



Integrated Noise Monitoring Systems

Custom solutions for environmental monitoring

 **Ecotech**
ACOEM Group

TOGETHER WE CREATE SOLUTIONS THAT SHAPE THE FUTURE

One System for Every Application

Noise monitoring is an important component of any total environmental monitoring solution.

Noise monitoring is necessary for regulatory compliance and provides accurate measurement of noise levels that can impact or adversely affect the health and wellbeing of a workforce or an entire community.

Monitoring can also mitigate and significantly reduce the financial and non-financial risk associated with non-compliance to relevant standards and regulations.

As part of a total environmental monitoring solution, noise monitoring must distinguish not only the level but also the origin of the noise. For regulatory purposes, knowing the origin is particularly important, so that noises from external sources (for example, wildlife) cannot be incorrectly attributed to a particular industrial or commercial activity.

Depending on your project requirements, ECOTECH's suite of 01dB smart noise and sound vibration analysers can be fully-integrated into a new or existing ECOTECH environmental monitoring station to create a cohesive multiparameter environmental monitoring system.

Add noise and/or vibration monitoring capability to single or multiple ECOTECH monitoring systems that include:

- Dust Monitors
- Particulate Monitors
- Gas Monitors
- Continuous Air Quality Monitors
- Water Monitors
- Weather Stations.

According to Safework Australia, 28–32% of the Australian workforce is likely to work in an environment where they are exposed to excessive noise.*

According to the USA Occupational Safety and Health Administration (OSHA), over 20 million workers are exposed to noise that can be damaging while they're working. †

Noise-related injuries are most common in the manufacturing and construction industries with technicians and trades workers, machinery operators, drivers and labourers having the most exposure.*

* safeworkaustralia.gov.au/noise † osha.gov/SLTC/noisehearingconservation



**FUSION™ Smart Sound
& Vibration Analyser**



**Orion™ Smart Vibration
Monitoring Terminal**



**DUO™ Sound Level Meter
& Monitoring Station**



**CUBE™ Smart Noise
Monitoring Terminal**

01dB FUSION™

Smart Sound & Vibration Analyser

The first sound level meter to offer completely wireless vibration measurement. Connect FUSION™ to a WLS wireless vibration sensor and it will record and store 3-axis vibrations in parallel, audio signals and all noise indicators.

01dB CUBE™

Smart Noise Monitoring Terminal

Designed as a noise terminal for permanent or semi permanent monitoring. The CUBE™ has the functionality of the DUO™ and FUSION™ but with a remote microphone, external GPS and 3G antenna connection to allow use in more remote regions.

01dB DUO™

Sound Level Meter & Monitoring Station

All-in-one: FUSION™ and CUBE™ in a single instrument. DUO™ is completely modular with a comprehensive range of features that lets you use it either as a sound level meter or a fully-fledged noise monitoring station.

01dB ORION™

Smart Vibration Monitoring Terminal

An all-in-one standalone vibration monitoring system with integrated sensor, 3G modem, WiFi and GPS. It is robust, waterproof, easy to configure and use. Orion™ also features seven measurement channels and smart integration of vibration standards.

Customised Solutions Tailor-made for Industry

ECOTECH has over 40 years' experience in the design, construction, installation, commissioning and maintenance of integrated environmental monitoring systems across Australia and around the world.

Our solutions are designed to withstand the toughest environments, from tropical rainforests in Indonesia, to the frozen tundra of Antarctica, urban centres like New Delhi to remote mining sites in Western Australia.

With the addition of o1dB's world-class noise monitoring instruments, our custom-designed systems are now even better equipped to meet the needs of ECOTECH customers worldwide.

ACCURATE MONITORING IN ALL CONDITIONS

ECOTECH Noise Systems can be housed in a variety of different shelter types and sizes depending on location and project parameters.

All-weather, temperature-controlled robust ECOTECH shelters are designed to withstand the extreme weather conditions when installed in harsh urban or remote locations.

External microphones are fitted on weather masts and are designed to withstand the elements. With the CUBE™, external antennas allow communication in remote locations.

The ability to mount the monitoring equipment in a range of enclosures - from existing monitoring shelters to standalone fibreglass, stainless steel or plastic enclosures - allows measurements in a range of conditions.

APPLICATIONS

- Construction
- Mining
- Aviation
- Transportation systems (road & rail...)
- Community, urban and city monitoring
- Workforce safety
- Research and environmental studies
- Monitoring dictated by legislation and standards



Problem Solved

ECOTECH Integrated Noise System.

Newman, Western Australia. 1200 km north of Perth.

ECOTECH designed, installed and maintains a network of hundreds of dust monitoring stations in and around Australia's remote Pilbara region for a number of large mining companies. The network of monitoring stations ensures dust levels from mining and blasting activities meet stringent environmental regulations.

In 2017, a mining company wanted to extend its monitoring parameters beyond dust to also include noise, so it commissioned ECOTECH to design a solution.

ECOTECH retrofitted a o1dB CUBE™ smart noise monitoring terminal into an existing dust monitoring station located in Newman, creating a fully-integrated environmental noise monitoring system.

Critical to the success of the project was the need for the noise monitoring system to accurately record, log, then push all noise data to the mining company's proprietary online data capture system.



COMPLETE REAL-TIME DATA MANAGEMENT

Accurate, reliable data is an essential factor in the successful operation and management of monitoring systems. An entire network of monitoring stations can be controlled centrally for data analysis, comparison and reporting.

Using ECOTECH and o1dB software, an ECOTECH Integrated Noise Monitoring System manages the entire data interface.

Communication platforms include integrated WiFi and 3G with ability for third party 4G, satellite and radio module connectivity.

Real-time and historical data can be presented through secure on-screen displays, SMS messaging or emails. Data can be made available to the public via custom-designed web pages.

ECOTECH can also push data out to external FTP networks. This allows captured data to be directly available on in-house systems managed and operated by end-use customers.

BENEFITS OF ECOTECH INTEGRATED NOISE MONITORING SYSTEMS

- Cost-effective solution for one cohesive unit with multiple applications
- Continuous long-term monitoring
- Fully-integrated advanced instrumentation
- Data reporting
- Remote access diagnostics
- Solar-powered
- Expert maintenance and technical support
- Dial-in and listen to real-time audio on exceedances
- Optional weather sensors integrated in the one system.



Installation, Maintenance & Technical Support

Our highly specialised team of ECOTECH field technicians and engineers uses a unique problem-solving perspective and decades of combined environmental monitoring know-how to install integrated systems, ensure they operate successfully and meet all regulatory standards, including initial calibration and final checks.

Once an ECOTECH Integrated Noise Monitoring System is installed and operational, scheduled on-going maintenance and calibration of all monitoring instruments is critical to ensure maximum performance, reliability, accuracy and regulatory compliance.

Accreditation is a valuable risk-management tool. ECOTECH is NATA-accredited for continuous monitoring of ambient air, meteorological monitoring, blast monitoring, calibration services, as well as industrial emissions (CEMS) monitoring.

ECOTECH field staff are equipped with ECOTECH's own industry-leading Asset Management System (AMS) to manage site assets, test equipment and perform associated maintenance tasks in accordance with Australian Standards and NATA requirements.

All maintenance and calibration activities are logged and tracked in AMS, facilitating collaboration between client and ECOTECH in performing calibration, operation and maintenance in accordance with NATA requirements. Our AMS system provides that additional level of traceability.

ECOTECH's NATA-accredited facilities and services comply with the requirements of ISO/IEC 17025 and include testing laboratories, calibration laboratory and blast monitoring services

Search for "ECOTECH" at www.nata.com.au/accredited-facility to see the complete list of ECOTECH NATA accreditations.

01dB CALIBRATION, SERVICE & REPAIR CENTRE

The first, and only NATA-accredited 01dB noise and vibration Calibration, Service & Repair (CSR) centre in the world is located at the ECOTECH global headoffice in Melbourne, Australia.

The 01dB CSR centre was established to meet the growing needs of 01dB customers across Australasia. The centre received its full NATA-certification as an ISO 17025 compliant laboratory in February 2019.

The convenient Melbourne location significantly reduces lead times for the calibration, service and repair of 01dB instruments.



Three Trusted Global Names in Environmental Monitoring Unite

Together, ECOTECH and 01dB provide wholistic environmental monitoring solutions to customers around the world. The combined expertise of two forward-facing companies delivers precision, accuracy and real-time data reporting for all monitoring requirements.

ECOTECH: Environmental monitoring systems

Pioneers of innovative solutions in environmental monitoring for 40 years, ECOTECH is a global leader in the design, manufacture, operation and maintenance of air, water, gas, meteorology, blast, fine particulate and dust monitoring systems to internationally recognised standards.

01dB: Noise & vibration monitoring instruments

Experts in noise and vibration monitoring, 01dB helps smart cities; ground and air transportation networks; public works; industrial and construction sectors; wind power; and leisure industries comply with regulations and develop sustainable strategies.

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