

High Voltage Adjustment

We recommend that this adjustment be done on a yearly basis at minimum, or as indicated by a plateau error. This procedure optimizes the high voltage setting and ensures that the detector can differentiate between alpha and beta particles.

Many agencies have started to do the Hardware Diagnosis in the Service Menu as part of their audit procedure. This test checks that Ralpha is less than 1 and that Rref is between 40% – 60% of Beta. If these conditions are not met, it indicates that a high voltage calibration should be performed.

NOTE: Always advance the tape to a clean spot before performing this adjustment.

Set the 5030 online	o1 (small letter “o”, then “1”)
Set Operating High Voltage (OHV) Check the label on the amplifier: Rev d = 1470, Rev e = 1330	ua1470 (for noisy beta, try 1420) Or ua1330 (for noisy beta, try 1280)
Switch to Alpha Counting Rate (ACR)	u1
Set Alpha Threshold Max (ATH)	KFxxxx (Start with KF2600)
Read ACR	UC (will be “0” to start)
Lower ATH by 200 at a time until ACR is positive, then increase it until average of 10 readings is 0.2.	KFxxxx (2400, 2200, 2000, 1800, 1850, etc) until UC average = about 0.2 (8 x “0”, 2 x “1”)
Switch to Reference Counting Rate (RCR)	u0
Read Beta Counting Rate (BCR)	UA (average 10 readings – write down)
Set reference Threshold (RTH)	udxxxx (start with 1500)
Read RCR	UC
Adjust RTH until RCR is 50% of recorded BCR (average 10 readings)	udxxxx (1300, 1100, 900, 700, 740, etc) until UC = 50% of recorded UA
Switch back to ACR	u1
Save the Settings to EEPROM	Y\$