paWorld of Joysticks Keyboard & Mouse Emulator

Standard Edition 1.59 - User Guide

The Thrustmaster Dual Trigger 3-in-1 gamepad was taken as example in this manual. All the controls of gamepad and application are numbered and this numbering will be used in the following description.

Top View

Front View

User Interface of WoJ Emulator application

C1 0.Dual Trigger 3-in-1 C3 C4 C5

Polling rate (ms)
C2 Buttons 10
C6 Axes 10

Assigned Controls
C7 C8 C9 C10 C35 C36 C37 ☑ Toggle Switches

Mode
○ Playing
● Setting C11

Keyboard / Mouse	Joystick	Action in the game

C17

Sensitivity 1
C12 Axis X 30
C13 Axis Y 30

Sensitivity 2
C14 Axis X 1
C15 Axis Y 1
☐ Sound C16

WORLD of JOYSTICKS

Axes Deadzone C38
Axis X
From: C18 25000
To: C19 40000

1. Select Interface DirectInput C25

2. Select Device 0. Dual Trigger 3-in-1 C20

Buttons Mapping
3. Output C21 C22
4. Input C23 C24
5. C26 C31 C32

Joystick Axes
X: 32767
Y: 32767
Z: 32767
Rx: 65535
Ry: 65535
Rz: 32767
C27

Axes Mapping
3. Output C28
4. Input C29
5. C30 C33 C34

1. **Connecting to Joystick .**

a) Connect one or more joysticks to PC before starting WoJ Emulator.

b) It is recommended to install the drivers of your joysticks from the CDs of web-sites of manufacturers. For many joysticks Windows installs its own standard driver by default, but you have to take in account that device name in the standard driver and driver from manufacturer can be different, therefore WoJ Emulator probably won't be able to apply configuration created with a different driver.

However you always will be able to create separate configurations for different drivers.

c) Start WoJ Emulator. Choose an interface by [**C25**] selector. DirectInput – it is universal interface for any gaming controllers but it does not support vibration for Xbox 360 devices. XInput – it is special interface from Microsoft for Xbox 360 devices, in this mode they support vibration and their triggers control independent axes. If you are going to use a Xbox 360 controller – choose XInput, for all other cases choose DirectInput. Different interfaces cannot be mixed in the common configuration. For playing with

different devices simultaneously always choose DirectInput. XInput mode supports up to 4 Xbox 360 controllers simultaneously. After choosing interface application will find all the relevant devices and will display them in the [**C3**] label and [**C20**] selector. But if application was started before connecting the joysticks – press the [**C1**] button to refresh connection.

2. **Investigate the functionality of your Joysticks.**
   First of all you have to select a joystick by [**C20**] selector. It is possible to mix the assignments for multiple joysticks in the single configuration, to play with multiple joysticks simultaneously. In this tutorial we'll see how to assign controls for the single device (Thrustmaster Dual Trigger 3-in-1) but you can do the same for others after switching [**C20**] selector.
   Push the sticks of you joystick [**A1, A3**] and all the buttons, some of them can behave as axes. Take a look at the panel [**C27**], it displays all the available axes. You have to identify all the axes in order to use them for assignments.
   In this device apart from 2 sticks (X,Y and Z,Rz) you have a triggers [**B1, B2**] which control axes Rx and Ry.
   Note: Special system buttons for switching modes for each model of joystick also can influence on the assignment of axes and buttons, therefore please choose the most suitable mode first.
   In this gamepad system buttons are [**A6, A7, A12**]. Also this device has the regular buttons [**A4, A5, A8, A9, A10, A11, B3, B4, B5, B6**] and Point of View (POV) switch [**A2**].

   Only system "Guide" button of Xbox controllers in the XInput mode can be used for assignments! System buttons of DirectInput controllers are not supported by emulator.

3. **Assignment of Keyboard Button to Joystick Button.**
   a) Click by mouse in the field [**C21**] to set focus.
   b) Press a key on the keyboard, its name will be displayed in the field [**C21**].
   c) Click by mouse in the field [**C23**] to set focus.
   d) Press a joystick button, its name will be displayed in the field [**C23**].
   e) Press the [**C26**] button in order to assign, assigned pair will be displayed in the table [**C17**].
   f) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

4. **Assignment of Mouse Button to Joystick Button.**

a) Click by appropriate mouse button in the field [**C21**], the name of pressed mouse button will be displayed in the field [**C21**].

b) Click by mouse in the field [**C23**] to set focus.

c) Press a joystick button, its name will be displayed in the field [**C23**].

d) Press the button [**C26**] in order to assign, assigned pair will be displayed in the table [**C17**].

e) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

5. **Assignment of Mouse Wheel scrolling direction to Joystick Button.**

a) Click by mouse in the field [**C21**] to set focus.

b) Scroll by mouse wheel Up or Down, its name will be displayed in the field [**C21**].

c) Click by mouse in the field [**C23**] to set focus.

d) Press a joystick button, its name will be displayed in the field [**C23**].

e) Press the button [**C26**] in order to assign, assigned pair will be displayed in the table [**C17**].

f) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

6. **Assignment of Virtual Button for switching axes sensitivity modes to Joystick Button.**

a) Select the "Sensitivity 1/2" item from the [**C22**] selector , its name will be displayed in the field [**C21**].

b) Click by mouse in the field [**C23**] to set focus.

c) Press a joystick button, its name will be displayed in the field [**C23**].

d) Press the button [**C26**] in order to assign, assigned pair will be displayed in the list [**C17**].

e) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

7. **Assignment of Mouse Moving Direction to Joystick Button.**

a) Select a mouse moving direction (Up, Down, Left, Right) from the [**C22**] selector , its name will be displayed in the field [**C21**].

b) Click by mouse in the field [**C23**] to set focus.

c) Press a joystick button, its name will be displayed in the field [**C23**].

d) Press the button [**C26**] in order to assign, assigned pair will be displayed in the list [**C17**].

e) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

8. **Assignment of Keyboard or Mouse Buttons to POV Joystick Switch direction.**

All the elements were assigned to joystick buttons in the steps 3, 4, 5, 6 and 7 you can assign to POV joystick switch [**A2**].

For this press an arrow or intermediate position of POV joystick switch [**A2**] instead of joystick button.

Assign 8 directions of POV switch (Up, Down, Left, Right, UpLeft, UpRight, DownRight, DownLeft). You can assign few actions for intermediate directions, e.g: Up and Left for UpLeft. (to move vehicle UpLeft by pressing the intermediate switch position)

9. **Assignment of Keyboard or Mouse Buttons to direction of Joystick Axis (+ \ -).**

All the elements were assigned to joystick buttons in the steps 3, 4, 5, 6 and 7 you can assign to direction of joystick axis (increase or decrease). For this choose a direction of axis from the list [**C24**] instead of joystick button. As a result pressing the stick or trigger of your joystick will behave as button instead of behave as axis.

10. **Assignment of Vibration to any Joystick control in the DirectInput mode.**

Choose the "Vibration" item from the list [**C22**]. If you don't see this option in the list – your device does not support vibration or you are using Xbox 360 gamepad in the DirectInput mode.

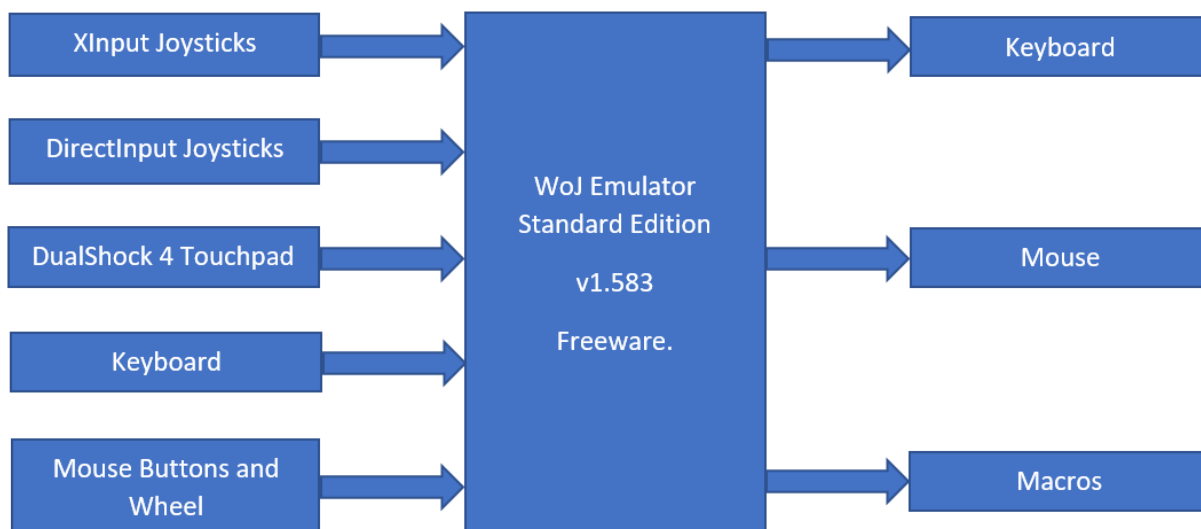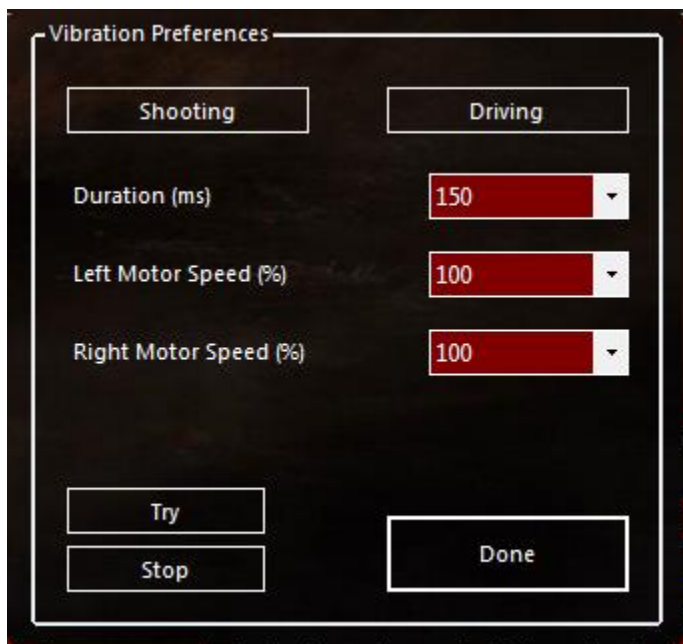It opens the modal window of Vibration Preferences:
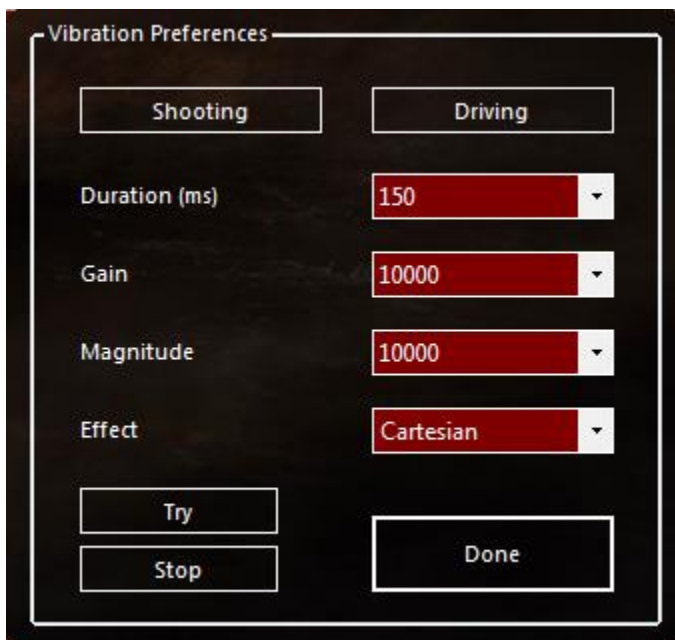
Here you can choose two predefined settings of vibration: for shooting and for driving of cars, tanks or other vehicles. Also you can adjust vibration manually using four selectors. After adjustment

press the "Try" button to verify your settings. At the end press the "Done" button, it closes the modal window and vibration code-name will be displayed in the field [**C21**]. Now you can choose any control of your joystick using [**C23**] or [**C24**] and assign vibration by [**C26**] button and add the comment in the last column of [**C17**] table.

11. **Assignment of Vibration to any Joystick control in the XInput mode.**

   Choose the "Vibration" item from the list [**C22**].

   It opens the modal window of Vibration Preferences:

Here you can choose two predefined settings of vibration: for shooting and for driving of cars, tanks or other vehicles. Also you can adjust vibration manually using three selectors. After adjustment press the "Try" button to verify your settings. At the end press the "Done" button, it closes the modal window and vibration code-name will be displayed in the field [**C21**]. Now you can choose any control of your joystick using [**C23**] or [**C24**] and assign vibration by [**C26**] button and add the comment in the last column of [**C17**] table.

12. **Assignment of Mouse Axis to Joystick Axis.**

   a) Choose an axis of mouse from the list [**C28**]. Selecting Inverted axis can be useful in the flight simulators.

   b) Choose an axis of joystick from the list [**C29**].

   c) Press the button [**C30**] in order to assign, assigned pair will be displayed in the list [**C17**].

   d) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

13. Assignment of Keyboard or Mouse button to another Keyboard or Mouse button.

All the things from the steps 3, 4, 5, 6, 7, 8 и 9 can be assigned to any keyboard or mouse button or to mouse scroll wheel.

XInput Joysticks	→		→	Keyboard
DirectInput Joysticks	→	WoJ Emulator Standard Edition v1.583 Freeware.		
DualShock 4 Touchpad	→		→	Mouse
Keyboard	→			
Mouse Buttons and Wheel	→		→	Macros

a) Click by mouse in the field [**C21**] to set focus.

b) Press a keyboard key or mouse button or scroll mouse wheel, or select any item from the list [**C22**], it will be displayed in the field [**C21**].

c) Click by mouse in the field [**C23**] to set focus.

d) Press a keyboard key or mouse button or scroll mouse wheel, or select any item from the list [**C24**], it will be displayed in the field [**C23**].

e) Press the button [**C26**] to assign, assigned pair will be displayed in the table [**C17**].

f) Optionally you can click on the last column of [**C17**] table to add inline the title of this action in the game.

14. Assignment of Radio functions to Joystick controls.

All the Joystick, Keyboard and Mouse controls available in the [**C23**] and [**C24**] controls can be assigned to the following functions of radio-player form the [**C22**] list:

Radio Play (toggle Play\Stop), Radio Pause (toggle Pause\Resume), Radio Stop, Radio Next, Radio Previous, Radio Mute, Radio Volume Up и Radio Volume Down.

15. Assignment CMD Commands to Joystick controls.

a)   Choose the "Cmd" item from the list [**C22**]. It opens "Command Prompt" window:
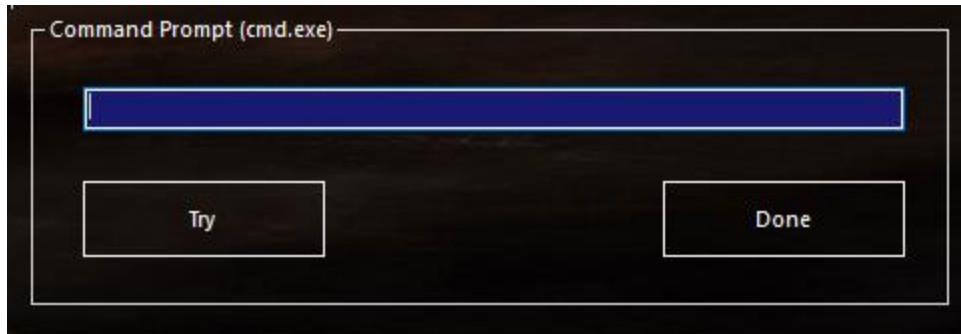
b) Type any Windows Command (e.g: "calc" to open Calculator)

c) If can press "Try" button to check your command line in the external console window.

d) Press "Done" to select this command.

e) Now you can choose any control of your joystick, keyboard or mouse using [**C23**] or [**C24**] and assign selected CMD command by [**C26**] button and add the comment in the last column of [**C17**] table.

16. **Editing of buttons assinments.**

a) Select by mouse an assignment for editing from the list [**C17**]. When you select the assignment for a button the values are displayed in the fields [**C21**], [**C23**] and button [**C32**] becomes visible.

b) Now you can change the values in the fields [**C21**], [**C23**] as described previously (reassign them according to your needs)

c) Press the button [**C32**] in order to apply your changes, modified pair will be displayed in the list [**C17**].

d) Optionally you can click on the last column of [**C17**] table in order to change inline the title of this action in the game.

e) Button [**C31**] clears the fields [**C21**], [**C23**] and cancels selection in the list [**C17**].

17. **Editing of axes assinments.**

a) Select by mouse an assignment for editing from the list [**C17**]. When you select the assignment for a button the values are displayed in the selectors [**C28**], [**C29**] and button [**C34**] becomes visible.

b) Now you can change the values in the selectors [**C28**], [**C29**] as described previously (reassign them according to your needs)

c) Press the button [**C34**] in order to apply your changes, modified pair will be displayed in the list [**C17**].

d) Optionally you can click on the last column of [**C17**] table in order to change inline the title of this action in the game.

e) Button [**C33**] clears the selectors [**C28**], [**C29**] and cancels selection in the list [**C17**].

18. **Changing the Polling Rate of joystick for keyboard and mouse simulation.**

You can change the polling rate of your joystick for keyboard (buttons) by selector [**C2**] and for mouse (axes) by selector [**C6**]. There are two separate threads for processing keyboard and mouse events. Set these values from 1 to 100 milliseconds experimentally.

19. **Changing sensitivity of Mouse Axes by specially assigned Joystick Button.**

We've already assigned the virtual button in the step 6.

Now we can set the sensitivity of mouse X and Y axes for each of two modes using selectors [**C12, C13**] and [**C14, C15**] accordingly. It is recommend to set lower values in the second mode to use it for precise aiming.

To remember that second mode was activated during playing you can enable the specific sound by checkbox [**C16**]. You can replace the sound file according to your taste, "sound.wav" is located in the installation folder.

20. **Axes Threshold of Joystick.**

These options are needed if axes of your joystick do not return to central position (usually 32767) after releasing.
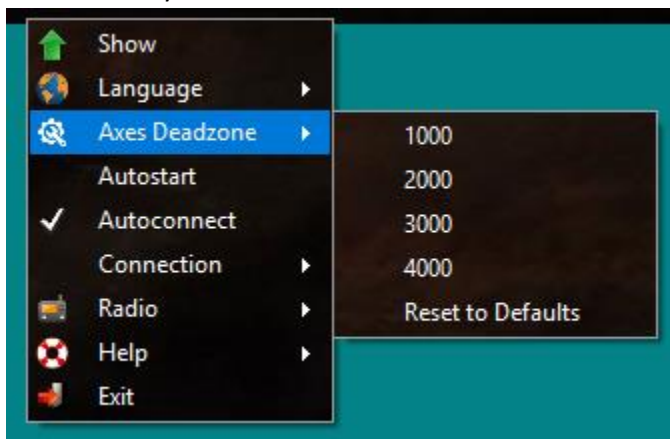
Select an axis by selector [**C38**].

Check for the maximal value of deadzone for selected axis in the [**C27**] panel and according to it set the appropriate values for selectors [**C18, C19**].

By default deadzone for each axis is from 25000 to 40000 (15000).

Also you have predefined settings: 1000, 2000, 3000, 4000 in the menu.

You can always reset it to default from the menu.

21. **Two main modes of WoJ Emulator application.**

You can switch between Working and Assignments modes using switch [**C11**].
In the working mode the panel of assignments is hidden. Use **emergency key** assigned in the settings file ("EmergencyKey" section) to switch the modes when emulator is not in focus. It is especially useful if you've loaded configuration for another joystick and mouse pointer escapes from the screen. "**PrintScreen**" keyboard key is the default. You should hold this button during the time assigned in the "EmergencyKeyPollingRate" section. Set "EmergencyKeyPollingRate" to zero in order to disable this feature. Default value is 2000 (2 seconds)

22. **Working with configuration files.**

Application uses the configuration files in the XML (UTF8) format.
a) Press the [**C7**] button to create a new configuration.
b) Press the [**C8**] button to load an existing configuration.
c) Press the [**C9**] button to save the configuration.
Attention please!
Application saves in the configuration file not only your assignments but also the values of all the adjustment selectors, so if you changed something and didn't save the configuration – application will suggest you to save it.
Also in the configuration file saved the interface type and joystick(s) name(s) reported by drivers. Application automatically selects suitable interface after loading the configuration.
d) Application allows you to delete from the list one or more assignments.
For this you have to mark them by mouse in the list [**C17**] and press the [**C10**] button.

23. **Additional user interface functions.**

a) Button [**C2**] opens the application web-site.
b) Button [**C4**] minimizes the application window.
c) Button [**C5**] hides the application to system tray.
d) Contextual menu can be opened from the tray and also by right mouse click in any empty space of main application window.

24. **Functions of contextual menu.**
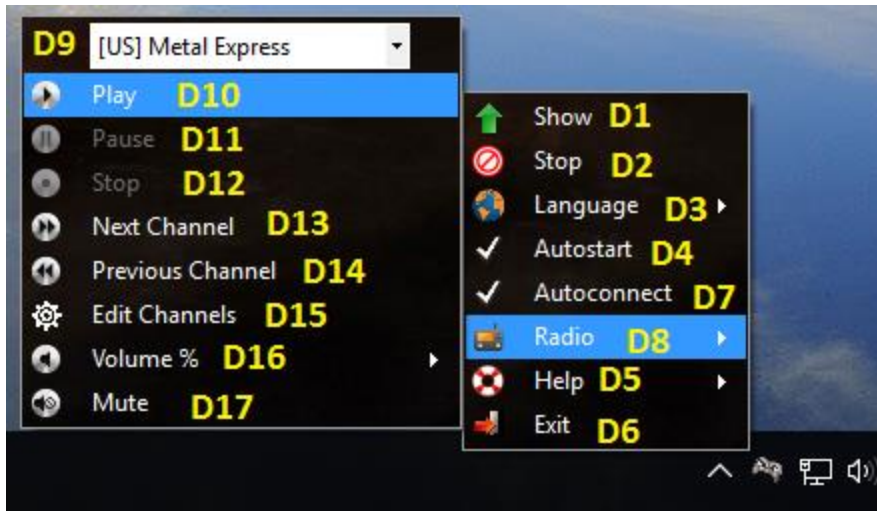
a) Menu item [**D1**] restores application window from tray. You can do the same by DoubleClick the application icon in the tray.

b) Menu item [**D2**] disables the joystick polling, next click on this item enables it. This function can be useful if you want to disable joystick temporary.

c) Menu item [**D3**] allows to choose the GUI language .

d) Menu item [**D4**] enables and disables the automatic application starting on Windows startup.

e) Menu item [**D5**] opens the application website.

f) Menu item [**D6**] closes the application completely.

g) Menu item [**D7**] automatically connects first gaming controller to emulator when you connect it to USB port.

h) Menu item [**D8**] open the submenu of Radio-Player.

i) Menu item [**D9**] opens the dropdown list for selecting a radio-channel. First item in this list completely disables radio-player.

k) Menu item [**D10**] starts or resumes radio playing.

l) Menu item [**D11**] pauses radio playing.

m) Menu item [**D12**] stops radio playing.

n) Menu item [**D13**] switches to next radio-channel from the list.

o) Menu item [**D14**] switches to previous radio-channel from the list.

p) Menu item [**D15**] opens the editor of radio-channels. Disabled while playing.

r) Menu item [**D16**] opens the list of radio volumes to change volume of radio playing.

s) Menu item [**D17**] mutes and unmutes radio playing (toggle).

t)   Connection options (available for DirectInput only)
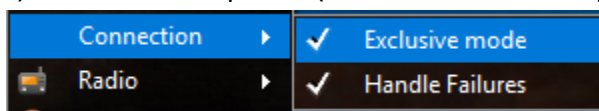
Check "Exclusive Mode" in order to connect DirectInput devices in the Exclusive mode. Try to change this option in the case of any problem with connecting to game.
Check "Handle Failures" in order to auto-reconnect DirectInput devices if connection lost. Try to change this option in the case of any problem with connecting to game.

25. **Radio Channels Editor .**

a) Adding a new radio-channel:
   Press [**E2**] button for creating a new radio-channel. Enter the Title and URL in the [**E6**] and [**E7**] fields. Press [**E3**] button to add your new radio-channel into the list.
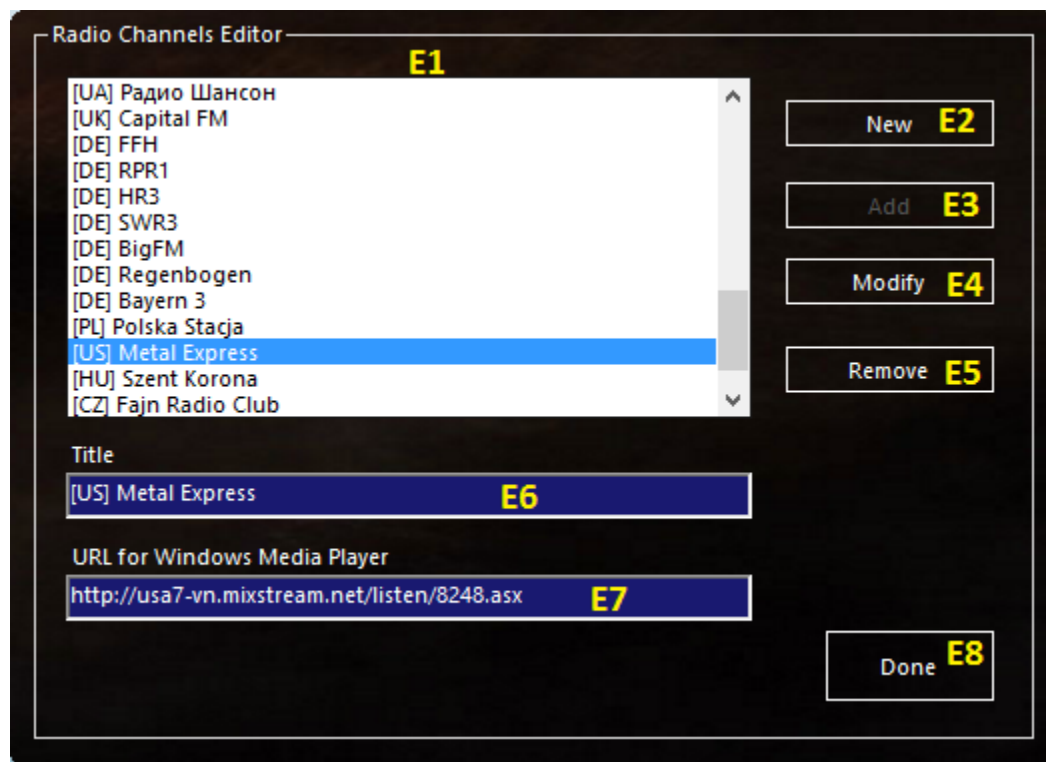
b) Editing an existing radio-channel:
   In the [**E1**] list choose a channel for editing. Change the Title and\or URL in the fields [**E6**] and [**E7**]. Press [**E4**] button to apply your changes.
c) Deleting an existing radio-channel:
   In the [**E1**] list choose a channel for deleting and press the [**E5**] button.
d) Press [**E8**] button to close the Editor. Selected in the [**E1**] list channel will start playing after closing.
e) After next update of WoJ Standard software the list of radio-channels won't be updated to avoid removing your changes.
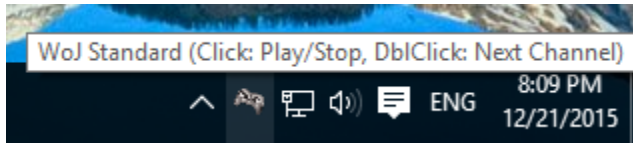   Used by WoJ Emulator file of radio-channels is:
   "c:\Users\%userprofile%\AppData\Local\WoJStandard\radioChannels.xml"

And the new one after update is:
"c:\Users\%userprofile%\AppData\Local\WoJStandard\radioChannelsOrig.xml"

26. Controlling of Radio-Player from the System Tray .

a) Click the WoJ Standard icon in the System Tray to Play or Stop radio-playing (Toggle).
b) DoubleClick the WoJ Standard icon in the System Tray to play the Next radio-channel from the list.
c) This functionality is not available when Radio-Player is disabled in the list.

27. Visualization of active configuration for XInput devices

Press the help button [**C35**], it opens the visualization full-screen. It helps to see the not assigned elements. Mouse click closes this screen.
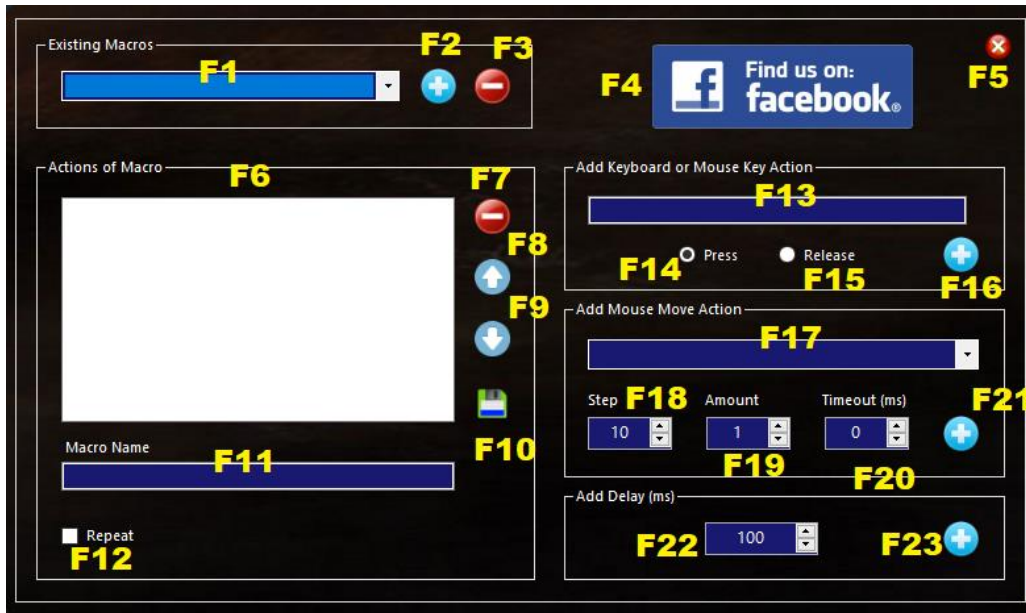
28. Support for DS4 Touchpad

Emulator supports touchpad while using Sony DualShock 4 gamepad.
In this case gamepad itself works in the DirectInput mode and mouse control by touchpad is auto-enabled when emulator detects DS4 controller. Touchpad works in both: wireless and wired modes.

29. Macros

Press the button [**C36**] to open the Macros Editor.

Use selector [**F1**] to choose a macro for editing or deleting.

Press the button [**F3**] to delete the selected macro.

Press the button [**F2**] to create a new macro, all the fields on the panel "Actions of Macro" will be cleared.

You can add buttons actions of keyboard and mouse, mouse wheel actions, actions of mouse movement and time delays.

In order to add an action of keyboard or mouse button or mouse wheel just click by this button or scroll the wheel in the field [**F13**], and you'll see its name in this field.

Now you have to select what is it: Press or Release by radio-buttons [**F14**], [**F15**]. It is irrelevant for mouse wheel. Press the [**F16**] button to add this action to macro. After it the action will be added to the list of macro's actions [**F6**]. Press actions of button always should be added before Release. If this is not the case or you've forgotten to enter one of them – editor won't be able to save the macro and warning will be displayed.

In order add a mouse move action choose it from the list [**F17**]. After it you can select the parameters of mouse movement: step of movement by selector [**F18**], amount of sequential movements by selector [**F19**] and time delay between sequential actions in milliseconds by selector [**F20**]. Press the button [**F21**] to add the action of mouse movement to macro. After it the action will be added to the list of macro's actions [**F6**].

Also you can add a time delay in milliseconds, as a separate action, by selector [**F22**], and press the button [**F23**] to add this delay-action to macro. After it the action will be added to the list of macro's actions [**F6**].

After adding all the required actions to macro you have to give a name to your macro in the field [**F11**], and also check the [**F12**] checkbox if you want to repeat this macro while holding the joystick's button (that activates the macro) after all the actions of macro were executed.

Press the button [**F10**] to save the macro. All the macros are always saved to file: "c:\Users\%userprofile%\AppData\Local\WoJStandard\Config\WoJEmulator_Macros.xml"
The name of the macro can be in any language.

For editing of the macro select it by selector [**F1**]. Now you can select by mouse the action that you want to delete or move up\down in the list [**F6**].

[**F7**] button deletes the selected action and buttons [**F8**], [**F9**] move it up or down. The name of macro can be edited in the field [**F11**] and repeat option can be changed by checkbox [**F12**]. Press [**F10**] button to save the changes.

Button [**F4**] open the application forum. Press [**F5**] when editing of macros is done, it closes the editor.

Macros are always displayed in the list [**C22**] of the main application window. They are always with prefix "M_". So if you've added in the editor the macro with name "macro1", in the list [**C22**] you'll see it with name "M_macro1".

Macros can be assigned to any control element of your joystick, keyboard or mouse, the same as any other elements from the list [**C22**]. For example: select a macro from the list [**C22**], click by mouse in the field [**C23**], press a button of your joystick for activating the macro and press [**C26**] to add this assignment to list [**C17**]. Assigned macros always executed on the Press of joystick, keyboard or mouse button, and if it was not released until executing of macro is finished and macro was marked as repeated, it will be repeated again and again until release of the button. If macro was not marked as repeated, it will be executed only once, not depending when button was released.

Macros are always executed continuously with other buttons, so until the finishing the macro emulator won't execute the actions were assigned to other buttons of joystick, keyboard or mouse, it is needed for consistent processing of buttons by emulator. Mouse axes movements were assigned from the panel "Axes Mapping" can be executed in parallel with macros, because they are executed from another thread of emulator.

Saving the macros in the separate file allows you to use them from any configurations, so each macro you create only once.

30. <u>Toggle Switches</u>

Enable checkbox [**C37**] for activation of Toggle Switches. In this mode few actions assigned to the same control of joystick, apart from axes, will be executed separately for any press, wrap-around (1-2-3-1-2…).

This feature is not compatible with Shortcuts if they are assigned directly in the main window of emulator, but it this case you can create Shortcuts as Macros.

Speech-notifications are played from Actions texts for each item of Toggle Switches.
They are applied according to selected UI language. So, if you select English UI - type action text in English, and the same for Russian, German and Spanish. (Do not mix languages)
If text is still not playing - install Speech for your language:
https://support.office.com/en-us/article/how-to-download-text-to-speech-languages-for-windows-10-d5a6b612-b3ae-423f-afa5-4f6caf1ec5d3

31. **Automatic saving of application settings .**
    Application saves the following settings on closing:
    a) Path to last opened configuration file.
    b) Interface language.
    c) Last activated mode. (Work or Assignment)
    d) Last application window state (hidden in the tray or not).
    e) Autostart
    f) Autoconnect
    g) All the settings of Radio-Player.

32. **Tips and Tricks:**

    a) Keyboard Keys are too responsive – increase the "Polling Rate" value.

b) Mouse Axes are too responsive – decrease the "Sensitivity 1" values, if it is not enough – increase the "Polling Rate" value.

c) Graphical artefacts while Mouse Movement - decrease the "Polling Rate" value.

d) You can modify the text of application UI in the following file:

"c:\Program Files (x86)\WoJStandard\WoJEmulator_Translations.xml".

33. Starting emulator from the command:

You are enabled to start emulator from the command line with specified configuration and mode, like this:

WoJKeyboardAndMouseEmulator d:\XBox_WoT.xml Mapping

WoJKeyboardAndMouseEmulator d:\XBox_WoT.xml Work

34. Using Global Hotkeys in VLC together with WoJ Emulator:

You can control VLC Media Player by your joystick, even when player is not in focus. For that you have to assign global hotkeys in your VLC settings (in the menu "Tools \ Preferences \ Hotkeys") according to this picture:

Action	Hotkey	Global
Play/Pause	Space	Ctrl+Space
Next	n	Ctrl+Right
Previous	p	Ctrl+Left
Stop	s	Ctrl+s
Volume up	Ctrl+Up	Ctrl+Up
Volume down	Ctrl+Down	Ctrl+Down
Clear the playlist	Ctrl+w	Ctrl+w

After it load the configuration for your joystick.

Contact Email: **winrazor@gmail.com**
Project Web-Site: **www.worldofjoysticks.com**
Forum: **www.facebook.com/WoJEmulator**
Users Group: **www.facebook.com/groups/WoJUsers**
https://plus.google.com/communities/103187048611213141749
https://www.linkedin.com/groups/13613762/