ESP32 Control Board V2.1, Part No. FB6261

For email support: esp32andmore@gmail.com. For text/telephone/WhatsApp support: 1.585.310.1770
See: https://github.com/fpovoski/ESP32-Temperature-Monitoring-PWM-Control-Board

Setup and Configuration

* Home Assistant Configuration
```
  api:
    encryption:
      key: "itqzvhZMJj8wuTJX0GTOuL/ffESFROzUlmcO0u2+sfo="  #use your own HA generated Key
```

* DO NOT ATTEMPT TO POWER FANS FROM USB-C. Supplied power (5v-14V) to barrel connector needs to match the voltage of the PWM fan (or other device) you are driving. Board has an onboard self-resetting flex fuse rated at 10 amps.

* To place on WiFi network use 2.4G phone to connect to "AVFAN1 Fallback Hotspot" with the password "esphome1" ("trek6666" in some factory flashed). Once connected to your WiFi network, to access the webpage of the device browse to http://avfan1.local

* Device is flashed with an example ESPhome binary image that has manual control over fans and automatic control based on the measured temperature and the target temperature setting. Four temperature sensors control each of the four PWM fan connectors. The lambda function in the Dallas Platforms calculates and sets the corresponding fan speed. Flashed binary image has "api:" enabled, MQTT disabled.

* For customization, download the example (flashed) code from https://github.com/fpovoski/ESP32-Temperature-Monitoring PWM-Control-Board (avfan1.yaml). Also update WiFi and MQTT server credentials as required.

* Flash over USB or ethernet. To flash over USB use ESPhome Web Flasher https://web.esphome.io/ with the device powered and connected to your host machine.

* For Dallas style sensors (board preprogrammed with logger level: DEBUG), to get device ID follow
Seach for them in the initial logger output when connected to the USB port using ESPhome Web Flasher. See, avfan1.yaml for instructions.

* For adding Wemos style boards (i.e., relay) with the case installed use the long (19mm) provided pins.

* For voltage selection of JST SH connector (J10) use J11 (+5V - J11.1 to J11.2, +3.3V - J11.3 to J11.2). Despite being able to supply 5v power make sure all your I2C devices are all using 3.3v signaling as it is not a 5v tolerant bus.

Connector to GPIO Mapping

GPIO	PIN	CONNECTOR	Input	Output	Notes
0	25		pulled up	OK	outputs PWM signal at boot, must be LOW to enter flashing mode
1	35	P2.1	TX pin	OK	debug output at boot
2	24		OK	OK	conn. to on-board LED, left floating or LOW to enter flashing mode
3	34	P2.2	OK	RX pin	HIGH at boot
4	26		OK	OK	
5	29	P1.7	OK	OK	outputs PWM signal at boot, strapping pin
6	20		x	x	connected to the integrated SPI flash
7	21		x	x	connected to the integrated SPI flash
8	22		x	x	connected to the integrated SPI flash
9	17		x	x	connected to the integrated SPI flash
10	18		x	x	connected to the integrated SPI flash
11	19		x	x	connected to the integrated SPI flash
12	14		OK	OK	boot fails if pulled high, strapping pin
13	16	PWM1-(J4)	OK	OK	
14	13	PWM2-(J5)	OK	OK	outputs PWM signal at boot
15	23		OK	OK	outputs PWM signal at boot, strapping pin
16	27	P2.6, SDA_B	OK	OK	
17	28	P2.5, SCL_B	OK	OK	
18	30	P1.4	OK	OK	

19	31	P1.5	OK	OK	
20					
21	33	P2.4, SDA_A-(J10)	OK	OK	
22	36	P2.3, SCL_A(J10)	OK	OK	
23	37	P1.6	OK	OK	
24					
25	10	PWM3-(J6)	OK	OK	
26	11	P1.3-(J1)	OK	OK	
27	12	1WIRE	OK	OK	
32	8	PWM4-(J7)	OK	OK	
33	9	RPM1-(J4)	OK	OK	
34	6	RPM2-(J5)	OK		input only
35	7	RPM3-(J6)	OK		input only
36	4	P1.2	OK		input only
39	5	RPM4-(J7)	OK		input only
EN	3	P1.1			
3.3	2	P1.8			
GND	1	P2.7			
GND	15				
GND	38				
NC	32				
+5		P2.8			

Open Collector 2.54mm Header Connector

CONN	PIN1	PIN2(labeled RESET)
J1	GND	IO26

Dallas One-wire Connectors

CONN	PIN1	PIN2	PIN3
J2	+3.3V	IO27	GND
J3	+3.3V	IO27	GND

PWM KK Style Headers:

PIN3 - Fan Speed Input, 5V Tolerant, 1K Pullup Resistor
PIN4 - Fan PWM Output, 5V Drive

CONN	PIN1	PIN2	PIN3	PIN4
J4	GND	+5/12V	IO33	IO13
J5	GND	+5/12V	IO34	IO14
J6	GND	+5/12V	IO35	IO25
J7	GND	+5/12V	IO39	IO32

JST SH (STEMMA QT/QWIIC)*

CONN	PIN1	PIN2	PIN3	PIN4
J10	GND	+3.3/5V	IO21	IO22

*1.27MM JUMPER HEADER: PIN1-2 -> +5V, PIN3-2 -> +3.3V

CONN	PIN1	PIN2	PIN3
J11	+5V	GND	+3.3V

J8 USB2.0 on USB-C (USB can be connected when barrel connector power).

J9 +5/12V 10 amps max. to board and fans. (5-14v range, needs to match devices on J4-J7)

P1 and **P2:** Standard WEMOS D1 Expansion Header