



FORCETUBEVR DOCUMENTATION

1 - Button

To put on a ForceTubeVR, you only have to press the on/off button. You should see two lights from your ForceTubeVR when it is on.

To put it off, make sure you unplugged it and press the on/off button for 3 seconds. If a light was blinking, it should freeze when you can release the button.

2 - Battery and LED

A little LED, always red, means the ForceTubeVR microcontroller is on.

The other LED (the batteries level LED) is red when you have low batteries, green when it is on middle of batteries charge and white when it has more than 80% of batteries charge. This LED blinks (0.71 Hz) when the ForceTubeVR isn't connected (it means it is free to pair or connect) and is static when it is connected. It blinks very quickly (0.33 Hz) if you have a battery cell with a perilously low charge level. At this state, the ForceTubeVR should stop any connection.

You can charge the ForceTubeVR by plugged in by USB-C. It will automatically stop the charge when the ForceTubeVR is fully charged. You can't put it off when it is plugged in. The batteries level LED turns orange when the ForceTubeVR is plugged in and is charging. If it turns white and still plugged in, it means the batteries charge is over.

3 - Bluetooth pairing

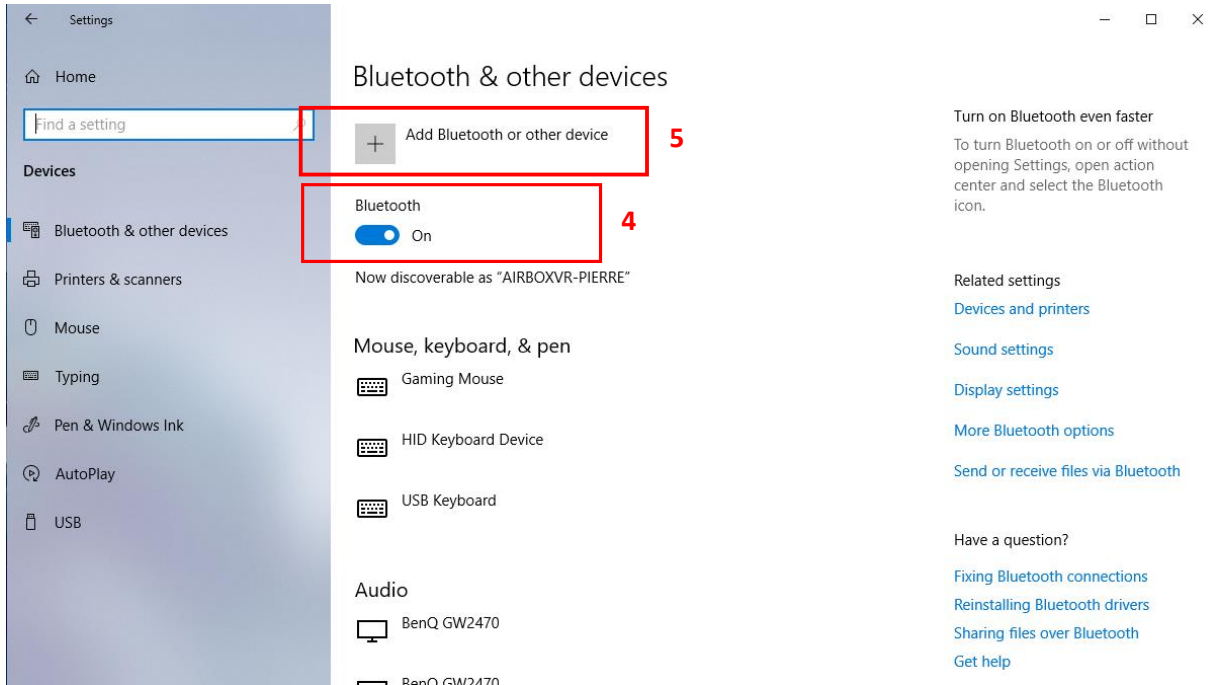
To use the ForceTubeVR, you first have to put it on and to pair it by Bluetooth in your OS (Android for an Oculus Quest and Windows for other headsets).

3.1 - On Windows

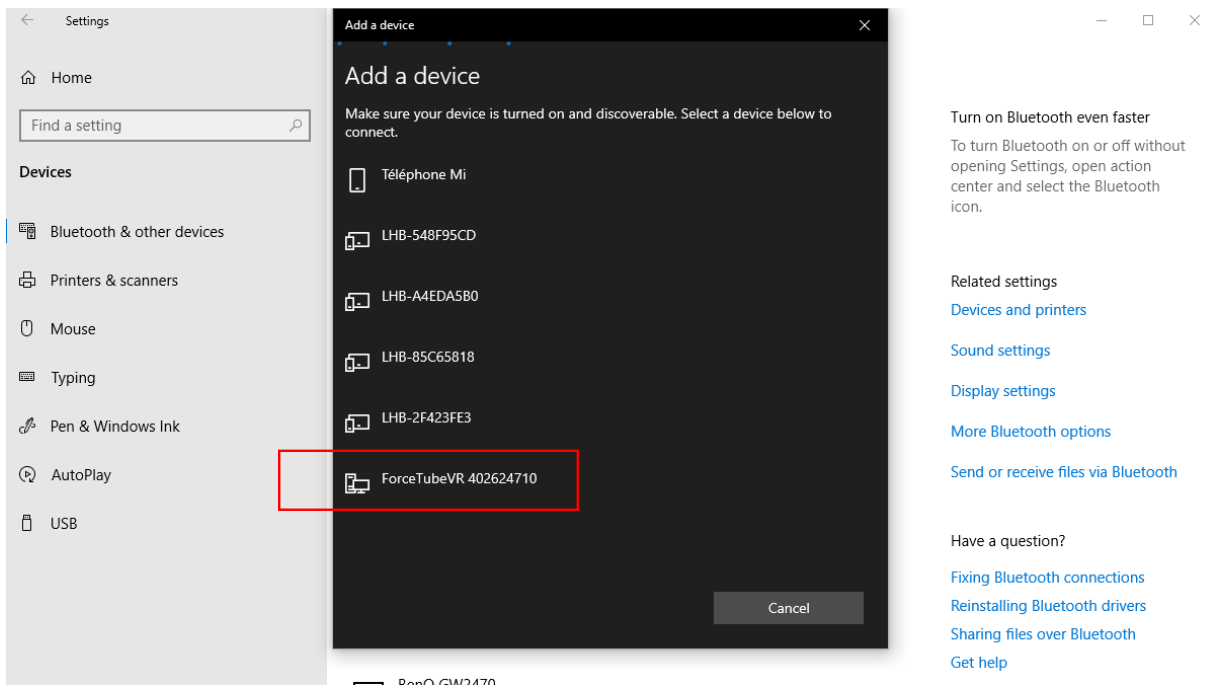
If your computer doesn't have Bluetooth, you can plug our Bluetooth dongle to allow Bluetooth on your computer.

To pair it on Windows 10, put on your ForceTubeVR and make sure it isn't connected (the batteries level LED shouldn't blink).

1. Open the Windows settings,
2. click "Devices"
3. Click "Bluetooth and other devices".
4. Turn on the Bluetooth if it isn't done
5. Click "Add Bluetooth or other device" > "Bluetooth".



6. Your ForceTubeVR should appear with numbers aside. It's your ForceTubeVR's ID.



7. Click on your ForceTubeVR.
8. Wait a few seconds while your ForceTubeVR is paired to Windows.

Troubleshooting:

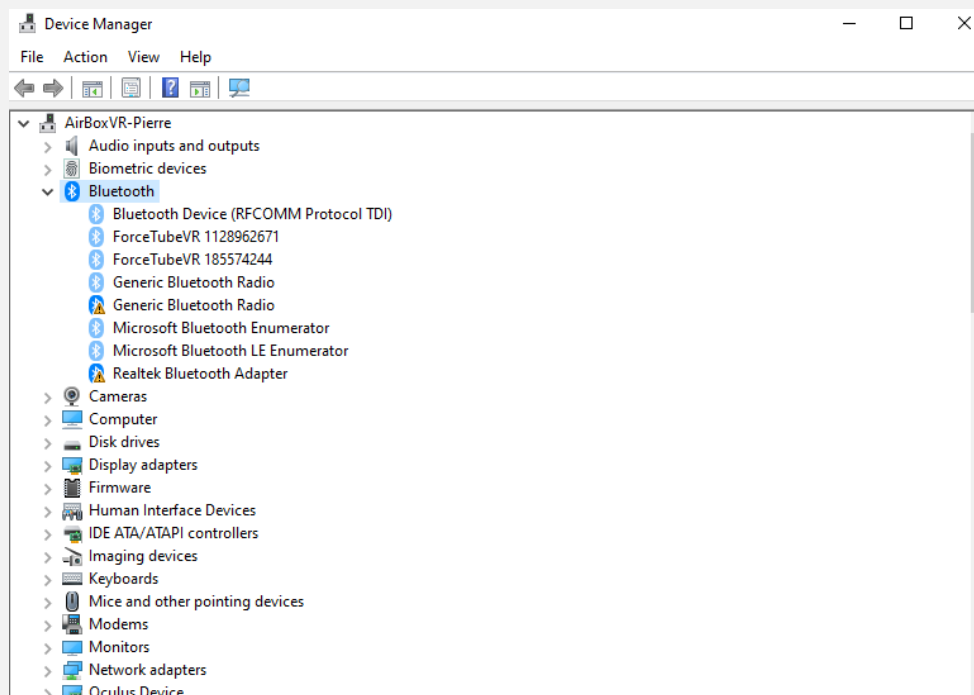
If your ForceTubeVR is paired on Windows but can't connect in games or Companion Application, it may be due to a pairing to the bad Bluetooth transmitter. It is a Windows problem.

Windows usually works with one Bluetooth transmitter, but all devices ever paired to one transmitter can't be paired to another from the same computer. This problem can occur if you have different Bluetooth transmitters installed or even if you moved your Bluetooth dongle to a new USB port and Windows had difficulties to recognize it, assuming it is a new Bluetooth dongle even if it isn't.

So, you should try to remove the ForceTubeVR to pair it again. If you have difficulties to remove it:

1. go to your Device Manager,
2. click "View",
3. "Show Hidden Devices",
4. open the "Bluetooth" tab.
5. In this "Bluetooth" tab, uninstall all unconnected devices (they have clearer icons) by right-clicking them and selecting "Uninstall device" and restart your computer.
6. Once done, try to pair again your ForceTubeVR on Windows.

If you accidentally remove a device you shouldn't, try to unplug it, restart your computer and plug it again.



If you have the bug just described, uninstall all clearer devices from the Bluetooth tab.

3.2 - On Oculus Quest

To pair a ForceTubeVR on Oculus Quest, put the ForceTubeVR and the Oculus Quest on and, in the Oculus Quest home, click "Settings" > "See all" > "Experimental features".

Next to "Bluetooth pairing", click "Pair". Scroll the list of devices and when you find your ForceTubeVR, click it. After some seconds, click "Pair".

4 - Play

4.1 - Native integration in games

Some games integrate the ForceTubeVR to be natively compatible.

Examples: 'Hot Dogs, Horseshoes & Hand Grenades' (H3 VR), War Dust, Onward, Contractors, Gun Club VR.

These natively compatible games only need you to put a paired ForceTubeVR when you launch them.

You can adjust the power and duration of ForceTubeVR feedbacks if you use the **Companion Application**.

For more details, go to 5.3 part.

4.2 - Backward compatibility with SteamVR

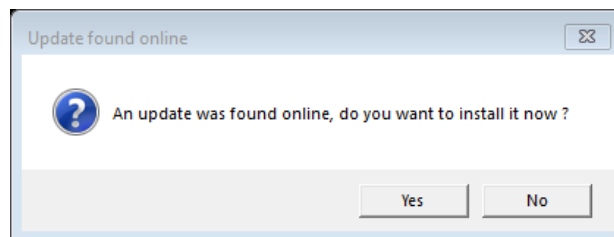
Other games work with ForceTubeVR if you launch them with **SteamVR** and you use the **Companion Application**.

For more details, go to 5.2 part.

5 - Companion Application for Windows

You can download it here:

<https://github.com/ProTubeVR/ForceTubeVR-User-Content/raw/master/ForceTubeVR%20Companion/ForceTubeVR%20Companion%20Application.rar>



It will automatically ask you the permission to auto-update at launch when a new version is available.

In the Companion Application, you have 4 tabs called "Channels binding", "SteamVR Backward compatibility", "Native Game Personalization" and "Demo".



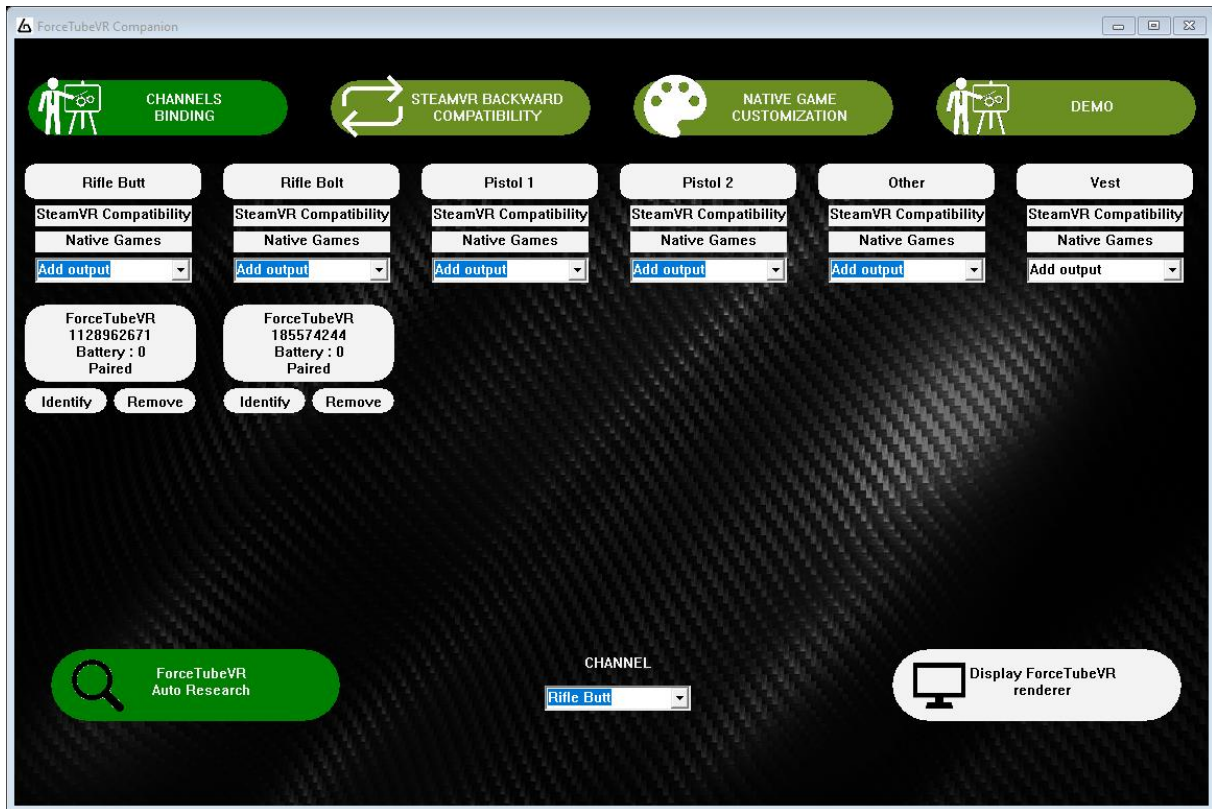
In all these tabs, you have some options, but the bottom of the window is common to all tabs.

5.1 - Channel binding

In this tab, you can see the six channels, in six columns, used to send targeted commands to your ForceTuberVR.

By default, most of games send requests to both "Rifle" channels (RifleButt and RifleBolt), but some games are designed to send requests to specific channels.

It enables players to apply different setups (one by channel) at the same time. It is useful if you have multiple ForceTubeVRs.



In all these channels, you can click "Add output" to add a ForceTubeVR. A ForceTubeVR can be placed in different channels simultaneously, it simply receives the signals from all these channels.

You can:

- Remove a ForceTubeVR from a channel by clicking the "Remove" button below,
- Make it rumble by clicking the "Identify" button also below,
- Make rumble an entire channel by clicking the channel name.

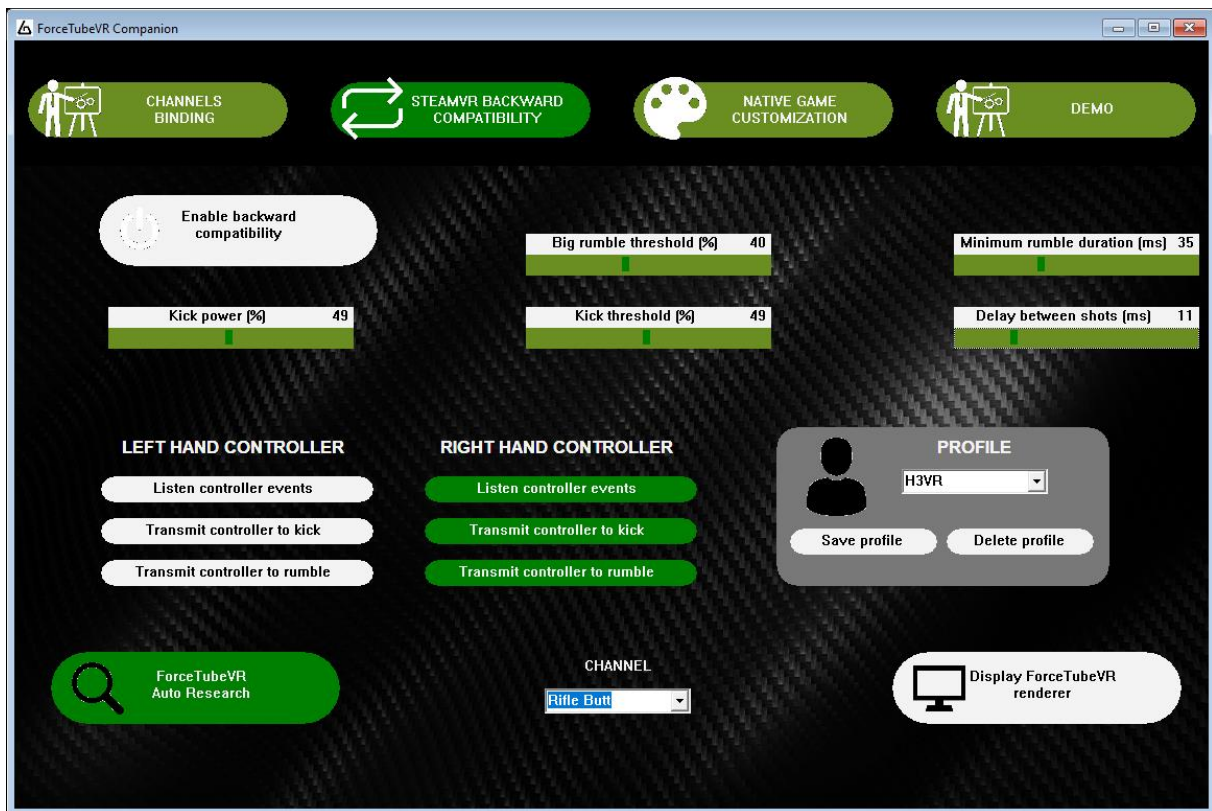
To custom the signals received by each channel, you can click "SteamVR Compatibility" and "Natives Games" in the channel column.

It respectively switches to the "SteamVR Backward Compatibility" and "Native Game Personalization" tabs and selects the channel to edit (you can see the selected one in the combo box "Channel" on the bottom) to match with the column where you clicked.

5.2 - SteamVR Backward Compatibility

You can use it to 'spy' the rumble requests sent by SteamVR to your VR controllers and transmit them to your ForceTubeVR under some conditions. You must keep the Companion Application open in background.

Remember: when you change something here, you only do it for the selected channel. You can see it in the "Channel" combo box on the bottom. To edit another channel, select it in this combo box before.



The "Enable backward compatibility" button let you enable or disable the SteamVR spy. Remember to enable it before use because it is disabled by default.

All the following sliders are useful to properly isolate the controller rumble signals corresponding to shoots, and to render them into realistic ForceTubeVR feedbacks:

- The "**Kick power**" slider let you choose the strength of the ForceTubeVR kicks generated by the backward compatibility.
- The "**Kick threshold**" slider let you choose the minimum power required by the Companion Application to make kick the ForceTubeVR. All weaker signals will only trigger the rumble motors of the ForceTubeVR.
- The "**Big rumble threshold**" slider let you choose the minimum power required to activate the bigger rumble motor of the ForceTubeVR. All weaker signals will only trigger the smaller rumble motor of the ForceTubeVR.

Troubleshooting:

- Too high shot frequencies can solicitate too much the kick motor and makes you feel misfires.
- It isn't the same problem with the rumble motors, because they do not need to get back to be reactivated, in this case you just have to reduce the kick power. (because directly linked to the motor activation duration)

- The "**Minimum rumble duration**" let you choose the minimum duration of a signal to transmit it. All shorter signals will be ignored.
- The "**Delay between shots**" slider let you choose a minimum delay between two shots. After a request is transmitted, all request after this one won't be transmitted during the duration you chose.

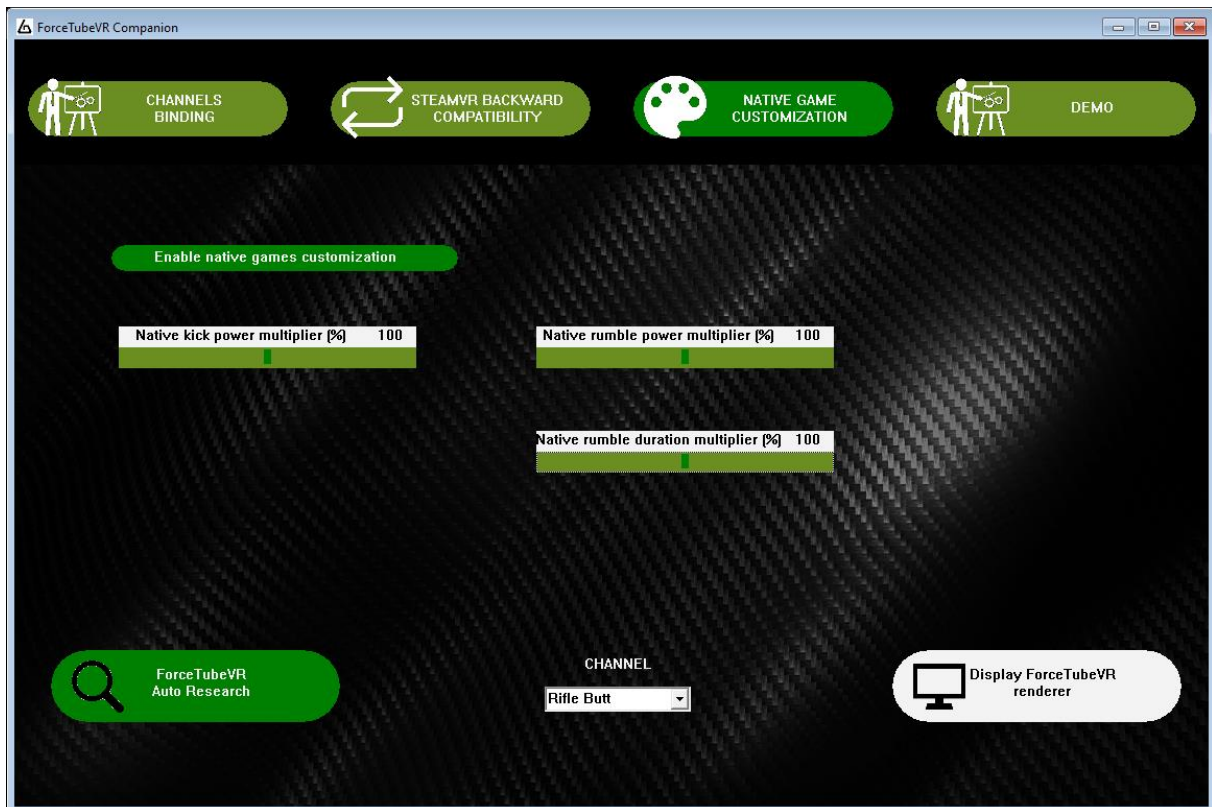
Below these sliders, there are two columns: "Left hand controller" and "Right hand controller". For each of these controllers, you have the following options:

- The "**Listen controller events**" button let you choose to spy or not the events from the VR controller left or right.
- The "**Transmit controller to kick**" button let you choose to transmit or not the events from the VR controller left or right to the kick motor (solenoid) of the ForceTubeVR.
- The "**Transmit controller to rumble**" button let you choose to transmit or not the events from the VR controller left or right to the rumble motors of the ForceTubeVR.

5.3 - Native Game Customization

You can use the Companion Application to custom the ForceTubeVR requests sent by natively compatible games. It needs you keep the Companion Application open in background.

Remember when you change something here, you only do it for the selected channel. You can see it in the "Channel" combo box on the bottom. To edit another channel, select it in this combo box before.



The "Enable native games customization" button let you enable or disable this function.

The "**Native kick power multiplier**" let you choose to increase or reduce the kick powers of ForceTubeVR requests from the natively compatible games.

The "**Native rumble power multiplier**" let you choose to increase or reduce the rumble powers of ForceTubeVR requests from the natively compatible games.

The "**Native rumble duration multiplier**" let you choose to increase or reduce the rumble durations of ForceTubeVR requests from the natively compatible games.

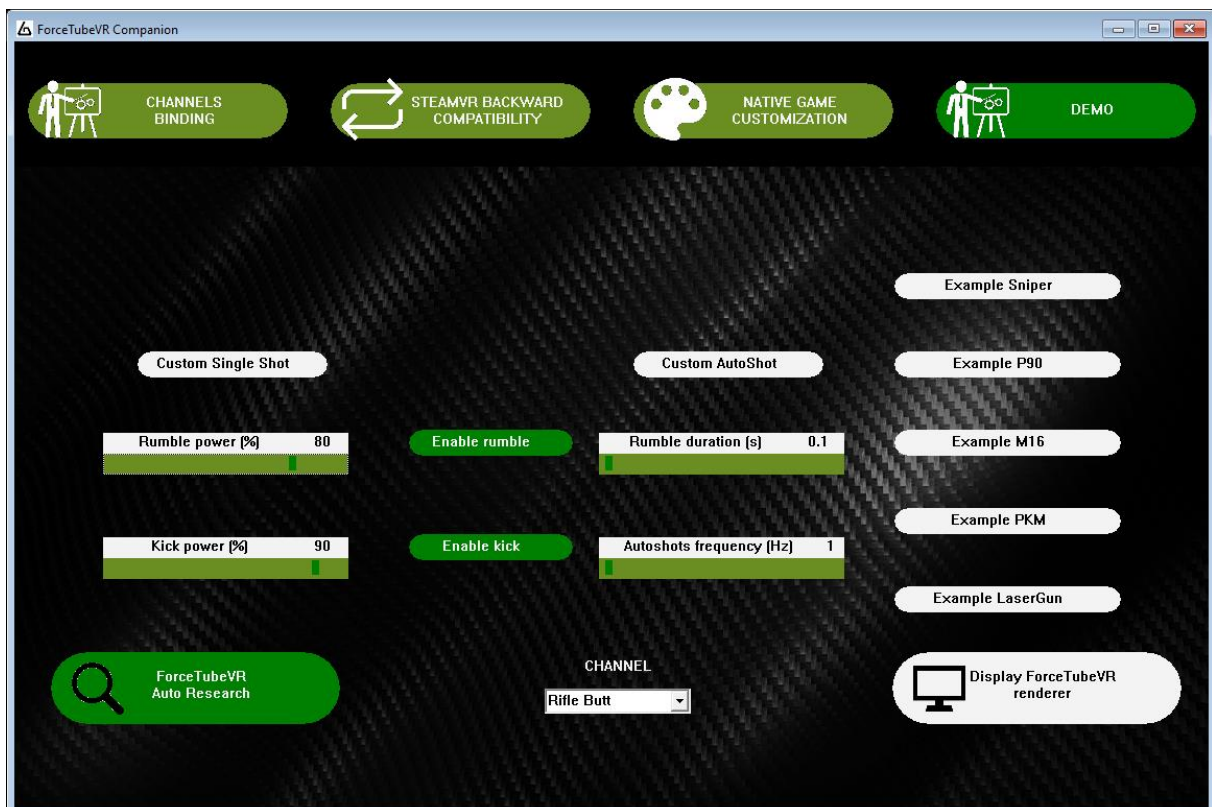
Their values are in percent:

- 200 means +100% (the same as x2),
- 100 means +0% (the same as x1),
- 0 means -100% (the same as x0).

5.4 - Demo

Here you can do all the tests you want, for example to test the behavior of a channel or to simply show the ForceTubeVR possibilities.

Remember the requests you send from here are only sent to the selected channel. You can see it in the "Channel" combo box on the bottom. To target another channel, select it in this combo box before.



The left and central part is like a toolkit to let you send fully custom requests to ForceTubeVR. The right column is a set of pre-calibrated typical requests you should often find in natively compatible games.

- The "Example sniper" button sends a unique powerful shot.
- The "Example p90" button sends high frequency shots while enabled.
- The "Example m16" button sends a burst of three little shots.
- The "Example PKM" button sends powerful shots with a low frequency while enabled.
- The "Example lasergun" button triggers an increasing rumble when it is clicked the first time (simulating a power loading lasergun) and sends a powerful shot (with a rumble power relative to the loading duration) when it is clicked the second time.

The "Custom single shot" button sends a request containing a kick if the "Enable kick" button is enabled and a rumble if the "Enable rumble" button is enabled.

The kick will have a power equal to the "Kick power" slider value. The rumble will have a power equal to the "Rumble power" slider value and a duration equal to the "Rumble duration" slider value.

If the "Custom autoshot" button is enabled, it regularly sends a "Custom single shot" button request. The frequency (the number of shots by second) is equal to the "Autoshot frequency" slider value.

6 - Other features

These features are visible from all tabs.

6.1 - ForceTubeVR Auto Research

When the "**ForceTubeVR auto research**" button is enabled, the Companion Application will automatically look for all unconnected but paired ForceTubeVR in background. It is useful to quickly recover the connection after a ForceTubeVR disconnection.

But if you have an off paired ForceTubeVR, it can cause some audio noise in Bluetooth headphone. To prevent this, unpair the off paired ForceTubeVR or disable this button.

When you launch the Companion Application, the natively compatible games stop their ForceTubeVR researches and let the Companion Application do it for them.

So, to prevent the audio noise in Bluetooth headphones in games if you have an off paired ForceTubeVR, you have two solutions:

- Launch the Companion Application, wait for your ForceTubeVR connection and uncheck the "ForceTubeVR Auto research" button.
- You can also simply unpair your off paired ForceTubeVR.

6.2 - Channel Combo box

It shows the channel which is customized by the "SteamVR Backward Compatibility" and "Native Game Personalization" tabs and targeted by requests from the "Demo" tab.

You can change it by clicking and selecting the new one you want to edit or target.

When you select a new channel, you should see the "SteamVR Backward Compatibility" and "Native Game Personalization" values change to the ones of the new selected channel.

6.3 - Display ForceTubeVR Renderer

The "Display ForceTubeVR renderer" button open a transparent window containing a ForceTubeVR picture.

The back of the ForceTubeVR picture kicks when the Companion Application or a natively compatible game sends a kick request to your ForceTubeVR.

The picture entirely vibrates when the Companion Application or a natively compatible game sends a rumble request to your ForceTubeVR.

It is useful to easily illustrate the ForceTubeVR behavior, for example during a live streaming on Twitch.