

STEPS NECESSARY TO OBTAINING SPECTRA DATA & EDS MAPPING

1. SAMPLE AT APPROPRIATE HEIGHT (9-10mm)* (Page 3)

3. ADJUST SPOTSIZE TO INCREASE THE CPS (TRY TO GET AT LEAST 1000 COUNTS PER SECOND (CPS))* (Page 3)z

5. COLLECT SPECTRA AND SAVE DATA (SPC, JPEG, TIFF, CSV) (Page 3, 5 or 7)

7. CHOOSE APPROPRIATE REGION OF THE IMAGE TO SCAN USING DIFFERENT SHAPE OPTIONS. (Page 7)

9. REMEMBER TO SWITCH BACK AND FORTH FROM THE SEM AND EDAX SOFTWARE IMAGING PRESS EXT/XY (Page 3)

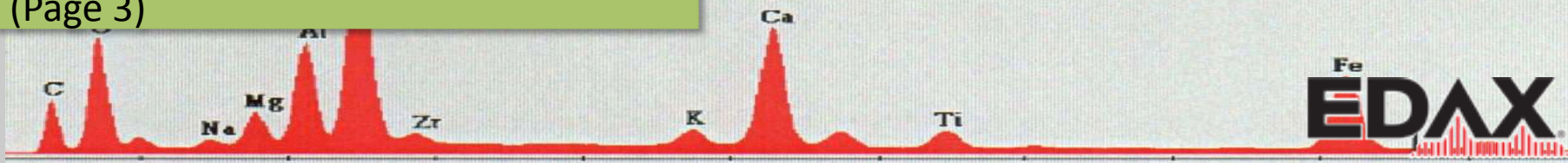
2. SET APPROPRIATE VOLTAGE (2X the voltage of highest energy peaks)* (Page 3)

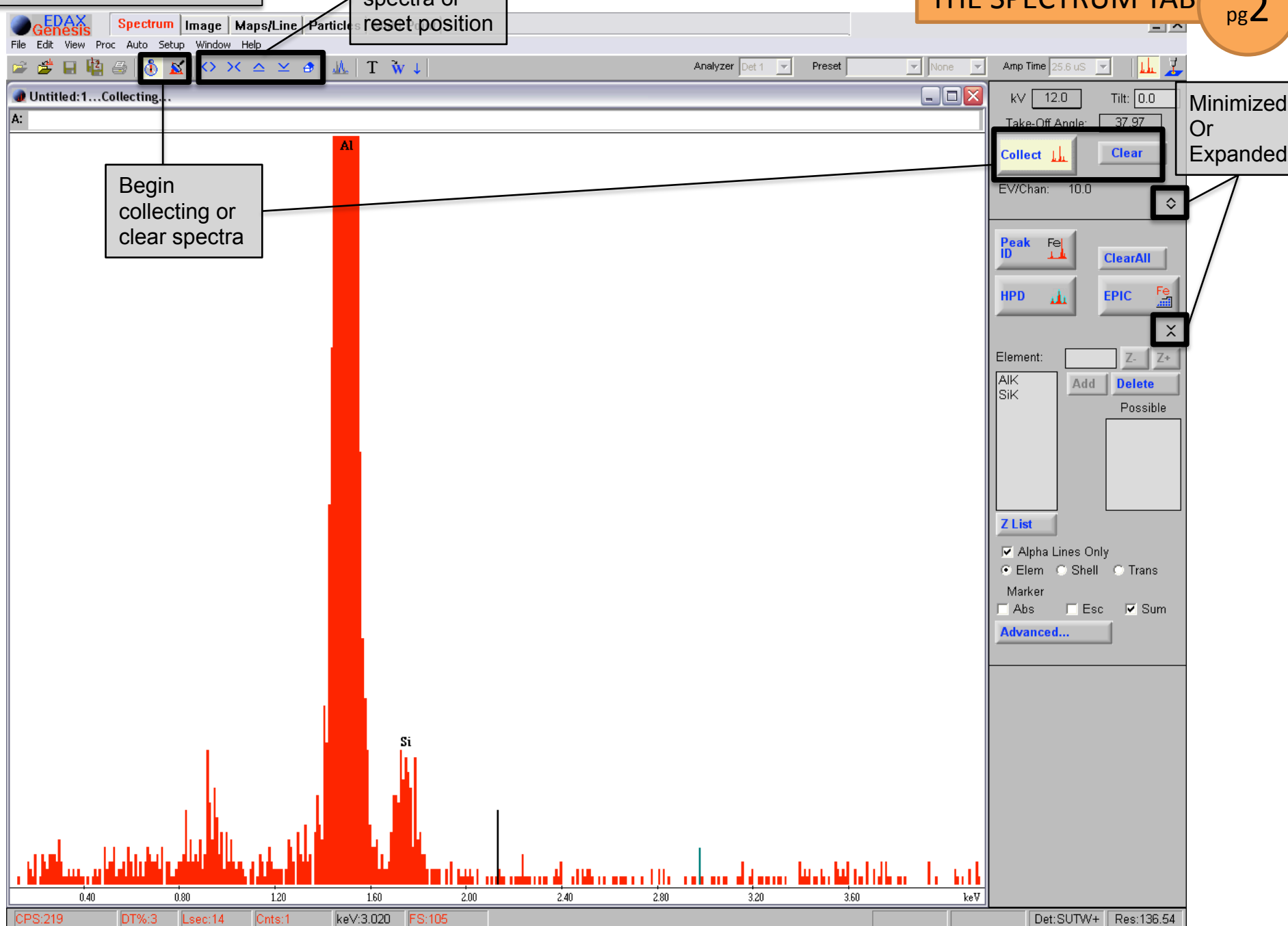
4. ADJUST DOWNTIME (DT) BETWEEN 20 – 40% BY ADJUSTING AMP TIME (Page 3)

6. FOR MAPS/LINES GO TO MAPS/LINES TAB, AND CLICK “COLLECT E” FOR AN IMAGE. (Page 7)

8. COLLECT MAPS IN EITHER BMP OR TIFF FORMATS (AN SPC FILE CAN BE SAVED SIMULTANEOUSLY) (Page 7)

*See FEI XL 30 SOP for more information about this procedure

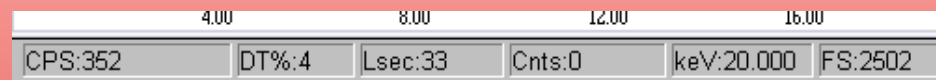




Open EDAX Genesis software



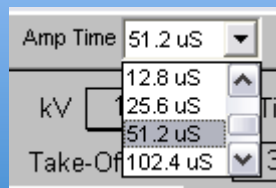
Aim to have at 1000 counts per second (CPS) or greater. There are several things to do to maximize your CPS:



- Greater voltage and spot size
- Set the working distance in the XL 30 to the appropriate height (9-10mm).
- You can also tilt the stage to increase counts

It is important to have the down time (DT%) be between 20 and 40%. This is controlled by the "Amp Time" drop down menu in the top right corner: DT%:4

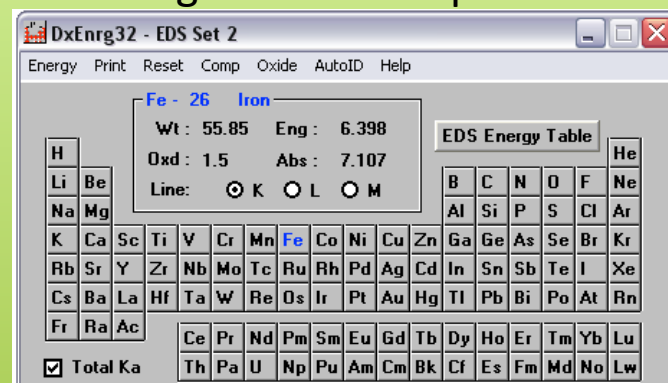
- >Amp Time = >DT%
- <Amp Time = <DT%



For more information about the Spectrum Tab, see GEN_EDS.pdf or spectrumbasic1.exe (video)

Over voltage: Expand "Peak Id"

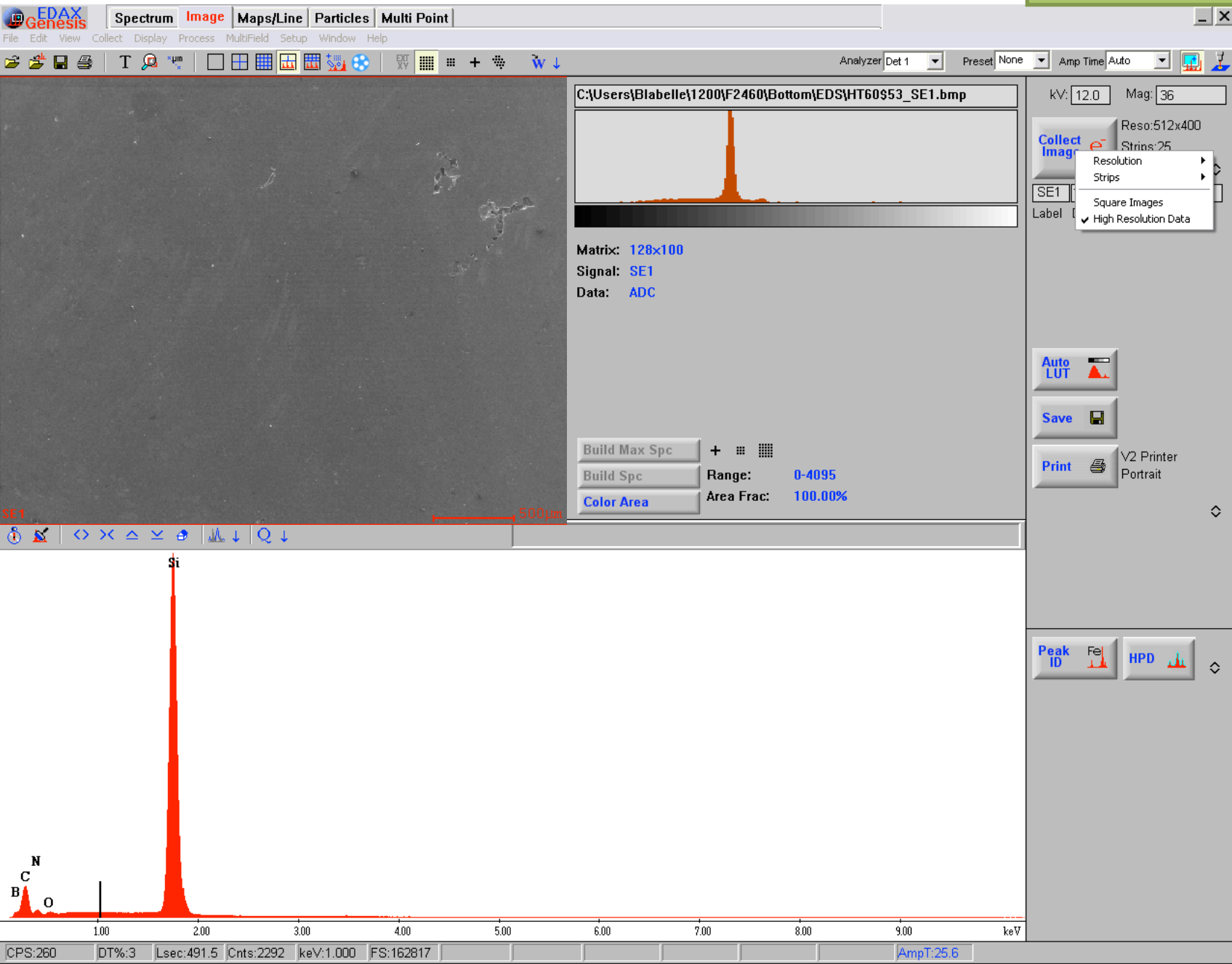
(to on pg2) Use EPIC to observe the energy (Eng) and absorption (Abs) of the known or possible elements to determine the appropriate voltage*. It is desirable to have 2 times the energy for elements looking to obtain a spectrum about.



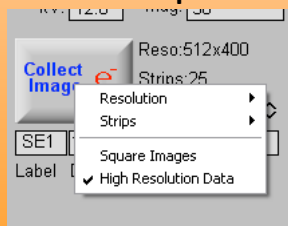
To begin collecting spectra, press the button or the button.

To clear the existing spectra on the screen, press the or the button

Save spectra files in spc, csv and an image format (jpeg, bmp, tiff)



Resolution and number of strips are set by right clicking in the top right corner



Auto LUT The Auto LUT (Look Up Table) button is displayed in the main imaging panel. This button allows for two basic greyscale adjustments:



- The first time the button is clicked, the look up table is modified so that the darkest pixel in the image becomes black and the lightest pixel in the image is white (scaled to the images minimum and maximum levels).
- The second time that the button is clicked the look up table is further modified so that the brightest and darkest 1% are excluded and the histogram is then stretched

**Taken from Chapter 5 Image Processing of GEN_IMG.pdf

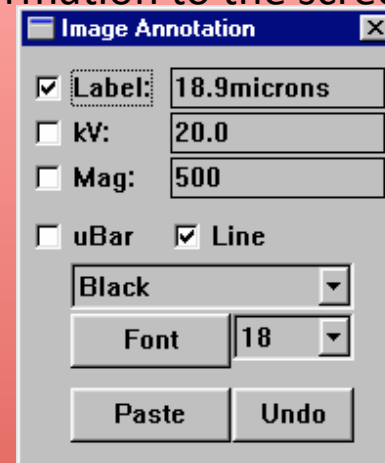
For more information about the Image Tab, see GEN_IMAGE.pdf or imagbasic1.exe (video)

To begin collecting an image press the



button

Go to “Edit>Annotate Image” to add a scale bar and other information to the screen



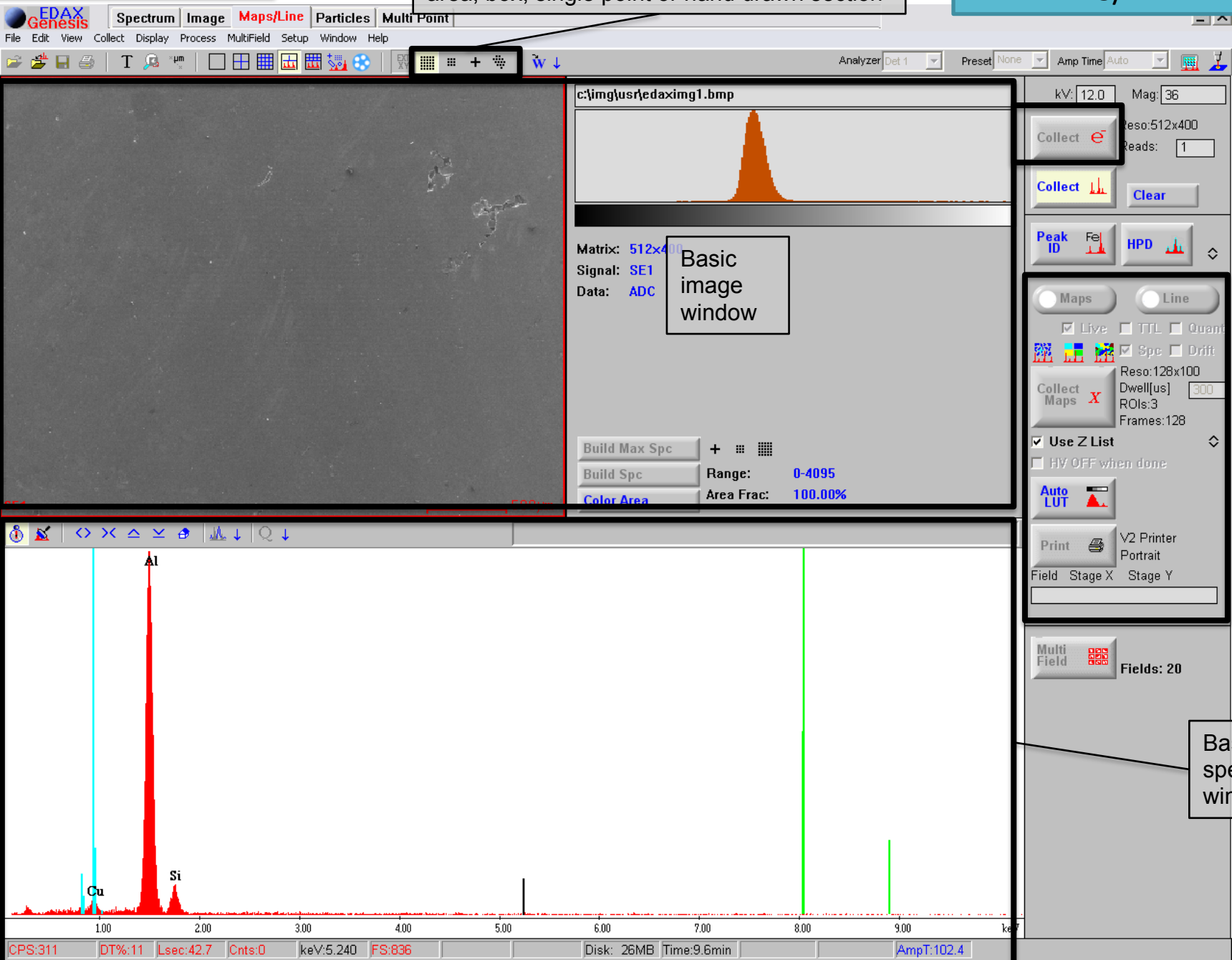
Can save image files in various formats: jpeg, bmp, tiff

Tip: To send active image back to FEI XL30, use the



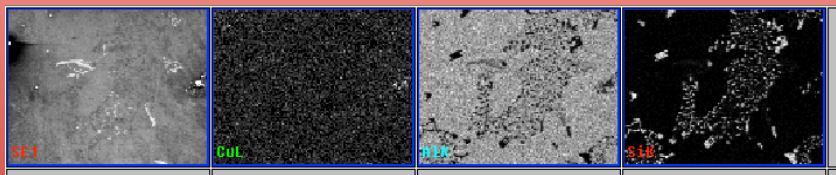
button at the top of the screen

Scan different areas of the screen: whole area, box, single point or hand drawn section



Collect a spectra over desired area or load a previously saved spectra. See spectrum tab information for setup.

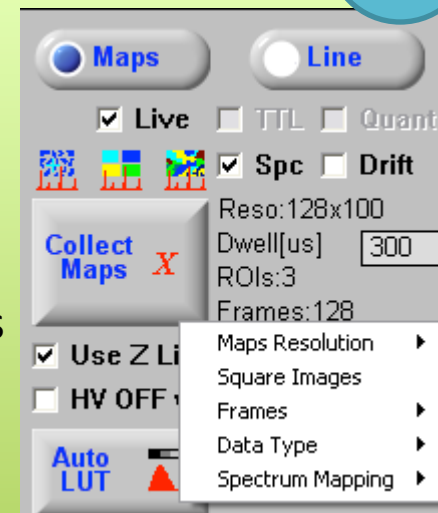
During or after scans are run, the colors can be changed for given elements: "Display>Gray Palette" or ">Color Palette"



Right click on the area next to the "Collect Maps" button to bring up the options menu.

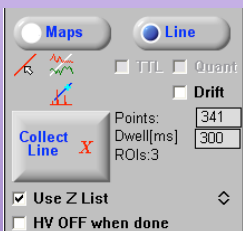
- How long does a maps collection take? It depends on the maps resolution, dwell (us) and number of frames collected.

- Can save maps in either tiff or bmp format



Lines:

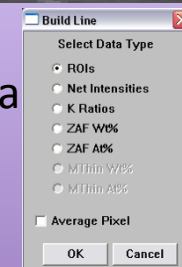
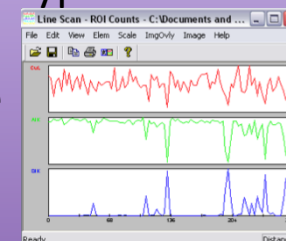
Use the  button to draw the desired path for the line scan



To begin collecting data, press the  button. Data is saved as a csv file. By pressing the  button, it determines the type of line generated.

The number of points and how long to dwell at each point can be adjusted.

The  button generated a image with the line data plotted out.



Refer to the FEI XL 30 for any help needed in configuring the SEM

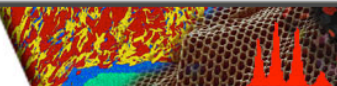
There are tutorial movies (exe flash)

EDAX Software Movie Launcher

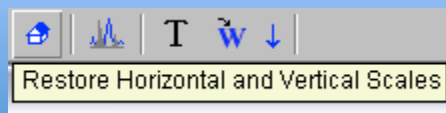
	Title	Description	Time / Size
1	Introduction to Genesis Software Movies	Introduction to the Camtasia Movie playing engine. Topics covered include: Right clicking the mouse to access functions like Pause/Play.	3:56 Mins. 19Mb
2	Introduction to Genesis	Introduction to the layout and the functionality of Genesis. Topics covered include: Using the main control panel with the expand/collapse feature, moving between tabs and using the right mouse click menus.	4:15 Mins. 14Mb
3	Spectrum Basics	Introduction to the spectrum tab and collecting spectra. Topics covered include: selecting and setting a preset, choosing an amp time, count rate and dead times, basic peak ID and standardless quant options, collecting, labeling and saving spectra, the z-list, choosing and entering the kV.	10:30 Mins. 32Mb
4	Intro to PeakID	An introduction to Peak identification. Topics covered include: The characteristics of K, L and M lines, the expanded peak ID portion of the main panel, peak labels and marker lines.	8:35 Mins. 24Mb.

Version 4.60
February 17, 2006

EDAX
AMETEK



To show any toolbar tips, go to the menu "Help>Tooltips"



EDAX references can be found on the desktop

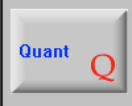
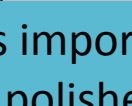
C:\Documents and Settings\All Users\Desktop\Edax Genesis

Name	Size	Type
What's New in V5.21	1 KB	Shortcut
Genesis	1 KB	Shortcut
EDAX Software Movies Folder	2 KB	Shortcut
EDAX Software Movies	1 KB	Shortcut
Service Utilities		File Folder
Manuals		File Folder

There are manuals for further reference:

C:\Documents and Settings\All Users\Desktop\Edax Genesis\Manuals

Name	Size	Type
EDX Library Matching	1 KB	Shortcut
Genesis DCOM Users Guide	1 KB	Shortcut
Genesis Drift Correction	1 KB	Shortcut
Genesis Imaging	1 KB	Shortcut
Genesis Maps-Line	1 KB	Shortcut
Genesis Multipoint	1 KB	Shortcut
Genesis Particle	1 KB	Shortcut
Genesis Spectrum	1 KB	Shortcut
Genesis Ultra-Report	1 KB	Shortcut
Genesis Utilities Users Guide	1 KB	Shortcut
Kla32	1 KB	Shortcut
Tencor32	1 KB	Shortcut

Quantitative analysis can be performed on Spectrum tab, using the  button. Basic quant can be found in  Maps/Line tab Using the  button. It is important that for most situation to have a polished surface for this technique.