UeeKKoo ESP32-C6-LCD-1.9

UeeKKoo ESP32-C6 1.9inch LCD Display Development Board User Manual

Model: ESP32-C6-LCD-1.9

1. Introduction

This manual provides detailed instructions for the UeeKKoo ESP32-C6 1.9inch LCD Display Development Board. This board is designed for embedded system development, featuring a powerful ESP32-C6 chip with integrated Wi-Fi 6 and Bluetooth 5 (LE) connectivity, a vibrant 1.9-inch LCD display, and various peripheral interfaces for versatile applications.

Image 1.1: The ESP32-C6 1.9inch LCD Display Development Board, showcasing the integrated display and compact form factor.

2. Key Features

The ESP32-C6 1.9inch LCD Display Development Board offers a robust set of features for various embedded projects:

- **High-Performance Processor:** Equipped with a 32-bit RISC-V processor, clock speed up to 160 MHz.
- **Integrated Memory:** Built-in 512KB HP SRAM, 16KB LP SRAM, 320KB ROM, and 8MB Flash.
- **Wireless Connectivity:** Supports 2.4GHz Wi-Fi 6 (802.11 b/g/n) and Bluetooth 5 (LE) with an onboard antenna.
- **1.9-inch LCD Display:** 170 x 320 resolution, 262K color, suitable for GUI applications like LVGL.
- **6-Axis IMU:** Onboard QMI8658 (3-axis accelerometer and 3-axis gyroscope) for motion detection.
- **USB Type-C Port:** For power supply, program downloading, and debugging.
- **Battery Support:** Onboard 3.7V MX1.25 Lithium battery recharge/discharge header.
- **TF Card Slot:** For external storage of pictures or files.
- **Pico Header Compatibility:** Multiple peripheral interfaces for strong compatibility and expandability.

Features

This product adopts ESP32-C6FH8 chip with 2.4GHz Wi-Fi 6 and Bluetooth BLE 5 support, integrates 8MB Flash. Onboard 1.9inch LCD display which can smoothly run GUI programs such as LVGL. Onboard QMI8658 6-axis IMU, TF card slot, Lithium battery header, etc. Compatible with Pico header, offering strong compatibility and expandability. It is suitable for the quick development of the HMI and other ESP32-C6 applications.

•Equipped with a high-performance 32-bit RISC-V processor with clock speed up to 160 MHz

•Supports 2.4GHz Wi-Fi 6 (802.11 b/g/n) and Bluetooth 5 (LE), with an onboard antenna

•Built-in 512KB HP SRAM, 16KB LP SRAM, and 320KB ROM, integrates 8MB Flash

•Onboard 1.9inch LCD display, 170 × 320 resolution, 262K color, delivering clear and vivid color image display

•Onboard QMI8658 6-axis IMU (3-axis accelerometer and 3-axis gyroscope) for detecting motion gestures, counting steps, etc.

•Onboard USB Type-C port for power supply, program downloading, and debugging, more convenient for development use

•Onboard 3.7V MX1.25 Lithium battery recharge/discharge header

•Onboard TF card slot for external TF card storage of pictures or files

•Compatible with Pico header, onboard multiple peripheral interfaces, offering strong compatibility and expandability

LCD Parameters			
DISPLAY PANEL	LCD	**DISPLAY SIZE**	1.9 inch
RESOLUTION	170×320	**DISPLAY COLORS**	262K
BRIGHTNESS	500 cd/㎡	**CONTRAST RATIO**	900:01:00
COMMUNICATION	SPI	**DRIVER IC**	ST7789V2
TOUCH	Supported (Touch Version Only)	**TOUCH IC**	CST816 (Touch Version Only)

Image 2.1: Overview of the ESP32-C6 LCD Development Board, highlighting key features and available versions (with/without touch control).

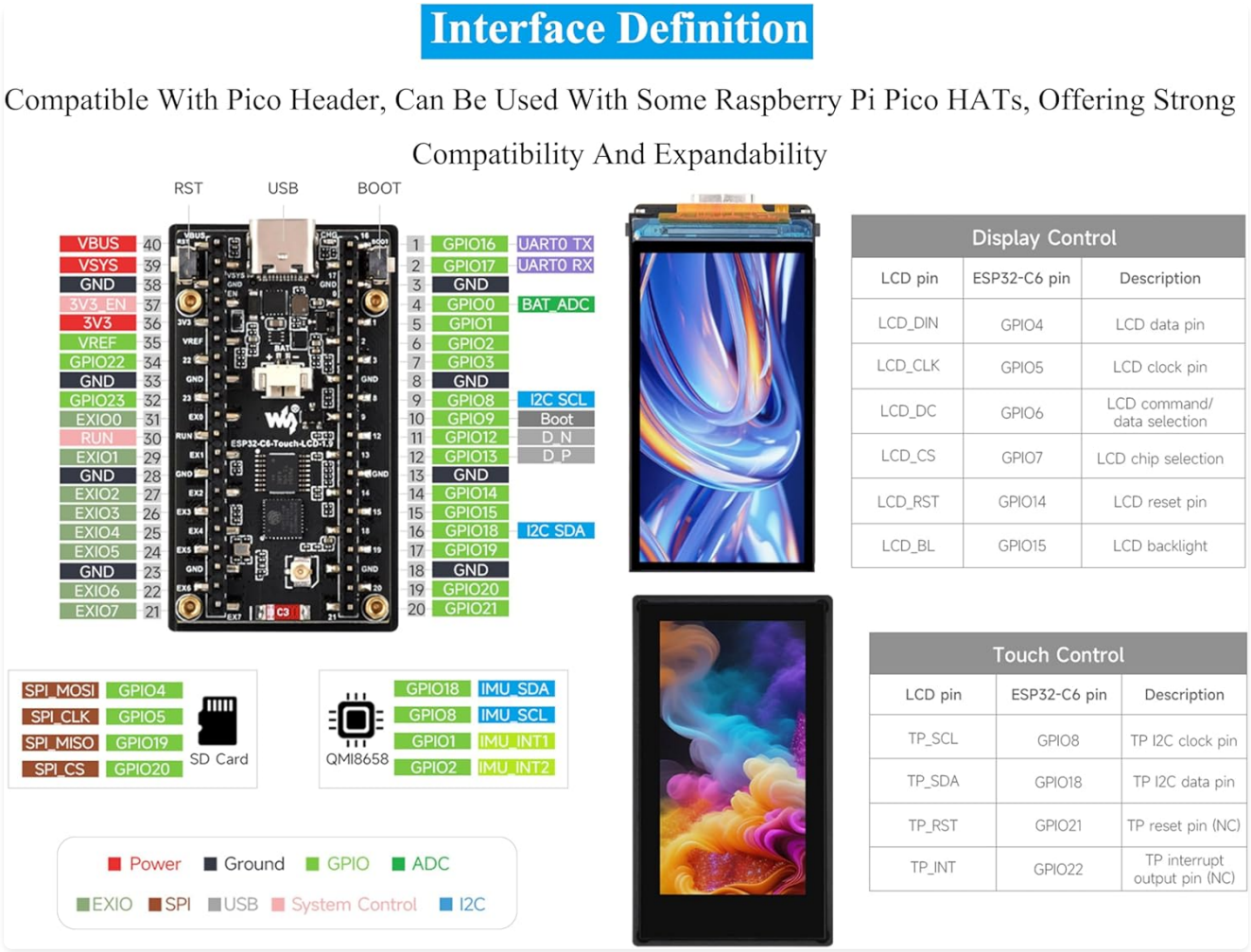


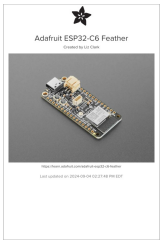
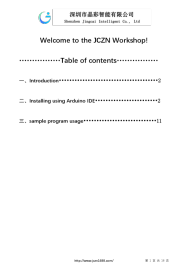
Image 2.2: A detailed list of features and LCD display parameters for the development board.

3. Setup Guide

Follow these steps to set up your ESP32-C6 1.9inch LCD Display Development Board:

1. **Unpack the Board:** Carefully remove the ESP32-C6-LCD-1.9 board from its packaging.
2. **Power Connection:** Connect the board to your computer using a standard USB Type-C cable. The USB Type-C port provides power and enables communication for programming and debugging.
3. **Driver Installation (if necessary):** Depending on your operating system, you may need to install a USB-to-serial driver. Refer to the official ESP-IDF documentation or the provided resources link for specific driver information.
4. **Development Environment Setup:** Install your preferred development environment, such as ESP-IDF or Arduino IDE. The board is compatible with these platforms.
5. **First Program Upload:** Follow the instructions for your chosen development environment to upload a basic test program (e.g., a

Related Documents - ESP32-C6-LCD-1.9

	[ESP32-S3 DevKits Documentation] Comprehensive documentation for Espressif's ESP32-S3 series development boards, including the ESP32-S3-DevKitC-1, ESP32-S3-DevKitM-1, ESP32-S3-USB-OTG, and ESP32-S3-LCD-EV-Board. This guide provides getting started instructions, hardware references, revision details, and related resources for developers.
	[Elecrow CrowPanel ESP32 Display User Manual] User manual for the Elecrow CrowPanel ESP32 HMI displays, detailing package contents, interface layouts, technical specifications, and safety instructions.
	[ESP32 Development Board Setup Guide for Arduino IDE] A comprehensive guide to setting up the ESP32 development environment within the Arduino IDE. Learn how to add board manager URLs, install ESP32 support, select the correct board and port, and enter download mode for ESP32-C3 modules.
	[Adafruit ESP32-C6 Feather: Your Guide to IoT Development] Explore the Adafruit ESP32-C6 Feather, a powerful development board featuring WiFi 6, Bluetooth 5, and 802.15.4 support. Learn about its features, pinouts, power management, and get started with CircuitPython and Arduino IDE for your IoT projects.
	[ESP32-S3 Development Boards Documentation | Espressif Systems] Comprehensive documentation for Espressif Systems' ESP32-S3 development boards, including DevKitC-1, DevKitM-1, USB-OTG, LCD-EV-Board, and USB-Bridge. Guides cover setup, hardware, and application development.
	[JCZN ESP32-S3 Display Module: Arduino IDE Setup and Usage Guide] A comprehensive guide for JCZN ESP32-S3 display modules, detailing Arduino IDE setup, ESP32 board installation, library management (Arduino_GFX, LVGL), and sample program implementation.