

# APMU

Air Pollution Measurement Unit

## Features

- CO, SO<sub>2</sub>, NO<sub>2</sub> and O<sub>3</sub> concentration measurement
- PM<sub>2.5</sub>, PM<sub>10</sub> concentration measurement
- Real-time measurements
- Easy installation on any vehicle roof
- Small form factor
- Low impact on vehicle aerodynamics
- Waterproof and portable unit
- Low-cost
- Easy sensor replacement
- Only one USB wire for power and data transmission
- G2 filter for sensors protection



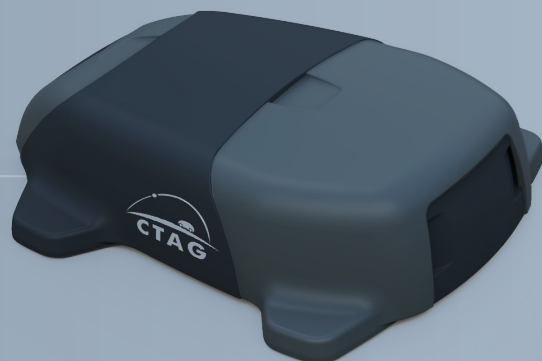
Urban Mobility

EIT Urban Mobility is supported by the EIT,  
a body of the European Union



*This APMU is part of an activity Real-time pollution City mAp thRough cOLlaborative sensing aNd Analysis (CAROLINA) that has received funding from the European Institute of Innovation and Technology (EIT). This body of the European Union receives support from the European Union's Horizon 2020 research and innovation programme.*

CTAG ELECTRONICS & ITS DESIGN TEAM



ELECTRONICS AND  
ITS DIVISION

# APMU

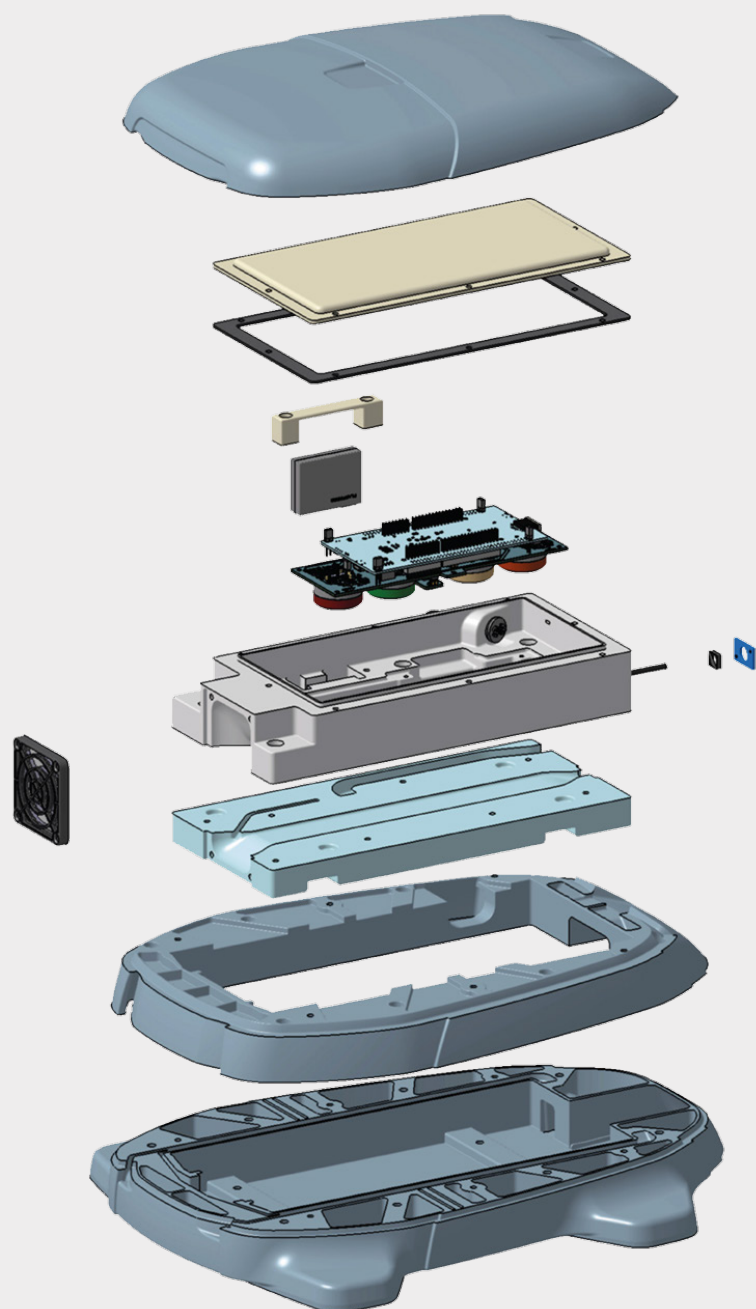
Air Pollution Measurement Unit

## DESCRIPTION

- ▶ An air pollution measurement unit is designed as a proof-of-concept to verify the proposed idea and technology. The unit is easily installed on a vehicle roof by means of magnets and due to the vehicle speed and a fan, the air sample enters into the unit to measure CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, Temperature, Humidity and Pressure. The hardware elements include electrochemical gas sensors from Alphasense, a PM sensor from Plantower, a temperature and humidity sensor from Silicon Labs and a pressure sensor from Infineon. A NUCLEO board including a microcontroller is also included for power, measurement control, data pre-processing and communications management. The measurement unit includes a G2 filter to prevent oils and unwanted particles. The exterior housing is designed to give support to the unit and to have a minimum impact on the vehicle aerodynamics.



## SPECIFICATIONS



### Gas concentration

- CO, SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>

### PM concentration

- PM<sub>2.5</sub>, PM<sub>10</sub>

### Environmental sensors

- Temperature, Humidity, Pressure

### Operation range

- Between -30°C to 70°C

- 5% to 95% RH

- 80kPa to 120 kPa

### Exterior size (mm)

- 415x320x102



**ELECTRONICS AND  
ITS DIVISION**

Polígono Industrial A Granxa. Calle A, parcelas 249-250  
E-36475 Porriño (Pontevedra)

Tel.: +34 986 900 300  
Fax: +34 986 900 301

[electronics@ctag.com](mailto:electronics@ctag.com)