



«CORDON.PRO»M

ALL-IN-ONE MULTI-TARGET PHOTO RADAR SYSTEM

«Cordon.Pro»M system performs automatic instant speed measurement within the controlled area (2—6 traffic lanes) with simultaneous photo-video capturing and storing the evidence data. The system may be used in immobile mode either on stationary pole bracket or portable tripod, as well as in moving mode while installed on the moving patrol vehicle.

Multiple «Cordon.Pro»M systems offer simultaneous measurement of both average speed between sensors, and instant speed within each sensor' controlled area.

SCOPE OF APPLICATION

- The system also supports the operation in moving mode while installed on the moving patrol vehicle. It can be installed both inside and outside the vehicle.
- Automatic instant and average speed measurement within the controlled area, time and coordinate determination with simultaneous photo-video capturing and storing the evidence data.
- The system may be supplied with different Installation Kits for quick switching between stationary, portable and mobile mounting options.
- Automatic license plate recognition of various countries and vehicle classification (cars, trucks and buses) using machine vision technology, with simultaneous search for wanted vehicles.

DESIGN AND OPERATION PRINCIPLE

- “Cordon.Pro”M system can be mounted either on stationary bracket, or on tripod, just like “Cordon-M”. All mounting hardware is interchangeable between these two systems. The setup is performed via Web-interface either remotely, or on installation place, using the mobile PC or other mobile device.

- The system supports the operation in moving mode while installed on the moving patrol vehicle. It can be installed both inside and outside the vehicle.
- New system benefits from vast reduction of time required for initial setup. The mounting interface include interactive gauges, displaying the quality of installation along with cues for required correction. Moreover, the system starts capturing only in case if the self-test is completed successfully, and the position is correct. If PRS is misplaced during the operation, the system will stop capturing, and if it's impossible to correct internally, it will issue the notification via E-mail or SMS.
- The system automatically captures the violations within the controlled area and gathers the necessary evidence: photos of the vehicle (general traffic view and close-up) from video camera; recognized license plate; measured vehicle; violation flags, date and time of capturing; address; geographic coordinates, violation video etc. The continuous video recording is performed simultaneously.
- The system is equipped with automatic vehicle class recognition system, operating on optical principle without access to any vehicle databases. It determines the proper car class for oncoming traffic with at least 95% accuracy: cars, trucks, buses. Appropriate speed limit is automatically assigned to each car, based on its class. The system automatically detects the forbidden truck traffic either on entire road, or on particular lanes.

NEW! MOVING MODE OPERATION

- During the movement along the road the system uses its radar to measure own speed and speeds of the vehicles in controlled area. The license plates are automatically recognized.
- To achieve the correct violation capturing, the system utilizes the electronic map to determine the zones with various speed restrictions. The map is prepared by Administrator using the user-friendly standalone program and can be updated on daily basis.
- The system automatically determines the violators on basis of the data from radar and immediately transmits the evidence to Police back-office.

FUNCTIONS AND FEATURES



VIOLATION CAPTURING

- Fully automatic operation for vehicle control on **up to 6 traffic lanes** simultaneously in both directions.
- Speed measurement **range 2—300 km/h**.
- Separate speed limits for different lanes and cars, trucks and buses.
- Evidence data and video clip recording for each detected violation.
- **Internal GPS/GLONASS** receiver determines the geographic coordinates of the system and ensures automatic time synchronization with satellite navigation system.



VEHICLE CLASSIFICATION

- The system is equipped with automatic vehicle class recognition system, operating on optical principle without access to any vehicle databases.
- Given the adequate lighting within the controlled area, the system determines the proper car class for oncoming traffic with at **least 95% accuracy**: cars, trucks, buses.
- Appropriate speed limit is automatically assigned to each car, based on its class.

- With vehicle classification, the system automatically detects the forbidden truck traffic either on entire road, or on particular lanes.



VIDEO MONITORING

- Ability to stream the video in real time using RTSP protocol.
- Automatic recording and storing video clips of road situation to the archive (up to 24 hours of video), ability to search through archive for specified time period.



PROTECTION AND SAFETY

- Software and stored data protection against corruption and unauthorized changes.
- Logging of system events and user actions.
- Mechanical shock sensor with real time notifications via E-Mail and SMS.
- Optional armored enclosure ensures protection from handgun and shotgun munition.



AUTOMATIC NUMBER PLATE RECOGNITION

- Automatic number plate recognition of various countries and vehicle classification (cars, trucks and buses) using machine vision technology with at least **95% success ratio**.
- Neural network technology ensures quick adaptation to new license plate formats.
- Ability to check the passing vehicles using the various databases in internal memory, with voice notification for operator and immediate sending the data to Police back-office.
- **Special “Intercept”** working mode for capturing the vehicles with missing or unreadable license plates.



DATA TRANSMISSION

- **Wireless data transfer** (2G, 3G or 4G) over the secure Virtual Private Network (VPN) using the internal cellular module.
- Automatic switching to **backup data channels** (4G, Wi-Fi) in case of main channel malfunction.
- Ability to stream the data to different servers simultaneously.



TELEMETRY AND DIAGNOSIS

- Self-testing and remote testing features.
- Automatic tracking of system performance with telemetry streaming in real time.



NIGHT TIME OPERATION

- Internal IR spotlight enables nighttime operation, regardless of roadway lighting conditions.
- Optional external IR spotlight for guaranteed vehicle make and model visibility.



TRAFFIC STATISTICS COLLECTION

- Gathering the statistical data on traffic flow properties.
- Plotting the interactive graphs on selected parameters.
- Analysis of captured violations with breaking down by violation types and overspeed amount.

SYSTEM VARIANTS AND OPERATION MODES

“Cordon.Pro”M system supports several different operation and installation modes, depending on the Customer’s requirements and supplied power source and installation kit. For the maximum simplicity of installation process the system utilizes quick setup using the Web-interface with automatic checkup for correct mounting parameters.



STATIONARY MODE

110-220 VAC Power Kit with rotary bracket for installation on any lamp pole and 110-220 VAC mains power supply. Maximum installation height 10 meters. The sensor is installed near the road border or above the road. Rotary quick installation bracket for pole mounting.

BPF Kit includes the custom-designed semi-autonomous power unit which charges the batteries from the city lighting in night time. 6 hours of charging from city lighting at night are enough for autonomous operation during the rest of the day. Rotary bracket for installation on any lamp pole is included.



MOBILE MODE

Patrol vehicle Kit — includes the mini tripod with 12 V battery box and tablet PC. The sensor is installed in car trunk and powered by battery box for operation in moving mode; no modifications to the car are required. The setup takes **just 5 minutes**. The system may be easily moved outside the vehicle and placed on roadside for operation in stationary mode.



PORTABLE MODE

On tripod — includes the standard tripod, 12V battery box and tablet PC or laptop. The sensor is installed on the roadside and powered by battery box.

On car roof rails — includes the roof rail bracket, 12V battery box and laptop.

OPTIONAL EQUIPMENT

- Color video camera
- Arctic version
- Various autonomous power sources
- Additional IR spotlights
- Bulletproof enclosure

VIOLATIONS ENFORCEMENT

- Speeding (instant and average).
- Movement in the wrong direction on two-way road.
- Movement in the wrong direction on one-way road.
- Movement on reserved bus lane.
- Movement on the roadside.
- Movement on divider lane
- Movement on pavement or cycle way.
- Driving under the STOP sign without stopping.
- Crossing the solid road marking.
- Truck traffic ban enforcement (on entire road or particular lanes).
- Failure to keep safe distance (tailgating).

SPECIFICATIONS

PARAMETER	VALUE
Speed measurement range	2—300 km/h
Speed measurement accuracy	± 1 km/h
Time synchronization error in relation to UTC scale	max. ±5 us
Power consumption above freezing temperature	up to 25 W
Sensor weight	up to 6 kg
Sensor dimensions	up to 460×180×280 mm

CERTIFICATES AND WARRANTY

- Warranty period 2 years.
- Period between verifications 2 years.
- **Type Approval Certificate OC.C.33.158.A No.75141** by Federal Agency for Technical Regulation and Metrology of the Russian Federation. Valid till September 18, 2024.
- Eurasian Customs Union **Certificate of conformity No. TC RU C-RU.ME83.B.00002/18**. Valid till December 26, 2023.