



PRODUCT DATA SHEET

AVALON-CPU-Unit

REDEFINING RELIABILITY IN VEHICLE CLASSIFICATION

The AVC-CPU is the central processing unit and the main intelligence of the AVC subsystem within the AVALON platform. Its primary role is to communicate with all IFU cards and receive their pre-processed lane data. The CPU then combines, aligns, and processes this information across multiple lanes (up to 7 lanes simultaneously) to generate accurate vehicle detection results.

Based on the fused data from LiDAR and axle-counting sources, the AVC-CPU calculates vehicle shape, dimensions, position, and classification, and produces the final triggers and events required by the overall MLFF system. These outputs are then delivered to higher-level systems for further action and transaction creation.

Due to its critical role in system stability and accuracy, the AVC-CPU is designed with full redundancy. Two CPU cards are installed in each AVC unit, continuously monitoring each other in an active/standby configuration to ensure uninterrupted operation. In case of failure in the primary unit, the secondary CPU automatically takes over without data loss or service interruption.

The AVC-CPU connects directly to the ZC (NEXOR) through both highspeed network communication and fast serial bus interfaces, ensuring reliable



and deterministic data exchange. The board is equipped with multiple connectivity and service interfaces including USB, GPIO, status LEDs, LAN ports, and SD memory for local data logging and diagnostics.

KEY SPECIFICATIONS

- Lane Capacity: 1-14 lanes
- Max Vehicle Speed: 250 km/h
- Detection Accuracy: 99.9%
- Classification Accuracy: >99%
- Vehicle Height Detection: Yes (± 5 cm error)
- Vehicle length measuring error ± 20 cm

INVIS

GET IN TOUCH

+90-262 999 18 19
info@invisplus.com

OUR OFFICE

GTÜ TEKNOPARK ,Cumhuriyet Mah.
ŞişecamYolu Sk. Arge 12 No: 54 İç Kapı No: 8

AVALON-CPU-Unit SPECIFICATION

REDEFINING RELIABILITY IN VEHICLE CLASSIFICATION



Hardware (HW)	Software / System Functions (SW)
Industrial CPU card for AVC processing	Multi-lane data fusion (up to 7 lanes)
Dual-CPU redundancy (Active / Standby)	Processing of pre-processed IFU data
Direct connection to ZC (LAN + high-speed serial bus)	Vehicle detection event generation
LAN interface for high-speed communication	Trigger generation for downstream systems
High-speed serial communication interface	Vehicle classification processing
USB port for service & maintenance	Shape, dimension, and position calculation
GPIO interface for control & signaling	Real-time synchronization across lanes
Status LEDs for system health indication	Continuous health monitoring & failover logic
SD memory slot for local data logging	Local event/data recording support
Designed for continuous 24/7 industrial operation	Deterministic real-time processing



INVIS

GET IN TOUCH

+90-262 999 18 19
info@invisplus.com

OUR OFFICE

GTÜ TEKNOPARK ,Cumhuriyet Mah.
ŞişecamYolu Sk. Arge 12 No: 54 İç Kapı No: 8