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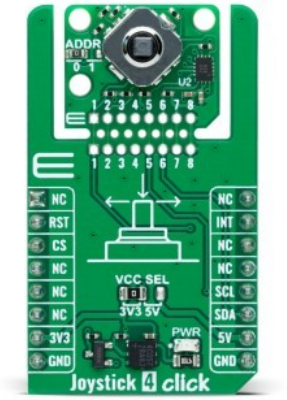
Joystick 4 Click



PID: MIKROE-6279

Joystick 4 Click is a compact add-on board that provides precise and reliable input control for various interactive projects. This board features the 2434804-1, a 5-position tactile switch from the ALCOSWITCH series by TE Connectivity. The switch features an extended top actuator for precise input detection, a stainless steel contact base, and silver contact plating, ensuring durability and corrosion resistance with a lifespan of 100,000 cycles. With a low-profile design, it handles a contact current rating of 50mA. The board also supports the new Click Snap feature, making the main area movable by breaking the PCB for flexible implementation. Joystick 4 Click is ideal for game controllers, portable device interfaces, security systems, and instrumentation applications.

How does it work?

Joystick 4 Click is based on the 2434804-1, an ALCOSWITCH series 5-position tactile switch from TE Connectivity. This tactile switch features an extended top actuator for precise and reliable input detection. Built with a stainless steel contact base and silver contact plating, it ensures durability and resistance to corrosion, providing an operational lifespan of 100,000 cycles. With its low-profile design, the switch can handle a contact current rating of 50mA and can operate at a voltage of 12VDC, in general. These tactile switches are critical for providing tactile feedback due to their high reliability and are used in various applications, including portable devices, instrumentation, security systems, gaming consoles, remote controllers, and handheld devices.

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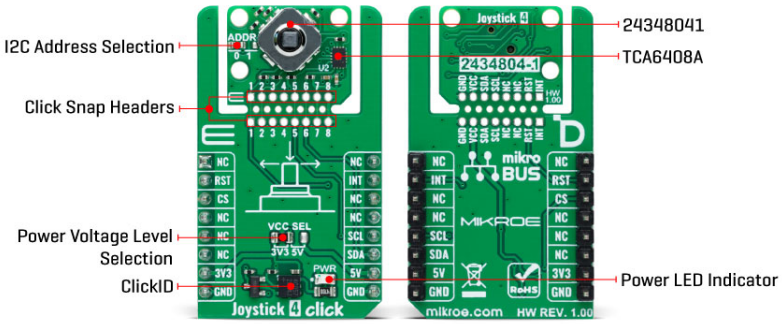

Joystick 4 Click leverages these attributes to deliver accurate and responsive input control, making it ideal for interactive projects where dependable tactile feedback is essential. Whether designing a game controller or developing a user interface for a portable device, this board offers the functionality and durability necessary for the most accessible integration.

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 2434804-1 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.

Joystick 4 Click interfaces with the host MCU through the TCA6408A port expander using the I2C interface. This port expander enables the control of the tactile switch and its associated control signals, including a dedicated signal for detecting joystick movements. When the tactile switch is activated, it provides an interrupt signal (INT) to the host MCU, ensuring immediate response to user inputs. Besides the I2C interface pins, the port expander also uses a reset (RST) pin and includes a jumper for selecting the I2C address labeled ADDR SEL.

This Click board™ can operate with either 3.3V or 5V logic voltage levels selected via the VCC SEL jumper. This way, both 3.3V and 5V capable MCUs can use the communication lines properly. Also, this Click board™ comes equipped with a library containing easy-to-use functions and an 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, introducing a new level of flexibility and ease of use. This feature allows for easy detachment of the main sensor area by simply snapping the PCB along designated lines, enabling various implementation possibilities. For detailed information about Click Snap, please visit the official page dedicated to this feature.

Specifications

Type	Pushbutton/Switches

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Applications	Ideal for game controllers, portable device interfaces, security systems, and instrumentation
On-board modules	2434804-1 - ALCOSWITCH series 5-position tactile switch from TE Connectivity
Key Features	Extended top actuator, durable construction, 100k operational lifespan, low-profile design, 50mA contact current rating, Click Snap feature, I2C interface with selectable address, and more
Interface	I2C
Feature	Click Snap,ClickID
Compatibility	mikroBUS™
Click board size	M (42.9 x 25.4 mm)
Input Voltage	3.3V or 5V

Pinout diagram

This table shows how the pinout on Joystick 4 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	
Reset	**RST**	2	RST	INT	15	**INT**	Interrupt
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	**5V**	Power Supply
Ground	**GND**	8	GND	GND	9	**GND**	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
JP1	VCC SEL	Left	Power Voltage Level Selection 3V3/5V: Left position 3V3, Right position 5V
JP2	ADDR SEL	Left	I2C Address Selection 0/1: Left position 0, Right position 1

Joystick 4 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V

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Software Support

We provide a library for the Joystick 4 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 Joystick 4 Click driver.

Key functions

- joystick4_get_int_pin This function returns the INT pin logic state.
- joystick4_get_pins This function reads all input pins logic state.
- joystick4_get_position This function returns the joystick position flag extracted from the input pins state mask.

Example Description

This example demonstrates the use of the Joystick 4 Click board™ by reading and displaying the joystick position.

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.Joystick4

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

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mikroBUS™

mikroSDK

Click board™ Catalog

Click boards™

ClickID

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TCA6408A datasheet

Joystick 4 click example on Libstock

Joystick 4 click 2D and 3D files v100

2434804-1 datasheet

Joystick 4 click schematic v100

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