Release Notes for Lattice Diamond 3.11 Service Pack 3

Welcome to Lattice Diamond®, the complete design environment for Lattice Semiconductor FPGAs.

What's New in Diamond 3.11 Service Pack 3

Installation of Service Pack 3 includes all the changes and features of Service Packs 1 and 2. If you have not already installed Service Pack 1 or 2, it is not necessary to do so. You can proceed by installing Service Pack 3, which is inclusive of all Service Pack 1 and 2 features.

This Service Pack 3 release of Diamond provides support for the following new items:

- MachXO3LF™-1300, MachXO3LF-2100, and MachXO3LF-4300 Automotive Speed Grade devices.
- MachXO3D™- 4300 and MachXO3D- 9400 Automotive Speed Grade devices.

What's New in Diamond 3.11 Service Pack 2

Installation of Service Pack 2 includes all the changes and features of Service Pack 1. If you have not already installed Service Pack 1, it is not necessary to do so. You can proceed by installing Service Pack 2, which is inclusive of all Service Pack 1 features.

This Service Pack 2 release of Diamond provides the following new items:

MachXO3D Family Support

- MachXO3D-4300 devices have bitstream capabilities enabled.
- MachXO3D-9400 device data are changed to final status.

What's New in Diamond 3.11 Service Pack 1

Installation of Service Pack 1 includes all the changes and features included in the existing CrossLinkPlus™ control pack.

CrossLinkPlus Device Support

- 6000 UMG64 IND package is generally available

Documentation

- Updated documentation to add CrossLinkPlus (LIFMDF) content, and also updated online help to fix display problem in Chrome browser.

Supported Devices

Lattice Diamond can be used with either a free license or a subscription license. The two licenses provide access to different device families.

Device Family	Free License	Subscription License
ASC	◀	◀
ECP5U™	◀	◀
ECP5UM™		◀
ECP5UM5G™		◀
LatticeEC™	◀	◀
LatticeECP™	◀	◀
LatticeECP2™	◀	◀
LatticeECP2M™		◀
LatticeECP2S™		◀
LatticeECP2MS™		◀
LatticeECP3™		◀
LatticeSC™		◀
LatticeSCM™		◀
LatticeXP™	◀	◀
LatticeXP2™	◀	◀
LIFMD (CrossLink)™	◀	◀
LIFMDF (CrossLinkPlus)	◀	◀
MachXO™	◀	◀
MachXO2™	◀	◀
MachXO3D™	◀	◀

Device Family	Free License	Subscription License
MachXO3L™	◀	◀
MachXO3LF™	◀	◀
Platform Manager™	◀	◀
Platform Manager 2™	◀	◀

System Requirements

The basic system requirements for Lattice Diamond are:

- Intel Pentium or Pentium-compatible PC, or AMD Opteron system support (Linux only)
- CPU with the SSE3 instruction set to run the Aldec Active-HDL Lattice Edition simulator
- One of the following operating systems:
  - Windows 7 (64-bit), Windows 8/8.1 (64-bit, including Windows 8.1), or Windows 10 (64-bit).
  - Red Hat Enterprise Linux 6.9/7.4. The host operating system is supported in 64-bit only.
- Approximately 5.75 GB free disk space
- RAM adequate for your FPGA design. For guidelines see “Memory Requirements” on page 3.
- Network adapter and, for a floating license, network connectivity

  A node-locked license is based on the physical (hard-coded) address provided by the network adapter. Network connectivity is not required for a node-locked license. In the absence of a network connection, you can install the NWLink IPX/SPX protocol to force recognition of your NIC card ID (see the Installation Notice).

  A floating license requires access to the license server, so both a network adapter and connectivity are required.
- JavaScript-capable Web browser
- Microsoft Internet Explorer 8 or higher if using the included Aldec Active-HDL Lattice Edition simulator
- Acrobat Reader 5.0 or later

Memory Requirements

Table 1 lists the minimum memory requirements and the recommended memory for the Lattice Semiconductor devices supported by Diamond.

Designing for LatticeECP3 with more than 95K LUT on a Windows system requires a 64-bit operating system.

Table 1: Recommended Memory

Device	Size	64-Bit Operating Systems	
		Minimum	Recommended
ECP5U/UM/UM5G	All	4 GB	6 GB
LatticeEC, LatticeECP	Up to 20K LUT	1 GB	1.5 GB
	Up to 50K LUT	1.5 GB	2 GB
LatticeECP2/M	Up to 20K LUT	1.5 GB	2 GB
	Up to 50K LUT	2 GB	3 GB
	Up to 100K LUT	2 GB	4 GB
LatticeECP3	Up to 95K LUT	4 GB	6 GB
	Up to 150K LUT	6 GB	8 GB
LatticeSC/M	Up to 40K LUT	1.5 GB	2 GB
	Up to 115K LUT	2 GB	5 GB
LatticeXP, LatticeXP2	Up to 20K LUT	1 GB	1.5 GB
	Up to 50K LUT	1.5 GB	2 GB
MachXO, MachXO2, MachXO3D, MachXO3L	All	512 MB	1 GB
LIFMD (CrossLink), LIFMDF (CrossLinkPlus)	All	512 MB	1 GB
Platform Manager, Platform Manager 2	All	512 MB	1 GB

Extending Memory on Windows

Note that increasing the amount of memory available to applications decreases the amount available for the file cache, paged pool, and nonpaged pool, which can affect applications with heavy networking or I/O.

Use the `BCDEdit /set increaseuserva 3072` command to set the boot entry option to 3 GB. For details, see Microsoft article “BCDEdit /set”: msdn.microsoft.com/en-us/library/ff542202.aspx

- When installing the Red Hat Enterprise Linux version, be sure to install the PERL modules XML::Parser, XML::DOM, and XML::RegExp. These PERL modules are available at www.cpan.org.

Issues Fixed

The following known issues are fixed with this release. Their workarounds are no longer needed. For the complete list of known issues, see: https://www.latticesemi.com/view_document?document_id=51101

MachXO3D UFM access routines and algorithms created for Diamond 3.11 SP1 and earlier may not work on silicon when bitstreams are re-generated with Diamond 3.11 SP2

UFM access routines and algorithms which pass Diamond 3.11 SP2 simulation will work on silicon with no issues.

Versions affected: Diamond 3.11 SP2
Devices affected: MachXO3D
Fixed_3.11SP3
CR130152

Online Help Problem with Chrome Browser Fixed

This release fixes an issue with the newest version of Google Chrome browser that prevented Diamond software online help from displaying properly.

Versions affected: All versions of Lattice Diamond and Radiant software
Devices affected: All
Fixed_3.11 SP1
CR129729

Known Issues

Following are known issues with this release and workarounds for them. For the complete list, see: https://www.latticesemi.com/view_document?document_id=51101

UFM Simulation doesn’t match hardware behavior

The read behavior of the UFM simulation model does not match MachXO3D hardware behavior for certain commands. In simulation, three dummy bytes (0xFF FF 00) precede the expected read data. Affected commands include 0x73 (Read Flash) and 0xC9 (Read UFM). All sysConfig ports, including WISHBONE, primary I2C, Slave SPI, and JTAG are impacted.

There is no current work-around. Users may wish to validate portions of their UFM interface design in simulation using MachXO2, MachXO3L or MachXO3LF device simulation environments. The simulation model is expected to be corrected in the next Diamond release.

Contact Lattice technical support for more information.

Versions affected: Diamond 3.11
Devices affected: MachXO3D
CR129774

RedHat version 7.4 can’t open Programmer

This issue requires the user to update to a Linux driver from RedHat in order to support version 7.4. This fix ensures that it is backward compatible with previous versions of RedHat. Refer to the *Lattice Diamond 3.11 Installation Notice for Linux* for RedHat instructions.

Versions affected: Diamond 3.11
Devices affected: All
CR129730

Contacting Technical Support

FAQs The first place to look. The Answer Database on the Lattice Semiconductor Web site provides solutions to questions that many of our customers have already asked. Lattice Applications Engineers are continuously adding to the Database.

Technical Support Assistance Submit a technical support case via www.latticesemi.com/techsupport.

For Local Support Contact your nearest Lattice Sales Office

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