



Invictus
Portable noise monitoring

CR:247 Invictus Portable Noise Monitor

Key Features

- High performance portable noise monitor
- Purpose designed for outdoor noise measurement applications
- Simultaneous measurement of all parameters
- 120dB measurement range in a single span
- Colour touch screen interface simplifies set up and operation
- Multi-frequency electrostatic calibration
- Full weather protection for the microphone & noise measurement system

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The CR:247 Invictus Portable Noise Monitor is a purpose designed environmental noise measurement instrument.

Using the very latest technology, the Invictus is simple to set up and deploy whilst providing a wide range of noise measurement parameters.

In-measurement noise event detection with audio recording, SMS, Email & Twitter alerts allows the Invictus to be the core of an effective noise measurement, monitoring and management system.

Integral to the Invictus system, the Noise-Hub² software allows data to be downloaded from the instrument, measurement reports created and data analysed.

Noise-Hub² can be installed onto a PC, Server or used as a web interface, allowing data access from any web browser on any device including tablets and smart phones.

The Invictus also supports weather measurements and outputs for video recording systems, allowing the unit to be used in a wide range of applications.

Applications

- Short/Medium Term Environmental Noise Monitoring
- Construction & Demolition Noise
- Airport Noise Management
- Wind Farm Noise Measurements
- Noise Compliance Monitoring

Features

- Colour touch screen interface simplifies set up and deployment
- Simultaneous measurement of all parameters
- Noise event detection with in-measurement audio recording, SMS, Email & Twitter alerts
- Live audio playback via the Noise-Hub² software
- IEC 61672-1:2002 Class 1 performance
- 120dB measurement range in a single span
- Full weather protection with dual-skinned windshield
- 32GB data storage as standard

Features

- Multi-frequency calibration with microphone performance verification
- Optional 1:3 Octave Bands from 6.3Hz to 20kHz with Tonal Noise Detection
- GPS location information stored with each measurement
- 3G, GPRS, Wi-Fi, Ethernet (LAN) & Radio Modem communications
- Option of weather measurements integrated with noise data
- Noise-Hub² software for PC, Server & Web
- Optional output stream for integration with video recording systems
- External power input for long term operation



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High performance in a simple package

The Invictus has been designed to provide the very highest levels of performance whilst being simple and straight forward to deploy.

Meeting the requirements of IEC 61672-1:2002 for a Class 1 instrument, the Invictus features the Cirrus Acoustic Fingerprint noise detection technology as well as a multi-frequency microphone calibration and performance verification system.

Simple configuration of the Invictus

The user interface to the Invictus is simple and straight forward.

A large colour touch screen gives access to the settings and configuration of the instrument as well as showing the current status of communications, calibration, battery level and other important data.

All of the measurement settings can be viewed and updated directly on the instrument allowing the Invictus to be used across a range of applications.

Noise measurements made simple

The Invictus has been designed from the ground up to be a portable outdoor noise monitor and with this in mind, the unit will measure and store all of the available noise functions automatically and simultaneously.

Deploying the Invictus is as simple as switching on and calibrating the unit. There's no risk of choosing the wrong setting or function and all of the data can be downloaded quickly to the Noise-Hub² software.

Noise event detection with the Invictus

As well as the overall noise measurement data, the Invictus uses an advanced system of rules and templates to detect specific noise events and to report these back to the user.

These templates can be as simple or as sophisticated as needed and are built on the unique Cirrus Acoustic Fingerprint technology.

When a template is triggered, the Invictus will store noise data for the source along with data from any other connected sensors.

At the same time, the instrument can trigger an audio recording with pre and post trigger options.

The quality of the audio recordings can be adjusted to provide either maximum fidelity, useful for later analysis, or maximum storage when the audio recordings will be used simply to identify the source.

An alert can be sent via SMS, Email or Twitter to any number of contacts to inform them that a noise event has occurred.

This can be used to great effect to inform site managers when construction noise is over preset limits and can help prevent noise complaints. The live noise data can then be viewed through a smart phone or tablet and immediate action taken.



At the heart of the Invictus

The Invictus noise monitor and the Noise-Hub² software package have been designed to work in partnership to provide a complete noise monitoring and reporting system.

This next-generation platform can be run on a single PC, on a server or accessed through a web interface, allowing measurement data to be downloaded, reviewed and reports created quickly and simply.

Expandable to meet your needs, now and in the future

Noise-Hub² can be expanded and upgraded with a range of modules which allow it to be used across a wide range of applications.

From the simplest installation with a single Invictus and a dedicated PC to a multi-user networked system with a number of noise monitors, Noise-Hub² can meet your needs.

Connect your Invictus to the cloud

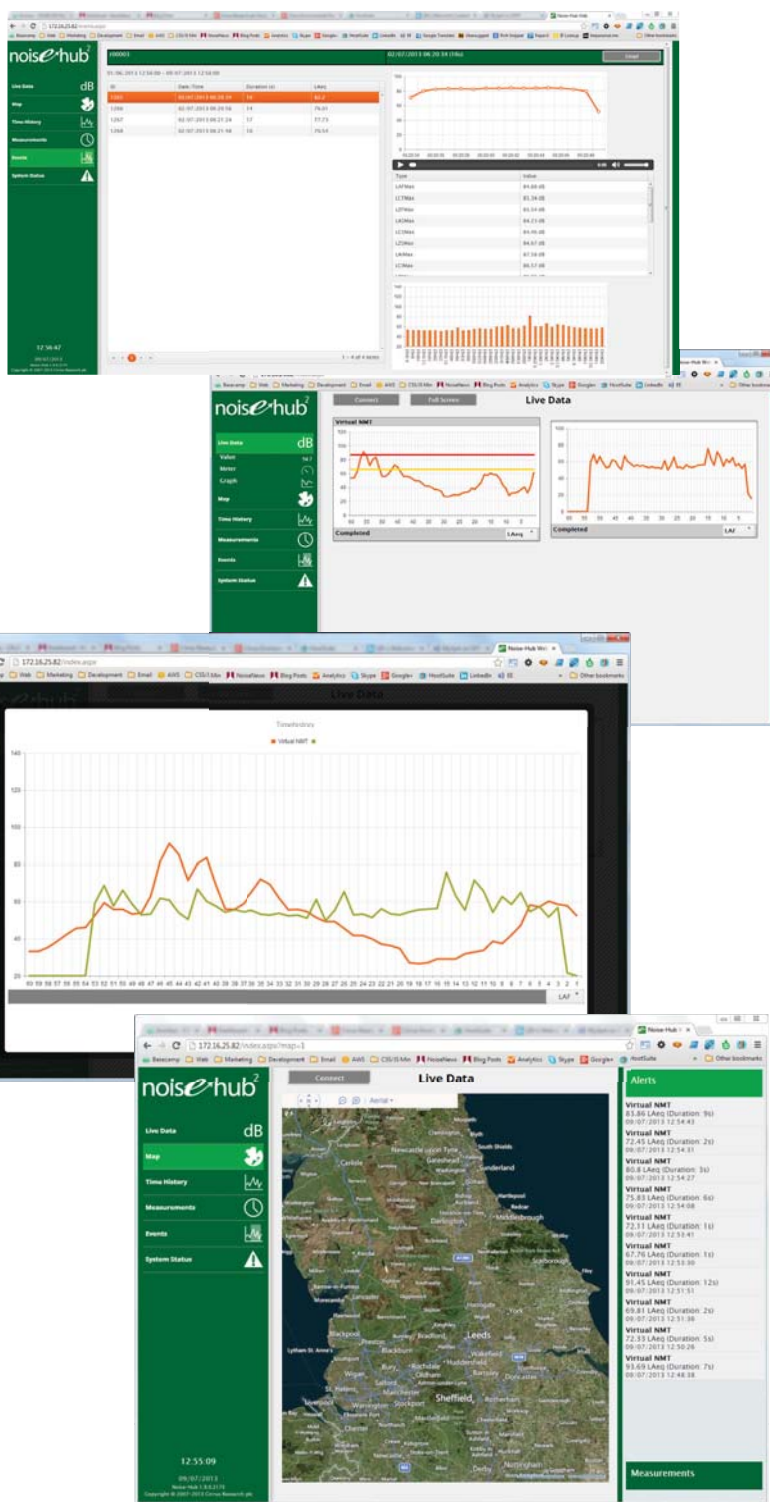
Cirrus Environmental offers the option of connecting directly to the Cirrus Cloud Server, removing the need for the user to install any software.

Measurement download can be scheduled along with calibration and reporting. Measurement reports can be emailed on demand or at regular intervals and are also available through the web interface.

The web interface allows live noise data to be viewed from any web-enabled smart phone, tablet or laptop. Historical data can be viewed and scheduled reports downloaded.

This option removes the need for any installation or software maintenance and offers a quick and effective solution for many customers. A complete support and maintenance package can also be offered with the hosted software option.

For more details of the hosted options, please contact Justin Barker at Cirrus Environmental.



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Preliminary Specification

Specifications	
Standards	IEC 61672-1:2002 Class 1 IEC 60651:2001 Type 1 I IEC 60804:2000 Type 1 ANSI S1.4 -1983 (R2006) ANSI S1.43 - 1997 (R2007) 1:3 Octave Band Filters to IEC 61260 & ANSI S1.11-2004
Measurement Range	20dB to 140dB RMS Single Range Noise Floor: <18dB(A)
Frequency Weightings	RMS & Peak : A, C, & Z Measured Simultaneously 1:3 Octave Bands: 6.3Hz to 20kHz (option)
Time Weightings	Fast, Slow & Impulse Measured Simultaneously
Display	High resolution 7" colour touch screen
Memory	32GB standard
Measurement Control	Repeating measurements with calendar based time & date control
Measurements	L_{XYMax} & Time History of L_{XYMax} L_{Aeq} , L_{Ceq} , L_{Zeq} , L_{CPeak} , L_{ZPeak} , L_{APeak} , L_{Aleq} Time History of L_{Aeq} , L_{Ceq} , L_{Zeq} , L_{CPeak} , L_{ZPeak} , L_{APeak} , L_{Aleq} Integrators 2 & 3: L_{AVG} , TWA, % Dose Time History of L_{AVG} Ln Values: 28 independent statistical values Audio recording during measurement 1:3 Octave Bands: Overall L_{eq} & L_{eq} Time History for each band 14 Ln values in each 1:3 Octave Band Tonal Noise Detection in 1:3 Octave Bands Time, date & duration of measurement where x=A, C, Z; y= F, S, I Other functions may be calculated by the Noise-Hub software and displayed on download.

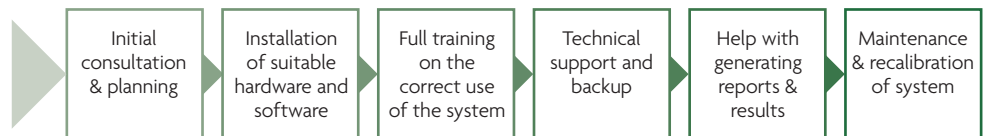
Specifications	
Time History Data Rates	10ms, 62.5ms, 125ms, 250ms, 1/2 sec, 1 sec, 2 sec
Weather Protection	Fully weather protected case Hydrophobically coated dual-skinned windshield
Noise Event Detection	Active noise event detection & storage using the Acoustic Fingerprint system.
Noise Event Detection Options	Noise measurement data storage Triggered audio recording SMS Alert Email Alert Twitter Alert
Audio Recording	Audio recordings can be triggered with the active noise detection templates.
Audio Recording Quality	Studio Quality: 96kHz/32bit Standard Quality: 16kHz/16Bit Compressed: 16kHz/16Bit Pre & Post Trigger options
Tonal Noise Detection	Tonal Noise Detection to ISO 996-2:2007 Simplified method (Annex D) and the Cirrus improved method with optional 1:3 octave band filters
Weather Measurement	Optional weather sensors Windspeed, wind direction, temperature, relative humidity, barometric pressure, rainfall
Calibration	Electrostatic calibration system with microphone performance verification
Size	
Weight	
Battery Life	Typically 7 days on internal power External power input for long term operation



ISO 9001:2008
FS 562109

All specifications are subject to change without notice.

Cirrus have 40 years experience in the design, manufacture and support of noise measurement equipment and have been responsible for many innovations during this period.



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