EN

Kapsch TrafficCom

kapsch
challenging limits

VDX

Video-based, high-performance road user detection, classification and front and rear license plate recognition.

Kapsch VDX is a groundbreaking and innovative sensor, combining the functionality of vehicle detection, tracking and classification with both front and rear license plate recognition, all within a single device delivering industry leading performance.

Wide road coverage

One VDX covers up to three lanes of traffic, meaning that toll stations can be deployed with a single sensor unit for smaller roads. For wider roads, or for a configuration with highest performance and redundancy, multiple VDX sensors can be used. This also improves the license plate recognition even further by providing additional high resolution license plate images from different viewing angles.

Stereoscopic 3D tracking

An overhead-view ensures occlusion is minimized and, thanks to stereoscopic 3D tracking, the front and rear license plate images are always associated to the correct vehicle, no matter how complex the traffic scenes are. Trajectory information is applied to accurately correlate the vehicle passage also with any in-vehicle transponder detected by the Kapsch roadside system.

Unique and versatile classification

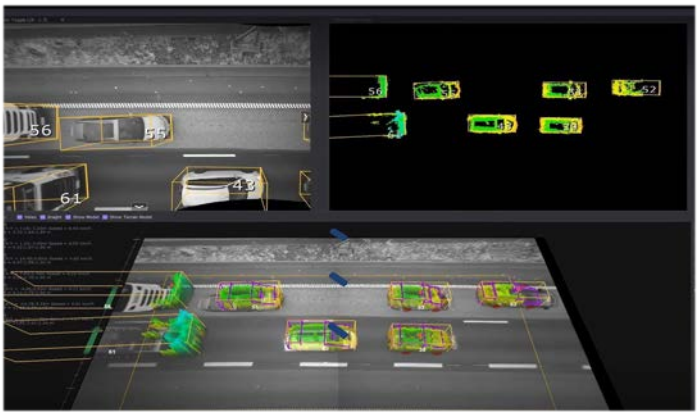
Video-based, stereoscopic 3D technology offers unique capabilities. By combining volumetric measurements with axle count and further deep-learning video analytics, vehicles can automatically be categorized into classes such as bus, truck, campervan, trailer, semi-trailer, and more. Any classification scheme that can be enforced with a visual proof can be supported.

VDX

Single device for multiple lanes.

ETC and ITS use cases

VDX is primarily targeted for Electronic Toll Collection (ETC): High-end video-based charging for pure video tolling applications, or combined with toll charging technologies such as DSRC / RFID or GNSS-based satellite tolling. VDX can also be used for high-end toll enforcement purposes as well as ITS applications such as road safety enforcement (RSE), electronic vehicle registration (EVR) and commercial vehicle enforcement (CVE). In addition, VDX generates valuable data for traffic surveillance and traffic management purposes.



From the Highway to the City

At Kapsch we excel in optimizing roadside system design for all types of roads and traffic scenarios: From highways and rural roads to city environments, handling multiple lanes with dense stop & go traffic as well as high speeds. VDX is a natural choice for any system requiring high-performance, front and rear, vehicle detection and classification. By mounting VDX above the traffic, either on a gantry or on a pole, it outperforms any side-mounted system which inherently suffers from occlusion in dense traffic scenarios.

Long-term commitment.

Kapsch continuously adapts to the latest technology, while continuing to ensure in-house control of critical areas such as end-to-end system performance, seamless system integration as well as long-term end-of-life / lifecycle management.

"Compared to other technologies for Electronic Toll Collection, such as DSRC/RFID or GNSS, Video is unique since it can be used both for charging and enforcement. VDX is a perfect fit for systems requiring highest performance video transactions, while minimizing infrastructure and ecological footprint".

Erik Larsson, Product Manager, Kapsch TrafficCom

Technical features

Unveiling Advanced Capabilities: Exploring Cutting-Edge Technical Features for Enhanced Performance and Functionality

VDX Overall

- Sophisticated on-board video analytics for high-end vehicle detection, classification and license plate reading
- Classification: Stereoscopic volumetric + deep learning based axle detection and further features for high performance on most schemes throughout the industry
- Front+rear license plate images incl. make and model visibility
- Detection: >99.95% in highest performance configuration
- Front+rear correlation: > 99.95%
- Synchronization of cameras, illuminators and other sensors in the roadside system
- Integrated, non-distracting illumination and optional external illumination, several wavelength options
- Seamless integration into various Kapsch roadside system configurations
- Well suited for truly redundant systems, avoiding single point of failure, for highest system availability
- Continuous monitoring and status information
- Gantry- or pole-mounting
- Handle for safe and easy handling

VDX Device

- Size (LxWxH) 565x392x154 mm (excl. bracket)
- Weight 10.2 kg excl. bracket (0.58kg)
- Recyclable enclosure: Anodized + powder coated aluminum with ABS dome
- Ambient temperature
  - Operating -40°C to +55°C
  - Non-operating -25°C to +55°C
  - Dry-heat test +70°C
- Humidity (operating) 4% to 100%
- Vibration 1 - 150 Hz, 10 m/s^2
- Shock: 150 m/s^2, 6ms
- Vehicle Detection Cameras Image sensors: 3 MP monochrome, near infrared. Configured as stereoscopic camera pair
- Vehicle Image Cameras Image sensor: 5.0MP or 8.9MP, monochrome, near infrared or color
- Illumination: Near-infrared or visible wavelengths, non-distracting to drivers
- MTBF > 60 000 hours
- Power: 24-48 VDC max 70W, typical 50W excl. heating optional heating max 30W
- Interface 10/100/1000BASE-TX

Approvals

- CE, FCC, UKCA, RCM
- EMC 2014/30/EU
- LVD 2014/35/EU
- RoHS3 2015/863/EU
- FCC: 47CFR15
- Photo-biological Safety: EN62471
- IEC protection rating IP66

Installation and Maintenance SW

- Web-based / Windows client user interface
- Image visualization
- Manual triggering of images possible
- Firmware update
- Monitoring of input (trigger) and output (result) message

Kapsch TrafficCom

Kapsch TrafficCom is a globally renowned provider of transportation solutions for sustainable mobility with successful projects in more than 50 countries. Innovative solutions in the application fields of tolling, tolling services, traffic management and demand management contribute to a healthy world without congestion.

With one-stop-shop solutions, the company covers the entire value chain of customers, from components to design and implementation to the operation of systems.

Kapsch TrafficCom, headquartered in Vienna, has subsidiaries and branches in more than 25 countries and is listed in the Prime Market segment of the Vienna Stock Exchange (ticker symbol: KTCG).

>>> www.kapsch.net