BootLoader Recovery Application Note

GE863-PRO^3

80000nt10012a Rev. 0 - 10/03/08

Making machines talk.

APPLICABILITY TABLE

PRODUCT	PART NUMBER	APPLICABILITY
GE863-PRO^3	3990250691	√
GE863-PRO^3 with Linux OS	3990250698	√

Contents

1 Introduction

The GE863-PRO^3 boot procedure is composed of different steps, which involve the AT91SAM9260 internal ROM and SRAM, and the embedded flash and SDRAM chips. When you power up your board, the first to be executed is code located in the internal ROM, and after this the flash code will be executed, if present.
It is not possible to alter the contents of the internal ROM, but note that the binary images in the flash of the Telit bootloader and U-Boot can be inadvertently overwritten making your system unusable.

This guide will provide you all necessary info on how to recover the flash contents in case some pieces of software needed for the boot process are lost. In order to follow this procedure, you need a JTAG adapter such as SAM-ICE or J-Link emulator and the following files provided by Telit and Atmel:

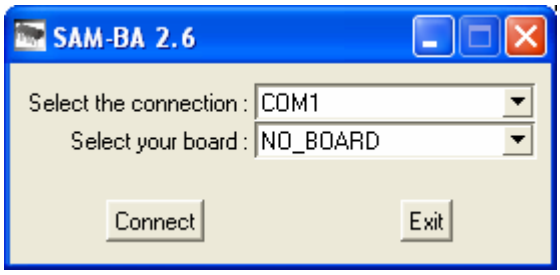
- The Software tool AT-91 ISP from ATMEL;
- The custom Telit SAM-BA files including the directory GE863-PRO^3, along with all the files beneath it and the file boards.tcl;
- The software package from Telit for GE863-PRO^3, including Bootloader and U-boot binaries

2 Recovering the Flash Contents

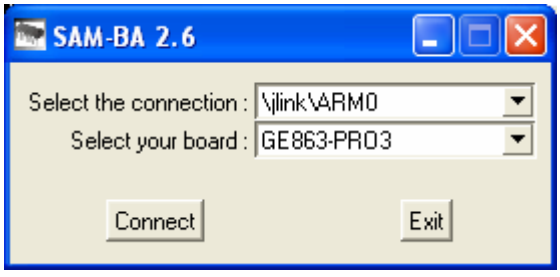
In order to recover the flash contents of your GE863-PRO^3 EVK you can use JTAG adapter such as the SAM-ICE or J-Link emulator, together with a tool from Atmel (SAM-BA). The SAM-BA tool is part of the AT91 ISP suite, which can be downloaded from Atmel's web site, following the links **Products → AT91SAM 32-bit ARM-based Microcontrollers → Tools & Software → AT91 In-system Programmer (ISP)**.
Once this package has been downloaded and installed you need to add support for the Telit GE863-PRO^3 EVK before launching the SAM-BA tool.
In the *SAM-BA v2.6\lib* directory under the installation directory of the ISP suite, there are some definitions and script files required for SAM-BA in order to work with different target boards. The files necessary to interface to the GE863-PRO^3 EVK board are:

- **extract** in the directory the GE863-PRO^3 folder
- boards.tcl file included in the Telit GE863-PRO3-SAM-BA.files_v1.0.zip, overwriting the existing file.

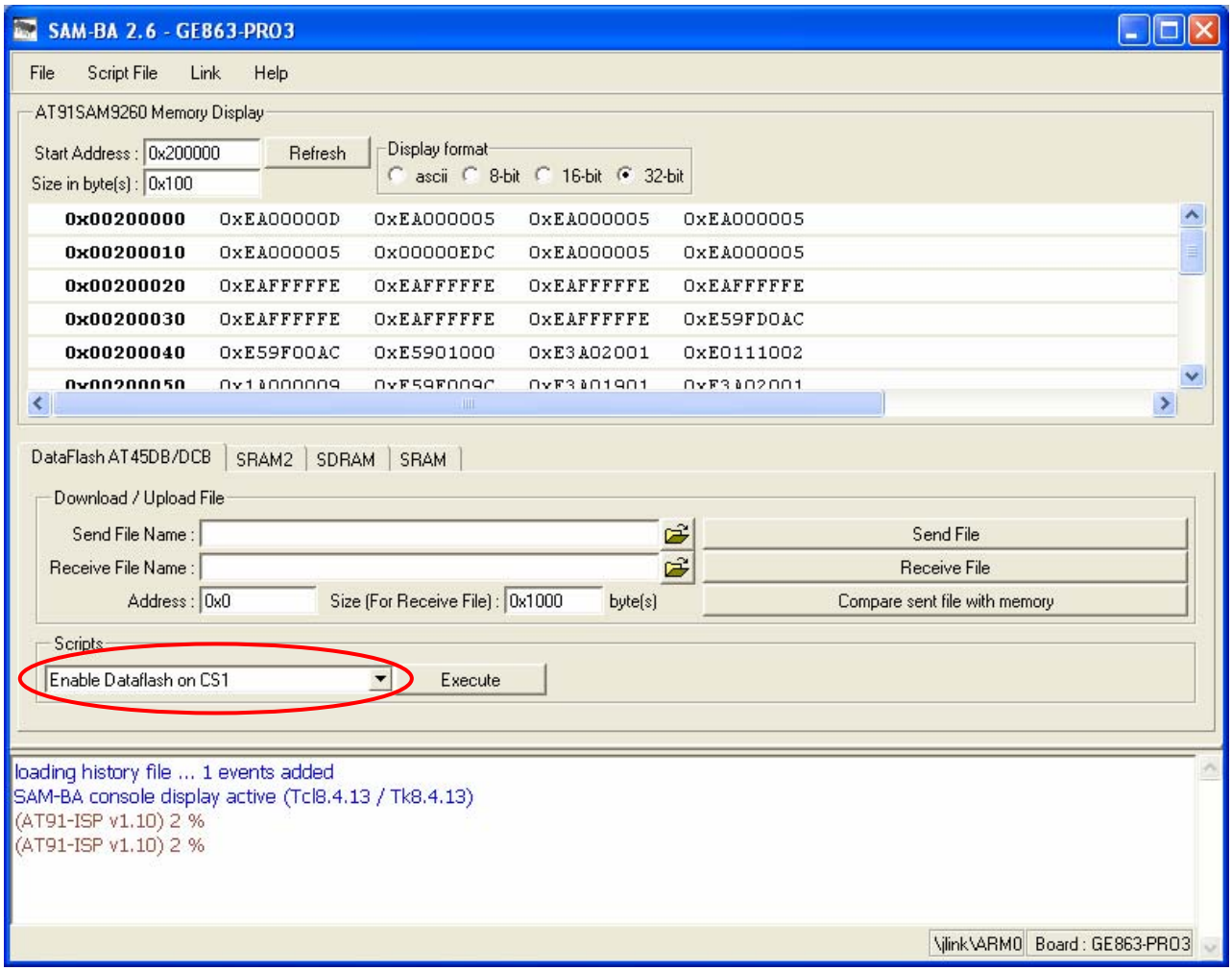
Note: Windows account with administrator privileges is necessary to run this tool.
The next step is to connect the SAM-ICE to an USB port of your PC and to the JTAG connector of the board, power up the board and launch SAM-BA. The following window should appear:



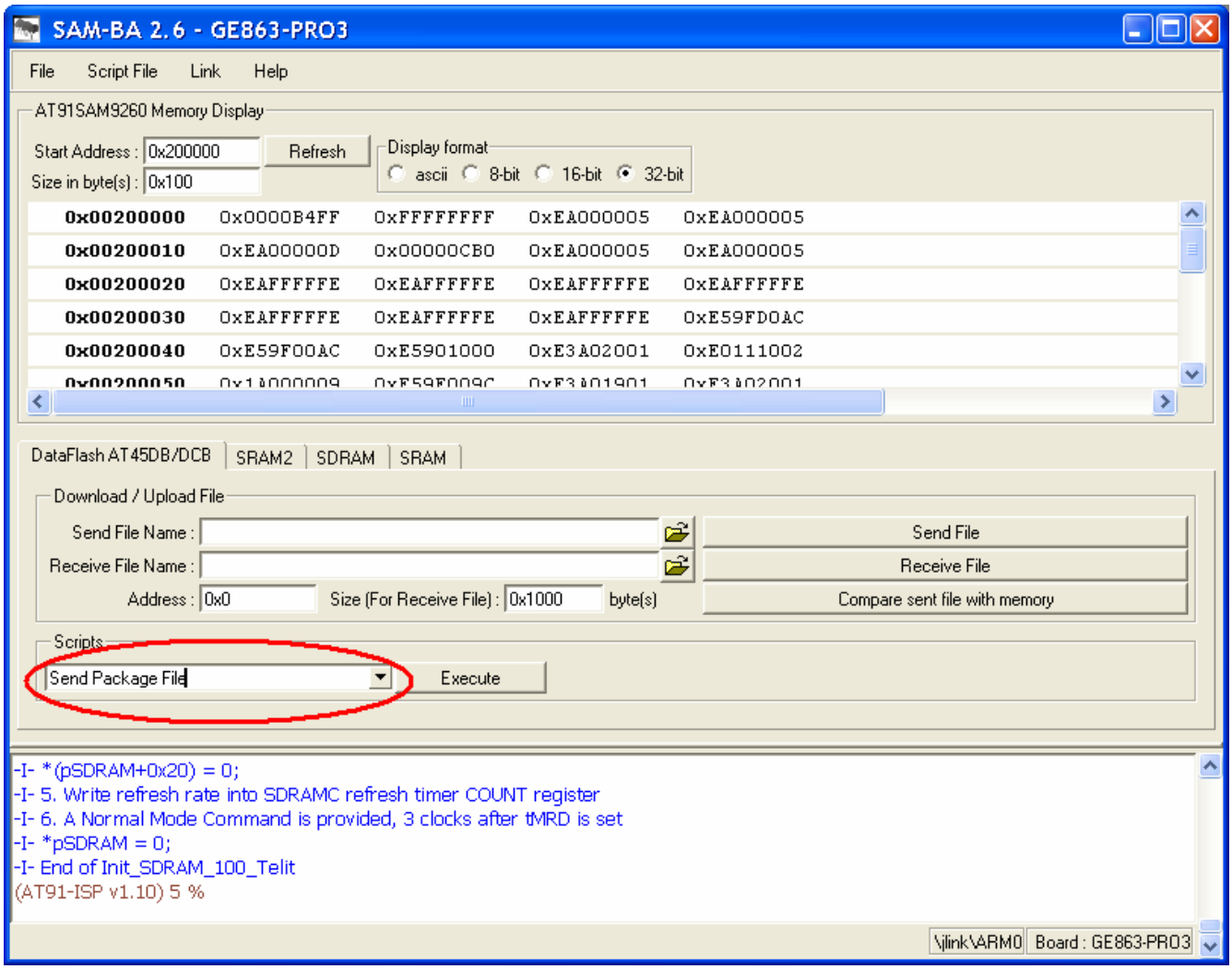
Select the **\jlink\ARM0** connection and the **GE863-PRO3** board, and then click on **Connect**.



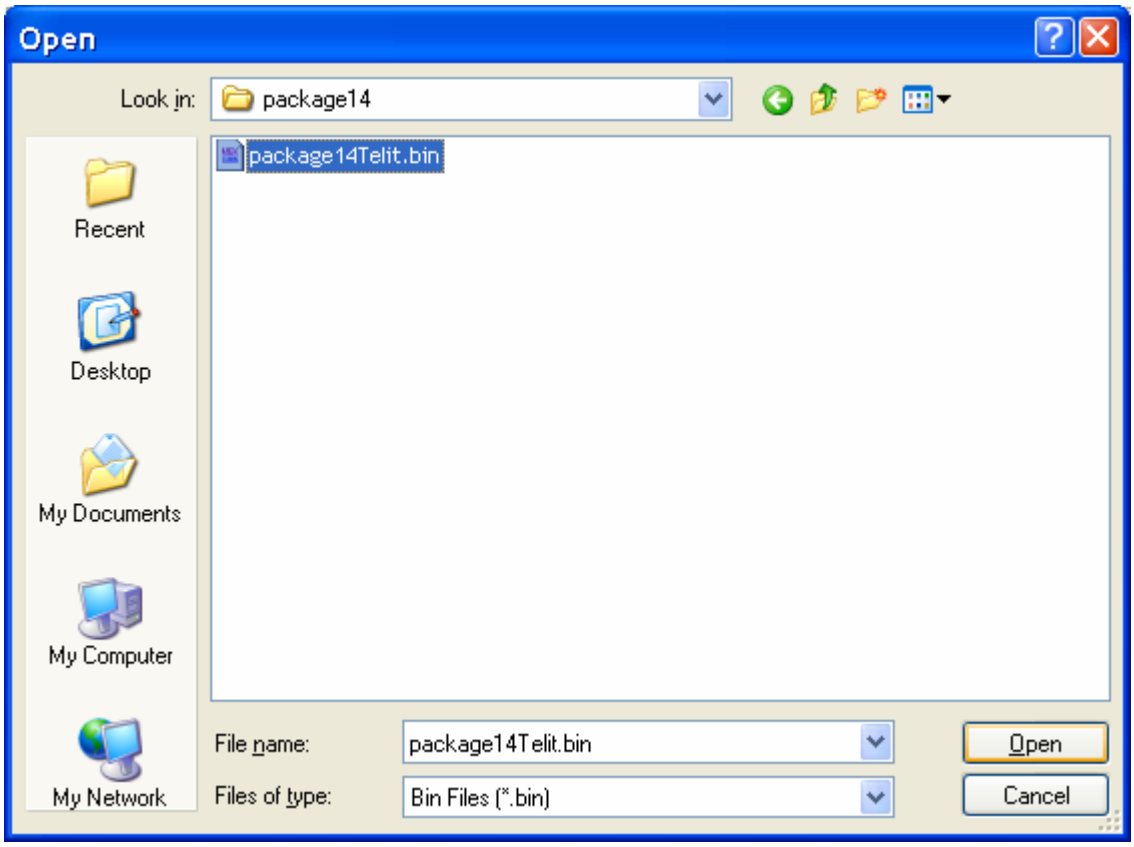
After a few seconds, the main SAM-BA window will appear. On that window, under the tab **DataFlash AT45DB/DCB**, select **Enable Dataflash on CS1** from the **Scripts** drop-down list and click on **Execute**.



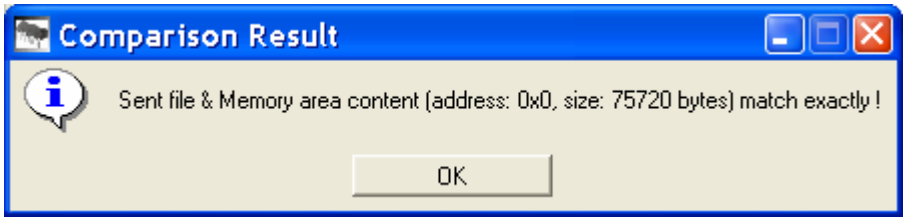
Then select **Send Package File** from the **Scripts** drop-down list and click on **Execute**.



At this point an Open dialog box appears; browse your PC for the Package file from Telit and click on **Open**.
This launches the copy in Flash of the Telit Package.



After the copy operation, the flash contents are compared with the file sent in order to verify that the operation has been completed successfully. A dialog box should appear to report the result of the operation: click on **OK** on that dialog box.



Now your flash contents are recovered and your board is brought back into an operational state.

3 Document Change Log

Revision	Date	Changes
ISSUE #0	10/03/08	First release