www.ortec-online.com

ORTEC® News

Issue 8

As you may have noticed we decided to do things a little different with this edition by sending out the newsletter electronically. We hope you like it! If you would rather have the printed version - please ask, as they are still available.

This edition highlights a number of new products for use in applications ranging from fundamental research through to monitoring of radiological contamination in food. These new products include the latest addition to our DSPEC range of Digital Gamma Spectrometers now in its fourth generation. The Fukushima disaster in Japan resulted in a massive demand for radiological monitoring equipment, as well as providing a range of our existing equipment and systems to deal with the crisis we have also released two new turn-key systems ready for use "out -of-the-box" specifically designed for the monitoring of radioactivity in foodstuffs; FoodGuard-1 and FoodGuard-2.

Please enjoy the read and let us know what you think, your feedback is appreciated.

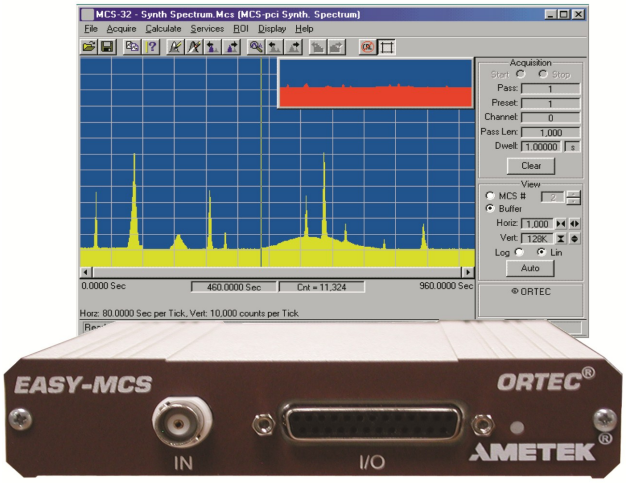
Inside this issue:

If you would like your details removed from our database, please send an email to: ortec.uksales@ametek.co.uk.

All requests will be completed within 5 working days of receipt.

NEW !!! USB MULTI CHANNEL SCALER

Multi channel Scaler (MCS) instruments record the counting rate of events as a function of time or act as multiple stop time spectrometers. They are used for a wide variety of applications, from phosphorescence lifetime spectrometry to mass spectrometers.



Ortec has supplied the popular MCS-PCI card and software for several years to address this need. However, computers with PCI slots are becoming harder to find and so the company has developed a new product called EASY-MCS with USB connectivity.

EASY-MCS comprises a small bench top instrument powered from a 12v supply, which is included, together with comprehensive operating, display and analysis software to run on an associated computer. The new instrument builds on the industry leading specifications offered by the MCS-PCI. For example dwell times can be selected from 100ns to 1,300 seconds per channel and the number of channels can range from 4 to over 65,000. Counting rates of up to 150MHz can be accommodated.

Many additional inputs and outputs can be connected into EASY-MCS via an optional fan out cable. This allows it to be used for a wide range of applications and experiments. For example the SCA input enables a single channel or range of channels to be selected; SCA 'Sweep Mode' allows the user to quickly select the relevant channels. Other useful inputs and outputs allow EASY-MCS scans to be either triggered by or start experiments; 'Ramp' outputs allow the instrument to be used for Mossbauer experiments.

For more details please download a data sheet from this link and why not call us for a demonstration?

http://www.ortec-online.com/download/EASY-MCS.pdf

NEW!! DSPEC-50 and DSPEC-502

DSPEC-50 salutes the 50th year in which ORTEC has delivered innovative and quality nuclear instrumentation to scientists in a broad range of applications world wide. The new DSPEC-50 is a landmark product which brings together our long design experience in digital spectrometers and the ongoing innovation skills of our developers.

Digital spectrometers are inherently more stable than the analog variety of years gone by. In introducing the DSPEC-50, ORTEC has launched an all-new digital instrument platform, enhanced with a number of unique features and modes of operation which have distinct benefits in real-world applications. The 'retro' look front panel, which incorporates a built-in display is a reminder of earlier times in the evolution of multichannel analyzers, but inside the DSPEC-50 is packed full of the latest digital signal processing technology and quality design.

The DSPEC-50 is a single input instrument while the DSPEC-502 provides a dual input capacity. Detectors can be connected directly to the instrument using the internal HV output for detector biasing or *alternatively* the DSPEC-50 is fully compatible with DIM or SMART modules providing the added benefits of those units. Unlike the other DSPEC units in the current line up which use switch mode supplies to power the instrument, a linear internal power supply is integrated into the DSPEC-50. This provides the lowest possible electrical noise input power. For communications both real TCP/IP or USB 2.0 are included.

The large colour display of the DSPEC-50 is used in the initial set-up of the Ethernet communications. The status displays can then be used to provide several standard display views as shown.. 'Gauges', 'Big numbers', 'Chart' and 'Spectrum'. The ability to display a "slide show" of different status views means that at a glance, a user can see that all is well, even when away from the controlling PC. A live spectral display with real time calculation of activities is a unique feature offering visual assurance that all is well. The display can also be customised to show company logos or detector identification image files.

The DSPEC-50 has been designed to incorporate all the very latest digital signal processing technologies available from ORTEC including:

Zero Dead Time (ZDT) correction improves results significantly over the traditional 'extended-live-time clock' method in situations where the input count ranges changes significantly while the acquisition is in progress.

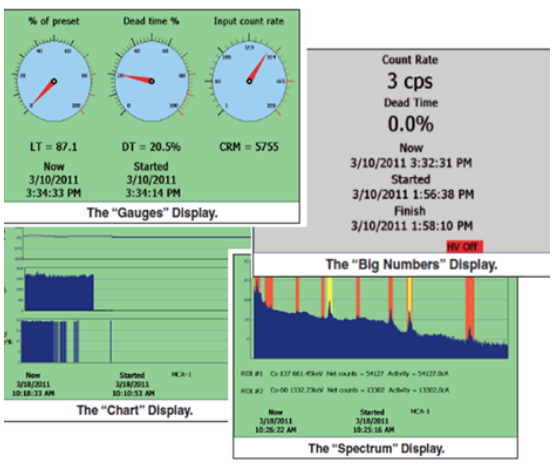
Enhanced Throughput (ETP) mode allows for counting at ultra-high input count rates.

Low Frequency Rejector (LFR) digital filter reduces effects of microphonics, groundloops and other sources of low frequency noise.

Resolution Enhancer corrects for resolution degradation due to charge trapping defects in the Germanium detector.

List mode where the spectrometer stores both a time stamp plus the pulse amplitude or every pulse.

Optimize for completely automatic set up of pole zero adjustment, baseline restore and digital filter flat top tilt.



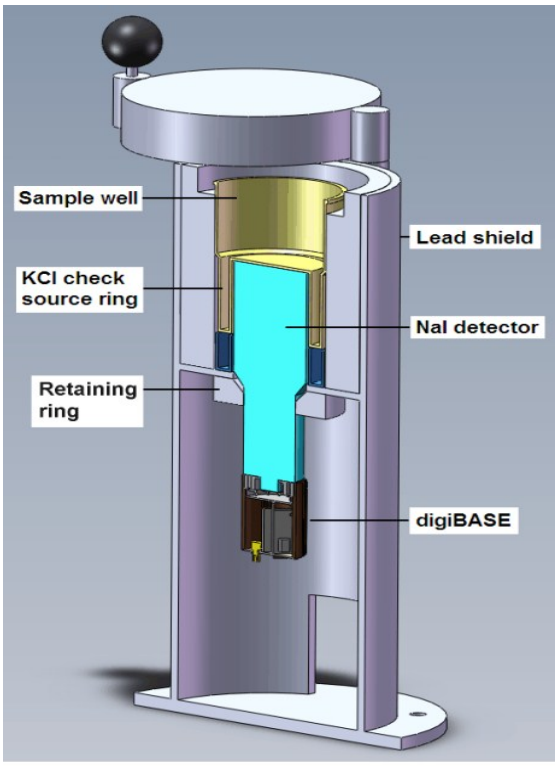
For more information on some of the digital signal processing techniques incorporated in the DSPEC-50 see http://www.ortec-online.com/download/Improved-Performance-Germanium-Detector-Gamma-Spectrometers-based-Digital-Signal-Processing.pdf

FOODGUARD SYSTEMS HELP WITH FOOD SAFETY

The recent nuclear accident at Fukushima in Japan is considered to be the second largest after Chernobyl. Reactor meltdown and hydrogen explosions led to large releases of radioactive iodine and caesium and there have been concerns over the safety of food grown in areas as far as 360 km from the plant.

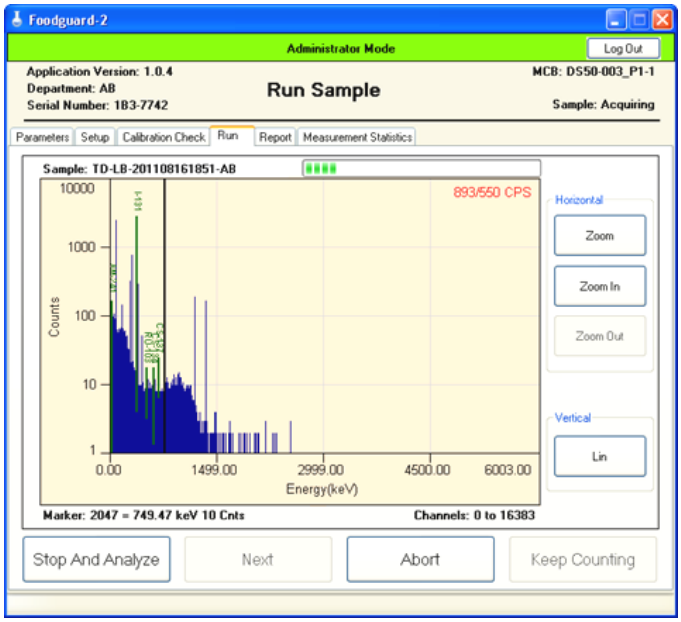
ORTEC has responded to the resulting increase in demand for food monitoring equipment by developing two radionuclide assay systems, FoodGuard 1 and 2, which are designed to work straight out of the box. They have simple to use interfaces for quick data entry; administrator and operator modes, plus clear results and reports. FoodGuard-1 is an easy setup, NaI based system designed for fast screening. FoodGuard-2 is an HPGe (high purity germanium) system with lower MDA levels, advanced reporting and customisable nuclide libraries.

At the Heart of FoodGuard-1 is a 3x3" NaI detector and PMT connected to Ortec's popular digiBASE photmultiplier tube base. The digiBASE combines detector HV, preamplifier, amplifier and MCA functions into a small USB connected device. Signal processing in the digiBASE is completely digital, meaning that it is less affected by the drift which can compromise results from similar systems. These components are housed, together with a KCl check source ring inside a lead shield. The system is completed with six 1L Marinelli beakers, operating software, and calibration files. FoodGuard-1 can be purchased 'ready to go', in which case all software and files are pre-loaded onto a supplied computer and printer, then tested together at the ORTEC factory prior to shipment. Alternatively, there is an option to source the computer and printer separately.



FOODGUARD SYSTEMS HELP WITH FOOD SAFETY

FoodGuard-1 software has been designed to move users from setup to results as fast as possible. It is aimed at both the scientist and layman, with a clear and simple user interface to reduce human error. There are supervisor and operator modes plus multiple reporting options to review results. The software screens for the most common radio-nuclides expected from nuclear power plant events; Iodine 131, Ruthenium 103, Caesium 134 &137.

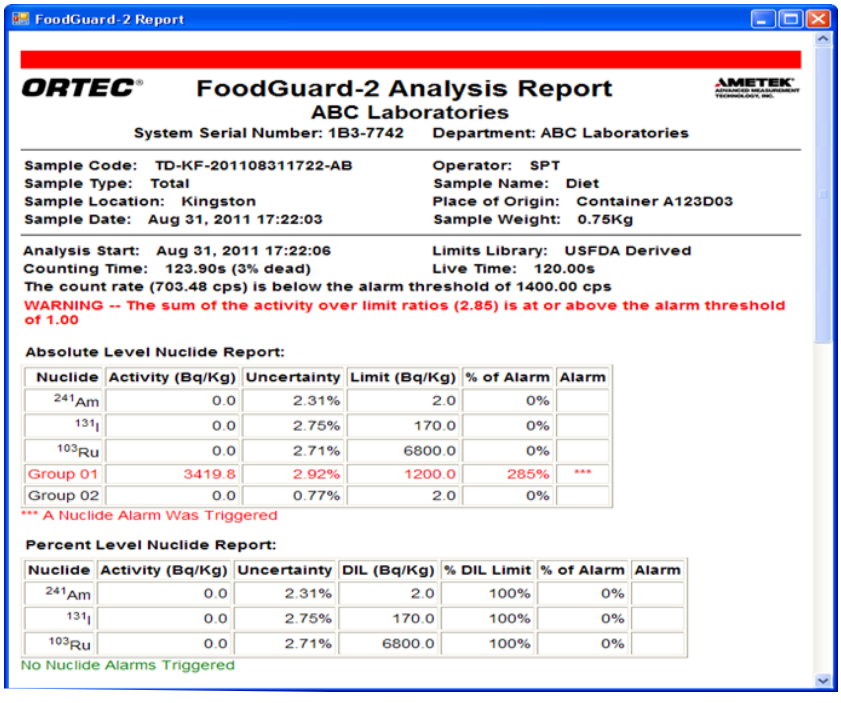


Supervisor mode, which is password protected, includes a calibration check wizard and simple entry boxes to define sample types, sample names and alarms based on both absolute levels and percentages. Operator mode allows easy data entry through drop down menus and provides audible or visual feedback of exceeded alarms after analysis. Multiple reporting options are available for different views of the data.

FoodGuard-1 can achieve an MDA of 14 Bq/L with a 30 minute count for it's intended use, food analysis. It is also likely to find an application in other areas, such as counting radon filters, test swipes, water samples and materials monitoring.

ORTEC's second new monitoring system, FoodGuard-2, is based around a high resolution HPGe detector, to achieve lower MDA levels in a shorter count time. Detector options range from 20 to 60 % relative efficiency, and can be electrically or liquid nitrogen cooled. The remaining components of the system are MCA, lead shield, FoodGuard-2 software, six 2L Marinelli beakers and a 2L KCl checksource.

The user interface is structured in a similar way to FoodGuard-1, with password protected supervisor and operator modes. FoodGuard-2 includes multiple limit libraries derived from published government limits for the UK and other jurisdictions. In the supervisor mode, users can edit these libraries or create new ones, adding nuclides and setting alarm levels.



FoodGuard-2 Report

ORTEC FoodGuard-2 Analysis Report

ABC Laboratories

System Serial Number: 1B3-7742 Department: ABC Laboratories

Sample Code: TD-KF-201108311722-AB
Sample Type: Total
Sample Location: Kingston
Sample Date: Aug 31, 2011 17:22:03
Operator: SPT
Sample Name: Diet
Place of Origin: Container A123D03
Sample Weight: 0.75Kg

Analysis Start: Aug 31, 2011 17:22:06
Counting Time: 123.90s (3% dead)
Limits Library: USFDA Derived
Live Time: 120.00s

The count rate (703.48 cps) is below the alarm threshold of 1400.00 cps

WARNING -- The sum of the activity over limit ratios (2.85) is at or above the alarm threshold of 1.00

Absolute Level Nuclide Report:

Nuclide	Activity (Bq/Kg)	Uncertainty	Limit (Bq/Kg)	% of Alarm	Alarm
^{241}Am	0.0	2.31%	2.0	0%	
^{131}I	0.0	2.75%	170.0	0%	
^{103}Ru	0.0	2.71%	6800.0	0%	
Group 01	3419.8	2.92%	1200.0	285%	***
Group 02	0.0	0.77%	2.0	0%	

*** A Nuclide Alarm Was Triggered

Percent Level Nuclide Report:

Nuclide	Activity (Bq/Kg)	Uncertainty	DIL (Bq/Kg)	% DIL Limit	% of Alarm	Alarm
^{241}Am	0.0	2.31%	2.0	100%	0%	
^{131}I	0.0	2.75%	170.0	100%	0%	
^{103}Ru	0.0	2.71%	6800.0	100%	0%	

No Nuclide Alarms Triggered

The operator mode allows samples to be run and results collected with maximum simplicity. The user selects from pre-populated dropdown menus to reduce errors and can select from multiple calibration files to account for different geometries. Immediate feedback is given during a run through a live spectrum display. Reports are generated in HTML and PDF formats for ease of data sharing and archiving. Reports can be quickly customised to include company logos and additional customer information. Please use this link to download the FoodGuard data sheets and also see other equipment designed for nuclear incident monitoring:

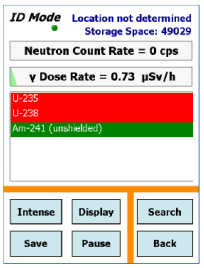
http://www.ortec-online.com/Solutions/Food-Water-Environmental-Monitoring.aspx

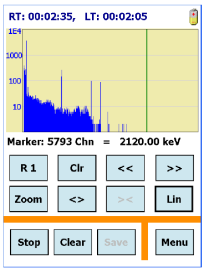
www.ortec-online.com

HIGH PERFORMANCE DATA PROCESSOR

We are pleased to announce yet another upgrade to our highly successful Trans-Spec-DX-100 Portable Gamma Spectroscopy System and the Detective-DX/EX-100 Portable Nuclide Identifiers.

Our new -100T models now incorporate a higher performance data processor which is now enclosed within a rugged watertight housing. Key features of the new data processor include





- Marvel 806 MHz XScale processor

- High visibility sunlight readable touch sensitive colour TFT display

- Integrated GPS with receiver mounted on the instrument chassis

- Secure Digital (SD) card slot

- Compact Flash (CF) card slot

- Single USB port for both data transfer and remote operation

- Wi-Fi 802.11 enabled for remote wireless operation using optional software

With the addition of the new data processor the Detective-DX/EX-100T models can now be directly interfaced to our Detective-Mobile Nuclide Search and Identification system. For more details on the Detective-Mobile system see http://www.ortec-online.com/Solutions/homeland-security.aspx.

For the full specifications for the Detective-DX/EX-100T please refer to http://www.ortec-online.com/Solutions/hand-held-radioisotope-identifiers.aspx and for the Trans-Spec-DX-100T please refer to http://www.ortec-online.com/Solutions/in-situ-gamma-spectroscopy.aspx

The UK Sales Team

Trevor Hatt
UK Sales Manager
Tel: 0118 936 1224
Mobile: 07818 097234
Email: trevor.hatt@ametek.co.uk

Nigel Rimmer
Sales Engineer, North UK
Tel: 01244 677746
Mobile: 07971 063709
Email: nigel.rimmer@ametek.co.uk

Shane Toal,
Sales Engineer, South UK & Ireland
Tel: 0118 936 1239
Mobile: 07818 097235
Email: shane.toal@ametek.co.uk

Shilpa Soni
Sales & Marketing Coordinator
Tel: 0118 936 1223
Email: shilpa.soni@ametek.co.uk

AMETEK
Advanced Measurement Technology
Spectrum House
1 Millars Business Centre
Fishponds Close
Wokingham
RG41 2TZ

Tel: 0118 936 1210
Fax: 0118 936 1211
E-mail: ortec.uksales@ametek.co.uk