

Navid Ansari

Electrical Engineering

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*Electrical Engineer with 7+ years of experience working with Designing **High Frequency PCB** , Designing **Fly back Power Supply** with power integration devices , Designing with all kind of microcontroller like **ARM(NXP,ST,Atmel,TI,,...)****AVR(Microchip/Atmel)8051(TI)**and professional Programmer in C/C++ for all Kind of Microcontroller. Primarily focused on implementation of digital systems. Excellent interpersonal and communication abilities, and possess a wide range of technical skills. Enjoys being part of a team, as well as managing, motivating and training a productive team, and thrives in high pressure and challenging working environments.*

EDUCATION

University of Kazeroon

Bachelor in Electrical Estimating, 2009 – 2013

PROFESSIONAL EXPERIENCE

Electro Sanat Yaghoot derakhshan 2014 – 2016

Programmer and PCB Designer with Altium Designer

- Designed schematics and PCB layouts (using Altium Designer)
- Programmed ARM and AVR microcontrollers, using C/C++ language on the Keil and Atmel Studio Platform
- Performed all soldering(QFP , BGA , ...)
- Tested using lab equipment
- Created the user guide and technical datasheet

Saman Mechanic pars 2016 – Now

Associate Business owner, Project Manager, Main Programmer and PCB Designer with Altium

- Designed schematics and PCB layouts (using Altium Designer)
- Programmed ARM and AVR and 8051 microcontrollers, using C/C++ language on the Keil and IAR and Atmel Studio Platform
- Project manager
- Teach Performing all soldering(QFP , BGA , ...)
- Work with android programmers

SKILLS

Software: Altium Designer , Keil , LTSpice , PI Expert , Tina , Atmel Studio , Arduino , MATLAB , Eclipse, IAR, Visual Studio, Subversion Designer , SPICE, Office , Android Studio

Programing languages : C/C++, Verilog, VHDL, Java ,C# , HTML , PHP, CSS

Lab Devices : Oscilloscope , Network Analyser , Spectrum Analyser , Function Generator

Some Of Projects

ZigBee Network

Programmer and PCB Designer

- Designed High frequency PCB(antenna section) for CC2530 ZigBee SOC from Texas Instrument
- Programing of 8051 MCU in CC2530 with IAR Embedded Workbench
- Designed Battery Power Door and Window Sensor Device that draw just 1.3 Micro Amp in deep sleep mode that can be alive for 1 to 3 year with 1000mAH Battery
- Create Mesh network that have coordinator , Router and End Device
- Designed 3 Kind of antenna one of them for it to be as small as it can be and has 64 % efficient and one of them can use external antenna with high efficiency and one them for high efficiency and small in size with 84 efficiency .

Bluetooth

Programmer and PCB Designer

- Designed High frequency PCB(antenna section) for NRF51422 Bluetooth SOC from Nordic semiconductor
- Programing of ARM Cortex M0 MCU in NRF51422 with Keil_MDK-ARM

- Designed Heart rate , Body Temperature that can be connect to iOS and android phone and show data in them
- Designed Smart Home Application that Phone can be connected via Bluetooth to Smart Home HUB . one of Smart Switches was Bluetooth and ANT device that called HUB and rest of them just have ANT . phone will be connected to HUB and via ANT network Control all other devices that just run ANT on them

ANT

Programmer and PCB Designer

- Designed High frequency PCB(antenna section) for NRF51422 ANT SOC from Nordic semiconductor
- Programing of ARM Cortex M0 MCU in NRF51422 with Keil_MDK-ARM
- Create Network of ANT Devices for Smart Home Application

Fly Back Power Supply

PCB Designer and Simulator

- Designed PCB that should consider ESD noise , Ripple , Clearance Safety , Space Limitation .
- USE EE13 Core that can deliver 5 wat (5v 1A) and small in size .
- Use Cost effective Component to be able to compete with china manufacturer .

Smart Home HUB

PCB Designer and Programmer

- Use LPC1768 As main MCU because it is cost effective and so powerful
- It has 1024 Kbyte EEprom
- It has DS1307 as Real time clock with CR1220 battery
- It has ZigBee module that I designed
- It has DP83848CVV to create TCP socket server on hub that android phone and IOS phone and web application can connect to HUB
- It has ADM485 RS485 as wire protocol that was chosen because some user don't want allot wireless in their home and another reason it is cheaper
- SIM800C as SMS Control of HUB
- Use TPS54331 as main regulator that can deliver up to 3 AMP . and use lm1117 for 3.3V and MIC29302-ADJ for 4.1 V that sim800 need

Smart Touch Switch for SmartHome Application

PCB Designer and Programmer

- Use STM32F030K6T6 as main MCU because its cheap and so powerful
- Use TS02N as Capacitive Touch IC that has two touch channel in it and it is cheap as well
- It has RS485 IC and ZigBee module as well as HUB
- It has two PCB , one of them is Power and Relay PCB and other one is MCU and Module and rs485 PCB . both of them connected with Connector header

Door and Window Sensor

PCB Designer and Programmer

- Use CC2530 module that I designed as main MCU
- Use reed relay and magnetic core as sensing component
- It just draw 1.3 Micro amp in deep sleep mode that with battery of 1000 mAH it can be alive till one to three year
- Use TPS78330DDCR as Ultralow Quiescent Current Low-Dropout Linear Regulator that it Quiescent Current is just 500nA
- Use BQ2409x as battery charger IC

Smart curtain

PCB Designer and Programmer

- Use STM32F030K6T6 as Main MCU Choose for BOM and Cost and powerfull
- It has two relay to open or close curtain
- It has Optocoupler for isolation to check either curtain reach end of its path or not
- It has RS485 IC and ZigBee module as well as HUB

100 Wat Music Player

PCB Designer and Programmer

- Use VS1003B from VLSI for MP3 player
- Use TPA3116D2 from Texas Instrument that has 2 amplifier in it .
- Use LPC1768 as Main MCU and DP83848CVV for it to be connected to lan network that any phone that is in this network can control this music player

- It has SD memory Card reader and mass storage flash reader in it

Global IR Remote Controller with Learning Capability

PCB Designer and Programmer

- Use 4 Led Transmitter for all direction
- Use one receiver HS0038A2 for learning codes
- Support protocols for learning and sending :
 - NEC
 - SONY
 - RC5
 - RC6
 - PANASONIC_OLD
 - JVC
 - NECX
 - SAMSUNG36
 - GICABLE
 - DIRECTV
 - RCMM

GSM SMS Control

PCB Designer and Programmer

- Use Sim800c for sending and receiving SMS and be cost effective
- Control whole smart home application with SMS
- Decide which Phone need SMS feedback From devices from smart home application
- Anti thief Application with SMS Report

Teamwork

PCB Designing and Programming

- Always Use Git (github , gitlab , ...) and all kind of version control system
- So readable programing and schematic designing
- Commenting For better reading
- Can Make project to smaller project for simplicity and teamwork

PCB Designer with ALTIUM Designer

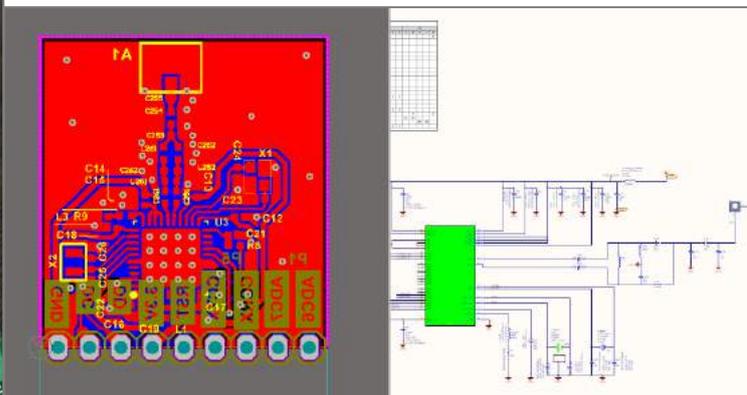
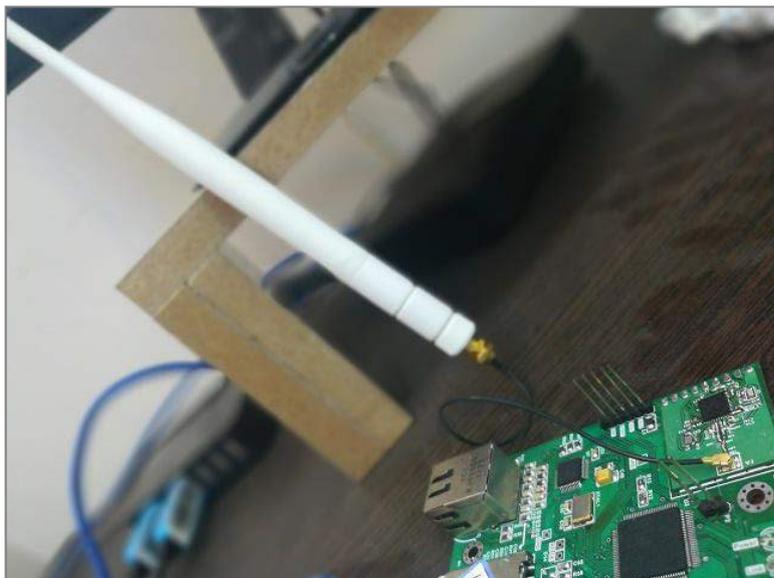
- Use Rule section and filter section of Altium to minimize any chance of mistake .
- Use Shortcuts to be fast as possible
- Use Script in Altium to minimize any chance of mistake
- Impedance matching for high frequency PCB ,
- Use Saturn PCB for fast calculating of Rule Parameter
- Add as much as it need data from datasheet to schematic to avoid any chance of mistake .
- More than 7 year experience with Altium(absolutely I'm in love with this software)

C/C++ Language

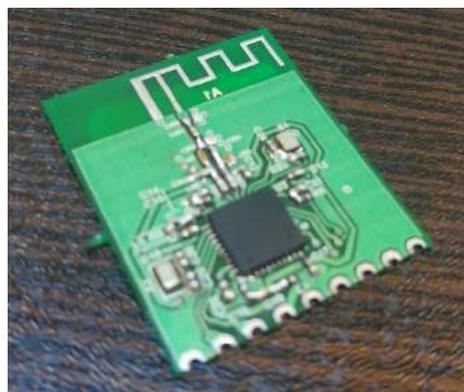
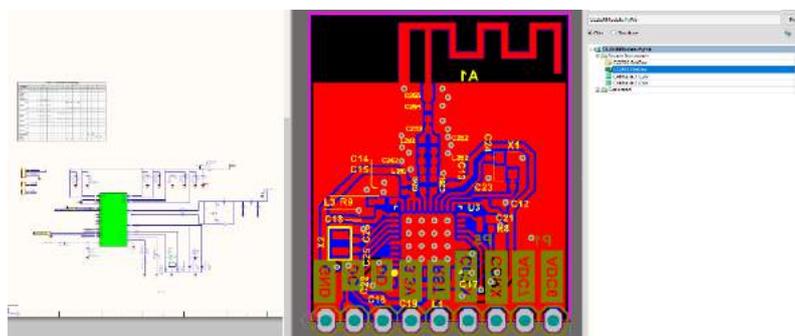
- Write Program in Keil , IAR , Atmel Studio , Arduino , ...
- So readable codes
- Modular programming
- Write library that can be used in any MCU and compiler
- Believe in commenting and choose right name for any variable
- Use macro to be human readable and to be constant to save to ROM not Ram
- Consider if the function need to be called as `__inline` or not
- Error checking and debugging idea that I learned from android java programing(I love write program so I work with allot of languages as a hobby)

1. ZigBee Module:

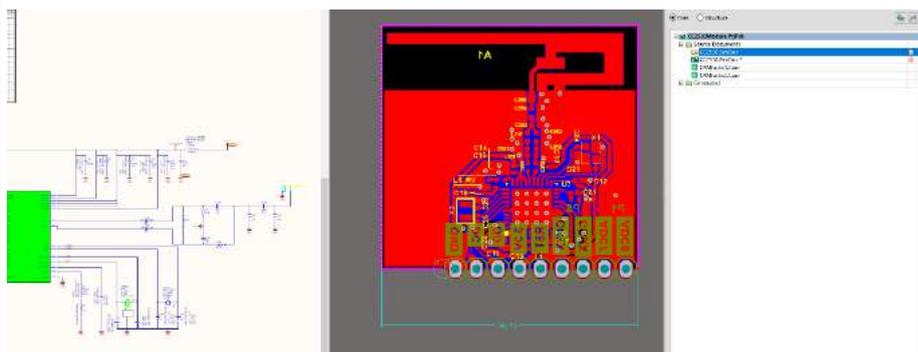
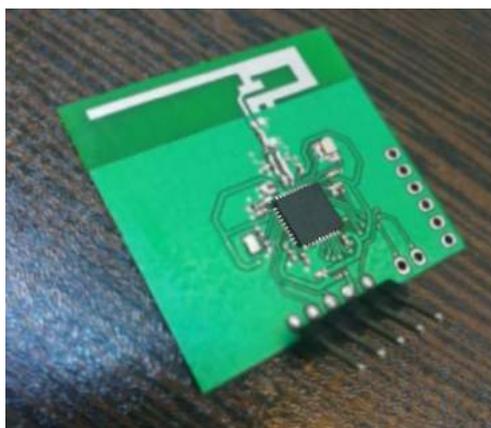
1.1: ZigBee Module With External Antenna :



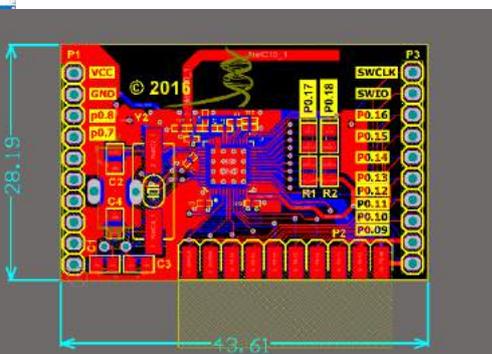
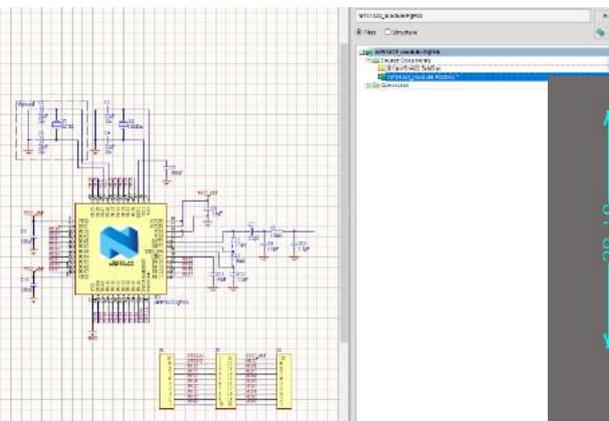
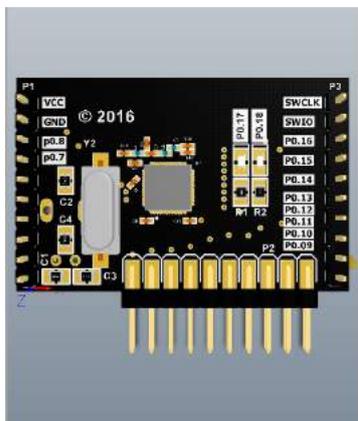
1.2: Zigbee Module with small size 68% efficient on board antenna :



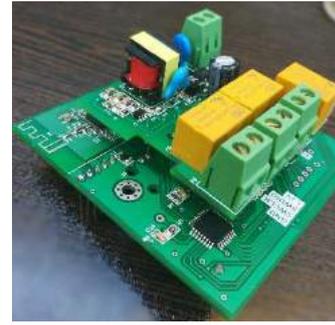
1.3: Zigbee Module with Bigger size 84% efficient on board antenna :



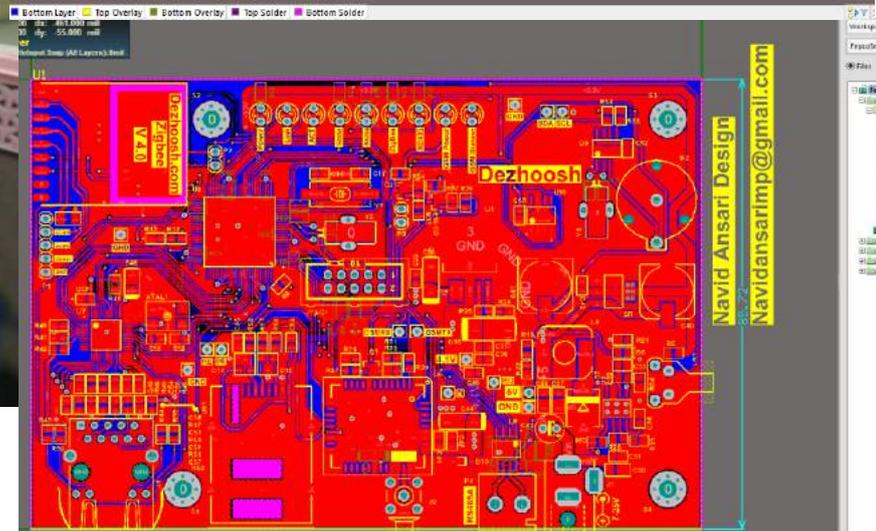
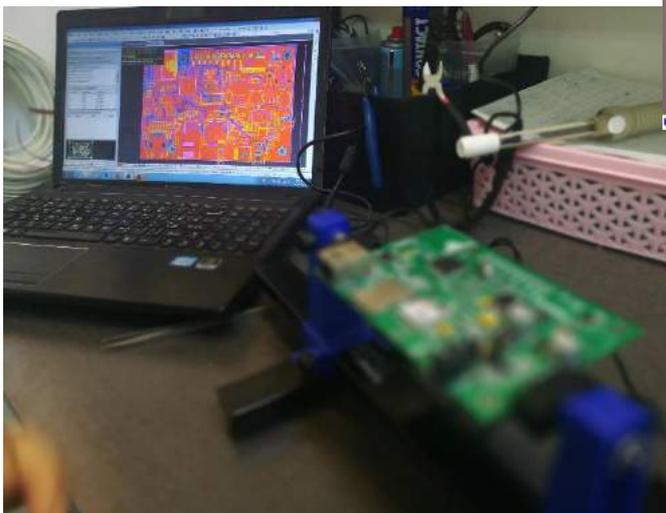
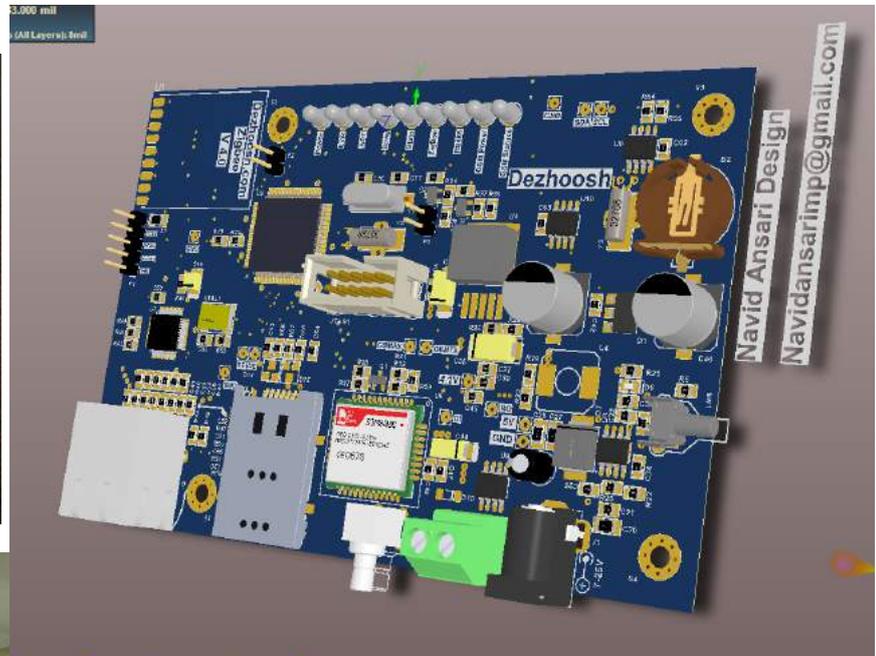
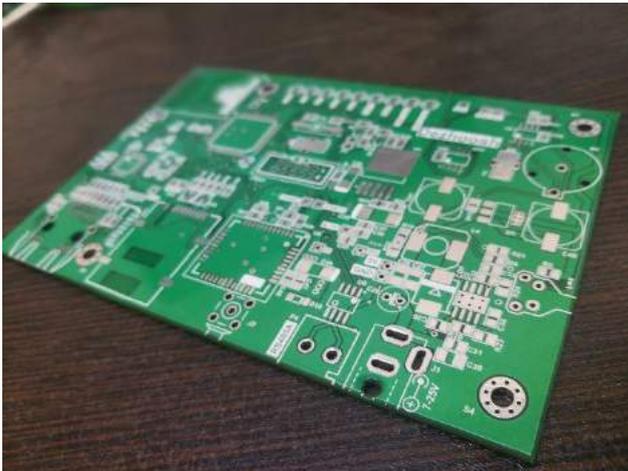
Bluetooth Module:



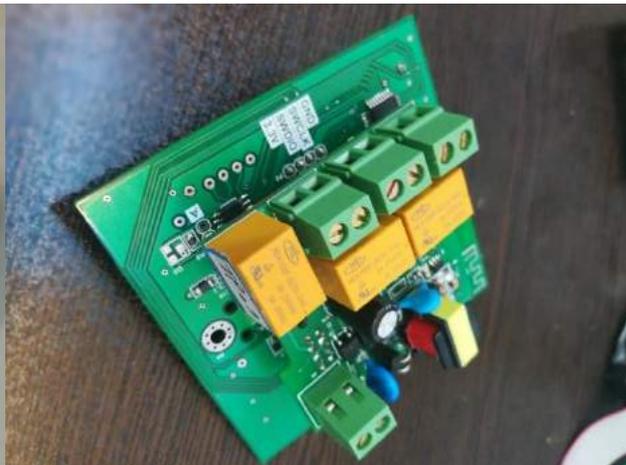
Fly Back Power Supply:



Smart Home HUB:



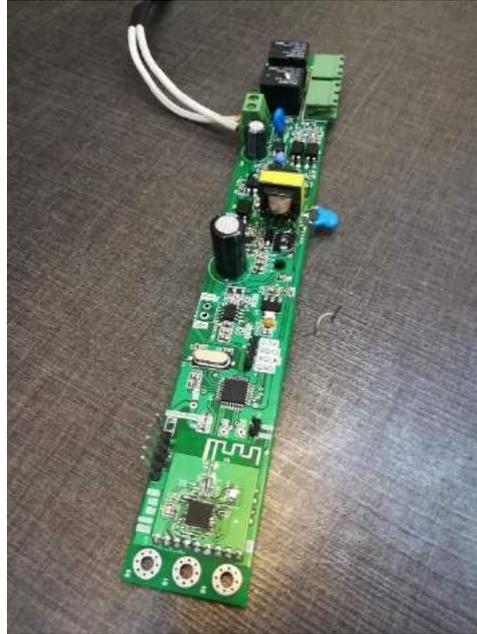
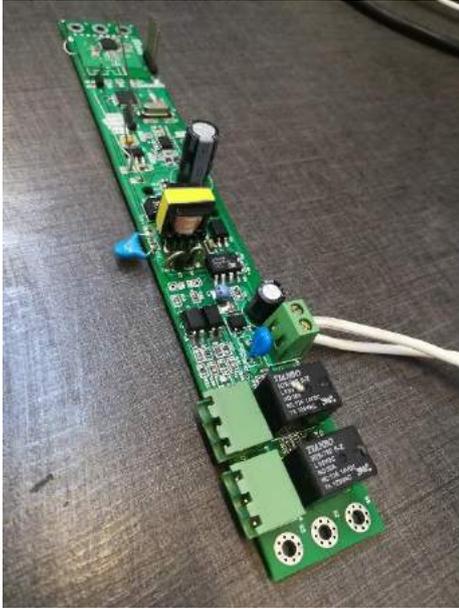
Smart Touch Switch for SmartHome Application:



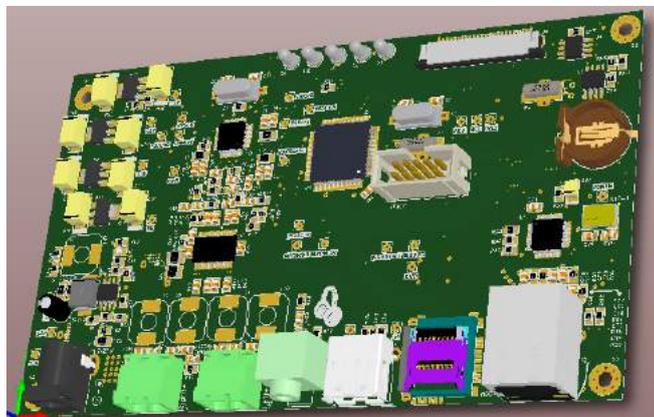
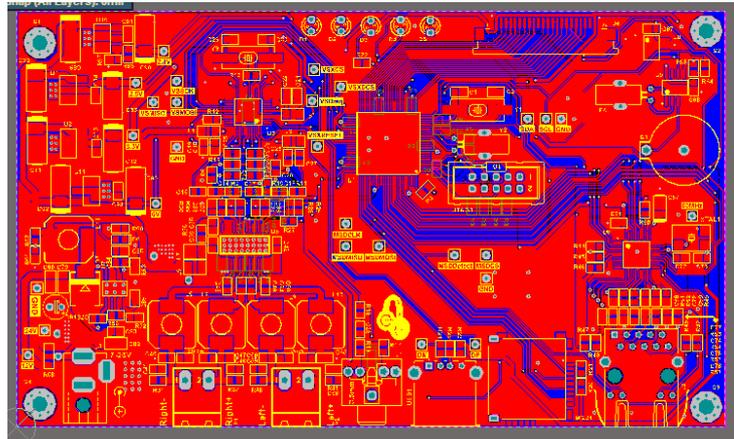
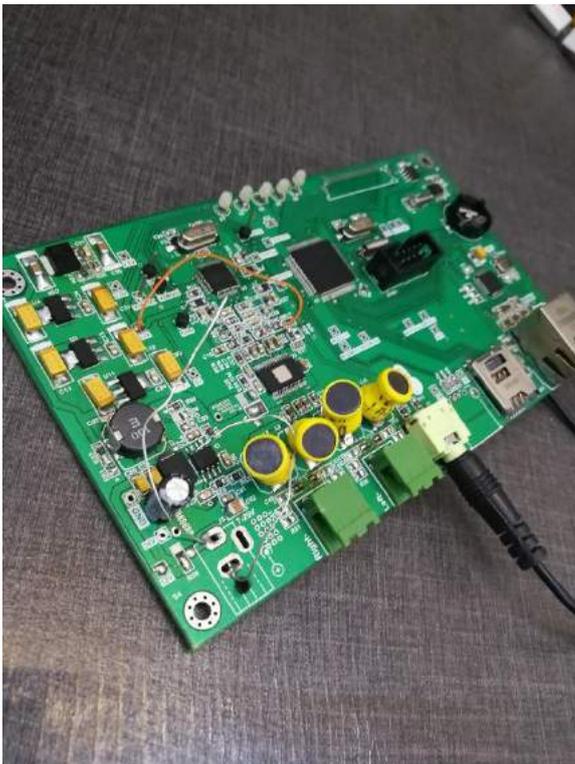
Door and Window Sensor:



Smart curtain :



100 Wat Music Player:(Work in progress)



Global IR Remote Controller with Learning Capability:

