

# TST100 E-Scooter I/O

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## Scooter Protocol



TST100 designed to work with:

- Segway Ninebot ES4
- Segway MAX
- Xiaomi M365
- Fitrider e-scooters
- Hergele
- Okai

When configuring TST100 device set correct "Scooter Protocol" for the e-scooter you using. This is necessary for correct communication between TST100 and e-scooter. Scooter protocol parameter default option is None. In this case IoT device will not communicate with scooter or control it.

**NOTE!** Protection of Segway scooters protocols (Segway ES and Segway MAX) is done based on type index, serial number or heartbeat packet length. First of all IoT checks type index, secondly checks serial number or heartbeat packet length. In case if Segway ES is configured and IoT device is used with Segway MAX, then IoT device configuration of Scooter protocol will change to Segway MAX **automatically**.

## Scooter Baudrate



Scooter Baudrate ensures communication between IoT device and Scooter.

Most of scooters using 115200 baudrate, but pay attention what scooter, protocol (documentation) and baudrate you are using. For example Fitrider T2S could use 9600 baudrate instead of 115200.

## Scooter FW Update



If this feature is enabled, TST100 device periodically checks scooter's firmware versions and updates them to the latest (**Segway models only**), based on which **Scooter Protocol** is selected and which device firmware is currently installed to TST100 device.

There are 3 main Segway E-Scooter's parts that requires sharing firmware versions to function properly with TST100 device:

- Master Control (Main board)
- Internal Battery (BMS)
- Instrument Panel (BLE)

The table below shows **Segway** E-Scooter's used firmware versions corresponding to **TST100** firmware versions:

<b>TST100 FW</b>	<b>Scooter Main board</b>	<b>BLE</b>	<b>BMS</b>
FMB.Ver.55.00.09.Rev.04	ES2/4	4.0.2	4.0.1 2.4.1
	MAX	21.0.7	21.0.1 3.5.6
FMB.Ver.55.00.10.Rev.00	ES2/4	4.0.2	4.0.1 2.4.1
	MAX	21.0.9	21.0.1 3.5.6
FMB.Ver.55.00.13.Rev.00	ES2/4	4.0.2	4.0.1 2.4.1
	MAX	21.1.0	21.0.1 3.6.3
FMB.Ver.55.00.19.Rev.00	ES2/4	4.0.4	4.0.1 2.4.1
	MAX	21.1.1	21.0.1 3.6.3

## **E-scooter I/O**

Depending on the Scooter Protocol, it is possible to receive different I/O elements in the E-scooter I/O section.

The full list of I/O elements can be found [here](#).

The description how to correctly configure the I/O settings can be found [here](#).

