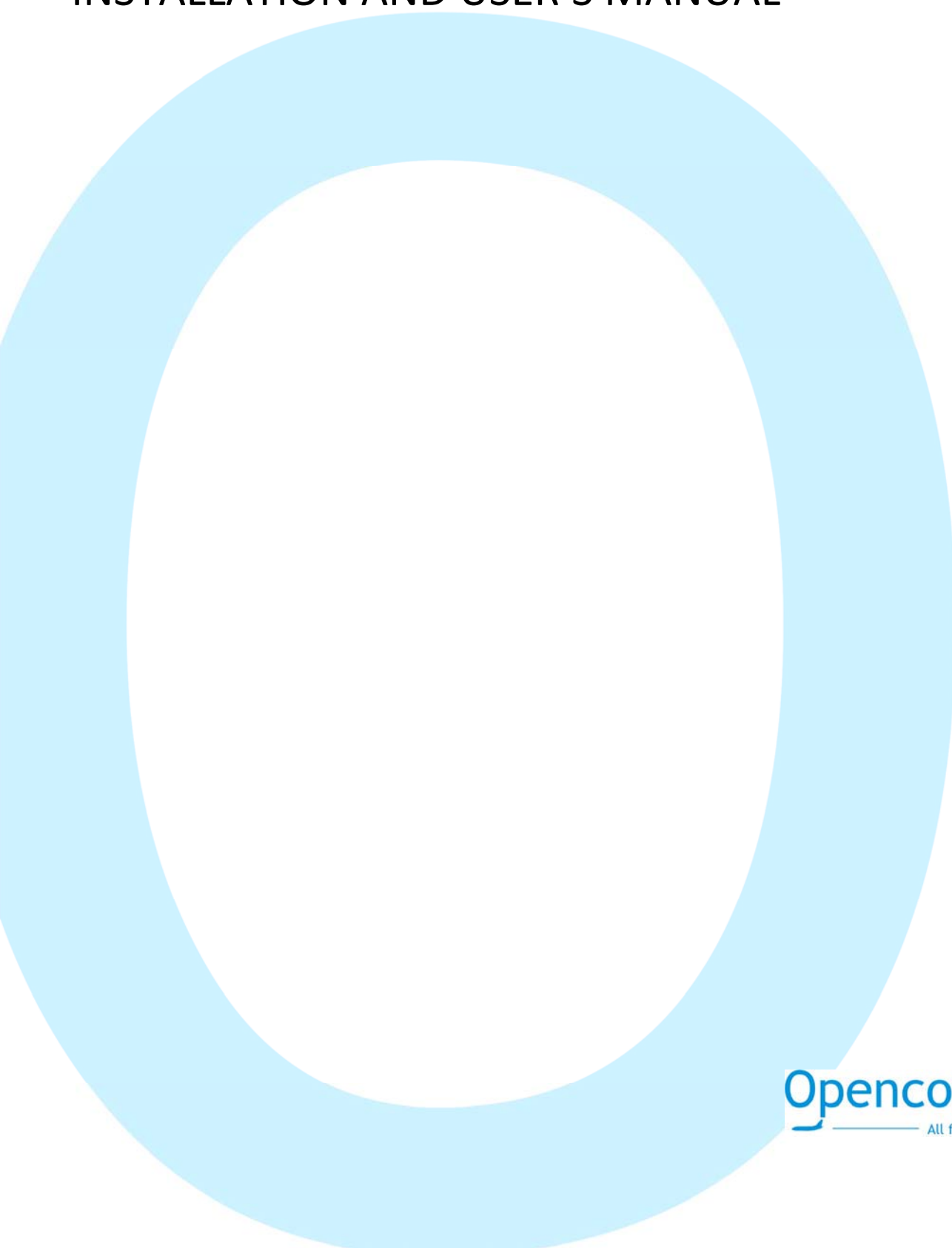


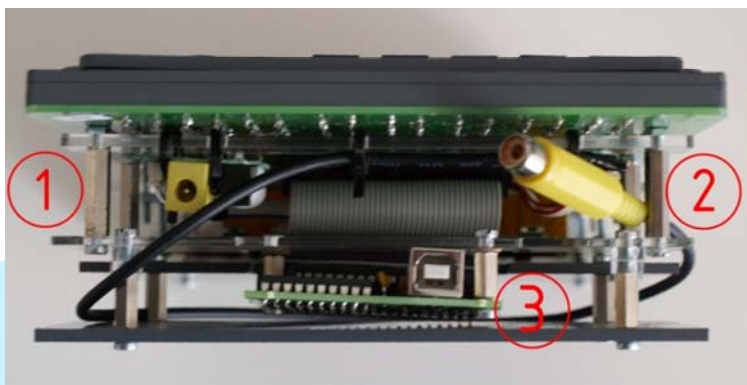
OPENCOCKPITS CDU B-737

INSTALLATION AND USER'S MANUAL



HARDWARE INSTALLATION

In the rear of the unit there are the following connectors:



1. Power intake
2. Video input
3. USB port

Connector 1:

Connect the power output from the power supply provided in the package to the power input. This will supply tension to the screen, but it does not mean that the screen must light up, since still it does not have a video signal.

Connector 2:

Plug in this connector the TV output (TV OUT) of the graphic card in the computer where the CDU will be connected. There are two possible cases due to the TV output connector of the graphic card:

RCA type connectors:

Simply use an extension cable with RCA/RCA connectors, because the CDU has this type of connector in his video intake, like in the following image



S-Video type connector:

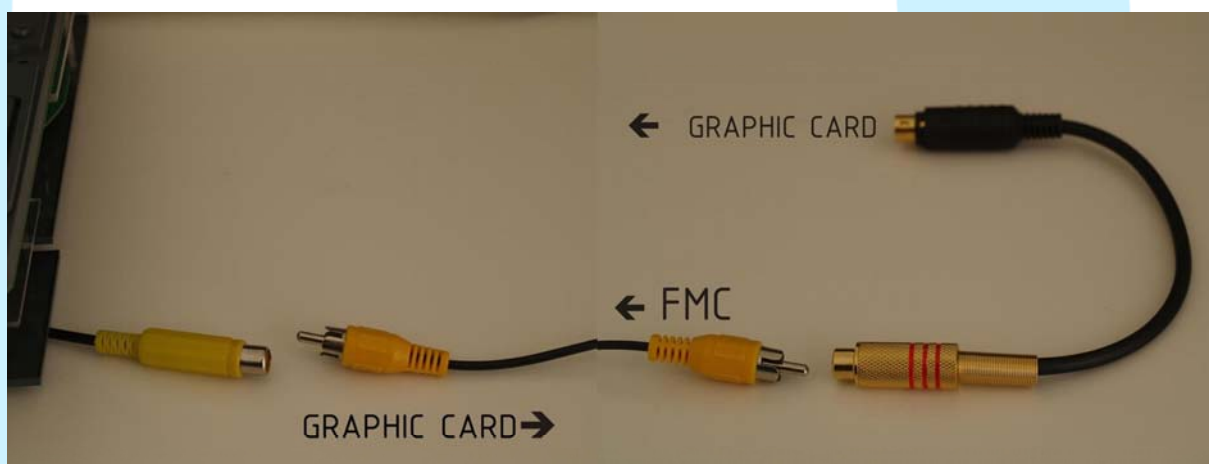
In that case use beside the extension cable formerly indicated (RCA/RCA), one S-VIDEO/RCA adaptor, like the one shown below.



There are two versions of the S-Video connectors: with 4 pins and with 7 pins, but this is not a problem, given that the signal is converted to only 2 pins in the RCA connector. Nevertheless it is advisable to use 7 pins connectors.

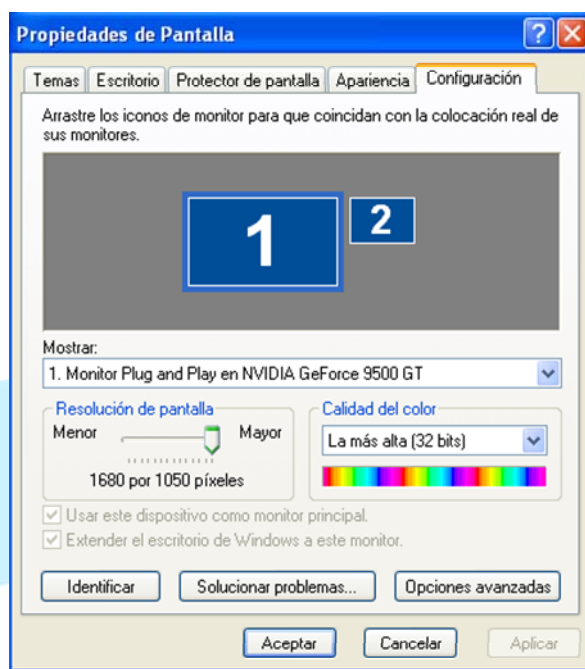
Today the most used connector in graphic cards, not to say exclusively, is the S-Video, so most probable this type of connector will be found in our video card.

Once the type of connector is established and if necessary the converter at hand, proceed to connect the video signal as shown in the image below, where we show the adaptor, but if this not necessary, connect the RCA plug directly to the graphic card.



In this moment the computer will detect that a screen has been connected and a message will be shown. If your computer does not show it, don't worry, the configuration will be made later.

To configure this screen, we shall press the right button of the mouse in any free space of the desk, and an options menu will show, select "Properties" and the configuration screen of our desk will show, like below:



It shows the two monitors that are connected in this moment; the image shows the configuration of the “main” monitor, numbered as 1, and at his side the monitor number 2 or “adjoin”, that in this case is the screen of the CDU. If this second monitor is selected and the right button of the mouse is pressed, the information that is shown is like we see in the following image



It indicates that the monitor is the “adjoin” and it is configured to a screen resolution of 800x600 pixels and a colour quality of 16 bits, and it is visualized like an extension of the Windows desk.

If "Advanced Options" are selected, in this screen will appear a menu that will depend on the chip used by the manufacturer of the graphic card (in this case it was a card with a NVidia GeForce 9500GT chip, manufactured by PointOfView) consequently there is not a general case. The most advisable configuration for the CDU is:

- Resolution: 800x600 or lower
- Color quality: 16 bits or lower
- Visual mode: Dualview, but depending on the user

It may happen that in spite that Windows detects and configures correctly the screen of the CDU, the image is not visible (screen remains black), this situation is probably due to the charge of the screen being too low for the graphic card to activate it. One solution adopted in this case is to interpose one 75 Ohms resistor between the signal and the ground; nevertheless there also have been cases in that the screen is activated by building ourselves an S-Video to RCA adaptor, as per the following scheme:



Also, due to the potential incompatibility of graphic card chips, the best way to connect the LCD of the CDU to the computer is through standard VGA connector, for this purpose we have today signal converters, which we convert the VGA video signal into RCA video signal, and which gives us a means to ensure the quality of the video signal and the security of being able to visualize the data on the LCD, ruling out any incompatibilities.

The converter is like the next picture, still available in our catalog and stores or even shopping on-line sales of electronic items.

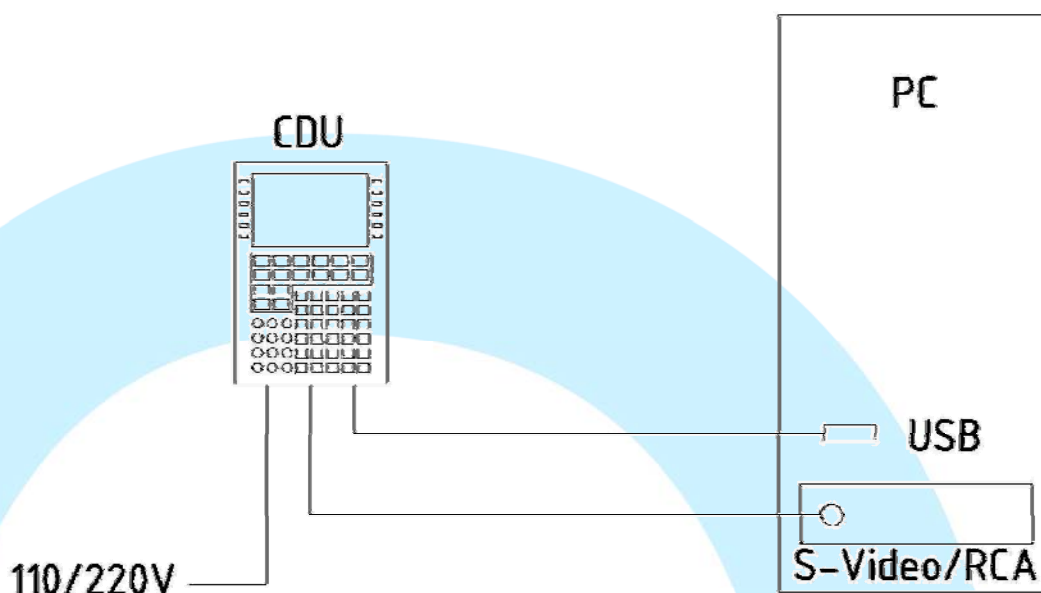


From Opencockpits strongly recommend the use of these converters, since they give us more maneuverability, since the connection is always consistent and there are in fact incompatible with chips video cards.

Connector 3:

In it is connected the USB cable provided in the package, directly between the CDU and one USB port in the computer.

This finishes the physical connections of the CDU, remaining as shown in the following schema:



SOFTWARE INSTALLATION

Download the software in the “downloads” tab in the sales page of the FMC, unzip it in any place. We advice to do it in C:\ because it is easier to find and its access is more direct. The following schema of folders and files will be created:

- OPENCOCKPITS CDU B737
 - USBCheck.exe
 - MANUAL DE INSTALACION Y USO CDU B737.pdf
 - INSTALLATION AND USER'S MANUAL CDU B737.pdf
 - CDU
 - Files related to SIOC and his configuration
 - SCRIPTS
 - Sioc fmc fds.txt
 - Sioc fmc magenta.txt

Once unzipped, next is to identify the number of Device of the CDU, for that purpose execute the USBCheck.exe program that comes included in the download. It will show the following dialogue window:



Surrounded in red, it can be seen the line corresponding to our case, the USBKeys Card of the CDU and his Device number at the end of the line (18, in this example). Note this number and close USBCheck.

Next, open the CDU folder and look for the sioc.ini file, open it with any text editor, usually and most easy with the Notebook in Windows. In sioc.ini look for the following line:

```
USBKeys=0,XX
```

And substitute XX for the Device number noted formerly. If the number has only one digit there is no need to fill with ceros, like in the examples detailed below:

```
USBKeys=0,18
```

```
USBKeys=0,3
```

```
USBKeys=0,65
```

Etc.

Next look for the line:

```
CONFIG_FILE=.\\scripts\\xxxxxxxxxxxxxxx.txt
```

And substitute the "x" by the configuration file that is going to be used in our CDU. Due that neither FS9 nor FSX include an FMC(CDU) in his software by defect and also PMDG and Wilco/Feelthere do not liberate the offsets needed to handle their FMC, we can only offer an effective configuration for Project Magenta and for Flight Deck software, this will leave the configuration file as we show in the next examples:

```
CONFIG_FILE=.\\scripts\\sioc fmc magenta.txt -> configuration for Project Magenta
```

```
CONFIG_FILE=.\\scripts\\sioc fmc fds.txt -> configuration for Flight Deck Software
```

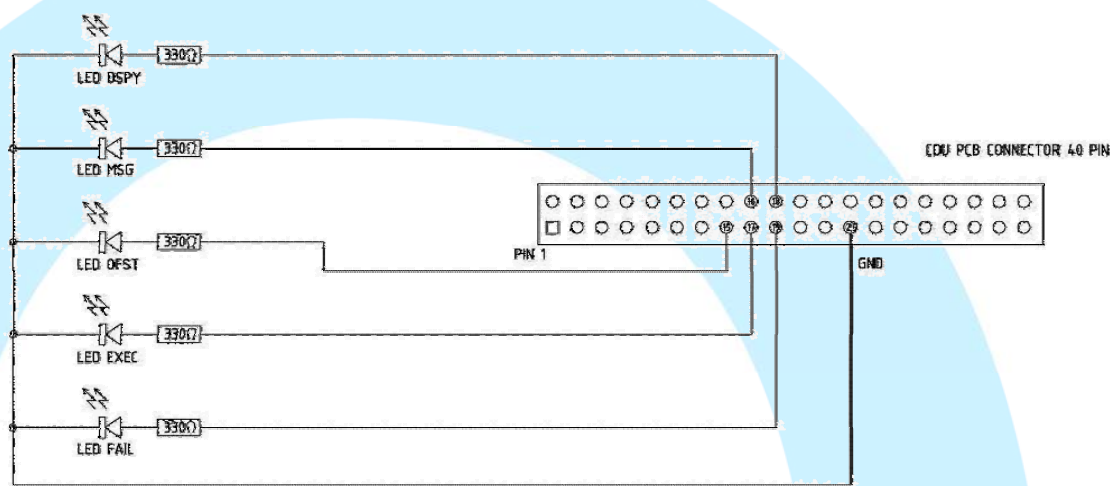

We can now save the changes and close the sioc.ini file.

With this last step the CDU is ready to work with FS and our favorite add-on, it only remains to run FS, let the starting situation load completely and then run the add-on (Magenta or FDS) and let as well load and finally execute sioc_cdu.exe.

OPTIONS

WIRING OF THE LEDS

In case you wish to connect the corresponding leds to the lateral message windows (OFST, MSG, DSPY and FAIL) and to the EXEC key, this scheme indicates the connections:



For that purpose use the 40 pins connector in the CDU board, extract the wires numbered in the scheme and connect them to the outputs of one IOCard MASTER, this arrangement gives also the option to handle this leds with SIOC.

In the same CDU board there also are soldered the LED's and resistors that will protect the led's, because the outputs in the MASTER feed 5V and the leds usually need only between 2 and 3V.

Alternatively an USBOutputs board could be used, but then the value of the resistor must be changed accordingly to the voltage fed into the USBOutputs board.

With regard to the script needed to handle these leds, it must be adapted to the add-on used to run the CDU.

The Project Magenta script, comes modified for manage those leds, simply we must change the outputs number in our script to adapt to our connections, so, Project Magenta only have offsets to manage the leds EXEC, MSG, FAIL and OFST, then don't allow to connect to corresponding offset for DSPY led.

As same, script for Flightdeck Software comes ready to use, but this only allow to connect to leds EXEC and MSG.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
We see the error "Could not bind socket. Address and port are already in use"	We have assigned the same port in two different sioc.ini and we intend to implement at once one of the two	Open one of the sioc.ini and change this number for other unused port number
Windows detects the screen but does not light it up	The graphic card does not detect "load"	Interpose one 75 Ohms resistor between the video signal and the ground
Windows detects the screen but does not light it up	There is no current	Make sure the connections are the right ones
The CDU can not be connected to the graphic card	An S-Video to RCA adaptor is needed	See the "CONNECTORS" section in text
We execute sioc_cdu.exe and nothing happens	The add-on that runs the CDU is not working	Execute the add-on for which the CDU was configured

TECHNICAL SPECS:

- Color 5" screen.
- USB cable, RCA cable and power supply included.
- Control by USBKeys and SIOC.
- Compatible with other Opencockpits modules and boards.
- Measures 150x225 mm.

Note:

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