cedargrove_ad5245

A CircuitPython driver for the AD5245 Digital Potentiometer.

The AD5245 Digital Potentiometer is an I2C, 10K-ohm potentiometer. The potentiometer sports 256 resistance steps and can work with a power source from 2.7v to 5.5v. The pins act similarly to a passive resistive potentiometer, but require that voltages placed on any of the three pins not exceed the power supply voltage or drop below ground potential.

The Cedar Grove AD5245 custom breakout board provides power and signal connections for I2C and the potentiometer chip. The AD5245 is also integrated with the AD9833 ADSR Precision Waveform Generator FeatherWing.

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Implementation Notes

Hardware:

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: https://github.com/adafruit/circuitpython/releases

class cedargrove_ad5245.AD52445(**, address=0x2C, wiper=0*)

Class representing the Cedar Grove AD5245, an I2C digital linear taper 10K-ohm potentiometer.

Parameters:
- **address** – The I2C bus address integer value. Defaults to ***0x2C*** (d44).
- **wiper** – The initial wiper integer value ranging from 0 to 255. Default is 0.

wiper

A class property.

Parameters: Change or read the integer value of the potentiometer wiper position, ranging from 0 to 255.

normalized_wiper

A class property.

Parameters: Change or read the normalized floating-point potentiometer wiper position, ranging from 0.0 to 1.0.

default_wiper

A class property.

Parameters: Change or read the wiper's default integer value, ranging from 0 to 255.

set_default(*default*)

A class helper function.

Parameters:	**value** — A dummy helper to maintain UI compatibility digital potentiometers with EEROM capability (dS3502). The AD5245's wiper value will be set to 0 unless the default value is set explicitly during or after class instantiation. The value can range from 0 to 255.

shutdown()

A class helper function.

Parameters:	Connects the ***W*** to the ***B*** terminal and opens the ***A*** terminal connection. The contents of the wiper register are not changed.