

Setup Procedure for MAX11410 Universal Input Design Board

Figure 1: AFE Board (Sensor Front End, Switch, Passives, ADC, Reference, Reference Power Supply, Isolated Supply, Data Isolator)

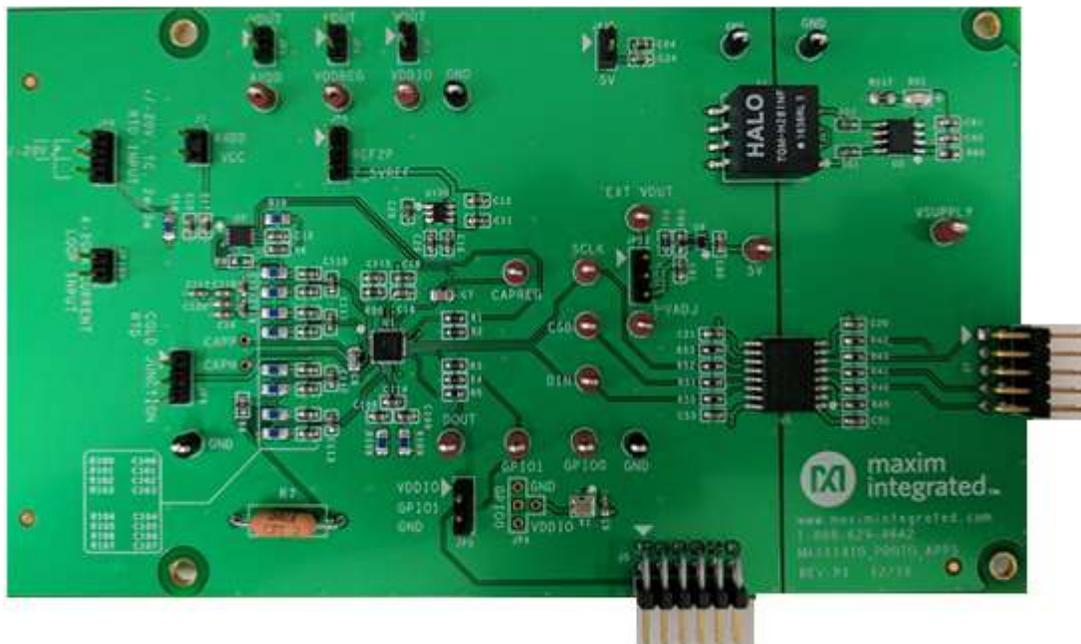


Figure 2: Communication Board: (MAXQ622: for USB to SPI communication from Laptop to ADC)



Jumper Settings: AFE Board

All the Jumper settings are pre-installed.

Name	Default Position
JP1	Install (1-2)
JP2	Install (1-2)
JP3	Install (1-2)
JP4	Do not Install (Don't Care)
JP5	Do not Install (Don't Care)
JP6	Install (2-3)
JP7	Install (1-2)
JP8	Connector – 3 Terminal (+/-20V, TC, 2w, 3w)
JP9	(PT100/PT1000 connected), Cold Junction Terminal
JP100	Connector – 2 Terminal (+/-25mA)
JP12	Install (2-3)
JP13	Install (1-2)
J2	10-pin Connector (male)

Table 1

Jumper Settings: USB to SPI comm board

All the Jumper settings are pre-installed.

Name	Default Position
JP1	10-pin connector (female)
JP2	Install (2-3)
JP3	Micro USB Connector Input
JP4	10- pin JTAG connector
JP6	+5V Jack Input

Table 2

Procedure for Thermocouple measurement (TC and Cold Junction):

1. Connect AFE board and the Communication board using J1(Comm. Board) to J2(AFE board).
2. Verify all the Jumper connections are as the table 1 and 2.
3. Connect the USB to micro-USB cable (USB laptop side and micro-USB to J3 of comm. Board)
4. D51 LED will be RED when connected.
5. JP9 is already installed with PT-1000 RTD, with Leg 2, 3 connected.
6. Connect the Thermocouple (Yellow wire to Terminal 1 of JP8 Connector and Red wire to Terminal 2 of JP8 Connector).
7. Double click and open the "**MAX11410EVKit.exe**" file provided specifically for this board. Verify if the board is connected in the status log present in the low region of the EVKIT software.

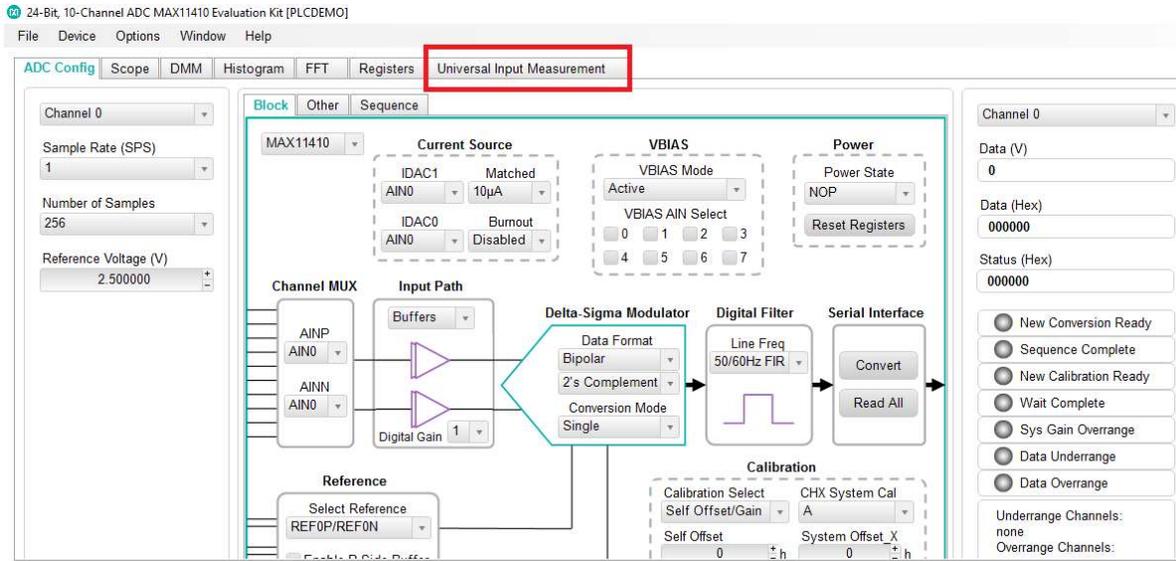


Figure 3

8. Please click the “**Universal Input Measurement**” Tab for this demo as shown in the above figure 3. The screen will be as shown below figure 4.

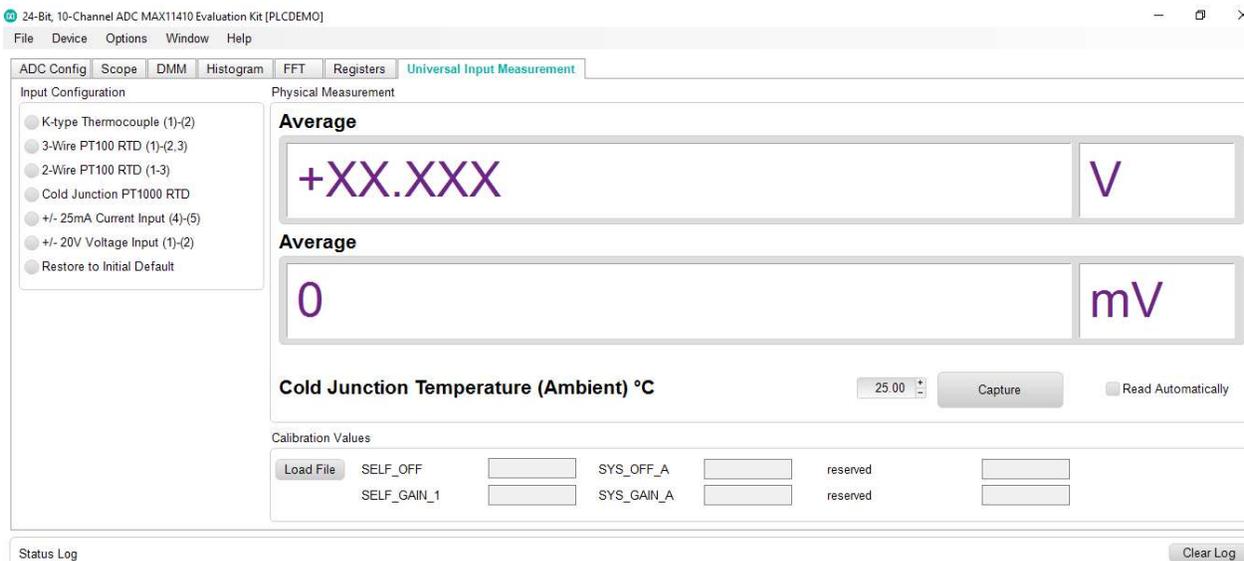


Figure 4

9. 7 Radio Buttons are available for display. The test associated for each radio button is shown as the radio button label.
 - a. When radio button is clicked for a measurement, all the configurations are internally taken care of.
10. Loading Calibration File: Pre-calibrated information is available for BRD #1, BRD #2, BRD #3 as shown below in Figure 5 and Figure 6 respectively
 - a. Please click the “Load File” to load the calibration file. The calibration file is a .txt file and is labeled based on the board.
 - b. If you have BRD #1, use BRD1.MAX11410.txt and so on.

c. If the board is not labeled, please use BRD3.MAX11410.txt.

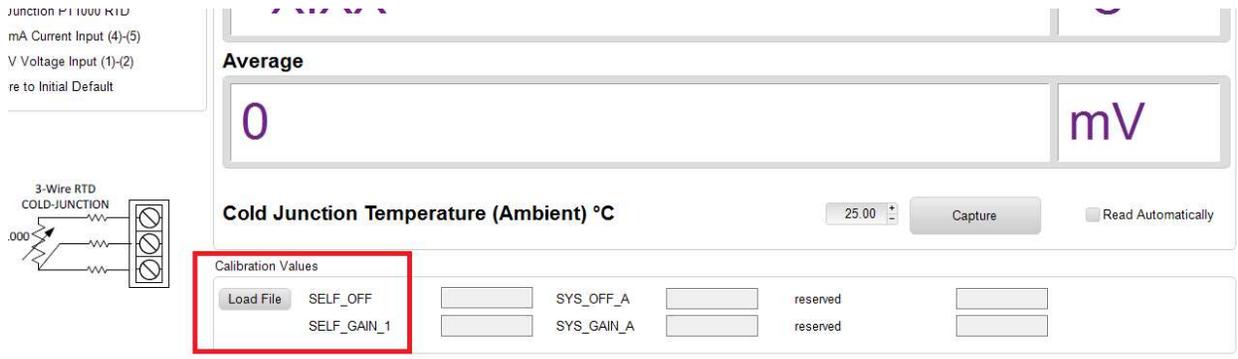


Figure 5.

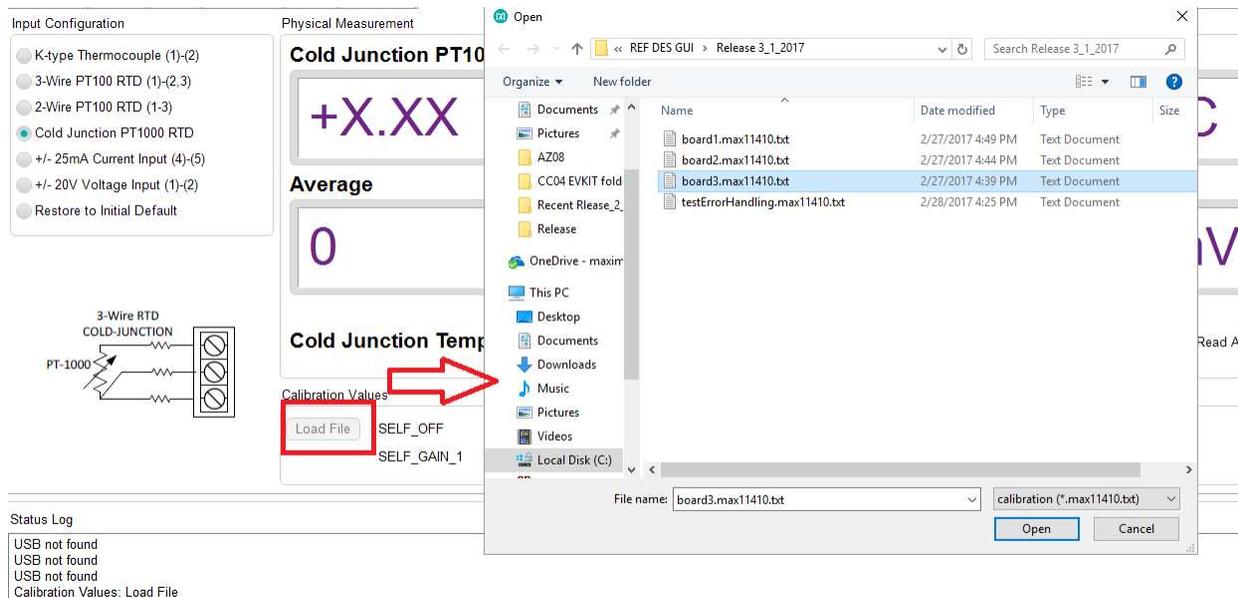


Figure 6

11. Thermocouple Measurement: For Thermocouple measurement, we would like to read the COLD Junction as well as the HOT Junction. Thermocouple reading is the HOT Junction. COLD Junction PT-1000 reading is Cold Junction.

a. Firstly, COLD Junction PT-100 reading radio button is selected as shown below in Figure 7

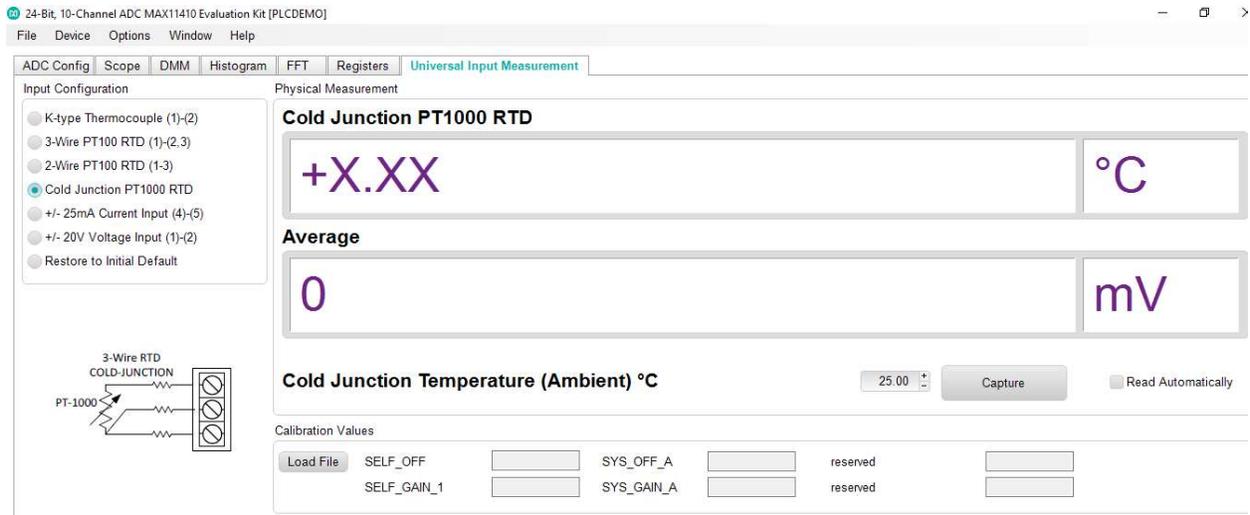


Figure 7

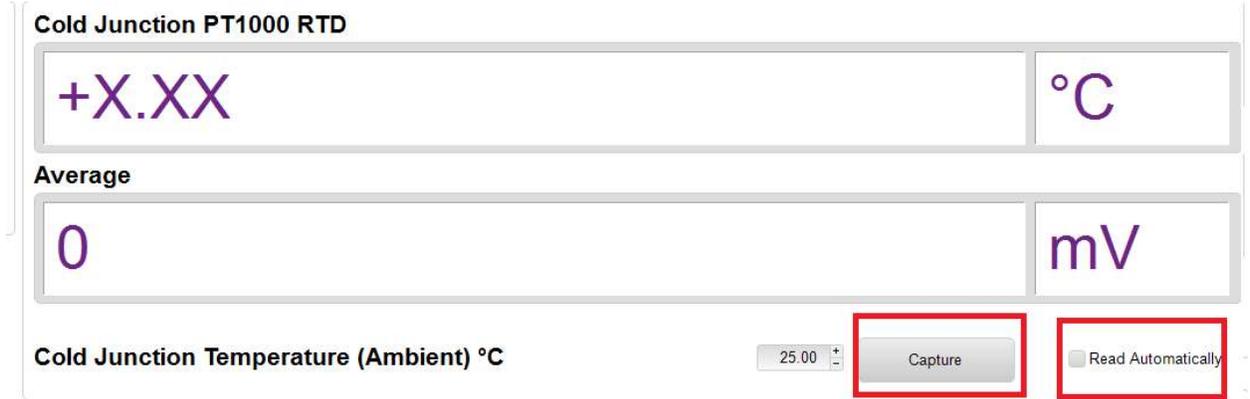


Figure 8

- b. cold Junction measurement reads the reference temperature or the Room Temperature.
- c. Single Capture/ Read Automatically: As shown in Figure 8, the part can perform a single capture or continuous read as highlighted red box shows.
- d. Choose the single capture/ read automatically based on your convenience, and wait for the temperature to settle and display.
- e. Once this is done, you will notice that the display for Cold Junction Temperature (Ambient) will get updated.
- f. Now we have the reference/ ambient temperature.
- g. Now, select the TC K-Type Thermocouple radio button, and perform a capture/ continuous capture.

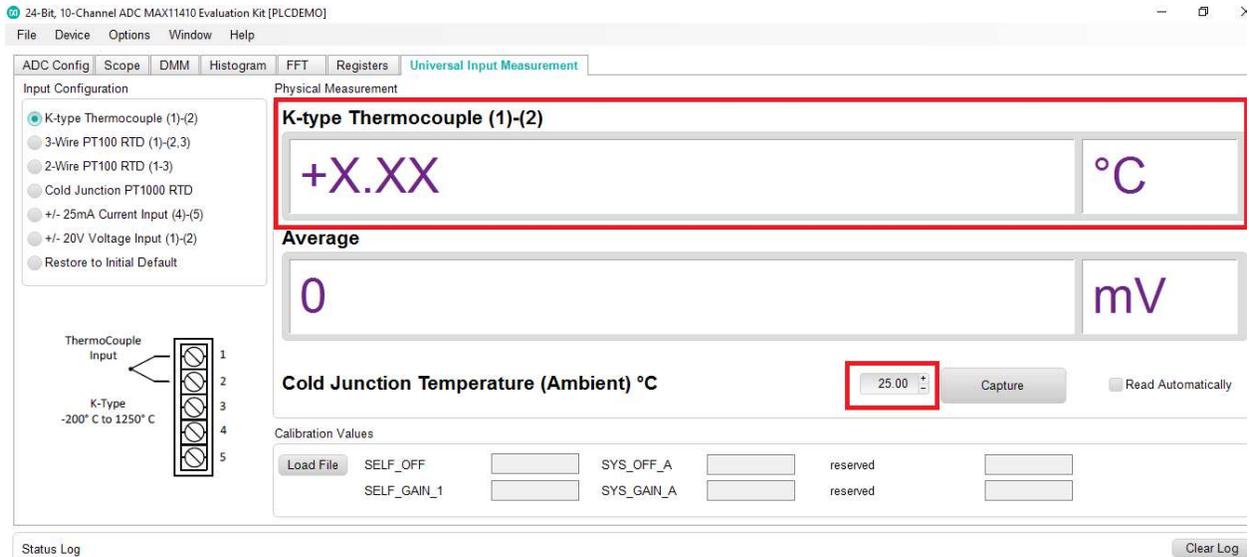


Figure 9

- h. You can see that the reference temperature measured in previous configuration (cold Junction) is updated here as shown in Figure 9.
 - i. When Capturing the TC input, you will notice the that the large Box display will display the final Temperature (HOT Junction + Cold Junction) or the total temperature.
12. We have successfully taken and displayed a measurement.