



Intelligent Traffic Monitoring System

iRoad Electronics®



Traffic Counting Systems are essential for road management and monitoring, and has been one of the basic ITS equipment for Road Maintenance & Transportation Organization (RMTO), a subsection of Iran Ministry of Roads and Urban Development, in recent two decades. This system has been widely used in more than 2500 points in Iran roads to collect all required traffic data for data analysis, road management and development, traffic modeling, etc. The system could report below parameters.

- Traffic Count
- Up to 8 Vehicle Classes
- Vehicle Speed
- Vehicle Traffic Direction
- Speed Violation, Reverse Direction Violation
- Level of Service, Occupation

iRoad Intelligent Traffic Monitoring System (iTCS) is a reliable, precision, low cost, and low power system, based on Inductive Loop Sensor technology. It has several high-tech confirmation and certificates from Iran Science and Technology Vice Presidency, and RMTO. It consists of the following sub-systems.

- Traffic Measurement Unit (TMU)
- Main Controller Unit (MCU)
- Inductive Loop Sensors
- IP54 outdoor cabinet and related equipment
- Server-side software for monitoring, data analysis and maintenance purposes.

System Features

- supports up to 6 Lanes
- TMU equipped with an enhanced Initial and continuous auto calibration technology
- TMU equipped with an enhanced Automatic Channel Frequency Assignment algorithm, reducing channel cross talk
- TMU measures loop sensor inductance
- MCU Data Storage of up to 3 years, in offline applications
- MCU Monitors real time measurement results in details, through HDMI output
- All the road, link and measurement parameters are configurable via MCU GUI
- MCU Supports Ethernet, cellular (2G, 3G, 4G), fiber optic, and serial communications
- MCU Support USB, SD Card and I/O ports for special purpose applications
- MCU supports dual SIM Card configuration, switching between Network Operators in bad network conditions in cellular communication
- Two-way SMS communication between MCU and control center is supported for remote management and status query
- Detecting Loop Sensor disconnection, and send related alarm to control center

Applications

- Measuring real-time traffic count, Level of Service, Occupation, average speed, traffic violation for 5-type of vehicle classes, in city streets and interurban roads.
- Measuring count of Speed and Reverse Direction and Overtaking violations for every car classes, separately
- Monitoring Traffic Flow to integrate with SCADA systems, in tunnel management applications
- Monitoring Traffic Flow to control Variable Message Signs (VMS) systems
- Monitoring Traffic Flow to integrate with street light control systems, reducing power consumption intelligently
- Data flow analysis for better urban development and management
- Optimizing Traffic Light Control Systems
- Traffic Heat Map in heavy traffic roads and streets
- Calculating Travel Time and Average Speed between source and destination point, in interurban roads
- Measuring Vehicle Traffic Pattern and behavior
- Measuring traffic volume and average speed, for billboard valuation and interactive advertisement
- Vehicle Traffic flow analysis in entering/exiting gates of residential/industrial settlements, factories, parking lots, shopping malls, exhibitions, bus/taxi station and terminals, etc.