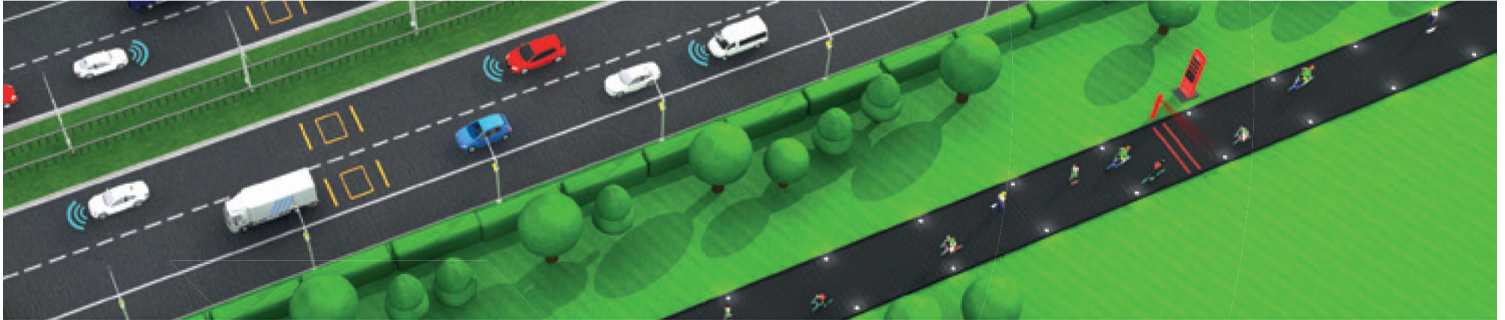


# HI-TRAC® iGATE

## INTELLIGENT GATEWAY DEVICE FOR ROADSIDE MONITORING

- Integrates communications hardware from multiple devices
- Reduces communications costs
- Integrates with multiple detection products



### OVERVIEW

The HI-TRAC iGATE is an intelligent gateway device that fulfils multiple roadside monitoring requirements and at the same time provides connectivity over 3G, GPRS or Ethernet or fibre TCP/IP connection to the real-time ITS in-station. The iGATE interfaces to various types of roadside monitoring equipment and collates the data providing a single communication interface to the central system reducing communication costs, power consumption and roadside hardware equipment. The iGATE is modular in design and can accommodate several current roadside monitoring technologies as well as provide an interface and gateway to future monitoring needs.

### iGATE BLUETOOTH MAC ADDRESS SCANNER

The iGATE BLUETOOTH MAC Address Scanner antenna modules are used for tracking Pedestrian and Multi-Modal Traffic Movement. TDC is the UK's leading company in Bluetooth Traffic Monitoring technology, with many systems installed as part of Driver Information Systems, Congestion Monitoring Schemes and is the leading provider of Bluetooth Temporary Traffic Survey equipment.

TDC unique antenna designs developed in partnership with the University of Bristol achieve maximum detection of visible Bluetooth devices in and out of the detection zone. The iGATE can interface to up to 2 Bluetooth MAC Address Antenna modules as parts of a journey time and origin and destination measurement system.

### iGATE WIFI MAC ADDRESS SCANNER

As an alternative to Bluetooth the iGATE WIFI MAC Antenna module can detect MAC Addresses of many Smart Phones with WIFI connectivity enabled.

### HI-TRAC® MOTE AIR QUALITY SENSORS

The HI-TRAC® MOTE is an Air Quality Sensor capable of measuring pollution gases including NO, NO2, CO.

The HI-TRAC® MOTE is fixed to street furniture and is powered by an internal battery and solar panel. Data is transmitted by low power wireless communications back to the iGATE through a mesh network.

### KEY FEATURES



Weigh-in-Motion



Counter & Classifiers



Cycle Monitoring Unit



Air Pollution Monitoring



Bluetooth MAC Address



WiFi MAC Address



### HI-TRAC® MOTE AIR QUALITY SENSORS

The HI-TRAC® MOTE is an Air Quality Sensor capable of measuring pollution gases including NO, NO<sub>2</sub>, CO.

The HI-TRAC® MOTE is fixed to street furniture and is powered by an internal battery and solar panel. Data is transmitted by low power wireless communications back to the iGATE through a mesh network.

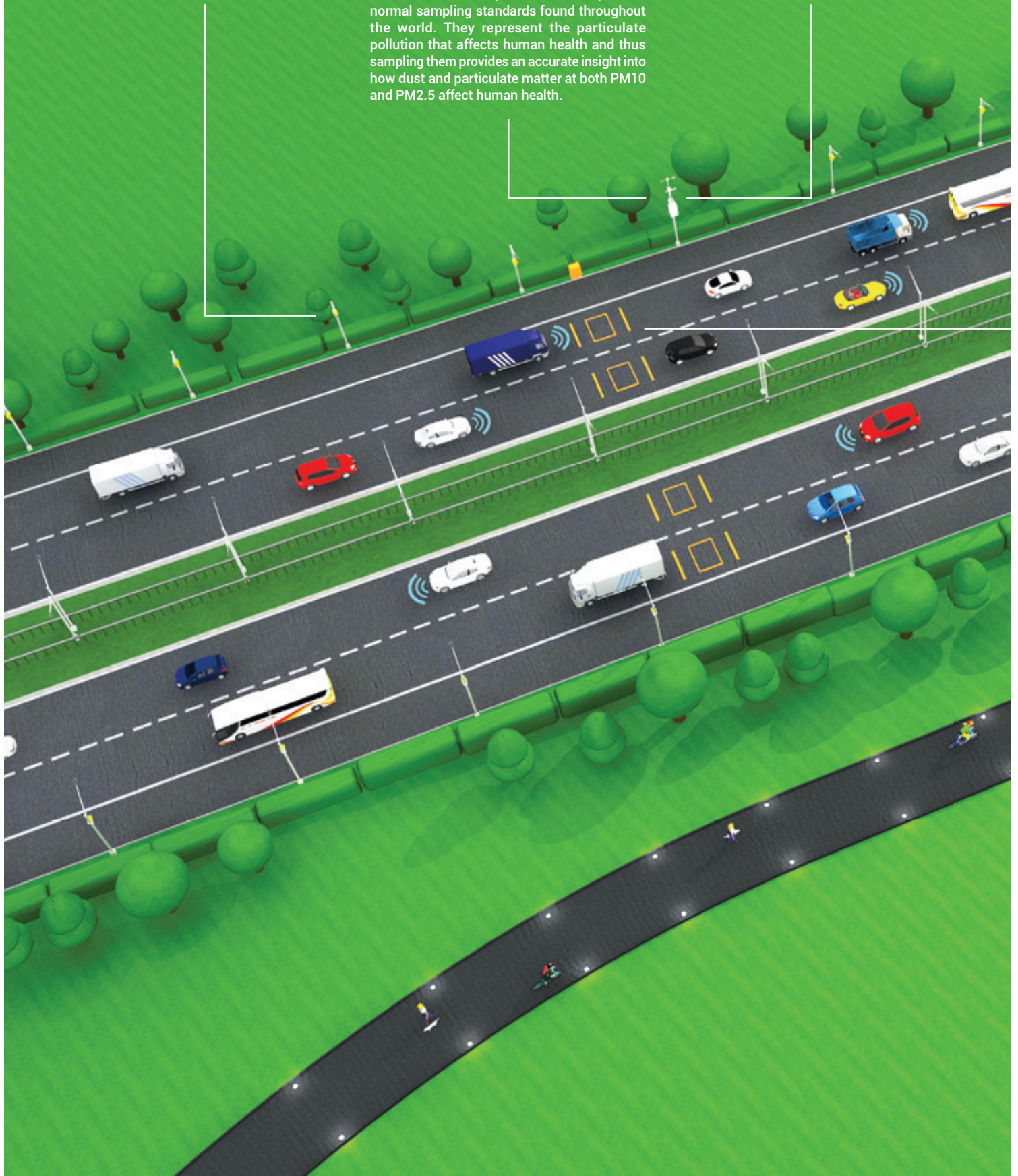
### HI-TRAC® PM Particulate Monitor Interface for PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1.0</sub>.

The iGATE Particulate Monitoring System records PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1.0</sub> levels at the roadside. Dust and particulate matter is a major component of air pollution that threatens both our health and our environment because the particles are small enough to be inhaled into the deepest parts of the lung.

The two size classes (PM<sub>10</sub> and PM<sub>2.5</sub>) are the normal sampling standards found throughout the world. They represent the particulate pollution that affects human health and thus sampling them provides an accurate insight into how dust and particulate matter at both PM<sub>10</sub> and PM<sub>2.5</sub> affect human health.

### iGATE EMS Weather Monitoring Sensors

Weather sensors provide essential information to be recorded alongside data coming from other roadside monitoring sensors. Weather has a direct impact on air quality, congestion, journey times, traffic movements and modes of transport. The iGATE EMS unit interfaces to wind speed, wind direction, air temperature and rain sensors.





## Weigh-in-Motions Sensors

With installations in more than 50 countries, TDC Systems is internationally recognised as a leader in high and low speed Weigh-in-Motion systems. Applications include bridge load monitoring, vehicle weight enforcement systems and virtual weigh stations with automatic number plate recognition (ANPR) technology.

## iGATE WIFI MAC Address Scanner

As an alternative to Bluetooth the iGATE WIFI MAC Antenna module can detect the MAC Addresses of many smartphones with WIFI connectivity enabled.

## iGATE Traffic, Cycle and Pedestrian Monitoring

The iGATE can connect to other roadside monitoring equipment with a 100m radius using low power wireless communications, including the TDC HI-TRAC range of traffic, cycle and pedestrian monitoring systems.

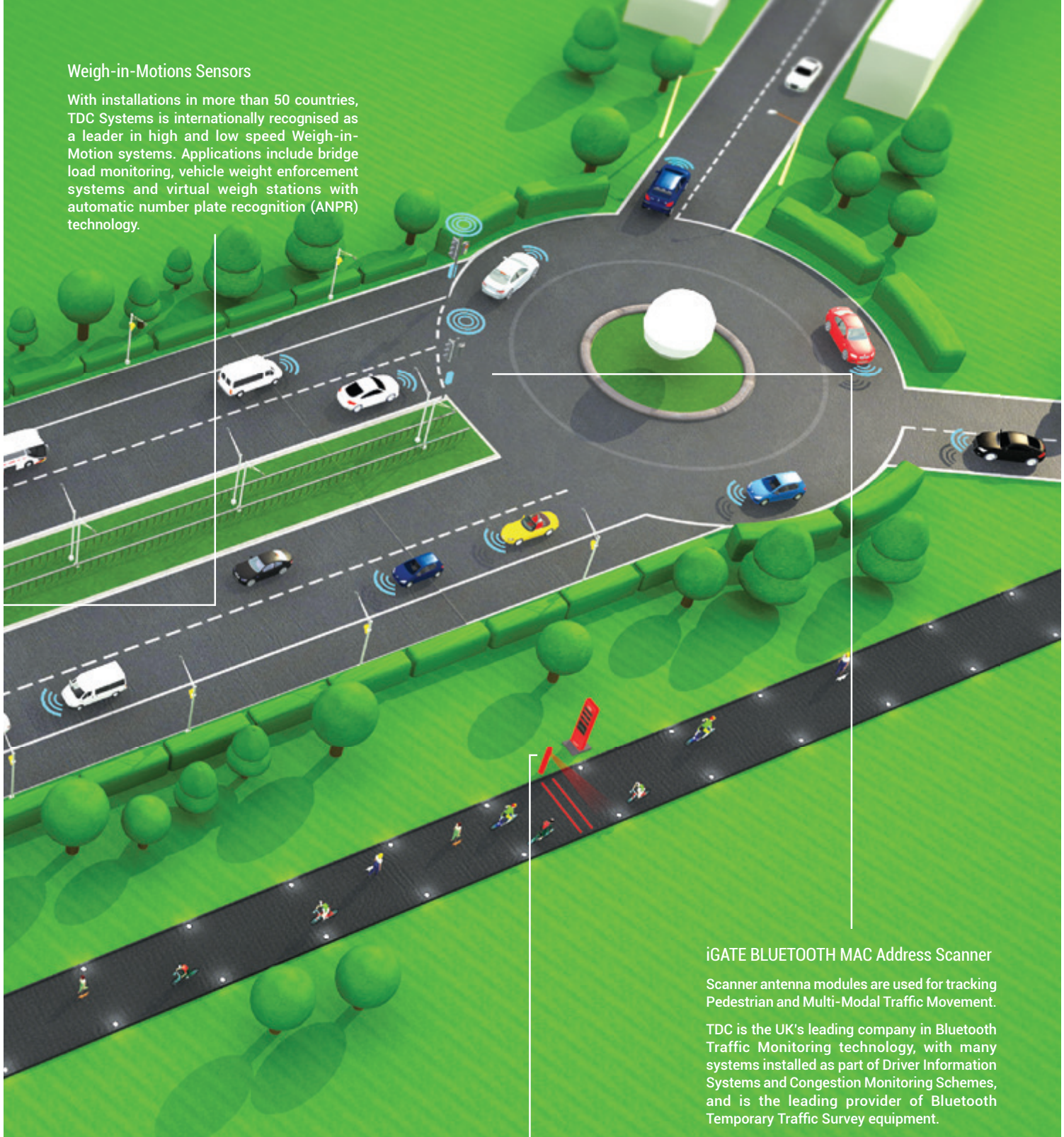
## iGATE BLUETOOTH MAC Address Scanner

Scanner antenna modules are used for tracking Pedestrian and Multi-Modal Traffic Movement.

TDC is the UK's leading company in Bluetooth Traffic Monitoring technology, with many systems installed as part of Driver Information Systems and Congestion Monitoring Schemes, and is the leading provider of Bluetooth Temporary Traffic Survey equipment.

TDC's unique antenna designs, developed in partnership with the University of Bristol, achieve maximum detection of visible Bluetooth devices in and out of the detection zone.

The iGATE can interface to up to 2 Bluetooth MAC Address Antenna modules as parts of a journey time, origin and destination measurement system.





### iGATE EMS WEATHER MONITORING SENSORS

Weather sensors provide essential information to be recorded alongside data coming from other roadside monitoring sensors. Weather has a direct impact on air quality, congestion, journey times, traffic movements and modes of transport. The iGATE EMS unit interfaces to wind speed, wind direction, air temperature and rain sensors.

### iGATE TRAFFIC, CYCLE AND PEDESTRIAN MONITORING

The iGATE can connect to other roadside monitoring equipment including the TDC HI-TRAC range of traffic, cycle and pedestrian monitoring systems installed within a 100M distance from the iGATE, using low power wireless communications.

### INSTALLATION

On available infrastructure (traffic signal heads, lamp columns, poles etc.)

Non-intrusive installation & maintenance

### iGATE PARTICULATE MONITORING PM10, PM2.5

The iGATE Particulate Monitoring System records PM10 and PM2.5 levels at the roadside. Dust and particulate matter is a major component of air pollution that threatens both our health and our environment because the particles are small enough to be inhaled into the deepest parts of the lung.

The two size classes (PM10 and PM2.5) are the normal sampling standards found throughout the world, they represent the particulate pollution that effects human health and thus sampling them provides an accurate insight into how dust and particulate matter at both PM10 and PM2.5 effect human health.

### SOFTWARE

HI-COMM 100 Compatible

Data hosting and reprting service



### TECHNICAL SPECIFICATIONS

#### iGATE DEPLOYMENT & COMMUNICATIONS

TCP/IP Ethernet, 3G, GPRS, GSM Wireless based on IEEE802.15.4 (Zigbee)  
High gain antenna deployed in centre of the MOTE network.

#### POWER SUPPLY

(iGATE and Bluetooth MAC Antenna Module Only)  
6 V Lead Acid Rechargeable Battery, 0.4 W (60 mA at 6 V).  
Solar Panel and Wind Generator Options

#### DIMENSIONS & WEIGHT

W – 120 mm    D – 60 mm    H – 110 mm  
Weight: 1.5 kg

(Other gas monitoring under development)

#### ROADSIDE MEASUREMENTS

Temperature	
Wind Speed	
Wind Direction	
Wet/Dry	(Rain)
Relative Humidity	
Noise	
Vibration	(accelerometer)
CO	(carbon monoxide)
NO	(nitric oxide)
NO2	(nitrogen dioxide)
SO2	(sulphur dioxide)
H2S	(hydrogen sulphide)
Cl2	(chlorine)
PM10, PM2.5 & PM1.0	
Bluetooth MAC Address	
WiFi MAC Address	
Traffic Counting	
Cycle and Pedestrian Counting	

Specifications are subject to change without prior notice.  
Copyright©TDCSystems 2015. All rights reserved.

**[www.Roadsysllc.com](http://www.Roadsysllc.com) / [dennis@roadsysllc.com](mailto:dennis@roadsysllc.com) / 480.289.0081**

