QSPI Flash Controller IP

IP Version: v1.5.1

Release Notes

FPGA-RN-02016-1.2

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1. Introduction

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

- QSPI Flash Controller IP User Guide (FPGA-IPUG-02248)
- QSPI Driver API Reference (FPGA-TN-02339)

QSPI Flash Controller IP v1.5.1

Software	Software Version	Summary of Changes
Lattice Radiant™	2026.1	Updated metadata to change default value of parameter *System Clock Frequency (MHz)* from 200 to 100.

QSPI Flash Controller IP v1.5.0

Software	Software Version	Summary of Changes
Lattice Radiant	2025.1	Driver release v25.01.00. • Fixed bug for transaction status checking in write and read function.

QSPI Flash Controller IP v1.4.0

Software	Software Version	Summary of Changes
Lattice Radiant	2024.2	• Updated SPI clock mode options to 0 and 3. • Updated Transmit FIFO address depth options. • Added support for AXI4 multiple bursts for direct write access. • Added burst transfer for enabled flash address mapping and FIFOs are enabled for register-based access configurations. • Updated IP driver.

QSPI Flash Controller IP Earlier Versions

IP Version	Summary of Changes
1.3.0	• Added LIFCL, LFMXO5, and LN2-CT device support. • Added XiP pattern IP GUI attribute. • Transmit and receive FIFO features are already supported. • Added generic command feature support to enable XiP of other flash devices. • Supported AXI4 multiple bursts for direct read access.
1.2.0	• Added AXI4 direct access and XiP for Macronix™ features support. • Updated interrupt signal. • Updated IP driver.
1.1.5	Updated AHB-L direct access feature implementation.
1.1.4	• Added LFD2NX device support. • Added AHB-L direct access feature support.
1.1.3	• Added LAV-AT device support. • Added multiple SPI target feature support. • Updated IP GUI and registers. • Updated implementation of supported commands with varying command, address and data IO lanes on SPI interface. • Updated customer testbench.
1.1.2	• Fixed SPI clock and data alignment.

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IP Version	Summary of Changes
	• Updated supported commands feature implementation.
1.1.1	Updated IP driver.
1.1.0	Added LFCPNX device support.
1.0.0	Initial release.

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References

- QSPI Flash Controller IP User Guide (FPGA-IPUG-02248)
- QSPI Driver API Reference (FPGA-TN-02339)
- 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
- MachXO5-NX web page
- QSPI Flash Controller IP Core web page
- Lattice Radiant Software web page
- Lattice Propel Design Environment web page
- Lattice Solutions IP Cores web page
- Lattice Solutions Reference Designs web page
- Lattice Insights for Lattice Semiconductor training courses and learning plans

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