Technical note:
Backpack calibration

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1. Connect to the Backpack
2. Go to Device Parameters
3. Press Get. Password is the device serial number
4. Go to Gamma Detectors:

Parameters

	LLD	Cosm Thr.	Gain		FIR	LINT		HV [V]	Dose Coeff.
GMM 1 - Left	12000	2097152	1.02009	☑ Auto	...	Get	Set	746	1
GMM 2 - Right	12000	2097152	1.01149	☑ Auto	...	Get	Set	622	1

Raw Sample

Detector	Smpl#	Acq. Time	Live Time	Gain	All Pulses	Accepted	Pileup	Cosmic	Status	Errors
GMM 1	20498	1000003	999993	1.02009	83	83	0	0	AutoStab	
GMM 2	20498	1000003	999973	1.01149	105	105	0	1		

☑ GMM 1   ☑ GMM 2   5325.00 keV

☑ GMM 1   ☑ GMM 2   14142.77 keV

☐ Accumulate

Adjusting High Voltage (HV)

The High Voltage will be adjusted for a specific gain to bring the Cs-137 662 keV peak in the right position. Please note that in this screen, we display 2048 ch spectrum, so 662 keV peak should sit in channel 440. We will go over the procedure for GMM1 and can be repeated for GMM2.

1. Uncheck the Auto gain:

	LLD	Cosm Thr.	Gain	
GMM 1 - Left	12000	2097152	1.02035	☑ Auto

	LLD	Cosm Thr.	Gain	
GMM 1 - Left	12000	2097152	1.02035	☐ Auto

2. Set the gain to 0.95 and press Set
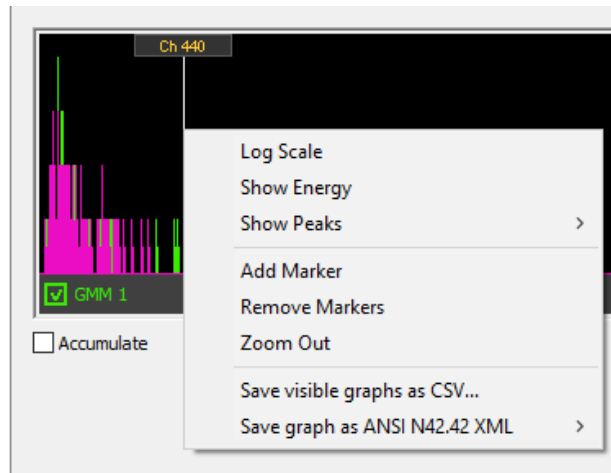
Parameters

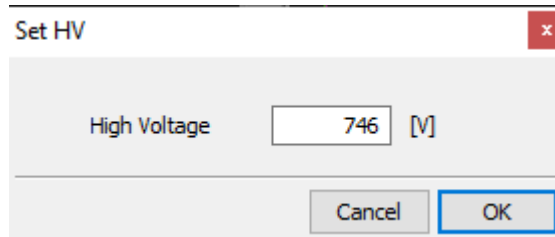|	LLD	Cosm Thr.	Gain	
GMM 1 - Left	12000	2097152	0.95	☐ Auto

3. Right click on the spectrum and Display Channels:
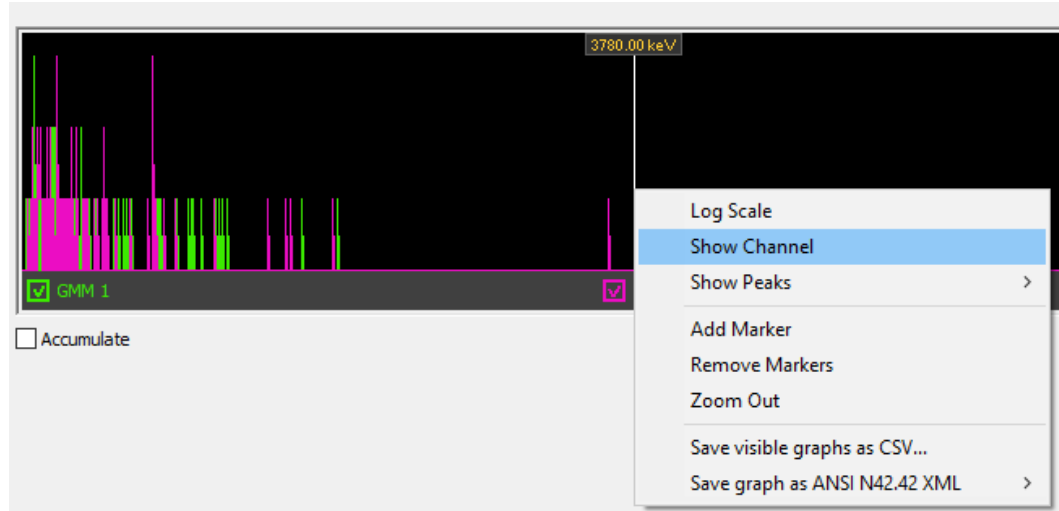
4. Move the mouse over to Channel 440 and right-click / Add Marker. This will make the HV adjustment easier:

5. Bring a Cs-137 source about 30cm from the detector
6. Click on HV:

7. Adjust the HV value to set the Cs-137 peak in Channel 440 or close to the marker. You can use the Accumulate function to accumulate data for easier visualization.
8. It is not possible to bring the peak exactly to Ch440, but try to get it as close as possible (either above or below).
9. Repeat the process for GMM2.
10. Remove the Cs-137.
11. Check the Auto on again.
12. The system will adjust the gain for the new HV based on the background.

If problems persist, try to update the Linearization Table and FIR coefficients.

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Setting up the Linearization Table (LINT)

The linearization table is responsible for translating the counts in the spectrometer channels into energy bins.

1. For GMM1, under LINT, press Set. Note that Get downloads the LINT from the device.
2. Load the RS350G3_LINT_GAMMDET_v3.0.0.0.txt
3. Repeat for GMM2

Setting up the FIR Coefficients

The FIR coefficients filter incoming pulses. They are responsible for accepting pulses that would go in the spectrum and reject pulses that are attributed to the pile-up events.

1. For GMM1, click on "…" under FIR.
2. Load the RS350G3_FIR_PARAMS_v2.0.0.1.txt
3. Repeat for GMM2

If problems persist, please give Service a call at +1-905-890-1111.