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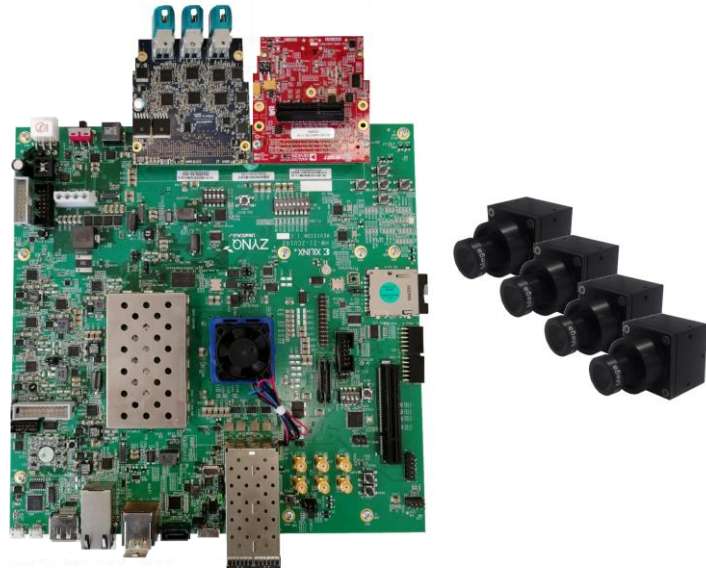


Figure 1: logiVID-ZU-GMSL2 MPSoC Vision Development Kit

Features

- Complete and flexible design platforms for embedded multi-camera vision applications
- Based on Xilinx Zynq[®] UltraScale+[™] MPSoC
- Available kit versions with support for the most popular automotive high-speed serial interfaces:
 - logiVID-ZU-FPD3 kit supports the FPD-Link III from Texas Instruments[™], and
 - logiVID-ZU-GMSL2 kit supports GMSL2 from Maxim Integrated[™]
- Includes licensed reference MPSoC designs (logiADAK-VDF-ZU Video Design Framework) with the video processing block example:
 - video capture and display of four CAM inputs
 - capture/display of one HDMI or CAM input
- Resolutions: IN 1928x1208* and OUT 1920x1080
- Designs are fully prepared for Xilinx Vivado[®] Design Suite 2019.1
- Enables vision developers to quickly add their own algorithms to the provided infrastructure
- Provided demos run on Linux OS and include logicBRICKS software drivers and applications
- Compatible with Xilinx PetaLinux tools
- The complete hardware platform includes:
 - 1x Xilinx ZCU102 Evaluation Kit
 - 1x Avnet HDMI Input/Output FMC board
 - 1x Xylon video input FMC board
 - 4x Xylon 2.3MP automotive video camera
 - 4x Rosenberger[®] FAKRA cables (5 m)
 - 1x Rosenberger[®] HFM[®] to 4x FAKRA cable assembly
 - Power Supply
- Documentation and Tech support (e-mail)

* HDMI demo video input resolution is 1920x1080

Applications

- AD/ADAS, guided robotics, drones, machine vision, AR/VR and other vision applications



The logiVID-ZU-GMSL2 kit with Xylon's GMSL2 automotive video cameras is fully available. For information about availability of the logiVID-ZU-FPD3 kit, please contact Xylon.

General Description

logiVID-ZU Vision Development Kits provide system designers with everything they need to efficiently develop multi-camera vision applications on Xilinx' Zynq UltraScale+ MPSoC devices. The complete hardware platform includes four Xylon's 2.3MP automotive video cameras and supports HDMI video input and HDMI video output. Xylon offers two kit versions; the logiVID-ZU-GMSL2 kit that supports the next generation GMSL2 serial interface from Maxim Integrated, and the logiVID-ZU-FPD3 kit that supports the FPD Link-III serial interface from Texas Instruments.

Kit deliverables include the complete and licensed logiADAK-VDF-ZU Video Design Framework with pre-verified reference designs implemented by Xylon's logicBRICKS IP cores. All IP cores are supplied with bare-metal and Linux software drivers. The video capture and display demo applications run in Linux OS.

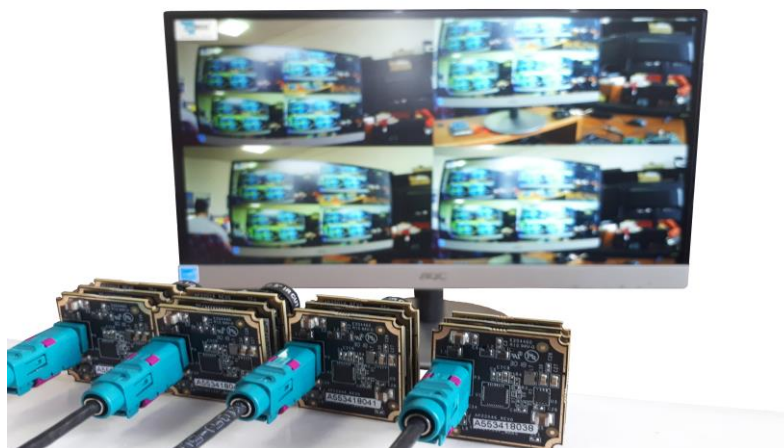


Figure 2: The Framework Provides Complete Multi-Camera-to-Display MPSoC Designs

logiVID-ZU reference designs include Xylon's logicBRICKS IP cores and design files prepared for Xilinx' Vivado Design Suite. These complete camera-to-display SoC designs use just a fraction of available programmable logic and significantly save design time. Instead of starting from scratch and having to spend months designing and building a new design framework, logiVID-ZU users can immediately focus on specific vision-based parts of their next SoC design.

logiADAK-VDF-ZU Video Design Framework

The logiADAK-VDF-ZU framework includes two reference designs for use with logiVID-ZU Vision Developer Kits. To get more information about the framework, please read the datasheet:

http://www.logicbricks.com/Documentation/Datasheets/IP/logiADAK-VDF-ZU_hds.pdf.

The fully functional evaluation version of the logiADAK-VDF-ZU Video Design Framework is available for download:

<http://www.logicbricks.com/logicBRICKS/Reference-logicBRICKS-Design/MPSoC-Video-Design-Framework.aspx>



The ZCU102 Evaluation Kit + the Avnet HDMI Input/Output FMC board make the minimal hardware configuration that enables partial evaluation of the CAM-HDMI reference design.

Xylon's logicBRICKS IP core used in the logiADAK-VDF-ZU reference designs is licensed through Xylon's Low-Volume IP Program: <http://www.logicbricks.com/logicBRICKS/Low-Volume-IP-Program.aspx>.

Xylon's Automotive Video Camera

Packed in a compact, only a cubic inch big waterproof aluminum housing, Xylon's new automotive video camera provides excellent performance. Based on the Semiconductor® AR0231AT CMOS image sensor, the camera provides 30 Frames per Second (fps) of color 2.3 MP (1928x1280) video processed by an internal FPGA video processor. The FPGA integrates Xylon's complete logicBRICKS High Dynamic Range (HDR) Image Signal Processing (ISP) pipeline. Depending on the camera's version, the supported communication interface can be either the GMSL2 or the FPD-Link III high-speed serial interface. Cameras supplied with the logiVID-ZU kit are equipped with the Sunex® NoGhost™ DSL977A miniature lens and short coax-cable leads with the Rosenberger FAKRA Z type connector.



Figure 3: Xylon logiCAM-GMSL2-AR0231 Video Camera

Xylon's Automotive Video FMC Cards

Depending on the selected version, the logiVID-ZU kit comes with either the logiFMC-GMSL2 or the logiFMC-FPD3-954 video input FMC card. These add-on cards are designed primarily to enable quick prototyping and evaluation of automotive multi-camera Advanced Driver Assistance (ADAS) and Autonomous Driving (AD) applications. Both cards enable easy interfacing of up to twelve (12) automotive video cameras to hardware boards based on Xilinx' FPGA, SoC, MPSoC and ACAP video and vision processors.



Figure 4: Xylon's logiFMC-GMSL2 FMC Card

<https://www.logicbricks.com/Products/logiFMC-GMSL2.aspx>



Figure 5: Xylon's logiFMC-FPD3-954 FMC Card

<https://www.logicbricks.com/Products/logiFMC-FPD3-954.aspx>

Application Example – Xylon’s ViewMore™ Natural Surround View Parking Assistance

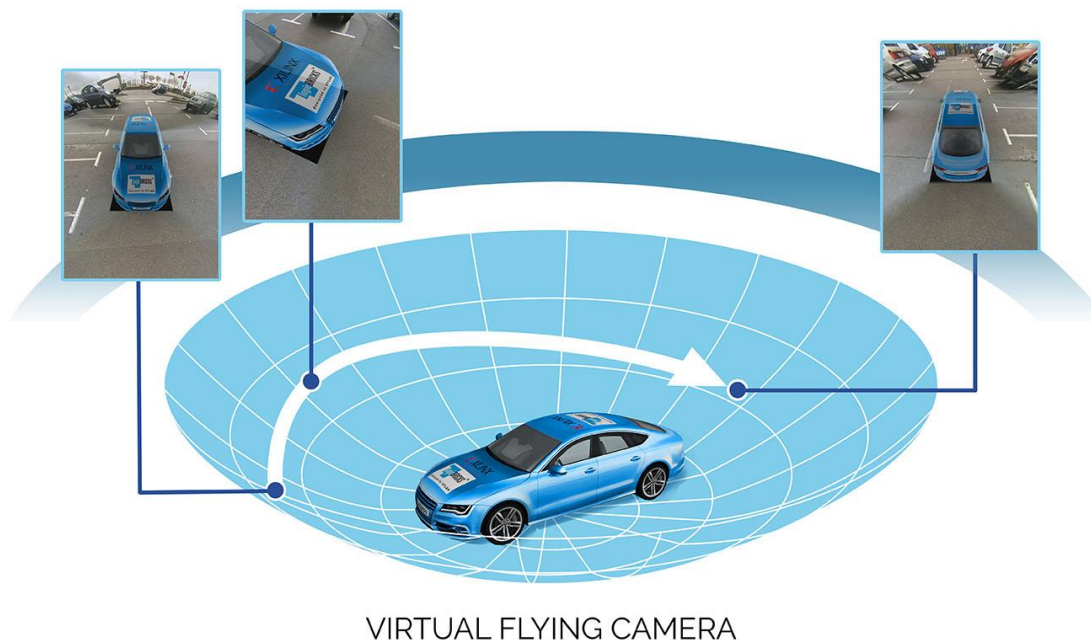


Figure 6: Xylon’s Surround View Parking Assistance ADAS – Illustration

Xylon’s logiADAK Programmable MPSoC Advanced Driver Assistance (ADS) Development Kit uses the logiVID-GMSL2-ZU hardware platform to quickly bring new ADAS innovations to the market. It includes the demo of Xylon’s latest generation ViewMore Natural Surround View IP suite and advanced software for quick setup on any vehicle; vehicle’s multi-camera calibration software and PC software for system configuration. This complete ADAS solution enables drivers to dynamically adjust the position of the virtual flying camera and to see the vehicle’s naturally looking surroundings in a three-dimensional hemispheric view displayed in fine-detail HD resolution.



Please note that Xylon’s Surround View ADAS IP Suite is not part of the logiVID-ZU kit. For more information about the IP Suite, please contact Xylon at sales@logicbricks.com.

Related Design Services

Design services are available to customers interested in customization and enhancement developments based on the presented hardware and software products. For more information, please contact Xylon at info@logicbricks.com.

Related Xylon Products

The logiADAK Automotive Driver Assistance kit is a great programmable platform for upcoming automotive ADAS/AD applications. The kit comes with a full set of user-customizable demo applications, advanced software for quick setup on any vehicle, documentation and skilled Xylon technical support. The provided hardware platform is appropriate for quick test vehicle installations and rapid engagements in proof-of-concept or demonstration projects:

Email: support@logicbricks.com
URL: <http://www.logicbricks.com/Products/logiADAK.aspx>

Xylon's logiISP-UHD Image Signal Processing Pipeline IP core is a full high-definition ISP pipeline designed for digital processing and image quality enhancements of an input video stream in Smarter Vision embedded designs based on Xilinx' All Programmable devices. The logiISP-UHD ISP pipeline IP core can be supplemented with the logiHDR High Dynamic Range (HDR) Pipeline. To learn more, please visit our website:

URL: <http://www.logicbricks.com/Products/logiISP.aspx>
URL: <http://www.logicbricks.com/Products/logiHDR.aspx>

Ordering Information

Products are available directly from Xylon. Please visit our web shop or contact Xylon for pricing and additional information:

Email: sales@logicbricks.com
URL: <http://www.logicbricks.com/Products/logiVID-ZU.aspx>

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Related Information

Xilinx Programmable Logic

For information on Xilinx programmable logic or development system software, contact your local Xilinx sales office, or:

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Revision History

Version	Date	Note
1.00	01.09.2017.	Initial release.
1.10	07.11.2017.	Added Surround View ADAS application example description.
2.00	31.03.2020.	New kit versions with new Xylon FMC cards and automotive cameras compatible with popular GMSL2 and FPD-Link III serial interfaces.