WT32-SC01

Datasheet

Version 1.0

Contents

1.Overview

WT32-SC01 is a development board for visual touch screen. The board is equipped with self-developed firmware of GUI platform, it supports graphical drag-and-drop programming to help users complete the development of customized control platform. The WT32-SC01 development board master uses the ESP32-WROVER-B module, the module is a general-purpose Wi-Fi+BT+BLE MCU module, which is equipped with 4MB SPI Flash and 8MB PSRAM. The WT32-SC01 development board can also develop and debug buttons, voice, camera and other functions through the extended interfaces on both sides, which greatly shortens the development cycle of users.

2.Board Size

The following picture is a schematic diagram of the size of the WT32-SC01 development board. The size of the board is 58mmx91mm. Four feet of the board are provided with positioning holes with a diameter of 4.05mm.

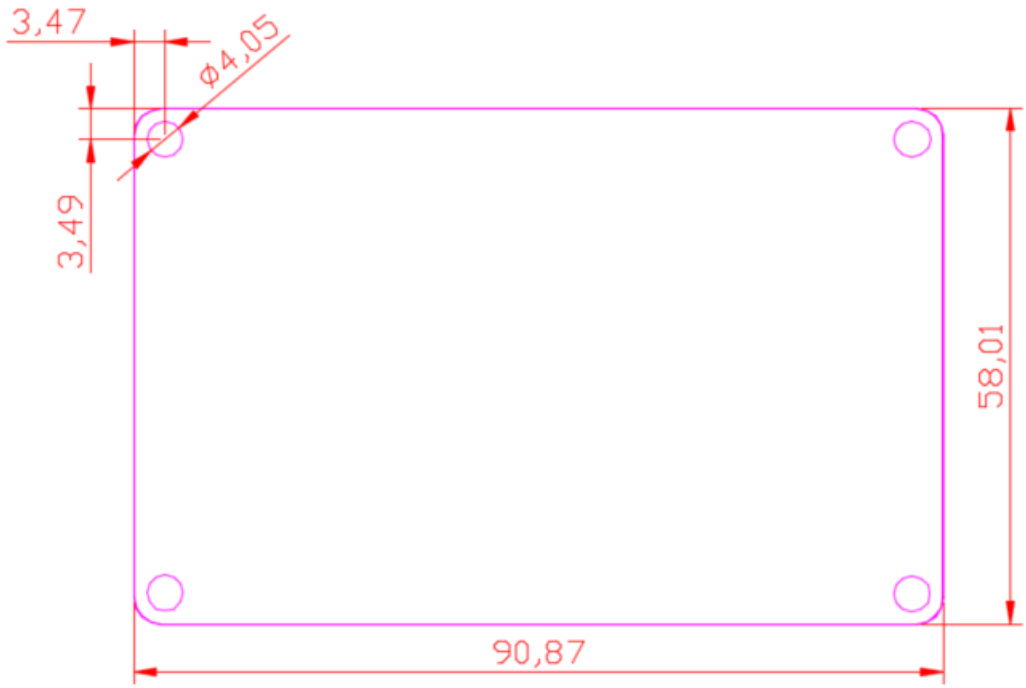

Figure 1: Schematic diagram of the size of the board

3.Hardware Resources

The following is the physical diagram of the development board, and the hardware resources of the development board are as follows:
Figure 2 is a physical view of the front of the development board, which contains a 3.5inch LCD screen with a resolution of 320x480 and a capacitive touchpad that supports two-point touch.
Figure 3 is a physical picture of the back of the development board, which contains the following hardware resources:

1.ESP32-WROVER-B Module

ESP32-WROVER-B is a Wi-Fi+BT+BLE MCU module for all kinds of applications. It has powerful functions and a wide range of applications. It can be used in low-power sensor networks and demanding applications. Such as voice coding, audio stream and MP3 decoding.

2.TP Interface

Capacitive touchpad interface, I2C interface, 0.5 spacing, 6 Pins.

3.LCM Display Interface

3.5 inch LCM display interface, SPI interface, 0.5 spacing, 24 pins. This SPI interface is connected to the hardware HSPI interface of ESP32 and runs at up to 80MHz.

4.Power Management

Two 3.3v LDOs, one to power the board itself and the other to power the external extension board. The power supply is separated to prevent the expansion board from interfering with the power supply of the ESP32, which ensures the stability of the operation of the ESP32.

5.Power Switch

Power on/off control for the whole development board including extension board interface.

6.RST Button

Touch the self-reset button to connect to the EN pin of the ESP32. This button can be used for the reset of the ESP32.

7.Type-C Interface

General USB-C interface (Type-C interface), This interface is used for power supply to the development board, UART communication and firmware download. The hardware of the download circuit realizes data flow control, so the firmware download supports the one-click automatic download.

8-9.Expansion Board Interface

The interface of external extension board can provide power supply, communication and control of external extension board, so as to realize functional expansion to meet various needs of users. The interfaces of 8 and 9 are connected by Pin to Pin, so the circuit connection of the expansion board between interface 8 and 9 is the same, which only satisfies the user's sense of experience of installing the expansion board in different directions. At the same time: when there is no conflict between the two extended versions of the IO, two expansion boards can be inserted at the same time to achieve the two expansion functions. Expansion board interface specification: 2.0 spacing, 2x20 Pins, can choose two side lay stick platoon mother installation. The interface definition is shown in figure 4-Extended Interface Definition Diagram.

10.Power Indicator

Power indicator, plug in the USB cable, turn on the 5 power switch and it will light up.

11.UART Communication Indicator

The TXD indicator and RXD indicator in the UART will flash when there is a data stream.

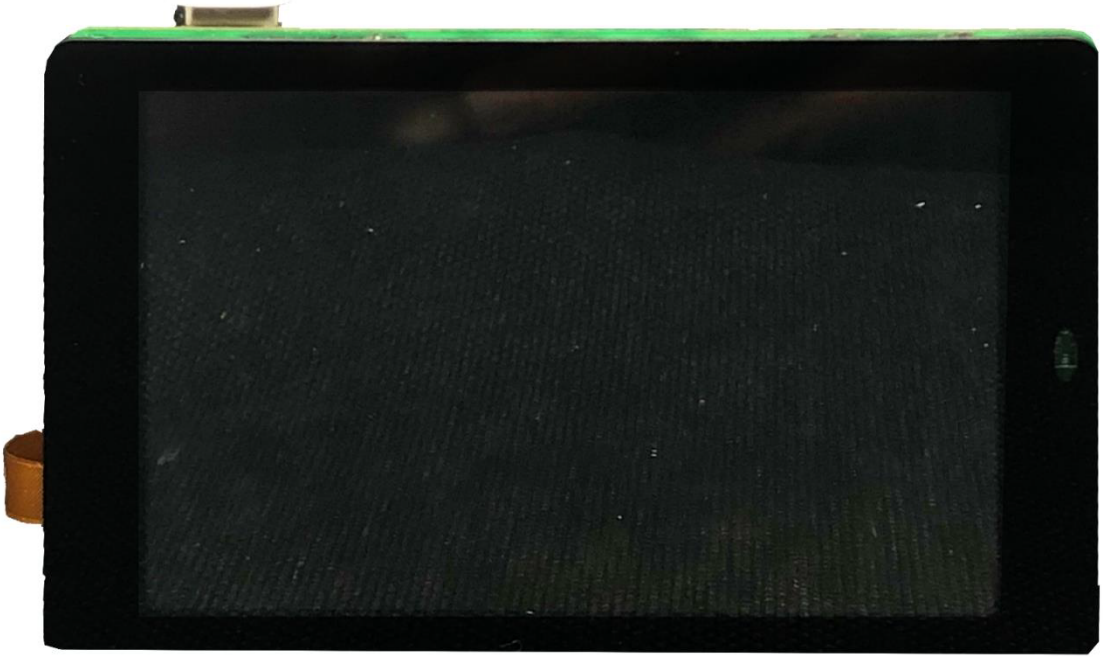

Figure 2: The Front of the Physical Drawing of the WT32-SC01

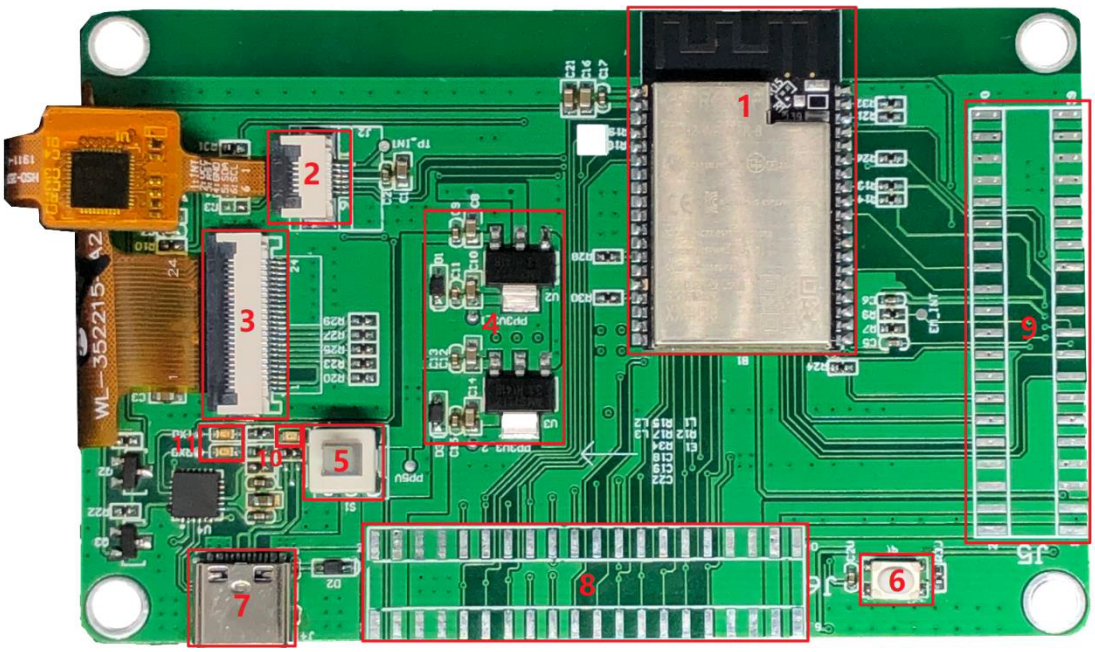

Figure 3: The Back of the Physical Drawing of the WT32-SC01

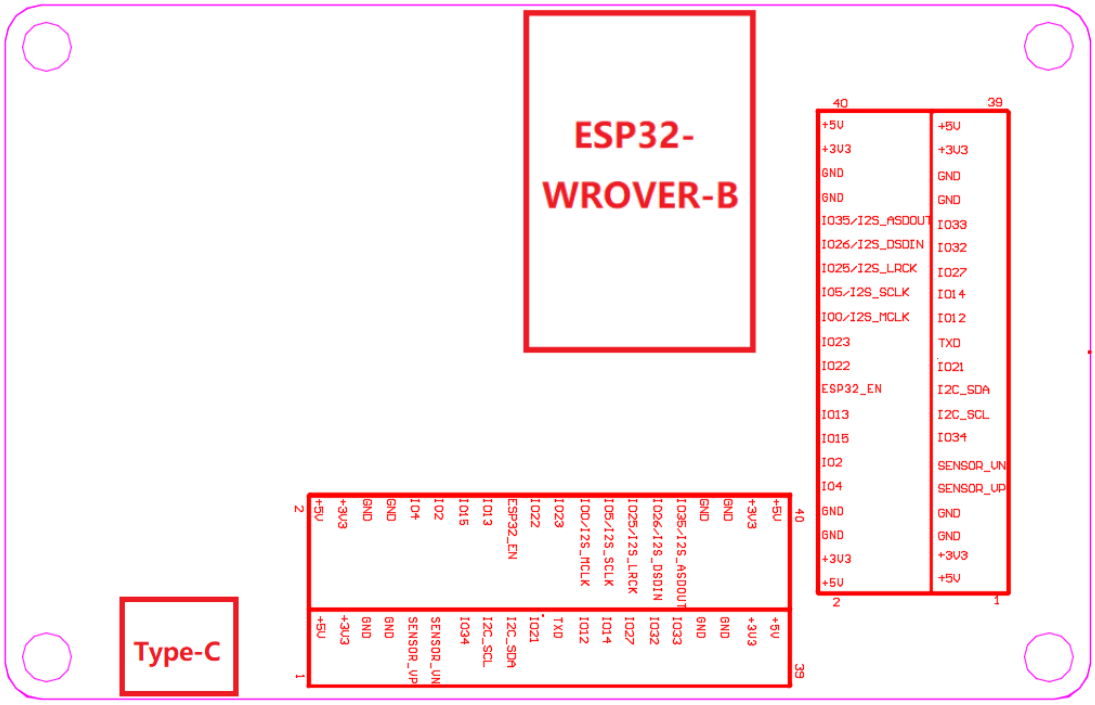

Figure 4: WT32-SC01 Interface Definition Diagram

4.Power Supply Instruction

1.Power Supply

This development board only supports USB 5V power supply, when no other expansion board is inserted, it is recommended that the input voltage 5V support current not less than 1A, and when other expansion boards are inserted, it is recommended that the input voltage 5V support current not less than 2A(Specifically, we should also refer to the actual power consumption of the expansion card.).

2.Note

Please first ensure that the FPC cable of the TP and LCM screens has been plugged into the corresponding FPC seat before powering up the development board, otherwise the TP and LCM screens may be damaged.
If the development board is abnormal, first test whether the voltage of the three TestPad points(Ther are PP5V, PP3V3_1 and PP3V3_2) on the board is normal.

PP3V3_1 output is to supply 3.3v power supply to this board, PP3V3_2 is to supply 3.3v power supply to external expansion board, PP5V is USB input 5V power supply and external expansion board is also supplied. Figure 5 is a schematic diagram of the power supply test point of the development board, test the three point-to-ground voltages respectively.

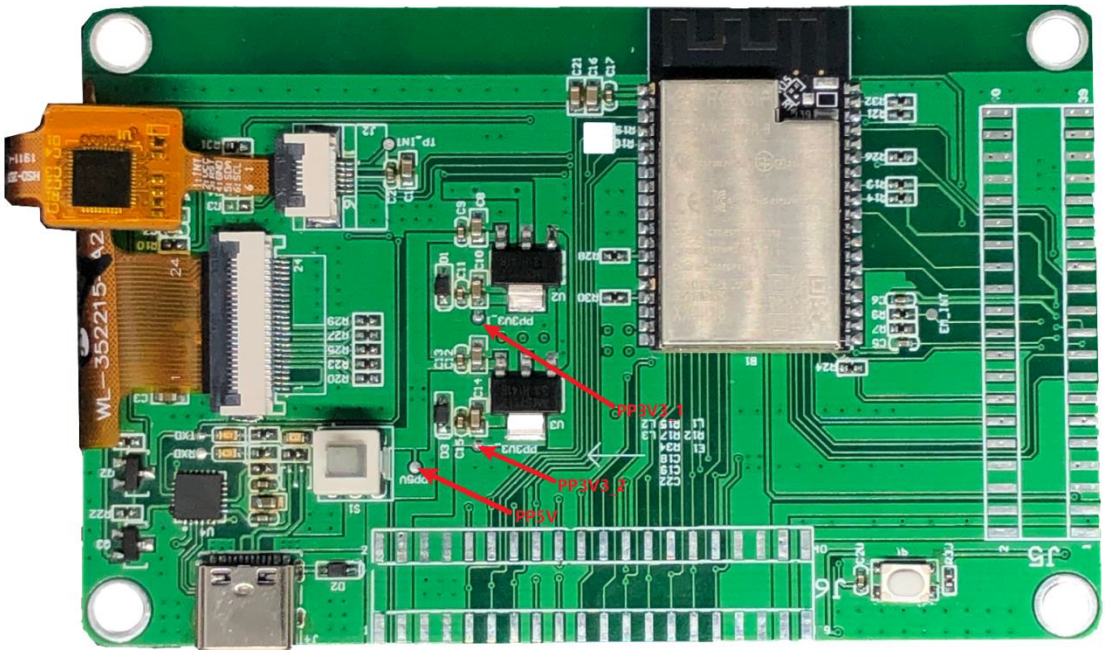

Figure 5: Schematic Diagram of Power Supply Test Point on Development Board