

EEPROM 12 Click



PID: MIKROE-5893

EEPROM 12 Click is a compact add-on board that contains a highly reliable, nonvolatile memory solution. This board features the [M24256E](#) from [STMicroelectronics](#). It is a 256Kbit (32KB) EEPROM with a page size of 64 bytes and an additional identification page with the same size. This identification page can be read or written and (later) permanently locked in read-only mode and can be used to store sensitive application parameters. This Click board™ makes the perfect solution for the development of the development of consumer electronics, office equipment, communication devices, medical equipment, automobile equipment, and more.

EEPROM 12 Click is fully compatible with the mikroBUS™ socket and can be used on any host system supporting the [mikroBUS™](#) standard. It comes with the [mikroSDK](#) open-source libraries, offering unparalleled flexibility for evaluation and customization. What sets EEPROM 12 Click apart is the groundbreaking [ClickID](#) feature, enabling your host system to seamlessly and automatically detect and identify this add-on board.

How does it work?

EEPROM 12 Click is based on the M24256E, an EEPROM from STMicroelectronics. The protections include write protection of the whole memory array, enhanced ESD/latch-up protection, and more. It can withstand over 4 million write cycles and has over 200 years of data retention. It has a write time both for byte or page within 5ms and supports random and sequential read modes. The write page mode allows up to 64 bytes to be written in a single write cycle. The error correction code (ECC) is implemented on each group of four EEPROM bytes, which improves the read reliability. During the internal write cycle, the device disconnects itself from the bus and writes a copy of the data from its internal latches to the

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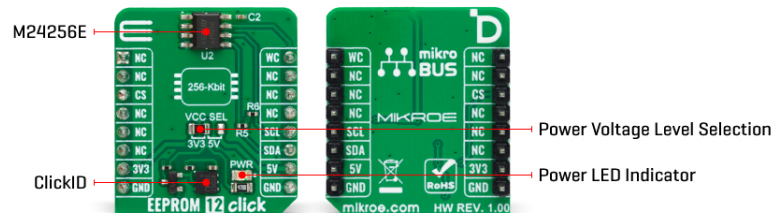


ISO 27001: 2013 certification of informational security management system.
 ISO 14001: 2015 certification of environmental management system.
 OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

memory cells. This, in turn, minimizes write delays.



EEPROM 12 Click uses a standard 2-Wire interface to communicate with the host MCU, supporting a clock frequency of up to 1MHz. The EEPROM supports a configurable device address register (CDA), which allows the user to define the device address and a device address lock (DAL) to freeze the configurable device address register. The EEPROM also supports a write control protection, which can be accessed over the WC pin.

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.

Specifications

Type	EEPROM
Applications	Can be used for the development of the development of consumer electronics, office equipment, communication devices, medical equipment, automobile equipment, and more
On-board modules	M24256E - 256-Kbit serial I2C bus EEPROM from STMicroelectronics
Key Features	Supports standard, fast, and fast mode plus I2C interface, 256-Kbit of EEPROM in 64 bytes of page sizes, random and sequential read modes, write protection of the whole memory array, enhanced ESD/ latch-up protection, long data retention and data write cycles, and more
Interface	I2C
ClickID	Yes
Compatibility	mikroBUS™
Click board size	S (28.6 x 25.4 mm)
Input Voltage	3.3V or 5V

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Pinout diagram

This table shows how the pinout on EEPROM 12 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin	mikro™ BUS				Pin	Notes
	NC	1	AN	PWM	16	WC	Write Control
	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	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/Logic Voltage Level Selection 3V3/5V: Left position 3V3, Right position 5V

EEPROM 12 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V
Memory Size	-	-	256	Kbit
Data Retention	200	-	-	Years
Endurance	4.000.000	-	-	Cycles

Software Support

We provide a library for the EEPROM 12 Click as well as a demo application (example), developed using MikroElektronika [compilers](#). The demo can run on all the main MikroElektronika [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 EEPROM 12 Click driver.

Key functions

- eeprom12_memory_write EEPROM 12 memory write function.
- eeprom12_memory_read EEPROM 12 memory read function.

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Example Description

This example demonstrates the use of EEPROM 12 Click board™. The demo app writes specified data to the memory and reads it back.

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.EEPROM12

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 MikroElektronika [compilers](#).

mikroSDK

This Click board™ is supported with [mikroSDK](#) - MikroElektronika 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

[EEPROM 12 click example on Libstock](#)

[EEPROM 12 click 2D and 3D files](#)

[M24256E-F datasheet](#)

[EEPROM 12 click schematic](#)

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