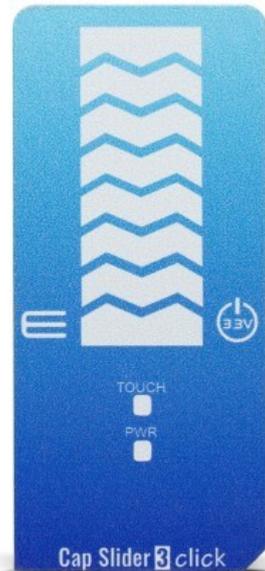


## Cap Slider 3 Click



PID: MIKROE-6645

**Cap Slider 3 Click** is a compact add-on board that provides a reliable capacitive sliding interface for touch-based control applications, ideal for implementing gesture-based user input in embedded systems. It is based on the [IQS323](#), a highly flexible ProxFusion® sensor fusion IC from [Azoteq](#), optimized for detecting slide gestures in both UP and DOWN directions. The IQS323 supports on-chip processing, automatic tuning, noise filtering, debounce and hysteresis, dual-direction trigger detection, and ultra-low power operation including a Halt and distributed ULP mode. Communication is handled via the standard I2C interface with a configurable RDY pin for efficient event handling, while two onboard LEDs indicate touch activity and power status. Cap Slider 3 Click is most suitable for wearable electronics, waterproof or sealed interfaces, SAR safety mechanisms, and low-power proximity or wake-up applications.

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

### How does it work?

Cap Slider 3 Click is based on the IQS323, a highly flexible ProxFusion® sensor fusion IC from Azoteq, designed to provide a reliable capacitive sliding interface for various touch-based control applications. The front side of the board incorporates a single large sensor pad that allows for intuitive sliding gestures, providing a smooth user experience. The IQS323 communicates over the standard I2C interface and performs all processing on-chip, allowing it to function effectively even in ultra-low-power modes. The built-in feature set includes automatic tuning for optimal sensitivity under varying environmental conditions, advanced noise filtering for stable readings, and differential measurement support via reference channels

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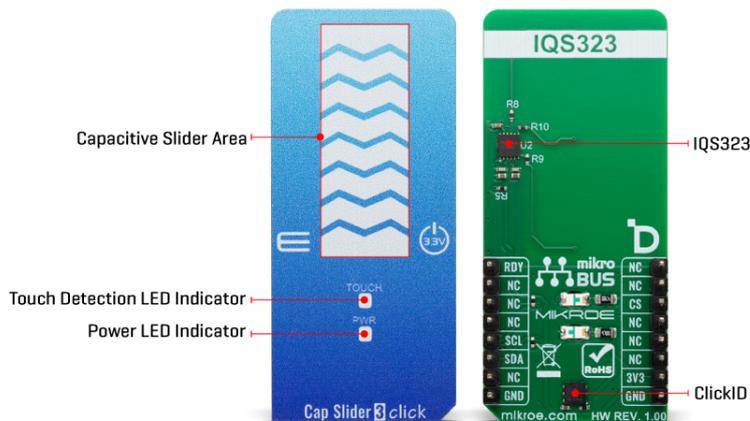


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to improve accuracy.



The IQS323 also integrates debounce and hysteresis mechanisms to prevent false triggers, as well as dual-direction trigger indication for clear response to sliding gestures in both directions. Additionally, the IQS323 supports a Halt Mode that significantly reduces power consumption, along with a distributed ultra-low-power (ULP) mode that intelligently balances response time and energy efficiency. These features make Cap Slider 3 Click an ideal solution for applications that require robust, low-power touch or proximity interfaces such as wearable electronics like fitness bands and smartwatches, presence or wear detection mechanisms, SAR (Specific Absorption Rate) safety sensors, and wake-up buttons in battery-powered systems.

As mentioned earlier, this Click contains a 3-segment capacitive sensing slider that can detect a slide in either the UP or DOWN direction, as well as two LED indicators (TOUCH and PWR). These are the only elements on the top side of the board, allowing the protective acrylic plexiglass layer placement. If a touch event is detected on slider area, the state of the TOUCH LED will be changed, indicating an activated channel; more precisely, touch has been detected on that specific field.

Cap Slider 3 Click communicates with MCU using the standard I2C 2-Wire interface with a maximum clock frequency of 1MHz, fully adjustable through software registers. An additional ready signal, routed on the RDY pin of the mikroBUS™ socket, is added, which indicates when the communication window is available with new data for optimal response. Thus, it is optimal for the response rate to use the INT pin as a communication trigger.

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.

## Specifications

Type	Capacitive
Applications	Ideal for wearable electronics, waterproof or sealed interfaces, SAR safety mechanisms, and low-power proximity or wake-up applications

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On-board modules	IQS323 - ProxFusion® sensor fusion IC from Azoteq
Key Features	3-segment capacitive sensing slider, on-chip automatic tuning, advanced noise filtering, differential measurement using reference channels, debounce and hysteresis functionality, dual-direction trigger detection, ultra-low-power distributed mode, Halt Mode for reduced consumption, I2C communication interface, RDY pin for data-ready signaling, and more
Interface	I2C
Feature	ClickID
Compatibility	mikroBUS™
Click board size	L (57.15 x 25.4 mm)
Input Voltage	3.3V

## Pinout diagram

This table shows how the pinout on Cap Slider 3 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	<b>RDY</b>	Data Ready Indicator
	NC	2	RST	INT	15	NC	
ID COMM	<b>CS</b>	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	<b>SCL</b>	I2C Clock
	NC	6	MOSI	SDA	11	<b>SDA</b>	I2C Data
Power Supply	<b>3.3V</b>	7	3.3V	5V	10	NC	
Ground	<b>GND</b>	8	GND	GND	9	<b>GND</b>	Ground

## Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
LD2	TOUCH	-	Touch Detection LED Indicator

## Cap Slider 3 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	-	3.3	-	V
Slider Type	3-Segment Capacitive			

## Software Support

[Cap Slider 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

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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 Cap Slider 3 Click board by initializing the device and reading the current slider position. The application logs the detected slider position in real-time.

### Key Functions

- `capslider3_cfg_setup` This function initializes Click configuration structure to initial values.
- `capslider3_init` This function initializes all necessary pins and peripherals used for this Click board.
- `capslider3_default_cfg` This function executes a default configuration of Cap Slider 3 Click board.
- `capslider3_read_data` This function reads various system information and sensor data from the Click board.

### Application Init

Initializes the logger and the Cap Slider 3 Click driver.

### Application Task

Continuously reads and logs the slider position detected by the Cap Slider 3 Click board.

## 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

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

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## Downloads

[Cap Slider 3 click example package](#)

[Cap Slider 3 click 2D and 3D files v100](#)

[IQS323 datasheet](#)

[Cap Slider 3 click schematic v100](#)

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