DE2_70 Application note 02

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Preliminary Version   © 2007 by Terasic

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Chapter

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About this application note

This document will describe how to configure the demonstrations of the TRDB_LTM board on the Altera DE2_70 board.

Getting Help

Here are some places to get help if you encounter any problem:

- ✓ Email to support@terasic.com
- ✓ Taiwan & China: +886-3-550-8800
- ✓ Korea : +82-2-512-7661
- ✓ Japan: +81-428-77-7000

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Chapter

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TRDB_LTM

This chapter illustrates how to exercise the digital panel reference design provided with the kit. Users can follow the instructions in this chapter to build a 4.3 inch Ephoto demonstration and pattern generator using the DE2-70 board.

DE2_70_LTM_Ephoto Demonstration

Locate the project directory from the *DE2_70\ DE2_70_LTM_Ephoto* folder included and follow the steps below :

Quartus II Project Directory: DE2_70_LTM_Ephoto

FPGA Bitstream Used: DE2_70_LTM_Ephoto.sof

1. Connect USB cable from PC to DE2-70 board (make sure Quartus II & NIOS II are installed)
2. Make sure the IDE cable on the TRDB_LTM is connected to **J4** of the DE2_70 board
3. Execute the Control Panel application software **DE2_70_Control_Panel.exe** from the **DE2_70\Control panel** folder.
4. Click **Download Code** button as shown in Figure 2.1 and the control panel is ready for use.
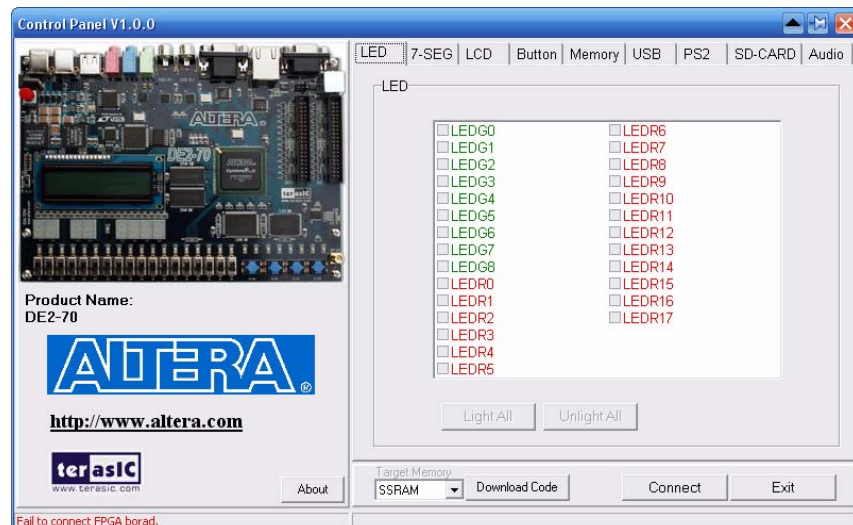
Figure 2.1. The control panel window.

5. Switch to the Memory tab in the Control Panel and select "FLASH" memory type as shown in Figure 2.2
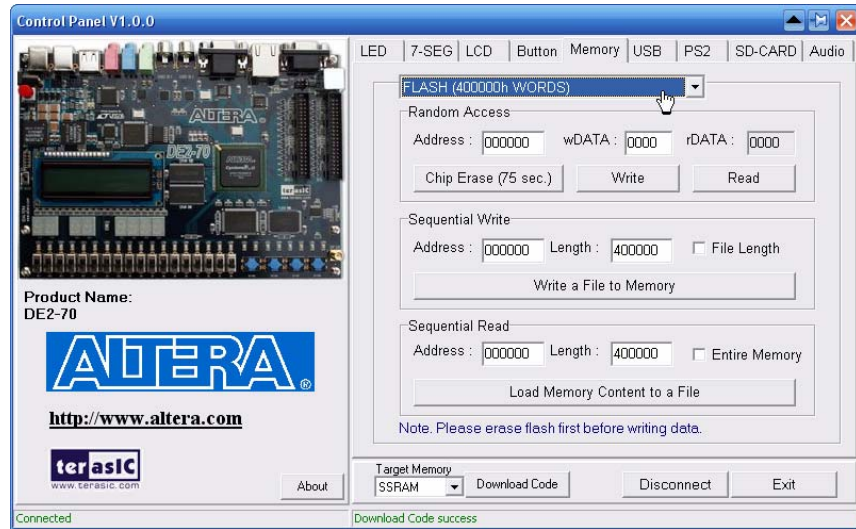

Figure 2.2. Accessing the Flash.

6. Click on the "**Chip Erase(75 Sec)**" button to erase Flash data
7. Click on the "**File Length**" checkbox to indicate that you want to load the entire file as shown in Figure 2.3
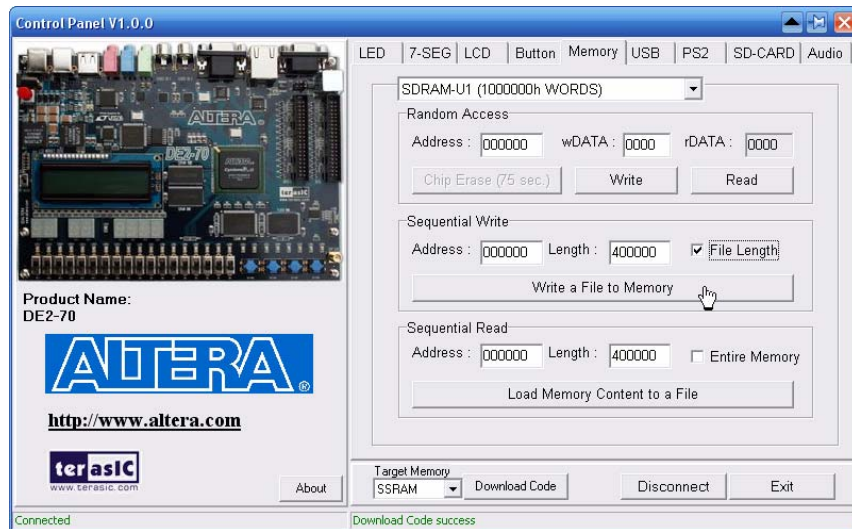8.

Figure 2.3. Load picture into the flash.

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9. Click on the "**Write a File to FLASH**" button. When the Control Panel responds with the standard Windows dialog box asking for the source file, select the "**480x3.bmp**" file from the *DE2_70\Photo* folder.

10. Close the Control panel window

11. Use Quartus II Programmer tool to download the bitstream file (**DE2_70_LTM_Ephoto.sof**) to the DE2-70 board from the *DE2_70\ DE2_70_LTM_Ephoto* folder

12. When user touches the LTM screen, the 7-segment named "HEX6~HEX4" and "HEX2~HEX0" on the DE2-70 board will display the X and Y coordinates (in Hexadecimal format) of the LTM panel you touched respectively

13. Touching the left bottom corner and top right corner of the LTM touch panel to display the next and previous photo respectively as shown in Figure 2.4.
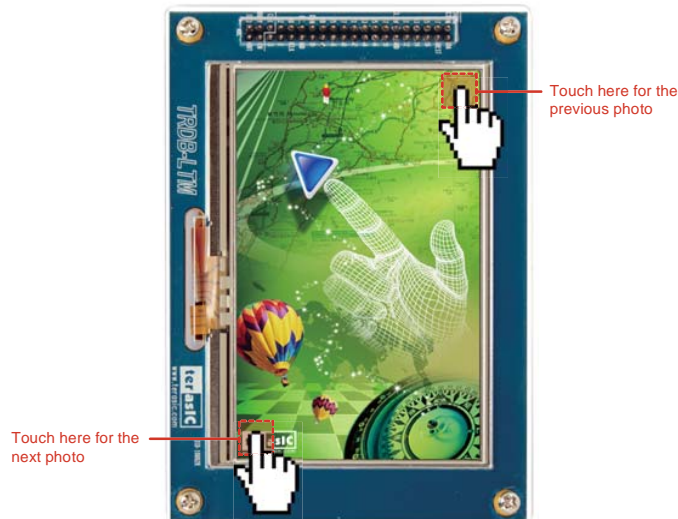

Figure 2.4. The touch function of changing displayed photo

DE2_70_LTM_TEST demonstration

Locate the project directory from the *DE2_70\DE2_70_LTM_TEST* folder included and follow the steps below :

Quartus II Project Directory: DE2_70_LTM_TEST

FPGA Bitstream Used: DE2_70_LTM_TEST.sof

1. Connect USB cable from PC to DE2-70 board (make sure Quartus II & NIOS II are installed).

2. Make sure the IDE cable on the TRDB_LTM is connected to **J4** of the DE2_70 board.

3. Download the bitstream (**DE2_70_LTM_TEST.sof**) to the DE2_70 board.

4. You can touch the LTM screen to switch to the other Pattern.

5. The following table summarizes the Pattern type of this demonstration.

Pattern
Gray bar.
Color bar.
50% gray level pattern.
White pattern.

6. When you touch the LTM panel, the 7-segment named "HEX6~HEX4" and "HEX2~HEX0" on the DE2-70 board will display the X and Y coordinates (in Hexadecimal format) of the LTM panel you touched respectively

Chapter

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Appendix

Revision History

Date	Change Log
OCT 30, 2007	Initial Version (Preliminary)