

# Agilent PLXB Documentation

### Purpose of Document:

The purpose of this document is to outline the program's deliverables, explain the functions utilized, and provides a pin state table.

### Program Deliverables:

- Initiate an ADC conversion
- Read back thermistor Zones THERM\_Z1\_TEMP, THERM\_Z2\_TEMP, THERM\_Z3\_TEMP, THERM\_Z4\_TEMP ADC values from the AD7265BC9Z
- Store ADC values from each Zone in their own buffer
- Provide a mean value for all the zones

### Description of Functions:

- **init\_adc()**: Sets spi pins high, and sets all multiplexer pin high since that configuration does not select a particular adc channel.
- **acd\_spi\_rx()**: Reads SPI data from the ADC over 14 clock cycles, capturing each bit on both the rising and falling edges of the clock.
- **select\_adc\_channel()**: takes in an integer and uses bit masks to each of the multiplexer pins.
- **read\_zones()**: Reads and stores the adc data of the four zones sequentially while calculating the mean of each zone.

### Pin State Table:

PIN	IDLE	ADC READ Z1	ADC READ Z2	ADC READ Z3	ADC READ Z4
TC_SPI_SCK	high	high / low	high / low	high / low	high / low
TC_SPI_MISO	3-state	high / low	high / low	high / low	high / low
TC_ADC_CS	high	low	low	low	low
TC_ADC_A0	high	low	high	low	high
TC_ADC_A1	high	low	low	high	high
TC_ADC_A2	high	low	low	low	low