**MAX31856 Notes**

Table : Version History

|  |  |
| --- | --- |
| **Date** | **Notes** |
| 11/29/24 | Created |

# General Notes

* Make sure thermocouple leads are not touching or wrapped as a single unit (there should be two separate leads, a positive and a negative). The polarity matters and may need to be reversed if there are unexpected measurements/results (<https://electronics.stackexchange.com/questions/621482/will-reversing-the-polarity-of-a-k-thermocouple-damage-it> )

# Acronyms

|  |  |  |
| --- | --- | --- |
| **Acronym** | **Definition** | **Comment** |
| CPOL | Clock Polarity |  |
|  |  |  |
|  |  |  |

# Adafruit Max31856 Library

* Installed via Arduino IDE on 11/29/24.

|  |  |  |
| --- | --- | --- |
| **Example/Config** | **Date** | **Results/Comment** |
| max31856\_oneshot.ino w/ hardware SPI | 11/29/24 | Not working, perhaps we need to hook up DRDY pin? |
| max31856\_manual.ino w/ hardware SPI | 11/29/24 | Success (only shows TC temp, no CJ temp) |
| max31856\_oneshot.ino w/ software SPI | 11/29/24 | Success (occasionally gave nan values but this might have been due to a loose TC connection) |
| max31856\_oneshot.ino w/ hardware SPI | 11/29/24 | Success. Both CJ and TC temps |
|  |  |  |

# SPI

## Read Cold Junction Via SPI

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\*!

@brief Return cold-junction (internal chip) temperature

@returns Floating point temperature in Celsius

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float Adafruit\_MAX31856::readCJTemperature(void) {

return readRegister16(MAX31856\_CJTH\_REG) / 256.0;

}

# Research Notes

## 11/29/24

* Successfully read temperatures of both CJ and TC using Adafruit supplied libraries/code.

A screenshot of a computer

Description automatically generated

## 11/30/24