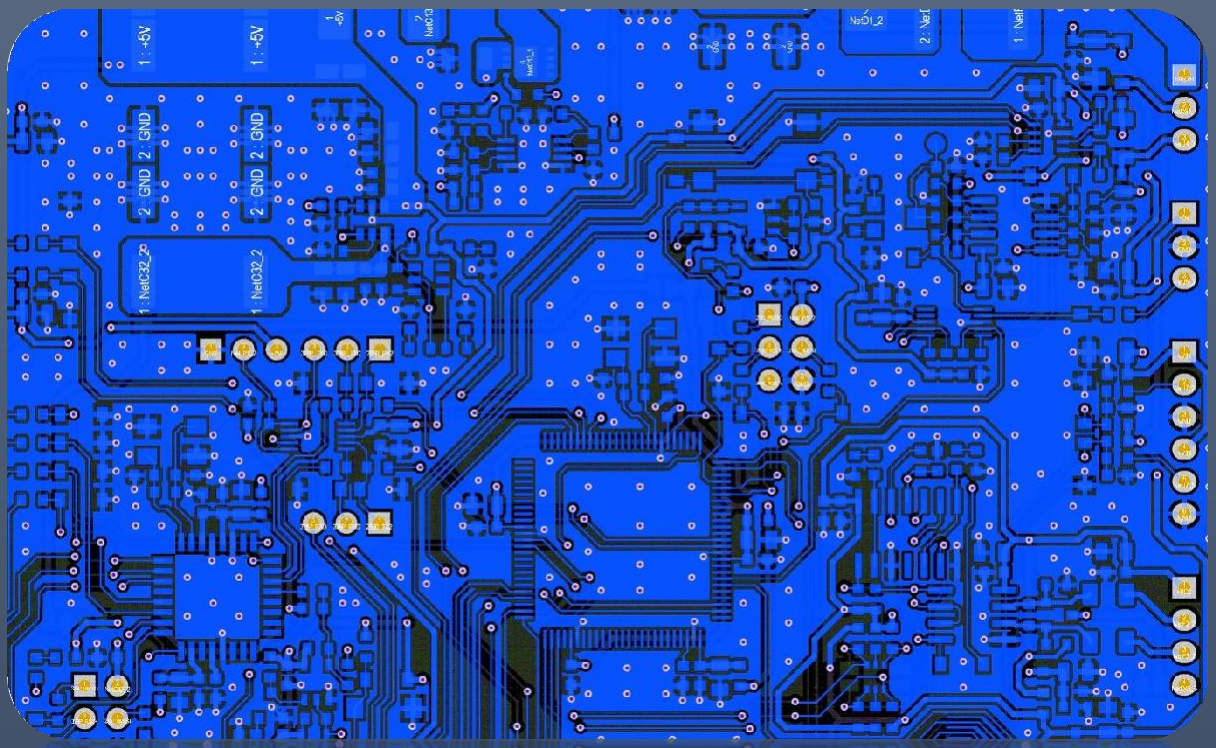
Shahzaib Shamim

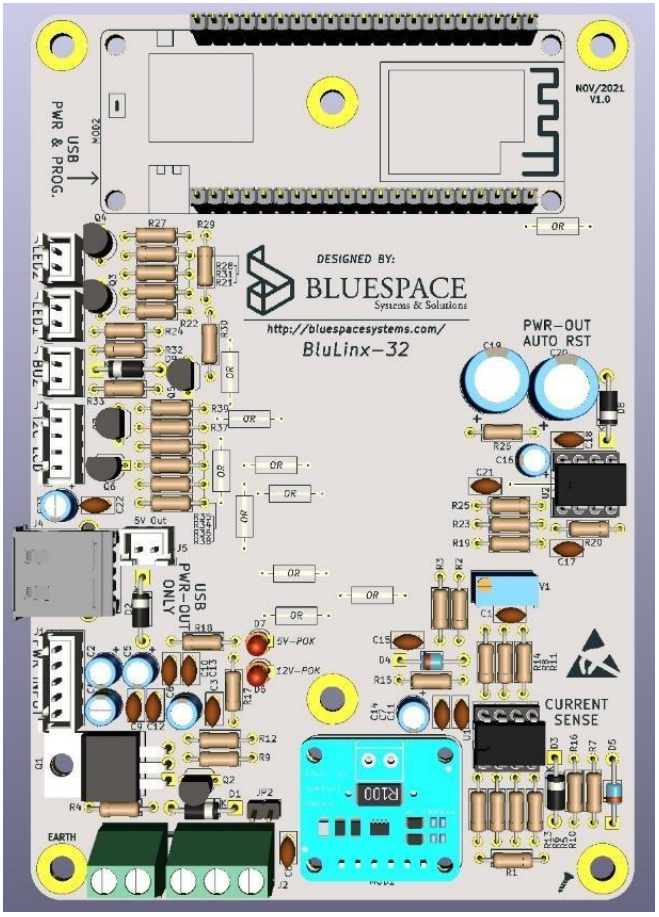


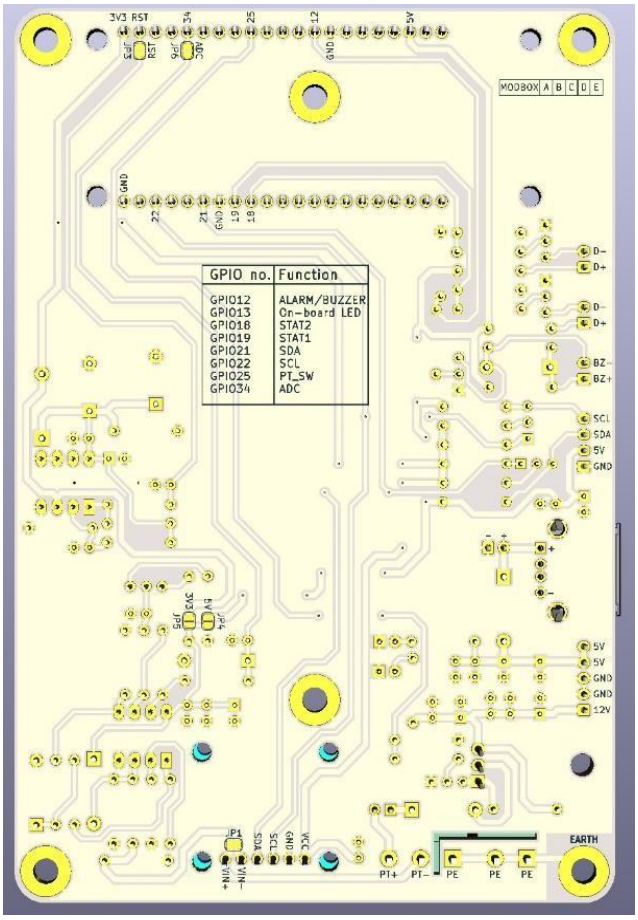
PORTFOLIO

My name is Shahzaib Shamim. I am an accomplished Electrical Engineer, specializing in Electronics, with a profound focus on PCB hardware design. Proficient in utilizing tools such as Altium Designer, KiCad, LTSPICE, Proteus, and EAGLE, I bring a wealth of experience to high-speed PCB design. Certified by Fedeval Academy in **Advanced PCB Layout**. Backed by a proven track record of successful projects. I am well-equipped to deliver precise and efficient solutions, ensuring that your projects adhere to the latest standards and practices in embedded electronics.

LINKEDIN | EMAIL | PHONE

GSM Alarm

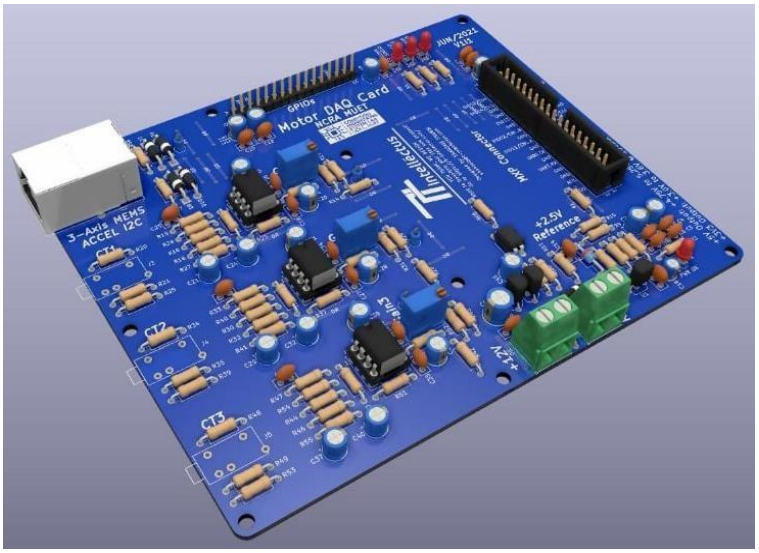


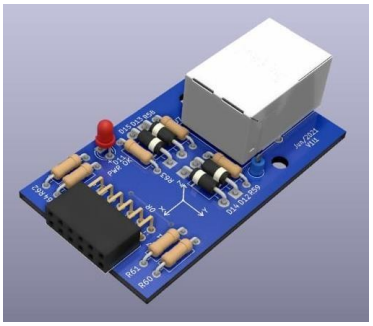


Features:

- ESP32 to monitor pressure and send the data via GSM
- Headers to plugin other peripherals to show the current status of the system
- Monitors power to safely shut down the system
- Onboard two current sense amplifiers to detect 4-20mA current signal

Motor DAQ

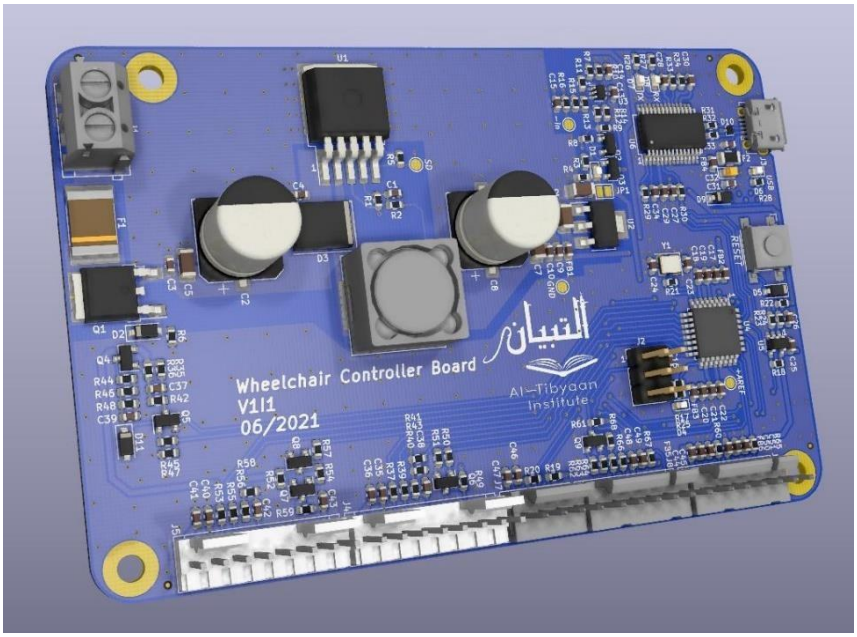




Features:

- Custom board for National Instruments' device to monitor AC current signals
- Communicates with an IMU on sensor shield board to detect vibration of the system via I2C
- Soft-switch for relay to control AC motor

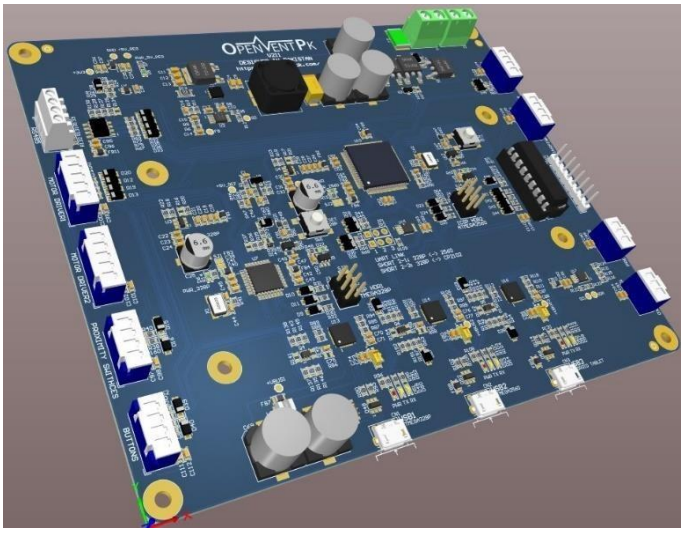
Motor Drive Controller

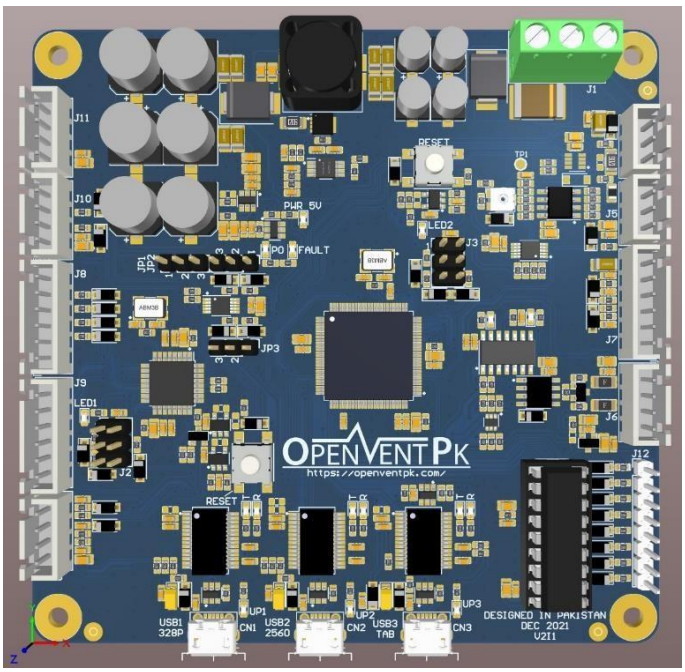


Features:

- Reads analog data from joysticks to control motors via external motor drivers
- Monitors the battery
- BUCK converter to drive system logic
- Onboard USB to Serial bridge

Open Vent PK

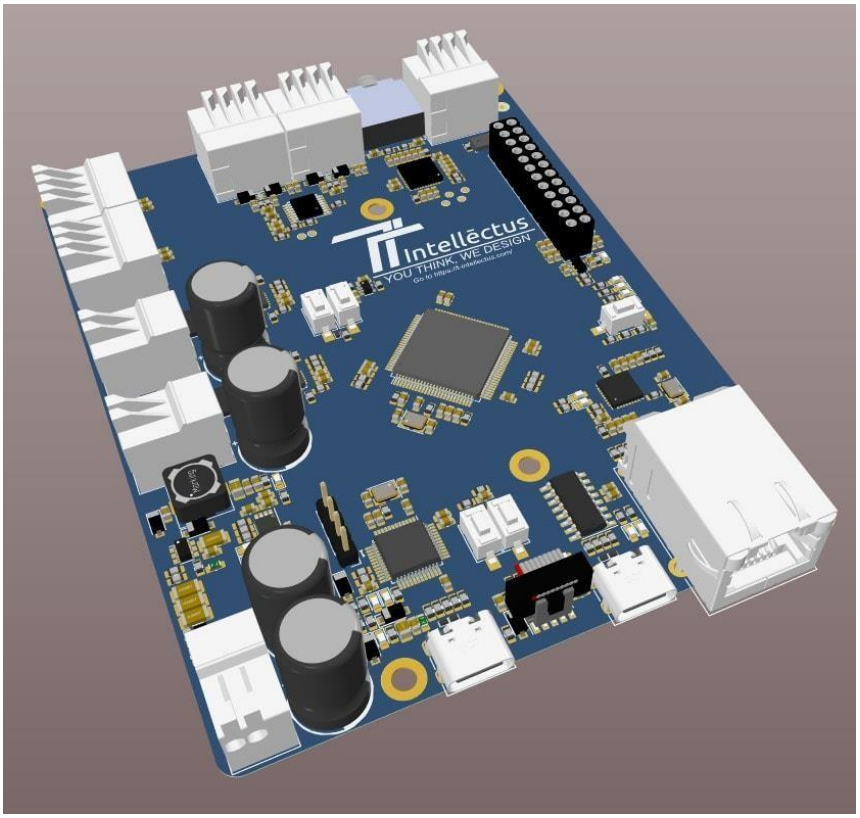




Features:

- Opensource ventilator projects (Rev 1 and Rev2) with two 8-bit AVR microcontrollers to monitor keypad inputs, external switches, and sensors
- Controls LCD, stepper motor drivers
- Communicate with a sensor over RS485
- Two USB to UART converters for debugging and programming, and one for UART interface for android devices

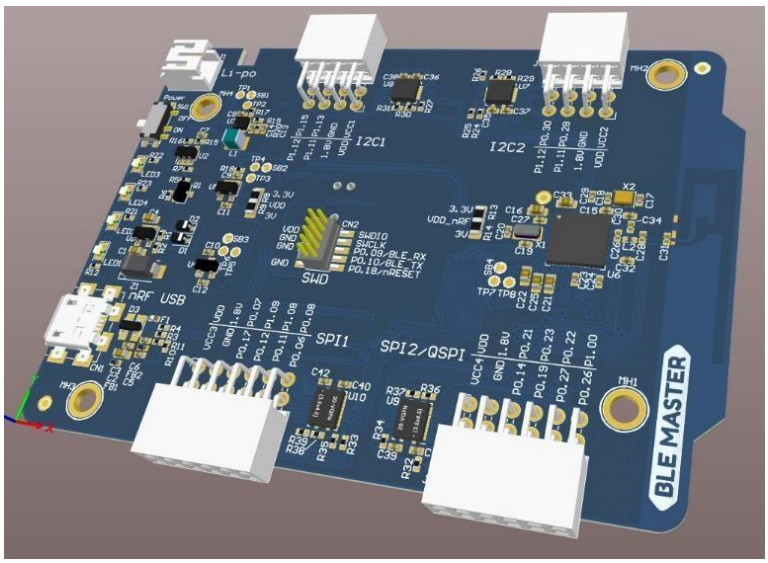
CortexM4 Development Board

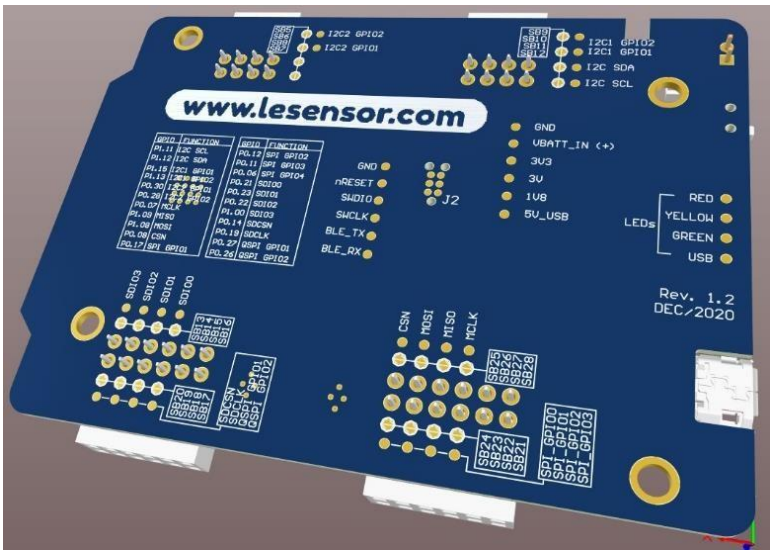


Features:

- Custom board for cortexM4 MCU with ST-LINK programmer/debugger
- Two motor drivers for up to 3A motors
- 24-bit ADC
- 10/100 Mbps Ethernet PHY
- CAN Bus
- Audio codec
- BUCK Converter
- GPIO expansion header

nRF BLE Sensor Kit V2

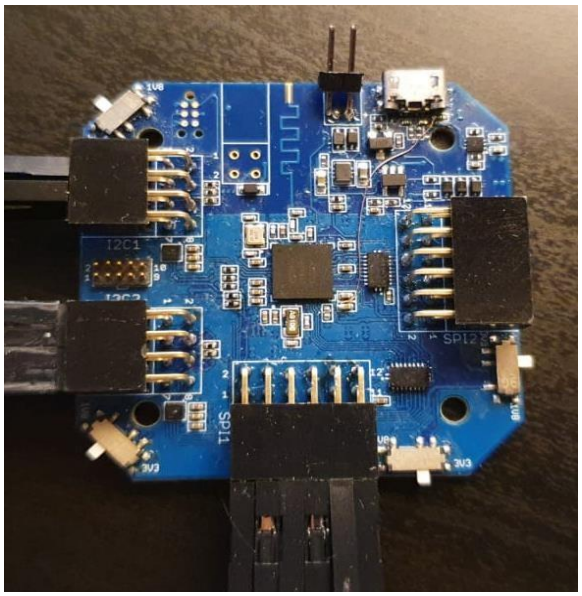




Features:

- New and improved revision
- Reads data from different sensor boards over I2C/SPI/UART and transmits over BLE to slave devices
- NRF52840 MCU with BLE
- SWD and Tag-Connect programming headers
- I2C and SPI headers for plug-in sensor modules
- Smart logic level shifters that convert logic level according to the sensor's IO level
- Battery charge monitor

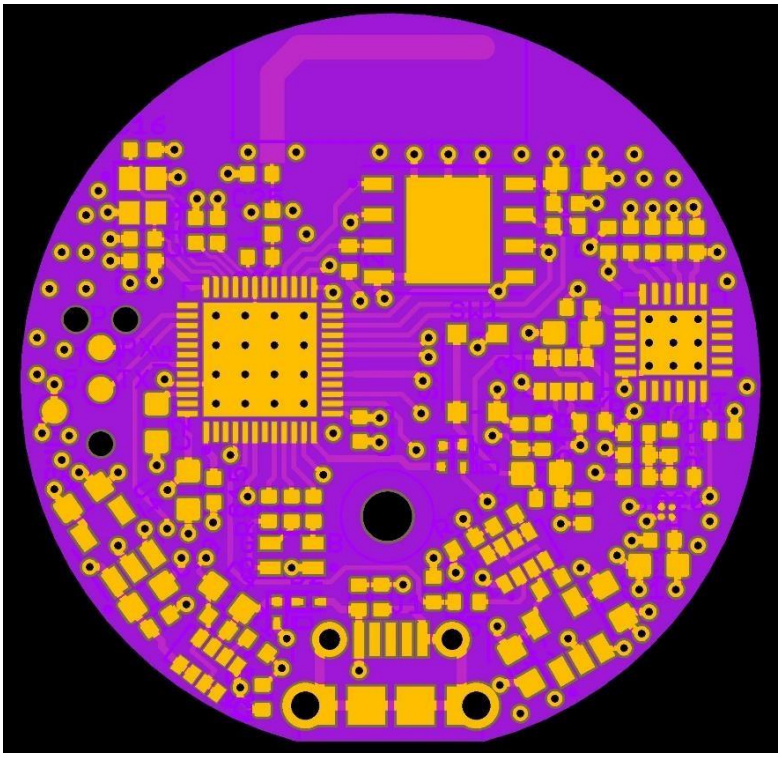
nRF BLE Sensor Kit V1



Features:

- Reads data from different sensor boards over I2C/SPI/UART and transmits over BLE to slave devices
- NRF52840 MCU with BLE
- Battery charge monitor

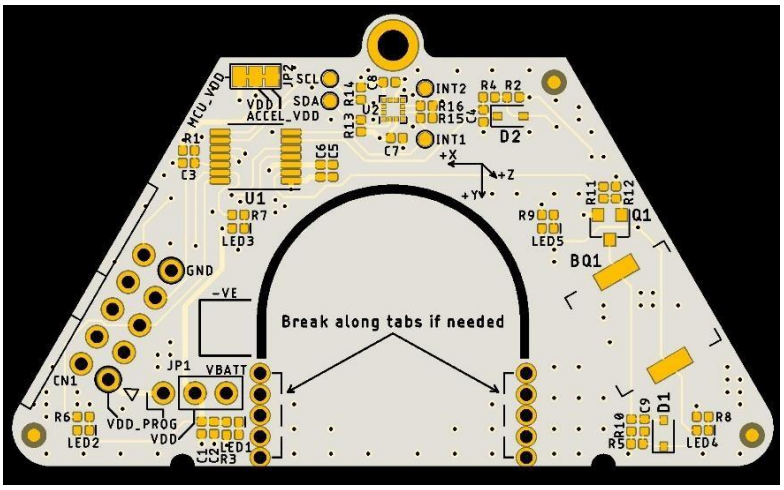
Tag Shield



Features:

- 28mm diameter Nrf52810 9-DoF reads data from IMU and magnetometer and sends it over BLE
- Battery-powered
- RGB LED and soft-switch
- Flash for data storage

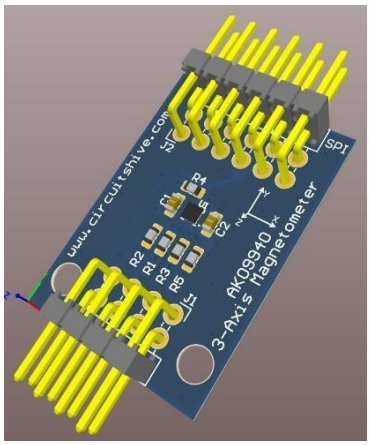
Motion Detection Card

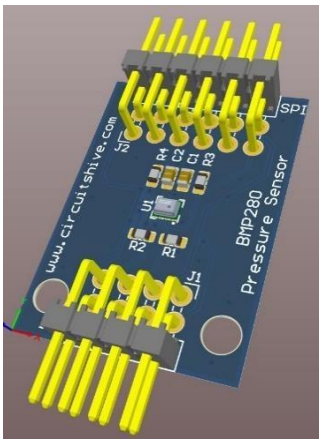


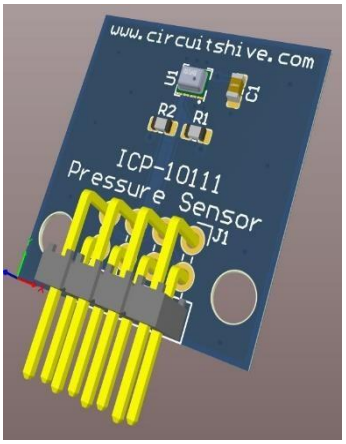
Features:

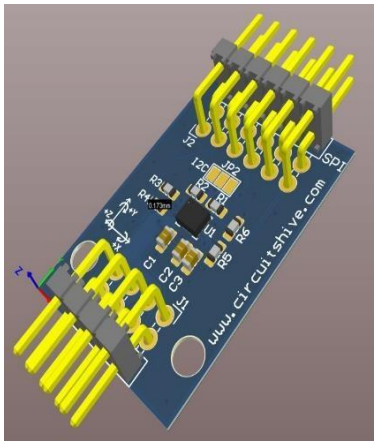
- Low-cost 8-bit 8051 MCU to detect motion from IMU
- Buzzer and LED indication
- Powered from a coin cell (CR2032)

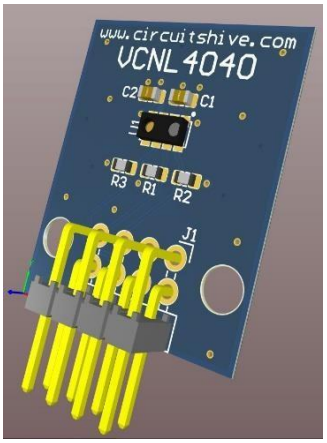
Sensor Plugin Modules







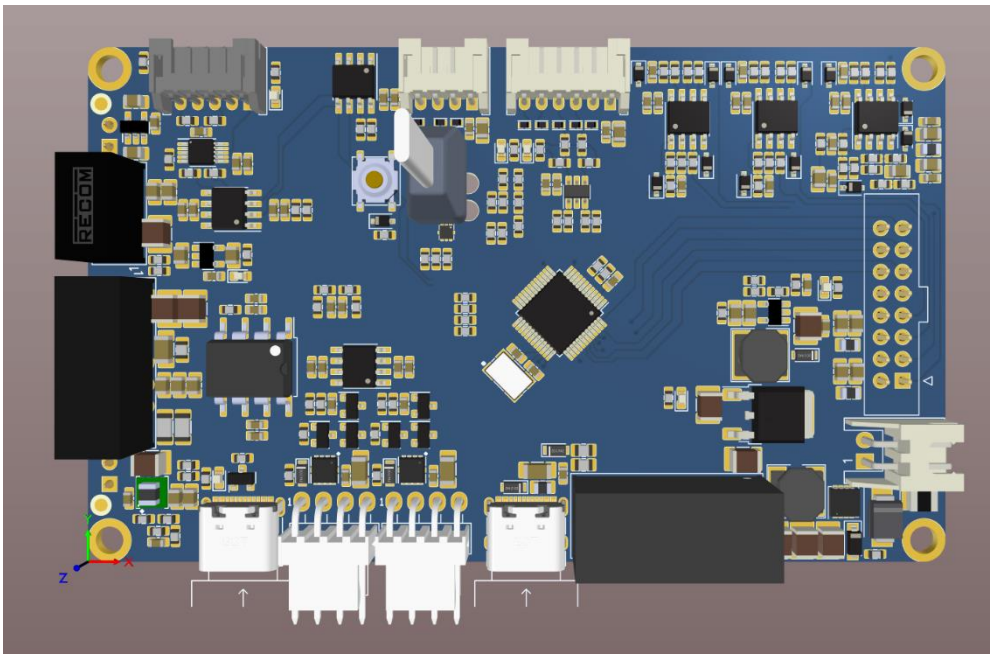




Features:

- Sensor modules for BLE Master Development kit
- I2C and SPI headers

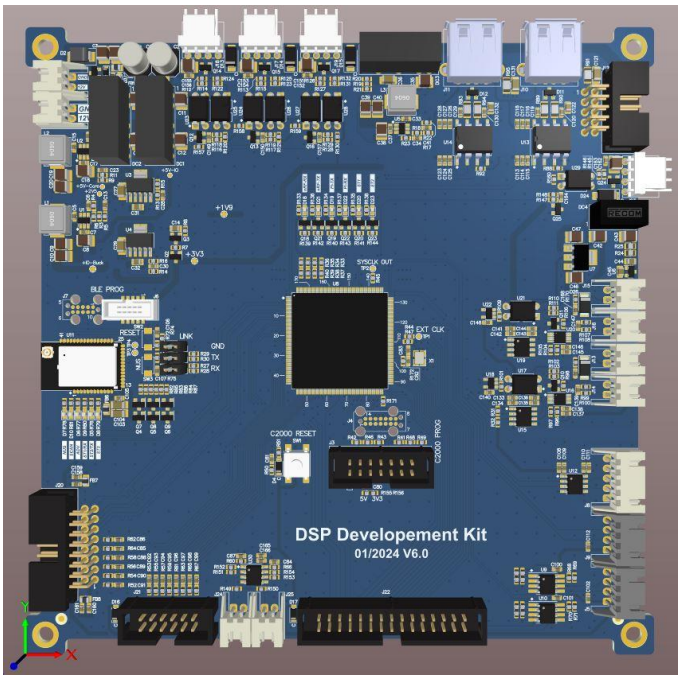
Inverter Control Card

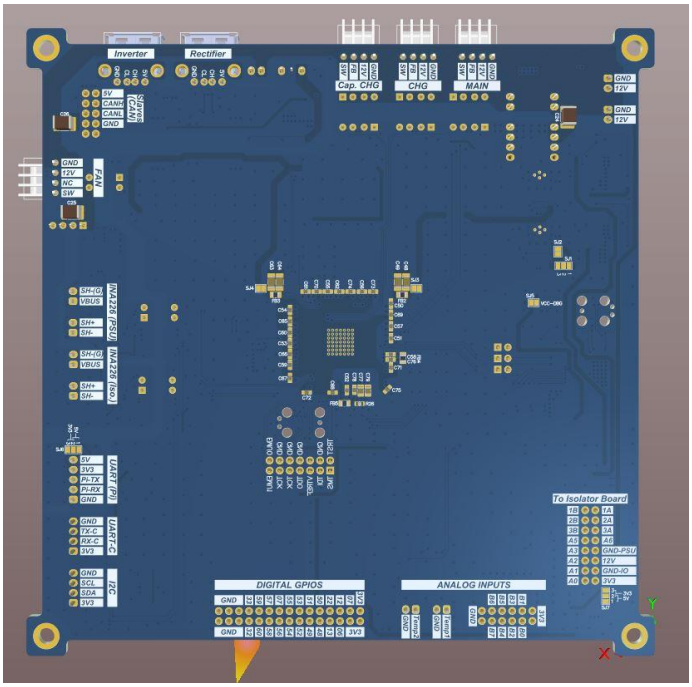


Features:

- Isolated CAN
- DC High Voltage sensing
- Isolated PWM signals
- AC coupled and buffers for analog measurements
- Isolated power supply
- 4-Layers

DSP Development Board

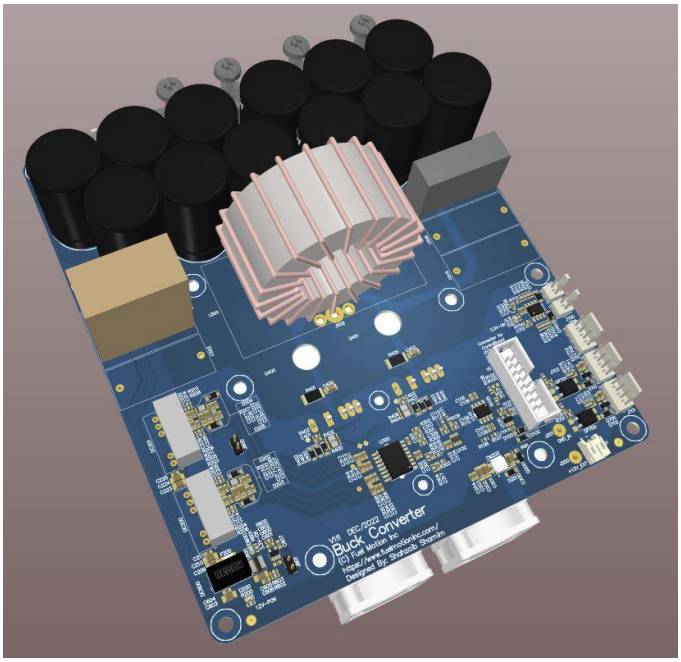


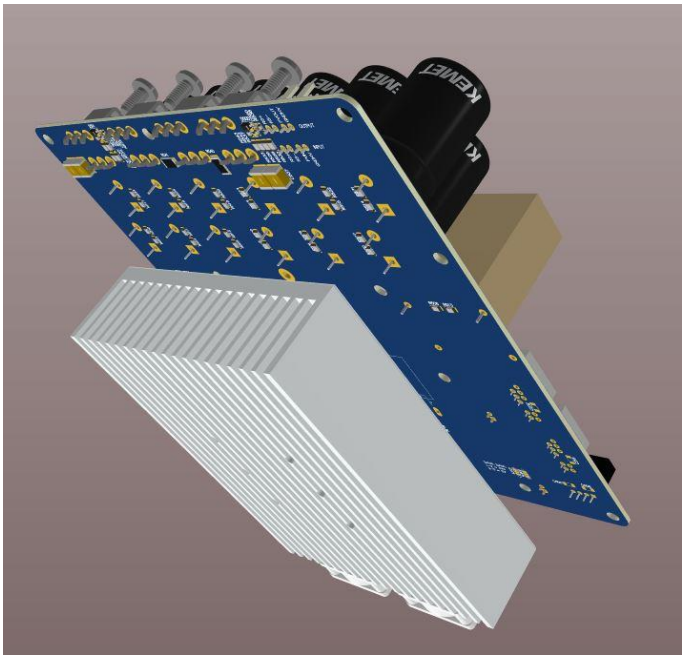


Features:

- Double sided assembly
- Isolated Power
- CAN communication
- PWM drive
- Isolated DC Bus sensing (voltage and current)
- BLE communication
- Analog inputs
- GPIO expansion headers

Buck Converter

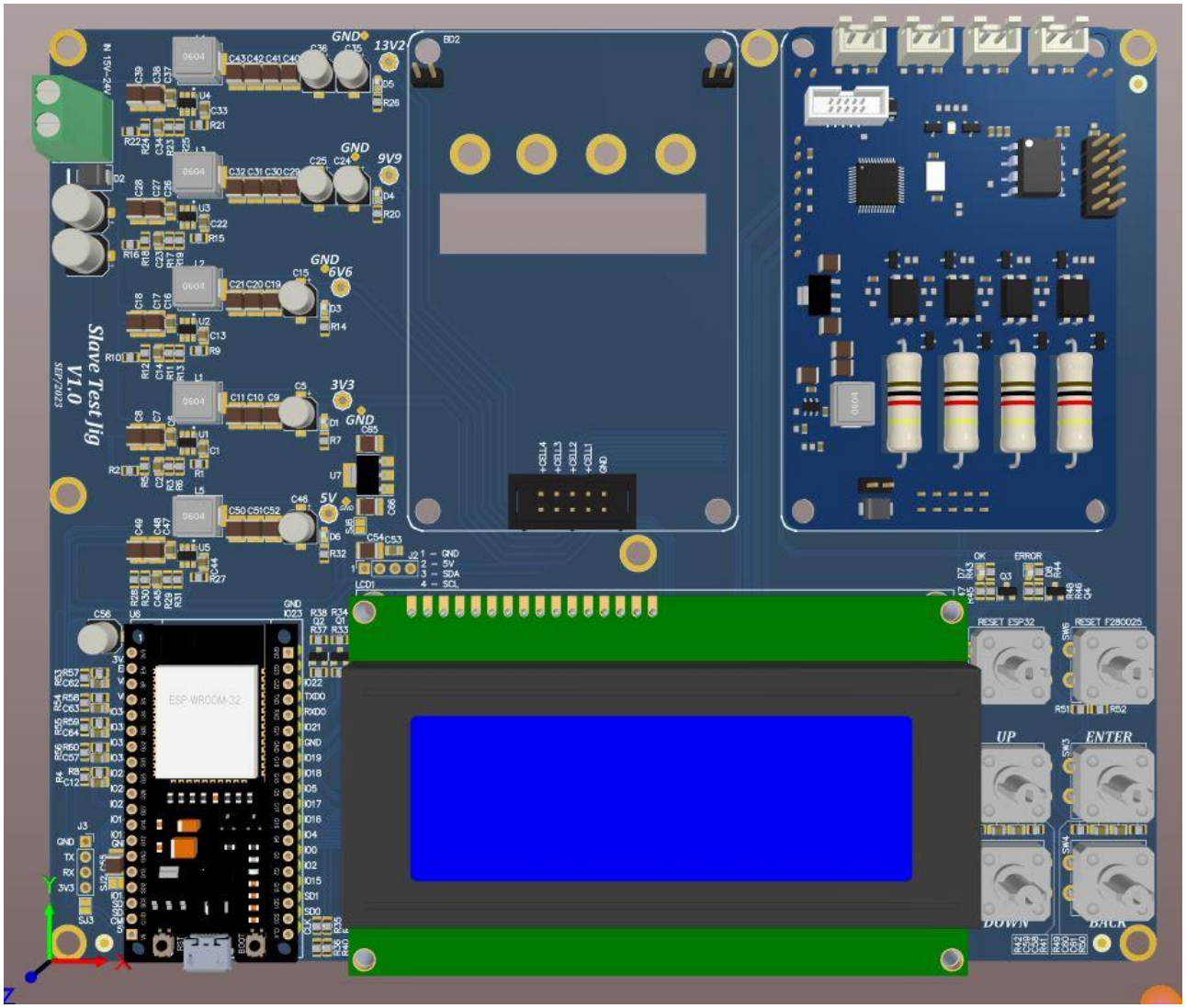




Features:

- Full-bridge and Hald-bridge configurable
- DC High Voltage and Current Sensing
- Isolated Power Supply
- Stackable design to connect to control board
- Double sided assembly
- 4-Layers
- Handles power of upto 4kW
- PWM drive
- Temperature sensing

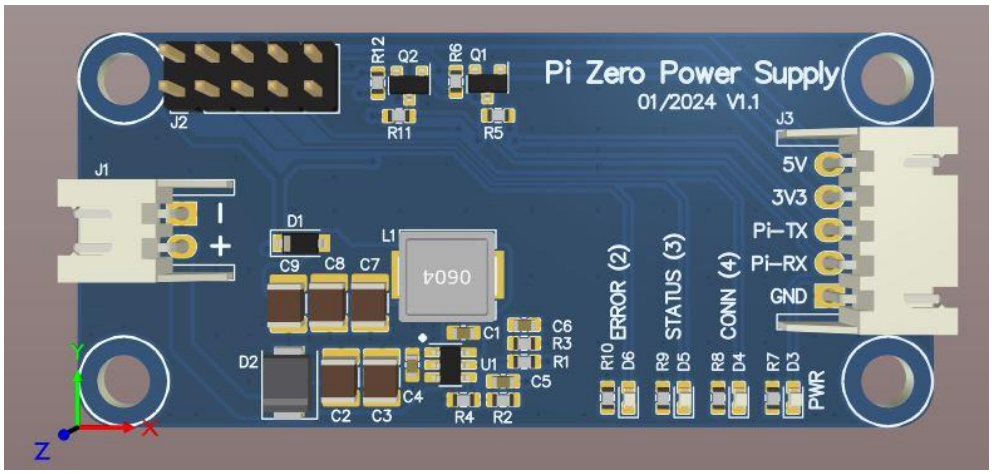
PCB Tester



Features:

- ESP32 control user interface and communication over UART with other PCB (test unit)
- Buck converters to simulate battery voltages
- Measure voltages and temperatures
- 2-layer design

Raspberry Pi Zero Power Supply



Features:

- 5V output for raspberry pi
- Logic level shifters for 5V and 3.3V signals
- Status LEDs

Tag Connect Breakout

Features:

- 1.27mm to 2.54mm pitch
- Multiple options to connect JTAG and SWD