



## AQM™ - Air Quality Monitoring

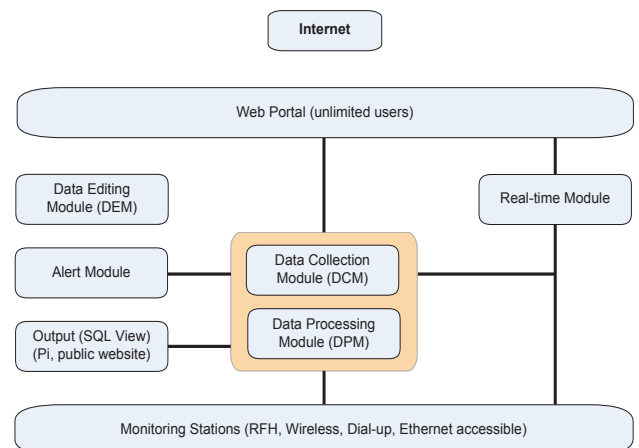
AQM™ is an innovative web-based ambient air monitoring system that offers a variety of options for acquiring and distributing data to various environmental and operational stakeholders who require real-time information about production processes. The AQM™ system moves data rapidly from various field locations providing instant feedback to current and ongoing production systems required to control emissions stemming from operations. The AQM™ collects, processes, compiles and stores the collected data so that it is easily available for regulatory reports, public information web sites or daily operational reports.

### Benefits

- Maximized productivity and profitability
- Consistent and reliable data collection
- Solid state data collection (no moving parts or hard drive at collection source)
- Redundant network connections (RFH, Wireless, Dial up, Ethernet)
- Alarming capabilities (SMS, email, voice)
- 4 levels of data redundancy (PLC array, CF card, RAD, Internal drive)

### Features

- **Real-Time Alerting** – System operators and service technicians will receive SMS, email or voice prompts directly to their PDA or web application. Capable of hierarchical and or issue escalation to particular groups or users.
- **Self-Monitoring and Repair** – Capable of independent service monitoring and repair.
- **Web-Based Access** – Web portal is accessible using any browser. Access privileges are pre-determined and granted by administrator.
- **Data Editing Module** – Static or batch editing capabilities with journalized tracking.
- **Maintenance Portal** - PLC based remote or local access user interface enables servicing modes for repairs or maintenance.
- **Remote Accessibility** - Remote calibration and remote diagnostics
- **Flexibility** - Unlimited number of users (no Cals) and unlimited number of views (OSIsoft PI, Aspen, SQL, FTP upload)
- **Multiple Instrument Monitoring** – Capable of simultaneously monitoring; SO<sub>2</sub>, NO<sub>x</sub>, CO, BAM, wind speed, direction, temperature, relative humidity, barometric pressure or solar radiometer waves etc.
- **Steadfast Data Management** – Fully reconcilable data (CF card and RAD source comparison)
- Multiple instrument capabilities and channels
- Simultaneous channel collection
- Automatic back-collection
- Data editing capabilities (audit history, journalized edit tracking)
- Reporting capabilities
- SQL database





## Minisonde - Radiosonde (probe)

The radiosonde contains instruments capable of making direct *in-situ* measurements of air temperature, humidity and pressure with height, typically to altitudes of approximately 30 km. The observed data are transmitted immediately to the ground station by a radio transmitter located within the instrument package. The ascent of a radiosonde provides an indirect measure of the wind speed and direction at various levels throughout the troposphere. Ground based radio direction finding antenna equipment track the motion of the radiosonde during its ascent through the air. The recorded elevation and azimuth information are converted to wind speed and direction at various levels by triangulation techniques.

### Various Applications

- Environmental Impact Studies
- Supplementary Emission Control
- Diffusion Studies
- Micro and Meso Meteorological Research Extent of Mixing
- Strength and Depth of the Nocturnal Inversion

### Benefits

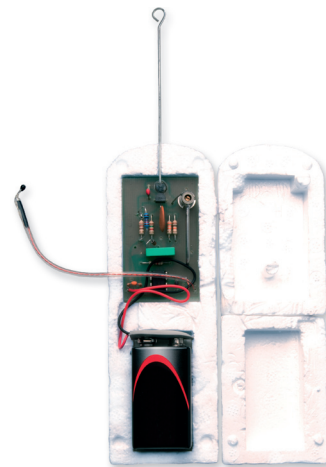
- Engineered for dependable performance and durability in the field
- Can be connected to a 3rd party data-logger
- Easy to use
- Low cost

### Features

- Lapse rate and wind speed and direction to above 3000 metres
- Comfortable calibration and maintenance, especially designed for use in the field
- RS 232- / SDI-12 interface for easy connection to an external data-logger
- 9 V DC power supply and low power consumption permit battery or solar operation

### Specifications

<i>Frequency Range:</i>	395 MHz to 410 MHz
<i>Factory set to:</i>	403 MHz (+/-) 0.25 MHz
<i>Modulation FM:</i>	0 + 400 KHz (+/-) 100 KHz
<i>Pulse Width:</i>	50 US nominal
<i>RF Output Power:</i>	approx. 30 mWatt
<i>Frequency Modulation:</i>	2400Hz (+/-) 400Hz (at 40°C) 1000Hz (+/-) 150Hz (at 20°C) 63Hz (+/-) 10 Hz (at -30°)
<i>Accuracy:</i>	Better than 0.2°C over 20°C
<i>Time Constant:</i>	2 to 3 seconds
<i>Temperature of Operation:</i>	- 40°C to 40°C
<i>Power Supply:</i>	9 VDC radio battery
<i>Weight:</i>	60 grams including battery
<i>Battery Life:</i>	10 hours
<i>Frequency Stability:</i>	(+/-) 1 MHz



### Balloon Filling System

- Designed for Portability
- Ascent rate of a 30gm pilot balloon-180 meters per minute

\* Minisonde may not be exactly as shown.