

Fan Power PWM Board Instructions

Thank you for purchasing the CORALUX Fan Power PWM Board. This board was designed to work in conjunction with the Storm or Storm X controllers to control the cooling fans on your LED fixtures. Please familiarize yourself with these instructions prior to installing the board.

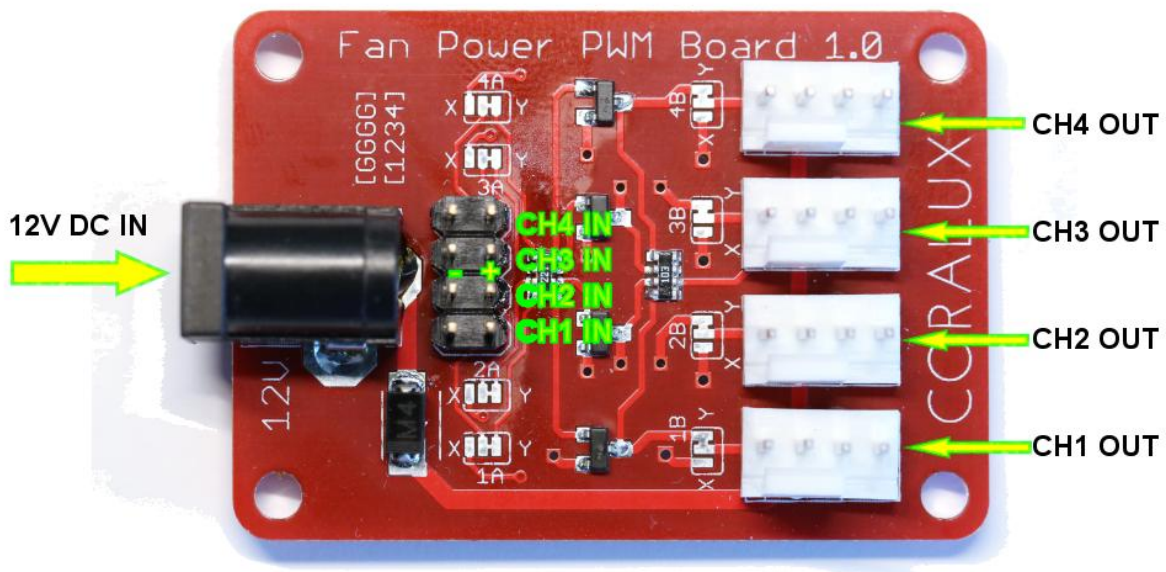
Features:

- Allows control of virtually any 12V cooling fan
- Selectable Power PWM or Control PWM modes
- Option to combine Channels 1 & 2, 3 & 4
- Four independent fan control channels
- Independent 12V power source

Specifications:

- Maximum 1000 mA combined fan current
- Maximum 300 mA individual fan current
- Maximum 12V DC input power supply
- Mounting holes 3mm @ 44mm x 29mm
- Board Dimensions 50mm x 35mm

Board Layout: Fan Power PWM Board



Description:

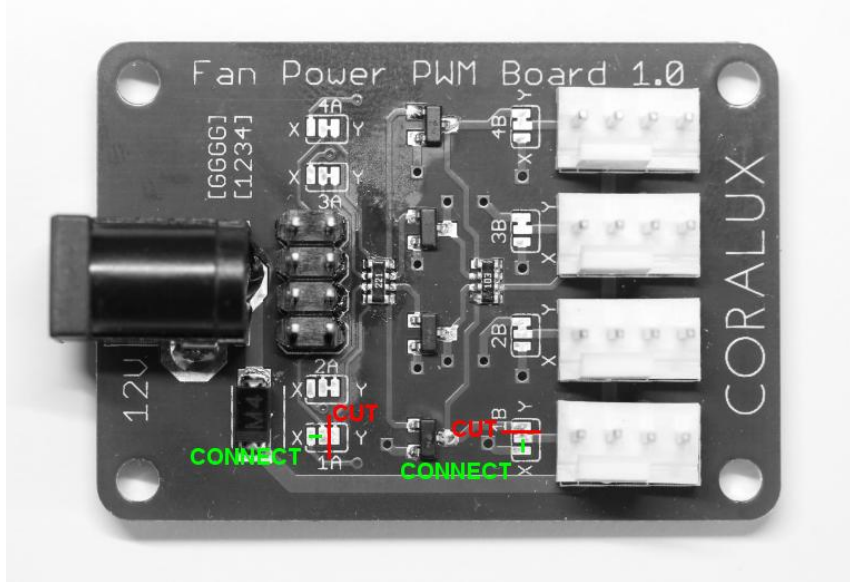
Fan Power PWM Board allows you to use any channel of your Storm or Storm X to control almost any 12V DC fan. The board includes its own 12V power supply to simplify the power requirements.

Jumper Selection: The Fan Power PWM Board can operate in Power PWM Mode (default) or Control PWM Mode. The Power PWM Mode will strobe the 12V power to the fan, enabling PWM speed control in much the same way that PWM is used to control the brightness of LEDs. This is the required method for controlling 2- and 3-wire fans and requires no further modification of the board. Because of the strobing of the power, some fans may exhibit a high pitched whine. The noise is usually drowned out by other ambient noises (pumps, filters, etc) but may be bothersome to some users.

For 4-wire fans, you may prefer to use the fan's internal PWM control circuitry instead of strobing the power to the fan. In this case you will want to modify the channel as follows: Using a hobby knife or some other sharp object, cut the small power trace that is connected by default on the two jumper for that channel. For example, if you want to enable Control PWM on CH1, you will cut the existing trace leading from the center pad to "Y" on jumpers 1A and 1B. Then electrically connect the center pad to "X" on the same jumpers, either with a small blob of solder or with a small wire soldered between the pads. This will disable Power PWM and enable Control PWM on that channel.

Control PWM also requires *firmware selection* of Fan Mode on the Storm (on CH4 and CH5 of Storm), or use of digital pin D9 on the Storm X. This is because the specification of 4-wire fans requires using 25 KHz PWM instead of 1 KHz PWM that is the default. In other words, whereas you can use any PWM channel on the Storm or Storm X when using Power PWM Mode, you must use the specifically assigned PWM channels when using Control PWM mode.

Some fans (in particular, Intel CPU fans) may have additional onboard circuitry that "revs" the fan to break the at-rest resistance to turning. We've found that these fans do not work well, if at all, under Power PWM mode and should be controlled by Control PWM mode if they are 4-wire fans.

Jumper Selection Example: CH1 changed to Control PWM Mode**Combining Channels:**

On the bottom of the board you'll see solder jumpers SJ1 and SJ2. The purpose of these jumpers is to give you the option of controlling two fans with one PWM signal. SJ1 will combine CH1 and CH2 outputs so that you only have to provide a single PWM signal (on CH1 or CH2 input side) to control both. Similarly, SJ2 will combine CH3 and CH4. Bridge the jumper with a blob of solder to activate this function. It works in both Power PWM and Control PWM modes.

Connections: We recommend using one Jumper Cable for each channel used. The jumper cable connects the appropriate PWM output pin(s) on the Storm or Storm X to the Power PWM Board input(s).