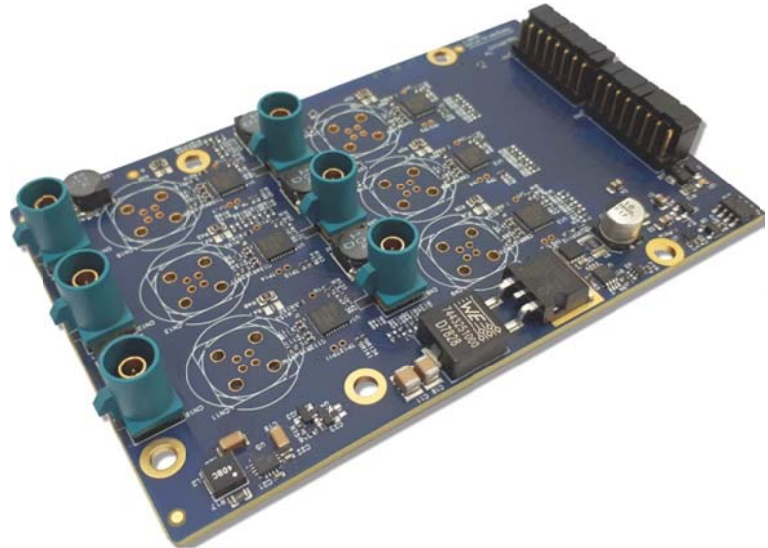


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**Figure 1: logiFMC-GMSL-96706 6-Ch GMSL FMC Daughter Card
(Assembled with the Rosenberger FAKRA Connectors)**

Features

- FPGA Mezzanine Card (FMC) with support for six video camera connections
- Compatible with the Maxim Integrated™ Gigabit Multimedia Serial Link (GMSL)
- Integrates MAX96706 GMSL deserializers that pair with the MAX96705 serializers
- Supported resolutions include 1MP/60fps and 2MP/30fps
- Incorporates High Pin Count (HPC) FMC connector (ASP-134488-01)
- Low Pin Count (LPC) pin section is compatible with standard Xilinx® evaluation kits
- Compatible with Xilinx ZCU102, ZC706, and other evaluation kits
- HPC FMC free pins section available for custom expansion features
- Supported video pinout configurations setup by a simple on-board pin header:
 - 6-Ch 12-bit video data, HSYNC, VSYNC and PIX_CLK (HPC carrier only)
 - 6-Ch 9-bit video data, HSYNC, VSYNC and PIX_CLK (LPC compatible)
 - 6-Ch 10-bit video data, HSYNC and PIX_CLK (LPC compatible)
 - 5-Ch 12-bit video data, HSYNC and PIX_CLK (LPC compatible)
- On-board I2C GPIO expander enables easy programming and power supply controls
- Optional cable assemblies: Rosenberger® FAKRA or RosenbergerHSD® video connectors
- Programmable power supply supports cameras with different power requirements
- Info EEPROM contains card's identification and configuration data
- VITA 57.1 FMC standard compliant
- Board dimensions 108.5mm x 69mm

Applications

The logiFMC-GMSL-96706 6-Ch GMSL Video FMC Daughter Card can be used in a broad range of automotive multi-camera Advanced Driver Assistance (ADAS) and Autonomous Driving (AD) applications.

General Description

Xylon's logiFMC-GMSL-96706 6-Channel GMSL FMC daughter card supports the Gigabit Multimedia Serial Link (GMSL) from Maxim Integrated™, which is one of the most popular automotive high-speed serial links for in-vehicle video, audio, and communication data streams transfers. The board is primarily designed to enable quick prototyping and evaluation of automotive multi-camera Advanced Driver Assistance (ADAS) and Autonomous Driving (AD) applications. It enables easy interfacing of up to six automotive video cameras to evaluation kits based on the Xilinx FPGA and SoC video and vision processors.

The board integrates six MAX96706 deserializers (1.74Gbps) that pair with the counterpart MAX96705 serializers. All deserializer chips can be programmed independently through a single I2C bus. The logiFMC-GMSL-96706 FMC board is compatible with the existing Xilinx Zynq® UltraScale+™ MPSoC ZCU102 Evaluation Kit and Zynq-7000 All Programmable SoC ZC706 Evaluation Kit, and can be also used with other Xilinx and third-party evaluation board with the FMC connector.

The logiFMC-GMSL-96706 FMC daughter card provides a single High Pin Count (HPC) FMC connector, which is pin compatible with the Low Pin Count (LPC) connectors on standard Xilinx evaluation kits. The HPC related pins, which are not utilized by standard carrier boards, are reserved for user-defined expansion functions used on custom-made carrier boards.

On request, the board can be assembled either with the Rosenberger FAKRA connectors for a coax cable, or with the RosenbergerHSD High-Speed Data connectors for shielded twisted pair (STP) cable.

Functional Description

The Figure 2 presents the FMC card's internal structure. The main functional blocks are:

- Maxim Integrated GMSL deserializers
- I2C GPIOs
- Info EEPROM
- Configuration header connectors
- FMC connector
- Video connectors
- Power supply

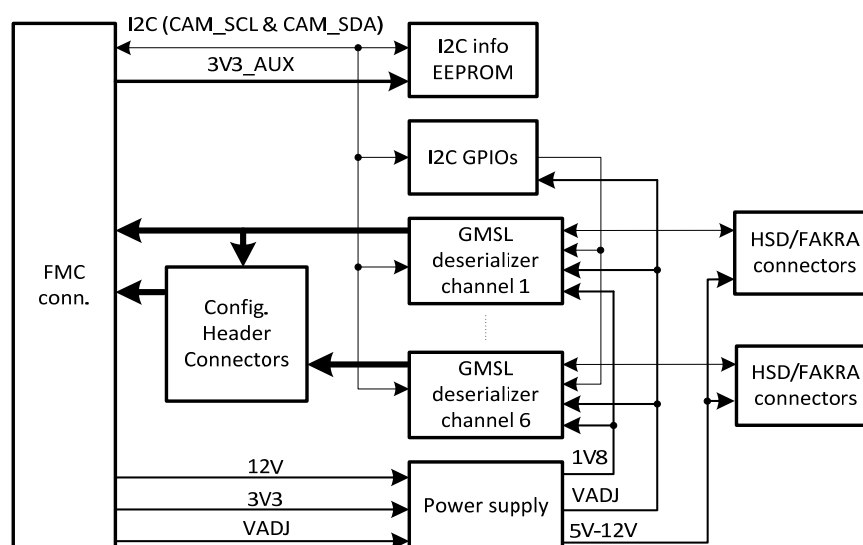


Figure 2: logiFMC-GMSL-96706 Block Diagram

GMSL Deserializers

The logiFMC-GMSL-96706 integrates six MAX96706 GMSL deserializers from Maxim Integrated. Prior to use, the deserializers need to be configured as it is explained in the User's Manual.

I2C GPIOs

General Purpose IOs (32x) enable easy programming of the GMSL deserializer chips, and power supply controls

Info EEPROM

Programmed by card's identification and configuration data in accordance to the IPMI format, the on-board non-volatile EEPROM memory assures full compliance with the VITA 57.1 standard.

Configuration Header Connectors

Enables FMC card's configurations to support more channels with the reduced video data width, or less channels with the full video data width. It enables full compatibility with different third-party carrier boards.

FMC Connector

On-board HPC FMC connector is pin compatible with the LPC connectors on many standard Xilinx evaluation kits, and includes free pins section available for custom expansion.

Video Connectors

On request Xylon delivers FMC cards assembled either with the Rosenberger FAKRA connectors for a coax cable, or with the RosenbergerHSD connectors for the STP cable. The HSD connectors can be freely oriented.



Figure 3: logiFMC-GMSL-96706 Assembled with the RosenbergerHSD Connectors

Power Supply

Provides all voltages necessary for a proper FMC card's operation. Integrated regulated power supply enables software controller powering of different camera types.

Available Support Products

To learn more about the Xylon hardware boards and development platforms, contact Xylon or visit the web:

Email: sales@logicbricks.com

URL: <https://www.logicbricks.com/Products/Hardware-Platforms.aspx>

The logiFMC-GMSL-96706 can be used in advanced multi-camera ADAS applications like the Surround View ADAS with an integrated virtual flying camera that provides a 3D hemispheric view of the vehicle's surrounding. Such systems enable the driver to dynamically adjust the perspective view and safely park the vehicle with no blind spots around it. To learn more about the Xylon Surround View IP Suite, contact Xylon or visit the web:

Email: sales@logicbricks.com

URL: <https://www.logicbricks.com/Solutions/Xylon-MPSoC-Vision-Development-Kit/Xylon-Surround-View-ADAS.aspx>

Ordering Information

This product is available directly from Xylon under the terms of the Xylon's IP License. Please visit our web shop or contact Xylon for pricing and additional information:

Email: sales@logicbricks.com

URL: <https://www.logicbricks.com/Products/logiFMC-GMSL-96706.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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2100 Logic Drive
San Jose, CA 95124
Phone: +1 408-559-7778
Fax: +1 408-559-7114
URL: www.xilinx.com

Maxim Integrated

For information on Maxim Integrated video high-speed serial links:

Maxim Integrated
160 Rio Robles
San Jose, CA 95134
URL: www.maximintegrated.com

Revision History

Version	Date	Note
1.0	28.02.2018.	Initial public release.