CUQI RS3254

CUQI 3.5-inch TFT Touch Screen Kit for Raspberry Pi 4 User Manual

Model: RS3254

1. Introduction

This manual provides detailed instructions for the assembly, setup, and operation of your CUQI 3.5-inch TFT Touch Screen Kit for Raspberry Pi 4. This kit enhances your Raspberry Pi 4 experience with a compact display, protective case, and efficient cooling solutions.

2. Package Contents

Please verify that all items listed below are included in your package:

- 3.5-inch TFT Touch Screen Display
- Acrylic Case for Raspberry Pi 4
- Mini Cooling Fan
- Heatsink Set (Copper and Aluminum)
- Touch Pen
- Copper Pillars and Screws for assembly
- Rubber Feet

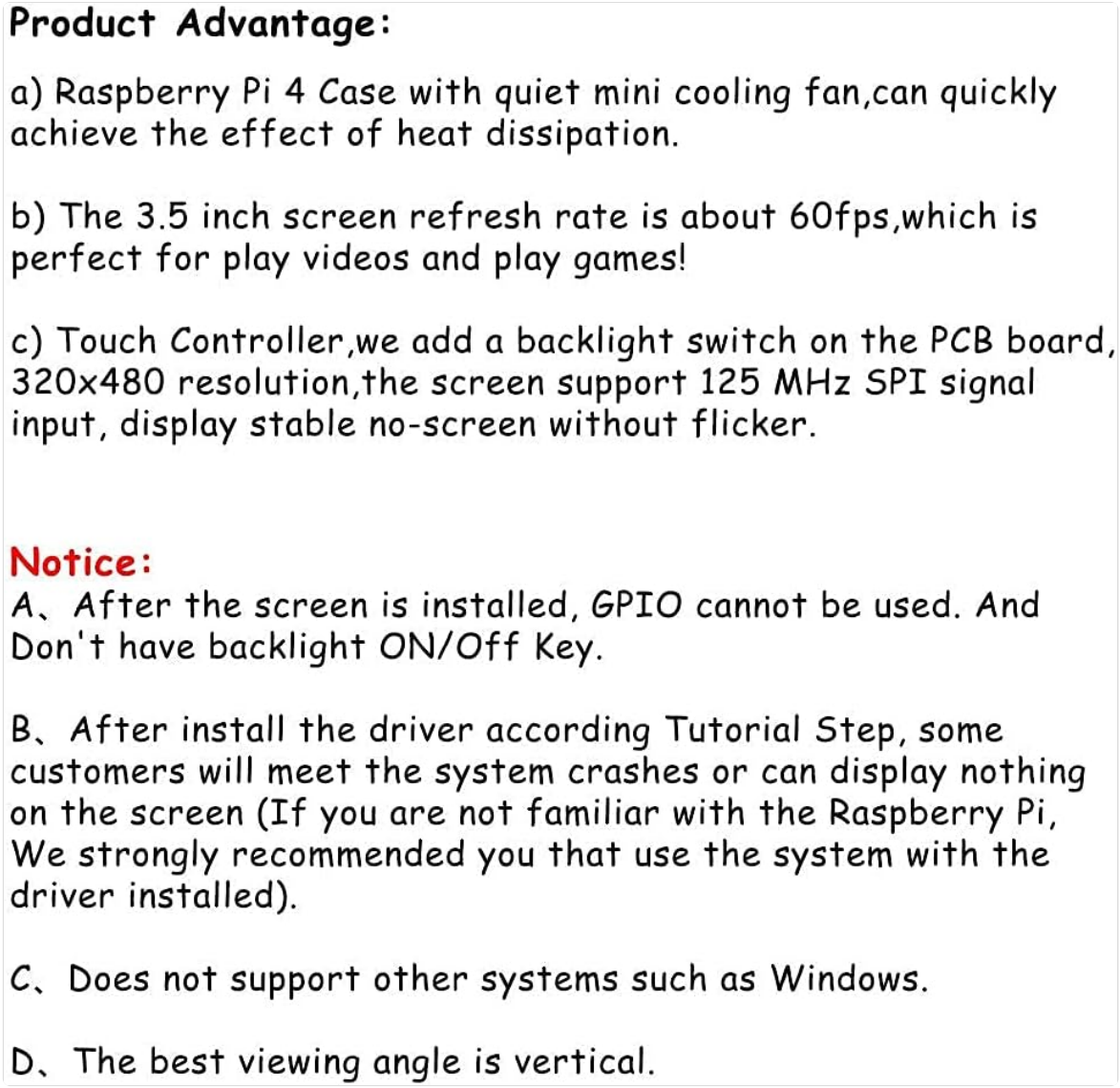

Image: Components included in the CUQI 3.5-inch TFT Touch Screen Kit.

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3. Product Features

- **3.5-inch Touch Display:** Compatible with Raspberry Pi 4, offering improved image performance and support for Raspbian Buster. Features a power pin for fan connection.
- **Efficient Cooling:** Includes a mini cooling fan and heatsink set for optimal heat dissipation, ensuring stable Raspberry Pi operation.
- **High Resolution:** 480x320 display resolution with 125MHz SPI signal input for stable, flicker-free visuals. Achieves approximately 60FPS refresh rate, suitable for video playback and gaming.
- **Protective Case:** Split design for easy installation and good ventilation, with copper balance columns to stabilize the screen. (Raspberry Pi not included).

Image: Assembled CUQI 3.5-inch TFT Touch Screen Kit for Raspberry Pi 4.

Image: Visual guide showing the assembly process of the kit components.

4. Setup Instructions

4.1. Hardware Assembly

Follow these steps to assemble the screen, cooling fan, heatsinks, and case with your Raspberry Pi 4. Ensure the Raspberry Pi is powered off before beginning assembly.

1. Install the heatsinks onto the appropriate chips on your Raspberry Pi board.
2. Carefully align and connect the 3.5-inch display to the GPIO pins of the Raspberry Pi.
3. Secure the display to the Raspberry Pi using the provided screws and copper pillars to ensure stability.
4. Attach the mini cooling fan to the designated pins on the display board.
5. Place the assembled Raspberry Pi and display into the bottom part of the acrylic case.
6. Secure the top part of the case.
7. Apply the rubber feet to the bottom of the case to prevent slipping.

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Video: Installation guide for the 3.5-inch touch screen and case for Raspberry Pi.

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Video: Detailed assembly instructions for the 3.5-inch touch screen with case for Raspberry Pi 4.

4.2. Software Installation (Driver)

To enable the touch screen functionality, you must install the appropriate drivers. This process typically involves preparing an SD card with a compatible operating system (e.g., Raspbian Buster) and then running specific commands on your Raspberry Pi.

1. **Prepare SD Card:** Format your MicroSD card using an SD card formatter tool.
2. **Burn OS Image:** Use a disk imager tool (e.g., Win32DiskImager or BalenaEtcher) to burn a compatible Raspbian Buster image (with pre-installed drivers if available, or a standard image) to the SD card.
3. **Initial Setup:** Insert the prepared SD card into your Raspberry Pi 4. Connect the Raspberry Pi to a standard HDMI monitor, keyboard, and mouse. Connect to the internet.
4. **Install Drivers (if not pre-installed):**
    - Open a terminal window on your Raspberry Pi.
    - Execute the following commands to download and install the display drivers. (*Note: Specific commands may vary; refer to the product's official support page or included documentation for the most up-to-date instructions. Example commands are provided in the video below.*)
    - After installation, reboot your Raspberry Pi.
5. **Connect 3.5-inch Screen:** After rebooting and ensuring the Raspberry Pi is powered off, connect the 3.5-inch screen to the GPIO pins. Power on the Raspberry Pi, and the screen should now display the interface.

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Video: Guide on installing the 3.5-inch screen drivers for Raspberry Pi 4.

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5. Operating Instructions

5.1. Display Usage

Once the drivers are successfully installed and the screen is connected, your Raspberry Pi's graphical interface will be displayed on the 3.5-inch screen. The screen supports resistive touch input, which is best used with the provided stylus for precision.

- **Touch Input:** Use the included touch pen for accurate navigation and interaction with the graphical user interface. Finger touch may be less responsive.
- **Resolution:** The display operates at 480x320 resolution. Adjust your Raspberry Pi's display settings if necessary to optimize the interface for this resolution.
- **Refresh Rate:** The 60FPS refresh rate ensures smooth video playback and responsive gaming experiences on the small display.

5.2. Cooling System

The mini cooling fan and heatsinks are designed to maintain optimal operating temperatures for your Raspberry Pi, especially during intensive tasks. The fan is connected via the display board's power pins.

- Ensure the fan is properly connected to the display board's power pins.

- Monitor Raspberry Pi temperatures using system monitoring tools to confirm effective cooling.

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6. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the screen and case. Avoid abrasive materials or harsh chemicals.
- **Dust Removal:** Periodically check the cooling fan and heatsinks for dust accumulation. Use compressed air or a soft brush to gently remove dust to maintain optimal cooling performance.
- **Storage:** When not in use for extended periods, store the kit in a cool, dry place away from direct sunlight and extreme temperatures.

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7. Troubleshooting

Problem	Possible Cause / Solution
Screen does not display anything after connection.	• Ensure the display is correctly seated on the Raspberry Pi's GPIO pins. • Verify that the display drivers have been correctly installed for your operating system. If you are using a standard Raspbian image, driver installation is required. • Confirm that the Raspberry Pi is powered on and functioning. • If using an official Raspbian system, ensure you have followed the driver installation steps precisely. Consider using a pre-installed system image if available and you are unfamiliar with manual driver installation.
Touch input is unresponsive or inaccurate.	• This is a resistive touch screen; use the provided stylus for optimal accuracy. Finger touch may not be precise. • Ensure touch screen calibration has been performed if necessary (refer to driver installation instructions for calibration tools).
Screen flickers or displays unstable images.	• Verify the SPI signal input is stable. • Ensure the power supply to the Raspberry Pi is sufficient and stable.
Raspberry Pi overheats.	• Check that the mini cooling fan is properly connected and spinning. • Ensure heatsinks are correctly applied to the Raspberry Pi's chips. • Verify that the case ventilation is not obstructed.

Problem	Possible Cause / Solution
Cannot use GPIO pins after screen installation.	The screen utilizes the GPIO pins for connection, which may limit their availability for other uses. This is a design characteristic.
Screen does not work with other operating systems (e.g., Windows).	This display is primarily designed for Raspberry Pi operating systems like Raspbian, Kali, Ubuntu, and RetroPie. Other systems may not be supported.
Display resolution issues or inability to use HDMI.	• The native resolution is 480x320. Larger windows may require adjustment. • After driver installation, the HDMI port might be disabled or require configuration changes in the `Raspi.config` file to work alongside the 3.5-inch screen. • Note that drivers are often specific to older OS versions like Raspbian Buster (2019). Newer OS versions (e.g., Bookworm) may not be compatible with current drivers.

8. Specifications

Feature	Detail
Brand	CUQI
Model Number	RS3254
Screen Size	3.5 Inches
Resolution	480x320 Pixels
Aspect Ratio	1.60:1
Screen Surface Description	Glossy
Touch Interface	SPI (Resistive Touch)
Refresh Rate	Approximately 60FPS
Product Dimensions	0.35 x 0.2 x 0.12 inches
Item Weight	5.6 ounces

9. Warranty and Support

For warranty information, technical support, or further assistance, please refer to the product's official sales platform or contact CUQI customer service directly. Keep your purchase receipt for warranty claims.
Additional resources and driver downloads may be available on the manufacturer's website or the product listing page.