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waveshare 5.5inch HDMI AMOLED

Waveshare 5.5-inch Capacitive Touch AMOLED Display User Manual

Model: 5.5inch HDMI AMOLED

1. Introduction

This manual provides detailed instructions for the setup, operation, and maintenance of your Waveshare 5.5-inch Capacitive Touch AMOLED Display. This high-resolution display features a 1080x1920 pixel AMOLED panel with 5-point capacitive touch control, protected by a toughened glass panel. It is designed for use with Raspberry Pi 4B and can also function as a general computer monitor.

2. Package Contents

Please verify that all items listed below are included in your package. If any components are missing or damaged, please contact customer support.

Figure 2.1: Included components of the Waveshare 5.5-inch AMOLED Display kit.

- 5.5-inch HDMI AMOLED Display
- Protective Case (A)
- Cooling Fan
- HDMI Adapter
- USB Adapter
- Screw Pack (various sizes for assembly)

3. Product Features and Specifications

The Waveshare 5.5-inch AMOLED Display offers advanced features for a superior visual and interactive experience.

Figure 3.1: Overview of display features.

Technical Specifications:

- **Screen Size:** 5.5 inches
- **Resolution:** 1080x1920 pixels (H×V), portrait by default
- **Display Panel:** AMOLED
- **Display Interface:** HDMI
- **Touch Type:** 5-point Capacitive Touch
- **Touch Panel:** Toughened Glass, up to 6H hardness
- **Viewing Angle:** 170°
- **Audio Output:** 3.5mm audio jack, supports HDMI audio output
- **Power Input:** 5 Volts
- **Item Weight:** 13.5 ounces
- **Package Dimensions:** 9.17 x 6.57 x 2.83 inches

4. Setup and Installation

4.1 System Compatibility

The display is compatible with various operating systems, primarily for Raspberry Pi and as a secondary monitor for Windows systems.

Figure 4.1: Supported devices and operating systems.

- **When used with Raspberry Pi:** Supports Raspberry Pi OS, Ubuntu, Kali, and Retropie. For Raspberry Pi OS, 5-point touch is supported. For Ubuntu/Kali, single-point touch is supported. All are driver-free.
- **When used as a computer monitor:** Supports Windows 11/10/8.1/8/7.
- **Important Note:** This display is specifically designed for use with **Raspberry Pi 4B only**.

4.2 Connection Examples

Follow these steps to connect the display to your Raspberry Pi 4B.

Figure 4.2: Connection to Raspberry Pi 4B.

1. Assemble the protective case around the display and Raspberry Pi 4B, ensuring the cooling fan is properly installed.
2. Connect the HDMI adapter from the display to the HDMI port on the Raspberry Pi 4B.
3. Connect the USB adapter from the display's USB port to a USB port on the Raspberry Pi 4B. This provides power to the display and enables touch functionality.
4. Ensure a stable 5V/3A power supply is connected to the Raspberry Pi.

> **Caution:** The glass panel of the AMOLED display is fragile without its enclosure. Exercise extreme care when handling. Always hold the Printed Circuit Board Assembly (PCBA) when plugging or unplugging HDMI and USB cables to prevent undue pressure on the glass panel.

5. Operating Instructions

5.1 Display Orientation

The display's native resolution is 1080x1920, which means it operates in portrait mode by default. To change the display orientation to landscape, you will need to adjust the software configuration on your Raspberry Pi or connected computer. Refer to the operating system's display settings for specific instructions.

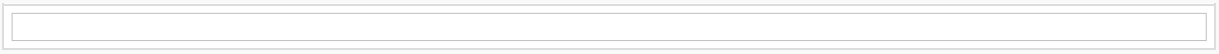


Figure 5.1: Display viewing angles.

5.2 Touch Control

The display features a 5-point capacitive touch screen, allowing for multi-touch gestures. The number of supported touch points may vary depending on the operating system used.

Figure 5.2: Demonstrating 5-point touch control.

6. Appearance and Dimensions

Understanding the physical layout and dimensions of the display is important for integration into projects.

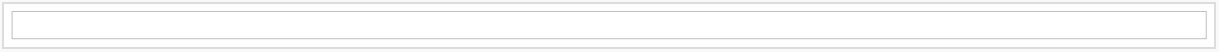


Figure 6.1: Physical dimensions and component layout.

- **Overall Dimensions:** Approximately 144.26mm (width) x 78.66mm (height) x 33.30mm (depth, including case).
- **Key Components:** Includes a cooling fan vent for heat dissipation and clearly marked Raspberry Pi connectors for easy integration.

7. Troubleshooting

If you encounter issues with your display, consider the following general troubleshooting steps:

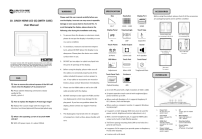
- **No Display:** Ensure all HDMI and USB connections are secure. Verify the Raspberry Pi is powered on and outputting video. Check the display's power connection.
- **No Touch Functionality:** Confirm the USB connection for touch is properly established. Ensure your operating system drivers are correctly configured (though most are driver-free, specific OS versions might require adjustments).
- **Incorrect Display Orientation:** Adjust the display settings within your operating system's configuration.
- **Flickering or Distorted Image:** Check HDMI cable integrity. Ensure the power supply to the Raspberry Pi is sufficient and stable.

8. Support

For further technical support, detailed documentation, or warranty information, please visit the official Waveshare website or contact their customer service department. Online user manuals and additional resources are typically available on the manufacturer's product page.

Waveshare Official Website: www.waveshare.com

Related Documents - 5.5inch HDMI AMOLED

	Waveshare 10.1-inch HDMI LCD (G) User Manual: Setup, Specs, and Connections Explore the Waveshare 10.1-inch HDMI LCD (G) with Case. This user manual covers essential specifications, safety warnings, connection guides for Raspberry Pi, Jetson Nano, and PCs, and answers common questions.
	Waveshare 10.4HP-CAPQLED: 10.4-inch QLED Touchscreen Display (1600x720) Discover the Waveshare 10.4HP-CAPQLED, a versatile 10.4-inch QLED capacitive touchscreen with 1600x720 resolution. This display is compatible with Raspberry Pi, Jetson Nano, and PCs, offering excellent visual performance and multi-touch capabilities via HDMI and USB.

[Waveshare 7-inch HDMI LCD (C) User Manual: Setup and Usage Guide]

This user manual guides users through the setup and operation of the Waveshare 7-inch HDMI LCD (C) display, detailing its specifications, connection methods for Raspberry Pi and PCs, and essential usage tips for optimal performance.

4inch DSI LCD

Introduction

Features

Working with Raspberry Pi

Hardware connection

Software settings

Method 1: Install Manually

Method 2: Program Pre-Install Image

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Method 1: Graphical Interface Rotation

Method 2: Rotation Display In Lite Version

Touch To Rotate

Backlight Control

Method 1: Graphical Interface Dimming

Method 2: Lite Version Dimming Command

Note

Resources

Software

Pre-installed images

FAQ

Anti-Piracy

Support

[Waveshare 4inch DSI LCD Display for Raspberry Pi: Setup and Guide]

Detailed guide for the Waveshare 4inch DSI LCD display, covering features, hardware connection, software installation, screen rotation, backlight control, and troubleshooting for Raspberry Pi.

	[Waveshare 4.3inch DSI LCD: Capacitive Touch Display for Raspberry Pi] Explore the Waveshare 4.3inch DSI LCD, an 800x480 IPS capacitive touch display designed for Raspberry Pi. Features MIPI DSI interface, driver-free setup, and software-controlled backlight.
	[Waveshare 8DP-CAPLCD 8-inch HD Capacitive Touch Screen IPS Display] Detailed specifications and user guide for the Waveshare 8DP-CAPLCD, an 8-inch HD capacitive touch screen IPS display with 1280x800 resolution, compatible with Raspberry Pi and Windows devices. Features include optical bonding, multiple input/output ports, and software calibration instructions.

8DP-CAPLCD

Overview

Introduction

8DP-CAPLCD is a mini universal capacitive touch screen with HD resolution and is compatible with most standard HDMI devices.
Its 8 is thin and light with toughened glass capacitive touch panel, 8DP-CAPLCD is excellent in display and has a smooth multi-touch effect.
The baseboard comes with fixed nuts, which enables users to integrate it into an all-in-one project more conveniently.

Features

- 8 inch IPS screen with a hardware resolution of 1280 x 800.
- 10 point capacitive touch, with tempered glass panel, hardness up to 9H.
- Adopting optical bonding touch technology, the display effect is better.
- Supports Raspberry Pi OS / Ubuntu / Kali and Retropie when used with Raspberry Pi.
- Supports Windows 11 / 10 / 8.1 / 8 / 7 when used as a computer monitor.
- Support multi-language OSD menu (can be used for power control, adjusting brightness/contrast, etc.)
- Support HDMI audio output, onboard 3.5mm headphone jack, and HDMI speaker jack.

Parameters

Item	Description	Unit
Model	8DP-CAPLCD	/
Size	8.0	Inch
Viewing Angle	178	Deg
Resolution	1280 x 800	Pixels
Touch screen dimensions	194.68 (H) × 119.39 (V) × 3 (D)	mm
Display dimensions	174.66 (H) × 104.26 (V) × 3.4 (D)	mm
Display area	169.64 (H) × 172.22 (V)	mm
Pixel pitch	0.13455 (H) × 0.13455 (V)	mm
Color gamut	72%	NTSC
Maximum brightness	400	cd/m²
Contrast	1200:1	/
Backlight adjustment	OSD menu dimming	/
Refresh Rate	60	Hz
Display port	Standard HDMI port	/
Power port	5V Type-C power supply	/
Power Consumption	6	Watt
Weight	426	g

Electrical Specifications

Parameter	Minimum Value	Standard	Maximum Value	Unit	Note
Input Voltage	4.75	5.00	5.25	V	Note 1
Input Current	750	890	1780	mA	Note 2
Operating Temperature	0	25	60	°C	Note 4
Storage Temperature	-10	25	70	°C	Note 4

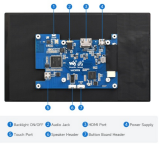
+Note 1: Input voltage exceeding the maximum value or improper operation may cause permanent damage to the device.
+Note 2: The input current must be ≥750mA, otherwise, it will cause startup failure or abnormal display, and it may cause permanent damage to the device if it is in an abnormal state for a long time.
+Note 3: Please do not store the display in a high-temperature and high-humidity environment for a long time. The display must work within the limited value range, otherwise, the display may be damaged.

EDID Sequence Parameter

If the system of the main control board can automatically identify the EDID for display, there is no need to additionally set related sequence parameters.
Otherwise, you can refer to the following EDID settings:

Pixel Clock	H Addressable	H Blanking	H Addressable	H Blanking	H Front Porch	H Sync Width	V Front Porch	V Sync Width	H Image Size	V Image Size	H Border	V Border
71Mhz	1280	212	800	50	408	40	28	4	194	105	0	0

Interface Introduction



User Guide

Working With Raspberry Pi

Hardware Connection

1. Connect the Touch port to the USB port of the Raspberry Pi.
2. Connect the HDMI port to the HDMI port of the Raspberry Pi.

Software Setting

```
Support Raspberry Pi OS(Bullseye/32), and Retropie system.
Please do not use it for any illegal purposes, and do not use it in the countries banned by Minecraft, the restriction will be wrong and it will affect your experience.
```

1. Please download the latest image in the official Raspberry Pi website.
2. Download the compressed file on the PC and unzip it to get the ".img" file.
3. Connect the TF card to the PC and use SDFormatter to format the TF card.
4. Open Win32DiskImager.exe, select the system image prepared in the first step, and click "write" to program the system image.
5. After programming, you can open the "config.txt" file in the TF card root directory. Add the following code at the end of "config.txt", save it and then safely remove the TF card.

```
hdmi_group=2
hdmi_mode=87
hdmi_cvt 1280 800 60 6 0 0 0
hdmi_drive=1
```

6. Insert the TF card into the Raspberry Pi, power on the Raspberry Pi, and wait for a few seconds for a normal display.

Linux Software Brightness Adjustment

Using the DDCCI program, here is an example of the ddcutil tool.

```
ddcutil detect --verbose
ddcutil getvcp 10 --display 2
ddcutil setvcp 10 50 --display 2
ddcutil getvcp 10 --display 2
#ddcutil setvcp 10 brightness_value --display display_number
#brightness_value: Brightness, ranges: should be modified to 0-100
#display_number: Display ID, Please
```

For more information about ddcutil function commands, please click here.

Working With PC

Support Windows 11/10/8.1/8/7

How To Use

1. Connect the Touch port of the LCD to the USB port of the PC, and Windows will automatically identify the touch function.
2. Connect the HDMI port of the LCD to the HDMI port of the PC, and Windows will automatically identify the display function.

Note:

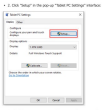
- Some PCs do not support the plug-and-play function of the HDMI device, but it can be used normally after restarting the system.
- If the power supply of the USB port is insufficient, the LCD will flicker. After connecting an external 5V 1A power adapter to the Power interface of the LCD, it can be operated normally.

Windows Touch Calibration

Take Windows 10 as an example:

1. Enter the Windows settings of the system, type in the search bar and click "Calibrate the screen for pen or touch input" (as shown in the picture below):

2. Click "Setup" in the pop-up "Tablet PC Settings" interface:



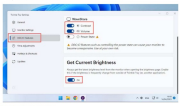
3. The following text prompt will appear on the screen. Please tap the touch screen with your finger, and the computer will recognize it as a touch screen.

Finish: If the touch screen is blank, press the "Enter" key, and the last prompt will switch to the touch screen. (The screen which displays the last prompt will be used as a touch screen!)

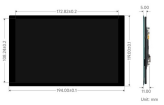
Windows Software Brightness Adjustment

1. Download and install DDCCI applications, such as the open-source Twinkle Tray®.
2. Open the software dimming tool, it will recognize the Wavshare monitor and adjust the monitor backlight brightness by sliding the slider.

3. You can also enter the DDCCI application settings screen to enable contrast adjustment, volume adjustment, and other functions.



Outline Dimensions



Resources

3D Drawing

- 8DP-CAPLCD 3D Drawing#

Support

If you require technical support, please go to the Support# page and open a ticket.