ASR6501 Development Board Quick Start

1 Development Board Introduction

ASR6501 chip development board includes Demo module and base board. The appearance is shown in Figure 1 below.
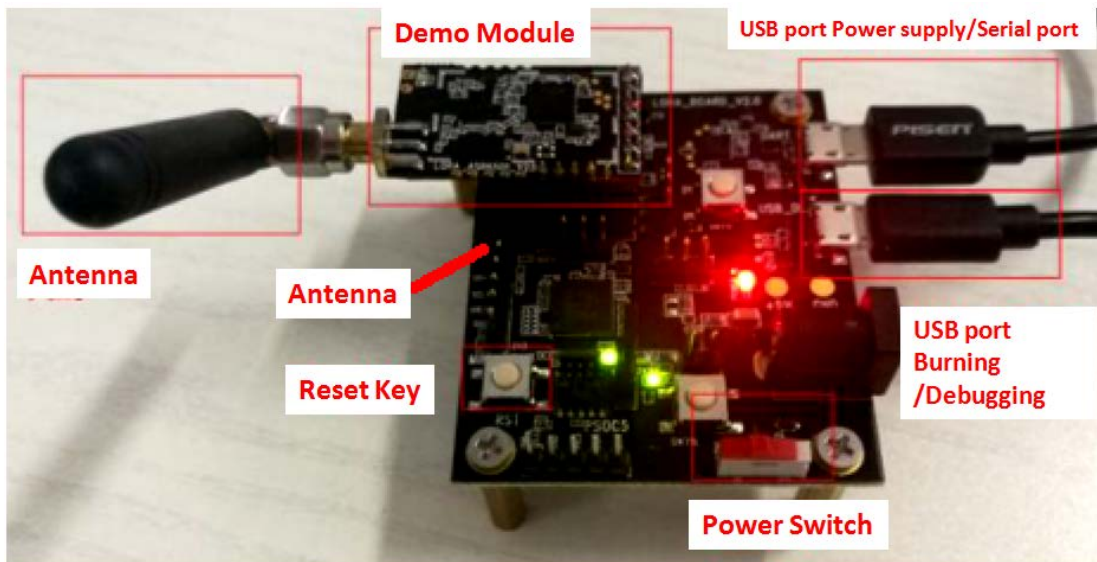

Figure 1: ASR6501 Development Board

1. Demo module can be directly connected to the base board through the plug-in pin on the back.
2. There are two USB ports on the right side of the base board, one is "USB power supply/Serial port", and the other is "USB burning/ Debugging port".
3. The driver "CP210x_VCP_Windows.zip" needs to be installed when using the USB serial port. The driver "KitProg2_USB_Download.rar" needs to be installed when using the USB burning port. Both drivers see the "ASR6501_driver.zip" in the published document.
4. Except for two USB ports, the 5V interface does not need to be connected. It is a standby power supply port.
5. There is a red power switch on the base board, which needs to be turned to the left when used.
6. The Reset button is located near the module on the base board.

2 Software SDK Introduction

ASR6501 provides complete open source software SDK, which has been updated to SDK version 3.0. The SDK download address is as follows:

https://github.com/asrlora/alios-asr-lora

After downloading, firmware burning and hardware evaluation are carried out according to "ASR6501-LoRA-SW-Release-Notes.pdf".

Software SDK is based on the development environment of "Cypress PSoC Creator IDE". The download address of the software is as follows:
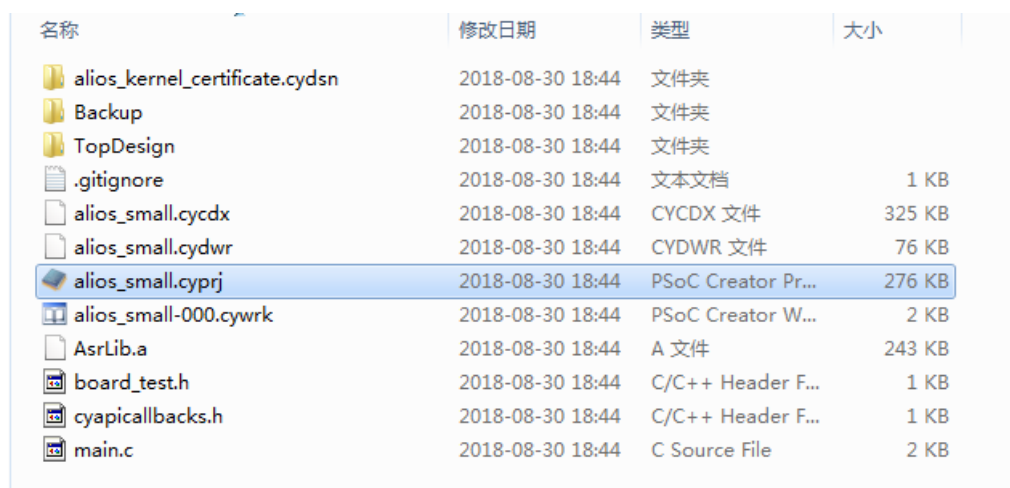
http://www.cypress.com/products/psoc-creator-integrated-design-environment-ide

"PSoC_Creator_User_Guide.zip" contains the development environment description of the file "PSoC Creator".

3 Software Burning

"PSoC Creator" supports the firmware burning.

1. In the SDK directory "\alios-asr-lora-master\projects\Creator\ASR6501\alios_small.cydsn" , find the "alios_small.cyprj" and open it, as shown in the following figure:
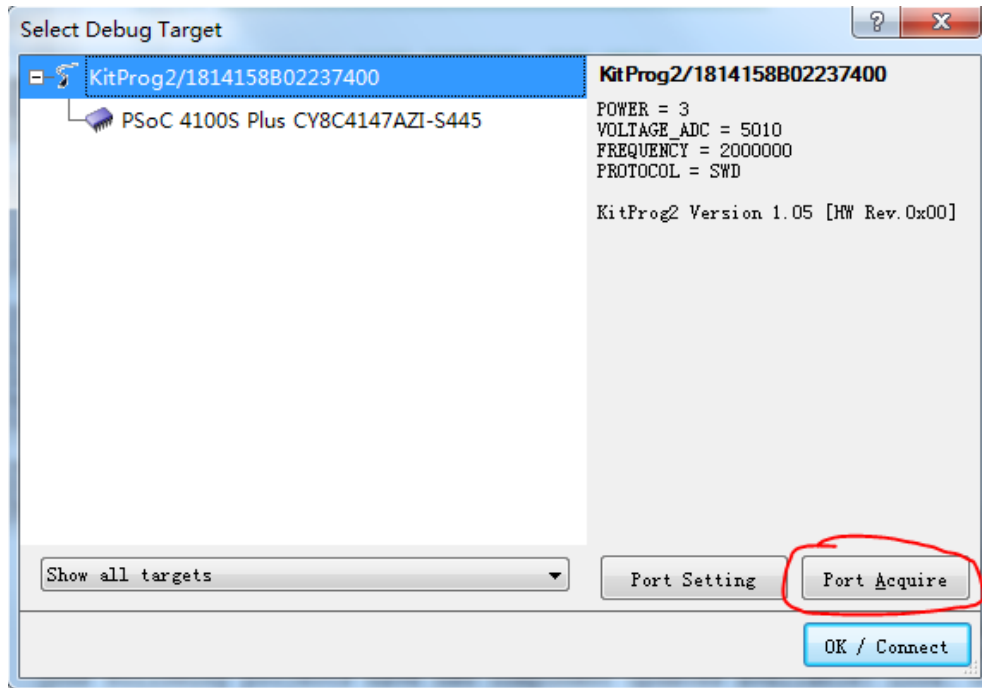

2. Connect PC and the base board USB_DL port with the Micro USB Cable. After installing the driver, the KitProg2 device will appear on the PC.

Click the Burning button to pop up the following interface. After selecting the device, click "Port Acquire" to appear "PSoC 4100S xxxx" device and click "OK/Connect".

3. The burning process is displayed at the "PSoC Creator" interface bottom bar "Output".
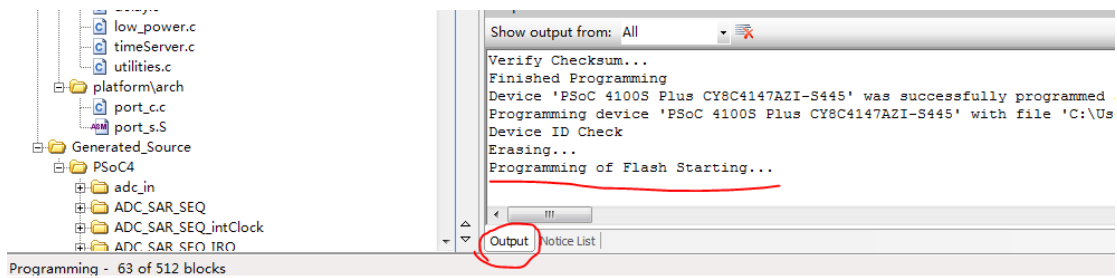
4. When the burning is completed, the display is as follows:

Protecting...

Verify Checksum...

Finished Programming

Device 'PSoC 4100S Plus CY8C4147AZI-S445' was successfully programmed at 07/05/2018 15:39:14.

4 Hardware Evaluation

Hardware evaluation includes two parts:

1. Evaluate the receiving, transmitting and power consumption by AT commands.

2. Evaluate the communication distance by point-to-point method.

1. AT commands are used to evaluate receiving, transmitting and power consumption. "ASR6501-LoRA-SW-Release-Notes.pdf" has the detailed evaluation process.

2. The point-to-point evaluation is used to test the communication distance. Point-to-point evaluation uses SDK, referring to "ASR6501-AT-Commands-Introduction.pdf".

Two development boards burn SDK respectively.

RX AT command：AT+CRX=<freq>,<data_rate>

TX AT command：AT+CTX=<freq>,<data_rate>,<pwr>

5 Important Reminder

1. When users get the document, please read "ASR6501_Release_note.xlsx", "ASR6501_Datasheet.pdf" and "ASR6501_LoRa_Communication_Solution_Training" for a systematic understanding of the chip.
2. The two documents "ASR6501-AT-Commands-Introduction.pdf" and "ASR6501-LoRA-SW-Release-Notes.pdf" are very important. It is recommended that users read them carefully.
3. If users encounter any problems, please contact:

   TEL: +86-755-82973805，

   Mail to: sales@hoperf.com