Manufacturer: DFS (DataFromSky)

Product Model: TrafficXRoads

TrafficXRoads I131-O-NX8-1TB is an embedded video analytics computer designed for real-time traffic detection, dynamic traffic light control, and data collection from IP cameras. Powered by a robust NVIDIA Jetson Orin NX processor, the system runs an AI-based detection and tracking algorithm that transforms any video stream into high-quality trajectory data for road users.

Capable of analyzing data from up to 6 connected cameras in real-time with an operating range of over 80 meters, this unit features a highly optimized and fully configurable trajectory processing engine that can evaluate dozens of detection tasks per camera in parallel.

Key Features

Real-Time Traffic Detection & Control

- AI-powered analysis for up to 6 video streams
- Dynamic control of traffic light signaling
- Operating range: 80+ meters
- Compact form for easy traffic cabinet installation
- Remote configuration and firmware updates

Detection Configuration with FLOW Framework

- Flexible detection setup using FLOW: spatial, temporal, or attribution filters
- Quick setup of advanced scenarios (e.g., U-turn, queue, average speed)
- Emulation of inductive loops at any point in the camera view
- Fully interactive system with real-time response to new configurations

Data Visualization & Export

- Aggregated statistics: whole history, time blocks, floating window, or custom intervals
- Visualization via custom dashboards (heatmaps, tables, trajectories, stats)
- Open APIs for 3rd-party integration
- Export data in various formats

Connectivity & Communication

- Protocols supported: NTCIP, J2735, UDP, SDLC, etc.
- Scriptable actions and outputs based on event detection or performance metrics
- Two GigE PoE ports for connecting IP cameras or other devices
- Operating temperature range: -40°C to 75°C

Applications

Dynamic Traffic Control

- Vehicle presence detection
- Speed monitoring and level of service
- Queue length and lane occupancy analysis
- Gap time & space estimation, ETA prediction

Traffic Violation Monitoring

- U-turn detection
- Wrong-way driving detection
- Illegal lane change detection
- Red-light violation detection

Vulnerable Road User Protection

- Pedestrian and cyclist presence
- Conflict detection (e.g., vehicle-pedestrian interactions)
- Jaywalking detection
- Personal safety messages (J2735 compliant)