



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

Contact Neousys

Get Quote

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-to-channel 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 3840x2160 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) * | <i>* For sub-zero and over 60°C operating temperature, a wide temperature NVMe is required.</i> |
| 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; 1920x1080 @ 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; 1920x1080 @ 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; 1920x1080 @ 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; 1920x1080 @ 30fps; LFM; HFOV 60°; IP67; -40°C to 85°C operating temperature; male FAKRA connector |
| AC-AR0233-H120 | Onsemi AR0233 CMOS sensor camera; 1920x1080 @ 30fps; LFM; HFOV 118°; IP67; -40°C to 85°C operating temperature; male FAKRA connector |
| AC-AR0233-H190 | Onsemi AR0233 CMOS sensor camera; 1920x1080 @ 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; 1920x1080 @ 60fps; LFM; HFOV 60°; IP67; -40°C to 70°C operating temperature; male FAKRA connector |
| AC-AR0233-H120-60FPS | Onsemi AR0233 CMOS sensor camera; 1920x1080 @ 60fps; LFM; HFOV 118°; IP67; -40°C to 70°C operating temperature; male FAKRA connector |
| AC-AR0233-H190-60FPS | Onsemi AR0233 CMOS sensor camera; 1920x1080 @ 60fps; LFM; HFOV 196°; IP67; -40°C to 70°C operating temperature; male FAKRA connector; without lens cap |