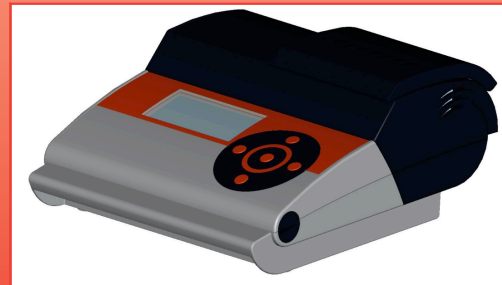
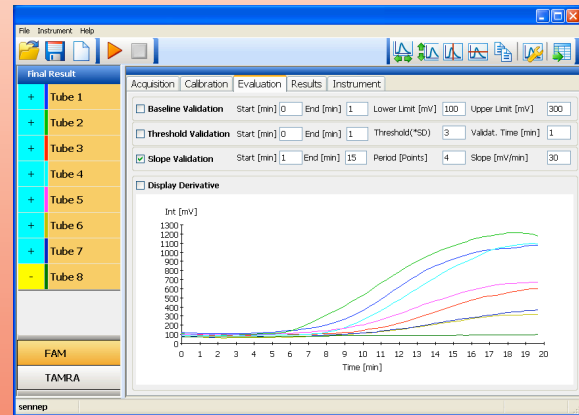


Twista™ Studio

Guide to Instrument Normalization



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1 Introduction

This guide is intended to help the first-time user to become familiarized with the normalization function of the Twista™ Studio software. The normalization function is used to ensure that different instruments give comparable results. This is done by measuring two reference samples of known concentration then generating a linear function to obtain factor and offset values which can be stored on the instrument. Note that there are separate normalization functions for both measurement channels (in this guide, they have been termed 'FAM and 'TAMRA').

Care should be taken to ensure that the reference samples have been accurately prepared. ESE cannot be held responsible for inappropriate sample preparation and/or use of the software.

2 Activating the Normalization Function

The normalization function is normally hidden from the routine user/analyst, and is activated by adding a password to the Twista™ command line as described in the following section.

If the Twista™ Studio software icon does not appear on the desktop, create one as follows:

- Locate the Twista™ program by clicking 'Start – Programs – Twista'
- Right click on the 'Twista' item and select 'Send to' then 'Desktop'

The Twista™ Studio icon should now be present on the desktop.

Right click the Twista™ icon, then select 'properties'. On the second page 'Shortcut' locate the target directory for the Twista™ Studio software.

Target:

Click on the text then go to the end of the data entry line using the 'End' key or the right arrow. Add the text 'Debug' to the end of the command line, which should now read something like:

C:\Programs\Twistdx\Twista\TwistaStudio.exe debug

Click on OK to update the command line.

Whenever the Twista™ Studio software is opened after adding this debug command, the Normalization page will appear in the Twista™ Studio program:

Acquisition | Calibration | Evaluation | Results | **Normalization** | Instrument

Set Control On Temperature [°C] 37,0

Measure **Tube 1:**
 Norm. Value [mV] 2000 Act. Value [mV]

Tube 2:
 Norm. Value [mV] 0 Act. Value [mV]

Calculate Factor 1,00 Offset [mV] 0

Save to Inst.

Load from Inst. Factor Offset [mV]

3 Getting Started

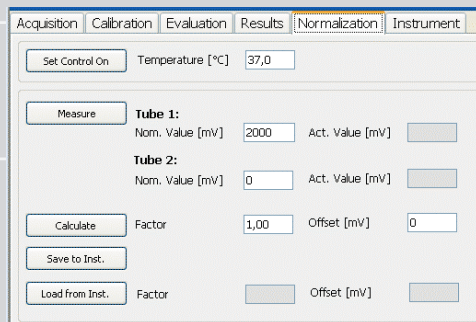
Start the Twista™ Studio software by double clicking the Twista™ Studio icon on the desktop.

Select the channel for normalization (in this case the FAM channel) by clicking on the FAM button on the bottom left of the screen:



4 Features of the Normalization Page

Click on the Normalization page button. The Normalization screen should appear:



4.1 Temperature Control

If the temperature of the reference samples should be controlled, enter the required temperature in the target temperature text box:

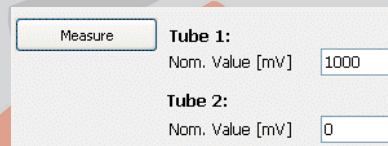


Then click on 'Set Control On'. The target temperature is sent to the instrument. Observe the instrument screen to determine the progress. When the desired temperature has been reached, we can proceed with the normalization measurements. To turn the temperature control off, click on the button labelled 'Set Control Off'.

4.2 Measuring the Reference Samples

Insert two reference samples, having high and low concentrations in Tubes 1 & 2 of Twista™. Note that the order is not important: the high concentration sample can be located in tube 1 or 2.

Enter the concentrations (or reference signal values) into the textboxes labeled 'Nom. Value [mV]' for each tube as shown right:

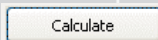


Then click on the 'Measure' button.

Twista™ will drive to tube 1, measure the signal ten times, then drive to tube 2 and repeat the measurement. The mean of each reference measurement will be displayed in the text boxes labelled 'Act. Value [mV]' to the right of the panel. These are the mean actual measured values for the reference samples. During measurement, all buttons on the Normalization page will be disabled. When measurement is complete they become active again.

4.3 Calculating Factor and Offset

When the reference samples have been measured and the values are deemed acceptable, click on the button labeled 'Calculate':

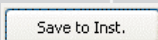


The factor and offset for this data channel will be calculated and displayed on the screen:

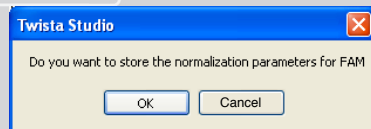
Tube 1:			
Norm. Value [mV]	<input type="text" value="1000"/>	Act. Value [mV]	<input type="text" value="475"/>
Tube 2:			
Norm. Value [mV]	<input type="text" value="0"/>	Act. Value [mV]	<input type="text" value="88"/>
Factor	<input type="text" value="8,55"/>	Offset [mV]	<input type="text" value="-225,5"/>

4.4 Saving Factor and Offset to Twista™

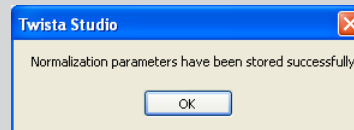
To save the factor and offset values to Twista™, click on the button labeled 'Save to Inst.':



The user will be asked to confirm:

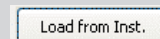


Click on 'OK' to store the calculated normalization values on Twista™. When the normalization values have been successfully sent to the instrument, the user is informed of this:



4.5 Loading Factor and Offset from Twista™ Reader

Click on the button labeled 'Load from Inst.':



The Factor and Offset values (for the current channel) stored in Twista™ will be loaded into the Twista™ Studio software:

Factor	<input type="text" value="8,55"/>	Offset [mV]	<input type="text" value="-225,5"/>
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4.6 Normalizing the Second Data Channel

Select the second channel for normalization (in this case the TAMRA channel) by clicking on the TAMRA button on the bottom left of the screen:



Repeat steps 4.2 – 4.4 for the second channel.



ESE products are subject to the quality standards in compliance / accordance with DIN ISO 9001.

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