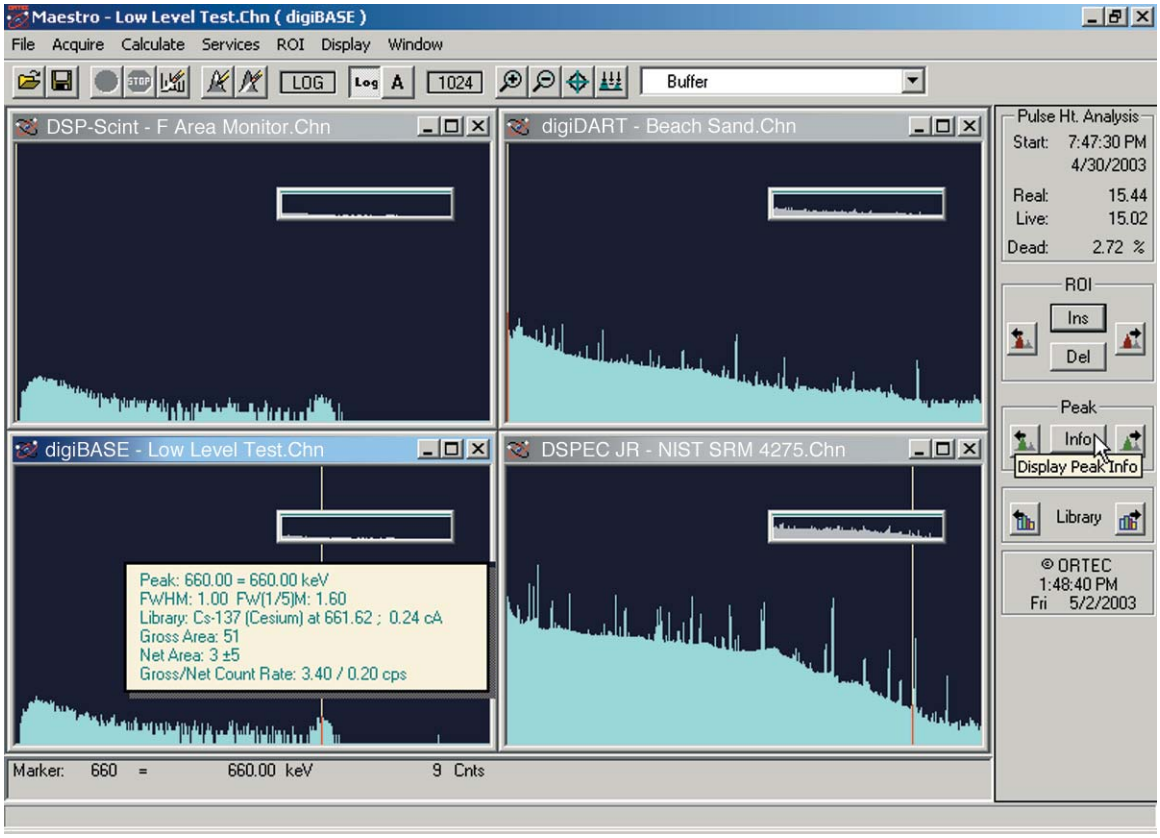
ORTEC®

MAESTRO®-32 V6

MCA Emulation Software

Powerful MCA Emulation Software



- MCA Emulation for Gamma and Alpha Spectroscopy
- Multi-Detector Interface
- Automation of acquisitions with "Job Streaming"
- True Windows™ program (2000/XP compatible)
- Seamless networking for remote detector systems
- Secure data with personal password protection
- Advanced peak analysis features
- Complete interactive control of all MCB hardware features
- Simplify hardware optimization with the virtual oscilloscope

The World's Most Popular MCA Emulator

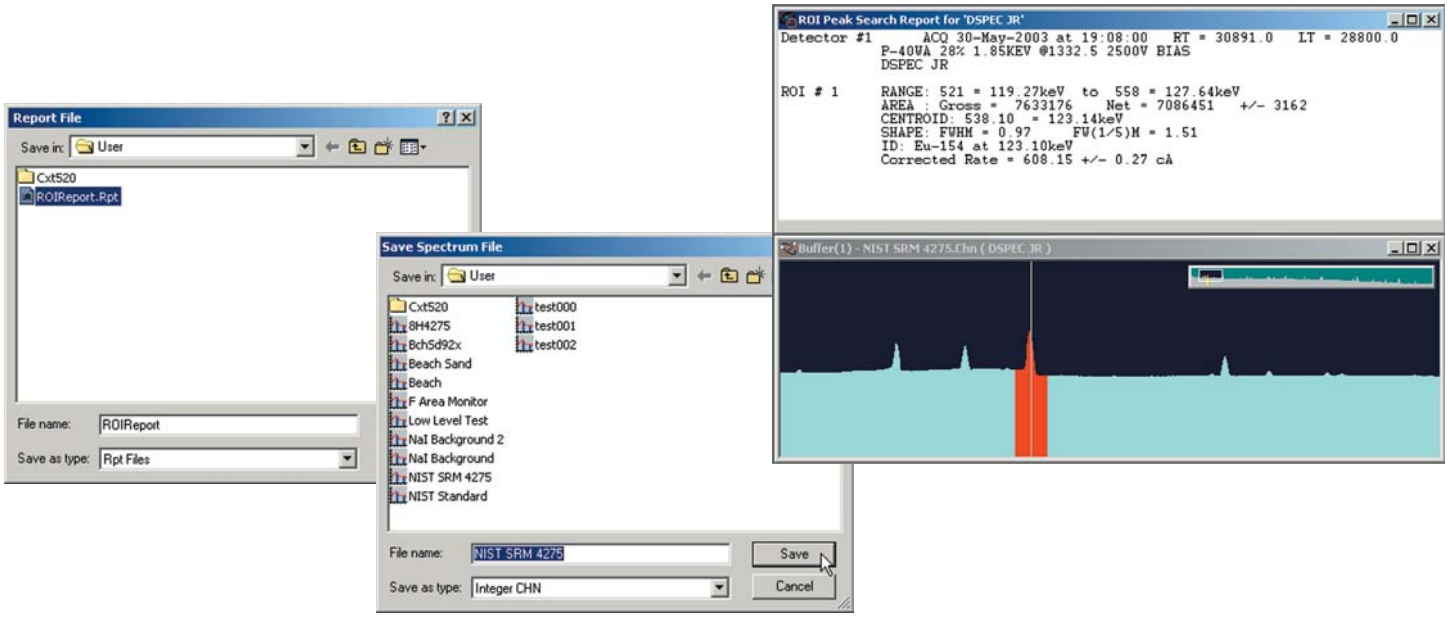
MAESTRO-32 MCA Emulator. . .

Welcome to the ORTEC Advantage

ORTEC continues to bring you the finest in acquisition, analysis and reporting software with the latest release of MAESTRO-32 Version 6. This latest release extends the capability of the world's most popular MCA emulation software to provide an even more advanced tool to simplify and reduce effort in your counting laboratory. This version of MAESTRO-32 focuses on enhancing the user interaction through the new Multi-Detector Interface and new library editing tools designed to simplify and enhance your productivity with spectral acquisition, basic analysis and reporting. The new features will enable you to Start/Stop and monitor the acquisition of single or multiple detectors simultaneously, improving the overall performance of your counting laboratory. The new library editor in MAESTRO-32 is now compatible with GammaVision-32, ORTEC's world-class high resolution gamma spectroscopy acquisition, analysis, and reporting software, making integration or upgrading seamless and simple. MAESTRO-32 — the world's most popular MCA emulation software just got better!

PC-Based MCA Emulation Your Way

The state-of-the-art for computing, networking, and instrumentation in the nuclear counting lab environment is undoubtedly the personal computer (PC). Whether you are a research and teaching laboratory, high-productivity commercial organization, advanced government facility, or nuclear power station, the PC, combined with the Windows operating system, is the most cost-effective combination for managing your counting, analysis, and data management processes. Just as the PC has become the standard for cost-effective counting laboratory operations, ORTEC maintains leadership in the development of advanced, PC-based, economical software for nuclear counting laboratories. By adopting the Windows platform early in the development of PCs, ORTEC established this leadership position and continues to extend capabilities that are offered through the Windows environment.



ORTEC — World Leader in PC-Based Software Solutions for Nuclear Measurements

MAESTRO®-32 V6
MCA Emulation Software

MAESTRO-32 Program Description

The PC Advantage

MAESTRO-32 V6 is an advanced, easy-to-use MCA Emulator for use with all ORTEC Multi-Channel Buffer (MCB) products. MAESTRO-32 is designed to fit precisely into your working environment and processes. As a member of ORTEC's family of MCA Emulators, MAESTRO-32 continues the traditions of advanced user interface, upward compatibility for hardware and data files, and robust design. MAESTRO-32 takes full advantage of the Windows 2000/XP Professional operating systems, dialog protocols using the latest Windows standards, and on-line and context-sensitive help. MAESTRO-32 uses the common Windows Explorer dialogs for importing and exporting files. If you know how to use Windows to manage files, learning to use MAESTRO-32 is a snap. No cryptic command line arguments to learn and remember, no advanced training or programming skills are required — with MAESTRO-32, it's point and click.

Networking Made Simple

MAESTRO-32 is a *CONNECTIONS-32* product, providing industry-leading advanced connectivity features within the Windows Network environment. Meaning you can control any networked ORTEC instrument (and instruments from other manufacturers) from a single PC over your existing ethernet. It's just that simple!

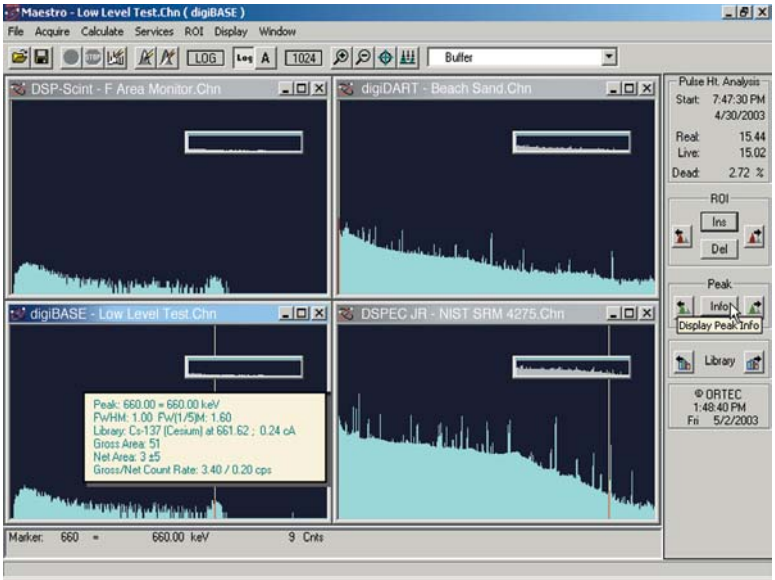
Simple, Complete, Networking Made Easy. . .

. . . Point and Click — It's a snap with MAESTRO-32!

New Advanced Features

Multiple Detector Interface (MDI)

With the new MAESTRO-32, your entire gamma spectroscopy laboratory can be visible within the MAESTRO-32 program interface. The new Mutiple Detector Interface in MAESTRO-32 V6 allows viewing up to 8 Detector and 8 Buffer windows simultaneously for a total of 16 interactive windows. Controlling multiple detectors, visually comparing spectra, and viewing multiple MCB properties is now easier than ever! Up to 250 detectors can be connected to MAESTRO-32.



Simple Simultaneous Acquisition

The new interface not only allows viewing and comparing of spectrum windows, but also for maximizing sample throughput in your lab, you can begin acquisitions of multiple samples or select one detector at a time. Synchronizing data acquisition on multiple detectors simultaneously is now a snap! Acquisition options allow for automatic acquisition for a group or single detector. The analyst can be prompted for acquisition options when acquisition is stopped and started, or the preferred option can be selected. The new features are sure to improve the performance of your lab. . . and FAST!

NOTE: A Multichannel Buffer or MCB is ORTEC terminology for an autonomous acquisition device, containing at least one ADC, histogramming memory, and a computer interface. A wide range of MCBs is available from ORTEC, including the industry-leading DSPEC jr®, digiBASE, microBASE, digiDART, DSPEC-Plus®, DSPEC®, and OCTÊTE® Plus, which are entirely integrated, computer-controlled, gamma- or alpha-spectroscopy systems.

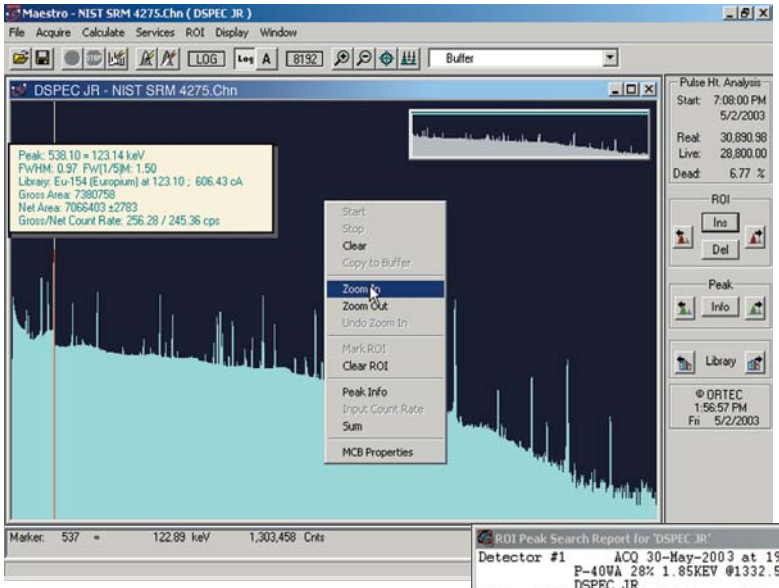
Time Tested and True

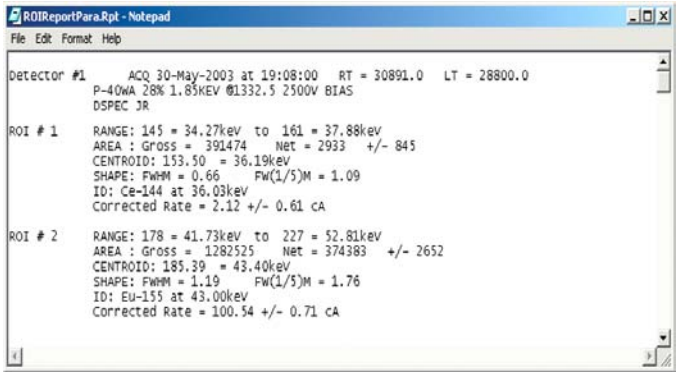
MAESTRO-32 is the total 32-bit solution for data acquisition, spectrum display, analysis, and MCB control in the personal computer environment. It provides independent support for multiple detectors, qualitative analysis functions, extensive networking abilities, interactive graphical user interface (GUI), and unsurpassed "JOB" capabilities. In addition to viewing the live spectral data in the acquisition hardware, or MCB, spectra from disk may be displayed in PC memory or “buffer”, allowing spectrum viewing and analysis to be done without disrupting data collection.

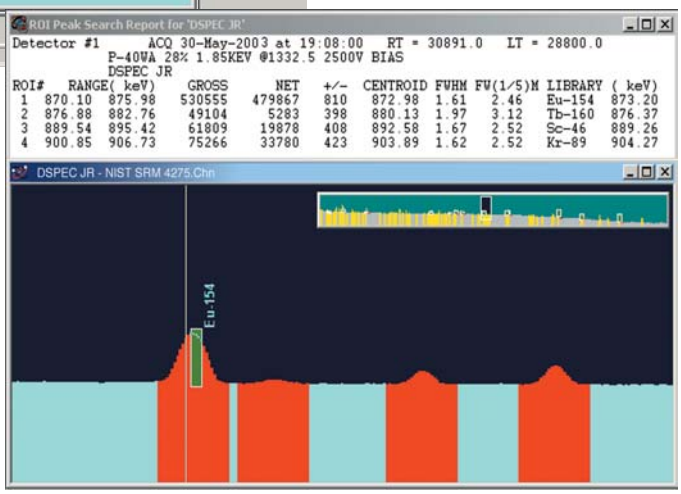
Informative

A complete, informative display of the spectrum, plus other information, such as details of the calculation is provided. Peak ROIs are marked quickly with the mouse or keyboard using familiar Windows mouse and keyboard commands. Display colors and modes may be customized to make the spectrum easy to see in any environment or display type. With built-in semiquantitative analysis, reports of peak area, centroid energy, peak count rate, and nuclide activity are easily produced.

MAESTRO-32 makes full use of the Windows interactive GUI to provide access to all functions and the most used functions are duplicated with hot keys and screen buttons. Multiple acquisitions and spectrum manipulation can be controlled for one or many detectors from a single Windows application.



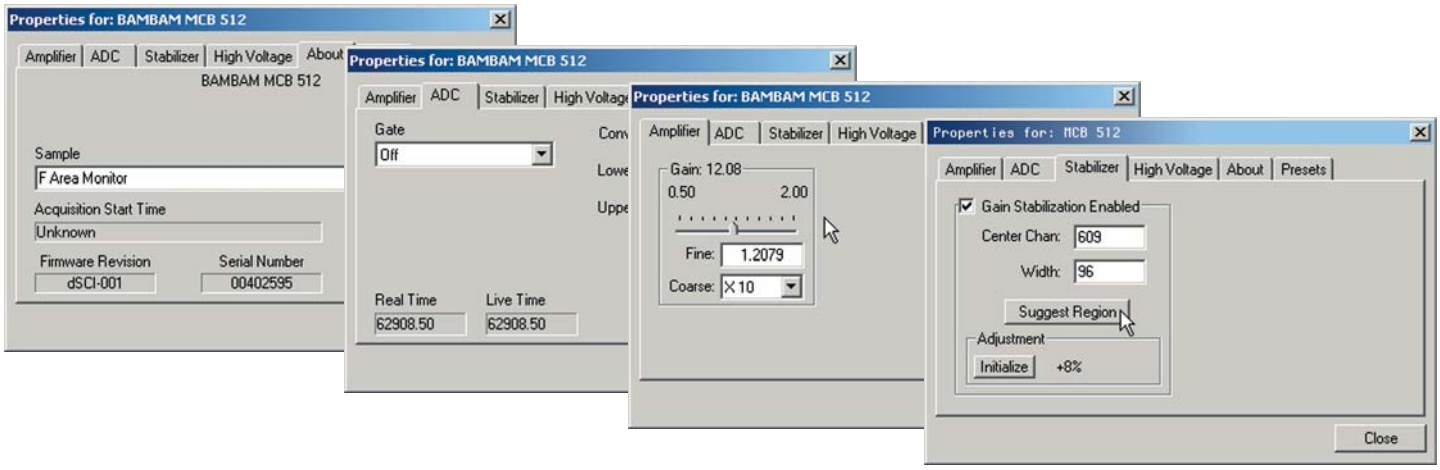




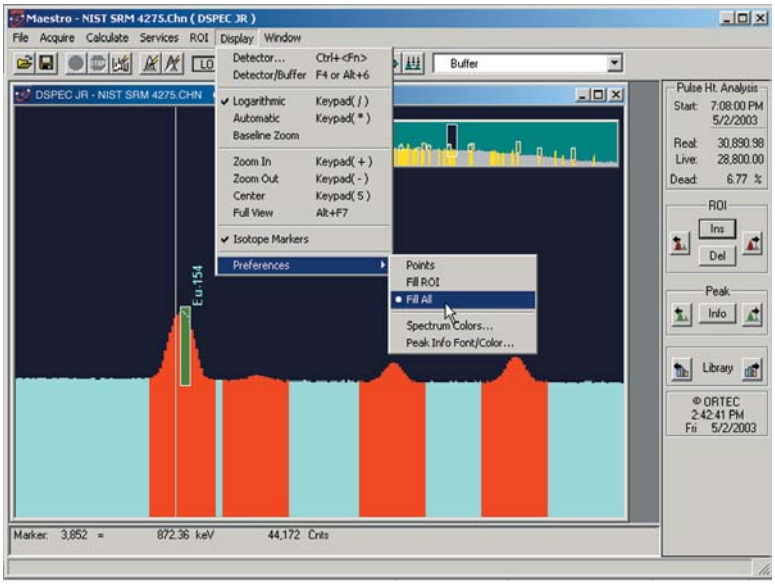
MAESTRO®-32 V6
MCA Emulation Software

Comprehensive

MAESTRO-32 supports the full range of ORTEC MCB hardware covering every application. All of the MCBs use the same operator interface, even over a LAN. The program knows which MCB is selected and presents the appropriate dialog for its unique features. All of the advanced controls, such as amplifier gain, pole zero, stabilizers, high voltage on/off, and sample changer control can be operated from the PC even over a network to any remote MCB on the network.

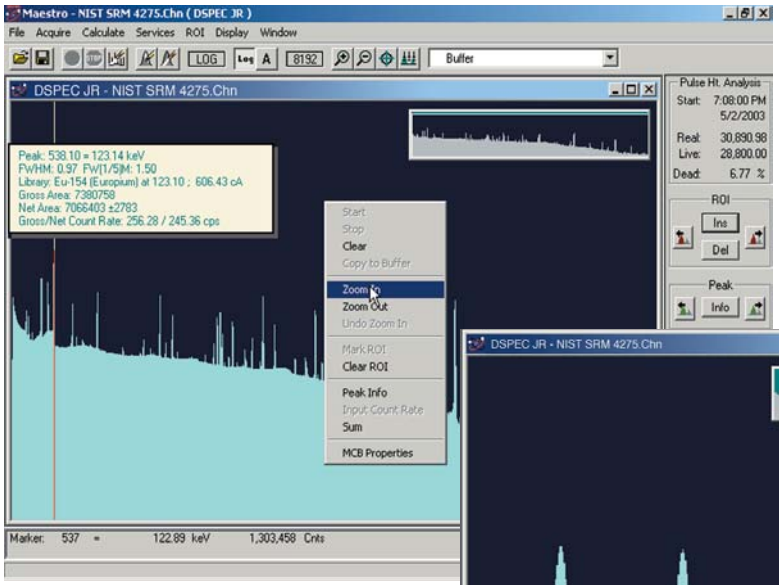


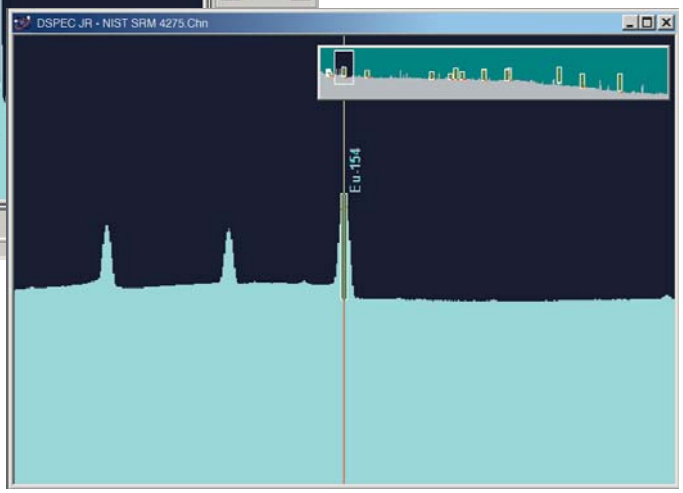
Display and User-Interface Features



- Microsoft Windows GUI for control and spectrum manipulation using the mouse or keyboard
- Multi-detector display and control
- Up to 32k channels in full display and zoomed window down to 32 channels
- Single key or mouse button for:
  - Setting/deleting of ROIs
  - Indexing to next ROI
  - Indexing to next peak
  - Indexing to next library energy
- Logarithmic and autoscaling-linear vertical display
- True live display on any mix of MCBs using dual port memory, PC printer port, direct Ethernet, or USB interfaces
- Identical operation for local MCBs and remote MCBs

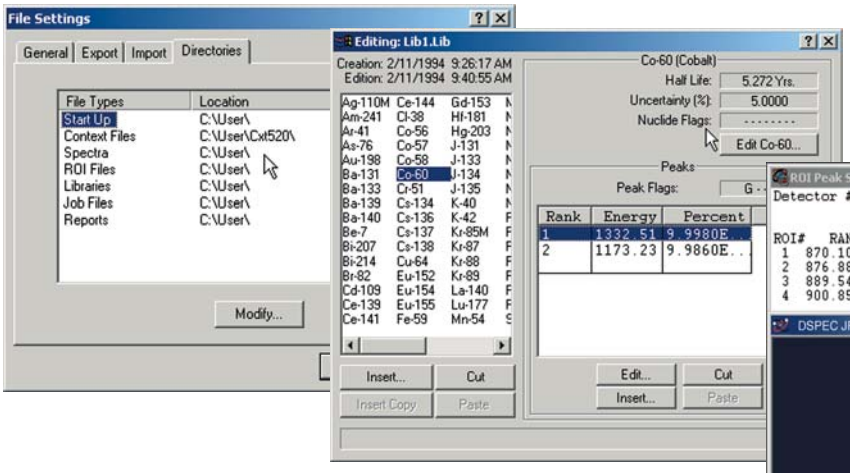
Display and detector control are integrated, providing an easy-to-use human interface. The most commonly used functions have been implemented as "hot keys" or buttons. This allows the commonly used functions to be accessed directly without going through the menus and taking up display space. These "hot keys" are the same as in previous versions of MAESTRO — making upgrading easy.



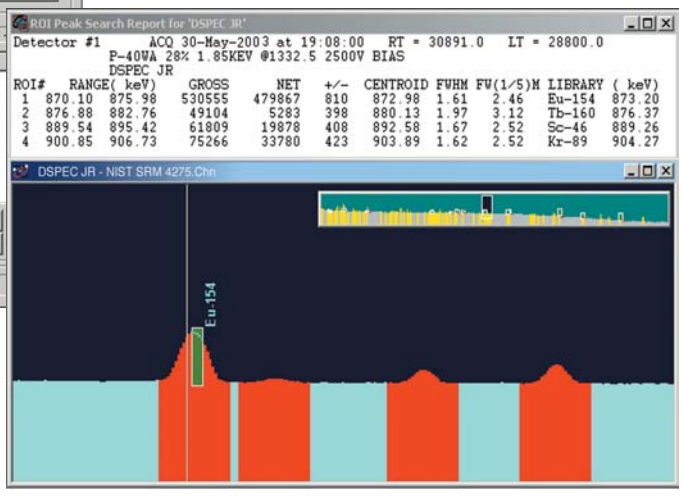


Convenient

Both the full spectrum and the expanded (zoomed) spectrum windows are shown at the same time. The expanded window region is highlighted in the full window and the expanded region can be selected by clicking on that part of the full window. The ROIs are shown in both views. The full display window can be sized independently of the expanded window. Comprehensive display manipulation is provided in the expanded spectrum window. Included are spectrum expansion, compare, ROIs, peak FWHM and area; one-button indexing to ROIs, peaks, and library energies; log display and vertical auto-scaling.



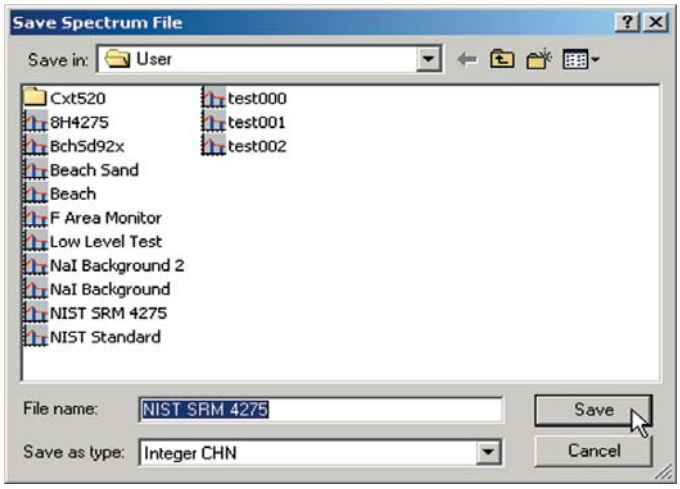
Spectral Analysis

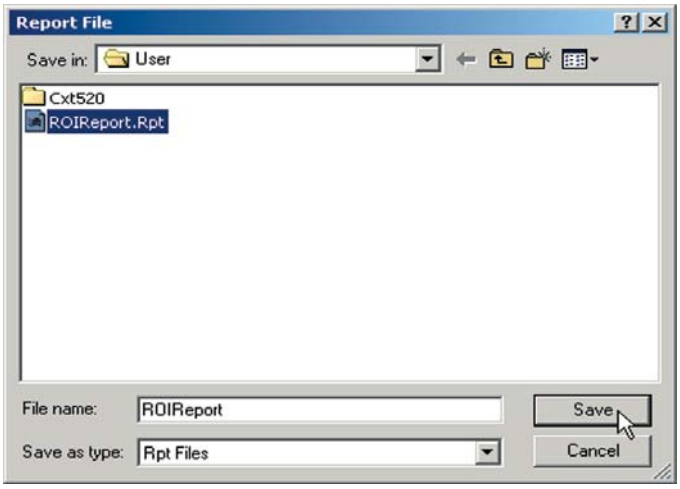


Creating Regions of interest in MAESTRO-32 is intuitive and simple. Just click and drag accross any region of the spectrum and MAESTRO-32 creates a region with an easy-to-use rubber rectangle. You may create as many regions as you like and save them to a template file for a convenient recall to another spectrum. Use the same set of regions easily for repetitive measurements. If you are more comfortable with the keyboard than the mouse, place the cursor on a peak in the spectrum and use the Insert key. MAESTRO-32 automatically creates a region for you! You may also use the arrow keys to create, adjust, modify, or remove regions. MAESTRO-32 allows you to manage the spectrum your way...right away...and its simple and convenient!

File Management

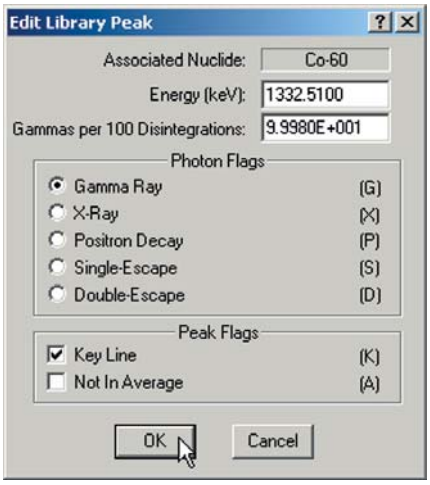
Saving and managing spectra and results is easy with MAESTRO-32. Any number of spectra may be saved to disk. When a spectrum is recalled, the Sample Description is shown on the recall dialog for easy identification. There are two file formats that are supported directly by MAESTRO-32 (*.CHN and *.SPC). The *.CHN file format offers storage and direct retrieval capability for basic MCA emulation. Stored information and data include Energy Calibration, Sample Description, MCA Detector Identification, Aquisition Start Time, Real Time, Live Time, Spectral Channel Length, and more. Not only can you use the MCA emulation file format, but MAESTRO-32 also supports the ORTEC *.SPC file format that contains these parameters and a more extensive list of analysis parameters for high-purity germanium and sodium iodide analyses, such as Library Information, Decay Correction Date and Time, Uncertainties, and much more. Add optional ORTEC DataMaster software and read any spectrum file format. DataMaster is a powerful spectrum conversion utility that allows superior flexibility in converting between a variety of spectrum formats for use with MAESTRO-32, GammaVision-32 and other spectral acquisition and analysis software products. In addition, the *.CHN and *.SPC file formats allow you to extract data directly using your own programs with the optional A12-B32 Programmer's Toolkit.





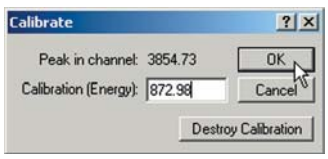
Advanced Features

- Mariscotti fast peak search, with nuclide identification by library lookup
- Activity, net and gross areas (with uncertainty), centroid and shape for peaks
- Control of advanced hardware functions of all MCBs
- Data protection with "detector locking" by name, not by workstation
- Comprehensive JOB STREAMING
- Integrated Local Area Network (LAN) support



Peak Functions

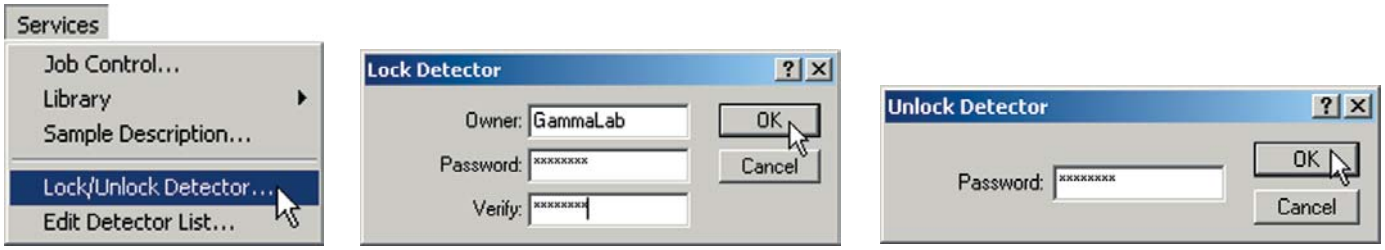
Using the peak search function, all the peaks in the germanium detector spectrum may be marked with ROIs. The sensitivity can be set to reject small peaks, so that only significant peaks are located. The report function produces a list of peak areas, and in a calibrated system*, nuclide activities. All of the peak information can be previewed on the display before producing the report. The report can be stored on disk for use in other programs for more detailed calculations.



*Calibration via external method.

Security

For added protection of the data being acquired, "detector locking" is provided. This feature will stop any destructive access (like stop, clear, or change presets) if the password is not entered. The password is required for each access so there is no worry about leaving the data "unlocked." In a network, the same password can be used anywhere for access, not just on a single workstation.

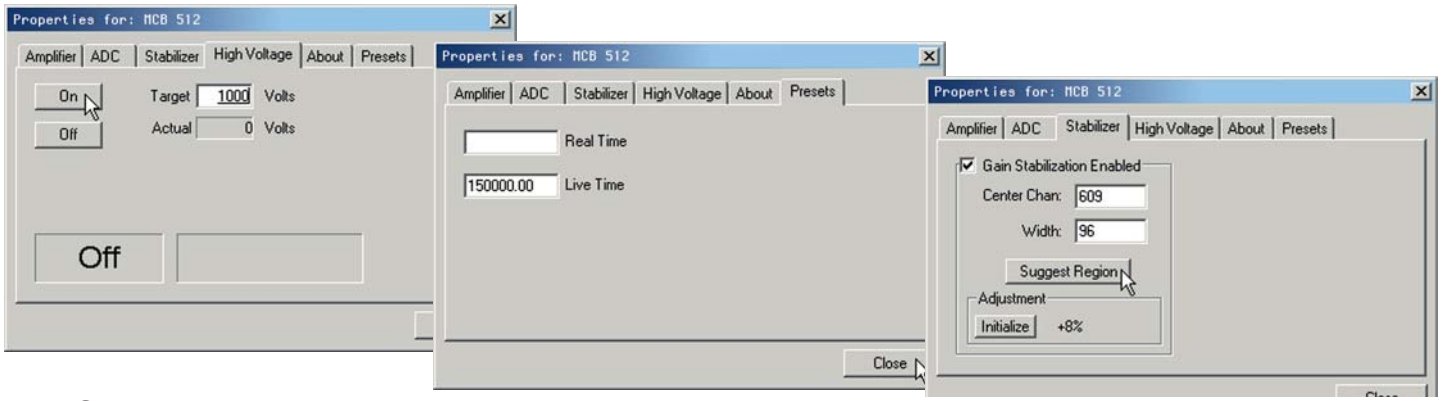


Hardware Control And Networking

Every aspect of the hardware is controlled by MAESTRO-32. In a configuration in which different types of MCB are connected, the control dialogs presented to the operator relate only to the features relevant to the MCB type selected.

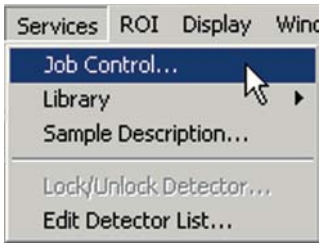
In a single Window, MAESTRO-32 can control up to the hardware limit on a single PC or 250 detectors in a network.

Network support has been built into MAESTRO-32 from its foundations. The physical location of the detector is transparent to the operation of MAESTRO-32 on any PC. Even the setup is completely automatic for all MCBs — no need to know network node names or addresses. This allows a detector to be controlled by a PC other than the one to which it is directly connected and from multiple workstations simultaneously. A live display can be viewed from any workstation. With the network's built-in ability to save calibrations and descriptions, the spectrum data is always the same from any PC.



Job Control

The JOB file provides a full set of commands to automate or batch the functions of MAESTRO-32. The on-line editor can be used to quickly create or change JOB files. A JOB file can be automatically executed whenever MAESTRO-32 is started to define or set initial conditions. The RUN command can be used to execute any program, thus allowing unlimited functions in a JOB. Separate copies of MAESTRO-32 can be started, each operating on a different set of detectors and each can run different JOB files.



MAESTRO-32 uses the full multitasking of Windows to overcome the limitations of previous PC systems and provide expanded capabilities. Multiple Windows can be opened to run JOB (batch) files for several detectors simultaneously. The user simply refers to the selected input by the detector name or number (set by the operator in the configuration program) without concern about detector type or location.

Specifications

General

MAESTRO-32 Integrates acquisition control, "Smart" MCA and quantitative analysis functions for use in conjunction with PC-based gamma and alpha spectroscopy workstations. On-line help and Operator Menu password protection are included.

Operating System

As a *CONNECTIONS-32* product, MAESTRO-32 V6 requires a Windows 2000/XP platform. Interfacing of MCB hardware to the system may be by Ethernet, printer port, serial port, or ORTEC Dual-Port Memory. (Check hardware literature for details.) Note that USB instruments are not supported by Windows NT.

Computer

Any computer that will support any of the operating systems listed above will support MAESTRO-32 V6.

Spectroscopy Hardware Supported

All ORTEC MCBs (past and present) and all other devices supported by ORTEC CONNECTIONS-32. Built-in support for advanced operations (where supported in hardware): amplifier gain/shaping control, Auto-PZ, DSPEC "optimize" and InSight™ mode, DART field mode, SMART-1 detector, graphical setting of MCB spectrum stabilizer and statistical uncertainty peaks. Detector Locking password protection is supported.

List of Supported MCBs:

digiBASE	DSPEC Jr	microBASE	DSPEC-Plus	digiDART	DSPEC	DART
MatchMaker	MicroACE	ACE Cards	TRUMP Cards	NOMAD	NOMAD Plus	MicroNOMAD
MiniMCA-166	M^{3}CA	OCTÊTE PC	OCTÊTE-Plus	CZTPack	916A	917
918	918A	919	919E	920	920E	921
921E	926	92X	92X-II	SBS65		

Spectrum Plotting

Spectrum graphical plotting or printing is provided by the FullShot™ program. This utility program will capture spectrum plots to the printer (including color printers) or disk files. The disk files can be in any number of popular formats for inclusion in documents. FullShot can be used to capture screens from any Windows program.

Ordering Information

To order, specify:

A65-B32	MAESTRO-32 MCA Emulator standalone or first network copy (includes documentation and Binary Use License)
A65-G32	Documentation for A65-B32
A65-K32	Upgrade from A65-BI to A65-B32 (requires BUL from any version of MAESTRO)
A65-K32-D	Upgrade from A64-BI or A63-BI (DOS) to A65-B32
A65-N32	Single Use Network Copy (includes BUL, disks, and documentation)
A65-U32	Update for A65-B32 or A65-N32 (requires BUL from any version of MAESTRO)

Options

A11-B32	*CONNECTIONS-32* Programmer's Toolkit with ActiveX™ Controls
A12-B32	Analysis Results File (UFO) Toolkit
A49-B32	DataMaster
C53-B32	Nuclide Navigator® III

Ordering Network Copies

Example

For a three-user network, order one copy of A65-B32 and two copies of A65-N32. If MAESTRO-32 is included with the MCB (e.g., DSPEC jr), then only order A65-N32 for the supplemental copies for PCs without DSPEC jr.

Developer's Support — "Step In" and "Step Out" With Your Own Programs. Use MAESTRO-32 and Your Own Custom Programs with ORTEC MCBs.

A11-B32 *CONNECTIONS-32* Programmer's Toolkit with ActiveX™ Controls

The *CONNECTIONS-32* Programmer's Toolkit is a set of software modules that simplifies the task of accessing the ORTEC *CONNECTIONS-32* hardware when custom software is written. This toolkit offers such a large improvement in programming efficiency that the ORTEC programmers all use it to write the standard ORTEC software. The toolkit is for use with 32-bit applications running under Microsoft Windows 2000/XP.

The toolkit has two options for programming. For programmers familiar with Dynamic Linked Libraries (DLLs), it provides DLLs and supplemental Windows applications programming interfaces, which can be called from C, C++, or Visual Basic. For programmers using ActiveX Controls, all the functionality can be accessed more conveniently through ActiveX methods, properties, and events. The ActiveX capability makes it easy to program the ORTEC products from LabVIEW (Version 5.1 or later), Visual C++, and Visual Basic. Simple example programs are supplied with both programming options.

The ORTEC models use a variety of interface options such as plug-in ISA and PCI bus cards, dual-port memory interfaces, printer ports, and direct Ethernet connections. A11-B32 supports all of these hardware interfaces. It also supports the LANL M^{3}CA and Rossendorf MiniMCA-166 hardware via the serial port. A11-B32 performs all of the network communication, and supports multiple protocols. The application program uses the same interface for local and remote hardware. Special features, such as gain stabilization, are under complete control of the application program. A11-B32 is transparent to the commands specific to the application program. Complete error reporting is provided for ease in diagnosing programs.

An automatic configuration program is included. The program will search the network for hardware and produce a list, including the hardware type and the PC node to which it is connected. Also included is a Hardware Server program for remote access to the hardware.

A11-B32 is used by all the programs in the *CONNECTIONS-32* family of ORTEC software. Properly written applications using A11-B32 will be able to run concurrently with these ORTEC programs. It is not necessary for ORTEC programs to be running in order for A11-B32 to operate.

ORTEC and user-written software may be combined by having the ORTEC standard software setup and calibrate the hardware, followed by implementation of the special operations of your program. For example, MAESTRO-32 , GammaVision-32, or MCS-32 can be used to configure the system and perform most of the interactive functions. Your program can step in to handle the other unique functions of the system.

The run time components of A11-B32 may be included on a royalty-free basis for programs written to support operation of ORTEC hardware.

A12-B32 UFO/SPC Results Toolkit

Like the A11-B32 Toolkit for controlling instruments, the Analysis Results Programmer's Toolkit (A12-B32) provides 32-bit Dynamic Link Libraries (DLLs) of functions which can be used to create custom programs to interface with the spectrum and analysis results files used by MAESTRO-32 for the analysis of gamma-ray spectra from germanium detectors. The data collection can be controlled from the user program or by MAESTRO-32 itself. The analysis is done by the WAN32 or other analysis engine of MAESTRO-32. A useful combination of ORTEC and user-written software would be to use the ORTEC software to set up and calibrate the MCBs and then implement the special operations in a user-written program. For spectroscopy applications it is expected that MAESTRO-32 will be used to configure and perform most of the interactive system functions. User-written programs can then perform any other system functions. Support and examples are given for Microsoft C and Visual Basic, both of which are supported for Windows 2000/XP.

MAESTRO®-32 V6
MCA Emulation Software

The ORTEC Advantage — Technology Leadership and Customer Focus

Get the Finest in High Purity Germanium

World's leading manufacturer of high purity germanium gamma-ray detectors and nuclear instrumentation.

For over 30 years, ORTEC has combined the world's best germanium crystals (all grown in-house at our manufacturing facility in Oak Ridge, TN U.S.A.), and superior manufacturing methods to ensure our detectors meet specifications that no other manufacturer can match in resolution, peak shape, peak-to-Compton ratio, and efficiency. ORTEC not only produces the finest quality in germanium detectors for all applications in high resolution gamma-ray spectroscopy, but we also lead the industry in the development of electronics, software and systems.

Patented Electronics and Mechanical Cooling for Gamma-Ray Measurements

Simple, Secure, Efficient day-to-day operations through superior electronics.

- Automatic Pole Zero Adjustment Circuit — No more manual adjustments
- Auto-Calibrating Multichannel Analyzer — Automate the daily routine
- Zero Deadtime Correction Method — Calculates uncertainties where other methods cannot
- Gated Baseline Restorer — Superior spectral stability at high count rates
- SMART-1 Technology —The ultimate in data validation
- X-COOLER — Economical mechanical cooling reduces cost and eliminates liquid nitrogen

Complete Gamma-Ray Measurement Systems for Personal Computers

The cost-effective way to complete your system needs with the industry leader in PC based gamma-ray spectroscopy systems.

Detectors, Electronics, Software and Systems, ORTEC Leads the Way in Technology Advances!

See the ORTEC website for information on any ORTEC product

Specifications subject to change
040306

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