

# Polverine – BMV080 mikroBUS™ Board

## GENERAL DESCRIPTION

The **Polverine** mikroBUS™ board consists of BMV080 PM 2.5 Sensor with BME690 gas sensor from Bosch Sensortec.

Espressif's ESP32-S3-MINI-1 dual core microcontroller with 2.4 GHz Wi-Fi (802.11 b/g/n) and Bluetooth® 5 (LE) manages the sensors.

The board can be programmed with Arduino, Eclipse or PlatformIO/VisualStudio IDEs enabling rapid application development.

The board is complemented with demo firmware for rapid sensor evaluation.



## FEATURES

The **Polverine** mikroBUS™ board provides an ideal solution for evaluating BMV080 PM 2.5 Sensor.

### MCU Core

- ESP32-S3-Mini-1 from Espressif
- Xtensa® dual-core 32-bit LX7 MCU @ 240MHz
- 8 MB of Flash memory
- 0.5 MB of PSRAM
- AES, SHA, RSA, ECC, RNG
- Secure Boot, Flash Encryption, Digital signature, HMAC module

### 2.4 GHz Radio

- Wi-Fi (802.11 b/g/n)
- Bluetooth® 5 (LE)

### Sensor Bosch BMV080

- Particulate Matter 2.5

### Sensor Bosch BME690 with A.I.

- Temperature, Pressure, Humidity
- V.O.C. (digital nose)

### I/O Interface

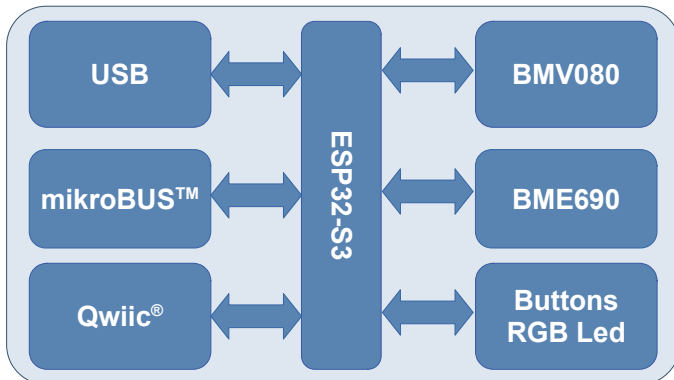
- USB
- Serial (SPI, I2C, UART)
- GPIO/PWM/INT
- Analog IN
- Qwiic® Connect System
- JTAG

### Human Machine Interface

- RGB LED
- User/Bootloader Button
- Reset Button

### Form Factor

- mikroBUS™ S size 25.4 x 28.6 mm



## Target Applications:

- 24/7 always-on sensor processing at low power consumption.
- IoT devices
- Environment Monitoring
- Industrial automation, Condition-based monitoring, Building Monitoring
- Fire Alert
- Health Monitoring
- Smart Home, Smart Office.

## BlackIoT Sagl

Via Stefano Franscini 2A  
6833 Vacallo - Switzerland  
CHE-192.005.916

[info@blackiot.swiss](mailto:info@blackiot.swiss)  
[www.blackiot.swiss](http://www.blackiot.swiss)

| Order Code   | Description                    |
|--------------|--------------------------------|
| BLK-POL-0001 | Polverine with mikroBUS™ board |