



# Release Notes for Lattice Diamond 3.11 Service Pack 2

Welcome to Lattice Diamond<sup>®</sup>, the complete design environment for Lattice Semiconductor FPGAs.

## 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™	◀	◀
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

**Table 1: Recommended Memory (Continued)**

Device	Size	64-Bit Operating Systems	
		Minimum	Recommended
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](https://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](http://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](https://www.latticesemi.com/view_document?document_id=51101)

### 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](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  
CR130152

### **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](http://www.latticesemi.com/techsupport).

**For Local Support** Contact your nearest [Lattice Sales Office](#)

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