ANPR solutions for ITS applications

Tolling
- Axle Counter
- Free Flow
- Stop & Go tolling
- Low Emission Zone

Vehicle tracking
- Homeland Security
- Parking
- Access control
- ANPR Mobile

Enforcement
- Speed enforcement
- Red light enforcement
- Bus lanes enforcement
Embedded Technology: OCR and image processing are embedded in the ANPR (ALPR) Camera (no need of extra PCs or software licenses)

- Multicore Processor
- Multi transit/second management capability

Optional Features:
- Embedded brand, color and model recognition
- Embedded optical vehicles classification
- HD video streaming
- Auto trigger
- Optical speed estimation

On field service
- Tattile’s Field Application Engineers (FAE) are fully dedicated to assist our partners during Design, Installation and After sales
- Worldwide on-field service available for partners

One step forward
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Tattile’s OCR is developed by our internal software team (in-house development)
- Tattile offers more than 110 in-house developed OCR libraries
- New OCR libraries can be developed and tested upon request
- Tattile can handle more than one OCR library onboard each ANPR (ALPR) camera; for instance, 28 European countries are embedded in one single library
- New OCR libraries available for the US market
- Third party OCR transferable onboard (no processing on external PC required)

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Top Performance Hardware

- Embedded multicore processors
- High sensitivity sensors
- Embedded FPGA
- Scalable device
- LTE and GPS available as options
- SSD from 128GB up to 1TB according to customer needs
- Smart design
- IP68 protection grade
- Extended temperature range (-40°/+ 60°C | -40°/+140°F external temperature)

The hardware system has been designed using a modular approach able to receive different processors ensuring future CPU evolutions for state of the art performances.

Modular Platform designed to include various sensors in order to match all the applications required by the most challenging scenarios.

Scalable HW architecture to include different FPGA modules and to ensure high-speed image processing in extreme situations.

Use of FPGA grants a huge processing capability for real time image processing and ANPR (ALPR) analysis.

SSD from 128 GB up to 1TB (Smart family).

Modular architecture allows an easy customization of the HW platform according to the complexity of the application.

Devices able to detect and read non-reflective licence plate, without any external illuminator.

Extra sensitive sensor mounted on Smart 2HD’s context camera ensures quality images also in low light conditions (from 25 Lux).
Tattile’s add-on software libraries allow transforming a simple ANPR (ALPR) camera into a big data collector, providing a wide range of information for different purposes such as security, traffic analysis, smart cities, data classification, pollution estimation and traffic statistics.

All add-on software can be uploaded even if the camera is already installed.

- **A - BCCM** - Brand, Class, Color and Model recognition
- **B - Rigel** - Traffic analysis and incident detection
- **C - Inspector** - Traffic data management system

### Add-on software

- **Linux OS platform**
- **Proprietary high performance plate reader algorithm**
- **Camera software can be fully upgraded from a remote connection**
- **Easy to use and configure with an integrated web interface**
- **SDK available for easy integration**
- **Optional integration with third-party software running on-board to extend device capabilities**
  - Standardized interface allows future system upgrades without significant rework
  - Automatic grabbing parameter selection to adjust image acquisition according to external light conditions
  - Transit notification with customizable metadata, encryption and signature algorithms
  - High performance software and scalability

### SMART

<table>
<thead>
<tr>
<th>Feature</th>
<th>HD</th>
<th>Speed</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Recognition</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Model Recognition</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Vehicle Classification</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Vehicle Color</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Rigel Traffic analysis and incident detection</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Inspector Traffic data management system</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Others</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### BASIC

<table>
<thead>
<tr>
<th>Feature</th>
<th>HD</th>
<th>Speed</th>
<th>Long Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brand Recognition</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Others</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

### ANPR/ Mobile

- **BCCM** Brand, Class, Color and Model recognition
- **Rigel** Traffic analysis and incident detection
- **Inspector** Traffic data management system
- **Others** Customizable based on usage needs
**BCCM**

**Brand, Class, Color and Model recognition**

- Vehicle brand, class, color and model recognition algorithm running inside the camera
- License plate, brand, class, color and model create the so-called vehicle «fingerprint» in a single report
- All information provided by a single source
- No extra cost for external software, processing server and integration time

**Applications:**
- Security
- Crime enforcement
- Tolling
- Smart City

---

**Rigel**

**Traffic Monitoring & Incident Detection**

- Rigel plugin is an extension of Telepas’s double head solutions. It enables the traffic analysis features providing an all-in-one solution for both reading plates and traffic monitoring.
- Rigel system is a real-time traffic analyser able to manage alarms and notification; reporting plate numbers and a number of traffic events directly to the aggregating software running on a remote server.
- The aggregating software works as a forwarder of all the collected events to all 3rd party systems like VMS or SCADA platforms, supporting standard protocols.
- The integration with the most commonly used video management systems and alerting systems allows the control room to have a quick overview of all traffic events and take actions accordingly.

**Available analysis:**
- Stopped vehicle
- Slowdown and queue
- Wrong way
- Pedestrian detection
- Smoke, low visibility
- Lost cargo
- Traffic density
- Vehicle counting

**Applications:**
- Traffic monitoring
- Automatic incident detection
- Traffic data collection
- Smart City
Inspector is a scalable platform able to centralize the data acquired from different cameras distributed on the field. The system is scalable and extensible to perform average speed enforcement control, security applications, traffic statistics, and access control.

Inspector can analyze collected data according to configurable rules and undertake a number of actions based on the results: opening gates, sending emails, posting messages on variable message panels.

Inspector generates reliable reports; various research queries can be done.

Applications:
- Average speed enforcement
- Vehicles research; transit movements control (reported vehicles) based on a configurable internal database or connecting to a database
- Origin destination
- Geo-referenced map indicating devices position
- Transit movements and traffic statistics generation, possibility to personalize statistics
- Access control

Inspector does not need to be installed on client machines; the SW can easily be accessed with any browser; the multi-user software manages multiple connections and queries at the same time.

Safe login to the system using credentials (username and password), leaving the possibility to set up different user profiles.

Possibility to embed the software in the user’s apps (or third parties) thanks to Web Service calls.

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Applications:
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The Vega Smart Family
Automatic Number Plate Reader

The Vega Smart line is built on a high performance base allowing a high scalability, for high-end, multivehicle per second applications

With embedded licence plate recognition, image analysis software, high resolution sensors, low power consumption and a web server on-board, the Vega Smart camera allows performing innovative applications

The camera can be integrated/connected to external devices and can receive vehicle’s class data from external classifier (laser scanner, radar loops, etc.), tag identifier from RFID antenna and vehicle’s axle number data from external device

The camera has two multicore processors on board with Linux operating system

New context camera color sensor capable of providing good quality images even in low light conditions (from 25 Lux)

Camera designed to detect and recognize reflective and non-reflective licence plate

Stand alone: thanks to the local buffering of information, the system is able to work also in case of disruption of data connection

Camera can be integrated/connected to external devices and can receive vehicle’s class data from external classifier (laser scanner, radar loops, etc.), tag identifier from RFID antenna and vehicle’s axle number data from external device

Vega Smart Family Applications

- Multilane Free Flow
- Police enforcement
- Vehicle tracking and monitoring
- Border control
- Tax and insurance control
- Congestion charge, access control to limited traffic areas

Vega Smart HD Vega Smart UND Vega Smart Speed Vega Smart Traffic Light

Multilane Processor X X X X

GPS X X X X

ODM Tag Sensor X X X X

Color Sensor X X X X

Radar Sx X X X X

Hanschiff/ADR Recognition X X X X

Hy always X X X X

SSD X X X X

Linux Os X X X X

Traffic Light Violation SW X X X X

Rigel Traffic Analysis X X X X

OCR X X X X

Kemler/ADR recognition X X X X

Autoiris X X X X

Brand Recognition X X X

Color Recognition X X X

Model Recognition X X X

Optical Classification X X X

Third party OCR X X X

Speed Estimation X X X

HD Video X X X

Included Features and Options

Incl. = Included / Opt. = Optional

- Multilane Free Flow
- Police enforcement
- Vehicle tracking and monitoring
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Vega Smart HD Vega Smart UND Vega Smart Speed Vega Smart Traffic Light

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Radar Sx X X X X

Hanschiff/ADR Recognition X X X X

Hy always X X X X

SSD X X X X

Linux Os X X X X

Traffic Light Violation SW X X X X

Rigel Traffic Analysis X X X X

OCR X X X X

Kemler/ADR recognition X X X X

Autoiris X X X X

Brand Recognition X X X

Color Recognition X X X

Model Recognition X X X

Optical Classification X X X

Third party OCR X X X

Speed Estimation X X X

HD Video X X X

Included Features and Options

Incl. = Included / Opt. = Optional
Vega Smart HD - Vega Smart 2HD

Automatic Number Plate Reader

The Vega Smart Line

It is built on a highly performing base allowing outstanding scalability.

Optionals can be installed upon request.

Impressive capability to keep the device always updated.

Application

• Toll collection
• Free Flow
• Traffic monitoring
• Security

Free-Flow Tolling - Security

<table>
<thead>
<tr>
<th>Software features and Performance</th>
<th>SMART HD</th>
<th>SMART 2HD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating Mode</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Free Run</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous processing, toll, free, vehicle detection, even without plate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Image capture or processing, triggering by detected vehicle or digital signal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operating &amp; Storage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From -40° to +140° F</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From -40° to +60° C</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Humidity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 95% non-condensing</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>290 x 127 x 235 mm - 11.4 x 5 x 9.25 in (WxHxL)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.5 kg - 12.12 lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power supply voltage</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Vdc</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 W (max)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Application                      |          |           |
| Traffic Monitoring               |          |           |
| Security                         |          |           |

**LAN Detected**

2

**Max Vehicle Speed**

250 km/h - 155 mph

**Working Distance**

Up to 35 m - Up to 115 ft

**ANPR (ALPR) engine on board**

NA

**Synchronization via NTP protocol, IEEE1588, GPS**

**Software Update**

Upgrading via Web Interface and SDK

**Data Transmission**

FTP - FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable

**TCP/IP**

Tattile TCP/IP open protocol; (SDK provided)

**Standard protocols**

XML; SNMP; NTCIP; DATEX2; UTMC; ONVIF; MODBUS

**Serial Port**

Insulated RS485

**Digital i/o**

6 Optoisolated input - 4 Relay Output – 1 Strobe output

**Connectors**

Waterproof circular connector

**IP Protection**

Waterproof IP68

**Ethernet**

GigaBit Ethernet 10/100/1000

**Storage**

uSD up to 128 GB - Optional HD/SSD

**GPS**

Optional

**LTE**

Optional

Part Numbers

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Vega Smart HD</th>
<th>Vega Smart 2HD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part Numbers**

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Vega Smart Design</th>
<th>Vega Smart HD Non Reflective Plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01760</td>
<td>Smart HD</td>
<td>Smart HD Non Reflective Plates</td>
</tr>
<tr>
<td>F01767</td>
<td>Smart Color HD</td>
<td>Smart Color HD Non Reflective Plates</td>
</tr>
<tr>
<td>F01761</td>
<td>Smart 2HD</td>
<td>Smart 2HD Non Reflective Plates</td>
</tr>
<tr>
<td>F01765</td>
<td>Smart Color 2HD</td>
<td>Smart Color 2HD Non Reflective Plates</td>
</tr>
</tbody>
</table>

**Technical Datas**

**Operating & Storage**

-40° to +140° F - From -40° to +60° C

**Humidity**

Up to 95% non-condensing

**Dimensions**

91.3 x 229 x 386 - 35.8 x 9.0 x 1.50 in (WxHxD)

**Weight**

29.3 lbs - 13.3 kg

**Power supply voltage**

220 VAC

**Power consumption**

35 W - 50 VA
Vega Smart Speed

Automatic Number Plate Reader

- Real time detection of infringements with OCR on board
- Embedded multi-tracking radar
- No post-processing required
- Detection of vehicles exceeding average speed or punctual speed limits

Ability to recognize every plate passing under the camera and not only violators. This is very useful for security or statistical purposes

All transit plates are recorded and available for:
- Speed enforcement (speed average)
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

- Ability to recognize every plate passing under the camera and not only violators. This is very useful for security or statistical purposes

All transit plates are recorded and available for:
- Speed enforcement (speed average)
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Application
- Enforcement
- Traffic monitoring
- Security

 SMART SPEED

- Lane Detection: 2
- Max Vehicle Speed: 250 km/h - 155 mph
- Working Distance: Up to 35 m - Up to 115 ft
- Detection: 99%
- Reading: >95%
- OCR: ANPR (ALPR) engine on board
- Third party OCR optional
- Capture rate: Up to 75 fps
- Classification: optional
- Vehicle Color: optional
- Vehicle Brand: optional
- Vehicle Model: optional
- AES256: Yes
- SHA2: Yes
- Compression: JPG
- Streaming: Video streaming via standard RTSP protocol
- Configuration: Web Server: Installation and configuration by Web Server on board
- TCP/IP Server: Configuration and monitoring through TCP/IP protocol. (SDK provided)
- Date and Hour: Synchronization via NTP protocol, IEEE1588, GPS
- Software Update: Upgrading via Web Interface and SDK
- Data Transmission: FTP: FTP Client to FTP Server mode for remote data transmission; Multiple IP servers addressable
- TCP/IP: Tattile TCP/IP open protocol; (SDK provided)
- Standard protocols: XML; SNMP; NTCIP; DATEX2; UTMC; ONVIF; MODBUS
- Serial Port: Insulated RS485
- Operating System: Linux Operating System
- Digital i/o: 6 Optoisolated input - 4 Relay Output – 1 Strobe output
- Connectors: Waterproof circular connector
- IP Protection: Waterproof IP68
- Ethernet: GigaBit Ethernet 10/100/1000
- Storage: uSD up to 128 GB
- Optional HD/SSD
- GPS: Yes
- LTE: Optional
- F01766

Op. Mode
- Free Run: Continuous processing with automatic vehicle detection even without plate
- Triggered: Image capture and processing triggered by Ethernet command or digital signal

System
- ANPR (ALPR) camera: 5 MPX BW
- Standard camera: 2.3 Megapixel only CMOS sensor
- Sensors: 12 high power LEDs, InfraRed @ 850 nm
- Illuminator: 12 high power LEDs, InfraRed @ 850 nm
- Lenses: Many focal lengths available
- Camera: Sharp-angled, welded, 80 x 80 x 30 mm
- Regular - 4 Optimized input - 1 Relay Output - 1 Strobe output
- Dimensions: 492 x 127 x 235 mm - 14.2 x 5 x 9 in
- Weight: 7.4 kg - 16.31 lbs
- Voltage: 24 Vdc
- Power consumption: 50 W (max)

Part Numbers

- F01766: 2-use speed

Speed Enforcement
Vega Smart Traffic Light

Automatic Number Plate Reader

- The new concept to safeguard the intersections
- Smart Traffic Light allows the red light status identification through image analysis.
- Red light violation detected by image analysis (without external sensors), no external device required and reduced installation and maintenance costs.

- The system is able to manage different kinds of traffic installations (one or two lanes, one traffic light each lane or every two lanes).

- Ability to recognise every plate passing under the camera and not only violators. This is very useful for security or statistical purposes.

- All transit plates are recorded and available for:
  - Red light enforcement
  - Tax and insurance control
  - Vehicle tracking
  - Traffic monitoring

Application
- Enforcement
- Traffic monitoring
- Security

### Technical Data

<table>
<thead>
<tr>
<th>Operating &amp; Storage</th>
<th>Temp.</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From -40° to +60° C</td>
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<table>
<thead>
<tr>
<th>Dimensions</th>
<th>WxHxL</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>290 x 127 x 235 mm</td>
<td>5.5 kg</td>
</tr>
</tbody>
</table>

## Product Specifications

### Part Numbers

- Vega Smart Traffic Light: F01764
- Smart Traffic Light: F01769
- Smart Traffic Light Non Reflective Plates
**Vega Basic Family**

Automatic Number Plate Reader

- Mainly targeted to stop & go tolling, parking and access control systems, with a maximum input power of 13W.
- The Vega Basic line features a Power-over-Ethernet (PoE) interface for minimizing the installation and maintenance time.

- New generation full-HD sensor for reading reflective and non-reflective plates.
- A multicore processor on board with Linux operating system.
- Extra compact size to reduce the installation impact.
- The Vega Basic is easy to install and does not require an external IR lighting.
- Vandal proof connectors.

**Vega Basic Family Applications**

- Stop & Go tolling
- Parking
- Access control
- Urban road tracking
- Congestion charge
- Access control to limited traffic areas
- Axle counting

**Included Features and Optionals**

<table>
<thead>
<tr>
<th>Included Features and Optionals</th>
<th>Vega Basic Short range</th>
<th>Vega Basic Long range</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicore Processor</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>OCR BW sensor</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>OCR Color sensor (color version)</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>Context color sensor</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Video streaming</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Micro Sd</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Linux Os</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>OCR</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>Kemler/ADR recognition</td>
<td>X</td>
<td>X</td>
<td>x</td>
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<tr>
<td>Autoiris</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>Speed Estimation</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>Brand Recognition</td>
<td>X</td>
<td>X</td>
<td>x</td>
</tr>
<tr>
<td>Color Recognition</td>
<td>X</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

- Incl. = Included / Opt. = Optional
- x = Included as standard feature

**Vandal proof connectors**

**Small and Performant**
The new concept of axle counting based on Artificial Intelligence

Axle Counter

Integrated axle counting system

The Axle Counter is targeted to free flow tolling applications. Its advanced embedded processing capability, based on Artificial Intelligence (AI), allows to detect and count vehicles’ axles, at any time of the day and of the night.

The Axle Counter gantry installation is made easy thanks to the Power-over-Ethernet (PoE) interface that provides a single cable connection to the camera for power and data transfer.

Additionally, for optimal performance the Axle Counter is triggered by different triggering sources, allowing flexible interfacing with existing devices and perfect integration with Tattle 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.

Its local storage capability allows operating stand-alone in case connectivity is not available.

Optional:
- GPS module
- Speed estimation

Technical Data

<table>
<thead>
<tr>
<th>Part Numbers</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01900</td>
<td>Axle Counter System</td>
</tr>
<tr>
<td>F01912</td>
<td>External IR Illuminator</td>
</tr>
</tbody>
</table>

Software features and Performance

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard processing</td>
<td>Trigger Ethernet</td>
</tr>
<tr>
<td>Local storage</td>
<td>Trigger input</td>
</tr>
<tr>
<td>Power Over Ethernet</td>
<td>Image captured and reconstructed by onboard computer and sent to Tattile server (or other destinations)</td>
</tr>
<tr>
<td>Metadata and image output</td>
<td>Image captured and processed by Tattile server (or other destinations)</td>
</tr>
</tbody>
</table>

Interface Features and Performance

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera</td>
<td>Sony IMX178 2 Megapixel grayscale</td>
</tr>
<tr>
<td>Illuminator</td>
<td>External illuminator InfraRed @ 850 nm</td>
</tr>
<tr>
<td>Lens</td>
<td>C-Mount. Different focal lenses available</td>
</tr>
<tr>
<td>OS</td>
<td>Debian 11.4.0 64-bit Linux Operating System</td>
</tr>
<tr>
<td>Digital I/O</td>
<td>2 Inputs – 2 Outputs – 1 Strobe output</td>
</tr>
<tr>
<td>Connectors</td>
<td>Waterproof circular connector</td>
</tr>
<tr>
<td>IP Protection</td>
<td>IP67</td>
</tr>
<tr>
<td>Audio</td>
<td>GigaBit Ethernet 10/100/1000</td>
</tr>
<tr>
<td>Storage</td>
<td>uSD up to 128 GB</td>
</tr>
</tbody>
</table>

Operating & Storage

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>From -40° to +60° C – From -40° to +140° F</td>
</tr>
<tr>
<td>Humidity</td>
<td>Up to 95% non-condensing</td>
</tr>
<tr>
<td>Dimensions</td>
<td>187 x 103,5 x 216 mm – 7.4 x 4.1 x 8.5 in</td>
</tr>
<tr>
<td>Weight</td>
<td>5 kg – 11 lbs</td>
</tr>
</tbody>
</table>

Power supply voltage | 24 Vdc, PoE+ |

Power consumption | 15 W (max) |

Ethernet | GigaBit Ethernet 10/100/1000 |

GPS | Optional |

Part Numbers

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01900</td>
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</tr>
<tr>
<td>F01912</td>
<td>External IR Illuminator</td>
</tr>
</tbody>
</table>
**Vega1**

Automatic Number Plate Reader

The Vega1 is a dual channel camera built in a compact case.

It is mainly targeted to single lane vehicle tracking, traffic limited areas and priority lanes. Its high sensitivity image sensors are available for ANPR (ALPR) reading, video streaming even in extreme and low light conditions.

The Vega1 is compact, easy to install and does not require an external IR lighting. The extra compact case reduces installation impact.

**Applications:**
- Single lane road tracking
- Surveillance and access control
- Congestion charge
- Limited traffic areas, priority lanes

**Optional functionalities:**
- GPS
- Vehicle class
- Vehicle color
- Vehicle model

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANPR (ALPR) onboard</td>
<td>Yes</td>
</tr>
<tr>
<td>Local storage</td>
<td>Yes</td>
</tr>
<tr>
<td>Speed estimation</td>
<td>Yes</td>
</tr>
<tr>
<td>Video streaming</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Technical Data**

**Operating & Storage**
- Temperature: From -40° to +60° C  - From -40° to +140° F
- Humidity: Up to 95% non condensing

**Dimensions**
- 187 x 103,5 x 216 mm  - 7.4 x 4.1 x 8.5 in (WxHxL)

**Weight**
- 5 kg  - 11 lbs

**Power supply voltage**
- 24 Vdc or PoE+ 802.3at Type2

**Power consumption**
- 15 W (max)

**Optional functionalities:**
- GPS
- LTE
- Vehicle brand
- Vehicle class
- Vehicle color
- Vehicle model

The Vega1 is compact, easy to install and does not require an external IR lighting. The extra compact case reduces installation impact.

The camera allows an easy setup to minimize the installation and maintenance time. Thanks to its local storage, it can work stand alone in case the connectivity is not available.

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The Vega1 is compact, easy to install and does not require an external IR lighting. The extra compact case reduces installation impact.
Vega Basic Short Range - Long Range

Automatic Number Plate Reader

- The Vega Basic Line is built around a small and compact case
- POE allows a single wire connection
- Optionals can be installed upon request
- Impressive capability to keep the device always updated
- Available in BW and Color version

Software Features and Performance

<table>
<thead>
<tr>
<th>Feature</th>
<th>Basic Short Range</th>
<th>Basic Long Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lan Interface</td>
<td>Ethernet</td>
<td>Ethernet, PoE</td>
</tr>
<tr>
<td>Max Vehicle Speed</td>
<td>70 km/h – 44 mph</td>
<td>150 km/h – 93 mph</td>
</tr>
<tr>
<td>Working Distance</td>
<td>Up to 8 m – 26 ft</td>
<td>Up to 25 m – 82 ft</td>
</tr>
<tr>
<td>Resolution</td>
<td>800x480</td>
<td>2048x1080</td>
</tr>
<tr>
<td>Reading</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>CAPM</td>
<td>0.5 s</td>
<td>0.5 s</td>
</tr>
<tr>
<td>Capture rate</td>
<td>&gt;95%</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>OCR</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>ANPR (ALPR) engine on board</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Compression</td>
<td>JPG</td>
<td>JPG</td>
</tr>
<tr>
<td>Capture Rate</td>
<td>Up to 60 fps</td>
<td>Up to 60 fps</td>
</tr>
<tr>
<td>AES256</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>SHA2</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Configuration</td>
<td>Web Server</td>
<td>TCP/IP protocol</td>
</tr>
<tr>
<td>Date and Hour</td>
<td>Synchronization via NTP protocol, IEEE1588</td>
<td>(SDK provided)</td>
</tr>
<tr>
<td>Software Update</td>
<td>Upgrading via Web Interface and SDK</td>
<td></td>
</tr>
<tr>
<td>Data Transmission</td>
<td>FTP, TCP/IP open protocol</td>
<td>FTP, TCP/IP open protocol</td>
</tr>
<tr>
<td>Illuminator</td>
<td>8 high power LEDs, InfraRed @ 850 nm</td>
<td>8 high power LEDs, InfraRed @ 850 nm</td>
</tr>
<tr>
<td>Lens</td>
<td>C-Mount, Many focal lengths available</td>
<td>C-Mount, Many focal lengths available</td>
</tr>
<tr>
<td>Operating System</td>
<td>Linux Operating System</td>
<td>Linux Operating System</td>
</tr>
<tr>
<td>Digital i/o</td>
<td>2 Optoisolated inputs - 2 Relay outputs – 1 Strobe output</td>
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<td>IP Protection</td>
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<tr>
<td>Ethernet</td>
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<tr>
<td>Storage</td>
<td>uSD up to 128 GB</td>
<td></td>
</tr>
</tbody>
</table>

Part Numbers

- Vega Basic F01750: Basic short range
- Vega Basic F01752: Basic long range
- Vega Basic Color F01751: Basic color short range
- Vega Basic Color F01753: Basic color long range

Parking Access Control - Stop & Go Tolling

- The Vega Basic Short Range can read up to 8 meters-26 ft far at 70km/h-44 mph max speed
- The Vega Basic Long Range can read up to 25 meters-82 ft far at 150km/h-93 mph max speed
ANPR Mobile

**Automatic Plate Reader**

ANPR Mobile is the latest generation system with Megapixel sensors that can scan up to 60 license plates per second, front and rear, in any light condition. It is part of the sophisticated Tattile ANPR/ALPR (Automatic Number Plate Reader) All On Board camera family, to read license plates in movement.

**Software Features**

- **OCR**: ANPR (ALPR) engine on board
- **Capture rate**: Up to 60 fps
- **Web Server**: Installation and configuration by Web Server on board
- **TCP/IP Server**: Configuration and monitoring through TCP/IP protocol
- **Date and Time**: Synchronization via SNTP protocol or GPS
- **Software Update**: Upgrading via Web Interface and SDK
- **FTP**: FTP Client to FTP Server mode for remote data transmission; two IP address management
- **TCP/IP**: Tattile TCP/IP open protocol; two IP address management
- **Streaming**: Video streaming via standard RTSP protocol
- **Operating Mode**: Free Run (continuous processing with automatic plate detection)

**Technical Data**

- **System**: ANPR Mobile
- **ANPR (ALPR) camera**: 1080 x 1080 monochrome DASG sensor
- **ANPR camera**: 1080 x 1080 Color DASG sensor
- **Illuminator**: Short range: 6 LEDs High power infrared @ 850nm
- **Lens**: f/2.0, f/1.6, f/1.4, f/1.2, f/1.0, f/0.95
- **Network**: Fast Ethernet 10/100 and WiFi 802.11 b/g/n
- **Storage**: Up to 128 GB
- **Environment, Size, Power**:
  - Temperature: From -30° to +60° C / -22° to +140° F
  - Humidity: Up to 95% non condensing
  - Dimensions: 178 x 76 x 141 mm - 7 x 3 x 5.5 in (WxHxL)
  - Weight: 1.650 Kg - 3.63 lbs
  - Protection: Waterproof IP66/IP67
  - Power supply voltage: 12 Vdc
  - Power consumption: 15 W

**Part Numbers**

- **ANPR Mobile**: 1080001411/142 short range
- **ANPR Mobile**: 1080001342/134 medium range
- **ANPR Mobile**: 1080001354/135 long range

**Wi-Fi data transmission from the unit to the pc/tablet**

**GPS on board**

**Embedded licence plate analysis (OCR on board)**

**Real time processing: up to 60 fps**