Datasheet:

Air Quality Sensor for Raspberry Pi

There are two types of this board.

Versions 1a to 1c of the board use a CCS811 sensor IC and a TMP235 temperature sensor chip.

Versions 1d and up use the CCS801 and a 0.5% thermistor to measure temperature.

Both designs also have a rudimentary display and a buzzer.

The board uses a bi-directional UART interface to communicate with the Pi.

The board is designed for use with the Raspberry Pi 400, but also works with other models of Raspberry Pi using the jumper wires included in the kit.

Electrical

		Units
Absolute maximum supply voltage	3.6	V
Minimum supply voltage	3.0	V
Typical current consumption	40	mA
Maximum current consumption	80	mA

Sensor Characteristics

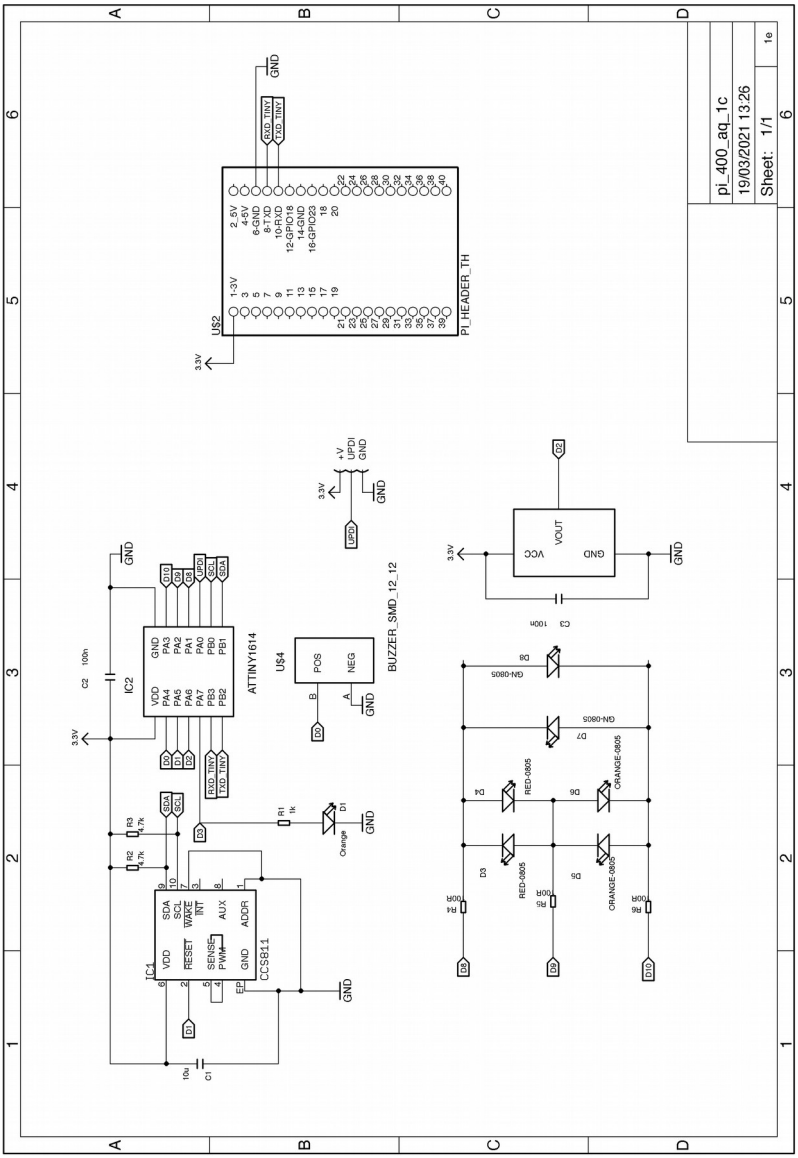
		Units
eCO2 minimum reading	400	ppm
eCO2 maximum reading	4095	ppm
eCO2 resolution	4	ppm
eCO2 accuracy	unspecified	
Temperature minimum reading	-10	deg. C
Temperature max reading	100	deg. C
Temperature accuracy	+/- 2	deg. C

Serial Protocol
All communication is at 9600 baud 8N1. Commands are a single letter with no terminating character or line feed required. Any extraneous command characters are ignored by the board. Some commands are followed by a response from the board within a few milliseconds. The responses are variable length and terminated with a \n character.

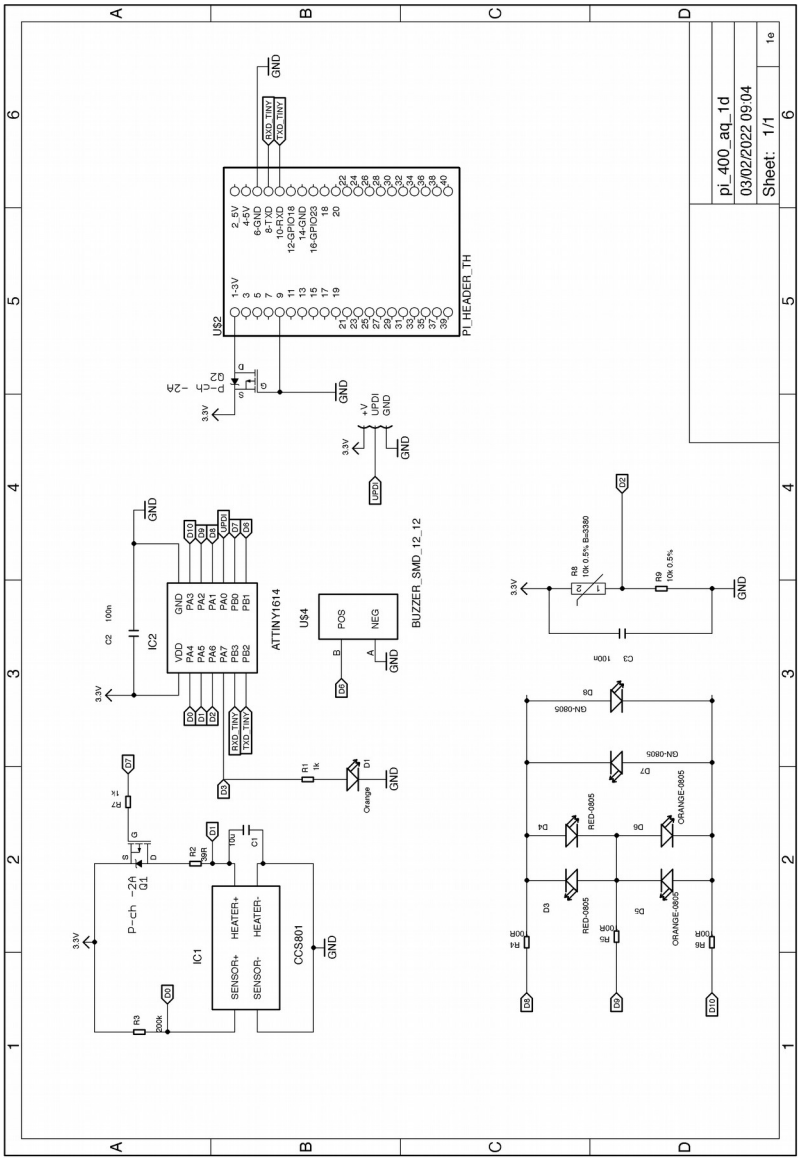
Command	**Response**	
t	t=23.45\n	returns the temperature in degrees C as a float
c	c=400\n	returns the eCOS level in ppm as an int
b	no response	turn the buzzer on
q	no response	turn the buzzer off
a	no response	auto-mode. Use the LED display to automatically show the current eCO2 level
m	no response	manual-mode. Turn off the auto mode, prior to setting the LED display level manually
0-6	no response	turn on the LED for the level indicated (0 no LEDs, 1 lowest LED, 6 highest LED). Note onlt 1 LED can be lit at a time.
?	undocumented	Returns self test data, for use during manufacturing. We reserve the right to change this from batch to batch. Use at your own risk.
k (v1d+ only)	Calibrate	Tare the sensor to 400ppm
K (v1d+ only)	Reset calibration	Reset the calibration factor back to the factory default.

See also the Python API here: https://github.com/monkmakes/pi_aq

Schematic Versions 1a to 1c



Schematic Versions 1d+



Mechanical

Actual size