

Guardian2

Multi-Agent Monitoring Station

- Real-time particulate, noise and ground vibration (PPV)
- Simultaneous PM10, PM2.5 and PM1.0 monitoring
- Web-hosted data with secure, password protected login
- Optional VOC sensor measures to 6000ppm
- Optional, maintenance free windspeed & direction sensor
- Email and text alerts to specified recipients
- Manual or automatic reports
- IEC 61672-1 Class 1 compliant sound level meter
- Wall or pole mounted
- AC-powered (100-250VAC), solar or battery



Overview

Guardian2 is designed to help you remain compliant with site emission levels, using remote monitoring and reporting of noise, dust, vibration and VOCs. Powered by AC, solar or battery, the Guardian2 is ideal for any location.

Guardian2 is a web-based remote monitoring system for noise, particulates and ground vibration, either as single 'agents' or in multiple combinations. It is ideal for construction & demolition sites plus many more fence-line applications.

Where compliance with limits is required and good relationships with neighboring people and businesses are a must, Guardian2 can guarantee the smooth progress of your project or manufacturing operations.

Wind speed and direction sensor



Microphone protection system

Particulate inlet

Data antenna

VOC inlet

Particulate outlet

Power connection

Data Anywhere with www.casella247.com

The **mHUB** datalogger incorporates an electronic SIM which means that the system will search for the strongest cellular signal but in the event of a lack of connectivity, the mHUB will continue to log then push the stored data to the server when communication is re-established.

The Casella 24/7 Data Management System is accessible via a secure log-in, giving organisational administrators and nominated users access rights to data, reports and alerts.



The Guardian2 advanced mHub datalogger and web connectivity allows data to be continuously sent to the cloud. Alerts and status reports can be seamlessly delivered to your PC or mobile device.

Multiple Sensors	Plug and Play	Communication Options	Power Sources	FTP Settings
<p>Guardian2 can be equipped with multiple environmental sensors to suit your needs.</p> <p>The system is flexible to have any combination of noise, dust, vibration, VOC and wind sensors.</p>	<p>Integrated into a small, unobtrusive environmentally sealed housing, Guardian2 can be configured at the time of ordering for a variety of 'agents' depending upon the specific application or requirements.</p> <p>Installation couldn't be simpler; just bolt to a wall or mount on a pole, apply power and then within a few moments begin transmitting data using cellular connectivity to a secure server.</p>	<p>The Casella247 web platform based on cloud functionality ensures that the users get live updates from their Guardian2.</p> <p>Users can select to receive alerts via email, SMS, website or even choose to setup their own FTP site to receive live data.</p>	<p>Guardian2 takes into account various power requirements for sites.</p> <p>Hence users can choose between mains, battery and solar power options.</p>	<p>Casella 24/7 gives you an option and flexibility to transfer your Guardian2 data directly to your organisation's own website using FTP settings. This means that users don't need to rely on cloud hosting only.</p> <p>The data will be pushed to the user's website in order to be integrated with other larger and meaningful data sets.</p> <p>This functionality benefits all organisations and system integrators dealing with complex environmental systems and projects.</p>

Configure Reports	Alert Configuration	User Configuration
<ul style="list-style-type: none"> For single or multiple agents at once e.g. noise and dust Automatic reports can be set to report daily, weekly or monthly data, direct to your inbox Graphical or tabular reports 	<ul style="list-style-type: none"> Configure alerts by text or email Can be configured for any measured parameter Error alerts, e.g. for power loss 	<ul style="list-style-type: none"> Different levels of access can be configured to Casella247.com Specify who just receives reports, or administrator access to configure reports and see Guardian2 units Configure Guardian2 units on different sites remotely Report showing PM10, PM2.5 and PM1.0 dust levels

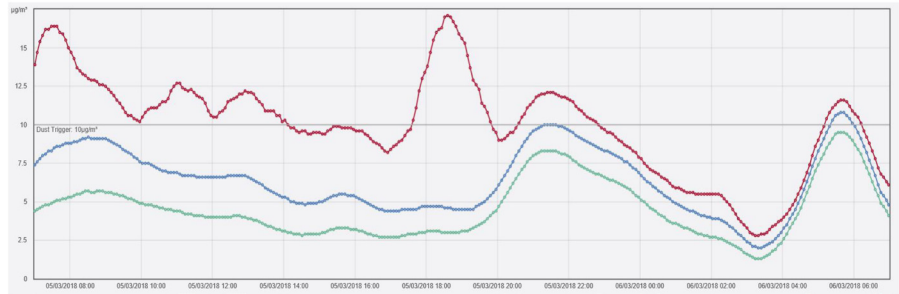
Reporting and alerts

Administrators can choose the number of users who have access to data and receive alerts while users themselves can create and edit reports and because there can be multiple sites and Guardians they can easily switch between them.

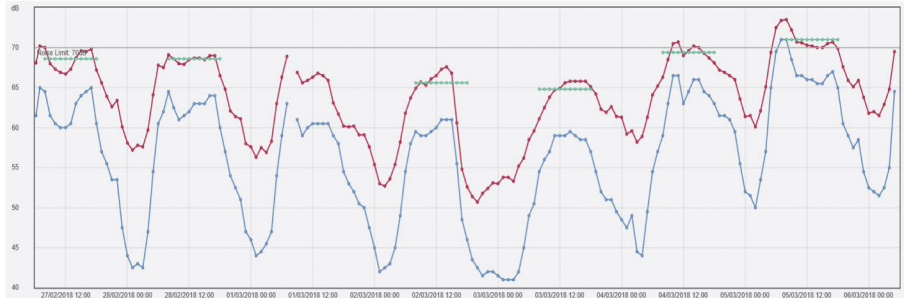
Reports can be created manually or automatically and can be sent by email to multiple recipients if required. Alerts can be generated when specified limits are exceeded as well as notification of power and communications outages should data not be received when expected by the system.

Action can then be taken to investigate the causes of these exceedances to head off potential complaints or citations as well as checking for integrity of the Guardian2 itself. Site limits can be added to graphs to show when values have been exceeded.

Report showing PM10, PM2.5 and PM1.0 levels



Report showing noise data over two weeks



Accessories

Guardian2 - Part Numbers

Part Number	Particulate (PM10 & PM2.5)	Noise	Vibration	Windspeed & Direction
208049D			●	●
208052D		●	●	
208054D		●		●
208057D		●		
208061D			●	
208063D		●	●	●
208170D	●	●	●	●
208171D	●	●		●
208172D	●		●	●
208173D	●			●
208174D	●	●	●	
208175D	●	●		
208176D	●			
208177D	●		●	

Optional Accessories	Part Number
Replacement windshield enclosure system	208041C
Windshield enclosure System extension kit (incl. 5m extension & bracket)	208104D
Spare 5m windshield extension cable	208083C
Replacement foam	208022C
Acoustic calibrator	CEL-120/1
VOC calibrator kit (gas not supplied)	208147A

Solar Power Parts	Part Number
Solar controller and battery enclosure*	208500D
Single solar panel array	208512D
Dual solar panel array	208511D
Triple solar panel array	208510D

For details of how many solar panels are required for a specific territory please visit the casella website. Solar panels come complete with mounts for scaffold poles.

For VOC Sensor Assembly simply add /VOC to the end of the part number above

Battery Power Parts	Part Number
Will power a Guardian2 for between 5-9 days depending on the configuration	
Battery enclosure*	208503D
Battery Backup Parts	Part Number
Battery will provide backup power in the event of mains failure	
AC power/Battery enclosure*	208504D

*Order battery separately

Battery	Part Number
12V leisure battery (130Ah)	B162

Noise	
Accuracy	Class 1 to IEC61672-1
Parameters	LAeq, LAMax, LAmin, LA10%, LA90%, 10 hour LAeq
Measurement range	20-140dB RMS
Calibration	Via optional acoustic calibrator
Particulate	
Sensitivity	1ug/m ³
Zero stability	+/-2ug/m ³
Size fractions	Simultaneous PM10, PM2.5 and PM1.0
Inlet	Heated to reduce moisture affecting measurements
Vibration	
Transducer type	Geophone outputting PPV and Hz data
Number of channels	3-axis
Frequency range	2-250 Hz
Measurement range	+/- 200 mm/s
Resolution	0.01 mm/s
Environmental rating	IP65
Wind Speed	
Accuracy	+/-2%
Resolution	0.01m/s
Threshold	0.01m/s
Wind Direction	
Accuracy	+/-3%
Resolution	0.1 degrees
Volatile Organic Compounds (VOC)	
Range	0-6000ppm
Detection limit	0.1ppm
T90 response time	3 seconds
Lamp	10.6eV
General	
Enclosure protection	IP65
Operating humidity	<5% to 100%
Logger	Built-in logger data transmission via GPRS
Mains power	100-250VAC
Mounting	Wall or pole mounted (50mm pole)
Dimension	400mm x 300mm x 150mm
Weight	<13kg