Restoring a Corrupt Bolo/Lolo with an ARM Multi-ICE JTAG

Application Note 248

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Abstract

This document describes the procedure using the ARM Multi-ICE for restoring the bootloader (LogicLoader) on a card engine that has had its boot sectors overwritten (block 0 of on-board flash memory).

REVISION HISTORY

REV	EDITOR	DESCRIPTION	APPROVAL	DATE
A	Aaron Stewart	Release	HAR	7/13/2004
B	Aaron Stewart	Added JTAG jumper settings diagram; Added Required Component: GNU Tools must be installed	HAR	9/10/04

1 Introduction

Logic Product Development has released this document to help customers restore bolo/lolo on a Sharp-ARM based card engine with corrupted flash memory. The applicable card engines include: LH75401-10, LH79520-10, LH7A400-10, LH7A404-10, LH7A404-11.

Note: *This document is only applicable for use with an ARM Multi-ICE JTAG.*

2 Restoring a Corrupt Bolo/Lolo with ARM Multi-ICE

Required Components:

- Cygwin
- Logic's GNU Tools Toolchain Build
- ARM Multi-ICE Software
- Mice.bat

Important Note: Please confirm that the JTAG jumper settings are correctly configured on the SDK for JTAG Operation.

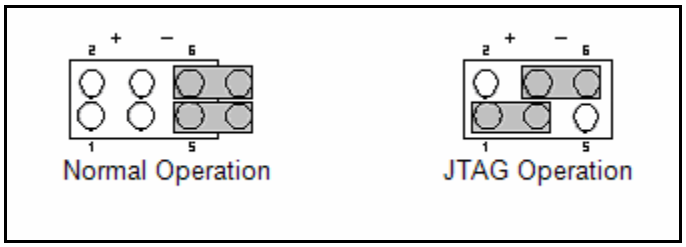

Figure 2.1: JTAG Settings

1. Run the installation CD that comes with the ARM Mulit-ICE JTAG programmer. After running the installation CD and installing the software per on-screen instructions, an .\ARM\Multi-ICE folder will be created in the location you have designated.

2. The following files need to be added to the 'Multi-ICE' folder. These files are available in a .zip file under software development tools on Logic Product Developments' Product Downloads page:

   - mice.bat
   - multi-ice-gdb-server.exe
   - Multi-ICE.dll
   - onchiptrace.dll
   - cygwin1.dll
   - toolconf.dll

3. Start up Multi-ICEServer.exe by double clicking the icon or selecting it from a Start menu icon.

4. Press the '#?' button in the upper left hand corner (under 'file') to auto-configure.

5. Run **'mice.bat'** by double clicking the file in the .\ARM\Multi-ICE folder referenced above. A window, like Figure 2.2 below, will appear. Set your initialization parameters according to the card engine you are using.

Please note the following card engine specific initialization parameters:

- LH75401-10: You don't need to enter any settings for the LH79520-10. Click 'OK.'
- LH79520-10: You don't need to enter any settings for the LH79520-10. Click 'OK.'
- LH7A400: Under 'Processor Settings' configure Multi-ice to start at: **b0010000**. Then, under the 'Advanced' tab, select '**disable cache'** on startup.
- LH7A404: Under 'Processor Settings' configure Multi-ice to start at: **b0010000**. Then, under the "Advanced' tab, select '**disable cache'** on startup.

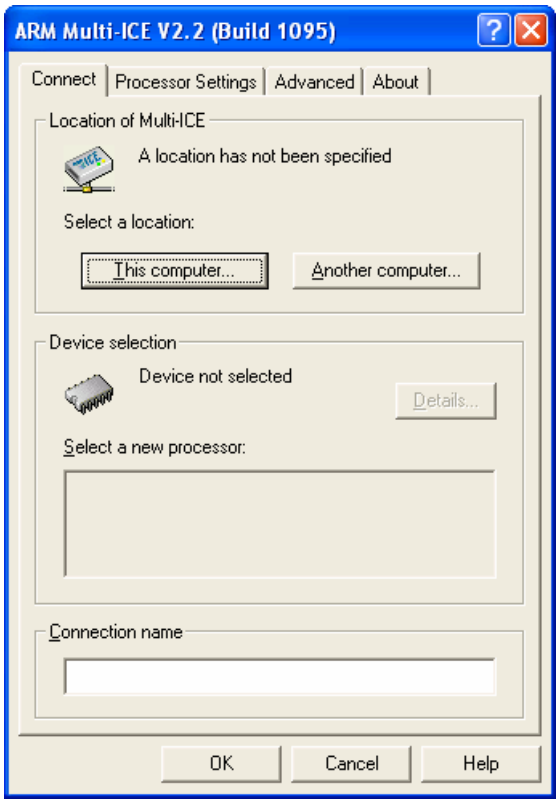

Figure 2.2: Run 'mice.bat'

6. Open a Cygwin Window. See Figure 2.3, below.

   (For specifics regarding Cygwin and GNU Tools installation and configuration, please refer to Logic's *Zoom Starter Development Kit User's Manual.*)

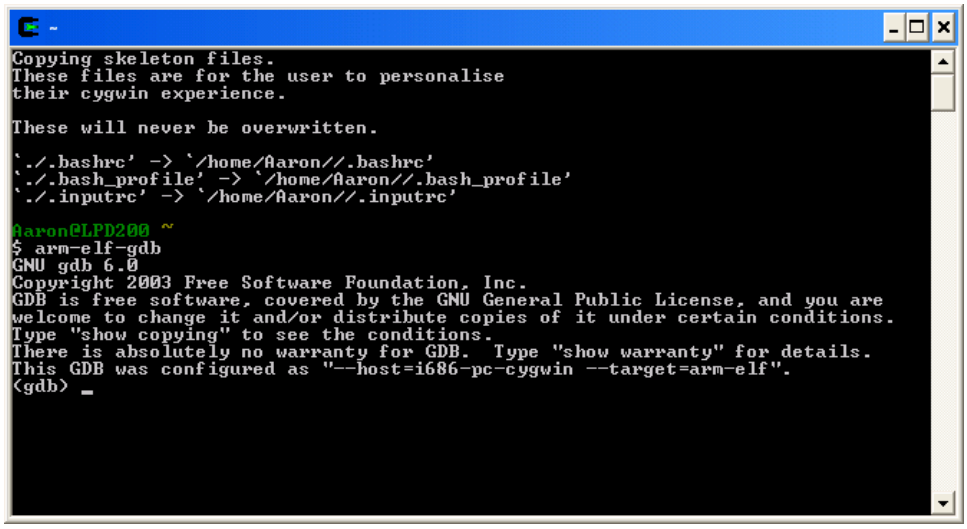

Figure 2.3: Open a Cygwin Window

7. Type ‘cd /’. This command will take you to your Cygwin root directory. ('/' means cygwin root, or the cygwin folder.)

8. Next, type ‘arm-elf-gdb’. This command will start up the gdb server and present you with a 'gdb' prompt.

   Important Note: Make sure to copy the necessary files to your cygwin root directory before launching gdb -- this will allow gdb to locate them for the load.

9. From the 'gdb' prompt enter the following commands. See Figure 2.4, below.

   - 'target remote localhost:9000'
   - load bootstrap file: load <filename>
   - click 'c' to continue
   - click 'Ctrl-C' after 1 second to stop continuation
   - load bolo Ram file: load <filename>
   - open a ‘TeraTerm’ window
   - click 'c' to continue, a bolo prompt will appear in your Tera Term window.

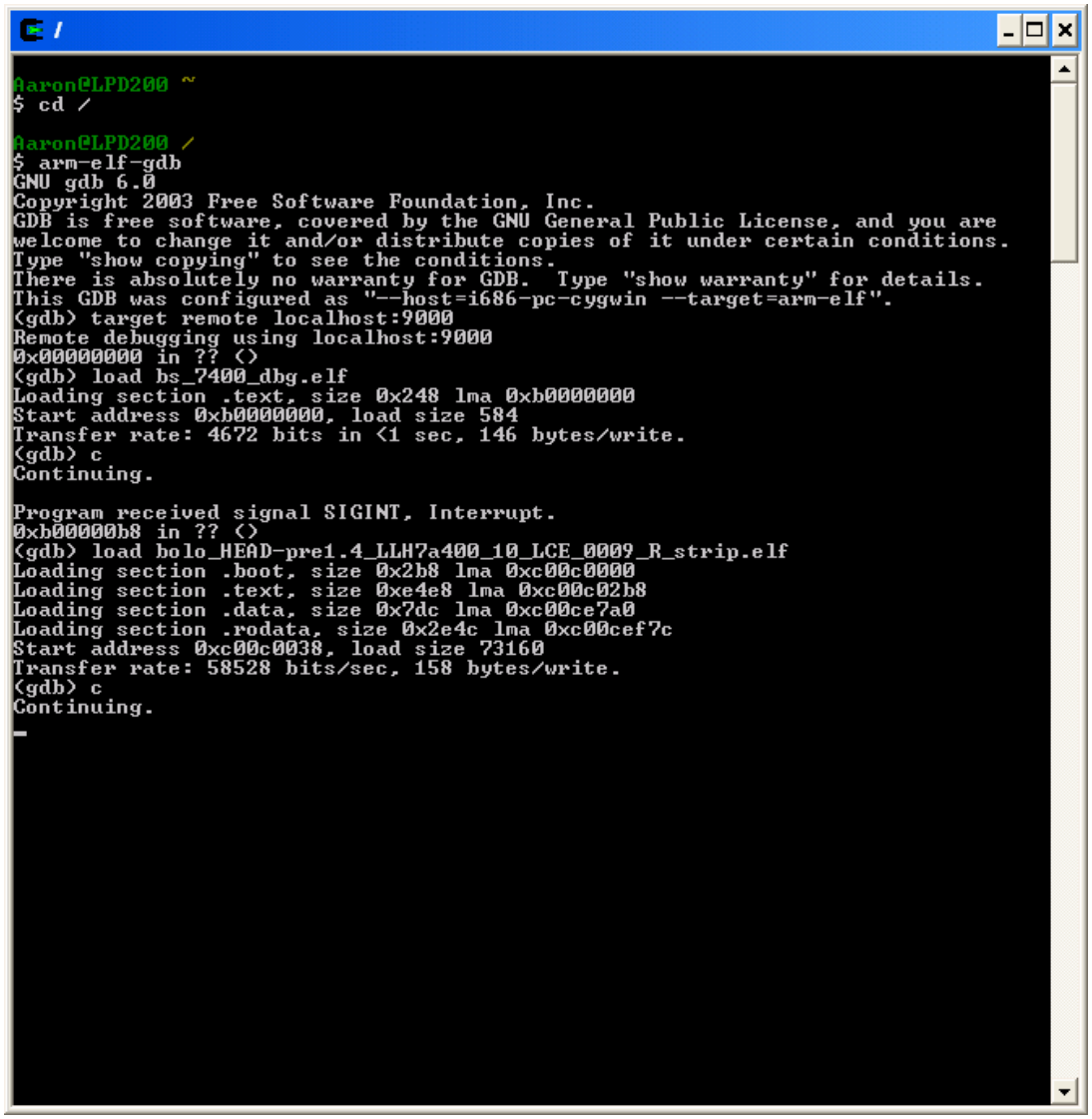

Figure 2.4: From the 'gdb' Prompt, Enter the Following Commands

10. In your Tera Term window, complete the following commands:

- type 'load elf' after the losh prompt
- use **File | Send** file functionality to send bolo flash file to board
- type burn, yes, and confirm to burn bolo flash to board
- load lolo flash with the same method as described above.
- Reset the board and the updated version of LogicLoader will appear.

11. Upon completing step 10, above, your corrupt Bolo/Lolo will be restored in the card engine flash memory.