MM32

ARM® Cortex®- M

32-bit Microcontroller

ISP Quick Start Guide

Ver:1.0

Contents

1   Introduction

1.1 Brief

This program quick guide describes how to use PC side software , and program application code to the main Flash with the UART protocol which used in the MM32 microcontroller In System Program. And it provides the detail description for the operation flow and hardware setting.

1.2 Support Series List

This document applies to all MM32 products as below:

MCU series	MCU chip with core Version	Notes
MM32F031	MM32F031xx_n	
	MM32F031xx_q	
MM32F103	MM32F103xx_n	
	MM32F103xx_o	
MM32F032	MM32F032xx_s	
MM32L0	MM32L0xx_n	
MM32L3	MM32L3xx_n	
	MM32L3xx_o	
MM32SPIN0	MM32SPIN0x_n	
	MM32SPIN0x_q	
	MM32SPIN0x_s	
MM32SPIN2	MM32SPIN2x_p	

These device can not support ISP because their Boot0 Pin is not assigned.

MCU series	MCU chip with core Version	Notes
MM32F003	MM32F003xx_q	

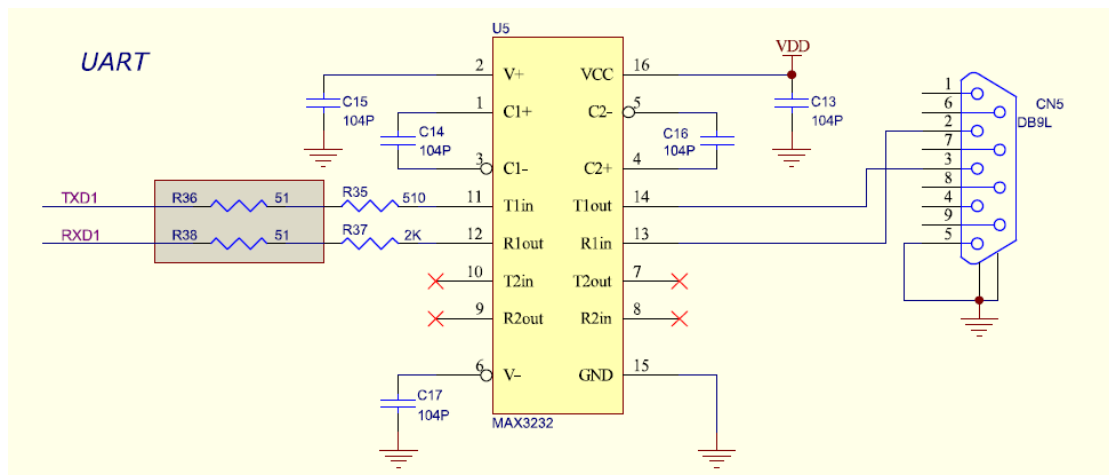## 2   In-System-Programming Operate in Windows

In-System-Programming (ISP) function of The MM32 Family microcontroller (MCU) can program the embedded Main Flash memory. ISP function code which is programmed in the system space, and it can support on-chip UART.
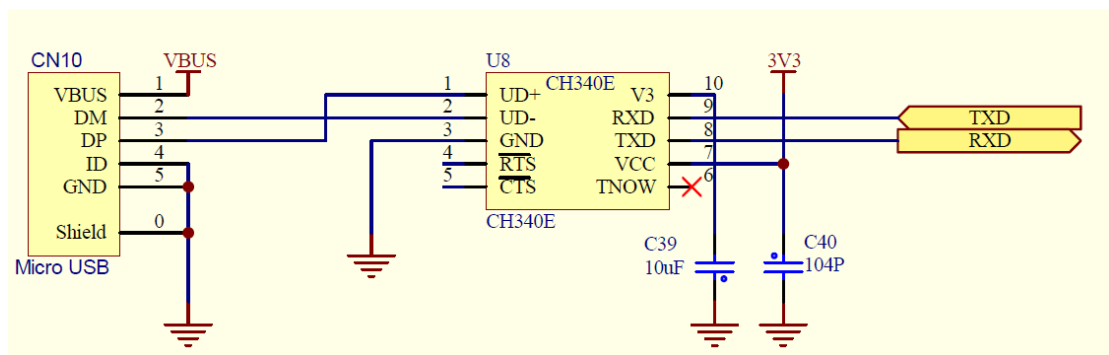
The program flow need to be flowed as below:

- Setup the MCU side

- Setup PC side

- Connect both PC side and MCU side

- Program, Verify, Run (Option)

2.1 Setup the MCU side

First step, it need to select one Hardware Device to connect target MCU through UART. Setup the target MCU Boot0 Pin to High(and Boot1 Pin to Low in Cortex-M3 core MCU), connect the TXD and RXD Pin to PC with RS232 interface or USB interface.

TXD and RXD Connect PC through RS232 with MAX3232

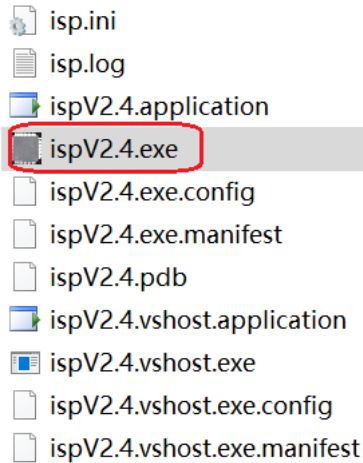TXD and RXD Connect PC through USB to UART with CH340E

2.2 Setup PC side

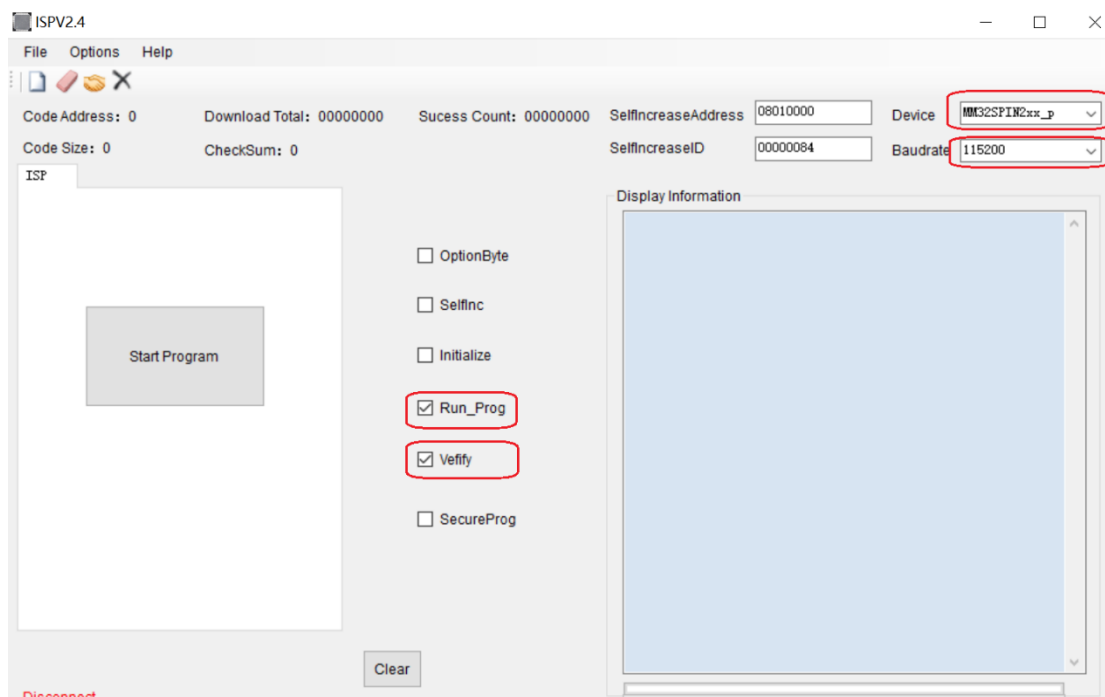The ISP Programming Tool is contained in the folder "MM32ISP_PC". Current version is V2.4.

2.1- Connecting target MCU through UART

Select ispV2.4.exe file, start ISP software.

MM32ISP_PC_EN_Ver2.4

- isp.ini
- isp.log
- ispV2.4.application
- ispV2.4.exe
- ispV2.4.exe.config
- ispV2.4.exe.manifest
- ispV2.4.pdb
- ispV2.4.vshost.application
- ispV2.4.vshost.exe
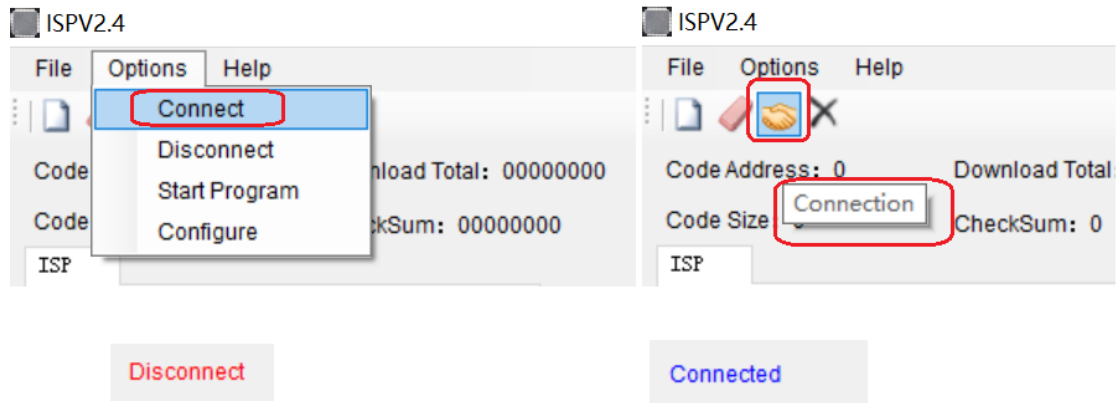- ispV2.4.vshost.exe.config
- ispV2.4.vshost.exe.manifest

Config the basic setting, here it uses MM32SPIN2xx_p as the samples: Baudrate is 115200, 8-N-1(8 data bit, 1 start bit, 1 stop bit, no parity);
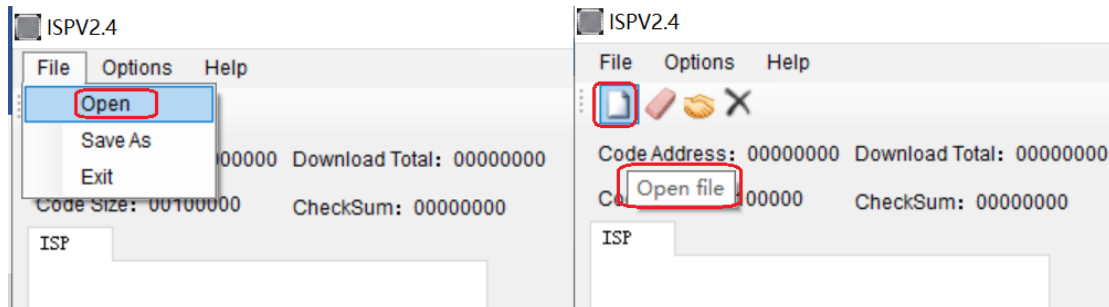
2.3 Connect both PC side and MCU side

Power the Target Board based correct hardware connect and boot pin setting, then use file menu "**Options**" ➔ "**Connect**" or "**Connection**" icon Button. The PC side software will scan all PC side active COM port, and auto connect the target MCU with ISP boot load. If it connected successful, the status would be change from "**Disconnect**" to "**Connected**".
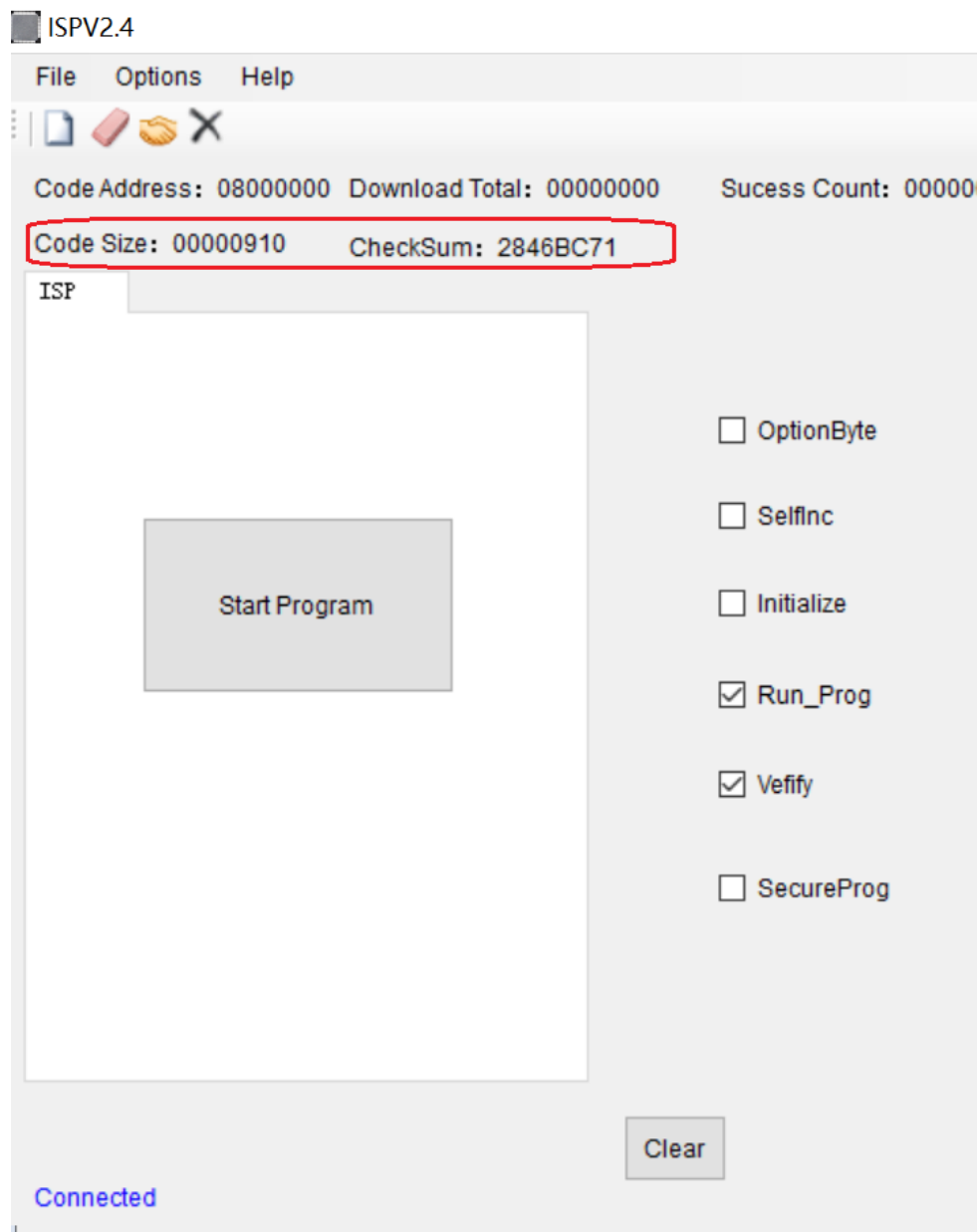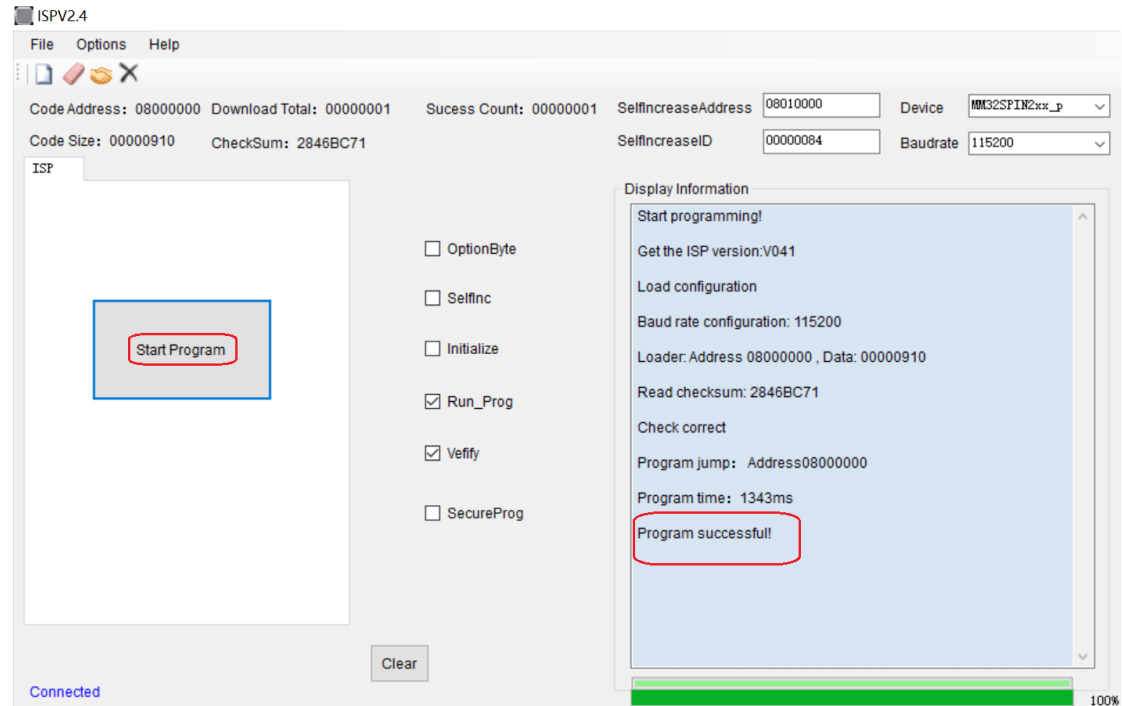
2.4 Program, Verify, Run (Option)

Open .Hex or .Bin File with file menu "**File**" ➜ "**Open**" or "**Open File**" icon Button.

After loading the file, the bin file size and check sum is showed as below:

Click "**Start Program**", the update information would be display in the "Display Information" window and the display "**Program Successful**" means the program is successful.

If it select "Run_Prog", then the target MCU will run with new downloaded code.

3 Document Revision History

Revision	Date	Author	Comment	Notes
1.0	2019/11/22	AE team	Add new chips	