



E-MOTE

AIR QUALITY MONITORING SYSTEM

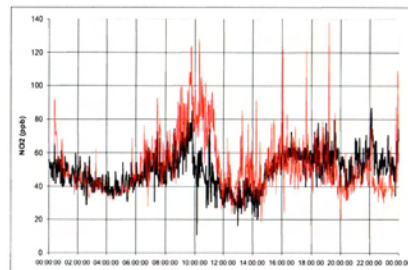
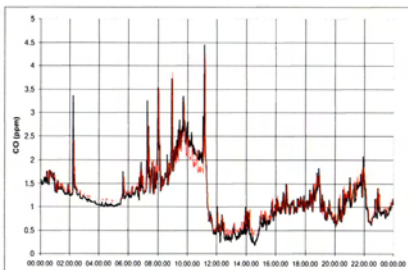
The E-MOTE is a pervasive sensor device or "mote" capable of measuring air quality and relaying data via wireless communications to a central server.

Originally developed as part of the "MESSAGE" (Mobile Environmental Sensing System Across a Grid Environment) project by researchers at Newcastle University, TDC Systems in association with Drakewell software have taken it a step further by integrating the E-MOTE with C2 software to provide users with real time pollution levels.

Easily deployed by fixing to lamp posts or similar street furniture at a height of 2.5m plus and up to 80-100m apart. The network can contain up to 100 motes in an area of 1km² and communicate via a central Gateway to the server instation

The units are designed for all weather conditions with a continual power supply provided by solar cells & internal battery.

The E-MOTES are small, low cost and completely wireless making them rapid and easy to deploy in large numbers to provide real time pollutant information.



The graphs above show results over 24 hours of co-location with precision gas monitors at a busy roadside location. The E-MOTE readings are shown in black and the precision reference is shown in red.

In both cases the agreement is good, particularly if the data are reduced to 5-15 minute averages

RECORDED MEASUREMENTS

- Temperature
- Relative Humidity
- Noise
- Vibration (accelerometer)

ANY 3 OF THE FOLLOWING GASES

- CO (carbon monoxide)
- NO (nitric oxide)
- NO₂ (nitrogen dioxide)
- SO₂ (sulphur dioxide)
- H₂S (hydrogen sulphide)
- Cl (chlorine)

FEATURES

- Wireless communication based on IEE-E802.15.4 (Zigbee)
- Solar Powered
- Low Cost Maintenance
- Simple Installation

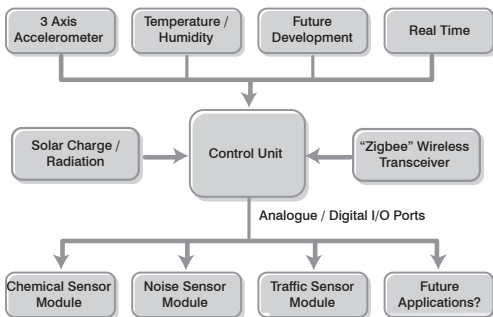


E-MOTE

AIR QUALITY MONITORING SYSTEM

TECHNICAL INFORMATION

E-MOTE ARCHITECTURE



DIMENSIONS & WEIGHT

W - 85mm
D - 65mm
H - 140mm

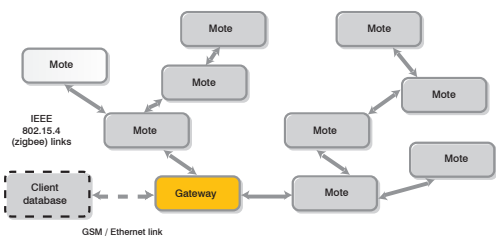
POWER

Approx. 20mW
Lithium D Cell
Solar Rechargeable Battery

COMMUNICATION

Wireless based on IEEE802.15.4
(Zigbee)

WIRELESS COMMUNICATION PROTOCOL



IEEE 802.15.4 Zigbee with custom built multi-hop network protocol developed to achieve self configuring, self healing tree topology networks.

GATEWAY DEPLOYMENT & COMMUNICATIONS

High gain antenna deployed in centre of the network

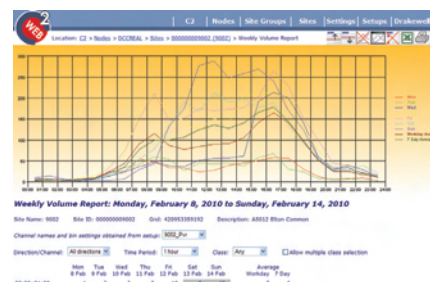
Power supply from mains or power over the Ethernet (PoE)

Server IP connection via Ethernet of GSM router

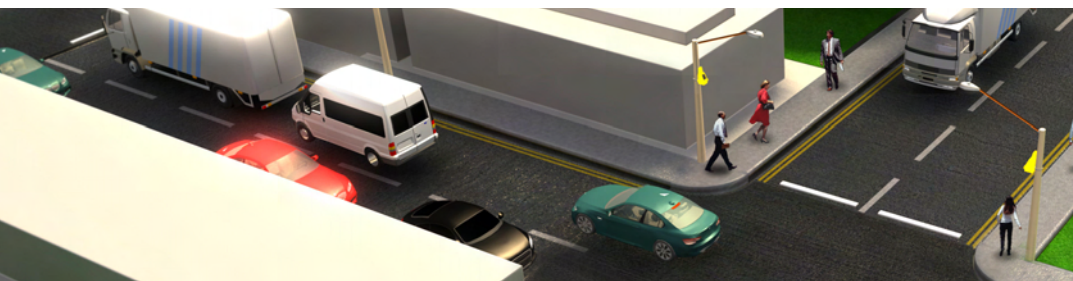
TCP-IP client makes periodic connections to server port

SOFTWARE

Data Download, Analysis, Real Time VBV View, Report Generation & Diagnostic



Drakewell C2, C2 Web Reports



CONTACT US

TDC Systems Ltd.
30 Lynx Crescent
Weston Industrial Estate
Weston-super-Mare
North Somerset
BS24 9BP
England
United Kingdom

T: +44 (0)1934 644299
F: + 44 (0)1934 644255
E: sales@tdcsystems.co.uk

www.tdcsystems.co.uk