

Analog I/O Cheat Sheet

What is an Analog Signal?

An analog signal can be seen as a voltage wave, it has an amplitude (Voltage) and frequency.

When using analog signals with the arduino, make sure the amplitude is no larger than 5V.

The analog signal is processed by one of the 6 on-chip Analog to Digital Converters (A0 to A5 pins) which return a value from 0 to 1023 for us to use in our control logic.

Write a value on an analog pin

```
analogWrite(pin, value);
```

- `pin`: the pin number (use the ones with the ~ symbol)
- `value`: Can range from 0 to 255

Read the value on an analog pin

```
value = analogRead(pin);
```

- `pin`: the analog pin number (A0 to A5)
- return value can range from 0 to 1023

Scale the analog value

The returned analog value can range from 0 to 1023, you can use the `map` function to scale that value to your needs.

```
1 // 0 to 100 range
2 value = map(value, 0, 1023, 0, 100);
```

In this case, we convert `value` to a 0 to 100 range, this can be useful to represent a percentage