

Delta Electronics Inc.

UNOCentral HTTP API Manual

Version 0.5

May 9 2023

Table of Contents

1.	Introduction	3
2.	API Manual	5
	A. Requirement	5
	B. API Url Format	5
	C. API Lists	6

1. Introduction

UNOCentral is the central server to monitor the multiple UNONexts. It provides HTTP Data API to retrieve the UNONext sensor values for engineer using. Basic UNONext model has following sensors: Temperature (°C/°F), Humidity (rH%), CO₂ (ppm), PM2.5 (µg/m³), PM10 (µg/m³). The advance model optionally provides highly accuracy NTC temperature (°C), CO (ppm), HCHO (ppm), TVOC (ppm), O₃ (ppm). This document introduces to use HTTP data API to retrieve the sensor data based on JSON format. The sensor data include real-time and average data (only air quality related sensors). Table 1 presents the sensor key, unit, notes and the calculation rule of moving average data. Table 2 explains the meaning of retrieved sensor data includes status code. Note, please upgrade your UNOCentral firmware for the latest API support.

Table 1 Sensor Table

Sensor Type	Key	Data Unit	IAQ Regulation Moving Average
Air Quality Index	aqi	N/A	N/A
Ambient Light	lux	lux	N/A
Temperature	temp	°C	N/A
NTC Temperature (opt.)	temp_hp	°C	N/A
Temperature °F	temp_f	°F	N/A
NTC Temperature °F (opt.)	temp_hp_f	°F	N/A
Humidity	humi	rH%	N/A
CO ₂	co2	ppm	8 hours
PM2.5	dust/pm2.5	µg/m ³	24 hours
PM10	pm10	µg/m ³	24 hours
TVOC (opt.)	tvoc	ppm	1 hour
HCHO (opt.)	hcho	ppm	1 hour
CO (opt.)	co	ppm	8 hours
O ₃ (opt.)	o3	ppm	8 hours

PS. Value of "temp_hp" and "temp_hp_f" are only valid when UNOnext connects the high accuracy NTC temperature sensor.

Table 2 Sensor Value Description

Name	Value	Description
SENSOR_ERROR_CODE	-99999	Sensor Initialized.
SENSOR_UNMOUNTED	-40000	Sensor unmounted
DATA_ABNORMAL	-50000	Sensor data abnormal
SENSOR_INIT_CODE	< -30000	Other error code
NORMAL_DATA	Others	Normal data

2. API Manual

A. Requirement

Please check UNOCentral and HTTP client (e.g. Browser or HTTP data grabber) in the same local LAN. Use http client to invoke API url to get data. Suggest to provide **STATIC IP** by IT team, and link UNOCentral by Ethernet cable. In this document, the test tool is postman as below figure.

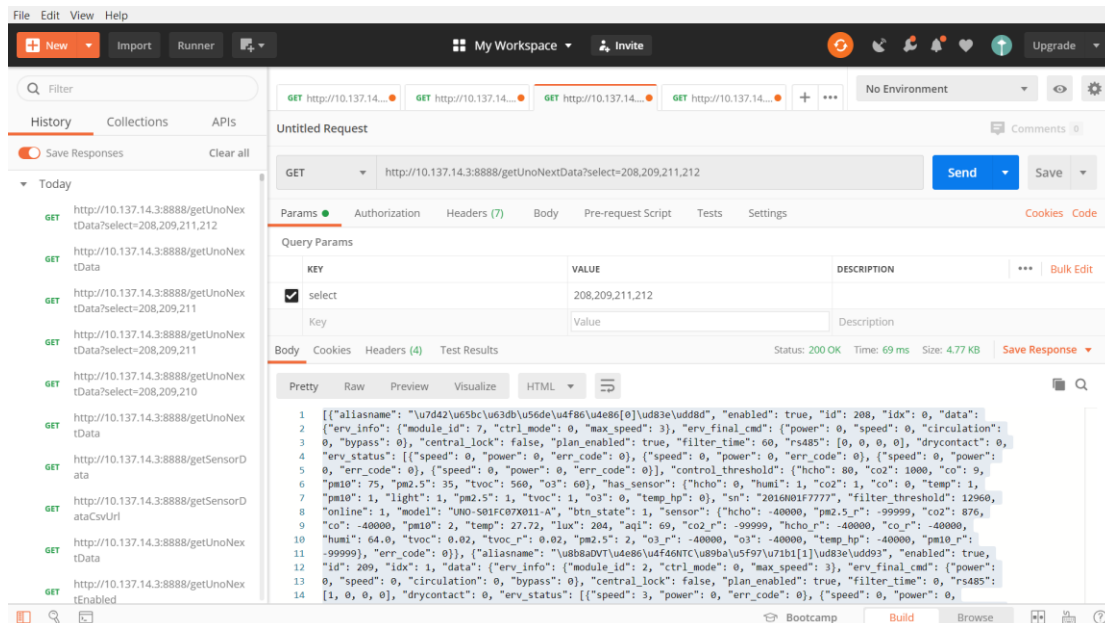


Figure 1 Postman screenshot

B. API Url Format

- `http://[IP]:8888/[API]` (Recommended)

Ex: `http://192.168.1.151:8888/getSensorData`

- `http://[SN].local:8888/[API]` (Not Recommend, Maybe limited by IT)

Ex: `http://2007C0112844.local:8888/getSensorData`

C. API Lists

Current UNOCentral provides following HTTP data API.

- `getSensorData` (Table 3 `getSensorData` Usage)
- `getUnoNextEnabled` (Table 4 `getUnoNextEnabled` Usage)

Because the data synchronization frequency is slower than 1 time in 5 seconds, the suggested frequency to call each HTTP API is slower than this frequency.

Table 3 getSensorData Usage

API	Protocol	Query Parameter
getSensorData	HTTP GET	None
Description		
Get all UNOnext sensor values.		
Response		
JSON (Responded in text/html)		
Response data schema		
Ex: <i>HTTP GET http://[IP]:8888/getSensorData</i> Array of JSON, array size is 16 or 32. Each item in array presents one UNOnext sensor values.		

```

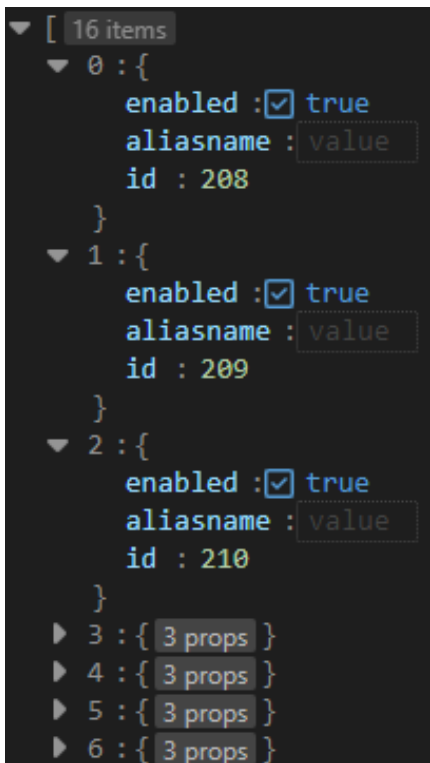
[ 16 items
  0 : {
    enabled :  true
    sensor : {
      hcho : -50000
      co : -50000
      co2_r : 736
      pm1_r : -99999
      pm2.5 : 2
      tvoc : 0.0
      o3_r : -99999
      co2 : 1191
      lux : -50000
      humi : 78.5
      o3 : -50000
      pm1 : 2
      temp_hp_f : -40000
      temp_f : 69.48
      hcho_r : -99999
      co_r : -99999
      aqi : 120
      pm10_r : -99999
      pm2.5_r : -99999
      temp : 20.82
      pm10 : 2
      tvoc_r : -99999
      temp_hp : -40000
    }
    aliasname : value
    id : 208
    online : 0
  }
}
    
```

JSON Key Description

Key	Description
sensor.[SENSOR]	The related sensors. Valid Keys are temp (Temperature), humi (Humidity), co2 , pm2.5 , pm10 , temp_f (Temperature with °F). Others are reserved for advance model. Please refer to Table 1 Sensor Table and Table 2 Sensor Value Description.
sensor.[SENSOR]_r	The average value for related IAQ sensors based on Table 1. Valid keys of standard model are co2 , pm2.5 , pm10 . Others are reserved for advance model. Please refer to Table 1 Sensor Table and Table 2 Sensor Value Description too.
id	On default RS485 mode, it means UNOnext Modbus ID. From 208 to 223 or 208 to 239 according to UNOCentral HW version.

	On MQTT mode, it means UNOnext MQTT ID. From 1 to 16 or 1 to 32 according to UNOCentral HW version.
aliasname	UNOnext alias name.
enabled	UNOnext is enabled by UNOCentral or not. If not, the other values is invalid.
online	1 means online, and 0 means offline

Table 4 getUnoNextEnabled Usage

API	Protocol	Query Parameter
getUnoNextEnabled	HTTP GET	None
Description		
Get all UNOnext enabled status.		
Response		
JSON (Responded in text/html)		
Response data schema		
Ex: <i>HTTP GET http://[IP]:8888/getUnoNextEnabled</i> Array of JSON, size is 32. Each item presents one UNOnext basic enabled status.		
		
JSON Key Description		
Key	Description	
id	On default RS485 mode, it means UNOnext Modbus ID. From 208 to 223 or 208 to 239 according to UNOCentral HW version. On MQTT mode, it means UNOnext MQTT ID. From 1 to 16 or 1 to 32 according to UNOCentral HW version.	

aliasname	UNOnext alias name.
enabled	UNOnext is enabled by UNOCentral or not. If not, the other values is invalid.