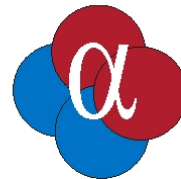




*Next generation
alpha spectroscopy software*



Apex-Alpha

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May 26 2005 – NPL Nuclear Spectrometry Users Forum

Apex-Alpha *Next generation Alpha Spectroscopy*

- ▶ **Provides (at least) the basic capabilities of existing**
 - ◆ **Alpha Management Software (VMS based)**
 - ◆ **Alpha Analyst software (PC based)**
- ▶ **Build around Genie-2000 core components**
 - ◆ **Spectroscopy functionality is known**
 - ◆ **Current Genie-2000 data can be imported**
 - **Calibrations**
 - **ASF files**
 - **Libraries**
 - **Certificates**
 - **MID files**

Apex-Alpha Key features

- ▶ **Client/Server based**
 - ◆ **Centralized sample/batch management**
 - ◆ **Accessible on any Apex-Alpha client computer**
- ▶ **Desktop version available**
 - ◆ **Scalable and no compromises on functionality**
- ▶ **Microsoft SQL database**
 - ◆ **Centralized data depository**
 - ◆ **Professional database (backup, restore, recovery tools)**
 - ◆ **Professional tools available for data extraction and reporting purposes**
 - ◆ **Remote accessible with popular applications (VB, Excel, etc)**

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Apex-Alpha Key features

- ▶ **Apex-Alpha software compatible with**
 - ◆ **Alpha Analyst hardware**
 - ◆ **OASIS hardware (future release)**
 - ◆ **Manual NIM spectrometers – G2K compatible MCAs**
- ▶ **Automatic energy and efficiency calibrations**
 - ◆ **No manual interactions required during calibration process**
- ▶ **Interactive Data Review**
 - ◆ **Extensive “search” capabilities**
 - ◆ **Sample and Batch data review**
 - ◆ **New tools for ROI driven analysis**

Apex-Alpha Key features

- ▶ **Based on the latest programming technology**
 - ◆ **Attractive and intuitive graphical User Interface**
 - ◆ **Easy to use sample/chamber assignment**
 - **Drag and drop**
- ▶ **Extensive Quality Assurance automation**
 - ◆ **Automatic warning or lockout on QA failure**
- ▶ **Security built into the application**
 - ◆ **Prevents undesired altering of critical parameters**
- ▶ **Event log**
 - ◆ **Extensive event logging keeps track of almost everything**
 - ◆ **Extensive search capabilities due to the database behind it**

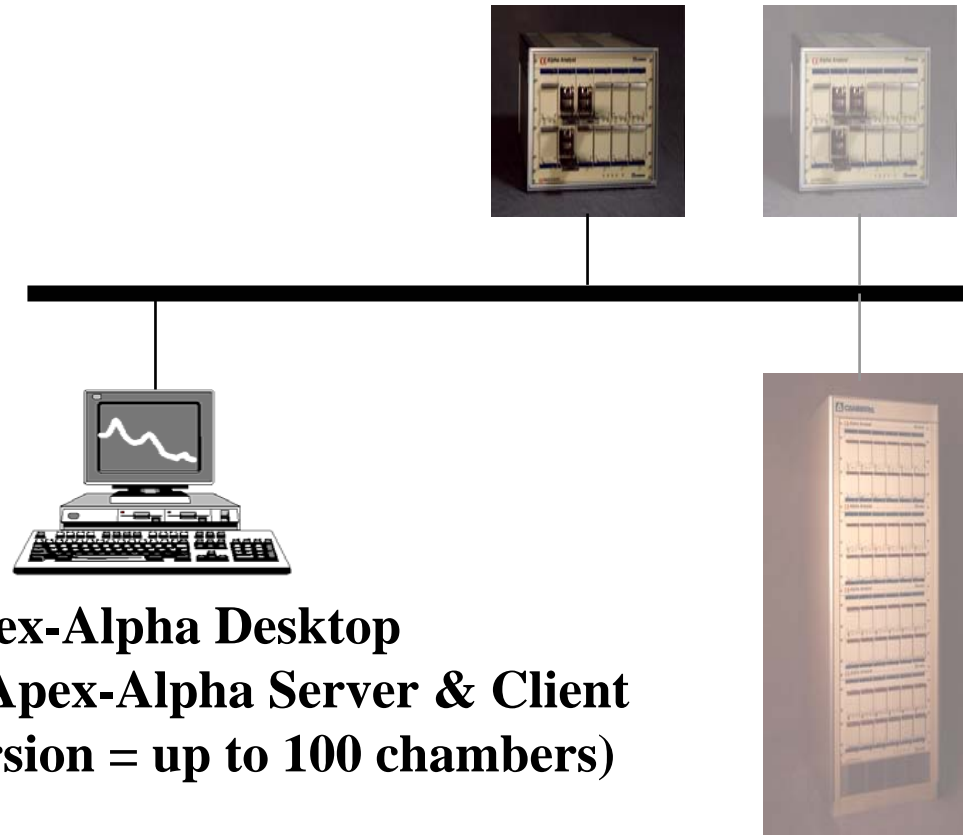
Apex-Alpha and Apex-Gamma

- ▶ **Apex-Alpha is part of the Apex family.**
 - ◆ **Apex-Gamma used since 2003,**
 - ◆ **SAME philosophy & database functionalities**
 - ◆ **Shared data between gamma and alpha**
 - **Partial sample data**
 - **Security data**
 - **Sample type and customer Data**
 - ◆ **Data retrieval from gamma and alpha measurements “made easy”**
 - **Centralized data depository**
 - **Centralized source for reporting**

Scalable Apex-Alpha Architecture DESKTOP version

Single computer

Single to multi alpha analyst (or compatible) hardware



Apex-Alpha Desktop

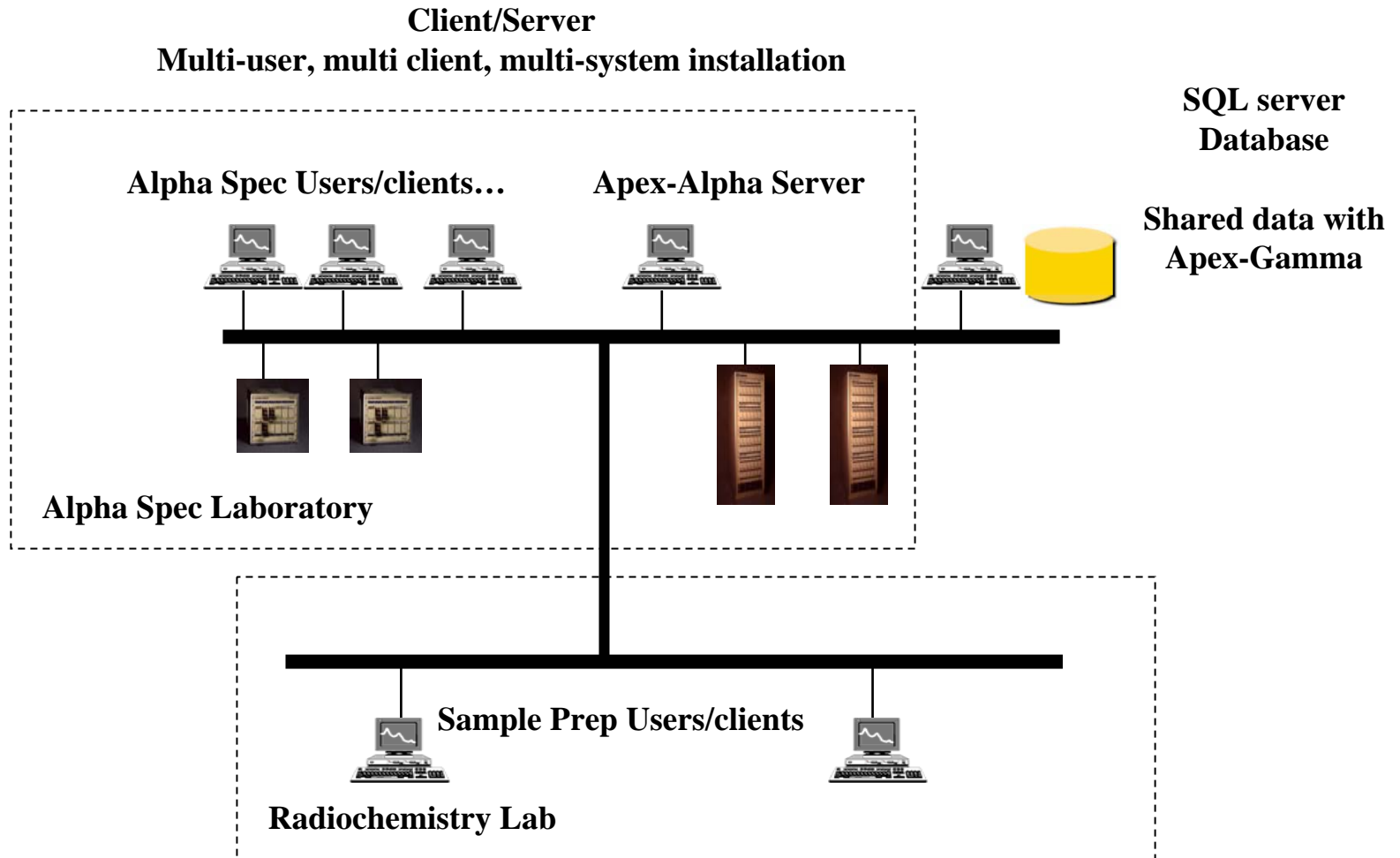
**Database & Apex-Alpha Server & Client
(Desktop version = up to 100 chambers)**

All running on the same computer

Scalable Apex-Alpha Architecture

CLIENT-SERVER

Multiple Client Model, Client Server



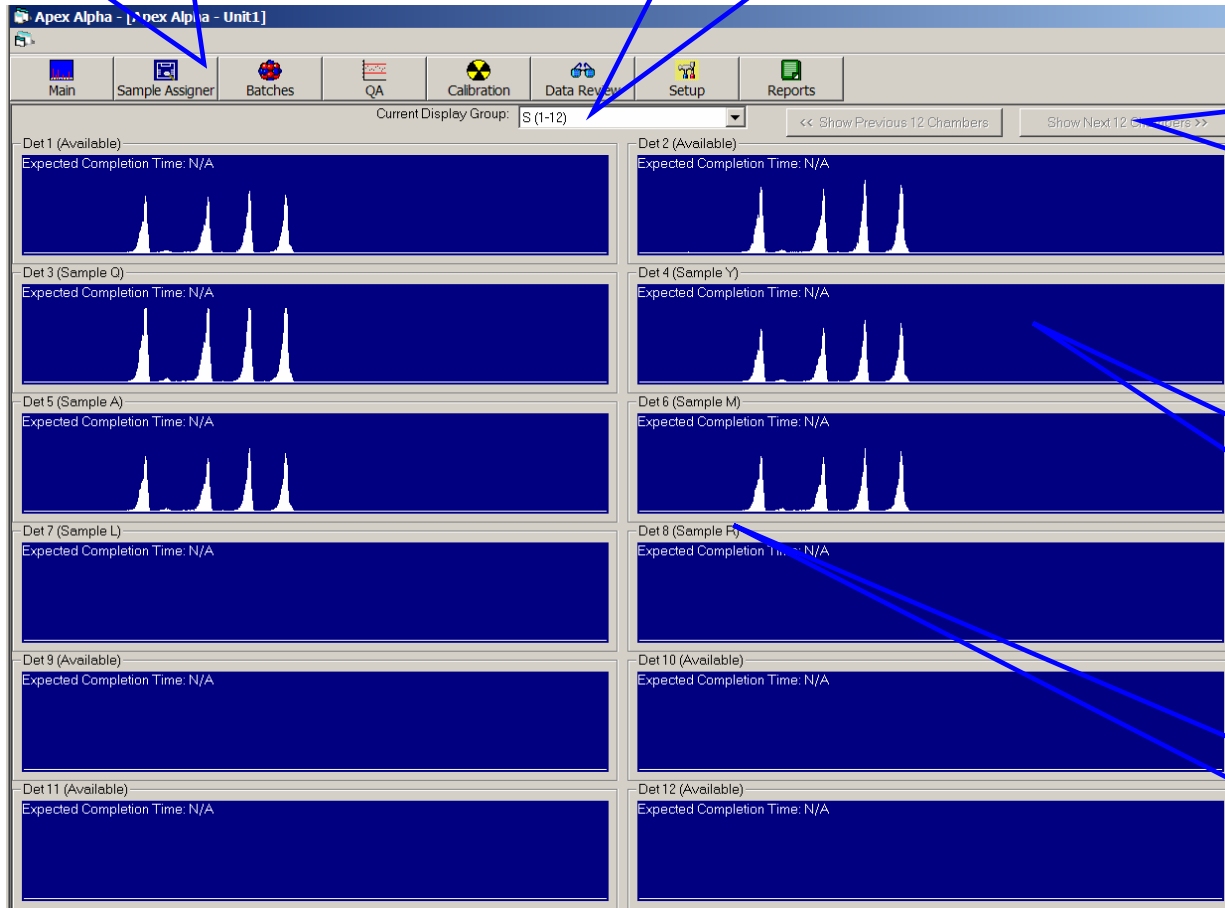
Sneak Preview

Subject to changes...

Main View

Main menu always on the top of the display

Predefined Display group selection

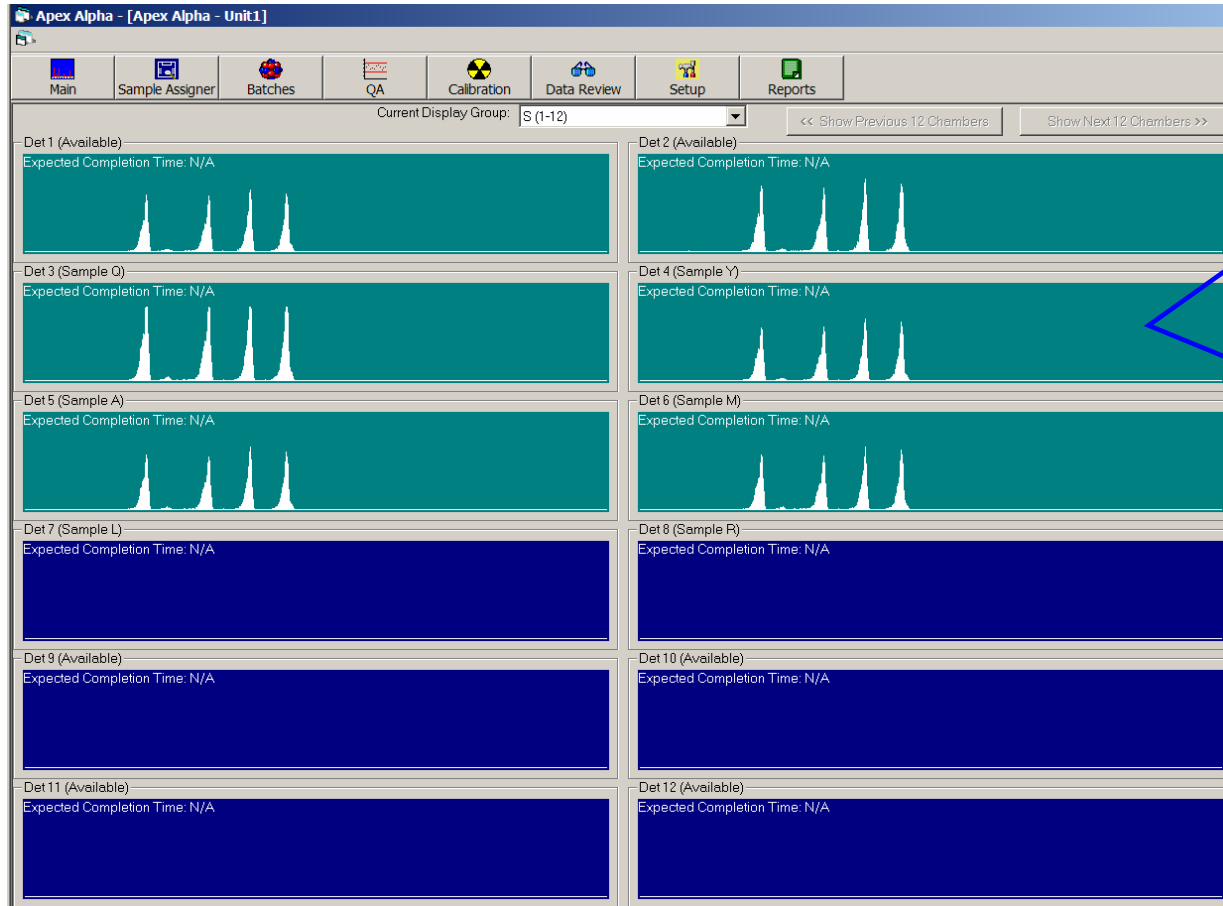


“Next”
If more than
12 chambers

Live display
per detector

Sample
reference

Main View



Color
code
shows
status of
the
chambers

Idle
Assigned
Counting
Off line
Error

ENERGY Calibration Review examples

ALL relevant energy calibration info on a single screen

Chamber: S_1_1A Calibration Count: S_1_1A02133907.cnf Is Current

Certificate: C:\GENIE2K\CAMFILES_DemoCert.cnf Cal. Date: 11/2/2004 1:39:08 PM

Info: Certificate Cal. Results

Energy	Centroid	Unc.	FWHM	Tail
4184.4	349.433	0.255	32.895	5.126
4761.5	520.838	0.236	22.552	2.133
5147.7	632.328	0.096	30.238	5.781
5479.1	730.995	0.141	37.850	9.744

Energy: 2998.5 + 3.40*Chn FWHM: 31.358 Low Tail: 4.469 Energy Cal Reduced Chi-Sq: 7.834

Channel: 632.3 Energy (KeV): 5147.7 / 4185.2

Energy (KeV) vs Channel

FWHM vs Energy

Previous Chamber Next Chamber Save Cancel

EFFICIENCY Calibration Review examples

ALL relevant efficiency calibration info on a single screen

The screenshot displays the 'Efficiency Review' window of a software application. The interface includes a menu bar at the top with options: Main, Sample Assigner, Batches, QA, Calibration, Data Review, Setup, and Reports. Below the menu bar, there are tabs for 'Count', 'Energy Review', 'Efficiency Review', and 'Manual Efficiency'. The 'Efficiency Review' tab is active, showing the following information:

- Chamber: S_1_1A
- Calibration Count: S_1_1A02133907.cnf
- Geometry: Shelf 2
- Is Current:
- Cal. Date: 11/2/2004 3:16:08 PM
- Change Certificate: C:\GENIE2K\CAMFILES_DemoCert.ctf

The main display area shows a spectrum plot with a red dashed line representing the fit and a yellow solid line representing the raw data. The plot is titled 'Idle VFS-4096 Channel: 348 : 4.1803 (MeV) Counts: 282 Preset: 80.0 / 80.0'. To the right of the plot are 'ROI Shift Controls' including a 'Shift All:' slider and buttons for 'Update ROI From Markers', 'Add ROI', and 'Del ROI'.

Below the spectrum plot is a smaller plot showing 'Efficiency' vs 'Energy' with a red horizontal line and error bars. The energy range is from 3000 to 6000 MeV, and the efficiency range is from 0.000 to 0.175.

To the right of the smaller plot is a data table with the following columns: Energy, Effic., Unc., Calc. Effic., Unc., FWHM, Peak Area, Unc., and Cert. P... The table contains the following data:

Energy	Effic.	Unc.	Calc. Effic.	Unc.	FWHM	Peak Area	Unc.	Cert. P...
4184.4	0.170	0.009	0.174	0.004	40.6	4279.0	65.4	315.10
4761.5	0.170	0.009	0.174	0.004	35.6	4378.0	66.2	320.20
5147.7	0.181	0.009	0.174	0.004	37.8	45020.0	212.2	3102.00
5479.1	0.176	0.009	0.174	0.004	39.5	44861.0	211.8	3210.00

At the bottom of the window are several buttons: Previous Chamber, Next Chamber, Recalculate, Plot, View Report, Save, and Cancel.

- ▶ **For more information, please contact your local CANBERRA representative**
- ▶ **Or visit our web site at:**

<http://www.canberra.com/uk/>

or

www.canberra.com

THANK YOU

