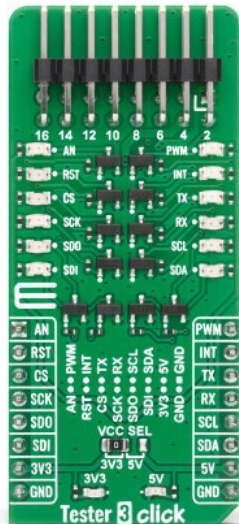


# Tester 3 Click



PID: MIKROE-6967

**Tester 3 Click** is a diagnostic add-on board designed for visual mikroBUS™ signal monitoring, interface verification, and convenient signal breakout during embedded development. This board is based on the [SI2310-TP](#), a compact N-channel MOSFET from MCC used to drive each indicator stage while minimizing load on the monitored lines. Key features include twelve orange LEDs for AN, RST, CS, SCK, CIPO, COPI, PWM, INT, TX, RX, SCL, and SDA signals, a J1 header for external access, green 3.3V and 5V power indicators, and a VCC SEL jumper for logic-level selection. Tester 3 Click is suitable for firmware bring-up, hardware prototyping, interface debugging, signal verification, and mikroBUS™ breakout testing across embedded platforms.

For more information about **Tester 3 Click** visit the official [product page](#).

## How does it work?

Tester 3 Click is based on the SI2310-TP from MCC, a compact N-channel MOSFET used on this board as a dedicated switching element for visual signal indication. The SI2310-TP uses Trench MV MOSFET technology and comes in a small SOT-23 package, making it suitable for dense diagnostic layouts where each monitored signal needs its own low-profile driver stage. On Tester 3 Click, these MOSFETs are not used for power switching, but as high-impedance input stages that allow mikroBUS™ signal activity to control LED indication with minimal loading of the host line.

Mikroe produces entire development toolchains for all major microcontroller architectures.

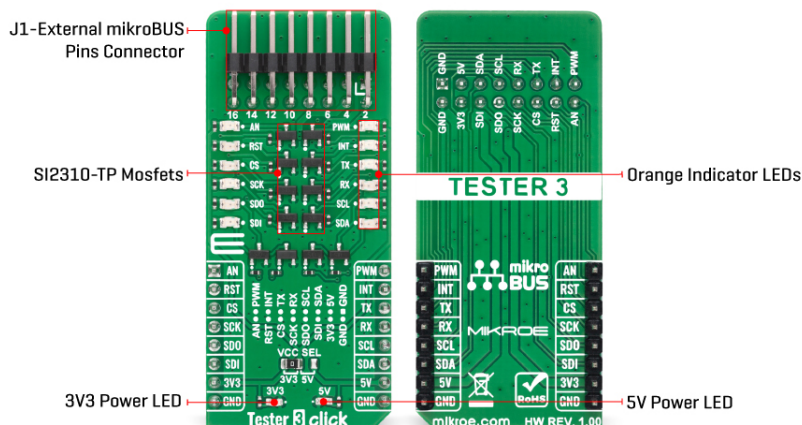
Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



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).



Each monitored mikroBUS™ signal is connected to its own SI2310-TP-based indicator circuit, allowing the board to show the logic state or activity of the line through a corresponding orange LED. This approach helps users visually confirm whether a signal is active during firmware bring-up, hardware debugging, interface testing, or board-to-board connection checks. By driving the LEDs through MOSFET stages instead of placing the LED load directly on the signal path, Tester 3 Click provides a practical way to observe bus activity while keeping the monitored lines suitable for normal development work.

Tester 3 Click does not use a dedicated digital communication protocol for exchanging data with the host MCU. Instead, it works as a GPIO-based diagnostic and breakout board that monitors the main mikroBUS™ communication and control lines, including AN, RST, CS, SCK, CIPO, COPI, PWM, INT, TX, RX, SCL, and SDA. This allows users to observe activity on SPI, UART, I2C, PWM, interrupt, reset, chip-select, and analog/control lines directly from the Click board. The same monitored signals are also routed to the onboard J1 header, making it easy to connect external circuits, logic analyzers, oscilloscopes, jumper wires, or custom hardware during development and prototyping.

The board includes twelve orange LEDs for visual indication of the monitored mikroBUS™ signal lines, with each LED clearly associated with its corresponding pin. It also includes two green power LED indicators for the 3.3V and 5V rails, helping users quickly confirm that the required supply rails are present. The onboard JP1 VCC SEL jumper is used to select the logic voltage level, while the J1 external mikroBUS™ pins connector provides convenient access to the monitored signals, power rails, and ground connections. The large Click board layout gives enough space for clearly labeled indicators and accessible test points, making the board useful as both a signal monitor and a mikroBUS™ breakout tool.

Tester 3 Click can operate with either 3.3V or 5V logic levels, selected through the VCC SEL jumper, which ensures compatibility with a wide range of mikroBUS™ host boards and embedded development platforms. The board uses the mikroBUS™ 3.3V and 5V power rails, with GND connections available through both the mikroBUS™ socket and the external header. Tester 3 Click comes with a ready-to-use code example that demonstrates how to control and toggle the monitored mikroBUS™ lines so users can immediately verify LED indication and use the board as a reference for further hardware testing, and this code example is available for download.

## Specifications

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



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).

| Type             | Proto                                                                                                                                                                                                                                                                                                    |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applications     | Ideal for firmware bring-up, hardware prototyping, interface debugging, signal verification, mikroBUS™ breakout testing, logic analyzer or oscilloscope connection, and other embedded development tasks that require quick visual monitoring                                                            |
| On-board modules | SI2310-TP - N-channel MOSFET in SOT-23 package from MCC                                                                                                                                                                                                                                                  |
| Key Features     | Twelve orange LED signal indicators, SI2310-TP MOSFET-based monitoring with minimal signal loading, visual status indication for key mikroBUS™ lines, J1 header for external signal access and breakout, 3.3V/5V logic-level selection through VCC SEL jumper, dedicated power rail indicators, and more |
| Interface        | GPIO                                                                                                                                                                                                                                                                                                     |
| Feature          | No ClickID                                                                                                                                                                                                                                                                                               |
| Compatibility    | mikroBUS™                                                                                                                                                                                                                                                                                                |
| Click board size | L (57.15 x 25.4 mm)                                                                                                                                                                                                                                                                                      |
| Input Voltage    | 3.3V or 5V                                                                                                                                                                                                                                                                                               |

## Pinout diagram

This table shows how the pinout on Tester 3 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

| Notes      | Pin         |  |      |     |    | Pin        | Notes      |
|------------|-------------|-------------------------------------------------------------------------------------|------|-----|----|------------|------------|
| Orange LED | <b>AN</b>   | 1                                                                                   | AN   | PWM | 16 | <b>PWM</b> | Orange LED |
| Orange LED | <b>RST</b>  | 2                                                                                   | RST  | INT | 15 | <b>INT</b> | Orange LED |
| Orange LED | <b>CS</b>   | 3                                                                                   | CS   | RX  | 14 | <b>TX</b>  | Orange LED |
| Orange LED | <b>SCK</b>  | 4                                                                                   | SCK  | TX  | 13 | <b>RX</b>  | Orange LED |
| Orange LED | <b>CIPO</b> | 5                                                                                   | MISO | SCL | 12 | <b>SCL</b> | Orange LED |
| Orange LED | <b>COPI</b> | 6                                                                                   | MOSI | SDA | 11 | <b>SDA</b> | Orange LED |
| Green LED  | <b>3.3V</b> | 7                                                                                   | 3.3V | 5V  | 10 | <b>5V</b>  | Green LED  |
| Ground     | <b>GND</b>  | 8                                                                                   | GND  | GND | 9  | <b>GND</b> | Ground     |

## Onboard settings and indicators

| Label | Name    | Default | Description                      |
|-------|---------|---------|----------------------------------|
| LD1   | PWR     | -       | 3V3 Power LED indicator          |
| LD2   | PWR     | -       | 5V Power LED indicator           |
| JP1   | VCC SEL | Left    | Logic voltage select jumper      |
| J1    | J1      | -       | External mikroBUS pins connector |

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



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).

## Tester 3 Click electrical specifications

| Description           | Min | Typ | Max | Unit |
|-----------------------|-----|-----|-----|------|
| Supply voltage        | 3.3 | -   | 5   | V    |
| Operating temperature | -40 | -   | 85  | °C   |

## Software Support

[Tester 3 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 Tester 3 Click board by controlling all LEDs on the Click board together and in sequential pin toggling with different delays.

### Key Functions

- `tester3_cfg_setup` This function initializes Click configuration structure to initial values.
- `tester3_init` This function initializes all necessary pins and peripherals used for this Click board.
- `tester3_toggle_all` This function toggles all mikroBUS pins together a desired number of times with the selected delay between each toggle.
- `tester3_toggle_seq` This function toggles all mikroBUS pins one by one with the selected delay between each toggle.

### Application Init

Initializes the driver and logger.

### Application Task

Toggles all pins together 5 times with a 500ms delay between each toggle, then toggles each pin sequentially with a 300ms delay between toggling each pin.

## 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](#).

## 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

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



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).

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

## Downloads

[Tester 3 Click example package](#)

[Tester 3 Click 2D and 3D files v100](#)

[Tester 3 Click schematic v100](#)

[SI2310-TP datasheet](#)

Mikroe produces entire development toolchains for all major microcontroller architectures.

Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.



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).