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General information
1. Premise

Cas Interface 3, the evolution of Cas Interface 2, combines in a single product all the features of Cas Interface 2, its Add-on and many additional options. This new release offers very advanced technical features. As compared to Cas Interface 2, it enables to fully manage PCMCIA connectors and easily connect external additional modules.

However, the most interesting novelty derives from the possibility of being able to emulate the PCMCIA port of a Common Interface (EN50221) receiver and thus use the Cam directly as if it were inserted in a receiver. Consequently, Cas Interface 3 can also be used by professionals to test a CAM (Conditional Access Module) without inserting it in a receiver.

Cas Interface 3 also enables users to manage and program several types of SmartCards, which includes both current ones and those yet to be developed. Cas Interface 3 can therefore be regarded a multifunction programmer suitable for the management of J-Tag, ISP, I2C, etc., through a USB port.

Cas Interface 3 supports the programming and reparation of the following modules:

- Magic Cam, Matrix Cam, Matrix Revolution, Matrix Reloaded, Matrix Reborn, and all CAMs based on SIDSA chipsets, which can be managed directly by means of a PCMCIA connector. For a full list of supported modules, open the Graphics Menu of Cas Studio. Remember to download the latest release from www.duolabs.com.

- Joker Cam, Zeta Cam and substantially all CAM modules based on NEOTION chipsets. These modules can be programmed and repaired using a J-Card. For a full list of supported modules, open the Graphics Menu of Cas Studio. Remember to download the latest release from www.duolabs.com.

- Dragon Cam; it is possible to program any version by inserting the Dragon Cam into Cas Interface 3 and using a Dummy Card. This mode eliminates the need of inserting the Dragon Cam into a receiver, which can sometimes damage the CAMs besides being impractical. It is also possible to repair faulty Dragon Cams if they fail to initialize due to a faulty Flash Memory. To do so, it is sufficient to open the module and connect a few wires, following a procedure that can be easily implemented even by less expert users.

- X-Cam, with ANGEL and ORION chipsets, standard and premium version. It is possible to program any version by inserting the X-Cam into Cas Interface 3 and using a Dummy Card. This mode eliminates the need of inserting the X-Cam into the receiver, which can sometimes damage the CAMs besides being impractical. It is also possible to repair faulty X-Cams if they fail to initialize due to a faulty Flash Memory. In this case it is necessary to open the module and connect a few wires, following a procedure that can be
easily implemented even by less expert users.

The receivers damaged by a faulty Flash Memory that can be repaired are the following:

- DreamBox DM7000 and 5600, 5620
- Mahattan, Xtreme, Nextwave 2500 with embedded SIDSA module.

For further information on the programming of Cam modules and receivers, refer to the following chapters.

The Cas Interface 3 software, called Cas Studio, offers a wide range of utilities for PCs in addition to the options for Cams and SmartCards described above. Sim Editor simplifies the management of the phonebook, SMS messages, system files of GSM SmartCards. Card Explorer, a flexible software, able to manage all Visual Basic scripts, is the best solution to explore the content of SmartCards. Wincrypt enables users to protect their sensitive data, files and databases, as it is specifically designed to encrypt data with secure algorithms (3DES) with SmartCards.

Cas Studio is easy to use and user-friendly thanks to its multilanguage GUI that is continuously updated.

All the options of Cas Interface 3 are described in detail in this user’s manual.
2. Kit

The Kit supplied with Cas Interface 3 comprises:

- 1 Cas Interface 3 device
- 1 20-pin female cable, length 30 cm
- 1 J-Card
- 1 Dummy Card
- 1 Case for the Cam Module
3. Connectors

Cas Interface 3 uses several external connectors that are described in detail in the sections that follow:

- **USB connector** (*Fig. 2*): enables to power and use the device with an ordinary PC.

- **RS-232 serial port** (*Fig. 2*): can be used to convert Cas Interface 3 into an ISO 7816 programmer with Phoenix and Smartmouse mode, to allow it to be used with third party programs based on these modes.

- **PCMCIA connector** (*Fig. 3 below*): this is where the CAM to program, repair or test must be inserted.

- **SmartCard connector** (*Fig. 3 above*): this is where you insert the SmartCard in order to perform the management tasks of Cas Interface 3 (programming, reading, reviewing, etc.).
• **20-pin external connector** (*Fig. 4*): this connector can be used to connect Cas Interface 3 to the J-Card, Dummy Card or to receivers that can be programmed with a flat cable. The connector can also be used to connect additional devices in future.

The device also has LEDs that provide information on its status:

- Red LED: indicates that Cas Interface 3 is powered
- Flashing green LED: indicates that Cas Interface 3 is programming a Cam, SmartCard, etc.
- Yellow LED: indicates that a Cam or SmartCard has been inserted.
4. First steps

Before using Cas Interface 3, download the test software version called Cas Studio from the Download section of www.duolabs.com and verify you have a USB type A-B connection cable, which can be easily purchased from any computer retailer. As this cable is generally used to connect several types of devices to computers, like printers, scanners, etc., it is also possible to use an existing cable, if available.

After downloading the setup file of Cas Studio from the Web, carefully follow these instructions. Verify that Cas Interface 3 is not connected to the PC.

- Run the .exe file. The program creates a folder that contains the files required to install Cas Studio and automatically runs the setup program.
- Carefully follow all the instructions of the setup program.
- Once the setup is complete, start Cas Studio by clicking the icon on the desktop or selecting it from the Duolabs folder in Window's programs.
- Select the interface language using the program pane and carefully follow all the instructions. When prompted, close Cas Studio.
- Connect Cas Interface 3 to the PC using the USB cable. Follow the procedure applicable to the operating system in use, as described below:

  ✦ Windows XP: Windows XP displays “Found New Hardware Wizard” window. Select “Install from a list or specific location”, click “Next”, select “Include this location in the search”, then click “Browse” to open the “Browse for Folder” dialog. Search and select the c:\Programs\duolabs\Cas_Studioxxx\drivers folder you have created. Attention: this path may be different if you have specified a different folder during setup or if Windows is in other language. xxx stands for the release version of Cas Studio. Click OK, select “Next” and wait for the process to complete. Once the setup is completed, click “End”.

  ✦ Windows 2000: Windows 2000 displays the “Found New Hardware” dialog. Click “Next”, select “Search for a driver suitable for the device”, then click “Next”, select “Specify Location”, click “Next” and “Browse” to open the “Locate File” folder. Locate and select the c:\Programs\duolabs\Cas_Studioxxx\drivers folder you have created. Attention: this path may be different if you have specified a different folder during setup or if Windows is in other language. xxx stands for the release version of Cas Studio. Click OK, select “Open”, click “Next” and wait for the process to complete. Once the setup is completed, click “End”.

  ✦ Windows 98: Windows 98 displays the “Found New Hardware
Wizard”. Click “Next”, select “Search for the best driver for the device (recommended)”, click “Next”, select “Specify Location”, click “Browse” (or “Cancel” if the system prompts you to insert a floppy). The application displays the “Browse for folder” dialog. Locate and select the `c:\Programs\duolabs\Cas_Studioxxx\drivers` you have created. Attention: this path may be different if you have specified a different folder during setup or if Windows is in other language. xxx stands for the release version of Cas Studio. Click OK, select “Next”. The application displays “Search for device driver file in:” and “CAS Interface 3 USB”. Click “Next”. Once the setup is complete, click “End”.

- **Windows Me**: Windows Me displays the “Found New Hardware Wizard”. Select “Specify the location of the driver (advanced)”, click “Next”, select “Specify Location” and click “Browse” (or “Cancel” if the application prompts to insert a diskette). The “Browse for Folder” dialog displays. Locate and select the `c:\Programs\duolabs\Cas_Studioxxx\drivers` folder you have created. Attention: this path may be different if you have specified a different folder during setup or if Windows is in other language. xxx stands for the release version of Cas Studio. Click OK and select “Next”. The application displays “Search for device driver file in:” and “CAS Interface 3 USB”. Click “Next” once more. Once the setup is complete, click “End”.

To verify if all the tasks have been performed correctly, select Control Panel and open the Device Manager tab. Make sure that the “Jungo” folder displays “Cas Interface 3” and that that Devices folder displays WinDriver.

- After you have completed all the steps above, open Cas Studio. You can now use Cas Interface 3.
5. Cas Studio

Cas Studio is a software specifically developed by Duolabs to enable you to use Cas Interface 3, Cas Interface 2 + Add-on and Dynamite. Cas Studio can be used with Windows 98/ME/2000/XP, but not with Windows NT. This manual describes the procedures that have to be followed for Cas Interface 2, Cas Interface 3 and Dynamite.

The software is able to identify the device connected to the USB port and to self-adapt to it by enabling/disabling the appropriate options.

**ATTENTION:** to allow the device to be correctly identified and be able to correctly use the software, **always connect the PC to one device at a time only**.

The application starts the identification process as soon as you have connected the device with the USB cable. If the device is correctly identified, the application displays the serial number of the device. If a problem occurs or the device cannot be identified, the application displays an error code. For more information on error codes, visit [www.duolabs.com](http://www.duolabs.com).

The upper section of the window displays the menu that enables you to select the category of options you can enable. These are:

- **SmartCard**: for Cas Interface 3, Cas Interface 2 + Add-on and Dynamite. It contains the programming options for SmartCards.
- **Cam Module**: for Cas Interface 3 and Cas Interface 2. It contains the programming options for CAMs.
- **Repair**: for Cas Interface 3 only. It contains the reparation options for CAMs.
- **Receiver**: for Cas Interface 3 and Cas Interface 2. It contains the reparation options for receivers.
- **Utilities**: for Cas Interface 3, Cas Interface 2 + Add-on and Dynamite. It contains additional applications.
SmartCard

The section below lists the SmartCards that are supported by Cas Studio:

PIC-based:
- Wafercard (16C84, 16F84, 16F84A)
- Goldcard (16F84/16F84A + 24C16)
- Silvercard (16F876/16F877 + 24C64)
- Greencard (16F876/16F877 + 24C128)
- Greencard2 (16F876/16F877 + 24C256)
- Bluercard (16F84A + 24C64)
- CanaryCard (16F628 + 24C16)
- EmeraldCard (16F628 + 24C64)
- Singlepic (16F876, 16F627, 16F628).

AVR-based:
- Funcard/Funcard2 (AT90S8515 + 24C64)
- PrussianCard/Funcard3 (AT90S8515 + 24C128)
- PrussianCard2/Funcard4 (AT90S8515 + 24C256)
- PrussianCard3/Funcard5 (AT90S8515 + 24C512)
- PrussianCard4/Funcard6 (AT90S8515 + 24C1024)
- PrussianCard5/Funcard7 (AT90S8515 + 2*24C1024)
- JupiterCard (AT90S2343 + 24C16)
- JupiterCard2 (AT90S8535 + 24C64)
- FunCard ATmega161 (ATmega161 + 24C64)
- FunCard ATmega163 (ATmega163 + 24C256)
- FunCard Atmega8515/Funkey2 (Atmega 8515 + 24C256)
- BlackCard (ATmega128 + 24C256)

OS Card:
- Titanium Card
- Platinum Card
- M2 Card
- Knot Card
- Knot Card2
- Penta VR3 Card
- Dragon Card
- Opos Card
- Titan Card
- Titan2 Card

*To display a full and complete list of SmartCards, select the Graphics Menu in Cas Studio.*
Before programming the SmartCard, verify that the PIN-to-PIN serial cable is not connected to the RS-232 serial port of the PC.

- To program the PIC-based and AVR-based SmartCards listed above, click “Prog”. The following dialog displays:

![Fig. 5](image-url)
Follow this procedure:

- Insert the card into the SmartCard connector of the Add-on (if you are using Cas Interface 2) or of Cas Interface 3 or of Dynamite.
- Click the button with the question mark to allow the SmartCard to be automatically identified.
- Select the files you wish to use for programming (Duolabs shall not be liable for damages originating from the files used).
- Click “Write”. You can also specify in which part you wish to write, by clicking the side icon.

- Click “Read” to read the SmartCard.
- Click “Erase” to delete the SmartCard.

The programmer is configured to automatically detect the card inserted in the connector. Select the appropriate options to disable this feature.

To repair a Dragon Card Loader, insert the SmartCard directly into the slot. The SmartCard will be identified as Funcard or Gold Card. The application displays (above the icon of the existing SmartCard) “Repair Dragon Card Loader”. Click the button and wait for the reparation to be completed.
**Note for expert users**
To edit a file, click the Notepad icon of the desired file.

To program the OS Card (Titanium, Knot Card, Opos Card, etc.) SmartCards listed above, click the button of the desired card, then perform the following operations:

- Insert the Card into the SmartCard connector of the Add-On (if you are using Cas Interface 2) or of Cas Interface 3 or of Dynamite.
- Click “Cancel” to resume the original status.
- Click “ATR” to reset the card and display the ATR number.
- Select the desired files for the Card (Duolabs shall not be liable for damages originating from the files used).
- Click “Write” to start programming.

**For Titanium SmartCards only**
- Click “OS 1.06” to switch from 1.03 to 1.06.
- Click “OS 1.03” to restore the SmartCard to OS 1.03.
- Click “Repair” to re-enable the cards that do not generate an ATR number after programming (this option enables you to retrieve the ATR number on all cards). The result is not however guaranteed. Customers interested in purchasing the device for this purpose only should not do so because the result of this feature is not 100% guaranteed, although it has yielded good results during the testing phase.

**For Dragon Loader Cards only**
- Click the Dragon Card button.
- Load the file containing the desired firmware (Duolabs shall not be liable for damages originating from the files used).
- Click “Program Dragon Card”.

**Note:** if the Dragon Card is damaged, you can repair it by selecting the “Prog” and clicking “Repair Dragon Card Loader”.
Cam Module

• To program Cam cards based on SIDSA chipsets, like Magic Cam, Matrix Revolution, Matrix Reloaded, Matrix Reborn, etc. (to view a full and updated list, select the Graphics Menu in Cas Studio), click the corresponding button and perform the following operations:

  • Insert the Cam card into the CAS Interface. All the CAM data will be displayed on screen.
  • Select the “General” tab and click “Delete All”.
  • Click “Open File” and select the correct file (Duolabs shall not be liable for damages originating from the files used).
  • Click “Write”. The horizontal bar starts scrolling until the writing process has completed.
  • To completely reprogram the CAM, you need to program the Xilinx chip too. To do so, click “Write Xilinx” and select the file that corresponds to the Xilinx chip. The programming process starts (Duolabs shall not be liable for damages originating from the files used).
  • To verify that the writing task is correctly being performed, click “Verify”.
  • To delete the dialog that displays the CAM data, click “Delete Monitor”.

You can also read part of the CAM Flash by specifying the beginning and the end of the part you wish to read in hexadecimal digits (i.e. 10000 - 20000) in the “Advanced” tab and clicking “Read from CAM”.

• To program CAMs based on NEOTION chipsets, like SkyCrypt, ZetaCAM, @Sky, Joker, Free-X TV, IceCrypt etc. (to view a full and updated list, select the Graphics Menu in Cas Studio), click the corresponding button and carefully follow the procedure described below.
• Insert the J-Card as shown in the figure (Attention: it is very important to initially insert the J-Card obliquely, as shown in the second pane of Figure 7).
• Insert the Cam into the Cas Interface (it is very important to first insert the J-Card), then connect the other end of the flat cable to the external connector of the Cas Interface.
• Click “Connect”. The application displays a square, which is red if the J-Card has been inserted improperly or green if it has been inserted correctly. If the card has been inserted incorrectly, try moving it delicately to the right until the square becomes green). If the square is green, the application displays "Joker Connected". Press the long button “When the connection is stable, click here” next to the square.
• Click "Open File" and select the correct file (Duolabs shall not be liable for damages originating from the files used).
• Click “Write”. The progress bar starts moving. The process requires approximately 5 minutes. Click “Verify during programming” to write and check that the bytes being transferred are correct.
• Remove the Cam, THEN the J-Card.

• To program an X-CAM (connect the Add-on if you are using Cas Interface 2), click the corresponding button, then perform the following operations:
  • Connect one end of the flat cable (the one used for the J-Card) to the
Dummy card and the other end to the external connector of Cas Interface 3 (or of the Add-On if you are using Cas Interface 2).

- Insert the Dummy Card into the X-Cam, verifying that the contacts are in the correct position, as shown in the figure.

If you are using Cas Interface 2:

- Insert the Cam with the Dummy Card into the receiver.
Switch the receiver on and open the Cam Menu to check if the status of the Cam is “virgin state”.

**Case 1**: the Cam Menu displays “XCAM MODULE”, indicating that there is no firmware (the status of the CAM is “virgin state”). In this case, perform the following operations:

- Click the button with the three dots to open the dialog that enables you to select the file with the updates, then select the file (Duolabs shall not be liable for damages originating from the files used).
- Click “Start Programming”: the programming starts. The programming process can be interrupted at any time by click “Stop Programming”.

As soon as the programming is complete, the application displays “Programming successfully”. To be able to use the CAM after it has been programmed, extract it from the receiver and reinsert it.

**Case 2**: the CAM Menu displays XCAM MODULE to indicate that the firmware is already present. In this case, you always NEED to delete the existing content before programming the new firmware.

To delete the content of the Cam, perform the following operations:

- Select XCAM xxxxxx (where the x indicate a code related to the firmware already present in the CAM), then click OK.
- Select “Serial Update” in the following menu, then click “OK”.
- Click “Delete XCAM” in the dialog of Cas Studio. From now on, you have 7 seconds to click OK to enable “Activate Loader”. The Cam deletion process will start from when you click the button.
- After completing the deletion, click OK to confirm the end of the operation, remove the Cam from the receiver and reinsert it. The application generally displays “XCAM MODULE” after a few seconds to indicate that the content of the Cam has been deleted (i.e. the CAM is in “virgin state”).
- At this point you can start programming the Cam.
following the steps illustrated in Case 1.

If you are using Cas Interface 3:

- Insert the X-Cam with the Dummy Card into the PCMCIA connector of Cas Interface 3, as shown in the figure.

- Click “…” and select the appropriate file (Duolabs shall not be liable for damages originating from the files used).
- Follow the displayed instructions.

- To program a Dragon Cam (which is possible with Cas Interface 3 only), click the corresponding button and perform the following operations:
  - Connect one end of the flat cable to the external connector of Cas Interface 3 and the other end to the Dummy Card.
  - Insert the Dummy Card into the Dragon Cam.
• Insert the Dragon Cam with the Dummy Card into the PCMCIA connector of Cas Interface 3, as shown in the figure.

![Fig. 11](image-url)

• Click “...” and select the appropriate file (Duolabs shall not be liable for damages originating from the files used).
• Follow the displayed instructions.
Repair

This option enables you to repair Dragon Cams and X-Cams and differs from the Cam Module option because it requires you to open the metal case of the Cam in order to weld the necessary wires.

To repair a Dragon Cam or X-Cam (which is possible with Cas Interface 3 only), follow this procedure:

- Connect one end of the flat cable to the external connector of Cas Interface 3 and the other end to the Dummy Card.
- Open the Cam and extract the circuit board (see Appendix A).
- Weld some wires (up to a maximum length of 10 cm) from the Dummy Card to the Cam, as shown in the figures (that show some examples of several types of Dragon Cams and X-Cams; refer to the image related to the type of Cam you are using).
  
  To determine the type of Dragon Cam used, read the label on the rear.

- Close the Cam. This procedure is easier if you have a spare case for the open Cam (see Appendix B).

The pages that follow show the wiring diagrams related to the connection of several types of Dummy Cards to Cams.

It is advisable to perform the connections in the exact order specified.
Wiring diagram for the connection of a Dragon Cam 2.5-2.6 with Dummy Card.

Fig. 12

<p>| Dummy Card to Dragon Cam 2.5 - 2.6 Connections |</p>
<table>
<thead>
<tr>
<th>Dummy</th>
<th>Dragon 2.5 - 2.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDO</td>
<td>TP_TDO</td>
</tr>
<tr>
<td>TCK</td>
<td>TP_TCK</td>
</tr>
<tr>
<td>TMS</td>
<td>TP_TMS</td>
</tr>
<tr>
<td>TDI</td>
<td>TP_TDI</td>
</tr>
<tr>
<td>TRST</td>
<td>DO NOT CONNECT!!</td>
</tr>
<tr>
<td>GND</td>
<td>TP_M</td>
</tr>
</tbody>
</table>

TP_2_7V = N.C.
Wiring diagram to connect a Dragon Cam 3.x-4.x with Dummy Card.

Fig. 13

<table>
<thead>
<tr>
<th>Dummy Card</th>
<th>Dragon Cam 3.x-4.x</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDO</td>
<td>TP_TDO</td>
</tr>
<tr>
<td>TCK</td>
<td>TP_TCK</td>
</tr>
<tr>
<td>TMS</td>
<td>TP_TMS</td>
</tr>
<tr>
<td>TDI</td>
<td>TP_TDI</td>
</tr>
<tr>
<td>TRST</td>
<td>DO NOT CONNECT</td>
</tr>
<tr>
<td>GND</td>
<td>TP_M</td>
</tr>
</tbody>
</table>

TP3 and TP_3_3V = N.C.
Wiring diagram for the connection of a X-Cam Chip Orion with Dummy Card.

Fig. 14
Wiring diagram for the connection of a X-Cam Chip Angel with Dummy Card.

Dummy Card to X-Cam Angel Chip Connections

This Schematic will work for X-Cam with Angel Chip
Ver 1.2 Ver 1.3 Ver 1.4 and Ver 1.5 (Premium)

Fig. 15
After welding the wires on the Cam and Dummy Card, insert the Cam into the PCMCIA connector of Cas Interface 3.

**Attention:** inserting a Cam without metal case into the PCMCIA connector is a very delicate operation that could potentially damage the two electronic devices. Always insert the CAM into the PCMCIA connector very carefully, making sure that the Cam is pointing upwards (i.e. that its chips are pointing upwards) and that it is perfectly centered, both horizontally and vertically, as compared to the connector of Cas Interface 3 (*Fig. 17*).
• Click the button of the Dragon Cam or X-Cam.

• Select the exact type of Cam you wish to repair from the menu.

• Click “Repair”. The reparation process requires several minutes.
Receiver

- To program an **Xtreme receiver**, click the corresponding button and perform the following operations:

  - If you are using Cas Interface 2 with Add-on, connect the flat cable to the Add-on and to Xtreme, as shown in the figure *(Fig. 18)*:

    ![Fig. 18](image1)

  - If you are using Cas Interface 3, insert one end of the flat cable into the external connector and the other end into Xtreme, as shown in the figure *(Fig. 19)*:
Click “Connect”. All the Cam data display.
Click “Delete All”.
Click “Open File” and select the desired file (Duolabs shall not be liable for damages originating from the files used).
Click “Write”; the progress bar displays until the process completes.
To be able to completely reprogram the receiver, you need to program also the Xilinx chip. To do so, click “Write Xilinx” and select the file that corresponds to the Xilinx chip to start the programming cycle (Duolabs shall not be liable for damages originating from the files used).

To program a NextWave receiver, click the corresponding button and perform the following operations:

- Open the NextWave receiver and remove its internal Cam.
- If you are using Cas Interface 2, build a cable that enables you to connect the external connector of Cas Interface 2 to the internal Cam of the receiver, as shown in Figure 20:
Fig. 20
If you are using Cas Interface 3, build a cable that enables you to connect the external connector of Cas Interface 3 to the internal Cam of the receiver, as shown in Figure 21:

![Image of Cas Interface 3 components]

**Dummy Card**

<table>
<thead>
<tr>
<th>Dummy Card</th>
<th>Nextwave 2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDO</td>
<td>A</td>
</tr>
<tr>
<td>TCK</td>
<td>D</td>
</tr>
<tr>
<td>TMS</td>
<td>C</td>
</tr>
<tr>
<td>TDI</td>
<td>B</td>
</tr>
<tr>
<td>TRST</td>
<td>Not Connected</td>
</tr>
<tr>
<td>GND</td>
<td>E</td>
</tr>
</tbody>
</table>

*Fig. 21*
• Click “Connect”. All the Cam data are displayed.
• Click “Delete All”.
• Click “Open File” and select the desired file (Duolabs shall not be liable for damages originating from the files used).
• Click “Write”; the progress bar displays until the process completes.
• To be able to completely reprogram the receiver, you need to program also the Xilinx chip. To do so, click “Write Xilinx” and select the file that corresponds to the Xilinx chip to start the programming cycle (Duolabs shall not be liable for damages originating from the files used).

• Retrieve **Dreambox Boot**.
  This option enables to you to retrieve the Dreambox boot. To determine if the Boot is really damaged, check the display of the Dreambox. If no data is displayed, the boot can be retrieved. All other errors are not supported. Click the button that corresponds to the DreamBox and perform the following operations:

  • If you are using Cas Interface 2 with the Add-on, connect the flat cable to the Add-O and to the DreamBox as shown in the figure:

  • If you are using Cas Interface 3, insert one end of the flat cable into the external connector and the other end into the DreamBox as shown in the figure (the figures refer to two models of

*Fig. 22*
DreamBox: refer to the photo of the model you are using) DM5600/5620 (Fig. 22) and DM7000 (Fig. 23):

- Click "Connect" when the receiver is on.
• If the application is able to correctly detect the device, additional buttons are displayed (“Open File” and “Write”).
• Click “Open File” and select the desired file.

**Note**: the file to use must be a 128k boot file, which can be downloaded from Web sites dedicated to Dreambox (Duolabs shall not be liable for damages originating from the files used).

• Click “Write”.

• To program a **Manhattan receiver**, click the corresponding button and perform the following operations:

  • If you are using Cas Interface 2, disconnect the Add-on (if in use) and build a cable to connect the external connector of Cas Interface 2 to the Manhattan receiver, as shown in Figure 24:

    ![Figure 24](image)

  • If you are using Cas Interface 3, insert one end of the flat cable into the external connector and the other end into the Manhattan receiver, as shown in the figure (Fig.25):
• Click “Connect”. All the Cam data displays.
• Click “Delete All”.
• Click “Open File” and select the desired file (Duolabs shall not be liable for damages originating from the files used).
• Click “Write”; the progress bar displays until the process completes.
• To be able to completely reprogram the receiver, you need to program also the Xilinx chip. To do so, click “Write Xilinx” and select the file that corresponds to the Xilinx chip to start the programming cycle (Duolabs shall not be liable for damages originating from the files used).
Utilities

- Using the Phoenix / Smartmouse:
  Use a Pin-to-Pin serial cable to connect the PC to the serial port of the Add-on (if you are using Cas Interface 2) or of Cas Interface 3 or of Dynamite. Click the Phoenix button to open the dialog in which you can select the desired mode. Click “Hide” to hide the main dialog. The mode selection options can be selected from a practical menu in the tray bar.

Main dialog:

![Main dialog](image)

Tray Bar Menu (Fig. 27):

![Tray Bar Menu](image)

Open Tray Bar Menu (Fig. 28):
After selecting the mode, run the software on the COM port.

**IMPORTANT:** use a pin-to-pin serial cable (the pin 1 on one side must correspond to pin 1 on the other side and so on; this cable must be purchased separately).

- **SimEditor** is a software module that enables you to easily and quickly manage the content of Sim cards installed in mobile phones.

- **WinCrypt** is a powerful software module that enables you to compress and encrypt sensitive data. The uniqueness of this application lies in the fact that the Sim Card of the mobile phone is used as encryption/decryption key for the data that needs protecting.

- **Cam Explorer** is a very practical software module that enables users to explore the content of Cams and interact with them using a PC, as if they were in a receiver. This eliminates the need of using the remote control of the receiver to select a menu or input alphanumerical text, because it is sufficient to use a mouse or keyboard.

Some modules are not supported or are partially supported. Customers are advised to report all modules that do not work with Card Explorer to allow us to improve the features of Cas Studio.
6. Technical data

- Full Speed connection, 12 Mbit, USB 1.1 and 2.0 compatible
- Compatible with all Windows operating systems
- Does not require external feeders
- Upgradable firmware
- Multifunction external port
- RS-232 serial communication port
- Fully managed PCMCIA slot
- Support for wireless devices (* optional devices)

For a correct maintenance of the device, it is very important to insert the Cam into the slot very carefully without forcing any mechanical movement.

The tampering or opening of the device will invalidate the warranty.
Appendix A – Opening the Cam

This section briefly explains how to open the Cam case.

1. Place the Cam on a flat surface and position the flat point of a screwdriver on one of the closing segments of the Cam, as shown in Figure 29:

![Fig. 29]

2. Delicately hammer the upper section of the screwdriver handle using the latter as a chisel, in order to remove and bend the closing segments shown in Figure 30.

![Fig. 30]

3. Tilt the Cam and repeat the operations described in steps 1 and 2 also for the other closing segment.
4. Separate the metal plates that form the case and carefully remove the Cam card, as shown in Figure 31:
Appendix B – Closing the Cam

This section briefly explains how to close the Cam case. As the opening of the Cam case implies breaking some metal elements of the case, the latter cannot be used and needs to be replaced with a case for Cam module suitable to allow the Cam case to be closed.

To close the Cam perform the following operations:

- Separate the three items that form the Kit for the case for the Cam module.
• Insert the Cam card, placing downwards, into the plastic frame of the case. Slide it along the guides, as shown in the following figures (Fig. 33 and 34):
• Correctly align the Cam and the plastic frame in the two points shown in Figure 35:

Fig. 35
• Remove the liner of the adhesive tape from the metal element with plastic insert (Fig. 36):

Fig. 36
• Place the Cam plate with plastic frame in the point shown above on the metal element (Fig. 37):
• Join the coupled elements in all points (Fig. 38):
• Remove the liner from the adhesive tape of the other metal element of the case (Fig. 39):
• Slide the metal element above the Cam plate in order to insert the segments into the plastic slots (Fig. 40):
- Perfectly join the two coupled elements in all points (Fig. 41):
Check that the metal segments of the PCMCIA connector of the Cam are firmly joined to the plastic, as shown in Figure 42:

Fig. 42
• Check that the side segments are correctly fixed in place (Fig. 43):

![Fig. 43](image)

The final result of the closing operation is shown in Figure 44:

![Fig. 44](image)
General information

Duolabs Srl assumes no liability resulting from damages caused by the faulty operation or improper use of its products. Duolabs Srl shall accept returned products only if these have been used in compliance with the instructions provided in this manual or on www.duolabs.com.

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