

Tesla-Link – Operating Guide

Introduction

This application allows you to see and control some feature of your Tesla vehicle through your Garmin device. The features documented in this guide is for version 7.9.0 of the application.

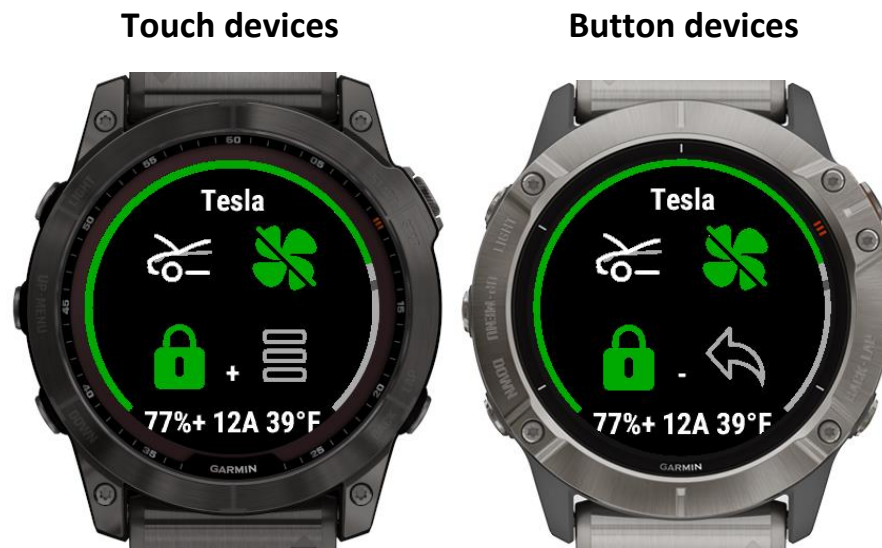
Caveat 1: You need to be in proximity of your phone and that phone must have Internet access for the application to work as the communication to the Tesla servers are done through your phone.

Caveat 2: The application doesn't support Multi-Factor Authentication (MFA or also known as 2FA) to login. There is a work around that will be explained later in the "Application's Parameters" section.




First Time Use

Although the application allows customizations, to start using it, all you need to do is to install it on your device. When you launch it the first time, it will ask you to login through your phone. Under normal circumstances, that's only time it should ask you again to log in, unless you change your Tesla account password, reinstall the application or possibly update it.

When launched, if the vehicle is already awake, the application default main screen is shown like this:



The screen is divided in four quadrants. We will call them the upper left, upper right, lower left and lower right quadrant in this guide. On a touch screen device, you activate the feature in the quadrant by simply touching it. On a button-operated devices, the buttons don't follow Garmin's standard button convention but that's to make it faster to operate. The "Select" button acts on the upper right quadrant, the "Down" button acts on the lower left quadrant, the "Up" button acts on the upper left button and the lower right quadrant is accessed through the "Menu" button. On many devices, this is activated by holding the "Up" button for a second. On touch and button devices, the "Cancel" button closes the application. You can also swipe right on touch device to close the application.

All quadrants but the upper left have a fix use that is depicted by the icon in the quadrant. For the upper left quadrant, beside the default “Open Frunk” command, it can be changed to three other options, “Open Trunk” , “Open Charge port”  or “pop-up menu”  through the application parameters or through the menu command “Alternate Frunk/Trunk/Port” option.



That “pop-up menu” is the most powerful one as it allows to interact with the frunk, trunk, port, windows and shows the state of these by just looking at that icon. When you select that option, a *pop-up menu* shows up asking which item to operate on:



This menu operates on the item as soon as it is selected, without any confirmation.

For the other options, to prevent inadvertent presses, it will ask to confirm the operation before being executed.

For safety, the icon will auto-switch to a moving vehicle if the vehicle is not in Park.



Touching the upper left quadrant or pressing the “Select” button will activate/deactivate the climate. By limitation of Tesla’s API (Application Programmer Interface), the mode chosen will be whatever the vehicle was left in. The icon will turn blue when it’s actively cooling and red when actively heating. Each of the blades of the fan can have a *heat wave* icon in them as shown on the left. The upper right one means the battery is preheating. The upper left one means auto defrost is On. The lower left means the rear defroster is On. The lower right one will show heat wave if *max defrosting* is On or a fan if *defog* is On. The image on the left depicts what is usually shown when it’s cold and the quadrant is touched/activated while climate is in Auto mode.



Touching the lower left quadrant or pressing the “Down” button will lock/unlock the doors. If a door is left open, an exclamation point will show up below the opened shackle piece.

Touching the lower right quadrant or pressing the “Menu” button will pop up the *menu*. Whatever shows up in that *menu* is selectable through the application’s parameters. You can have from one to sixteen commands (max allowed by Garmin) in that menu. You have 23 commands to choose from, which will be explained later in the *Commands Available* section of this guide.

If the vehicle is asleep when you launch the application, a ‘Should I wake’ confirmation will be shown.



If you select *Cancel*, you’ll be brought to the Select a vehicle pop-up in case you want to select a different vehicle to control without waking this one.

If you instead select *Confirm*, the screen will be changed to a “Waking vehicle” followed by up to two counters below it. The right one is the number of seconds elapsed since the wake command was sent and the left one is the number of times a 408 error was received. That error code means the vehicle is unavailable. Most likely because it’s still waking up and hasn’t communicated with Tesla’s servers yet. You might see these counters when sending commands too.

Beside the default view, there is also a vintage view, which was the first view this application was designed for, as it was designed for button operated devices.



There is far less information displayed in this view. What is shown is quite self-explanatory. This view is not touch compatible, except to show up the *menu* by pressing anywhere on the screen. The buttons operate identically to the default view. You switch to that view by selecting “Toggle View” from the *menu* (if included as a command in the *menu*).

Both views also show some common information on screen. The circle around the perimeter indicates the percentage charge level graphically. The green portion is the current charge level, the dark grey tick mark is the charge level to reach, and the lighter gray segment is the unused charge level of the battery. Below that circle at the top is shown the currently selected vehicle name.

Additional Information Displayed on the Default Screen



Just below the vehicle name is an *Eye* icon. If it's visible, it means Sentry is On. If it's not there, then Sentry is Off.

If scheduled departure is set, it will be displayed in the middle of the screen as shown.

Just between the lower two quadrants, there is a *spinner* that is helpful to see if the device is communicating with the vehicle. That *spinner* will alternate between '+' and '-' if enhanced Touch (see below) is enabled and '/' '\ ' if not. Every time the vehicle state info is received, it alternates between these two symbols. If instead an error is received, for each successive error, it will alternate between '?' and '¿'. In addition, if a command (like Unlock door) is queued and can't be transmitted right away, at 'W' will be displayed right after the *spinner*.

At the bottom of the screen, it displays the current State of Charge (SoC), followed by a '+' if it's actively charging. The configured maximum current the charger can draw and the inside temperature.

Additional Features for Touch-Enabled Devices

If your device is touch enabled, there are other ways to interact within the application.

Enhanced Touch: These are set in the application's parameters, which will be explained below. The first one is Enhanced Touch. This option adds more touch points to the screen. It defaults to Enable.

The first touch point is the vehicle's name. Touching this area will pop up a list of vehicles that you have access with your account.

The second touch point is that small eye below the vehicle name. Touching it will toggle Sentry On/Off.

The third touch point is the center of the screen. Touching it will pop up a time menu where you can schedule your departure (it's all days of the week) or disable it. It toggles between both. If the time is shown, it disables it. If it's not shown, it sets it. In the screen above, the departure is scheduled for 6 am.

The last two touch points are at the bottom of the screen, one towards the left where the SoC is displayed and the other one towards the right where the temperature is displayed. Through the application's parameters, you can select any of the following for each of these two touch points:

- Set Maximum State of Charge
- Set Maximum Charge Current
- Set Inside Temperature

Hold Action: Each one of the four quadrants can perform a specific action when it's touched for a second or more (ie, held down). These actions are configured in the application's parameters. When held, if your device supports vibration, it will shortly vibrate to indicate the action was registered. By default, these hold actions are all disabled.

Upper Left quadrant has four options: *Open Frunk*, *Open Trunk*, *Open Charge port* and *Vent*

Upper Right quadrant has one option: *Max Defrost*

Lower Left quadrant also only has one option: *Honk*

Lower Right quadrant has two options, *Homelink* and *Remote Boombox*

Swiping: By swiping left on the screen, it will switch the view to the Data View and disables the default action of the buttons and touch points of the screen. In this view, additional information about the Charge state (first sweep), Climate state (second sweep) and Drive state (third sweep) will be shown. More data might be available by swiping up or down in those views. You get out of this view through the Back button, swiping right or swiping left once at the drive state.

Glance mode

For devices supporting *Glance*, the application will be added to the Glance view.



When you first start your device, the glance view will request you to launch the application (widget) so it can establish communication with Tesla's servers. Once the communication is established and data is received,

that information about the vehicle will be displayed if the vehicle can be accessed. What is shown is the SoC, if it's charging (that '+' sign), its estimated EPA range and at what time is the selected SoC expected to be reached.

If the vehicle is asleep, it will display that status and the current time.

Glance data is limited by Garmin to a poll per 5-minute interval, so if Supercharging, don't rely on this to know when the SoC has been reached.

Application's Parameters

The application can be customized through the application's parameters on your phone. The parameters might reset to their default value after an application update if new settings were introduced in that update. That's forced by Garmin, and I have no control over it, sorry.

The following is an explanation of each of these options.

App Version: It's a non-editable field showing the current application version. Make sure you check for updates to get the latest features and bug fixes.

Enhanced Touch Experience: Selecting this checkbox (on by default) will activate the enhanced touch hotspot explained above.

Use Touch (for devices with both buttons and touch screen): By default, on those devices, the touch screen is active. By disabling this, the buttons are activated and the screen interaction is limited to the activate the *menu*. Both buttons and touch can't be used at the same time.

Quick Return to Main Screen: By default, when a command is sent, before the control is given back, the application waits to receive the latest vehicle state so the screen shows the updated status. For example, when issuing an Unlock command, the control is given back when the new state of the vehicle with the vehicle showing Unlock is received. This can take a few seconds to appear. By selecting this

checkbox, the control is given back as soon as the command is sent. Allowing you to send more commands immediately. In the example above, it can take a few seconds before the screen shows the Unlock icon.

Default option for the Upper Left quadrant: Options here were explained above. They are *Open Frunk*, *Open trunk*, *Open Port* and *PopUp Menu*. For legacy reason, default is *Frunk*.

Has a Hansshow Powered Frunk: If this option is checked (default is unchecked), Once the Frunk is open, instead of displaying 'Frunk already opened' if activated again, it will display 'Close Frunk'.

For Screen Bottom Left: As explained above, the options are *Set Charging Limit*, *Set Charging Amps* and *Set Temperature*. Each of these will be explained below.

For Screen Bottom Right : As explained above and same as *For Screen Bottom Left*.

Touch Hold action for upper left quadrant: Options are *Disable* (default), *Open Frunk*, *Open Trunk*, *Open Port* and *Vent*.

Touch Hold action for upper right quadrant: Options are *Disable* (default) and *Defrost toggle*.

Touch Hold action for lower left quadrant: : Options are *Disable* (default) and *Honk*.

Touch Hold action for lower right quadrant: Options are *Disable* (default), *Homelink* and *Remote Boombox*.

How many filled slots: Out of the sixteen available slots for menu commands, how many you want to be filled. If you say 5 for example, then only the first five menu options will be shown when *menu* is selected.

Slots 1 to 16: The command you want in that specific slot. Any one of the slots can have any of the available 23 commands. It's up to you to choose which one you want where. See below for the available commands.

API Refresh Token: This is optional, unless you have MFA activated in your Tesla Account. You can use an application like Tesla Token (available in both the Play Store and App Store) to generate a **Refresh** token that you enter here. If this is set, theoretically, you should no longer be asked to login on your phone unless you changed your password.

Location of Tesla's API Servers: Defaults to *owner-api.teslamotors.com*. Only needs to be changed when in mainland China. There, it's *owner-api.vn.cloud.tesla.cn*.

Location of Tesla's Auth Servers: Defaults to *auth.tesla.com*. Only needs to be changed when in mainland China. There, it's *auth.tesla.cn*.

Commands Available

The following command and a description of each are given below:

Defrost Toggle: Toggles Max Defrost On or Off. When toggling On, it will also turn on the climate but when toggling off, it does NOT turn off the climate. That's to allow the vehicle to remain warm after the frost/snow has melted from it.

Seat Heat: Allows to set individually or by groups (Front, Rear and All) the seat's heater from Off, Low, Medium, High and Auto. The Rear and All options are only available if the vehicle is equipped with rear seat heaters. Climate does not need to be On for the seat heaters to be On.

Steering wheel heat: Turn the steering wheel heater On or Off (must be equipped with one). Unfortunately, climate has to be On for this option to work for some reason. Also, the Low, Medium, High and Auto endpoints are not available through the API.

Set charging limit: Sets the maximum State of Charge (SoC) to the value specified (from 50% to 100%).

Set charging amps: Sets the maximum charging current (in amperes) to the value specified (from 5A to the maximum the vehicle can handle while AC charging). Has no effect while fast (or DC) charging.

Start/Stop charging: As its name implies, this will toggle between charging and not charging.

Set temperature: Set the driver's temperature (also passenger if the controls are not split) to the value specified (minimum and maximum are vehicle dependent). Unit follows the device's configured unit format.

Adjust Departure time: If a time is already set, it will deactivate departure, otherwise it will set the departure to the time entered in 15 minutes increments. Time format follows the device's configured time format (12h/24h).

Sentry Toggle: Toggles Sentry On or Off.

Honk: Briefly activates the vehicle's horn. There is no confirmation asked. It honks as soon as the command is received by the vehicle.

Open Frunk: Will show *Open Frunk* or *Close Frunk* (if Hansshow checkbox checked). There is no confirmation asked. It will open the frunk as soon as the command is received by the vehicle unless it's moving.

Open Trunk: Will show *Open Trunk* or *Close Trunk* (only does something if the trunk is mechanically actuated to close). There is no confirmation asked. It will open/close the trunk as soon as the command is received by the vehicle unless it's moving.

Open Port: This command knows the state of the port and will show either open the port, close it, unlock the cable or stop charging.

Vent: Vent the windows or close them if open. Does not work on newer vehicles.

Homelink: Activate Homelink.

Toggle View: Toggle between the default and text mode view.

Alternate Frunk/Trunk/Port: Alternate the available options for the upper left quadrant between *Open Frunk* (default), *Open Trunk*, *Open Port* and *PopUp Menu*.

View data screen: For button-operated devices that don't have a touch screen. Allows to view the data screen. Up/Down moves within a screen, Select moves to another screen.

Select Vehicle: Shows a popup menu with a list of vehicles the account has access to control.

Reset: Reset the communication parameters with the vehicle. A new access token will be requested, and authentication could be required.

Force wake: Sends a Wake command to the vehicle.

Set refresh time: By default, the application requests a new vehicle state every 4 seconds. With this option, you can change this from 0.5 seconds to 9 seconds in 0.5 second increments.

Remote Boombox: Activate the *remote boombox* (ie, "fart on demand").

Climate Mode: Set the mode for the climate. Options are *Off*, *On*, *Dog* or *Camp*. Unless Off is selected, this will also turn on the climate.

More Details

For more details and a changelog of what has changed and when, you can consult the README file here:

<https://github.com/SylvainGa/Tesla-Link/blob/master/README.md>

You can find the application in the Connect IQ store here:

<https://apps.garmin.com/en-US/apps/3ca805c7-b4e6-469e-a3fc-7a5c707fca54>

Helping

If you want to help translating this application in different languages, contact me through the Connect IQ Store and we'll set something up.

<https://apps.garmin.com/en-US/apps/3ca805c7-b4e6-469e-a3fc-7a5c707fca54>

Acknowledgement

This application would not have been possible if Steven Walter wouldn't have made the foundation (and most of the walls lol) of his application. You can find his version of the application here in the Garmin Store:

<https://apps.garmin.com/en-US/apps/f5f8b74f-f04a-4ad9-9575-231a33640475>