LogiCORE IP JESD204 v5.1

PB011 December 18, 2013 **Product Brief**

Introduction

The Xilinx LogiCORE™ IP JESD204 core implements a JESD204B interface supporting line rates from 1 Gb/s to 12.5 Gb/s. The JESD204 core can be configured as transmit or receive.

Additional Documentation

A product guide is available for this core. Access to this material may be requested by clicking on this registration link: www.xilinx.com/member/jesd204/index.htm.

Features

- Designed to JEDEC® JESD204B
- 1 to 8 lane configurations
- Initial Lane Alignment
- Supports scrambling
- 1-256 octets per frame(1)
- 1-32 frames per multi frame(1)
- Subclass 0, 1 and 2
- Physical and Data Link Layer functions provided
- AXI4-Lite configuration interface
- AXI4-Stream data interface
- GTX, GTH or GTP transceiver sharing
- GTX or GTH transceivers supported in Zynq®-7000 All Programmable SoC and Kintex®-7 and Virtex®-7 FPGAs
- GTP transceivers supported in Artix®-7
- GTHE3 transceivers supported in Kintex Ultrascale™ architecture

1. The maximum supported LMFC size is 1000 (F*K must be less than or equal to 1000) and the minimum is 20.

LogiCORE IP Facts Table	
Core Specifics	
Supported Device Family(1)	Kintex UltraScale. Zynq-7000, 7 Series
Supported User Interfaces	AXI4-Stream, AXI4-Lite
Provided with Core	
Design Files	Vivado: Encrypted RTL
Example Design	Verilog
Test Bench	Verilog
Constraints File	Vivado: XDC
Simulation Model	Verilog
Supported S/W Driver	N/A
Tested Design Flows(2)	
Design Entry	Vivado® Design Suite IP Integrator
Simulation	For supported simulators, see the Xilinx Design Tools: Release Notes Guide.
Synthesis	Vivado Synthesis
Support	
Provided by Xilinx @ www.xilinx.com/support	

Notes:

1. For a complete listing of supported devices, see the Vivado IP Catalog.
2. For the supported versions of the tools, see the Xilinx Design Tools: Release Notes Guide.

Applications

JESD204 is a high-speed serial interface designed to connect Analog-to-Digital Converter (ADCs) and Digital-to-Analog Converter (DACs) to logic devices. The JESD204 interface is specified in the *JEDEC JESD204A Specification 2008* and the *JEDEC JESD204B Specification 2011*. Figure 1 and Figure 2 illustrate how the JESD204 provides the interface between an ADC/DAC and user logic over an example 4 lane interface.

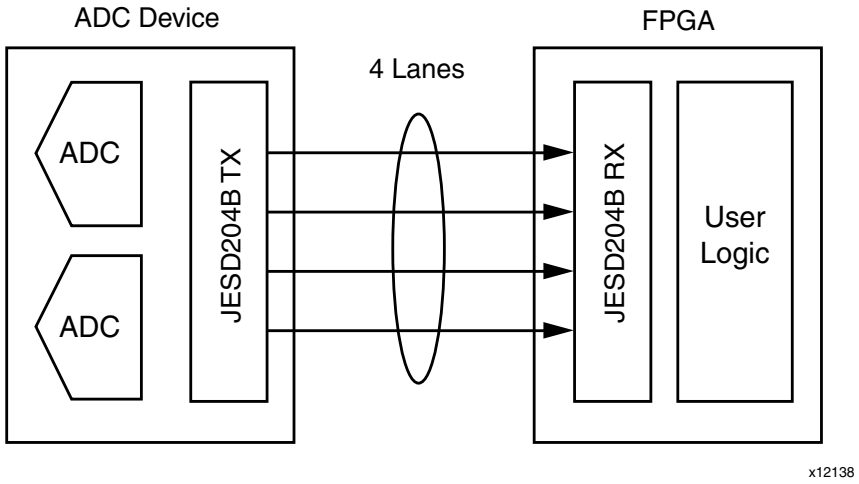

Figure 1: **ADC Application**

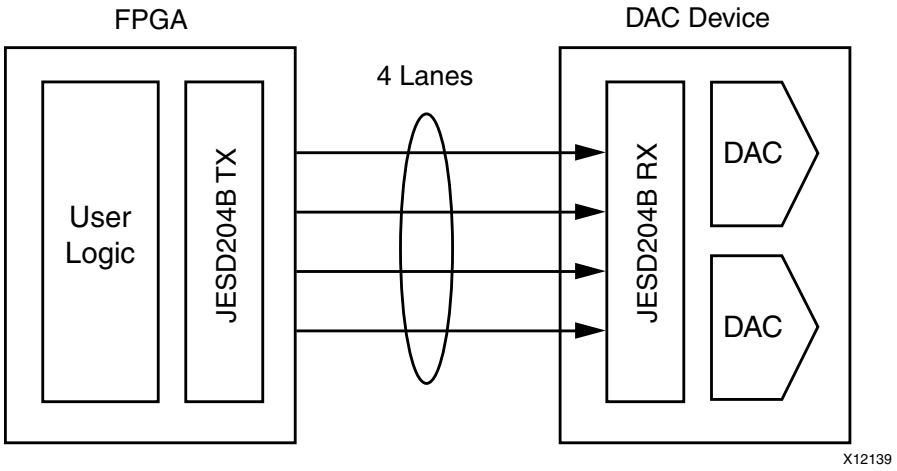

Figure 2: **DAC Application**

Technical Support

Xilinx provides technical support at www.xilinx.com/support for this LogiCORE IP product when used as described in the product documentation. Xilinx cannot guarantee timing, functionality, or support of product if implemented in devices that are not defined in the documentation, if customized beyond that allowed in the product documentation, or if changes are made to any section of the design labeled DO NOT MODIFY.

Licensing and Ordering Information

A free evaluation version of the core is provided with the Xilinx® Vivado Design Suite, which lets you assess the core functionality and demonstrates the various interfaces of the core in simulation. To access the evaluation version visit the JESD204 IP Evaluation page.

This Xilinx LogiCORE IP module is provided under the terms of the Xilinx Core License Agreement. The module is shipped as part of the Vivado Design Suite. For full access to all core functionalities in simulation and in hardware, you must purchase a license for the core. Contact your local Xilinx sales representative for information about pricing and availability.

For more information, visit the JESD204 product web page.

Information about other Xilinx LogiCORE IP modules is available at the Xilinx Intellectual Property page. For information on pricing and availability of other Xilinx LogiCORE IP modules and tools, contact your local Xilinx sales representative.

Revision History

The following table shows the revision history for this document:

Date	Version	Description of Revisions
07/25/2012	1.0	Initial Xilinx release.
12/18/2012	2.0	Updated for 2012.4 • The core now supports 1, 2, 3, 4, 5, 6, 7 and 8 lane configurations in 7 series devices • Added 12.5 Gb/s line rate support • Removed JESD204A (new designs should use JESD204B subclass 0) • Removed ISE • Added three new test modes • Added software lane select
03/20/2013	3.0	Updated to core version 4.0. • Hierarchy updated; block level now the default core top level • AXI4-Lite address map corrections, including addition of byte write support • Added Artix-7 support • Increase rx_buffer_adjust from 256 to 1024 • Pipeline stage added to receiver to improve timing • Zynq support added to HW demonstration platform
10/02/2013	5.0	• Revision number advanced to 5.0 to align with core version number. • Replaced option to generate shared core with option to include or exclude shareable logic resources in the core. • Added option to include or exclude RPAT and JSPAT modules. • Added optional transceiver control and status ports. • Removed GUI option for JESD204 subclass selection; subclass is now selected using a register. • AXI4-Lite address map has been updated. • A single AXI4-Stream bus is used for all txdata and rxdata lanes
12/18/2013	5.1	• Added UltraScale architecture support

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