Environment Click

PID: MIKROE-2467

Environment click measures temperature, relative humidity, pressure and VOC (Volatile Organic compounds gases). The click carries the BME680 environmental sensor from Bosch. Environment click is designed to run on a 3.3V power supply. It communicates with the target microcontroller over SPI or I2C interface.

You can use it to test your indoor air quality, to control HVAC (heating, ventilation, and air conditioning) systems, in a weather station, sports applications and more.

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BME680 sensor features

The BME680 is as combined digital gas, humidity, pressure, and temperature sensor based on proven sensing principles.
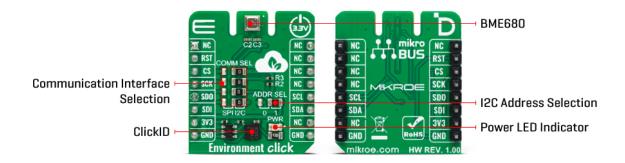
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The **humidity sensor** provides an extremely fast response time for fast context awareness applications and high overall accuracy over a wide temperature range. The **pressure sensor** is an absolute barometric pressure sensor with extremely high accuracy and resolution.
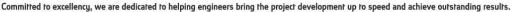
The integrated **temperature sensor** has been optimized for lowest noise and highest resolution. Its output is used for temperature compensation of the pressure and humidity sensors and can also be used for estimation of the ambient temperature.

The **gas sensor** within the BME680 can detect a broad range of gases to measure indoor air quality for personal well being. Gases that can be detected by the BME680 include Volatile Organic Compounds (VOC) from paints (such as formaldehyde), lacquers, paint strippers, cleaning supplies, furnishings, office equipment, glues, adhesives, and alcohol.

Specifications

Type	Environmental
Applications	Indoor air quality measurement, personalized weather station, home automation control, measuring ambient temperature, etc.
On-board modules	BME680 integrated environmental sensor
Key Features	A digital 4-in-1 sensor with gas, humidity, pressure and temperature measurement
Interface	I2C,SPI
Feature	ClickID Manifest,No ClickID
Compatibility	mikroBUS™
Click board size	S (28.6 x 25.4 mm)
Input Voltage	3.3V

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Pinout diagram

This table shows how the pinout on **Environment click** corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikro™BUS			Pin	Notes
	NC	1	AN	PWM	16	NC	
ID SEL	**RST**	2	RST	INT	15	NC	
SPI Select / ID COMM	**CS**	3	CS	TX	14	NC	
SPI clock	**SCK**	4	SCK	RX	13	NC	
Master in slave out	**MISO**	5	MISO	SCL	12	**SCL**	I2C clock
Master out slave in	**MOSI**	6	MOSI	SDA	11	**SDA**	I2C data
Power supply	**+3.3V**	7	3.3V	5V	10	NC	
Ground	**GND**	8	GND	GND	9	**GND**	Ground

Jumpers and settings

Designator	Name	Default Position	Default Option	Description
JP1	COMM. SEL.	Right	I2C	Selecting communication with MCU between SPI and I2C
JP2	ADDR. SEL.	Right	1	I2C address selection
JP3	COMM. SEL.	Right	I2C	Selecting communication with MCU between SPI and I2C
JP4	COMM. SEL.	Right	I2C	Selecting communication with MCU between SPI and I2C
JP5	COMM. SEL.	Right	I2C	Selecting communication with MCU between SPI and I2C

Software Support

We provide a library for the Environment Click as well as a demo application (example), developed using MIKROE compilers. The demo can run on all the main MIKROE development boards.

Package can be downloaded/installed directly from NECTO Studio Package Manager (recommended), downloaded from our LibStock™ or found on MIKROE github account.

Library Description

This library contains API for Environment Click driver.

Key functions

- Function gets gas resistance value from BME680 chip.

- Function gets pressure value of BME680 chip.

- Function get humidity value of BME680 chip.

Example Description

Example demonstrates use of the Environment Click.

The full application code, and ready to use projects can be installed directly from NECTO Studio Package Manager (recommended), downloaded from our LibStock™ or found on MIKROE github account.

Other MIKROE Libraries used in the example:

- MikroSDK.Board
- MikroSDK.Log
- Click.Environment

Additional notes and informations

Depending on the development board you are using, you may need USB UART click, USB UART 2 Click or RS232 Click to connect to your PC, for development systems with no UART to USB interface available on the board. UART terminal is available in all MIKROE compilers.

mikroSDK

This Click board™ is supported with mikroSDK - MIKROE Software Development Kit. To ensure proper operation of mikroSDK compliant Click board™ demo applications, mikroSDK should be downloaded from the LibStock and installed for the compiler you are using.

For more information about mikroSDK, visit the official page.

Resources

mikroBUS™

Click board™ Catalog

Click Boards™

Downloads

BME680 datasheet

Environment click schematic v100ID

Environment click 2D and 3D files v100

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[Environment click example on Libstock](#)

[Environment click 2D and 3D files v100ID](#)

[Environment click schematic v100](#)