**VESA DSC 1.2a Video Encoder and Decoder Validation Platform**

**Applications**
- Interoperability and compliance tests
- Video quality assessment tests
- Pre-silicon prototyping
- Post-silicon ASIC validation
- Technology demo vehicle

**Key Features**
- One instance of the Hardent DSC 1.2a video encoder and one instance of the Hardent DSC 1.2a video decoder inside a Xilinx Kintex-7 FPGA KC705 evaluation board

<table>
<thead>
<tr>
<th>Operating Modes</th>
<th>Video Input</th>
<th>Video Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>DSC encoding</td>
<td>Uncompressed</td>
<td>DSC compressed</td>
</tr>
<tr>
<td>DSC decoding</td>
<td>DSC compressed</td>
<td>DSC decompressed</td>
</tr>
<tr>
<td>DSC encoding / decoding</td>
<td>Uncompressed</td>
<td>DSC decompressed</td>
</tr>
</tbody>
</table>

- Encoding/Decoding of native RGB/YCbCr 444, YCbCr 422 & YCbCr 420
- Backward compatible with DSC v1.1
- HDMI video input and output daughter card (RGB DVI mode)
- FMC expansion connector to interface with customer hardware for board to board prototyping
- On-board microcontroller controllable via a USB monitor
  - Load initialization tables
  - Set and display DSC configuration parameters (PPS)
- Standard and custom video resolutions supported with pixel clock range between 25 and 148.5 MHz (1920x1080 at 60fps)
- Measures CRC for compliance with DSC Compliance Test Guidelines
- Preview DSC encoding error maps on video output
- Programmable DSC parameters (PPS)
  - Native encoding mode
  - Target bit per pixel
  - Slice height
  - Block Prediction on/off
  - 1 or 2 slices per line

**Deliverables**
- Hardware boards mounted in a ruggedized transparent plastic case
- FPGA bitstream that includes one Hardent DSC 1.2a video encoder and one Hardent DSC 1.2a video decoder
- Microcontroller firmware
- Detailed user guide

**Product options**
- Technical support and maintenance updates
- Customization services available on request

Hardent’s IP portfolio offers customers ready-made solutions to accelerate product development and meet demanding time-to-market schedules.

Developed by a team of experienced FPGA and ASIC designers, Hardent’s IP cores have undergone extensive verification and offer proven interoperability and compatibility.