FreewayCAM^{RT}

HARDWARE-TRIGGERED ANPR/LPR IP CAMERA
DESIGNED FOR NUMBER PLATE RECOGNITION AND TRAFFIC MANAGEMENT

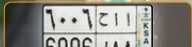**ANPR/LPR RESULTS:**

- NUMBER PLATE: MX XN - 58
- NATIONALITY: EU-NEDERLAND
- SPEED: 98 MPH / 158 KMH
- RECOGNITION TIME: 2014-10-12T15:19:54+00:00

ANPR RESULTS:
- NUMBER PLATE: B 13213
- NATIONALITY: HONG KONG
- SPEED: 105 MPH / 169 KMH
- RECOGNITION TIME: 2014-10-12T15:21:19+00:00

ANPR RESULTS:
- NUMBER PLATE: JHT 3832
- NATIONALITY: EU-GERMANY
- SPEED: 96 MPH / 154 KMH
- RECOGNITION TIME: 2014-10-12T15:20:20+00:00

ANPR RESULTS:
- NUMBER PLATE: 6006 JAA
- NATIONALITY: KSA
- SPEED: 90 MPH / 148 KMH
- RECOGNITION TIME: 2014-10-12T15:20:14+00:00

ANPR RESULTS:
- NUMBER PLATE: ARH 001
- NATIONALITY: EU-HUNGARY
- SPEED: 108 MPH / 174 KMH
- RECOGNITION TIME: 2014-10-12T15:20:10+00:00

ANPR RESULTS:
- NUMBER PLATE: MX XN - 58
- NATIONALITY: EU-NEDERLAND
- SPEED: 98 MPH / 158 KMH
- RECOGNITION TIME: 2014-10-12T15:19:54+00:00

ANPR/LPR CAMERA AND
RADAR COMBO DEVELOPED FOR TRAFFIC SOLUTION

The radar-equipped FreewayCAM^{RT}, as a hardware-triggered IP camera, is ideal for zone-targeted traffic surveillance and automatic number plate recognition (ANPR). It is uniquely designed and built for motion-activated identification and superbly functions under various environmental conditions where other cameras fail to provide similarly positive results.

The attached Doppler radar, which can be configured through the camera's IP connection, is able to measure not just the target vehicle's speed but also its moving direction, dimensions, and works specifically as a trigger toward the camera and its built-in processing unit (PU).

SPEED ENFORCEMENT   JOURNEY TIME MEASUREMENT   CONGESTION CHARGING

TOLL COLLECTION   TRAFFIC MONITORING   BUS LANE AND RED LIGHT ENFORCEMENT

MAIN BENEFITS

- Onboard hardware trigger eliminates need for road-based infrastructure
- Optimized data processing greatly reduces resource demands
- Color or B&W image capturing of vehicles traveling
  up to 250 km/h (155 mph) in all environmental conditions
- Easy remote access and adjustment through IP connection
- Quick and easy installation, IP-based remote control
- Adjustable image compression to decrease network loads

TOWARD THE FUTURE IN SAFETY – SINCE 1991

SPECIFICATIONS

FreewayCAM^{RT} uses a Doppler radar trigger and IR illumination to achieve 24/7 accurate detection and precise ANPR/LPR. The built-in communication allows remote setting, but the device is also capable of automatically adjusting brightness control and time synchronization (NTP). The ONVIF compliant camera is IP67 rated for reliable operation. The captured images are internally buffered and processed for output as JPEG stills or MPEG/H.264 stream.

IMAGING

Resolution (H × V pixels)	1280 × 720
Sensor	Color, Progressive scan CCD 1/3"
Max Frame Rate (at all resolution)	30 frames/sec
Output Format	JPEG, MJPEG stream, H.264
Exposure Control	Global shutter, software adjustable 1/100 s – 1/30000 s
JPEG Quality	Adjustable between 40 % – 90 %
Day/Night Mode	Configurable day/night mode switching

LENS

|	
Lens Type	5.2 – 58.8 mm with high precision motorized positioning
Iris	Automatic motorized, programmable
Focus	Automatic motorized, programmable
Zoom	Automatic motorized, programmable
Optical Filter	Switchable: None / IR cut above 850nm
Recommended ANPR Range	3 m – 20 m (10 feet – 65 feet)

PROCESSING & I/O

CPU	500MHz DSP with image processing chip (X25)
Operating Memory	64 MB + 128MB
Storage Memory	256 MB
Operating System	ucLinux
Communication Protocol	ARP, ICMP, TCP/IP, DHCP, NTP, FTP, HTTP, SMTP, RTP
Communication Interface	RJ45, 100 Mbit/sec, Ethernet

ELECTRICAL DATA

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Input Voltage	24 V – 28 V AC
Basic Power Consumption	22 W
Power Consumption With Heating	59 W
Conformity	CE, RoHS, FCC
I/O ports	Opto Out and serial RS232 reserved for radar
Junction Box	Optional

MECHANICAL DATA

Operating Temperature	-40 °C to 55 °C (-40 °F to 131 °F)
Additional Heating	Optional
Startup Temperature	Over -20 °C (-4 °F)
IP rating	IP67
Dimensions (L × W × H)	150 mm × 350 mm × 412 mm (5.91" × 13.79" × 16.22")
Weight (without bracket)	6.1 kg (13,5 lbs)
Weight (bracket)	0.6 kg (1.32 lbs)
Housing Material	Aluminum
Housing Color	RAL 9007 / Optional Custom
Shield Color	RAL 9007 / Optional Custom
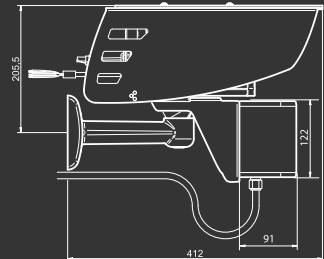
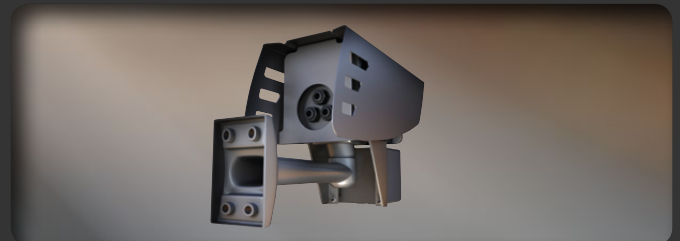## ILLUMINATION

Type	High power IR LED (optional white LED), regulated
IR Wavelength	850 nm (white LED: 435–750 nm)
Number of LEDs	8
Intensity	3 preconfigured modes (low, medium, high)
Flash Time	Software adjustable, up to 950 µs
Additional Illuminator	Optional
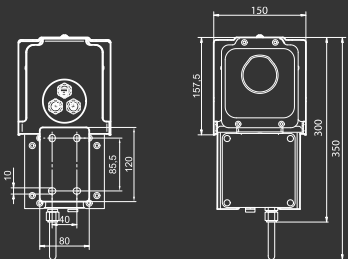
RADAR

Measurement Principle	Doppler-Radar
Measurement Range	0 – 255 km/h (0 – 158.5 mph)
Radar frequency	24.165 GHz, K-Band
Direction	Selectable uni- or bidirectional
Installation angle	10 ° – 25 ° for official speed measurement
Operating mode	Counting (signed) speed