

What is PWM ?

(Pulse Width Modulation) A modulation technique that uses a digital circuit to create a variable analog signal. PWM is a simple concept: open and close a switch at uniform, repeatable intervals. Analog circuits that vary the voltage tend to drift, and it costs more to produce ones that do not than it does to make digital PWM circuits. In addition, control of almost everything today is already in the digital realm.

For example, PWM is widely used to control the speed of a DC motor and the brightness of a bulb, in which case the PWM circuit is used to open/close a power line. If the line were opened for 1ms and closed for 1ms, and this were continuously repeated, the target would receive an average of 50% of the voltage and run at half speed or half brightness. If the line were opened for 1ms and closed for 3ms, the target would receive an average of 25%.

Today, PWM technique has been used in wide applications, such voltage control, current control, motor control, power control, UPS, inverter...