ESP32-P4 Revision v1.0 Sample Notes

Espressif's ESP32-P4, the latest high performance MCU AIOT SoC, has entered the engineering sample stage. Thank you for your trust in Espressif and our products. We are honored to provide you with ESP32-P4 **revision v1.0** samples for functional testing and solution validation.

Please note that the revision v1.0 samples we currently provide are different from the mass production version. Please pay attention to the following points during the testing process.

1. The CPU frequency of current samples is 360 MHz.
2. The ADC on current samples is calibrated, **and we recommend updating the ESP-IDF version regularly to gain the support for the ADC driver.**
3. The eFuse structure of current samples will have slight differences compared to the mass production version. We recommend updating the ESP-IDF version regularly to ensure comprehensive support for eFuse functionality.
4. The ESP32-P4 itself does not support wireless communication functionality. The functional testing board (ESP32-P4-Function-EV-Board) includes an ESP32-C6 module. If you require Wi-Fi communication, please pay attention to the Espressif ESP-Hosted solution.
5. **Please ensure you are using the required version of ESP-IDF.** For details, refer to Appendix A, " Notes on ESP-IDF for ESP32-P4" on page 2.
6. The USB Serial JTAG functionality is supported on the ESP32-P4 Revision v1.0 chip. However, on the v1.4 version of the function testing board (ESP32-P4-Function-EV-Board), the JTAG function pins are routed to GPIO headers instead of the USB debug port. Please stay tuned for future updates. Currently, the USB debug port is connected to UART0 via a USB bridge chip, which is used for firmware downloading and serial debugging.
7. The online version of the sample note can be accessed by scanning the QR code below or by clicking the link: https://espressif.com.cn/sites/default/files/ae/ESP32-P4%20(Revision%20V1.0)%20Engineering%20Sample%20Notes_EN.pdf.

Appendix A: Notes on ESP-IDF for ESP32-P4

The master branch of ESP-IDF (https://github.com/espressif/esp-idf) already contains preview support for ESP32-P4 revision v1.0. We suggest updating the master branch every now and then to get the latest ESP-IDF feature support and bug fixes. You can check this link (https://github.com/espressif/esp-idf/issues/12996) to have the support status of ESP32-P4 functionalities in the ESP-IDF master branch.

If this is your first exposure to ESP-IDF, then please get familiar with the software development environment for ESP32-P4 and the documentation first:

https://docs.espressif.com/projects/esp-idf/en/latest/esp32p4/index.html

Notice:

1. Please run the following command to set the project target to ESP32-P4:
   `idf.py --preview set-target esp32p4`

   The `--preview` option can be removed once the ESP-IDF for ESP32-P4 is officially released.

2. After the ESP32-P4 mass production version chip is fully supported in ESP-IDF, code for ESP32-P4 revision v1.0 chip can be reused for the next ESP32-P4 revision by updating ESP-IDF to the latest version and rebuilding the firmware. In most cases, the firmware source code will only require minor changes or even no changes.

3. Please note that before using the current ESP32-P4 Revision v1.0 chip, **you must upgrade to ESP-IDF master branch commit ID: 0546805fc57422a52ef390ad70a4bfcd92a42f6c or a later version.**