

**In This Issue:**

- Focus on... The Optimus range
- Photography competition
- 15 year warranty news
- 25% discount trade-in
- Forthcoming events



# the Measure

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Keeping you up-to-date with the world of **noise measurement**

Welcome  
to our first edition

We're delighted to welcome you to *The Measure*, the newsletter from Cirrus Research, created to help keep you up-to-date with the world of noise measurement as well as sharing information to help you in your work.

Future editions will include articles about:

- Forthcoming legislation and noise regulations
- Case studies – you and your company could share your experiences
- Interviews with Cirrus staff, clients and associates including 'A day in the life...'
- 'Ask Jim' – Got a 'burning question'? We've got the answer (hopefully!)
- Future events, seminars and workshops
- And much, much more.

In this issue we share with you our findings on the noise of fireworks – (proving work can be fun!) and introduce our 'Noise in Action' photography competition - see details overleaf.

We hope you enjoy reading *The Measure* and look forward to receiving your comments and questions. Equally we'd love to hear from you if you would like to participate in any of our features. Just send me an email.

Merry Christmas from us all at Cirrus and we wish you a successful and prosperous 2012.

**James Tingay, Editor**

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Follow us on twitter: [@cirrusresearch](https://twitter.com/cirrusresearch)



## Did you know...?

The word noise derives from the Latin word 'nausea' meaning sickness.



## Focus on... The Optimus range



## Experimenting with fireworks!

With the New Year on the horizon many people love to celebrate with fireworks – the bright colours illuminating the sky, showers of light forming magical shapes to a chorus of ooohs and aaaahs. But what about the noise they make? Those whooshes, pops and big bangs can be very noisy indeed. The Cirrus team set out to investigate.

Our four intrepid adventurers; James Tingay, Gill Cussons, Justin Barker and Nigel Palmer, braved the inclement weather on Bonfire Night this year armed only with their trusty Cirrus Optimus sound level meters to boldly go and measure the noise levels at their respective local firework displays.

Mingling with up to 500 spectators, the team were able to get a representative selection of

measurements of noise exposure covering a wide range of different fireworks.

In total nine measurements were obtained with durations of between 52 seconds and 19 minutes, from a single rocket to an entire display, using Optimus Red and Green sound level meters. These were pre-calibrated and used standard windshields to reduce the effects of wind on the microphone.

### How loud?

Gill captured the loudest measurement in terms of the C-Weighted Sound Pressure and the LAFmax (Maximum A-Weighted Fast Sound Level) over a 5 minute period.

Although none of the measurements had Peak(C) levels above the exposure limits value of 140dB(C), the top three were at or above the upper exposure action value of 135dB(C) Peak.

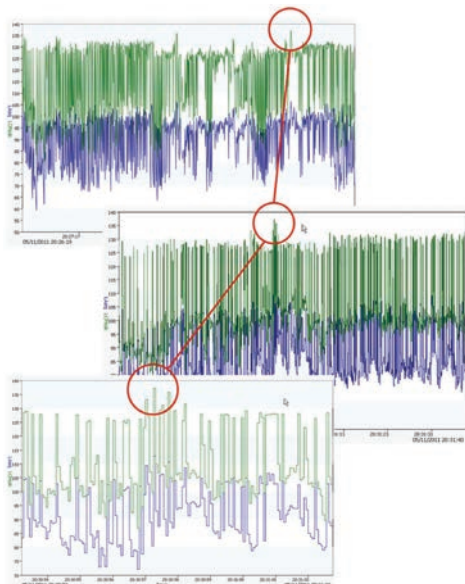
The Optimus Green's ability to record audio samples during a measurement proved very useful.  
Justin Barker

*Continued on page 2*

**Focus on... The Optimus range** *continued from page 1*

If this noise level had continued for an hour, the noise exposure for the spectators would have been at the upper exposure action value of 85dB(A) and the situation would have required noise control measures.

Much of the excitement from fireworks comes from the audible and physical impact of the explosions as the fireworks detonate. Measurement #1 had the highest LAFmax and LCPeak occurring at 20:30:57.25 precisely (or within a 1/16 of a second of that time!) enabling us to get some very detailed information from the sound level meter at that point.



The meters were set to record time history, or noise profile data at a rate of 1/16th second or 1/100 second with the 1:1 and 1:3 octave band information being stored at 1/16th second or 62.5ms resolution.

Digging into the detailed data using the NoiseTools software and by looking for the time at which the LCPeak was recording 137.2dB gives us the 1:1 and 1:3 octave band information.

The graph below highlights where the highest levels occurred in the measurement and by zooming in with the NoiseTools software, we could see the exact moment that the dB(C) Peak level got to 137.2dB.

**Audio recording**

The Optimus Green sound level meters used by Gill and Justin have the ability to record audio samples during a measurement. These can be triggered either manually or automatically using level and threshold triggers.

In this application, the audio recordings were started manually. They were then downloaded into the NoiseTools software program and listened to and analysed using the built-in tools.

**Full report**

For our full findings and data on this unscientific experiment visit our blog: <http://goo.gl/bwivX>

To find out more about the Optimus range call our friendly team on **0844 6640812** or visit our website [www.cirrusresearch.co.uk](http://www.cirrusresearch.co.uk)



**Have you heard...?**

**15 year warranty now available**

Buy any of our noise measurement equipment manufactured after **1 September 2011** and we will extend the standard two year warranty by a further **13 years** at no additional cost.

The warranty covers all faults on the instrument, as well as minor accidental damage, excluding the microphone, provided the instrument is routinely verified by Cirrus Research every year.

This extended warranty provides peace of mind that the equipment our customers purchase is reliable and will last the test of time.

Call us on **0844 6640812** to find out more.



**Get up to 25% discount when you trade-in your old equipment**



**Events in 2012**

**February 28th 2012**  
SICUR International Security Safety & Fire Exhibit, Madrid, Spain, Stand 4B41

**May 15th 2012**  
Safety and Health Expo 2012, NEC, Birmingham, UK

**June 18th 2012**  
AIHce 2012, Indianapolis, IN, USA, Stand 1044

**August 19th 2012**  
Internoise 2012, New York City Marriott Marquis, USA

Dig out your old noise measurement equipment and see what it could be worth against a new Optimus sound level meter, doseBadge noise dosimeter or Safety Officer's Noise Measurement kit.

You could get up to 25% trade-in discount (Terms & Conditions apply).

And don't forget that with recent legislation, you can't just throw old electronic equipment in the bin.

It needs to be disposed of properly and we can help you. Cirrus is a registered manufacturer under the WEEE Directive and so we have the facilities and procedures in place to dispose of your old equipment.

To find out more, call us on **0844 6640812** or email [sales@cirrusresearch.co.uk](mailto:sales@cirrusresearch.co.uk)

**WIN! WIN! WIN!**  
in the Cirrus 'Noise in Action' Photography Competition

Enter our photography competition and you could be the lucky winner of an Amazon voucher worth £150.

There are also 11 runners up prizes of £50 vouchers to be won plus all 12 winning photographs will feature in our 2013 charity calendar.

We're looking for interesting, unusual and imaginative images of 'Noise in Action' to feature in the calendar. This could be anything from an image of our products being used in obscure or picturesque places to a photograph creatively illustrating noise, noise measurement or the impact of noise.

For full details on how to enter including the competition rules please visit [www.noisephotocompetition.com](http://www.noisephotocompetition.com)

Closing date for entries is 31 August 2012.

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