

Keithley quickDAQ Quick Start Guide

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1. Measurement setup

Use the drop-down menu to select one of the supported thermocouple types:
J,K,B,E,N,R,S,T

Thermocouples require Differential Configuration

Channel 0 (zero) is NOT AVAILABLE for TC measurements (it is only used for cold junction compensation, CJC, measurements).

Only Recorded Data can be plotted

Strip	Chan	Rec	Plot	Ban
0	0	R	-	A
1	1	R	P	A
2	1	R	P	C
3	3	-	-	D
4	4	-	-	E

Use the Device tab to setup the basic configuration for data acquisition using the KUSB-3100 Module:

Select Subsystem
DT9802(00) Aln 0

Sample Rate Per Channel
Requested: 1000.00
Actual: 1000

Filename
C:\quickDAQ\data\DataFile1.hpf

Recording | Device

Channel Type:
Differential

Trigger Type:
Software

Range:
(-10 : 10)

Gain:
1.0
2.0
4.0
8.0

Differential: 8 channels
Single Ended: 16 channels
State: Initialized

The Gain Values will change as the acquisition unit changes.

Only recorded data can be plotted. Use the Recording tab to setup the recording parameters:

Select Subsystem
DT9802(00) Aln 0

Sample Rate Per Channel
Requested: 1000.00
Actual: 1000

Filename
C:\quickDAQ\data\DataFile1.hpf

Recording | Device

Press the Record button to start recording data to disk.

Stop Recording

Total Samples
10000

Time (sec)
10

On Event

Stop Button

The file name can be entered

2. Setting up to record multiple bands

Several “bands” are provided that can be used to simulate strip charts. These bands can be configured to display multiple channels of data. Several parameters for these bands can be programmed including a background color and trace color. Different data acquisition channels can be assigned to these Bands, as shown below:

Strip	Chan	Rec	Plot	Band
0	4	R	P	A
1	5	R	P	A
2	2	.	.	C
3	3	.	.	D
4	4	R	.	E
5	5	R	.	F
6	6	.	.	G
7	7	.	.	H

Strip 5 Channel: 5

Channel name: 0

Measure B ← 1

Record Band 2

Plot Band 3

Plot data type

Voltage Sensor

Thermocouple

To Plot a Channel, It must also be recorded

Each Channel Can Be Given an Arbitray Name

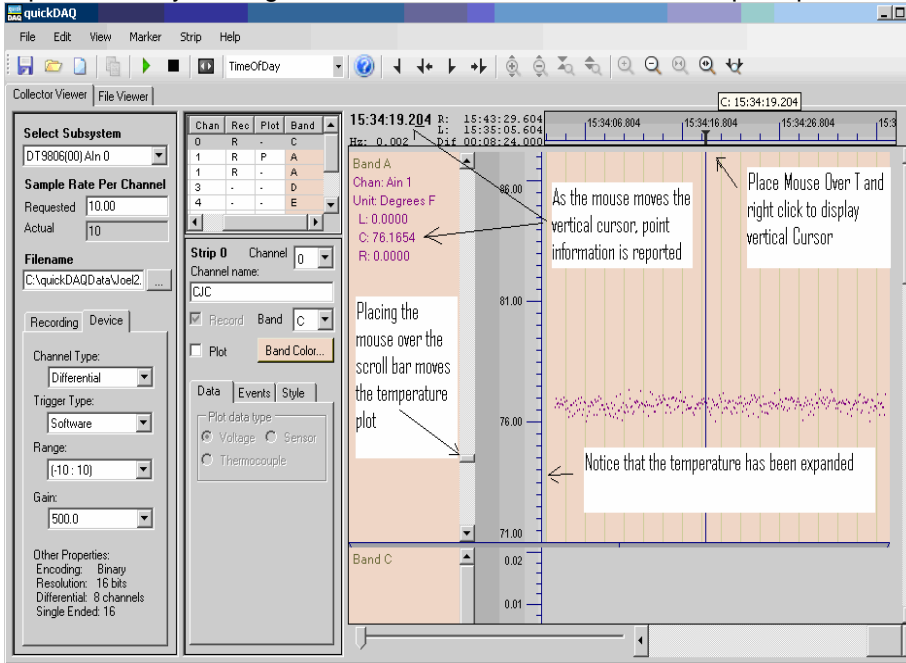
Band A
Chan: Arb Name
Unit: Volts
L: -10.0000
C: -10.0000
R: 10.0000

Chan: Measure B
Unit: Volts
L: -10.0000
C: -10.0000
R: -10.0000

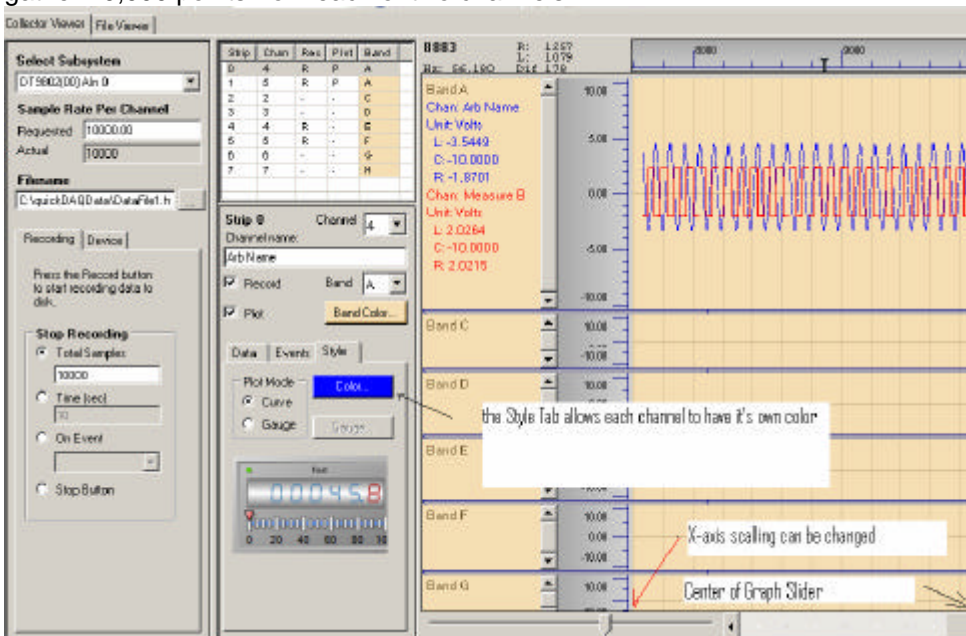
Band C
Band D
Band E
Band F
Band G

3. Analyzing data

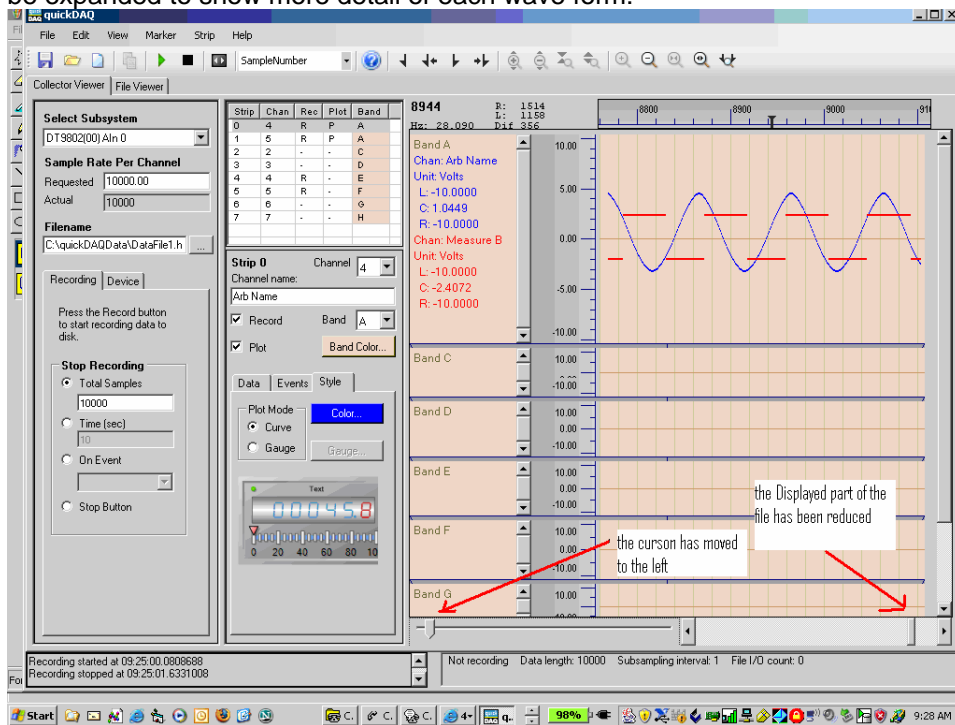
Once data collection begins, the Y axis on the spreadsheet will be set to span the entire temperature range for the selected Thermocouple. Change the Y-axis limits by placing the mouse in the plotting area of the graph and pressing the mouse's left button while the Ctrl Key is pressed until an expanded arrow is presented. Once this expanded arrow is presented, moving the mouse up or down compresses or expands the Y (Temperature) axis. This expanded axis can be repositioned by moving the vertical slider bar at the left of the plot up and down as shown below.



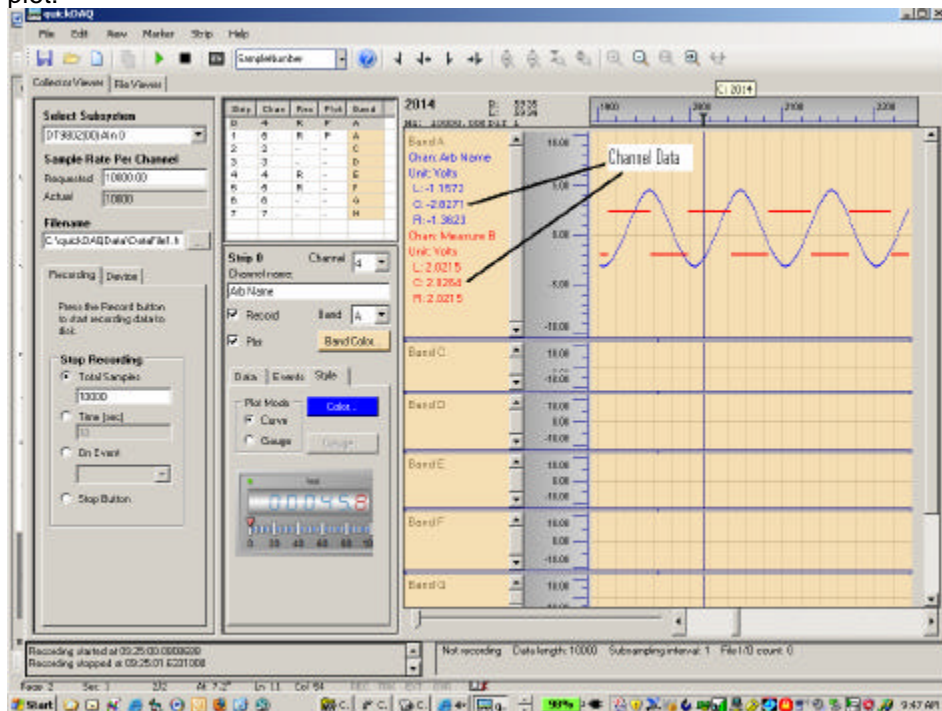
The quickDAQ software provides scrolling and zoom capability allowing individual points from a collected sample set to be read out easily. Shown below, is the result of configuring quickDAQ to gather 10,000 points from each of two channels:



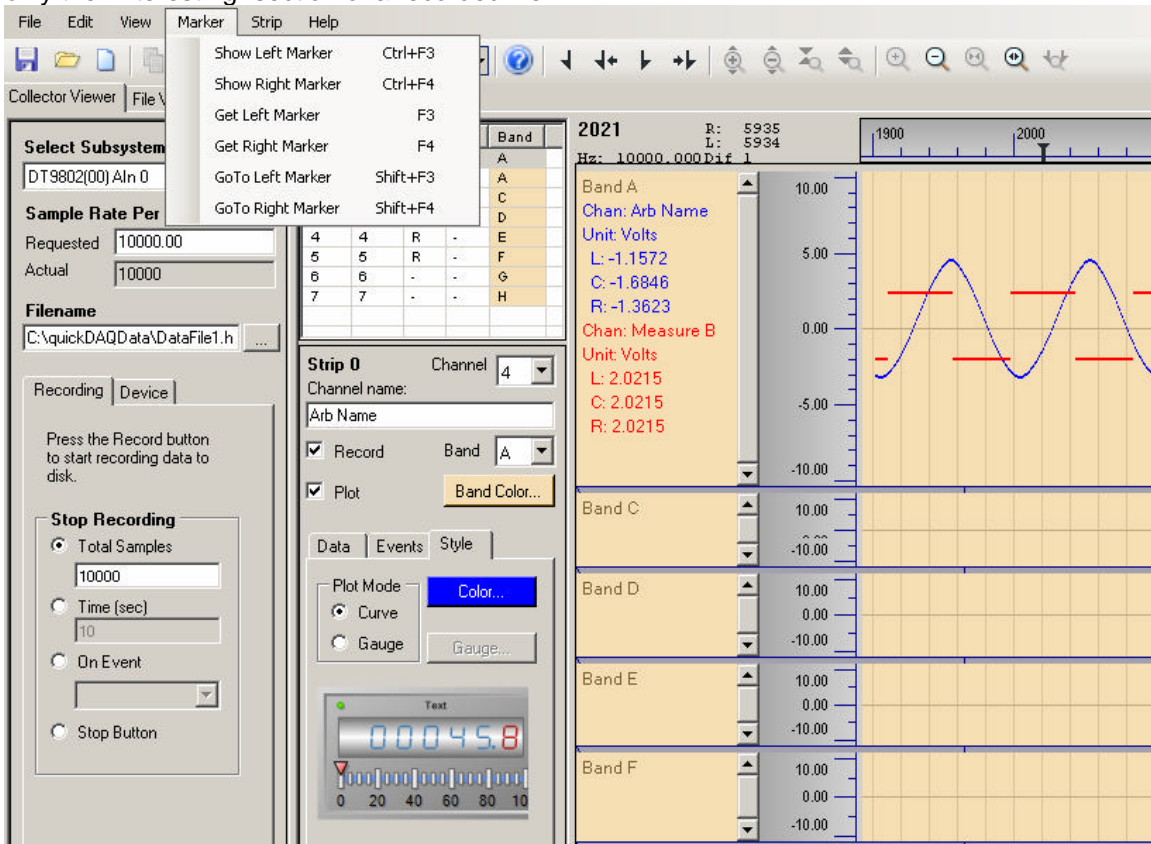
After the data has been collected, the Zoom axis (indicated by the slider at the lower left of the graph) is positioned near its center. If the position of this slider is moved to the left, the X-axis can be expanded to show more detail of each wave form:



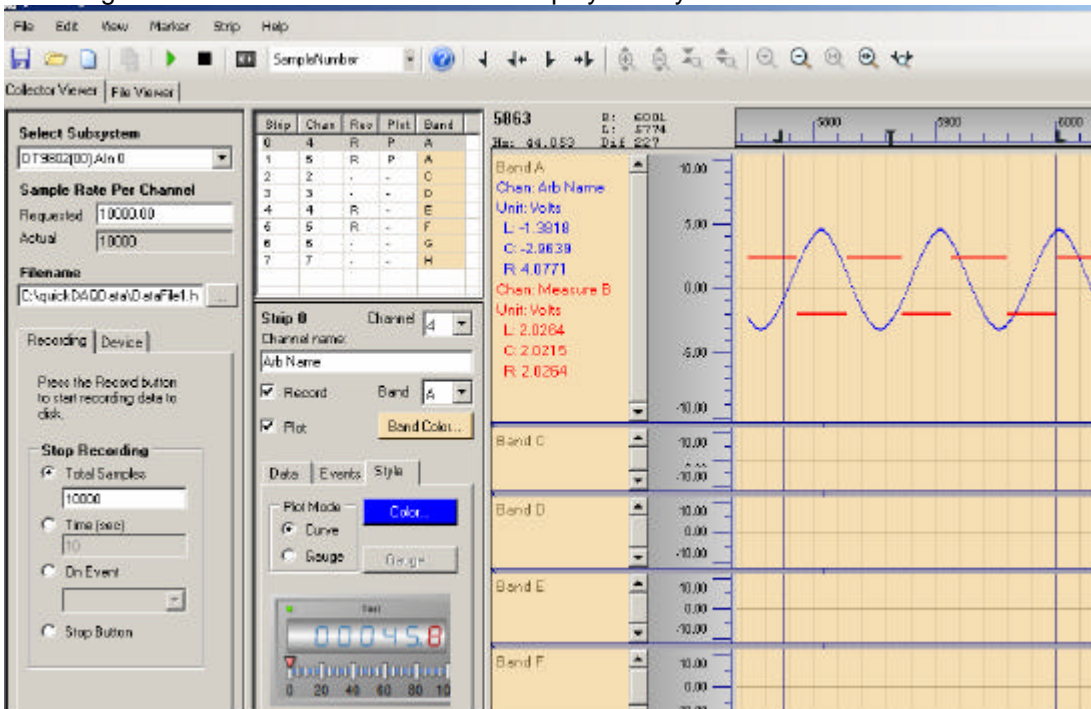
The software provides vertical cursors that “read out” the value of each recorded point. One of these vertical cursors can be selected by right clicking the mouse as it sits of the “T”. As this cursor is slid left and right, the recorded data value is displayed along the left edge of the graph of plot:



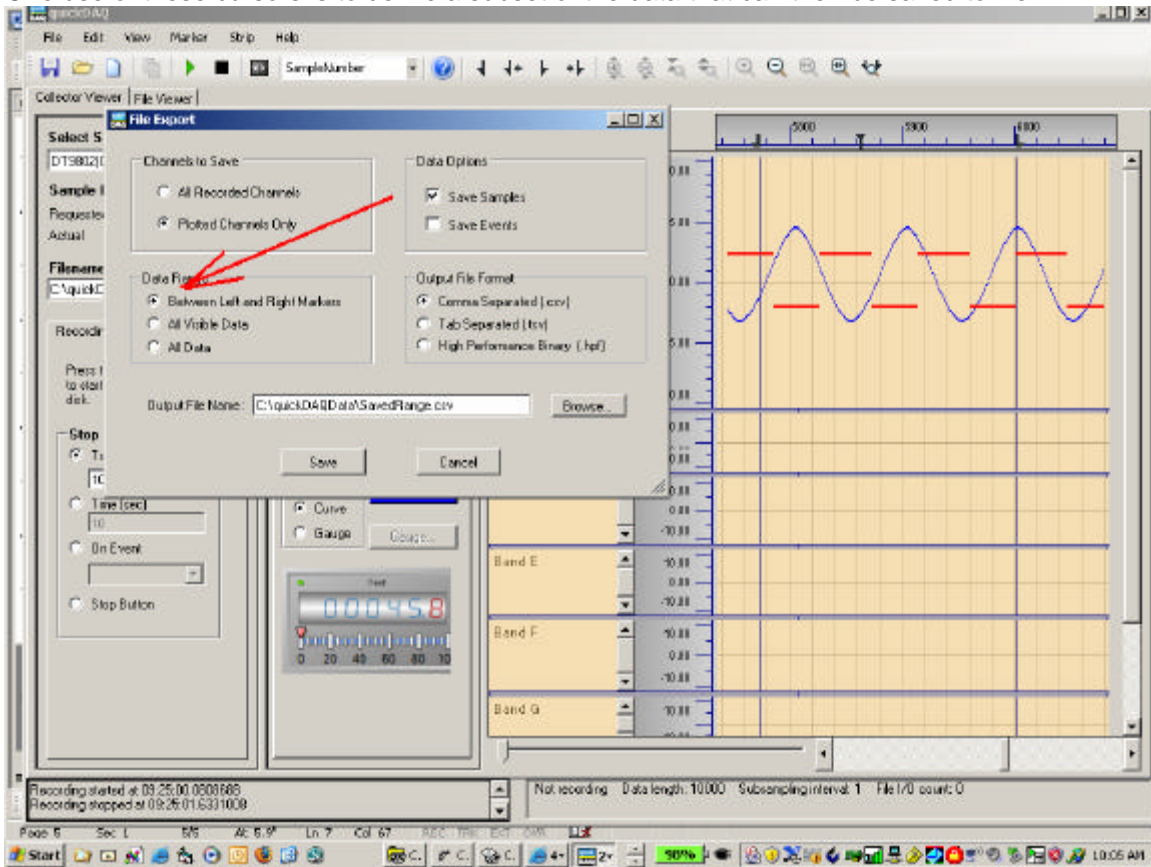
A Right and Left Vertical Scroll Bar are also available that provide a convenient way of saving only the “interesting” section of a recorded file:



Once Right and Left Scroll Bars have been displayed they can be set at a desired location:

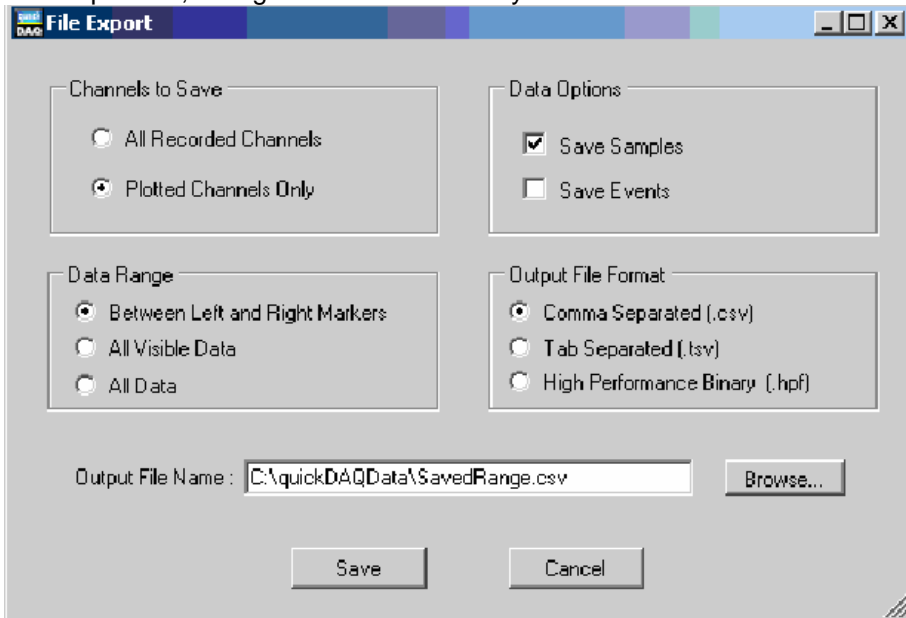


One use of these cursors is to define a subset of the data that can then be saved to file:



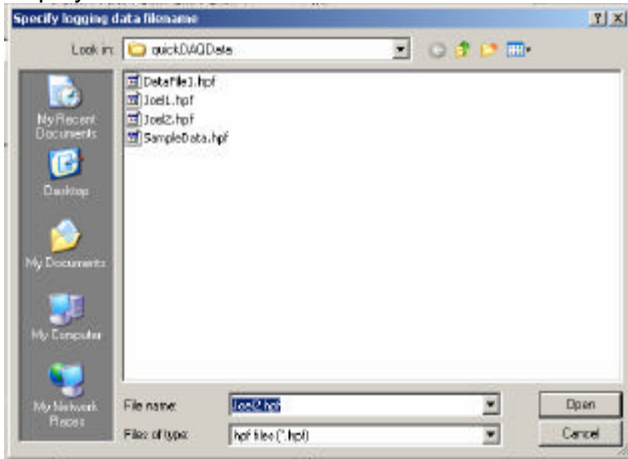
4. Saving files

Once the data has been collected, it can be stored in a variety of formats (Comma Separated, Tab Separated, or High Performance Binary).



5. Playback of recorded files

Using the OPEN menu, a previously created .HPF can be loaded into the quickDAQ software and displayed:



Data can then be analyzed as described in Section 3 of this document.