ASSURED SYSTEMS PCIe-GL26 AI Enabled 6 Port GMSL2 Camera Frame Grabber Card Owner's Manual

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**PCIe-GL26 Get Quote
AI-enabled 6-port GMSL2
Camera Frame Grabber Card**

Contents

PCIe-GL26 AI Enabled 6 Port GMSL2 Camera Frame Grabber Card

Key Features

- 6x GMSL2 FAKRA Z inputs supporting automotive GMSL2 cameras
- Turnkey solution with pre-installed GMSL2 camera driver for selected cameras
- Powered by NVIDIA® Jetson Xavier™ NX bundled with JetPack 4.6.1
- 21 TOPS AI performance with up to 22 streams simultaneous 1080p@30FPS video encoding capability
- x2 Gen3 PCI Express interface offering 10Gb/s total bandwidth
- 1x GPS PPS input for frame sync calibration
- 1x isolated CAN 2.0 and 1x RS232
- -25°C to 60°C operating temperature with airflow

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Introduction

PCIe-GL26 is an AI-enabled automotive six-port GMSL2 camera frame grabber card. It is a turnkey industrial-grade frame grabber solution that incorporates drivers for selected GMSL2 cameras with video streaming sample codes.

PCIe-GL26 aims to provide superior outdoor vision capability with automotive GMSL2 camera connectivity to advanced x86 autonomous vehicle computing platforms. Automotive GMSL2 cameras are ideal for autonomous vehicle applications due to their advanced features, such as IP67 waterproof, high dynamic range (120dB HDR), auto white balance (AWB), and LED flicker mitigation (LFM). It also benefits computer vision applications in outdoor environments where illumination conditions are constantly changing. Powerful x86 computers with PCIe-GL26 can obtain high-quality images with minimal latency regardless of lighting conditions, from bright sunny days to pitch-black nights.

With a half-length, standard height, and single-slot form factor, PCIe-GL26 can be accommodated in most host computers with a PCIe expansion.

With pre-built sample codes, a host computer can install up to four PCIe-GL26 cards and support up to 24x GMSL2 camera streams. Featuring a unique synchronization mechanism, it is capable of acquiring images from six GMSL2 cameras simultaneously within microseconds of channel-tochannel skew. It can also accept a GPS PPS signal to align image data with LIDAR or PCIe-GL26 in another host machine.

Powered by Jetson Xavier™ NX, PCIe-GL26 is much more than just a GMSL2 frame grabber card. With 21 TOPS AI performance, 6x GMSL2 camera inputs,1x GPS PPS input, 1x RS232,and 1x isolated CAN 2.0, PCIe-GL26 is an AI camera sensor hub capable of sensor fusion and data pre-processing for ADAS or autonomous vehicles.

Specifications

System Core	
Processor	NVIDIA® Jetson Xavier™ NX System-on-Module (SOM), comprising of NVIDIA® Volta GPU and Carmel CPU
Memory	8GB/16GB LPDDR4x (Xavier NX 8GB/ 16GB) @ 1600/ 1866 MHz (15W/ 20W TDP mode)
eMMC	16GB eMMC 5.1 on SOM
Deployment I/O Interface	
Bus Interface	x2, Gen3 PCI Express
GMSL2	6x GMSL2 ports (3Gbps) FAKRA Z connectors
CAN bus	1x isolated CAN 2.0 port
Serial Port	1x RS-232 port
Isolated DIO	1x GPS PPS input
Development I/O Interface	
Ethernet port	1x Gigabit Ethernet
USB	2x USB 2.0 ports 1x micro USB (OTG)
Video Port	1x DisplayPort, supporting 3840×2160 at 60Hz
DC Input	12V DC power input (for development only)
Internal I/O Interface	
M.2 NVMe	1x M.2 2242 M key socket (PCIe Gen3 x1) for NVMe SSD
Mechanical	
Dimension	167.7 mm (W) x 111 mm (H)
Weight	0.43kg
Environmental	
Operating Temperature	-25°C to 60°C with airflow (20W TDP mode) * * For sub-zero and over 60°C operating temperature, a wide temperature NVMe is required.
Storage Temperature	-40°C ~85°C
Humidity	10%~90% , non-condensing
EMC	CE Class A, according to EN 55032/55035 (pending) FCC Class A, according to FCC Part 15, Subpart B (pending)

Ordering Information

Model No.	Product Description
PCIe-GL26-JXN8	AI-enabled 6-port GMSL2 camera frame grabber card powered by Jetson Xavier NX (8GB)
PCIe-GL26-JXN16	AI-enabled 6-port GMSL2 camera frame grabber card powered by Jetson Xavier NX (16GB)

Optional Accessories

PA-60W-OW	60W AC/ DC power adapter 12V/ 5A; cord end terminals for terminal block, operating temperature: -30 to 60°C
FK-FF-CABLE-7M	7M FAKRA cable for cameras with male FAKRA connector; the waterproof end is black
AC-IMX390-H60	Sony IMX390 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 63.9°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX390-H120	Sony IMX390 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 120.6°; IP67+IP69K; -40 °C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-IMX390-H190	Sony IMX390 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 186°; IP67+IP69K; -40°C to 85°C operating temperature; male FAKRA connector; active alignment; without lens cap
AC-AR0233-H60	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 60°; IP67; -40°C to 85°C operating temperature; male FAKRA connector
AC-AR0233-H120	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 118°; IP67; -40°C to 85°C operating temperature; male FAKRA connector
AC-AR0233-H190	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 30fps; LFM; HFOV 196°; IP67; -40°C to 85°C operating temperature; male FAKRA connector; without lens cap
AC-AR0233-H60-60FPS	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 60fps; LFM; HFOV 60°; IP67; -40°C to 70°C operating temperature; male FAKRA connector
AC-AR0233-H120-60FPS	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 60fps; LFM; HFOV 118°; IP67; -40°C to 70°C operating temperature; male FAKRA connector
AC-AR0233-H190-60FPS	Onsemi AR0233 CMOS sensor camera; 1920×1080 @ 60fps; LFM; HFOV 196°; IP67; -40°C to 70°C operating temperature; male FAKRA connector; without lens cap

Assured Systems

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References

- ⊙ [**Industrial Embedded Computers and Displays - Assured Systems**](#)
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- ⊙ [**Industrial Embedded Computers and Displays - Assured Systems**](#)
- [**User Manual**](#)