

Use Wind Weather Station with MQTT Guidance

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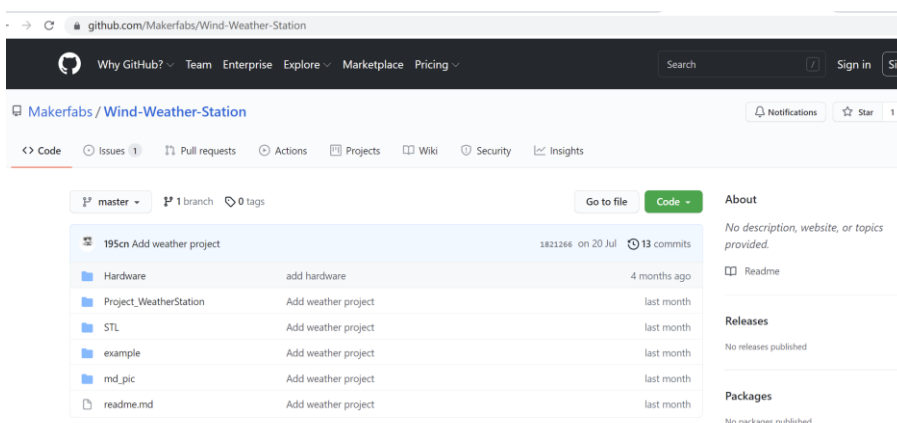
This article shows how to use the wind weather station to transmit the data by MQTT, and how to use the application (**MQTTX**) to receive the data.

Wind weather station

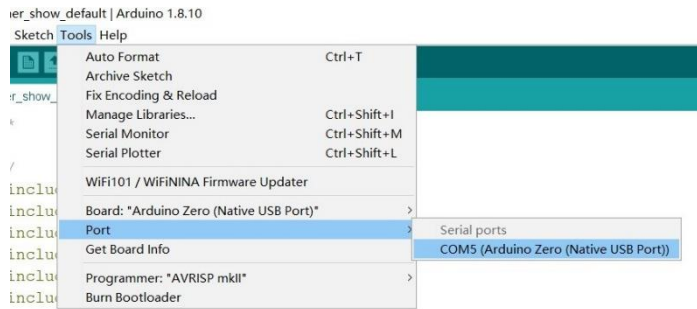
1. Firstly, open the case to plug into your SIM card. The Makerfabs GPRS Wind station at: <https://www.makerfabs.com/open-wind-station-gprs-mqtt.html>



2. Plug the USB cable into the board to upload the code. The code can be obtained from [Github](#).



3. Open the code by Arduino IDE. Then install the libraries (DHT sensor library, Adafruit GFX library and Adafruit SSD1306 library, Adafruit BMP280 library), you can check the install details on [wiki](#).
4. Select the develop board and port.



```

/ variables will change:
int buttonState = 0; // variable for reading the pushbutton status
bool tag=0;
bool ledStateTag=0;

```

5. There is a parameter you need to modify to yours.

```

111 sendData("AT+CGDCONT=1,\"TCP\",\"CMNET\"", 1000, DEBUG);
112 sendData("AT+CGACT=1,1", 1000, DEBUG);
113 sendData("AT+MQTTCONN=\"test.mosquitto.org\",1883,\"mqttx_0931852d35\",120,0", 1000, DEBU
114 String topic_W = "AT+MQTTPUB=\"/public/TEST/makerfabs-W\", \"\"+(String)50+\"\",0,0,0";
115 String topic_T = "AT+MQTTPUB=\"/public/TEST/makerfabs-T\", \"\"+(String)73.5+\"\",0,0,0";
116 String topic_H = "AT+MQTTPUB=\"/public/TEST/makerfabs-H\", \"\"+(String)46.8+\"\",0,0,0";
117 //String topic_P = "AT+MQTTPUB=\"/public/TEST/makerfabs-P\", \"\"+(String)pressure_value+\"
118 //String topic_H = "AT+MQTTPUB=\"/public/TEST/makerfabs-H\", \"\"+(String)h+\"\",0,0,0";
---
```

Note that the array "test.mosquitto.org" is the destination we send the data to, while the "mqttx_2314682x57" is the unique MQTT client ID, define it as your wish but better to make it somewhat complex to make sure it unique.

6. Verify the code and upload it.



7. Pull out the USB cable and assemble the board into the case.

8. Turn the button to Power it.

9. Later it will transmit:

the wind speed to the topic "/public/TEST/makerfabs-W";

the temperature to the topic "/public/TEST/makerfabs-T";

the humidity to the topic "/public/TEST/makerfabs-H";

the pressure to the topic "/public/TEST/makerfabs-P".

you can define the data destination by yourself.

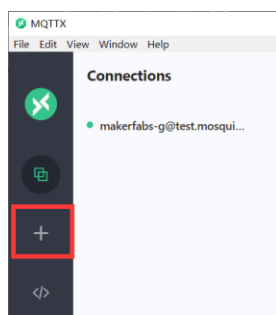
MQTT Broker

The MQTT broker used is the Mosquitto one. The Host link is **test.mosquitto.org**.

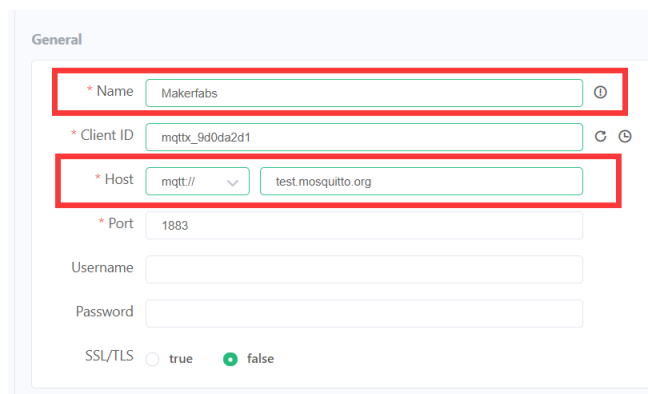
MQTT Client

Install an MQTT client application to check the data which wind weather station transmitted.

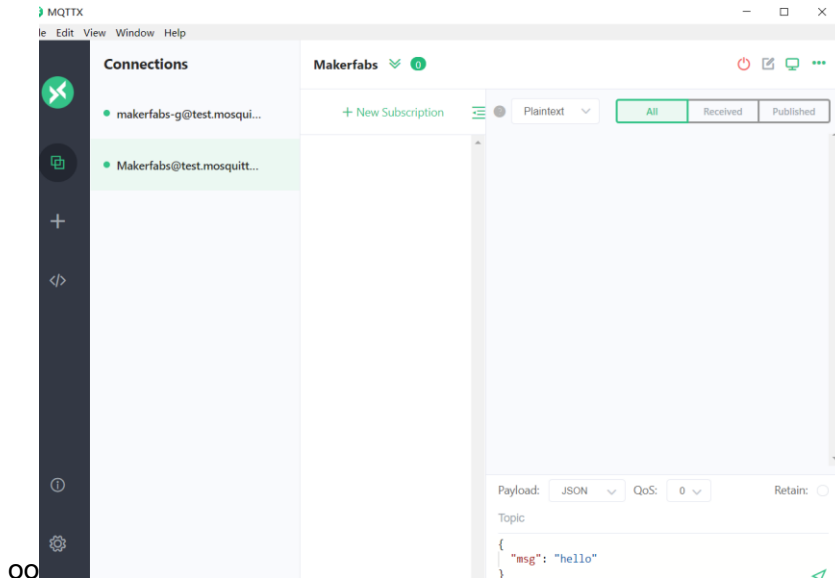
1. Here the **MQTTX** is used. Install MQTTX in your PC. (<https://mqttx.app/>). Of course you can also use some other MQTT tools such as the MQTTbox(on PC) or MQTT Client(on smartphone)
2. With MQTTX, open the app, click the icon at left to add a new MQTT client.



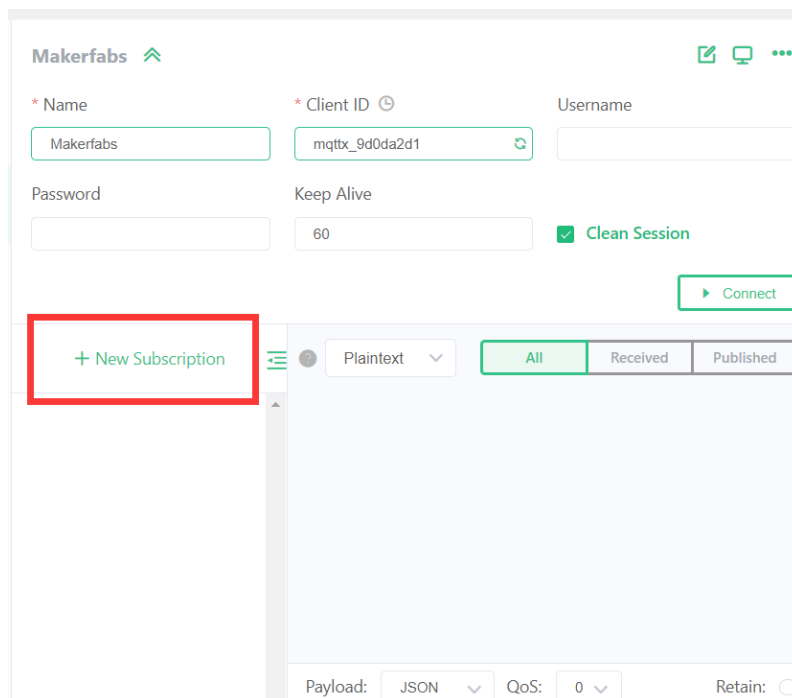
3. Fill in the name to yours, and fill in the link (test.mosquitto.org) at the Host bar.



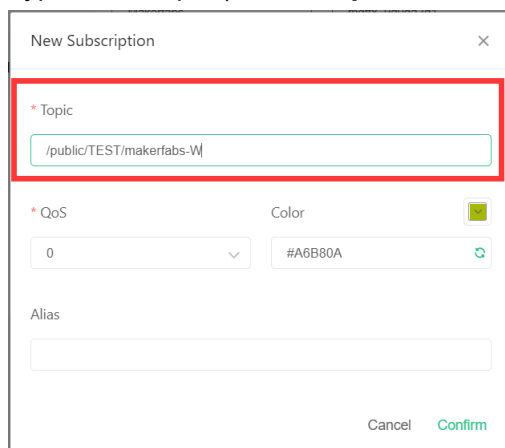
4. Then connect it.



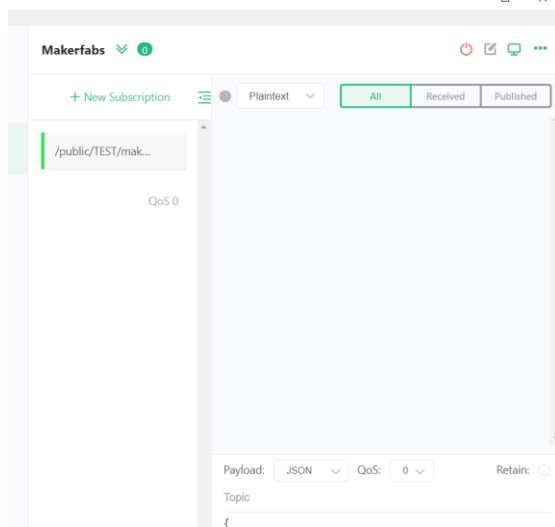
5. Click the New Subscription button to subscription some topic for receiving data.



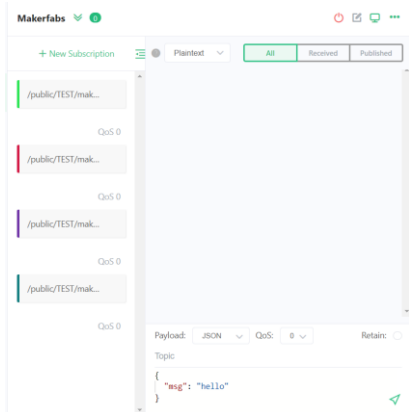
6. Type in the topic (such as **"/public/TEST/makerfabs-W"**), and confirm it.



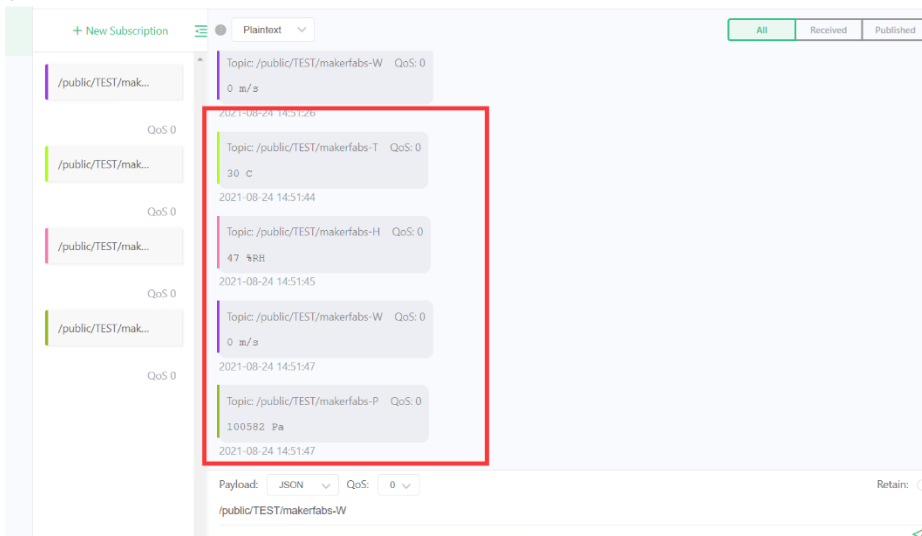
7. The client has subscribed the topic, and it will receive the data and show when the station transmits the wind speed to it.



8. As above steps, subscribe other topics to receive temperature, humidity and pressure.



9. As if the wind station sends data to the server **test.mosquitto.org**, the MQTTX will get the data and shows:



You can also use the MQTTbox(on PC) or MQTT Client(on smartphone) to receive them.

MQTTBox

MQTTBox Edit Help

Menu ← Connected + Add publisher + Add subscriber ⚙

MQTTCLIENT - mqtt://test.mosquitto.org:1883

Topic to publish

QoS

0 - Almost Once

Retain

Payload Type

Strings / JSON / XML / Characters

e.g. {"hello":"world"}

Payload

123

Publish

123

topic:/public/TEST/makerfabs-T, qos:0, retain:false

123

topic:/public/TEST/makerfabs-T, qos:0, retain:false

/public/TEST/makerfabs-T

30 C

qos : 0, retain : false, cmd : publish, dup : false, topic : /public/TEST/makerfabs-T, messageid : , length : 30, Raw payload : 51483267

30 C

qos : 0, retain : false, cmd : publish, dup : false, topic : /public/TEST/makerfabs-T, messageid : , length : 30, Raw payload : 51483267

30 C

qos : 0, retain : false, cmd : publish, dup : false, topic : /public/TEST/makerfabs-T, messageid : , length : 30, Raw payload : 51483267

30 C

qos : 0, retain : false, cmd : publish, dup : false, topic : /public/TEST/makerfabs-T, messageid : , length : 30, Raw payload : 51483267

MQTT Client

Connected to tcp://test.mosquitto.org:1883

/public/TEST/makerf... 2021-08-24

30C 1

↑

Topic QOS 0