

The main device U1 in the EV kit is the CH376S chip, but some of the signals in the figure are named after CH375 or CH374.

Crystal X1 is standard 12MHz, USB host requires higher frequency accuracy than USB device, X1 error requirement is less than 0.4%, and ordinary 12MHz crystal can basically meet the requirements. It is strongly recommended to shorten the length of the associated leads to reduce interference.

Capacitor C4 is used for internal power supply node decoupling to reduce EMI during USB transmission. The capacity is 4700pF to 0.1uF. The normal 103 chip capacitor is 0.01uF.

P4 is a USB port, which can be used for USB HOST host mode or USB DEVICE device mode. Resistor R1 is used to limit the current output to external USB devices, avoiding the power supply voltage when USB devices such as USB flash drives are just inserted. A short time drop, even causing CH376 or microcontroller abnormal reset or internal RAM data error. If it is a USB external hard drive, you should replace the resistor R1 with a smaller DC resistance, or use a 5V power supply to directly provide a larger operating current (500mA or more) to the external hard drive. In addition, the capacity of the power supply decoupling capacitor C9 of the USB-HOST socket should not be too small, and the larger capacity (should be greater than 100μF) can reduce the fluctuation of the power supply voltage when the USB device is just inserted.

P5 is an SD card socket that can be used with standard size SD cards. Other sizes of SD cards may require an additional conversion seat. Resistor R3 is used to limit the current output to the external SD card, avoiding a short-term drop in the supply voltage when the SD card is just inserted.

P1 is an 8-bit parallel port signal port for connecting to the parallel port of the MCU. The necessary signals for the parallel port include D0-D7, A0, RD#, WR#, CS# and GND, and INT# is optional.

P2 is the signal port of the SPI serial port. It is used to connect to the SPI interface of the microcontroller. The necessary signals of the SPI include SCS, SCK, SDI, SDO and GND, and INT# is optional.

P3 is the signal port of the asynchronous serial port, which is used to connect the asynchronous serial port of the single-chip microcomputer. The necessary signals of the asynchronous serial port include RXD, TXD and GND, and INT# is optional. P3 also provides the write-protected SDWP and plug-in status SDINSERT signal lines for the SD card.

The above P1, P2, and P3 communication ports can also provide 5V power from the outside to the EV kit and an optional hardware reset signal to the RS376 pin of the CH376. If there is a μP monitoring circuit in the actual product circuit, it should be CH376. And the microcontroller provides the same reset signal. Note that the length of the signal line between the evaluation board and the microcontroller should be as short as possible, and the maximum length should not exceed 20 cm. Otherwise, a dedicated cable with a signal spacing of one ground line should be used.

J3 is used to select the operating voltage of the CH376 chip. It is 5V when shorted to 1-2 pins and 3.3V when shorted to 2-3 pins. The default is 5V, but when the operating voltage of the microcontroller is equal to or lower than 3.3V, 3.3V can be selected for CH376. When the operating voltage of the CH376 chip is 5V, J2 must be disconnected. When the operating voltage of the CH376 chip is 3.3V, J2 must be shorted.

Instructions for use:

J1, J5 and J6 are used to select the communication interface between CH376 and MCU after power-on or hardware reset:

If J1 is shorted, J5 is disconnected, and J6 is disconnected, then it is an 8-bit parallel port;

If J1 is disconnected, J5 is shorted, and J6 is shorted, then it is the SPI interface;

If J1 is disconnected, J5 is disconnected, and J6 is disconnected, it is an asynchronous serial port.

Some example programs may use the serial port of the MCU to output debugging status information. If you need to display these monitoring information, you can connect the serial port of the MCU to the computer through RS232 level conversion and then use the serial port monitoring/debugging tool

software. If you use the CH375 evaluation board, you can connect J2 to the computer serial port; if the computer does not have a serial port, or the serial port is already occupied by other devices, the emulation serial port can be provided by the USB to serial chip CH341.

When the internal device of the CH375 evaluation board operates at a 5V supply voltage, resistor R0 must be added and the 3.3V regulator D4 must be removed. When operating at 3.3V supply voltage, regulator D4 must be added and resistor R0 removed. The default is 5V power.