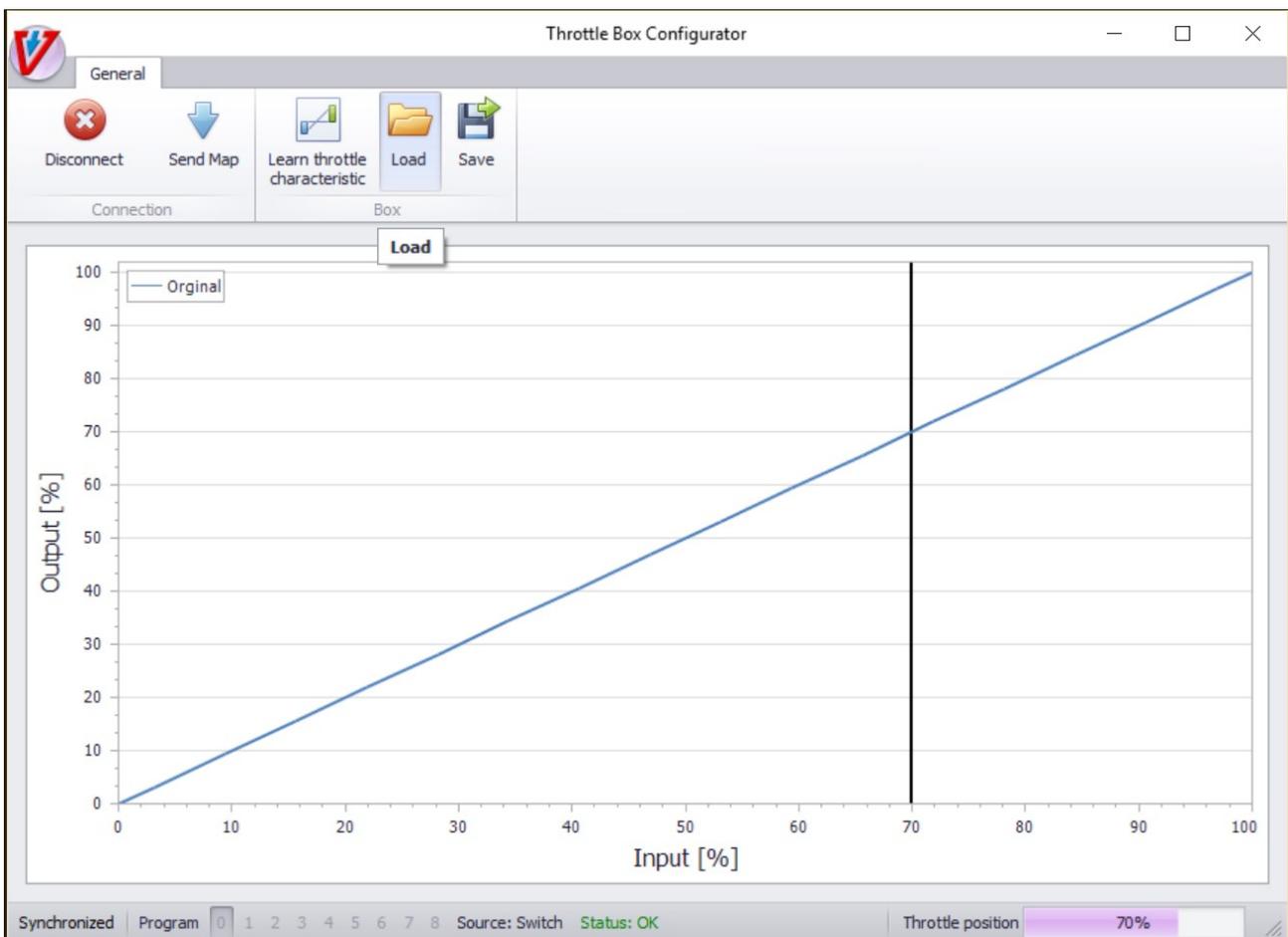


Manual for PHEV Box Configurator (v1.1)

1. Preparation

- Install drivers from <http://vtechtuning.eu/phev-box.html> (at the end of page) PRIOR to starting PHEV Box configurator
- Download and start PHEV Box Configurator. Use any USB-microUSB (smartphone-compatible) to connect with box. You need to open box by unscrewing 4 screws (Phillips screwdriver). MicroUSB port is inside.
- Ensure, that orange rotational programmer is NOT set to zero, as if it is set to zero, box is switched off (car works as factory designed).



2. Main window:

Connect – establish connection. You need to choose proper port (try all if you see many of them). If no port to box is available, ensure you have installed drivers, and unplug and plug again USB cable.

Disconnect – close connection. There is no need to close connection while driving (box will show actual throttle level, if stays connected).

Send Map – store actual map of throttle (visible at graph).

Learn Throttle Characteristic – opens sub-window, where you can change parameters or recalibrate throttle characteristic. Box is not working (car uses factory setup) when this sub-window is open.

Load – load complete set of characteristics and parameters for all programs (XML file)

Save – save complete set of characteristics and parameters for all programs (XML file)

You can edit map using arrows. Factory map is presented as blue line. New characteristic must be sent to box using „Send Map” function to work. There is no need to disconnect.

At the bottom of program window you can see if box is synchronized with manager („synchronized”) or map is changed, but not stored into box memory - „Pending changes”. Also you can see, which program is selected (with orange programmer inside box), status of connection and actual throttle position.

3. Learn Throttle Characteristic sub-window

Notice: Your box will work only if: (a) Enable EV tuning is checked (is selected) and Learn Throttle Characteristic window is CLOSED. When this window is open, box is disabled for security reasons (car uses factory characteristic).

Throttle Box Configurator

General

Disconnect Send Map Learn throttle characteristic Load Save

Learn throttle

Learned no throttle

Ch0 0,54V

Ch1 1,04V

Learned full throttle

Ch0 2,43V

Ch1 4,80V

Actual Voltage

Potentiometer 1 2,20V

Potentiometer 2 4,34V

Start learning NO throttle

Abort learning

Close

Tuning: Disabled

Output [%]

Input [%]

Enable ICE stop

Enable EV tuning

Prog	Engine starts	Kick start	Kick hard	Kick stop
1	35	86	95	20
2	38	86	95	20
3	37	86	95	20
4	36	87	95	20
5	35	87	95	20
6	34	87	95	20
7	36	88	95	20
8	34	88	95	20

Apply EV params

Synchronized Program 0 1 2 3 4 5 6 7 8 Source: Switch Status: OK Mode: Disabled Throttle position 83%

Buttons/check fields:

Enable ICE Stop – enables manipulating of internal car temperature and demanded load to ensure, that ICE (gasoline engine) won't start as often in winter/cold weather. Car will use much more of electric heating in that mode, saving gasoline, but using more electric energy for equivalent cabine heating.

Enable EV tuning – enables parameters for EV mode. Without enabling them, box influence is reduced to designed throttle curve (at main screen)

Learning Throttle – recalibrating throttle by scanning no throttle position, full throttle (with kick-off). This function is used only, if box is not working correctly with factory maps – there is no reason to use it otherwise.

Apply EV params – store params to box (permanent). There is no need to use Save button later. Applied EV params work only, if window with them is closed.

Parameters:

Engine starts – level of throttle, when ICE starts.

Kick start – level of throttle, when box should switch to full gasoline mode (for instance – at highway, overtaking etc). Going over this level is equivalent to switch off (uncheck) EV Tuning check field.

Kick hard – demand of full power of car, equivalent to kick-off (pedal to the metal)

Kick stop – level of throttle, when box will go back from full gasoline mode to EV mode. It is equivalent to switching on (checking) EV Tuning check field.

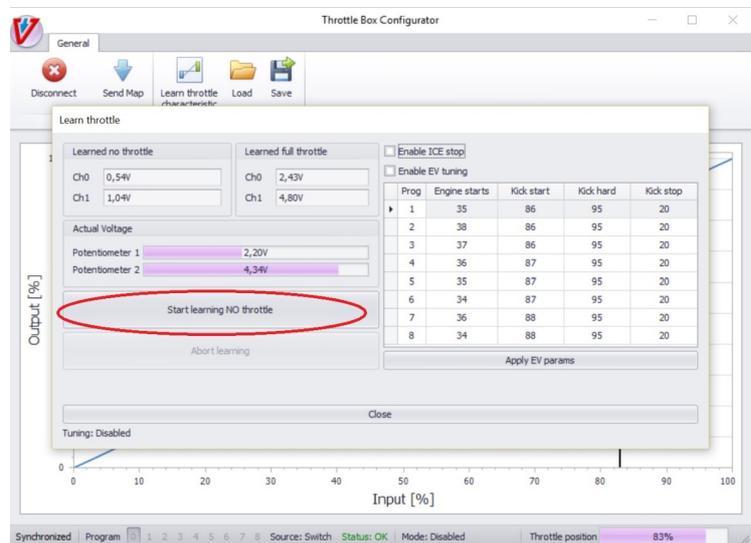
Remember: these settings work only if applied with Apply EV params button and when window with these params is closed. Otherwise car will work as factory car!

4. How to tune/adapt when box misbehaves

a. PHEV Box switches off after some time (car works like factory)

Solution: it means probably, that throttle characteristic is too different in some areas to default EU version, which is stored in box. Adaptation of throttle curve would be needed to solve this problem.

To adapt please follow on-screen instructions in PHEV Box Manager software (start adaptation with acc pedal released, confirm, press full throttle including kickdown, confirm). After adaptation PHEV box should work without any further troubles.



b. ICE starts after installing box in ECO mode on

Solution: set Kick Start to be equal to Kick Hard (95) so switching modes with throttle pedal won't occur except real kick-down. Then try decreasing value of „Engine starts” by 1 to find highest possible value, that won't star ICE at full throttle (but not kick-down).

c. ICE is not starting, but power gauge stops deep in green field, power of car is low.

Solution: try to increase „Engine starts” value to highest possible without start of ICE.

d. After switching to full gasoline mode with short kick down, I want to keep it until I remove leg from throttle

Solution: set “Kick stop” to value = 8. Do not set to zero, because throttle even if unused, shows about 5% level, so if you set to zero, box cannot return from full gasoline mode to EV mode.

e. When I keep full throttle, but not kick down and I increase pressure to accelerator pedal, there is no switching to gasoline mode. It works only if I do kick down.

Solution: Kick start parameter is probably too high. Try to find your end of throttle % level by pressing 10x full throttle (without kickdown) with usual pressure level. Read max % of throttle at the bottom right corner of window program. For example Let it be 86-88. Then set your kick start level to 89 (max level +1). Then – if you increase pressure at full throttle – box will switch to gasoline mode properly without using real kick-down to do so.

5. Alternative setups

If you think that factory power in EV mode with box is too low for you or launch is too sluggish, you can use alternative setup – use NORMAL mode as EV mode.

To do so, you must set “Engine starts” level to about 35. Please use procedure from 4.a. above to determine maximum possible “Engine starts” level for NORMAL mode. Then you can use NORMAL mode as EV mode. It has better acceleration from standing.

Other option is to stay with factory manner of ICE control – but with much longer EV mode area at throttle. In that case you can switch off “EV tuning” checkbox, and apply changes. Box will convert throttle curve to new one, promoting EV area of throttle (60% of pedal movement instead of factory 35-45%) and rest will be ICE mode, as before.