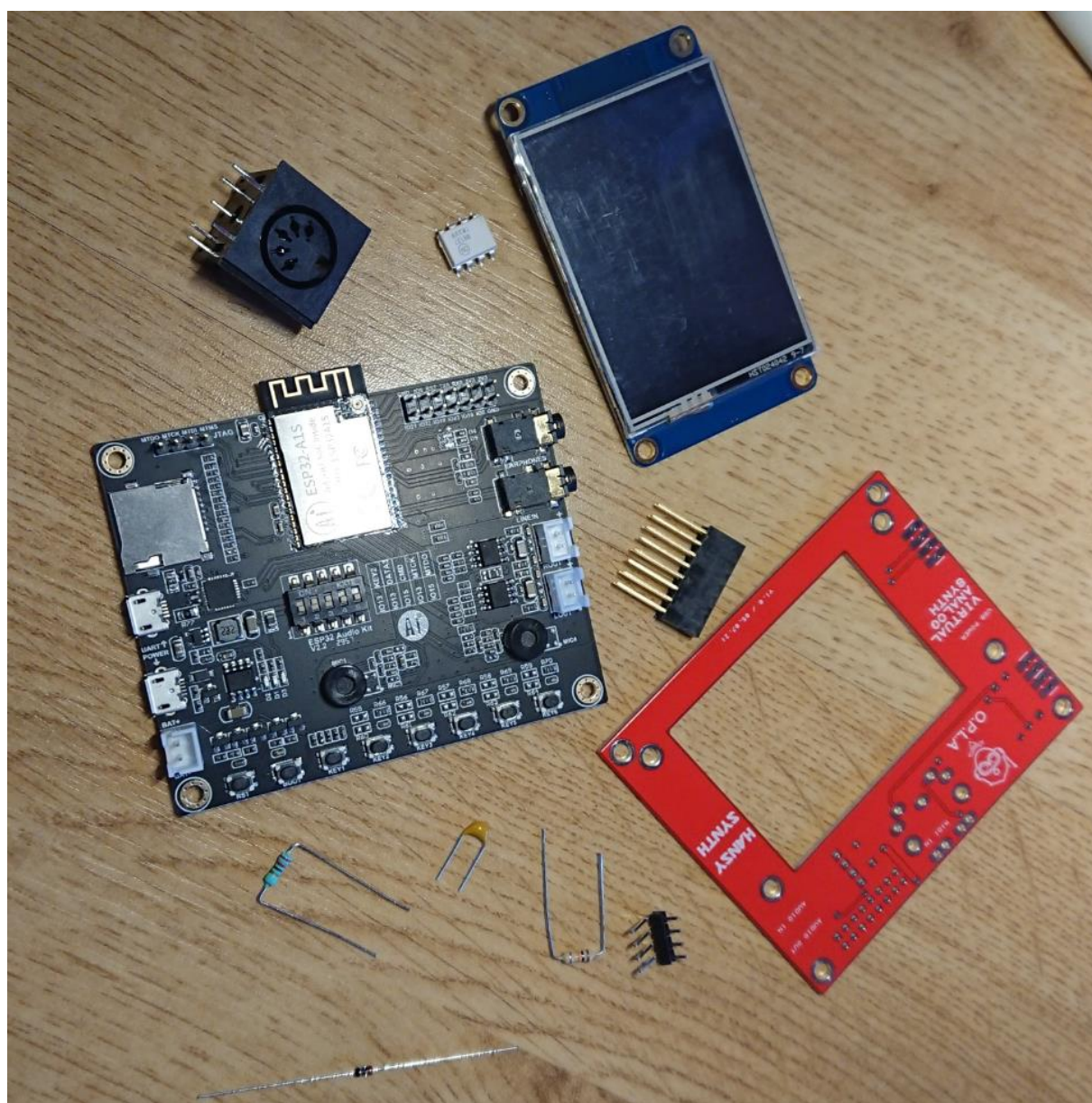




Contents

BOM.....	4
CONFIG ESP32 AUDIO KIT SWITCH.....	5
RESISTOR & DIODES.....	6
CAPACITOR	7
IC.....	7
CONNECTORS	8
NEXTION SCREEN.....	9
PREPARE THE BACKPLANE BOARD	10
J1 CONNECTOR.....	11
PROGRAM THE SD CARD	12
PROGRAM THE NEXTION SCREEN	13
INSERT THE NEXTION SCREEN	16
PROGRAM THE OPLA MULTI FILE VERSION.....	19
PROGRAM THE OPLA WITH ONE FILE VERSION	22
TEST AND CALIBRATION	23



And Backplane board

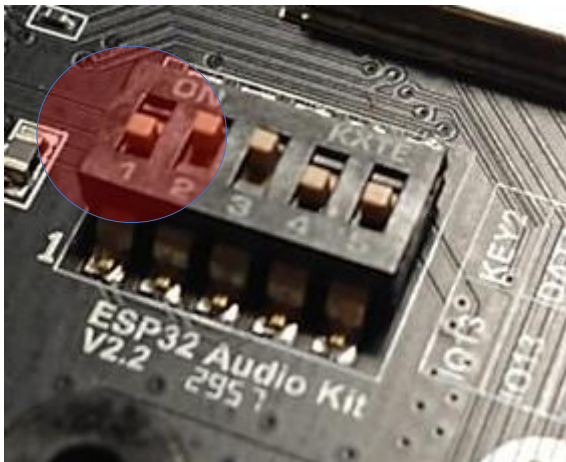
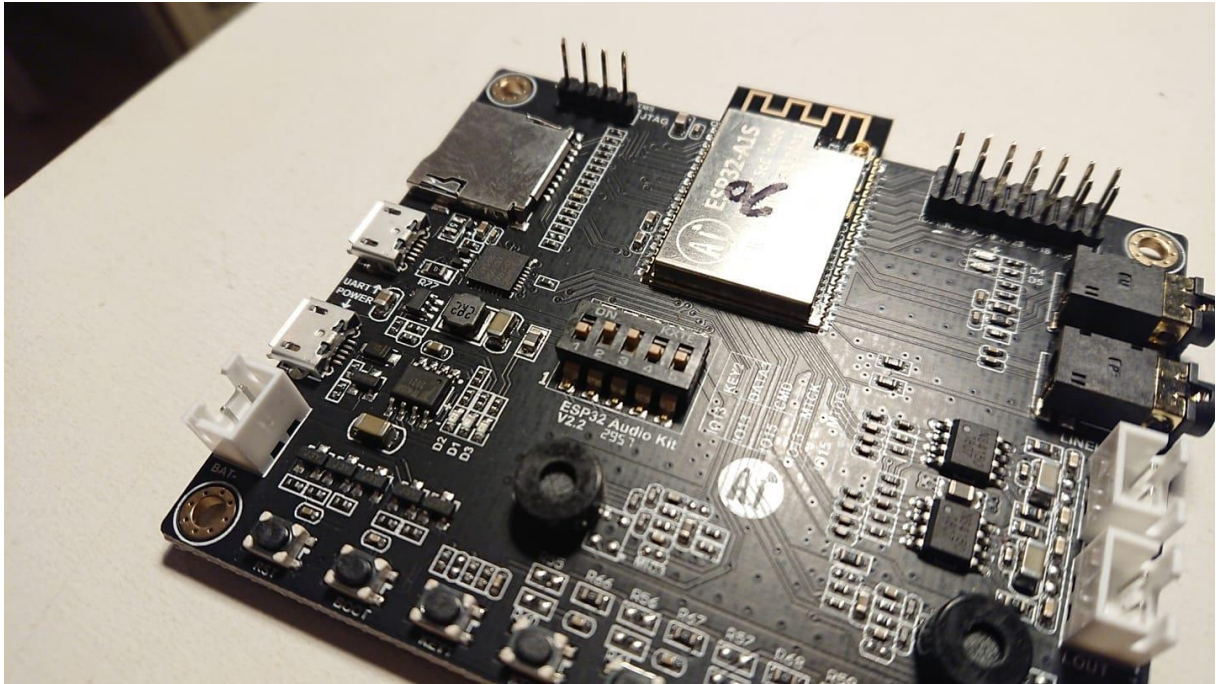


BOM

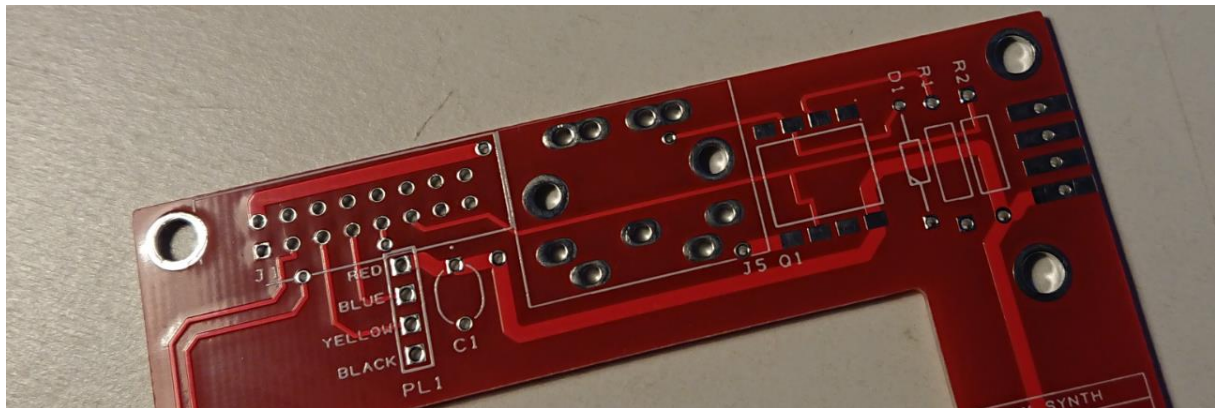
DESIGNATION	QT
Screw M3*16	12
Nuts M3	20
Spacer M3*20	4

	DESIGNATION	QT
R1	200Ohm Resistor 1/4W	1
R2	10KOhm Resistor 1/4W	1
D1	1N4148 Diode	1
C1	100nf Capacitor	1
Q1	6N137 Optocoupleur	1
PL1	Four pin right angle connector	1
	Midi 5 pin connector	1
J1	2*8 pins PC104 Connector	1
	Nextion screen	1
	Hansy Synth HS021 Board	1
	Hansy Synth HS022 Board (backplane)	1
	ESP32 Audio Kit	1
	Micro SD card < 64Go + SD support	1
	Pen for the screen	1
	USB cable	1

CONFIG ESP32 AUDIO KIT SWITCH

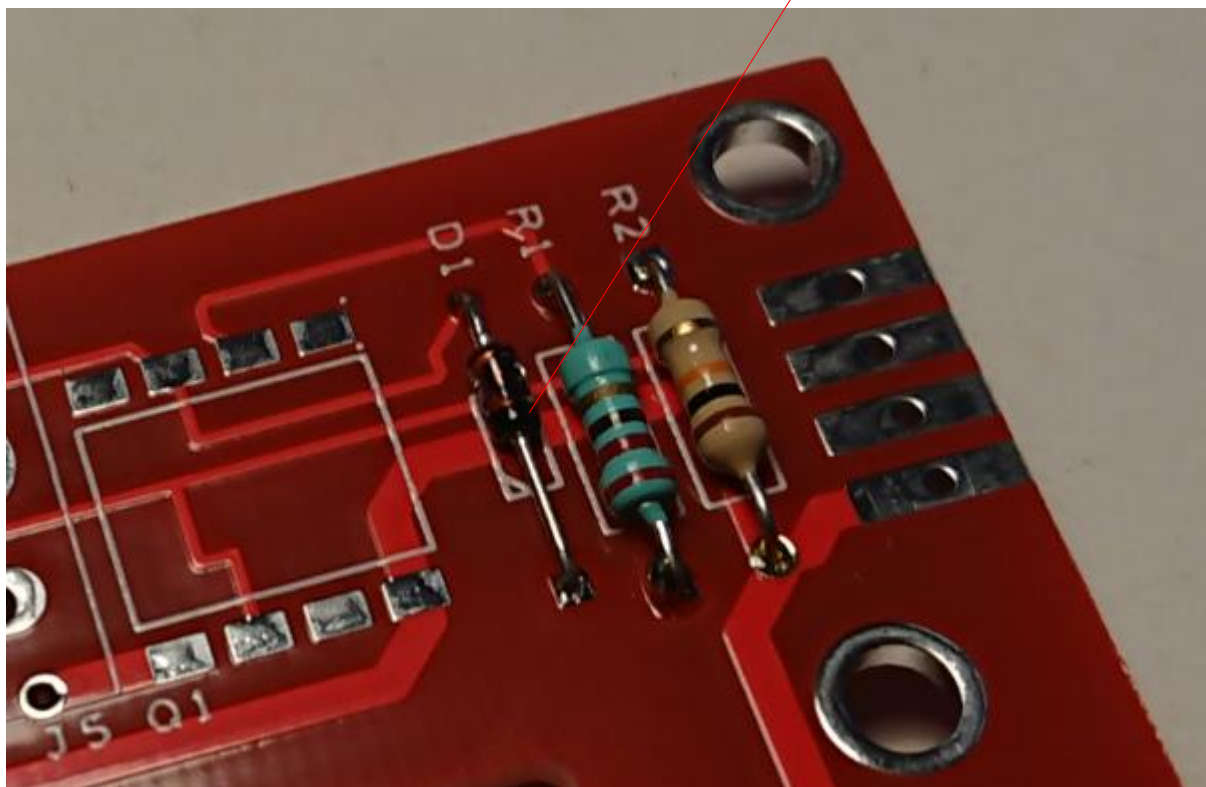


RESISTOR & DIODES



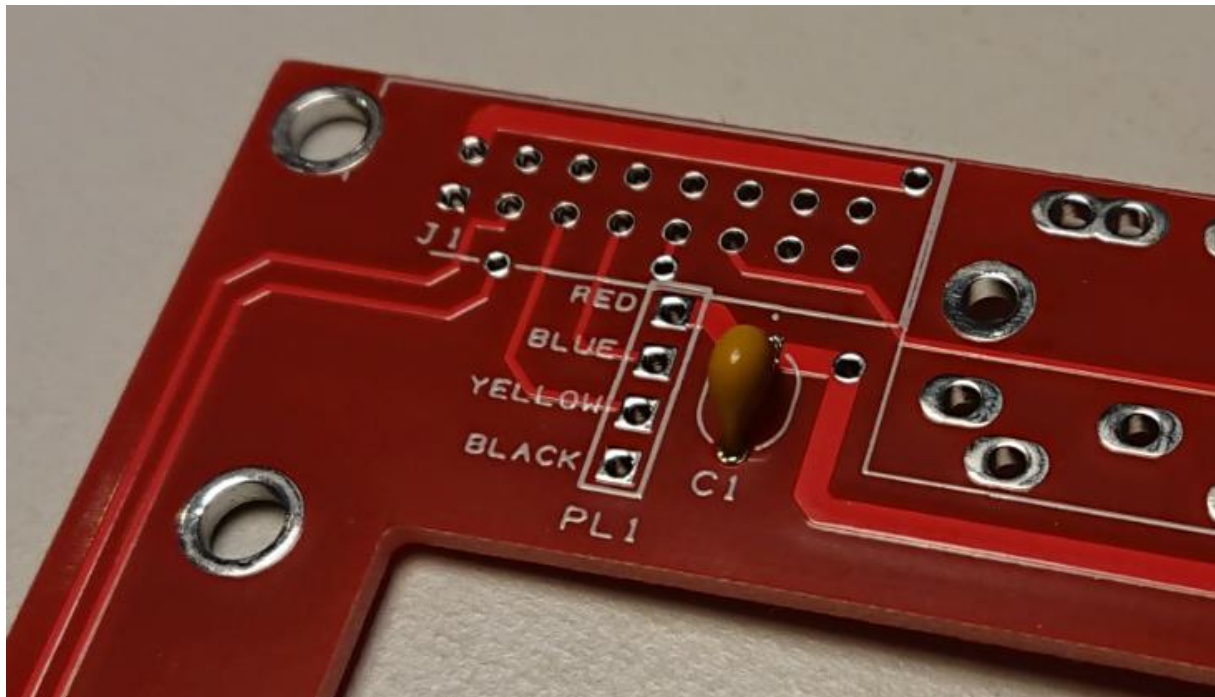
200 Ohm	R1
10 KOhm	R2
1N4148	D1

Mark on this side



CAPACITOR

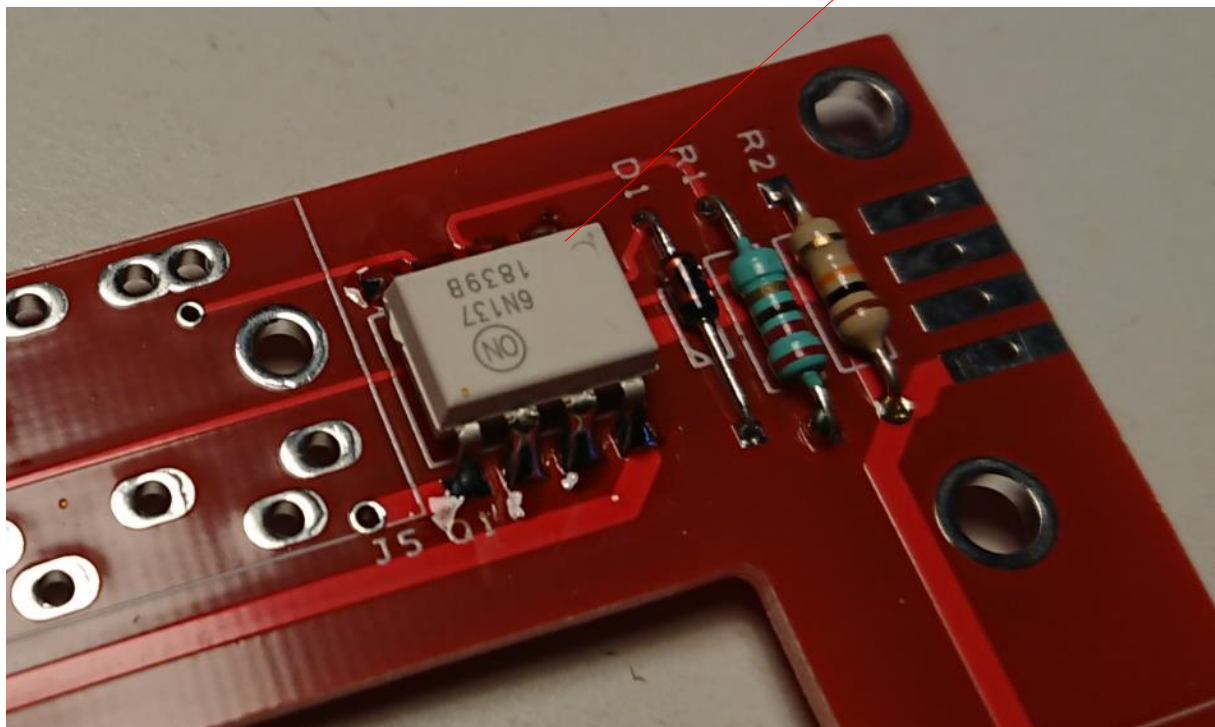
100nF C1



IC

6N137 Q1

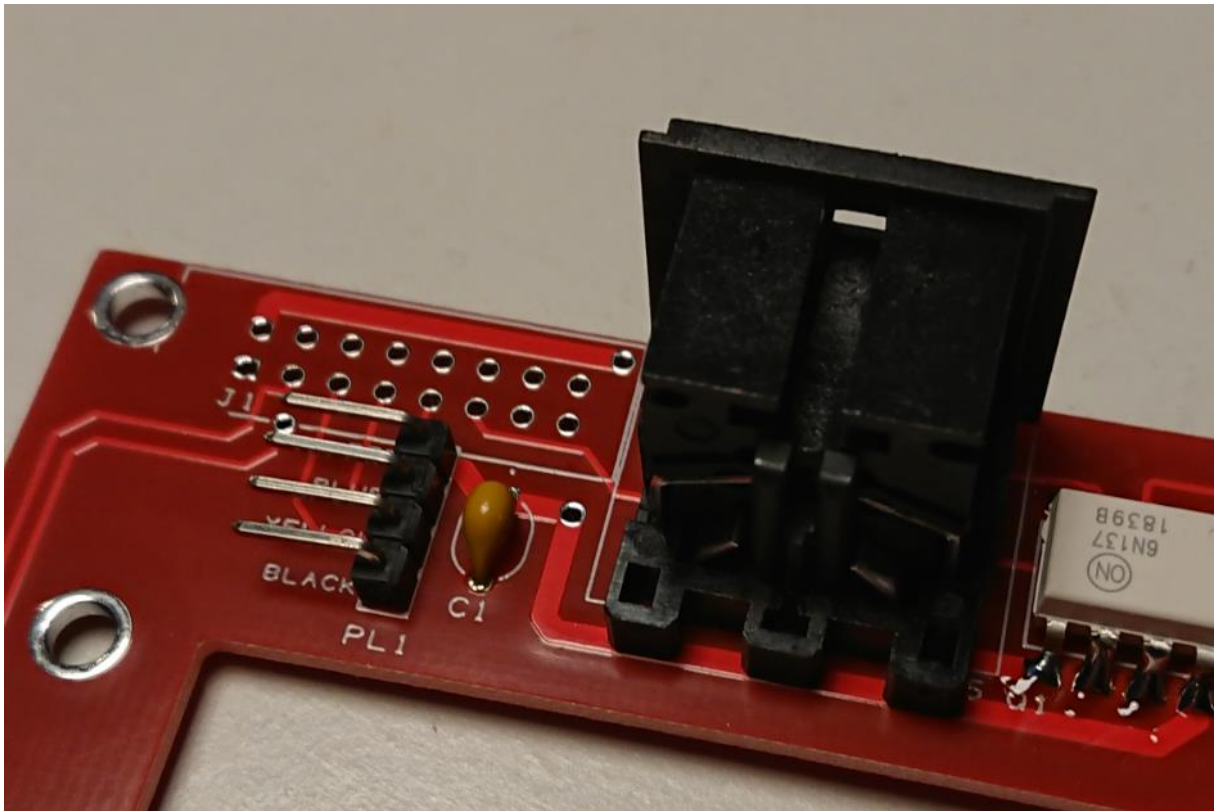
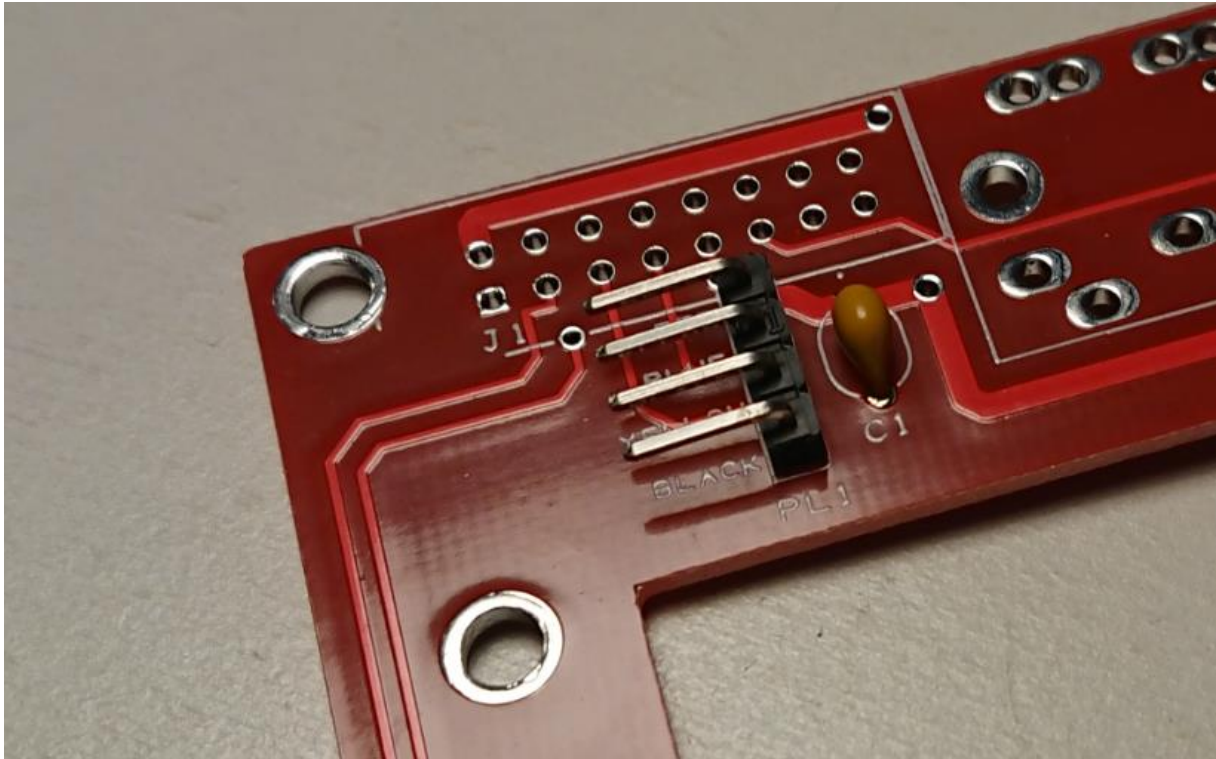
Pin n°1



CONNECTORS

4 pins PL1

Din 5 pins J5

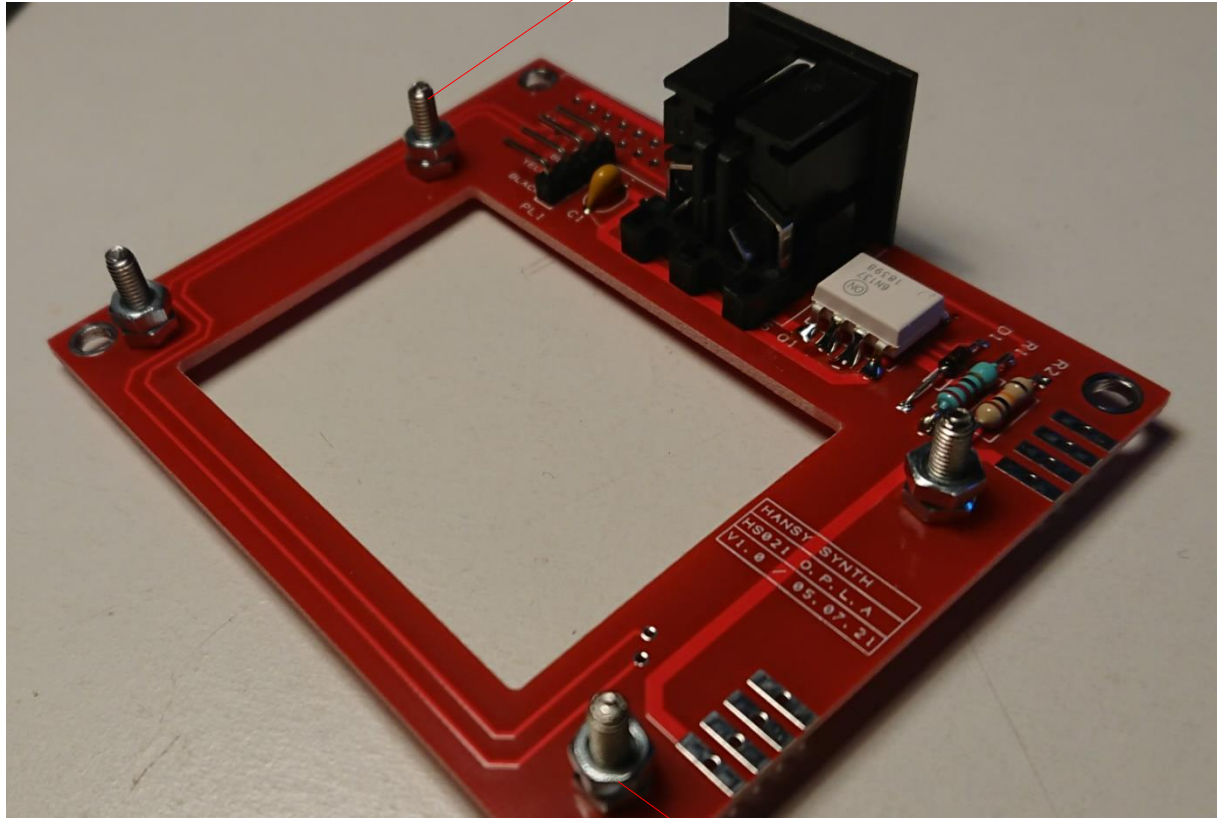


NEXTION SCREEN

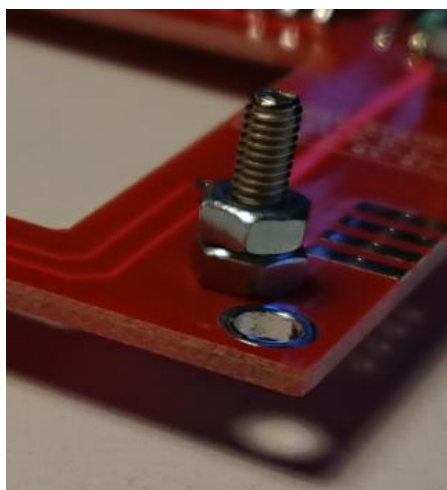
Screws M3*16 4

Nuts M3 8

Screw M3*16



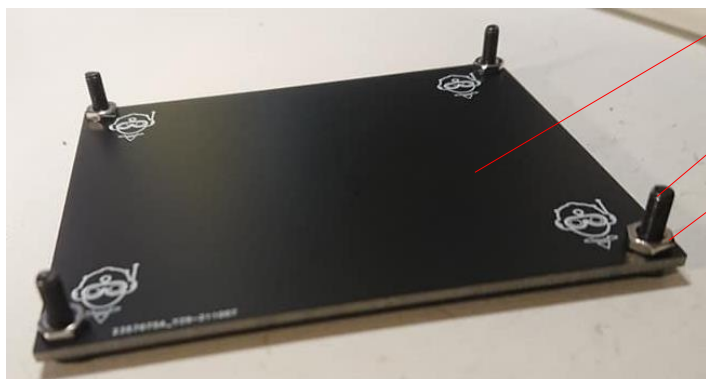
2 Nuts



WARNING

2 NUTS

PREPARE THE BACKPLANE BOARD



Backplane

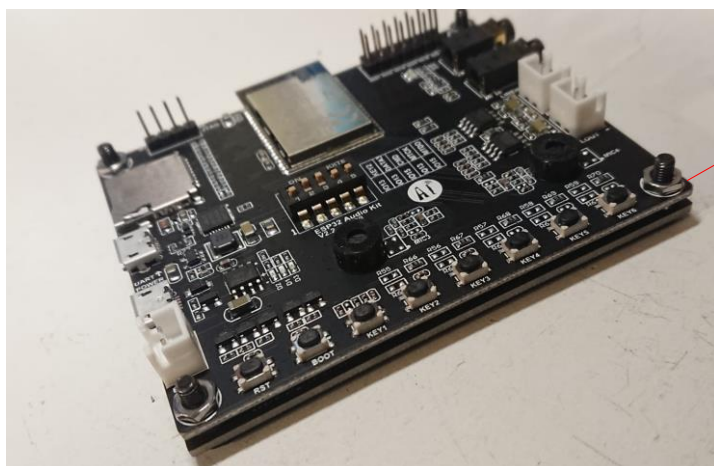
Screw M3*16

Nuts

Bottom view



Insert the mother board and add four nuts



Nuts

Add the four spacers

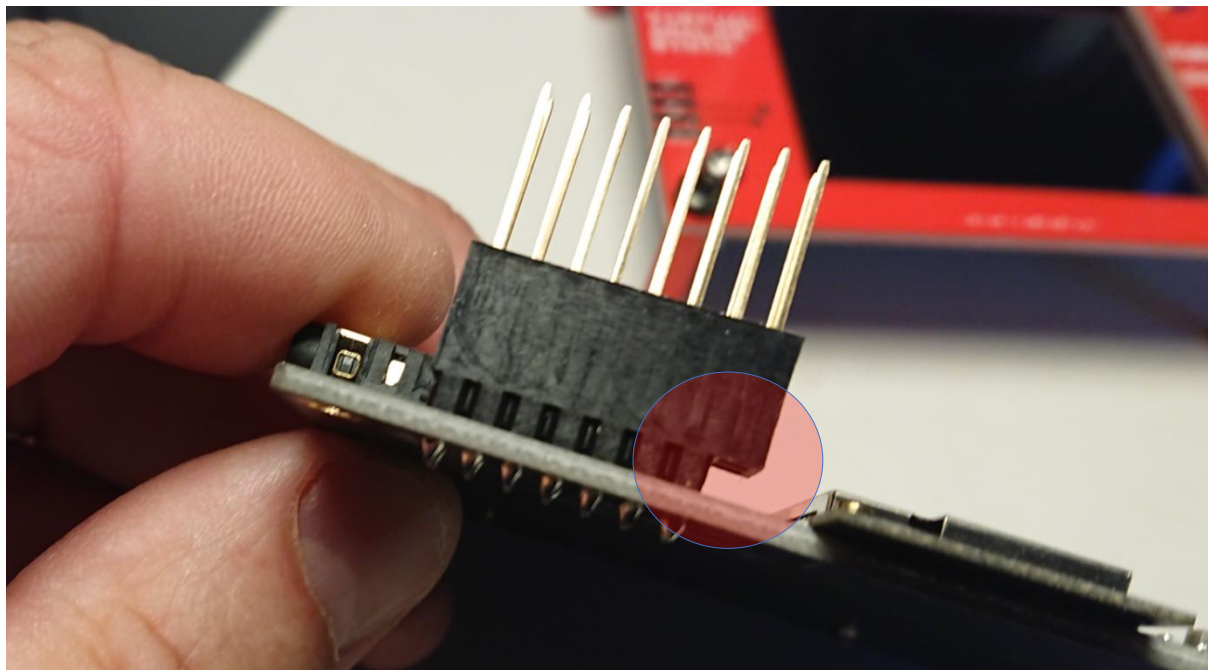


20mm spacer

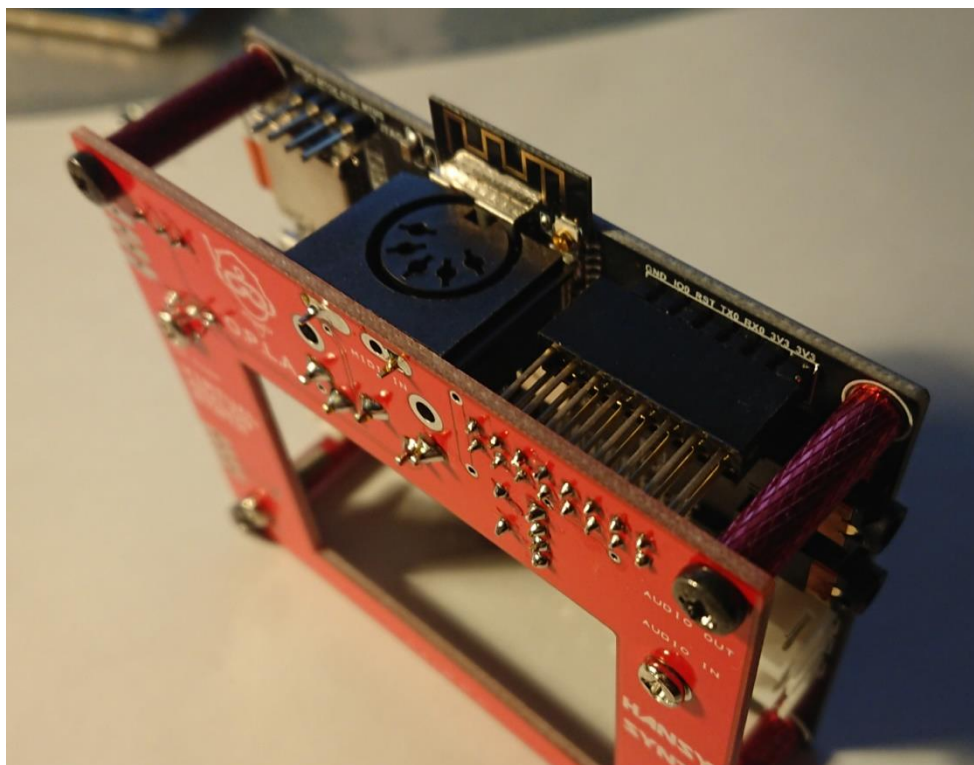
J1 CONNECTOR

Plug the PC104 connector to the ESP32 Audio kit board

The last row on the right is unconnected



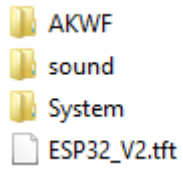
Plug the two boards together and sold the connector, then unplug the 2 boards



PROGRAM THE SD CARD

In the SD card you must have these files

You can find all these files in the github repository [CLICK HERE](#)



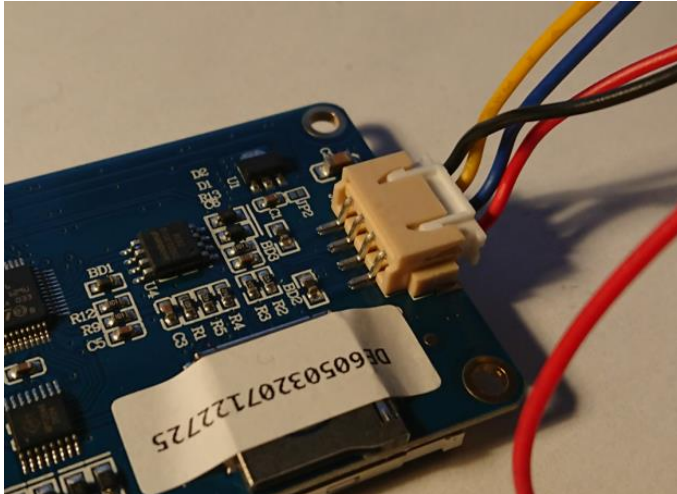
PROGRAM THE NEXTION SCREEN

The Nextion screen is normally already programmed.

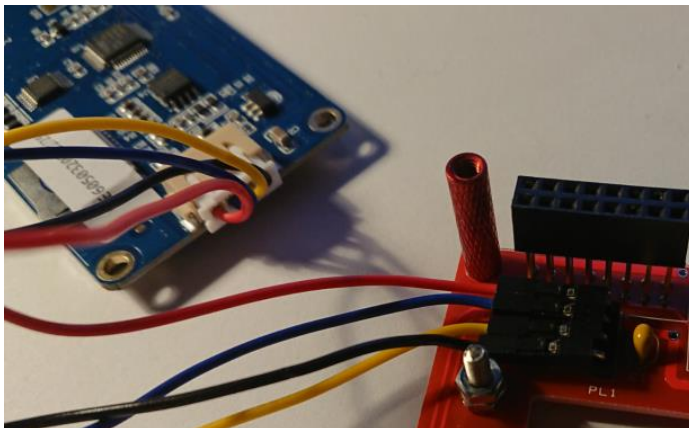
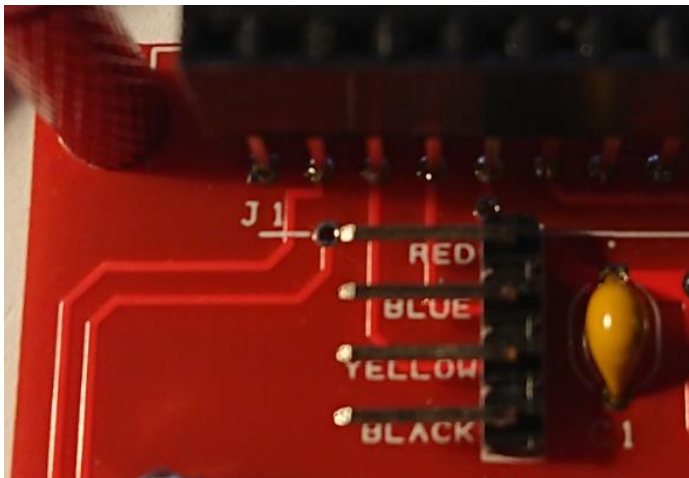


Go to the next chapter INSERT THE NEXTION SCREEN

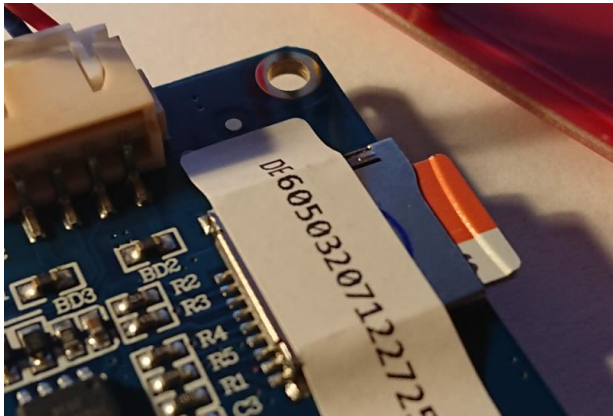
Insert the connector in the Nextion screen



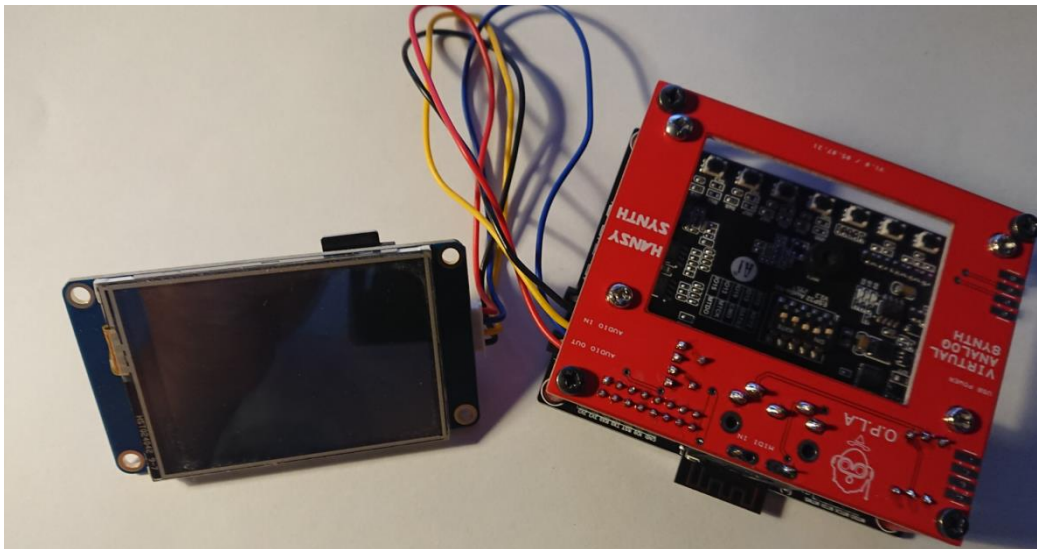
Connect the PL1. The colors of the wires are writing in the board



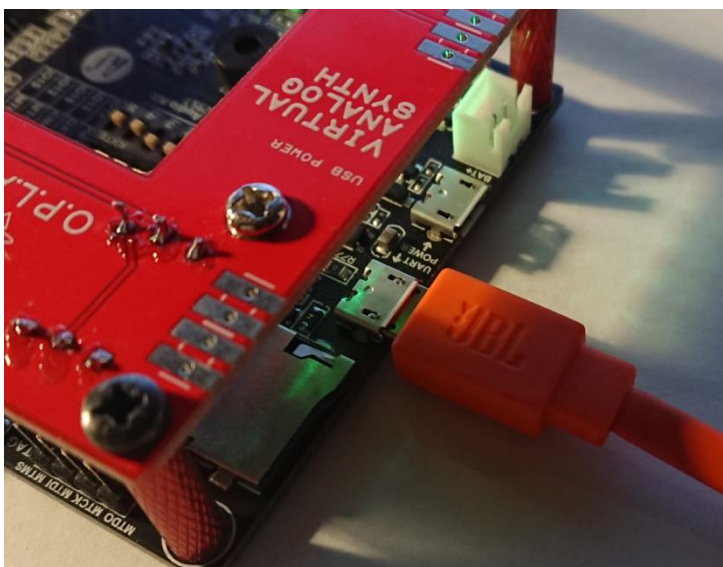
Insert the SD card in the Nextion screen



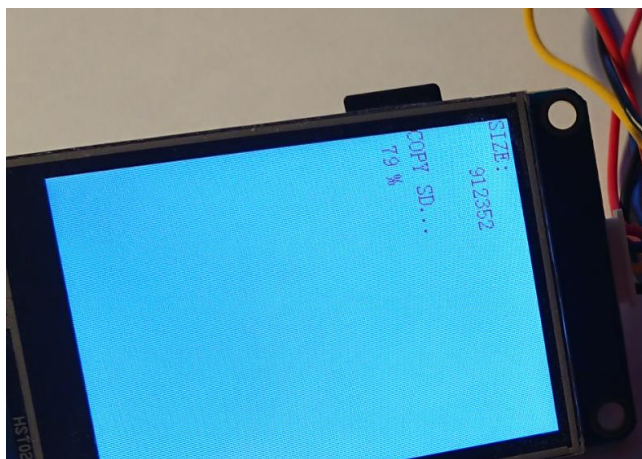
Plug again the 2 boards



Power on the OPLA



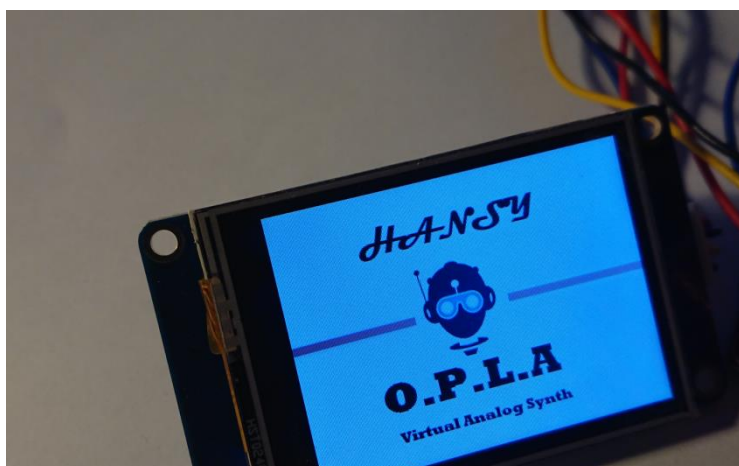
After some seconds you must see something like that



Then



Unplug the SD Card / Power off and on the OPLA. The screen must start with the OPLA main screen

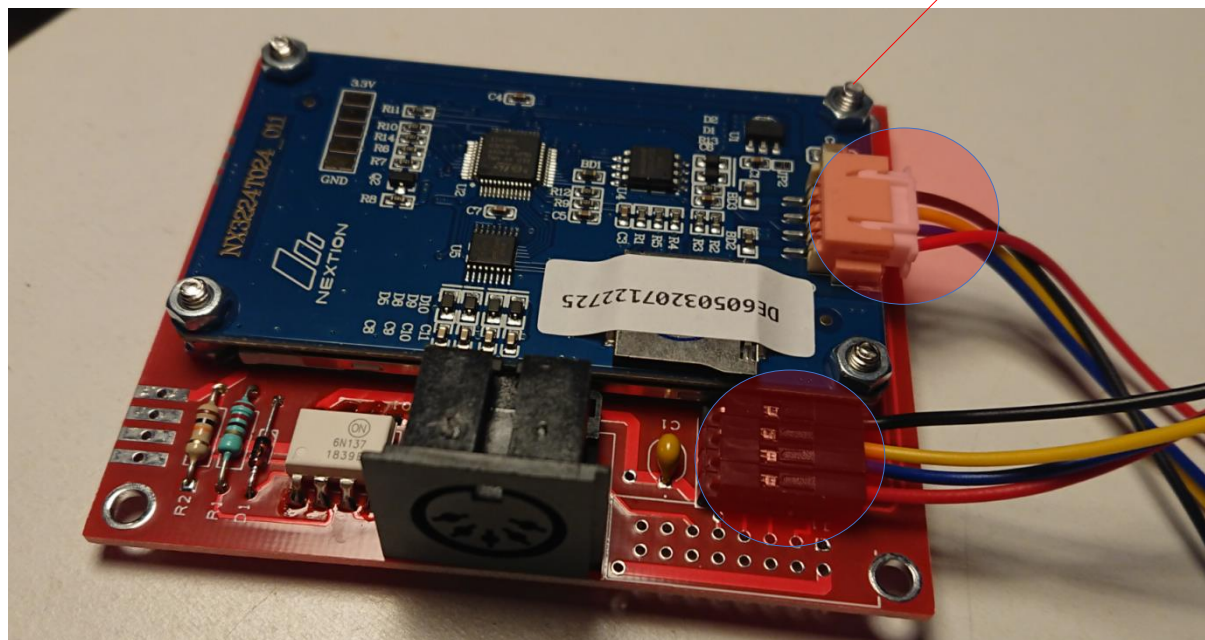


INSERT THE NEXTION SCREEN

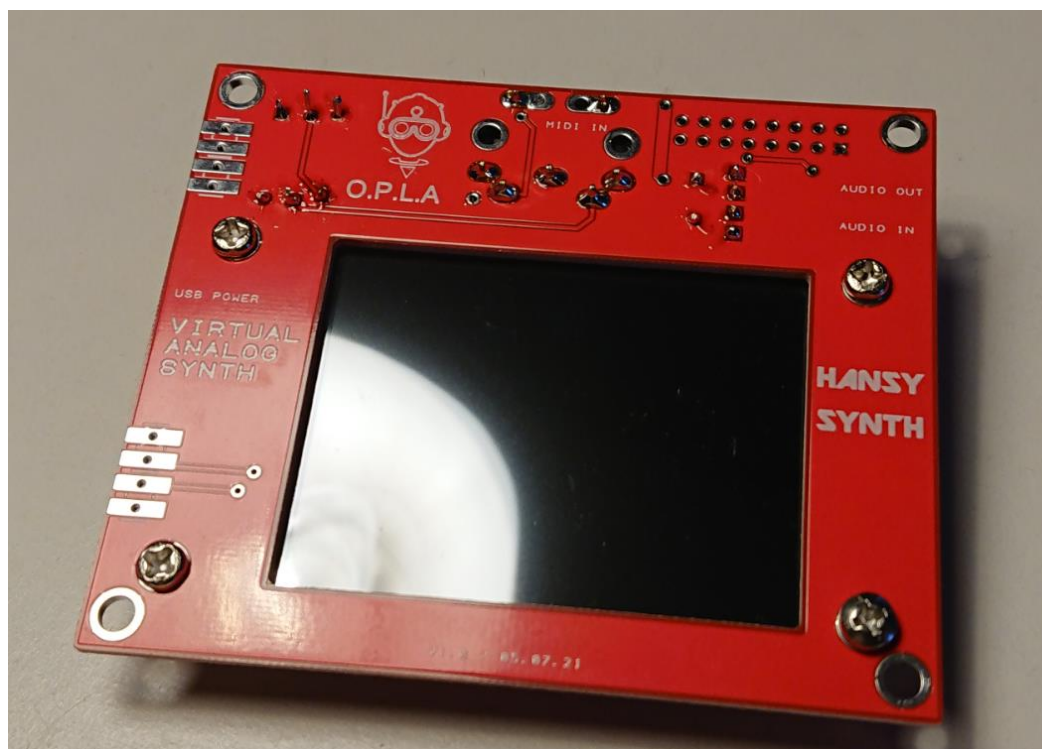
Connect the PL1. The colors of the wires are writing in the board.

Insert the nextion screen and set the 4 nuts

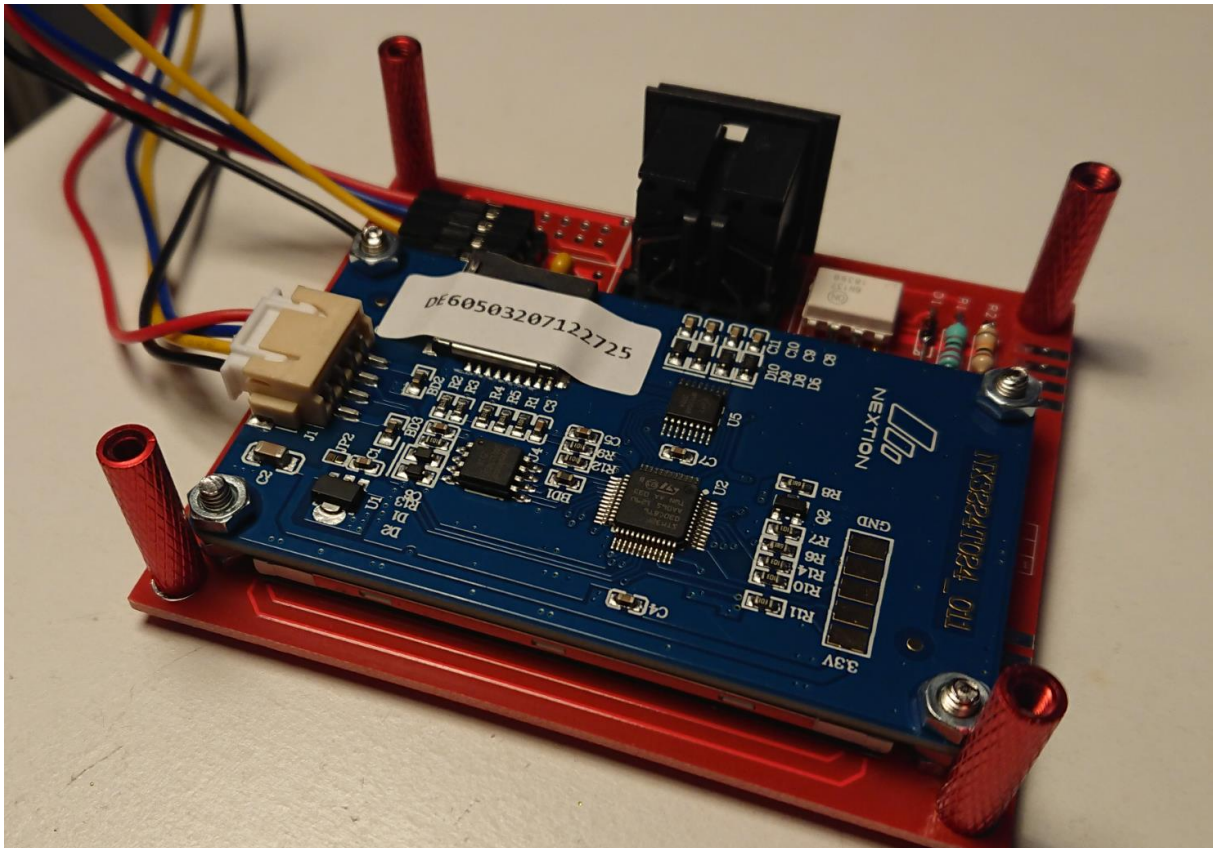
Nuts



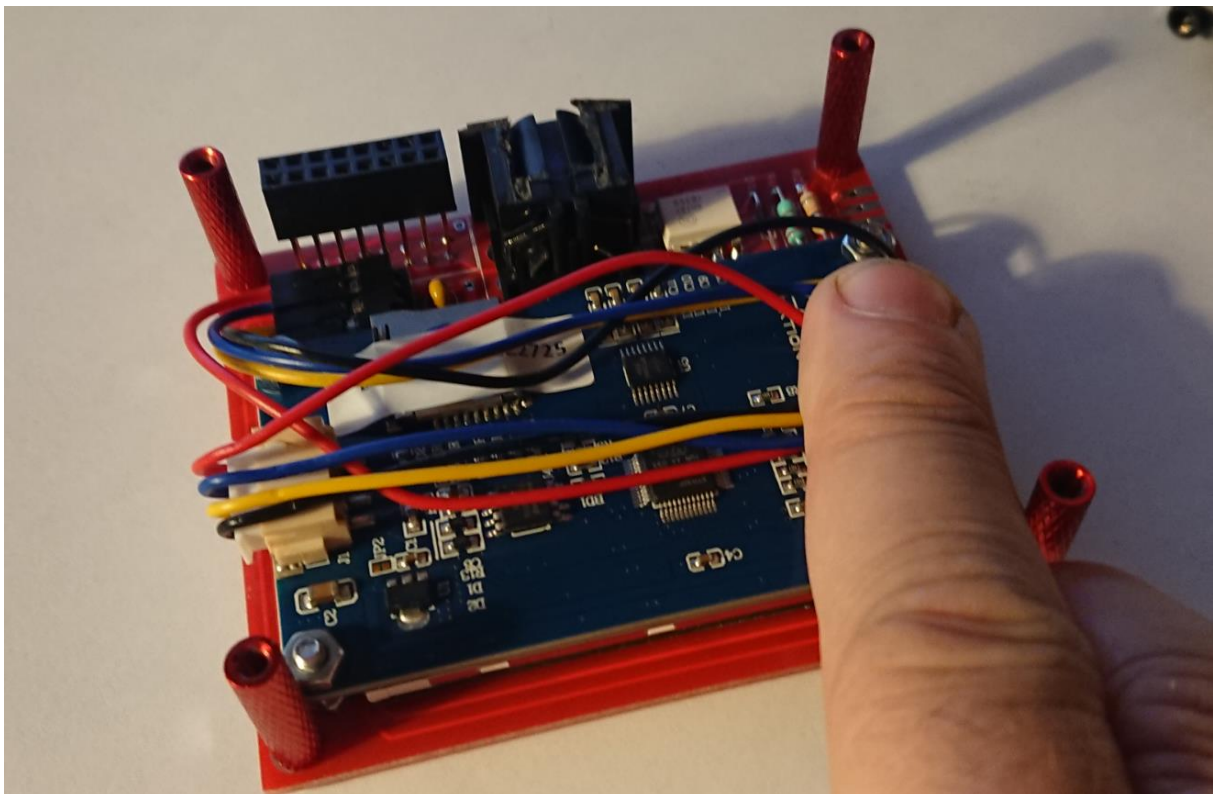
View of the other side



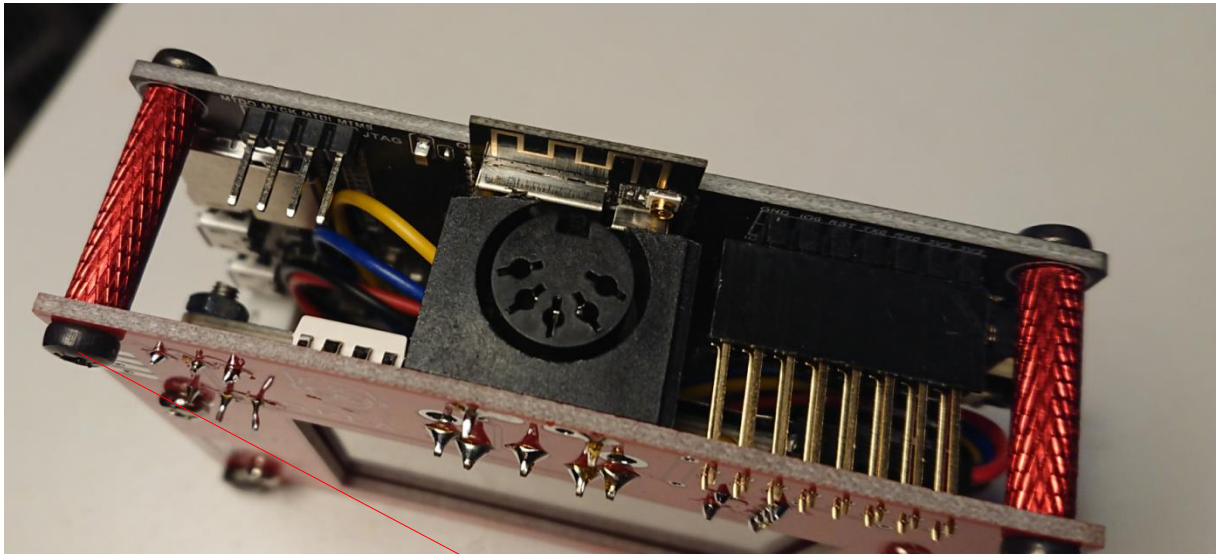
Add the 4 spacers + 4 M3 screws



Set the wire as follow



Then plug the other card and add the last 4 screws



Screw M3*16

PROGRAM THE OPLA MULTI FILE VERSION

The Mother Board is normally already programmed.



Go to the next chapter INSERT THE NEXTION SCREEN

Plug the SD card in the ESP32 Audio Kit board
Download the **ESP32 Flash download tool** [here](#).

Flash Download Tools

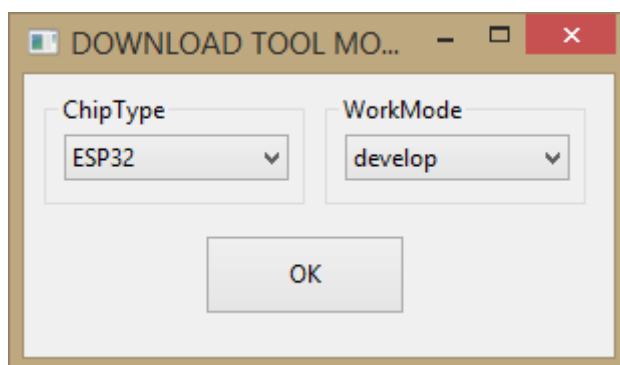
<input type="checkbox"/>	Title	Platform	Version	Release Date ▾	Download
<input type="checkbox"/> +	Flash Download Tools	Windows PC	V3.8.8	2021.06.02	

Unzip the file

Click on the file **flash_download_tool_3.8.8.exe**

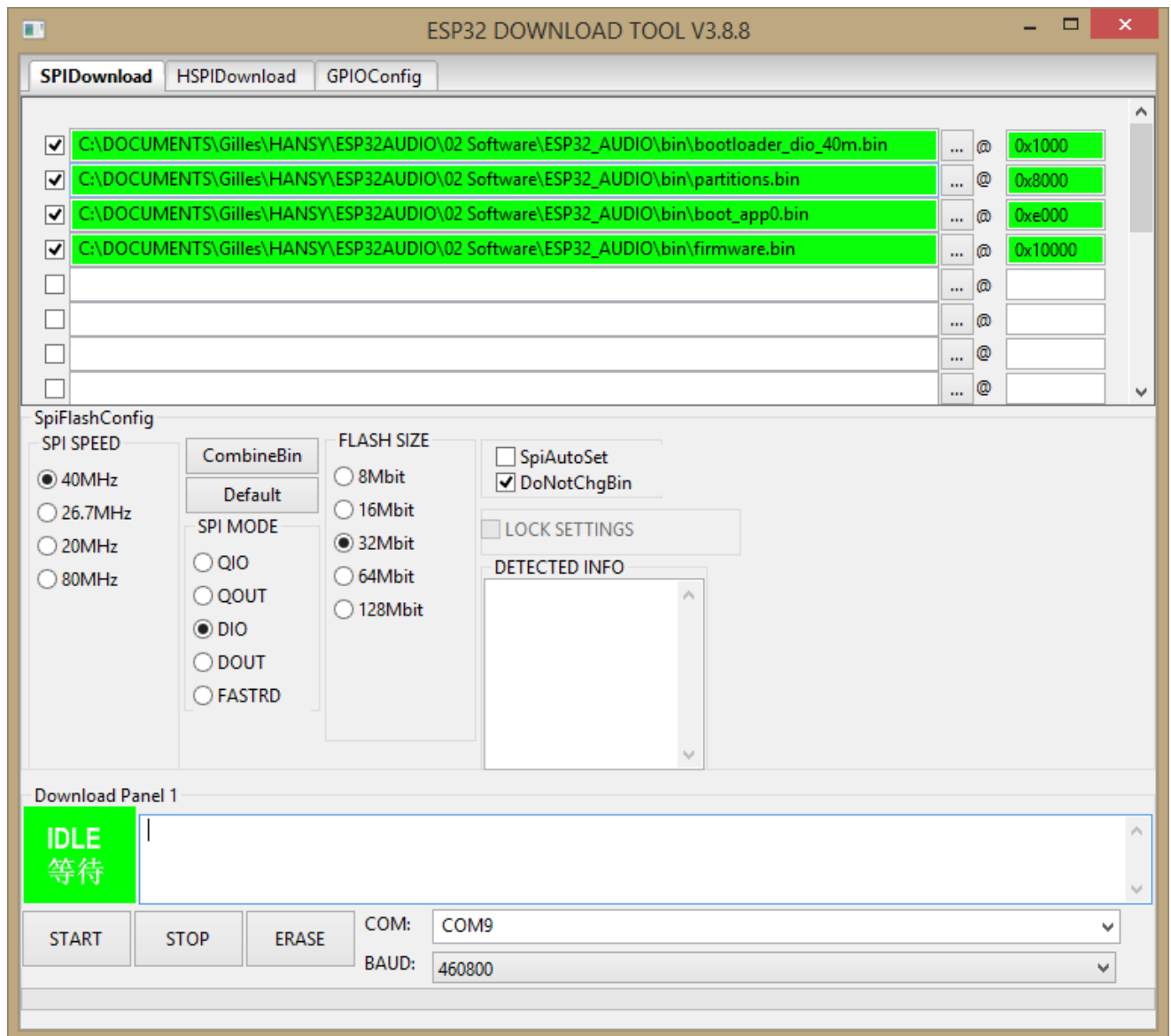
	bin	29/04/2021 04:44	Dossier de fichiers
	configure	30/08/2021 22:05	Dossier de fichiers
	dl_temp	31/08/2021 20:49	Dossier de fichiers
	doc	29/04/2021 04:46	Dossier de fichiers
	logs	31/08/2021 20:50	Dossier de fichiers
	RESOURCE	02/06/2021 11:07	Dossier de fichiers
	flash_download_tool_3.8.8.exe	02/06/2021 10:58	Application 16 048 Ko

Select ESP32 for the chip type

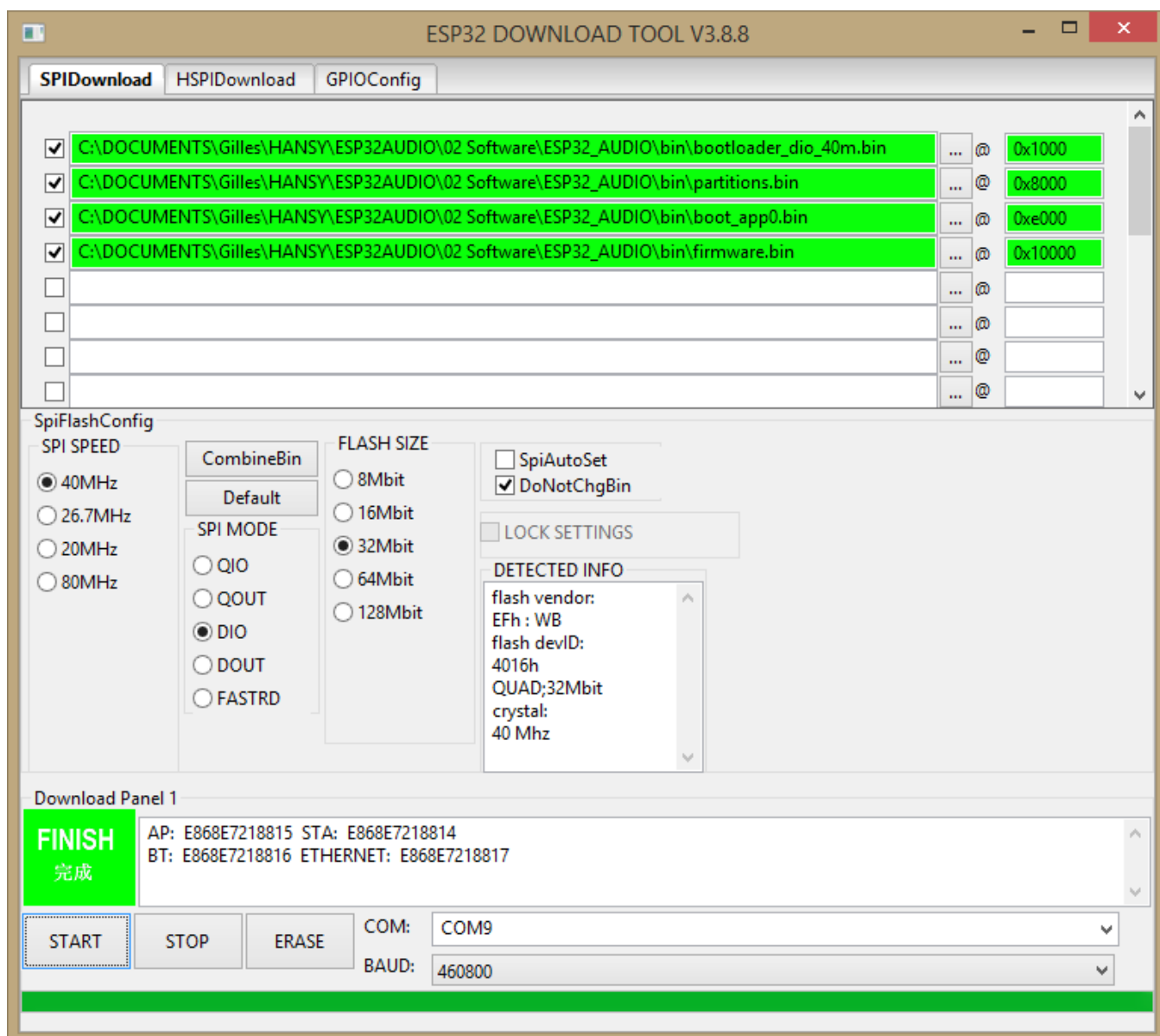


Bootloaderfile address	0x1000	bootloader_dio_40m.bin
Partition file address	0x8000	partitions.bin
Partition boot address	0xe000	boot_app0.bin
Firmware address	0x10000	firmware.bin
Chrystal	40M	
Baud rate	460800	
Flash size	4MB	

Load the different .bin files and set the address.
Check the box on the left for the four files
Set the com port. It can be different from COM9
Set the Baud rate at 460800



Click on start after 10 seconds you must see this screen



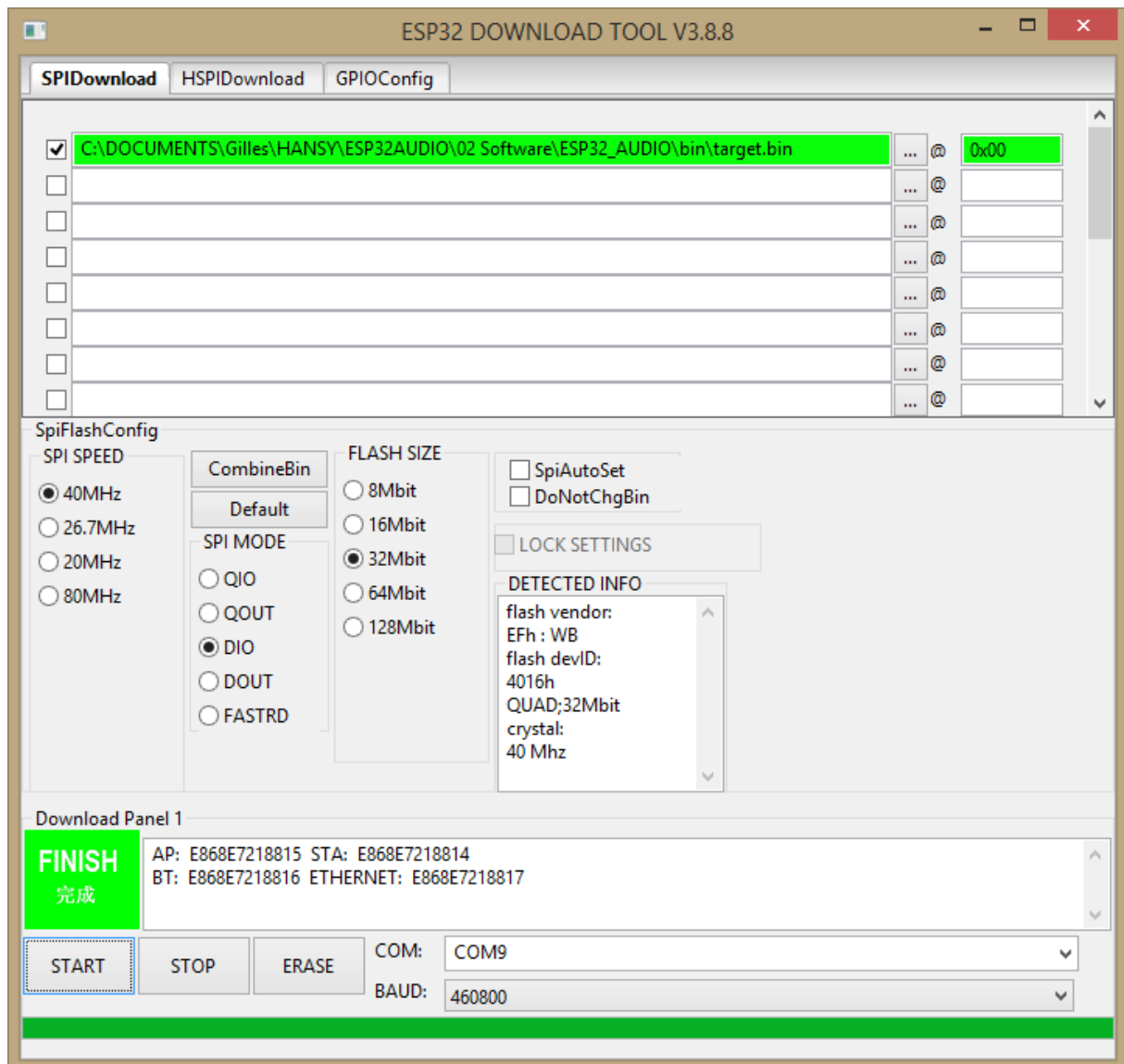
PROGRAM THE OPLA WITH ONE FILE VERSION

The four file can be combine to just one file with the **Combinebin** button

The result is a target.bin file

Load this file, set the address to 0x00 and uncheck the **DoNotChgBin** button

Click on start



TEST AND CALIBRATION

Plug the Midi Din connector

Plug a Headphone on the Audio out jack

Plug the Mini USB connector

Check if the SD card is inserted



- The OPLA Must start

Connect a Midi Keyboard with a **Midi Channel 1**

Hit some Key and test if you see the number of key in the bottom lines of the screen

Test if you have some sound on your headphone.

To Calibrate the Nextion screen go to the FX section select CAL then set the cursor to yes and follow the instructions