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Test Procedure for the ADT7473EBZEVB Evaluation Board

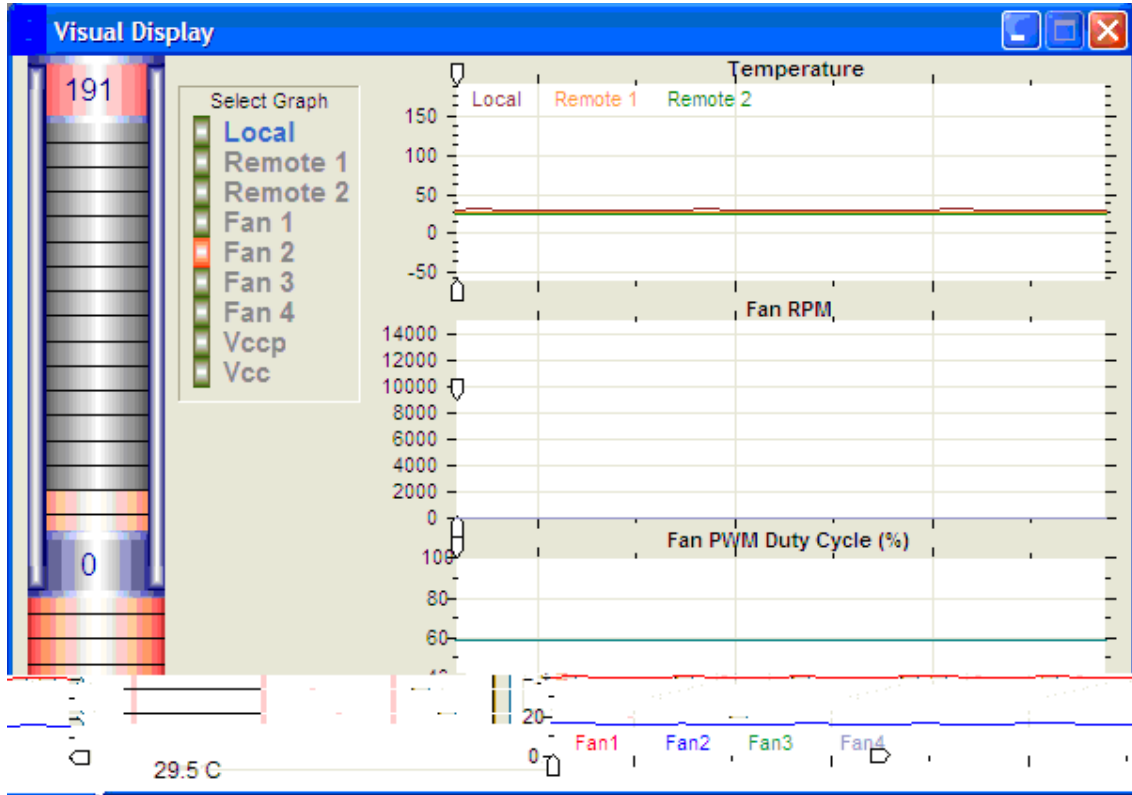cycle for each of the PWM channels. It also displays the different voltage readings taken from the board.

Figure 5. Graphing Window

Ø Limits for: Local, Remote 1, Remote 2, Fan 1, Fan 2, Fan 3, Fan 4, Vccp, Vcc, 5V, 12V and 2.5V channels can be adjusted using the slider bars in the graph. The upper limit (red) and lower limit (blue) are adjusted by clicking and dragging the slider up or down. The Status will change from green to red on an out of limit event for the corresponding channel.

Ø The on-board potentiometer can be used to adjust the Vccp voltage.

Ø Some pins on the ADT7473 share functionality (pins 5, 9, and 15) To change the function of these pins you need to open the Eval Board Configuration window. On the main toolbar click 'Main'> 'Eval Board Configuration'
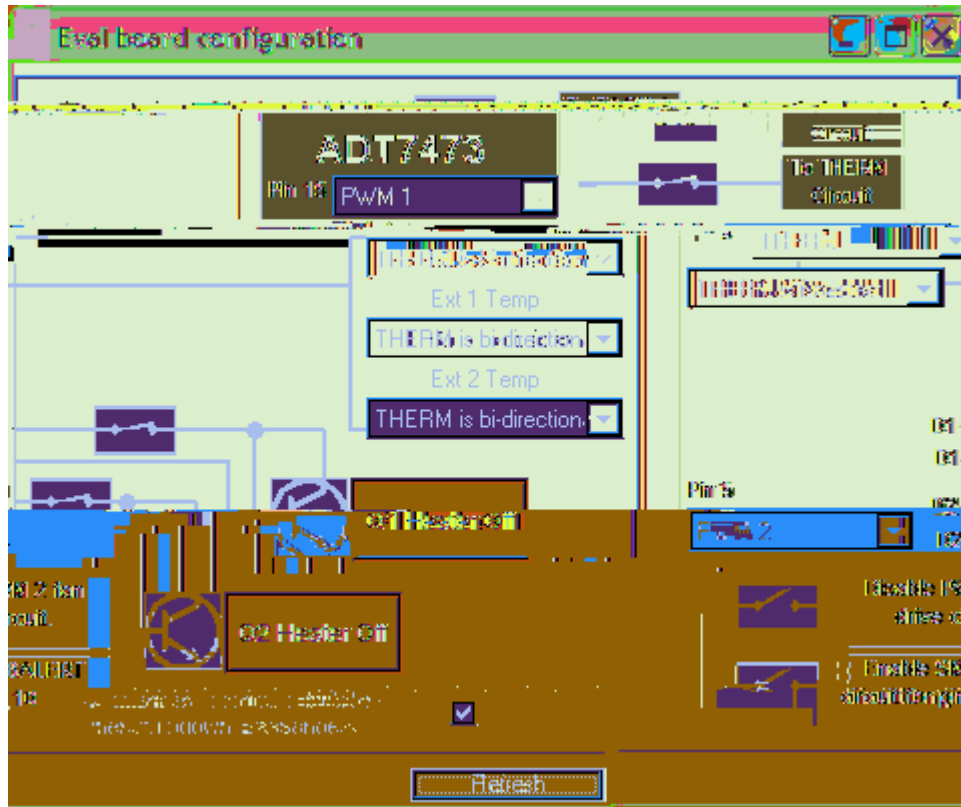
Figure 6. Eval Board Configuration Window

Ø   The onboard heaters can be turned on and off in this same window by clicking the appropriate heater (Q1 or Q2). In figure 6 heater Q1 is turned on.
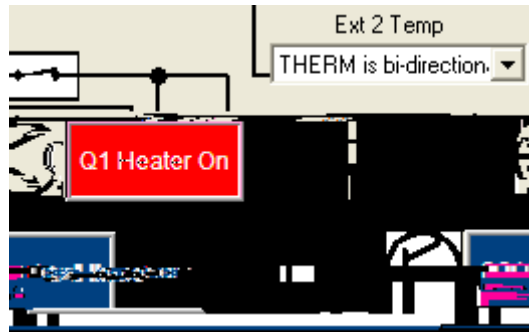

Figure 7. Onboard heater control.

AUTOMATIC FAN CONTROL:

Automatic fan control can be configured by opening the automatic fan control window. The fans may be configured to be controlled by any temperature and the associated settings (T_{MIN} T_{RANGE}, PWM_{MIN}, PWM_{MAX} etc…) can be changed in this window.

(Note: slide bars should be dragged to the right to increase the value and to the left to decrease the value.)

Ø   'Max PWM1 Duty Cycle' changes the maximum speed that the fan can run at while the temperature reading is below the Therm limit.

Ø   'Min PWM1 Duty Cycle' changes the minimum speed that the fan can run at while the temperature reading is above the TMIN limit.

Ø   'TMIN' indicates at what temperature at which the fan will turn on. At this temperature the fans run at the value of

'Min PWM1 Duty Cycle'

Ø 'T THERM' is the temperature at which the fan goes to full speed. (Most likely a critical temperature).

Ø 'Temp Hyst' is the range the temperature reading must reduce below before the fan will decrease its speed.

Ø 'TRange' defines the slope of the line from 'Min PWM1 Duty Cycle' to 'Max PWM1 Duty Cycle'.

Ø 'Operating Point' is a temperature that the user wishes to maintain. This is used in an algorithm to dynamically adjust the fan speed.

Ø 'Min Temp Limit' – if the temperature reading drops below this limit, an error flag is set in the status register and an SMBALERT interrupt is generated.

Ø 'Max Temp Limit' – if the temperature reading exceeds this limit, an error flag is set in the status register and an SMBALERT interrupt is generated.
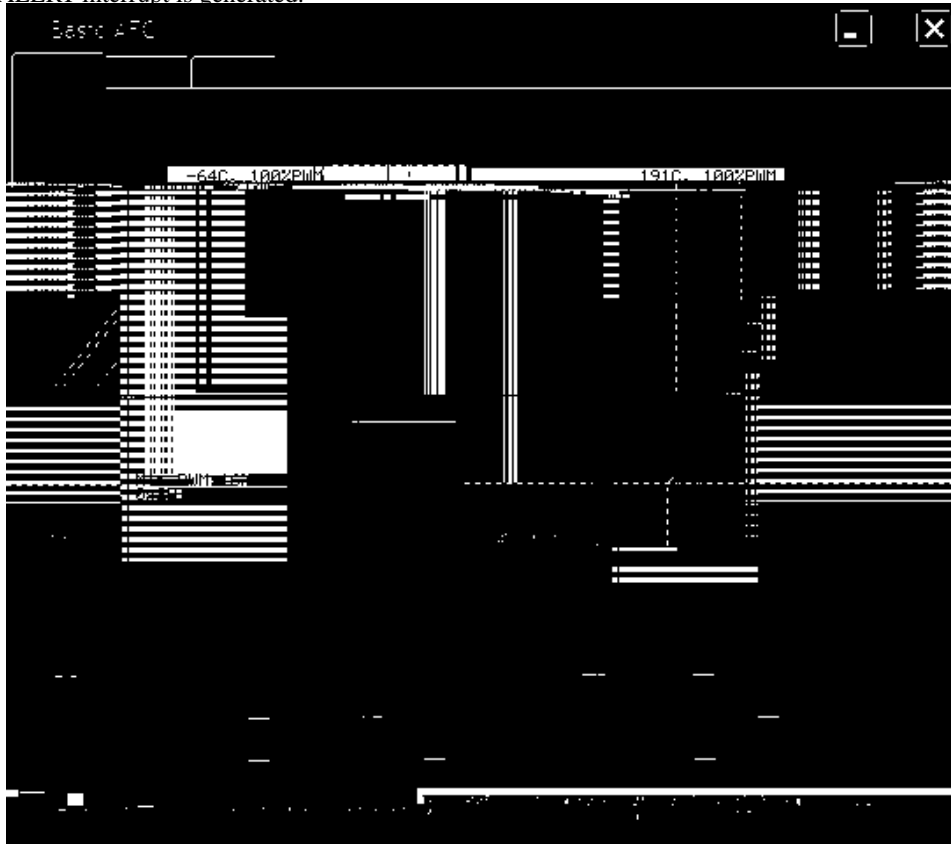

Figure 8. Automatic Fan Control Window

DYNAMIC TMIN CONTROL:

Dynamic Tmin control allows the ADT7473 to intelligently adapt the system's cooling solution for best system performance or lowest possible system acoustics, depending on user or design requirements. The ADT7473 can self-adjust its fan control loop to maintain either an operating temperature or a system target temperature. For example, it can be specified that the ambient temperature in a system should be maintained at 50°C. If the temperature is below 50°C, then fans might not need to run, or might run very slowly. If the temperature is higher than 50°C, the fans need to throttle up.

The dynamic Tmin control settings can be adjusted in the Automatic Fan Control window (Figure 7). The 'Enable Dynamic tmin' checkbox must be checked in order for this function to work.

ORDERING GUIDE

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Model	Package Description
ADT7473ZEVB	Evaluation Board

[1] Z = RoHS Compliant Part.

For more information on the ADT7473 device, see the product datasheet.