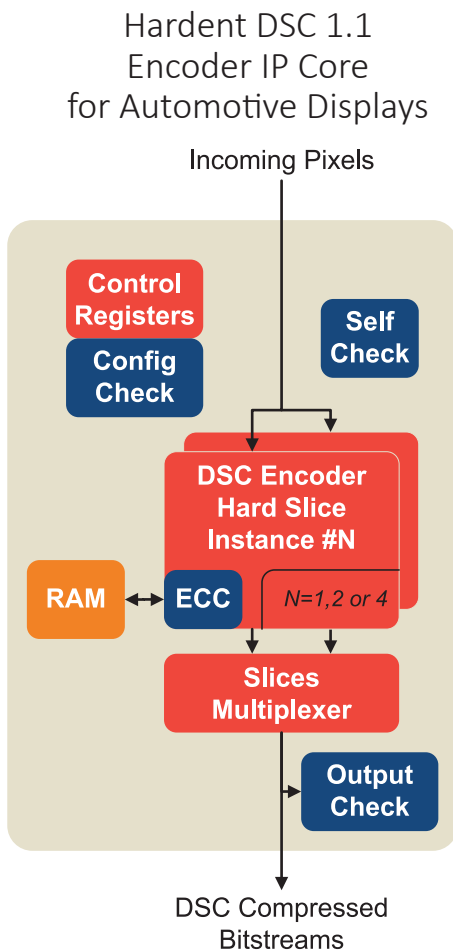# VESA DSC 1.1
Encoder IP Core
For Automotive Displays

ASIL-B Ready ISO 26262 Certified

Applications

- Automotive video transmission
- Automotive video applications
- Infotainment
- Navigation systems
- Rearview camera displays

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Incoming Pixels

Control Registers

Config Check

Self Check

DSC Encoder Hard Slice Instance #N

RAM ↔ **ECC**   *N=1,2 or 4*

Slices Multiplexer

Output Check

DSC Compressed Bitstreams

Description

The Hardent VESA DSC 1.1 Encoder IP Core for automotive displays implements a fully compliant VESA DSC 1.1 encoder. It contains additional safety features to detect and report transient or permanent faults in order to meet the high level of safety required by automotive applications. The IP core is ASIL-B ready, as per the ISO 26262 standard.

Key Features

- VESA Display Stream Compression (DSC) 1.1 compliant
- Supports all DSC 1.1 mandatory encoding mechanisms
- Configurable maximum display resolution
  - Up to 4K (4096x2160), 5K (UHD+), and 8K (FUHD)
- 8 and 10 bits per video component
- Parameterizable number of parallel slice encoder instances (1, 2, or 4) to adapt to the capability of the technology and target display resolutions used
- Ultra low latency

Safety Features

- Self-checking during VBLANK period
- Control output diagnostics
- RAM protection
- Configuration and Status Register (CSR) protection
- Fault avoidance mechanism

Deliverables

- Safety manual
- Failure modes, effects and diagnostic analysis (FMEDA) report
- Encrypted RTL source code IP core
- Functional and structural coverage reports
- Comprehensive integration guide
- Technical support and maintenance updates

Product Options

- IP customization and integration services available on request
- Multi-project licenses available
- UVM verification bindable modules

Hardent

a **Rambus** company