



737NG AFT OVERHEAD ETHERNET



USER MANUAL

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1 INTRODUCTION

This product has been designed following the last AFT OVERHEAD product mounted in the new B737NG. The equipment is full scale 1:1 and has been made to fulfill the customer expectations.



The metal casing makes that the product were robust and adaptable to different environments and cockpits.

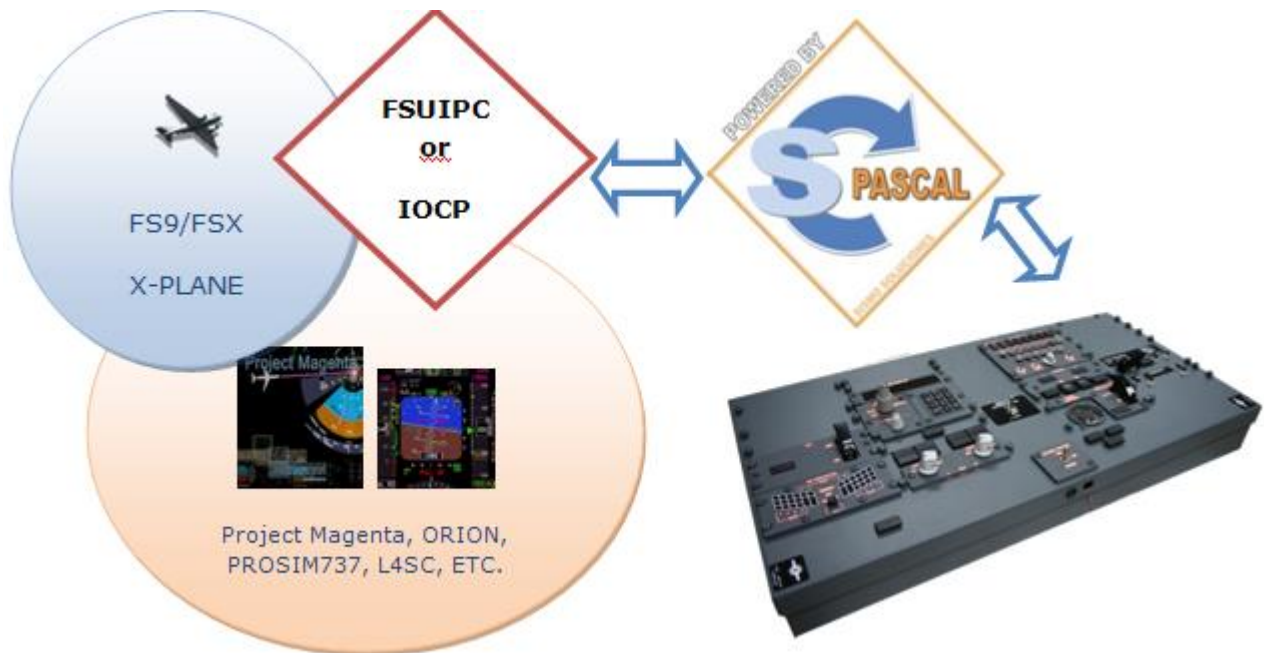
AFT OVERHEAD Plug&Fly is ready to be connected to your computer via ETHERNET. Follow the next simple steps to configure it.

The software interface for FS9/FSX/X-PLANE has been made in SC Pascal. Sismo provides different scripts to be used with Project Magenta, L4SC, Prosim737, Orion, etc.

SC Pascal also allows to all users to make modifications to adapt, modify or make new functions for increasing the power of your AFT OVERHEAD.

Note: With the new version of SC Pascal 5.1 Build 765 or superior, the scripts are deployed as .exe files. This is easier for standards users, allowing once the equipment is well configured, that the script can be run automatically when starting or rebooting the computer.


The following image shows the general scheme for (AFT OVERHEAD) –software connection.



2 COMPATIBILITY

	 	 	 	 	 
 FS9					
 FSX					
 X-Plane					

PLEASE CHECK FOR UPDATES

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3 PREVIOUS REQUIREMENTS

The new AFT OVERHEAD is compatible with any operating system; it only is necessary to have a computer with an ETHERNET free port. It is also possible to use a SWITCH (AutoSense) with free ports that allow to centralize the wired up of a network and to be able to extend it.

There are two ways of connecting the AFT OVERHEAD to the control computer:

1. By direct way with only a cable: it is necessary a crossed cable type that connects the AFT OVERHEAD with the computer (included with the purchase).
2. By means of a SWITCH: it can be used indistinctly a crossed cable or a normal cable (recommended).



The easiest situation is that the AFT OVERHEAD is connected to the computer where Microsoft Flight Simulator is installed, because it must accede to its functions through the IOCP or of FSUIPC communication protocol which is going to be used. Nevertheless, in network configuration, the equipment can be connected to other computers, but for that purpose the network must be configured adequately, and this is not inside the area of this manual. Anyway, this manual will be useful for orientating to the user how he must do it.

Others requirements:

1. Download the last free Build of the SC-Pascal editor/compiler (download section from Sismo Web).
2. Install the last version of “**FSUIPC**” for FS9 and/or FSX. More info at: <http://www.schiratti.com/dowson.html>.

4 INSTALLATION

1. Locate the 5V DC, 12V DC (Backlighting) and Ethernet connectors in the bottom of the metal cover of the AFT OVERHEAD.
2. Connect the computer, which you want to control the hardware, to the AFT OVERHEAD via Ethernet cable. As previously indicated, there are 2 ways to do it, directly to your computer through the Ethernet port computer- AFT OVERHEAD, or indirectly through a SWITCH.



3. There are 2 possibilities to supply 5V DC and 12V DC to the AFT OVERHEAD:
 - a) If the user has **not** got the SismoSoluciones FWD OVERHEAD:

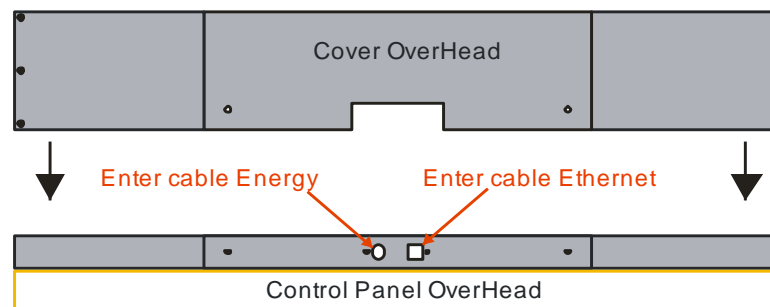
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- Plug the 5V DC Power Supply on the connector place at the bottom on the metal cover of the AFT OVERHEAD.
- Plug the 12V DC Power Supply on the connector place at the bottom on the metal cover of the AFT OVERHEAD.

IMPORTANT: Connect firstly the 5V DC power supply and check that the displays digits of the IRS Panel show the character '3'. Later connect the 12V DC

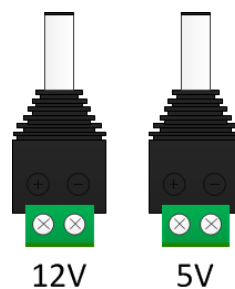
b) If the user **has** Sismo Soluciones FWD OVERHEAD:

- The FWD-Overhead is supplied with 2 power supply connectors (5V DC and 12V DC) rolled in its interior. If the Overhead is supplied with back cover (Platinum Line), it will be necessary to remove this back cover unscrewing the screws which are fixed to the chassis of FWD-Overhead. See picture below:



OverHead Front

- Locate the 5V DC connector and 12V connector for the energy for AFT-Overhead which is placed in the interior of the FWD-Overhead. The connectors have a stick named with the voltage (5V and 12V respectively). See picture below:



- Place these 2 connectors by the top of the metal frame of the FWD-Overhead in order to supply the AFT-Overhead.
- Place the 5V DC Power Supply first and check that the displays digits of the IRS Panel show the character '3'.

IMPORTANT: Do the step 11 first than step 12, otherwise you can confuse power supplies and burn the equipment



- Place the 12V DC Power Supply for Backlighting. The Backlighting function will be activated when running the software interface (using SC-Pascal).

IMPORTANT: The latest versions of AFT-OH have two 12V DC connectors, one for the power supply and another for the backlight. In case of any doubt please contact Sismo Soluciones before to avoid any damages.

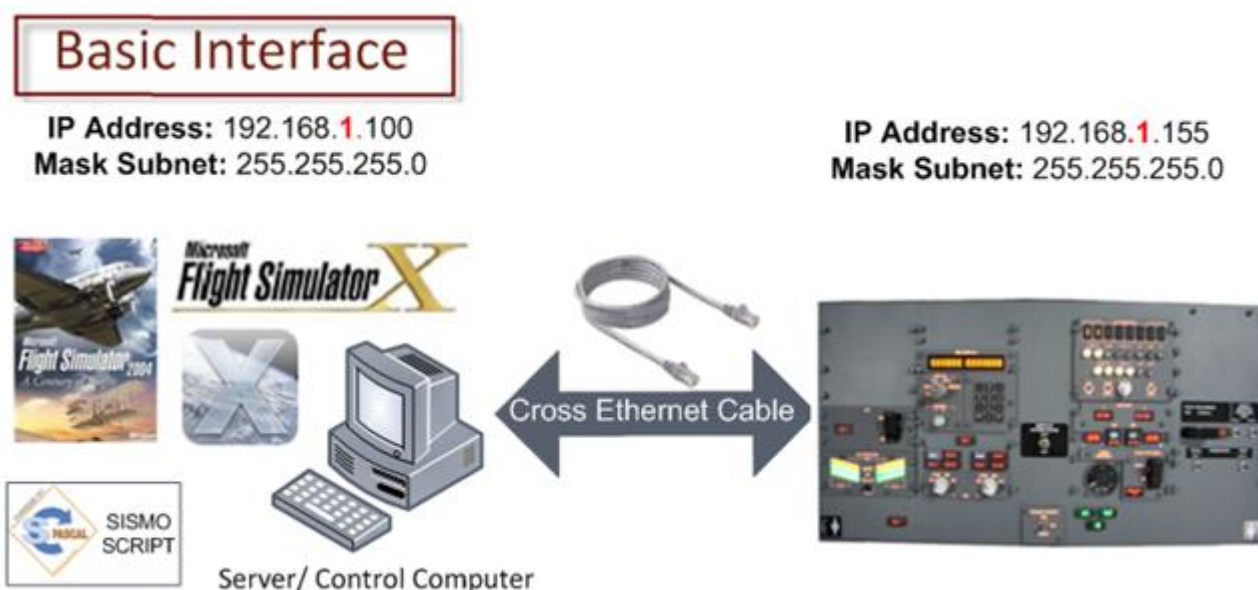
5 CONFIGURATION

5.1.1 Configuration Page and IP Address of the AFT-Overhead

5.1.1.1 IP Address by Default

The default IP address of the AFT OVERHEAD is 192.168.1.155. This data is important in order that the first time the AFT OVERHEAD is read. In this case the computer (or the network) in which we connect the equipment must have the same range of IP address, that is to say, **range 1**.

As an example, the diagram below shows the items required to configure a basic network or local network (1 computer only). Later, another diagram will illustrate a more complex network (multiple computers).



See in the above example that the IP address range of the control computer, which is marked in red (range 1), is the same that in the AFT OVERHEAD. This specification is a condition necessary to enable that the network communication occurs between the AFT OVERHEAD and other equipments.

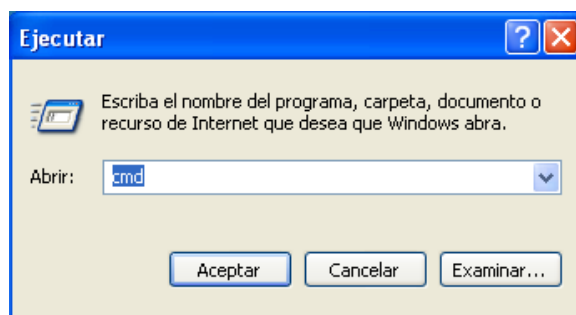
Note: It's essential to disable the DHCP on the computers that you are going to connect with SC-Pascal scripts to avoid IP address conflicts.



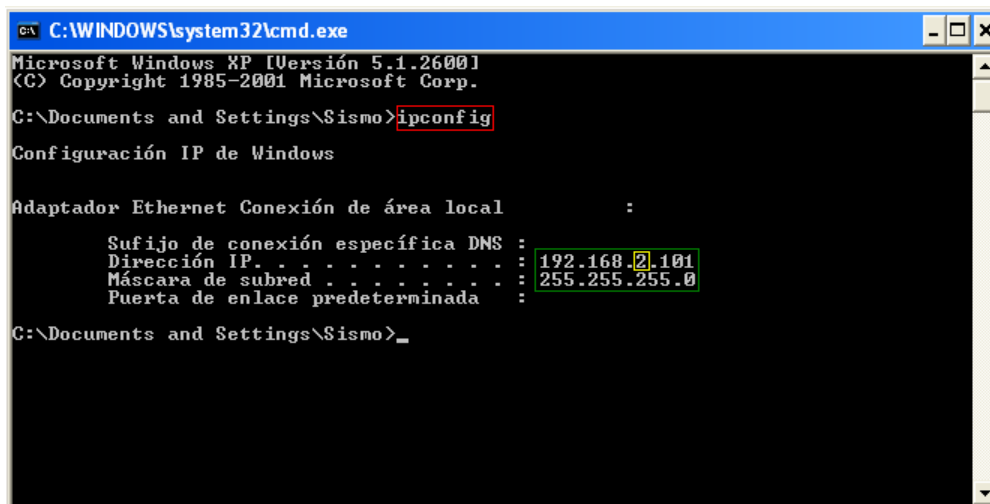
Like the AFT OVERHEAD has by default an IP address of range 1, the first thing that the user must do is to check if the IP address of the control computer has also range 1.

Here's one way to know the personal IP address of your computer:

1. Go to: Start ->Run. An input box will appear with a flashing cursor.
2. Type: **cmd**. Click on OK or press the Enter key on your keyboard.



1. A new black color window is opened. Here type: **ipconfig/all**
2. Press the "Enter" key on your keyboard and IP Address will be shown.



The user does not have to change the IP address of the control computer if it turns out to be range 1. That is to say, that the equipment is already configured with a right IP address.

If the control computer does not have range 1 as in the previous example which the IP address is range 2 (see green box and inside yellow box), the user must temporarily change the IP address of his control

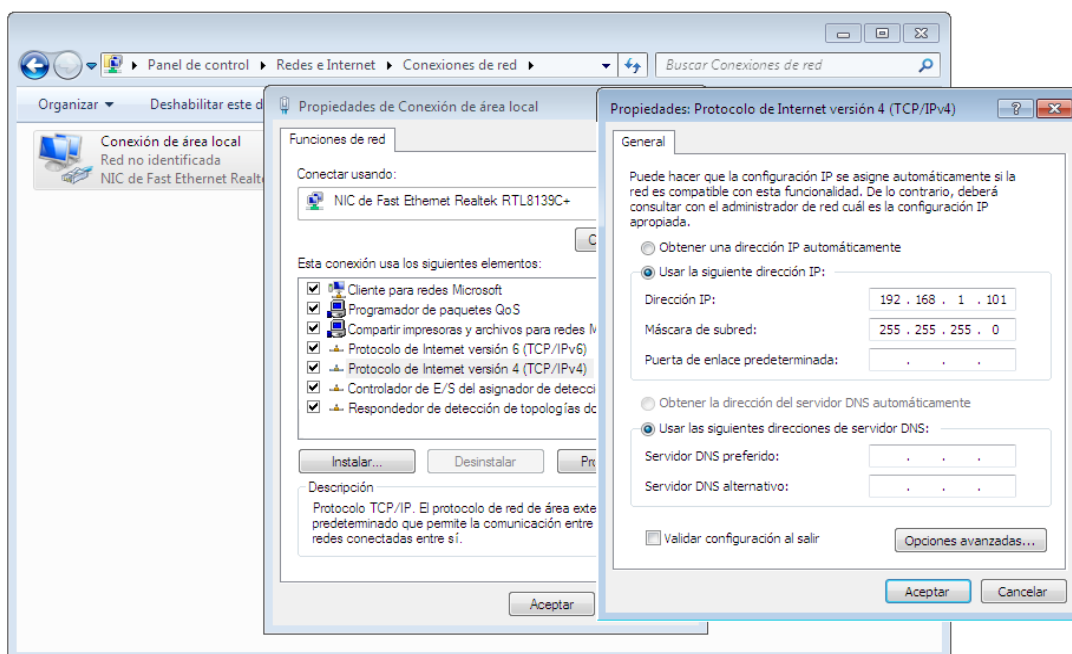


computer to range 1 in order that the card can be read by the computer the first time, because as it was noted above, the AFT OVERHEAD comes with a default IP address of range 1.

Follow the next steps to change the IP address of the control computer:

E.g. for Windows 7:

1. Go to: Start -> Control panel -> *Network and Sharing Center* -> Adaptor configuration.
2. Press with the right button of the mouse on the icon of "*Local Area Connection*" and later press on General Properties.
3. After a window is opened. Make double click on "*Internet protocol v4 (TCP/IPv4)*".
4. Again a new window is opened. Mark the option "*Use the following IP Address*" in order that the zone where it will be possible to write the new IP address of the control computer is enabled (Ej: IP address **192.168.1.101**).
5. As "subnet mask" to write for example **255.255.255.0** and in the third field **192.168.1.1**

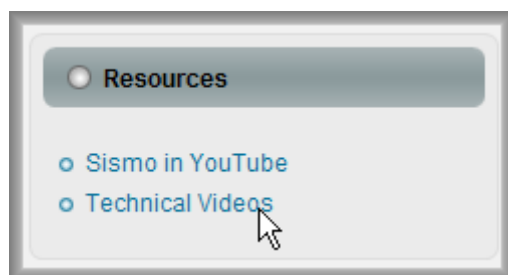


6. Finally, the windows will be closed when "Ok (Aceptar)" has been pressed. From this moment the change has been saved.
7. Once the process has finished, both the IP address of the equipment and the IP of the control computer will have the same range, in this case **range 1**. Now to accede to the configuration page of the AFT OVERHEAD will be possible.

Note1: This is only an example for Windows 7 in an orientated way. The way of changing the IP for other operating systems can be found into multiple tutorials or Internet.

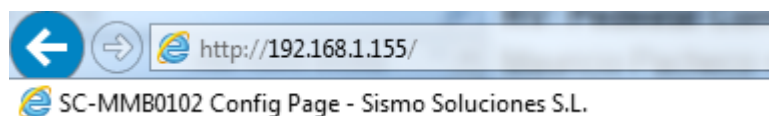


Note2: Find also video tutorials at the section of “YouTube” of SISMO in which how to change the IP is shown. Learn better how to configure the AFT OVERHEAD, etc.



As we will see along the manual, this provisional change in the IP address does not suppose a problem for the configuration of the rest of equipments that the user had previously, because once we accede to the configuration page of this equipment, it will be possible to restore the previous IP addresses as well as give a new IP address to the AFT OVERHEAD with the IP range that the user wants to use in the set of his equipments.

Now, for being able to accede to the configuration of this equipment is necessary to open Internet Explorer. Write inside of the address bar in Internet Explorer the IP of the AFT OVERHEAD: <http://192.168.1.155/>



The configuration page is loaded and as headline appears the serial number of the this equipment in red colour in addition of the **CONFIG PAGE** words which indicate that effectively the configuration page of the AFT OVERHEAD has been charged.

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SC-MMB0000 Config Page - Sismo Soluciones S.L. - Windows Internet Explorer

http://192.168.1.150/

SC-MMB0000 Config Page - Sismo Soluciones S.L.

SC-MMB0000 CONFIG PAGE

NETWORK CONFIG

MAC ADDRESS: 00:04:A3:00:00:00

IP ADDRESS: 192 168 1 150

MASK: 255 255 255 0

DEFAULT GATEWAY: 192 168 1 1

UDP CONFIG

HOST IP: 192 168 1 19

LOCAL PORT: 1024

HOST PORT: 1026

SAVE BOARD CONFIG RESTORE DEFAULT VALUES

DAUGHTER BOARDS CONFIG

SC-MDODB OUTPUTS1: ☐ ON ☒ OFF

SC-MDODB OUTPUTS2: ☐ ON ☒ OFF

SC-MDIDB INPUTS1: ☐ ON ☒ OFF

SC-MDIDB INPUTS2: ☐ ON ☒ OFF

SC-MISDB SERVOS: ☐ ON ☒ OFF

SC-MDDB DISPLAYS: ☐ ON ☒ OFF

SC-MAIDB ADCS: ☐ ON ☒ OFF

SAVE DAUGHTER CONFIG

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Three configuration fields appear: **NETWORK CONFIG**, **UDP CONFIG** and **DAUGHTER BOARDS CONFIG**. All these fields have the values by default. For its correct configuration, there is detailed the meaning, content and way to proceed in each item:



5.1.1.2 Network Config

The serial number of the AFT OVERHEAD will serve you to access to the features when set in SC Pascal, or configure the software interface provided by SISMO (scripts).

MAC ADDRESS: it is the hardware address of the AFT OVERHEAD and therefore, it is unique and cannot be modified.

The last four digits are in hexadecimal and give name to the variable part of the serial number of the equipment. The invariable part is fixed as SC-MMB:

SC-MMBnnnn

The serial number of the AFT OVERHEAD will be useful to accede to all the functionalities of this equipment when someone is going to program with SC-Pascal or configuring the software interface provided by Sismo (scripts).

IP ADDRESS: this section is used to modify the IP address of the equipment which has by default 198.168.1.155.

In case of being modified, do not forget that it must have the same IP range that the IP address of the control computer. It is the moment to proceed to restore the IP address which the user had configured its equipment.

Note1: the new assigned IP address of the AFT OVERHEAD must not be repeated in any other hardware or equipment of the network, otherwise it will create conflict and will not load correctly. If you forgot this instruction, you must remove the power supply and return to connect it in order to solve the problem and the equipment can be recognized.

Example:

1. Before the control computer had the next IP address: 192.168.2.200.
2. We must remember that for acceding to the configuration page, the IP of the control computer must have the same range that the AFT OVERHEAD. Therefore, proceed to change the IP address of the computer to 192.168.1.200.
3. Go to the configuration page with the direction: <http://192.168.1.155/>
4. Change the default IP of the AFT OVERHEAD to 192.168.2.155 bearing in mind that is not repeated by other one of the equipments that are used in the network.
5. Change again the IP address of the control computer to the same one that the user had before.
6. Go to the configuration page with the direction: <http://192.168.2.155/>

*see videotutorials at "YouTube" SISMO section

DEFAULT GATEWAY: puede ser usado para enviar datos a través de internet. Si no se hace uso dejar el valor que viene por defecto: 192.168.1.1 (más información contacte con Sismo Support)

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MASK: in this section we advise to put the same number of mask that you have in the control computer of the network. By default it is: 255.255.255.0

DEFAULT GATEWAY: it can be used to send information through Internet. If you are not going to use it, leave the value by default: 192.168.1.1 (more info ask for toSismo Support)

5.1.1.3 UDP Config

HOST IP: it is the IP address of the control computer where the AFT OVERHEAD will send all the information. As already it has been mentioned, the IP address of the computer must have the same range that the IP address of the AFT OVERHEAD named in the section IP ADDRESS. The value that can appear by default is any of **range 1**.

LOCAL PORT: if you are going to use the Sismo scripts, leave by default this value (to 1024).

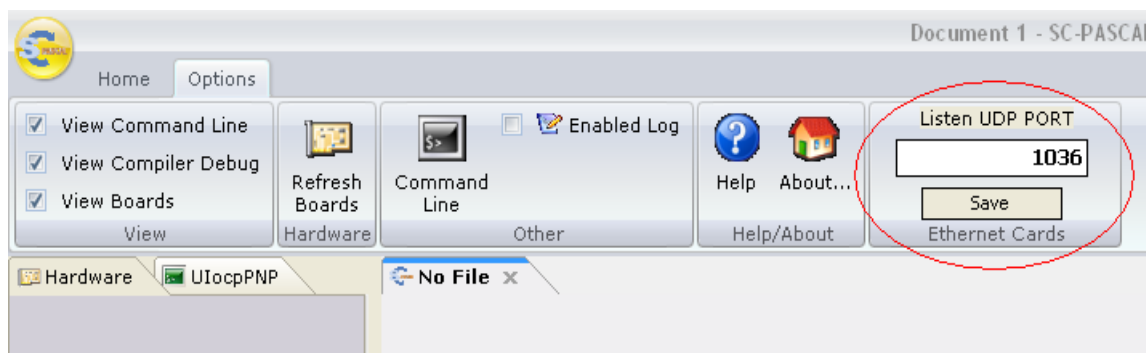
*This port can be modified for those users who want to use its own editor/compiler and not SC-Pascal, because the LOCAL PORT is the port where the AFT OVERHEAD receives the data from the control computer.

HOST PORT: it is the port where the control computer is going to get the information from the AFT OVERHEAD. In case of using SC-Pascal, the port used by default is; **1155**.

This port must be opened (without to be used for any other program and enabled/opened in order the data can be received).

If the port 1155 is occupied, it will be necessary to indicate another port which the user must choose (e.g. 1036, 5001...).

The SC-Pascal V5 Build 765 or superior allows to the user to change the Host Port in the field "List UDP Port". In order this equipment and SC-Pascal are communicated, the port indicated in the configuration page in the field HOST PORT and the port where SC-Pascal listens, which is indicated in "List UDP Port ", must be the same.



The normal situation is that the port is enabled/opened, but it is possible that the control computer has this port closed. In order to assure it works, it must be enabled (see chapter 3.7, "FAQ" and know how to open ports in computers).

Once all the sections are correctly filled out in this manual has been described, proceed to press on SAVE BOARD CONFIG to save the new configuration of the AFT OVERHEAD.

Note: Wait at least 5 seconds while the data are saved at the Internet browser.

SC-MMB0000 CONFIG PAGE

NETWORK CONFIG

MAC ADDRESS: 00:04:A3:00:00:00
 IP ADDRESS: 192 . 168 . 1 . 150
 MASK: 255 . 255 . 255 . 0
 DEFAULT GATEWAY: 192 . 168 . 1 . 1

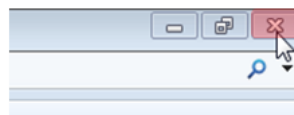
UDP CONFIG

HOST IP: 192 . 168 . 1 . 101
 LOCAL PORT: 1024
 HOST PORT: 1026

SAVE BOARD CONFIG

RESTORE DEFAULT VALUES

In order that it makes effect and once saved, it is indispensable to close Internet Explorer and to return to opening. After that the new IP address of the AFT OVERHEAD must be indicated on the bar of directions. This step must be done necessarily due to the exigency of the Internet protocol Explorer.



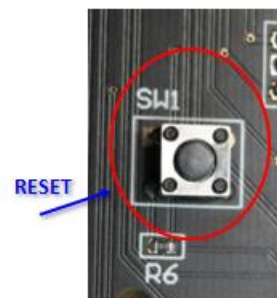
Close and return to opening
Internet Explorer

Once the page has been correctly loaded with the new IP address, the information of configuration will be visualized.

At this moment you can choose 3 options:

1. Return to modify again some section in which the configuration has not been the required one by the user and later to save again the new information pressing with the mouse on SAVE BOARD CONFIG.

2. Make a reset of the AFT OVERHEAD. It returns to the configuration by default. It is made on having pressed with the mouse on RESTORE DEFAULT VALUES in the configuration page or opening the back metal cover of the AFT OVERHEAD Module and pressing manually more than 10 seconds on RESET button placed physically on the SimcardEthernet. To make this step, the equipment must be correctly connected to the power supply. With both methods we make the erased EEPROM (Electrically Erasable Programmable Read-Only Memory).



SC-MIMB0000 CONFIG PAGE

NETWORK CONFIG

MAC ADDRESS: 00:04:A3:00:00:00
 IP ADDRESS:
 MASK:
 DEFAULT GATEWAY:

UDP CONFIG

HOST IP:
 LOCAL PORT:
 HOST PORT:

3. Finish the main configuration.

Again, and in order that it makes effect, in any of the options 1 or 2 that we have chosen, do not forget to close and re-open Internet Explorer indicating on the bar of directions the new IP address of the already configured in the equipment.

5.1.1.4 Daughter Board Config

At this field, if the user has acquired an AFT OVERHEAD line which also includes the gauges by servo, the SC-MSDB SERVOS must be also pressed to ON. Afterwards, press SAVE DAUGHTER in order to save automatically the configuration. Now, it is not necessary reboot Internet Explorer.

DAUGHTER BOARDS CONFIGSC-MDODB OUTPUTS1: ☐ ON ☒ OFFSC-MDODB OUTPUTS2: ☐ ON ☒ OFFSC-MDIDB INPUTS1: ☐ ON ☒ OFFSC-MDIDB INPUTS2: ☐ ON ☒ OFFSC-MSDB SERVOS: ☒ ON ☐ OFFSC-MDDB DISPLAYS1: ☐ ON ☒ OFFSC-MDDB DISPLAYS2: ☐ ON ☒ OFFSC-MAIDB ADCS: ☐ ON ☒ OFF

You must not any more do the configuration of this equipment once the AFT OVERHEAD configuration has been correctly done and saved.

Note: Once the equipment was configured, and unlike the USB Systems, you will never have any problems when recognizing the equipment and overloads, that is one of the advantages to have AFT OVERHEAD by Ethernet connectivity.

*If in some of the necessary steps to configure this equipment appears signs of difficulty of load at the Configuration Page, do not worry, it is normal and is due to the Internet Protocol Explorer. For solving this problem, Internet Explorer must be closed and rebooted indicating IP address of the AFT OVERHEAD on the directions bar. If this method does not work, proceed to remove the power supply and restart to connect everything again.

5.1.2 Connection Scheme Type (Local Network)

Below, there is an example of a network configuration consisting of 2 computers that control 2 different equipments (FWD OVERHEAD and AFT-OVERHEAD). For this particular case, there may be 2 types of configuration:

- 1 computer controlling both equipments.
- Each computer controls only one equipment (*recommended setting*).

The only requirement for being networked is that the 4 elements must have the same IP range. For example, the configuration **a)** could be the following one:

192.168.1.155 (AFT-OVERHEAD) 192.168.1.154 (FWD-OVERHEAD)

192.168.1.152 (computer 1) 192.168.1.153 (computer 2)

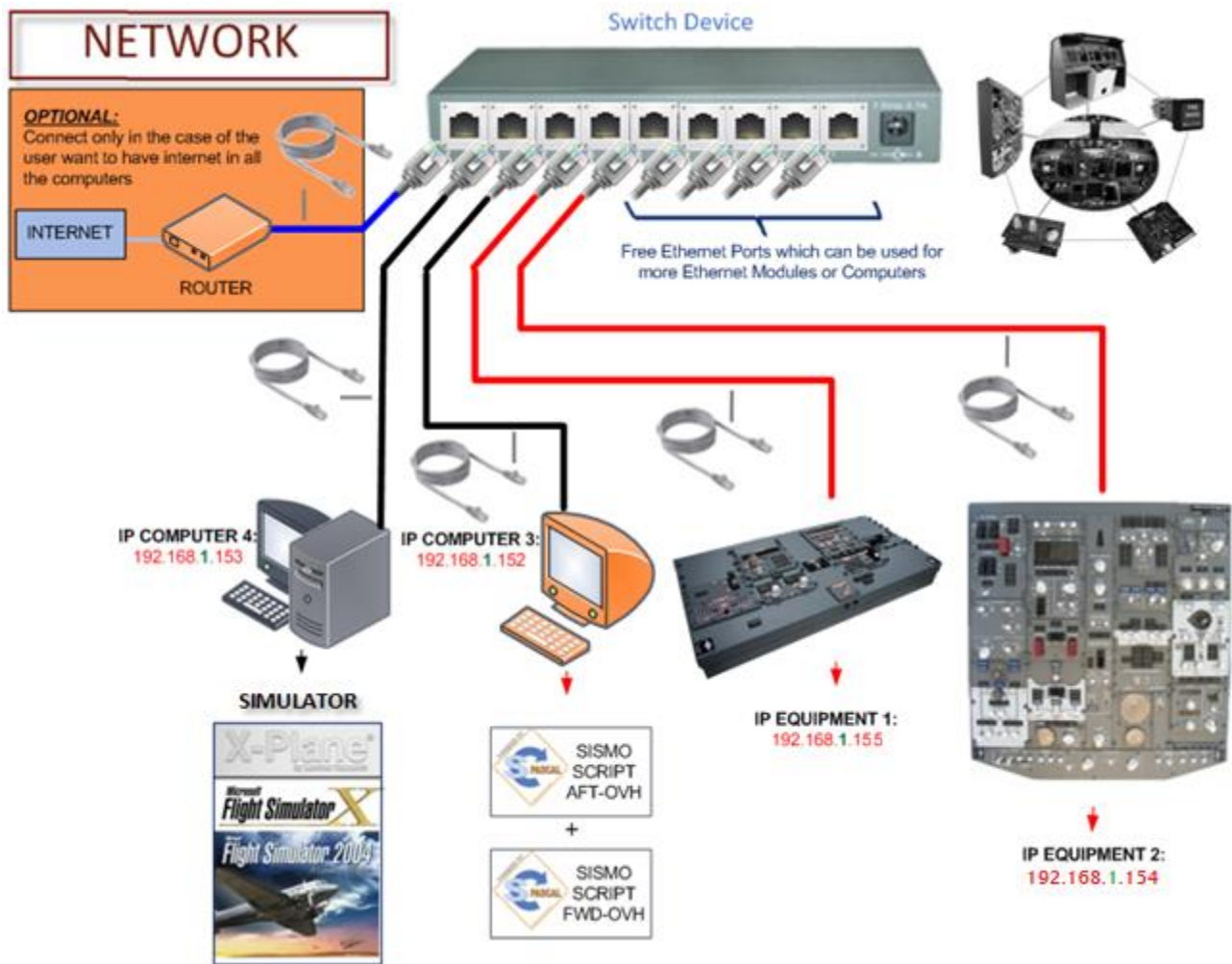


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Each computer and each equipment must have an Ethernet port (normally used for connecting to the internet).

4 Ethernet cables will connect each of these 4 equipments to a SWITCH device (with Auto-sense) in order to allow the communication between them.

The Ethernet cable, which is used to provide internet connection to the network, can also be connected to the same SWITCH.

6 TESTING AND VERIFICATION

The language of programming that specifically has developed Sismo Soluciones is SC-Pascal and in spite of the fact that the AFT-OH can be controlled for any another language previous its appropriate configuration, in this manual only and exclusively is indicated the necessary requirements to control the equipment with the SC-Pascal editor/compiler, being enough for every user who want to interact with the simulator.

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There is a function within SC Pascal for the verification of hardware (Inputs, Outputs, Displays, Servos and Analog Inputs or Pots) for AFT-OH, which allows hardware checking. It shows the active inputs, switches on/off the outputs, and verifies the displays, servos and analog inputs.

Check the SimCard SC-MB Ethernet User Manual for further information.



For being able to do these checks, download the last version of SC Pascal V5.1 Build 765 or superior which is available at the download zone of the web www.sismo-soluciones.com.

*For further info, read the manuals and tutorials of SC-Pascal.

7 CONTACT MAP

Available for customers under request.


8 FAQs

¿How can the user enable/open any port in the computer?

As example, the necessary steps to open manually ports in Windows XP will be explained. For others operating systems, it can be done after to look for easily how to do it through any internet browser.

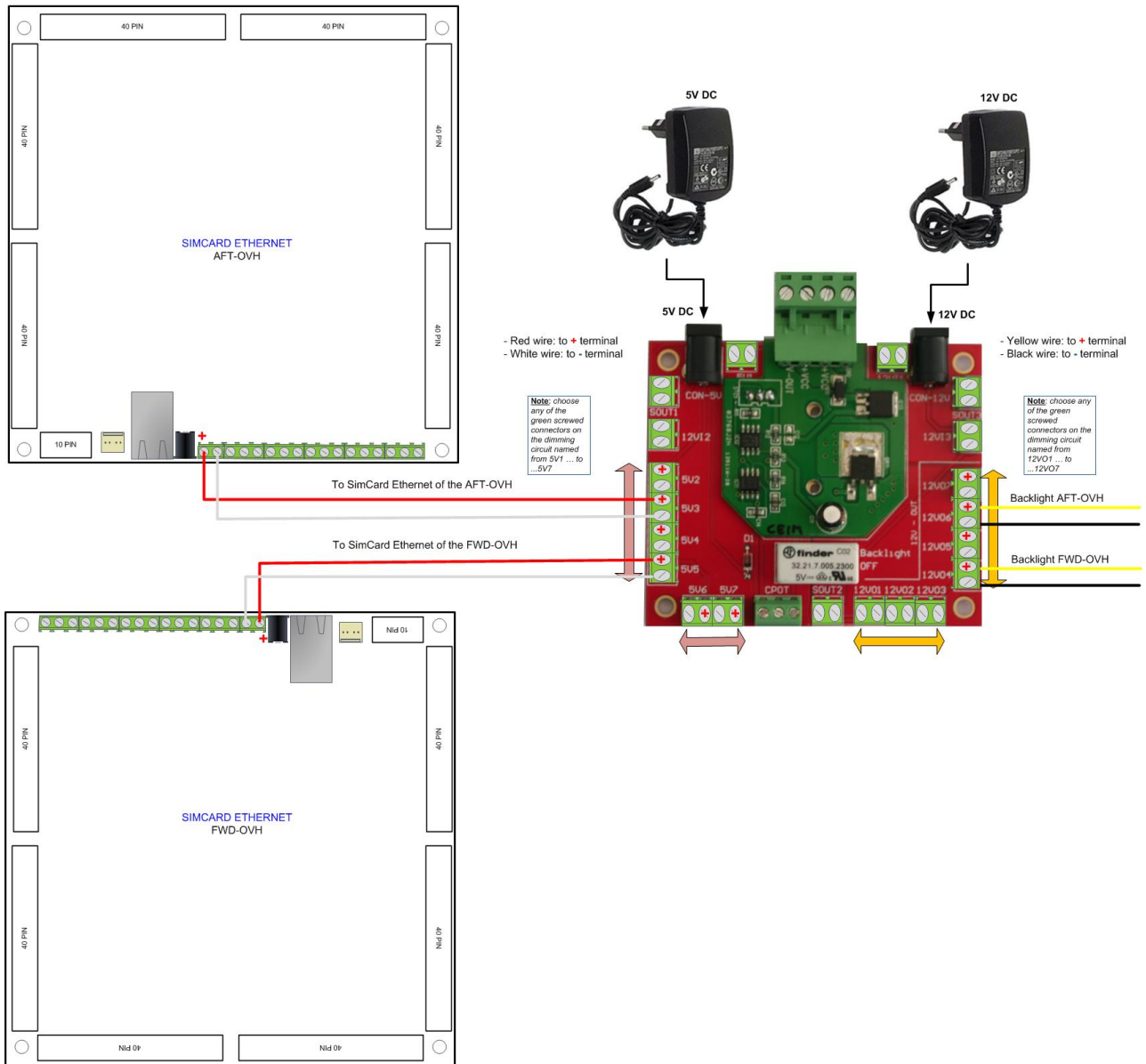
1. Click Start, and then click My Network Places.
2. Under Network Tasks, click View Network Connections. (Or, right-click My Network Places on the desktop, and then click Properties.)
3. Right-click the connection that you use for the Internet, and then click Properties.
4. Click the Advanced tab, and then click Settings.
5. Note if the Settings button is unavailable, ICF is not enabled on this connection, and you do not have to open any ports (because they are all already open).
6. Click Add to open a new port.
7. In the Description box, type a friendly name. For example, type File Sharing: Port 445.
8. In the Name or IP address of the computer hosting this service on your network box, type 127.0.0.1.
9. Note: You can specify the IP address of an internal computer. But you typically will use 127.0.0.1.
10. In the External port and Internal port boxes, type the port number. Generally, this number is the same.
11. Click UDP, and then click OK.
12. Repeat steps 1 through 9 for each port that you want to open.

Advice: disable completely the Firewall Windows in case to have more than an equipment connected to the network and improve the communications.

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¿How can the user supply the Dimming Circuit – FWD OVH and AFT OVH with the same power supplies?

Note: ONLY FOR BLUE LINES (not PLUG & FLY)



END OF DOCUMENT

