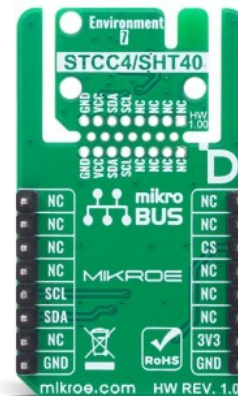
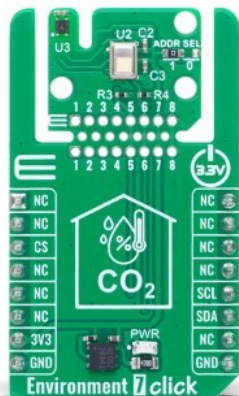


Environment 7 Click



PID: MIKROE-6600

Environment 7 Click is a compact add-on board designed for indoor environmental monitoring by measuring CO₂ concentration, temperature, and humidity. This board is based on the [STCC4](#) and [SHT40](#) digital sensors from [Sensirion](#), combining CO₂ sensing with high-accuracy temperature and humidity measurement in a single platform. The STCC4 sensor provides reliable CO₂ readings from 400 to 5000 ppm with $\pm 100\text{ppm} + 10\%$ accuracy, while the SHT40 offers $\pm 1.8\% \text{RH}$ humidity and $\pm 0.2^\circ\text{C}$ temperature accuracy, both over I2C with selectable addresses. Furthermore, the STCC4 is using the humidity and temperature signals to compensate the CO₂ output for its environment. Environment 7 Click also features MIKROE's innovative Click Snap design, allowing the sensor area of the board to be physically separated and mounted independently for flexible installation. With ultra-low power consumption and factory calibration, this board is ideal for air quality monitors, smart thermostats, building automation, and other indoor environmental control systems.

For more information about **Environment 7 Click** visit the official [product page](#).

How does it work?

Environment 7 Click is a compact environmental monitoring solution that integrates two highly reliable sensors from Sensirion: the STCC4 CO₂ sensor and the SHT40 temperature and humidity sensor. Unlike standalone sensor boards, this Click board combines CO₂, temperature, and humidity measurements into a unified platform, enabling comprehensive environmental monitoring for indoor air quality applications. The STCC4 offers precise CO₂ concentration readings in the range of 400 to 5000 ppm with an accuracy of $\pm 100\text{ppm} + 10\%$, using advanced thermal conductivity sensing technology to ensure reliable performance. It is factory calibrated and optimized to deliver accurate results when paired with high-quality temperature and

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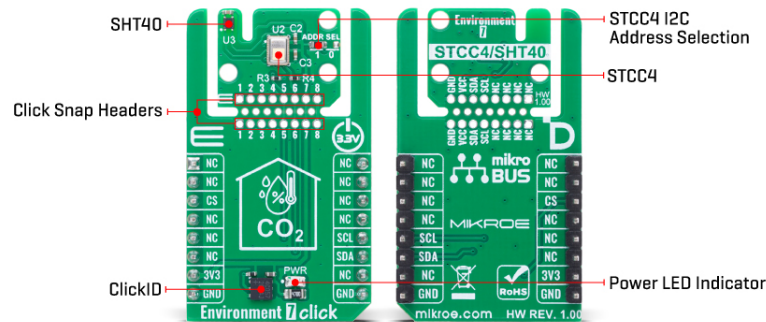


ISO 27001: 2013 certification of informational security management system.
ISO 14001: 2015 certification of environmental management system.
OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

humidity data, making it ideal for use in air quality monitors, HVAC systems, and smart home devices.



The SHT40 complements this setup with its high-precision measurements of relative humidity ($\pm 1.8\%RH$) and temperature ($\pm 0.2^\circ C$), providing a full environmental profile that supports intelligent decision-making in demanding applications. It features ultra-low power consumption and robust performance in both standard and condensing environments, with a wide operating range and JEDEC qualification for durability. Together, these sensors allow Environment 7 Click to deliver synchronized environmental data through an I2C interface with selectable addresses. The result is a powerful, multi-sensor solution designed to ensure optimal indoor conditions, energy efficiency, and user comfort through precise, real-time monitoring of the most relevant air quality parameters.

This Click board™ is designed in a unique format supporting the newly introduced MIKROE feature called "Click Snap." Unlike the standardized version of Click boards, this feature allows the main sensor area to become movable by breaking the PCB, opening up many new possibilities for implementation. Thanks to the Snap feature, the STCC4 and STH40 can operate autonomously by accessing its signals directly on the pins marked 1-8. Additionally, the Snap part includes a specified and fixed screw hole position, enabling users to secure the Snap board in their desired location.

This Click board™ can be operated only with a 3.3V logic voltage level. The board must perform appropriate logic voltage level conversion before using MCUs with different logic levels. It also comes equipped with a library containing functions and example code that can be used as a reference for further development.

Click Snap

Click Snap is an innovative feature of our standardized Click add-on boards, designed to bring greater flexibility and optimize your prototypes. By simply snapping the PCB along predefined lines, you can easily detach the main sensor/IC/module area, reducing the overall size, weight, and power consumption - ideal for the final phase of prototyping. For more details about Click Snap, visit the [official page](#) dedicated to this feature.

Specifications

Type	Air Quality, Environmental, Temperature &
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	humidity
Applications	Ideal for air quality monitors, smart thermostats, building automation, and other indoor environmental control systems
On-board modules	STCC4 - CO ₂ sensor from Sensirion SHT40 - temperature and humidity sensor from Sensirion
Key Features	CO ₂ measurement in the range of 400 to 5000 ppm with ± 100 ppm accuracy, high-precision temperature sensing with $\pm 0.2^{\circ}\text{C}$ accuracy, reliable relative humidity measurement with $\pm 1.8\%$ RH accuracy, I2C interface with selectable addresses, ultra-low power consumption, factory calibration for both sensors, JEDEC JESD47 qualification, Click Snap, and more
Interface	I2C
Feature	Click Snap, ClickID
Compatibility	mikroBUS™
Click board size	M (42.9 x 25.4 mm)
Input Voltage	3.3V

Pinout diagram

This table shows how the pinout on Environment 7 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikroBUS				Pin	Notes
	NC	1	AN	PWM	16	NC	
	NC	2	RST	INT	15	NC	
ID COMM	CS	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	SCL	I2C Clock
	NC	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

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
JP1	ADDR SEL	Left	I2C Address Selection 1/0: Left position 1, Right position 0

Environment 7 Click electrical specifications

Description	Min	Typ	Max	Unit
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Supply Voltage	-	3.3	-	V
CO ₂ Measurement Range	400	-	5000	ppm
CO ₂ Accuracy	-	±100ppm+10%	-	ppm
Temperature Measurement Range	-40	-	+125	°C
Temperature Accuracy	-	±0.2	-	°C
Humidity Measurement Range	0	-	100	%RH
Humidity Accuracy	-	±1.8	-	%RH

Software Support

[Environment 7 Click](#) demo application is developed using the [NECTO Studio](#), ensuring compatibility with [mikroSDK](#)'s open-source libraries and tools. Designed for plug-and-play implementation and testing, the demo is fully compatible with all development, starter, and mikromedia boards featuring a [mikroBUS™](#) socket.

Example Description

This example demonstrates the use of the Environment 7 Click board, which provides temperature, humidity, and CO₂ concentration measurements. The example initializes the device, reads sensor IDs, and continuously logs environmental data.

Key Functions

- `environment7_cfg_setup` This function initializes Click configuration structure to initial values.
- `environment7_init` This function initializes all necessary pins and peripherals used for this Click board.
- `environment7_read_id` This function reads the product and serial numbers of the STCC4 device.
- `environment7_set_meas_mode` This function sets the measurement mode on the STCC4 device.
- `environment7_read_meas` This function reads gas concentration, temperature, and relative humidity data from the STCC4 device.

Application Init

Initializes the logger, retrieves and logs the product and serial numbers, and starts the measurement in continuous mode with 1Hz sampling rate.

Application Task

Continuously reads and logs temperature (degC) and humidity (%RH), and CO₂ concentration (ppm) from sensors.

Application Output

This Click board can be interfaced and monitored in two ways:

- Application Output - Use the "Application Output" window in Debug mode for real-time data monitoring. Set it up properly by following [this tutorial](#).
- UART Terminal - Monitor data via the UART Terminal using a [USB to UART converter](#). For detailed instructions, check out [this tutorial](#).

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Additional Notes and Information

The complete application code and a ready-to-use project are available through the NECTO Studio Package Manager for direct installation in the [NECTO Studio](#). The application code can also be found on the MIKROE [GitHub](#) account.

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

Downloads

[Environment 7 click example package](#)

[Environment 7 click schematic v100](#)

[Environment 7 click 2D and 3D files v100](#)

[STCC4 datasheet](#)

[SHT40 datasheet](#)

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