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.
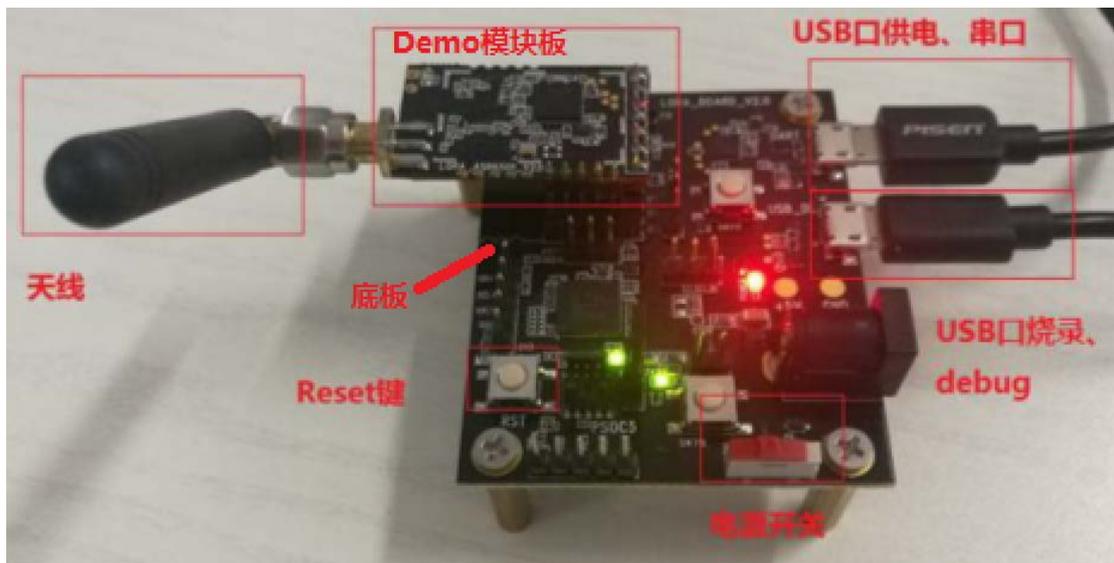

Figure 1: ASR6501 Development Board

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

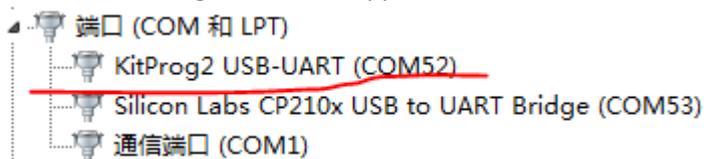"PSoC Creator" supports the firmware burning.

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:
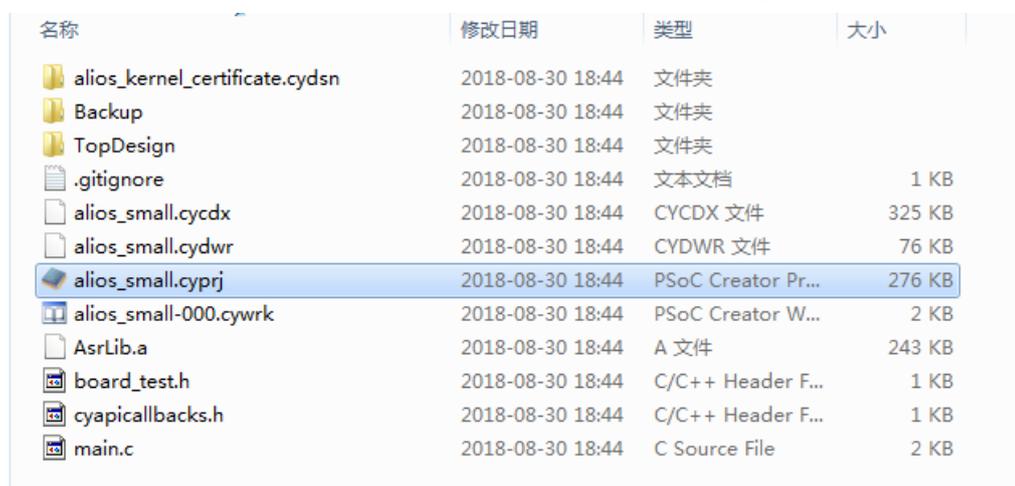
名称	修改日期	类型	大小
📁 alios_kernel_certificate.cydsn	2018-08-30 18:44	文件夹	
📁 Backup	2018-08-30 18:44	文件夹	
📁 TopDesign	2018-08-30 18:44	文件夹	
📄 .gitignore	2018-08-30 18:44	文本文档	1 KB
📄 alios_small.cycdx	2018-08-30 18:44	CYCDX 文件	325 KB
📄 alios_small.cydwr	2018-08-30 18:44	CYDWR 文件	76 KB
📄 alios_small.cyprj	2018-08-30 18:44	PSoC Creator Pr...	276 KB
📄 alios_small-000.cywrk	2018-08-30 18:44	PSoC Creator W...	2 KB
📄 AsrLib.a	2018-08-30 18:44	A 文件	243 KB
📄 board_test.h	2018-08-30 18:44	C/C++ Header F...	1 KB
📄 cyapicallbacks.h	2018-08-30 18:44	C/C++ Header F...	1 KB
📄 main.c	2018-08-30 18:44	C Source File	2 KB

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.

▲ 🖧 端口 (COM 和 LPT)
　　🖧 KitProg2 USB-UART (COM52)
　　🖧 Silicon Labs CP210x USB to UART Bridge (COM53)
　　🖧 通信端口 (COM1)

点击烧录按钮会弹出来如下界面，选中设备后点击"Port Acquire"出现"PSoC 4100S xxx"设备，点击"OK/Connect"。

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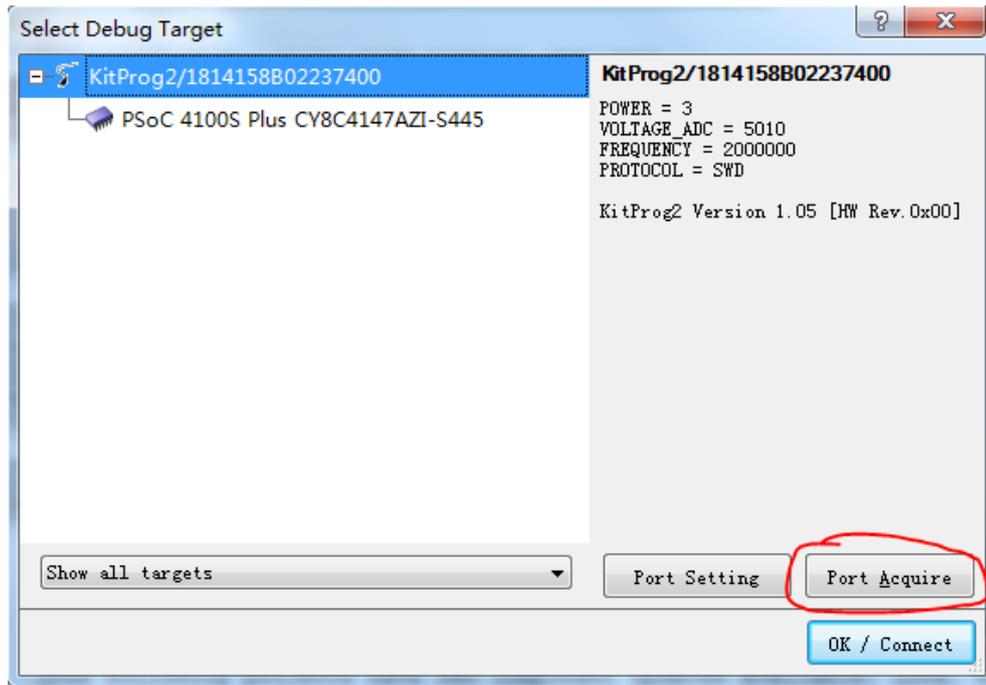
3. The burning process is displayed at the "PSoC Creator" interface bottom bar "Output".
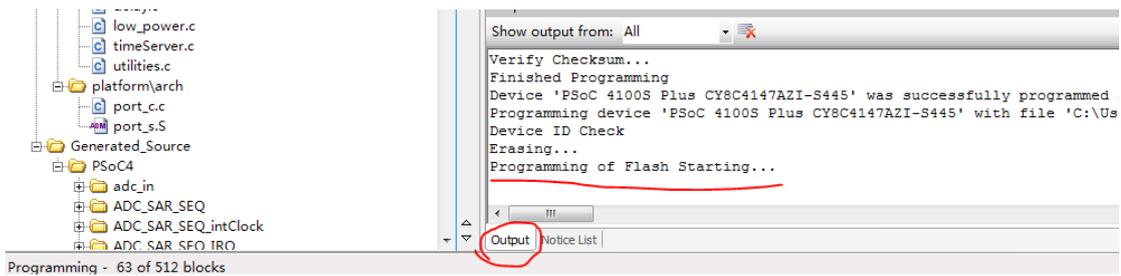
4. When the burning is completed, the display is as follows:

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:
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