I3C Controller IP

IP Version: v3.7.1

Release Notes

FPGA-RN-02017-1.3

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1. Introduction

This document contains the Release Notes for the I3C Controller IP. For specific details about the IP and driver, refer to the following:

- I3C Controller IP User Guide (FPGA-IPUG-02228)
- I3C Controller Driver API Reference (FPGA-TN-02342)

I3C Controller IP v3.7.1

Software	Software Version	Summary of Changes

Lattice Radiant
Lattice Propel Builder
	2026.1	• Fixed an Rx FIFO write issue when the FIFO was full.
		• Driver update v1.1.0:
		  • Added API for the HDR read/write, direct CCC, broadcast CCC, IBI handler for I3C, and secondary controller functions.
		  • Added API macros for *Registers*, *Configuration Register 0 Settings*, *Reset Fields*, *IBI Settings*, *HDR-DDR Settings*, and *Bus Condition Mode*.
		  • Updated the API parameters.
		
		Note: There are no updates to the IP user guide for this release. Refer to the I3C Controller IP User Guide (FPGA-IPUG-02228, v1.6) for the applicable documentation.

I3C Controller IP v3.7.0

Software	Software Version	Summary of Changes
Lattice Radiant Lattice Propel Builder	2025.2	• Added support for configurable FIFO implementation and depth. • Removed the IP licensing requirement.

Corrections to Previous Release Notes

- All IP versions listed below are supported by the Lattice Propel Builder software.

I3C Controller IP v3.6.0

Software	Software Version	Summary of Changes
Lattice Radiant	2025.1	• Added support for MachXO5-NX devices (LFMXO5-35, LFMXO5-35T, LFMXO5-65, and LFMXO5-65T). • Added support for Certus-NX devices (LFD2NX-15, LFD2NX-25, LFD2NX-35, and LFD2NX-65).

I3C Controller IP v3.5.0

Software	Software Version	Summary of Changes
Lattice Radiant	2024.2	• Added support for the Lattice Certus-N2 devices. • Added the LFD2NX-9 and LFD2NX-28 devices to supported devices.

I3C Controller IP Earlier Versions

IP Version	Summary of Changes
3.3.0	• Added an option to use an external source for the core clock.

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IP Version	Summary of Changes

	• Fixed APB/AHBL data and address widths from 8 bits to 32 bits.
	• Added the following tests to the driver:
	  • Broadcast and Direct CCCs
	  • IBI
	  • FIFO Write
	  • I3C Write-Read (repeated start)

3.2.0	• Updated the support for Lattice Avant devices. • Added support for Secondary Controller and HDR-DDR. • Added driver files.
3.1.0	• Added support for Certus-NX-RT and CertusPro-NX-RT devices. • Added support for Lattice Avant devices. • Added support for Mach-NX devices. • Added support for MachXO3D devices.
3.0.1	Increased supported system clock frequency to 50 MHz.
3.0.0	• Introduced a new design to support I3C Specification v1.1.1. • Updated the IP name from *Master* to *Controller*.
2.3.0	• Fixed an issue with interrupt clearing. • Added support for the Lattice Propel software.
2.2.1	Set default *SCL OE* to *disabled* when device is not the main master.
2.2.0	Added support for MachXO5-NX devices.
2.1.0	Added support for CertusPro-NX devices.
2.0.0	Optimized the design and added support for more configurations. This version is not compatible with previous releases.
1.0.2	Updated compatibility for the Lattice Radiant 2.1 software.
1.0.1	Initial release.
1.0.0	Preliminary release.

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References

- I3C Controller IP User Guide (FPGA-IPUG-02228)
- I3C Controller Driver API Reference (FPGA-TN-02342)
- Avant-E web page
- Avant-G web page
- Avant-X web page
- Certus-N2 web page
- Certus-NX web page
- CertusPro-NX web page
- CrossLink-NX web page
- iCE40 UltraPlus web page
- Mach-NX web page
- MachXO3D web page
- MachXO5-NX web page
- I3C Controller IP Core web page
- Lattice Propel Design Environment web page
- Lattice Radiant Software web page
- Lattice Solutions IP Cores web page
- Lattice Solutions Reference Designs web page
- Lattice Insights web page for Lattice Semiconductor training courses and learning plans

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