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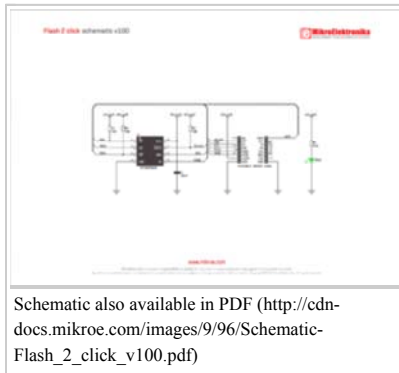


## Flash 2 click

From MikroElektronika Documentation

**Flash 2 click** carries Microchip's **SST26VF064B** flash-memory module with 8 MB capacity. It's a highly reliable module with a specified minimum of 100,000 write cycles and with over 100 years of Data Retention. For data security, the module features a One-Time Programmable (OTP) 2 KB bit secure ID and a 64 bit unique, factory pre-programmed identifier. Additional software security measures include individual-block write Protection with permanent lock-down capability. Flash 2 click communicates with the target MCU through the mikroBUSTM SPI interface (CS#, SCK, MISO, MOSI) with additional functionality provided by the #HOLD pin (in place of default mikroBUSTM RST pin). The board is designed to use a 3.3V power supply.

### Features and usage notes



The SST26VF064B/064BA memory array is organized in uniform, 4 KByte erasable sectors with the following erasable blocks:

- Eight 8 KB parameter
- Two 32 KByte overlay
- One-hundred twenty-six 64 KByte overlay blocks

The #HOLD pin temporarily stops serial communication with the SPI Flash memory

while the device is selected. This pin only works in SPI, single-bit and dual-bit Read mode and must be tied

high when not in use.

The manufacturer's data sheet has more information about the memory protection features of the chip:

"SST26VF064B/064BA offers flexible memory protection scheme that allows the protection state of each individual block to be controlled separately. In addition, the Write-Protection Lock-Down register prevents any change of the lock status during device operation. To avoid inadvertent writes during power-up, the device is write-protected by default after a power-on reset cycle. A Global Block Protection Unlock command offers a single command cycle that unlocks the entire memory array for faster manufacturing throughput."

### Programming

This snippet initializes all necessary pins and functions for using Flash 2 Click, and performs a test by writing test values to the click, and then reading them back to the user through UART communication.

```

1 #include <stdint.h>
2 #include "flash_2_hw.h"
3
4 sbit FLASH_2_WP at GPIOA_ODR.B0;
5 sbit FLASH_2_CS at GPIOD_ODR.B13;
6 sbit FLASH_2_HLD at GPIOC_ODR.B2;
7
8 int main(void)
9 {
10
11     uint8_t buffer[4]           = {15,20,25,30};
12     uint16_t count              = 4;
13     uint32_t address            = 0x0100F0;
14     uint8_t receive_buffer[4];
15     char tmp[20];
16
17     GPIO_Digital_Output( &GPIOA_BASE, _GPIO_PINMASK_0 );
18     GPIO_Digital_Output( &GPIOC_BASE, _GPIO_PINMASK_2 );
19     GPIO_Digital_Output( &GPIOD_BASE, _GPIO_PINMASK_13 );
20
21     SPI1_Init_Advanced( _SPI_FPCLK_DIV64,
22                       _SPI_MASTER | _SPI_8_BIT | _SPI_CLK_IDLE_LOW |
23                       _SPI_FIRST_CLK_EDGE_TRANSITION | _SPI_MSB_FIRST |
24                       _SPI_SS_DISABLE | _SPI_SSM_ENABLE |
25                       _SPI_SSI_1,
26                       &_GPIO_MODULE_SPI3_PC10_11_12 );
27
28     Delay_ms(300);
29
30     UART1_Init(9600);

```

Flash 2 click



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<b>IC/Module</b>	Microchip SST26VF064B ( <a href="http://ww1.microchip.com/downloads/en/DeviceDoc/20005119G.pdf">http://ww1.microchip.com/downloads/en/DeviceDoc/20005119G.pdf</a> )
<b>Interface</b>	SPI (MISO, MOSI, SCK), CS, #HOLD
<b>Power supply</b>	3.3V
<b>Website</b>	<a href="http://www.mikroe.com/click/flash-2">www.mikroe.com/click/flash-2</a> ( <a href="http://www.mikroe.com/click/flash-2">http://www.mikroe.com/click/flash-2</a> )

```

31 Delay_ms(300);
32
33 UART1_Write_Text( "Initializing Flash 2 click... " );
34 UART1_Write_Text( "\r\n" );
35 flash_2_init();
36 Delay_ms(300);
37 flash_2_global_block_unlock();
38 Delay_ms(400);
39 flash_2_write( address, buffer, count );
40 flash_2_read( address, receive_buffer, count );
41
42 UART1_Write_Text( "Initial Values: " );
43 while( count-- )
44 {
45     ByteToStr( buffer[count], tmp );
46     UART1_Write_Text( tmp );
47 }
48 UART1_Write_Text( "\r\n" );
49 count = 4;
50
51 UART1_Write_Text( "Received Values: " );
52 while( count -- )
53 {
54     ByteToStr( receive_buffer[count], tmp );
55     UART1_Write_Text( tmp );
56 }
57 UART1_Write_Text( "\r\n" );
58
59 return;
60 }

```

Code examples that demonstrate the usage of Flash 2 click with MikroElektronika hardware, written for mikroC for ARM, AVR, dsPIC, FT90x, PIC and PIC32 are available on Libstock (<http://libstock.mikroe.com/projects/view/1785/flash-2-click>).

## Resources

- Microchip SST26VF064B data sheet (<http://ww1.microchip.com/downloads/en/DeviceDoc/20005119G.pdf>)
- Flash 2 click examples on Libstock (<http://libstock.mikroe.com/projects/view/1785/flash-2-click>)
- This NAND, NOR that NAND (<http://learn.mikroe.com/this-nand-nor-that-nand/>), article about Flash 2 click on learn.mikroe.com
- mikroBUS standard specifications (<http://download.mikroe.com/documents/standards/mikrobus/mikrobus-standard-specification-v200.pdf>)

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