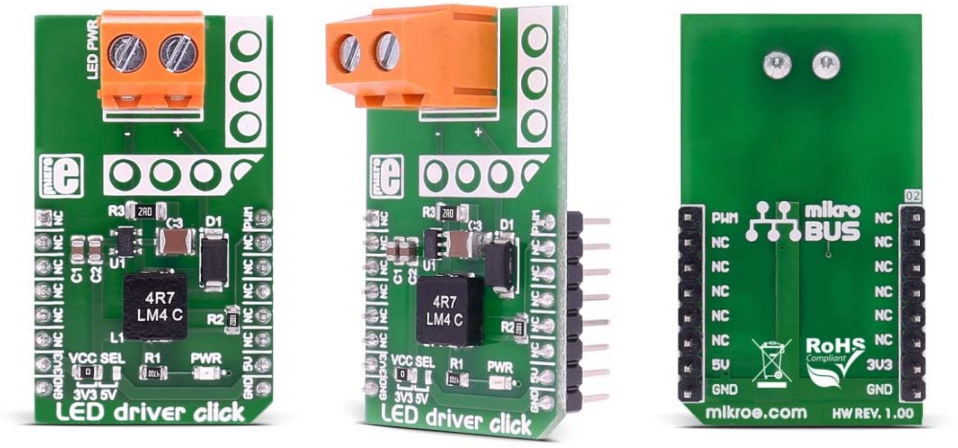
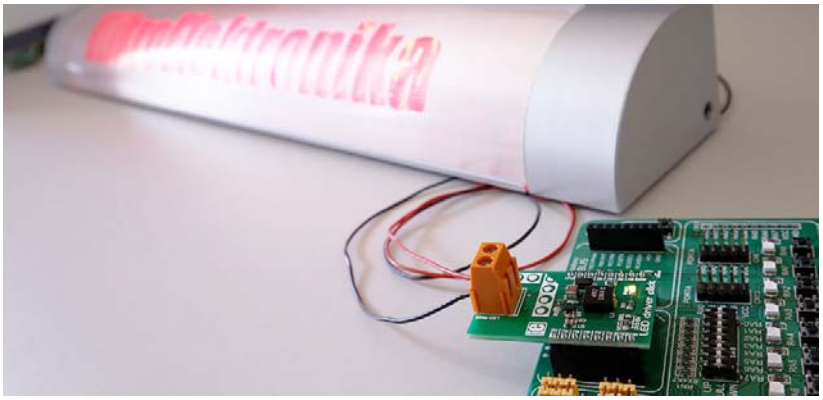
LED driver click

PID: MIKROE-2676



LED driver click carries the MCP1662 high-voltage step-up voltage driver from Microchip. The click is designed to run on either 3.3V or 5V power supply. It communicates with the target microcontroller over PWM pin on the mikroBUS™ line.



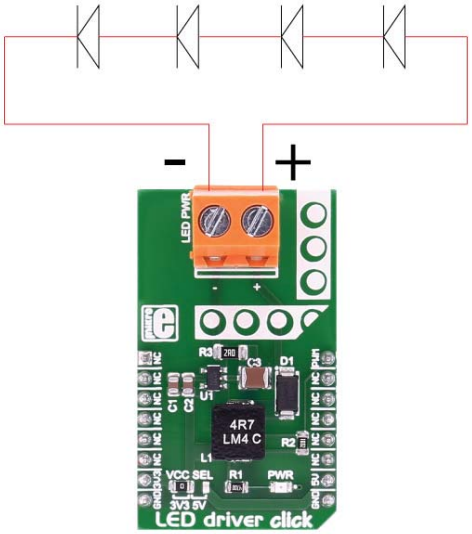
MCP1662 MCU features

The MCP1662 device is a compact, space-efficient, fixed-frequency, non-synchronous step-up converter optimized to drive LED strings with a constant current from a two- or three-cell alkaline or lithium Energizer®, or NiMH/NiCd, or one-cell Lithium-Ion or Li-Polymer batteries.

The device integrates a 36V, 800 mW low-side switch, which is protected by the 1.3A cycle-by-cycle inductor peak current limit operation.

How it works

LED driver click has a power input and a PWM input, so the LED lights can be dimmed. It's a great choice for driving LED strips.



Specifications

Type	Boost
On-board modules	MCP1662 High-Voltage Step-Up LED Driver
Key Features	Open Load Protection, Overtemperature Protection, Input Voltage Range: 2.4V to 5.5V
Interface	PWM
Input Voltage	3.3V or 5V
Click board size	M (42.9 x 25.4 mm)

Pinout diagram

This table shows how the pinout on **LED driver 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	**PWM**	PWM input
	NC	2	RST	INT	15	NC	
	NC	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

Maximum ratings

Description	Min	Typ	Max	Unit
Supply Voltage	2.4		5.5	V
Max Out Voltage			32	V
Max Out Current 4.2V Vin 8 LEDs	100			mA
Max Out Current 3.3V Vin 4 LEDs	125			mA
Max Out Current 5.0V Vin 4 LEDs	200			mA

Programming

Code examples for LED driver click, written for MikroElektronika hardware and compilers are available on Libstock.

Code snippet

The following code snippet shows the LED driver click example, which initializes ADC and PWM and sets the PWM output depending on the potentiometer analog input.

```
01 void systemInit()
02 {
03     TRISC = 0;                          // designate PORTC pins as output
04     LATC  = 0;                          // set PORTC to 0
05     PWM2_Init( 5000 );                  // Initialize PWM2 module at 5KHz
06 }
07
08 void main()
09 {
10     systemInit();
11     currentDuty  = 0;
12     PWM2_Start();
13     PWM2_Set_Duty(currentDuty);
14
15    while ( 1 )                         // Playing with Potentiometer P1
you can control current PWM duty cycle
16     {
17         currentDuty = ADC_Read(1) & 0x0000FFFF;         // Read 10 - bit
ADC value and set newly acquired 8 - bit PWM duty
18         currentDuty = currentDuty / 4;
19         PWM2_Set_Duty(currentDuty );          // Set newly acquired duty
20     }
21
22 }
```