



tVOC Transmitter via USB

UA50-A

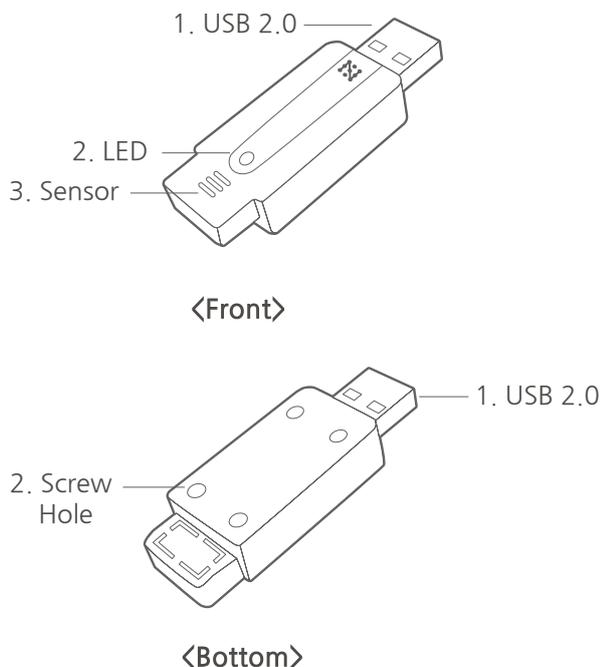
- Real-time tVOC & CO2eq Transmitter
- Mono metal oxide gas sensor embedded
- Long Lifetime of Sensor
- Recording/Monitoring Software on Win/Mac/Linux
- Android Recording App.



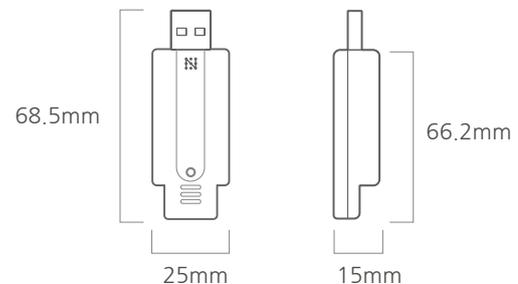
The UA50A device is designed to measure TVOC (Total Volatile Organic Compounds) and CO2eq and transmit them in real-time via the USB connector. Embedded mono metal oxide sensor allows more accurate measuring and faster response time than others. It is suitable for checking Indoor Air Quality.

The UA Series is automatically recognized as a serial port on the operating system and accessed using the AT command. Multiple USB connections of the UA device could compose the multi-channel sensor. The sensor data is not stored in the UA, but recording in PC and Android device. 128CH real time monitoring software on pc, Tapaculo Lite is downloadable on our website(www.radionode365.com). And android real time recording application is also available from google play store.

Hardware



Dimensions



⚠ CAUTION!

- During the warm-up period, the sensor must be driven from clean air.
- The longer the operation time, the better the measurement accuracy. So avoid frequent power-offs.
- CO2eq value is not from actual CO2 sensor but calculated from Ethanol and Hydrogen. So it is highly recommended only for air ventilation purpose.
- Avoid contact with conductors. Static electricity can cause distorted values.

Contact Information

- www.radionode365.com
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UA50-A Specifications

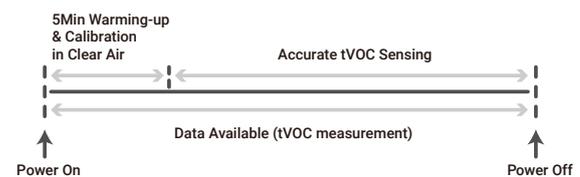
Sensor Channel Info.	<ul style="list-style-type: none"> • CH1: TVOC • CH2: CO2eq OR Absolute humidity
Gas Sensor Type	Mono Metal Oxide sensor
Measurement Range	<ul style="list-style-type: none"> • tVOC: 0 ~ 60 ppm • CO2eq: 400 ~ 10000 ppm • Absolute humidity: 0 ~ 256 g/m3
Measurement Unit (Selection using SW)	<ul style="list-style-type: none"> • tVOC [ppm(Default) or ppb] • CO2eq [ppm(Default) or %] • Absolute humidity [g/m3]
Measurement Cycle	1 sec
Sensor Resolution	<ul style="list-style-type: none"> • TVOC: 0.01ppm • CO2eq: 1ppm • Temperature: 0.01°C
Sensor Accuracy (Repeatability)	<ul style="list-style-type: none"> • tVOC: ±15% of measured value • CO2eq: ±10% of measured value • Temperature: ±0.3°C
Compensation Logic	Humidity
Long-term Drift	<ul style="list-style-type: none"> • TVOC: < 1% of measure value/ month • CO2eq: < 2% of measure value/ month
Gas Response Time	T90 < 5mins
Warming up Time	5mins after power-on
Operating Condition	<ul style="list-style-type: none"> • Temperature: -40 ~ 85°C • Humidity: 10 ~ 95%RH
Lifetime	< 8 Years
Power Consumption	5V (Max. 315mW)
Calibration Method	Offset adjustment
USB Port	USB 2.0 Type A Plug
Output Mode (Selection using SW)	Default mode: MODE2 <ul style="list-style-type: none"> • Mode 1 : [TVOC, Absolute humidity] • Mode 2 : [TVOC, CO2eq]
Output Signal	USB digital, CDC Device (AT Command)
LED	Device Status Indicator <ul style="list-style-type: none"> • BLINK RED & GREEN : Warming-up • RED KEEP ON: USB Connection Failed • BLINK GREEN : Measuring
Software Support	<ul style="list-style-type: none"> • Tapaculo Lite 128CH recording software on PC Download: www.radionode365.com • Tapaculo Mobile 2CH recording software on Android devices Download: Google play store • Calibration Software Calibrator that compensates measuring error. Download: www.radionode365.com

* **CO2eq** : CO2 concentration estimate based on H2 measurement in air. It is only for a Ventilation purpose

UA50-A Major detectable Gases

n-Hexane	α-Pinene
n-Nonane	n-Pentanal
n-Decane	n-Hexanal
n-Undecane	Iso-propanol
1-Octane	2-Butanol
1-Decene	2-Butanone
Cyclohexane	3-Methyl-3-butanone
m-Xylene	4-Methyl-2-pentanone
Ethylbenzene	n-Butylacetate
1,2,4-Trimethylbenzene	Ethoxyethylacetate
n-Propylbenzene	1,2-Dichloroethane

Operating Guide



- On power up, UA50 will be in the warming-up state during 5 minutes. the accuracy of UA50 would be unstable at this moment.
- During the warm-up period, the sensor must be in clean air for more accurate measurement.
- Since the internal software algorithm keep calculating parameters for a better accuracy, the long running time could make the better measurement accuracy

Application

- Indoor air quality measurement

Product Components

Model	Component
UA50	<ul style="list-style-type: none"> • UA50(1EA) • Type A USB Extension Cable 1.5 m(1EA)

Accessories

Type	Model Number	Spec.
Converter (USB → LAN)	RN171	<ul style="list-style-type: none"> • Supports cloud monitoring • Supports MODBUS TCP/HTTP data transmission • Power: PoE 48V, IEEE802.3af/at, DC6V, 1.9W
Converter (USB → WIFI)	RN172	<ul style="list-style-type: none"> • Supports cloud monitoring • Supports MODBUS TCP/HTTP data transmission • Power: DC6V, 2.4W