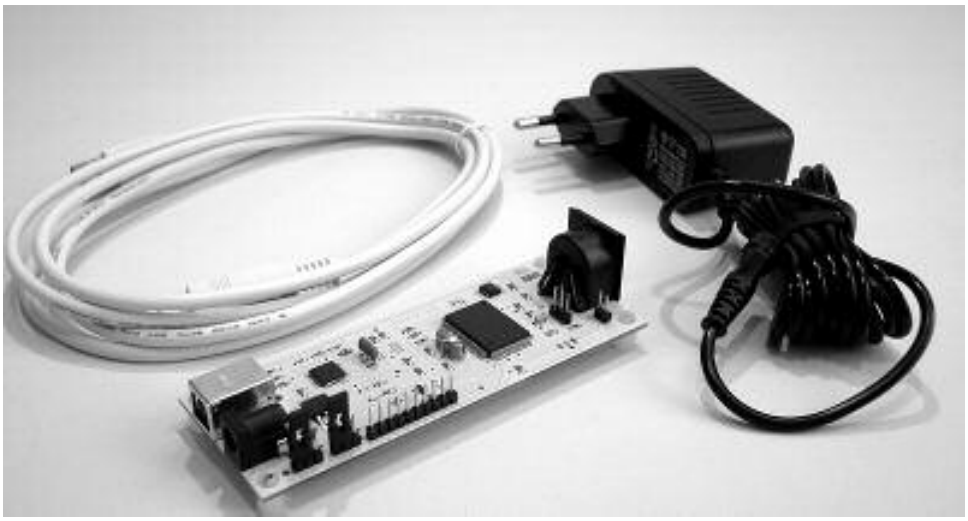
BLKBOX

USB Interface board for CPflight modules



This manual is intended for Flight Simulator use only and may not be used in any real world aviation application. The authors are not responsible for any errors or omissions.

FOREWORD

The BLKBOX is an interface board that allow to connect the CPflight modules like Radios, Mip board and EFIS directly to a computer USB port without need the CPflight MCP737. This manual give you the information to connect and use this module with Microsoft Flight simulator and with Project Magenta (www.projectmagenta.com).
BLKBOX supports Project Magenta, default FS aircraft and third part add-on aircraft using FSUIPC data format and offset. Freeware and commercial add-on aircraft using their own software modules or gauges may use different data format and offset and it is not possible to assure of the compatibility. If you mean to use the BLKBOX specifically with an add-on aircraft see: http://www.cpflight.com/sito/support.asp

CONNECTIONS

To use BLKBOX you have to connect power (Figure 1 “A”) and USB computer interface (Figure 1 “B”). Connect the CPflight modules (radios MIP737 board etc.) to the 5 pole connector (Figure 1 “C”) .
Supply adapter and USB cable are both provided with the BLKBOX. The 5 pole cables provided with the CPflight modules.

Figure 1: Connectors

A - Power supply socket

B - USB

C - 5 poles DIN socket for module connection

D - Used to control the modules backlight using an external switch (or potentiometer)

E - Jumper to select the backlight control (external switch or directly by BLKBOX board)

F - Power-on indicator LED

DRIVER INSTALLATION AND FIRST START

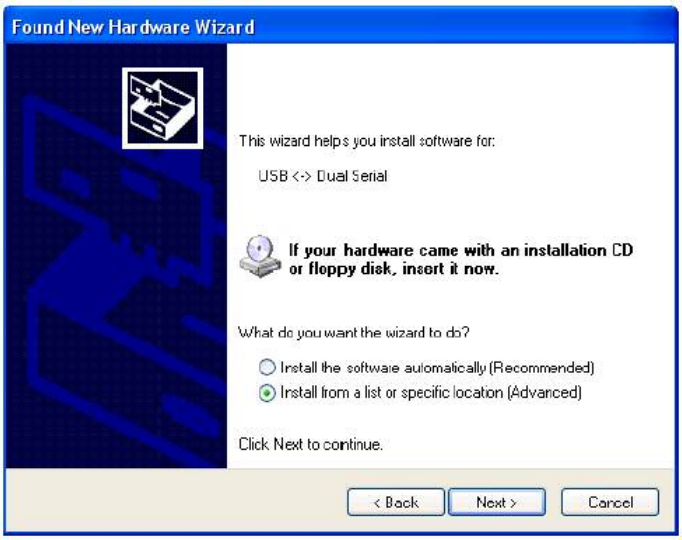
When you connect the BLKBOX for the first time you will ask for the driver installation. To install the drivers follows these steps:

- Download the driver “usb.zip” at http://www.cpflight.com/sito/downloads/downloads.asp
- Unzip the files in a temporarily folder.
- Connect the power supply to the BLKBOX. The BLKBOX is provided with an universal supply adapter that accept a voltage of 100 to 240Vac. Connect the DC plug to the ”A” socket (Figure 1 “A”) and plug the adapter to a main supply socket.

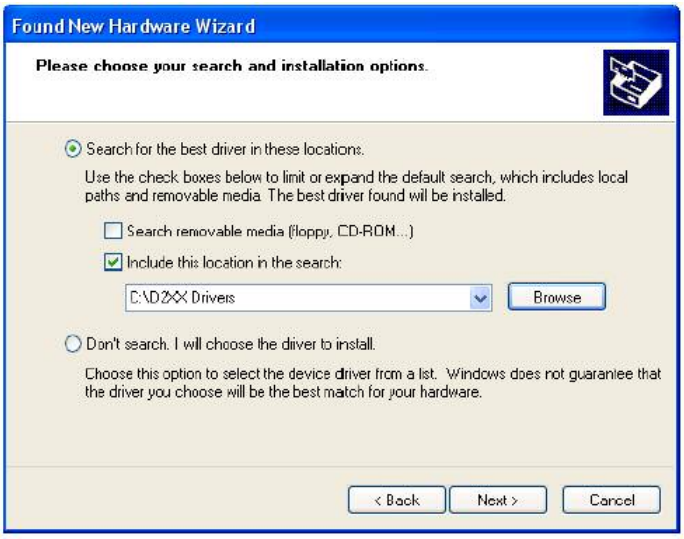
BLKBOX accepts a supply voltage of 6Vdc. Only provided stabilized plug-in power supply adapter must be used; do not attempt to plug in a different adapter to BLKBOX as you may irreparably damage the board and the connected modules.

- Connect the USB cable to the BLKBOX USB connector (Figure 1 “B”) and the other side to a free USB port of your computer; the computer have to be switched on when you connect the BLKBOX for the first time. The driver installation procedure will start automatically; follows the instruction on the screen (note that the figure of the below example may be different depending by your operating system):

When you will ask to connect to Windows Update to search for software select “No, not this time” and click next to continue…



Select “Install from a list or specific location” and click next to continue…



Browse the temporarily folder where you have unzipped the files and click next to continue…

You will be informed that the driver has not been subordinate to Windows Logo testing click "Continue Anyway"…

The drivers will be installed in the system; click "Finish" when prompted.

Important note: Depending by the system you may be required to repeat the driver installation two times.

During the USB drivers installation the system assign a number to the communication port. Check your configuration in the Windows Control panel -> System Property -> Device Manager tab. On the (COM & LPT) port you will see "CPflight serial adapter (COM n)" where "n" is the assigned communication port number, you will use this number in the First set up (se following).

SOFTWARE INSTALLATION

Beyond the USB drivers there is a software applications to install for BLKBOX use: FS_COM.exe that manage the data exchange with the computer. Please download latest version of CPflighttoolsxxx.zip at http://www.cpflight.com/sito/downloads/downloads.asp, (the file is in a compressed zip archive); unzip the files in a temporary folder and run "setup.exe" then follow the instructions on the screen. Start PC as administrator to install software on Windows 2000/XP/Vista. The data exchange between FS_COM and FS occur through the popular FSUIPC.dll, if you didn't use it before download it at http://www.schiratti.com/dowson.html, copy the FSUIPC.dll file into module folder of Flight Simulator. If you use the MCP737 with FS2004, revision 3.xx of FSUIPC is needed; for use with Windows Vista download the revision 4.xx of FSUIPC. Visit http://www.schiratti.com/dowson.html for information's and instructions about FSUIPC.

To verify the file exists in Module folder, run Flight Simulator and look at the menu bar: you should see a new menu called “Modules” and below “FSUIPC”.

IMPORTANT NOTE! Before run FS_COM.exe you have to assign the communication port. Run the software setser.exe (find it in the …Program Files\CPFLIGHT\CPFlightTools folder) and select the communication port assigned by the system during the USB drivers installation. If you use the BLKBOX with Project Magenta, you have to enable communication in Project Magenta “mcp.ini” file. In the Project Magenta MCP folder edit “mcp.ini” with a text editor and set CpflightComm= n in the [Serial Connection] section where “n” is the communication port assigned by the system during the USB drivers installation.

Note: if you need to run FS_COM automatically when Flight Simulator starts, insert in [Programs] section of FSUIPC.ini (it also is located on Module folder of FS) the line command:
runif1=HIDE,READY,CLOSE,C:\Program files\Microsoft Games\FS2004\MODULES\FS_COM.exe
(The path refers to default FS004 directory, the path can be different depending by the configuration; browse your coputer to insert the correct path in the command line). To modify FSUIPC.ini file you may use any text editor like Notepad.exe, do not modify others line of the file. On http://www.schiratti.com/dowson.html page you may find a useful application (FSUIPCRunOptions.zip) that will do it for you.

BLKBOX START-UP

The BLKBOX will start automatically running FS_COM.exe (when used with standard Flight Simulator aircraft) or running Project Magenta MCP software.

Important note: when used with Project Magenta you have <u>not</u> to run FS_COM.exe.

Note: If you do not use BLKBOX for a long time it is preferable disconnect the power supply..

BACKLIGHT SET UP

The BLKBOX board directly control the backlight of the connected modules. The backlight status is related to the FS “instrument lights”; note that in the default FS aircraft the “instrument lights” is related to the NAV lights condition.
If you need to externally control the backlight of the connected modules, you can do it using a switch or potentiometer. In this case you have to connect a switch (or potentiometer) to LK8 and set the jumper LK9 in the “b” position. If you use a potentiometer to regulate the module backlight brightness you have to select a suitable value, this is affected by the number of the connected modules, in any case a 1000 ohm 0,5W potentiometer is suitable for a typical setup.

5 POLE DIN CONNECTOR (C)

The DIN 5pole socket allows the connection of CPflight plug&play add-on modules. You may add modules at anytime; the BLKBOX is the center for data exchange between modules and flight simulator (and/or Project Magenta). BLKBOX explores the line at start-up and recognizes the connected units. The module connection has a daisy-chain structure: connect first module to BLKBOX and this to the following (Figure 2).

Note: some modules only can works with Project Magenta, this because the default FS aircraft does not allows the related functions. Further information can be found on each module operations manual.

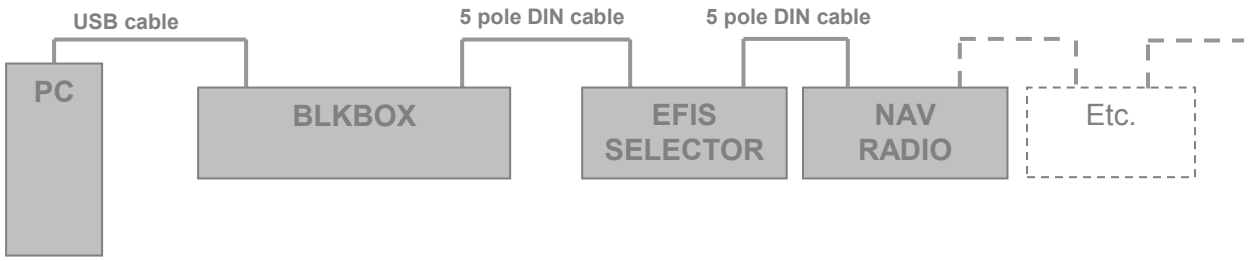


Figure 2: plug&play add-on modules

WARNING! Note that each 5 pole cable have an electrical resistance and involve a small voltage drop on the daisy-chain; this may cause malfunctioning if you have an high number of modules or long connection cables. To avoid this issue a simple "Daisy-chain adapter" (see DCA001 Operation manual) allows to connect an auxiliary power supply adapter to buffering the chain supply and to split the module connection to more independent connectors. This avoid the above issue, make easier to arrange the connections and allows to connect new series (Amber digits) and old series (Red digits) modules on the same setup. Switch-off and disconnect power supply from the MCP before connecting any module.

OVERVIEW

- 16 bit Flash microcontroller.
- USB Interface.
- DIN 5 pole connector for dasy-chain plug&play modules interface..
- Supply: 6Vdc 1A (supply adapter provided)

LINKS/REFERENCES

Web site:	http://www.cpflight.com
Support:	http://www.cpflight.com/sito/support.asp
Project Magenta Web Site:	http://www.projectmagenta.com
FSUIPC software and upgrade:	http://www.schiratti.com/dowson.html