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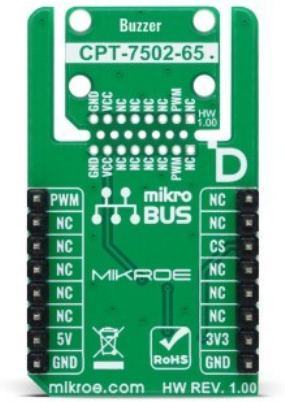
Buzzer Click



PID: MIKROE-6370

Buzzer Click is a compact add-on board for generating sound signals in various electronic applications. This board features the CPT-7502-65-SMT-TR, a piezoelectric buzzer transducer from Same Sky, known for its efficient sound output and compact surface-mount design. The buzzer offers a sound pressure level of 65dB and consumes only 1mA of current, making it ideal for battery-powered devices. The board also features the MIKROE "Click Snap" function, allowing for flexible installation and autonomous operation. This Click board™ is suitable for applications requiring sound signaling, such as alarms, notifications, and feedback systems in portable electronics.

How does it work?

Buzzer Click is based on the CPT-7502-65-SMT-TR, a piezoelectric buzzer transducer from Same Sky designed for efficient and reliable sound output in a surface-mount form factor. The buzzer has a compact square shape with dimensions of 7.5x7.5x2mm and offers a sound pressure level of 65dB, ensuring clear and noticeable sound in various applications. It is externally driven, meaning it requires an external circuit for activation, which is placed on this board. It consumes a low current of only 1mA, making it suitable for battery-powered devices.

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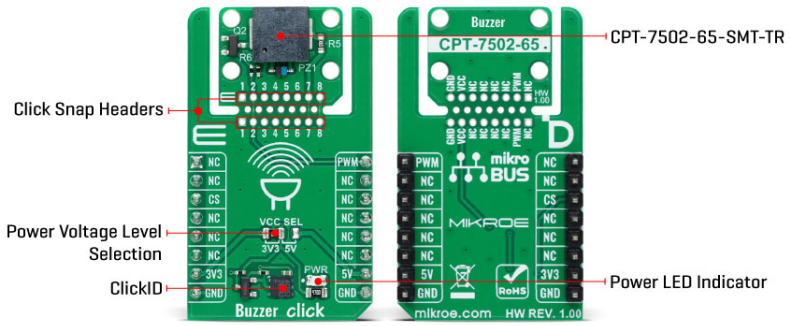

This Click board™ is designed in a unique format supporting the newly introduced MIKROE feature called "Click Snap." Unlike the standardized version of Click boards, this feature allows the main sensor area to become movable by breaking the PCB, opening up many new possibilities for implementation. Thanks to the Snap feature, the CPT-7502-65-SMT-TR 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™ uses an N-channel MOSFET to control the buzzer via a PWM signal, allowing for precise modulation of the sound's frequency and intensity. When the PWM signal is applied, the MOSFET enables the flow of current through the piezoelectric buzzer, activating it and producing sound. This setup provides flexibility in controlling the buzzer's output, making it a versatile solution for sound signaling in various electronic projects.

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	Speakers
Applications	Ideal for applications requiring sound signaling, such as alarms, notifications, and feedback systems in portable electronics
On-board modules	CPT-7502-65-SMT-TR - piezoelectric buzzer transducer from Same Sky
Key Features	Piezoelectric buzzer transducer, 65dB sound

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	pressure, low current consumption, controlled by an N-channel MOSFET via PWM signal, operating at 3.3V or 5V, MIKROE "Click Snap" feature for flexible installation, and more
Interface	PWM
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 Buzzer 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	**PWM**	PWM Signal
	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	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

Buzzer Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V

Software Support

We provide a library for the Buzzer 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

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This library contains API for Buzzer Click driver.

Key functions

- buzzer_play_sound This function plays sound on the buzzer.

Example Description

This example demonstrates the use of Buzzer click board by playing the Imperial March melody on the buzzer.

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.Buzzer

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

mikroBUS™

mikroSDK

Click board™ Catalog

Click boards™

ClickID

Downloads

Buzzer click example on Libstock

Buzzer click 2D and 3D files v100

CPT-7502-65-SMT-TR datasheet

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