

The fast lane to embedded vision solutions

The fastest and easiest way to realize your embedded vision application is to use the modular and scalable embedded vision platform from hema electronic.

- Flexible and scalable performance
- Use of compatible FPGA modules from Enclustra
- 45+ building blocks
- IP ready

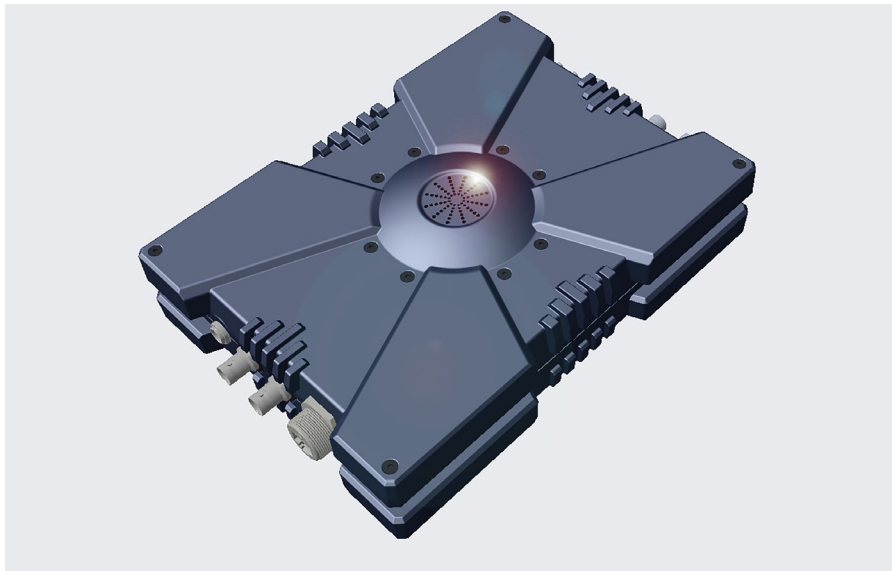
hema electronic is one of the leading specialist to design embedded vision systems by using a multilayer design process to realize your solution based on platform technology with scalable FPGA modules and adjusted mainboards. Many interfaces are already ready to use. For different applications we choose the suitable performance, ARM-core quantity and the best memory combination. Linux based software, environment and tools are reusable for different types of modules.

The hema embedded vision platform kit is ideal to bridge the gap between evaluation and series.

Ready to use for

- Environment for developing
- Environment for programming
- Environment for evaluation
- Prototype close to series product

Faster to market – longer successful!



How it works:

- Specify demands and requirements
- Adjustments between mainboards and modules
- Use of hema design blocks (building blocks)

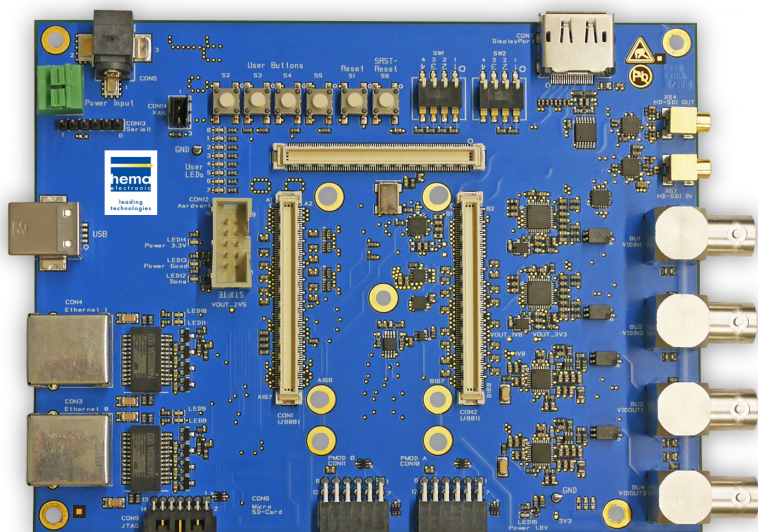
With this concept the software development starts already on embedded hardware close to series product. The final hardware could be realized within 8-12 weeks

Applications

- Embedded vision platforms based on FPGA-module technology
- Video distribution units

Customer benefits

- Rapid product development with predefined building blocks
- Rapid prototyping
- Extensive Know-how
- Ready to start your Software development – reduced time to market
- Flexible and scalable performance
- Cost optimized even for small quantities
- Individual customizing
- Future-proof by Hard- and Software compatibility
- Known design environment – reuse of competency for following projects
- Longterm availability to secure the design
- Upgrade possibility of Hard- and Software



About hema electronic GmbH:

VISUAL INTELLIGENZ

Competency and Capacity for your projects

Vision systems for harsh environments need robust solutions. Fields of applications are vehicle control, surveillance (mobile and stationary), vision control for different use in various market segments like defence, avionic, transportation and industrial automation are our main focus. We support our customer from the idea to series production with corresponding logistic service agreements. More than 25 years experiences in video technology helps our customer to realize their projects. Our modular design concept and platform technology in Hard- and Software contributes significantly to customize the products and systems according our customer demands. With the hema team spirit and discipline we will work together with our customer to find the best effectively solution. This is our contribution for your success.

THE CHALLENGE: VIDEO DISTRIBUTION WITH MERCURY+ XU5 MODULE

System overview

Take up the challenge with the combination of the hema EVB1 Mainboard with an Enclustra XU5 SoC module. The system allows to accept up to 10 analog and digital video inputs for image processing and distribution. With the processing power of the Zync Ultrascale+™ it is possible to build powerful video processing, compression and distribution.

Highlights / Benefits

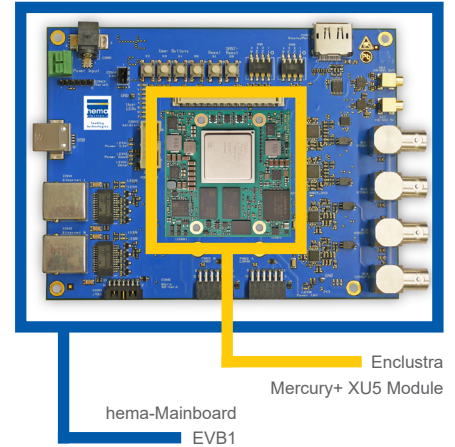
- Mercury+ XU5
- 2, 4, or 8 digital video inputs (3G- / 6G- / 12G-SDI)
- 2 analog video inputs
- 2 oder 4 digital video outputs (3G- / 6G- / 12G-SDI)
- max. 4 output video streams with PiP, dual-view, quad-view, SLP overlay per stream
- h.264 / h.265 En- / Decoding (all possible)
- 2x Gigabit Ethernet interfaces to distribute the complete video streams
- Storage of video streams on SSD (1TByte)
- reduced time to market
- cost optimized
- flexible design e.g. in terms of interfaces
- easy to upgrade via compatible FPGA modules
- many different types of FPGA modules available

Best suited in:

Applications for integration in „dual-world“ applications (analog-digital) – RETROFIT-application.

Features

- Xilinx® Zynq Ultrascale+™ MPSoC
 - ARM® dual- / quad-core Cortex™-A53 (64 bit, up to 1500 MHz)
 - ARM® dual-core Cortex™-R5 (32 bit, up to 600 MHz)
 - Mali-400MP2 GPU (only for EG / EV variants)
 - h.264 / h.265 Video Codec (only for EV variants)
- Up to 8 GB DDR4 ECC SDRAM (PS)
- Up to 2 GB DDR4 SDRAM (PL)
- Up to 8 × 6 / 12.5 Gbit/sec MGT
- 2 × Gigabit Ethernet
- USB 3.0
- CAN
- UART
- SPI
- I²C
- SDIO / MMC
- Up to 117,120 LUT4-eq (5EV)



WITH ENCLUSTRA MERCURY+ MODULE

ME-XU5xxxx

THE CHALLENGE: ULTRA LOW LATENCY VIDEO STREAMING WITH MERCURY+ XU1, XU8 OR XU9 MODULE

System overview

Take up the challenge with the combination of the hema EVB2 Mainboard with an Enclustra XU1, XU8 or XU9 SoC module. The system allows to accept up to 16 analog and digital video inputs for image processing and distribution. With the processing power of the Zync Ultrascale+™ it is possible to build powerful video processing, compression and distribution.

Highlights / Benefits

- Mercury+ XU1 / XU8 / XU9
- 4, 8, or 16 digital video inputs (3G- / 6G- / 12G-SDI)
- 2 analog video inputs
- 2 oder 4 digital video outputs (3G- / 6G- / 12G-SDI)
- max. 4 output video streams with PiP, dual-view, quad-view, SLP overlay per stream
- h.264 / h.265 En- / Decoding (all possible)
- 2x Gigabit Ethernet interfaces to distribute the complete video streams
- Storage of video streams on SSD (1TByte)
- Ultra Low Latency ≤ 35 msec (from glass to glass)
- grafic overlay

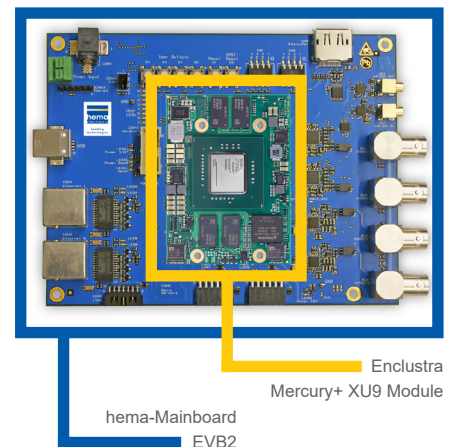
Best suited in:

Applications for high speed real-time video streaming.

- vehicle control
- rear view camera

Features

- Xilinx® Zynq Ultrascale+™ MPSoC
 - ARM® dual- / quad-core Cortex™-A53 (64 bit, up to 1500 MHz)
 - ARM® dual-core Cortex™-R5 (32 bit, up to 600 MHz)
 - Mali-400MP2 GPU (only for EG/EV variants)
 - h.264 / h.265 Video Codec (only for EV variants)
- Up to 8 GB DDR4 ECC SDRAM (PS)
- Up to 2 GB DDR4 SDRAM (PL)
- Up to 8 × 6/12.5 Gbit/sec MGT
- 2 × Gigabit Ethernet
- USB 3.0
- CAN
- UART
- SPI
- I²C
- SDIO / MMC
- Up to 504,000 LUT4-eq (7EV)
- 747,000 LUT4-eg (15EG)



WITH ENCLUSTRA MERCURY+ MODULE

ME-XU1xxxx

ME-XU8xxxx

ME-XU9xxxx

THE CHALLENGE: VIDEO DISTRIBUTION BOX WITH MERCURY+ XU1, XU8 OR XU9 MODULE

System overview

Take up the challenge with the combination of the hema EVB2 Mainboard with an enclustra XU1 / XU8 / XU9 SoC module. The system allows to accept up to 16 video inputs for image processing and distribution. With the processing power of the Zynq Ultrascale+™ it is possible to build powerful video processing, compression and distribution.

Highlights / Benefits

- Mercury+ XU1 / XU8 / XU9
- 4, 8, or 16 digital video inputs (3G- / 6G- / 12G-SDI)
- 2 analog video inputs
- 2 oder 4 digital video outputs (3G- / 6G- / 12G-SDI)
- max. 4 output video streams with PiP, dual-view, quad-view, SLP overlay per stream
- h.264 / h.265 En- / Decoding (all possible)
- 2x Gigabit Ethernet interfaces to distribute the complete video streams
- Storage of video streams on SSD (1TByte)

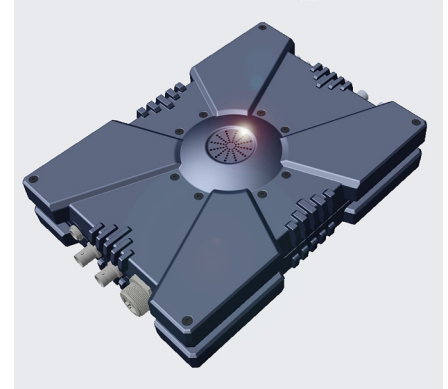
Best suited in:

- Applications in ...
- Video distribution

- Video encoding
 - Video decoding
 - Video recording
- ... with many video inputs / outputs

Features Module

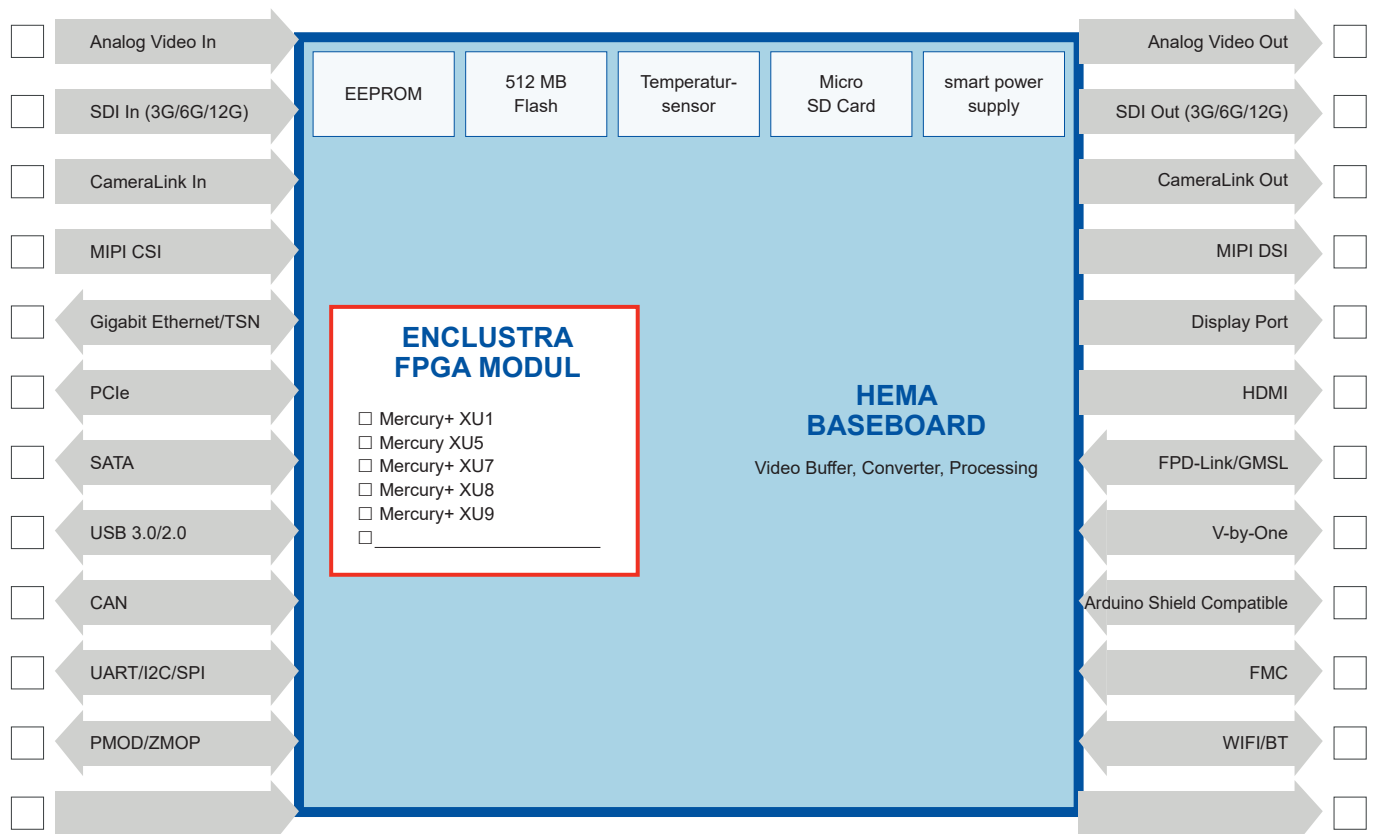
- Xilinx® Zynq Ultrascale+™ MPSoC XCZU5EV, XCZU7EV, XCZU15EG, XCZU6EG
- ARM® quad-core Cortex™-A53
- ARM® dual-core Cortex™-R5
- Mali-400MP2 GPU
- h.264 / h.265 Video Codec (EV)
- Up to 8 GB DDR4 ECC SDRAM (PS)
- Up to 8 GB DDR4 SDRAM (PL)
- 2 × Gigabit Ethernet
- USB 3.0
- CAN
- UART
- SPI
- I²C
- SDIO / MMC
- Up to 504,000 LUT4-eq (7EV)
- 747,000 LUT4-eq (15EG)



WITH ENCLUSTRA MERCURY+ MODULE

ME-XU1xxxx
ME-XU8xxxx
ME-XU9xxxx

Choose the performance you need!



Embedded Vision Platform Kit



leading
technologies

Please contact us regarding your application!



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leading
technologies

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