

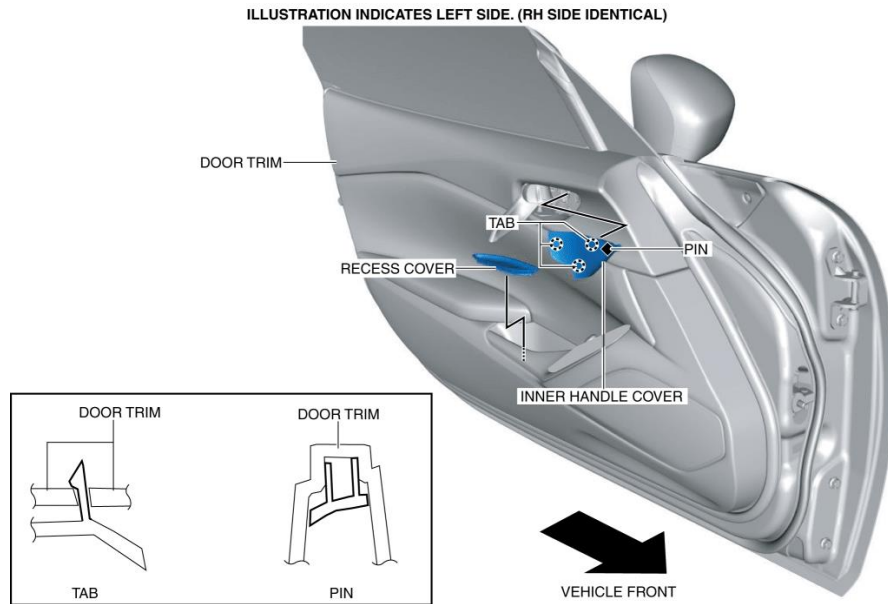
Auto-Up Windows Controller for RF Installation Guide



Step by step instructions:

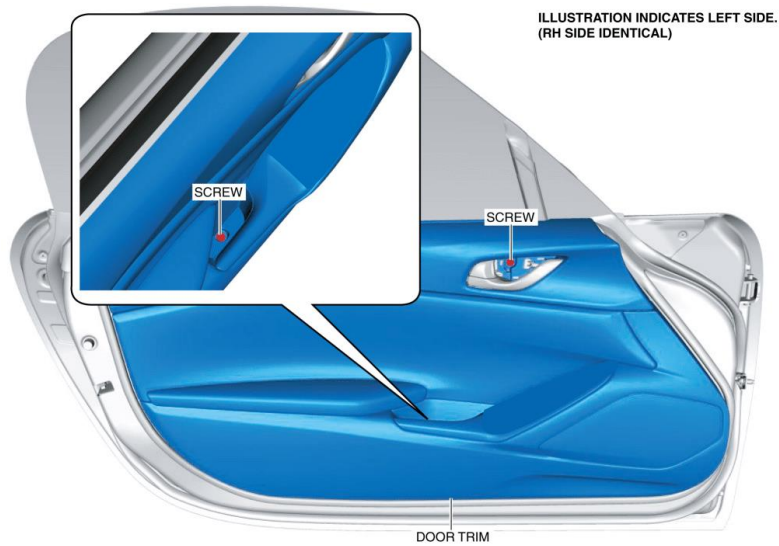
1. Lower both windows and open the top.
2. Disconnect the negative battery cable.
3. Remove the inner handle cover as shown in *Figure 1* while also detaching the tabs and pin.

Figure 1



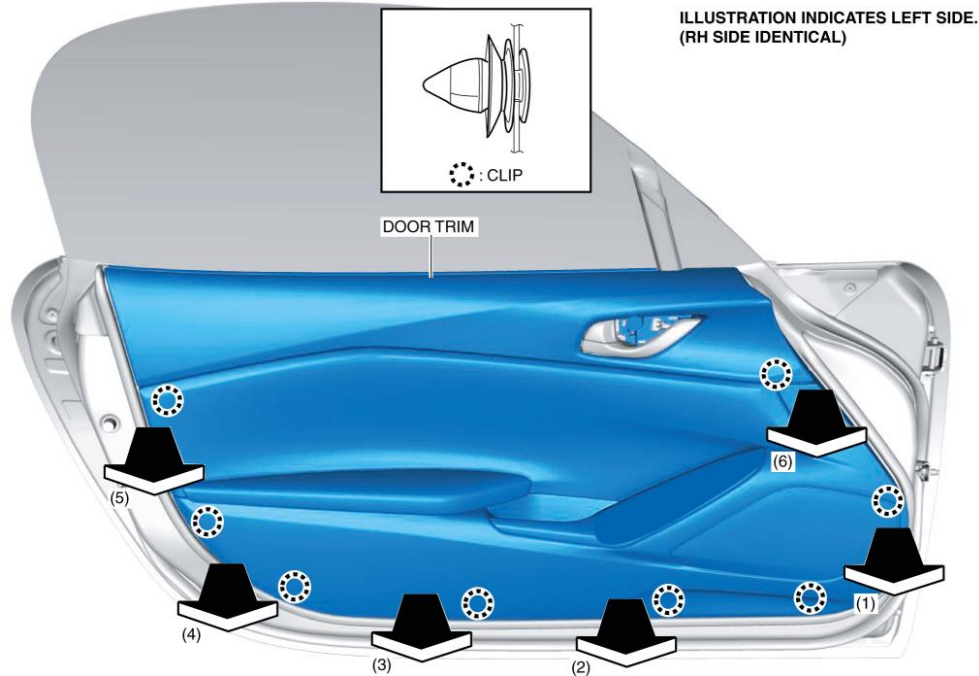
4. Remove the recess cover.
5. Remove the screw shown in *Figure 2*.

Figure 2



6. As shown in *Figure 3*, pull the door trim outward in the order of the numbered arrows (1), (2), (3), (4), (5) and (6) and detach the clips.

Figure 3



7. Unplug the connectors shown in *Figure 4*.

Figure 4

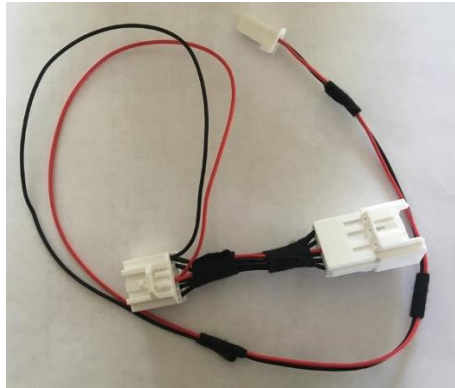


8. Lift the inner door panel, remove, and set carefully to one side.

9. Attach the controller harness between the switch and main harness.
10. Use the supplied Velcro strip to attach the module to the plastic door panel.

11. If the harness for Key Fob operation is included (*Figure 5*), reattach the door connector through the harness. Plug the 2-pin key fob harness connector into the main window controller harness. Route the Key Fob harness as shown in *Figures 6 and 7*.

Figure 5



12.

Figure 6

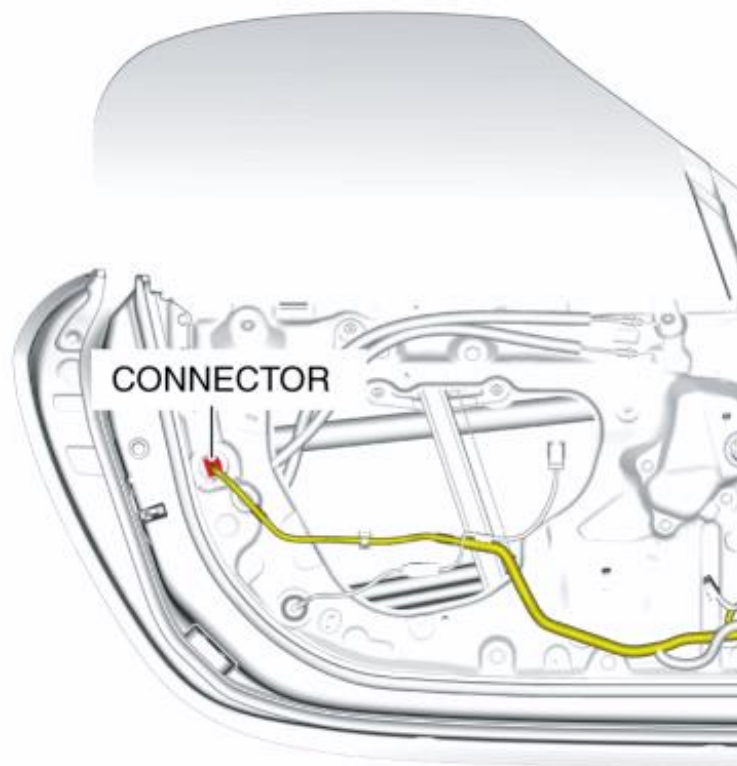


Figure 7



13. **RHD cars** and some European MX-5 models have different lock connector wiring. Using an incompatible plug-n-play harness disables the locking mechanism. The alternate solution does not use the harness plug. Use [Posi-tap connectors](#), to connect the red key fob harness wire to the yellow car plug wire. Connect the black key fob harness wire to the green car wire.

Figure 8,9 identifies the wires on the car plug.

Figure 8 (for RHD and some European models only)

Tap the Black key fob harness wire to the green car plug wire.

Tap the Red key fob harness wire to the yellow car plug wire.

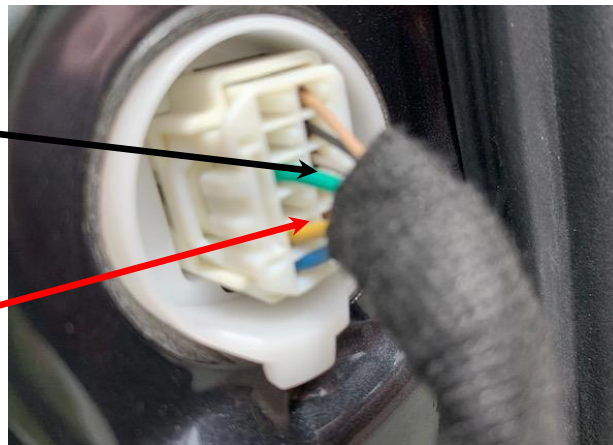
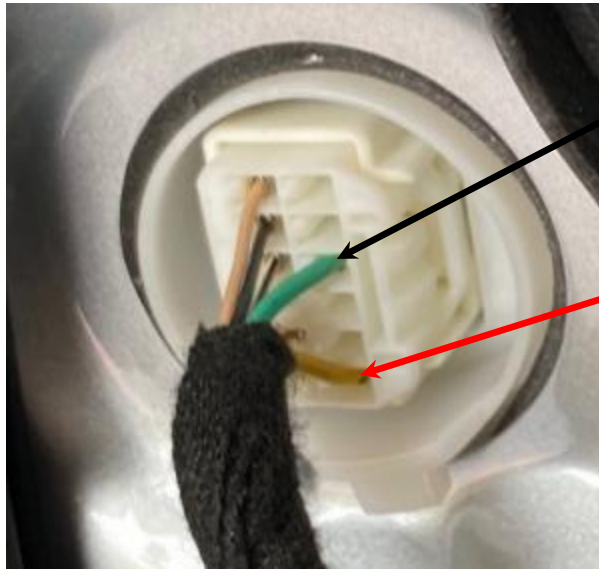


Figure 9 (for LHD cars only)



Tap the Black key fob harness wire to the green wire.

Tap the Red key fob harness wire to the yellow wire.

14. Use the zip ties included with the shipment to secure the new key fob harness to the existing harness.
15. Reassemble in the reverse order of disassembly and reconnect the negative battery cable.
16. Run the window initialization procedure, according to the Mazda manual (see next page)

POWER WINDOW SYSTEM INITIALIZATION PROCEDURE

1. Close the door.
2. Close the roof.
3. Switch the ignition ON. (engine on or off)
4. Operate the power window main switch (LH) on the power window main switch to fully open the door glass (driver-side).
5. Operate the power window main switch (LH) on the power window main switch and keep the door glass (driver-side) fully closed for approx. 2 sec.
6. Operate the power window main switch (RH) or the power window sub-switch to fully open the door glass. (passenger-side)
7. Operate the power window main switch (RH) or the power window sub-switch and keep the door glass (passenger-side) fully closed for approx. 2 sec.

Test operation with installed controller:

1. Close the door.
2. If not already done, complete the POWER WINDOW SYSTEM INITIALIZATION PROCEDURE
3. Use the driver-side window switch to operate the windows manually. After a 0.5 second delay, each window will fully raise with one touch.
4. Check key fob operation. Double-click* the Unlock button to lower both windows. Double-click* the Lock button to raise both windows.
5. If windows drop automatically after operating the roof mechanism (for the US market only), the lock function raises windows all the way.

* - “double click” is default configuration which can be changed via configuration software.

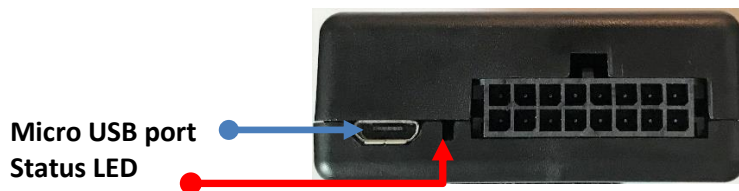
Caution: Do not test Key Fob window operation multiple times. Window motors can overheat, and the battery may drain quickly.

Module Configuration:

To change module configuration, use the Windows or MacOS software. Configuration can be done before installing the module in the car or after the module is installed when the car power is off.

For normal operation, the USB cable **must** be unplugged from the computer. The Micro USB end can remain connected with the module. The cable can then be routed so that the USB A connector is available for easy access to make future configuration changes.

Figure 10

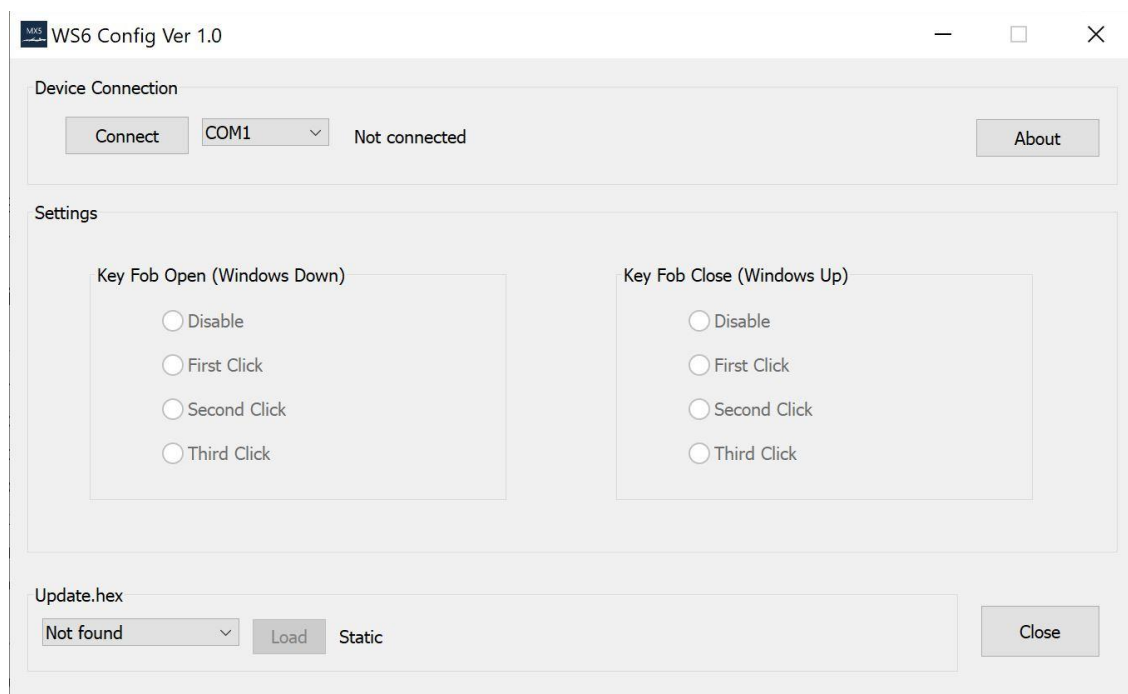


The Status LED will be blinking if LIN bus communication with the car is active. The module goes to sleep 2 minutes after the car power turns off and the LED will turn off.

Windows Configuration software

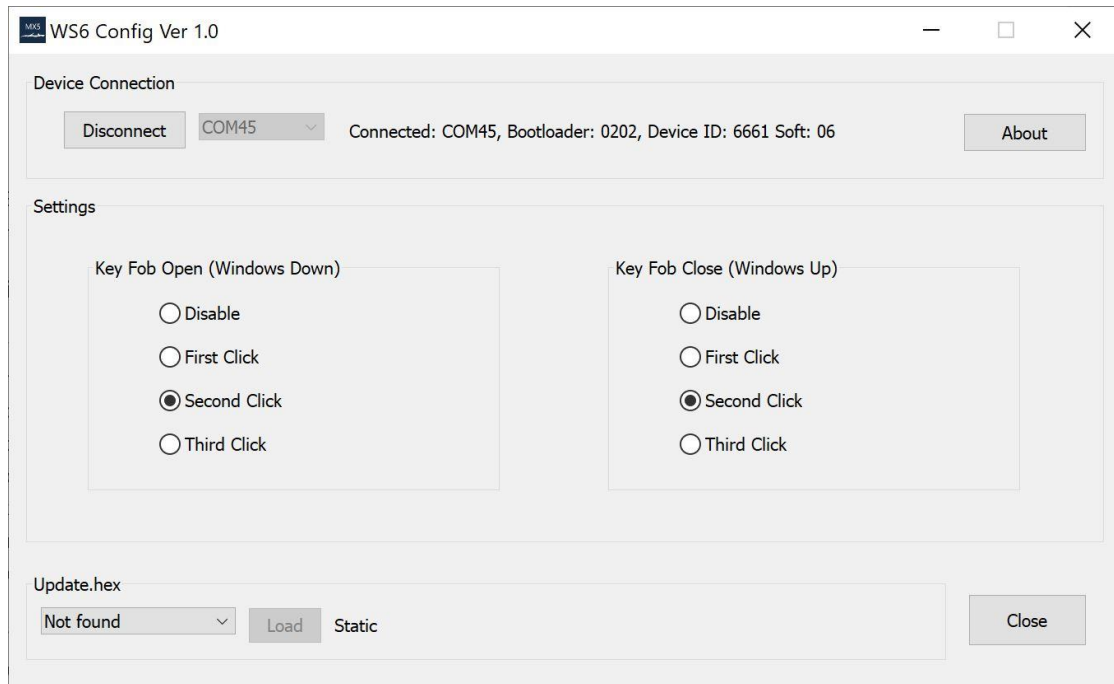
1. Download [installation package](#) and unzip it to desired location.
2. Connect the WS6 module to a Windows PC via the Micro-USB cable. The module status LED will be solid Red.
3. Start the WS6_config.exe application.

Figure 11



4. Select COM port.
5. Click on the “Connect” button.
6. After successful connection, the current software version is displayed next to the Connect button.

Figure 12

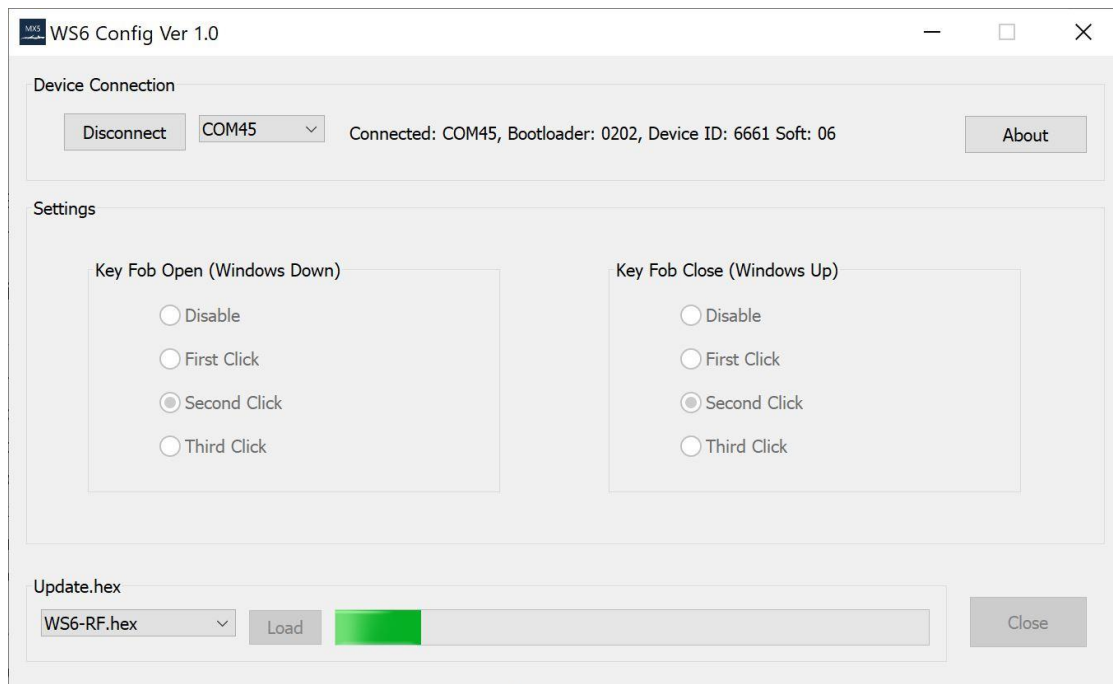


7. You can now select desired number of clicks for each operation. Configurations save to the module immediately.
8. Disconnect the USB cable from the computer.
9. Test to confirm selected key-fob control operation.
10. 2 minutes after the car power turns off and the LED will turn off.

To update firmware if needed:

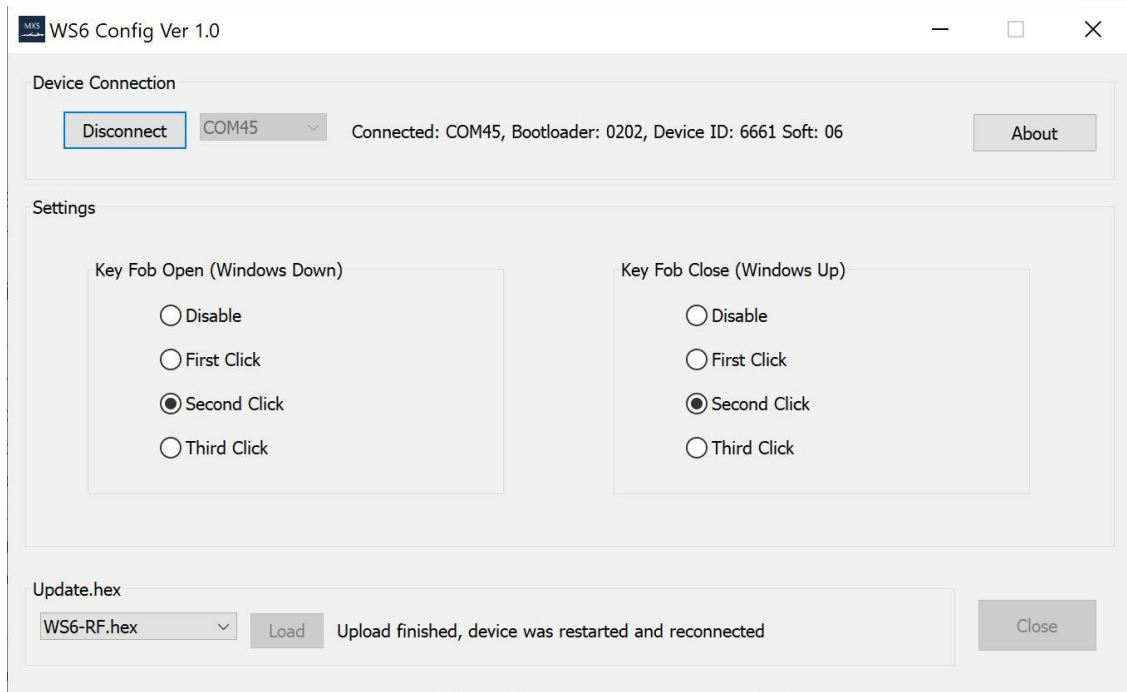
1. To update firmware, select the latest firmware from the Update.hex drop-down box. Click on the “Load” button. Firmware files must be in the same folder with configuration software. If the update is not necessary, skip to Step 10.
2. The upgrade process starts automatically and displays a progress bar.

Figure 13



3. After uploading completes, the device reconnects.

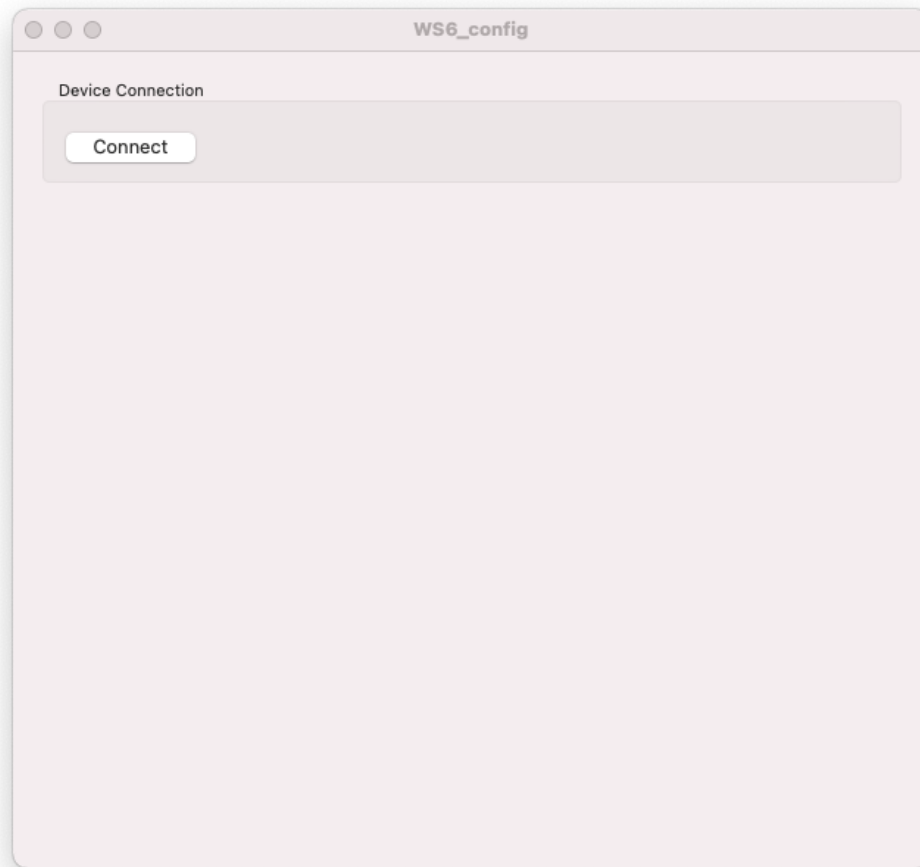
Figure 14



MacOS Configuration software

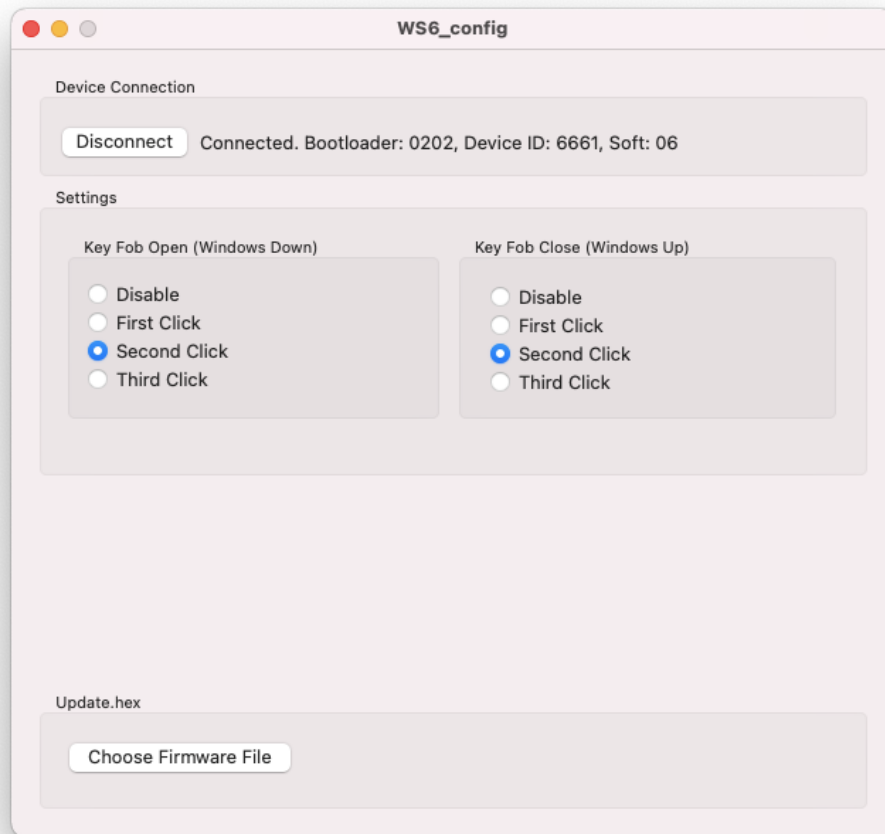
1. Download [installation package](#) and click on downloaded zip file, .it will create application on the desktop WS6_config.
2. Connect the WS6 module to a Mac computer via the Micro-USB cable. The module status LED will be solid Red.
3. Start the WS6_config application.

Figure 15



4. Click on the "Connect" button.
5. After successful connection, the current software version is displayed next to the Connect button.

Figure 16



6. You can now select desired number of clicks for each operation. Configurations save to the module immediately.
7. Disconnect the USB cable from the computer.
8. Test to confirm selected key-fob control operation.
9. 2 minutes after the car power turns off and the LED will turn off.

10. To update firmware (if needed), select the latest firmware by clicking on the "Choose Firmware File" button.
11. The upgrade process starts automatically and displays a progress bar.