OrbitXP Connector for X-Plane 12

User Manual

FS-MAN-SOF-NA-E-20-2453

Ed. 4

INDEX

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	2 / 22

OrbitXP User Manual - Ed4.docx

1   PURPOSE

In this document we have tried to explain the key characteristics of OrbitXP – how it works, all of its benefits to Sismo customers and also how you can set up your own Sismo flight simulator.

OrbitXP has been designed to connect the Sismo Plug&Fly Modules directly to X-Plane 12 via Zibo738X.

2   REFERENCE DOCUMENTS

Id	Title	Reference	Ed.	Author/Publisher
[R1]	User Manual - SC-MB Ethernet Configuration	SC-MAN-SCE-E-17-0003	1.6	Sismo
[R2]				

3   INTRODUCTION TO SISMO HARDWARE

Each Plug&Fly module (Such as the AFT; FWD, MIP, etc) which has been developed by Sismo has its own particular hardware components and wiring layout. However, they are all controlled by means of electronic boards which were also designed by Sismo. These boards are called the SimCards Ethernet family, and they have been in use since 2009.

The SimCards, as opposed to many other I/O boards on the market, use ethernet port. This provides a reliable communication, which is highly desirable for a Flight Simulator which requires hundreds of inputs/outputs in real-time.

The most common alternative is USB. However, USB modules usually have communication issues, due to the saturation of information or a simple loss of configuration.

Ethernet communication through a LAN is very stable and can be connected with any router without having to constantly change IP addresses. For further information, please read the manual [R1] or watch the following videos:

https://www.youtube.com/watch?v=nPaQGjc2VPw&t=14s

https://www.youtube.com/watch?v=0ouRsOyB014

▶	There is available a **Video Tutorial** about OrbitXP in the following link: https://www.youtube.com/watch?v=usIIQYq5w0c

	4	OrbitXP Connector for X-Plane 12		
📖		User Manual	FS-MAN-SOF-NA-E-20-2453	3 / 22

OrbitXP User Manual - Ed4.docx

3.1 EXAMPLE HARDWARE SET-UP

In the figure below you can see a typical layout for a Flight Simulator based on Sismo Hardware.
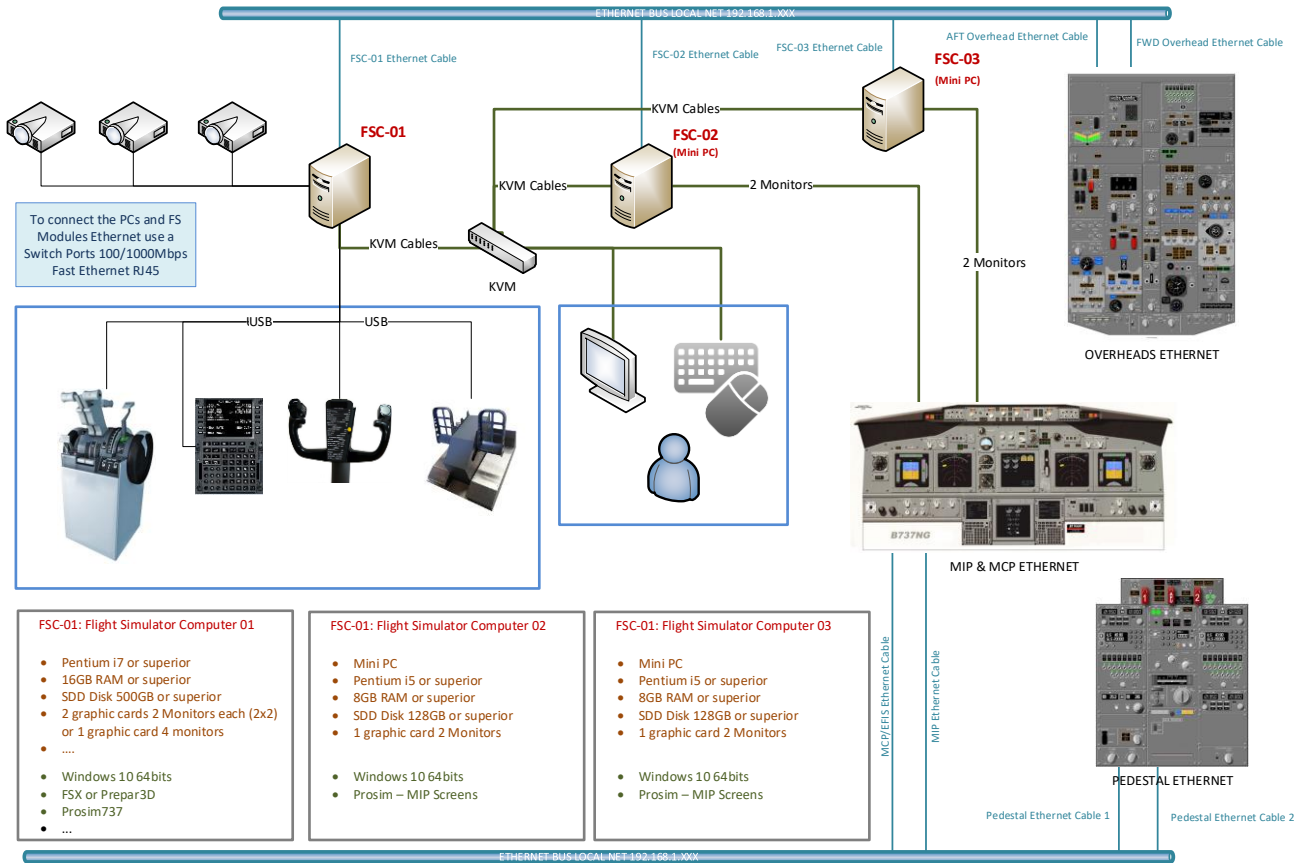
3.2 ORBITXP FEATURES

OrbitXP is a native application in 64 bits developed by Sismo. This product was designed with the following objectives in mind:

- To provide the customer with an application that will be able to connect our Plug&Fly modules directly and automatically to X-Plane 12. The mapping between the modules and X-plane should be done inside the application, which will allow the user to simply connect and run the software.
- The application has to be native 64 bit.
- No 3rd party add-ons are required.
- OrbitXP should be able to scan the LAN to identify connected SimCards that are associated with Sismo modules, and assign them automatically depending on the IP address. See previous videos for further info.
- OrbitXP will create a link with X-Plane 12, once it is running and the selected aircraft is Zibo 738X 3.43.18 or superior.
- The application can be managed in X-Plane through menu commands
- The customer configuration is minimal and can be managed directly in the OrbitXP interface or alternatively in the 'config.ini' file.

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	4 / 22

OrbitXP User Manual - Ed4.docx

- OrbitXP is a complex application, but it is free for Customers. We consider this to be an important advancement for Sismo.
- It has been developed using the latest software.
- Please take into account that the mapping is for hundreds of inputs/outputs.

The available functionality depends on the Zibo variables, there are some buttons and modules which are dummy or have limited functionality. This is not due to any hardware limitations. When Zibo releases new panels, OrbitXP can be modified to control the new panels.

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	5 / 22

OrbitXP User Manual - Ed4.docx

3.3 ORBITXP FUNCTIONAL LAYOUT
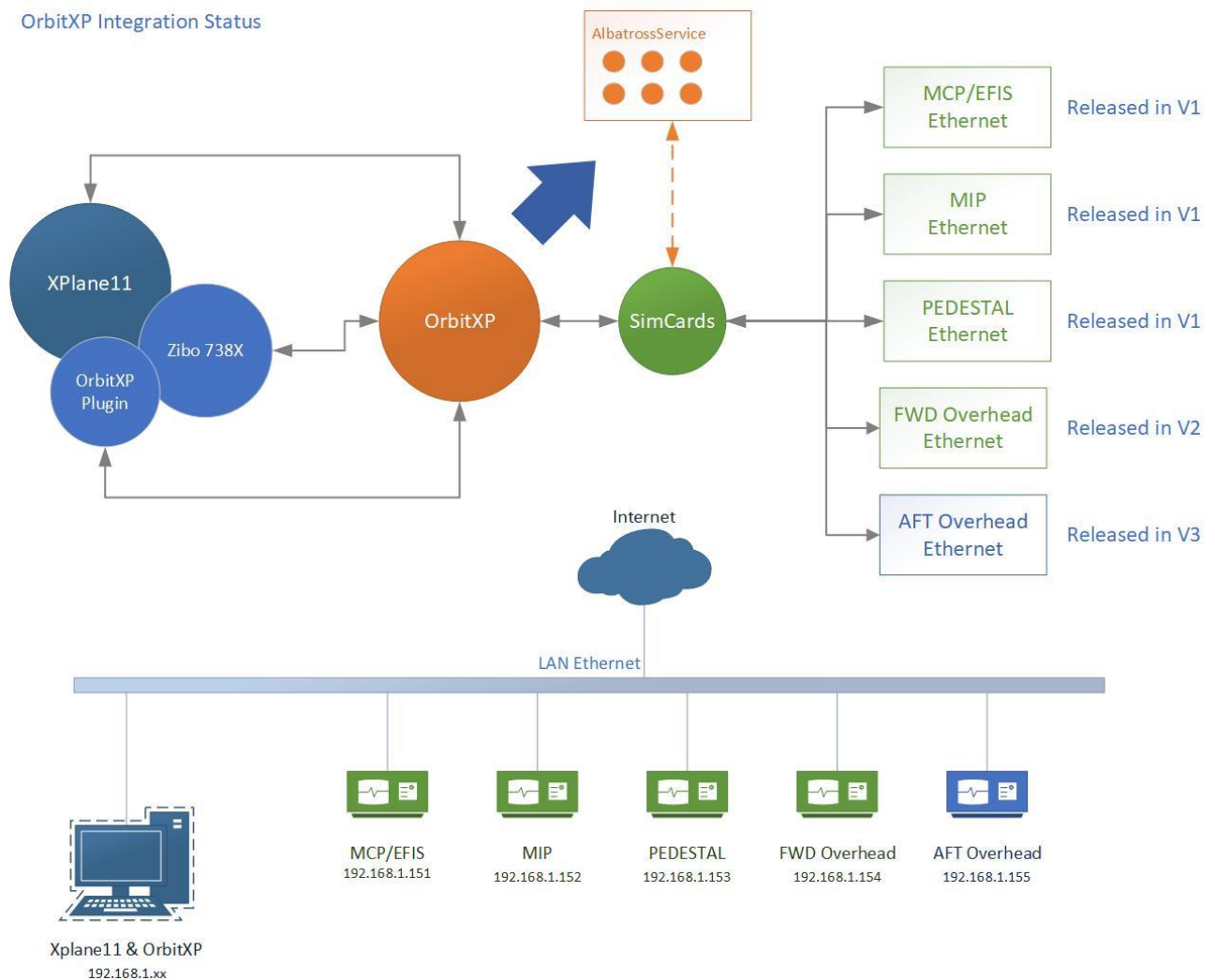
OrbitXP is an application with the following capabilities:

- Scans and connects the SimCards connected in the LAN and automatically assigns a Plug&Fly module depending on the IP address.
- Automatically detects when X-Plane is running and establishes a connection. Sometimes X-Plane does not send a message to the connector, therefore it is more reliable to run X-Plane and launch OrbitXP from the menu.
- You can use OrbitXP to access and configure the CONFIG page of the SimCard. By default, the Plug&Fly module will be configured with the correct IP Address, but you can also choose to change the IP to customize your network. There is a limitation to this, which is that the IP must belong to the correct range. This configuration is similar to the way ProSim works.
- OrbitXP shows the inputs in real-time and can force outputs, displays, servos and analog inputs. This can be used for testing purposes. This service is very useful when the user wants to check if a particular error is due to the software or the hardware. This service is called "AlbatrossService"

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	6 / 22

OrbitXP User Manual - Ed4.docx

4   COMPATIBILITY

4.1   HARDWARE COMPATIBILITY

We are proud to say that all of Sismo Flight Simulator Plug&Fly modules are now included.

- MIP
- MCP/EFIS
- Pedestal
- FWD Overhead
- AFT Overhead

You do not need to have the full Plug&Fly module in order to use OrbitXP.

It is necessary to follow our wiring schedule with our Baseplate and SimCard. As an example, you could start with just the baseplate with the SimCard Ethernet, and add IDC Modules one by one using flat ribbon cables.

The baseplates are designed with the wiring schedule already integrated for compatibility with OrbitXP and any of the IDC Modules (DS, EDC, AFDS, NAV, VHF…). Bear in mind that the baseplate is also useful as it provides specific wiring schedule, it is designed to facilitate the connection of the different IDC modules with the SimCard.

If the customer has a complete Plug&Fly Sismo module, then the module is fully assembled with all the connections. You only need to connect the module to a modem and to a power supply.

4.2   SOFTWARE COMPATIBILITY

4.2.1   Operating system

It requires Windows 10 x64 Home or Professional version with the latest updates and .NET Framework 4.8 Runtime. This framework is installed automatically by OrbitXP, but if you need to install it manually, follow this link:

https://dotnet.microsoft.com/download/dotnet-framework/net48

4.2.2   X-Plane and Zibo

The required release of X-Plane has to be **11.50** or superior using the add-on of **Zibo 738X 3.43.18** or superior. The X-Plane API has to be 3.0 or superior as is described in the following link:

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	7 / 22

OrbitXP User Manual - Ed4.docx

https://developer.x-plane.com/article/building-and-installing-plugins/

Please, bear in mind that Sismo hardware has all the functions available in the real B737-NG. However Zibo 738X, while a fantastic add-on, has the drawback that some modules are not fully functional.

The hardware has more capabilities but until Zibo implements the function in the software they will not work. Some of the modules known in the current release (Zibo 3.43.18) that have partial functionality are the following:

Zibo modules with partial functionality:

- Cargo Fire Panel.
- EDC Panel. Just the encoder N1.
- Fire Warning Panel: Some toggle switches and a push button
- ACP Panel

Zibo dummy modules:

- WXR Panel.
- SELCAL Panel.

Modules that do not require a connection with X-Plane:

- CBC Panel. The adjustment of the backlighting is done by hardware (Sismo solutions).
- FOCBC Panel. The adjustment of the backlighting is done by hardware (Sismo solutions). The brightness of the DUs is not available in Zibo.
- BALC Panel. The adjustment of the backlighting is done by hardware (Sismo solutions). The brightness of the DUs is not available in Zibo.
- Pedestal Bright Panel.

5   INSTALLATION

The latest release of OrbitXP is available in the downloads section of our website: www.sismo-soluciones.com, please check the web or follow us on Facebook to hear about new releases.

Before installing the application, you must take into account that OrbitXP should usually be installed on the same computer where X-Plane is installed. The UDP configuration to establish a connection between OrbitXP and X-plane has to be "127.0.0.1" with a Port = 49000. See config page in section 6.

If OrbitXP and X-Plane are on different computers in the LAN, then the IP of the X-Plane computer must be established. See section 6.

Download and install the files from our website. You MUST give the application permission to pass through the **Firewall**. If you do not do this the application will not work as expected.

Once the application is installed in the folder "Program Files" of your computer, please do the following steps:

- Open the folder where OrbitXP is installed, as shown in figure 01.

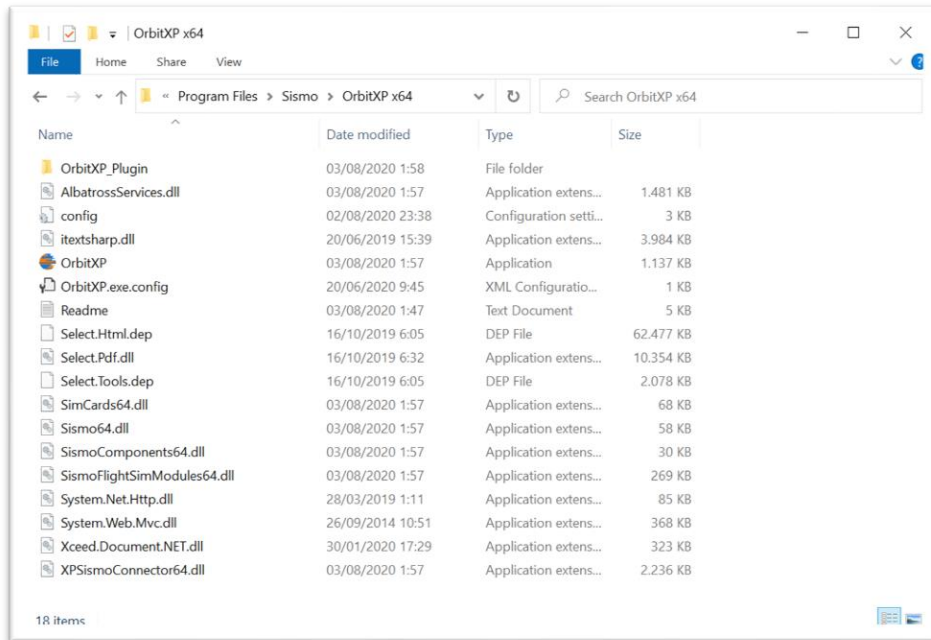|	4	OrbitXP Connector for X-Plane 12		
	User Manual	FS-MAN-SOF-NA-E-20-2453	8 / 22

OrbitXP User Manual - Ed4.docx

Figure-01

- Read the readme.txt file if you want to know the functions and services of the release
- Copy the folder "OrbitXP Plugin" into the X-Plane folder "...\Resources\ plugins". The destination of this folder depends on the specific X-Plane installation of every user.
- Run X-Plane 11 and load the aircraft Zibo 738X 3.43.18 or superior
- Go to the X-Plane Menu "Plugins", submenu "Sismo OrbitXP" and click in "Run & Connect" as shown in Figure-04. OrbitXP will be shown to verify that everything is working properly, as shown in Figure-02
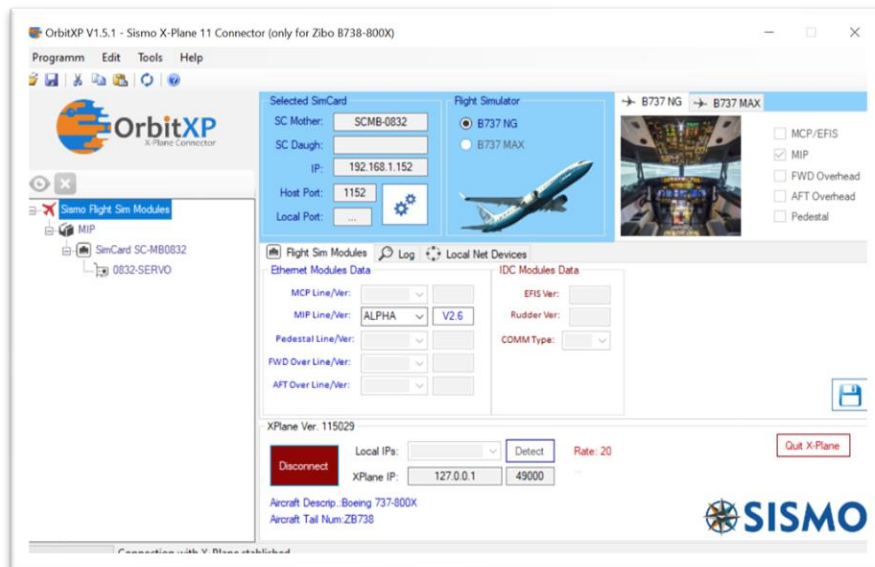

Figure-02

	4	OrbitXP Connector for X-Plane 12		
		User Manual	FS-MAN-SOF-NA-E-20-2453	9 / 22

OrbitXP User Manual - Ed4.docx

Note: In case OrbitXP is called by the user from the installation fodder and X-Plane is not running, then you will see an interface as is shown in Figure-03
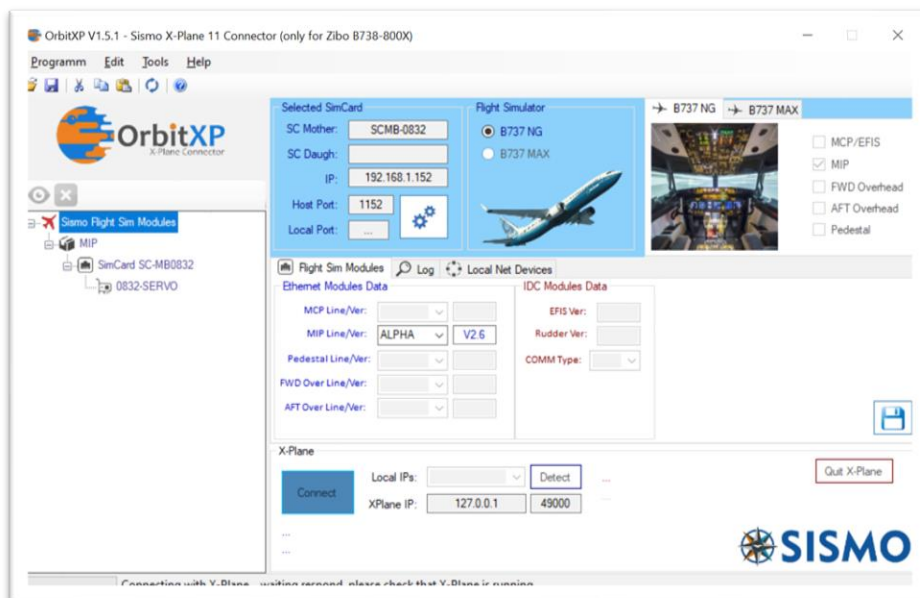

Figure-03

- You can now Minimize OrbitXP. If you need to see the OrbitXP interface, select the menu option "Show". This function is available if OrbitXP is connected with X-Plane, otherwise, the option will not do anything. It would be necessary to open the interface in the Windows System-Tray.

Figure-04
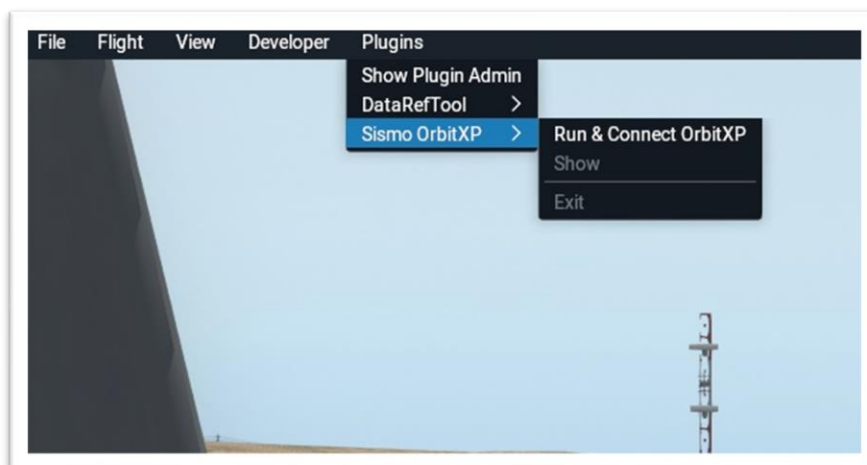
Once the user clicks this menu, the interface will be visible as shown in Figure-05

	4	OrbitXP Connector for X-Plane 12		
		User Manual	FS-MAN-SOF-NA-E-20-2453	10 / 22

OrbitXP User Manual - Ed4.docx

Figure-05

For most users, the default configuration will be valid. No changes are necessary. The mapping between the hardware and software is fully automatic. No programming or manual connection required.

The connector can be shown again in 2 ways:

- Clicking in the X-Plane Menu "Show". This option requires that the connection between both applications is established.
- Go to system-tray and double click in the icon or with mouse left button select "Show"

	4	OrbitXP Connector for X-Plane 12		
		User Manual	FS-MAN-SOF-NA-E-20-2453	11 / 22

OrbitXP User Manual - Ed4.docx

6   SOFTWARE CONFIGURATION

6.1   IP ADDRESSING

Please note that the Sismo modules (Simcards), if available, have the following IP addresses. Otherwise SismoLink will not be able to detect them correctly.

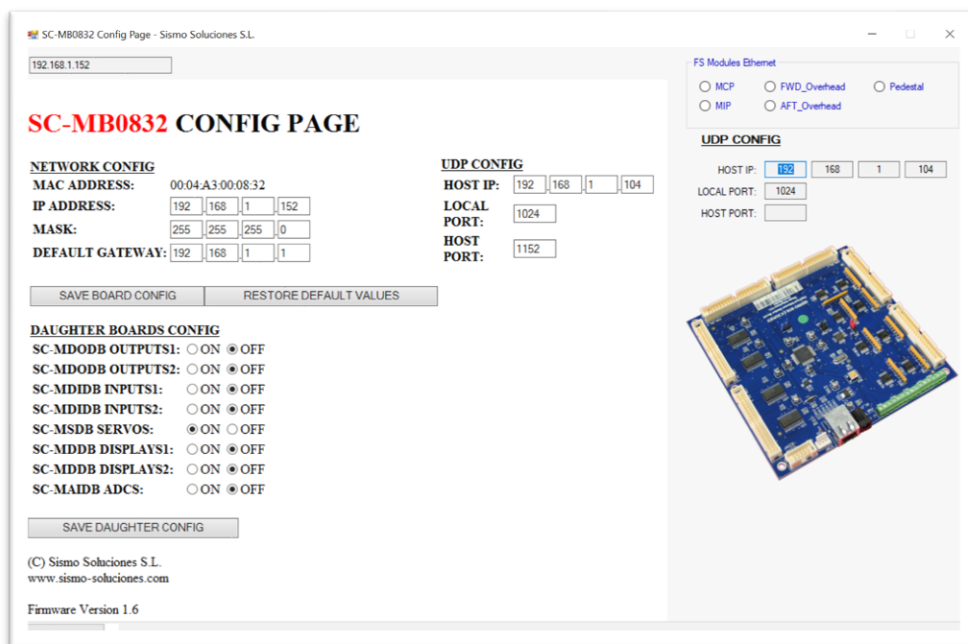|	MCP	MIP	Pedestal	FWD Over	AFT Over
IP	192.168.1.151	192.168.1.152	192.168.1.153	192.168.1.154	192.168.1.155
HOST IP	Computer IP	Computer IP	Computer IP	Computer IP	Computer IP
HOST PORT	1151	1152	1153	1154	1155

6.2   SIMCARDS CONFIGURATION

The SimCards have to be connected in the user's LAN as is explained in the document [R1] or in the videos linked above. If for whatever reason the user has to change some parameters on the network, it can be done directly in the browser with the IP address or through OrbitXP, by right-clicking on the following icon:

If you bought a specific baseplate with a SimCard (MIP, Pedestal, Overheads) the SimCard connected to the baseplate will be shipped pre-configured. If the client buys a SimCard without the baseplate then the IP address will be 192.168.1.150 by default, but this can be changed following the steps in the manual or videos.
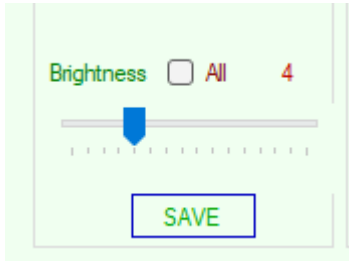
We'd like to highlight that OrbitXP has been developed to simplify the work to be done by the user as much as possible.

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	12 / 22

OrbitXP User Manual - Ed4.docx

6.3 DISPLAYS BRIGHTNESS

The displays brightness of every P&F Module (MCP, Pedestal, AFT Over and FWD Over) can be adjusted and saved in config file.

Open SimCard Motherboard as is described in chapter "SimCards Testing Service" and select the desired brightness with the scroll bar and push "Save".

It has to be done for every P&F module.

6.4 EDITING THE CONFIG FILE

Although most of the values of the config file installed in the OrbitXP program folder are available through the graphical interface of the OrbitXP application, the user can also change them directly opening the config file with notepad. If you follow this route, you must respect the syntax of the document.

For most users these values will not have to be changed, with the default configuration covering most of the work.

One example of when you must edit the config file, is when you are using a previous version of Sismo AFT or FWD Plug&Fly modules which uses a different encoder-manufacturer. More details on this case in 7.1.2.3.

6.4.1 Typical values

In the Extract of the config file below, you can see the syntax of the document and the different configuration variables available for the network and the different Plug&Fly modules.

```
//-------------------------------------------------------------------
// Flight Sim information
//-------------------------------------------------------------------
//
// Select from Boeing 737-NG or Boeing 737 MAX
[SISMO_FS]
  SIM_MODEL = "Boeing 737-NG"

//-------------------------------------------------------------------
// Network Configuration Data
//-------------------------------------------------------------------
// HOST IP: is the IP of the computer where the SC is connected
//
[UDP CONFIG]
  SC_SC_SCAN_FIRST_HOSTPORT = 1151
  SC_SCAN_LAST_HOSTPORT = 1155
  SC_LOCAL_PORT = 1024
  SC_HOST_IP = "127.0.0.1"

[XPLANE CONFIG]
  XP_SERVER_IP = "127.0.0.1"
  XP_PORT = 49000
```

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	13 / 22

OrbitXP User Manual - Ed4.docx

```
XP_AUTOCONNECT = "YES"

//------------------------------------------------------------------
// SIM Modules for B737-NG & B737 MAX
//------------------------------------------------------------------
//
//######### Flight Simulator Modules Plug&Play <8Ethernet) #########
//
// Simulator Type; Module; Line; Release; IP
  SIMMOD737_MCP = "NG;MCP;ALPHA;V3;192.168.1.151"
  SIMMOD737_MIP = "NG;MIP;ALPHA;V2.6;192.168.1.152"
  SIMMOD737_PED = "NG;Pedestal;ALPHA;V2;192.168.1.153"
  SIMMOD737_FOH = "NG;FWD_Overhead;ALPHA;V3;192.168.1.154"
  SIMMOD737_AOH = "NG;AFT_Overhead;ALPHA;V3;192.168.1.155"
//
//####################### IDC Modules #########################
//
  /// MCP IDC Mod Data
  MCP_EFIS = "V3"
  //
  /// Pedestal IDC Mod Data
  // VHF or RT
  COMM_TYPE = "VHF"
  // V3 or V4
  RUDDER_TRIM_VER = "V3"
  /// FWD Overhead Mod Data
  // Encoders = CTS or ALPS
  FWD_OVER_ENCs = "CTS"
  // Encoders = CTS or ALPS
  AFT_OVER_ENCs = "CTS"
//
//####################### Servo Gauges #########################
//
  //MIP Gauges Positions (between 0 and 255)
  // Positions: UP; 1; 2; 5; 10; 15; 25; 30; 40
  FLAPS_POSITIONS = 35;61;92;117;143;165;184;202;224
  HBP_POSITIONS = 0
  //FWD Over Gauges Positions (between 0 and 255)
  FUEL_TEMP_POSITIONS = 0
  EGT_POSITIONS = 0
  CABIN_CLIMB_POSITIONS = 0
  DIFF_PRESS_POSITIONS = 0
  CABIN_ALT_POSITIONS = 0
  DUCT_PRESS_L_POSITIONS = 0
  DUCT_PRESS_R_POSITIONS = 0
  TEMP_POSITIONS = 0
  //AFT Over Gauges Positions (between 0 and 255)

  OXY_POSITIONS = 0
```

6.4.2   Data description

We will now see the syntax of how to fill-in each field.

6.4.2.1   SIMMOD737_XXX

```
SIMMOD737_MCP = "NG;MCP;ALPHA;V3;192.168.1.151"
SIMMOD737_MIP = "NG;MIP;ALPHA;V2.6;192.168.1.152"
SIMMOD737_PED = "NG;Pedestal;ALPHA;V2;192.168.1.153"
```

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	14 / 22

```
SIMMOD737_FOH = "NG;FWD_Overhead;ALPHA;V3;192.168.1.154"
SIMMOD737_AOH = "NG;AFT_Overhead;ALPHA;V3;192.168.1.155"
```

XXX is the Plug&Fly Module. The different values are separated with a semicolon **;**

Simulator Type: NG or MAX. use always <u>NG</u>

Module Plug&Fly: MCP, MIP, PED, FWD_Overhead and AFT_Overhead

Module Line: ALPHA, BRAVO, CHARLIE, DELTA, ECHO. Usually here use always <u>ALPHA</u>

Module Release: Vx. Depending of the release of your module. This info is in your order. If you don't have the info, keep the default data.

Module IP: It is the IP address of the SimCard Mother Board that controls the module. The default values of IP Address of the Plug&Fly modules are detailed in red in the extract above (e.g. Pedestal is 192.168.1.153).

Notice also the quote signs at the beginning and end **" "**.

6.4.2.2 COMM_TYPE

```
COMM_TYPE = "VHF"
```

You can select this variable in the OrbitXP graphical user interface (GUI). The VHF or RT modules of the pedestal variable is stored here.

6.4.2.3 FWD_OVER_ENCs & AFT_OVER_ENCs

```
FWD_OVER_ENCs = "CTS"
```

Select between CTS encoders that are 2 bit gradient or ALPS encoders. The second of these two being the ones currently used in Sismo Modules. If the encoders do not work properly, change the value from CTS to ALPS.

6.4.2.4 Gauge Positions

This code records the calibration data of every gauge. So far, only the FLAPS and TEMP gauges can be calibrated through AlbatrossService in the OrbitXP GUI. We are planning to have all the gauges calibrated in Albatross. But you can also type in the values in the Servo Gauges as per the example above.
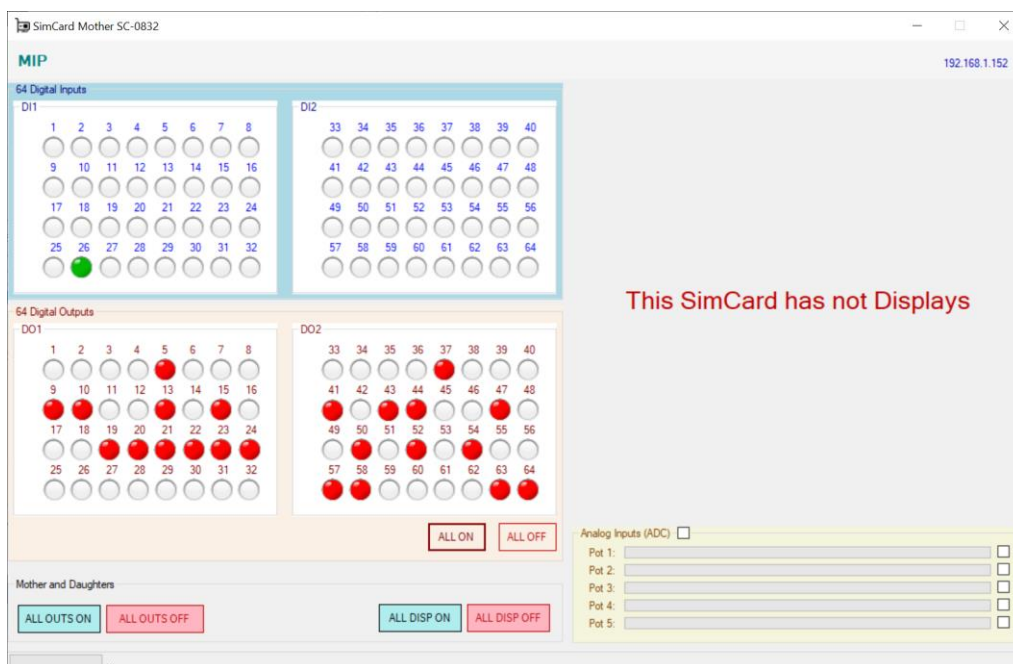
6.5 SIMCARDS TESTING SERVICE

This service is available in OrbitXP V1.5 and above. If the user has to check if the inputs are being received, just select the SimCard and open the window, clicking on the icon
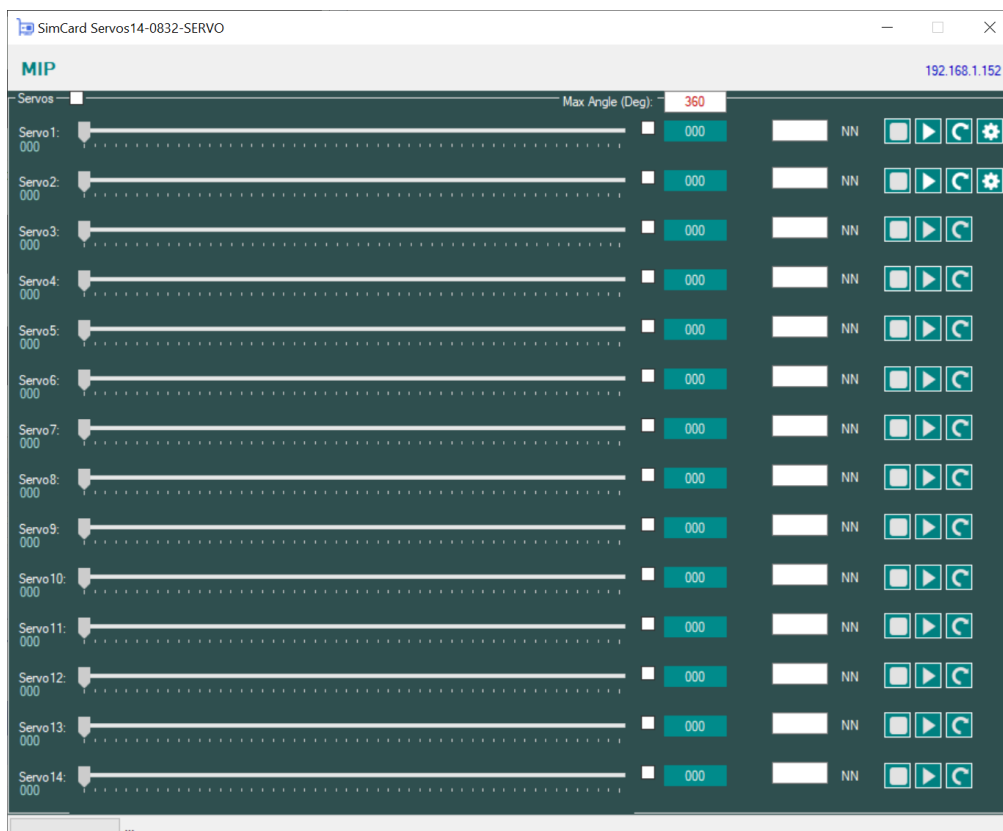
	4	OrbitXP Connector for X-Plane 12		
	User Manual	FS-MAN-SOF-NA-E-20-2453	15 / 22

OrbitXP User Manual - Ed4.docx

6.5.1 SimCard Mother Board without Displays (MIP)

6.5.2 SimCard Servos

To calibrate the Flaps Gauge click in the gear icon and follow the steps indicated by the application.

	4	OrbitXP Connector for X-Plane 12		
		User Manual	FS-MAN-SOF-NA-E-20-2453	16 / 22

OrbitXP User Manual - Ed4.docx

7   VIRTUAL SISMOFMC/CDU

As of version 5.4, a new feature of a virtual FMC, which connects via TCP/IP, has been included.

This is a free service, only available to customers with one of the Sismo Modules, as it requires the use of OrbitXP.

Note: This service will be available without OrbitXP, but will have some cost.

This is a beta version with the following features:

- Captain's side only.
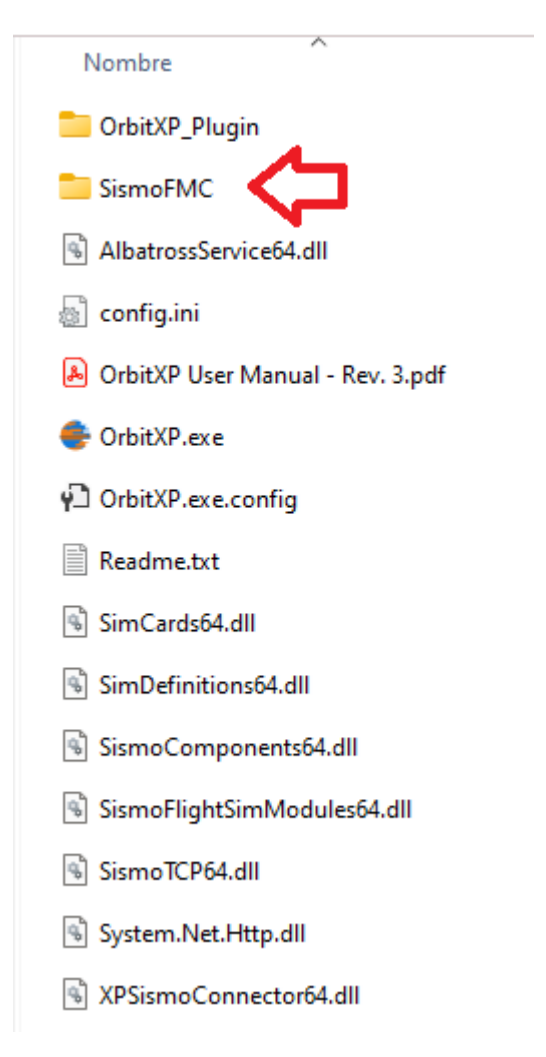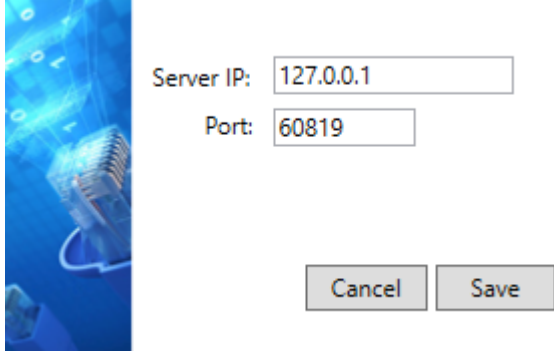- It is black and white; it does not handle colors.
- Requires OrbitXP V5.4 or bigger

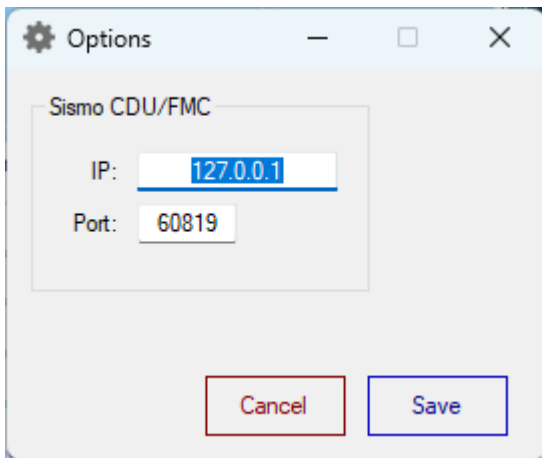### 7.1   FUNCTIONS UNDER DEVELOPMENT

Manage color and F/O Side

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	17 / 22

OrbitXP User Manual - Ed4.docx

7.2 CONFIGURATION IN SISMOFMC

7.2.1 Configuration in SismoFMC

Nombre 📁 OrbitXP_Plugin 📁 SismoFMC ⟵ 📄 AlbatrossService64.dll ⚙ config.ini 📕 OrbitXP User Manual - Rev. 3.pdf 🌐 OrbitXP.exe 📄 OrbitXP.exe.config 📄 Readme.txt 📄 SimCards64.dll 📄 SimDefinitions64.dll 📄 SismoComponents64.dll 📄 SismoFlightSimModules64.dll 📄 SismoTCP64.dll 📄 System.Net.Http.dll 📄 XPSismoConnector64.dll	The application is installed inside the SismoFMC folder and there you will find the executable "SismoFMC.exe" to launch the application. To establish the IP, click the following icon: Write the IP of the computer where OrbitXP is running. Select an open Port Server IP: 127.0.0.1 Port: 60819 Cancel Save Save and wait till OrbitXP is running and FMC is connected

	4	OrbitXP Connector for X-Plane 12		
📘		User Manual	FS-MAN-SOF-NA-E-20-2453	18 / 22

OrbitXP User Manual - Ed4.docx

7.2.2 Configuration in OrbitXP

Set the IP and port in the menu Options
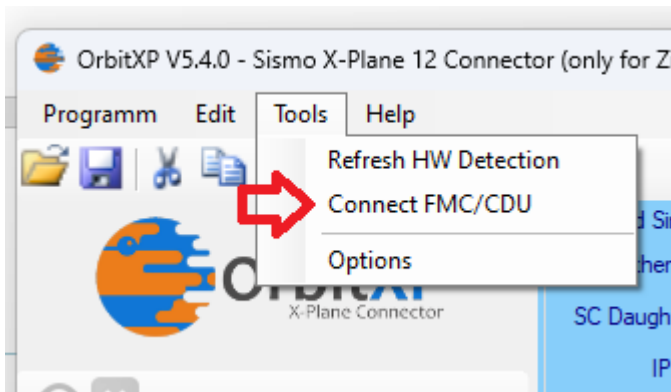
Activate the FMC/CDU in menu option

If SismoFMC is running and X-Plane 12 with Zibo 738, the FMC will be connected. Be sure that the selected port is open for connections.

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	19 / 22

OrbitXP User Manual - Ed4.docx

8   QUESTIONS AND ANSWERS

Q1: The plugin does not load correctly in X-Plane 11. Error Code = 126 : The specified module could not be found.

A1: in X-Plane log.txt the following error is reported:

..\X-Plane 11/Resources/plugins/OrbitXP_Plugin/64/win.xpl : Error Code = 126 : The specified module could not be found.

First, be sure that you are using the latest OrbitXP release available on our website.

It means that something is missing in your Windows 10 that block some plugins with X-Plane. One potential solution is to install the last version of Microsoft visual C++ redistributable that you can download in the following link:

https://support.microsoft.com/en-us/help/2977003/the-latest-supported-visual-c-downloads

Be sure that you have windows 10 updated and you are using X-Plane 11.50 or superior.

Q2: A specific function available in a Sismo module does not do anything in X-Plane

A2: Please, read the chapter "Software compatibility" in section 4.2.2 in this manual.

Q3: I can't save my changes.

A3: Did you open OrbitXP with Administration permissions?

Q4: Modifying the config file doesn't work as expected.

A4: Review the syntax. **;** is not the same as **,**

V4 is not the same as v4. You must select the correct version of your modules.

Q5: SismoLink does not detect any Sismo Module.

Check the config of the SimCard, that controls the module, introducing the IP in the browser. Be sure that the following "HOST PORTS" has been introduced in every SimCard and the computer IP of the customer (HOST IP), where the module is connected is correctly written.

Please check the chapter "IP Addressing" to see the values

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	20 / 22

OrbitXP User Manual - Ed4.docx

Note: To now the HOST IP, go to the "cmd" windows and write "ipconfig"

An example with the FAT Overhead connected in a computer with the IP 192.168.1.10
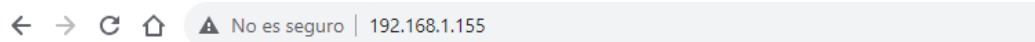
SC-MMB1179 CONFIG PAGE

NETWORK CONFIG

MAC ADDRESS:	00:04:A3:00:11:79
IP ADDRESS:	192 . 168 . 1 . 155
MASK:	255 . 255 . 255 . 0
DEFAULT GATEWAY:	192 . 168 . 1 . 1

UDP CONFIG

HOST IP:	192 . 168 . 1 . 10
LOCAL PORT:	1024
HOST PORT:	1155

[SAVE BOARD CONFIG] [RESTORE DEFAULT VALUES]

**DAUGTHER BOARDS CONFIG**

SC-MDODB OUTPUTS1: ●ON ○OFF
SC-MDODB OUTPUTS2: ○ON ●OFF
SC-MDIDB INPUTS1:   ●ON ○OFF
SC-MDIDB INPUTS2:   ○ON ●OFF
SC-MSDB SERVOS: ●ON ○OFF
SC-MDDB DISPLAYS1: ○ON ●OFF
SC-MDDB DISPLAYS2: ○ON ●OFF
SC-MAIDB ADCS: ○ON ●OFF

[SAVE DAUGTHER CONFIG]

(C) Sismo Soluciones S.L.

Firmware Version 1.5

	4	OrbitXP Connector for X-Plane 12		
	User Manual		FS-MAN-SOF-NA-E-20-2453	21 / 22

OrbitXP User Manual - Ed4.docx

9 PICS OF THE SISMO COCKPIT
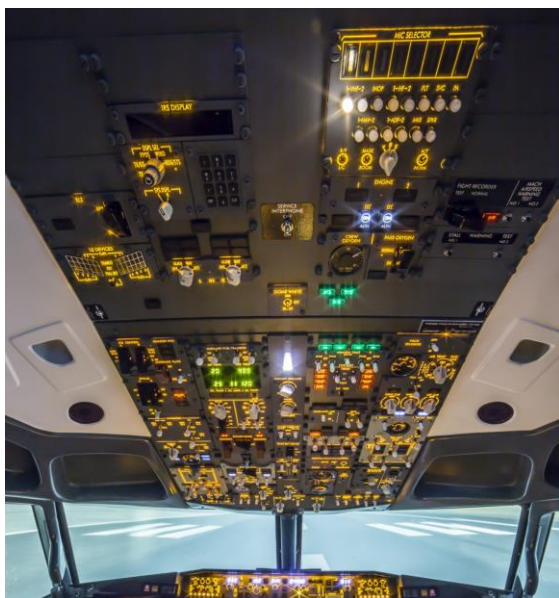
End of document

	4	OrbitXP Connector for X-Plane 12		
		User Manual	FS-MAN-SOF-NA-E-20-2453	22 / 22

OrbitXP User Manual - Ed4.docx