
SDTSRV EXAMPLES (ARM9) README

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1 Revision History

Date	Name	Version	Description
12/07/2005	Shilpa Byrichetty	1.0	Initial creation of the document
04/17/2006	Shilpa Byrichetty	1.1	Added flash test cases
11/15/2007	Shilpa Byrichetty	1.2	Added DbgCom test cases

2 Release Notes

2.1 *Version 1.2*

- This release has a test case that tests all the DbgCom features of ARM9 targets. This test case can be used to program, verify, erase or read from flash via DbgCom channel.
- The DbgCom features can be tested only when installed with spectrum digital driver release of 30322 or later.
- This can be used as an example to do various applications on ARM9 target via DbgCom channel.

2.2 *Version 1.1*

- This release has more diagnostics features added to the SD XMLGUI application like programming, erasing and verifying Flash for ARM9 targets.
- A new window called flash test is created in the xml file just for accessing flash functions and modifying flash options.
- The test window is modified such a way that all the tests are controlled from this window by checking or unchecking the corresponding test checkbox.

2.3 *Version 1.0*

- Initial Release

3 APPLICATIONS

3.1 TestARM9mfc APPLICATION

TestARM9mfc application is a general-purpose framework which uses XMLGUI to create a sample application for testing some of the diagnostic features of ARM9 products. This application provides a generic interface to JTAG communications channel that can be used as a coff loader as well as to support flash programming. Using SDXMLGUI as a coffloader prevents the use of Code Composer Studio to load and run a coff file. Using SDXMLGUI as a flash programming utility prevents the use of Code Composer Studio and Flash burn to program, erase and verify flash. Each window in the application is defined as xml files which are created on startup of SDXMLGUI. This application is tested on OSK5912 when installed in a CCS 3.3 environment.

3.1.1 Description

The SD XMLGUI application four windows defined as .xml files (See sample output section 10)

3.1.1.1 Settings Window

OPTIONS		DESCRIPTION
Driver	Required for all Tests	Represents the driver path and driver name for a specific target
Board File	Required for all Tests	This is .dat file required for connecting to the target.
Processor Name	Required for all Tests	Default is cpu_0. Must match the board file.
Coff File	Required only for COFF Test.	This is the .out file to be loaded and ran in the target processor.

3.1.1.2 Flash Window

NOTE: Be sure to check Flash test checkbox in the Test window for the tests checked in the flash window to work.

OPTIONS	DESCRIPTION
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Flash Erase	Erases flash for the specific target if checked.
No of Pages to Erase	Specify the no of pages to erase(0-represents maximum number of pages for a specific target)
Flash Program	Programs flash with the flash program data file (.out) specified if checked.
Flash Program Data file	Represents the bootable flash program data file (.out). This is an .out file which is a uboot file used for testing purposes on OSK5912.
Flash Verify Checksum	Verifies checksum of the data in the flash with the checksum of program data file if checked.
Flash Algorithm file	Executable (.out) file for the DSP being programmed and is executed on the target. Required for all flash operations.

3.1.1.3 Test Window

OPTIONS	DESCRIPTION
Verbose Messages	Display messages while testing on the output window if checked.
Verbose Errors	Display error messages on the output window if checked
Register Test	Does a basic Register test for the specific target if checked
Memory Test	Does a basic Memory Test for the specific target if checked
Coff Test	Works as a coff loader if checked. Be sure to specify the coff file name in the Settings window.

Flash Test	Does flash tests with the options specified from the flash window.
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3.2 TestDbgComArm9 APPLICATION

TestDbgComARM9 application is a general-purpose framework which uses XMLGUI to create a sample application for testing the DbgCom features of ARM9 products. Each window in the application is defined as xml files which are created on startup of SDXMLGUI. This application is tested on OSK5912 when installed in a CCS 3.3 environment installed with spectrum digital driver release of v_30322 or later.

3.2.1 Description

The SD XMLGUI application 3 windows defined as .xml files (See sample output section 11)

3.2.1.1 Settings Window

OPTIONS		DESCRIPTION
Driver	Required for all Tests	Represents the driver path and driver name for a specific target
Board File	Required for all Tests	This is .dat file required for connecting to the target.
Processor Name	Required for all Tests	Default is cpu_0. Must match the board file.
Flash Tests		Does flash tests with the options specified from the flash window.
Verbose		Display messages while testing on the output window if checked.

3.2.1.2 Flash Window

NOTE: Be sure to check Flash test checkbox in the Settings window for the tests checked in the flash window to work.

OPTIONS	DESCRIPTION
Flash Erase	Erases flash for the specific target if checked.

No of Pages to Erase	Specify the no of pages to erase(0-represents maximum number of pages for a specific target)
Flash Program	Programs flash with the flash program data file (.out) specified if checked.
Flash Program with Erase Overlap	When Flash Erase, Flash Program and Flash Program with Erase Overlap checkboxes are checked, the application performs an optimized Flash programming with erase overlap.
Flash Program Binary	Programs the Flash at the starting address specified in the Program Start Address box with the flash program data file (.bin) specified if checked.
Flash Program Start Address	Starting address of the flash used for programming a binary file.
Flash Program Data file	Represents the bootable flash program data file (.out / .bin). This is an .out file which is a uboot file used for testing purposes on OSK5912.
Flash Verify Checksum	Verifies checksum of the data in the flash with the checksum of program data file if checked.
Flash Read	Reads the contents of the flash into a binary file(Flash Read File Name) from start address to length.
Start Address	Represents the start address of the Flash to be read from.
Length	Represents the length of the Flash to be read from.
Flash Read File Name	Represents the File name to read the

	contents of the Flash to.
Flash Algorithm file	Executable (.out) file for the DSP being programmed and is executed on the target. Required for all flash operations.

4 Finding More Information

If you are interested in source code to the XMLGUI.exe application or XMLPARSER.dll, visit KRKsoft at <http://www.krksoft.com/sd/>.

5 Build Environment

- Target – ARM9,CCS 3.3 tools
- Host - WinXP Pro,MSVC 6.0 with Service Pack 5

6 Assumptions

- All files are installed and copied into <CCS_INSTALLDIR> \specdig \sdtsrv\Examples directory maintaining the relative directory structure.
- The Directory structure must be exactly duplicated within CCS install for the diagnostic to find emulation drivers.

7 Directory Structure

<CCS_INSTALLDIR>\specdig\sdtsrv\Examples

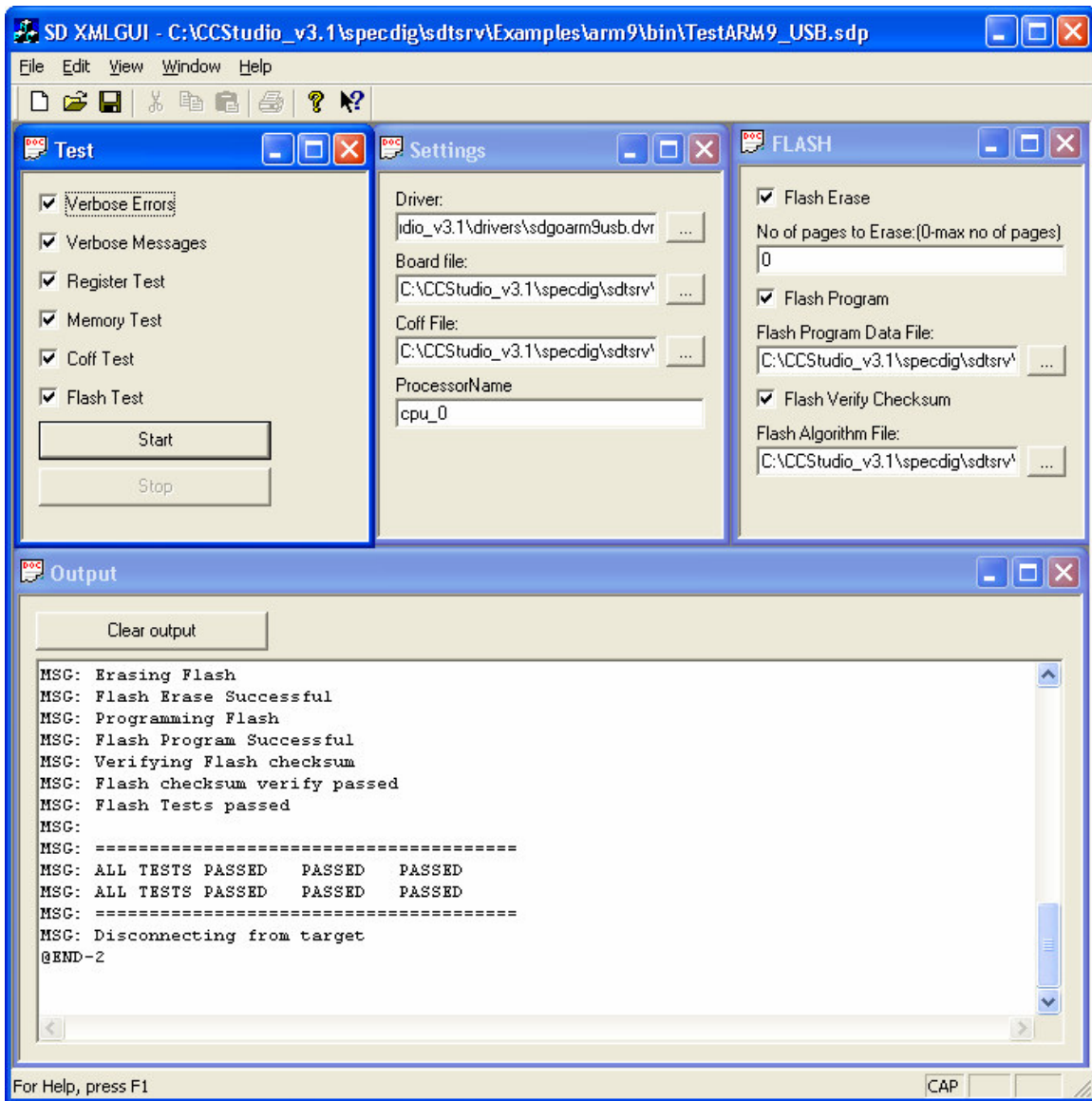
- \Coff- Generic coff files
- \ARM9 - directories specific to ARM9
 - \bin-Binary and .dll files required to run TestArm9mfc application.
 - \Common- ARM9 Target specific files.
 - \DbgCombin – Binary and .dll files required to run TestDbgComArm9 application.
 - \Target-Output files
 - \ARM9
 - Step.out – For testing coff.
 - PostARM9.out – Flash Program data file

- ARM9FlashAlgorithm.out – Flash Algorithm file.
- DbgComArm9.out – DbgCom Flash Algorithm file.
- \ARM9Flash- CCS Project files for generating ARM9 specific Flash algorithm file.
- \DbgComArm9 – CCS Project files for generating DbgCom ARM9 specific Flash algorithm file.
- \TestArm9mfc-Source files required to build TestArm9mfc.dll (Host Test code).
- \TestDbgComArm9-Source files required to build TestDbgComArm9.dll
- \DbgComSource-Source files for DbgCom Flash algorithm file.
- \FlashSource-Source files required to produce Flash Algorithm file.

8 Running the TestArm9mfc Application

- Connect your OSK5912 to PC and power the dsk.
- Double-click on the XMLGUI.exe from
<CCS_INSTALLDIR>\specdig\sdtsrv\Examples\ARM9\bin directory.
- Open TestARM9_PPEMU.SDP project in the XMLGUI window if your target is connected to PC via XDS510PP emulator.
- Open TestARM9_USB.SDP project in the XMLGUI window if the target is connected to PC via XDS510USB emulator.
- Four tests Register test, Memory test, Coff test and Flash test may be performed all together or in any combination by checking and unchecking the checkboxes from the test window.
- Press the start button to see the results on the output window.

9 Sample Output (TestArm9mfc)



10 Running the TestDbgComArm9 Application

- Connect your OSK5912 to PC and power the dsk.
- Double-click on the XMLGUI.exe from <CCS_INSTALLDIR>\specdig\sdtsrv\Examples\ARM9\DbgCombin directory.
- Connect the ARM9 target to PC via XDS510USB or XDS510USB PLUS emulator.
- Open SDProject.sdp project in the TestDbgComArm9 application.

- Select the options on the XMLGUI window based on the user requirements.
- Press the start button to see the results on the output window.

11 Sample Output (TestDbgComArm9)

