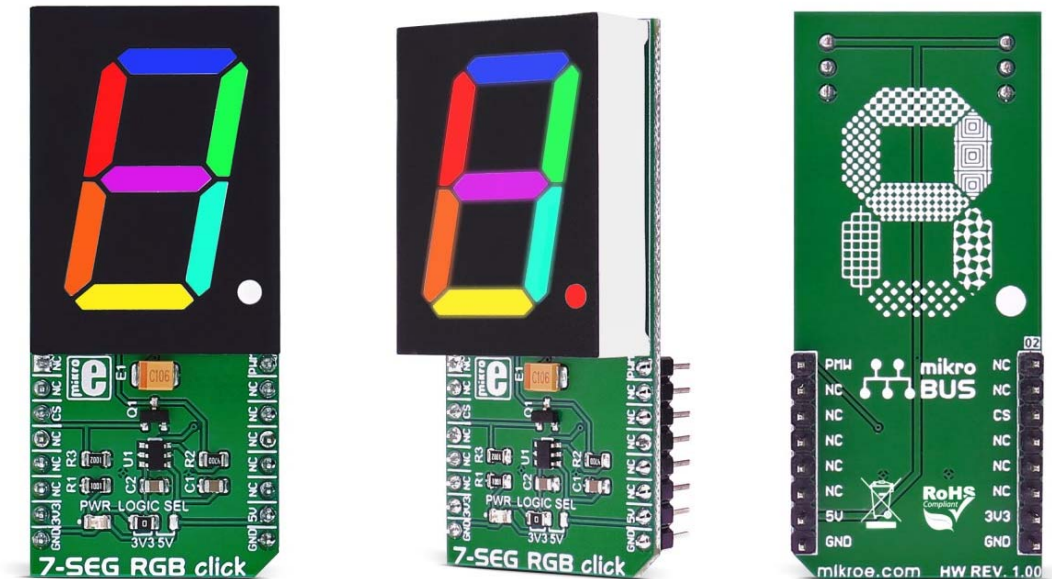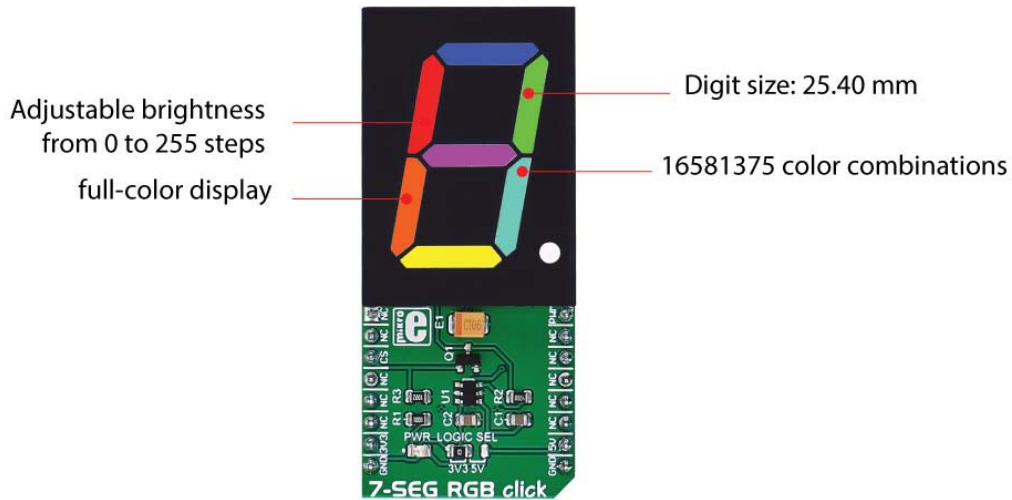# 7-SEG RGB click

PID: MIKROE-2734

7-SEG RGB click carries a full-color single 7 segment digit display. The click is designed to run on either 3.3V or 5V power supply. It communicates with the target microcontroller over the CS, and PWM pin on the mikroBUS™ line.

The click can be connected in a chain, in order to display a larger number of characters. Unlike with conventional 7 segment displays, you will be able to use multiple colors on the display.

Display features

Adjustable brightness from 0 to 255 steps
full-color display

Digit size: 25.40 mm

16581375 color combinations

Each segment has R, G, B LEDs that can be adjusted in 255 steps and therefore 16,581,375 color combinations are available for each segment of the digit on the display.

Also, the ability to **control the brightness** of all the LED's is driven at 255 steps. It should be noted that the brightness values above 80 should rarely be used.

Specifications

Type	LED Segment
Applications	Displaying digits and letters on a seven segment in full color
Brightness	Adjustable from 0 to 255 steps
On-board modules	RGBdigit full color single 7 Segment digit display
Key Features	Multi-colored display
Interface	PWM
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 **7-SEG RGB 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	**PWM**	Data input
	NC	2	RST	INT	15	NC	
Write enable (active low)	**CS**	3	CS	TX	14	NC	
	NC	4	SCK	RX	13	NC	
	NC	5	MISO	SCL	12	NC	
	NC	6	MOSI	SDA	11	NC	
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	Logic level	Left	3.3V	Data in level Voltage Selection 3V3/5V, left position 3V3, right position 5V

Programming

Code examples for 7-SEG RGB click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

The following code snippet writes the numbers 1, 2 and 3 in green, red and blue colors on 7-SEG RBG click.

```
01 #define ONE      0x06
02 #define TWO      0x5B
03 #define THREE    0x4F
04 sbit CS_BIT at GPIOD_ODR.B13;
05 sbit RGB_CONTROL_BIT at GPIOA_ODR.B0;
06 void systemInit()
07 {
08     GPIO_Digital_Output( &GPIOD_BASE, _GPIO_PINMASK_13 );
09     GPIO_Digital_Output( &GPIOA_BASE, _GPIO_PINMASK_0 );
10 }
11 void RGB_7_SEG_Init()
12 {
13     RGB_CONTROL_BIT = 0;
14     CS_BIT = 0;
15 }
16 void RGB_7_SEG_Task()
17 {
18     setSevenSegment(ONE,40,0,0);
19     Delay_ms(1000);
20     setSevenSegment(TWO,0,40,0);
21     Delay_ms(1000);
22     setSevenSegment(THREE,0,0,40);
23     Delay_ms(1000);
24 }
25 void main()
26 {
27     systemInit();
28     RGB_7_SEG_Init();
29     while( 1 )
30     {
31         RGB_7_SEG_Task();
32     }
33 }
```