

# How to access the CCI air quality data

We have several AirGradient indoor and outdoor air quality sensors at the Greencoat building, which log data every 30 seconds via MQTT and are available to students and staff who want to access this data.

## MQTT Server

The MQTT server sits at `mqtt.cci.arts.ac.uk` on port `1883`.

The read-only student username and password can be provided by asking on Slack in the `#technical` channel.

## Data format

The data format is `airgradient/readings/(sensor)`, the sensors is the MAC address and serial number of that location, the locations are:

### Greencoat

- GB\_G03 = 0cb815082660
- GB\_G04 = 4022d8f9b4d8

### Peckham Road

- PR\_B501-01 = dc5475bb845c
- PR\_B501-02 = b48a0a613900
- PR\_B501-03 = dc5475bcc430

### High Holborn

- HH\_302 = dc5475bce770
- HH\_308 = dc5475bacb84

### Millbank (Chelsea College of Arts)

- MB\_AG06 - Lecture Theatre
  1. a842e3285cf8
  2. 64b70835462c (tbc)
  3. c049ef0c92fc
- MB\_ALG02 - Interior Design Studio

1. c049ef0c9514
  2. 90380c6dc6c8
  3. a842e3283e84
  4. a842e3285cf0
- MB\_BLG19B = c049ef0c8648
  - MB\_BLG19C = 0cb815081120
  - MB\_BLG19D = 64b70834d3b0
  - MB\_BLG20 = 64b70834fa14
  - MB\_BLG20A = 64b7083502c8

Example data:

```
{
  "firmware": "9.3.0",
  "wifi": -39,
  "ssid": "UAL-IoT",
  "light": 4095,
  "hwVersion": 8,
  "rco2": 409,
  "atmp": 31.2,
  "rhum": 31.55,
  "tvoc_index": 164,
  "nox_index": 1,
  "pm003_count": 544,
  "pm01": 2,
  "pm02": 2,
  "pm10": 2,
  "boot": 1537,
  "wdog": 1
}
```

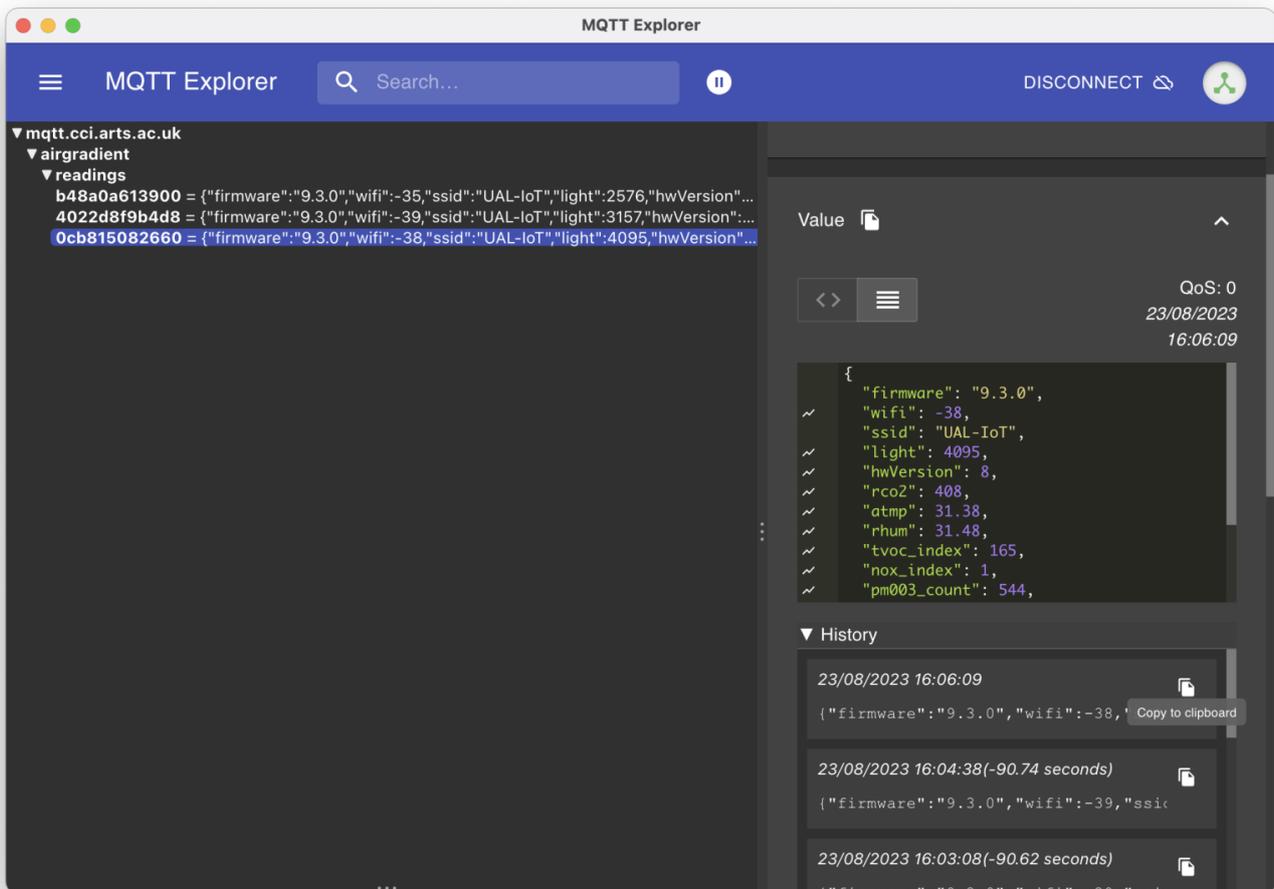
## What are these values?

- `pm003_count`: PM0.3 particle count
- `pm01`: PM1  $\mu\text{g}/\text{m}^3$
- `pm02`: PM2.5  $\mu\text{g}/\text{m}^3$
- `pm10`: PM10  $\mu\text{g}/\text{m}^3$
- `nox_index`: NOx Index (Ind41)
- `tvoc_index`: TVOC Index (Ind40)
- `rhum`: Relative Humidity %
- `atmp`: Temperature  $^{\circ}\text{C}$
- `rco2`: CO2 PPM

# Subscribing to the data

In order to view the data in something like a GUI you need to subscribe with a wildcard such as `airgradient/#` the default subscription for apps like MQTT Explorer shown below is just `#` however the permissions of the student account only allow you to view the data inside `airgradient`, `sensors`.

If you wanted just 1 sensor, you could subscribe to `airgradient/sensors/(sensor)` where sensor is one of the sensors listed in the sections above.



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