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

www.tattile.com
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

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

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 on-board (no processing on external PC required)
Top Performance Hardware

- Embedded multicore processors
- Embedded FPGA
- High sensitivity sensors
- 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.

HW Scalability

- 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 license 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)
Top Performance Software

Add-on software

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

### SMART SPEED

<table>
<thead>
<tr>
<th>Brand</th>
<th>Speed</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### BASIC

<table>
<thead>
<tr>
<th>Brand</th>
<th>Speed</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ANPR Mobile

<table>
<thead>
<tr>
<th>Brand</th>
<th>Speed</th>
<th>Traffic Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 reworks
- 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
Rigel plugin is an extension of Tattile’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.

The software is able to work in different scenarios, either in approaching and receding traffic, day and night and on multiple lanes.

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 analyse 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 party) thanks to Web Service calls.

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 party) thanks to Web Service calls.
**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.

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

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

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.

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

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

**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

**Included Features and Optionals**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Vega Smart HD</th>
<th>Vega Smart HD</th>
<th>Vega Smart Speed</th>
<th>Vega Smart Traffic light</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multilane Processor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Processor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Radar</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>OMR Reader</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sensor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>IMU</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>GPS</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>LTE</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>SSD</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Traffic Light Violation SW</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
| Traffic Light Vi...
The Vega Smart Line

It is built over 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

---

### Technical Datas

**Operating & Storage**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>From -40° to +60° C  -  From -40° to +140° F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humidity</td>
<td>Up to 95% non condensing</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Width x Height x Depth</th>
<th>290 x 127 x 235 mm  -  11.4 x 5 x 9.25 in</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>5.5 kg  -  12.12 lbs</td>
</tr>
</tbody>
</table>

**Power supply voltage**

24 Vdc

**Power consumption**

50 W (max)

---

### Part Numbers

<table>
<thead>
<tr>
<th>Model</th>
<th>Vega Smart HD</th>
<th>Smart HD</th>
<th>Vega Smart Color HD</th>
<th>Smart Color HD</th>
<th>Vega Smart 2HD</th>
<th>Smart 2HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Numbers</td>
<td>F01760</td>
<td>F01767</td>
<td>F01762</td>
<td>F01765</td>
<td>F01761</td>
<td>F01768</td>
</tr>
</tbody>
</table>

---

### Free-Flow Tolling - Security

Free-Flow Tolling - Security
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 (spot average)
  - Tax and insurance control
  - Vehicle tracking
  - Traffic monitoring

**Smart Speed**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Detected</td>
<td>2</td>
</tr>
<tr>
<td>Max Vehicle Speed</td>
<td>250 km/h (155 mph)</td>
</tr>
<tr>
<td>Working Distance</td>
<td>Up to 35 m (115 ft)</td>
</tr>
<tr>
<td>Detection</td>
<td>99%</td>
</tr>
<tr>
<td>Reading</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>OCR</td>
<td>ON-Board OCR, ALPR engine</td>
</tr>
<tr>
<td>Third party OCR</td>
<td>Optional</td>
</tr>
<tr>
<td>Capture rate</td>
<td>Up to 75 fps</td>
</tr>
<tr>
<td>Classification</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Color</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Brand</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Model</td>
<td>Optional</td>
</tr>
<tr>
<td>AES256</td>
<td>Yes</td>
</tr>
<tr>
<td>SHA2</td>
<td>Yes</td>
</tr>
<tr>
<td>Compression</td>
<td>JPG</td>
</tr>
<tr>
<td>Streaming Video</td>
<td>RTSP protocol</td>
</tr>
<tr>
<td>Configuration</td>
<td>Web Server, TCP/IP Server, NTP, IEEE1588, GPS</td>
</tr>
<tr>
<td>Software Update</td>
<td>Web Interface, SDK</td>
</tr>
<tr>
<td>Data Transmission</td>
<td>FTP, TCP/IP</td>
</tr>
<tr>
<td>Operating System</td>
<td>Linux Operating System</td>
</tr>
<tr>
<td>Digital i/o</td>
<td>6 Optoisolated Input, 4 Relay Output, 1 Strobe</td>
</tr>
<tr>
<td>Connectors</td>
<td>Waterproof Circular Connector</td>
</tr>
<tr>
<td>IP Protection</td>
<td>Waterproof IP68</td>
</tr>
<tr>
<td>Ethernet</td>
<td>GigaBit Ethernet 10/100/1000</td>
</tr>
<tr>
<td>Storage</td>
<td>uSD up to 128 GB, Optional HD/SSD</td>
</tr>
<tr>
<td>GPS</td>
<td>Yes</td>
</tr>
<tr>
<td>LTE</td>
<td>Optional</td>
</tr>
</tbody>
</table>

**Data Transmission**

- FTP
- TCP/IP
- Standard protocols: XML, SNMP, NTCIP, DATEX, UTMC, ONVIF, MODBUS

**Technical Data**

- Operating & Storage:
  - Temperature: From -40° to +60° C (Up to -40° to +140° F)
  - Humidity: Up to 95% non-condensing
- Dimensions: 404 x 127 x 235 mm (15.9 x 5 x 9.25 in)
- Weight: 7.4 kg (16.31 lbs)
- Power supply voltage: 24 Vdc
- Power consumption: 50 W (max)

**Part Numbers**

- Vega Smart Speed: F01766

**Application**

- Enforcement
- Traffic monitoring
- Security

**Speed Enforcement**
The new concept to safeguard the intersections

Vega 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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Application
- Enforcement
- Traffic monitoring
- Security

Traffic Light Enforcement

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>

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 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:
- Red light enforcement
- Tax and insurance control
- Vehicle tracking
- Traffic monitoring

Applications
- Enforcement
- Traffic monitoring
- Security

Part Numbers

Part Numbers

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F01764</td>
<td>Vega Smart Traffic Light</td>
</tr>
<tr>
<td>F01769</td>
<td>Smart Traffic Light</td>
</tr>
<tr>
<td>F01770</td>
<td>Smart Traffic Light Non Reflective Plates</td>
</tr>
</tbody>
</table>
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.

A new generation full HD sensor for reading reflective and non-reflective plates.

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

**Vandal proof connectors**

**Included Features and Optionals**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Short range</th>
<th>Long range</th>
<th>Included</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicore Processor</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>OCR Color sensor (color version)</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>Video streaming</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>MicroSD</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>OCR</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>Autoiris</td>
<td>X</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>
<td>X</td>
</tr>
<tr>
<td>Brand Recognition</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Class Recognition</td>
<td>X</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>
<td>X</td>
</tr>
</tbody>
</table>

Incl. = Included / Opt. = Optional
The new concept of axle counting based on Artificial Intelligence

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 performances the Axle Counter is 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.

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

### Part Numbers
- **Axle Counter**: F01900
- **Axle Counter**: F01912
- **External IR Illuminator**: F01903

| Optional: | • GPS module | • Speed estimation |
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
- GPS
- LTE
- Vehicle brand
- Vehicle model

### Technical Data

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

#### Dimensions
- **Dimensions:** 187 x 103,5 x 216 mm  - 7.4 x 4.1 x 8.5 in

#### Weight
- **Weight:** 5 kg  - 11 lbs

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

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

### Part Numbers
- **Vega 1:** F01870
- **Vega 1 Long Range:** F01872
- **Vega 1 Short Range:** F01873

---

**Table of Features and Performance**

<table>
<thead>
<tr>
<th>Feature/Function</th>
<th>Value</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>

**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

---

**Software features and Performance**

<table>
<thead>
<tr>
<th>Feature/Function</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lane Detected</td>
<td>1</td>
</tr>
<tr>
<td>Max Vehicle Speed</td>
<td>200 km/h  - 124 mph</td>
</tr>
<tr>
<td>Working Distance</td>
<td>Up to 25 m  - Up to 82 ft</td>
</tr>
<tr>
<td>Detection</td>
<td>99%</td>
</tr>
<tr>
<td>Reading</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>OCR</td>
<td>ANPR (ALPR) engine on board; Third party OCR optional</td>
</tr>
<tr>
<td>Capture rate</td>
<td>Up to 60 fps</td>
</tr>
<tr>
<td>Classification</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Color</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Brand</td>
<td>Optional</td>
</tr>
<tr>
<td>Vehicle Model</td>
<td>Optional</td>
</tr>
<tr>
<td>AES256</td>
<td>Yes</td>
</tr>
<tr>
<td>SHA2</td>
<td>Yes</td>
</tr>
<tr>
<td>Compression</td>
<td>JPG</td>
</tr>
<tr>
<td>Streaming</td>
<td>Color video streaming via standard RTSP protocol</td>
</tr>
<tr>
<td>Configuration</td>
<td>Web Server; Installation and configuration with on board Web Server; TCP/IP Server (SDK provided)</td>
</tr>
<tr>
<td>Date &amp; Time</td>
<td>Synchronization via NTP protocol, IEEE1588, GPS</td>
</tr>
<tr>
<td>Software Update</td>
<td>Upgrading via Web Interface and SDK</td>
</tr>
<tr>
<td>Data Transmission</td>
<td>FTP (Client to 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</td>
</tr>
<tr>
<td>Serial Port</td>
<td>Insulated RS485</td>
</tr>
</tbody>
</table>

---

**Op. Mode**

- **Free Run:** Continuous image capture and processing
- **Triggered:** Image capture and processing triggered by Ethernet command or digital signal

**System**

- **ANPR (ALPR) camera:** Up to 3 Megapixel grayscale sensor
- **Context camera:** Up to 3 Megapixel color sensor
- **Illuminator:** 10 high power LEDs, InfraRed @ 850 nm
- **Lenses:** C-Mount. Many focal lengths available.
- **Operating System:** Linux Operating System
- **Digital i/o:** 2 Inputs - 2 Outputs – 1 Strobe output

---

**Connectors**

- **Waterproof circular connector**

---

**IP Protection**

- **Waterproof IP67**

---

**Ethernet**

- **GigaBit Ethernet 10/100/1000**

---

**Storage**

- **uSD up to 128 GB**

---

**GPS**

- **Optional**

---

**LTE**

- **Optional, external**

---

**Technical Data**

**Operating & Storage**

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

---

**Dimensions**

- **Dimensions:** 187 x 103,5 x 216 mm  - 7.4 x 4.1 x 8.5 in

---

**Weight**

- **Weight:** 5 kg  - 11 lbs

---

**Power supply voltage**

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

---

**Power consumption**

- **Power consumption:** 15 W (max)
Vega Basic Short Range - Long Range

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>Lane Detection (Max)</td>
<td>70 km/h</td>
<td>150 km/h</td>
</tr>
<tr>
<td>Max Vehicle Speed (Max)</td>
<td>44 mph</td>
<td>93 mph</td>
</tr>
<tr>
<td>Working Distance (Max)</td>
<td>8 meters - 26 ft</td>
<td>25 meters - 82 ft</td>
</tr>
<tr>
<td>Resolution</td>
<td>99%</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Capture rate</td>
<td>99%</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Image Capture Rate (Max)</td>
<td>60 fps</td>
<td></td>
</tr>
<tr>
<td>AES Encryption</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SHA2 Encryption</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Compression</td>
<td>JPG</td>
<td></td>
</tr>
</tbody>
</table>

Configuration

- 2 Megapixel and 2 Megapixel with 2-Mega pixel Camera
- 2 Megapixel Color Camera (Color Version)
- 8 high power LEDs, InfraRed @ 850 nm
- C-Mount. Many focal lengths available
- Linux Operating System
- 2 Optoisolated input - 2 Relay Output – 1 Strobe output
- Water proof IP67
- GigaBit Ethernet 10/100/1000
- Max speed: 70km/h - 44 mph
- Dimensions: 178 x 90 x 133 mm - 7 x 3.5 x 5.2 in
- Weight: 1.5 kg - 3.3 lbs
- Power supply voltage: 24 Vdc, PoE
- Power consumption: 12 W (max)

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 at 150km/h-93 mph max speed
ANPR Mobile

Mobile is the smart solution to prevent crime, offered as an aid to Police Forces. It is an evolved and modern license plate reading system, installed on the cars of specialized operational departments and/or intelligence services, as a support to surveillance and protection, serving as a tireless watchful eye on the road.

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

- 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

Technical Data

- License Plate Recognition
- OCR: WPR-OCR 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

Part Numbers

- ANPRMOBILE19201080 short range
- ANPRMOBILE19201080 medium range
- ANPRMOBILE19201080 long range