STEREOVIEW

Platform for stereoscopic 3D imaging in full HD
About **STEREO**\(^{\text{VIEW}}\)

**STEREO**\(^{\text{VIEW}}\) is a platform for real-time 3D-imaging accommodating fully synchronized optical zoom designed for OEMs who improve ergonomics in stereovision.

This platform features a full HDTV stereoscopic camera for crisp and real-time 3D imaging to increase the immersive experience. The accurate alignment of the optics combined with the optical zoom function allows for recording of objects in 3D within a short range to inspect regions of interest. Use digital recording to document your inspections or stream recordings in real-time over the internet.

**System design**

![Diagram of system design](image)

- **FPGA**
- **LDC Optic PCIE**
- **OSD JPG**
- **EP-11 controller**
- **LVDS** (up to 4)
- **IR IN** >250 MB/s
- **Qseven embedded computer**
- **µSD ARM Intel DSP Flash**
- **Display port**
- **HDMI**
- **SATA**
- **Ethernet streaming / remote control (1000 Mb/s)**
- **USB (Audio, GPS, WLAN, ...)**
Key features

- 5 MPixel dual sensor front-end with integrated zoom optics, auto-focus.
- Matched twin 12x zoom optics with minimum 55 mm inter-axial distance. 16x zoom on request. Electronic vergence adjustment from 0.5 m to infinity.
- Precisely synchronised optics movement and sensor timing for perfect 3D effects.
- FPGA hardware accelerated image/video compression and real-time lens distortion correction.
- HDMI 1.4a compliant outputs.
- OSD and IR remote control.
- Onboard SATA interface to host an SSD for mass data storage. Record video in RAW-data or compressed formats such as JPG or H.264. Other formats on request.
- 1000 Mbit Ethernet connection streaming. Web-based GUI for remote control.
- USB interfaces for additional peripherals such as audio devices, GPS, 3D sensors, etc.
- Stable mounting platforms for direct system integration available.

Technical specifications

**MO-4X CAMERA MODULE**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>SENSORS</strong></td>
<td>2 x CMOS 1/2.5&quot; color (Bayer-pattern)</td>
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<tr>
<td><strong>SENSOR RESOLUTION</strong></td>
<td>max 2 x 1920 x1080 (1080p)</td>
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<tr>
<td><strong>SENSOR FRAME RATE</strong></td>
<td>variable, up to 30 fps @ 1080p</td>
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<tr>
<td><strong>SENSOR DYNAMIC RANGE</strong></td>
<td>70 DB</td>
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<tr>
<td><strong>SENSOR OUTPUT</strong></td>
<td>10 bit ADC</td>
</tr>
<tr>
<td><strong>ELECTRONIC SHUTTER</strong></td>
<td>33 μs (at full resolution) to 1s</td>
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<tr>
<td><strong>WHITE BALANCE</strong></td>
<td>Auto, Manual</td>
</tr>
<tr>
<td><strong>GAIN</strong></td>
<td>Analog &amp; Digital (0 dB to 12 dB continuous)</td>
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<tr>
<td><strong>EXPOSURE CONTROL</strong></td>
<td>Auto, Manual</td>
</tr>
<tr>
<td><strong>ZOOM</strong></td>
<td>Twin 12x (16x), high-quality, matched pair F1.6 to F2.6 (wide f=26 mm equivalent)</td>
</tr>
<tr>
<td><strong>FOCUS</strong></td>
<td>continuous Auto, Manual min. object distance 0.1 m (wide)</td>
</tr>
<tr>
<td><strong>3D</strong></td>
<td>Inter-axial minimum 55 mm, electronic vergence adjustment</td>
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<tr>
<td><strong>SYNC</strong></td>
<td>Internal sensor frame sync and optics sync</td>
</tr>
<tr>
<td><strong>CONTROLLER DISTANCE</strong></td>
<td>Up to several meters from camera module</td>
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<tr>
<td><strong>WEIGHT</strong></td>
<td>203 g</td>
</tr>
<tr>
<td><strong>DIMENSIONS</strong></td>
<td>140 x 95 x 56 mm</td>
</tr>
<tr>
<td><strong>ACCESSORIES</strong></td>
<td>Baseplate BP-41 for high precision mounting</td>
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</tbody>
</table>

**EP11 CONTROLLER**

**POWERFUL, SINGLE MULTI-PURPOSE CONTROLLER BOARD WITH:**
- Live HDMI 1.4a outputs supporting many 2D and 3D formats
- FPGA accelerated JPEG compression, real-time distortion correction, OSD, remote control
- On-board Qseven module connector for Intel and ARM embedded Linux system with PCIe based DMA access to raw and compressed image data
- 1000 Mbit ethernet connection for streaming, SATA data storage, USB 2.0 peripherals
- Extension connectors for additional applications and interfaces (e.g. HD/SDI, external sync)
- 8 W average power consumption (13 W with Qseven)
About 3D-ONE

“It is our mission to develop and deliver embedded vision systems to OEM customers who are building intelligent solutions that have to act upon a solid understanding of the environment.”

3D-ONE develops versatile solutions that combine imaging, application-specific sensors, and computing power into intelligent OEM solutions for applications where today’s vision systems are too bulky, too expensive or too inflexible.

Our extensive know-how in optical design, multi-spectral imaging and data processing results in value adding solutions that make our OEM customers advance. 3D-ONE has all the resources in house to tailor solutions to specific application requirements and to deliver in-depth integration support.

Applications

3D VIDEO CONFERENCING  VISUAL INSPECTION  IMAGE GUIDED SURGERY

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