

DJI PC Simulator

User Manual V1.0

2015.06



Introduction

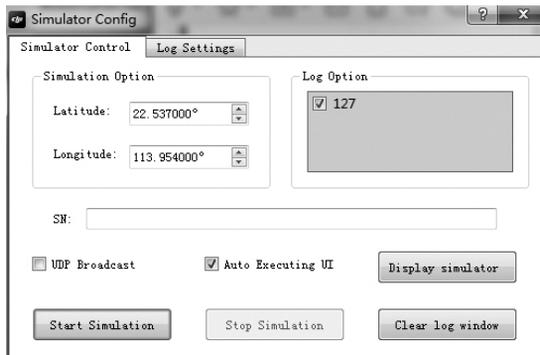
The DJI PC Simulator is a flight simulator designed for SDK developers. The simulator creates a virtual 3D environment and a data analysis from flight data transmitted to the PC via the UDP protocol.

Supported Operating Systems: Windows 7, Windows 8 and Windows 8.1

Supported DJI Platforms: Matrice 100, Inspire 1, Phantom 3 Professional and Phantom 3 Advanced

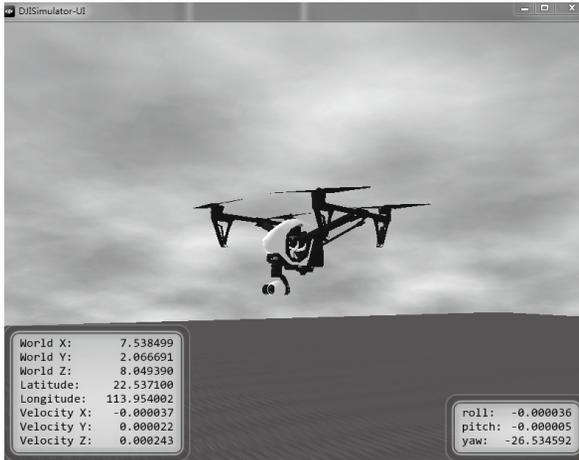
Using the DJI PC Simulator

1. Download the DJI WIN driver from the DJI official website and follow the instructions to install the driver. You must install the driver before running the simulator.
2. Unzip the "DJISimulator-Installer.rar" file, and then follow the instructions to install the program. The Simulator Config window will appear once you launch the DJI PC Simulator. Set the Latitude and Longitude values based on your preference.



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- ⚠ • The aircraft will not take off if the latitude and longitude values are near a No Fly Zone.
 - Select Show Log Window under the Log Settings tab to display the log window.
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3. Connect the aircraft to your PC via a Micro USB cable, and then power on the aircraft and the remote controller. Click Display Simulator.

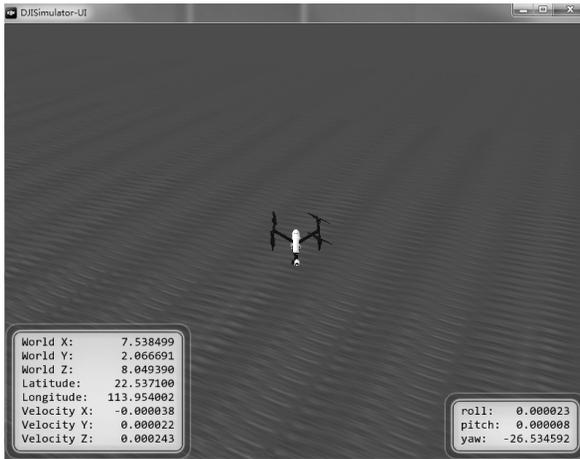
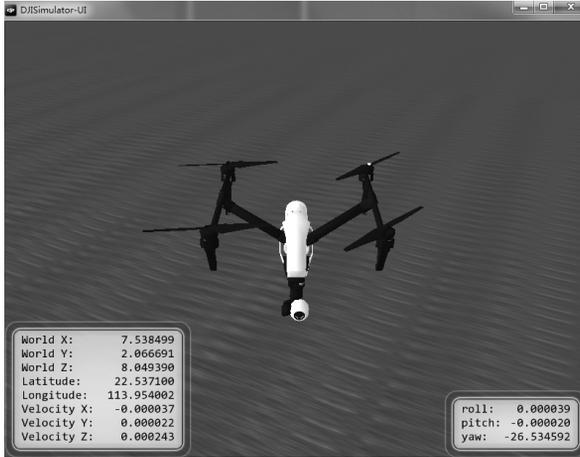


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- ⚠ • Do NOT launch the DJI Pilot app when the DJI PC Simulator is running.
• Do NOT mount the propellers on the aircraft when the DJI PC Simulator is running.
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4. Start the simulation by clicking Start Simulation. You can use the remote controller to change the course of the aircraft or bring it back with the Return-to-Home function. Enable API Control to allow control from a mobile or onboard device. World X, Y, Z represents the North-South, East-West, and Up-Down axes (take the North, East and Up directions as positive).



5. Left-click and drag to change the view angle. Scroll to zoom in and zoom out.



6. Click Stop Simulation to stop the simulation. Close the simulator, and power off the aircraft and the remote controller after use.

UDP Transmission

Function

Flight data is transmitted to the PC through the UDP port. The PC can interpret this data to create a virtual 3D environment for analysis. Use port 5566 for transmission.

Transmission Protocol

Data is transmitted in JSON. For example:

```
{  
  "Roll":          0.0,  
  "Pitch":        0.0,  
  "Yaw":          0.0,  
  "WorldX":       0.0,  
  "WorldY":       0.0,  
  "WorldZ":       0.0,  
  "WorldLatitude": 0.0,  
  "WorldLongitude": 0.0,  
  "VelocityX":    0.0,  
  "VelocityY":    0.0,  
  "VelocityZ":    0.0,  
  "Time":         0,  
  "TransformState": 0,  
  "MotorStarted": 0,  
  "FlyingState":  0,  
  "ProductType":  0,  
  "SimulatorCommand": 0  
}
```

Below is a description of the parameters.

Parameter	Type	Description	Remarks
Roll	FLOAT	Roll angle	Unit: rad
Pitch	FLOAT	Pitch angle	Unit: rad
Yaw	FLOAT	Flight direction relative to True North	Unit: rad
WorldX	FLOAT	X-coordinate	Unit: m
WorldY	FLOAT	Y-coordinate	Unit: m
WorldZ	FLOAT	Z-coordinate	Unit: m
WorldLatitude	FLOAT	Latitude value	Unit: rad
WorldLongitude	FLOAT	Longitude value	Unit: rad
VelocityX	FLOAT	Speed in the X-direction	Unit: m/s
VelocityY	FLOAT	Speed in the Y-direction	Unit: m/s
VelocityZ	FLOAT	Speed in the Z-direction	Unit: m/s
Time	UINT32	Flight time	Unit: ms
TransformState	UINT8	Landing gear status	For Inspire 1 only: 1. Landing gear is lowered. 2. Landing gear is being lowered. 3. Landing gear is raised. 4. Landing gear is being raised. 5. Stop raising/lowering landing gear.
MotorStarted	UINT8	If the motor is working or not	Value is '0' or '1'
FlyingState	UINT8	If the aircraft is flying or not	Value is '0' or '1'
ProductType	UINT8	Denotes the aircraft model	'1' denotes Inspire 1, '2' denotes Phantom 3
SimulatorCommand	UINT8	The transmission number of Simulator	This value increases on each launch of the Simulator program.

This content is subject to change.

Download the latest version from
<http://dev.dji.com/en/products/sdk/onboard-sdk/downloads>



If you have any questions about this document, please contact DJI by sending a message to DocSupport@dji.com.