EFOS

USER'S MANUAL

Rev. 2.0 - May 2022

1. IN THE BOX

A) Switcho EFOS module

B) Anti-slip leg

C) “H”connecting piece between modules

D) "L" connecting piece between modules

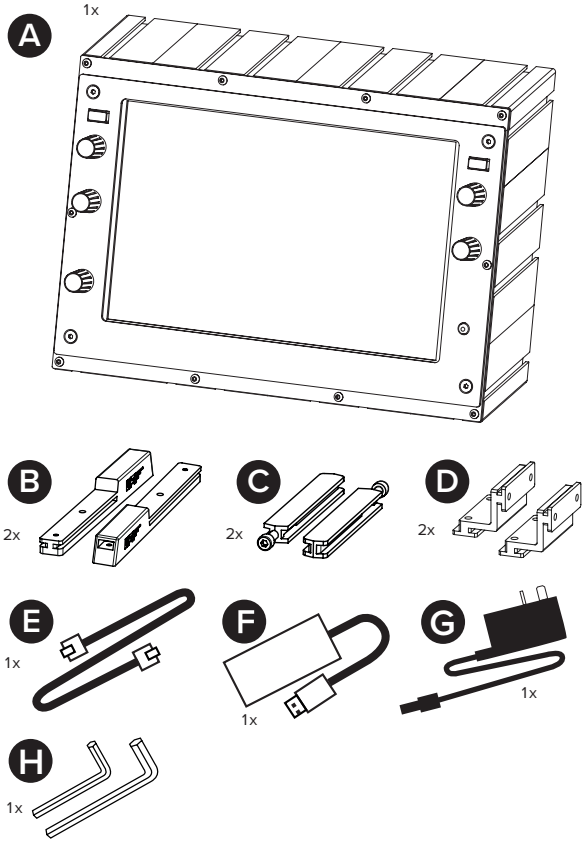
E) Network cable (Ethernet)

F) Ethernet to USB adapter

G) Power supply (with four regional interchangeable heads)

H) Allen keys (n.2, n.3)

For support, contact us at support@virtual-fly.com



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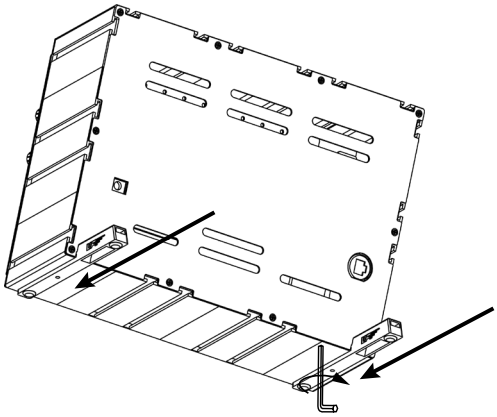
2. HARDWARE SETUP

2.1 ATTACHING TO DESKTOP/HOME COCKPIT SETUP

OPTION A: Using Anti-slip Legs

Introduce both anti-slip legs (B) in the lower slots from the backside, as indicated below. Using the n.2 Allen key (H), tighten the screw on each anti-slip leg as displayed below until you feel resistance.

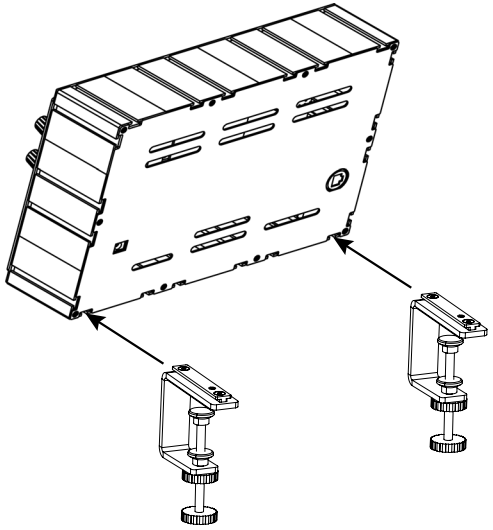


To secure your SWITCHO EFOS into your desktop, simply place the device on the surface it will rest, and the anti-slip legs will ensure it won't move.

OPTION B: Using SWITCHO CLAMP (not included)

Set up your EFOS in your home cockpit using the SWITCHO Clamp to fix it into your support base. This item is sold separately in our website at: https://www.virtual-fly.com/shop/avionics/efos#accessories.

Slide in the SWITCHO Clamp into the lower slots of the EFOS as displayed in the diagram below, and attach the clamp onto the support base.

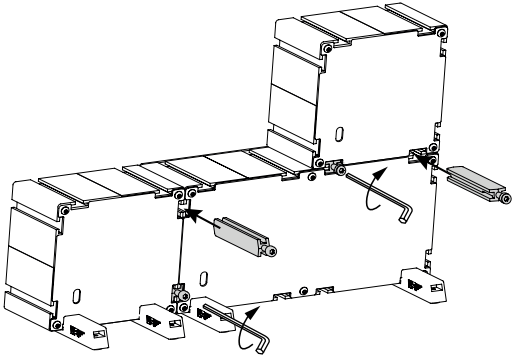


2.3 MODULE ASSEMBLY

If you own another SWITCHO module, you can combine the modules with the provided connecting pieces (C).

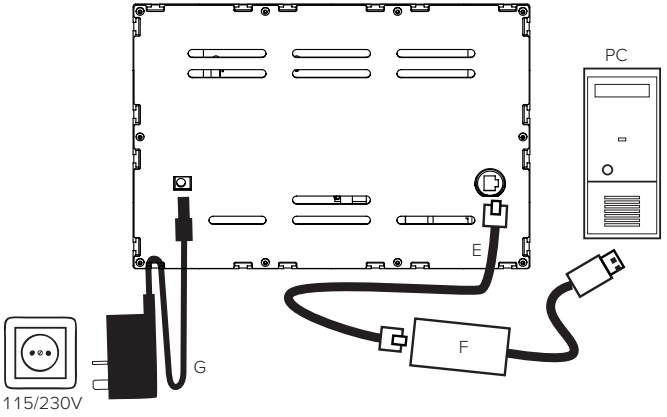
The modules can be combined forming rows and columns. Expand your SWITCHO Family and configure it to your preferences.

Join the modules you want to combine and introduce the connecting pieces (C) as displayed below. Tighten the screw with n.3 Allen key (H) until you feel resistance.



2.4 CONNECTING TO PC

Connect the USB-C power supply cable (E) to the back of the EFOS labelled as “Power 5V” and the USB-A to USB-C cable (D) to the back of the SWITCH module labelled as “PC USB”. Connect the power supply to a wall power socket and the free end of the USB cable (D) to the computer where the flight simulator software is running.



3. SOFTWARE SETUP

To interact with your PC, the EFOS requires installing some additional software depending on the flight simulation software you use. The EFOS is compatible with MSFS, Prepar3D and X-Plane 11.

MSFS and Prepar3D

To set up the EFOS with MSFS or Prepar3D, you will need to install VFConnect, the software developed by Virtual Fly to enable interaction between our flight panels and PCs, and FSUIPC. You can download these from the following links:

- **VFConnect:** https://downloads.virtual-fly.com/software/vfconnect/efos/latest/vfconnect_efos.exe
- **FSUIPC:** http://www.fsuipc.com/

If you already have FSUIPC installed, skip this step. During the installation, a registration window will appear, THE EFOS DOES not require full FSUIPC installation for full functionality. which you must skip by selecting “Not Now”. Restart MSFS/ Prepar3D after the installation is complete.

X-Plane 11

To set up the EFOS with X-Plane 11, you only need to install the VFConnect version suitable for X-Plane 11. You can download it from the link below:

- **VFConnect_XP:** https://downloads.virtual-fly.com/software/vfconnect/efos/latest/vfconnect_efos_xp.exe

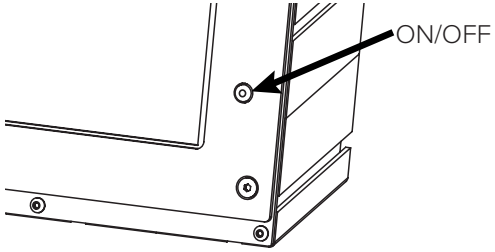
> **!** VFConnect takes care of making your EFOS works with MSFS, Prepar3D and X-Plane 11, so it **must always be running** when you use the EFOS.

4. START UP

4.1 ACTIVATING PROCEDURES

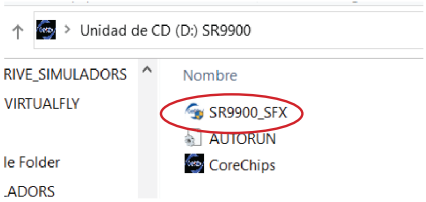
1. Start your preferred flight simulation software (MSFS, Prepar3D or X-Plane 11).

2. After the EFOS is connected to the PC, press the push button (a) indicated below to start the EFOS.

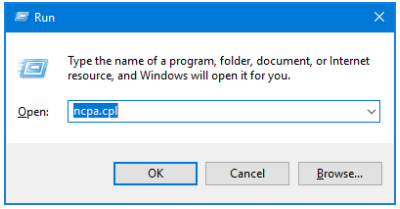


! It is **very important to activate/deactivate the device using the ON/OFF button** and to **wait for the software to load** before deactivating the device.

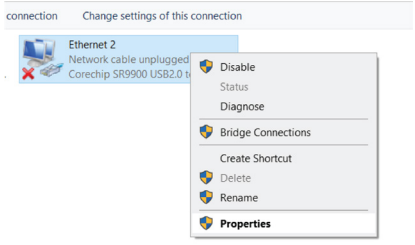
! **If it's the first time you connect the EFOS to your PC**, in the File Explorer, open the folder that corresonds to the Ethrenet cable adapter. Execute the **SR9900_SFX file** as indicated below. This will install the necessary drivers to use the EFOS.



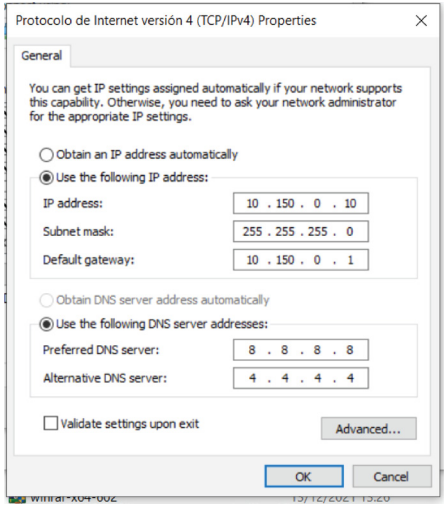
3. Press the Windows icon and "R" key simultaneously to pop up the screen below, and type "ncpa.cpl". This will open the Network Connections from the Control Panel of your PC.



4. Right click on the Ethrenet connection named "CorechipSR900 USB2.0 to Fast Ethernet Adapter" and select "Properties", as displayed below. A pop up will appear.



5. From this pop-up, click on the “Internet Protocol Version 4 (TCP/IPv4)” and configure the IP of the EFOS by inputting the values depicted below:



6. Execute the VFConnect version that corresponds to the simulation software running. If the Windows firewall is activated, a warning permission to communicate with networks might appear. You must click “Allow Access” to enable the connection between the EFOS and the computer.

Depending on the flight simulation software you use, the connection time will vary.

The VFConnect software window will look like (a) below if it is not yet connected, and like (b) if a connection has been established succesfully between computer and EFOS.

(a) The plugin is searching for MSFS/Prepar3D/X-Plane 11 and EFOS

(b) The plugin is connected to MSFS / Prepar3D / X-Plane and EFOS

> **!** If using X-Plane 11, VFConnect will not show a "Connected" status until a flight has been loaded.

If a connection has not been established yet between the EFOS and PC, the EFOS’ screen will display either one of the messages below:

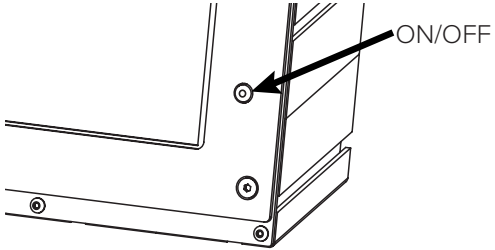
(a) VFConnect has not been executed in the PC.-

(b) The Ethernet cable has not been connected between the EFOS and PC.

If you have issues establishing the connection between the EFOS and your computer, please contact Virtual Fly's Technical support at support@virtual-fly.com.

4.2 DEACTIVATING PROCEDURES

Press the push button of the EFOS and wait until everything has stopped before unplugging the EFOS from the power source.



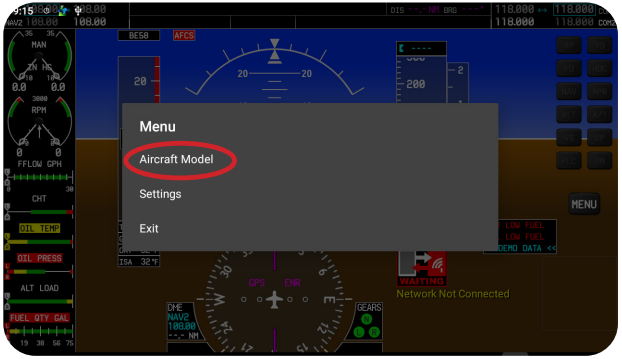
5. EFOS FUNCTIONS

5.1 AIRCRAFT SELECTION

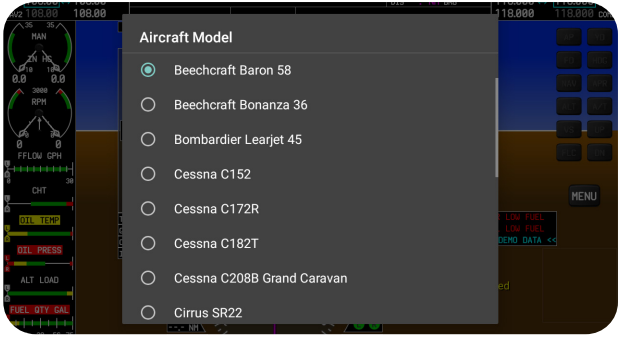
Once the EFOS and PC are connected, you must select which aircraft you wish to fly in the EFOS. To do so, you must first press the button indicated in the image in the left below, which will pop up the buttons indicated in the right below.

Select the “MENU” button indicated below.

After pressing “MENU”, the screen depicted below will pop up. Press the “Aircraft Model” option from the Menu.



Select the aircraft from the list that is/will be flown in the flight simulation software.



Check the Aircraft Compatibility table from Chapter 7 to learn about which aircraft's instruments you can display in the EFOS with MSFS, Prepar3D and X-Plane 11.

> **!** The Settings/Exit sections of the Menu are for technical purposes only. If you ever press them by accident, restart the EFOS.

5.2 TOUCHSCREEN BUTTONS

The EFOS' screen contains several buttons which must be toggled using the touchscreen. These buttons are divided into two zones, the right for the autopilot and navigation functions, and bottom for the XPDR, timer, instrument display options and additinal settings.

AUTOPILOT & NAVIGATION FUNCTIONS

- AP: Engages/disengages the Autopilot and Flight Director with the default pitch and roll axis modes.
- YD: Engages/disengages the Yaw Damper.
- FD: Engages/disengages the Flight Director in the default pitch and roll axis modes. If autopilot is engaged, FD button is disabled.
- HDG: Selects/deselects Heading Select Mode.
- NAV: Selects/deselects the Navigation Select Mode.
- APR: Selects/deselects the Approach Mode.
- ALT: Selects/deselects the Altitude Hold Mode.
- A/T: Engages/disengages the Autothrottle mode.
- VS: Selects/deselects the Vertical Speed Mode.
- UP and DN: Control the active pitch reference for the Pitch Hold, Vertical Speed, and Flight Level Change modes.
- FLC: Selects/deselects the Flight Level Change Mode.

OTHER FUNCTIONS

- ENGINE: Makes available the LEAN and SYSTEM softkeys
    - ENGINE: Engine Display displayed in EIS. If the PINNED softkey is selected, the EIS will hold the Engine Display in the EIS, otherwise it won't appear after leaving the ENGINE section.
    - LEAN: Lean Display displayed in EIS.
    - SYSTEM: System Display displayed in the EIS.
- ADF FRQ: Displays the ADF1 and ADF2 in the Nav Frequency Box and allows their tuning.

- PFD: Displays second-level softkeys for additional PFD configurations:
    - FLAP-TRM: Displays the Flaps and Trims indicators.
    - WIND: Displays softkeys to select wind data parameters.
    - BRG1: Shows Bearing 1 Information Window.
    - BRG2: Shows Bearing 2 Information Window.
    - MORE: Makes available additional options to display.
    - UNITS: Allows selection of units to display variables.
    - STD BARO: Sets barometer to standard barometric pressure.
- CDI: Cycles through GPS, VOR1, and VOR2 navigation modes on the CDI
- DME: Displays the DME Tuning Window.
- XPDR: Displays transponder mode selection softkeys.
    - STBY: Selects standby mode (transponder does not reply to any interrogations).
    - ON: Selects mode A (transponder repllies to interrogations).
    - ALT: Selects mode C, the altitude reporting mode (transponder replies to identification and altitude interrogations).
    - GND: Allows manual selection of ground mode in certain conditions.
    - VFR: Automatically enters the VFR code (1200 in the USA only).
    - CODE: Displays transponder code selection softkeys.
- IDENT: Activates the Special Position Identification (SPI) pulse for 18 seconds, identifying the transponder return on the ATC screen.
- TIMER. Displays Timer Window.
- ALERTS: Displays Alerts Window.
- BACK: Returns to the previous menu.

5.3 PHYSICAL BUTTONS

The EFOS also contains physical push buttons (keys) and rotary switches (knobs) to control various aspects of the flight instrument system. The rotary switches have three functions depending on whether the user rotates the knob (1), pushes it (2) or push-holds whilst rotating (3).

- NAV key: Transfers the standby and active NAV frequencies.
- COM key: Transfers the standby and active COM frequencies. Pressing and holding this key for two seconds automatically tunes the emergency frequency (121.5 MHz) in the active frequency field.
- NAV knob: (1) Sets the kHz of the active NAV frequency. (2) Transfers the active NAV source to the standby frequency of the same NAV source. (3) Sets the MHz of the active NAV frequency.
- HDG | IAS knob: (1) Sets the Heading Bug position in the HSI. (2) Syncs the Heading Bug to the current heading. (3) Increases/decreases the IAS to hold.
- ALT knob: (1) Sets the Altitude Bug in the altimeter. (2) Syncs the Altitude Bug to the current altitude. (3) Increases/decreases the Altitude Bug in the altimete in steps of 1000s ft.
- COM knob: (1) Sets the kHz of the active COM frequency. (2) Transfers the active COM source to the standby frequency of the same COM source. (3) Sets the MHz of the active COM frequency.
- CRS | BARO knob: (1) Sets the course. (2) Returns the course pointer to the bearing of the active waypoint or navigation station. (3) Sets the altimeter barometic pressure.

5.4 LIST OF INDICATED VARIABLES

ENGINE

CHT
EGT
HOBBS
RPM
TORQUE
FUEL FLOW
FUEL QUANTITY RIGHT
FUEL QUANTITY LEFT
FUEL PRESSURE
ITT
N1
N2
OIL PRESSURE
OIL TEMPERATURE
PROPELLER RPM
VAC

GPS & NAVIGATION

ADF DME DIST
ADF WAYPOINT ID
CROSSTRACK ERROR
DISTANCE TO NEXT WAY-POINT
FD PITCH
FD ROLL
GPS BEARING
GPS DESTINATION
GPS DME DISTANCE
GPS FLAGS
GPS NEEDLE
GPS PITCH MODE
GPS ROLL MODE
GPS WAYPOINT ID
IAS TO HOLD
MAGNETIC DEVIATION
NAV ACTIVE FREQUENCY
NAV BEARING
NAV DME DISTANCE
NAV GS NEEDLE
NAV LOC NEEDLE
NAV1 RADIAL
NAV TO FROM FLAG
NAV STBY FREQUENCY
NAVAIDS STATUS
NAVIGATION SOURCE
NEXT WAYPOINT ID
TO/FROM
VERTICAL SPEED TO HOLD
VOR DME DISTANCE

FLIGHT DYNAMICS

AILERON TRIM
AIRCRAFT NAME
ALTITUDE
BAROMETRIC PRESSURE
CRITICAL VELOCITY
ELEVATOR TRIM
FLAP POSITION
FORWARD ACCELERATION
GLIDESLOPE
GROUND SPEED
HEADING
HSI
INDICATED AIRSPEED
ISA TEMPERATURE
PITCH ANGLE
PITCH RATE
ROLL ANGLE
ROLL RATE
RUDDER TRIM
SLIP/ SKID
TRUE AIRSPEED
TRUE HEADING
TURN COORDIATOR BANK
TURN COORDINATOR BALL
TURN COORDINATOR RATE
VERTICAL SPEED
YAW DAMPER

ELECTRONICS

BUS VOLTS
BATTERY VOLTS
BATTERY AMPS
BUS AMPS

RADIO

ADF FREQUENCY
COM ACTIVE FREQUENCY
COM STBY FREQUENCY
NAV ACTIVE FREQUENCY
NAV STBY FREQUENCY
XPDR CODE
XPDR MODE

OTHER

CABIN PRES ALT
CABIN PRES DIFFERENTIAL
CAS MESSAGES
LAND GEAR LEFT
LAND GEAR LEVER
LAND GEAR NOSE
LAND GEAR RIGHT
LOCAL TIME
OUTSIDE AIR TEMPERATURE
PARKING BRAKE ON
PRESSURISATION ALTITUDE SET CHANGE RATE
UTC TIME
WIND DIRECTION
WIND SPEED

6. TROUBLESHOOTING

Anomaly	Possible Cause	Solution
MSFS/ Prepar3D/ X-Plane 11 do not connect to the EFOS.	MFS / P3D / X-Plane is not running.	Check connection of network cable nº 3 between SOLO and MFS / P3D / X-Plane computer.
	X-Plane 11 is loaded but an aircraft is not loaded.	Execute MFS / P3D / X-Plane.
	EFOS does not connect to VFConnect3	Restart VFConnect.
	“VFConnect3.exe” or “VFConnect3-Xplane.exe” is not executed.	Execute “VFConnect3-Xplane.exe” on the MSF / P3D / X-Plane computer.
	“VFConnect3.exe” or “VFConnect3-Xplane.exe” started incorrectly.	Only one of “VFConnect” or “VFConnect-Xplane” can be executed at the same time, be sure that you are executed the version that corresponds on your simulation software. “VFConnect” will only work with MFS/P3D and VFConnect-Xplane will only work with X-Plane.
	Windows firewall does not allow communication with SOLO.	You will have to add an exception manually to allow VFConnect through the firewall. Type “Allow an app through firewall” in your desktop and select the correct version of VFConnect3.

Anomaly	Possible Cause	Solution
EFOS indications do not display correct values.	VFConnect3/Simulation Software has been closed and reopened after successful connection.	Restart the EFOS.
EFOS screen does not display the aircraft instrument panels.	EFOS software has been shut down by exiting it from the menu.	Restart the EFOS.

7. AIRCRAFT COMPATIBILITY

The EFOS is compatible with the following aircraft in MSFS,

Prepar3D and X-Plane 11:

MSFS	Prepar3D	X-Plane 11
Beechcraft Baron 58	Beechcraft Baron 58	Beechcraft Baron 58
Beechcraft Bonanza 36	Beechcraft King Air 350	Beechcraft King Air C90
Beechcraft King Air 350	Bombardier Learjet 45	Cessna C172
Cessna C152	Cessna 152	
Cessna C172	Cessna 172	
Cessna C208 Grand Caravan	Mooney Acclaim	
Cirrus SR22	Mooney Bravo	
CubCrafters XCub		
Diamond DA40		
Diamond DA62		
JMB VL-3		
Socata TBM 930		