

FYSETC V2.1 RGB Mini 12864 Graphic LCD Screen

FYSETC V2.1 RGB Mini 12864 Graphic LCD Screen User Manual

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and configuration of the FYSETC V2.1 RGB Mini 12864 Graphic LCD Screen. This display is designed for use with 3D printers, CNC machines, and other microcontroller projects, offering a compact and versatile user interface.

The FYSETC V2.1 RGB Mini 12864 features a 2.4-inch graphic LCD with 128x64 resolution, a rotary encoder with RGB backlighting, and an SD card slot for offline printing capabilities. It is compatible with Marlin firmware and various mainboards, including RAMPS 1.4.



Image 1.1: The FYSETC V2.1 RGB Mini 12864 Graphic LCD Screen and included connection cables.

2. FEATURES

- **Display:** 2.4-inch high contrast Graphic LCD with 128x64 resolution.
- **Display Styles:** Supports multiple display color styles (e.g., black-gray, black-green, white-black, white-blue, green-black).
- **Communication:** SPI communication to host micro-controller.
- **SD Card Support:** Vertical or side SD slot with card detect, with an optional SD module for offline printing.
- **User Interface:** Rotary Encoder with RGB-Aura for navigation and input.
- **Lighting:** Configurable RGB LED backlight, controlled by 3 WS2811 chips.
- **Contrast:** Software configurable contrast setting.
- **Compatibility:** EXP1 & EXP2 RAMPS Compatible socket.
- **Open Source:** Designed as an open-source component.

3. PACKAGE CONTENTS

The standard package includes:

- 1 x FYSETC V2.1 RGB Mini 12864 Graphic LCD Display
- 2 x Custom connection cables (approximately 30cm/11.8in each)

4. SETUP AND INSTALLATION

4.1 Connecting to a Mainboard

The FYSETC Mini 12864 display connects to your mainboard via the EXP1 and EXP2 ports. These ports are standard LCD display interfaces on many motherboards.

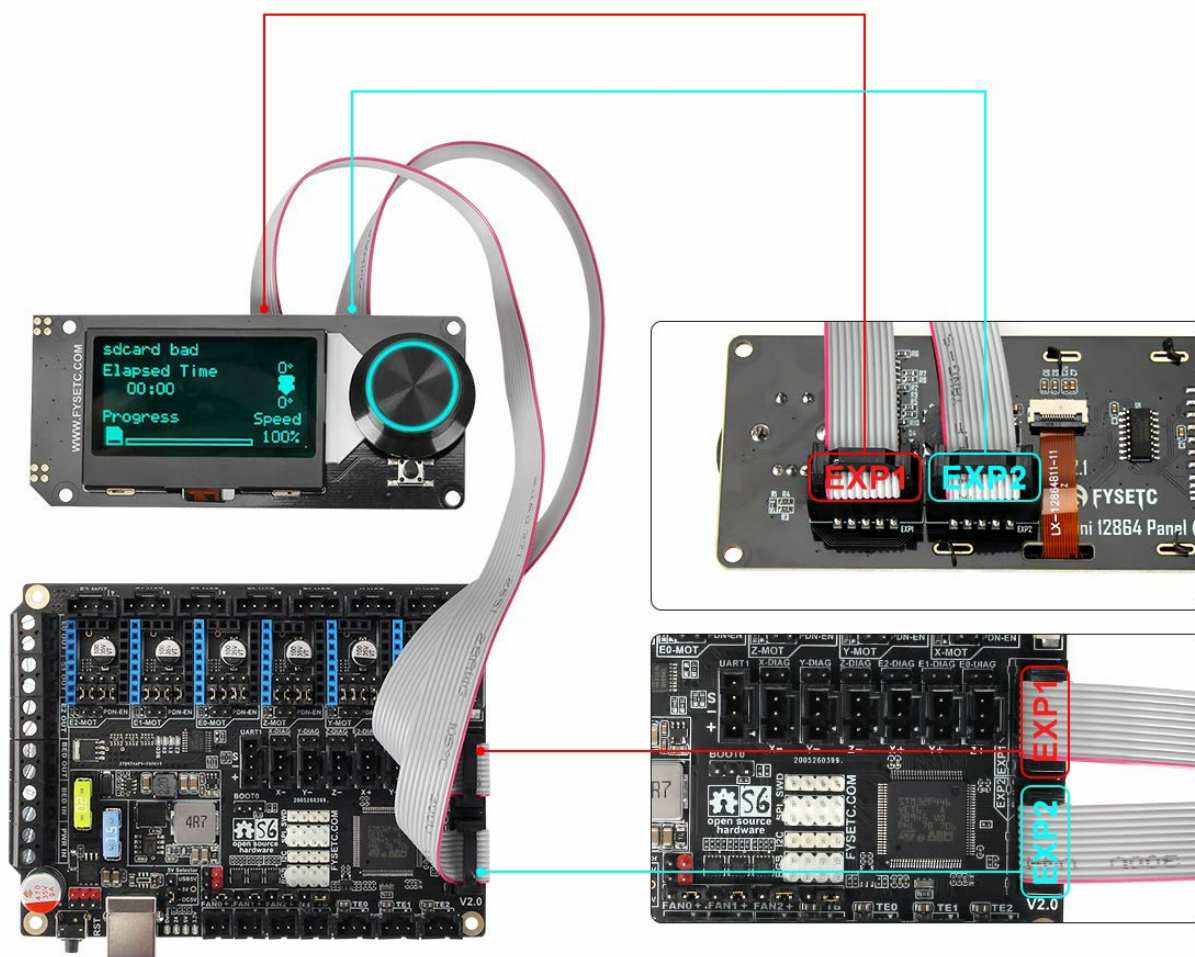


Image 4.1: Typical connection diagram for the Mini 12864 to a RAMPS 1.4 compatible board.

4.2 Cable Connections

The display comes with two custom connection cables. For direct connection to FYSETC motherboards (such as the

Spider board), these cables can be used without modification.

More detailed information is updated on wiki
dot fysetc dot com

 Mini12864 Panel

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注意/NOTICE:

EXP1&EXP2

The diagram shows two pin headers, EXP1 and EXP2, used for connecting the panel to various components.

EXP1 Header:

PIN	Signal
10	D37
9	LCD CS
8	D17
7	LCD EN
6	LCD D4
5	LCD D5
4	LCD D6
3	Green
2	D27
1	GND

EXP2 Header:

PIN	Signal
10	D35
9	D16
8	LCD A0
7	D15
6	Rd DEN
5	B25 Blue
4	BTN_ENG
3	LCD E5
2	LCD D5
1	LCD D7

Wiring Diagram:

A circuit diagram showing the connection of RST (R3) and KILL (R4) resistors to the panel's VCC and GND pins. The RST pin is connected to VCC through resistor R3 and to GND through resistor R4. The KILL pin is connected to VCC through resistor R1 and to GND through resistor R4. A switch S1 is shown connected between the VCC and GND lines, labeled SW-DPST.

为了兼容某些主板，如RAMPS1.4，FYSETC mini12864 设置了 RST(R3) 和 KILL(R4) 的可选择电阻。目前，有些主板（S6/Spider）将 KILL 换成 5V，此时，请确认 mini12864 上 R4处于空贴状态，否则按下屏幕上的按钮会导致 5V 与 GND 短路，长时间操作会导致主板损坏。

In order to be compatible with some motherboards, such as RAMPS1.4, mini12864 is equipped with RST (R3) and KILL (R4) optional resistors. At present, some motherboards (S6/Spider) change the KILL to 5V. At this time, please make sure that R4 on the mini12864 is in the empty state, otherwise pressing the button on the screen will cause a short circuit between 5V and GND, and long-term operation will cause the motherboard to be damaged.

Firmware config

This screen driver is ST7567 and is compatible with the marlin Mini panel (UC1701,same as ST7567). It has been tested well, and the following configuration is required.

Before you start, please install the latest version of U8glib.

Step1. changes the pins.

On a RAMPS-compatible board, you need to make the following changes in pins_RAMPS.h:

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 - Step1. changes the pins.
 - Step2. Config the configuration.h.
 - Step3. Config the configuration_adv.h.
 - Step4. add the codes in ultralcd_impl_DOGM.h.
- Optional Hardware module:

Attention

FAQ

Attachments

1. Schematic
2. Dimensions

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Image 4.2: Cables configured for direct connection to FYSETC motherboards.

When connecting to other brand mainboards, it may be necessary to reverse the cable plugs to ensure correct pin alignment. This involves gently removing the connector shrouds and re-orienting them.

To connect Fysetc's motherboard directly



To work with more other brand boards without reversing the cable plugs.



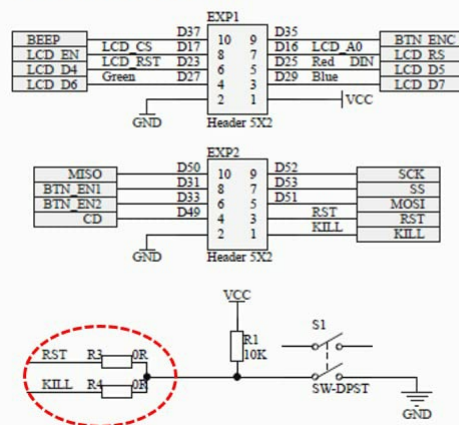
Image 4.3: Cables with reversed plugs for compatibility with various mainboards.

4.3 Important Notice Regarding Resistors

For compatibility with certain motherboards, such as RAMPS 1.4, the Mini 12864 is equipped with RST (R3) and KILL (R4) optional resistors. Some motherboards (e.g., S6/Spider) may change the KILL pin to 5V. In such cases, ensure that R4 on the Mini 12864 is in an empty state (not populated). Pressing the button on the screen with R4 populated and KILL at 5V can cause a short circuit between 5V and GND, potentially damaging the motherboard.

注意/NOTICE:

EXP1&EXP2



为了兼容某些主板，如RAMPS1.4，mini12864设置了RST(R3)和KILL(R4)的可选择电阻。

目前，有些主板（S6/Spider）将KILL换成5V，此时，请确认mini12864上R4处于空贴状态，否则按下屏幕上的按钮会致使5V与GND短路，长时间操作会导致主板损坏。

In order to be compatible with some motherboards, such as RAMPS1.4, mini12864 is equipped with RST (R3) and KILL (R4) optional resistors.

At present, some motherboards (S6/Spider) change the KILL to 5V. At this time, please make sure that R4 on the mini12864 is in the empty state, otherwise pressing the button on the screen will cause a short circuit between 5V and GND, and long-term operation will cause the motherboard to be damaged.

Image 4.4: Pin definitions for EXP1 and EXP2, with a critical notice regarding R3 and R4 resistors.

4.4 Pin Definitions

The EXP1 and EXP2 headers on the FYSETC Mini 12864 serve as the LCD display interface. Refer to the diagram below for pin assignments.

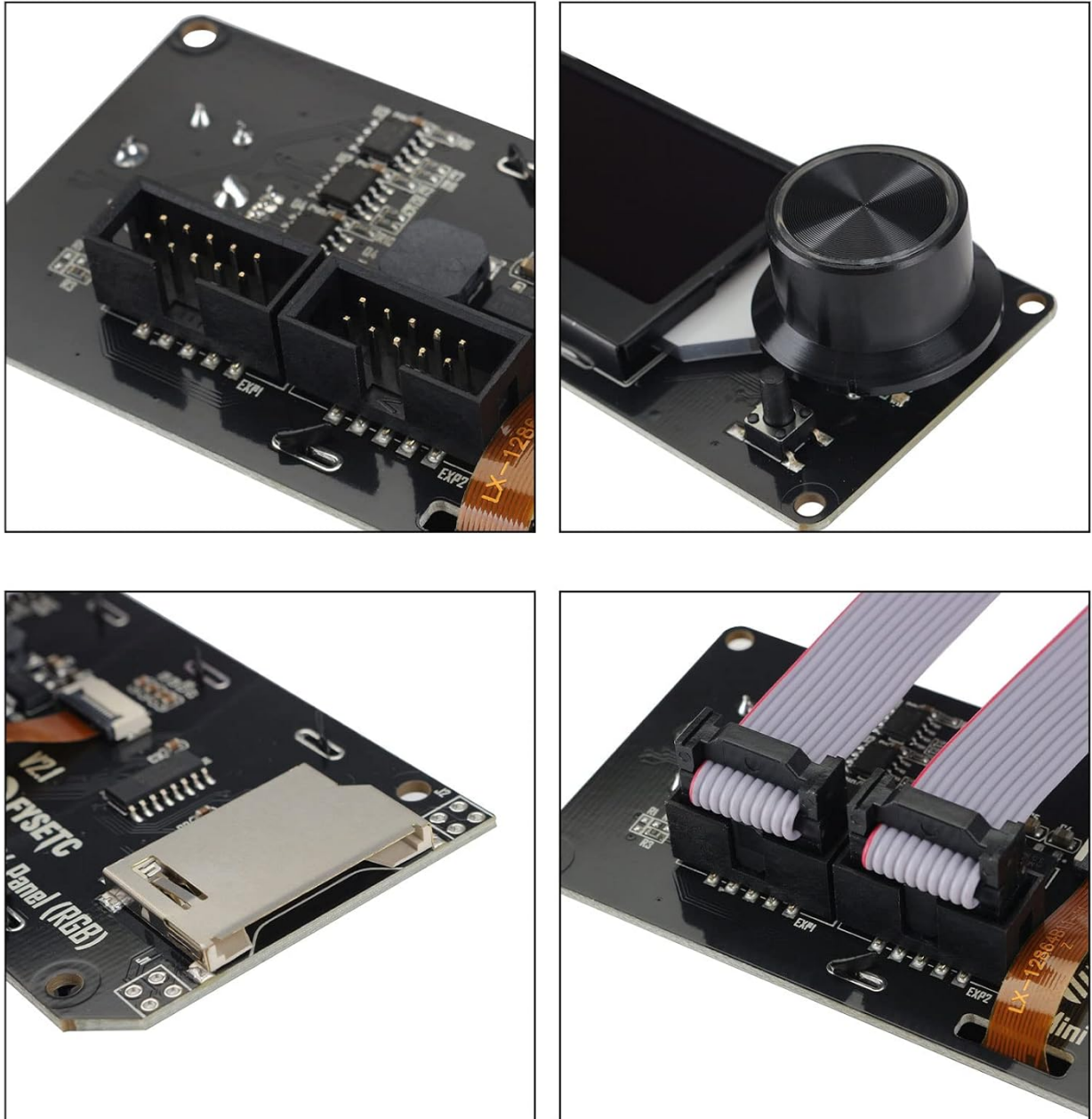


Image 4.5: Detailed pin definitions for EXP1 and EXP2 on the Mini 12864.

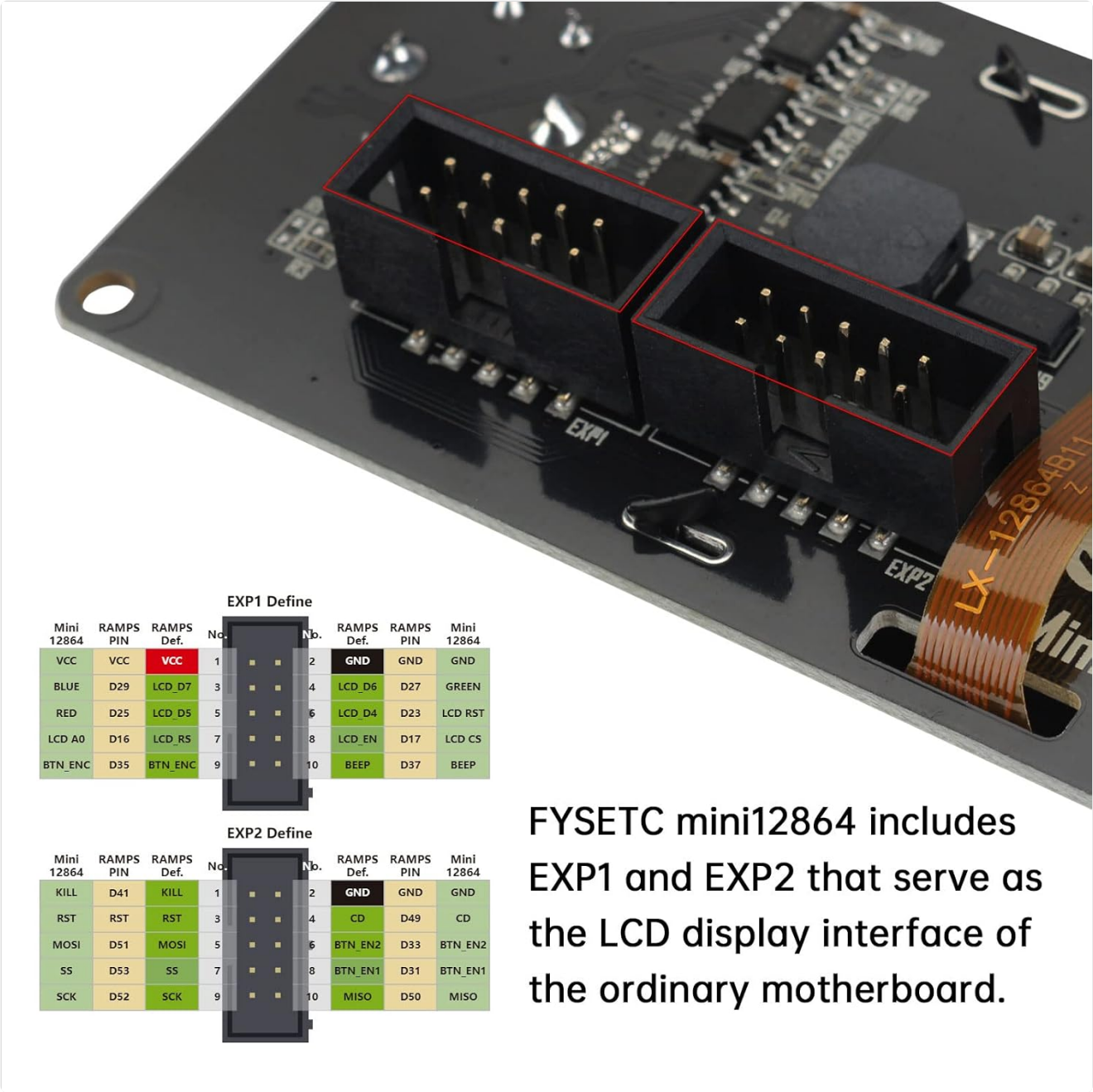
5. OPERATION

The FYSETC Mini 12864 display provides a user interface primarily through its 2.4-inch LCD screen and rotary encoder.

- **Rotary Encoder:** Rotate the knob to navigate through menus and adjust settings. Press the knob to select an option or confirm a setting.
- **SD Card:** Insert an SD card into the designated slot to access files for offline printing. The display will show progress and status during printing.
- **RGB Backlight:** The RGB LEDs around the encoder and the display backlight are configurable via software, allowing for personalized visual feedback.

6. CONFIGURATION AND FIRMWARE

The display uses the Sitronix ST7567 driver. For detailed configuration instructions and firmware integration, refer to



FYSETC mini12864 includes EXP1 and EXP2 that serve as the LCD display interface of the ordinary motherboard.

Image 6.1: Screenshot of the FYSETC Wiki, a resource for detailed information and configuration.

The FYSETC Wiki provides comprehensive guides on:

- Firmware configuration steps (e.g., for Marlin).
- Pin definitions and wiring diagrams.
- Using libraries like u8g8 for Arduino projects.

For the most up-to-date information and support, please visit the FYSETC Wiki at wiki.fysetc.com and search for "Mini12864_Panel".

7. SPECIFICATIONS

Attribute	Value
Display Type	Graphic LCD

Resolution	128x64 pixels
Display Area	2.4 inches
Screen Dimensions (L x W)	104.9 x 47 mm (4.1 x 1.8 inches)
Driver IC	Sitronix ST7567
Backlight	RGB LED (WS2811 controlled)
Interface	SPI, EXP1 & EXP2
SD Card Slot	Vertical or Side (optional module)
Cable Length	Approximately 30 cm (11.8 inches)
Package Dimensions	5.87 x 4.02 x 1.46 inches
Weight	3.53 ounces

8. TROUBLESHOOTING

- **Display Not Lighting Up or Showing Garbled Text:**

- Verify all cable connections are secure and correctly oriented. If using a non-FYSETC mainboard, try reversing the cable plugs (refer to Section 4.2).
- Ensure the display is receiving power.
- Check your firmware configuration to ensure the correct display driver (ST7567) and pin assignments are set.

- **SD Card Not Detected or Slow Transfers:**

- Ensure the SD card is properly inserted into the slot.
- Try a different SD card. Some cards may have compatibility issues or slower read/write speeds.
- Verify firmware support for the SD card reader.

- **Buttons or Rotary Encoder Not Responding:**

- Check the physical connection of the display to the mainboard.
- Review firmware configuration for encoder and button pin assignments.
- Refer to the important notice regarding RST (R3) and KILL (R4) resistors in Section 4.3 to prevent potential short circuits.

- **RGB LEDs Not Functioning Correctly:**

- Ensure the WS2811 control in your firmware is correctly configured for the RGB LEDs.
- Check power supply to the display.

For further assistance, consult the FYSETC Wiki or contact FYSETC customer support.

9. WARRANTY AND SUPPORT

For information regarding product warranty, returns, or technical support, please refer to the purchase platform or contact FYSETC directly through their official channels. Detailed technical documentation and community support

can often be found on the FYSETC Wiki (wiki.fysetc.com) and their GitHub repositories.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question