

# BME688

## Development kit

### GENERAL DESCRIPTION

Bosch Sensortec's BME688 development kit allows for testing and developing use cases based on temperature, barometric pressure, humidity and gas sensing. The BME688 can detect gases by measuring their unique electronic fingerprint and therefore distinguish different gas compositions. This enables a broad spectrum of new applications.

### USE CASE EXAMPLES

- ▶ Indoor and outdoor air quality measurement
- ▶ Bad breath or spoiled food detection based on the measurement of volatile sulfur compounds, which are an indicator of bacteria growth
- ▶ Detection of unusual gases and smells, which might indicate for instance a leakage or fire
- ▶ Diaper state detection, e.g. for baby care
- ▶ Early detection of bad smells
- ▶ Wildfire detection

The BME688 development kit can be configured with the BME AI-Studio Software. This allows to optimize performance, ODR and power consumption on specific application needs. By featuring eight BME688 sensors, the board allows you to test and gather data with more than one configuration at the same time. This significantly increases statistics and reduces development time as well.

### HARDWARE

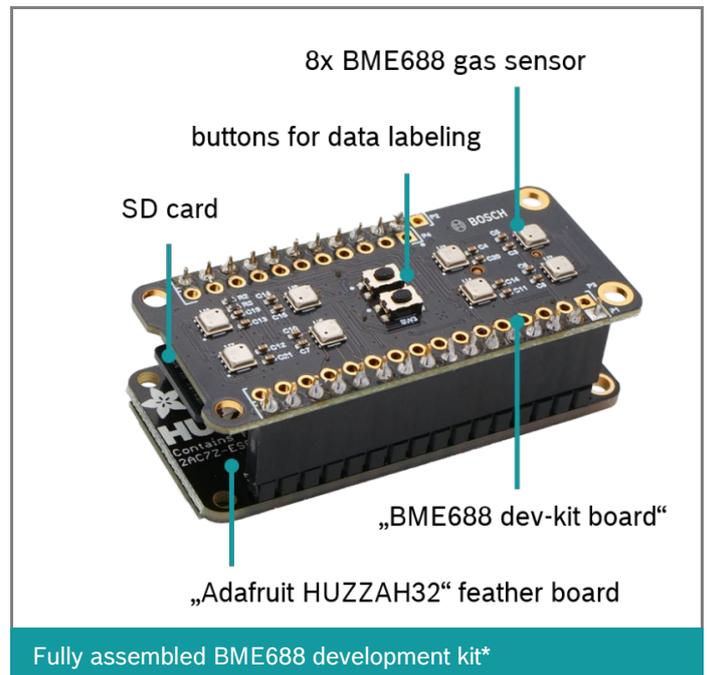
The BME688 development kit hardware consists of

- ▶ "BME688 dev-kit board" (ordering code 0330.EKB.016), which is an Adafruit feather compatible shield (see <https://www.adafruit.com/feather>)
- ▶ "Adafruit HUZZAH32" feather board with an ESP32 MCU (see <https://www.adafruit.com/product/3591>)
- ▶ MicroSD card for data storage
- ▶ CR1220 coin cell battery for the real-time clock

The "BME688 dev-kit board" itself can be purchased with the ordering code 0330.EKB.016. Several distributors offer a bundle with all hardware components. If a plug and play solution is

preferred, a fully assembled and programmed BME688 development kit can be ordered at

<https://buyzero.de/products/bosch-bme688-gas-sensor-developer-kit>.



### SOFTWARE

The BME AI-Studio software enables sensor configuration, data analysis & labelling, training and optimization of application-specific solutions. The software is designed very user-friendly and supports with a comprehensive documentation.

The software can be downloaded at: <https://www.bosch-sensortec.com/software-tools/software/BME688-software/>



\* Note: Product photo may differ from real product's appearance

## SETUP DEV-KIT

If you start with a new Adafruit HUZZAH32 board, which is not yet programmed, you can flash it by following these steps:

- 1) Download the dev-kit software from <https://www.bosch-sensortec.com/software-tools/software/BME688-software/>
- 2) Copy the \*.bmeconfig file on the microSD card
- 3) Place microSD card and CR1220 coin cell into dev-kit board and stack it on the Adafruit board
- 4) Connect the board to PC via micro-USB data cable
- 5) Run “flash.bat” on PC by choosing the right COM port

## USAGE

The BME688 development kit directly starts after connecting it to USB power supply via micro-USB cable. All eight BME688 are operated in the standard gas scan mode and the data is being logged on the microSD card. You can directly use the two buttons on the board to set time stamps in the data log. This makes data labelling very easy afterwards.

You can find more information in the BME AI-Studio software. Just download it or watch this getting started video:

<https://youtu.be/4vdliMRtxBY>

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### Headquarters

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