



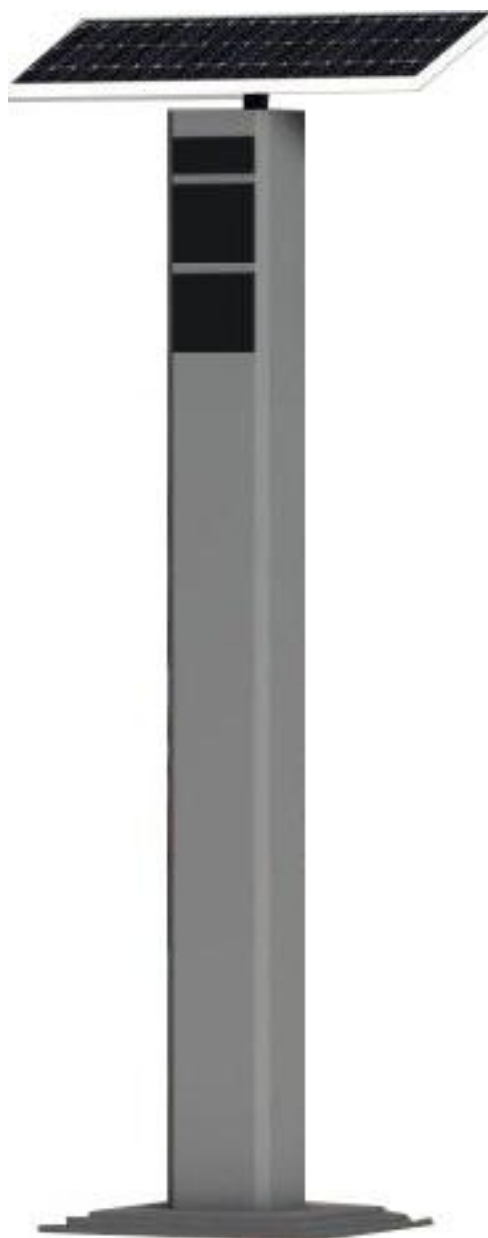
Design & Production

MTP POLAND



Solar Traffic Sign

MTP Poland over Speed Violation Detector



MTP POLAND sp.zo.o

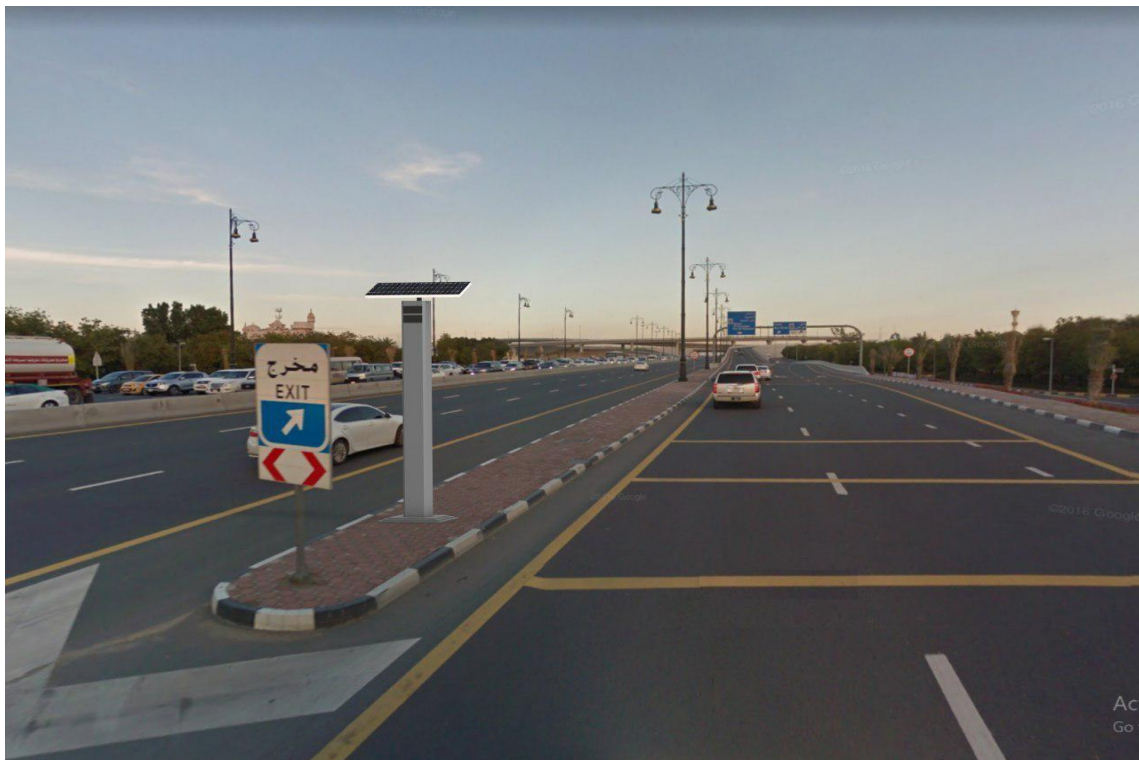
Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440
NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtppoland.com

A worldwide review of studies found that speed cameras led to a reduction of "11% to 44% for fatal and serious injury crashes". The UK Department for Transport estimated that cameras had led to a 22% reduction in personal injury collisions and 42% fewer people being killed or seriously injured at camera sites. The British Medical Journal recently reported that speed cameras were effective at reducing accidents and injuries in their vicinity and recommended wider deployment.

An LSE study in 2017 found that "adding another 1,000 cameras to British roads could save up to 190 lives annually, reduce up to 1,130 collisions and mitigate 330 serious injuries.



Picture 1: MTP Poland Over Speed Violation Detector

MTP POLAND sp.zo.o

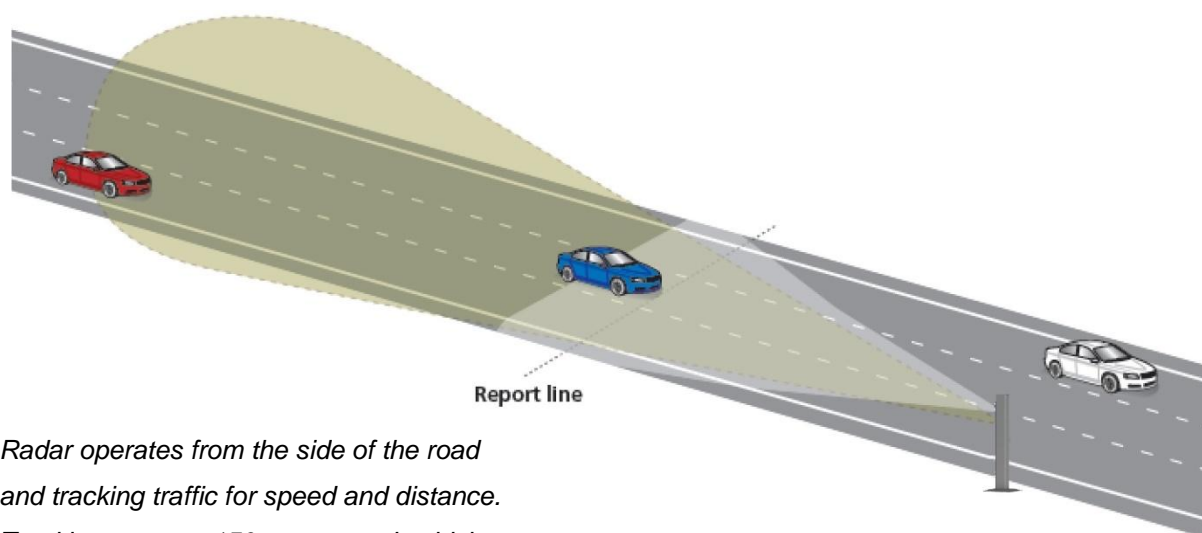
Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

A traffic enforcement camera (over Speed Detector) is a camera which may be mounted beside or over a road or installed in an enforcement vehicle to detect monitoring offences like as over speed and it may be linked to an automated ticketing system



Radar operates from the side of the road and tracking traffic for speed and distance. Tracking starts at 150 meters and vehicles Exceeding the speed limit trigger the system at a set report line. A picture is taken of the violating vehicle and stored with time, date, speed and location embedded in the file

Picture 2: Diagram of installation and activity of Over Speed Detector

Over speed Violation detector is involved:

- Doppler Radar
- Camera
- miniPC
- Router
- Automatic Number Plate Reader (ANPR) Technology
- IR Light Projector

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

Speed calculation with Doppler Radar:

Doppler radar, like other types of radar, consists of a radio transmitter and receiver.

They send out a radio signal in a narrow beam, and then receive the same signal back after it bounces off the target object.

Due to a phenomenon called the Doppler Effect, if the object is moving toward or away from the radar, the frequency of the reflected radio waves when they come back is different from transmitted waves.

When the object is approaching the radar, the frequency of the return waves is higher than transmitted waves, and when the object is moving away, the frequency is lower.

From that difference, the radar can calculate the speed of the object from which the waves have been bounced.



Picture 3: Doppler Radar

Distance calculation with Doppler Radar:

Doppler radar can calculate target distance to radar too.

MTP POLAND sp.zo.o

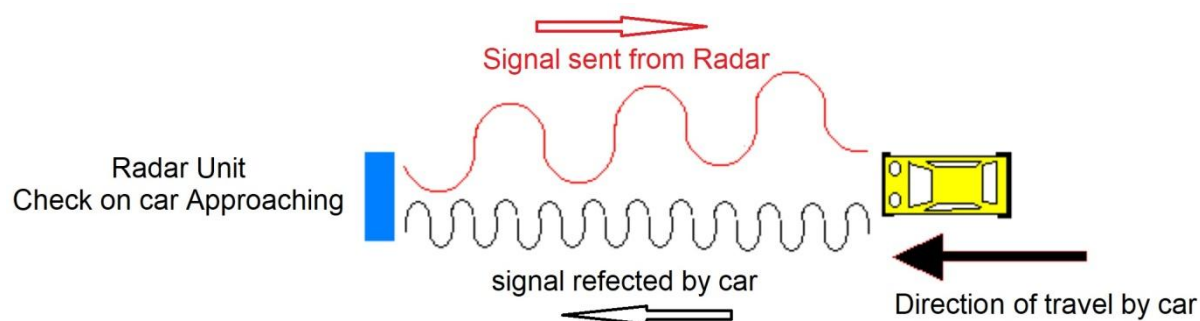
Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

It has interval time between transmitter and receiver. In other hand, speed of radio frequency wave is constant, so distance will calculated.

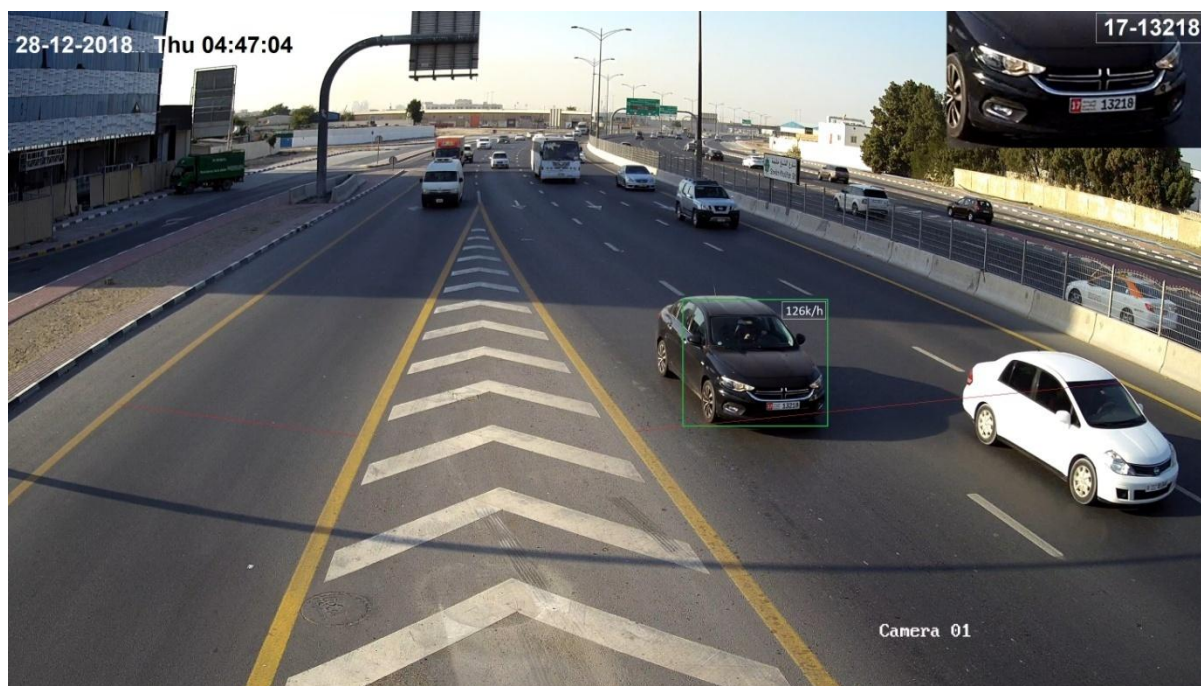


Picture 4: basis of Doppler Effect

Image and video recorder:

Radar operates from the side of the road and tracking traffic for speed and distance.

Tracking starts at 150 meters and vehicles Exceeding the speed limit trigger the system at a set report line.



Picture 5: Report Line (red line)

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440
 NIP: 5252655683 REGON: 364224743 KRS: 0000612101
 Email: info@mtpoland.com
www.mtpoland.com

Two picture and video is taken of the violating vehicle and stored with time, date, speed and location embedded in the file.

Pictures and video recorder by fast and high resolution camera and save and transfer to control room as optional.

Camera Specification

- . Power Supply 110-240 vac,(solar optional)
- . Up to 8 megapixel high resolution
- . Main stream 3840*2160 pixel with 20fps
- . Third stream 1280*720 pixel with 30fps
- . Min illumination 0.01lux for color mode
- . Shutter Speed: 1/3 to 1/100,000s
- . Operation conditions: -30°C to +60°C (-22 °F to +140°F)



Picture 6: Camera with speed and high resolution

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

Radar Specification

- . Frequency 24.15 to 24.25 GHz
- . Output power 1mW (EIR<20dBm)
- . Antena beamwidth Horiz : 18° / Verti : 32°
- . Compliant with EN300440

Radar Performance

- . Velocity range 5km/h to 255km/h
- . Turn on time 500ms
- . Meas. Refreshing time 50ms
- . Accuracy ± 1 km/h
- . Sensitivity Programmable gain

Radar DC Specifications

- . Supply voltage from 9 to 30v
- . Supply current (typ.. @ 12v) 89mA with detection
28mA without detection

Radar Mechanical specifications

- . Length 64mm
- . Thickness 22mm with connector
- . Width 89mm
- . Weight 50gr

Radar Environmental conditions

- . Operation Temperature -40°C...+80°C
- . Storing temperature -40°C...+80°C

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440
NIP: 5252655683 REGON: 364224743 KRS: 0000612101
Email: info@mtpoland.com
www.mtpoland.com

IR Light Projector

- . Power 36 watt
- . Voltage 12 volt
- . LED quantity 12pcs x 3watt



Picture 7: IR light projector

Our Over Speed violation detector has two IR light projector, each light included 6pcs of high power IR LED. It provides enough light for reorganization and reading vehicle plate number at night.



Picture 7: Night mode plate reader

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

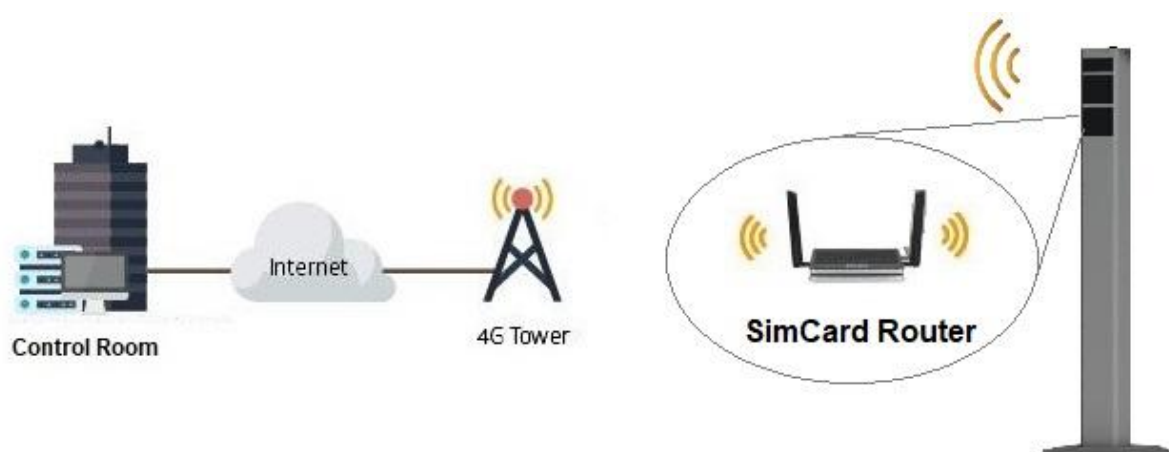
Router:

After detection over speed violation with Doppler radar, camera will record two images and one video of violator vehicle and save it in miniPC.

These images and video along with its data like as date, hours and place can send to traffic control section of police office via one Router which is embedded in our over speed violation detector. This Router has one Simcard which provided with police. It can make secure connection between our violation detector and police office.

Another option is available with our system and it is WIFI collection data. Means police officer can collect all data and images and videos with stop beside of camera for a few minutes, so data and images and video will transfer from our violation detector to police laptop with WIFI connection. One more option is available also for collection data and it is USB memory.

Our miniPC can save all of violation data and images and video on USB memory, so police officer only have to visit camera every day or couples of days and remove USB memory and put new USB memory.



Picture 8: Data transferring with Simcard Router

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com

So violation data and images and videos in our violation detector can be collect with three following ways:

- **Collection data and images and videos by USB memory,**
- **Collection data and images and videos by WIFI system,**
- **Collection data and images and videos by Simcard internet,**



Picture 9: Data Collection ways, USB memory, WIFI system, Simcard internet



Picture 10: MTP Over Speed Violation Detector

MTP POLAND sp.zo.o

Tel: +48 22 7166612 Fax: +48 22 7166613 Mob: +48 576 185440

NIP: 5252655683 REGON: 364224743 KRS: 0000612101

Email: info@mtpoland.com

www.mtpoland.com