

Car PC JoyCon EX User Guide

1. Feature of CarPC JoyCon EX

Hardware feature

- Converts resistance-output steering wheel remote controller into USB HID keyboard and HID remote controller.
- Works same as standard USB HID keyboard and HID remote controller by hardware.
- 24V tolerant 4 channel resistance input.
- Supports 28 physical buttons, 52 programmable logical buttons.
- 2 logical button for one physical button, up to 5 simultaneous key strokes by one button.
- 2 programmable LED port.
- Remote wake-up(resume PC from sleep with steering wheel remote controller).
- Temperature range : -40 ~ +85°C

JoyCon Explorer aided feature

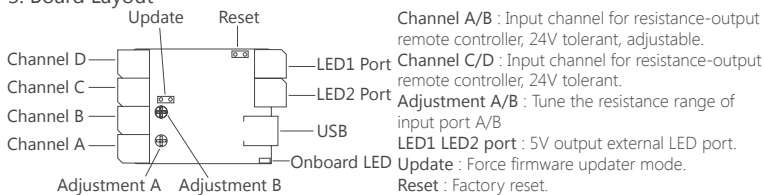
- Preset change by Preset up and down buttons.
- Speech and OSD when preset is changed.
- Application link(application launches and popup with preset changing).
- Speech when application launches and a button is pressed.
- Online firmware update.

- No external power or driver installation needs.
- Available OS : Windows 7, Vista, XP, 2003 (JoyCon Explorer supports Windows XP and the later version. JoyCon Explorer does not support Linux.)

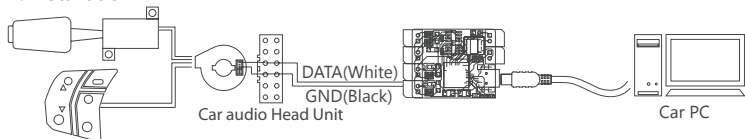
2. Contents

CarPC JoyCon EX, 4 input cable, 2 LED cable, User guide, (USB A-mini B 5P cable and JoyCon Explorer CD is optional. You can download JoyCon Explorer at www.rcjoycon.com)

3. Board Layout



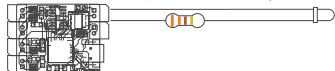
4. Installation



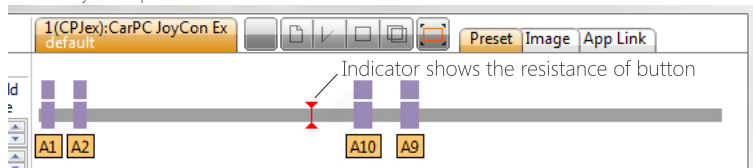
Remote Controls

- Connect two wires of CarPC JoyCon EX's input channel to the remote controls, and connect USB. Warning!! Do not connect one remote controller both to car audio and CarPC JoyCon EX at the same time. Do not connect DATA(white) and GND(black) wire reversely.

For external LED, a current limit resistor(usually 330ohm) must be connected in series. Without the current limit resistor, LED burns out. (Black wire is GND)

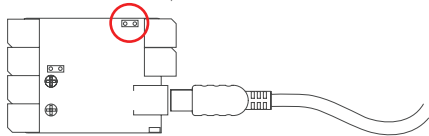


- When CarPC JoyCon EX is connected to PC for the first time, wait until auto-installation is completed. (Close JoyCon Explorer when auto-installation is in progress.)
- When remote controller's button is pressed, red indicator shows the button's resistance value at JoyCon Explorer.



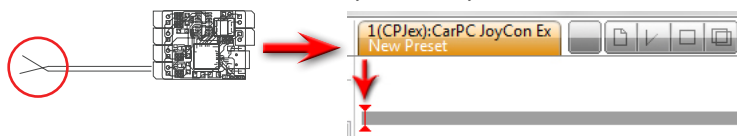
5. Factory Reset

Short-circuit two reset points and connect USB.



6. Trouble Shooting

To check if CarPC JoyCon EX works properly, short-circuit two wires of one input channel without connecting remote controller. The red indicator must go to the left during short-circuit, and returns when short-circuit is released. If the red indicator does not move, the CarPC JoyCon EX is faulty.

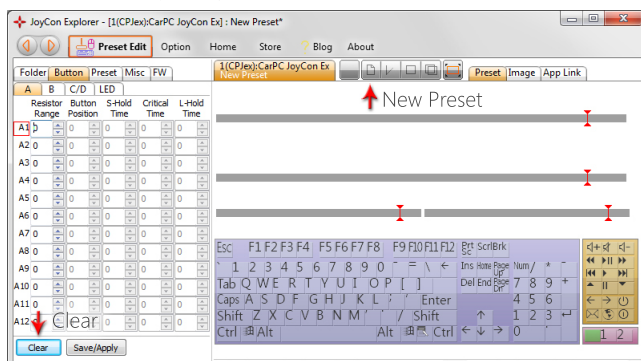


Basic Setting

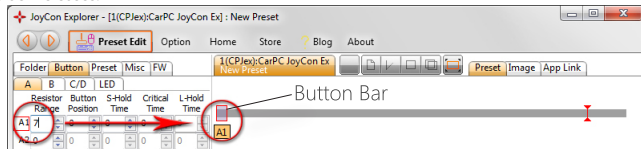
1. Setup remote controller's buttons

The button resistance of steering wheel remote controller differ from car to car, so button's position and resistance range must be configured.

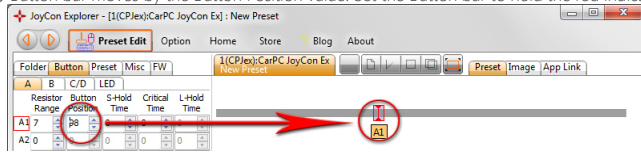
- Clear all the values by clicking Clear and New Preset.



- Button bar appears when Resistance Range is over than zero. Button bar grows longer as the value increases.

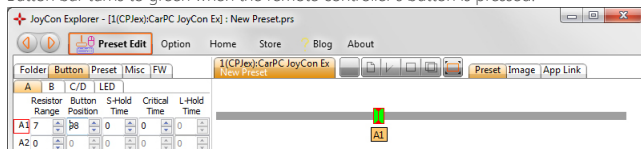


- Button bar moves by the Button Position value. Set the Button bar to hold the red indicator.



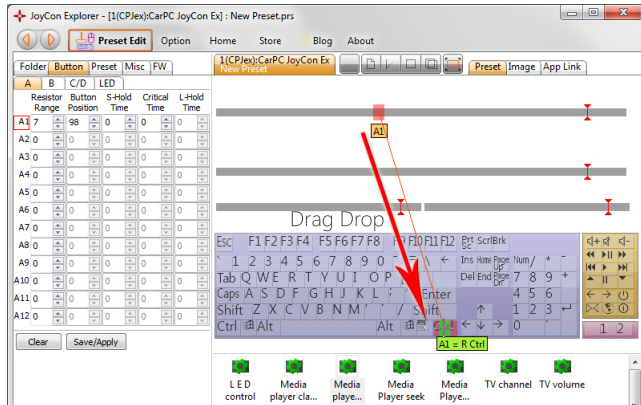
- Click Save/Apply to save the Preset File and download the settings to CarPC JoyCon EX.

- If Button Position and Resistance Range value are proper, Button bar turns to green when the remote controller's button is pressed.

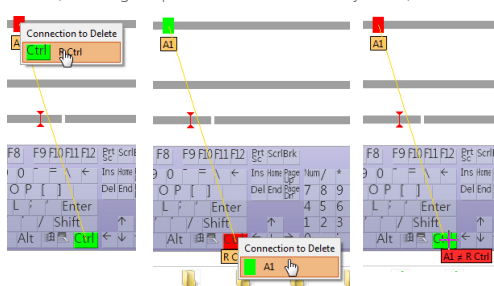


2. Connect functions

Connect remote controller's buttons to the keyboard keys(or HID remote controller buttons) by drag-drop. Up to 5 keyboard keys(or HID remote controller buttons) are possible for one button. Drag-drop sequence is same with the sequence of keyboard key stroke. For example, if you want a button to generate shortcut CTRL+ALT+DEL, drag-drop the Button on the CTRL first, ALT and DEL last.

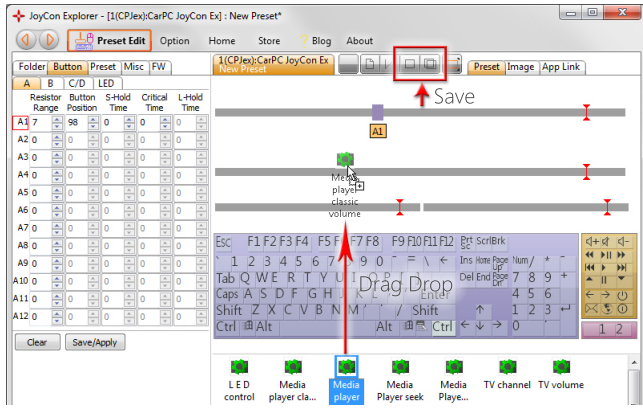


To disconnect function of a button, right-click the Button Bar or keyboard key(or HID remote controller button). Or drag-drop the Button Bar on the keyboard(or HID remote controller button) again.



3. Save / Restore Preset

Save all the settings as a preset file by clicking save button and restore by double-click or drag-drop a preset file.

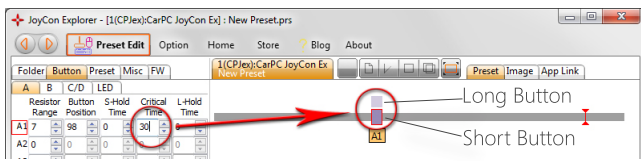


Extended Button Setting

1. Short Button and Long Button

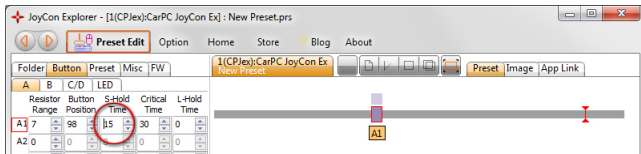
CarPC JoyCon EX supports two separated functions for one button of steering wheel remote controls. The two functions are Short Button and Long Button.

Short Button is generated when the remote controller's button is released before Critical Time. Long Button is generated when the remote controller's button is pressed longer than Critical Time. To use Long Button, set the Critical Time over than 0, then Long Button Bar will appear above the Short Button bar.



2. Hold Time

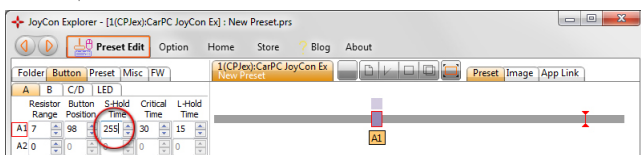
When you want to release the button after a period time automatically, set the Hold Time 1~254. The Hold Time value 1 is 10ms, so Hold Time value 254 is 2540ms(2.54s). S-Hold Time is for short button. L-Hold Time is for Long Button.



When the Hold Time is 1~254, the button is released automatically after that period. Hold Time 0 means that the button keeps being pressed while you keep pressing the button. This is useful when you need to keep a key pressed like volume control. Hold Time 255 means that the button is Toggle Button. (C, D channel support only Short Button and S-Hold Time.)

3. Toggle Button

If the Hold Time of a button is 255, the button is toggled between press and release. This is useful when you need to press a keyboard key while SHIFT, CTRL, ALT keys are kept pressed. (For example, ALT+TAB or Window+TAB)



(C, D channel do not support Toggle Button.)

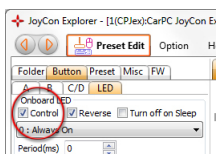
4. Programmable LED control

CarPC JoyCon EX can control one onboard LED and two external LEDs. You can use this function to control your remote controller's illumination or other devices.

If you want to control LED with this preset, check **Control**. If **Control** is not checked, this preset doesn't control LED and LED's status keeps previous configuration.

If **Reverse** is checked, On Off is reversed.

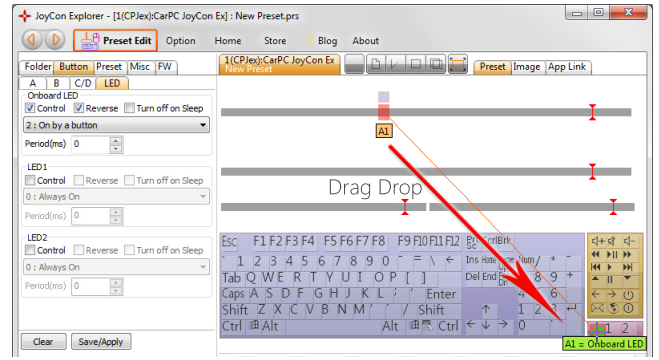
If **Turn Off on Sleep** is checked, LED is turned off when the PC goes into hibernation.



LED control has 8 modes.

0. **Always On** : LED is turned on always
 1. **Always Off** : LED is turned off always
 2. **On by a button** : LED is turned on while a button is pressed.
 3. **Blink by a button** : LED blinks periodically while a button is pressed.
 4. **Toggle by a button** : LED is turned on by pressing a button, and is turned off by another pressing the button.
 5. **Toggle blink by a button** : LED blinks periodically by pressing a button, and is turned off by another pressing a button.
 6. **On by a button, off after a period** : LED is turned on by pressing a button, and is turned off after a period automatically.
 7. **On by any button, off after a period** : LED is turned on by pressing any button, and is turned off after a period automatically.
- Unit of **Period** is millisecond. In LED's toggle state, turning on is one period and turning off is another period. For example, if the **Period** is 500(ms), LED is turned on every 1 second(1000ms).

To assign a button to LED, drag-drop a button to LED.

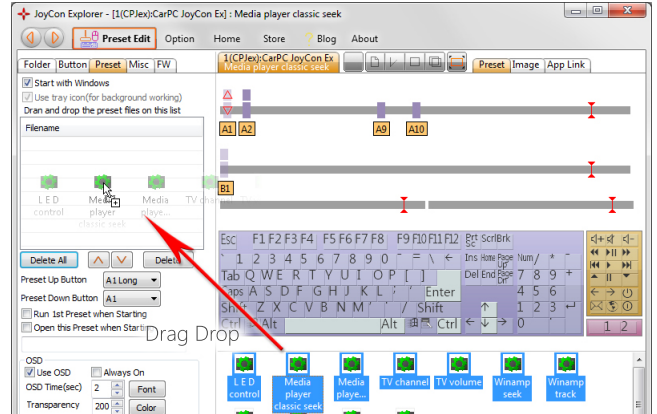


Preset Change

Preset can be downloaded to CarPC JoyCon EX with Preset Button automatically, it is useful when you need to change steering wheel remote control's configuration while driving.

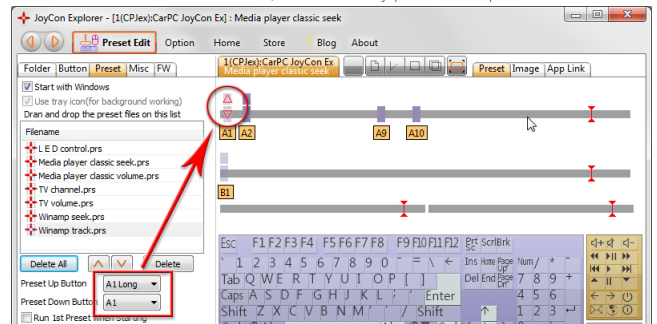
1. Preset List

Drag Drop preset files on the list of Preset tab. Preset is changed with the sequence of this list.



2. Preset Button

Assign Preset Up/Down Button to change preset. It is better not to assign a Preset Button to keyboard(or HID remote controller). And it is better to set the Preset Button's configuration(S-Hold Time, L-Hold Time and Critical Time) same for every preset in the preset list.



3. Start option

Check **Start with Windows** to start JoyCon Explorer automatically when Windows starts. Check **1st Preset when Starting** to run first preset of the preset list when the JoyCon Explorer starts. ("Run Preset" means download a preset to CarPC JoyCon EX and launch or popup the linked application, see the Application Link below.)

Check **Open this Preset when Starting** and drag-drop a preset on the edit box, to download the preset when JoyCon Explorer starts.

4. Application Link

Application can be launched and popped up when Preset is changed. Drag-drop exe file(or shortcut) or double-click current running application of the list box. **Name** is spoken when the application is launching. If the application is not running, the application is launched. If the application is already running, the application pops up.

Some application may need **Minimize before activate** or **Confirm Top Window** option to get input focus properly.

