



SMART
MOBILITY

TRAFFIC DATA STATION LIDA DBT01

SICE, within the TRAIECTO R+D European Project, has developed the device LIDA DBT01, an equipment conceived as a non-intrusive traffic data station: it does not require civil works in the pavement as with the electromagnetic loops.

In recent times, the lowering of certain technologies has allowed the proliferation of more advanced technologically and cheaper automated vehicle identification systems (AVIs). These, among others, are those based on the detection of anonymous wireless devices using Bluetooth technologies.

The LIDA DBT01 is installed next to a roadway (highway, expressway, street, etc.) and it is capable of capturing and storing the mobile devices (telephones) of users passing by. Nevertheless, the device only detects those devices with the Bluetooth module activated on and in "hands-free" mode.

More specifically the computer reads the MAC addresses of the devices. A MAC (Media Access Control) address is the unique identifier assigned by the manufacturer to a network hardware device (wireless cards, Ethernet cards and of course mobile phones).

This reading is made using Bluetooth technology. The LIDA DBT01 device reads MAC addresses from Bluetooth devices that circulate around them, accumulates them and transmits the information processed via communication network (wireless 3G or Ethernet interface) to the control centre.

By installing several of these devices along a road it makes possible a myriad of applications: source-destination matrices, occupancy values, stopping times, travel times, prognosis, and so on.

Among the advantages of the system are its low cost, its ease of deployment and maintenance, its privacy, its diversity and it is non-intrusive (the explicit collaboration of the driver is not necessary, as for example with GPS-based systems).

TECHNICAL FEATURES

There are two versions of the device:

- LIDA DBT01b. It has a battery which allows it to be installed on the street lights. In this way it allows to receive energy from the electrical connections for at least 8 h of load, and it is able to withstand without feeding the rest of the day (more than 16 h of discharge).
- LIDA DBT01e. It does not have battery. Designed to be installed on Variable Message Panels or any other signage.



CONSTRUCTION

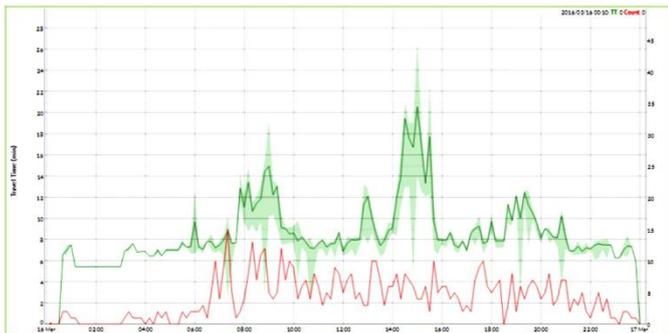
The device consists of an easy-to-remove microprocessor, Ethernet and USB ports, a Rovin Networks BT RN41 module, digital output card, electrical power supply and finally a IP67 non-metallic (polycarbonate) cabinet.



The dimensions are 28x28x13 cm and 6 kg approx. (including the batteries), this requires a robust and safe design.

FUNCTIONAL FEATURES

The equipment sends the information to a central server. Once the information is processed, it is possible to generate graphical information in real time with added data at 5, 10 or 15 minutes intervals; and also historical records.



The uncertainty margin over the estimated travel time data is also calculated (shaded area), since in the urban area this variation can be significant in short sections influenced by the typical characteristics that a traffic light regulation implies.

This system can be applied in urban (cities) or interurban environments (highways).

Data sheet

Models:	LIDA-DBT01b: with battery LIDA-DBT01e: without battery
Cabinet:	Dimensions (Length x Width x Height): 280x280x130 mm Material: Polycarbon Protection: IP67
Weight:	6 kg (model -b) and 2 kg (model -e)
Working temperature:	0..+60° C
Energy connection:	Energy connection: cable 3x2,5 mm ²
Power supply:	90 ~ 264 Vac
Input electrical current (typical):	1A/ 230 Vac
Max input current (fuse):	3 A
Max output current to the electronics (CH1):	2.8 A/ 13.8 Vdc (38.6 W)
Max output current to the batteries (CH2):	1.5 A/ 13.8 Vdc (20.7 W)
Max total output current:	4.3 A/ 13.8 Vdc (60 W)
Battery voltage (model -b):	12 Vdc
Battery capacity (model -b):	10 Ah
Maximum consumption of the electronics:	1 A/ 5 Vdc (5 W)
Total maximum consumption (electronics + battery charge) (model -b):	< 30W
Estimated average daily consumption (Wh x 24 hours):	200 W (model -b), 120 W (model -e)
Communications interface:	Ethernet 10/100 Mb
Bluetooth. Reception and emission frequencies:	2.402 - 2.480 GHz
Bluetooth. Channel bandwidth:	3 Mbps
Bluetooth. Max. Apparent Radiated Power:	18.4 dBm
Bluetooth. Range:	100 m
Standards:	Safety: EN 60950-1 EMC: EN 301 489-1, -17 Radio (Transmission / Reception): EN 300 328

