AirSENSE version 3

## Performance under Specified Conditions

The AirSENSE device must be able to monitor air quality indoor in real time.

This version is used for STEM system for students (12 – 17 years old) so it must be easy to use, have a friendly appearance.

Upgradable in the future.

Use for air environment research so it must be able to include as many sensor as posible

## Design

### Monitoring system

* Monitoring:
  + PM1, PM2.5, PM10 (ug/m3)
  + Temperature (Celsius)
  + Humidity (%)
  + Extra index: air pressure (hpa), CO2 (ppm), Light intersity (lux)
* Display
  + There are serval displays using LCD and
  + Home display consists of
    - Time
    - Internet connection
    - PM2.5
    - PM10
    - Temperature
    - Humidity
  + No display (turn off display)
* Buttons
  + Input from user to switch and set up
  + Turn on, off power
* LED sign
  + Power: If power is on and microprocessor is running: the LED will blink with frequency x
  + Air quality: The LED show the color corresponding to AQI color [?]
  + SD card:
    - If SD card is well connected and working fine, the LED is ON
    - If SD card is well connected and not working well, the LED turn red
  + Internet connection (connect to server)
    - When a message is sent to server successfully, the LED is light and is OFF after 5s
* Send data to mqtt server over the internet
* Save data to SD card
  + Save log data
  + Get SSID and password from SD card to connect to Wi-Fi access point

### Power

Power system shall be constructed to operate safely and conform to

applicable standards

Power will be supplied using a common and mature technology

### External body

### Preriod of useful life