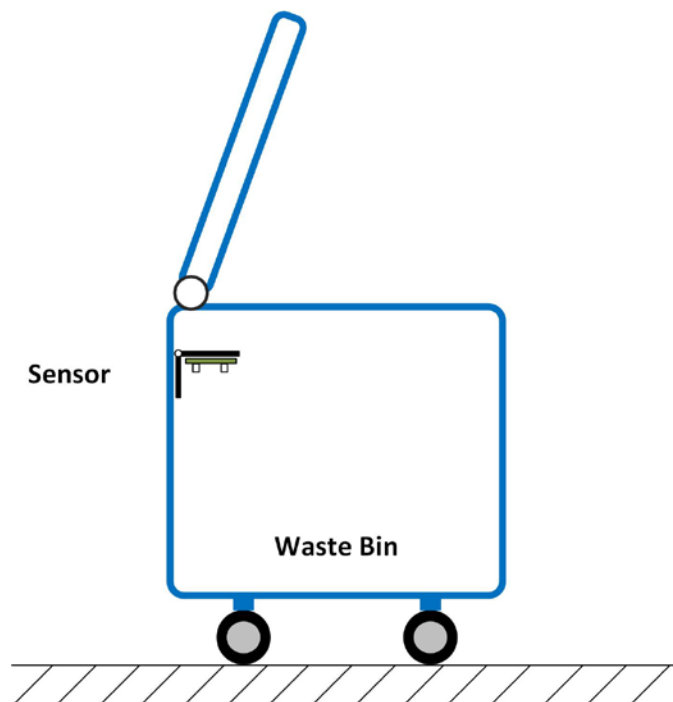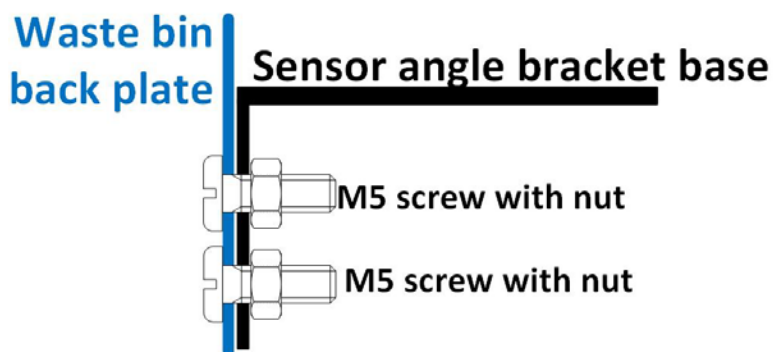# SkyMS
Sky Mass Scanner telemetry unit IoT

SkyMS is a small device designed to be installed inside waste collectors in order to monitor and dispatch the level of waste inside. The unit uses ultrasound for contactless measurement of the filling level of the waste inside the collector and it transmits the measurements through an IoT connection (either LoRaWAN or NBIot). Apart from the percentage of waste inside the bin, the unit can send its geographical position (latitude & longitude), the bin inclination and battery level and it also monitors its own temperature. SkyMS can be installed either under the top cover of the waste bin or, if the bin does not have one, on the interior back wall of the bin, with the help of the SkyMS-PC (metal protection cover).

Operational Manual

Sensor installation

To install the sensor use four (4) 5mm screws with nut to secure it safely on the back of the waste bin.

Activation Procedure

Each unit has a unique id affixed to it so as when it connects to the LoRaWAN network it is immediately identifiable.

To enable the unit, first switch it on. This will initiate the connection sequence for the device to connect to the gateway (network).

Once connected to the network, the id number will appear in the user interface.

From there on, it will display the information associated with that device such as trash level, battery percentage, geographical location and temperature of the device.

The information gathered by the device is sent in packet data form to the installed gateway which in turn sends this data to the server.

The frequency of data sending and the type of information sent by the device can be configured by the user to suit their requirements. This configuration is done via the configuration port on each device or can be sent via the user interface to multiple devices when the next scheduled data transfer is executed.