NEOUSYS TECHNOLOGY

Autonomous Vehicle Solutions

Rugged In-vehicle Computers for **Sensing, Inference & Planning**

www.neousys-tech.com

About Neousys

Established in 2010, Neousys Technology designs and manufactures industrial grade rugged embedded modules and systems with core expertise ranging from embedded computing to data acquisition and processing.

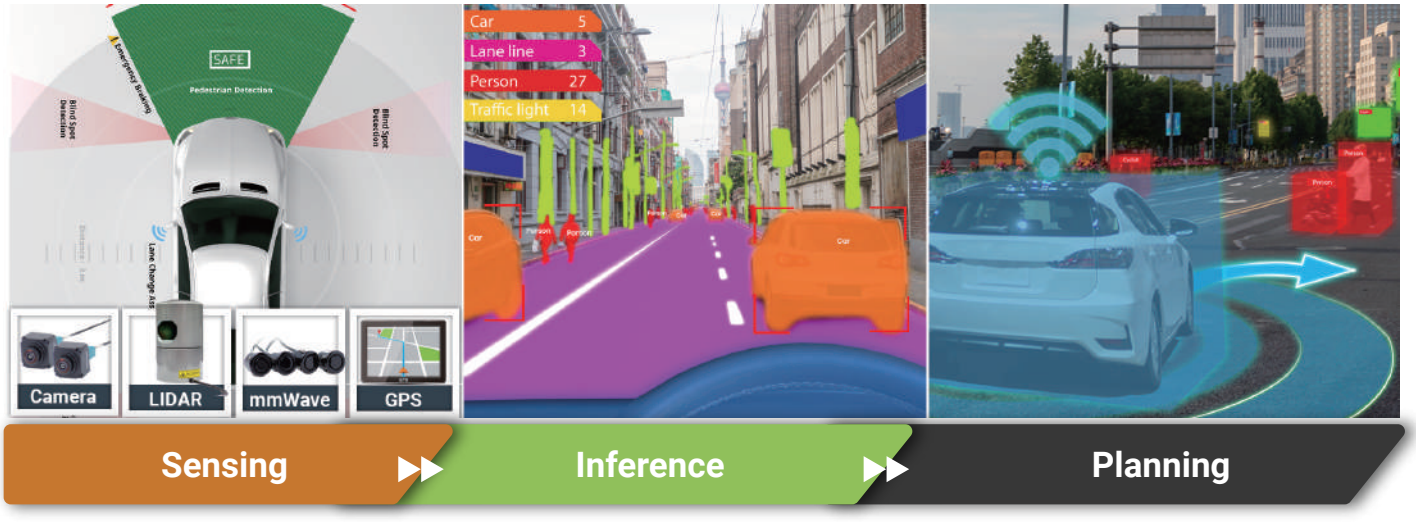
Our dedication to innovate and integrate practical application-oriented functions set us apart from the rest and our products are ideal solutions for automation, machine vision, transportation, GPU computing, surveillance and video analytics.

Neousys Technology application-oriented systems thrive in the following fields:

- Wide temperature range fanless computer
- Rugged embedded fanless computing
- Machine vision controller
- In-vehicle fanless computer
- Ultra compact fanless embedded controller
- Surveillance/ video analytics computing
- GPU computing platform

Typical Functional Blocks

An autonomous driving platform provides complete hardware & software solutions that include cloud data services, vehicle, hardware and software platform. Its capabilities in obstacle perception, trajectory planning, vehicle control & operating systems and other functions, as well as the complete set of testing tools will be made available.



Speed implies Computing Requirement

Designed to operate in industrial or hazardous environments, industrial vehicles can be seen in a variety of industries, such as mining, agriculture, military, logistics, utility, etc. Incorporated with reliable embedded computers, the vehicles are capable of data collection, communication, control and video processing for automation applications. And with edge AI technologies today, GPU-aided device s are integrated into vehicles to enable intelligent decisions and functions for safer and efficient operations.

Heavy Load Truck

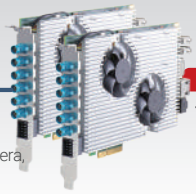
60 km/h

RGS-8805

AMD® EPYC™ 7003 "MILAN" Series Rugged HPC Server Supporting NVIDIA® RTX A6000/ A4500, 2x 10G and 4x 1G Ethernet and 8~48V DC Input

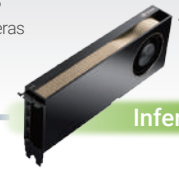
GMSL2 Camera

- IP67 + IP69K waterproof
- 2MP/5MP automotive camera, up to 120db HDR with LFM



PCIe-GL26

- Supporting 6x 2MP/ 5MP automotive GMSL2 cameras
- 21 TOPS AI Performance



NVIDIA® Tesla/ RTX GPU

AMD EPYC™ 64-core CPU

Camera → Sensing → Inference → Planning

Shuttle Bus

40 km/h

GMSL Camera

- IP67 waterproof
- 1MP automotive camera, up to 120db HDR with LFM

NRU-110V

- NVIDIA® Jetson Xavier™ Edge AI
- 8x GMSL input
- 10G Ethernet for real-time video streaming

Nuvo-8108GC-QD

- Intel® Xeon® E Platform
- Supporting NVIDIA® RTX A6000/ A4500
- -25°C to 60°C rugged operation

Nuvo-7100VTC

- Intel® 9th Gen Core™ CPU fanless embedded computer
- E-Mark certification
- 4x M12 PoE+ ports

Camera → Sensing → Inference → Planning

Mining Truck

25 km/h

SEMIL-1748GC

IP67 Waterproof GPU Computer Supporting **NVIDIA® Tesla T4/ Quadro P2200** and Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU with All **M12 Connectors**

IP Camera

PoE+

8x 802.3at PoE+ ports via M12 X-coded

NVIDIA® Tesla T4/ Quadro P2200

Intel® Xeon® E or 9th/ 8th-Gen Core™ CPU

Camera | Sensing | Inference | Planning

Warehouse AMR

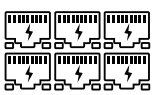
5 km/h

IP Camera

Nuvo-7168GC

Ruggedized AI Inference Platform Supporting NVIDIA® RTX A2000 and Intel® 9th-Gen Core™ Processor

Camera | Sensing | Inference | Planning



NVIDIA® RTX A2000

Intel® 9th-Gen Core™

Delivery Robot

3 km/h

GMSL2 Camera

- IP67 + IP69K waterproof
- 2MP/5MP automotive camera, up to 120db HDR with LFM

NRU-51V

Rugged **NVIDIA® Jetson Xavier™ NX GMSL2 Camera** Sensor Hub for Autonomous Vehicles and Teleoperation

Camera | Sensing | Inference | Planning

- 21 TOPS AI performance
- 173 x 144 x 60 mm compact dimension
- 2x mPCIe + 1x M.2 B Key for mobile connectivity and expansion

NVIDIA® Jetson Xavier™ NX

RGS-8805GC

AMD® EPYC™ 7003 "MILAN" Series
Rugged HPC Server

Highlights

- **Sensing, Inference, Planning** HPC Server for Edge Application
- Rugged **-25°C to 60°C** Operation
- Powered by **AMD® EPYC™ 7003** Processors
  - Supporting up to 64 Cores / 128 Threads
  - Up to 512GB DDR4 LRDIMM
- Supports 1x **NVIDIA® RTX A6000/ A4500**
  - 300 TFLOPS with Proprietary Thermal Design
- Connect up to **12x GMSL2** Cameras
  - via 2x PCIe-GL26
- Compact **2U 19"** Enclosure only **350mm** depth

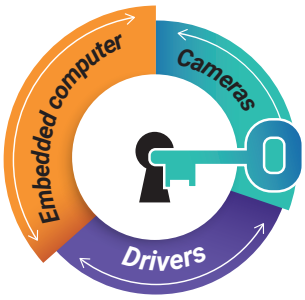
PCIe-GL26

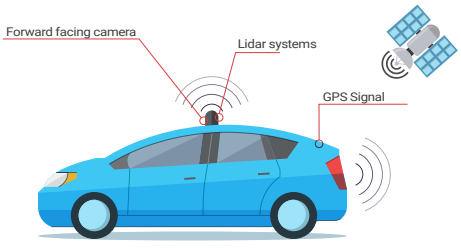
AI-enabled 6-port GMSL2 Camera
Frame Grabber Card

Highlights

- **6x GMSL2 FAKRA Z inputs**
  Supporting 2MP/ 5MP automotive GMSL2 cameras
- **x2 Gen3 PCI Express** interface
  for Powerful x86 Computer
- **Turnkey solution** with pre-installed **GMSL2 camera driver** for selected cameras
  Outdoor dynamic, harsh environments deployment
- Powered by **NVIDIA® Jetson Xavier™ NX**
  21 TOPS AI performance/ 22x 1080p30 (H.265) encoding
- **-25 to 60°C** Operating Temperature with Air Flow

Neousys GMSL2 Turnkey Solutions





Turnkey Solution

Neousys GMSL2 camera turnkey solution including **cameras, drivers,** and an embedded **computer**

Sync between Cameras

Simultaneously trigger all cameras within **microseconds** channel-to-channel skew

Synch between Multiple Sensors

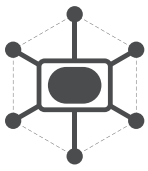
Further calibrate trigger with GPS PPS input to sync cameras with Lidar

IP67 Waterproof

120dB HDR

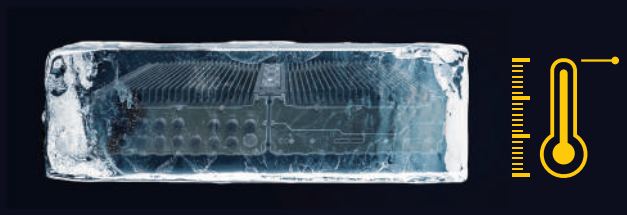
AWB (auto white balance)

LFM (LED flicker mitigation)



Easy to Deploy
with Single Coaxial Cable

Neousys, Your Trusted Partner



-25°C/ -40°C Cold Boot

Carefully selected components to guarantee a stable power-on sequence in sub-zero conditions

Effective Passive Cooling

- Design as a whole system and not a single-board
- Customized motherboard design to maximize conduction between hot components and the heatsink

Active Cooling

- Minimal GPU throttling at high temperatures
- Patented ventilation design bringing cool air to the GPU continuously

Power Efficient Fanless GPU Computer

MIL-STD-810G

Simulates real-world vibrations with 3-axis random vibration

Patented GPU Holder

Adjustable mechanical design to secure various PCIe cards

SuperCAP UPS

- Patented built-in or standalone SuperCAP UPS to protect against power interruptions and power outages
- Up to 10-year lifespan or 500k charge-discharge cycles

IP67 Waterproof GPU Computer

Patented waterproof GPU computer with all M12 connectors for demanding environments

Flexible/ Efficient Power Consumption

- Wide range DC input & ignition power control
- Low power consumption for longer battery life

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