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EERAM 3.3V click

PID: MIKROE-2728



Add memory to your project with **EERAM 3.3V click**. It carries the [47L16](#) EERAM, a 16Kbit SRAM with **EEPROM Backup** from Microchip. The click is designed to run on a 3.3V power supply. It communicates with the target microcontroller over I2C interface, with additional functionality provided by the INT pin on the mikroBUS™ line.

47L16 features


The Microchip Technology Inc 47L16 EERAM is a 16Kbit SRAM with EEPROM Backup. The I2C EERAM Memory is a Low-Cost NVSRAM that Eliminates the Need for an External Battery to Retain Data. The device is organized as 2048x8 bits and utilizes the I2C serial interface. The 47L16 provides infinite read and write cycles to the SRAM while the EEPROM cells provide high endurance non-volatile storage of Data. With an external capacitor, SRAM data is automatically transferred to the EEPROM upon power-loss. Data can also be transferred manually by using either the hardware store pin or by software control. **Upon power-up, the EEPROM data is automatically recalled to the SRAM.** Recall can also be initiated through software control. The unlimited endurance makes the EERAM useful in applications that need to constantly monitor or record data.

Specifications

Type	EEPROM
Applications	Additional memory for your projects
On-board modules	47L16 I2C serial EERAM from Microchip
Key Features	16K bits density, 1 MHz Maximum clock frequency, Automatic Store to EEPROM upon power-down (using optional external capacitor)
Key Benefits	Retain the contents of the SRAM memory when system power is lost
Interface	I2C
Input Voltage	3.3V
Click board size	S (28.6 x 25.4 mm)

Pinout diagram

This table shows how the pinout on **EERAM 3.3V 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	NC	
	NC	2	RST	INT	15	HS	Hardware store
	NC	3	CS	TX	14	NC	
	NC	4	SCK	RX	13	NC	
	NC	5	MISO	SCL	12	SCL	SCL I2C line
	NC	6	MOSI	SDA	11	SDA	SDA I2C line
Power supply	+3.3V	7	3.3V	5V	10	NC	

Ground	GND	8	GND	GND	9	GND	Ground
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Jumpers and settings

Designator	Name	Default Position	Default Option	Description
A1	A1	Left	0	Address select 1
A2	A2	Left	0	Address select 2
SW1	SW1	Down	OFF	Automatic store data or manual

Buttons and LEDs

Designator	Name	Type	Description
PWR	PWR	LED	Power Indication LED

Programming

Code examples for EERAM 3.3V click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

The following code snippet reads data from the SRAM memory location, then writes to it, then reads it again to verify that write. It then copies the SRAM contents to EERAM memory.

```

01 //Read and write test
02 LOG ("rnrnReading 11 bytes of SRAM memory, from addresses 0x0100:");
03 EERAM_read (0x01, 0x00, readData, 11);
04 outputHex (readData, 11);
05
06 LOG ("rnrnWriting values 0x42 to SRAM memory");
07 LOG (" , at addresses 0x0100 - 0x0105...");
08 memset (writeData, 0x42, 6);
09 EERAM_write (0x01, 0x00, writeData, 6);
10
11 LOG ("rnrnReading 11 bytes of SRAM memory, from addresses 0x0100:");
12 EERAM_read (0x01, 0x00, readData, 11);
13 outputHex (readData, 11);
14

```

```
15 //Storing test
16 LOG ("nrnrnStoring SRAM data to EERAM memory...");
17 EERAM_command (_EERAM_CMD_STORE);
```

