



Vega Family

An advanced modular platform born to host AI applications, being performant and flexible



- ❖ The hardware platform is designed with the scalability needed to adapt to multiple applications; it supports different computing needs, even the most challenging, thanks to internal extensibility.
- ❖ The new STARK Software architecture creates a solid foundation for Vega, providing high stability, software modularity, intuitive and responsive web interface.

- ❖ Vega family comes with easy-to-integrate protocols for seamless and cost-effective adoption.
- ❖ Simple installation and connection with cable glands and PoE+ for selected devices

- ❖ Internal sensors for anti-tampering and advanced camera diagnostic management
- ❖ Highly sensitive imaging sensors and high-quality components to maximize performances lifecycle and reduce downtime to zero

- ❖ Pre-configured multiple lens options to provide the best image quality and no additional installation efforts
- ❖ Extended temperature range and weather-proof housing (-40°/+ 60°C | -40°/+140°F external temperature, IP-68)
- ❖ Additional optional internal SSD storage from 128GB up to 1TB according to customer needs
- ❖ Precise positioning with optional integrated GPS module
- ❖ Optional LTE module for continuous connectivity and operating in remote locations



FREE FLOW TOLLING

Axle Counter

The Axle Counter is a compact axle counting system based on Artificial Intelligence (AI)



🔗 The new concept of axle counting based on Artificial Intelligence.

The Axle Counter is targeted to free flow tolling applications; with above-ground layout, no road works are needed for installation and maintenance and no distraction for the drivers, thanks to the infrared illumination.

An on-board dedicated neural network processor allows fast image processing capability to detect vehicles and their characteristics, such as axles, raised axles status and speed estimation, at any time of the day and of the night. The system doesn't require external

triggering, it detects transits by image analysis thanks to its processing capability. Optionally, the Axle Counter can be triggered by different triggering sources, allowing flexible interfacing with existing devices and perfect integration with Tattile devices.

The Axle Counter provides the resulting metadata together with the reconstructed image of the vehicle, giving evidence of the transit to the tolling operators.

- 🔗 Onboard AI processing
- 🔗 Self-triggering
- 🔗 Vehicle reconstructed image
- 🔗 Fully customizable
- 🔗 Rich user interface
- 🔗 REST compliant

Optional: Expandable local storage / GPS / WIFI

AXLE COUNTER	
Data Transmission	
FTP	FTP Client mode for remote data transmission
Standard protocols	REST and binary protocol
Configuration	Actions and content customizable
Serial Port	Insulated RS485
Operating Mode	
Autotrigger	Self triggering based on image analysis
Trigger Ethernet	Image capture and processing triggered by Ethernet with start and stop message
Trigger Input	Image capture and processing triggered with start and stop digital signal
System	
Image capture sensor	2 Megapixels grayscale
Illuminator	Infrared External Illuminator
Lenses	Fixed lens configuration
Operating System	Linux Operating System
Digital I/O	2 Inputs – 2 Outputs – 1 Strobe output
IP Protection	IP68
Ethernet	Gigabit Ethernet 10/100/1000
Storage	uSD up to 128 GB
Vandal proof Connector	Yes
Antitamper sensor	Yes
Internal SSD	Optional, up to 1TB
GPS	Optional
Wifi	Optional
Technical Data	
Operating & Storage Temperature	From -40° to +60° C - From -40° to +140° F
Operating & Storage Humidity	Up to 95% non condensing
Dimensions	
Weight	3,6kg
Power supply voltage	24 Vdc
Power consumption	24W

AXLE COUNTER	
Software features and Performance	
Processed Lane	Gantry
Max Vehicle Speed	Up to 250km/h - 155mph
Installation height	7m (typical) - 23ft
Detection accuracy	99%
Managed vehicles	Up to 2400 v/hour
Axes counting accuracy	>95% over 4 classes (2,3,4,5+ axles)
Raised axles detection	Yes
Speed estimation	Yes
Processing	Onboard processing
AES256	Yes
SHA2	Yes
Data buffering and storage	Yes
Compression	JPG
Configuration	
Web Server	Installation and configuration with on board Web Application
Integration	REST and binary protocol available
Date and Hour	Synchronization via NTP protocol or optional internal GPS
Software Update	Upgrading via Web Application and integration protocols

Part Numbers

AXLE COUNTER SYSTEM	
F02002	Axle Counter Camera
F01920	External IR Illuminator