**Tiempo: 5 de septiembre**

Sensores:

1. Oxigeno: Gravity™ Analog Dissolved Oxygen Kit

<https://atlas-scientific.com/gravity-analog-do-kit/>

1. pH: Gravity™ Analog pH Kit

<https://atlas-scientific.com/gravity-analog-ph-kit/>

1. Temperatura: DS18B20

<https://datasheets.maximintegrated.com/en/ds/DS18B20.pdf>

Dispositivo: LILYGO®Módulo de T-SIM7000G TTGO, ESP32-WROVER-B, Chip, WiFi, Bluetooth 18650, soporte de batería, placa de carga Solar

<https://es.aliexpress.com/item/4000542688096.html>

github:

<https://github.com/Xinyuan-LilyGO/LilyGO-T-SIM7000G>

**TRAMAS DE DISPOSITIVO ESP32-SIM700G**

**TRANSMISION**

{

“ID”: “[LA IMEI ]”,

“DO(%)”: [47-100],

“PH” : (0-14),

“TEMP(C)”: [-55 a 125],

“BAT(mV)”: [Voltaje de celda de litio]

}

RECEPCION

{

}

Protocolo MQTT:

Broker: ec2-3-16-154-178.us-east-2.compute.amazonaws.com

puerto: 1883

QoS: 2

retain: TRUE

AUTENTICACIÓN: Al final…

Tópicos de dispositivo:

Topic Out: [IMEI]/out

Topic In: [IMEI]/in

Topic Status (Wiill topic): [IMEI]/status

Status message (Will Message): “Conectado” / ”Desconectado”

TABLAS DE BASE DE DATOS

| ID (int)  Primary key  Autoincremental | FECHA (datetime) | TIMESTAMP (timestamp) | ID\_DEVICE  (varchar 30) | DO (float) | PH (float) | TEMP (float) | BAT (int) |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | mysql | mysql | ABC124 | 80.7 | 4.2 | 20.4 | 3400 |
| 2 |  |  |  |  |  |  |  |