I2C to PWM Converter "AfroI2C"
Hardware and Connection

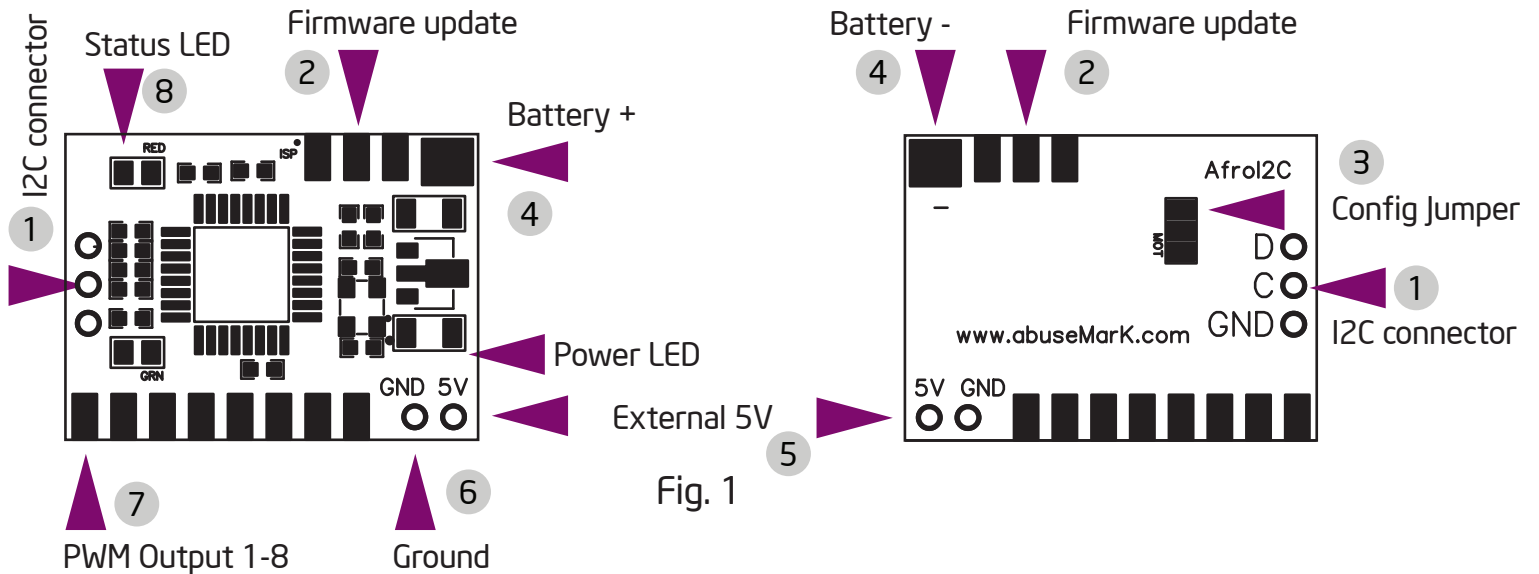NOTE Current revision of the converter can only be powered by external 5V supply.

Fig. 1

1. I2C connector. SDA (D), SCL (C), GND pins from top to bottom. Connect these to C, D and Ground pads on Flight Control. For convenience, standard servo cable can be used. Black = Ground; Red = C; White = D.

2. Firmware update connector. AVR-ISP standard 6-pin connector. Pin 1 is on top, facing the Status LED. Use AVRDude or similar programmer to upgrade firmware.

3. Motor configuration jumper. Pads are numbered from top to bottom. All pads untouched (default) = Quad
   1-2 bridged = Octo
   2-3 Bridged = Hexa
   1-2-3 bridged = Tri

4. Battery +/- terminals. Not used in current version. Do not connect.

5. External 5V connector. Any 5V power source, such as BEC, Flight Control's 5V, etc.

6. Ground connector. Connect this to system ground.

7. PWM output to ESC, standard pinout.
   Top = Signal
   Center = 5V (only 1st connected)
   Bottom = Ground

8. Status LED

Automatic ESC Calibration (Bind-Plug)

1. Disconnect I2C plug from the board (Fig.1 (1))
2. Connect Bind-plug from your receiver (or short out pins D and GND)
3. Apply power to all ESCs and I2C converter.
4. Status LED (Fig.1 (8)) will blink, while controllers will make calibration beep sounds.
5. After status LED finish blinking, remove power and Bind-plug and
   re-connect I2C connector.

WARNING Remove propellers or tie down the model before attempting ESC calibration.

Firmware update using AVR-ISP

1. Connect 6-pin ISP cable to the converter's "Firmware update" header. (Fig.1 (2)).
   Note pin1 location (top side, facing Status LED).
2. Use whatever software included with ISP programmer to write updated .hex file.
3. No special fuse settings are needed, make sure to use external oscillator 8MHz+ and
   disable CKDIV8 fuses.

Using the converter

On power-up the Status LED (Fig.1 (8)) blinks rapidly for a few seconds, then blink more slowly to count the number of configured motors. Default configuration is 4, so there will be 4 blinks, after which the LED turns off.

1. Connect Standard ESC to PWM Output pins 1-8 (Fig.1 (7))
   Motor #1 is left-most connector.
2. Calibrate ESC (Only needs to be done once)
3. Fly around.