ISP Studio Manual

Version 0.6

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1. Introduction

Quintic ISP Studio is a tool to download application and configuration file to target chip for Bluetooth Low Energy application development or mass production based on Quintic QN9020 platform. Two digital interfaces can be used to download files to target chip, UART and SPI. In addition, the tool supports protection and encryption to the application.

2. Main Window

The main window of ISP Studio is shown as in Figure 1.

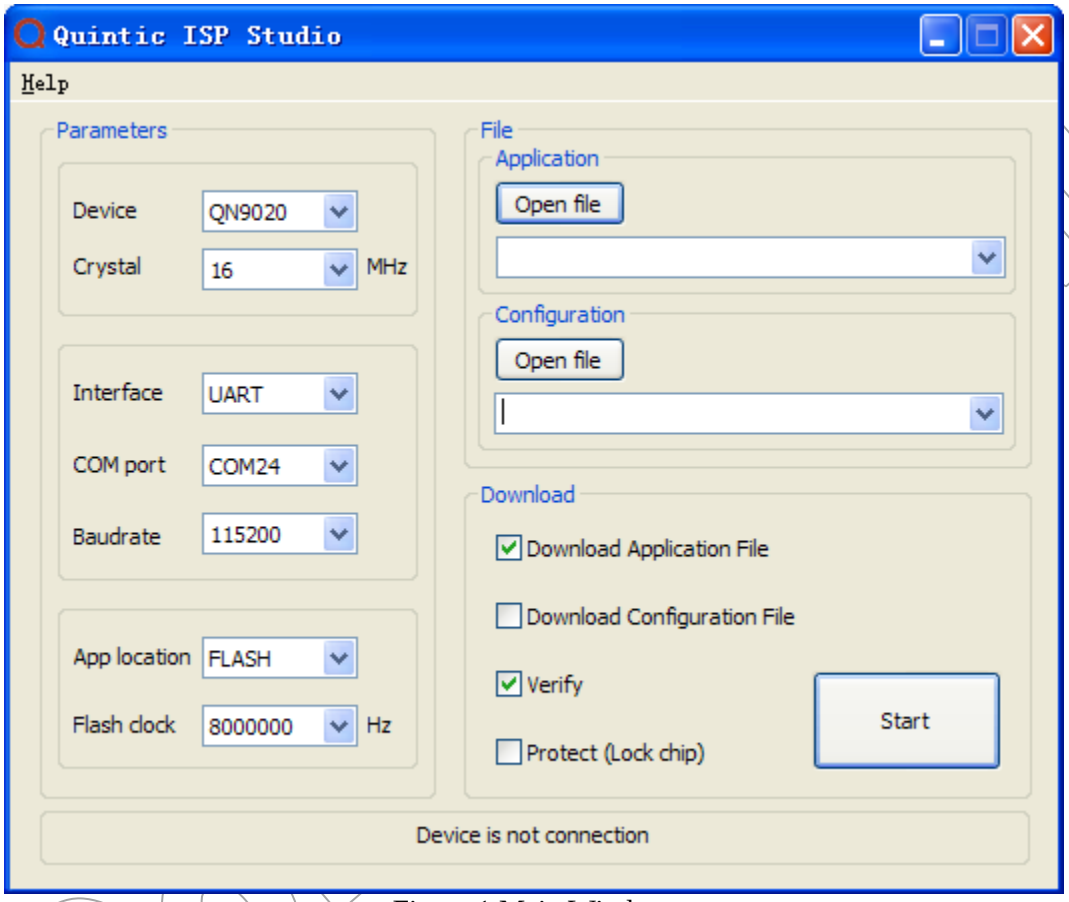

Figure 1 Main Window

Note:

1. Whenever you click the button “Start” to download files, please press the reset button of the target chip on DK into boot mode. Otherwise the connection will not succeed.
2. Don’t select “Protect” box if you would like to debug the program code. It causes the data in flash encrypted and flash download failed when you debug by Keil later.

3. Set Parameters

Eight parameters need to be configured as below.

1. **Device:** The type of target chip.
2. **Crystal:** The frequency of external crystal. Two frequency selections are available: one is 16MHz, the other is 32MHz.
3. **Interface：** The interface between PC and the target chip. Either UART or SPI can be selected. When selected “UART”, the parameter “Com Port” and “Baud Rate” are valid.
4. **Com Port：** The application can list the valid UART interface automatically.
5. **Baud Rate：** The UART baud rate. The default value is 115200 bps. If any errors during the download, please use a lower baud rate and try again.
6. **App Location:** Download the application code to flash or RAM. If selected “Flash”, the “Flash Clk” parameter is valid. And the code will be burn into 0x00001100 address of flash. The flash address assignment is shown in Figure 2. QN9020 has a 64KB flash which is assigned as three areas: configuration data area, boot loader data area, and application code area. Any area can be protected except configuration area. If selected “RAM”, the code will be burn to the address of 0x10000000.
7. **Flash Clk:** If the parameter “App location” is selected as “Flash”, the “Flash Clk” parameter is valid. It is the clock of SPI flash. Its range is from 100KHz to 8MHz based on 16M crystal or from 200KHz to 16MHz based on 32M crystal. The default value is 8MHz or 16MHz. If any errors during the download, please use a lower flash clock, like 4MHz or 2MHz, and try again.

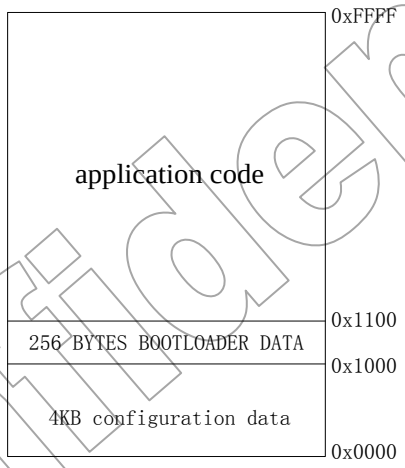

Figure 2 Flash Address Assignment

4. Open File

Two kinds of file may need to download into the target chip. One is application file (*.bin), the other is configuration file (*.cfg).

5. Download

Five selectable parameters are available to download files.

1. **Download Application File**: If selected, the application will burn the application file to chip in case that the application file is opened. Otherwise, don’t download it.
2. **Download Configuration File**: If selected, the application will burn the configuration file to chip in case that the configuration data file is opened. Otherwise, don’t download it. When the parameter “App location” is selected as “Flash”, this is valid.

3. **Verify**: If selected, it verifies the code or configuration data.
4. **Protect**: If selected, the IRAM and flash data will be locked and be prohibited to access though SWD. Whether selecting it or not, the data in flash will be encrypted. If the users want to debug the program code, please don't select it.

Start to download file

First of all, please make sure the cable is connected correctly between PC and the target chip by UART or SPI interface. Click the button "Start", and the text of the same button will change to "Cancel'. Then, restart or reset the target chip into boot mode. After that, the connection will be established and the code or configuration data will be burned into chip automatically. The process of burning will be seen. Finally, the successful result information will be shown as in Figure 3.

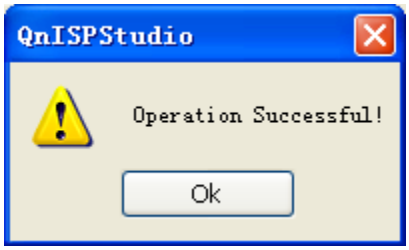

Figure 3 Operation Result Window

If user's application program is outputting data by the same interface by coincidence, the download process might fail. In this case, you have to power off the target chip before clicking "Start" button, and power on the target chip again after clicking "Start" button.

Release History

REVISION	CHANGE DESCRIPTION	DATE
0.1	Initial release	2012-12-10
0.2	Update Figure 1	2012-12-26
0.3	Add description of baud rate selection and App location	2013-03-05
0.4	Update Figure 1	2013-04-12
0.5	Modify some description, update figure 1	2013-05-07
0.6	Delete erase function	2013-05-29

