ASR6601

Tremo Programmer Tool User Guide

Version 1.1.0

Issue Date 2021-05-08

About This Document

This document mainly introduces the download tool *Tremo Programmer* for the developers to use the tool to download to the Flash of LPWAN SoC ASR6601.

Intended Readers

This document is mainly for engineers who use this chip to develop their own platform and products, for instance:

- PCB Hardware Development Engineer
- Software Engineer
- Technical Support Engineer

Included Chip Models

The product models corresponding to this document are as follows.

Model	Flash	SRAM	Core	Package	Frequency
ASR6601SE	256 KB	64 KB	32-bit 48 MHz Arm China STAR-MC1 Processor	QFN68, 8*8 mm	150 ~ 960 MHz
ASR6601CB	128 KB	16 KB	32-bit 48 MHz Arm China STAR-MC1 Processor	QFN48, 6*6 mm	150 ~ 960 MHz
ASR6601SER	256 KB	64 KB	32-bit 48 MHz Arm China STAR-MC1 Processor	QFN68, 8*8 mm	150 ~ 960 MHz
ASR6601CBR	128 KB	16 KB	32-bit 48 MHz Arm China STAR-MC1 Processor	QFN48, 6*6 mm	150 ~ 960 MHz

Copyright Notice

Trademark Statement

 ASR and ASR Microelectronics Co., Ltd. are trademarks of ASR Microelectronics Co., Ltd.

Other trade names, trademarks and registered trademarks mentioned in this document are property of their respective owners.

Disclaimer

ASR do not give any warranty of any kind and may make improvements and/or changes in this document or in the product described in this document at any time.

This document is only used as a guide, and no contents in the document constitute any form of warranty. Information in this document is subject to change without notice.

All liability, including liability for infringement of any proprietary rights caused by using the information in this document is disclaimed.

ASR Microelectronics Co., Ltd.

Address: 9F, Building 10, No. 399 Keyuan Road, Zhangjiang High-tech Park, Pudong New Area, Shanghai, 201203, China

Homepage: http://www.asrmicro.com/

Revision History

Date	Version	Release Notes
2020.05	V0.1.0	First release.
2020.09	V0.2.0	Updated some pictures.
2020.09	V0.3.0	Updated the pictures of ASR6601SE development board v2.0.
2021.05	V1.1.0	● Deleted Chapter 1, and move the contents to “About This Document”. ● Deleted the contents about Option.

Table of Contents

List of Tables

List of Figures

1. Preparation

1.1 Hardware

Hardware requirements：

(1) 1 ASR6601 development board

(2) 1 antenna

(3) 1 USB cable

(4) 1 PC

1.1.1 ASR6601 Development Board

ASR6601SE development board v2.0 front and back photos are as follows:

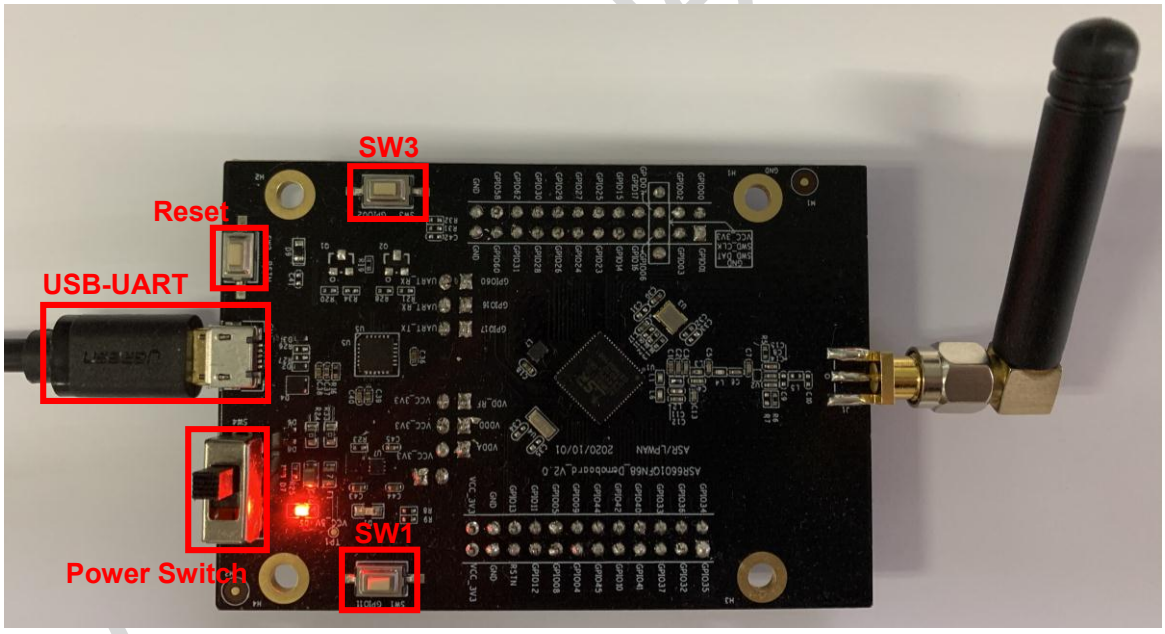

Figure 1-1 The Front View of ASR6601SE Development Board v2.0

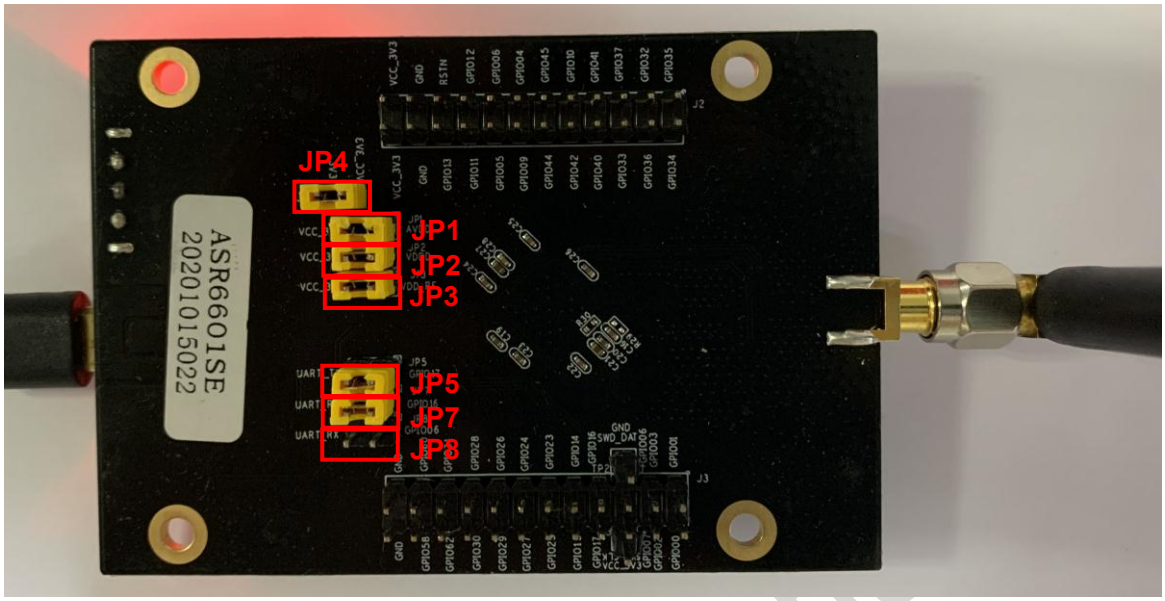

Figure 1-2 The Back View of ASR6601SE Development Board v2.0

Table 1-1 ASR6601SE Development Board v2.0 Interface

Interface	Description
USB-UART	USB
Power Switch	Power switch
Reset	Reset button
SW3	It's the Download button pressed to pull up GPIO02
SW1	It's the User button pressed to pull down GPIO11
JP1	Jumper1
JP2	Jumper2
JP3	Jumper3
JP4	Jumper4, which can be used to test the board's total power consumption
JP5	Connect UART_TX jumper, then select UART0_TX. Reference: Schematics
JP6 (only used in ASR6601CB development board)	Connect UART_TX jumper, then select LPUART_TX. Reference: Schematics
JP7	Connect UART_TX jumper, then select UART0_RX. Reference: Schematics
JP8	Connect UART_TX jumper, then select LPUART_RX. Reference: Schematics

1.1.2 Jumper Connection

When testing ASR6601 development board, please make sure the following jumpers' state is set correctly.

Table 1-2 Jumper Connection State

Jumper	Connection State
JP1	connected
JP2	connected
JP3	connected
JP4	connected
JP5	connected
JP6 (only used in ASR6601CB development board)	Not connected
JP7	connected
JP8	Not connected

1.2 Software

Tremo Programmer is located in the *tools/programmer* directory of ASR6601 SDK.

2. Tool Introduction

2.1 Main Interface

The main interface of Tremo Programmer is shown as follows:

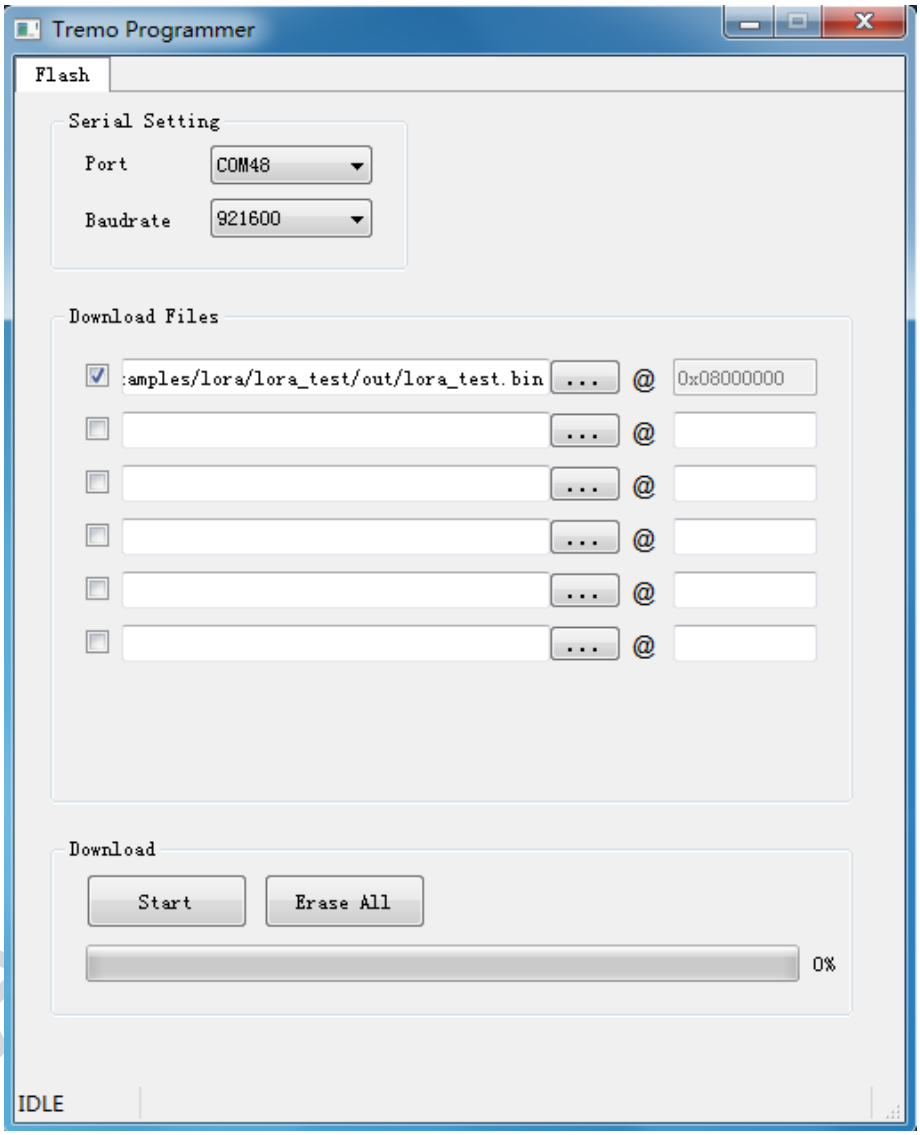

Figure 2-1 Tremo Programmer Main Interface

2.2 Flash Tab

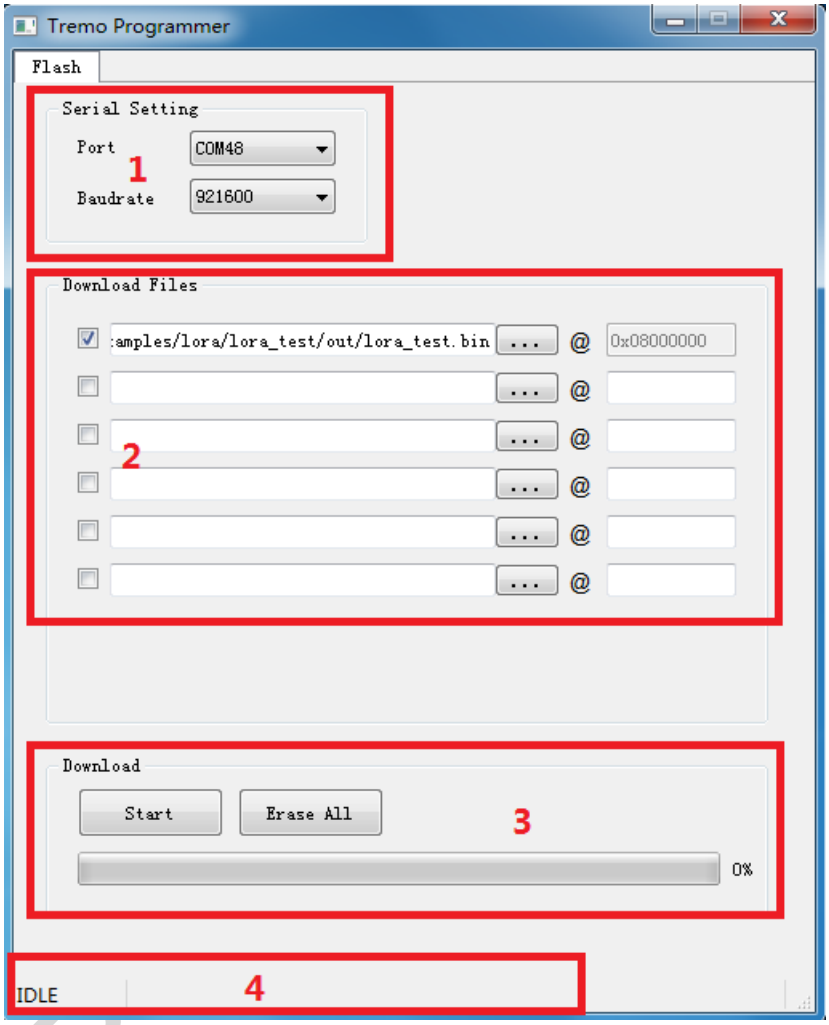

Figure 2-2 Flash Tab

The Flash tab is divided into four areas:

1. **Serial Port Configuration**

   Set the communication serial port and baud rate, etc.

2. **File Download Configuration**

   Configure the file to be downloaded and the address to download the file to. Users must download at least one file to 0x08000000 address to ensure that the program can run properly.

3. **Download Operation**

   This area has “Start” button for downloading and “Erase All” button. Only when you need to erase all the information in Flash, you click the “Erase All” button.

4. **Status Display**

   Display the download result (success or failure) and related information.

3. Tool Operation

3.1 Enter Download Mode

Before download, press and hold the SW3 button to pull up GPIO02, meanwhile, press the RESET button to reboot the board to enter download mode.

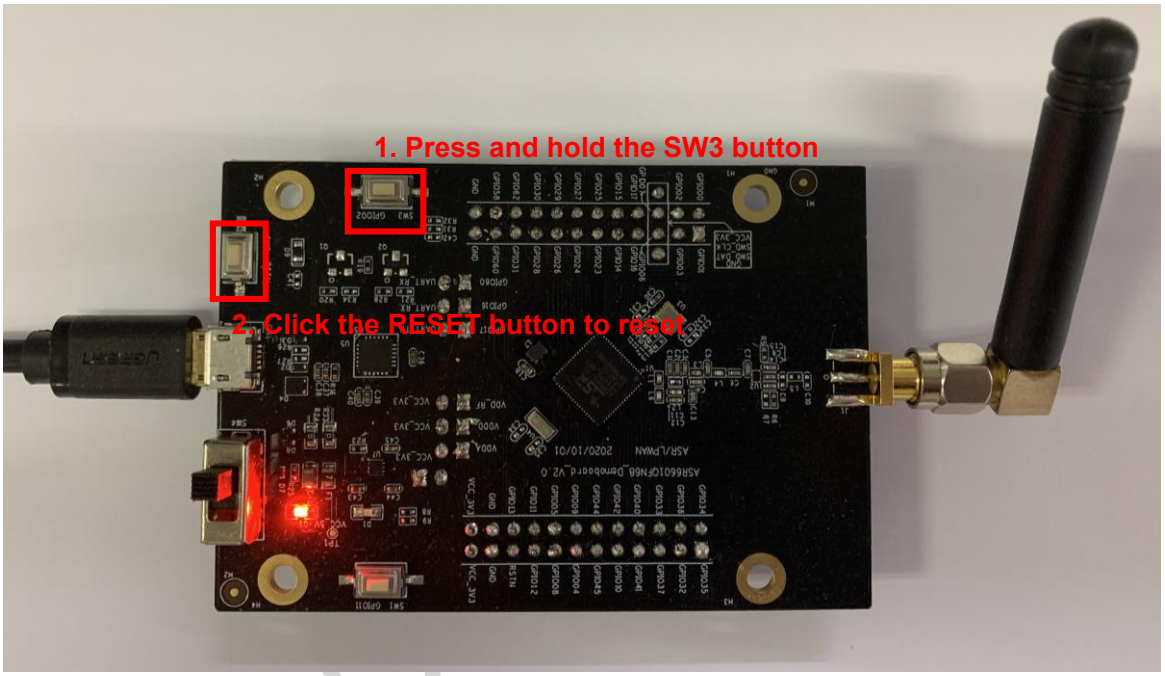

Figure 3-1 Enter Download Mode

3.2 Download

(1) Choose the serial port:

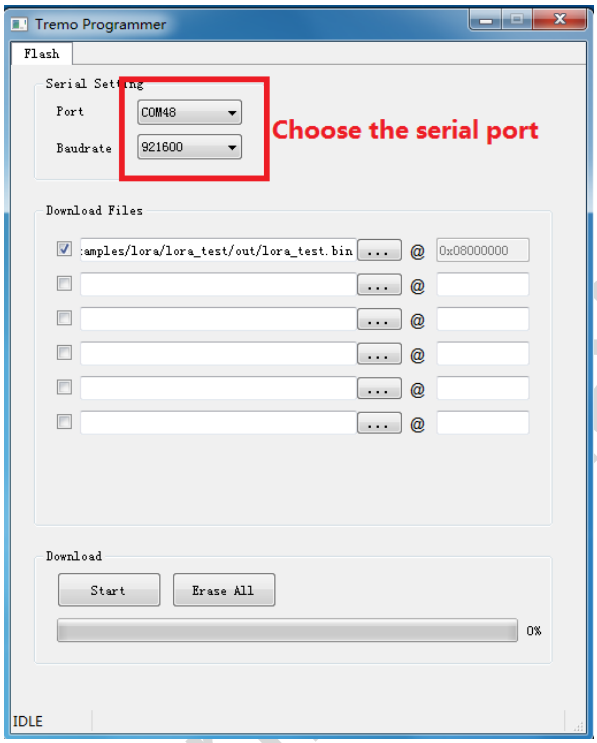

Figure 3-2 Choose the Serial Port

(2) Configure the download file:

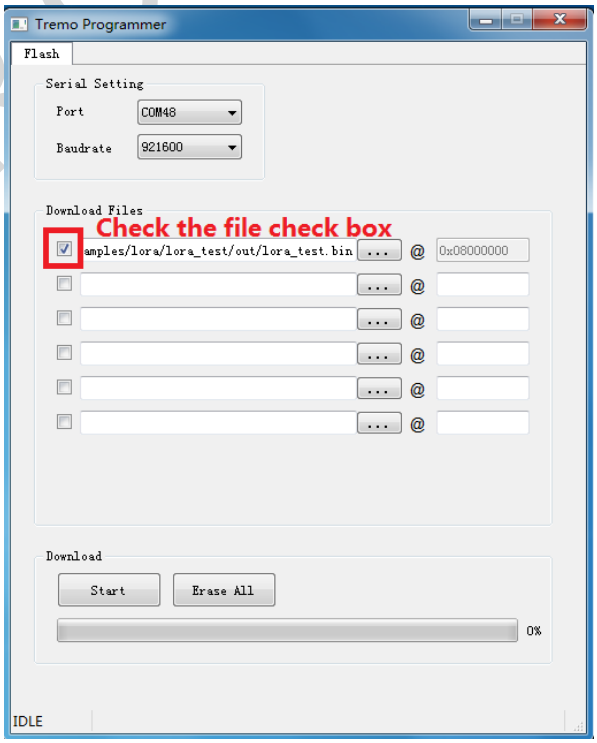

Figure 3-3 Check the File Check Box

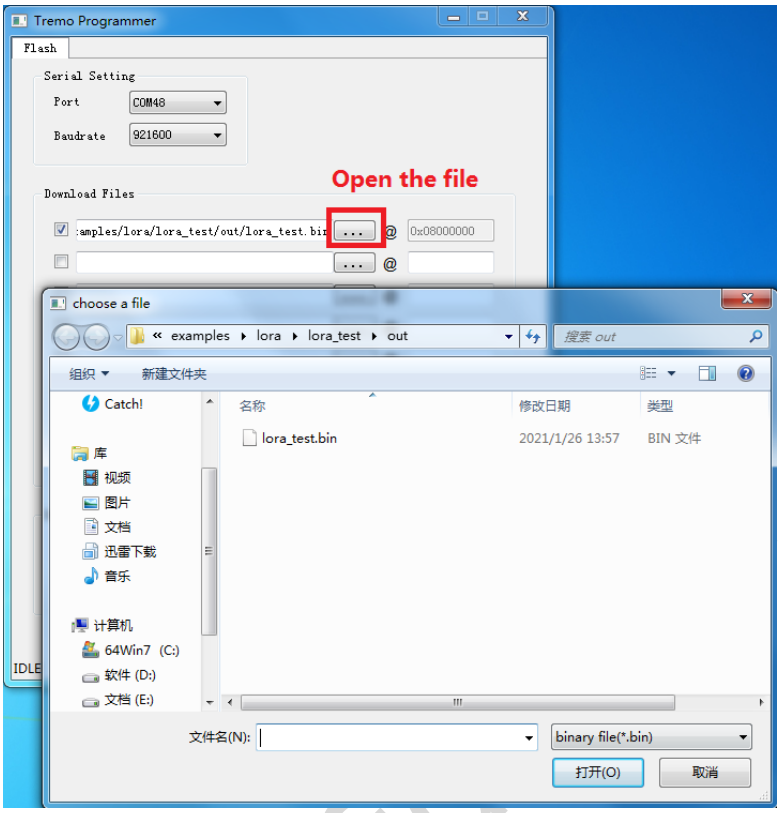

Figure 3-4 Browse and Select the Bin File

(3) Click “Start” Button to start downloading:

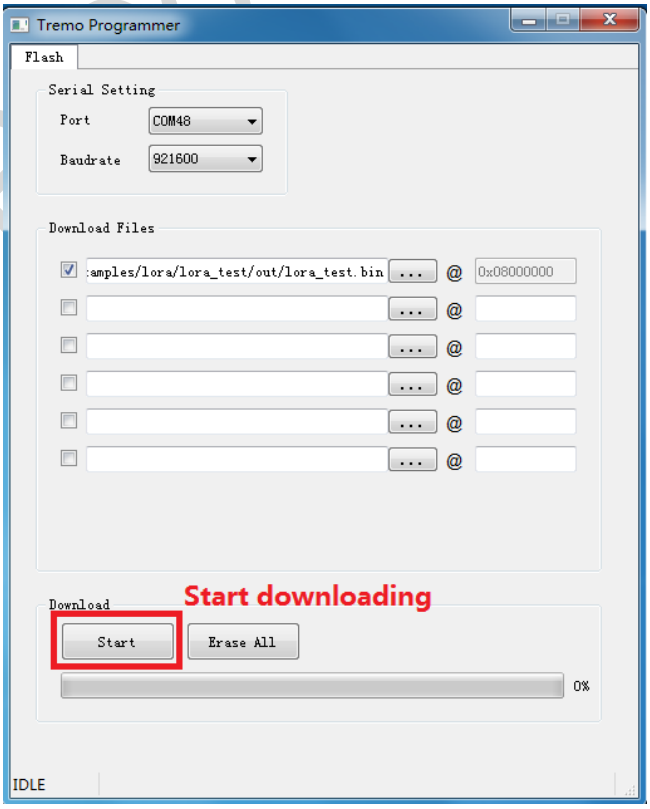

Figure 3-5 Start Downloading

(4) Finish downloading:

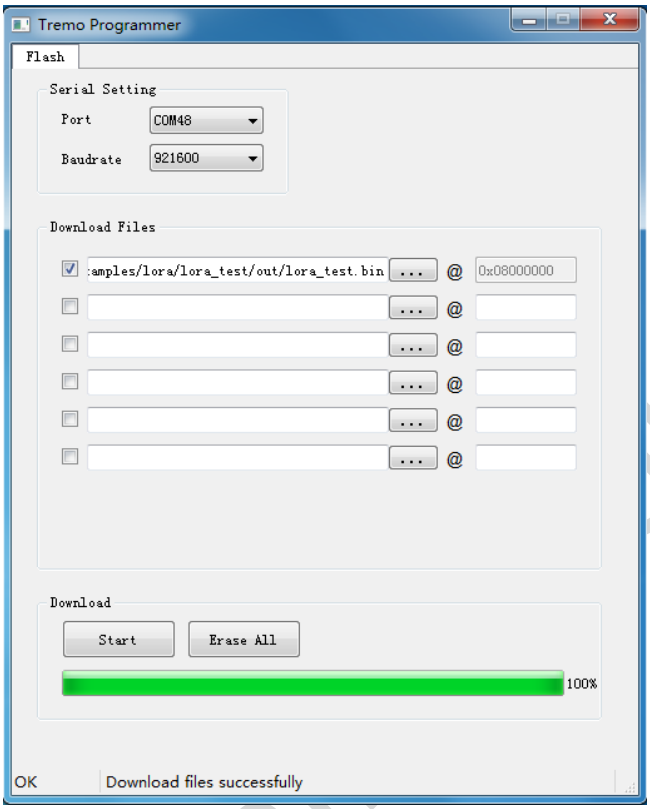

Figure 3-6 Finish Downloading

4. Q&A

4.1 What is the reason for read response header timeout ?

This problem is caused by no response from the development board to be downloaded. Please check the following:

(1) Check if the serial port connection is normal.

(2) Check if the MCU is in download mode. Try to press and hold the SW3 button while pressing the RESET button to reboot the development board.

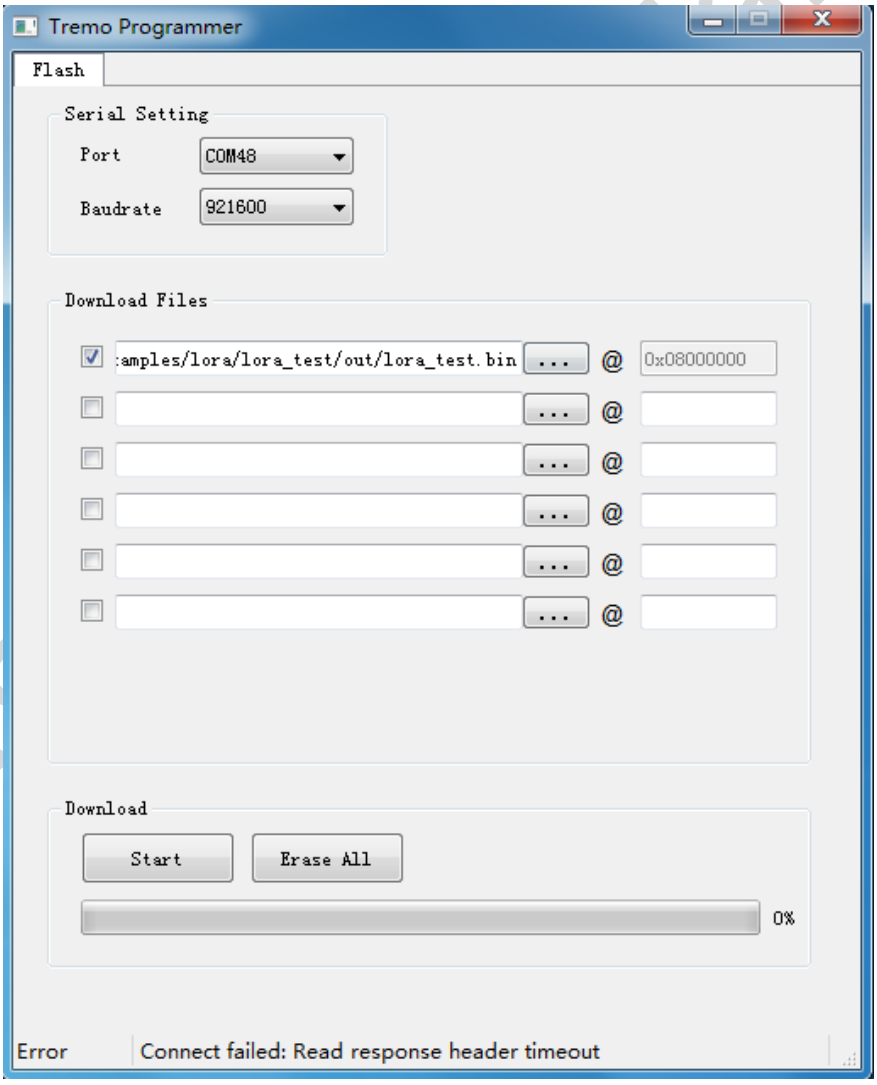

Figure 4-1 Example of Download Failures