

Button 2 Click



PID: MIKROE-6275

Button 2 Click is a compact add-on board designed for simple and efficient tactile input detection. This board features the TL3215AF160BQ, a TL3215 series of tactile switches from E-Switch, featuring high reliability and precise operation. The switch has a 2mm actuator, 160gf actuation force, silver contact material, and a lifespan of 1,000,000 cycles, while the integrated blue LED provides visual feedback. The board supports the new Click Snap feature, allowing easy detachment of the sensor area for flexible use. Button 2 Click is ideal for various applications, including user interface controls in consumer electronics, industrial equipment, and automotive systems, where reliable and responsive tactile feedback is crucial.

How does it work?

Button 2 Click is based on the TL3215AF160BQ, a member of the TL3215 series of tactile switches from E-Switch. This specific switch, denoted by its part number TL3215AF160BQ, features several key characteristics. The 'TL' in the part number indicates it belongs to the TL series, known for its high reliability and consistent performance. The '3215' model is a testament to its robust construction and design. It includes an actuator option ('A') with a 2mm actuator, ensuring precise and responsive operation. The 'F160' denotes an actuation force of 160gf, providing a balanced tactile feedback that is neither too hard nor too soft, thus preventing accidental presses while remaining user-friendly. The 'B' indicates the blue color of the switch, making it easily identifiable, while the 'Q' signifies the use of silver contact material, known for its excellent conductivity and durability.

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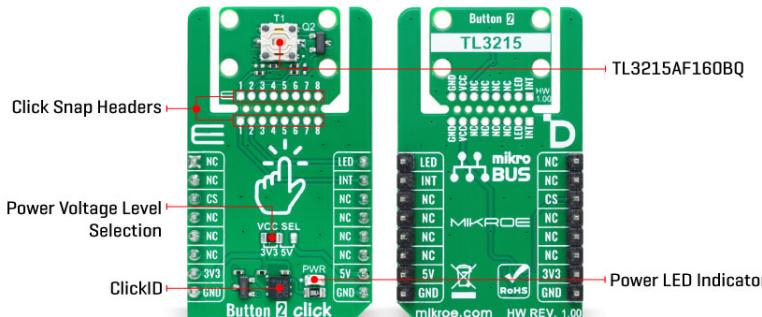
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Regarding specifications, the TL3215AF160BQ has an impressive electrical rating of 50mA at 12VDC, and its electrical and mechanical life is rated at 1,000,000 cycles, ensuring longevity and reliability in various applications. Initially, the contact resistance is a maximum of 100mΩ, while the insulation resistance stands at 100MΩ at 500VDC, highlighting its excellent electrical isolation properties. The switch also has a dielectric strength of 250VAC for 1 minute and operates efficiently in a temperature range of -40°C to 85°C. The contact arrangement is single-pole single-throw (SPST), providing straightforward switching functionality. Additionally, the integrated LED in this version operates at a forward current of 20mA with a typical forward voltage of 3V at 20mA. It delivers a typical luminous intensity of 100mcd, ensuring clear visibility of the switch's status.

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 TL3215AF160BQ 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.

Button 2 Click communicates with the host MCU using only two pins from the mikroBUS™ socket, ensuring a simple and efficient interface. The INT pin is dedicated to detecting button presses, providing an interrupt signal whenever the tactile switch is activated. The LED pin controls the blue LED on the TL3215AF160BQ, lighting up momentarily when the switch is pressed. This configuration allows for easy integration into various projects, enabling both input detection and visual feedback with minimal wiring and setup.

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

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to this feature.

Specifications

Type	Pushbutton/Switches	
Applications	Ideal for user interface controls in consumer electronics, industrial equipment, automotive systems, and more	
On-board modules	TL3215AF160BQ - TL3215 series of tactile switches from E-Switch	
Key Features	High reliability, precise operation, switch with 2mm actuator, 160gf actuation force, silver contact material, lifespan of 1,000,000 cycles, integrated blue LED offers clear visual feedback, Click Snap feature, and more	
Interface	GPIO	
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 Button 2 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	LED	Switch LED Control
	NC	2	RST	INT	15	INT	Switch Press Detection
ID COMM	CS	3	CS	RX	14	NC	
	NC	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
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

Button 2 Click electrical specifications

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Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V

Software Support

We provide a library for the Button 2 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 Button 2 Click driver.

Key functions

- `button2_get_int_pin` This function returns the INT pin logic state.
- `button2_toggle_led` This function toggles the button LED state by toggling the LED pin logic state.
- `button2_enable_led` This function enables button LED by setting the LED pin to the high logic state.

Example Description

This example demonstrates the use of Button 2 Click board™ by toggling the button LED and switch state on button press.

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.Button2`

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.

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For more information about mikroSDK, visit the [official page](#).

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

Downloads

[Button 2 click example on Libstock](#)

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

[TL3215 datasheet](#)

[Button 2 click schematic v100](#)

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