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Professional

Sniffer4D V2

Multi-gas Detection & Mapping System

For Drones & Ground Vehicles

Sniffer4D V2

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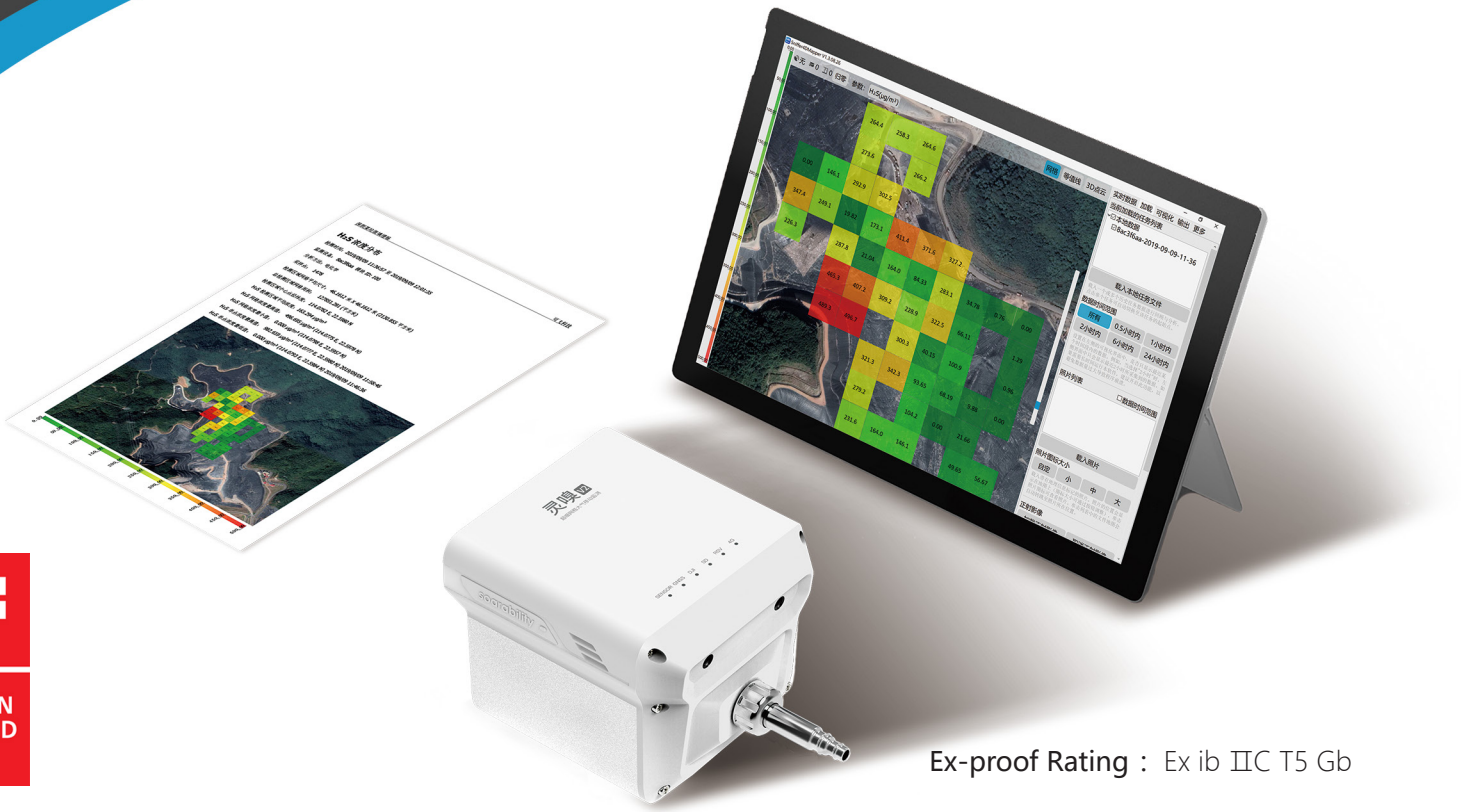


DESIGN AWARD 2021

Ex-proof Rating： Ex ib ⅡC T5 Gb

Multi-gas Detection & Mapping System for Drones & Ground Vehicles

Sniffer4D consists of a multi-gas detection hardware and powerful analytic software. This system is able to measure and visualize real-time 3D gas concentration distributions. By providing timely & actionable information, Sniffer4D helps first responders, oil & gas industry, environmental agencies, and researchers improve work efficiency, mitigate risks, and reduce costs.

Typical Applications

Hyper-local Environmental Monitoring

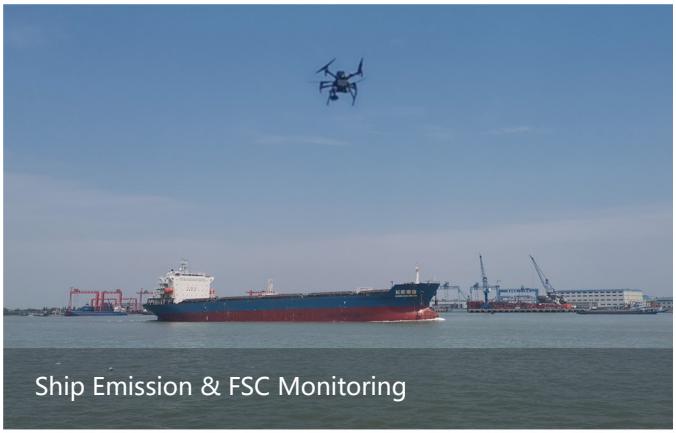
Quickly scan through an area and obtain its hyper-local air pollution distribution in 3D. The results can be used to pin down exact locations of suspected fugitive emission sources, to understand how air pollution are transported, and so on.

HAZMAT Response

In an event of an emergency, before putting the health and safety of your team at risk, fly Sniffer4D into the scene to quickly identify the types and spreads of toxic gases, and define a safety perimeter.

Leak Detection

Efficiently gather distribution information of certain gases in oil & gas plants. Use the information to locate suspected leakage spots, and to identify the spread of harmful substances.



Ship Emission & FSC Monitoring

Fly Sniffer4D into ship plumes and it can automatically estimate the Fuel Sulfur Content (FSC) of the ships using its built-in inversion algorithm.

One-stop Workflow

From data collection to result delivery.

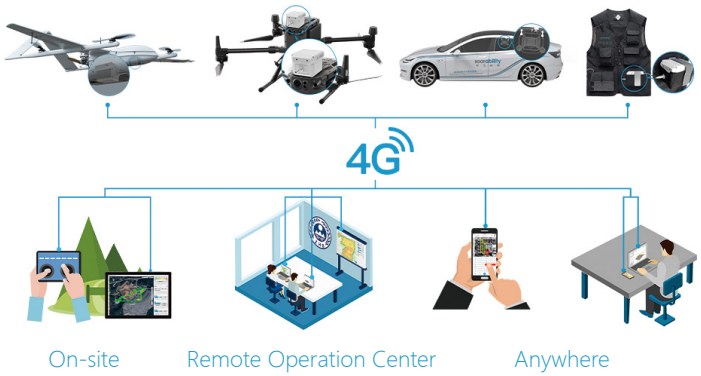
Parameters (configurable, up to 9)
PM2.5 PM10 SO2 CO NO2 O2 O3
VOCs LEL / CH4 CO2 H2S NH3 HCl H2
Cl2 PH3 NO HCN High-Resolution CH4
Odor (OU) Gas Sampling Wind Speed & Direction
Ionizing Radiation Other Customized Parameters...

Sense Up to 9 Gases at a Time

Sniffer4D is able to obtain up to 9 gas concentration distributions at one time. Users can flexibly choose or alter their sensor configurations that suit their applications and budgets.

Examples:

- PM2.5, PM10, O3, NO2, CO, SO2, VOCs, Odor (OU) for ambient air monitoring;
- VOCs, CH4, CO, Cl2, O2, NO2, H2S, CO2 for HAZMAT response;
- VOCs, CH4, H2S, SO2 for oil & gas plant leak detection.

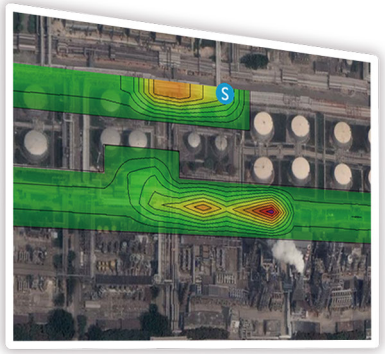


See Your Real-time Data, Anywhere

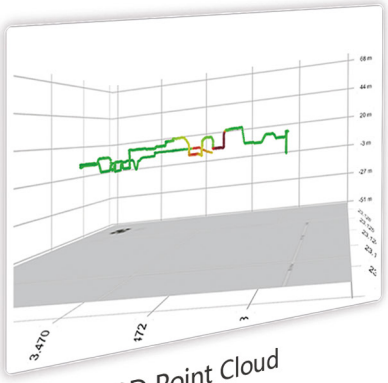
Sniffer4D's built-in cellular connectivity & US-based Cloud server enable secure real-time data transmission with unlimited range to decision makers in different locations.

Advanced Real-time Visualization

Sniffer4D Mapper software visualizes and analyzes data from one or more Sniffer4Ds in real time, providing intuitive & insightful information for decision makers.



2D Isoline Map

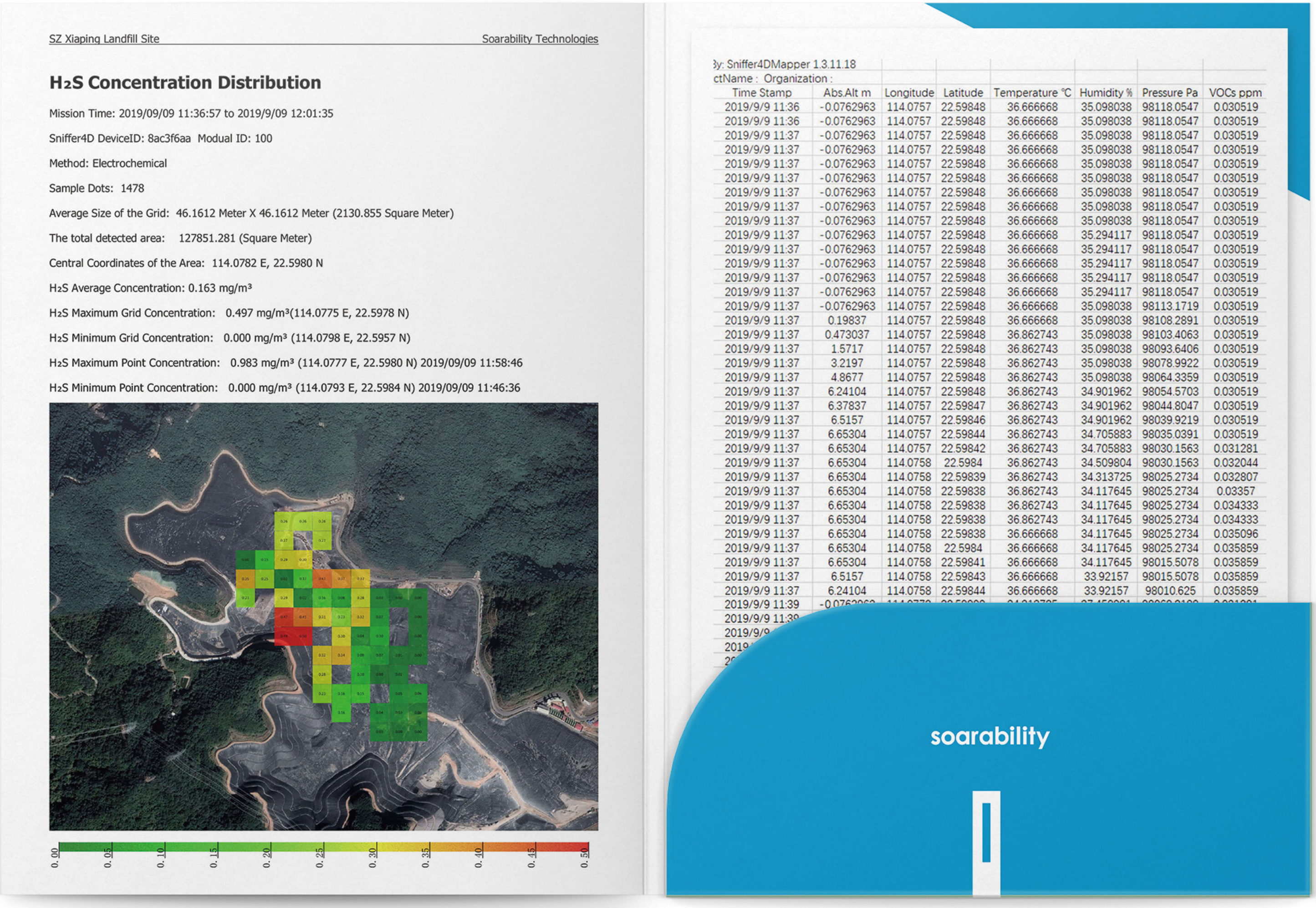


3D Point Cloud

2D Grid Map

One-click Result Delivery

After a mission, simply click a button to generate a mission report containing key results, or a CSV file containing all the raw data. Reporting your work has never been easier.


SZ Xiaping Landfill Site Soarability Technologies

H_2S Concentration Distribution

Mission Time: 2019/09/09 11:36:57 to 2019/9/09 12:01:35

Sniffer4D DeviceID: 8ac3f6aa Modual ID: 100

Method: Electrochemical

Sample Dots: 1478

Average Size of the Grid: 46.1612 Meter X 46.1612 Meter (2130.855 Square Meter)

The total detected area: 127851.281 (Square Meter)

Central Coordinates of the Area: 114.0782 E, 22.5980 N

H_2S Average Concentration: 0.163 mg/m³

H_2S Maximum Grid Concentration: 0.497 mg/m³(114.0775 E, 22.5978 N)

H_2S Minimum Grid Concentration: 0.000 mg/m³ (114.0798 E, 22.5957 N)

H_2S Maximum Point Concentration: 0.983 mg/m³ (114.0777 E, 22.5980 N) 2019/09/09 11:58:46

H_2S Minimum Point Concentration: 0.000 mg/m³ (114.0793 E, 22.5984 N) 2019/09/09 11:46:36

3y: Sniffer4DMapper 1.3.11.18

ctName : Organization :

Time Stamp	Abs.Alt m	Longitude	Latitude	Temperature ℃	Humidity %	Pressure Pa	VOCs ppm
2019/9/9 11:36	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:36	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.294117	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.294117	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.294117	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.294117	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.294117	98118.0547	0.030519
2019/9/9 11:37	-0.0762963	114.0757	22.59848	36.666668	35.098038	98113.1719	0.030519
2019/9/9 11:37	0.19837	114.0757	22.59848	36.666668	35.098038	98108.2891	0.030519
2019/9/9 11:37	0.473037	114.0757	22.59848	36.862743	35.098038	98103.4063	0.030519
2019/9/9 11:37	1.5717	114.0757	22.59848	36.862743	35.098038	98093.6406	0.030519
2019/9/9 11:37	3.2197	114.0757	22.59848	36.862743	35.098038	98078.9922	0.030519
2019/9/9 11:37	4.8677	114.0757	22.59848	36.862743	35.098038	98064.3359	0.030519
2019/9/9 11:37	6.24104	114.0757	22.59848	36.862743	34.901962	98054.5703	0.030519
2019/9/9 11:37	6.37837	114.0757	22.59847	36.862743	34.901962	98044.8047	0.030519
2019/9/9 11:37	6.5157	114.0757	22.59846	36.862743	34.901962	98039.9219	0.030519
2019/9/9 11:37	6.65304	114.0757	22.59844	36.862743	34.705883	98035.0391	0.030519
2019/9/9 11:37	6.65304	114.0757	22.59842	36.862743	34.705883	98030.1563	0.031281
2019/9/9 11:37	6.65304	114.0758	22.5984	36.862743	34.509804	98030.1563	0.032044
2019/9/9 11:37	6.65304	114.0758	22.59839	36.862743	34.313725	98025.2734	0.032807
2019/9/9 11:37	6.65304	114.0758	22.59838	36.862743	34.117645	98025.2734	0.03357
2019/9/9 11:37	6.65304	114.0758	22.59838	36.862743	34.117645	98025.2734	0.034333
2019/9/9 11:37	6.65304	114.0758	22.59838	36.862743	34.117645	98025.2734	0.034333
2019/9/9 11:37	6.65304	114.0758	22.59838	36.666668	34.117645	98025.2734	0.035096
2019/9/9 11:37	6.65304	114.0758	22.5984	36.666668	34.117645	98025.2734	0.035859
2019/9/9 11:37	6.65304	114.0758	22.59841	36.666668	34.117645	98015.5078	0.035859
2019/9/9 11:37	6.5157	114.0758	22.59843	36.666668	33.92157	98015.5078	0.035859
2019/9/9 11:37	6.24104	114.0758	22.59844	36.666668	33.92157	98010.625	0.035859
2019/9/9 11:39	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2019/9/9 11:3[illegible]							
2019/9/9							
2019							
20[illegible]							

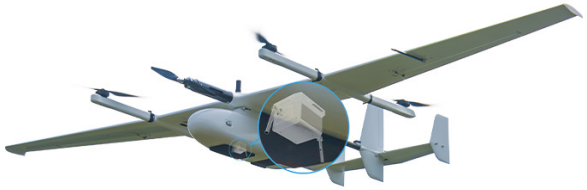
More Software Features

* Display real-time gas concentration values and temporal graphs;
* Display Sniffer4D's working status (e.g. GPS satellite number, a ltitude);
* Automatically retrieve data collected by Sniffer4D during communication interruption back to the software;
* Display real-time video feed from drone;
* Support connecting to multiple Sniffer4Ds at the same time;
* Display real-time UAS camera view;
* Support screen recording during missions;
* Calculate estimated Fuel Sulfer Content (FSC);
* Import historical mission files;
* Import & display orthophoto;
* Import geo-tagged photos;
* Calibrate Sniffer4D;
* Show demo missions;
* Automatic update.

Designed for Drones & Ground Vehicles

Sniffer4D + Multirotors

Normally mounted on the top of the multirotor to stay away from propellers' downwash



Sniffer4D + Fixed Wings

Placed inside the payload compartment and use snorkels for air exchange

Sniffer4D + Ground Vehicles

Mounted on the roof top or windscreen, ideally away from the exhaust

Wearable

Free up your hands when you perform monitoring missions on your foot

Size 157 * 103 * 87mm	Weight 400 - 500g	IPX2 Rated	Ex-proof Rating Ex ib II C T5 Gb	Cellular Connectivity	Anti-EMI Aluminum Casing	Internal Suspension Mechanism	Active Air Intake	Data Retrieval Algorithm	Automatic Data Backup in the SD Card

Agile & flexible. Designed to work under motion, vibration, and EMI. Cellular connectivity enables real-time data transmission with unlimited range. Data retrieval algorithm and automatic data backup ensure data integrity to the highest level.

Designed for Simplicity

Plug & Play

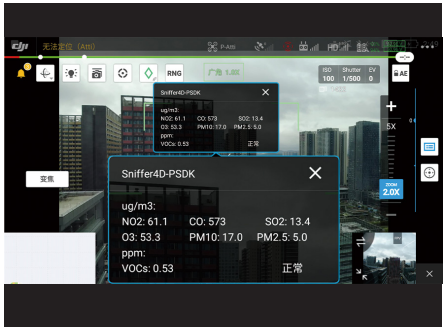
With built-in cellular connectivity & GNSS, all you need to do is to plug in a power cable to make Sniffer4D work.

Status LEDs

Sniffer4D's 6 status LEDs enable users to quickly understand its working status, boosting you work efficiency.

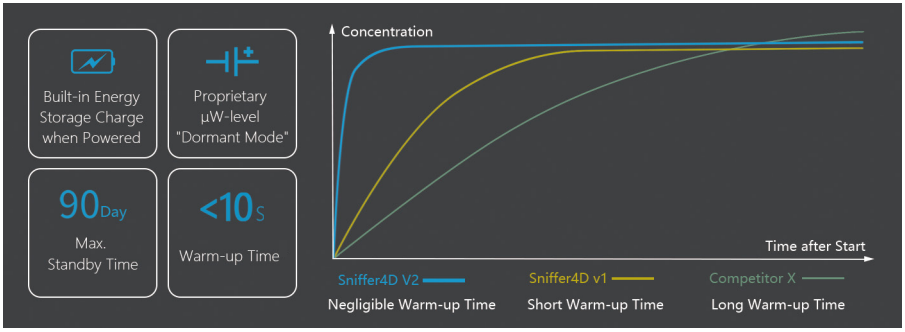
Front & Back Warning Lights

Sniffer4D's high-brightness warning lights can change their color under different gas concentrations, notifying on-site personnel about the risks.



Seamless Drone Integration

Sniffer4D shows its real-time data on the DJI Pilot screen through DJI Payload SDK. Deep integration with other drone platforms is also possible via Sniffer4D's API.



Negligible Warm-up Time

When Sniffer4D disconnects from power, it automatically enters "dormant mode*", in which the most crucial sensing components still remain working. Therefore, when Sniffer4D is powered up, almost no more warm-up time is needed for the sensors, helping users to race against time.

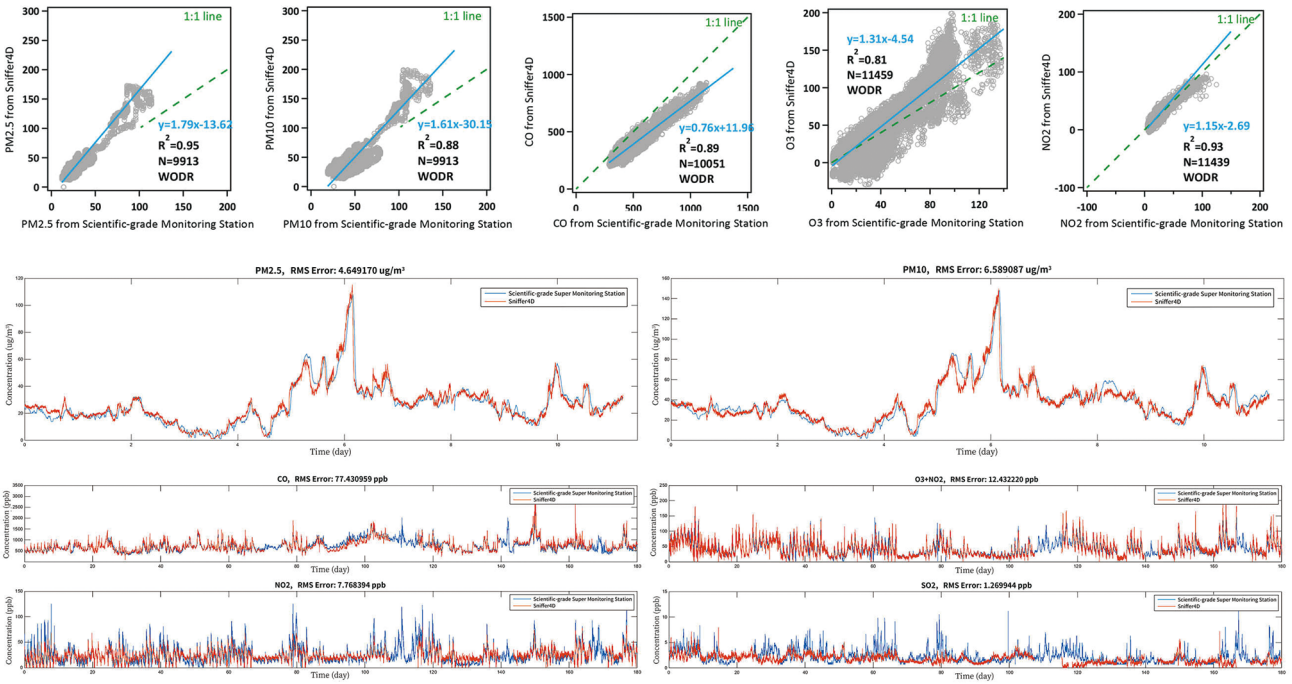
*Only available for certain sensing modules.

Verified Data Quality

- Proprietary ultra-low noise signal processing electronics
- State-of-the-art sensing components
- Proprietary environmental and bias compensation algorithms
- Rigorous quality control process

Advanced Hardware & Algorithm Design

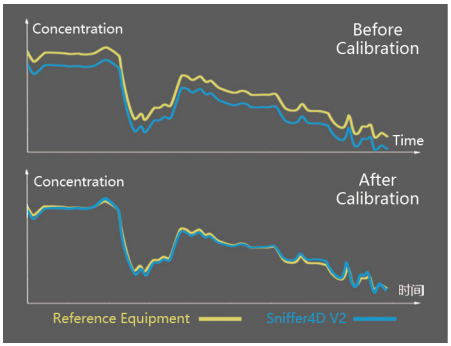
Ensure Sniffer4D's excellent data linearity, repeatability, reliability and short response time.



Industry leading data quality (R^2 0.81-0.95) in co-location test with a scientific grade monitoring station.

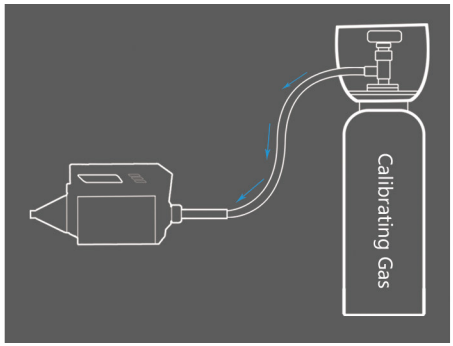
Flexible & Easy Calibration

Every Sniffer4D is factory calibrated before being shipped out. We recommend re-calibrating the device every 6 months. There are generally 3 ways to calibrate Sniffer4D.



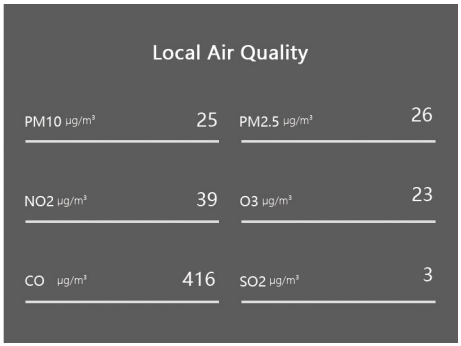
Data Learning

Compare long-term datasets from Sniffer4D and a local reference monitoring station (placed at the same location) to determine the calibration parameters.



Calibrating Gas

Inject calibrating gases with known concentrations to determine the calibration parameters.



Quick Adjustment

Use local AQI information to roughly determine the calibration parameters.

Support Gas Sampling

Start or stop gas sampling via DJI Pilot App or Sniffer4D Mapper. Adaptive to gas sampling bags with different capacities. Automatically stop when the bag is full. Easy integration with DJI M300RTK & DJI M210/M210RTK. Plug & play.

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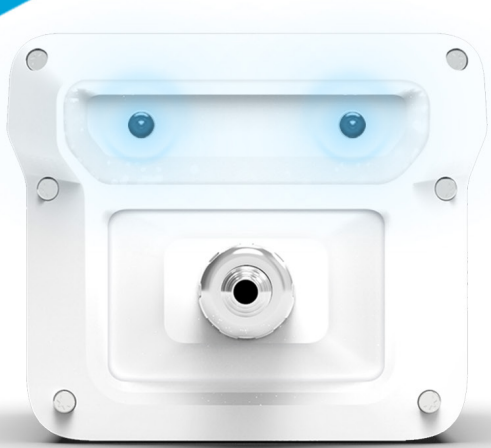

For more information
www.soarability.tech
inquiry@soarability.tech
www.linkedin.com/company/soarabilitytech/