



Automotive Product Group Microcontroller & Infotainment Division

Infotainment Business Unit - System & Applications
STA8090 XLoader user manual

1 Introduction

The aim of this document is to describe the usage of Teseo III XLoader. This tool is used to download a binary image into Teseo III supported memory. Depending on which board is used, this tool is able to program either SRAM, NOR and SQI memories.

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3 Document Management

3.1 Revision History

Rev	Date	Author	Notes
1.0	2015-10-21	G. De Angelis	First document version aligned with XLoader 1.11 tool.

Table 1: Revision history

3.2 Acronyms

Keyword	Definition

Table 2. Acronyms

4 Bibliography

None

5 XLoader usage

Here after you can find a brief description of every option available on Teseo III XLoader tool. Figure 1 shows the XLoader main window.

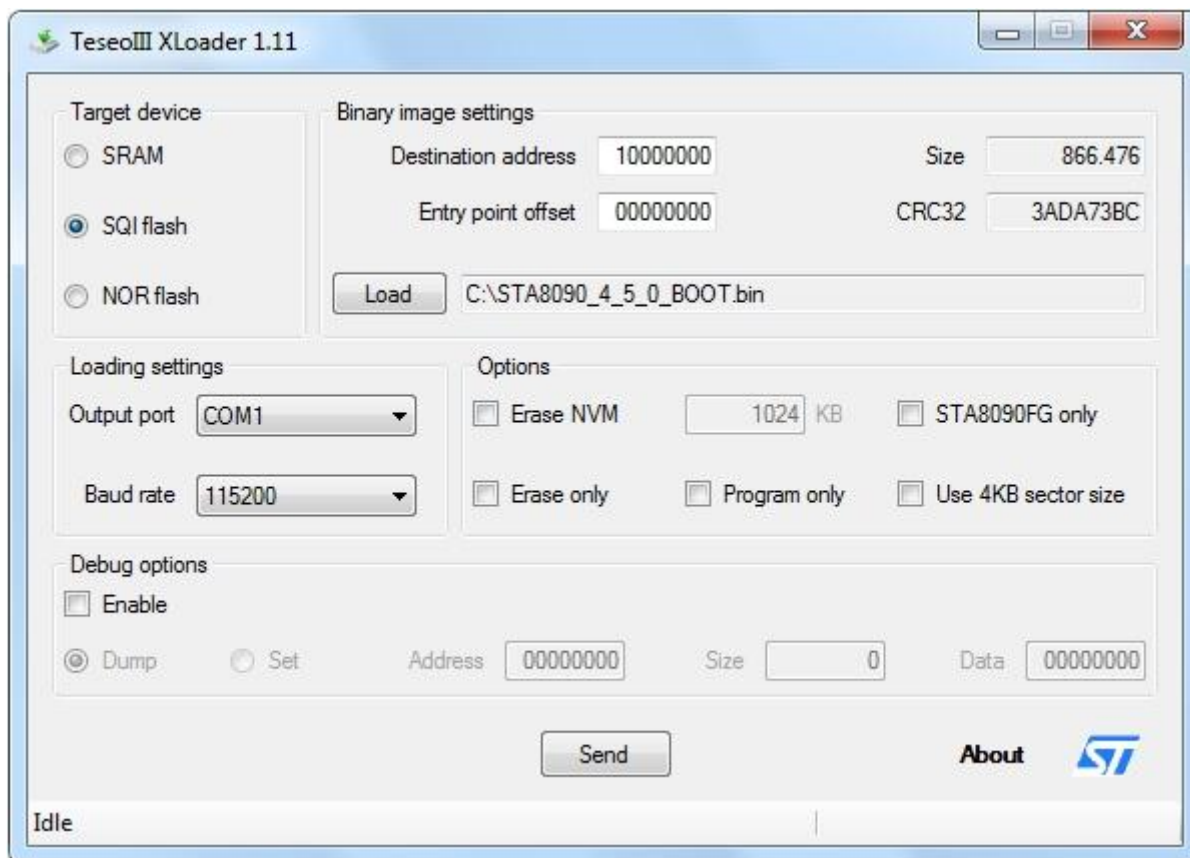


Figure 1: XLoader 1.11 main window

5.1 Target device

This box selects in which memory the firmware will be downloaded.

- SRAM stands for external RAM;
- SQI stands for internal or external SQI flash memory;
- NOR stands for external NOR flash memory.

When one of these buttons is pressed, the address field inside the “Destination address” text box will be updated with the default value associated with the selected memory device. By default we have:

- SRAM mapped at 0x24000000;
- SQI mapped at 0x10000000;
- NOR mapped at 0x20000000

Of course, “Destination address” field can be changed by the user according to his needs.

5.2 Binary image settings

This box represents the physical memory address where the firmware will be downloaded and then executed. “Destination address” is the absolute address where the firmware will be downloaded, while “Entry point offset” is the offset from the destination address where the tool will jump after the firmware download.

The “Load” button is used to load the firmware binary file from the file system into the tool; when the file is selected, two read-only fields “Size” and “CRC32” are updated with the values of the byte size and CRC-32 of the file.

5.3 Loading settings

In this box the user can choose how the firmware will be downloaded into TeseoIII through one of the available UARTs. The device must be switched on and boot pins must be in “Boot from UART” mode. When this mode is selected, the user can choose the desired COM port number and baud rate value which will be used during download process. Pressing right mouse button over COM ports box, all the available PC ports will be enumerated.

5.4 Options

In this box the user can select some options used during TeseoIII memory programming. These options are available only if NOR or SQI is selected in “Target device” box.

- Erase NVM: when this box is checked, the NVM flash memory area will be erased just before the tool starts to download firmware into TeseoIII. If this box is selected, a new field will be available; here the user can write the size of the NVM portion. Size must be expressed in number of Kilobytes. Base address of NVM region is fixed and cannot be modified. It's:
 - 0x20100000 for NOR flash device;
 - 0x10100000 for SQI flash device
- Erase only: when this box is selected, the flash program area will be ONLY erased, so there will be no firmware download;
- Program only: when this box is selected, the flash program area will be NOT erased before being programmed. This feature can be used ONLY with flash memories which have been already erased, otherwise the download process will end with a CRC error. This option should be used only with brand new flash memories;
- STA8090FG only: this box must be checked to erase and/or program the SQI flash memory of STA8090FG only. Do not check with any other package;
- Use 4KB sector size: when flash memory is an SQI, checking this box all the flash erase operations will use a 4KB sector size instead of default 64KB.

5.5 Debug options

Using this panel the user can read data from any address in the memory space or modify the content of internal/external RAM. If “Enable” box is checked new menus are available; below the description.

- Dump box is checked

When “Dump” box is checked, the user can read the content of any memory in TeseoIII. Field “Address” must be filled with a 32-bit address indicating the start address of the memory dump. Field “Size” is the number of 32-bit words to dump from the memory.

- Set box is checked

When “Set” box is checked, the user can write a single 32-bit word in the internal/external RAM. Address must be passed using “Address” field, while “Data” field represents the value that must be written. The software running on TeseoIII will not perform any check on the validity of the selected address, so the user must be sure the address is a valid entry in the RAM (DTCM or external RAM).

6 Disclaimer

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