

Tesla Roadster Tow Mode - SavvyCAN Manual

Version 3 - Tow Mode hold and free-rolling procedure

Information provided by **Philip Schuster** (philip.zapatero@gmail.com).

No liabilities. This information and the included files are provided as-is. Use entirely at your own risk.

High-voltage safety: The Tesla Roadster contains lethal high voltage. Disconnecting the HV service plug or working near HV components must only be performed by a person trained and equipped for EV high-voltage work, with the vehicle secured against movement and the official service procedure followed. Do not disconnect an energized HV circuit or interrupt load current.

Important behavior of Tow Mode

Tow Mode switches off immediately when transmission of the Tow Mode request stops. The request is not stored permanently. SavvyCAN must therefore keep replaying the Tow Mode frame continuously for as long as the parking pawl must remain released.

Project background and OpenInverter link

This procedure was developed while working on Philip Schuster's Tesla Roadster battery replacement project. At the time, Philip could not get the Roadster into a free-rolling state and therefore had to load it onto his trailer using a vehicle lift. Having this CAN-based Tow Mode procedure available would have been necessary and would have made loading the vehicle much easier.

OpenInverter project thread:

[Tesla Roadster Battery replacement with ID.3 Modules](https://openinverter.org/forum/viewtopic.php?t=7040)

<https://openinverter.org/forum/viewtopic.php?t=7040>

What this package contains

- A 1-minute SavvyCAN playback file: **Roadster_Tow_Mode_Hold_1min.csv**. Enable **Loop Sequence** so Tow Mode remains active.
- A convenience Tow OFF file: **Roadster_Tow_Mode_Off_2sec.csv**.
- This PDF manual and the reference screenshots.

1. Requirements

- Windows PC or laptop.
- SavvyCAN installed.
- PEAK PCAN drivers installed.
- A PEAK PCAN2 / PeakCAN adapter connected to the Roadster diagnostic port.
- An OpenVehicleMonitor cable that can be cut and adapted.

2. Build the CAN3 cable

Buy an **OpenVehicleMonitor cable**, cut it, and connect it to the PCAN adapter as follows:

Roadster diagnostic connector	PCAN adapter
Pin 4	CAN High (CAN_H)
Pin 11	CAN Low (CAN_L)

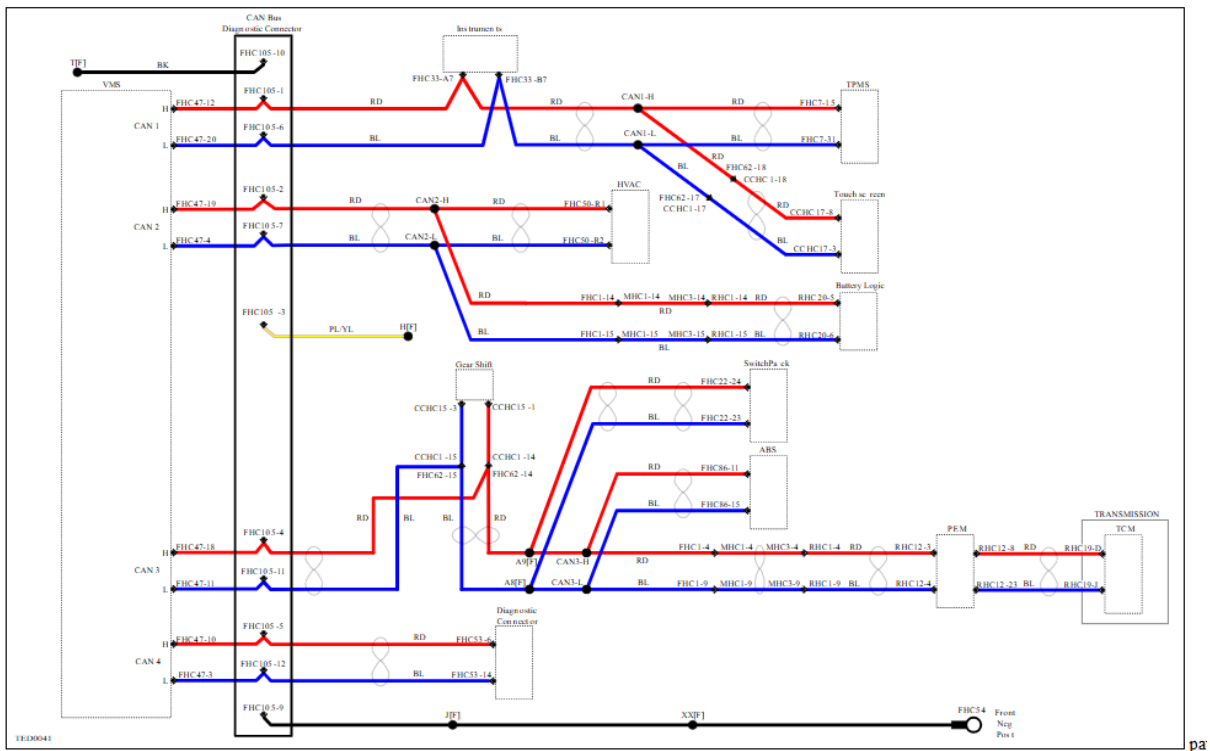


Figure 1. CAN bus and diagnostic connector reference. CAN3 is the PEM / transmission bus.

3. Install the software

- Download and install the **PEAK PCAN drivers**.
- Download and install **SavvyCAN**.
- Connect the PCAN adapter to the PC and to the Roadster diagnostic port.

4. Connect SavvyCAN to CAN3

Step 1: Click **Add New Device Connection**. Select **QT SerialBus Devices (SocketCAN, PeakCAN, etc)**. Select **peakcan**, choose the correct port, and create the connection.

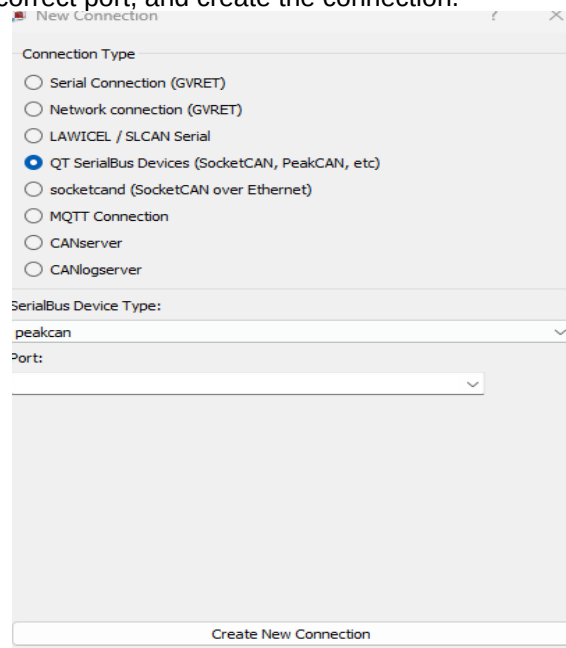


Figure 2. Select the PeakCAN adapter in the new connection window.

Step 2: Select the connected adapter, set the CAN speed to **500000**, enable the bus, and save the bus settings.

Connected Devices:

	Type	Subtype	Port	Buses	Status
1	Bus	peakcan	usb0	1	Connected

↑

↓

Add New Device Connection

Reset Selected Device

Disconnect Selected Device

Bus Details:

Speed:

500000

Listen Only:

☐

Enable Bus:

☒

Enable CAN FD:

☐

CAN FD Data Rate

2000000

Save Bus Settings

0

☐ Enable Console

Device Console:

Send:

Send Hex

Send Text

Clear

Figure 3. Set 500000 baud and enable the bus.

5. Start and hold Tow Mode

- 1 Open SavvyCAN **Playback / Send Frames**.
- 2 Click **Load File** and load **Roadster_Tow_Mode_Hold_1min.csv**.
- 3 Keep **Use original frame timing from captured frames** enabled.
- 4 Enable **Loop Sequence**. This is essential because Tow Mode turns off immediately when the Tow Mode frames stop.
- 5 Select CAN ID **0x08C** in the ID filter.
- 6 Select the correct CAN bus and press **Play**.

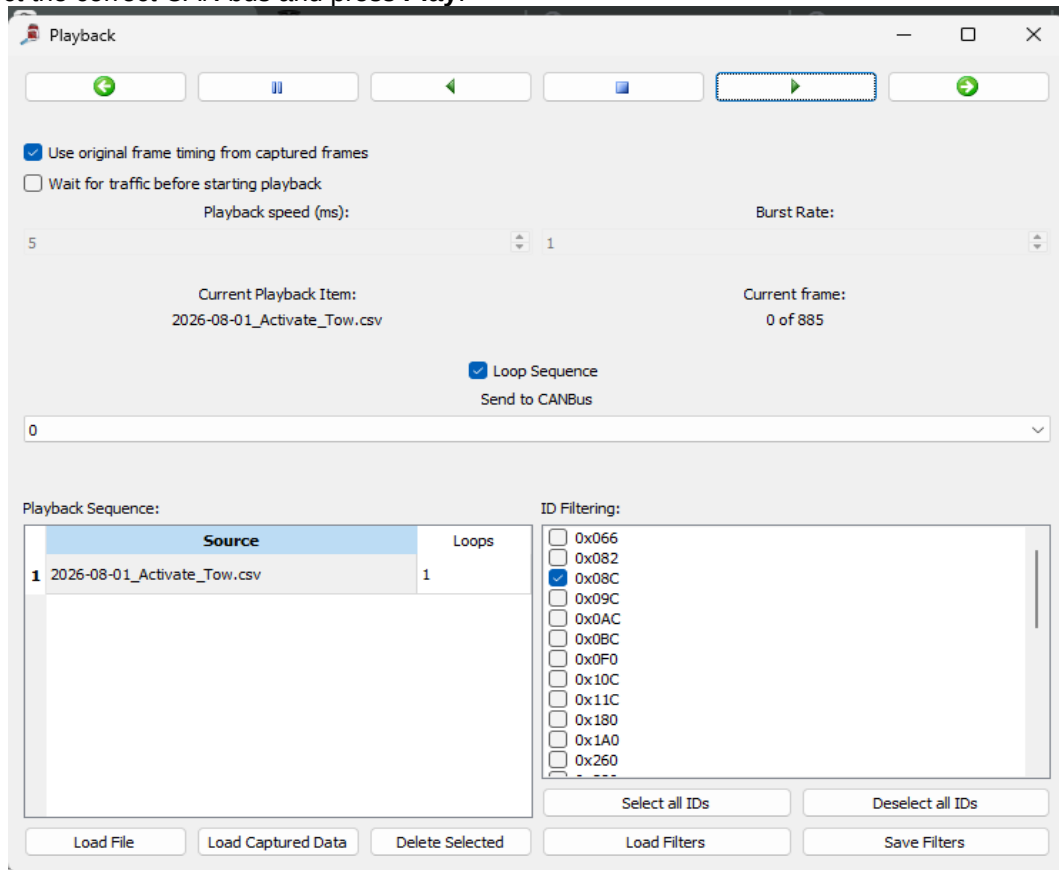


Figure 4. Playback setup: load the file, retain original timing, select 0x08C, enable Loop Sequence, and start playback.

6. CAN frame sent by the file

Parameter	Value
CAN bus	CAN3
CAN ID	0x08C
DLC	8
Data	00 00 50 64 BA AD 00 00
Interval	100 ms
File duration	1 minute; loop continuously

7. Make the Roadster remain free-rolling

The following sequence is the procedure provided by Philip Schuster. **Secure the vehicle against rolling before starting.**

- 1 **Start the Tow Mode CSV in loop mode.** Tow Mode must still be actively transmitted.
- 2 **Confirm that the parking pawl has released** and that the vehicle can roll.
- 3 **While Tow Mode is still active, disconnect the HV service plug** using the proper Tesla Roadster high-voltage isolation procedure.
- 4 **Then disconnect the 30 A plug / fuse under the front hood next to the HVAC controller.**

- 5 With the HV plug and the 30 A plug disconnected, the Roadster remains free-rolling according to this procedure.

Critical: Do not pull the HV service plug under electrical load. Use the official isolation procedure, wear appropriate PPE, secure the vehicle with wheel chocks, and treat all HV components as energized until safely verified otherwise.

8. Turning Tow Mode off without disconnecting the vehicle

If the HV service plug and 30 A plug have not been disconnected and you want to leave Tow Mode normally, stop the looping Tow Mode playback and play **Roadster_Tow_Mode_Off_2sec.csv**. It sends CAN ID **0x08C** with data **00 00 00 64 BA AD 00 00**. Make sure the vehicle is stationary and secured before allowing the parking pawl to engage.

9. Disclaimer

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