

# Embedded Designs Plus PC104 16 Bit PWM 8 Channel Input & 8 Channel Output Board (PC104PWM)

## Description

By utilizing 18 different 16-bit 82C54 timers, 8 individual 16-bit PWM Outputs and 8 individual 16-bit PWM Inputs are available on one board. This board has one of four jumper selectable address so a total of four boards can be stacked to create up to 32 individual 16-bit PWM Outputs and 32 individual 16-bit PWM Inputs on one stack.

The input clock is taken directly from the PC104 bus BCLK (typically 8.33 MHz).

The input clock is fed through the first 82C54 timer. This programmable timer divides the 8.33 MHz clock by any number from 1 to 65535. This derives an output clock frequency between 127 Hz and 8.33 MHz that is fed into the 17 remaining 82C54 timers as the Master Clock. The overall output PWM width is controlled by the second 82C54 timer. This programmable timer divides the Master Clock by any number from 1 to 65535. Once a value is written to a PWM output register, that PWM output is maintained until the pulse width is updated.

Writing 8 bits of data to a latch enables the PWM inputs. With this, any or all of the 8 PWM inputs are enabled. Once enabled, on the next rising edge of the enabled PWM input, the PWM input is sampled and a 16-bit timer starts counting. On the next falling edge of the PWM input, the timer stops counting and the input is gated so no more PWM inputs can be read until the PWM input enable latch is written to again. This gives the software time to read the registers without another PWM event overrunning the timer register. All 8 PWM inputs can sample 8 different PWM inputs simultaneously.

Additional circuitry is installed which allows this board to monitor the average voltage of a 9<sup>th</sup> PWM Input and switch between the internally generated 8 PWM outputs and 8 externally generated PWM Outputs. This feature is typically used with Radio Remote Control Servos.

## Specifications

### Typical Usage

- PWM Monitoring & Control Including RC Servos

### Interface

- 5 Volt TTL Logic

### PC/104 Bus

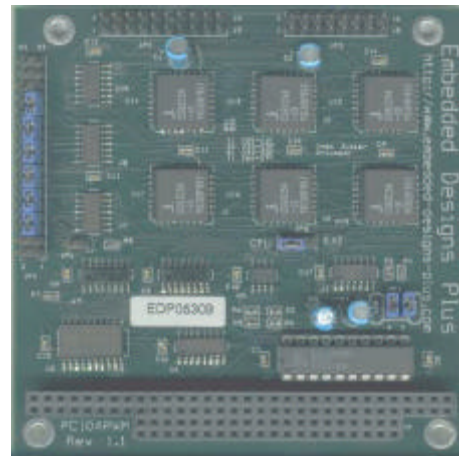
- 16 Bit PC104 connector for expansion modules

### Environmental Information

- Operating temperatures: 0~60&deg;C
- Storage temperatures: -20~80&deg;C
- Relative humidity: 10~90% non-condensing

### Physical Dimensions

- 3.55"(L) x 3.75"(W)



**Please refer to part number PC104PWM when ordering**

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