

OLED W 2 Click



PID: MIKROE-6793

OLED W 2 Click is a compact add-on board that provides a clear and high-contrast 128x32 pixel monochrome display for embedded applications requiring reliable visual feedback, text rendering, and simple graphic output. It is based on the [MCOT128032CY](#) OLED module from Midas Displays, a passive matrix display featuring a white-on-black appearance and 1/32 drive duty operation. Key features include a 3-wire SPI communication interface, control pins for command and data handling, an active area of 22.384x5.584mm within a slim 48x11.5x1.40mm form factor, fine pixel pitch and size for sharp character definition, and an integrated anti-glare polarizer for improved readability under various lighting conditions. OLED W 2 Click is well suited for status displays, portable instruments, industrial control panels, compact user interfaces, and other embedded systems that require compact, low-power, and visually crisp display solutions.

For more information about **OLED W 2 Click** visit the official [product page](#).

How does it work?

OLED W 2 Click is based on the MCOT128032CY, an OLED module from Midas Displays, delivering a crisp 128x32 pixel resolution in a monochrome white-on-black configuration optimized for clear, high-contrast visual output. Based on passive matrix OLED technology with a 1/32 drive duty, this display ensures sharp rendering of text, icons, and simple graphics while maintaining low power consumption and fast response times typical of organic light-emitting diode panels. The module communicates via a reliable SPI interface, enabling integration with a wide range of microcontrollers and embedded platforms while minimizing pin usage and simplifying firmware development. It is ideal for status displays, instrumentation panels, compact user interfaces, portable devices, and embedded control systems where high visual

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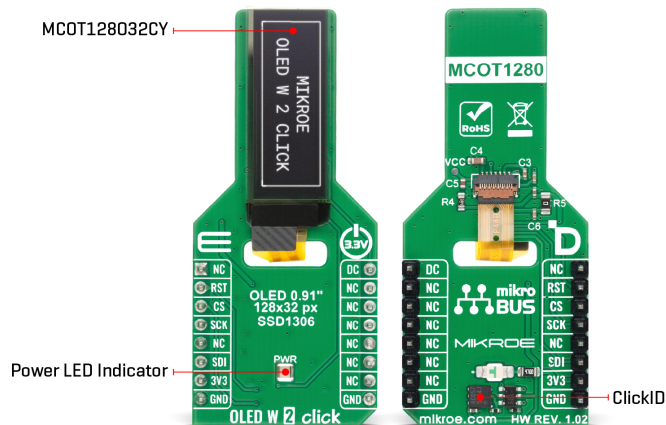


ISO 27001: 2013 certification of informational security management system.
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ISO 9001: 2015 certification of quality management system (QMS).

clarity are essential.



With overall display dimensions of 48x11.5x1.40mm and an active area of 22.384x5.584mm, the MCOT128032CY offers an excellent balance between compact form factor and usable viewing space, making it suitable for space-constrained designs that still require clear visual feedback. The pixel pitch of 0.175x0.175mm and pixel size of 0.159x0.159mm provide well-defined pixel geometry, contributing to precise character definition and consistent graphical performance across the screen. The integrated anti-glare polarizer enhances readability under various lighting conditions by reducing reflections and improving perceived contrast, ensuring dependable operation in both indoor and moderately lit industrial environments.

This board operates through a 3-wire serial SPI interface for communication between the display and the host MCU. Beyond the SPI interface pins, the display also uses additional control signals for enhanced functionality. The RST pin plays a crucial role in ensuring reliable operation by allowing the display to be reset. This is essential for recovering from errors and initializing the display during power cycles. The DC pin serves as a display data/command selection pin, crucial for distinguishing between data and command instructions sent via the SPI interface. This enables precise control over the display's functionality, ensuring that graphical content and operational commands are processed correctly.

This Click board™ can be operated only with a 3.3V logic voltage level. The board must perform appropriate logic voltage level conversion before using MCUs with different logic levels. It also comes equipped with a library containing functions and example code that can be used as a reference for further development.

Specifications

Type	OLED
Applications	Ideal for status displays, portable instruments, industrial control panels, compact user interfaces, and other embedded systems
On-board modules	MCOT128032CY - 128x32 OLED module from Midas Displays
Key Features	128x32 pixel monochrome white-on-black OLED display, passive matrix display technology with 1/32 drive duty, 3-wire SPI

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	communication interface, 22.384x5.584mm active area, 0.175x0.175mm pixel pitch, 0.159x0.159mm pixel size, integrated anti-glare polarizer, and more
Interface	SPI
Feature	ClickID
Compatibility	mikroBUS™
Click board size	L (57.15 x 25.4 mm)
Input Voltage	3.3V

Pinout diagram

This table shows how the pinout on OLED W 2 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	DC	Data/Command Control
Reset / ID SEL	RST	2	RST	INT	15	NC	
SPI Select / ID COMM	CS	3	CS	RX	14	NC	
SPI Clock	SCK	4	SCK	TX	13	NC	
	NC	5	MISO	SCL	12	NC	
SPI Data IN	SDI	6	MOSI	SDA	11	NC	
Power Supply	3.3V	7	3.3V	5V	10	NC	
Ground	GND	8	GND	GND	9	GND	Ground

Onboard settings and indicators

Label	Name	Default	Description
LD1	PWR	-	Power LED Indicator

OLED W 2 Click electrical specifications

Description	Min	Typ	Max	Unit
Supply Voltage	-	3.3	-	V
Resolution	128 x 32			px
Active Area	22.384 x 5.584			mm

Software Support

[OLED W 2 Click](#) demo application is developed using the [NECTO Studio](#), ensuring compatibility with [mikroSDK](#)'s open-source libraries and tools. Designed for plug-and-play implementation and testing, the demo is fully compatible with all development, starter, and mikromedia boards featuring a [mikroBUS™](#) socket.

Example Description

This example demonstrates the use of the OLED W 2 Click board by showing images, writing text in different fonts and display rotation, adjusting display contrast, and performing horizontal and diagonal scrolling operations.

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Key Functions

- `oledw2_cfg_setup` This function initializes Click configuration structure to initial values.
- `oledw2_init` This function initializes all necessary pins and peripherals used for this Click board.
- `oledw2_default_cfg` This function executes a default configuration of OLED W 2 Click board.
- `oledw2_write_string` This function writes a text string starting from the selected position in configured font size.
- `oledw2_draw_picture` This function draws a picture.
- `oledw2_set_rotation` This function sets the display rotation.

Application Init

Initializes the logger and OLED W 2 Click driver and performs default device configuration.

Application Task

Demonstrates drawing images, rotating the display, text rendering with various fonts, contrast fading, and several scroll modes.

Application Output

This Click board can be interfaced and monitored in two ways:

- Application Output - Use the "Application Output" window in Debug mode for real-time data monitoring. Set it up properly by following [this tutorial](#).
- UART Terminal - Monitor data via the UART Terminal using a [USB to UART converter](#). For detailed instructions, check out [this tutorial](#).

Additional Notes and Information

The complete application code and a ready-to-use project are available through the NECTO Studio Package Manager for direct installation in the [NECTO Studio](#). The application code can also be found on the MIKROE [GitHub](#) account.

Resources

[mikroBUS™](#)

[mikroSDK](#)

[Click board™ Catalog](#)

[Click boards™](#)

[ClickID](#)

Downloads

[OLED W 2 click example package](#)

[MCOT128032CY datasheet](#)

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[OLED W 2 click 2D and 3D files v102](#)

[OLED W 2 click schematic v102](#)

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