

# Programming and Debug Tools v11.8 Service Pack 1

## Release Notes

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Microsemi Corporation (Nasdaq: MSCC) offers a comprehensive portfolio of semiconductor and system solutions for aerospace & defense, communications, data center and industrial markets. Products include high-performance and radiation-hardened analog mixed-signal integrated circuits, FPGAs, SoCs and ASICs; power management products; timing and synchronization devices and precise time solutions, setting the world's standard for time; voice processing devices; RF solutions; discrete components; enterprise storage and communication solutions; security technologies and scalable anti-tamper products; Ethernet solutions; Power-over-Ethernet ICs and midspans; as well as custom design capabilities and services. Microsemi is headquartered in Aliso Viejo, California, and has approximately 4,800 employees globally. Learn more at [www.microsemi.com](http://www.microsemi.com).

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## Revision History

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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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# 1 Programming and Debug Tools v11.8 SP1 Release Notes

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Starting with v11.7, Microsemi introduces a new 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 also available with the full Libero SoC v11.8 SP1 release.

Job Manager is a necessary component of Microsemi's Secure Production Programming Solution (SPPS), which enables customers to prevent overbuilding of their systems.

## About Libero

Microsemi Libero® System-on-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 synthesis and simulation tools—Synopsys Synplify Pro® and Mentor Graphics ModelSim, respectively—with best-in-class constraints management, debug capabilities, and secure production programming solution.

Libero SoC v11.8 SP1 can be used for designing with Microsemi [RTG4](#) Rad-Tolerant FPGAs, [SmartFusion2](#) and [SmartFusion®](#) SoC FPGAs, [IGLOO®2](#), [IGLOO](#), [ProASIC3®](#), and [Fusion®](#) FPGA families.

To access datasheets, silicon user guides, tutorials, and application notes, visit [www.microsemi.com](http://www.microsemi.com), navigate to the relevant product family page, and click the **Documentation** tab. [Development Kits & Boards](#) are listed in the **Design Resources** tab.

See the [Libero SoC v11.8 SP1 Release Notes](#) for more information about the Libero SoC v11.8 SP1 release.

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## 2 What's New in Programming and Debug Tools v11.8 SP1

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### 2.1 Software Enhancements/Changes

Unless otherwise noted, Software Enhancements apply to all SmartFusion2, IGLOO2, and RTG4 devices.

#### 2.1.1 SmartDebug Enhancements

The following new features and enhancements are available in the Libero SoC v11.8 SP1 release.

##### **Demo Mode**

Demo mode allows you to experience SmartDebug features (Active Probe, Live Probe, Memory Blocks, SERDES) without connecting a board to the system running SmartDebug.

**Note:** SmartDebug demo mode is for demonstration purposes only, and does not provide the functionality of integrated mode or standalone mode.

**Note:** You cannot switch between demo mode and normal mode while SmartDebug is running.

##### **VCD file generated during FHB step function can be opened in ModelSim**

Microsemi supports bus names with intermittent signals added from the same bus (as in the example count\_out\_c[7:5,3:0], where count\_out\_c[4] is not included). This naming style is Microsemi-specific and is not supported in generic VCD viewers. To support generic VCD viewers, the probe name has been updated to count\_out\_c[7:0]. 'x' has been added as the data read for this bit in the generated .vcd file.

##### **Enhanced Memory Blocks sort options**

The Memory Blocks sort options have been enhanced. Sorting can be done in ascending or descending order.

##### **Tooltip on Logical view and physical view in Memory Blocks tab**

A tooltip has been added to the logical view and physical view in the Memory Blocks tab.

For more information, refer to the [SmartDebug User Guide](#).

### 3 Resolved Issues

The following table lists the customer-reported issues resolved in Libero SoC v11.8 SP1.

Case Number	Descriptions
	"Insufficient device capabilities" error when trying to program SF bitstream to IGL2
	Warning: device 'M2GL150T' : Device authentication failure: Failed to validate Factory PUF ECC private key on device.
	UEK3 is only available for G4X "S" devices only
	SPPS: Auto Programming shouldn't affect Programming Recovery
	Fix SPI export when Fabric/eNVM are protected by UPK1
	SmartDebug GUI should launch/come up even if there is no hardware connected
493642-2249006892	Enhancement Request: Memory Block should have filter option
	Crash- Click on "select" for memory Blocks crashes SmartDebug
493642-2146230106	Enable DAT file generation for RTG4
	Crash when exporting bitstream with lowercase speed grade
	SF2/IGLOO2: DEVICE_INFO fails
493642-2246913738, 493642-2260399698	Removal of VPP and TEMP fields from the programming log file
	FlashPro5 and VPUMP
	UEK3 is only available for G4X "S" devices only
	SPM: Auto Programming doesn't affect Programming Recovery
493642-2263280761	Libero export bitstream file path does not support "@" character

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## 4 Known Limitations, Issues and Workarounds

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**Note:** Unless stated otherwise, known issues from Libero SoC v11.8 also apply to Libero SoC v11.8 SP1. Review the [Libero SoC v11.8 Release Notes](#) for Known Issues in Libero v11.8 SP1.

### 4.1 Error Message from FlashPro Express

The error message

```
HSM operation g4GetAuthCode failed: GetAuthCode call HSM SEE failed : Error Code (16): 'Failed' - Command failed Error code #1009
```

appears during ERASE when all of the following are true:

- FlashPro Express is used for programming larger SmartFusion2/IGLOO2 devices (M2S/M2GL060, M2S/M2GL090, and M2S/M2GL150)
- Asymmetric keymodes are used along with HSM
- Programming actions are run in this sequence: PROGRAM, PROGRAM, and ERASE.

**Workaround:**

Close and open FlashPro Express again and run ERASE again.

### 4.2 Generate Bitstream Fails if FlashPro Profile becomes Unset

If the FlashPro tool profile becomes unset when switching between different releases of the Libero SoC software, Generate Bitstream fails.

### 4.3 SmartDebug - Demo mode

A FlashPro programmer must be connected to the machine to run standalone SmartDebug in demo mode.

### 4.4 SmartDebug – Empty Popup Window on Windows 10 operating systems

An empty popup window appears when SmartDebug is invoked in standalone mode on Windows 10 machines.

### 4.5 SmartDebug - Logical View for LSRAM/uSRAM known issues

- The logical view cannot be reconstructed for LSRAM/uSRAM with port width of x1 inferred through RTL.
- The logical view cannot be reconstructed for LSRAM/uSRAM configurations when a single net of the output bus is used, i.e. A\_DOUT[0]/B\_DOUT[0] for DPSRAM/uSRAM and RD[0] for TPSRAM and others are unused. The memories can be read/write using the physical view.
- The logical view cannot be constructed for RAM blocks that are generated through nested SmartDesigns.
- The logical view cannot be reconstructed for LSRAM/uSRAM configurations inferred using IP Cores CoreAHLtoAXI (Verilog flow), and CoreFIFO (Verilog and VHDL flow)

The logical view width of LSRAM/uSRAM ports is incorrect when a sliced portion of the output port is promoted to the top level and the sliced portion contains the Most Significant Bit (MSB) of the output port.



## 4.6 Programming and Debug Reference Manuals

The Programming and Debug Tools Documentation Catalog (Reference Manuals) links open the v11.8 versions of these documents: SmartDebug User Guide, FlashPro User Guide, and FlashPro Express User Guide.

Click the following links to access the v11.8 SP1 versions of the documents:

[SmartDebug User Guide](#)

[FlashPro User Guide](#)

[FlashPro Express User Guide](#)

## 4.7 C++ Installation Error Message

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.

## 4.8 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.

## 4.9 Warning Message During Bitstream Generation/Programming

A warning message **Untested Windows version 6.2 detected!** appears in the Libero SoC Log window during Bitstream Generation on Windows 8 and Windows 10 machines. This warning message originates from the Qt Library on which the bitstream generation tool is based. This message is benign and can be safely ignored.

## 4.10 FlashPro3/4/5 and VPUMP

Users need to connect VPUMP of SmartFusion2, IGLOO2, and RTG4 devices to the programmer's (FlashPro3/4/5) VPUMP pin to program the device.

This applies to Libero, FlashPro, and FlashPro Express for v11.8 SP1 and before.

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## 5 System Requirements

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For information about operating system support and minimum system requirements, see the [System Requirements](#) web page.

**Note:** A 64-bit OS is required for designing with SmartFusion2, IGLOO2, and RTG4 devices.

For Linux OS setup instructions, see [How to Set Up Linux Environment for Libero User Guide](#).

### 5.1 Operating System Support

#### Supported

- Windows 7, Windows 8.1, Windows 10
- RHEL 5\*, RHEL 6, RHEL 7, CentOS 5\*, CentOS 6, and CentOS 7
- 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
- Windows XP
- Support for the following operating systems will cease in the second half of 2017:
  - RedHat Enterprise Linux 5.x through 6.5
  - CentOS 5.x through 6.5

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## 6 Download Programming and Debug Tools Software v11.8 SP1

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Click the following links to download Programming and Debug Tools software v11.8 SP1 on Windows and Linux operating systems:

- [Windows Download](#)
- [Linux Download](#)

**Note:** Installation requires administrator privileges to the system.

### 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
```