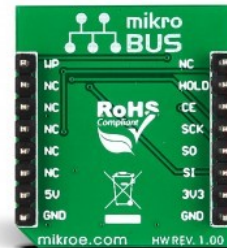


Flash 3 Click



PID: MIKROE-2374

Flash 3 Click is a compact add-on board representing a highly reliable memory solution. This board features the IS25LP128, a serial Flash memory with 133MHz multi I/O SPI & quad I/O QPI DTR interfaces from [Integrated Silicon Solution](#). This 128Mbit (16MB) Flash memory chip is a high-performance device that operates at 50MHz at Normal and 133MHz at Fast Read speeds. It is specified to standard 100,000 erase/program cycles with over 20 years of data retention. The data can be erased in sectors or blocks and programmed with 1 to 256 bytes per page. This Click board™ makes the perfect solution for the development of applications for storage and data transfer in consumer devices and industrial applications.

Flash 3 Click is supported by a [mikroSDK](#) compliant library, which includes functions that simplify software development. This [Click board™](#) comes as a fully tested product, ready to be used on a system equipped with the [mikroBUS™](#) socket.

How does it work?

Flash 3 Click is based on the IS25LP128, a serial Flash memory with 133MHz multi I/O SPI & quad I/O QPI DTR interfaces from Integrated Silicon Solution. This Flash memory chip supports Serial Flash Discoverable Parameters (SFDP), selectable dummy cycles, SPI modes 0 and 3, and configurable drive strength. The flexible and efficient memory architecture allows chip erase with uniform sector/block erase (4/32/64 KB) and program/erase suspend and resume. The read and program modes consist of low instruction overhead operations, continuous read 8/16/32/64-byte burst wrap, selectable burst length, and more. There are software and hardware protections, power supply lock protection, a 4x256-byte dedicated security area with OTP user-lockable bits, and the 128-bit Unique ID for each device.

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ISO 27001: 2013 certification of informational security management system.
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ISO 9001: 2015 certification of quality management system (QMS).

The Flash 3 Click communicates with the host MCU through an industry-standard SPI serial interface, supporting the two most common SPI modes, SPI Mode 0 and 3, with a maximum frequency of 133MHz in Fast Read mode. The Flash 3 Click features write-protect ability over the WP pin, with active LOW. The HLD pin is a communication hold pin, and the Flash memory can stay in a hold state with logic LOW, in which time the device is paused without resetting the serial sequence. The CE pin enables and disables the device's operation on this Click board™, pulled high for normal operation.

This Click board™ can only be operated with a 3.3V logic voltage level. The board must perform appropriate logic voltage level conversion before using MCUs with different logic levels. However, the Click board™ comes equipped with a library containing functions and an example code that can be used, as a reference, for further development.

Specifications

Type	FLASH
Applications	Can be used for the development of applications for storage and data transfer in consumer devices, and industrial applications
On-board modules	IS25LP128 - serial Flash memory from Integrated Silicon Solution
Key Features	128-bit unique ID, Standard/Dual/Quad SPI, high speed clock frequency, protection features, reliability, enhanced access performance, low power consumption, and more
Interface	GPIO, SPI
Feature	No ClickID
Compatibility	mikroBUS™
Click board size	S (28.6 x 25.4 mm)
Input Voltage	3.3V

Pinout diagram

This table shows how the pinout on Flash 3 Click corresponds to the pinout on the mikroBUS™ socket (the latter shown in the two middle columns).

Notes	Pin					Pin	Notes
	NC	1	AN	PWM	16	WP	Write Protect
Serial Communication Pause	HLD	2	RST	INT	15	NC	
Chip Enable	CS	3	CS	RX	14	NC	
SPI Clock	SCK	4	SCK	TX	13	NC	
SPI Data OUT	SDO	5	MISO	SCL	12	NC	
SPI Data IN	SDI	6	MOSI	SDA	11	NC	
Power Supply	3.3V	7	3.3V	5V	10	NC	

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Ground	GND	8	GND	GND	9	GND	Ground
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Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator

Flash 3 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	-	3.3	-	V
Memory Size	-	-	128	Mbit
Organization	16M x 8			
Write Endurance	100k	-	-	Cycles
Data Retention	20	-	-	Years

Software Support

We provide a library for the Flash 3 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 Flash 3 Click driver.

Key functions

- Pause function.
- Unpause function.
- Unpause function.

Example Description

This applicaion adding more flash memory.

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.Flash3

Additional notes and informations

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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™](#)

Downloads

[Flash 3 click example on Libstock](#)

[Flash 3 click 2D and 3D files](#)

[IS25LP128 datasheet](#)

[Flash 3 click schematic](#)

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