REBOTNIX®
INDUSTRIAL A.I. SOLUTIONS

Edge AI · Vision · Industrial

SKU RB_GM2CHGMSLNxx

GUSTAV MINI

EDGE AI COMPUTER

A compact, rugged all-in-one edge computer based on NVIDIA Jetson Orin NX 8 GB or 16 GB, alternatively Orin Nano 4 GB or 8 GB. It connects two GMSL2 cameras over a single coax cable each and runs AI vision directly on the device, in robots, machines and vehicles.



ON/OFF · RES/RSC · GMSL1 · GMSL2

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DIO-1 · M12-X · DIO-2 · DC IN · USB/UART

BUILT FOR TIGHT SPACES

AI vision where there is no room for an industrial PC.

- Jetson Orin NX or Orin Nano
- 128 GB to 1 TB NVMe SSD
- Gigabit Ethernet, CAN, RS232, GPIO
- 9–60 V DC wide input
- –20 °C to +70 °C
- 111 × 85 × 57 mm, 540 g

COMPLIANCE

CE · CRA · EU AI Act

Details and camera FAQ on pages 2 to 4

SUPPORTED CAMERAS

PLUG IN YOUR GMSL2 CAMERAS

One coax cable per camera with Power over Coax, up to 15 m, FAKRA Code Z. Drivers and device trees are part of the REBOTNIX board support package. Dual GMSL2 deserializer: Maxim MAX9296A.



REBOTNIX
D3 GMSL
Industrial GMSL2 camera, IP67, Power over Coax

LEOPARD IMAGING
LI-IMX390-GMSL2
Sony IMX390 HDR sensor, automotive grade

LEOPARD IMAGING
OWL
GMSL2 camera for specialised vision tasks

E-CON SYSTEMS
ECON20
GMSL2 camera

E-CON SYSTEMS
ECON21
GMSL2 camera

YOUR CAMERA?
Driver service
Driver development incl. testing for other GMSL2 cameras

APPLICATIONS

Quality inspection · Mobile machines and vehicles · Process monitoring · Robotics and autonomous systems

REBOTNIX GmbH · Lünen, Germany
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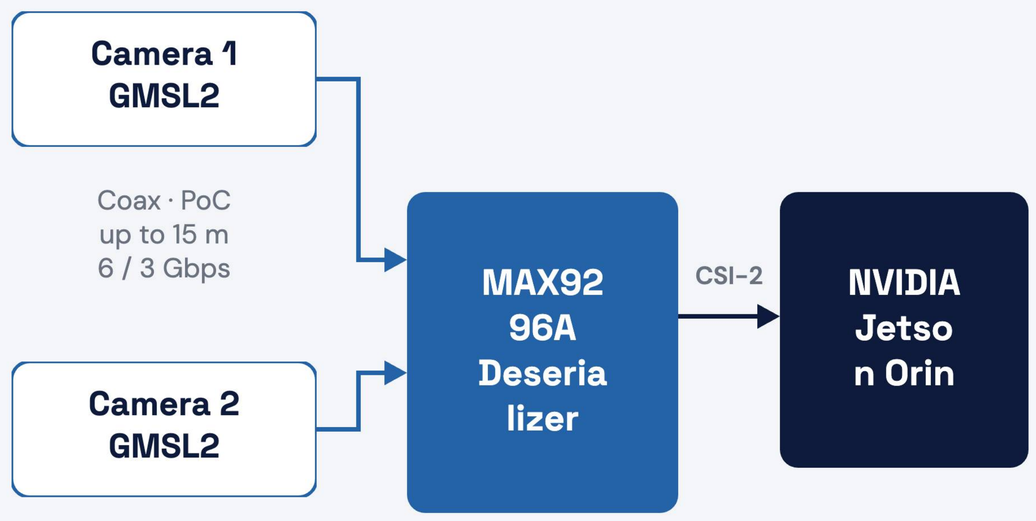
CAMERA INTERFACE

GMSL2 VIA MAXIM MAX9296A

The integrated MAX9296A dual deserializer from Analog Devices (formerly Maxim Integrated) receives two independent GMSL2 links. Video, bidirectional control data and camera power share a single coaxial cable per camera, so cameras can be mounted far from the computer and stay robust against vibration and electromagnetic interference.

- Two GMSL2 links, 6 Gbps or 3 Gbps each
- Power over Coax (PoC) for the cameras
- Coax cable lengths up to 15 m
- FAKRA Code Z connectors, automotive grade
- MIPI CSI-2 directly into the Jetson Orin

SIGNAL PATH



Simplified block diagram

CAMERA INTERFACE · GMSL2	
Deserializer	Maxim MAX9296A dual GMSL2 deserializer (Analog Devices)
Camera inputs	2× GMSL2 (GMSL1, GMSL2), FAKRA Code Z coaxial connectors
Link rate	6 Gbps or 3 Gbps forward channel, set per link by jumper (A / B)
Camera power	Power over Coax (PoC)
Cable length	up to 15 m coax
Host interface	MIPI CSI-2 to the Jetson Orin module
Supported cameras	REBOTNIX D3 GMSL · Leopard Imaging IMX390, OWL · e-con Systems ECON20, ECON21
Other cameras	Driver and device tree development incl. testing on GUSTAV MINI, on request

SYSTEM	
Compute module	NVIDIA Jetson Orin NX 8 GB or 16 GB, alternatively Orin Nano 4 GB or 8 GB
AI performance	up to 157 TOPS (Orin NX 16 GB, Super Mode from JetPack 6.2)
Storage	128 GB to 1 TB NVMe SSD (M.2 2242, PCIe Gen 4 x4)
Expansion	M.2 Key E slot (PCIe Gen 3 x1, USB 2.0) for WiFi / Bluetooth modules
Software	NVIDIA JetPack 6.2 up to JetPack 7.2, REBOTNIX board support package

PRODUCT LIFECYCLE

Available until January 2030

Hardware components may change during the product lifecycle, together with matching software updates. Availability depends on the supply chains of our chip suppliers, e.g. NVIDIA.

ORDERING & SUPPORT

SKU RB_GM2CHGMSL

Module variants, cameras, cables and accessories on request.
Integration support: communicate@rebotnix.com

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TECHNICAL SPECIFICATIONS

ELECTRICAL & INTERFACES	
Supply voltage	9–60 V DC (DC IN)
Power consumption	up to 40 W
Ethernet	1× Gigabit Ethernet (10/100/1000BASE-T), M12 X-coded
USB / UART	1× USB 2.0 and UART, M8 combi socket
Digital I/O	2× M12 (DIO-1, DIO-2): RS232, 4× GPIO (2× PWM), CAN 2.0 / FD, I²C, UART
Controls	ON/OFF button, RES/RSC button (reset / recovery)
Real-time clock	Battery-backed RTC

MECHANICAL & ENVIRONMENTAL	
Dimensions	111 × 85 × 57 mm (without connectors)
Weight	540 g (without power supply)
Enclosure	Black anodised aluminium
Ingress protection	IP54
Cooling	Active cooling: concealed fan with heat pipe beneath the housing
Operating temperature	-20 °C to +70 °C
Humidity	up to 90 % RH, non-condensing

CONNECTORS



FRONT · ON/OFF · RES/RSC · GMSL PORT 1 · GMSL PORT 2



REAR · DIO-1 · M12-X · DIO-2 · DC IN · USB/UART

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CAMERA INTEGRATION

CAMERA BRING-UP · FAQ

Which cameras are supported?

REBOTNIX D3 GMSL, Leopard Imaging IMX390 (LI-IMX390-GMSL2) and OWL, e-con Systems ECON20 and ECON21. Each camera needs its sensor driver and device tree in the BSP. For other GMSL2 cameras we develop and test the driver.

MAX9296A starts, but the camera does not?

The deserializer initialises independently of the sensor. If the sensor driver reports no CSI lane configuration (num-lanes), the device tree for this camera model is not active. Reflash with the camera-specific device tree.

Which link rate do I set?

The jumper of each link (A / B) must match the serializer of the connected camera, 6 Gbps or 3 Gbps. A mismatch keeps the video link down although the deserializer reports OK.

Which software do I need?

NVIDIA JetPack 6.2 up to 7.2 with the REBOTNIX board support package and the device tree profile of your camera. Flashing runs over USB in Force Recovery Mode.

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