

Lattice Radiant 3.1.1 MachXO5-NX Device Update Release Notes

Welcome to Lattice Radiant® software, the complete design environment for Lattice Semiconductor Field Programmable Gate Arrays (FPGAs).

What's New in Radiant 3.1.1 MachXO5-NX Device Update

▶ Device Support:

- MachXO5™-NX (LFMXO5)
 - 25K (-7/-8/-9) HP/LP 1.0 V (COM/IND) – BBG256
 - 25K (-7/-8/-9) HP/LP 1.0 V (COM/IND) – BBG400

▶ Tool and Other Enhancements:

- **Programmer** – The Programmer tool has been updated to support the MachXO5-NX (LFMXO5) device with plain bitstream only, no security or encryption features.
- **Reveal Logic Analyzer** – The Reveal Logic Analyzer tool has been updated to support the MachXO5-NX (LFMXO5) device.
- **Update installer allows user to specify installation path** – The user can specify the installation path when installing the MachXO5-NX Device Update.

Supported Devices

Lattice Radiant software 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
iCE40UP (iCE40 UltraPlus)	▶	▶
CertusPro™NX (LFCPNX)		▶
Certus™-NX (LFD2NX)	▶	▶

Device Family	Free License	Subscription License
CrossLink™-NX (LIFCL)	◀	◀
Certus™-NX-RT (UT24C)		◀
CertusPro™-NX-RT (UT24CP)		◀
MachXO5-NX (LFMXO5)		◀

Support for Third-Party Synthesis and Simulator Tools

The Synopsys Synplify Pro® for Lattice synthesis tool and the Siemens ModelSim® Lattice Edition simulator tools are included in the Radiant software.

- ▶ **Synopsys Synplify Pro FPGA synthesis software version S-2021.09LR**
 - ▶ Release Notes for Synplify Pro are located in `..\<install_directory>\radiant\3.1\synpbase\doc\`. The file name is `release_notes.pdf`.
 - ▶ A full set of documents for Synplify Pro are also located in `..\<install_directory>\radiant\3.1\synpbase\doc\`.
- ▶ **Siemens ModelSim Lattice Edition 2021.4 revision 2021.10**
 - ▶ Release Notes for ModelSim Lattice Edition are located in `..\<install_directory>\radiant\3.1\modeltech\`. The file names are `RELEASE_NOTES.html` or `RELEASE_NOTES.txt`.
 - ▶ A full set of documents for ModelSim Lattice Edition are located in `..\<install_directory>\radiant\3.1\modeltech\doc\`.
- ▶ **Siemens Questa® 2020.4**
- ▶ **Cadence Xcelium® 20.09-s004**
- ▶ **Synopsys VCS® Q-2020.03**

Help Resources

Available information resources for the Radiant software include the following:

- ▶ Online Help updated with CertusPro-NX (LFCPNX), Certus-NX (LFD2NX), MachXO5-NX (LFMXO5), CrossLink-NX (LIFCL), Certus-NX-RT (UT24C), and CertusPro-NX-RT (UT24CP) content.

- ▶ To view the Online Help, start the Lattice Radiant software and select the  “Getting Started” icon under Information Center.

System Requirements

The following shows the basic system requirements for Radiant software:

- ▶ Intel Pentium or Pentium-compatible PC
- ▶ 64-bit OS:
 - ▶ Windows 10
 - ▶ Red Hat Enterprise Linux 7.8 or 8.2
 - ▶ Ubuntu version 18.04 LTS or 20.04 LTS
 - ▶ CentOS 7.8
- ▶ Approximately 10 GB free disk space
- ▶ Computer Memory Requirement: 16 GB Recommended for running a single project. If running multiple projects, the memory requirement will be higher.
- ▶ 1024 X 768 graphics display
- ▶ Network adapter for license and network connectivity
- ▶ A Web browser with JavaScript capability
- ▶ Acrobat Reader

Installation Instructions

Before you install the Lattice Radiant 3.1.1 MachXO5-NX Device Update, you must first install Lattice Radiant 3.1 (3.1.0.43.2).

Software downloads are available at <https://www.latticesemi.com>.

To install the Lattice Radiant 3.1.1 MachXO5-NX Device Update:

1. Download and install Lattice Radiant 3.1 (3.1.0.43.2). For installation instructions, refer to:
 - [Lattice Radiant Software 3.1 Installation Guide for Windows](#)
 - [Lattice Radiant Software 3.1 Installation Guide for Linux/Ubuntu](#)
2. Download and install Lattice Radiant 3.1.1 MachXO5-NX Device Update (3.1.1.269.0).
 - For Windows:

- Click Download to save the update to a directory and install it later. In the Save File dialog box, navigate to the location where you want to save the file and click Save.
- Double-click the 3.1.1.269.0_Radiant_XO5_patch.exe file to install the software
- For Linux/Ubuntu:
 - Click Download to save the update to a directory and install it later. In the Save File dialog box, navigate to the location where you want to save the file and click Save.
 - Execute the Radiant run file as follows:

```
% cd <directory_with_RUN>  
  
% ./3.1.1.269.0_Radiant_lin_XO5_patch.run
```

Issues Fixed

The following known issues are fixed in this release. Their workarounds are no longer needed.

SEI Editor was disabled for CertusPro-NX (LFCPNX) device.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-12365

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

Reveal Controller incorrectly detects the number of PLL instantiations when CertusPro-NX (LFCPNX) device is used in the design.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-12408

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

When Reveal is inserted into a mixed language design, compilation fails due to a missing VHDL entity by the parser.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-12432

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

Unable to add clock signals using TCL commands in Reveal Inserter.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-12441

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

The Programmer Deployment Tool window cannot be resized.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-12445

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

Mixed language designs with multiple libraries failed to build hierarchy when the VHDL top module is using a different library other than “work” library.

Devices affected: Certus-NX (LFD2NX)

Bug number: DNG-12650

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

Lattice Synthesis Tool (LSE) crashes when the VHDL top module is using a different library other than “work” library.

Devices affected: Certus-NX (LFD2NX)

Bug number: DNG-12651

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

The “sedc_errcrc_o” output signal of the SED/SEC module is active even when there is no SEI injection.

Devices affected: CertusPro-NX (LFCPNX)

Bug number: DNG-13631

Fixed in Radiant 3.1.1 MachXO5-NX Device Update

Known Issues for Radiant 3.1.1 MachXO5-NX Device Update

The following are known issues for the Radiant 3.1.1 MachXO5-NX Device Update.

When simulating Generic DDR, there may be a mismatch in the RTL and post-route simulation. Silicon is not affected.



For assistance with this issue, please contact Lattice Technical Support.

Devices affected: CertusPro-NX (LFCPNX), Certus-NX (LFD2NX), MachXO5-NX (LFMXO5), CrossLink-NX (LIFCL), Certus-NX-RT (UT24C), CertusPro-NX-RT (UT24CP)

Bug number: DNG-9639

For some SystemVerilog designs, Synplify Pro may fail to identify multi-driven nets and the flow may pass with no errors.

Workaround: Check the design for multi-driven nets and run the flow using LSE to verify.

Devices affected: CertusPro-NX (LFCPNX), Certus-NX (LFD2NX), MachXO5-NX (LFMXO5), CrossLink-NX (LIFCL), Certus-NX-RT (UT24C), CertusPro-NX-RT (UT24CP)

Bug number: DNG-10132