Matrix RGB click

PID: MIKROE-2239

RS Product Code: 136-0810

Matrix RGB click is a mikroBUS™ add-on board powered by a 32-bit FT900 MCU designed specifically for powering 16x32 RGB LED matrices. The board has a 16 wire IDC connector for connecting to a single 16x32 LED panel; however, the firmware inside the FT900x chip can drive more than one panel. Multiple panels can be connected to each other into a daisy-chain configuration (see the video). Matrix RGB click communicates with the target MCU through the SPI interface. It uses a 3.3V power supply only. Complete kits with Matrix RGB click, a single 32x32 RGB LED matrix panel (consisting of two 16x32 matrices joined together), and a power supply unit are available to order.

Alternatively, panels and power supplies can be purchased separately.

Specification

Product Type	LED Matrix
Applications	Driving up to 16 16x32 RGB LED panels (more than 32 is possible, but flickering may occurr)
On-board modules	32-bit FT900 MCU
Key Features	Can drive up to 16 panels of 16x32 RGB LEDs, Removes the load from the host MCU
Key Benefits	Custom firmware simplifies integration, Able to drive multiple panels chained together, Microcontroller can be accessed through separate IDC connector
Interface	SPI
Power Supply	3.3V
Compatibility	mikroBUS
Click board size	M (42.9 x 25.4 mm)
Weight	25g

Features and usage notes

RGB Panels are driven by shift registers. There are 9 shift registers for driving LED colours and row selections effectively, along with 3 pins to latch, clock and enable leds. There are 2 for each colour, 3 for row selection (A, B, C), clock pin (CLK), latch pin (STB), and a OE / enable pin. Top row colour shift registers are labelled R1, G1 and B1, while bottom row colour registers are labelled R2, G2 and B2. Row selection registers are used to make re-writes appear more fluent. While your row selection is set to row 0, row 8 will also be updated. Shifting data onto R1, B1 and G1, will update row 0 data, and R2, B2, and G2 will update row 8.

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A detailed development guide is available on the learn page.

However powerful, Matrix RGB click is only a driver board, and you need to have one or more RGB panels and a power adapter to see the output. Make sure to buy them along with the click.

A full Matrix RGB development kit is also available. It includes matrix RGB click, 32x32 RGB LED Matrix Panel - 6mm pitch, 12V-3A power supply with EU plug (can power up up to two panels)

Programming

To show how to initialize the matrix, add scrolling text, scroll bitmap images, all with different colours and speeds very easily click on the link Mikroe.com

Code examples that demonstrate the usage of Matrix RGB click with MikroElektronika hardware, written for mikroC for ARM, AVR, dsPIC, FT90x, PIC and PIC32 are available on Libstock.

Downloads

Matrix RGB click Examples

Matrix RGB click Schematic

Learn Article - Matrix RGB Panel

Learn article: 2x2 panel with Matrix RGB click