EasyMotion User Guide

EasyMotion v1.0

Contents

NOTE: This plugin has only been tested with a DOF Reality *Seat Mover M2* model and is therefore not guaranteed to work with other platforms. In its current form, it is most suited for game developers who possess a motion platform and wish to contribute to the known compatible platform types.

1. System Requirements

Operating System:	Windows 7 SP1+, 8, 10, 64-bit versions only
Unity version:	2019.1+
API Compatibility Level:	.Net 4.x
Motion Platform Motor Driving Firmware:	SMC3
Motion Platform DOF Configuration:	2DOF
Known Compatible Platforms:	“Seat Mover M2(2Axis)” by DOF Reality

2. EasyMotion Setup

The plugin generates motion cues from longitudinal and lateral accelerations as well as incline data. It acquires its telemetry from an assigned Rigidbody and therefore requires said component on whichever vehicle is to be tracked.

The plugin will only operate if a player enables the motion control and selects the platform’s COM port. Therefore, it is also necessary to map menu-component references.

NOTE: You may delete the *Demo* folder safely but must have the *Scripts, Editor* and *VisualAids* ones for correct operation.

2.1 Initial Setup

This configuration wizard follows the steps required for correct functioning of the plugin. The following components are setup:

- Toggle reference
- Dropdown reference
- Slider references

Toggle reference

Select the Toggle component which activates or deactivates control of the platform.

The assigned component will receive an `EasyMotionToggleController` script component and is necessary for correct functioning.

Dropdown reference

Select the Dropdown component which contains all available COM ports.

The assigned component will receive an `EasyMotionSerialPortDropdownController` script component and is necessary for correct functioning. NOTE: This script handles port population and uses the `System.IO.Ports` namespace.

Slider references

Select the Slider components which allow the player to tweak force strength.

When assigned, pitch and roll force multipliers will be made available to the player. The assigned components will receive `EasyMotionSerialSliderController` script components and are necessary for correct functioning.

2.2 Rigidbody Reference

Assigning a Rigidbody reference is done via the menu item *Rigidbody Motion Setup*. Simply select the vehicle for which motion is desired and click Apply. The relevant GameObject in the hierarchy will be revealed. The inspector window for the EasyMotion component gives access to the Force Settings, Visual Aids and Jitter Effect Demonstration header groups.

Force Settings

Set the amount of longitudinal or lateral force produced by the plugin.

NOTE: This is not the same multiplier as the one made available for the player through the Slider reference setup.

Visual Aids

Enable or disable Motion Platform and G-Force visualizations.

NOTE: These will not be rendered in the game as they are editor-only features.

Jitter Effect Demonstration

Enable or disable a demonstration of StartJitterEffect().

NOTE: It is highly recommended that the effect be called via script and not left on for the entire scene duration.

3. Jitter Effect Reference

The plugin has a built-in vibration effect which can be used to simulate bumpy surfaces, windy conditions, etc. It oscillates on the roll axis of the platform.

StartJitterEffect

The **StartJitterEffect()** function starts the platform vibration effect.

```
void StartJitterEffect(float jitterStrength)
```

- jitterStrength : the amount of jitter that will be generated. Values above 10 will be silently clamped.

StopJitterEffect

The **StopJitterEffect()** function stop the platform vibration effect.

```
void StopJitterEffect(float)
```

4. Demo Contents

The plugin includes two demo scenes: *MenuExample* and *SimpleGame*.

4.1 MenuExample Scene

This scene is designed with the *Initial Setup* configuration wizard in mind. Setup must be completed prior to using the *SimpleGame* with a motion platform.

NOTE: The visual aids will display their correct simulations, even if the platform has been disabled.

4.2 SimpleGame Scene

This scene makes use of Unity's *Vehicle Tools* and *Standard Asset* assets and puts together a scene with an opportunity to see the plugin in action. The `Rigidbody` component has already been assigned to the dodge challenger model.