

Continuous Ambient Air Quality  
**Micro-Monitoring Station**



**"AirSENCE" - Advance, Accurate & Affordable caaqMicro-Monitoring System**

Introducing AirSENCE an Advanced, Accurate & Affordable Micro-Monitoring System for continuous ambient air quality monitoring and mapping.

Nowadays monitoring air quality only at limited locations is no longer sufficient in modern cities. Increased urbanization, vehicular density, infrastructure development and industrialisation have intensified pollution levels around the world resulting in elevated premature death rates in adults as well as in children.



Mapping local air quality is quickly becoming an essential requirement for cities and industrial areas as it provides high spatial and temporal resolution of air pollutant concentrations. This high-resolution data enables authorities to trace the sources of pollution and formulate effective strategies to curb its impact.

AirSENCE is the ideal solution for any air quality monitoring and mapping applications with its advanced features, accurate results and affordable pricing. AirSENCE's commercial success is rooted in its strong academic research base. AirSENCE is developed in collaboration with the Southern Ontario Centre for Atmospheric Aerosols Research (SOCAAR) at the University of Toronto.

AirSENCE incorporates both electrochemical and optical sensors that have high "sensitivity, selectivity and long-life" which when combined with robust machine learning-based signal processing and data fusion, provides "Industrial Internet of Things (IIoT)" sensor network.

AirSENCE measures both Gaseous and Particulate pollutants along-with weather parameters to provide comprehensive information about local air pollution. It measures following pollutants – NO, NO<sub>2</sub>, CO, O<sub>3</sub>, SO<sub>2</sub>, VOC, CO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and PM<sub>1</sub>. It also measures weather parameters including wind speed & direction, rain fall, noise and luminescence.

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One of the major advantages of AirSENCE is its portability. Small footprint (23.9cm (H) x 32.2cm (W) x 17.7cm (D)) and light-weight (2.2 Kg) enables it be installed in-situ at varied monitored sites e.g. on signal poles at traffic intersections or light poles at road dividers etc. This delivers reliable data and provides highly representative pollutants mapping for the areas monitored. IP65 rated weatherproof polycarbonate enclosure allows AirSENCE to operate in any harsh environmental conditions.

AirSENCE has a unique proprietary sensor layout design which when combined with active sampling and optimal internal space, provides multiple advantages. First and foremost, it ensures consistent performance even in presence of high pollutant concentrations. In-addition, AirSENCE includes AUG's proprietary algorithms that ensures accurate data generation even as sensors ages over time, thus providing a sensors life expectancy of more than 2 years.

AirSENCE has minimal installation requirements & procedures which includes insertion of local SIM and attaching power cable. Every AirSENCE device is calibrated using factual procedure of reference colocation calibration before shipment. AirSENCE has minimal maintenance protocols and does not require routine replacements of consumables.

Most importantly every AirSENCE device is equipped with an onboard embedded microcomputer that converts sensor signals to pollutant concentrations and weather data (polished data) within the device and transmits polished data to a cloud server this ensures complete data integrity. AirSENCE has built-in a 32GB SD card which stores several years' worth of data and an auto-sync mechanism to recover data from network disruption.

**"AirSENCE provides an affordable, user-friendly, and highly accurate air quality Micro-monitoring solution."**