

## RACING DASH SIMULATOR

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Pentru pasionatii de simulatoare auto, pentru amatorii de gadget-uri tech, am pus cap la cap un device pe care il puteti confectiona acasa, cu piese relativ ieftine si cu un rezultat foarte incurajator.

### Lista componente si materiale necesare:

NUME	CANTITATE	MAGAZIN	PRET
TM1638 Keypad	1	<a href="#">UNDA Tech</a>	44.9
Arduino Nano128P	1	<a href="#">UNDA Tech</a>	19,9 RON
MAX7219 Dot Matrix	1	<a href="#">UNDA Tech</a>	20 RON
Cabluri / fire diverse	1	<a href="#">UNDA Tech</a>	10 RON
Panou plexiglass	1	<a href="#">UNDA Tech</a>	34,9 RON
Set imprimat 3D			
Folie carbon panou	OPTIONAL		

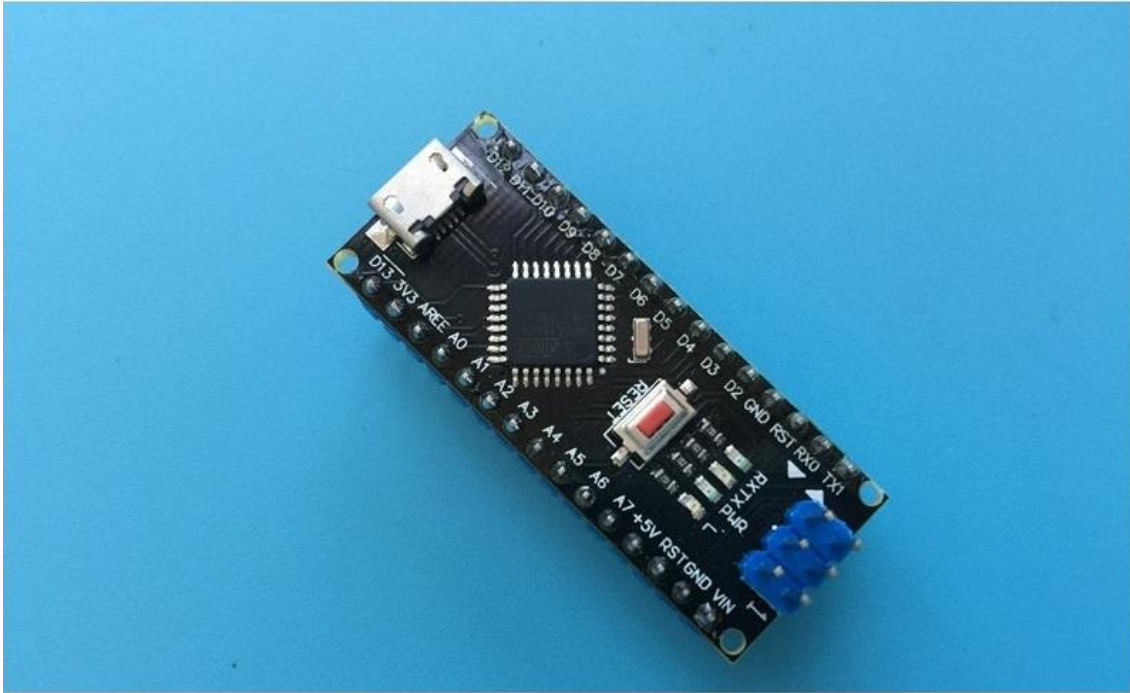
**TOTAL: 129,8 RON**

Toate piesele se pot cumpara de pe magazinul nostru, [www.unda.tech/magazin](http://www.unda.tech/magazin) . Folia de carbon este optionala si nu este inclusa in KIT-ul disponibil online, aceasta se poate fabrica cu usurinta urmand pasii din tutorial.

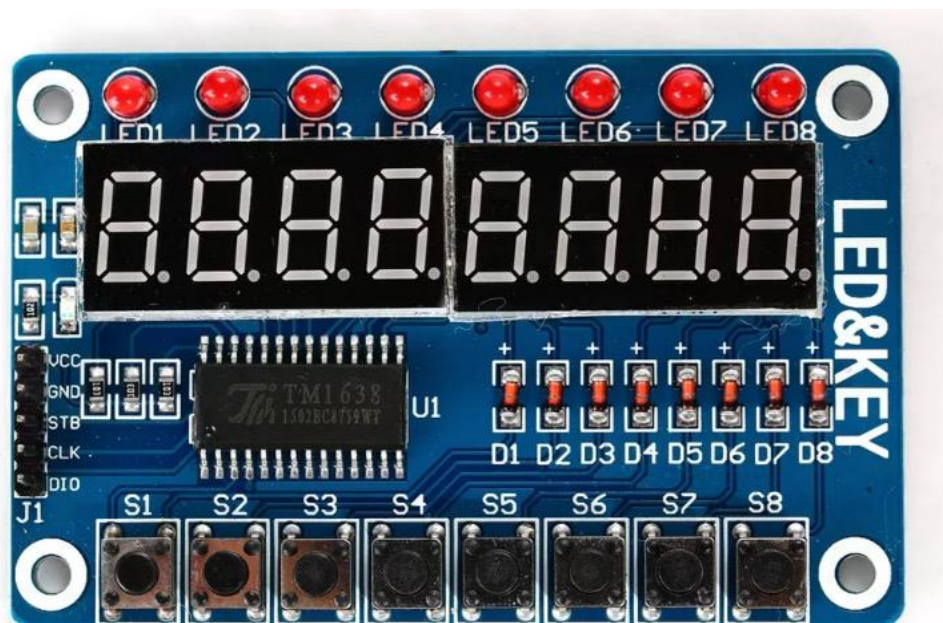
## PASUL 1 – Identificarea componentelor

Electronice:

- Arduino Nano168P



- TM1638 Keypad Module



- MAX7219 Led Matrix



Accesorii:

- Fire diverse



- Kit Panou plexiglass + piese imprimate 3D



\* kit-ul contine: - panou plexiglass transparent

- suport arduino nano ( backplate )

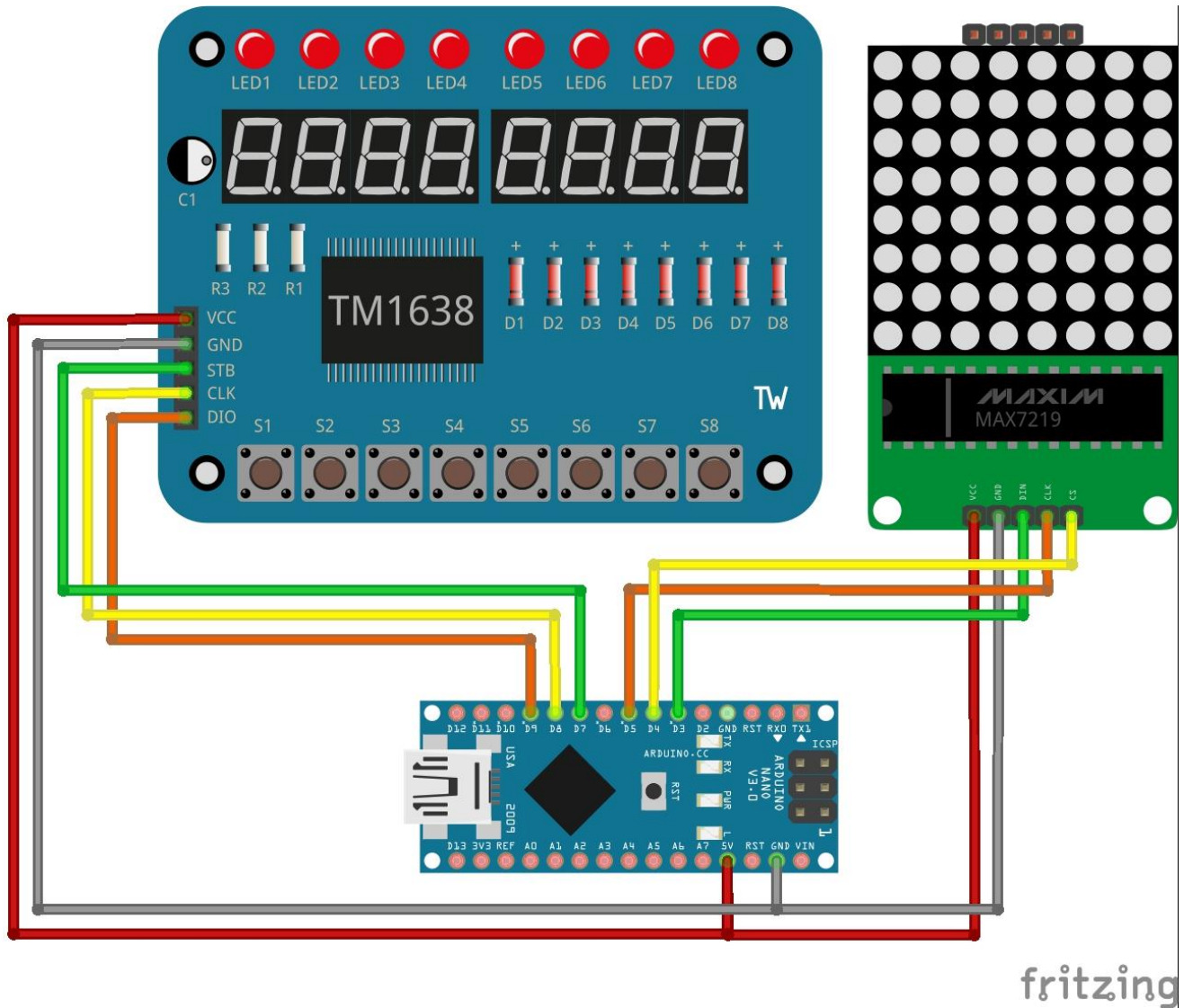
- stand Keypad si Led Matrix

- M3x25 (6buc) si M3 Nuts (6buc)



## PASUL 2 – Conectarea componentelor electronice

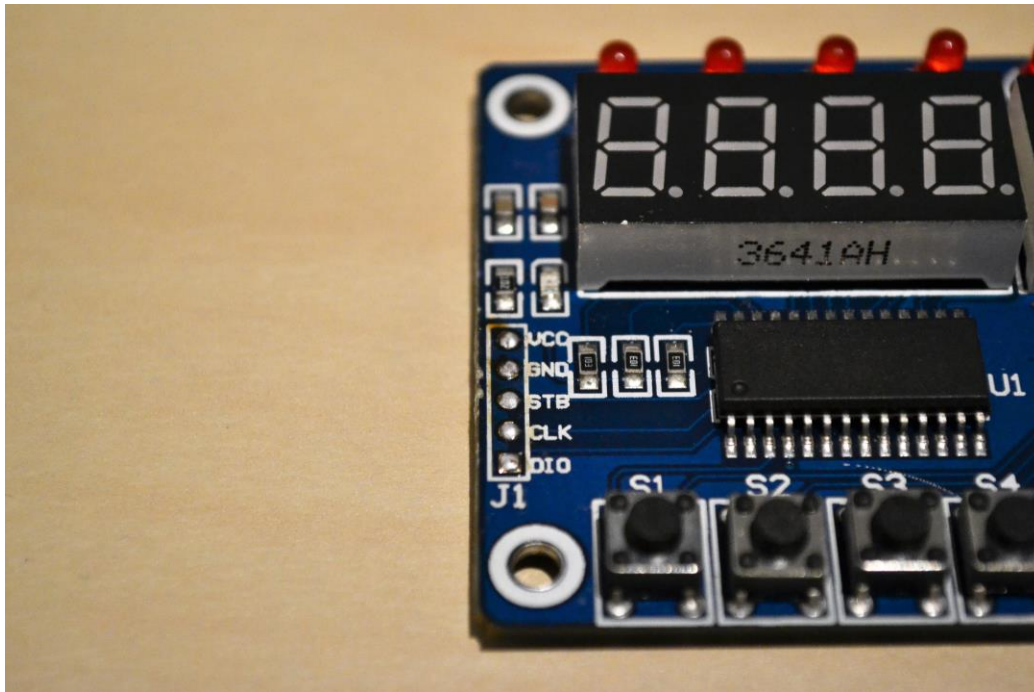
Conectarea componentelor se va face dupa urmatoarea schema :



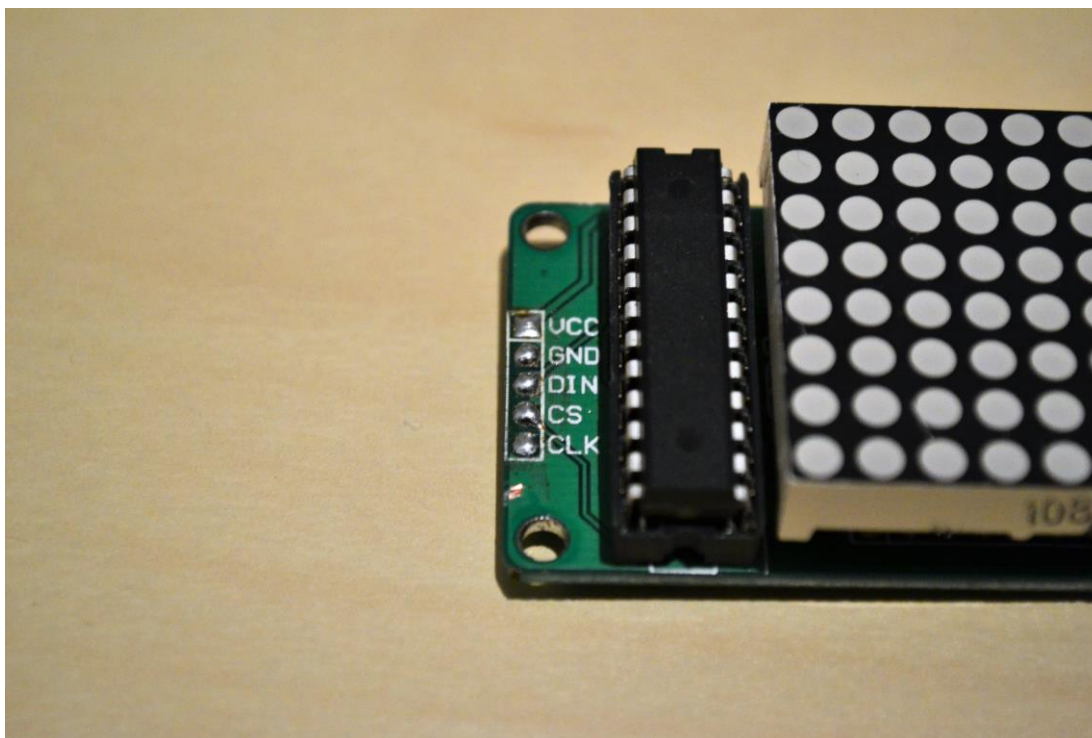
Part	Part Pin	Arduino Nano Pin
TM1638 KEYPAD MODULE	VCC	5V
	GND	GND
	STB	D7
	CLK	D8
	DIO	D9
MAX7219 LED MATRIX MODULE	VCC	5V
	GND	GND
	DIN	D3
	CLK	D5
	CS	D4

Se vizualizeaza conexiunile ce urmeaza a fi realizate, se decide lungimea firelor.

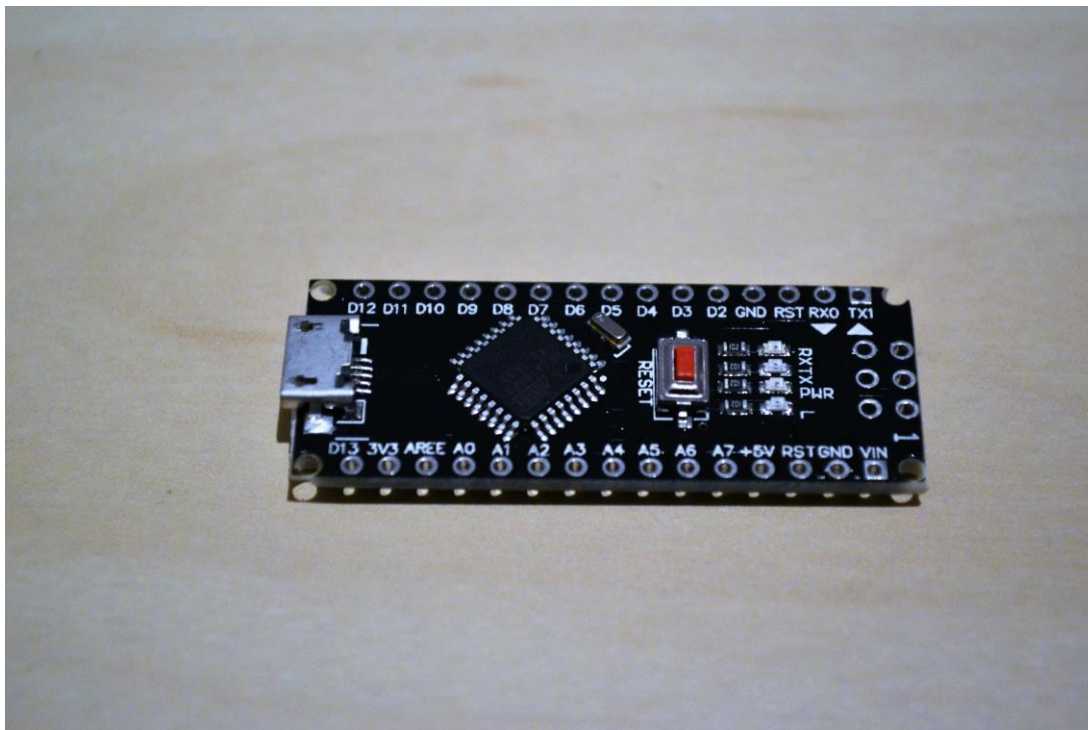
TM1638



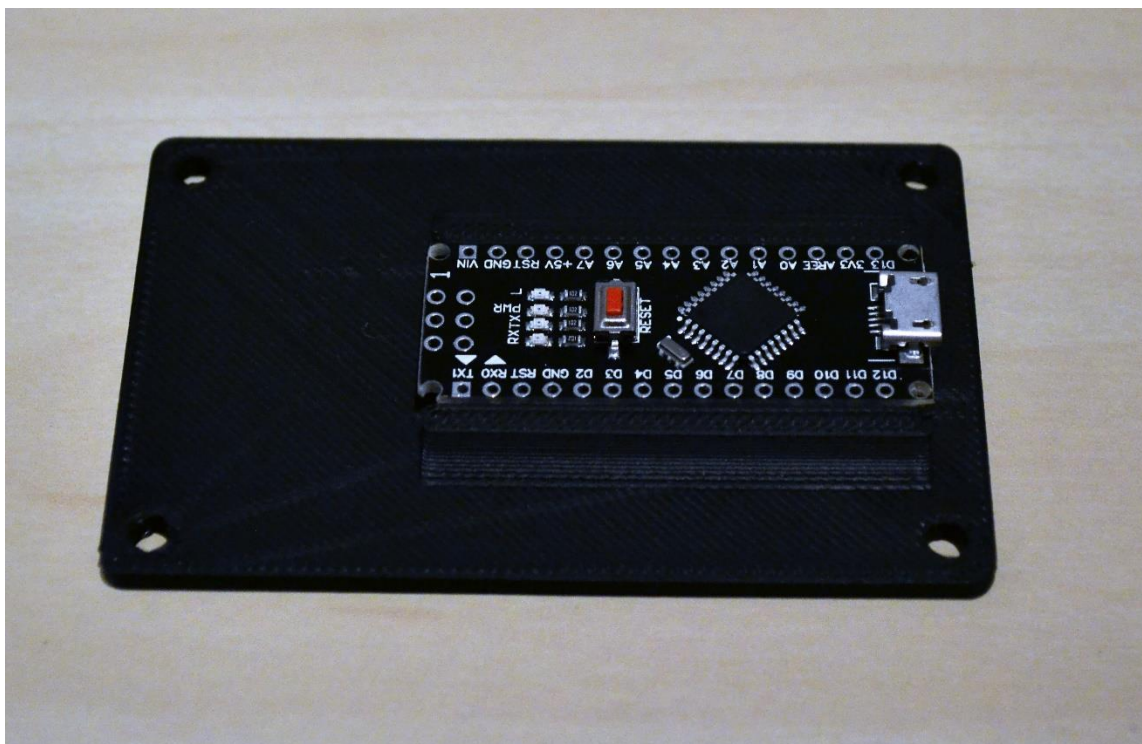
MAX7219



Arduino Nano168P

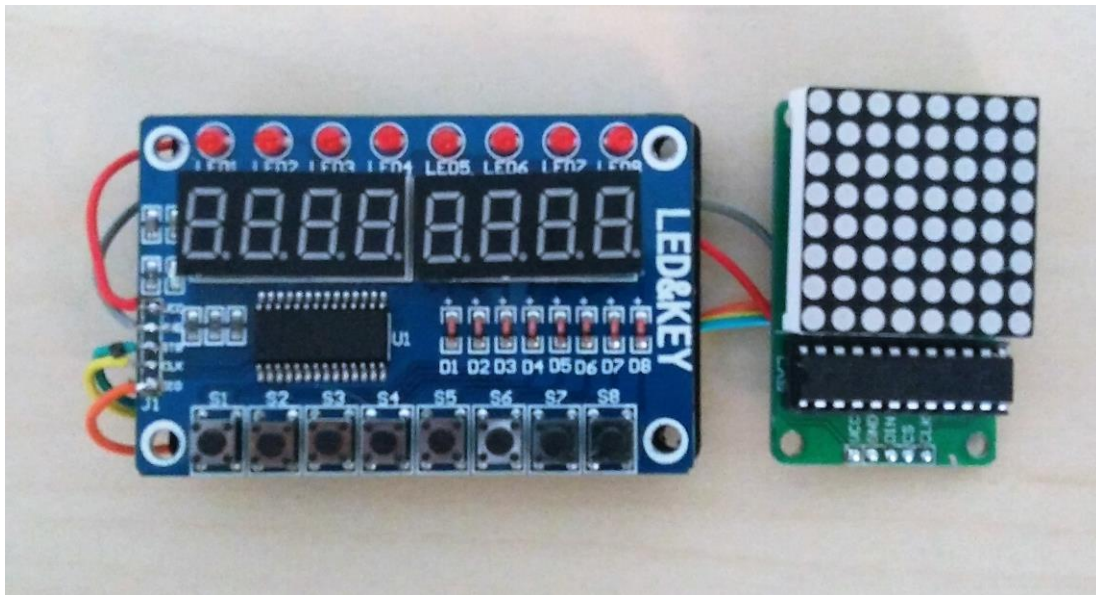
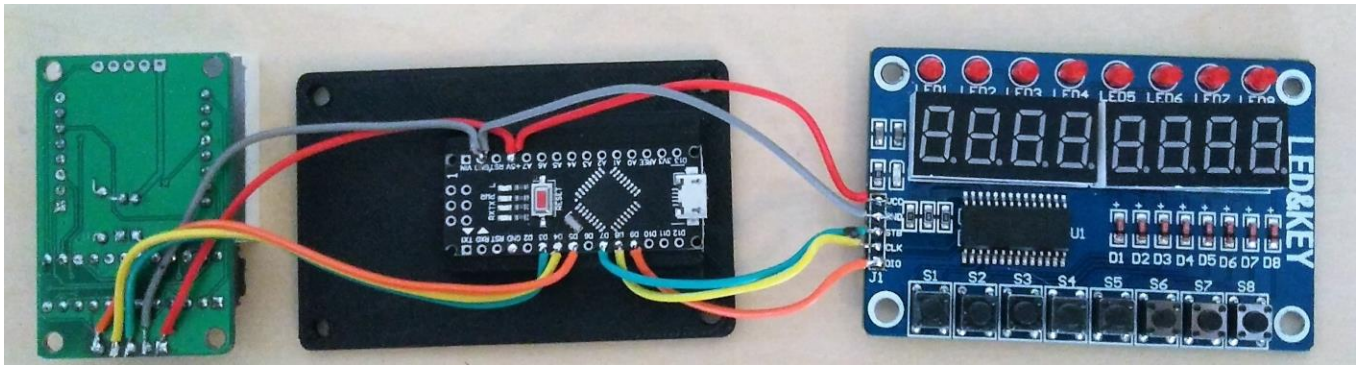


Se monteaza placa de dezvoltare Arduino Nano pe suport-ul din Kit, cu mufa Micro USB spre exterior.  
Aceasta se clipseaza in pozitie folosind putina forta.

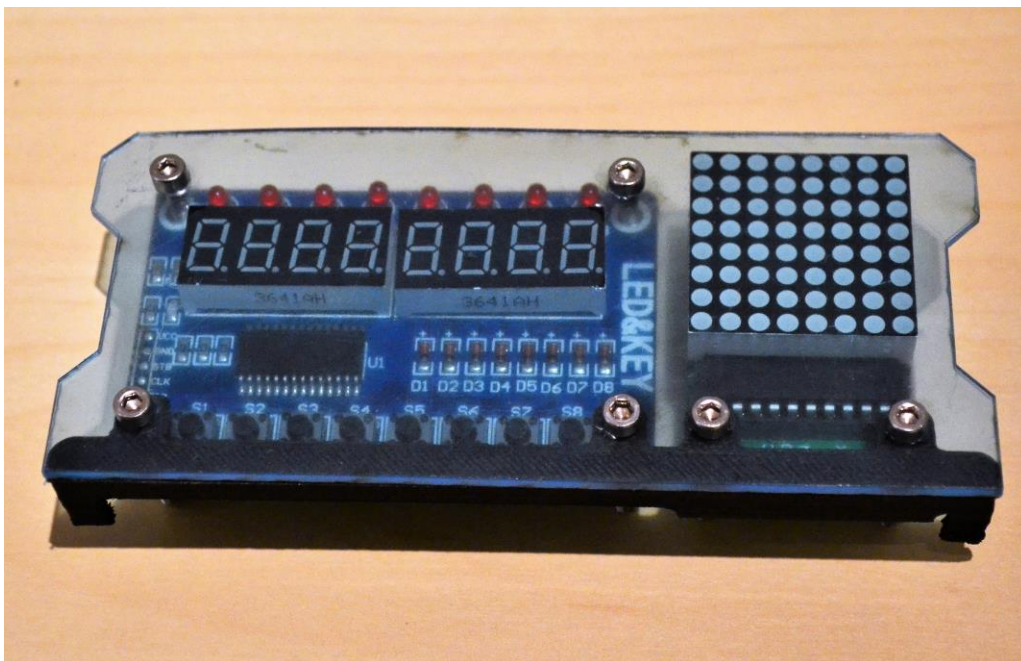




Pentru usurinta se recomanda cositorirea firelor direct in gaurile placii Arduino Nano.



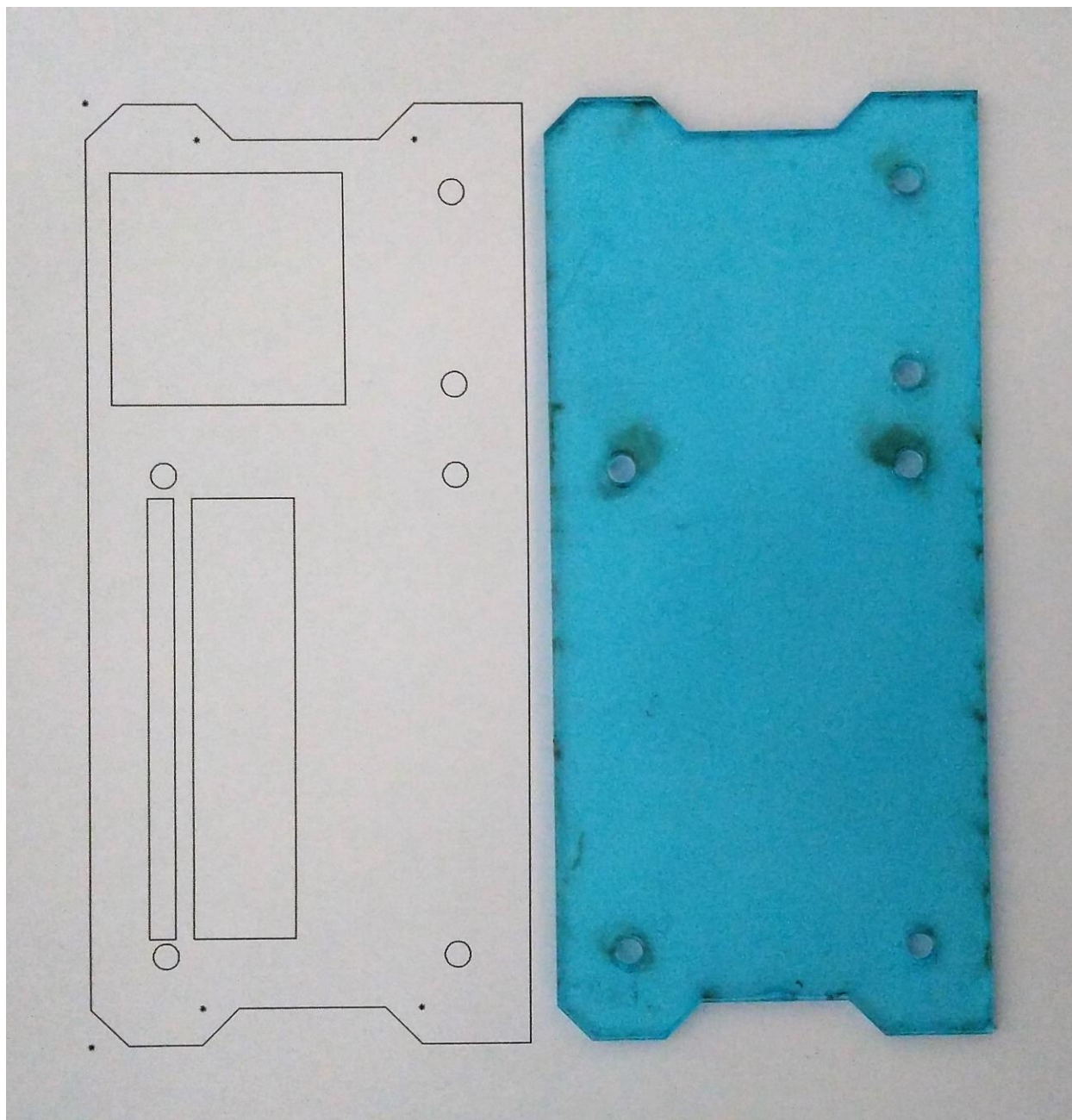
Se testeaza ansamblul pentru a vedea daca ajung firele, daca totul se aliniaza conform cerintelor.



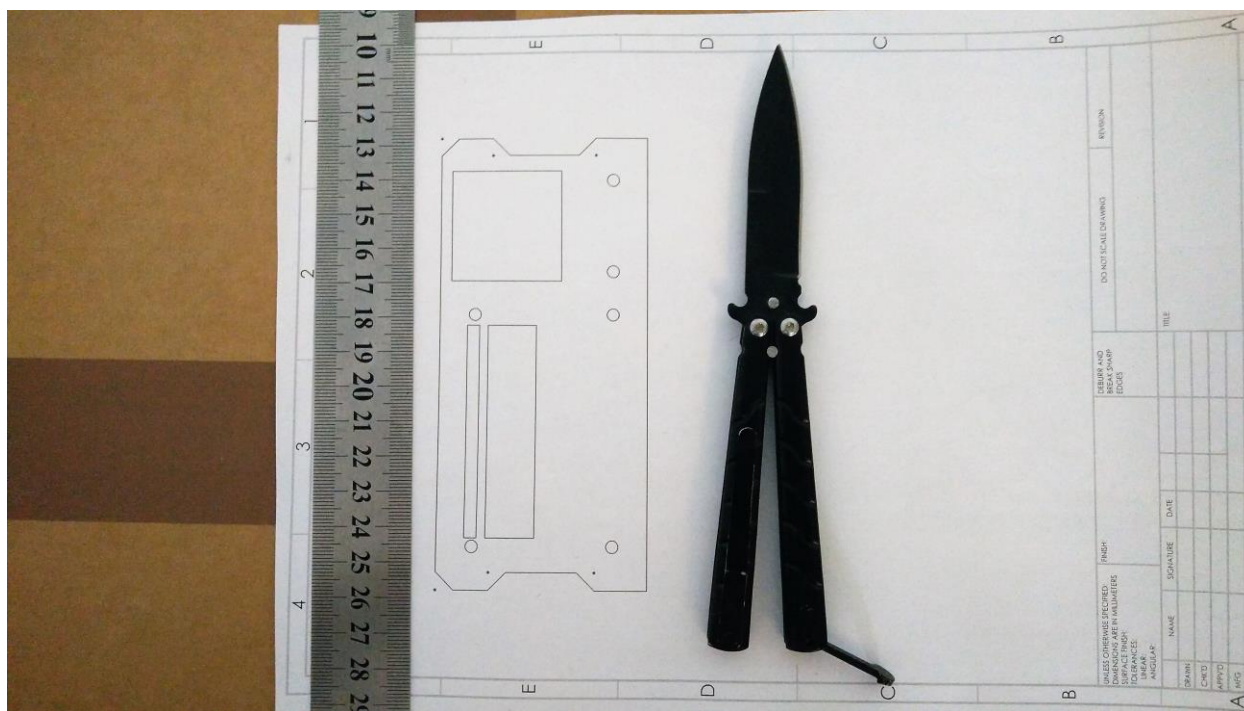


### **PASUL 3 – Folie Carbon ( OPTIONAL )**

- Se imprima desenul PDF atasat, folosind scara 1:1 .

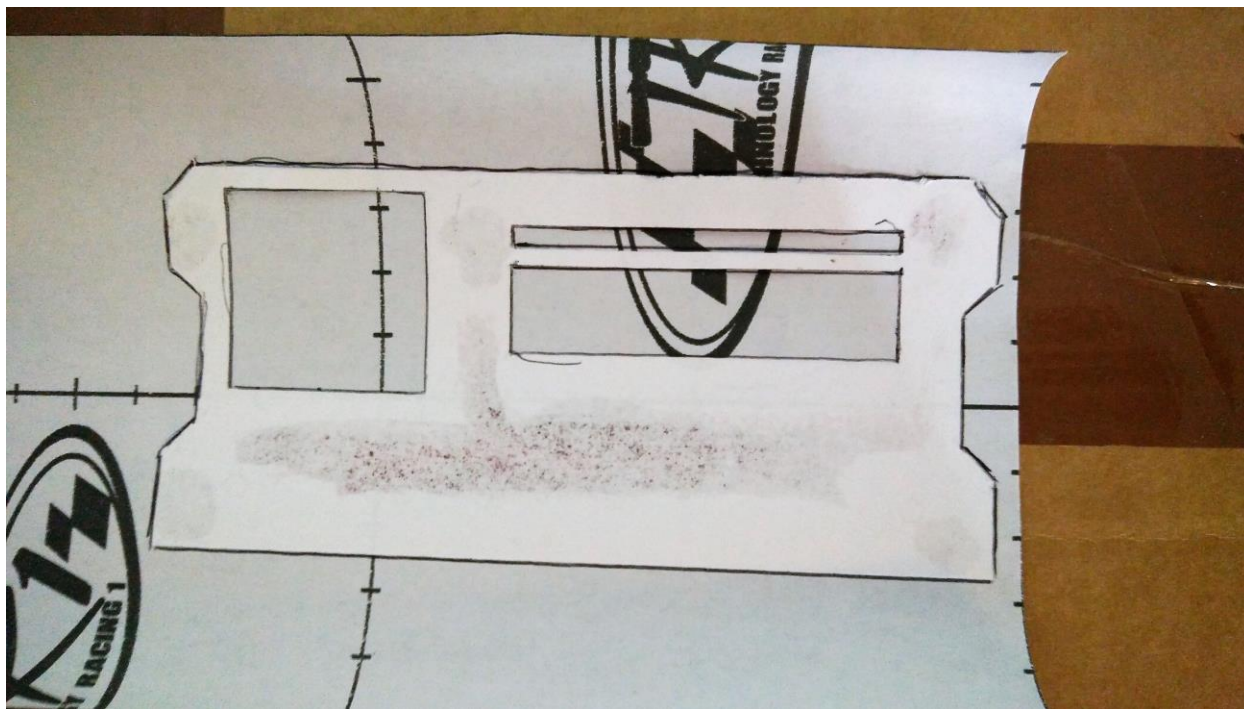


- folosind o rigla metalica si o lama de precizie ( sau un cutit foarte bine ascutit ) , se taie conturul imprimat si se decupeaza dreptunghiurile din interior. Daca aveti acces la un cutter plotter, desenele in format DXF vor fi disponibile in sectiunea resurse.



- Se transfera desenul IN OGLINDA pe spatele foliei cu fibra de carbon.





- Se taie folosind cutter-ul si rigla forma dorita

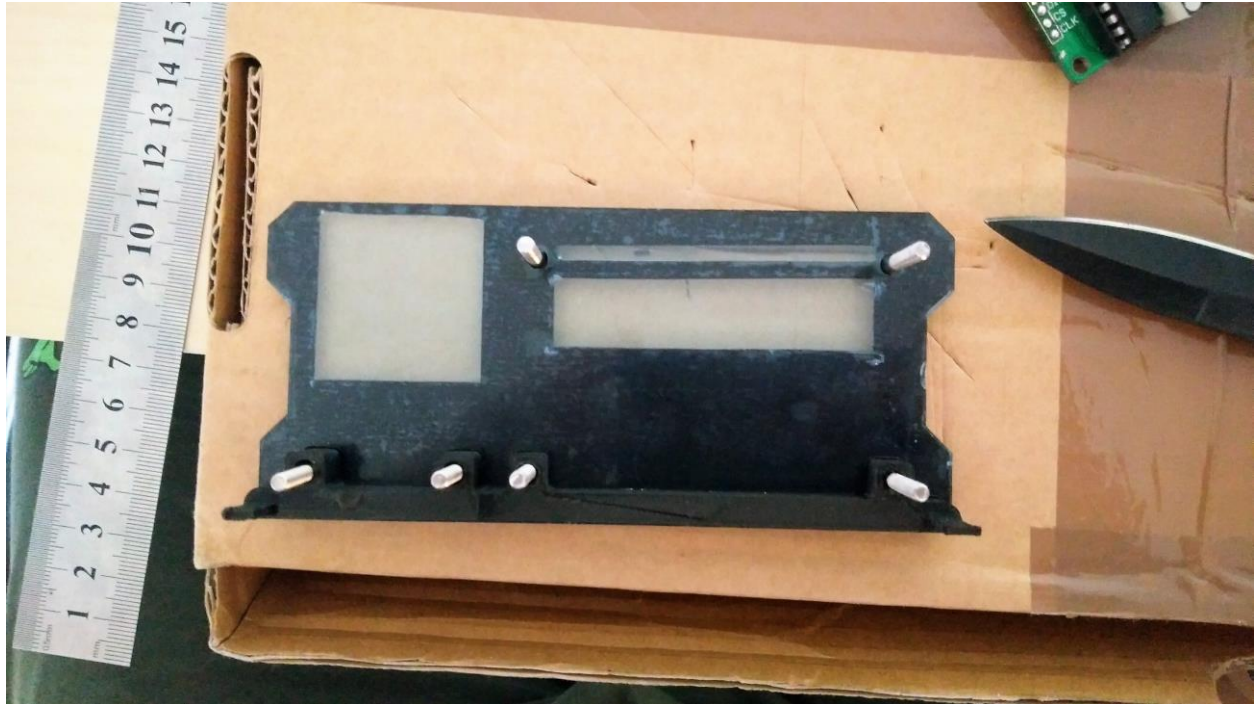


- se recomanda utilizarea unei suprafete neimportante pentru taiere, in imagine puteti vedea o cutie pentru a proteja masa de eventualele zgarieturi pe care le poate face lama de precizie.

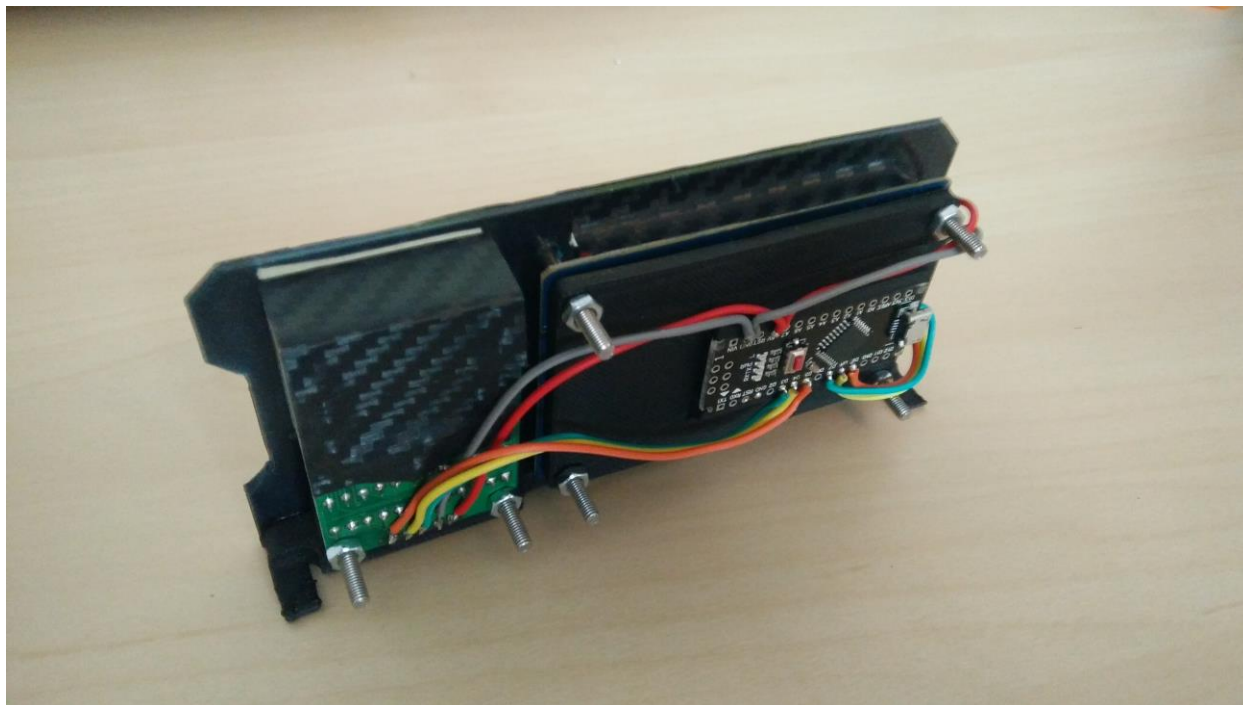


- se lipeste folia pe panoul de plexiglass si se curata eventualele imperfectiuni ramase in urma taierii:

- Se inteapa gaurile pentru suruburi si se introduc suruburile in gaurile lor. Se adauga stand-ul imprimat 3D peste acestea:

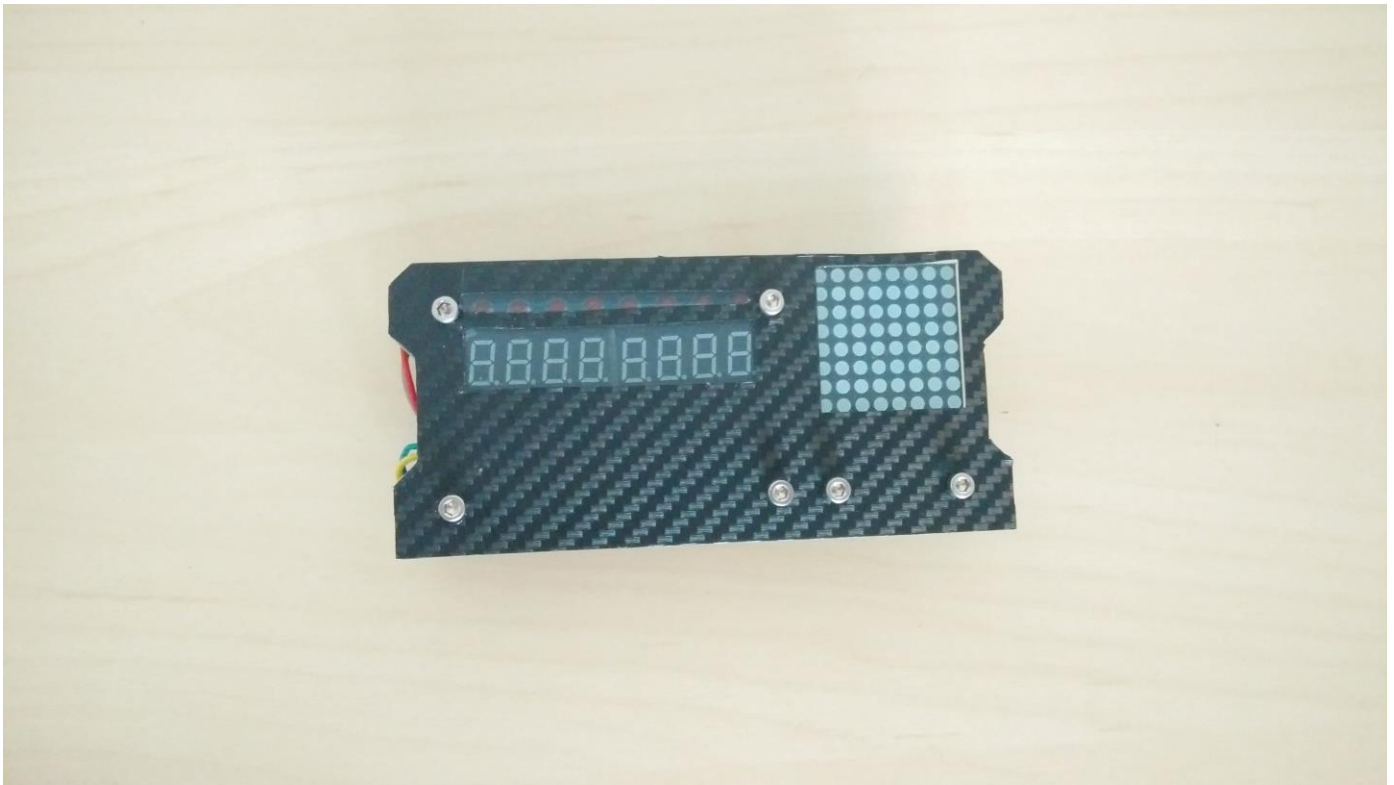


- Se monteaza modulul Keypad, Matrix si Arduino Nano pe panou utilizand suruburile si piulitele necesare (6 buc M3x25 si 6 buc piulite ). Se adauga folie carbon in zonele cu pini expusi pentru a preveni eventualele scurt-uri nedorite.



- In final, proiectul va arata asa :





## PASUL 4 – Software

- Se instaleaza ultima versiune de Arduino IDE: <https://www.arduino.cc/en/main/software>

The screenshot shows the Arduino Software website. The top navigation bar includes links for Buy, Software, Products, Learning, Forum, Support, and Blog. The main content area features the Arduino Web Editor section, which includes a circular logo with a minus and plus sign, a description of the editor, and a 'Try It Now' button. Below this is the 'Download the Arduino IDE' section, which includes a large circular logo with a minus and plus sign, a description of the IDE, and a list of download links for Windows, Mac OS X, Linux, and ARM. The bottom of the page shows the 'AROUND SOFTWARE HOURLY BUILDS' section and the 'AROUND 1.0.6 / 1.5.x / 1.6.x PREVIOUS RELEASES' section.

Arduino - Software

Securizat | <https://www.arduino.cc/en/main/software>

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### ARDUINO WEB EDITOR

Start coding online with the Arduino Web Editor, save your sketches in the cloud, and always have the most up-to-date version of the IDE, including all the contributed libraries and support for new Arduino boards. The Arduino Web Editor is one of the Arduino Create platform's tools.

Try It Now  
Getting Started

### Download the Arduino IDE

#### ARDUINO 1.8.1

The open-source Arduino Software (IDE) makes it easy to write code and upload it to the board. It runs on Windows, Mac OS X, and Linux. The environment is written in Java and based on Processing and other open-source software. This software can be used with any Arduino board. Refer to the Getting Started page for installation instructions.

Windows Installer  
Windows ZIP file for non-admin install  
Windows app [Get it](#)  
Mac OS X 10.7 Lion or newer  
Linux 32 bits  
Linux 64 bits  
Linux ARM  
Release Notes  
Source Code  
Checksums (sha512)

AROUND SOFTWARE  
HOURLY BUILDS

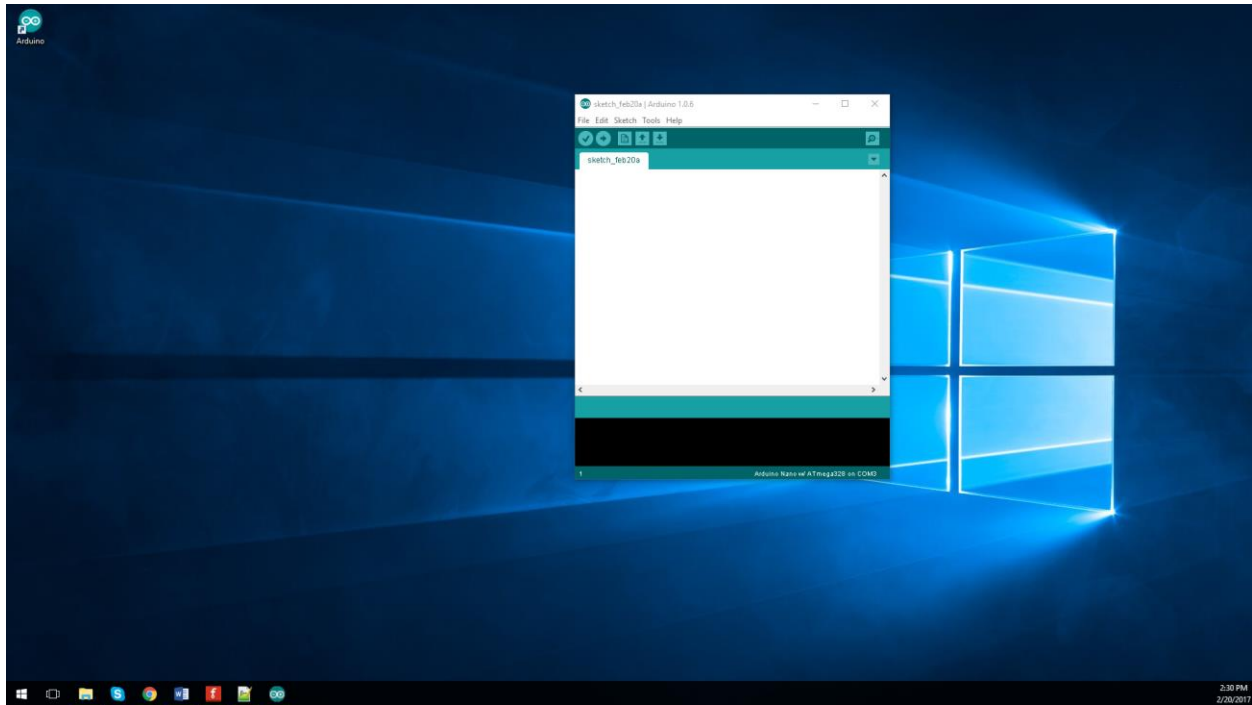
AROUND 1.0.6 / 1.5.x / 1.6.x  
PREVIOUS RELEASES

[https://www.arduino.cc/download\\_handler.php?fw=/arduino-1.8.1-windows.exe](https://www.arduino.cc/download_handler.php?fw=/arduino-1.8.1-windows.exe) of the incoming release with the most updated

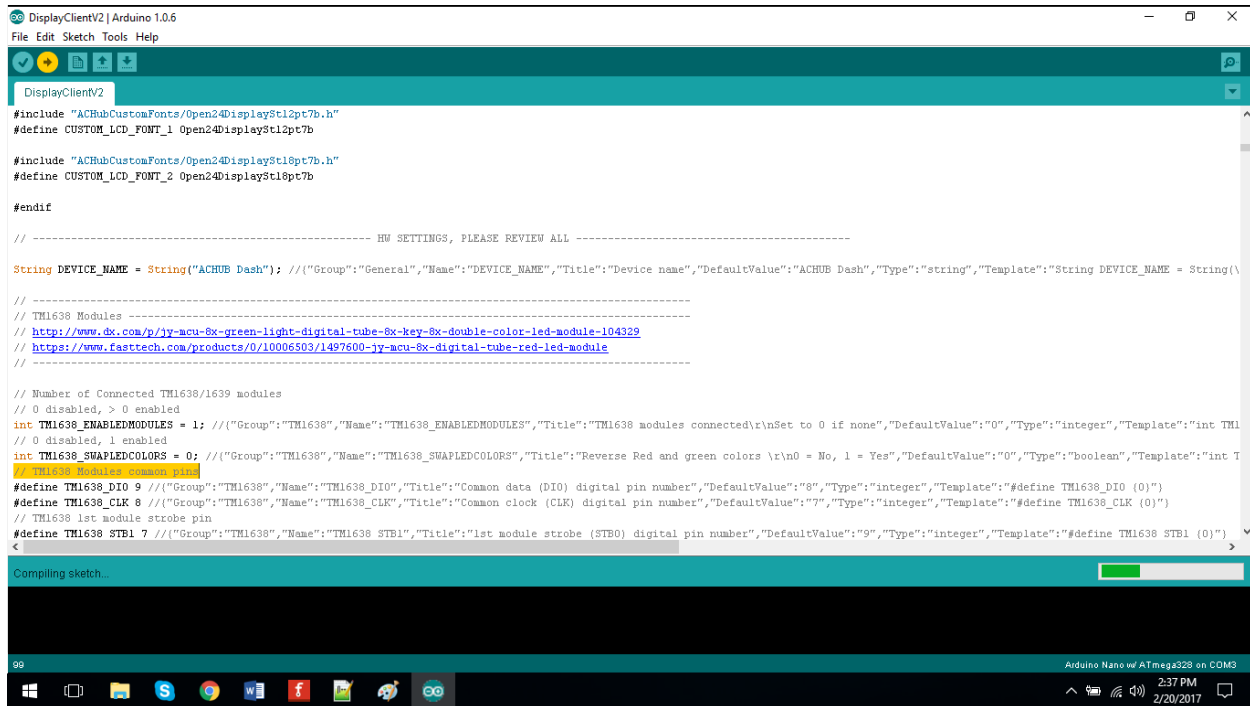
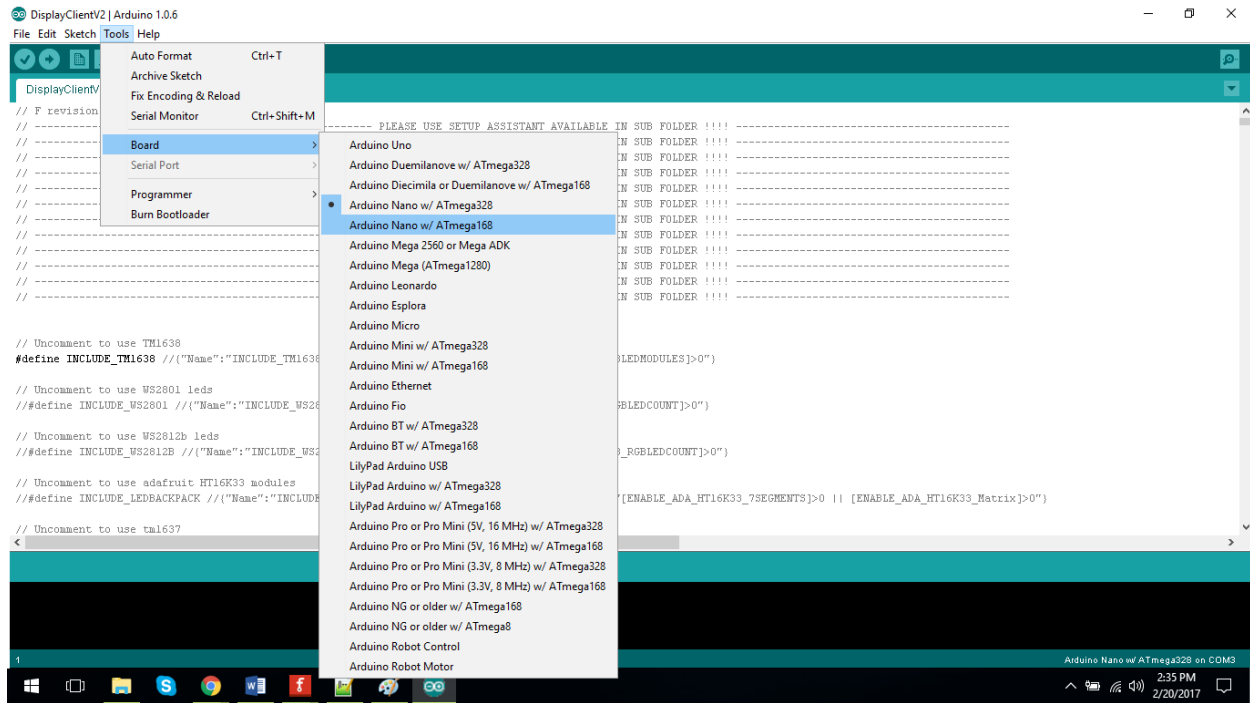
Download the previous version of the current release, the

3:28 PM  
2/20/2017



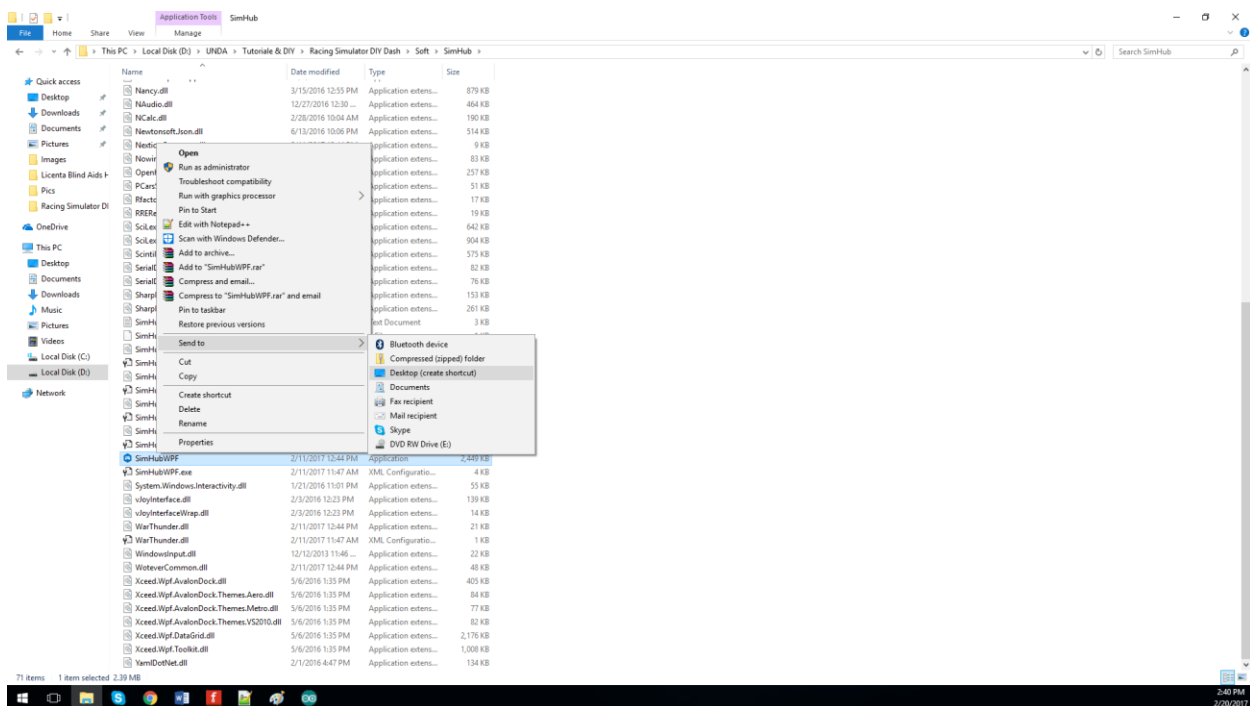


- Se instaleaza librariile necesare din locatia : Racing Simulator DIY Dash > Libraries .  
Acestea se copiaza in <<Arduino Install Folder>> > Libraries
- Se deschide codul sursa din locatia : Racing Simulator DIY Dash > Code > DisplayClientV2 > DisplayClientV2.ino
- Se selecteaza Arduino Nano168P (sau, in cazul folosirii unui arduino Nano328P, se selecteaza acesta) ,  
port-ul la care se poate vedea placa de dezvoltare si se apasa butonul Upload

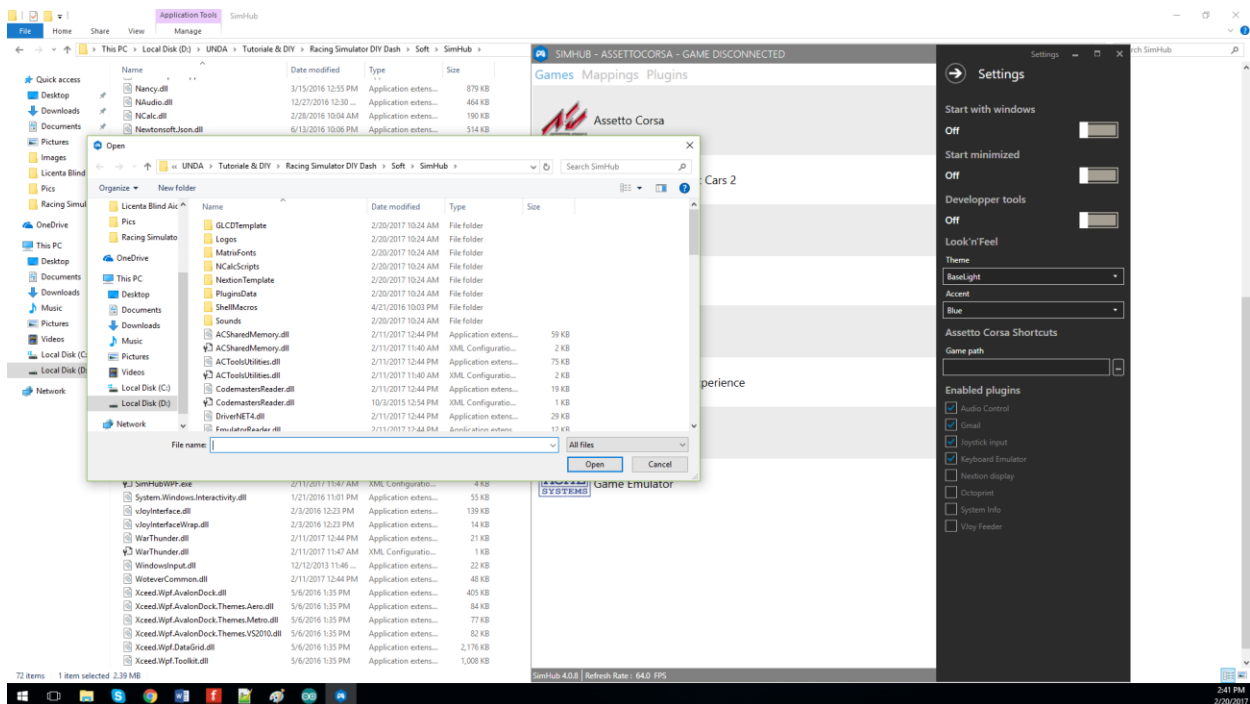


- Dupa incarcarea codului, trebuie configurat programul SimHub.

In locatia Racing Simulator DIY Dash > Soft > SimHub se regaseste aplicatia dorita. Folderul SimHub se muta undeva in memorie la o locatie cunoscuta , dupa care se creeaza un shortcut catre SimHub.exe



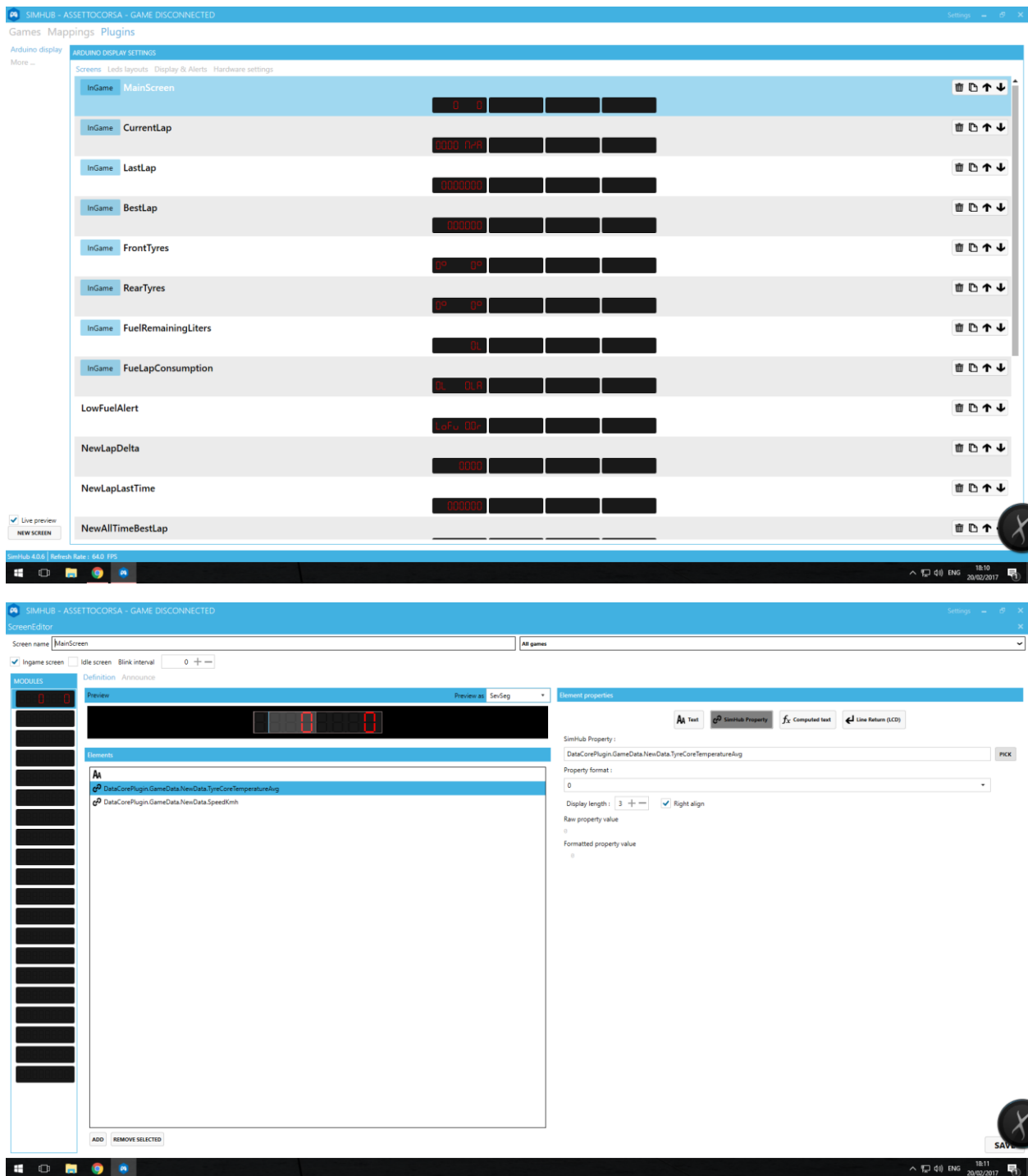
Se deschide SimHubWPF si se selecteaza locatiile de instalare pentru jocurile dorite din meniul Settings



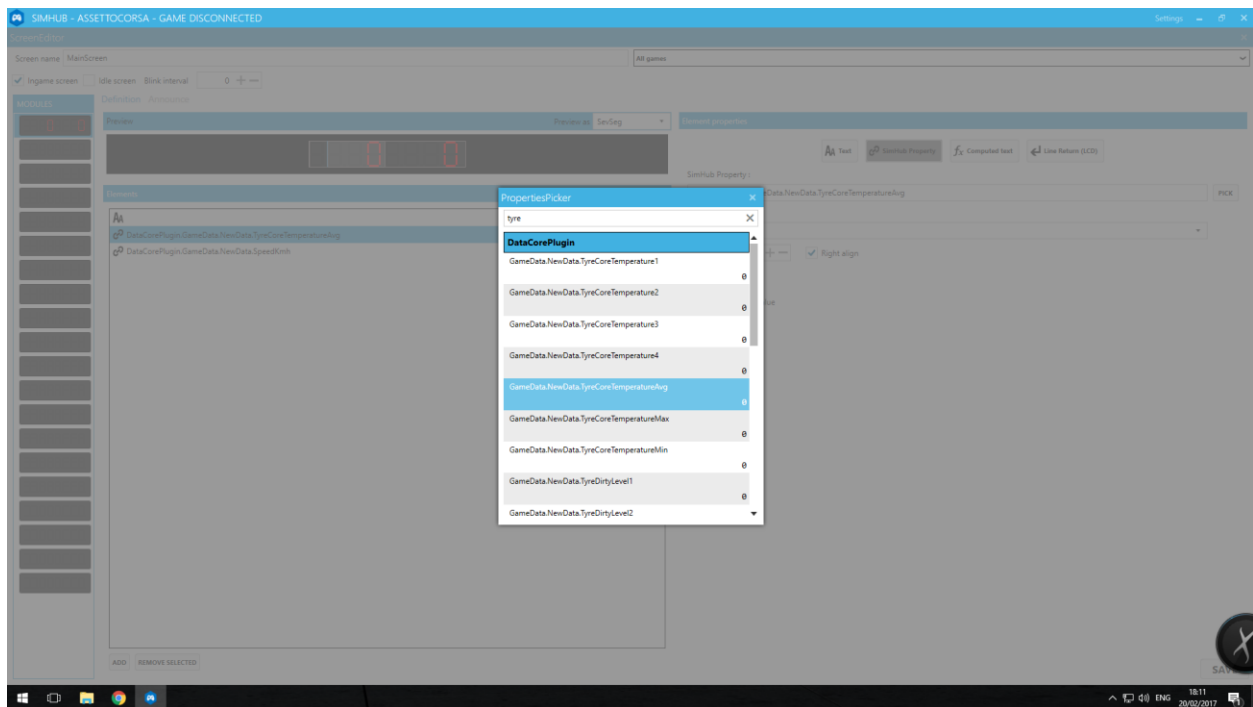
- dupa ce ati selectat destinatia jocului, urmeaza configurarea display-ului cu ajutorul aplicatiei SimHub

- Mergem in meniul Plugins > Screens si selectam Main Screen

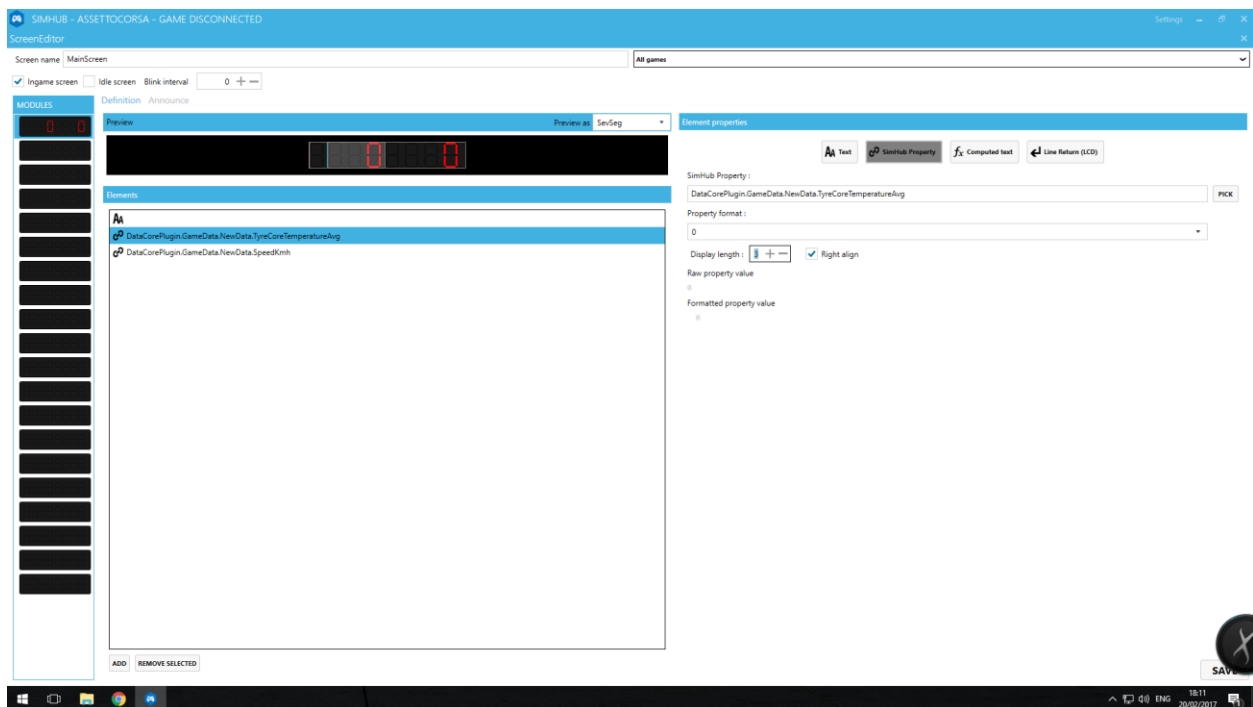




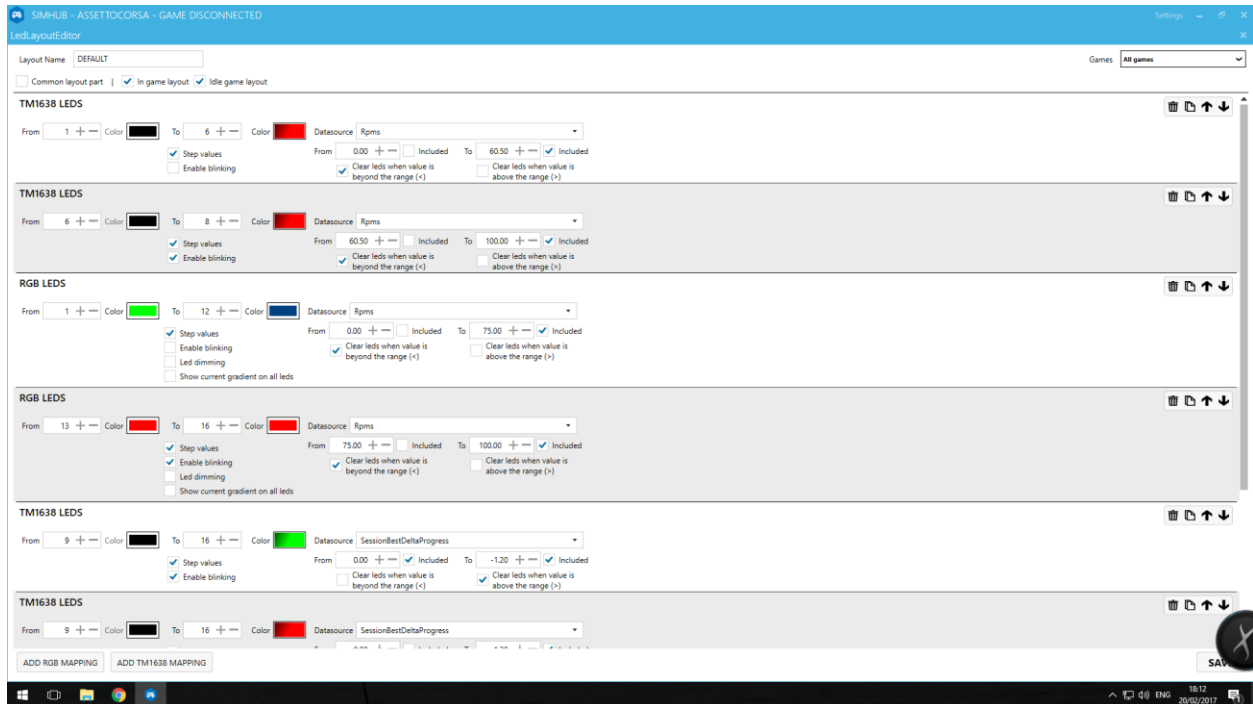
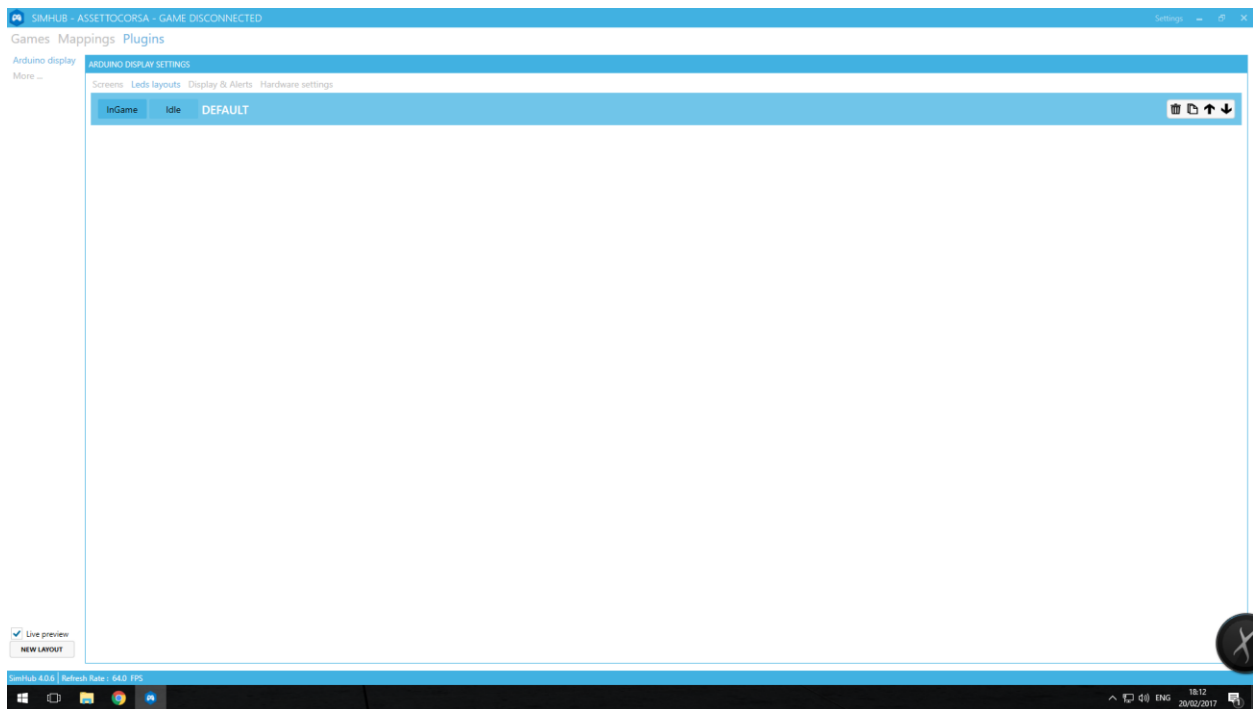
- In meniul curent selectam optiunea Elementul 1 (nu cel care ne da viteza) si alegem optiunea Pick



- Selectam GameData.NewData.TyreCoreTemperatureAvg



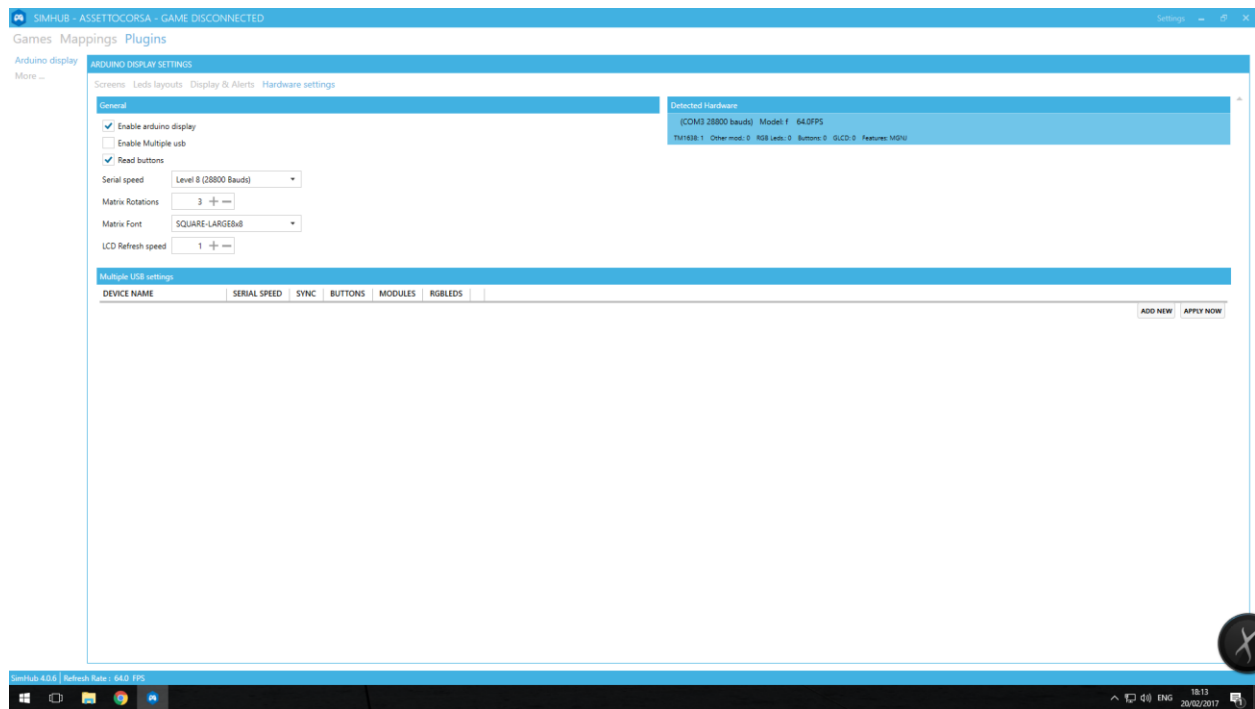
Mai departe vom configura layout-ul pentru Ledurile care reprezinta Turatia motorului  
Mergem in meniul Plugins > Led Layout si actualizam setarile dupa urmatoarele imagini:



In ultima parte vom configura matricea de leduri pentru a ne arata treapta de viteza. Pentru acest lucru mergem in meniul Hardware Settings

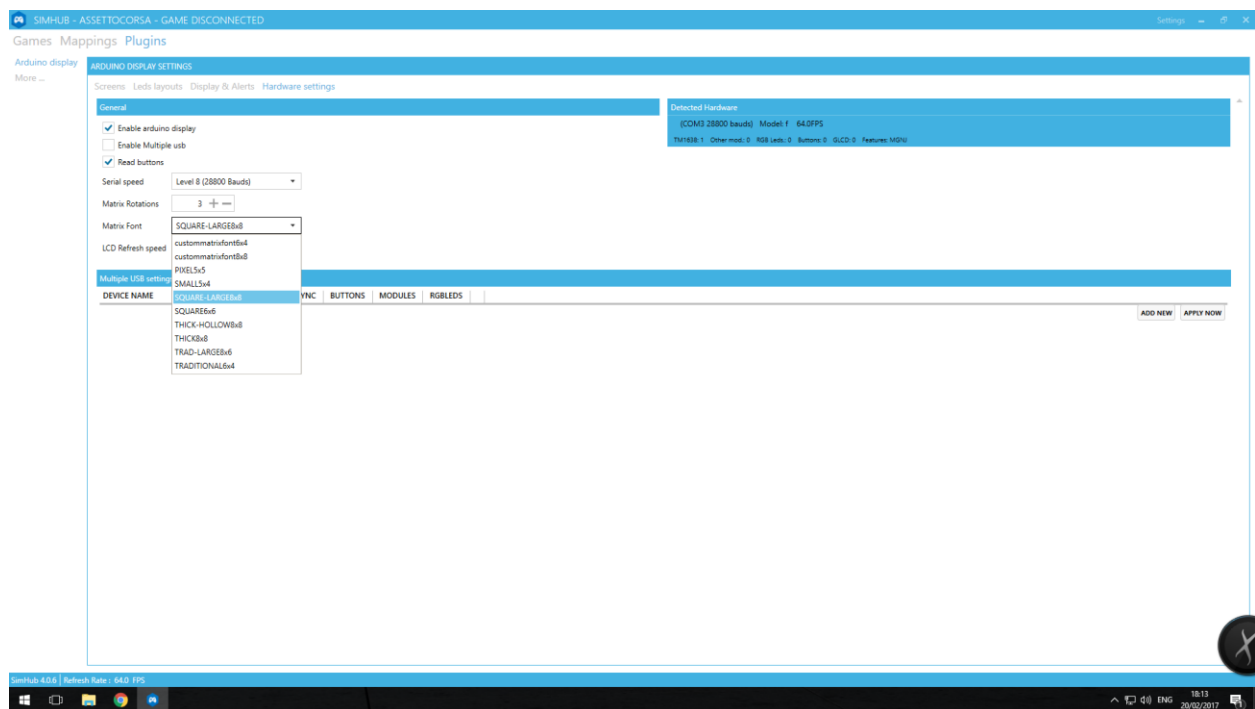
Aici putem observa conexiunea cu Dash Board-ul nostru, COM-ul atribuit acestuia si Baudrate-ul de comunicare.





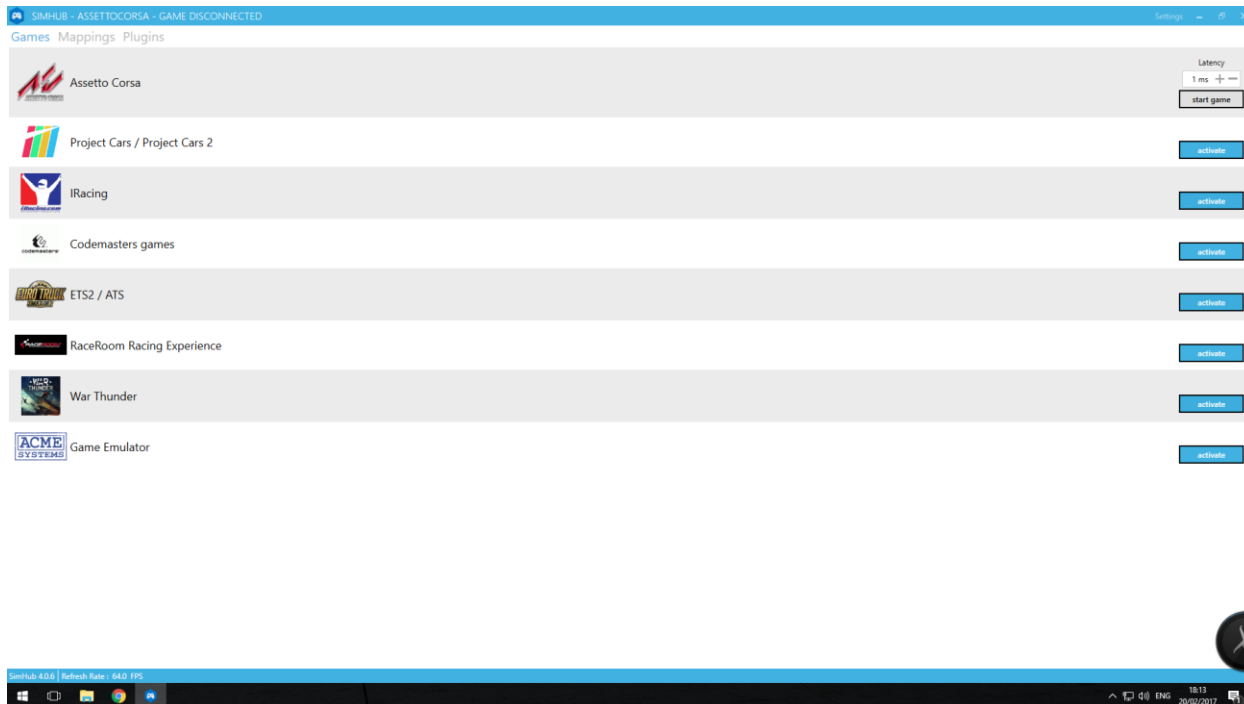
Selectam Matrix Font si alegem Squere Large 8x8

Ne asiguram ca valoarea Matrix Rotations este 3, pentru a nu avea afisajul rotit .



In final selectam Apply Now pentru a salva modificarile facute.

Acum putem da Start Game din meniul SimHub pentru a initializa afisajul.  
ATENȚIE! Afisajul va functiona numai daca jocul va fi pornit din meniul SimHub.



Acestea fiind spuse, ghidul nostru a ajuns la sfarsit!  
Pentru intrebari/sugestii nu ezitati sa ne contactati!

Material apartinand S.C UNDA Tech S.R.L . Distribuirea/modificarea/utilizarea este permisa.  
Acest material este gratuit si nu trebuie distribuit cu scop comercial.