ARINC 818 Direct Memory Access (DMA) IP Core

DMA IP Core for ARINC 818

Applications

Embedded and test avionics vision and display systems

Avionics camera and display test stands

Windows- and Linux-based ARINC 818 systems

Benefits

Increased performance with hardware-based ARINC 818 offload

Leverage proven technology for standard interface implementation

Implement a complete ARINC 818 subsystem with minimal HDL coding

Features

ARINC 818-2 compliant interface

Supports data rates up to 10G with 8b/10b encoding

Hardware-based container processing

Hardware DMA engines with ARINC 818 container mapping

Built-in buffer management and flow control

Configurable number of ports in a single FPGA

AXI-based host interface for embedded or PCIe-based processors

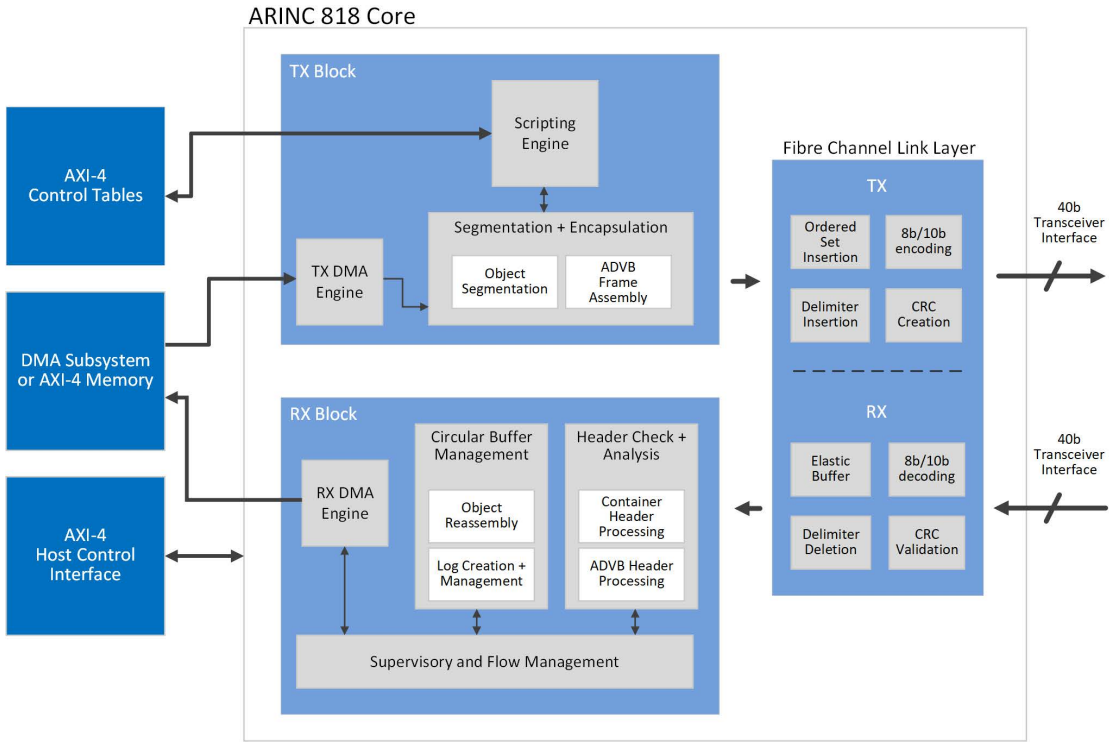
Overview

ARINC 818 is a point-to-point serial protocol primarily used in avionics applications and supports the transmission of video, audio, and data. It is a flexible protocol that supports a wide variety of data rates and image formats.

The New Wave Design and Verification (New Wave DV) ARINC 818 Direct Memory Access (DMA) core provides a complete hardware IP solution for the receipt and transmission of the ARINC 818 protocol. It is optimized for embedded applications and offloads the formatting, timing, and management of the ARINC 818 link. With an advanced buffering and timing engine, it provides embedded processors with a simple and efficient way of interfacing with ARINC 818.

Included in the core is hardware-based container processing and an offload of frame handling including: ARINC 818 Container offload, hardware-based Object processing, DMA controller, frame building/checking, and CRC generation/checking. The core uses AXI-based interfaces for easy and flexible integration into AMD, Intel, and Microchip FPGAs.

The core is also available integrated into New Wave DV hardware with up to 16 ports per card. This provides a turnkey ARINC 818 solution and includes hardware, FPGA build, optics, and Windows/Linux software drivers.



ARINC 818 Direct Memory Access (DMA) IP Core

DMA IP Core for ARINC-818

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 ARINC 818 Cards

In addition to the ARINC 818 DMA core, New Wave DV provides standard form factor ARINC 818 interface cards that incorporate the ARINC 818 interface along with high performance DMA engines and software drivers. Available in XMC/PCIe/PXIe/VPX form factors, New Wave DV ARINC 818 cards provide up to 16 ports in a single card. Reach us at info@newwavedv.com to ask about our ARINC 818 solutions.

Technical Specifications

Core is delivered in encrypted RTL format including constraint files.

SUPPORTED DEVICES
AMD (Xilinx): 7-Series, UltraScale, UltraScale+, Versal FPGAs
Intel (Altera): Stratix, Arria, Cyclone FPGAs
Microchip (Microsemi): SmartFusion2, Igloo2, PolarFire FPGAs

SUPPORTED RATES
User-definable up to FC 10x (8B/10B)

Ordering Information

700-AR200-00-00: ARINC 818 DMA IP Core, includes Link Layer core, AXI DMA controller, descriptor manager, Linux/Windows software driver, FC 1x to FC 10x rates (8B/10B)

Refer to the following hardware datasheets to assemble an off-the-shelf, pre-loaded hardware solution:

- V1151: 4 Optical Front Panel Ports, 1/2/3/4Gbs support
- V1153: 4, 8, or 12 Optical Front Panel Ports, 1/2/3/4Gbs support
- V1153: 8 Electrical Backplane Ports, 1/2/3/4Gbs support

Other product configurations are available. Please contact us.

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