MIKROELEKTRONIKA D.O.O, Batajnički drum 23, 11000 Belgrade, Serbia
VAT: SR105917343 Registration No. 20490918
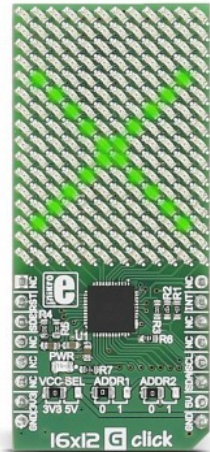Phone: + 381 11 78 57 600 Fax: + 381 11 63 09 644 E-mail: office@mikroe.com
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16x12 G Click

PID: MIKROE-2758

Add a green LED display to your design.

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.

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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

Mikroe produces entire development toolchains for all major microcontroller architectures.
Committed to excellency, we are dedicated to helping engineers bring the project development up to speed and achieve outstanding results.

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).

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Applications	8x8 Y click brings serial 8x8 Yellow LED display matrix to your design
On-board modules	IS31FL3733 - a general purpose 12×16 LEDs matrix driver with 1/12 cycle rate, from Integrated Silicon Solution, Inc.
Key Features	16 current source outputs for row control, 12 switch current inputs for column scan control, 1MHz I2C-compatible interface
Interface	GPIO,I2C
Feature	No ClickID
Compatibility	mikroBUS™
Click board size	L (57.15 x 25.4 mm)
Input Voltage	3.3V or 5V

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	mikro™ BUS		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

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available on Libstock.

Code snippet

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

```
01 IS31FL3733_init( &instance, _IS31FL3733_GND_ADDR, _IS31FL3733_GND_ADDR,
02                  I2C2_Start, I2C2_Stop, I2C2_Write, I2C2_Read );
03     IS31FL3733_setGCC( &instance, 64 );
04     // PWM control mode (default)
05     for( i = 0; i < _IS31FL3733_CS; ++i )
06     {
07         // Set PWM values for all LEDs at i-th row to 55/255 level.
08         IS31FL3733_setLEDPWM ( &instance, i, _IS31FL3733_SW, 55 );
09         // Turn on selected LEDs.
10         IS31FL3733_setLEDState ( &instance, i, _IS31FL3733_SW,
11                               _IS31FL3733_LED_STATE_ON );
12     }
13     // Clear the matrix
14     IS31FL3733_clearMatrix( &instance );
```

Resources

mikroBUS™

Click board™ Catalog

Click Boards™

Downloads

IS31FL3733 datasheet

16x12 G click schematic

16x12 G click example on Libstock

16x12 G click 2D and 3D files

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