

CarPC JoyCon Exc -BSG (Button Signal Generator)

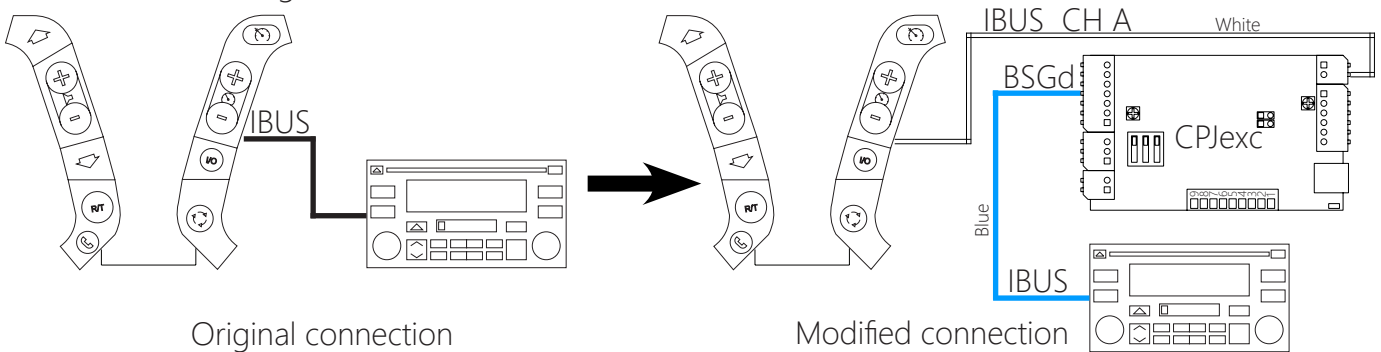
CPJexc - CAN and IBUS Steering wheel controls USB interface

BSG(Button Signal Generator) emulates the button signal that controls the car stereo. CarPC JoyCon Exc(CPJexc) itself supports BMW IBUS, AUDI '99-'04(LIN) and VW(Volkswagen) '99-'04(LIN) by BSGd pin. BSGc(Button Signal Generator CAN) and BSGr(Button Signal Generator Resistive) are an external devices connected through J2P BUS. BSGc(Button Signal Generator CAN) generates CAN signal. BSGr generates resistive button signal. (J2P BUS is a signal wire that connects CPJexc and its peripherals.)

1. BMW IBUS

1-1. Installation of BSGd for BMW IBUS

You can control both car PC and BMW stereo with steering wheel controls using BSGd. Connect the steering wheel controller's IBUS wire to Channel A. Connect BSGd wire to the car stereo instead of steering wheel controller's IBUS wire.

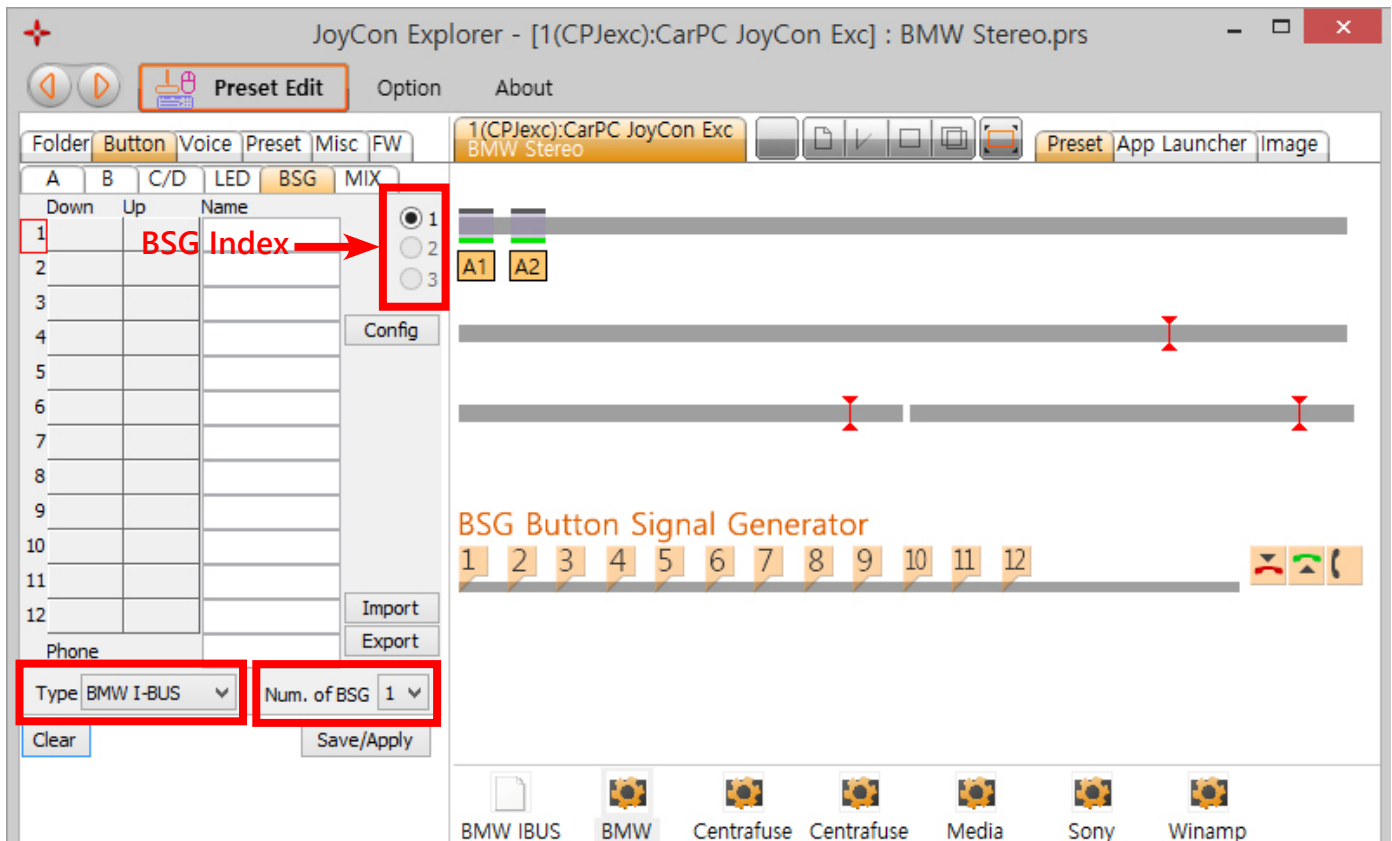


1-2. JoyCon Explorer Setting

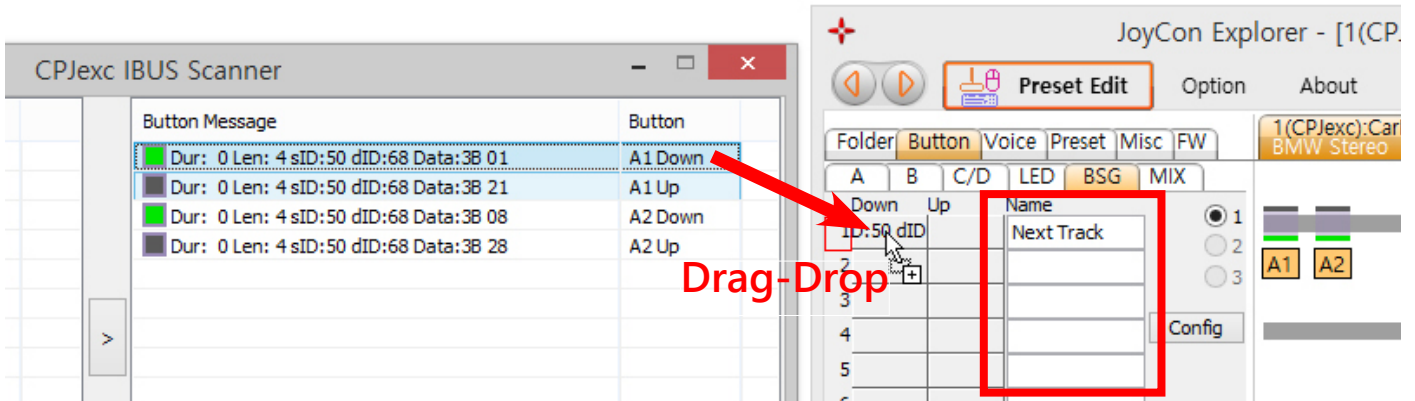
Choose the number of BSG device in **Num. of BSG**.

Choose the **BSG index**.

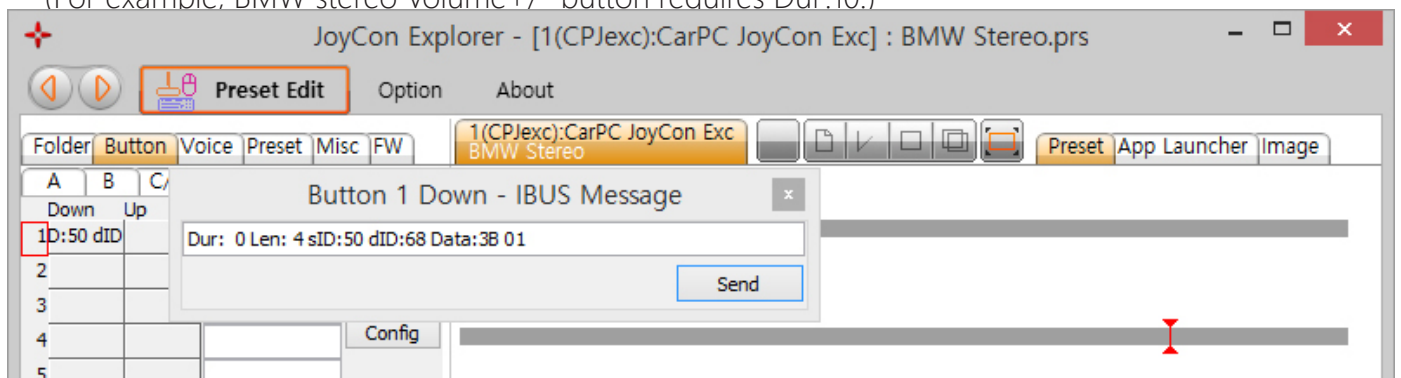
Choose the **Type** of BSG as BMW I-BUS.



Drag and Drop IBUS message from the **CPJexc IBUS Scanner** to BSG Button.
 IBUS message of **Up Button** is generated when the steering wheel button is pressed.
 IBUS message of **Down Button** is generated when the steering wheel button is released.
Name of BSG button is spoken when the Button is pressed.

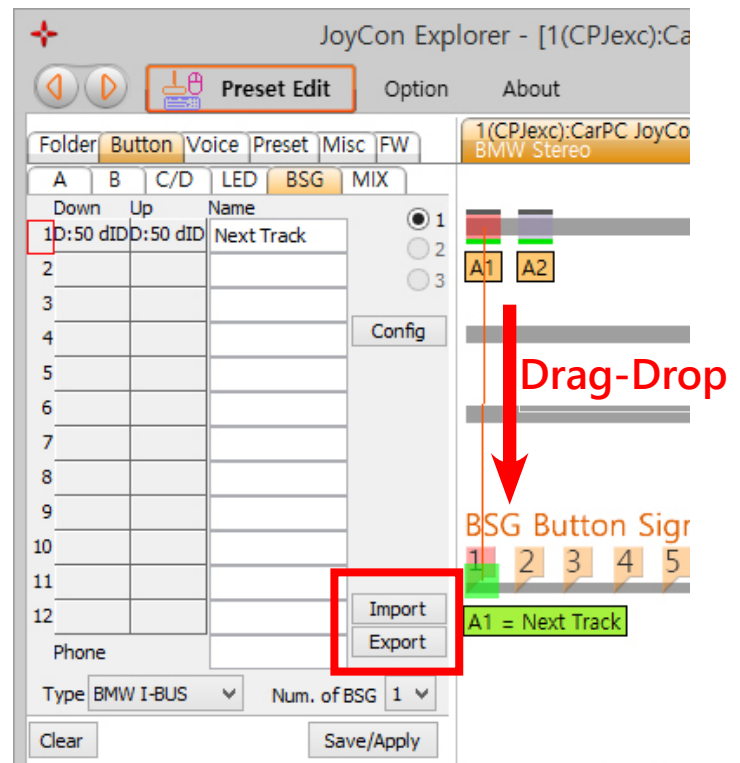
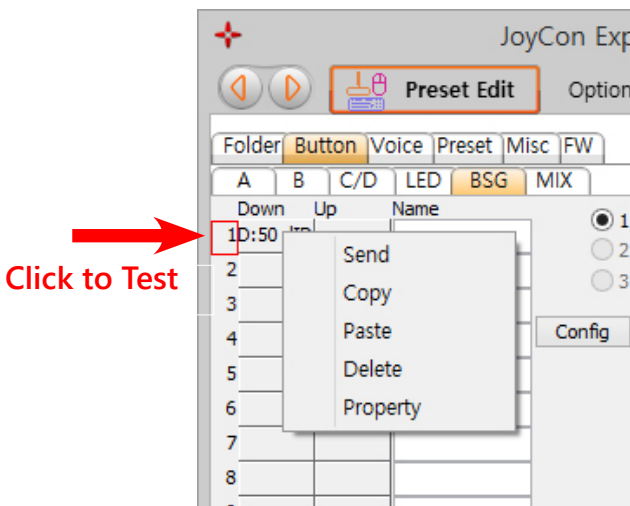


The IBUS Message dialog box appears by clicking the BSG button. You can type IBUS message in the edit box. "Dur:" is duration of the IBUS message that is repeated while the button is being pressed. (For example, BMW stereo Volume+/- button requires Dur:10.)



You can test the BSG button by clicking the number. And you can also test the Down or Up message by Send command in the context menu that appears by right clicking of the button message.

Drag-drop buttons to the BSG buttons to connect a steering wheel button to a BSG button.

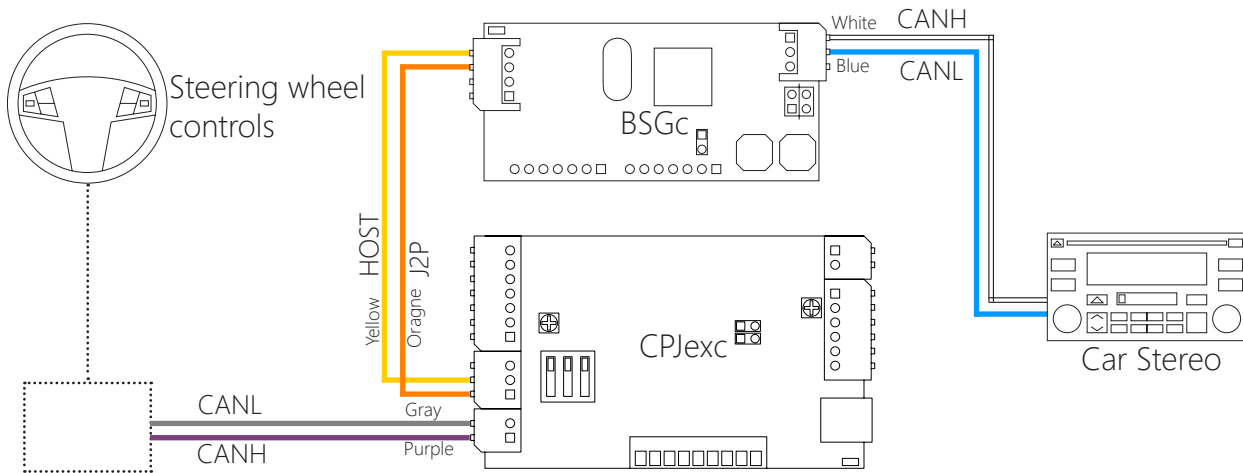


BSG settings can be saved as or restored from a file(.bsg) with **Import** and **Export** button.

2. CAN

2-1. Installation of BSGc(Button Signal Generator CAN)

You can control both car PC and car stereo with steering wheel controls using BSGc. BSGc(Button Signal Generator CAN) is an external device connected through J2P BUS. Connect CPJexc's HOST and J2P to BSGr's HOST and J2P respectively. Connect BSGc's CAN (CANH, CANL) wire to the car stereo's CAN wire.



2-2. JoyCon Explorer Setting

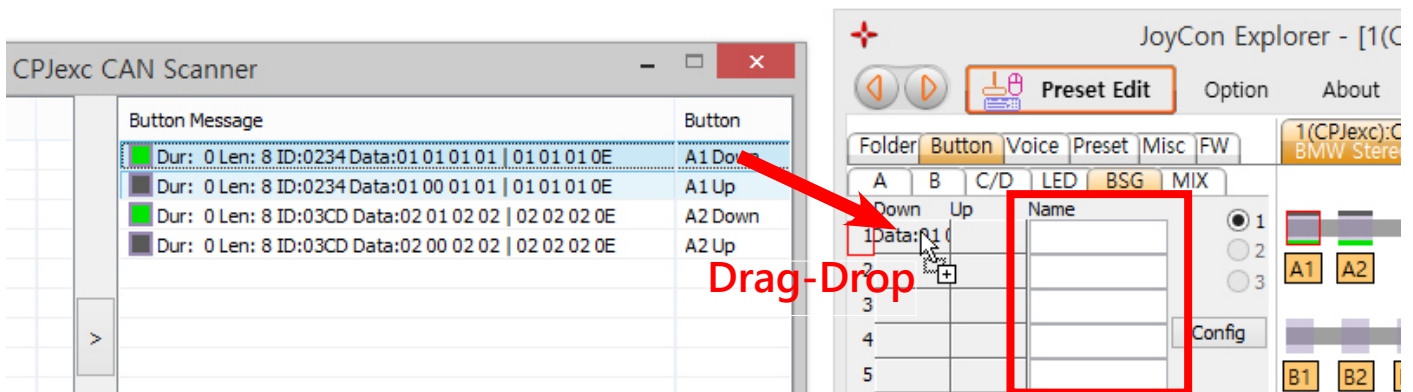
1. Choose the number of BSG device in **Num. of BSG**.
2. Choose the **BSG index**.
3. Choose the **Type** of BSG as BSG-C.

The screenshot shows the JoyCon Explorer software interface. The BSG Index is set to 1, and the Type is BSG-C. The Num. of BSG is set to 1. The BSGc CAN Config window is open, showing Baudrate(kbps) set to 100, and the 'Bypass Steering Wheel Control to Head Unit' and 'Bypass Head Unit to Steering Wheel Control' options are checked. A red arrow points from the BSG Index setting to the BSGc CAN Config window.

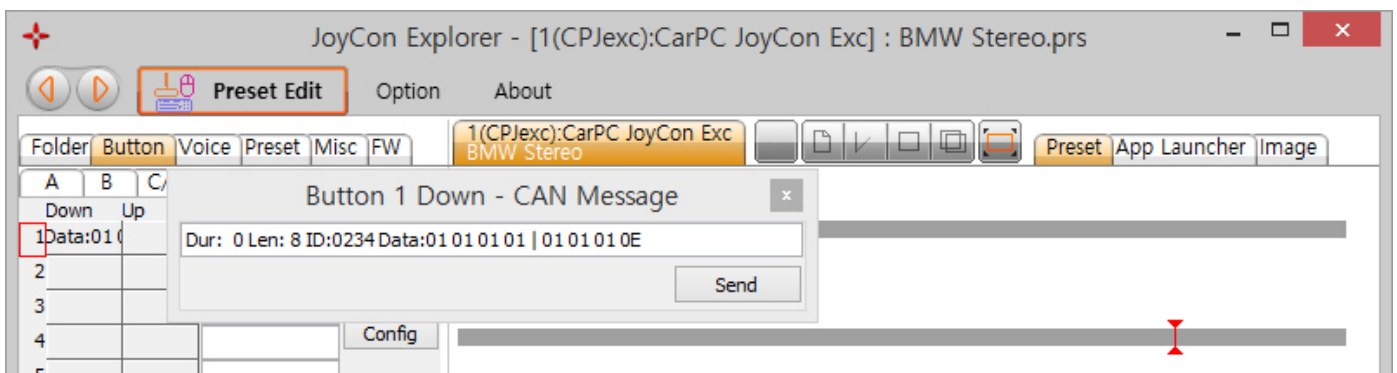
Check "Bypass Steering Wheel Controls to Head Unit", if you want to bypass all the messages which are originated from the steering wheel controls and which are not used as a button.

Check "Bypass Head Unit to Steering Wheel Controls", if you want to bypass all the messages which are originated from the head unit and which are not used as a button.

Drag and Drop CAN message from the **CPJexc CAN Scanner** to BSG Button.
 CAN message of **Up Button** is generated when the steering wheel button is pressed.
 CAN message of **Down Button** is generated when the steering wheel button is released.
Name of BSG button is spoken when the Button is pressed.

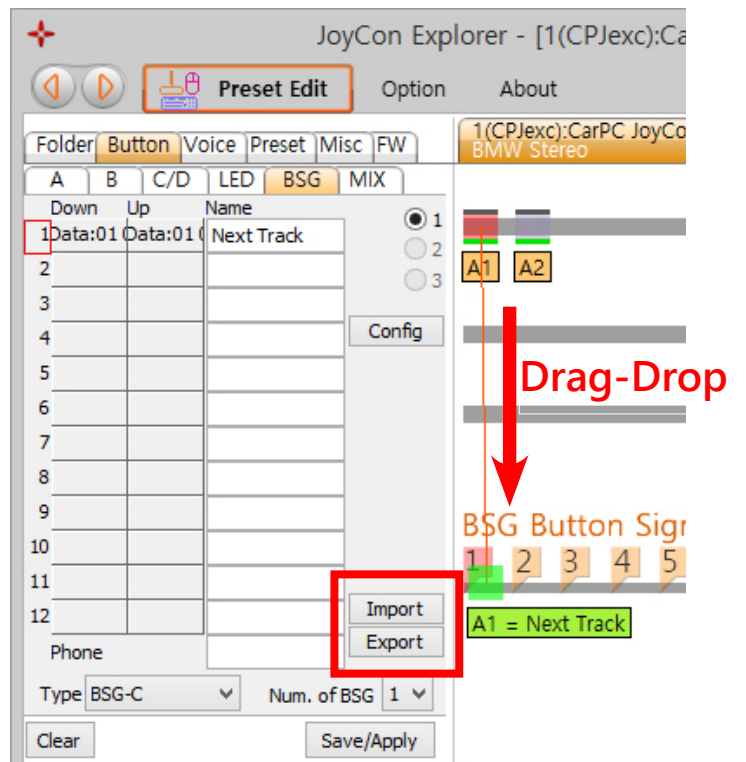
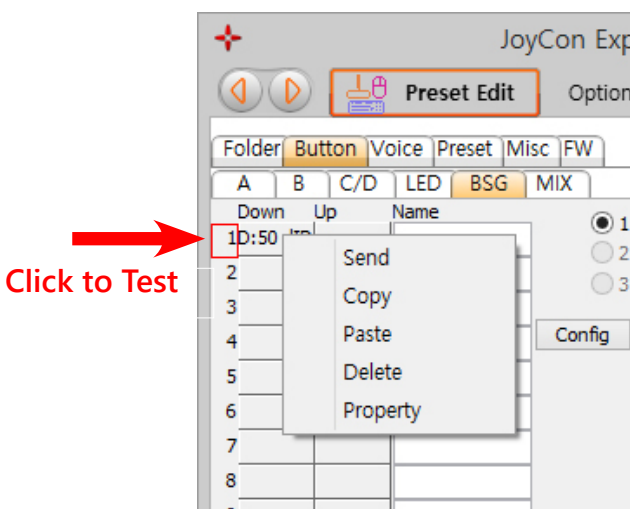


The CAN Message dialog box appears by clicking the BSG button. You can type CAN message in the edit box. "Dur:" is duration of the IBUS message that is repeated while the button is being pressed.



You can test the BSG button by clicking the number. And you can also test the Down or Up message by Send command in the context menu that appears by right clicking of the button message.

Drag-drop buttons to the BSG buttons to connect a steering wheel button to a BSG button.



BSG settings can be saved as or restored from a file(.bsg) with **Import** and **Export** button.

3. BSGr(Button Signal Generator Resistive)

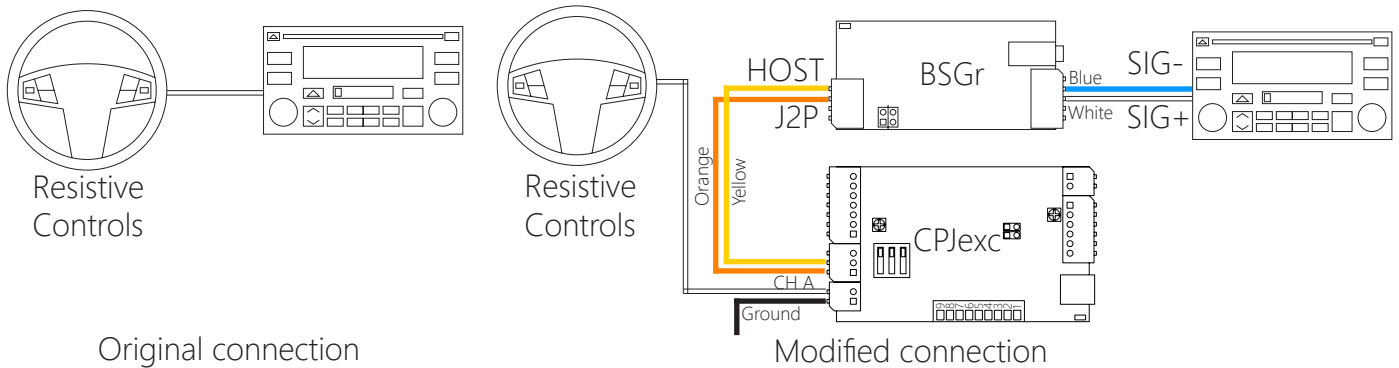
BSGr is an external device connected through J2P BUS.

Connect CPJexc's HOST and J2P to BSGr's HOST and J2P respectively.

Connect BSGr's SIG+ to the steering wheel controller's positive signal.

Connect BSGr's SIG- to the steering wheel controller's negative signal. If there is no steering wheel controller's negative signal wire, connect SIG- to Ground.

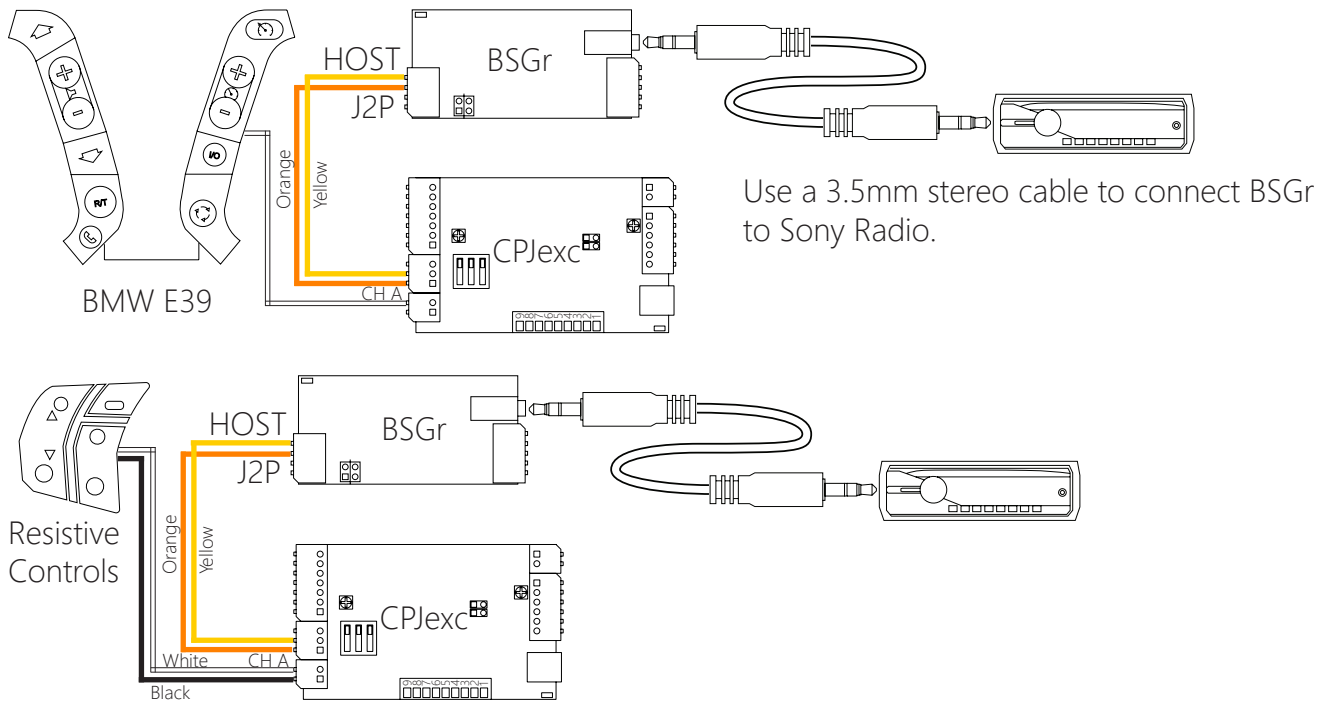
(For more information of BSGr, see BSGr user guide or visit www.rcJoyCon.com)



4. Different kind of steering wheel controller for different kind of car stereo

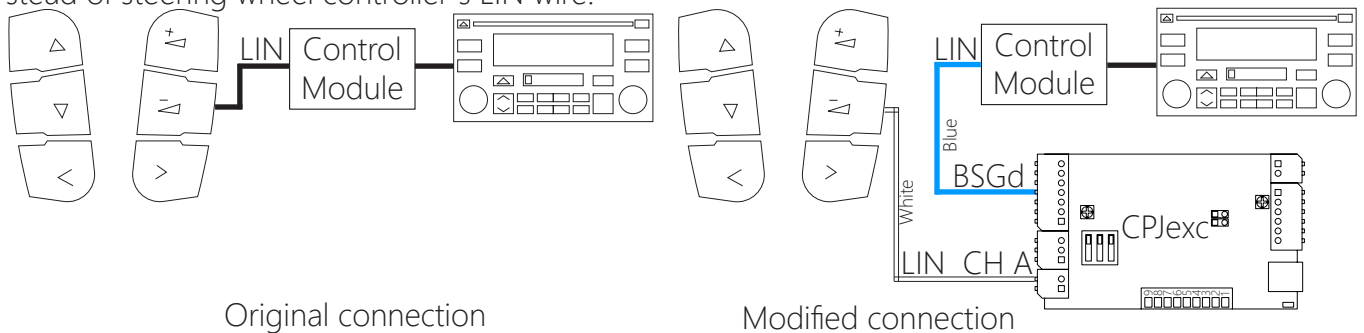
You can also use a different kind of steering wheel controller for a different kind of car stereo.

For example, you can control the resistive controlled car stereos(eg. Sony, Hyundai radio) with BMW E39 controller.(BSGr is required) This is useful when you install an aftermarket car stereo.



5. AUDI '99-'04(LIN) and VW(Volkswagen) '99-'04(LIN)

Connect the steering wheel controller's LIN wire to Channel A. Connect BSGd wire to the Radio instead of steering wheel controller's LIN wire.



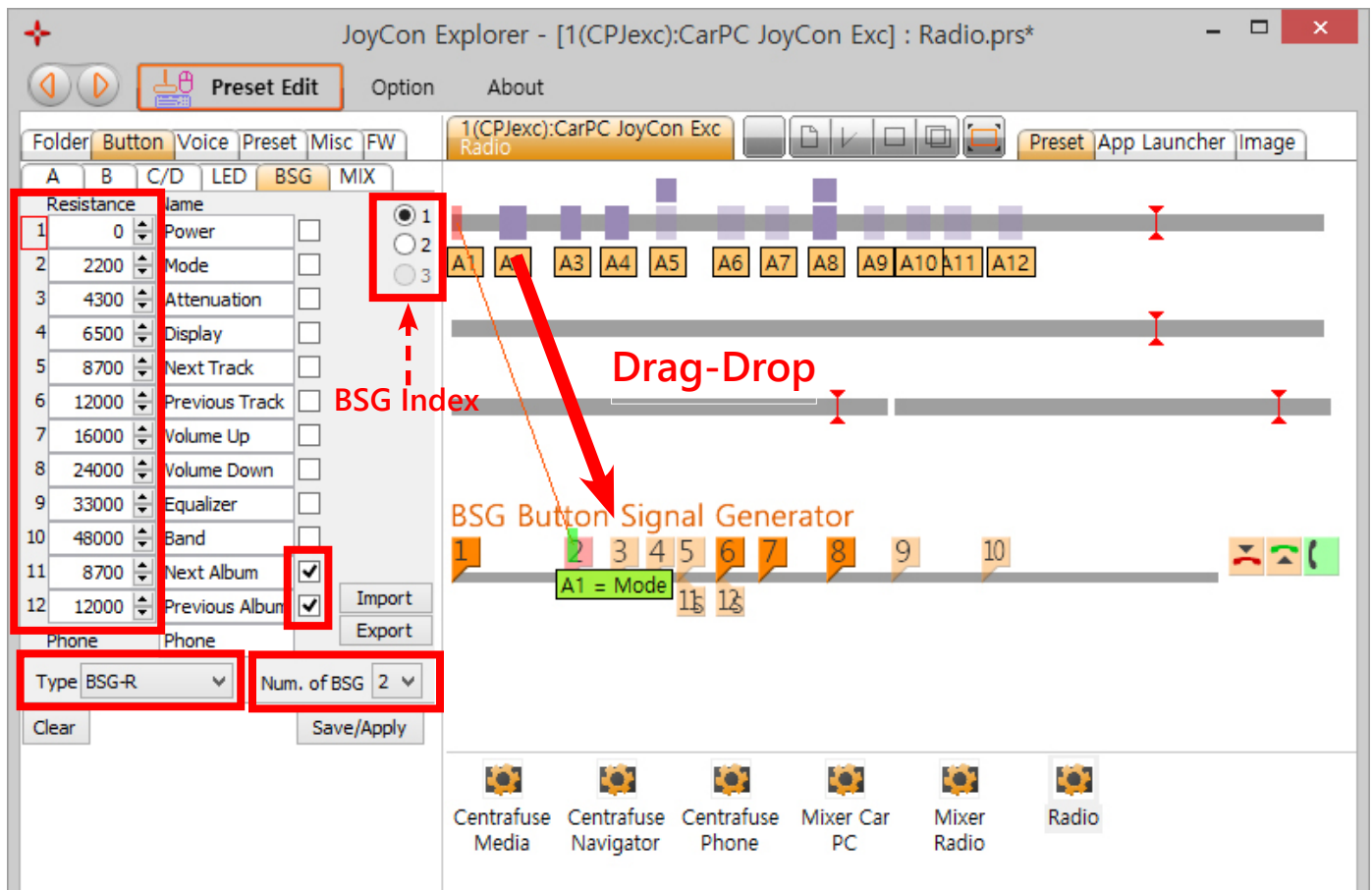
6. Configuration of JoyCon Explorer

1. Choose the number of BSG device in **Num. of BSG**.
2. Choose the **BSG index**.
3. Choose the **Type** of BSG.
4. Put the **Name** of BSG button that is spoken when the Button is pressed.
5. Drag-drop buttons to the BSG buttons.

BSGr needs resistance values for each BSG button. The resistance unit is ohm(Ω).

Sony radio needs shift signal for Next/Previous button, check the checkbox for Next/Previous Album button.

BSG settings can be saved as or restored from a file(.bsg).



Download the latest user guide at this URL.

http://www.changjack.com/user_guide/cpjexc/CPJexc_BSG_UserGuide_eng.pdf

