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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

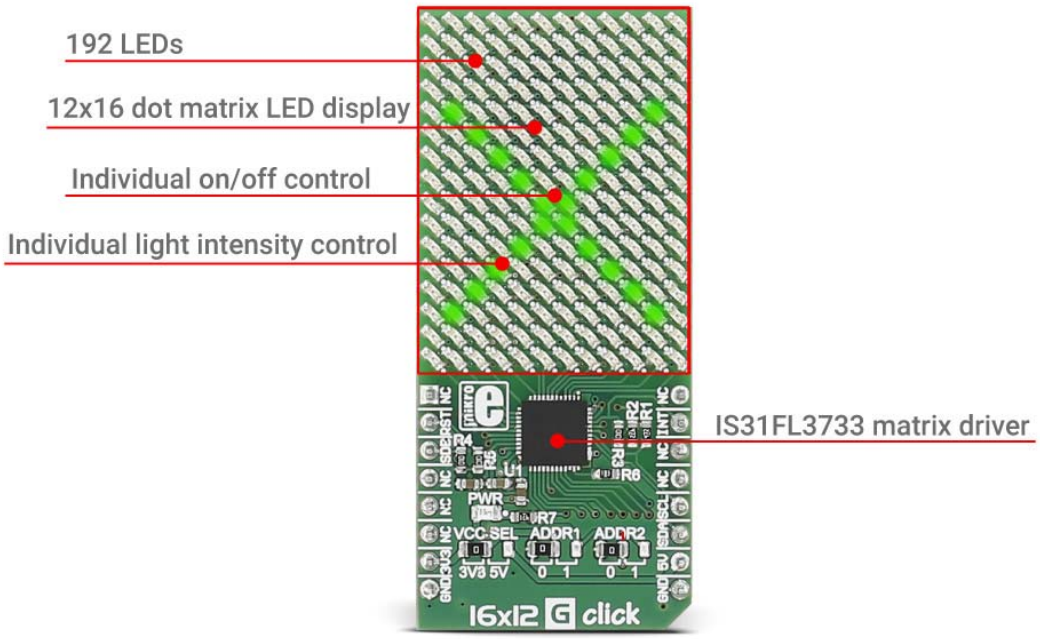
16x12 G click

PID: MIKROE-2758

16x12 G click carries a 16x12 LED display and the IS31FL3733 matrix driver. The click is designed to run on either 3.3V or 5V power supply. It communicates with the target microcontroller over I2C interface, and the following pins on the mikroBUS™ line: INT, RST, CS.

Each LED can be controlled individually – both for on/off control and light intensity.

IS31FL3733 driver features



The IS31FL3733 is a general purpose 12×16 LEDs matrix driver with 1/12 cycle rate.

Each of the 192 LEDs can be dimmed individually with 8-bit PWM data, which allows 256 steps of linear dimming.

The driver has selectable 3 Auto Breath Modes for each LED (ABM-1, ABM-2, and ABM-3).

Specifications

Type	LED Matrix
Applications	Gaming devices, small handheld devices, home appliances, IoT devices, etc.
On-board modules	IS31FL3733 matrix driver
Key Features	Selectable 3 Auto Breath Modes for each dot, Individual 256 PWM control steps
Key Benefits	Each of the 192 LEDs can be dimmed individually
Interface	GPIO,I2C
Input Voltage	3.3V or 5V
Click board size	L (57.15 x 25.4 mm)

Pinout diagram

This table shows how the pinout on **16x12 G 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	NC	
Reset	**RST**	2	RST	INT	15	**INT**	Interrupt pin
Standby	**SDB**	3	CS	TX	14	NC	
	NC	4	SCK	RX	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

Jumpers and settings

Designator	Name	Default Position	Default Option	Description
JP1	PWR.SEL.	Left	3V3	Power Supply Voltage Selection 3V3/5V, left position 3V3, right position 5V
JP2	ADDR. 1	Left	0	The last two bits of the I2C address
JP2	ADDR. 2	Left	0	The last two bits of the I2C address

Programming

Code examples for 16x12 G click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

The following code snippet shows the default initialization procedure for 16x12 G click board™.

```
IS31FL3733_init( &instance, _IS31FL3733_GND_ADDR, _IS31FL3733_GND_ADDR,
                    I2C2_Start, I2C2_Stop, I2C2_Write, I2C2_Read );
    IS31FL3733_setGCC( &instance, 64 );
    // PWM control mode (default)
    for( i = 0; i < _IS31FL3733_CS; ++i )
    {
        // Set PWM values for all LEDs at i-th row to 55/255 level.
        IS31FL3733_setLEDPWM ( &instance, i, _IS31FL3733_SW, 55 );
        // Turn on selected LEDs.
        IS31FL3733_setLEDState ( &instance, i, _IS31FL3733_SW,
                                 _IS31FL3733_LED_STATE_ON );
    }
    // Clear the matrix
    IS31FL3733_clearMatrix( &instance );
```