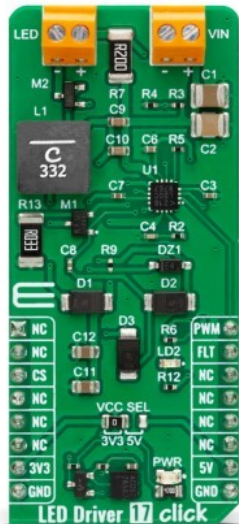


LED Driver 17 Click



PID: MIKROE-5565

LED Driver 17 Click is a compact add-on board that offers a simple solution for controlling multiple LEDs, making it an ideal choice for various applications. This board features the LTR3755, a highly efficient DC/DC controller from Analog Devices that operates as a constant-current source. It can easily drive high current LEDs and features onboard low-side external N-channel power MOSFETs driven from an internal regulated supply. The LED Driver 17 Click is capable of stable operation over a wide supply range and offers several LED protection features, including overvoltage and overcurrent protection. Additionally, the frequency adjust pin allows users to program the switching frequency from 100kHz to 1MHz, optimizing efficiency and performance. This Click board™ is a versatile product that can be used in various settings, including architectural lighting and general lighting applications. It is also an excellent choice for hobbyists and professionals looking to control multiple LEDs.

LED Driver 17 Click is supported by a [mikroSDK](#) compliant library, which includes functions that simplify software development. This [Click board™](#) comes as a fully tested product, ready to be used on a system equipped with the [mikroBUS™](#) socket.

How does it work?

LED Driver 17 Click is based on the LT3755, a highly efficient DC/DC controller from Analog Devices. This Click board™ is designed as a Buck mode LED driver with the ability to output 500mA, offering, in addition, PWM dimming functionality. The LTR3755, a highly efficient DC/DC controller, operates as a constant-current source, features onboard low-side external N-channel power MOSFETs, which are driven from an internal regulated supply, and it is capable of driving high-power 16V LEDs. Due to its high efficiency and reliable protection features, this board can be used in applications that require consistent and precise LED lighting control. It

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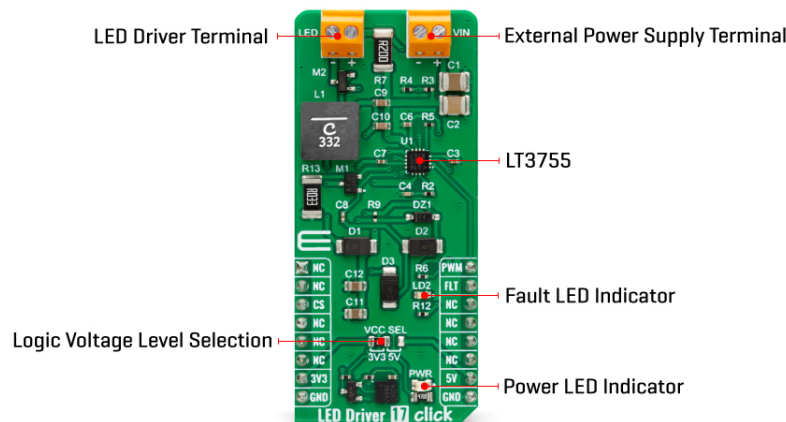


ISO 27001: 2013 certification of informational security management system.
ISO 14001: 2015 certification of environmental management system.
OHSAS 18001: 2008 certification of occupational health and safety management system.



ISO 9001: 2015 certification of quality management system (QMS).

can also be used in applications that demand high power output, such as commercial and industrial lighting.



In terms of connectivity, this solution is designed to be controlled via the PWM pin of the mikroBUS™ socket to provide LED dimming control with ratios of up to 3000:1. In addition, the LT3755 also has a frequency adjust pin that allows the user to program the switching frequency from 100kHz to 1MHz. This feature is performed via an onboard R5 resistor, with the 800kHz set as the default value to optimize efficiency and performance.

Other than the PWM pin, this Click board™ also features a fault pin labeled FLT, which is routed to the default interrupt INT position of the mikroBUS™ socket. This fault pin indicates any fault conditions to an external system, including overvoltage and overcurrent protection. Besides information via the mikroBUS™ socket, the fault signal is visually indicated via a red LED labeled LD2. This LED Driver 17 Click supports an external power supply for the driver, which can be connected to the input terminal labeled VIN and should be within the range of 22V to 36V.

This Click board™ can operate with either 3.3V or 5V logic voltage levels selected via the VCC SEL jumper. This way, both 3.3V and 5V capable MCUs can use the communication lines properly. However, the Click board™ comes equipped with a library containing easy-to-use functions and an example code that can be used, as a reference, for further development.

Specifications

Type	LED Drivers
Applications	Can be used for applications that demand high power output, such as commercial and industrial lighting
On-board modules	LTR3755 - DC/DC controller from Analog Devices
Key Features	Buck mode LED driver, 500mA, PWM dimming, wide input voltage supply, output voltage suitable for 16V high power LEDs, protection features, adjustable switching frequency, fault detection and indication, and more
Interface	PWM

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ClickID	Yes
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 LED Driver 17 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 Signal
	NC	2	RST	INT	15	FLT	Fault Signal
	NC	3	CS	RX	14	NC	
	NC	4	SCK	TX	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

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator
LD2	LD2	-	Fault LED Indicator
JP1	VCC SEL	Left	Logic Level Voltage Selection 3V3/5V: Left position 3V3, Right position 5V

LED Driver 17 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	3.3	-	5	V
Input Voltage Range	22	-	36	V
Output Current	-	500	-	mA

Software Support

We provide a library for the LED Driver 17 Click as well as a demo application (example), developed using MIKROE [compilers](#). The demo can run on all the main MIKROE [development boards](#).

Package can be downloaded/installed directly from NECTO Studio Package Manager (recommended), downloaded from our [LibStock™](#) or found on [Mikroe github account](#).

Library Description

This library contains API for LED Driver 17 Click driver.

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Key functions

- `leddriver17_get_fault_pin` This function returns the fault (FLT) pin logic state.
- `leddriver17_set_duty_cycle` This function sets the PWM duty cycle in percentages (Range[0..1]).

Example Description

This example demonstrates the use of LED Driver 17 Click board™ by changing the LEDs dimming level.

The full application code, and ready to use projects can be installed directly from NECTO Studio Package Manager (recommended), downloaded from our [LibStock™](#) or found on [Mikroe github account](#).

Other Mikroe Libraries used in the example:

- MikroSDK.Board
- MikroSDK.Log
- Click.LEDDriver17

Additional notes and informations

Depending on the development board you are using, you may need [USB UART click](#), [USB UART 2 Click](#) or [RS232 Click](#) to connect to your PC, for development systems with no UART to USB interface available on the board. UART terminal is available in all MIKROE [compilers](#).

mikroSDK

This Click board™ is supported with [mikroSDK](#) - MIKROE Software Development Kit. To ensure proper operation of mikroSDK compliant Click board™ demo applications, mikroSDK should be downloaded from the [LibStock](#) and installed for the compiler you are using.

For more information about mikroSDK, visit the [official page](#).

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

Downloads

[LED Driver 17 click example on Libstock](#)

[LT3755 datasheet](#)

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[LED Driver 17 click 2D and 3D files](#)

[LED Driver 17 click schematic](#)

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