



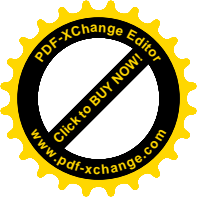
# ASR6601

## Programming tool manual

Version 1.1.0

Date: 2021-01-27

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## About this document

This document mainly describes the programming tool for IoT LPWAN SoC chip ASR6601, so that customers can use this tool to program the Flash of ASR6601.

## Target Audience

This document is mainly suitable for the following engineers:

- hardware development engineer
- software engineer
- technical support engineer

## Product numbering

Product models corresponding to this document:

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

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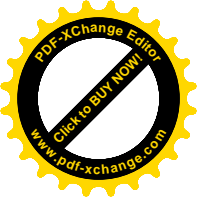
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## Document Revision History

Date	Version	Release Notes
2020.05	V0.1.0	Initial Release.
2020.09	V0.2.0	Updated illustrations.
2020.09	V0.3.0	Updated with ASR6601SE-EVAL v2.0 diagram.
2021.01	V1.1.0	<ul style="list-style-type: none"><li>Removed the Overview in Chapter 1 and merged its contents into the "About This Document" section of the Preface.</li><li>Delete option related content.</li></ul>



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# 1. Preparation

## 1.1 Hardware Preparation

Hardware required:

- (1) ASR6601 Development board
- (2) Antenna
- (3) USB cable
- (4) PC

### 1.1.1 ASR6601 Development Board description

The front and back of the development board ASR6601SE-EVAL v2.0 are shown in Figure 1-1 and Figure 1-2:

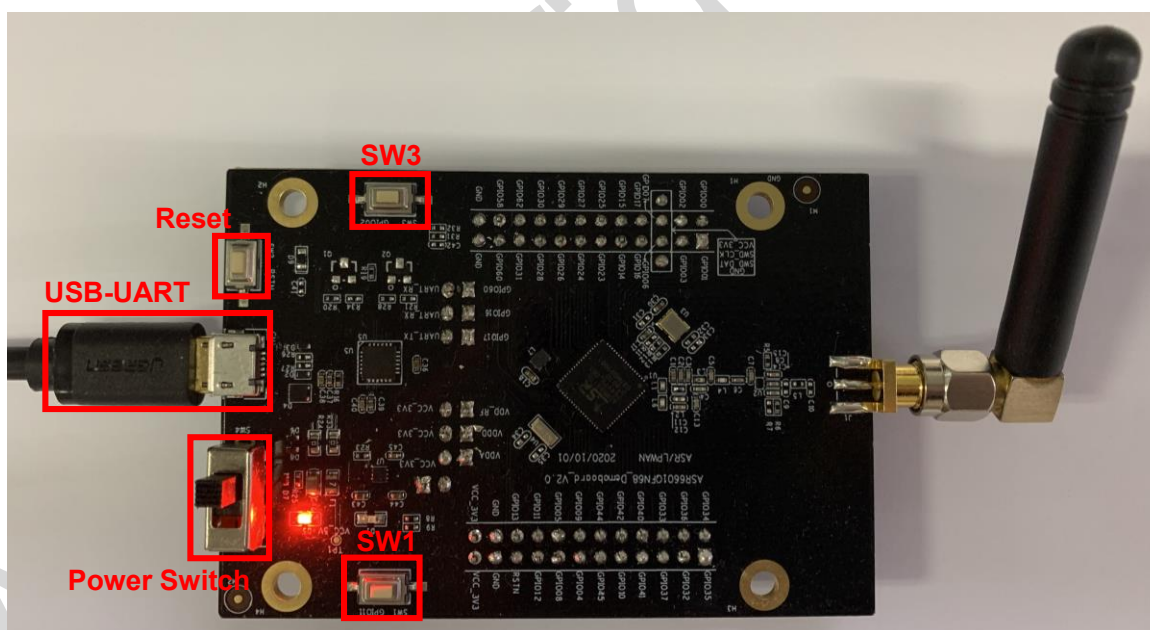


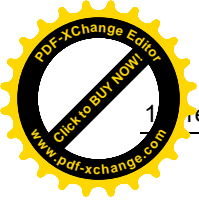
Figure 1-1 ASR6601SE-EVAL v2.0 top view



### Table 1-1 ASR6601SE-EVAL v2.0 interface description

Interface	Description
USB-UART	USB to Serial
Power Switch	Switch
Reset	Reset button
SW3	Download button, when pressed, GPIO02 is pulled high
SW1	User button, when pressed, GPIO11 is pulled low
JP1	Power jumper
JP2	Power jumper
JP3	Power jumper
JP4	Power jumper, for current sensor
JP5	UART_TX jumper, jumper connection selects UART0_TX
JP6 (only exists in ASR6601CB-EVAL)	UART_TX jumper, jumper connection selects LPUART_TX
JP7	UART_RX jumper, jumper connection selects UART0_RX
JP8	UART RX jumper, jumper connection selects LPUART RX





### 1.1.2 Jumper connection

When operating with ASR6601 development board, please ensure that the following jumpers are in the correct state.

**Table 1-2 Jumper connection**

Jumper	Status
JP1	Close
JP2	Close
JP3	Close
JP4	Close
JP5	Close
JP6 (only exists in ASR6601CB-EVAL)	Open
JP7	Close
JP8	Open

## 1.2 Software Preparation

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

## 2. Software description

### 2.1 Main window

Tremo Programmer main window:

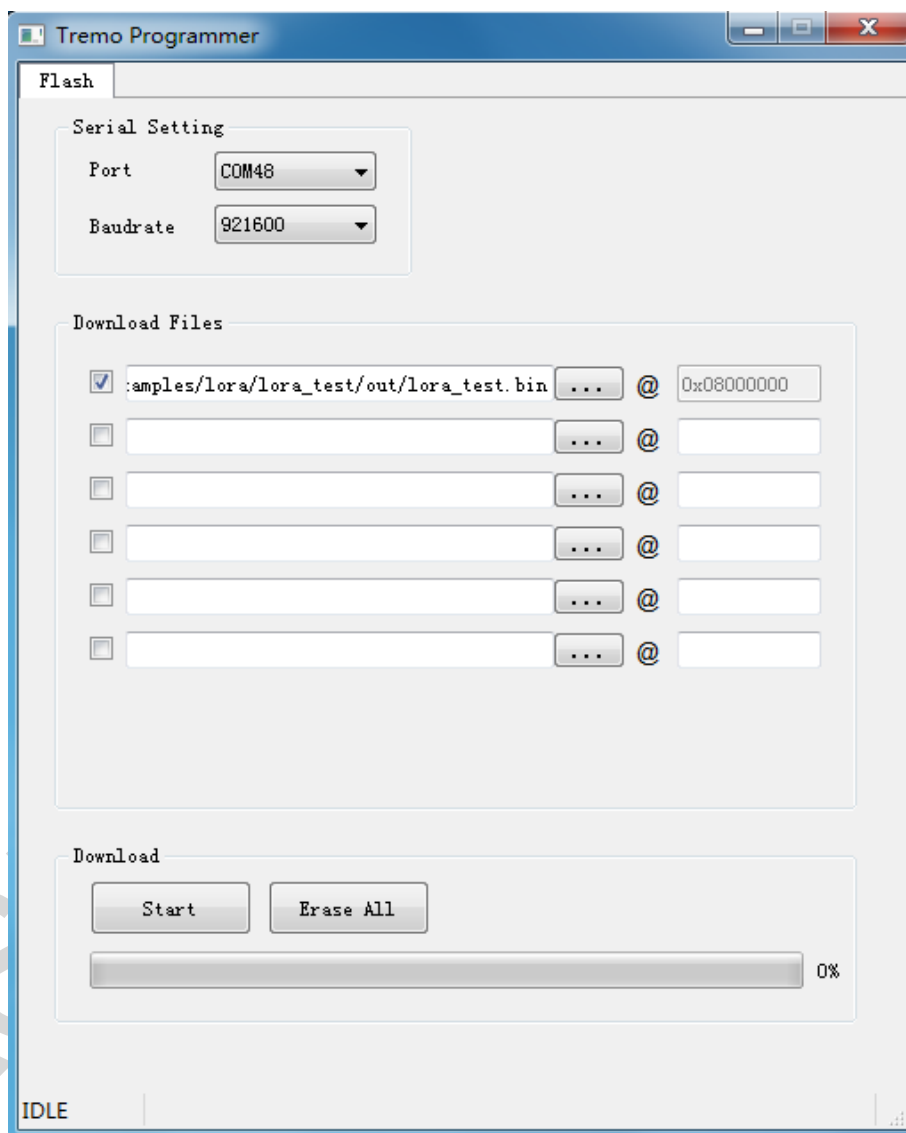


Figure 2-1 Tremo Programmer main window

## 2.2 Flashing interface description

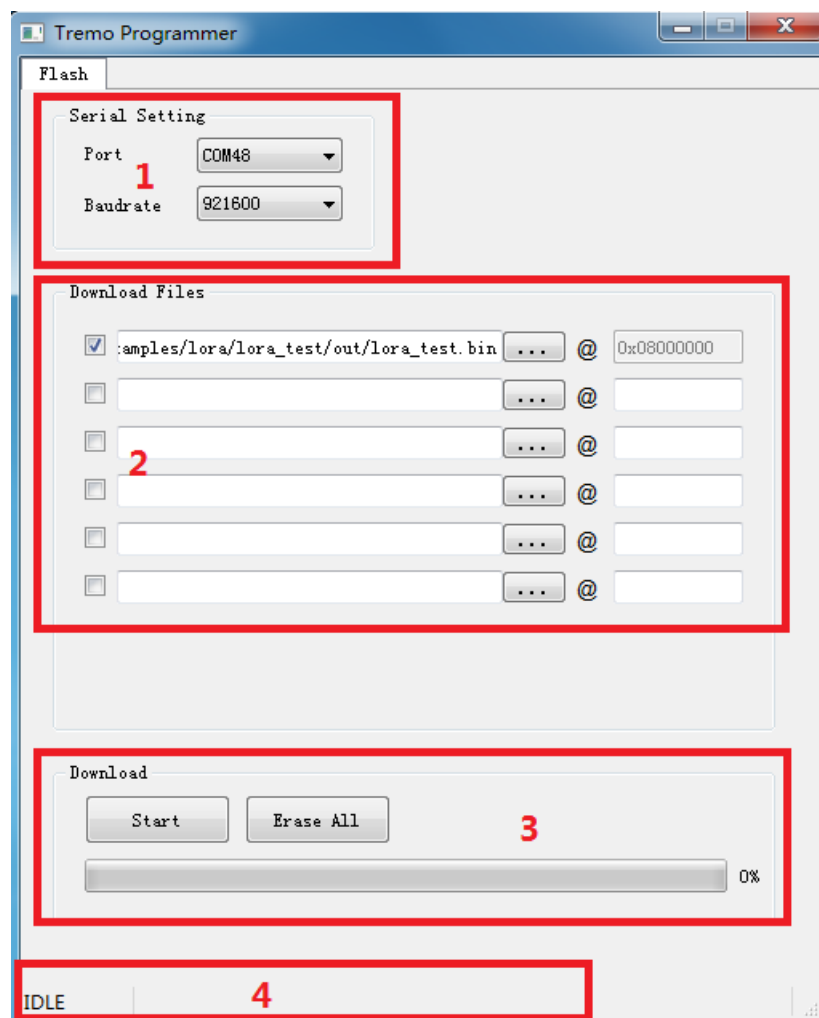


Figure 2-2 Flash interface

The Flash interface is mainly divided into 4 parts:

### 1. Serial port configuration

Serial port configuration settings.

### 2. Download file selection

Used to configure the location and download address of the downloaded file. At least one file needs to be downloaded to 0x08000000 to ensure that the program can be executed.

### 3. Download operation

There are download start and erase buttons. You only need to click the erase button when you need to erase all Flash (mass-erase).

For other simple file downloads, you do not need to click the erase button.

### 4. Status display

Displays information of download progress, success or failure status.

## 3. Operating instructions

### 3.1 Enter download mode

Before starting to download, press and hold the SW3 button to pull GPIO02 high, and press the Reset button to restart the board and put it into download mode.

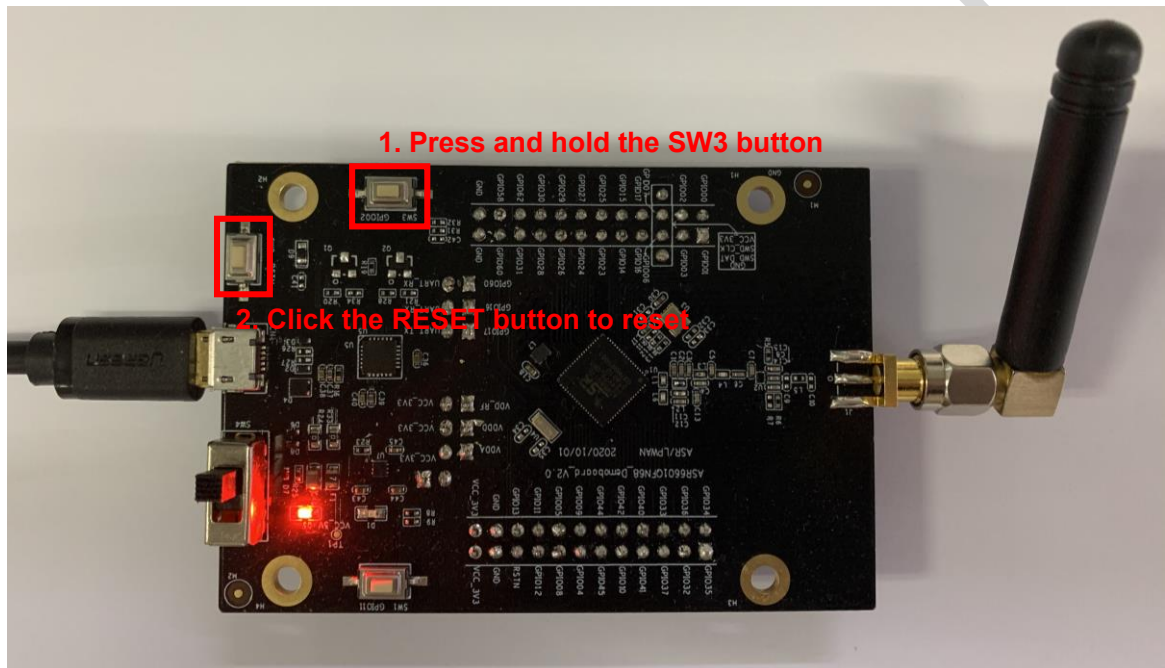


Figure 3-1 Entering download mode

## 3.2 Flash programming Instructions

(1) Select the serial port:

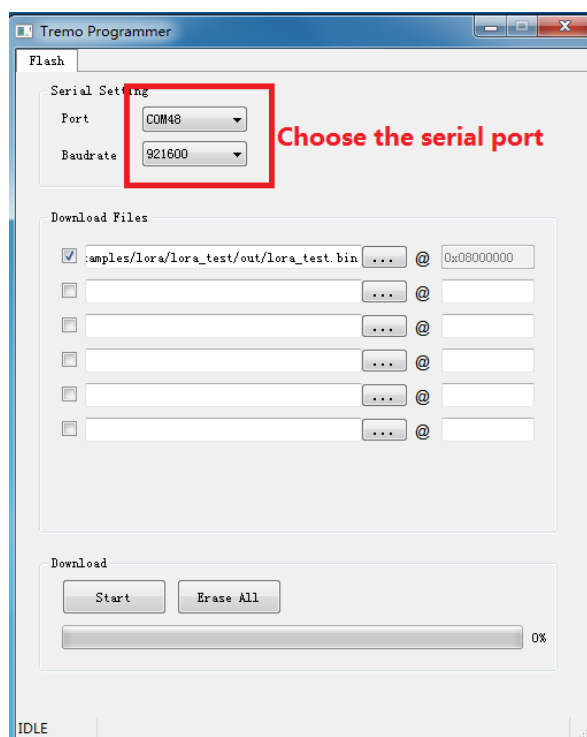


Figure 3-2 Serial port selection

(2) Choose file to download:

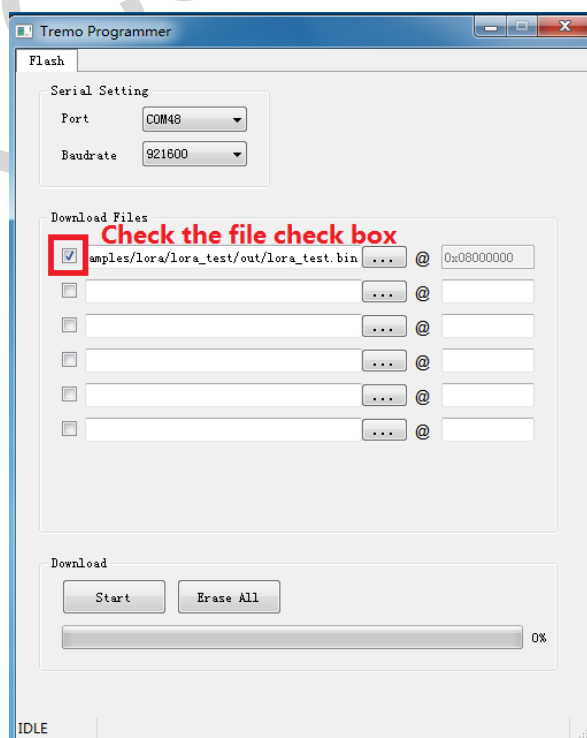


Figure 3-3 File selection box

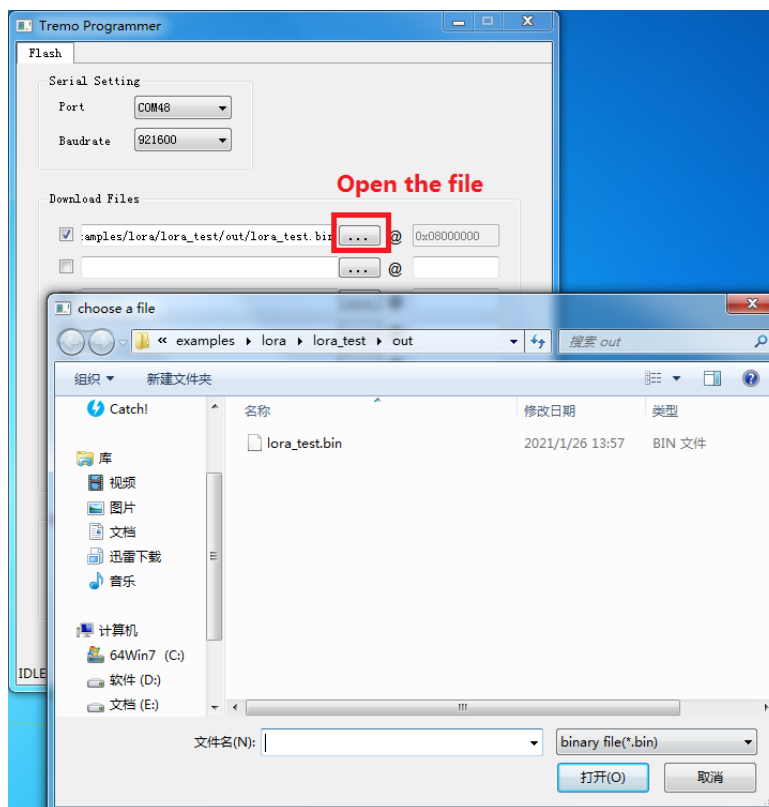


Figure 3-4 Open file

(3) Click the Start button to start programming:

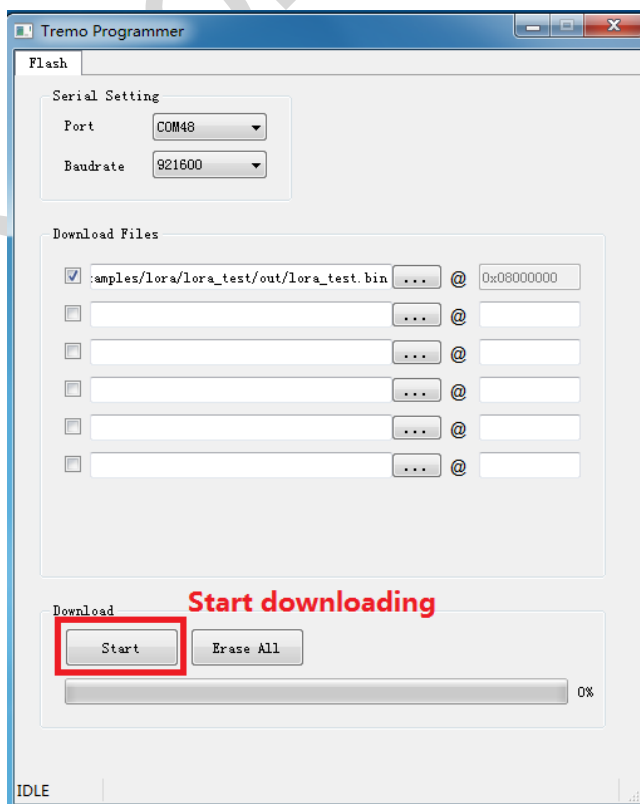


Figure 3-5 Start programming

(4) Programming completed:

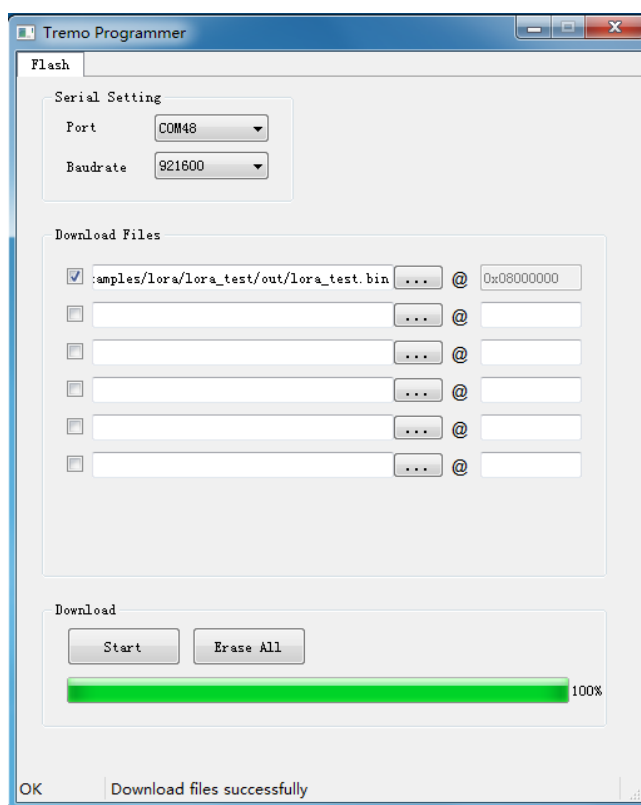


Figure 3-6 Programming completed

## 4.

## Q&A

### 4.1 Reason for read response header timeout

This problem is caused by the board to be burned not responding. You can check the following two points:

- (1) Check serial port connection.
- (2) Check MCU download mode entering. You can try to restart by holding down the SW3 button and pressing the Reset button at the same time.

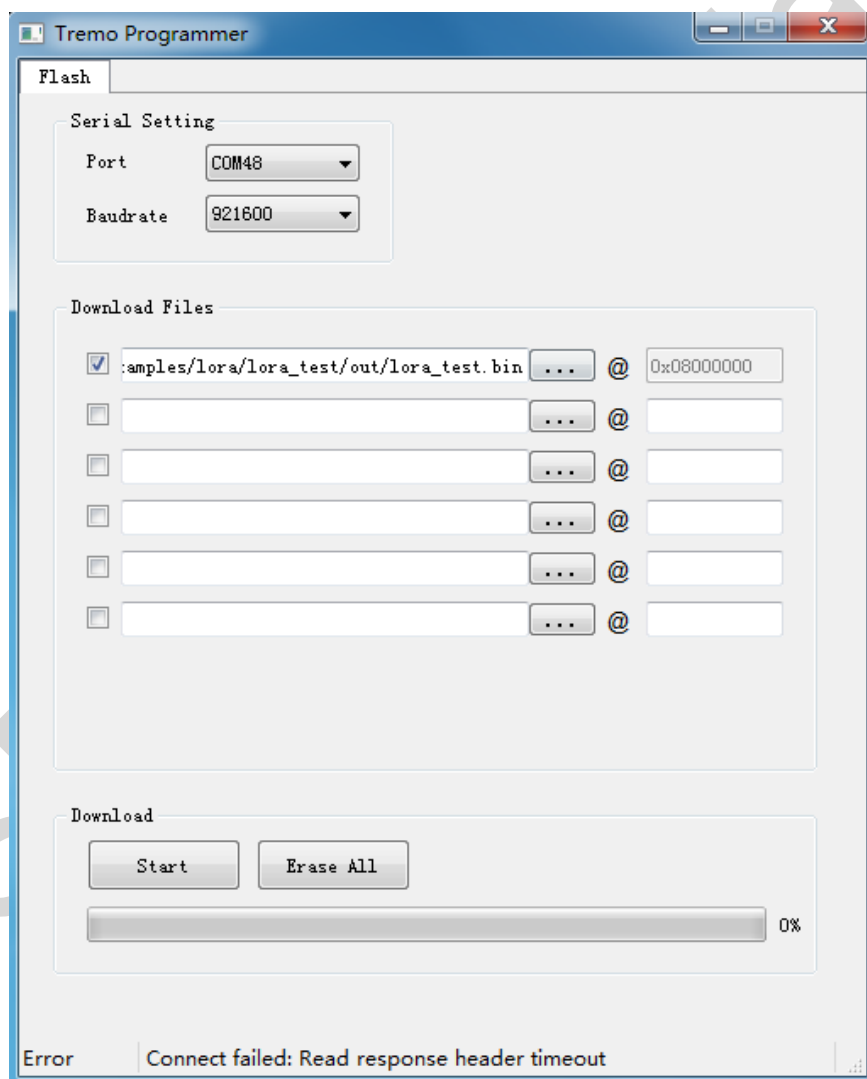


Figure 4-1 Programming failure example