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NTC Thermistor  
Evaluation Board: MTHMR-N-0002A

# Quick Start Guide



# NTC Thermistor Evaluation Board: MTHMR-N-0002A

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- The Evaluation Board can be utilized for testing temperature sensor(NTC Thermistor; NXFT-series).
  - It's simple way to test temperature sensing by connecting this board with your microcomputer or single-board computer. Because, this is integrated Thermistor and peripheral circuit.
- Specifications
    - Rated Voltage : 5V
    - Output signal : analog
    - Dimension : 15×10mm

# Quick Start Guide : NTC Thermistor

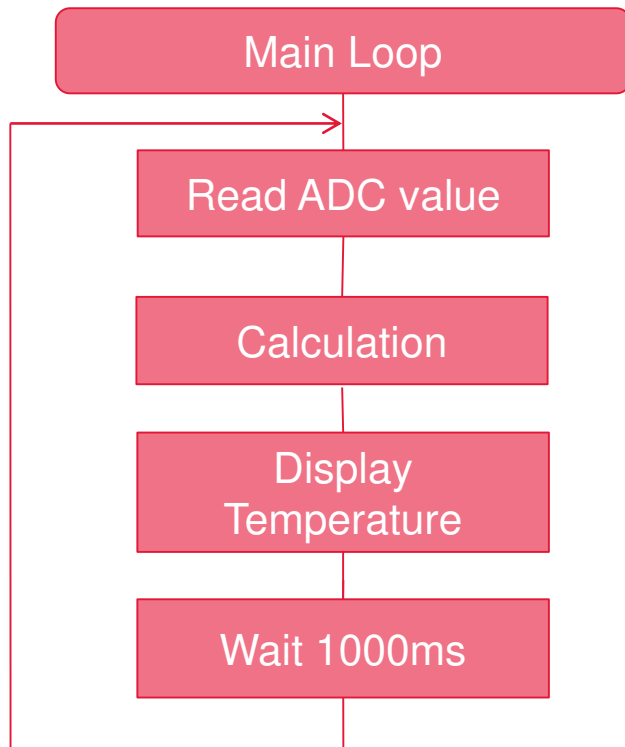
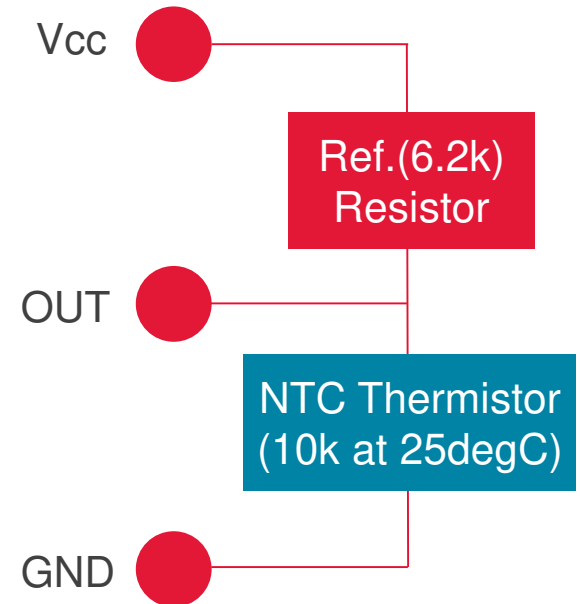


Thermistor is resistive component whose resistance value varies in respond to its temperature. NXFT15XH103FA2B030 as standard item for starter kit has 10kohm at 25degC.

# Hardware & Software Operation

On the board, Vcc (3.3V ~ 5V) is applied to thermistor and reference register (6.2kohm) and divided voltage is obtained at OUT.

Intaking OUT into ADC port and applying approximation formula, we obtain temperature value.  
(About the formula, please refer to “[Approximation Formula.ppt](#)”)



Calculation Example :

$$V = V(\text{out}) = (\text{ADC\_reading} / \text{ADC\_resolution}) * V_{cc}$$

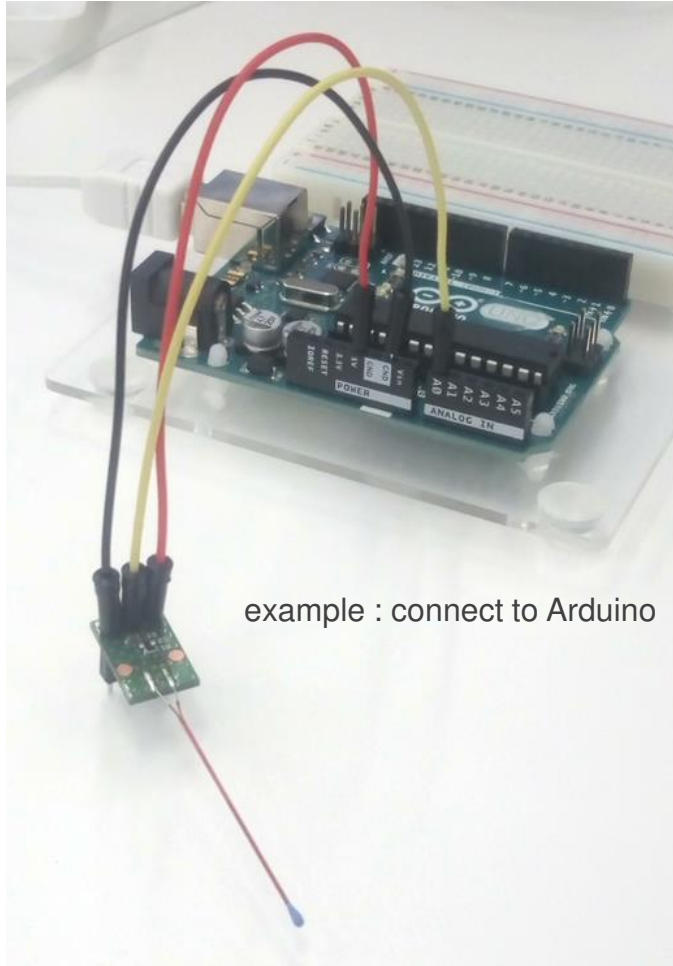
(in case of Arduino : ADC\_resolution is 1023, due to 10bit ADC.)

Applox. Formula:

$$\text{Temp [degC]} = -0.30779 * V^5 + 4.1545 * V^4 - 23.272 * V^3 + 68.015 * V^2 - 126.35 * V + 160.42.$$

(condition : 6.2kohm ref-resistor, 5V input)

# Pin Connection



Pin connection to each CPU board is also instructed in sample code.

Evaluation Board	↔	Arduino UNO
VCC		5V
OUT		A0
GND		GND