SOLUTION DATA SHEET

AVALON

REDEFINING RELIABILITY IN VEHICLE CLASSIFICATION

The INVIS AVC is a next-generation Automatic Vehicle Classification system designed to deliver unparalleled accuracy and reliability for ETC and ITS applications. Built on years of engineering expertise, it combines the latest fiber optic axle counting sensors with advanced 2D LiDAR technology, ensuring precise vehicle detection and classification in all traffic conditions.

At its core, the AVC determines vehicle class by analyzing the number and spacing of axles, while the high-frequency 2D LiDAR provides additional data on vehicle shape, length, height, and speed. This dual-technology approach ensures that every vehicle is classified with an accuracy rate of over %99, even at speeds up to 250km/h.

A key advantage of the INVIS AVC is its redundant processing architecture, guaranteeing system reliability and continuity. The sensor network is faulttolerant, meaning that even if one LiDAR or several axle sensors fail, the system continues to operate seamlessly without data loss.

The system can also be integrated with an Embedded Zone Controller (ZC), which is especially critical in MLFF (Multi-Lane Free Flow) environments. The ZC itself supports redundancy.

With a 24 V input, flexible data storage options, monitoring capabilities, and error reporting, the AVC is designed to meet the most demanding operational requirements.

KEY SPECIFICATIONS

- Lane Capacity: 1–14 lanes
- Max Vehicle Speed: 250 km/h
- Detection Accuracy: 99.9%
- Classification Accuracy: >99%
- Vehicle Height Detection: Yes (±5cm error)
- AVC – Redefining reliability in vehicle classification.

INVIS

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AVALON SPECIFICATION

REDEFINING RELIABILITY IN VEHICLE CLASSIFICATION

Lane Detected	14-1 lanes
Max Vehicle Speed	250km/h
Detection accuracy	99.90%
Classification Accuracy	>99%
Vehilce Height Detection	Yes (±20cm Error)
Vhicle Length Detection	Yes (±30cm Error)
Vehicle Angle Detection	Yes (±1 degree Error)
Vehicle Speed estimation	Yes (97% accuracy)
Vehicle Axle claasification	13 different Class
CPU Redundancy	Yes (2 CPUs installed as Hot swap redundant proccessor cards)
Zone Controller Input card	Yes (2 ZCs can install in Subrack)
Web Server configuration	Installation and configuration by Web Server
TCP/IP Server	Configuration/Data communication through TCP/IP protocol
Remote SW update	Yes
AES256	Yes
SHA2	Yes
Date and Hour Syncronization	Synchronization via NTP protocol, IEEE1588
Standard protocols	SNMP; NTCIP (coming soon); MODBUS(optional)
Vehicle Detection sensor	2D Lidar 100hz (380Hz optional)
Vehicle Axle detection sensor	4 Fiber Optic Pressure sensor for each lane (or piezo sensor)
Operating System	Special Realtime OS (not Linux or Windows)
Serial Comunication	CAN Bus , RS485
USB communication	1 per CPU Card
Case type	Standard 6U Sub-Rack 19inch
IP Protection	Waterproof IP40
Ethernet	GigaBit Ethernet 10/100 for CPUs
Storage on CPU	uSD up to 256 GB
GPS and Time sync on GPS	Yes (optional)
Operating Temprature	From -40° to +60° C
Operating Humidity	Up to 95% non condensing
Weight	5 Kg
Power supply voltage	24 Vdc (2A max)
Power consumption	48 W (max)

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