Pulse-width modulation (PWM)

Pulse-width modulation (PWM), also known as pulse-duration modulation (PDM) or pulse-length modulation (PLM), is any method of representing a signal as a rectangular wave with a varying duty cycle (and for some methods also a varying period).

PWM is useful for controlling the average power or amplitude delivered by an electrical signal. The average value of voltage (and current) fed to the load is controlled by switching the supply between 0 and 100% at a rate faster than it takes the load to change significantly. The longer the switch is on, the higher the total power supplied to the load. Along with maximum power point tracking (MPPT), it is one of the primary methods of controlling the output of solar panels to that which can be utilized by a battery. PWM is particularly suited for running inertial loads such as motors, which are not as easily affected by this discrete switching. The goal of PWM is to control a load; however, the PWM switching frequency must be selected carefully in order to smoothly do so.

[Wikipedia](#)

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