

Ethernet Real-Time Publish-Subscribe (RTPS) IP Core

IP Core for 10G Ethernet RTPS

Applications

Avionics vehicle and mission systems
Industrial/Machine vision systems

Benefits

Increased performance with hardware-based Ethernet RTPS offload
Hardware-based message label filtering and host DMA setup
Leverage proven technology for standard interface implementation
Mitigate obsolescence

Features

OMG DDSI-RTPS 2.2 compliant interface with hardware-based offload
Hardware DMA engines with message label mapped buffers
Message label validation and filtering
Host processor offloaded from all networking responsibilities
Supports 10G data rate
Configurable number of ports in a single FPGA
AXI4 host interface for embedded or PCIe-based processors
Frame counter and error statistics

Overview

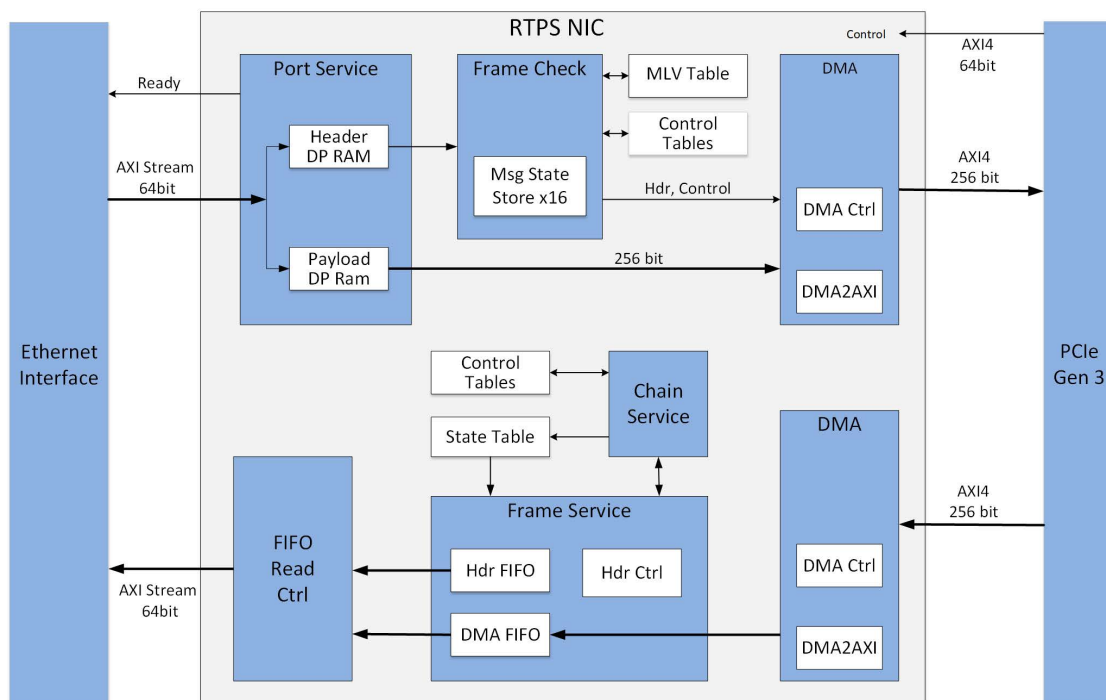
The New Wave DV Ethernet Real-Time Publish-Subscribe (RTPS) core provides a complete hardware IP solution for the Ethernet RTPS protocol.

The core provides OMG DDSI-RTPS compliance, hardware-based message label filtering, hardware mapping of message label to host memory, and complete offload of RTPS handling including: Transmit messages, Receive messages, IEEE 1588 Precision Time Protocol (PTP), DMA controller, frame building/checking, and CRC generation/checking.

The host interface to the core is AXI4. This allows the core to be connected to an external host processor over PCIe or to an embedded SoC processor. The core is built for dropping into an FPGA and providing the complete design from processor interface to Ethernet RTPS network interface.

This core is targeted towards applications in military/aerospace and has been implemented on AMD (Xilinx) UltraScale™/UltraScale+™ devices. The core comes with test benches, constraints and an example design, making design integration a straightforward task.

New Wave DV has a set of standard form factor boards featuring FPGAs, 10G Ethernet optics, and off-the-shelf reference designs for quick evaluation of the IP core.



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Complete Product Support Program

Our customers can attest to our exceptional support. New Wave DV provides an industry-standard warranty on its products, but it is the human factor that makes our support so valuable to our customers. Our team takes the time and effort to ensure a positive customer experience.

Our Commitment

New Wave DV is committed to providing the latest innovations in technology, architectures, and techniques to keep our customers one step ahead of the rest. Our products, complete with the Development Framework, are intended to offer our customers an entirely unique out-of-the-box experience.

New Wave DV FC RTPS Cards

In addition to the Ethernet RTPS core, New Wave DV provides standard form factor Ethernet RTPS interface cards that incorporate the Ethernet RTPS interface core along with high performance DMA engines and software drivers. Available in XMC, PCIe, and VPX form factors, New Wave DV Ethernet RTPS cards provide up to 4 ports in a single card. Reach us at info@newwavedv.com to ask about our Ethernet RTPS solutions.

Technical Specifications

Core is delivered in netlist format including constraint files

SUPPORTED DEVICES

AMD (Xilinx): UltraScale™, UltraScale+™, Versal®

SUPPORTED RATES

10.3125 Gbs

OPERATING FREQUENCIES

10G: 156.25 MHz

Ordering Information

700-EN100-00-X0-RP: Ethernet RTPS DMA IP Core, 10Gb support, Xilinx Platforms, per port license

Other product configurations are available. Please contact us.

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