

2026/07/22

PRODUCT MANUAL

R1.0



M10 Motion Imitator

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Document revision history

Version	Date	Comment
1.0	2025-02-13	First release

Publisher

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M10 Motion Imitator

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1.1 Introduction



M10 Motion Imitator is delivered programmed to emulate a specific motion device. The Input data (telemetry) from a simulation or a game (SIM) is sent to ForceSeat Platform Manager (ForceSeatPM) which calculates series of required top frame positions. That way user is able to look into Output Diagnostics and see the calculated output telemetry without the machine.

M10 Motion Imitator connects to the PC via USB.

INFORMATION

- M10 Motion Imitator could be programmed to emulate any PS-series or QS-series machine.
- M10 Motion Imitator also works with ForceSeatDI.

1.2 Connection

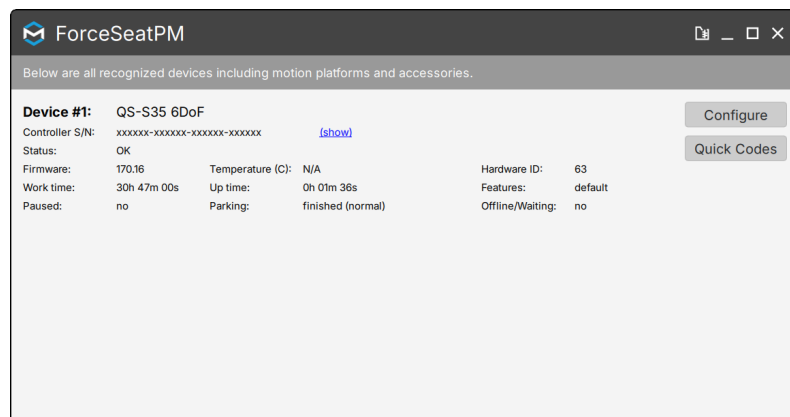
Download and install ForceSeatMI or ForceSeatPM (more information on the software in next section). License code or Serial Number (S/N) will be needed. It is printed on the M10 housing.

After installation M10 Motion Imitator must be connected to PC via USB type C cable. The **Status** in ForceSeatPM will change from **Not connected** to **Parked/Centered** in the lower left corner of ForceSeatPM. Emulated platform is now connected and ready.



Status: Parked/Centered

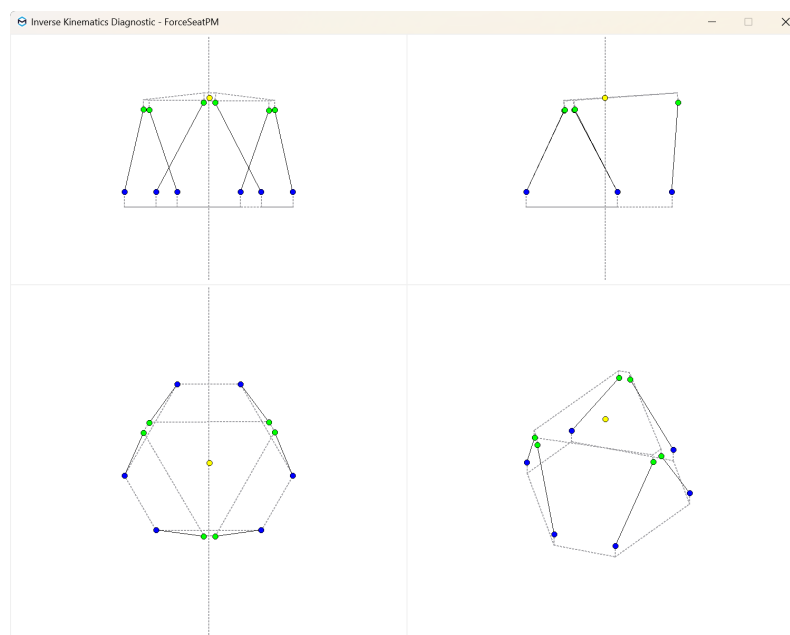
Click on the Icon or go to **Tools and Diagnostics** → **Devices** to see the status of the device.



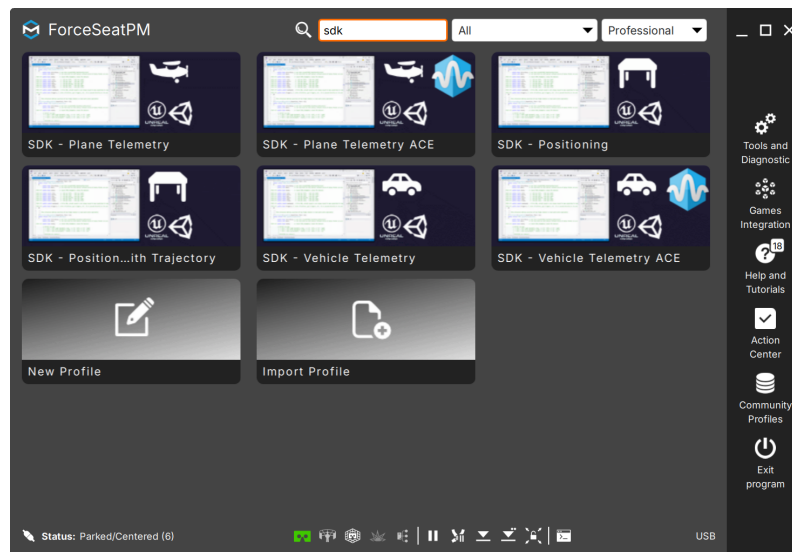
1.3 Functionality

Once the M10 Motion Imitator is connected - input data coming from the SIM is calculated into top frame positions in real time and Diagnostics data is generated.

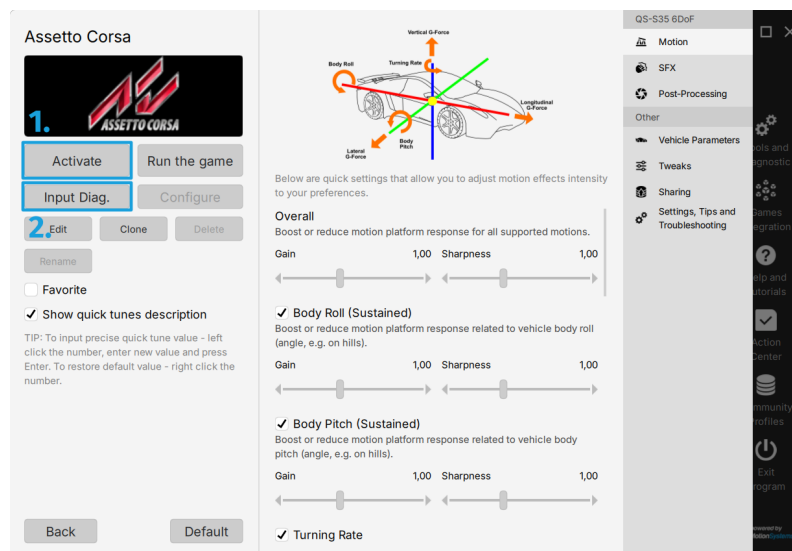
Example illustration from ForceSeatPM → **Tools and Diagnostics** → **Kinematics Diagnostics**:



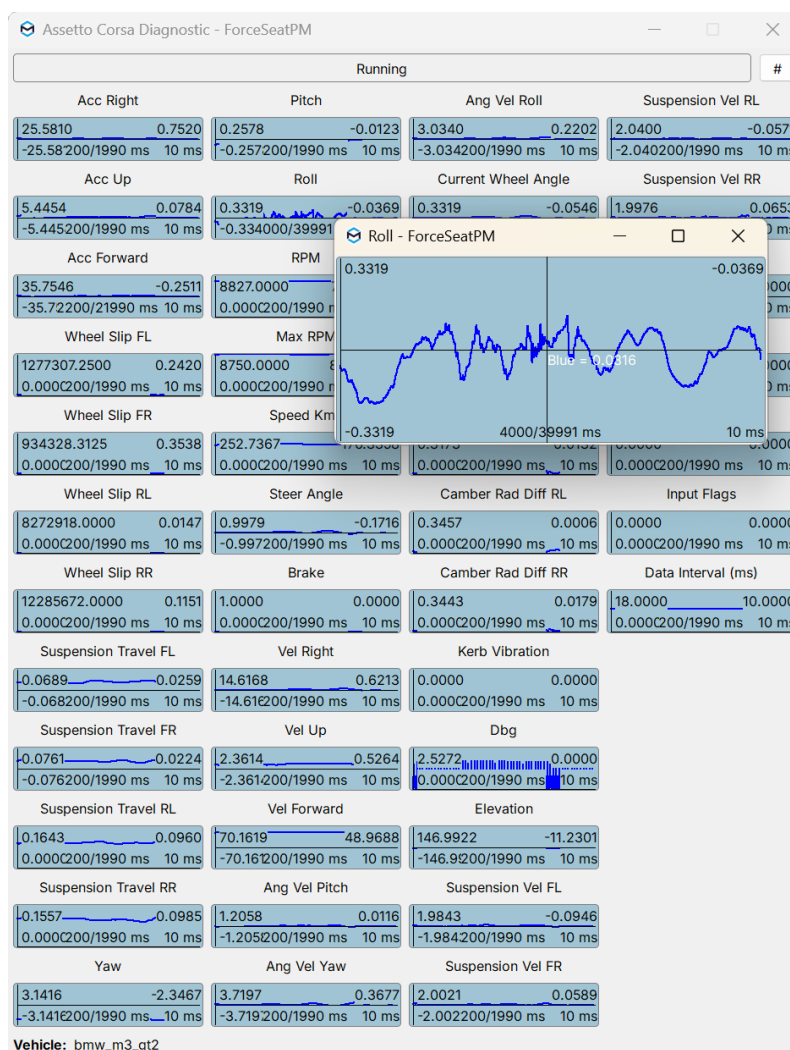
For motion cueing algorithm to work, telemetry input data is needed, which could be generated by a SDK Simulation (Software Developer Kit). It is used by Game developers to generate telemetry data and to simulate top frame motion. For this product activation code is needed.



A driving or flying simulation game also could be used to generate telemetry input data. Once it is installed on your PC - select one of the profiles in ForceSeatPM and **Activate** it (1).



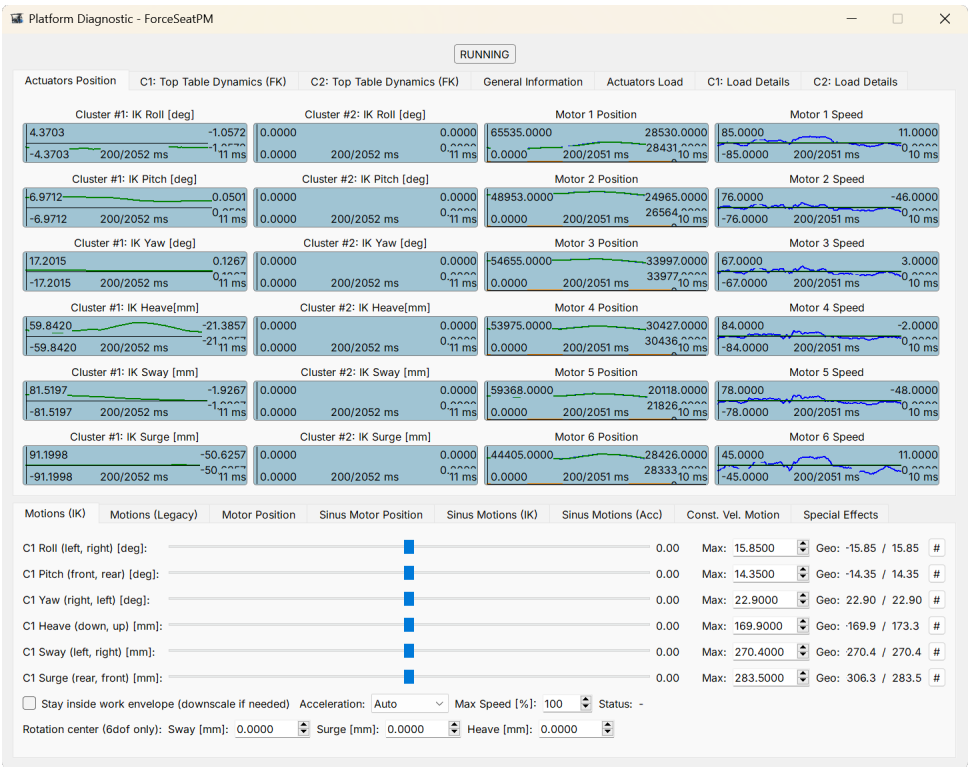
Then run the game and start a game session. Click **Input diagnostics (2)** to see all the telemetry information coming in.



INFORMATION

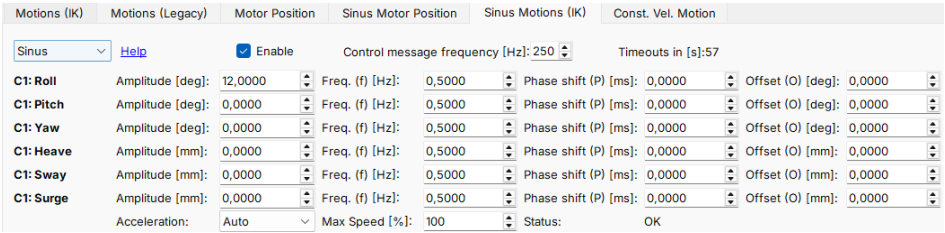
Double-click on a graph to see it in separate window. Right-click on it to see all the options available to adjust the graph.

When input data is present and M10 Motion Imitator is connected, Platform Diagnostics plots all the available information on pop-up graphs.



Using one of the sliders in **Motions (IK)** will result in new calculated data being shown on the graphs.

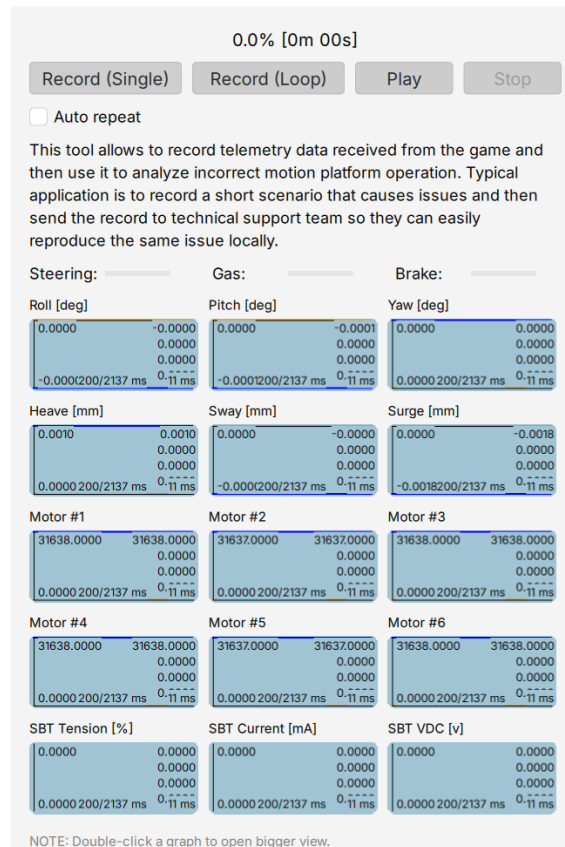
In order to generate a continuous looped movement, go to **Sinus Motions (IK)** and enter an **Amplitude** value and then click **Enable**.



INFORMATION

Keep in mind that **Platform diagnostics** window overwrites the input data from the game.

Instead of having to constantly generate a telemetry in the SIM, it is possible to record it and replay it back. Go to **Tools and Diagnostics** → **Game Data Playback** and record a game session. **Save** it to file → click **Play** → **Load the file** → select **Auto repeat**. All output diagnostics will be generated until the recorded file is played in the background.



1.4 Recommended reading

More information on ForceSeatPM software functionality and ACE profile creation is found in Vehicle physics simulation application manual:

- https://motionsystems.eu/files/Vehicle_physics_simulation_application.pdf

More information on Force Seat software family details and functionality is found in user manuals:

- <https://motionsystems.eu/files/Software.pdf>
- <https://motionsystems.eu/files/ForceSeatMI.pdf>
- <https://motionsystems.eu/files/ForceSeatDI.pdf>