SPECIFICATIONS HARDWARE AND SOFTWARE CARNETSOFT DRIVING SIMULATOR version: december 2021

SPECIFICATIONS DRIVING SIMULATOR SOFTWARE

Required specifications may change in future updates, because of the fast developments in computer hardware and software. In that case this document will be updated.

It is very important to realize that the driving simulator software is not like a game. In a game, the forward field of view is typically around 60 degrees. In the simulator, there's a forward view, a view to left and to right and each view has a rearview mirror. So, that's 6 channels in total, opposed to 1 channel in a typical computer game. Effectively these 6 channels give a 360 degrees surround view. Modern graphics boards (GPU's) are very fast but they all are still limited in the number of drawing primitives that can be transferred between the CPU and the GPU per second, or the band width. That's why most computers and their GPU and not suitable for use as a driving simulator, because band width is simply too low. Especially, laptops or computers with integrated graphics are always unsuitable.

That's why the highest possible band width is needed. The **NVidia RTX3080** is HIGHLY recommended. This GPU has 10 GB of video memory and a bandwidth of 760 Gb/s. A minimum of 8 Gb video memory is required.

SPECIFICATIONS HARDWARE

Component	**Type**
Computer	
PSU	600 Watt
Processor (CPU)	**Intel Core i7-9700, 4.9 GHz or better. The Ryzen processors of AMD are NOT recommended because those may result in freezes.**
Motherboard	MSI B150M or better
Memory	16 GB DDR4-3200 or higher
Harddisk	**SSD 240GB. SSD is IMPORTANT!**
Graphics board (GPU)	**NVidia RTX3080 (10 GB, 760 Gb/s)**
Operating system	Windows 10, 64 bit
Ethernetcard	1Gbit
DVD player	any
Steering console	Logitech G29 Driving Force + Driving Force shifter (including clutch, brake and accelerator pedals): **NOT THE G920**, because it does not have enough buttons for all functions. Although in principle any device that interfaces with the computer via USB can be connected, **the software does NOT work with the Fanatec Wheelbases, Fanatec steering wheel (base) is not supported**.
Monitors	4 x 23 inch monitors widescreen (16:9). Aspect ratio must be 1.777 (as in 1920x1080) or 1.6 (as in 1680x1050). Size or resolution are not important, but aspect ratio is.
Sound system	2.1 or 5.1 sound system

CHARACTERISTICS OF THE SYSTEM

Characteristic	Value
Rendering displays	3 (+ 1 for userinterface).
Display resolution	Recommended 1920x1080 per display.
Horizontal field of view	210 degrees.
Graphical databases	15, rural environments, town, highway, motorways, roundabouts etc.
Virtual instructor	Yes, gives instructions and feedback o driving behaviour. Large number of tasks monitored automatically, for example, headway, driving speed, (speed limits), lane following (steering and use of lane), lane changing, overtaking, priority rules, approaching and driving on roundabouts etc.
Traffic model	Advanced autonomous traffic that behaves very natural. High traffic density.
Scenario generation	Via (binary compiled) fast scripts.
Rendering surfaces	Left, center and right out-of-the window views, rearview mirrors left, center and right, top view to assess vehicle position on the road.
Sound generation	3D sound generation.
Special circumstances	Night driving, fog, rain and snow.
Gear shifting	Both manual and automatic (selected via user interface). In both cases you need a gear shifter.
Configurability	Via configuration tool. To configure display resolutions, input devices (easy to add different gear shifter, pedals, buttons etc), rendering (shadow generation, glow mapping for night driving) etc.
Vehicle model	Advanced mathematical vehicle- and engine model, for realistic driving. Graphical models to drive in include Toyota prius, Tata Nano, skip truck, articulated truck and city bus.
Countries	Versions available for the Netherlands, India, Australia, UK and many more. Software can be translated for different traffic rules and road signs as found in other countries.
Side of the road	Both left-lane (RHD) and right-lane (LHD) driving versions available.