User Guide

RUSBA

Rudder USB Adapter

RUSBA - User Guide v1.03.1

Contents

PICTURE

DESCRIPTION

R.USB.A is the acronym for Rudder USB Adapter. This special version has been designed for the game port rudders and let you connect your loved and well done old rudders to any standard USB socket.

RUSBA uses standard HID drivers included in your installed operating system, no matter if x32 or x64, XP, W7 or other higher MS operating system, RUSBA will work in all situations.

RUSBA has been designed with state of the art last generation microcomputer and has been adjusted to improve the accuracy and precision of your hardware, giving you a full free noise 12 bit resolution (4096 steps) in all analog variables.

RUSBA is only available in one model: the full re-programmable one.

Additionally, as RUSBA has a D-sub 15 pin connector can be used as Game Port adapter, this is not the main purpose of RUSBA but thanks to the full configurable system, you only need to install the GamePort firmware and your Rudder adapter will let you connect to your new USB socket any of your loved old game port joysticks.

As well as FSSB R3, RUSBA R2 and FUSBA, RUSBA is firmware upgradeable. We supply RUSBA with 3 different firmwares:

- RUSBA RandB (rudder and brakes).
- RUSBA GP (game port).
- RUSBA Rudder.

Beside the above characteristics, the product is supplied with a firmware update tool (DCC) to install new versions of firmware and a GUI application (RS_HID_DEV_TOOL) to configure and calibrate the device. Both tools can be downloaded from the product's website.

http://www.realsimulator.com/html/rusba.html

EMYCSA RealSimulator	Package Content and Technical Data
	Date: 26/06/2018 **Version:** 1.02

PICTURE

DESCRIPTION

Package content

RUSBA is supplied as a plug and play device with no necessary hardware installation or drivers. The package, showed in the before picture, contains the following components:

- RUSBA adapter.
- USB type A extension cable 0,5m.

Technical data

- D-sub 15 female socket.
- USB - A male plug.
- Plastic sealed cover.
- 14 bits analog conversion and 12 bit measures full free noise.
- Low pass filter (Glitch Reject).
- 1, 3 or 4 analog channels (in function of firmware version).
- 4 DX buttons (in function of firmware version).
- Compliance with Windows XP, W7 or other higher MS operating system, x32

and x64 versions.
- Firmware upgradeable.
- There are three available firmwares:
  - RUSBA RandB (rudder and brakes).
  - RUSBA Rudder.
 - RUSBA GP (game port).
- Weight: 90 gr.

RUSBA RandB firmware

This firmware is designed to support all the rudders with toe brakes compatible with the HOTAS Cougar. If they work on it, they work on RUSBA.

This firmware has the next axes configuration:

- Axis Z: rudder.
- Rotation X: left brake.
- Rotation Y: right brake.

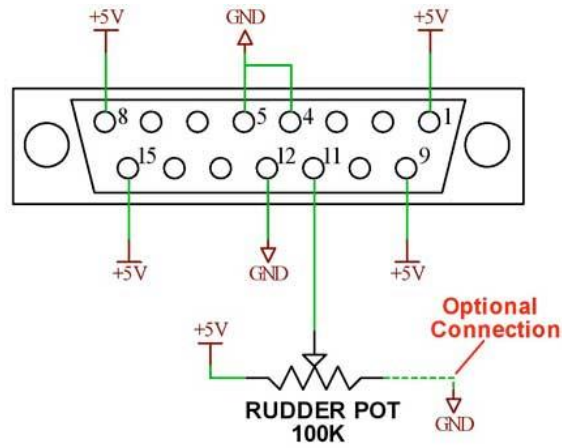Electrically, the rudder pedals with toe brakes corresponds to the next wiring.
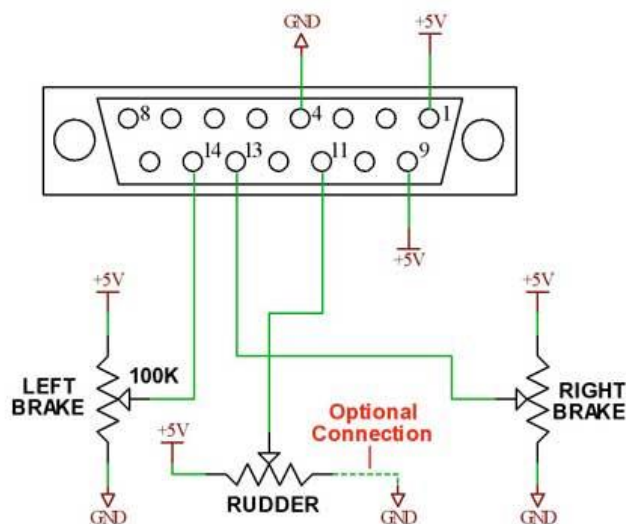
RUSBA Rudder firmware

This firmware is designed to support all the old analog rudders with game port connector.

This firmware has the next axis configuration:

- Axis Z: rudder.

Electrically, the rudder pedals corresponds to the next wiring.

RUSBA GamePort firmware

As we said before, this is not the main purpose of RUSBA, and must be understand as a gift or additional functionality. As the GamePort joystick has the same D-sub 15 pins, we can configure RUSBA to convert the 4 axes and 4 buttons available in most of the game port joysticks and convert them to an USB compatible signal.

This firmware is designed to support all the old joysticks with a game port connection. But of course it cannot work with the mouse, keyboard or other custom functionality of these joysticks, because this information is not provided through the game port connection.

This firmware has the next axes and buttons configuration:

- Axis X: analog 0.
- Axis Y: analog 1.
- Axis Z: analog 2.
- Axis Rot. X: analog 3.
- Button 1: digital 4.
- Button 2: digital 5.
- Button 3: digital 6.
- Button 4: digital 7.

Electrically, this configuration corresponds to the following wiring.
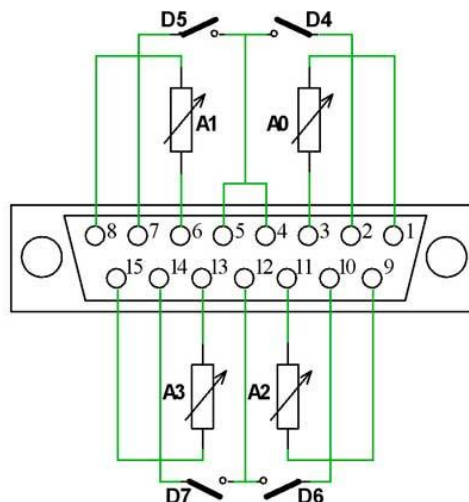
PICTURE

DESCRIPTION

The first time that you connect your RUSBA in your computer, you will take notice about really your RUSBA are several devices living in the same hardware. In fact, inside your RUSBA there are:

- A Boot system, to allow you to update RUSBA with new firmware.

- A HID Game Device, to let you communicate RUSBA directly with MS operating system and let you control your simulator or some other game with DX axes and buttons.

- Two additional comms ports for special comms with the device.

As soon as you connect RUSBA, MS operating system will detect it and will start looking in its data base to install the appropriate drivers for it. As you know, from the FSSB R3 we have avoided custom drivers or additional special system in order not to have any problems in the future with new MS operating systems. Just as you know, every time MS improve its OS, all of us have a headshake with incompatibilities, drivers, etc. so we have learnt from the past, that the best is to use the own legacy MS drivers for comms and this is what we have done in the RUSBA system, use only MS drivers, so when you connect your RUSBA to the computer, MS will look in its data base for the best MS driver for it, in fact its own HID drivers.

The first device to look for drivers is the RUSBA Boot system, and a few seconds after taking comms with MS, the RUSBA Boot will left the system and will be disconnect to allow working the Game device and additional Comms ports. You will see as this USB

input device will be showed in red (have a look to the next picture). And as soon as the Boot goes out a USB Composite Device with 3 USB Input Devices will start looking for drivers.
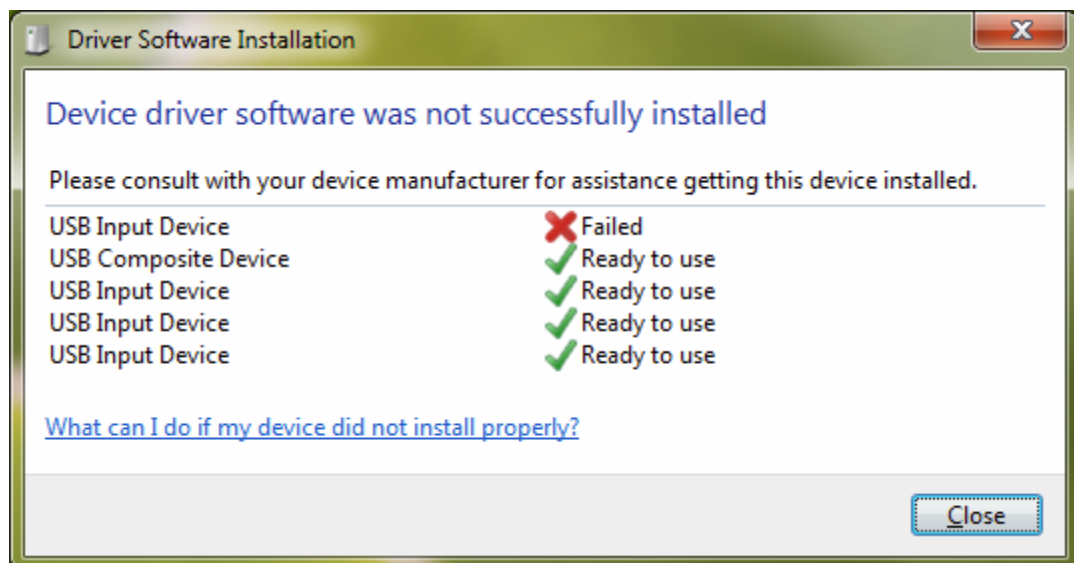

As these HID devices will not go out from your system, after a few second or minutes you will see as your MS OS will found the drivers and install them in your computer and the USB Composite device and the 3 USB Input devices will be tick in green.

This picture is what you normally will have if you are running W7 64bits, perhaps it will look different in other OS, but it will be similar.

About the first USB Input Device, ticked in RED, don't worry it will be connected the next time you upgrade your system with the DCC software. Not necessary now.

EMYCSA RealSimulator	Tools Installation
	Date: 26/06/2018 **Version:** 1.03

PICTURE
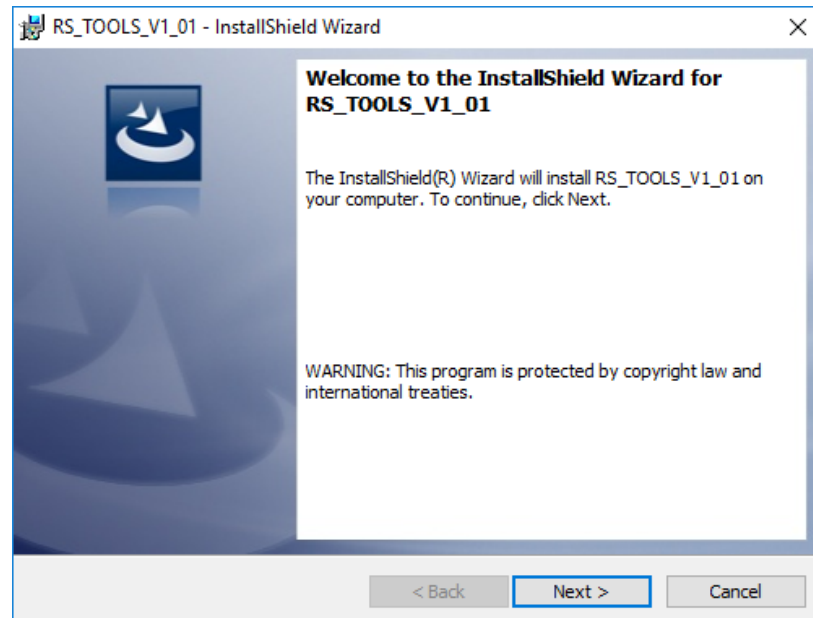
DESCRIPTION

The product is supplied with two software tools, a firmware update (DCC) to allow installing new versions of firmware in the device and a GUI application (RS_HID_DEV_TOOL) to configure the device.

Both tools can be downloaded from the download's website inside the same package. The package also includes the RealSimulator device metadata files, latest firmwares and the product User Guide.

To download the tools, please, go to the RealSimulator download's website by clicking the next hyperlink:

<div align="center">

http://www.realsimulator.com/html/download.html

</div>

and download the latest version of **RS_TOOLS** and save it where you prefer.

NOTE: If you have a previous version installed in your computer, please, uninstall the older version prior to install the newer one.

System requirements are Windows XP sp3 and above MS operating systems and Microsoft .NET 4.5 or above.

To install it, please, run the downloaded program by double-click on the file icon, at this moment "setup_RS_Tools_V1_01.rar" although the procedure is equal if there is other newer version.

Any case, you should have a window like this one.
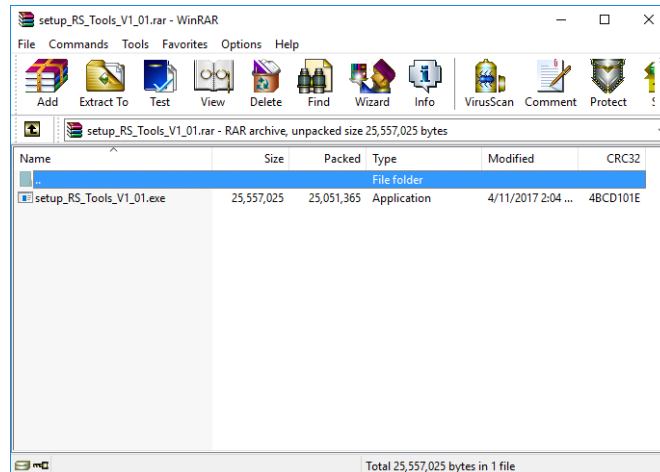
where **setup_RS_Tools_V1_01.exe** is the tools installer. To install it, please, run the file with a double click on the file name.

After some seconds extracting and decompressing the package the installation wizard will launch, then select **Next** to continue.
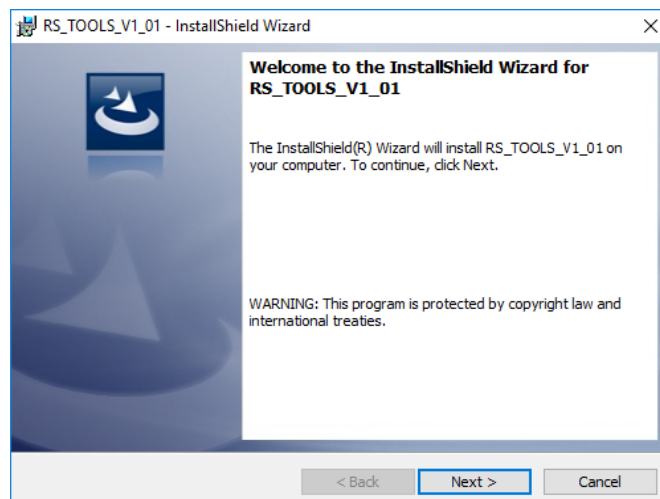

A standard licensing agreement must be accepted before moving on. Choose **I accept the terms of the license agreement** and click **Next**.
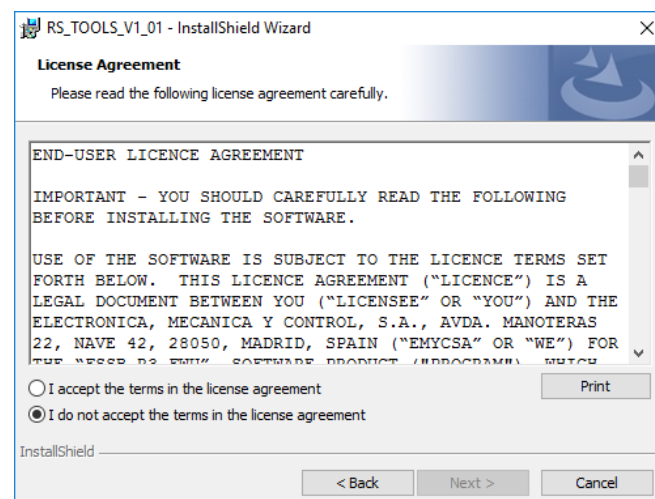
If you want to install all program features (DCC, RS_HID_DEV_TOOL, Metadata files, firmwares and User Guide) select the **Complete** setup type and click **Next** to continue.
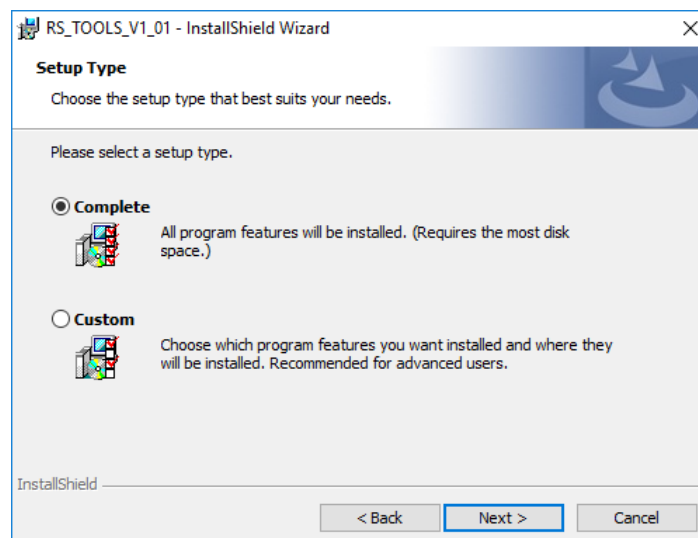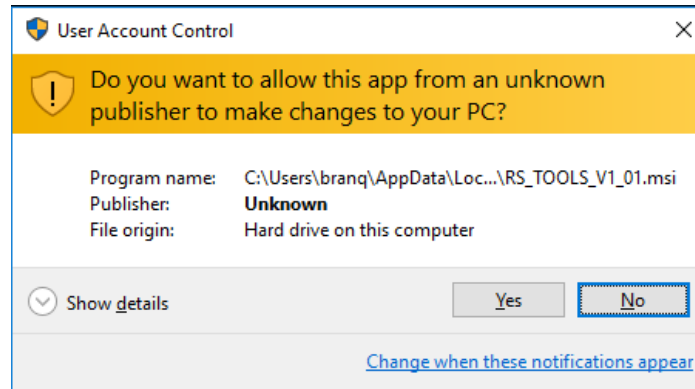

Or select **Custom** if you want to choose the features to install and click **Next** to continue. Select the features to install and click **Next**.
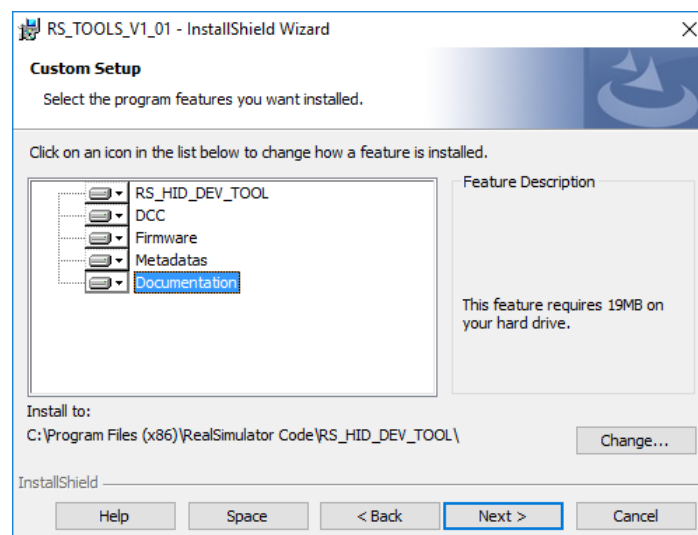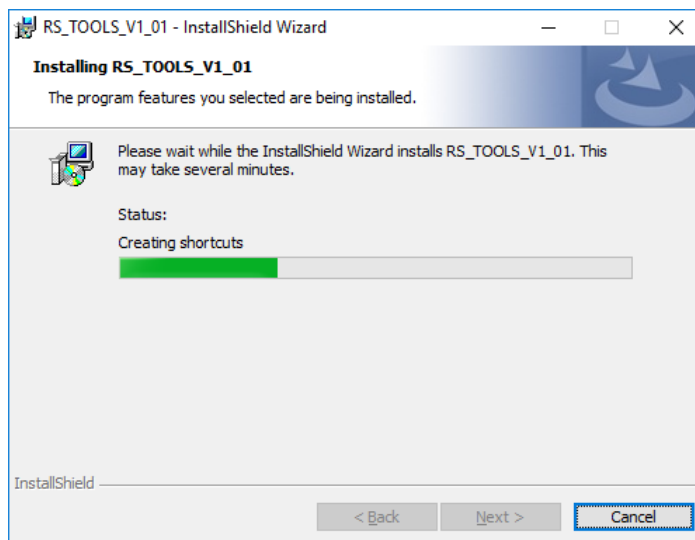

The wizard is now ready to start the installation process. Please, click on **Install**.
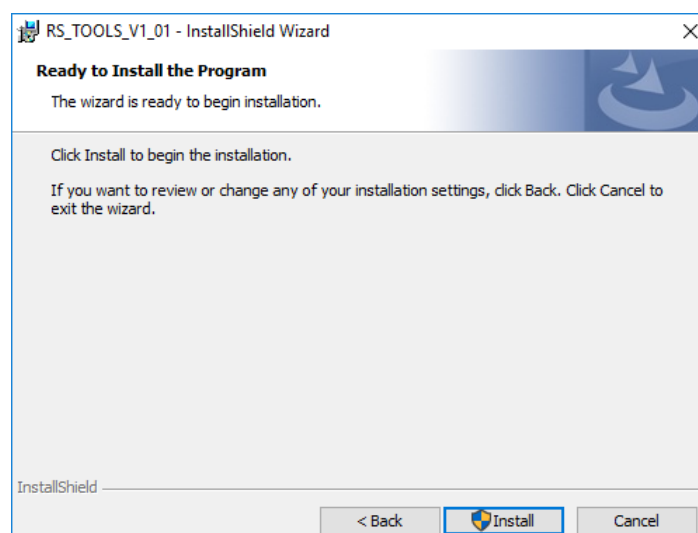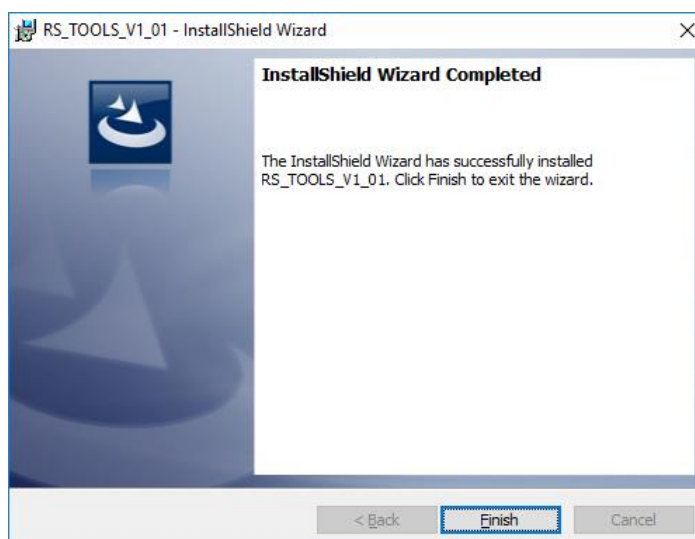
If the User Account Control window appears click the **Yes** button to continue.

The installation of RS_TOOLS_V1_01 may take several minutes to complete.

Wait until the wizard finishes the installation and click **Finish**.

The installation is now finished, if you have connected to the PC your flight controls with the RUSBA kit installed you can see a new device image in the Devices and Printers window.

For this, click in the windows **START** button and select **Devices and Printers**. You should see an icon device like these in function of firmware installed in RUSBA


RUSBA_RandB

RUSBA_GamePort

RUSBA_Rudder
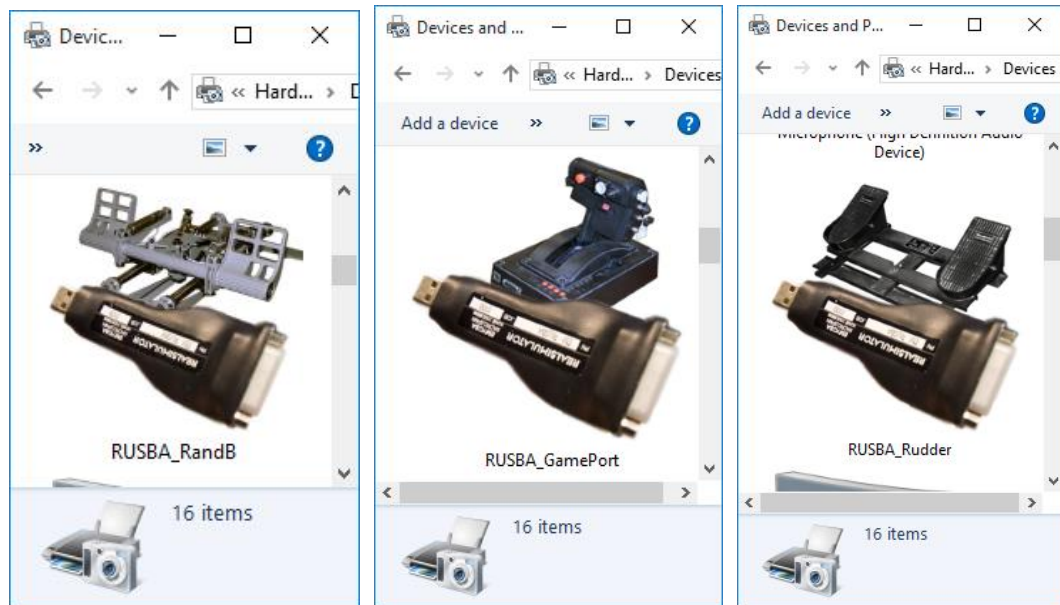
NOTE: sometimes Windows does not update immediately the icon device and you see the standard game device icon, in those occasions press the **F5** key to force windows to update the icon devices cache.

Also, after the installation you will find in your desktop, two new icons: DCC and RS_HID_DEV_TOOL application shortcuts.
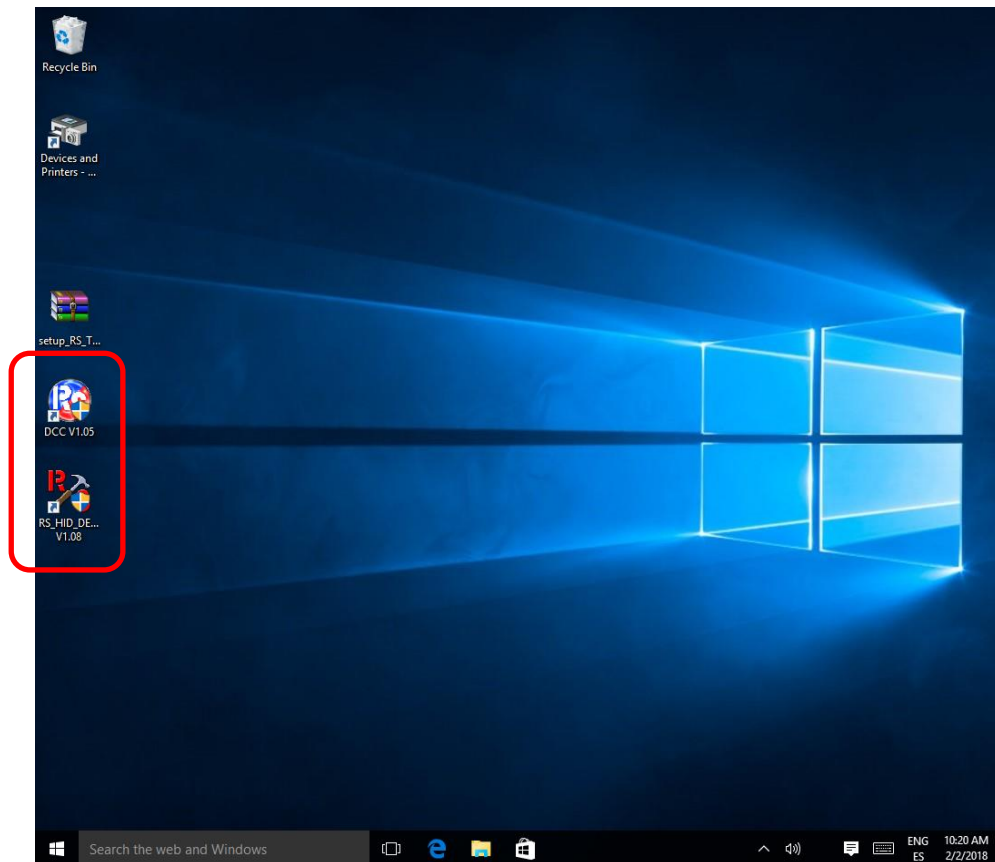
Finally, if you press the windows **START** button and look the **All App** section in the R letter you will find in the Realsimulator folder shortcuts to the DCC and RS_HID_DEV_TOOL programs, RealSimulator devices User Guide and the FSSB R3
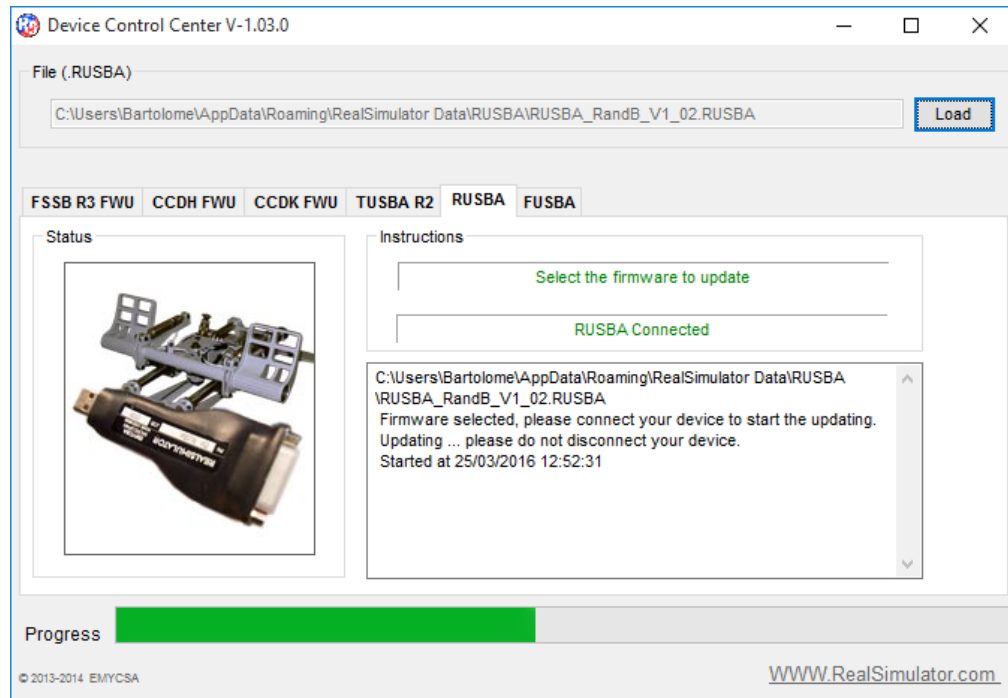
BluePrint.
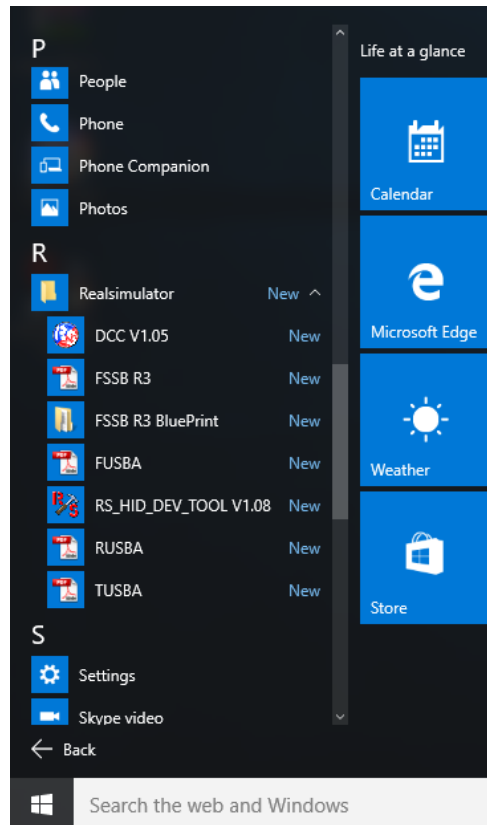
As general information, here it is the default directories where the installer saves programs:

C:\Program Files (x86)\RealSimulator Code\DCC
C:\Program Files (x86)\RealSimulator Code\RS_HID_DEV_TOOL

And, the User Guide, Metadata, Firmware and BluePrint files on:

%APPDATA%\Realsimulator Data\

| EMYCSA RealSimulator	Firmware Update
	Date: 26/06/2018 **Version:** 1.03

PICTURE

DESCRIPTION

Usually you will receive your RealSimulator device with the last firmware version installed, so it will not be necessary to use DCC to update your device immediately after its reception.

If you check the product's website periodically you could find new versions with enhancements and issues fixed, so you will need to use the DCC program.

To start the DCC program, launch by double click the DCC desktop icon or click in the windows **START** button and select **All Program > Realsimulator > DCC > Launch DCC.exe.** If the User Account Control window appears click **YES** to continue.
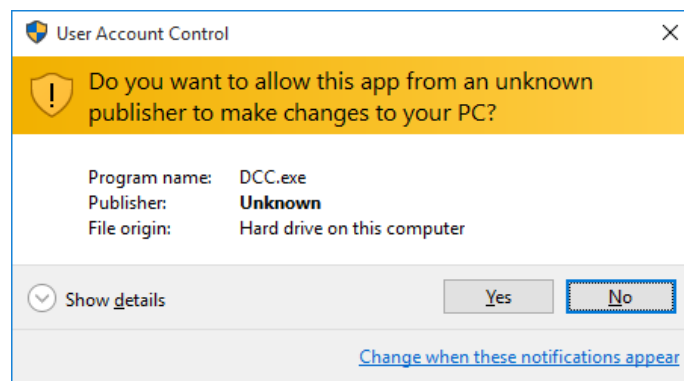

Select the tab labelled as **RUSBA** and follow the instructions given in the groupbox

Instructions to update the device.

Unplug the device from USB extension cable supplied or computer port.

As you can see in the next picture, **Status** groupbox shows a light device image, it is normal, this image will only be in normal colour when the device is running the bootloader program, in other cases, with the device unplugged or in normal operation the image will be light.
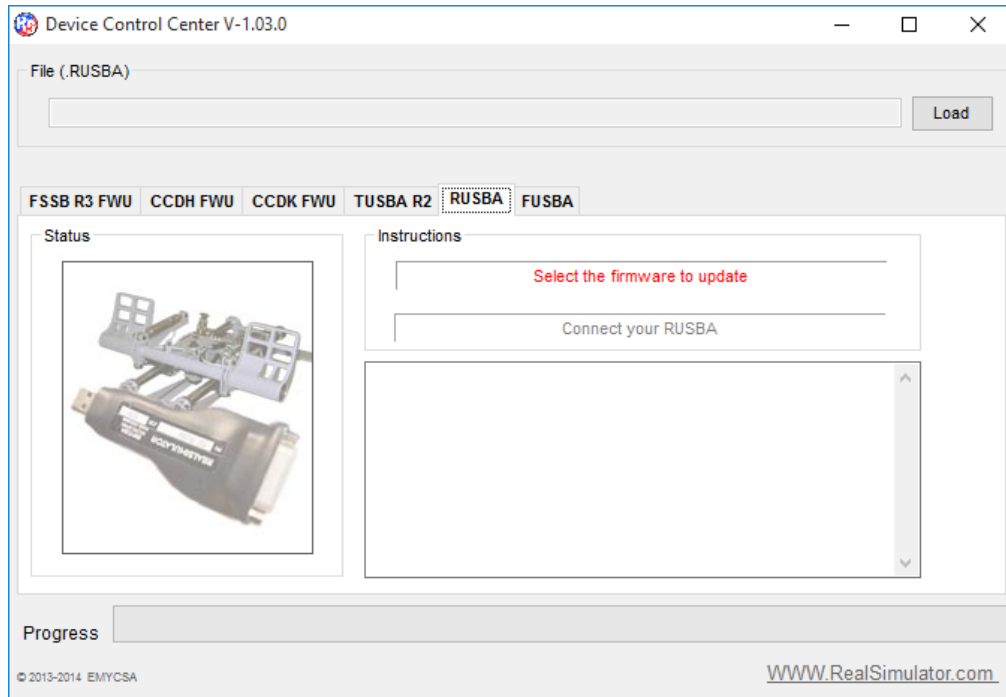

At first, the **Select the firmware to update** message will be blinking in red, so click the **Load** button to open the Open Firmware File window to select the new firmware to install, select the desire file clicking the filename and click the **Open** button to close the window.
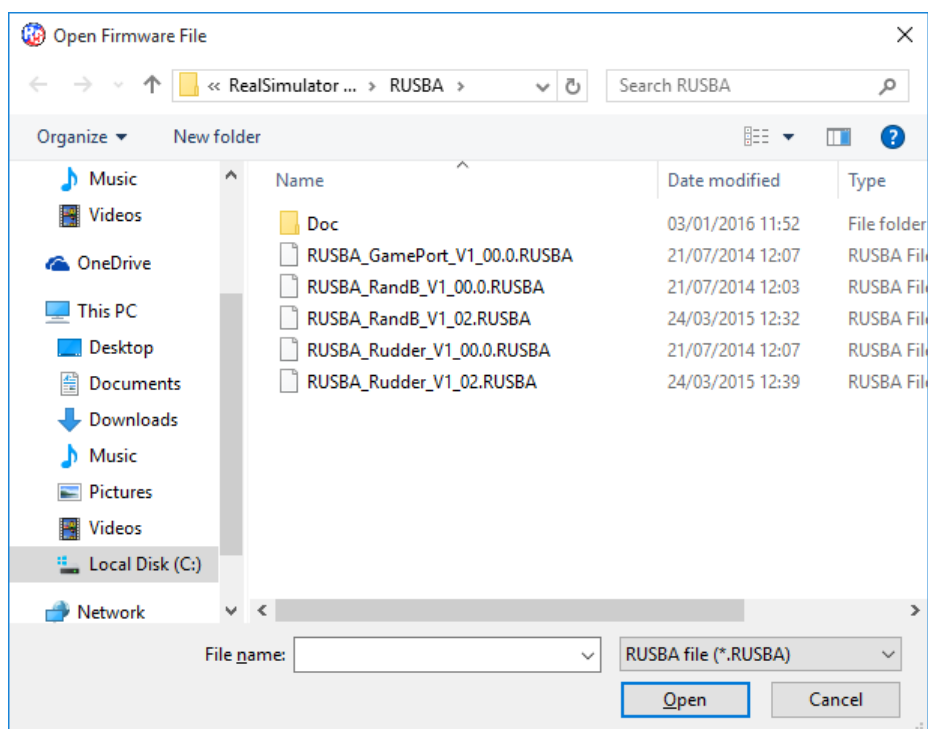
Second, with the previous message in green, the following message **Connect your RUSBA** will blink in red.
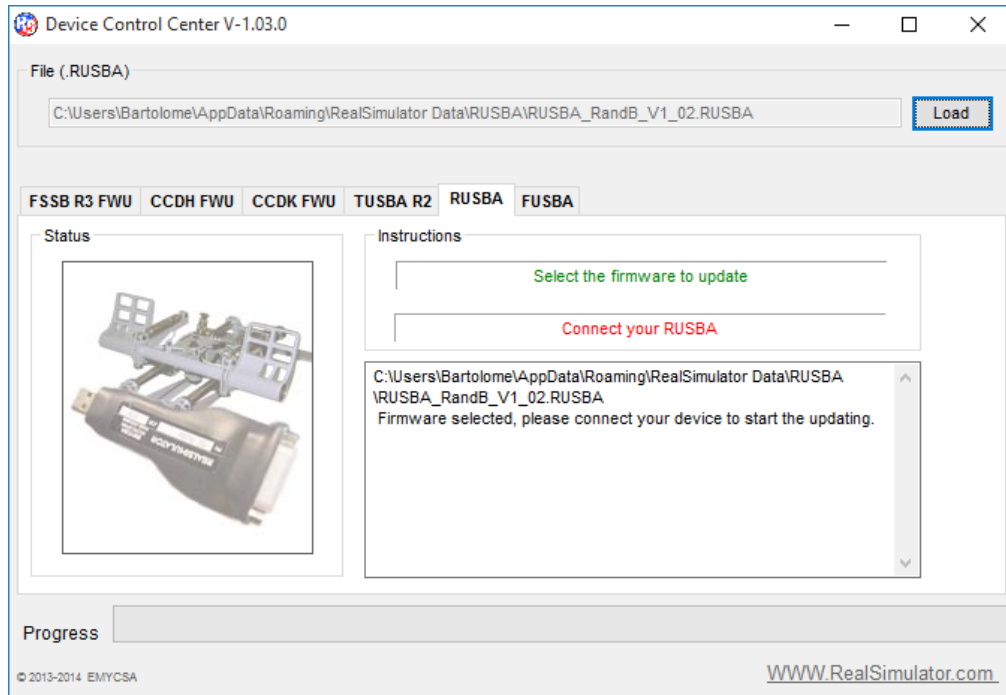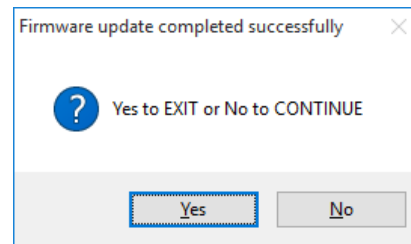

To start the updating we must plug in the previously unplugged device, which will launch the bootloader for some seconds and DCC program will start the communications with the device sending the new firmware. During this data transference we will be able to see the progress in the Progress bar and the status image in normal colour.
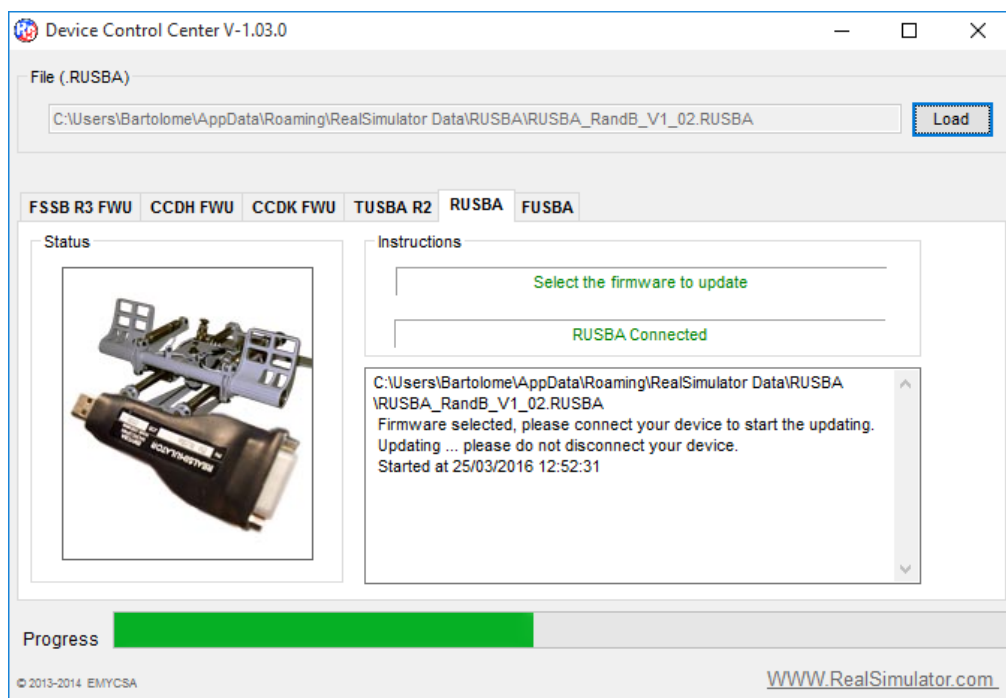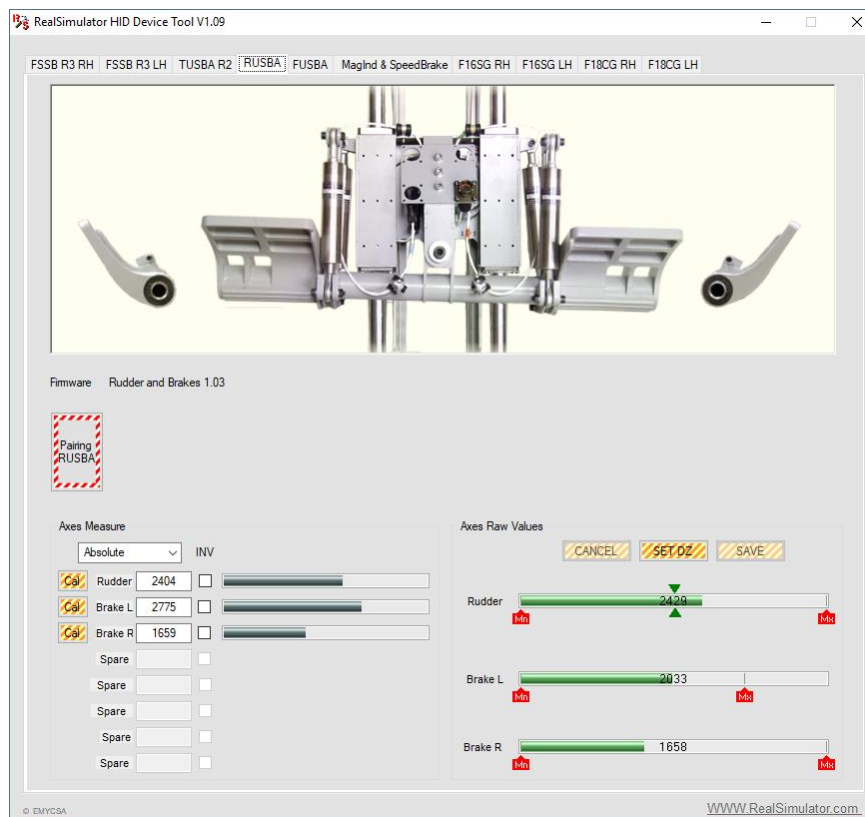

Finally, when the update finishes the device will exit from the bootloader program and will run the new firmware.

DCC program will show a new window to confirm the firmware update completed successfully and it will ask you to continue with other device or exit.

Click **Yes** to exit.

Firmware update completed successfully ✕

❓ Yes to EXIT or No to CONTINUE

Yes   No

EMYCSA RealSimulator	RUSBA Set Up (RandB and Rudder)
	Date: 26/06/2018 **Version:** 1.03

PICTURE

DESCRIPTION

RUSBA, like all devices manufactured by RealSimulator that must be connected with customer's hardware, is shipped without configuring, it is necessary to do this labour by himself when receives the device.

RealSimulator has developed a tool called **RS_HID_DEV_TOOL** to facilitate this action; thereby you will be able to customize and adjust easily the different options offered by the device and get the maximum performance from your hardware.

At this moment, RS_HID_DEV_TOOL only supports RandB and Rudder firmwares; if you need to use the GamePort firmware, please read the appropriate chapter.

RUSBA gives functionality for the following axes in function of firmware installed:

- Rudder, Left brake and Right brake with the RUSBA_RandB firmware.
- Rudder with the RUSBA_Rudder firmware.

Next, we will explain you how to operate with the RS_HID_DEV_TOOL program and each step required to configure your RUSBA. This explanation is only valid for the two supported firmwares, although the brakes section is not valid for the RUSBA_Rudder firmware because in this configuration there are no brakes.

In order to do this, first we will connect our RUSBA to the PC, directly to an USB port or through the USB expansion cable supplied.

To start RS_HID_DEV_TOOL program, launch by double click the RS_HID_DEV_TOOL desktop icon or click in the Windows **START** button and select **All Program > Realsimulator > RS_HID_DEV_TOOL > Launch RS_HID_DEV_TOOL.exe.** If the User Account Control window appears, click **YES** to continue.
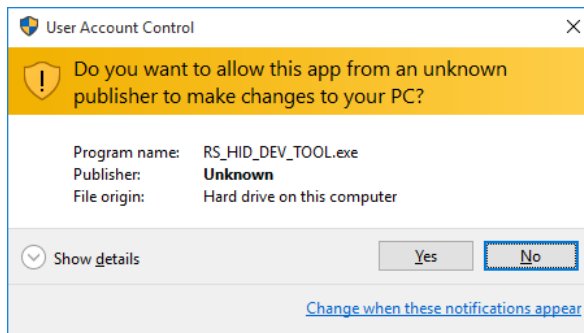
Select the **RUSBA** tab and you should see a window like this.
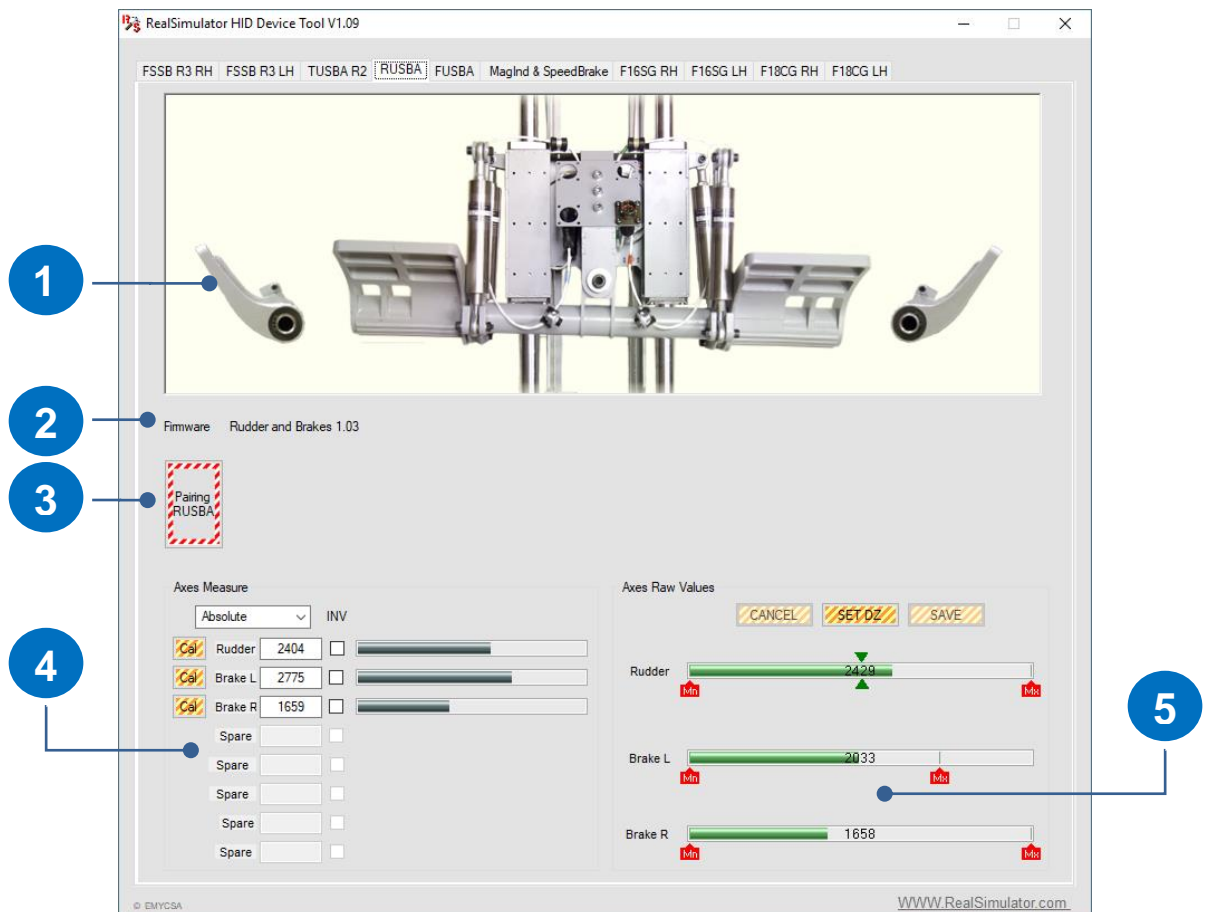
Where we have identified with numbers the different information and configuration areas.

1. Animated area where the program shows graphically the positions of rudder pedals and toe brakes.
2. Area where to see the firmware version installed in the device. If a message of "**Firmware non supported**" is showed you need to update your firmware because you have installed an old version and not full

actions will be supported.

3. Pairing button. Below you will find a complete explanation about its operation.

4. Groupbox with the Direct X information of axes. We can see the analog axes information graphically in progress bars and numerically in text box, buttons to calibrate individually the axes and check box to invert them individually. The information showed in this groupbox for the different axes is the same as we can see in the Microsoft Game Controllers window.

5. Groupbox with the Raw information for the analog axes. Here, we can see the measure of each axis numerically and graphically in a progress bar, red icons for the maximum and minimum values of each axis, green icons for the dead zone of rudder pedal axis and three buttons to make manually the dead zone adjust. Additionally from V1.09 the user can see and adjust the value of each icon manually clicking on the icon and writing the desired value manually (see section **Manually configure Raw Axes**).

In general, every button or checkbox in the window has associated a small pop-up box (tooltip) with basic information about it. This information will appear when the mouse pointer is over the button or checkbox.
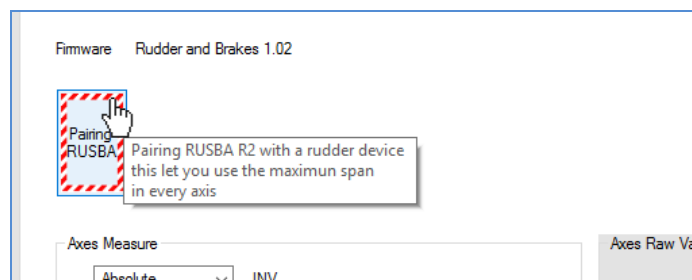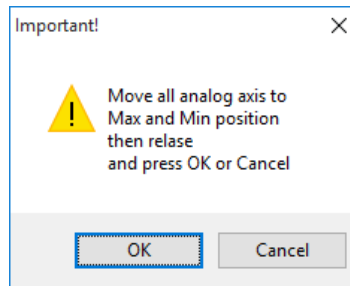

Pairing

The process of adjust and calibration of rudder pedals with RUSBA starts with the Pairing action. With this action RUSBA adjusts individually the amplifiers of each analog axis to obtain the maximum span and so to make better use of 12 bits analog converter. For this, RUSBA needs to know the maximum and minimum values of the analog measure of each axis, so as we will see after, we will need to move the axes to the extreme positions to achieve these values.

To start the pairing process, click the **Pairing RUSBA** button, and click **OK** in the new window to continue.
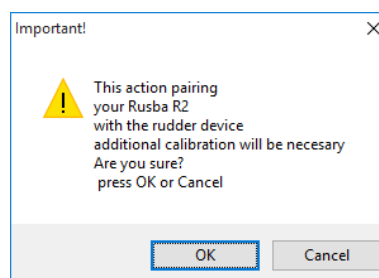
A new window will appear to inform us about **moving all analog axes to maximum and minimum positions** as comment above. It is very important to make this phase well for a future correct operation; we suggest maintaining the end positions for some seconds to guarantee RUSBA identifies correctly end positions. To finish, click "**OK**".

Important! ✕

⚠ Move all analog axis to
Max and Min position
then relase
and press OK or Cancel

[OK]   [Cancel]

NOTE: It is absolutely necessary to make the pairing action at the first time when receive RUSBA, but it is also advisable after a firmware update.

Axes calibration overview

As the pairing window informed us before, after the pairing is necessary to calibrate each analog axis.

With this calibration we will inform Windows about the maximum, minimum and central position of each axis. This procedure is similar to the Game Controllers properties calibration wizard of Windows with the following differences:

- With the RS_HID_DEV_TOOL we can calibrate individually axes, only the axis that we need.

- If the axis has central position, like the Rudder axis, RS_HID_DEV_TOOL allows us the possibility of adjusting a dead zone area (automatically and manually).

- Invert individually axes to adapt the hardware to the simulation program requirements.

- See the Raw and DX values graphically and numerically.

So, **we only suggest using this tool to configure RUSBA and calibrate the rudder pedal device**.

In the next image, you can see identified the different informative areas related with the axes calibration.
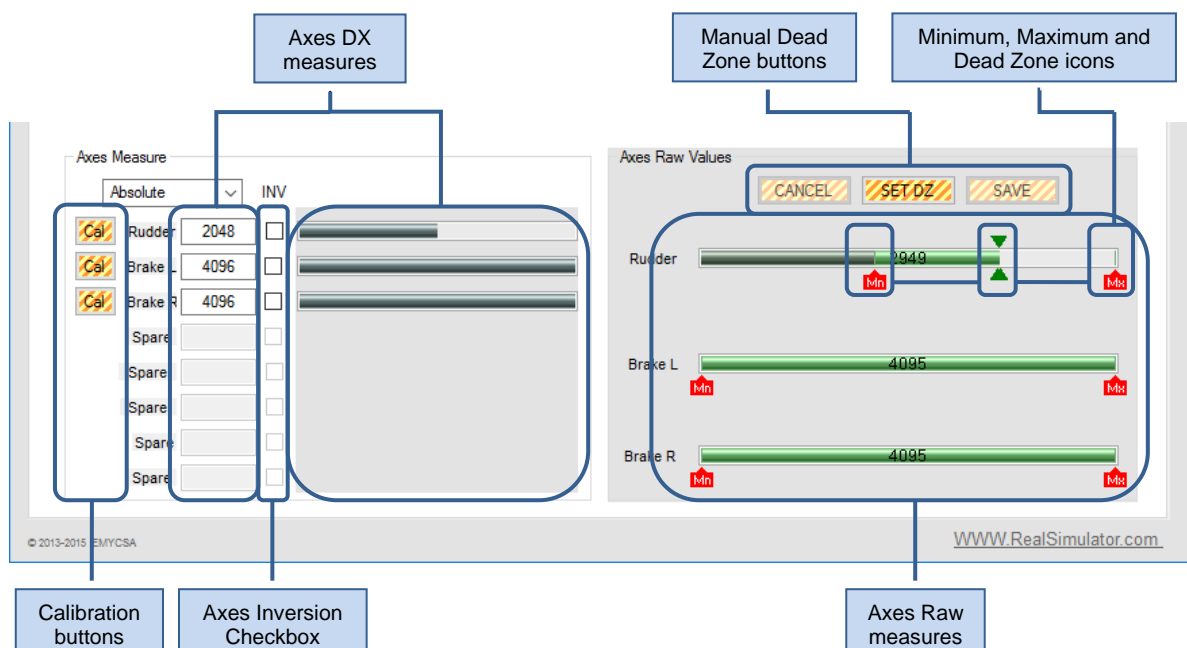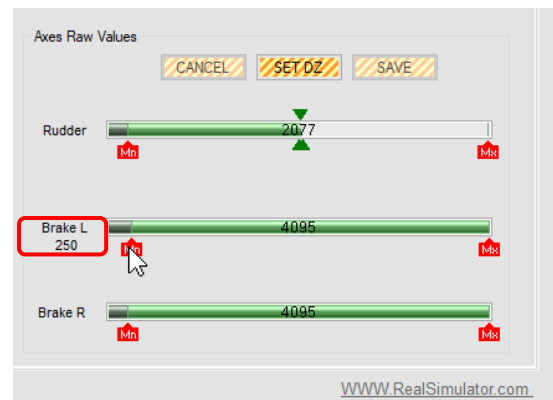
Axes Raw Values groupbox shows the internal measures of each analog axis of RUSBA, numerically and graphically through a green progress bar with the numeric value in the centre. Each axis has associated two red icons to identify the maximum and minimum positions; if the axis has central position, it has associated a dead zone identified for three green icons.

Values of associated icons (Maximum, Minimum and Dead Zones) can be visualized putting the mouse over the icon and modified by the user by double-click over the icon. For an explanation about how to do it, please, see the section **Manually configure Raw Axes**.
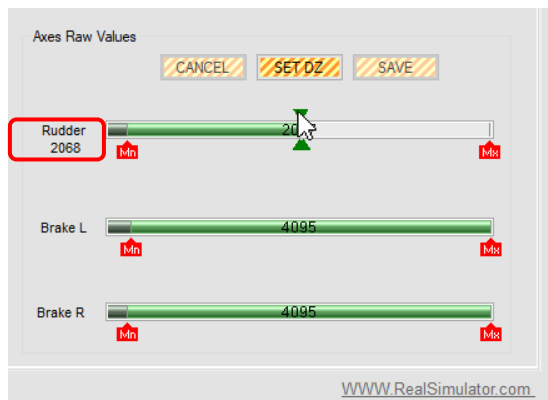

| Rudder Centre Dead Zone Value | Brake Left minimum value |

If you move the Rudder axis, you can check the information showed is "fully raw", because the dead zone area is not applied to the measure showed. To see the "normally raw" values that RUSBA sends Windows to generate the DX values is necessary to open the Game Controllers properties window of device and enter in the Calibration wizard.

We have made the decision to show the "fully raw" measures because we consider this is more interesting than the other one and allow us to show graphically the full information to the user.

Axes Measure groupbox shows the Direct X information. This information is showed numerically on text boxes and graphically in progress bars. The numeric information can be showed in **Absolute** or **Percentage** format. To change it, select the preferred option in the combo box.
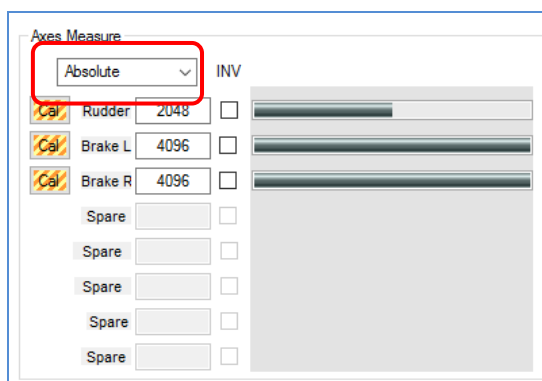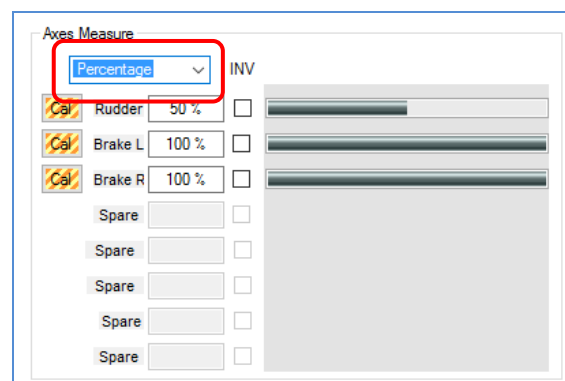
| Absolute format | Percentage format |

The axes calibration procedure is very easy and is guided with instructions on the screen; however, we are going to show you step by step how to do it.

The axes calibration is grouped in two paragraphs:

- Brakes calibration (only valid for the RandB firmware).
- Rudder calibration.

Brakes calibration

We are going to show you how to calibrate the brakes although we will only show you how to do it with the Left Brake; the procedure is similar for the Right Brake. For this, click the **Cal** button associated to the axis.


And a new small window will appear with instructions to make the axis calibration.
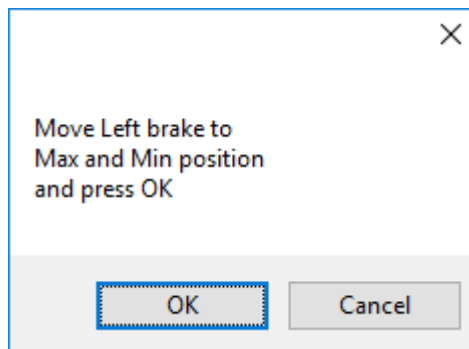
Following the instructions, press and release the left pedal several times to generate the minimum and maximum positions, and click **OK** to finish.
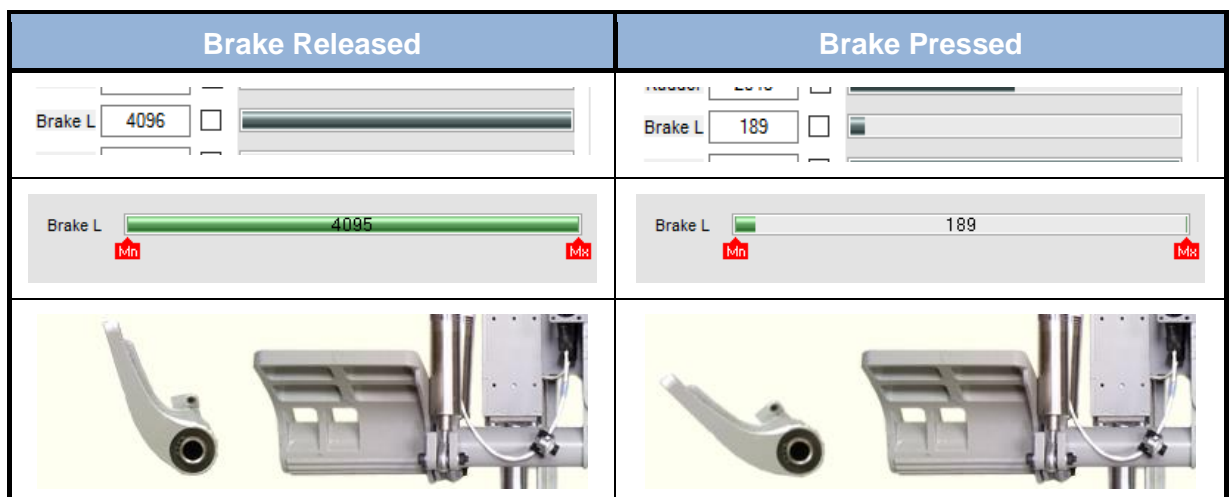
Brake Released	Brake Pressed

After closing the window, RS_HID_DEV_TOOL will save the new calibration values for Windows and will relocate the red icons of maximum and minimum to the new positions, as we can see here.
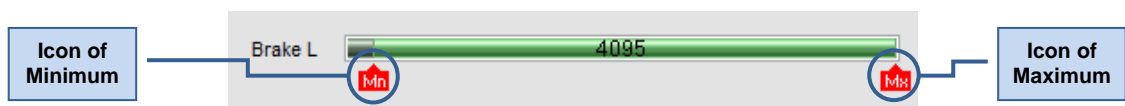
Now, after the calibration there is a direct correlation between the two extreme positions of our hardware, which are showed with red icons, and the maximum and minimum values of DX, as we can see in this table.

| Brake Released	Brake Pressed

In order to finish the axis calibration/configuration, we have to know that RS_HID_DEV_TOOL gives us the possibility of inverting the axis. To do it, click in the check box associated to axis and automatically the measure and the maximum and minimum positions will be inverted, as we can see in the next image.

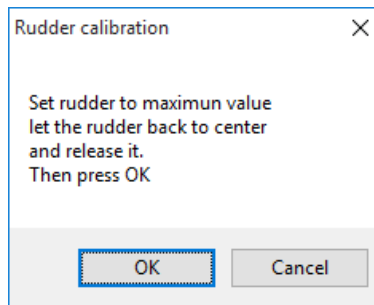| Brake Non Inverted	Brake Inverted

Rudder calibration

Now we are going to show you how to calibrate the rudder, one axis with central position. As before, it will be necessary to get the maximum and minimum values of each axis, but as the axis also has a central position, it is necessary to detect this position and the dead zone around this central position. For that, the calibration in this type of axes is made in two phases.

To start the calibration, click the **Cal** button associated to the axis.
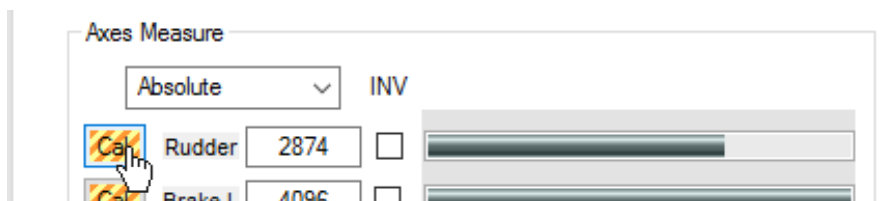
A new small window will appear with instructions for the first phase of the Rudder axis calibration.

Rudder calibration ✕

Set rudder to maximun value
let the rudder back to center
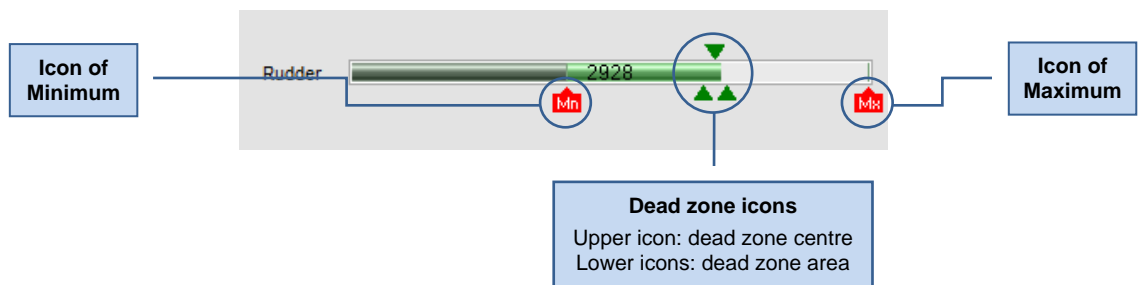and release it.
Then press OK

[OK]   [Cancel]

Following the instructions, move the rudder to achieve the maximum value in the raw measure, let the rudder back to centre and release it. Click **OK** to continue.

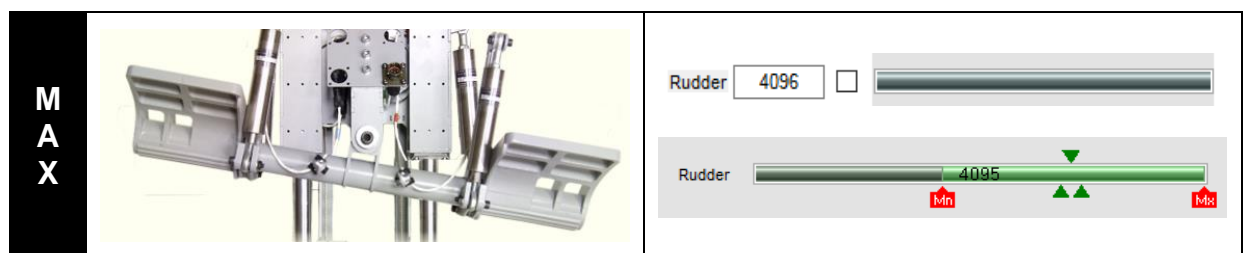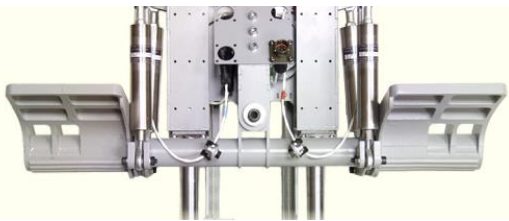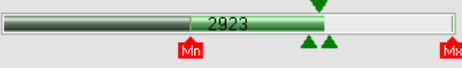A new second window will appear with instructions for the second phase.

Rudder calibration ✕

Set rudder to minimun value
let the rudder back to center
and release it.
Then press OK

[OK]   [Cancel]
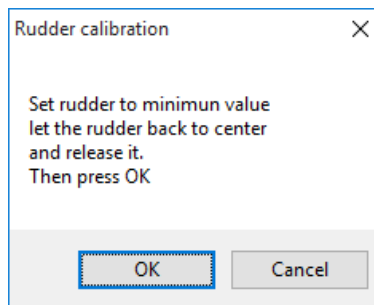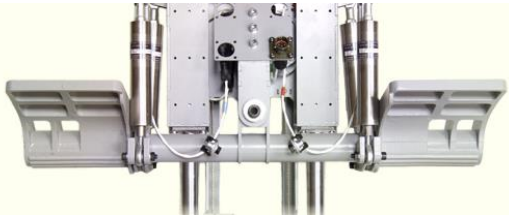
Now move the rudder to achieve the minimum value in the raw measure, let the rudder back to centre and release it. Click **OK** to continue.
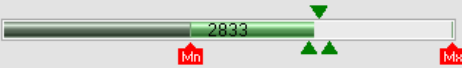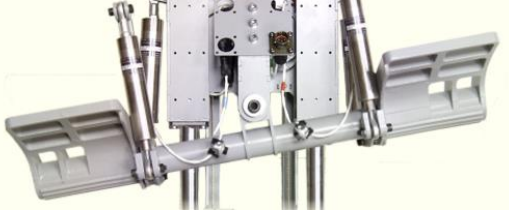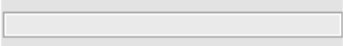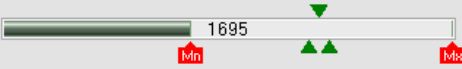
After closing the window, RS_HID_DEV_TOOL will save the new calibration values for Windows and the automatic calculated dead zone. It will also relocate the red icons of maximum and minimum positions and the green icons of dead zone area, as we can see here.

| Icon of Minimum | Rudder 2928 | Icon of Maximum |

Dead zone icons
Upper icon: dead zone centre
Lower icons: dead zone area

Now, with the calibration finished there is a direct correlation between the extreme positions of rudder device, showed with the two red icons and the maximum and minimum DX values, and a dead zone area delimited for the two lower green icons, where DX measure of axis does not change, although the raw measure changes inside it, as we can observe in the next example.


MAX

Rudder 4096

Rudder 4095

28 / 42

D Z 1		Rudder 2048 ☐ Rudder [Mn] 2923 ▼ ▲▲ [Mx]
D Z 2		Rudder 2048 ☐ Rudder [Mn] 2833 ▼ ▲▲ [Mx]
M I N		Rudder 0 ☐ Rudder 1695 ▼ ▲▲ [Mn] [Mx]

As we see in the calibration of rudder axis, RS_HID_DEV_TOOL has calculated the dead zone value in function of only one movement of rudder toward each side. Normally the calculated value is valid to operate, but sometimes if our hardware is very used and has much play in the centre, then the dead zone calculate is not enough and we could need to adjust it manually.

If when the rudder comes back to the central position its position is out the dead zone area, we can be absolutely sure it is our case and we will need to repeat several times the movement and release of rudder, and get visually the new desired dead zone area to adjust it manually how we explain below.

To start the manual adjust of dead zone, click the **SET DZ** button

Axes Raw Values
CANCEL SET DZ SAVE

Rudder [Mn] 2896 ▼ ▲▲ [Mx]
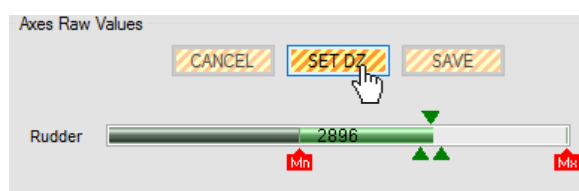
Automatically, if it is possible, the program spans the axis with dead zone to achieve more precision in the adjust process and enables the green icons movement. When the axes span occurs, the program adjusts automatically the progress bar width between the maximum and minimum positions.

To adjust the dead zone, the program allows us two possible actions:

- To displace the dead zone area.
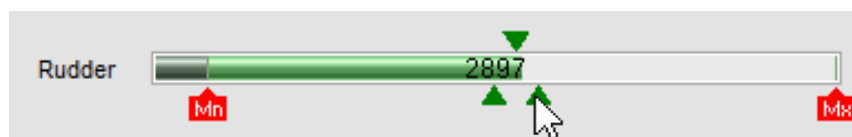- To increase or decrease the dead zone.

To displace the dead zone area, click and hold with the left button of mouse on the upper triangle and move it to the desired position, and release the button to finish. As you can see you displace the three triangles like a block.
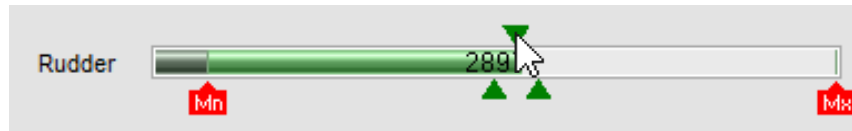
Clicking the upper green triangle and without release the mouse button you can displace the area where you want
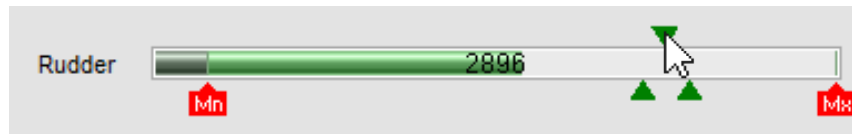

To increase or decrease the dead zone area, click and hold with the left button of mouse on either of lower triangles and move it to the desired position and release the button to finish. Both lower triangles will move symmetrically with respect to the upper triangle.

Clicking on either of lower green triangles and without release the mouse button you can increase or decrease the dead zone area
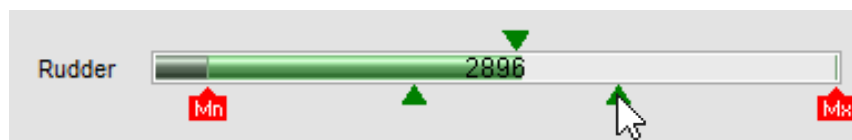

When the dead zone adjust is finished, click the **SAVE** button to save the new adjust configuration or click **CANCEL** to restore the previous adjust.
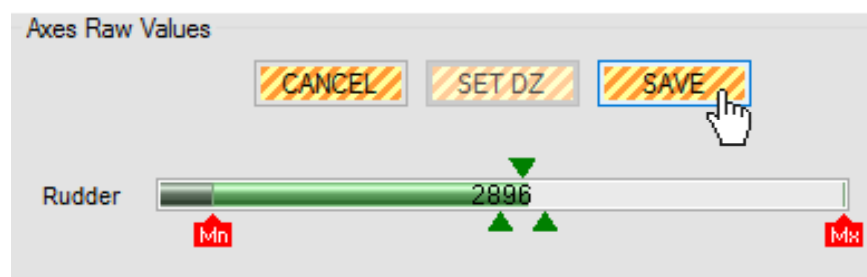
Manually configure Raw Axes

From v1.09 of RealSimulator HID Device Tool is possible see and adjust manually each parameter associated to the raw axes progress bars, as Max, Min and Dead Zones.

To see a parameter value you must put the mouse over the parameter icon and the measure will be showed for 4 second below the raw axis name. After this time the measure value disappears and will be necessary to move the mouse and put again over the icon to see it again.
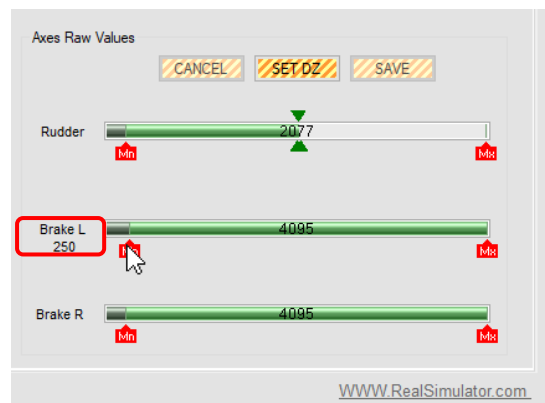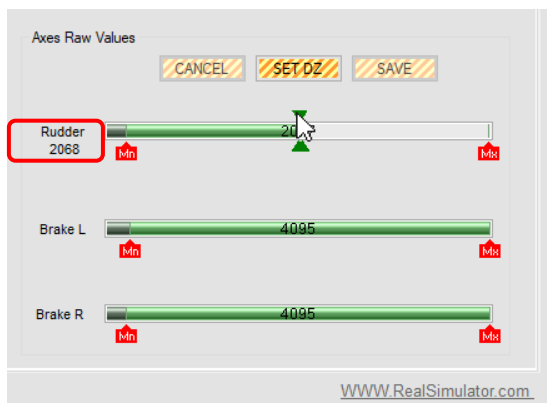
If you want to modify a value, with the mouse double-click on the icon and a new window will be opened showing the "minimum" (upper position) and "maximum" (lower position) admitted values for the selected parameter. In the centre position is showed in bold the actual value, clicking with the mouse in the box you can write the new value.
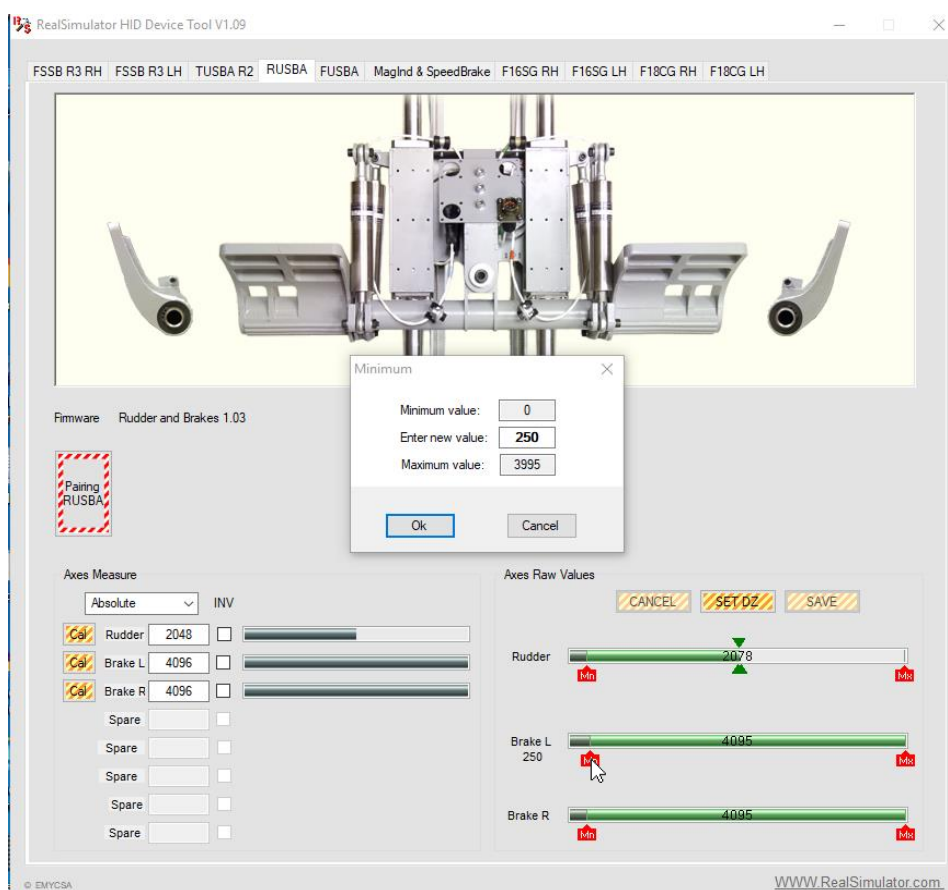
To finish the operation, click on the OK button to accept the written value.
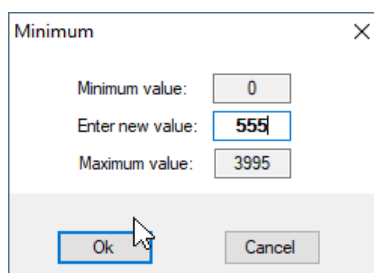
If the value is correct the window will close and the parameter and icon position in the progress bar will be modified.
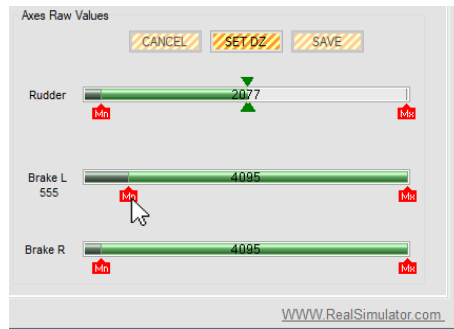
If the value written is incorrect an ERROR window will be showed to inform about the error and the operation will be cancelled after accept the error.

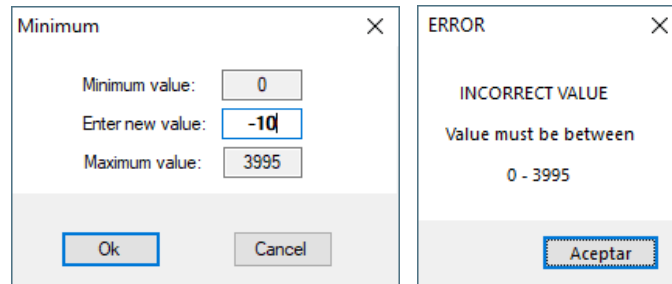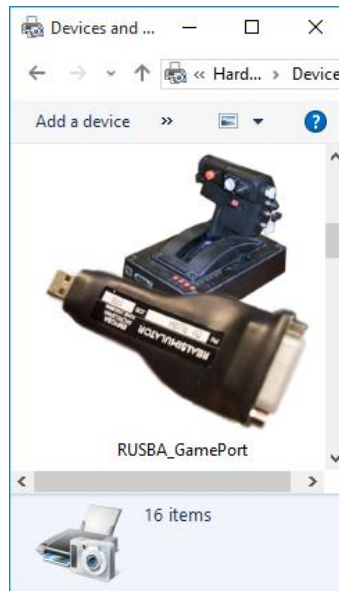| **EMYCSA**	**Game Port Calibration**	
RealSimulator	**Date:** 26/06/2018	**Version:** 1.03

PICTURE

DESCRIPTION

The GamePort firmware of RUSBA supports the standard configuration of game port devices, that is to say, four axes and four buttons as show the next image.

- - **Axis X**: analog 0 (A0).
- - **Axis Y**: analog 1 (A1).
- - **Axis Z**: analog 2 (A2).
- - **Axis Rot. X**: analog 3 (A3).
- - **Button 1**: digital 4 (D4).
- - **Button 2**: digital 5 (D5).
- - **Button 3**: digital 6 (D6).
- - **Button 4**: digital 7 (D7).
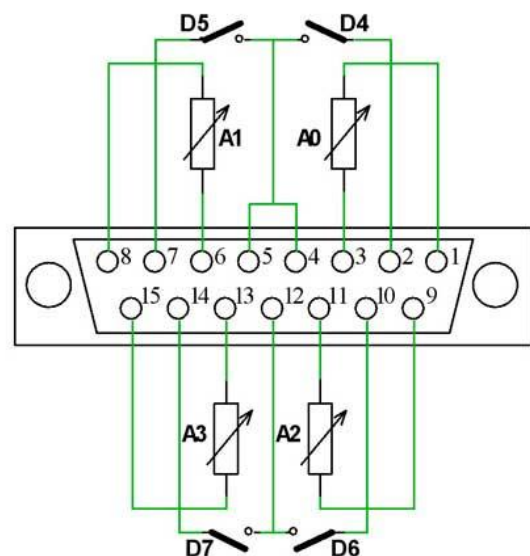
As we said before, RS_HID_DEV_TOOL does not support RUSBA with the GamePort firmware; if you need to calibrate or verify your game port device, you must use the standard tool of windows, the Game Controllers window.

To start the calibration procedure, open the **Devices and Printers** window.
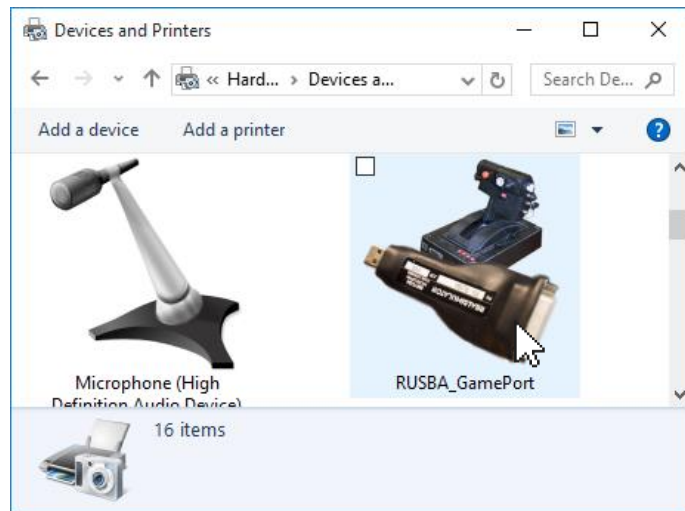
Click with the right mouse button the **RUSBA_GamePort** icon and select the **Game controller settings** option in the pop-up menu to open the **Game Controllers** window.
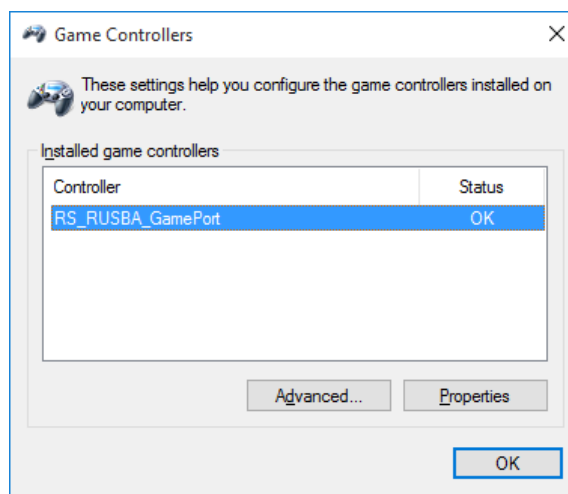
Click the **RS_RUSBA_GamePort** text controller once to highlight it as shown in the previous image and next, click on the **Properties** button to open the **RS_RUSBA_GamePort** properties window; you must have a window as this where you can see the four axes and the four buttons status.
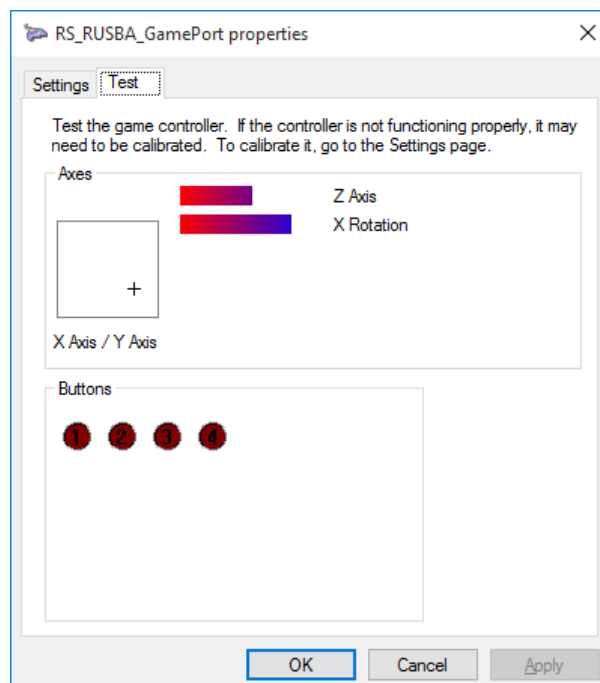
Continue clicking the **Settings** tab,
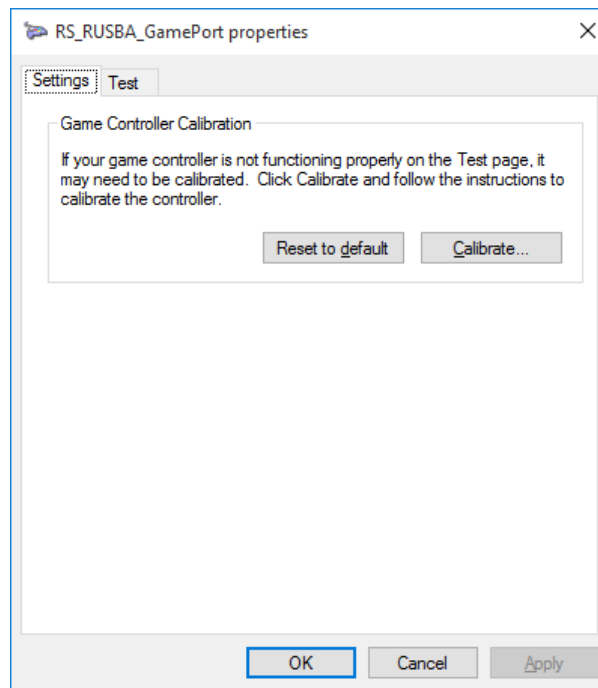
And click the **Calibrate…** button to start the calibration wizard.
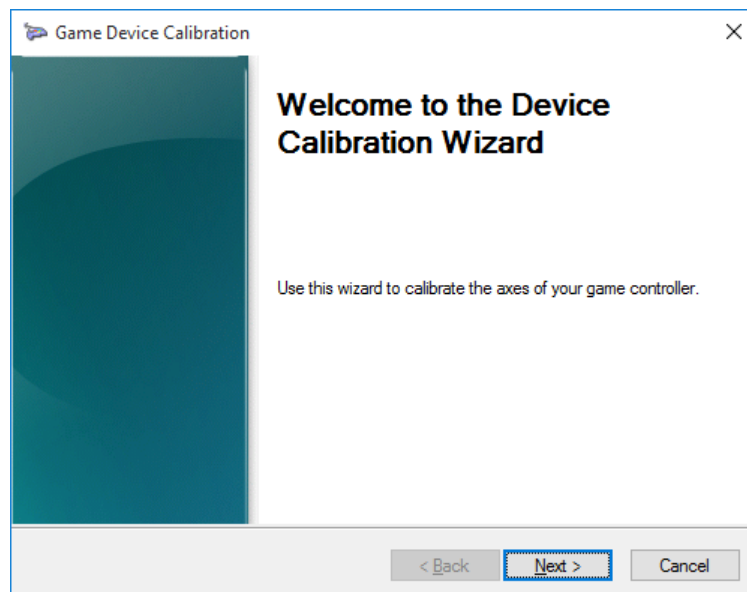
Click the **Next** button to start the **Device Calibration Wizard** and follow the instructions of successive windows

Game Device Calibration

Axis Calibration
Move the Z Axis all the way up and down, then press a button on the controller.

53%

Z Axis

Z Axis   2184

☑ Display raw data

< Back   Next >   Cancel

Game Device Calibration

Axis Calibration
Move the X Rotation all the way up and down, then press a button on the controller.

85%

X Rotation

X Rotation   3483

☑ Display raw data

< Back   Next >   Cancel

Game Device Calibration

Calibration Complete
To save your calibration, click Finish.

< Back   Finish   Cancel

Click the Finish button to return to the **Test** tab and verify the proper operation of axes and buttons.
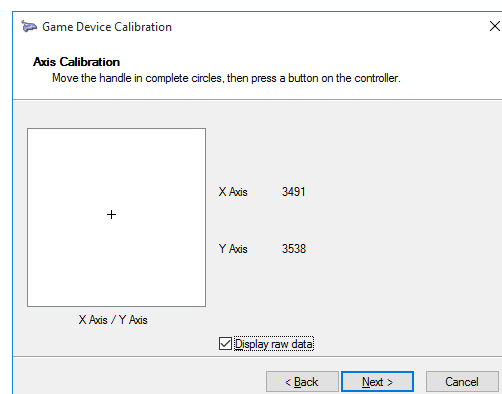
RS_RUSBA_GamePort properties

Settings | Test

Test the game controller. If the controller is not functioning properly, it may need to be calibrated. To calibrate it, go to the Settings page.

Axes
Z Axis
X Rotation

+

X Axis / Y Axis

Buttons
① ② ③ ④

OK   Cancel   Apply
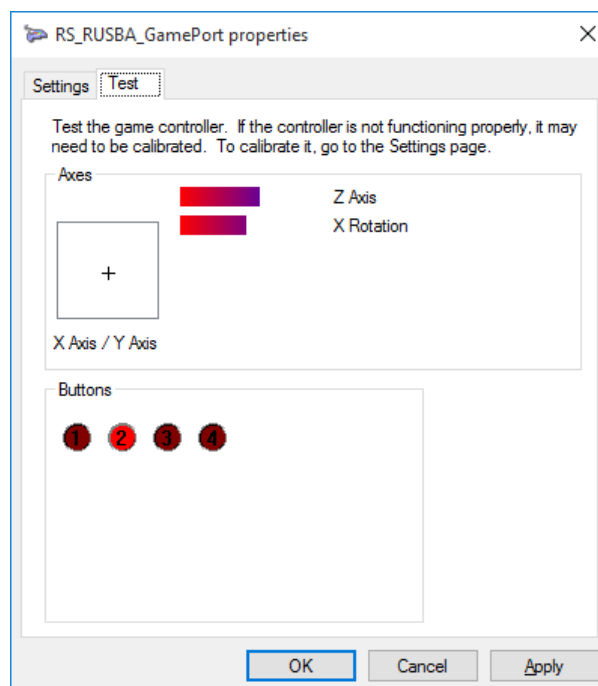
Finally, click the **OK** or **Apply** button to finish the operation.

PICTURE

DESCRIPTION

Changes from v1.03 (23/03/2016) to V1.03.1 Revision   **Page**

- *Added **Tools Installation** chapter and removed **DCC Installation** and **RS_HID_DEV_TOOL Installation** chapters. ……..……………………….…...*   *11*

- *Expanded information about new functionalities in the **Axes Raw Values** groupbox. ……………………………………….…………………………..*   *23*

- *Expanded information about new functionalities in the **Axes Calibration Overview**. ……………………………………………..………………….....*   *25*

- *Added **Manually configure Raw Axes** section ……………………..……...*   *30*

- *Added new **FAQ** case ……………………………..……………….……….…...*   *41*

EMYCSA RealSimulator	FAQ
	Date: 26/06/2018　　　　　**Version:** 1.03

PICTURE

DESCRIPTION

In this section, you will find answers to frequently asked questions. If your question is still unsolved, please feel free to contact us.

FAQ Links:

- I have just received my RealSimulator device and I want to install it, but I do not find the drivers in anyplace.

- I can't update the firmware of my device with DCC.

- I want to install a new version of DCC or RS_HID_DEV_TOOL, but I cannot uninstall the older one.

- My rudder is in the central position but their associated DX measure is not centred.

- When I move an analog axis, I have spikes in the measure.

- I have connected my Simped F-16 rudder pedals to RUSBA and the toe brakes work fine but there is no response from the rudder movement.

- My device has suddenly stopped working after connecting it or turning on the computer.

I have just received my RealSimulator device and I want to install it, but I do not find the drivers in anyplace.

Don't worry, no drivers are necessary, RUSBA uses standard HID drivers included in your installed operating system. No matter if x32 or x64, XP, W7 or other higher MS operating system. RUSBA will work in all situations.

RealSimulator provides two tools to configure and upgrade the device:

- Device Control Center (DCC): is the firmware update tool for the RealSimulator devices.
- RealSimulator HID Device Tool (RS_HID_DEV_TOOL): is a GUI application to configure and calibrate RealSimulator devices.

You can find more information about them in this User Guide in theirs correspondent paragraphs.

## I can't update the firmware of my device with DCC.

If you have followed the procedure given in the **Firmware Update** chapter and DCC cannot synchronize with your device to launch the update sequence, perhaps the source of problem is how you have connected the RS device to the computer. Please, connect the device with the supplied extension USB wire directly to an USB 2.0 port in the computer and try again.

I want to install a new version of DCC or RS_HID_DEV_TOOL, but I cannot uninstall the older one.

Microsoft has created a great and free tool to fix these problems. You can find it in the next link:

https://support.microsoft.com/en-us/mats/program_install_and_uninstall

Click the previous link (or next picture) to open the webpage and press the **RUN NOW** button to launch the wizard.
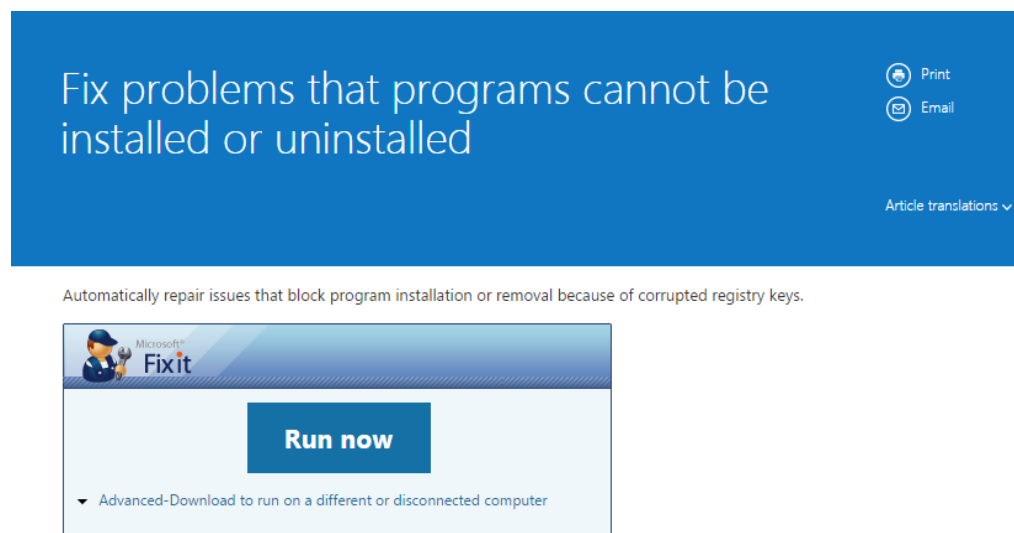
My rudder is in the central position but their associated DX measure is not centred.

As we talk in this user guide, to obtain the best performances of your device is very important to make the pairing process and axes calibration correctly. We describe step by step how to do it in the **RUSBA Set up** charter.

If you have followed this procedure and you continue having problems with the DX measures of rudder because it is not centred when the rudder is released and centred, possibly the source of this problem is the mechanic play of plastic parts and the potentiometer accuracy and repeatability. You can solve it modifying manually the dead zone of axis. You can see how to do it in the **Rudder calibration** section of **RUSBA Set up** charter.

When I move an analog axis, I have spikes in the measure.

Analog measures in all RealSimulator devices are digitally filtered, so if you have spikes in measures of one analog axis of your device, the problem is the potentiometer and you will need to change it, so you must look for a spare part.

I have connected my Simped F-16 rudder pedals to RUSBA and the toe brakes work fine but there is no response from the rudder movement.

Some customers with the Simped F-16+ rudder pedals have reported this issue. The problem is an incompatibility between the Simped rudder wiring and the RUSBA pin-out of D-sub connector, concretely in the pin 15 of connector.

To fix the problem, disconnect or cut the wire soldered to this pin 15 (white in the next picture) inside the D-sub housing.
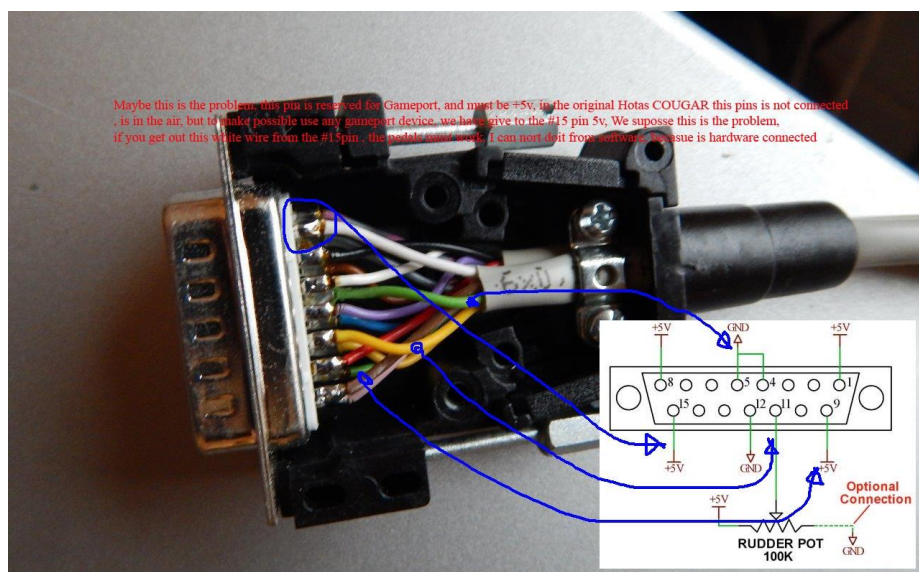
My device has suddenly stopped working after connecting it or turning on the computer.

As the title says, if sometime your device does not work after connect it to the computer or after a power on and you are running Windows 10, then please, read this paragraph.

Windows 10 has a bug with the HID composite devices, sometimes it changes the HID devices order and when programs access to the device information selected, it is not correct.

For these occasions we suggest follow this method, we have used it when the problem has occurred and usually the problem is solved.

Open the **Devices and Printers** window, click with the right mouse button the **RUSBA_RandB** icon and select the **Game controller settings** option in the pop-up menu to open the **Game Controllers** window.
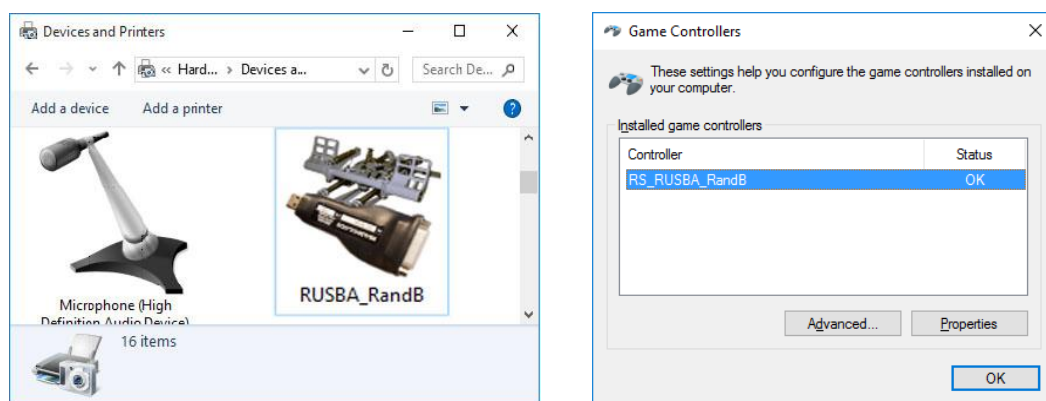

Click the **RS_RUSBA_RandB** text controller once to highlight it as shown in the previous image and next, click on the **Properties** button to open the **RS_RUSBA_RandB** properties window; you must have a window as this where you can see the four axes and the four buttons status.

You should have a window as next left image with the axes bar graph, but if the system is wrong, you will see an image as right one. If you look at the imagen you will check the error, the window name is not correct and the axes area does not exit.
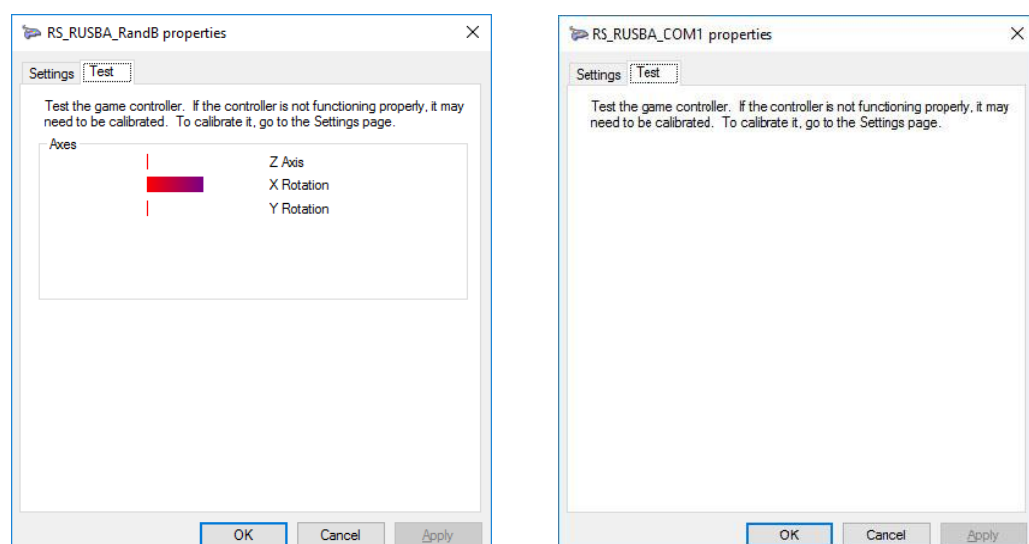
To solve the problem you must remove the device, for that, go to the the **Devices and Printers** window and click again with the right mouse button over the **RS_RUSBA_RandB** icon and select the **Remove Device** option. Finally, press the **Yes** button in the next confirmation window.
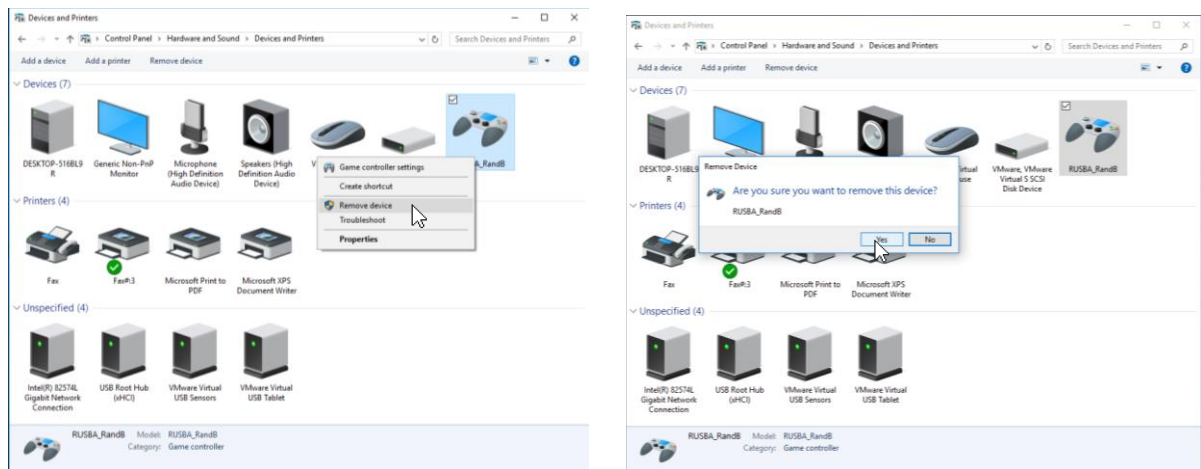
When the device is removed, unplug the device and after some seconds plug again the device and verify if the problem is solved. Usually the problem will be fixed, if not, repeat the procedure.