

# S1 TITAN/TRACER 5/CTX

- **EasyCal—Count Rate Shutoff Calibration**

**Version 2.5.58**



This page intentionally left blank.



# 1. Resetting the No-Sample Count Rate

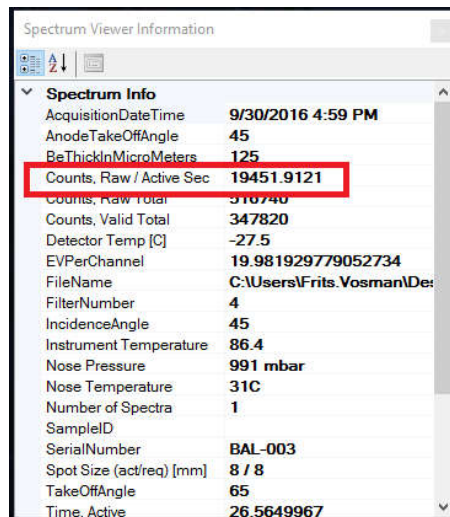
**Description** Taking a measurement when no sample is present is a safety concern as X-rays from the XRF instrument are not blocked. If a measurement is started without a sample in place, the instrument automatically stops the measurement and display the message **Count Rate Too Low**.

When a custom calibration is created, the minimum count rate setting may need to be reset to avoid automatic termination of a measurement of a sample with a low count rate. This document describes the procedure for resetting the minimum count rate when no sample is present to avoid automatic measurement termination when a low count rate sample is in place.

**Find counts per second**

*To find the counts per second –*

Step	Action
1	Create a calibration.
2	Install the calibration on the instrument.
3	Disable or cover the Sample IR Sensor but do not cover the Prolene window. If a stand is available, put the instrument in its stand and close the lid. Otherwise set up the instrument in a way to safely take a measurement <i>without a sample present</i> .
4	Select the new calibration and take a measurement <i>without a sample</i> . If the measurement does not terminate, note the scan number.  If the measurement terminates, measure a low count rate sample instead and note the scan number.
5	Using Bruker Instrument Tools (BIT) or a USB drive, copy the following to a PC – <ul style="list-style-type: none"> <li>• The spectrum.</li> <li>• The [name of new calibration].aen file from the Bruker directory on the instrument.</li> </ul>
6	In BIT, open <b>Tools -&gt; Spectrum Viewer -&gt; Options -&gt; Spectrum Info</b> .
7	Select the spectrum measured without a sample, or the spectrum of the low count rate sample, and note the <b>Counts, Raw/Active Sec</b> .





Reset min.  
count rate

**To reset the minimum count rate –**

Step	Action
1	Open with a text editor, like NotePad, the file [name of new calibration].aen copied from the instrument. (See Step 5 in the previous table.)
2	Search for <b>BackScatterLimit</b> . A line similar to <b>&lt;DCBackScatterLimit&gt;1000&lt;/DCBackScatterLimit&gt;</b> is highlighted.
3	Replace the number in the middle. <ul style="list-style-type: none"> <li>• For a count rate measured without a sample present, use a value approximately 20% higher than measured.</li> <li>• For a count rate measured with a low count rate sample, use a value lower than measured.</li> </ul>
4	Save the file.
5	On the instrument, replace the existing [name of new calibration].aen file with the edited version.
6	Restart the instrument.
7	Verify that the instrument displays the <b>Count Rate Too Low</b> message when operated without a sample.

Message  
when sample  
is present

If the **Count Rate Too Low** message is displayed when measuring a sample, lower the value in the [name of new calibration].aen file as described in the previous table. Adjust the value until the instrument –

1. Measures a sample without displaying the message.
2. Shuts off if no sample is present.

No setting  
found

In the rare case that a setting cannot be found –

1. Set the instrument to shut off if no sample is present.
2. Email Bruker ([rs0.hmp@bruker.com](mailto:rs0.hmp@bruker.com)) for assistance in how to measure the low count rate sample. Include –
  - Contact information.
  - Your [name of new calibration].aen.
  - Spectrum files (\*.pdz) with and without a sample.
  - Indication if the instrument is run with, or without, a window.