BoltGPU 10-31

AI and Machine Vision Subsystem for Rolling Stock and Automotive





- GPU Accelerated
- Multiple Camera Input
- High Speed Interfaces
- Rolling Stock & Automotive
- Rugged
- Customizable

Features

GPU Accelerated - Powered by NVIDIA Jetson Xavier NX with up to 21 TOPS of GPU accelerated computing **Multiple Camera Input** - Supports high speed, high frame rate cameras on GMSL, GbE and USB3 **High Speed Interfaces** - Provides best in class interfaces, like 3x GbE, 4x GMSL, USB3.1 G2 and Wi-Fi 6 **Rolling Stock & Automotive** - Certified for EN50155, EN45545 and E-Mark, supporting GNSS with Untethered Dead Reckoning **Rugged** - Comes with rugged connectors, EN50155 OT3 operating temperature and with a 24-110VDC EN50155 power supply **Customizable** - Personalization and full customization options are available, ranging from branding ("skins" and color) to deep HW/SW configurations

Description

The BoltGPU 10-31 is a rugged subsystem that has been designed to deliver GPU acceleration to Rolling Stock and Automotive applications.

Based on NVIDIA Jetson Xavier NX, it combines a 6-core, high-performance ARM CPU with a 384-core GPU and 48 Tensor Cores, offering exceptional power efficiency and up to 21 TOPS of accelerated computing.

The BoltGPU 10-31 is a power efficient, stand-alone unit that enables traditional and GPU-accelerated workloads in harsh environments, and comes with Automotive and Rolling Stock certifications, such as EN50155, EN45545 and E-Mark.

With a very complete set of high-speed interfaces, the BoltGPU 10-31 can be used to process multiple video streams from high speed, high frame rate cameras: it provides 3x GbE, 4x GMSL and 3x USB3.1 Gen 2 ports (noise and surge protected) that can be used to connect sensors and to create sophisticated networking architectures. Wireless connectivity is also cutting edge, thanks to Wi-Fi 6, BT5.1 and support for optional LTE modems.

The BoltGPU 10-31 offers plenty of storage capacity for video and other data via an internal NVME unit; removable storage is also supported via a microSD interface.

On-vehicle features include isolated CAN-FD and opto-isolated DIO, a GNSS with Untethered Dead Reckoning (optionally RTK), and rugged M12 connectors.

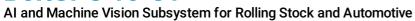
Other transportation and heavy-duty enablers are a wide range power input (24-110VDC, EN50155) with ignition sense and EN50155 OT3 operating temperature range (-25 to +70°C).

The BoltGPU 10-31 shares the same form factor of the BoltGATE 20-31 and of its expansion modules, making it possible to create hybrid architectures with extra features.

For customers seeking a tailored product, Eurotech offers a range of personalization and full customization options, ranging from branding ("skins" and color) to deep HW/SW configurations.

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	Ordering C	ode: BTGPU-10-31-XX		
	xx	-21	-24	
	Core	NVIDIA® Jet	NVIDIA® Jetson Xavier NX™	
NVIDIA MODULE	CPU	6-core NVIDIA Carmel ARM®	6-core NVIDIA Carmel ARM® v8.2 64-bit CPU 6MB L2 + 4MB L3	
	GPU	384-core NVIDIA Volta™	384-core NVIDIA Volta™ GPU with 48 Tensor Cores	
MEMORY	RAM	8 GB 128-bit LPDDR 4x @1600MHz, 51.2GB/s		
STORAGE	Embedded	16 GB e	16 GB eMMC 5.1	
	NVME	-	- 512GB on M.2 Key M	
	Additional Storage	Micro SD Slot	(User Accessible)	
I/O INTERFACES	Ethernet	3x 10/100/1000 Mbps - M12		
	USB 3.0	2x Host USB3.1 Gen.2 (Noise and Surge Protected) - Type A		
	Serial	1x TTL Serial Console		
	CAN	1x CAN-FD (Isolated) - DB9		
	Digital IO	2x Digital Inputs Optoisolated 2x Digital Outputs Optoisolated		
	Video OUT	1x Video Output (Display Port)		
CAMERA INPUT	Camera IN	4x GMSL (1.5Gbps to CSI-2)		
CAMERA INFO	Wi-Fi/BT Radio	4X 01VIOL (1.	Wi-Fi 6 (802.11ax/ac/abgn) + BT5.1/BLE	
RADIO INTERFACES	Cellular Radio	Footo	ry Option	
	Celiulai Radio	Facto	, ,	
	GNSS	-	Internal (72 channels BeiDou, Galileo, GLONASS, GPS, QZSS) - Untethered Dead Reckoning (RTK GNSS - Factory Option)	
EXPANSIONS	M.2 Key B	1x M.2 Key B (3042, 3052) - (USB3.1, USB2, PCle x1)		
	M.2 Key E		1x M.2 Key E (1630, 2230, 3030) - (PCle x1, USB2.0, SDIO, I2C, I2S) - Used for Wi- Fi/BT	
	M.2 Key M	1x M.2 Key M (2242, 3042, 22	1x M.2 Key M (2242, 3042, 2280) - (PCIe x4) - Used for NVME	
	Side Connector	PCIe x4 Endpoint Mode + 12V Power Input - PCIe x4 Shared with M.2 Key M		
OTHER	RTC	Yes (SuperCAP Backed) with Anti-tampering Timestamp		
	Discrete Watchdog	Yes		
	Serial EEPROM on I2C	256 Kbit		
	TPM	Internal TPM 2.0		
	Sensors	Internal Temperature		
	LED	1x Power (Blue) 1x Cellular Activity (Green) 4x User Configurable (2x Green, 2x Amber)		
	Buttons	1x Reset		
MISC	Anti-Tamper Detection	Yes		
	· ·		Yes (User Accessible)	
I POWELLIDUL		Wide Range 24-110VDC nom.(EN5	Vide Range 24-110VDC nom.(EN50155 Compliant); 24VDC Automotive (Regulation 10 Compliant) with Ignition sense	
POWER	Power Consumption		TBD	
	· ·		EN50155 OT3	
ENVIRONMENT	Operating Temperature		-40°C to +85 °C	
	Storage Temperature			
CERTIFICATIONS	Humidity		RH 595% Operating Non-condensing (40°C)	
	Regulatory		CE, FCC, ISED	
	Safety		EN62368, UL60950 (§)	
	Vertical	EN50155, EN45545, E-Mark		
	Environmental	ROHS3, REACH		
	Wi-Fi/BLE Radio	-	- RED, FCC, ISED	
	Cellular Radio		-	
	Ingress Protection	II	IP 40	
MECHANICAL	Dimensions	65v122v140mm (WV	HxD) - With Connectors	

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§ UL, NRTL listing Factory Option

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