Libero SoC v11.7 SP2

Programming and Debug Tools Release Notes

Microsemi

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Revision History

The revision history describes the changes that were implemented in the document. The changes are listed by revision, starting with the most current publication.

Revision 1.0

Revision 1.0 is the first publication of this document.

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Microsemi Libero® System-on-Chip chip (SoC) design suite offers high productivity with its comprehensive, easy to learn, easy to adopt development tools for designing with Microsemi's power efficient flash FPGAs, SoC FPGAs, and Rad-Tolerant FPGAs. The suite integrates industry standard Synopsys Synplify Pro® synthesis and Mentor Graphics ModelSim ME® simulation with best-in-class constraints management, debug capabilities, and secure production programming support.

To access datasheets and silicon user guides, visit www.microsemi.com, select the relevant product family and click the **Documentation** tab. Tutorials, Application Notes, Development Kits & Boards are listed in the **Design Resources** tab.

Libero SoC v11.7 SP2 includes a Programming and Debug Tools installer. This installer is intended for laboratory and production environments where Libero is not installed, and allows you to install the following tools:

- FlashPro/FlashPro Express
- SmartDebug Standalone
- Job Manager

All the above tools are also available with the full Libero SoC release.

To access Datasheets and Silicon User Guides, visit http://www.microsemi.com/products/fpga-soc/fpga-and-soc, select your Product, then click the **Documents** tab. Tutorials, Application Notes, Development Kits and Starter Kits are listed in the Design Resources tab.

1.1 System Requirements

See the web page System Requirements for more information regarding operating system's support and minimum system requirements. A 64-bit OS is required for designing with SmartFusion2, IGLOO2, and RTG4 devices.

Setup Instructions for Linux OS can be found on the Libero SoC Documents web page.

1.1.1 Operating System Support

Supported

- Windows 7, Windows 8.1.
- RHEL 5* and RHEL 6, CentOS 5* and CentOS 6.
- SuSE 11 SP4 (Libero only; FlashPro Express, SmartDebug, and Job Manager are not supported)
  Note: *RHEL 5 and CentOS 5 do not support programming using FlashPro5.

Not Supported

- 32-bit operating system is no longer supported.
- Windows XP is no longer supported.
- Support for the following operating systems will cease in the first half of 2017:

  o Solaris Flexlm license daemon support; Libero SoC is not supported on Solaris.

  o Libero SoC software support for RedHat Enterprise Linux 5 and CentOS 5.

1.2 Download Libero SoC v11.7 SP2 Programming and Debug Tools

Installation requires Admin privileges.

- Windows download
- Linux download

1.2.1 Installation Note

After installation of Programming and Debug Tools on Linux, any attempt to run the udev_install script for FlashPro setup will fail.

When running the script, you will see the following:

```
% ./udev_install
/bin/sh^M: bad interpreter: No such file or directory
```

Problem:

The script uses Windows CR/LF line termination instead of UNIX/Linux LF only line termination and, as such, is not a valid shell script.

Workaround:

You must run dos2unix on the script to convert CR/LF line termination to LF only line termination:

```
% dos2unix udev_install
% ./udev_install
```

If dos2unix is not available, you may need to run the following command, and then run dos2unix:

```
% sudo yum install dos2unix
```

The Libero SoC v11.7 SP2 service pack is an incremental update and must be installed on top of the Libero SoC v11.7 SP1 or Libero SoC v11.7 SP1.1.

Note: If your Libero SoC installation is v11.7 production release, first update it to Libero SoC v11.7 SP1 and then apply the Libero SoC v11.7 SP2 service pack update.

Note: Installation requires Administrator privileges to the system.

The following links have the steps for downloading the Libero SoC v11.7 SP2 on Windows and Linux operating systems:

- Windows Download
- Linux Download

1.3 Download SoftConsole 3.4/4.0

The Libero SoC v11.7 SP2 is compatible with SoftConsole v3.4 SP2 and SoftConsole v4.0. The following links have the download packages and explains the steps for downloading different versions of SoftConsole on different operating systems:

- Download SoftConsole v4.0 for Windows.
- Download SoftConsole v4.0 for Linux.
- Download SoftConsole v3.4 SP1 for Windows.

1.4 Silicon Feature Support

1.4.1 SmartFusion2/IGLOO2 - Four New Parts

The Libero SoC v11.7 SP2 release introduces two new SmartFusion2 parts and two new IGLOO2 parts.

Family	Die	Pin/Package	Speed Grade	Core Voltage	Temperature
SmartFusion2	M2S010S	144 TQ	-1	1.2 V	TGrade2
	M2S005S	144 TQ	-1	1.2 V	TGrade2
IGLOO2	M2GL010S	144 TQ	-1	1.2 V	TGrade2
	M2GL005S	144 TQ	-1	1.2 V	TGrade2

1.5 Known Limitations, Issues and Workarounds

Known issues in the Libero SoC v11.7 SP1 release may also apply to the Libero SoC v11.7 SP2 release. Review the Libero SoC v11.7 SP1 Release Notes for known issues in the Libero v11.7SP1 release.

1.5.1 RTG4 SmartDebug: Device Resets during JTAG Operations with SmartDebug

After performing one or more JTAG operations, if a user closes and reopens the SmartDebug tool (either standalone or within the Libero SoC software), the device resets itself.

Workaround:

The device reset problem can be avoided using the FlashPro5 programmer and by setting a value of "1" on the def variable **"SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET".**

- For standalone SmartDebug
  - When invoking the tool from the command line, add the following argument:

    Console >

    ./sdebug.exe **SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET**:1

  - When invoking the tool from the GUI:

    Edit the sdebug.def file and change the value of def variable to '1' in the line below:

    data SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET 0 OVERRIDE

- For SmartDebug invoked from Libero:
  - Edit the sdbg.def file and change the value of def variable to "1" in the line below:

    data SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET 0 OVERRIDE

  - Add the following line in the libero.def file:

    data SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET 1 OVERRIDE

- For Tcl script-driven batch mode operation, add the following def variable and the value in a Tcl script:

    defvar_set -name **SMARTDEBUG_RTG4_FLASHPRO5_DISABLE_RESET** -value 1

Note: When this def variable is set to 1, the LiveProbe set in the previous SmartDebug session is not retained when a subsequent SmartDebug session is invoked.

1.5.2 Programming - Libero crashes when Exporting FlashPro Express Job for UEK1 or UEK2 with eNVM

Libero crashes when the Export FlashPro Express Job tool is invoked to generate a programming job encrypted using UEK1/UEK2 and eNVM is the only selected component. To work around this problem, select both fabric and eNVM components for exporting the programming job encrypted using UEK1 or UEK2.

1.5.3 Programming - SPPS Flow: export_hsmtask fails when set_security_overwrite is followed by set_envm_update

If the user Tcl script has the security overwrite command followed by the eNVM update command, the export of HSM job will fail. In other words, if set_security_overwrite is followed by set_envm_update, export_hsmtask fails.

Workaround:

If both the security overwrite command and the eNVM update command are required, make sure that the eNVM update command is executed prior to the security overwrite command. Put the set_envm_update Tcl command before the set_security_overwrite Tcl command in the Tcl script.

1.5.4 Programming - No Programming Support for Virtual Machines

Programming is supported for physical machines only. Programming is not supported on any virtual machine (VM).

1.5.5 Programming - Inspect Device Feature Disabled in FlashPro

The Inspect Device feature is disabled in FlashPro for SmartFusion2/IGLOO2 devices beginning with the Libero 11.7 release. Use standalone SmartDebug instead.

1.5.6 Programming - SmartFusion Encrypted STP File Generation

Generating the encrypted STP files for SmartFusion takes 50 times longer than generating the non-encrypted plain STP.

1.5.7 Programming – Programming Recovery Not Working After Programming Interruption

Exporting a SPI bitstream with Programming Recovery enabled with another programming file type (STAPL, DAT) will erase and reprogram the Programming Recovery setting. If a programming interruption occurs before the Programming Recovery setting is reprogrammed with the following programming method (Auto Update, Auto Programming, or IAP/ISP services), Programming Recovery will not occur.

Workaround:

Export the SPI bitstream only without any other programming file type. This will be resolved in Libero v11.8.

1.5.8 SoftConsole - Restricts ARM® Cortex®-M3 Debug with Debug Pass Key

SoftConsole does not support this feature.

1.5.9 Documentation - Web-based documentation

Starting with the Libero SoC v11.7 release, most Users Guides for SmartFusion2, IGLOO2, and RTG4 are available on the Microsemi website. Libero and Programming/Debug tools will include links to the website.

If the machine on which you have installed Libero does not have access to the Internet, you (or a site administrator) can download all the Libero SoC v11.7 User Guides from the Libero SoC documentation site.

1.5.10 Documents on Linux: Firefox requirement for Online Help and User Guides

Libero SoC v11.7 SP2 requires the "Firefox" executable to be in your PATH variable on Linux. Alternatively, you can access the Reference Manuals on the Microsemi website, or by clicking **Help > Reference Manuals** in Libero. For the Libero SoC v11.7 SP2 release, the "Web Browser" selection in the Libero Preferences dialog is only used by Online Help and for some user guide links.

1.5.11 Installation

C++ installation error can be ignored. Required files will install successfully.

On some machines, the InstallShield wizard displays a pop-up message stating:

The installation of Microsoft Visual C++ Redistributable Package (x86) appears to have failed. Do you want to continue the installation?

Click **Yes** to complete the installation.

1.5.12 Antivirus Software Interaction

Many antivirus and Host-based Intrusion Prevention System (HIPS) tools flag executables and prevent them from running. To eliminate this problem, users must modify their security settings by adding exceptions for specific executables. This is configured in the antivirus tool. Contact the tool provider for assistance.

Many users are running Libero SoC successfully with no modification to their antivirus software. Symantec, McAfee, Avira, Sophos, and Avast tools have known issues. The combination of operating system, antivirus tool version, and security settings all contribute to the end result. Depending on the environment, the operation of Libero SoC, ModelSim ME, and/or Synplify Pro ME may or may not be affected.

1.5.13 Installation Issue on Linux

After installation of Libero on Linux, the attempt to run the udev_install script for FlashPro setup fails with the following message:

```
% ./udev_install
/bin/sh^M: bad interpreter: No such file or directory
```

Problem:

The script uses Windows CR/LF line termination instead of UNIX/Linux LF only line termination and, hence, is not a valid shell script.

Workaround:

Run the `dos2unix` command on the script to convert CR/LF line termination to LF only line termination:

```
% dos2unix udev_install
%. /udev_install
```

If the `dos2unix` command is not available, install the command first, and then run `dos2unix,` and `udev_install`:

```
% sudo yum install dos2unix
% dos2unix udev_install
%. /udev_install
```