

EDGE COMPUTING UNIT

PS-ECU-X



PS-ECU-X is a compact on-board computer for buses and trains, specially designed for video processing with AI. This edge computing unit combines high performance and compactness. The independent unit can be deployed without an existing on-board IT infrastructure and features a modern system architecture:

- Quad-core CPU, neural processing unit, 2D/3D graphics acceleration, hardware video encoding/decoding etc.
- Three additional network ports for POE devices, an integrated cellular module and a geolocation function for cost-effective autonomous system solutions
- Fits in a 19" rack with matching plug-in mounts and panel mounting accessories available from stock
- Compatible with popular open source Deep Learning frameworks

PS.LOAD - LIVE OCCUPANCY WITH AI

What belongs together, comes together - with the edge computing unit PS-ECU-X and the AI-based software PS.Load. The software turns cameras on buses and trains into intelligent devices by using algorithms to determine the actual passenger load in real time.

More insights into passenger flows offer new opportunities to optimize public transport operations. Smarter passenger guidance can increase efficiency and improve passenger interchange times. This solution opens up many options to make travel more comfortable for passengers.

TECHNICAL SPECIFICATIONS

Power supply	12V DC to 36 V DC nominal EN 50155 class S1 compliant EN 50498 compliant ITxPT compliant Ignition input, programmable
Energy consumption	max. 10 W own consumption max. 45 W for connected PoE devices max. 55 W total < 10 mW in Standby
Operating temperature	-20 °C to +65 °C (-4 °F to +149 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Humidity	max. 95 % continuous, max. 100 % occasional
Shock/vibration	IEC 60721, STM-E001, any orientation
Dimensions	151 mm x 110 mm x 78 mm
Weight	950 g
Ingress protection	IP20
Fire protection	EN 45545 compliant, UL94-V0
Reliability	MTBF > 300000 h in typical railway environment
Certifications	EN 50155 approval for railway vehicles ECE type approval for road vehicles CE and UKCA conformity Product safety 2001/95/EG

COMPUTER SPECIFICATIONS

CPU	NXP i.MX8M Plus SoC
RAM	2 GB LPDDR4
Storage	8 GB industry-grade SD
Interfaces	1 x 1000 Mbit/s Ethernet, M12 X-coded 1 x USB 3.0 type A 2 x digital input (isolated) 1 x digital output (isolated)
Mobile network	3 x 100 Mbit/s Ethernet, M12 D-coded PoE class 0 Power Source (PSE), IEEE 802.3af Worldwide certifications Quad-band 850/900/1800/1900 MHz LTE Cat M1, NB-IOT Cat NB2, EGPRS Upload max. 1119 kbps (LTE) Download max. 588 kbps (LTE) Micro-SIM slot in front plate
Geo-location	GPS, Galileo, BeiDou, GLONASS, QZSS
Other extras	6-axis acceleration sensor programmable pushbutton programmable 3-color status LED
Operating System	Linux
User interfaces	via IP network or USB No monitor port (headless unit)

»» PS-ECU-X is also available as a basic configuration PS-ECU