PWM BASED DC MOTOR SPEED CONTROLLER

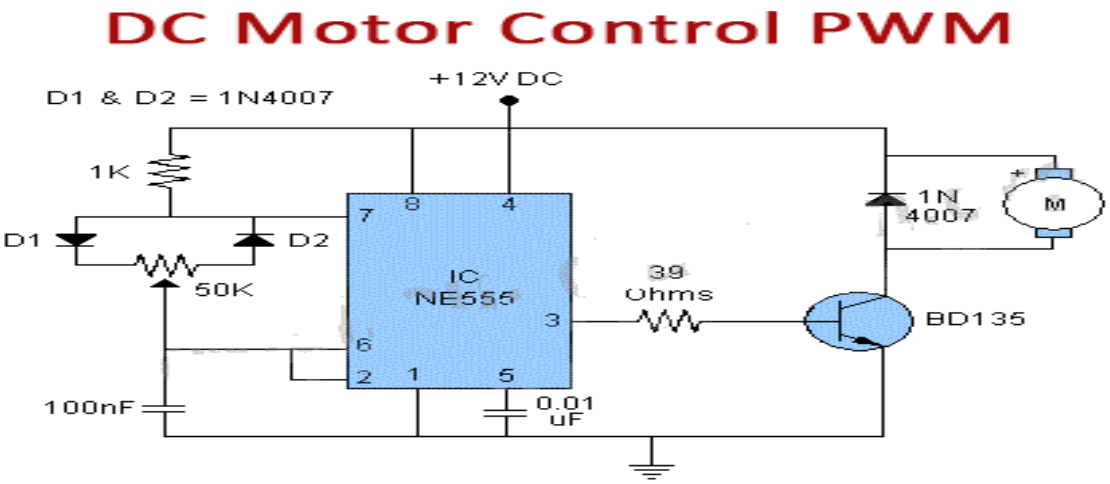
ABSTRACT:

The main goal of this project to develop and designing of the pwm based DC motor speed control using 555 time by using the tools of Kicad software.

The speed control of direct current(DC) Motor for verious applications is very importent. in particular requirement, setting a speed DC motor as the driving equipment must be performed. under that condition,conducted a research on a dc motor speed control with pulse width modulation(PWM) METHOD OF A 555 Timer. the PWM Duty cycle is used to vary the speed of the motor by controlling the motor terminal voltage. the motor voltage and revalution per menutes(RPM) obtained at defferent duty cycle rates.as duty cycle rates. as duty cycle increases, more voltage is applied to the motor. this contributes to the stronger magnetic flux inside the armiture windings and the increase the RPM.

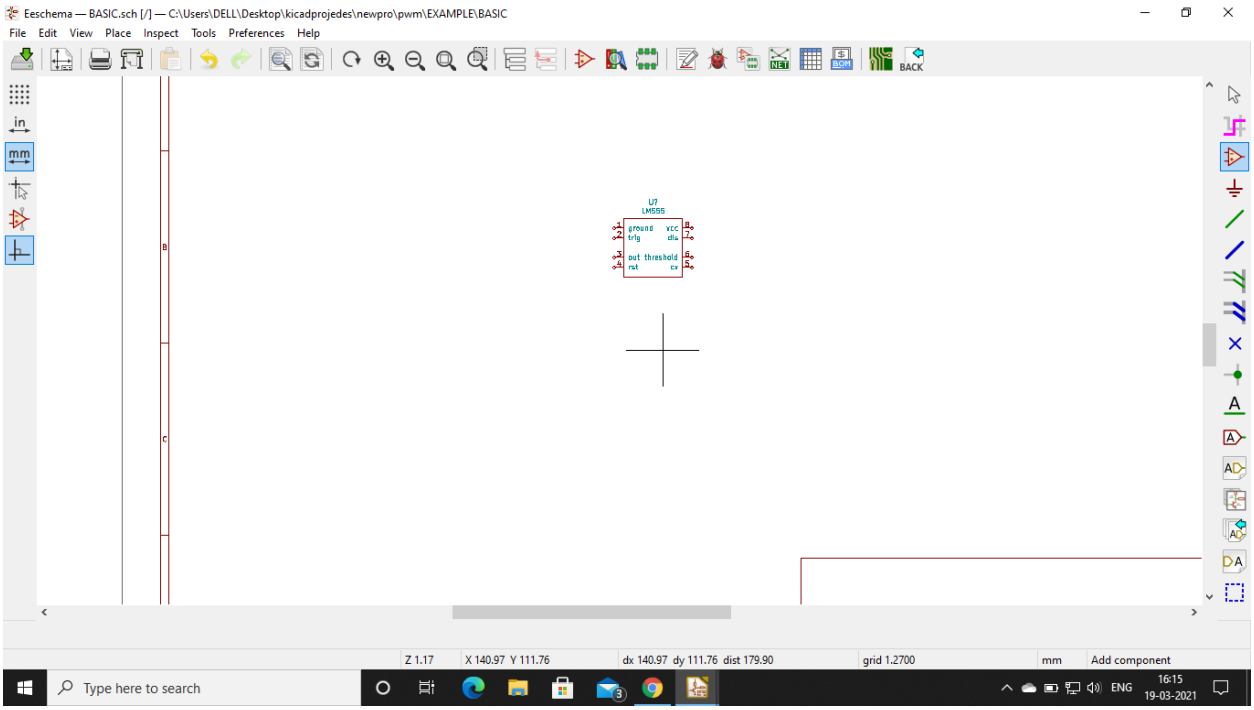
COMPONENTS & CRCUIT DIAGRAM

1. **555 Timer**
2. **variable voltage (based on the designing)**
3. **DC Motor**
4. **Resistors**
5. **IRF540 mosfet**
6. **capacitors**

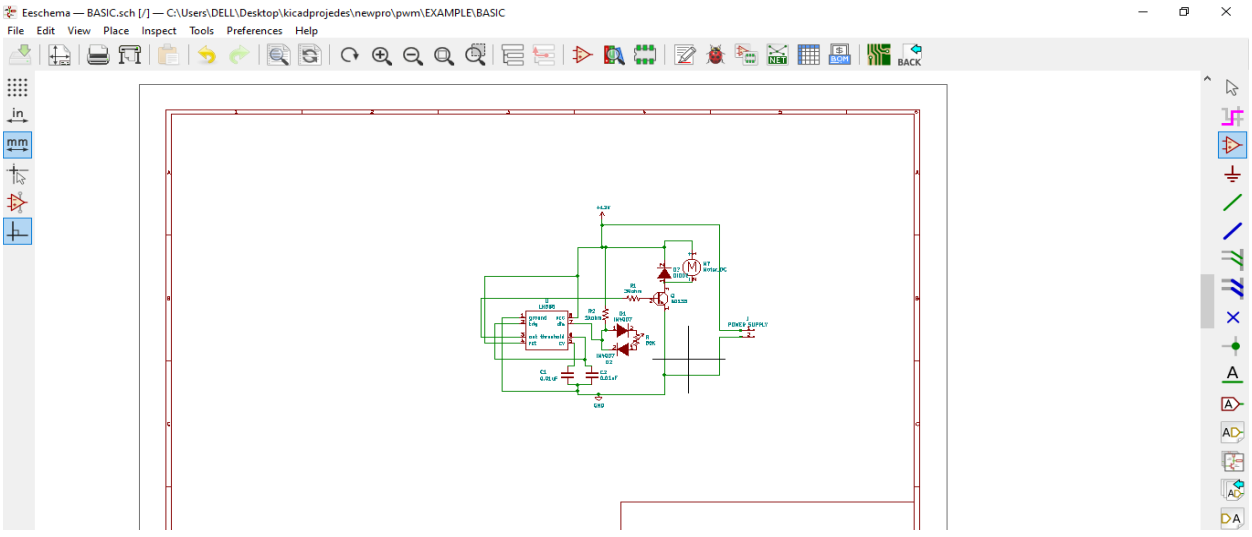


KiCAD PCB DESIGNING STEPS:

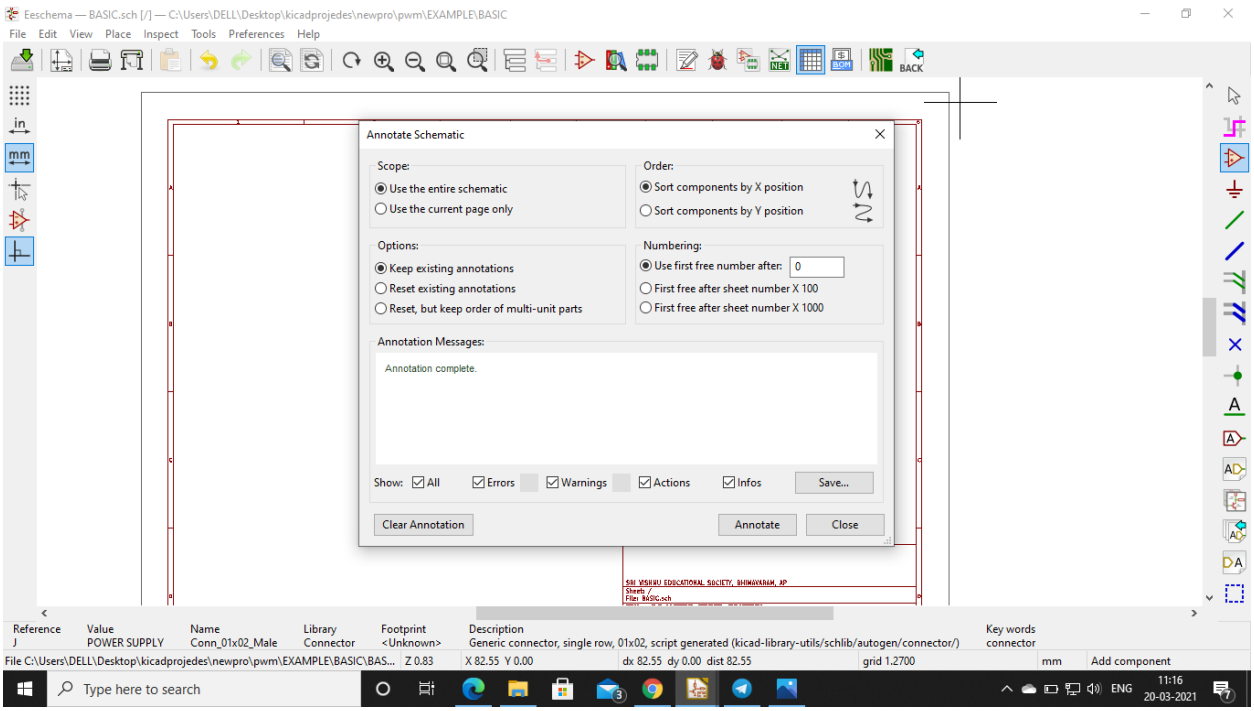
1. **OPEN A KICAD SOFTWARE**
2. **CREATED LIBRARY FOR 555 IC CHIP**



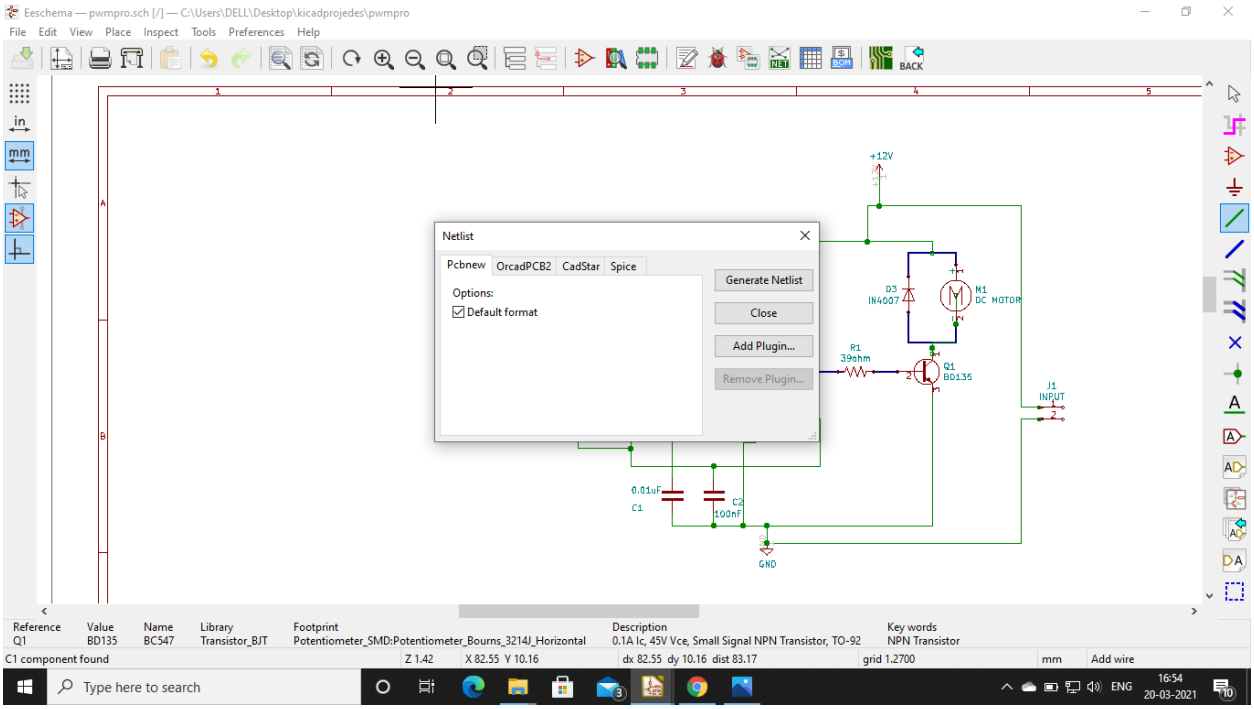
NORMAL CIRCUIT:



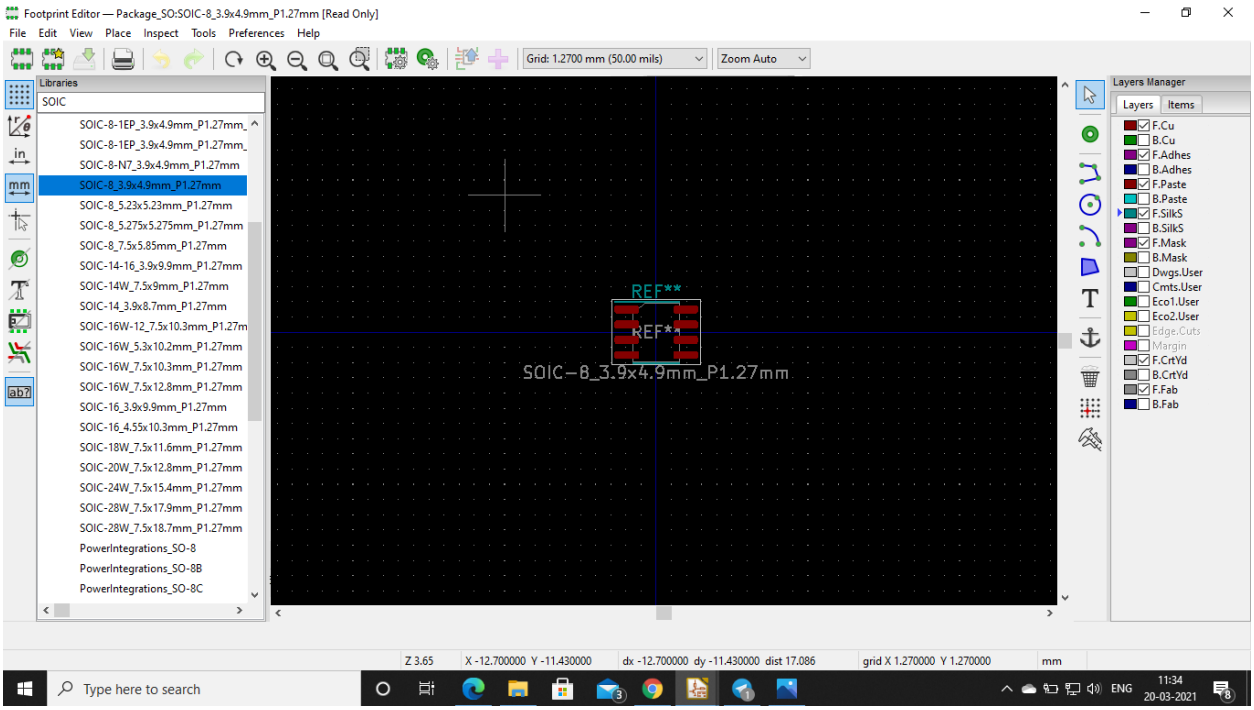
CREATE A ANNOTATION:



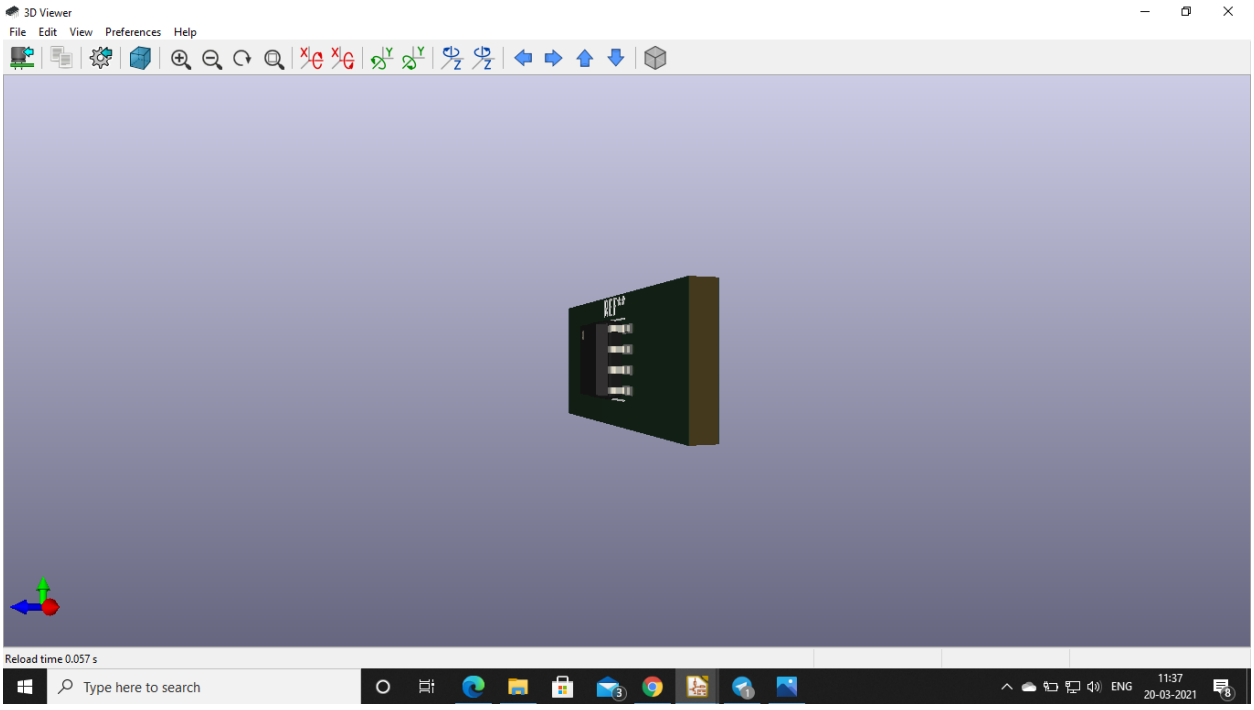
CREATING NETLIST

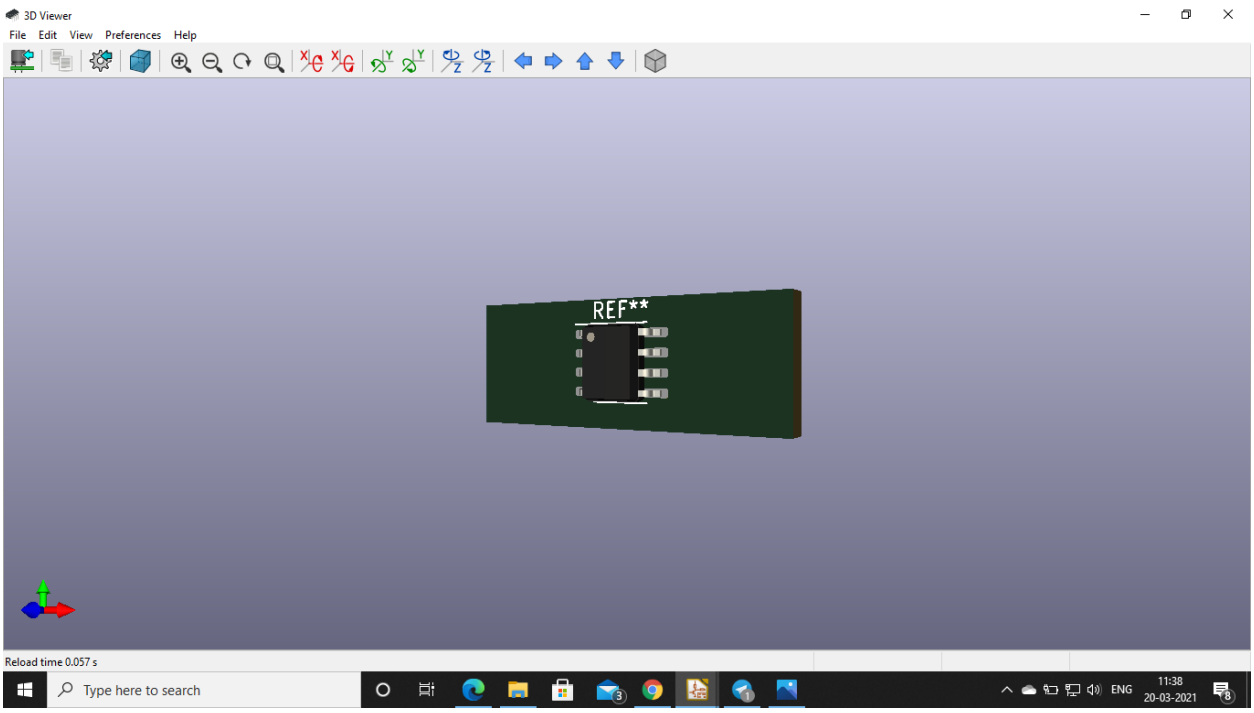


CREATING FOOTPRINT:

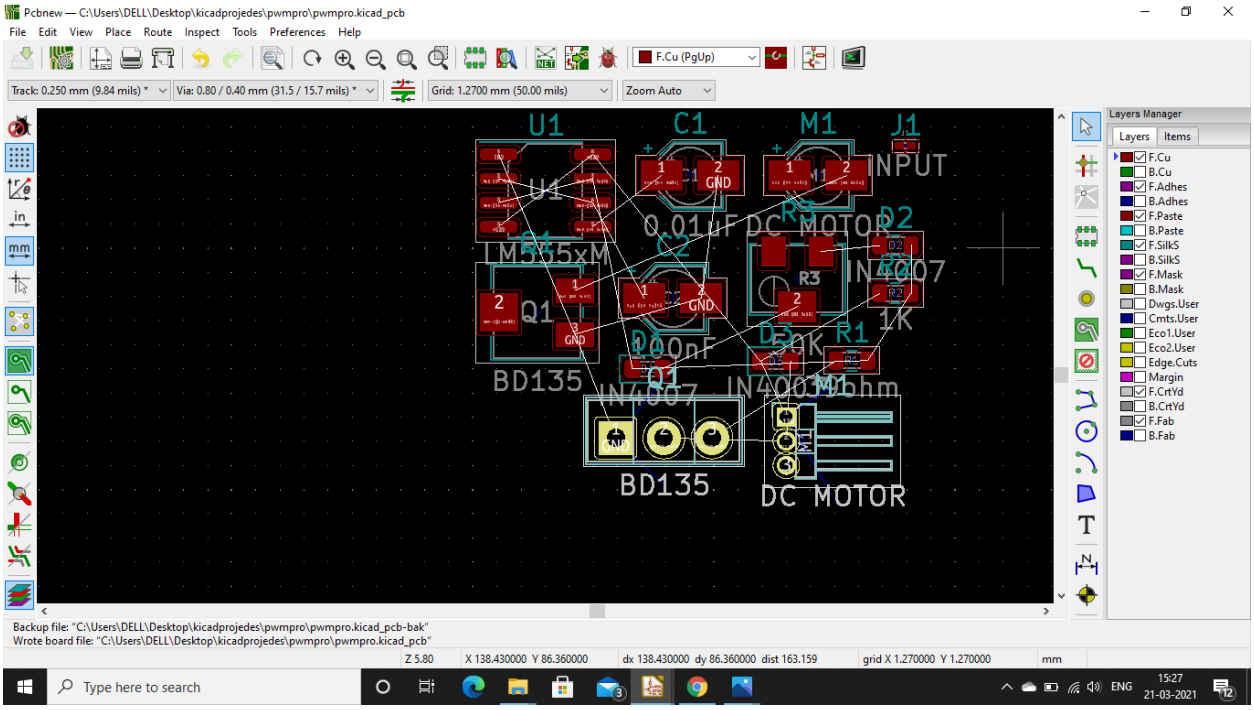


IN 3D VIEW

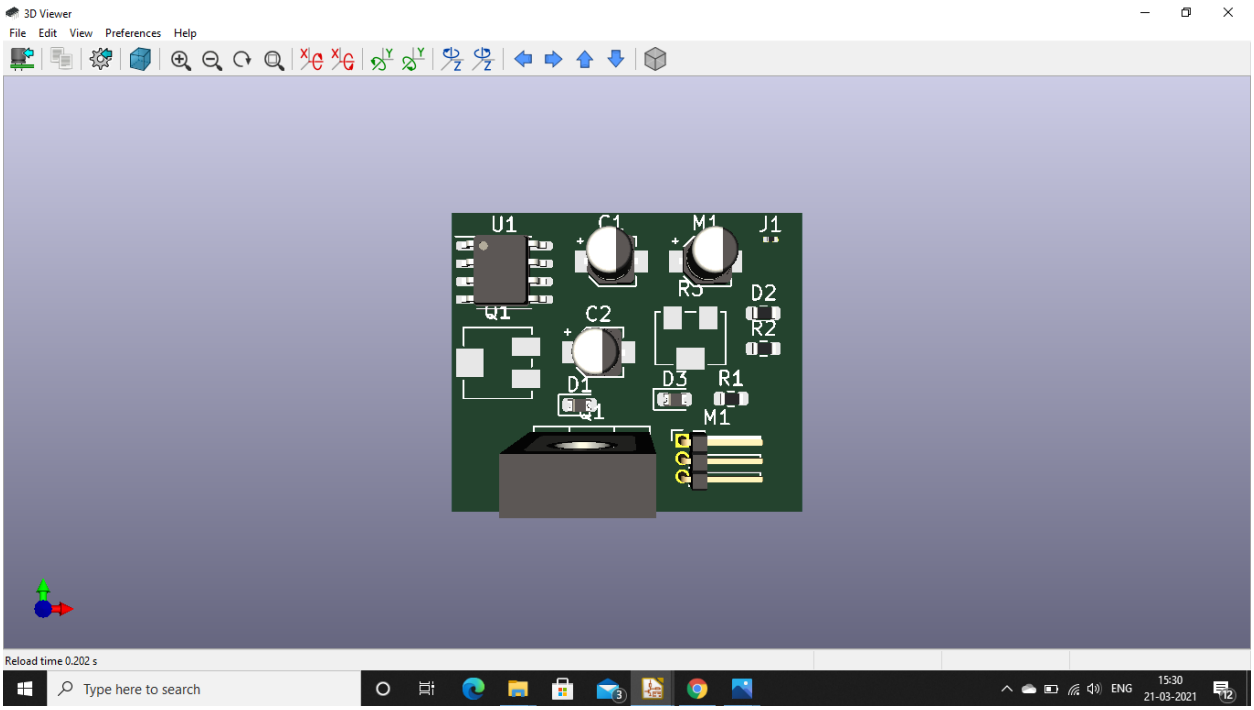




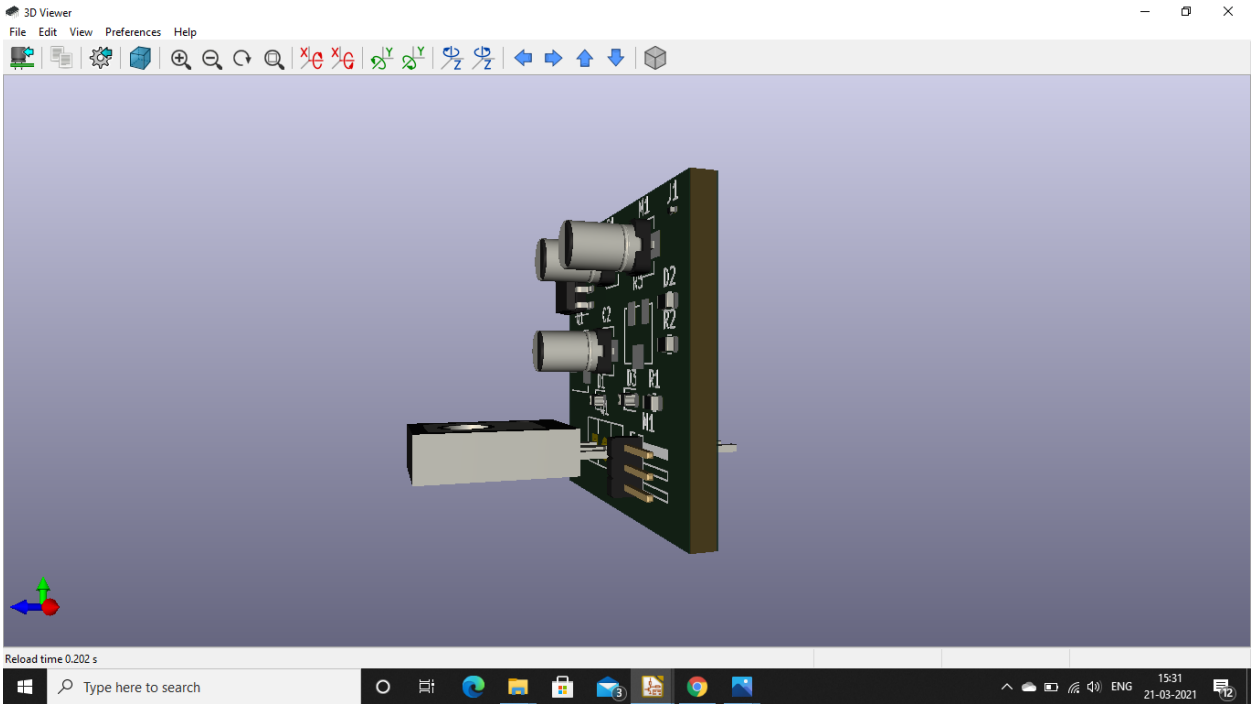
SCHEMATIC UPDATING:

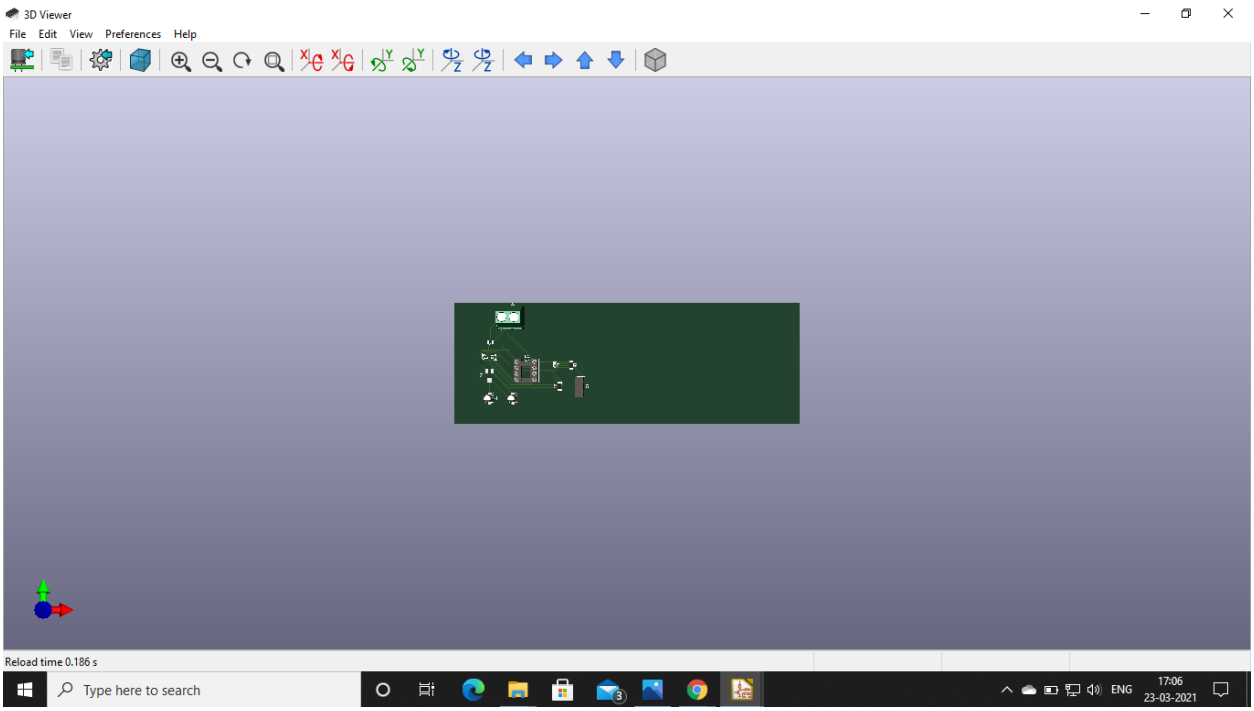


3D VIEW1

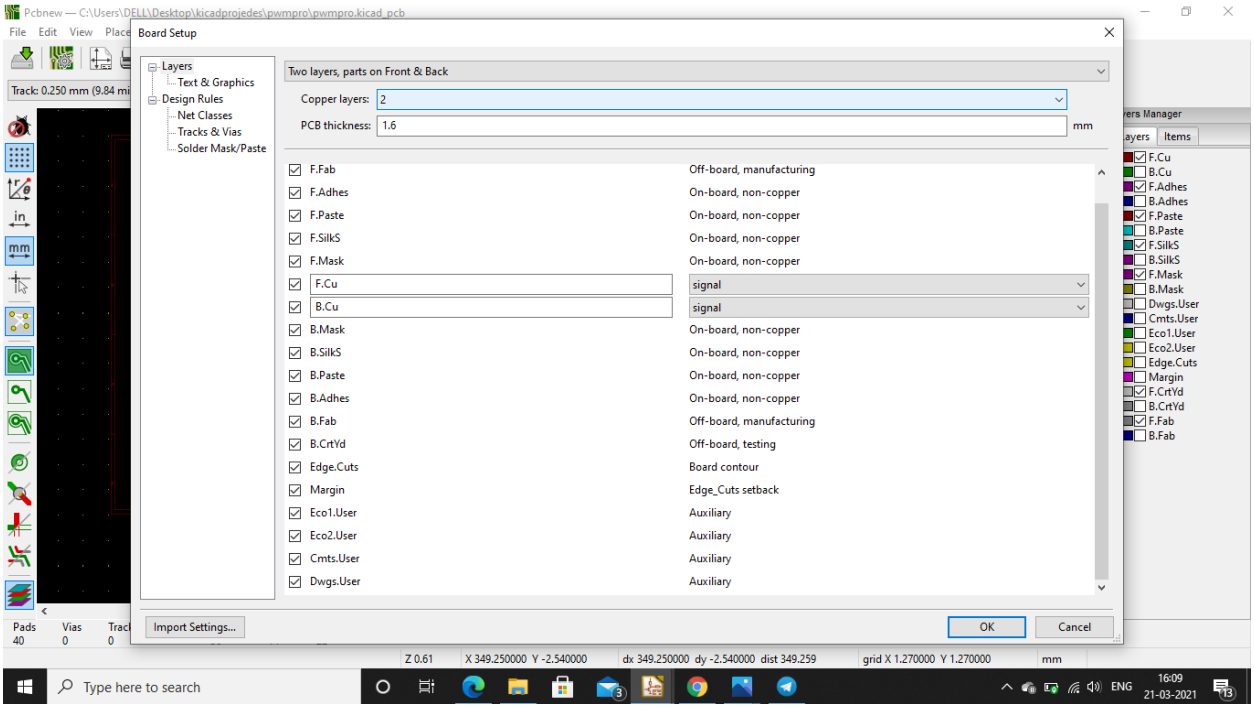


3D VIEW2

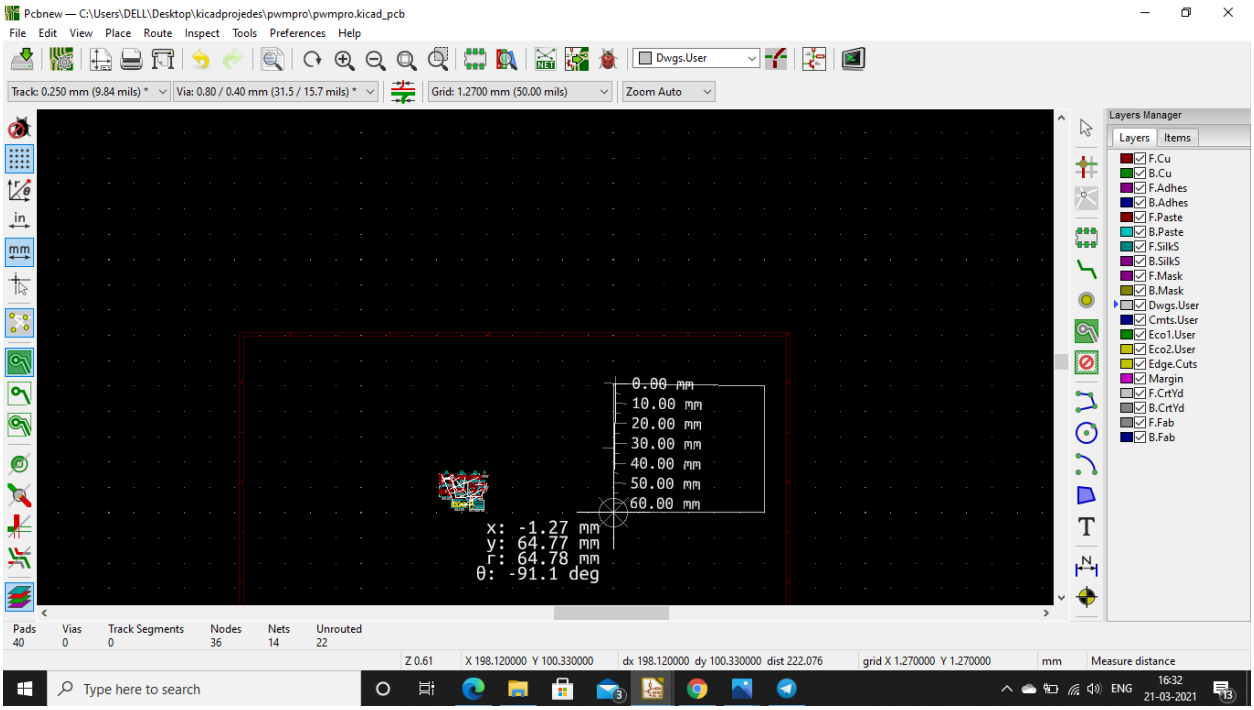




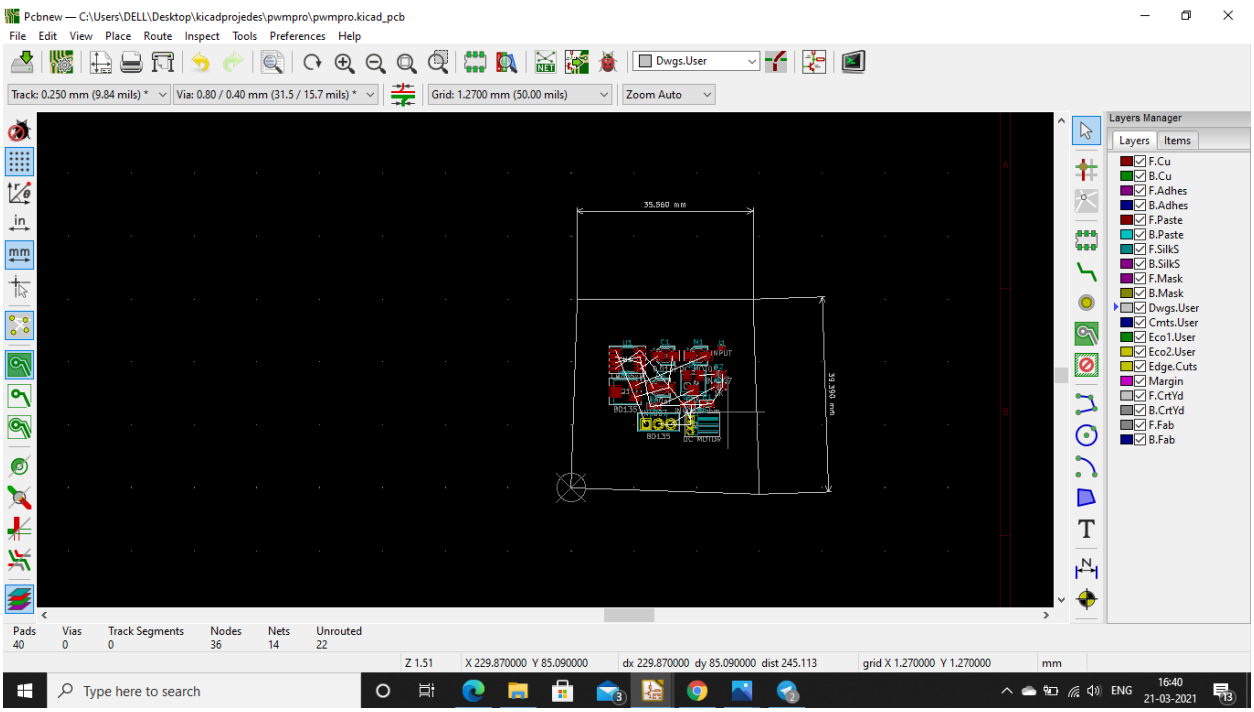
SELECTED LAYERS



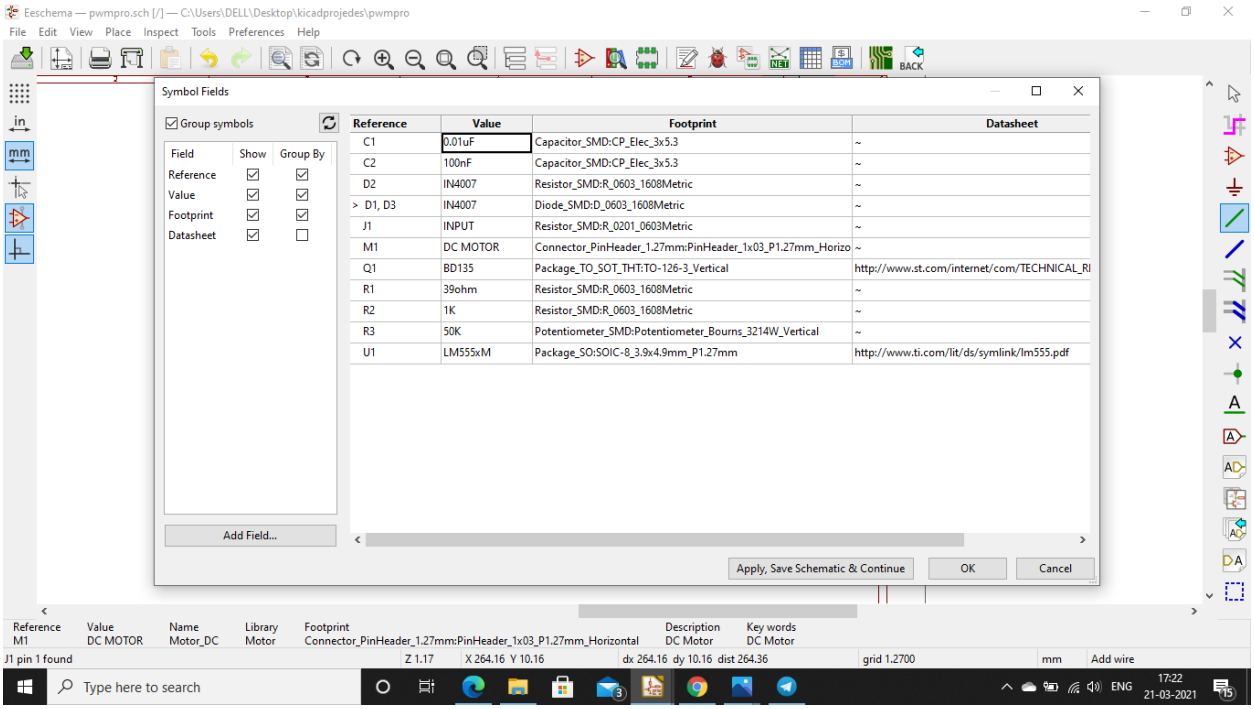
TAKEN MEASURMENT:

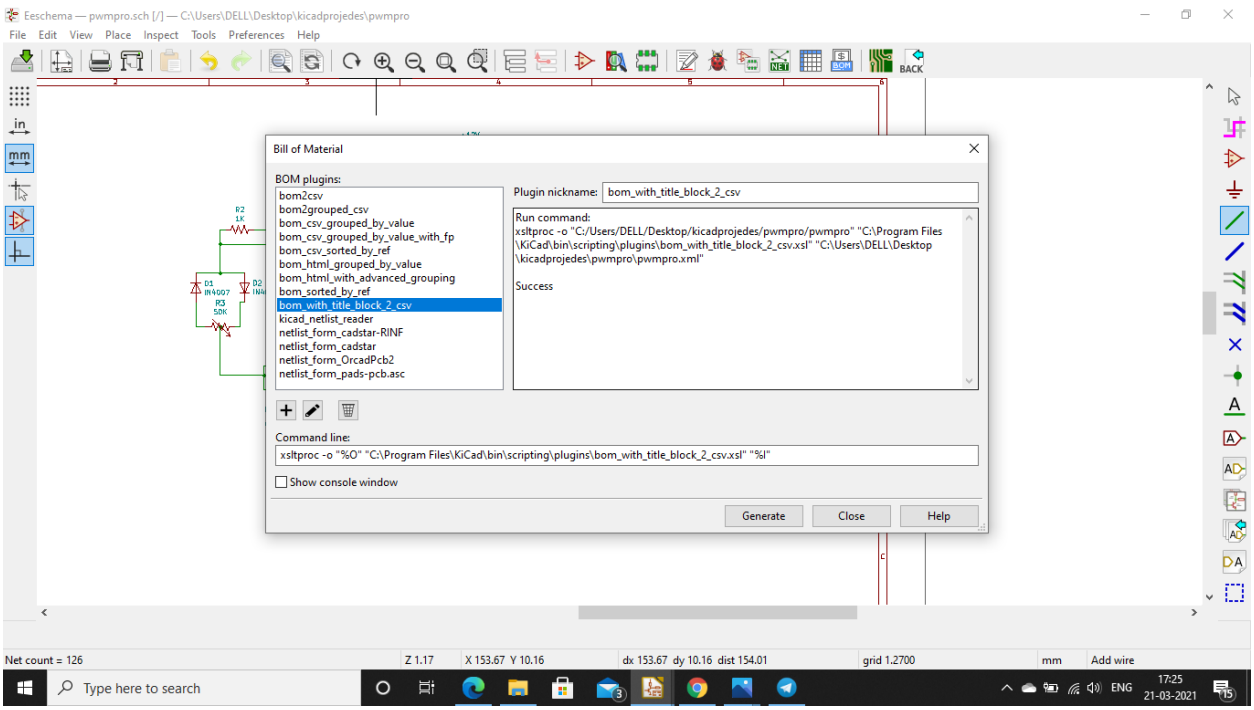


INSERTED MY CIRCUIT TO GRID

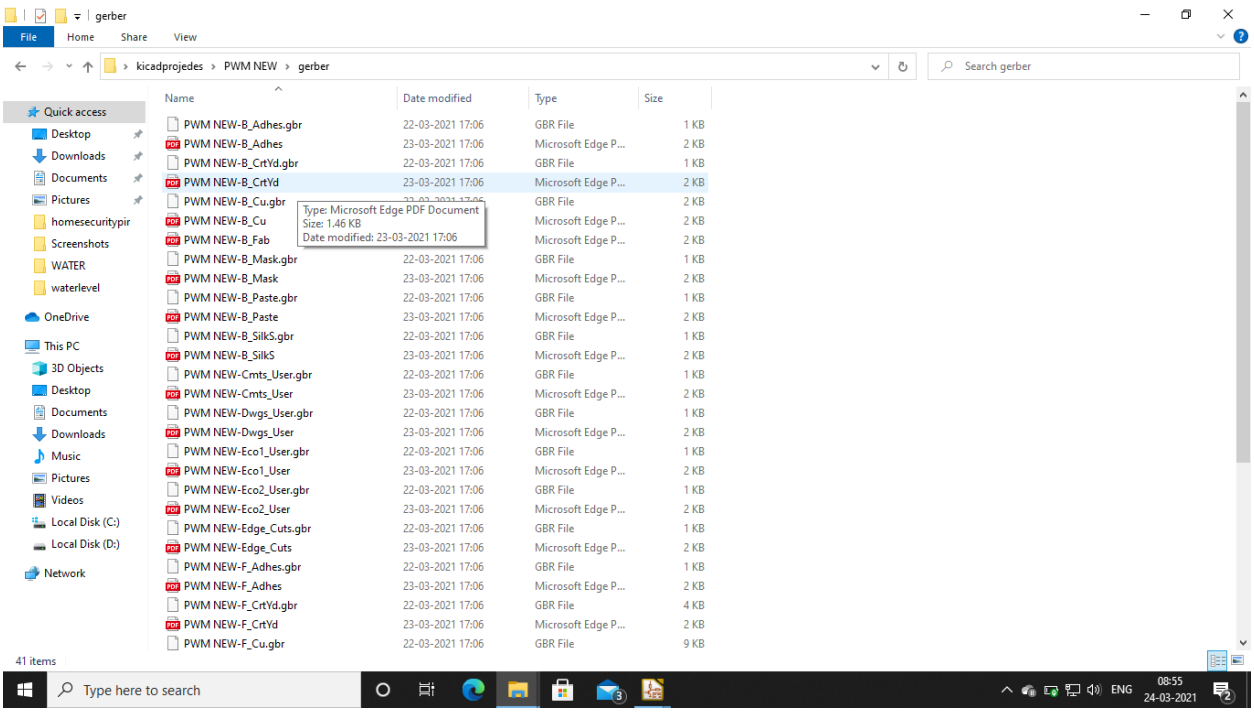


BOM GENERATION:





CREATING GERBER FILE:


gerber
File
Home
Share
View
kicadprojedes › PWM NEW › gerber
Search gerber
Quick access
Desktop
Downloads
Documents
Pictures
homesecuritypir
Screenshots
WATER
waterlevel
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
Local Disk (D:)
Network
Name
Date modified
Type
Size
PWM NEW-B_Adhes.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-B_Adhes 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-B_CrtYd.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-B_CrtYd 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-B_Cu.gbr GBR File 2 KB
PWM NEW-B_Cu Microsoft Edge P... 2 KB
PWM NEW-B_Fab Microsoft Edge P... 2 KB
Type: Microsoft Edge PDF Document
Size: 1.46 KB
Date modified: 23-03-2021 17:06
PWM NEW-B_Mask.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-B_Mask 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-B_Paste.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-B_Paste 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-B_SilkS.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-B_SilkS 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-Cmts_User.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-Cmts_User 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-Dwgs_User.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-Dwgs_User 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-Eco1_User.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-Eco1_User 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-Eco2_User.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-Eco2_User 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-Edge_Cuts.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-Edge_Cuts 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-F_Adhes.gbr 22-03-2021 17:06 GBR File 1 KB
PWM NEW-F_Adhes 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-F_CrtYd.gbr 22-03-2021 17:06 GBR File 4 KB
PWM NEW-F_CrtYd 23-03-2021 17:06 Microsoft Edge P... 2 KB
PWM NEW-F_Cu.gbr 22-03-2021 17:06 GBR File 9 KB
41 items
Type here to search
ENG
08:55
24-03-2021