D210 5 in 1 Battery Managment

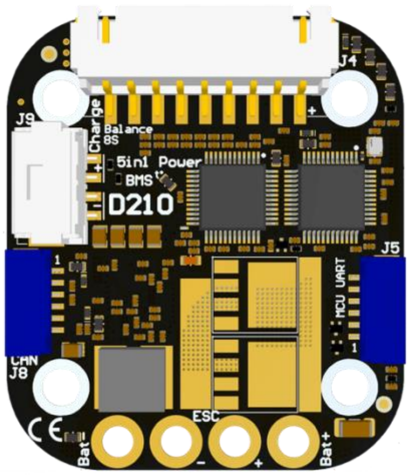
8S Balancer and Charger

AUVIDEA

tiny but powerful

Overview

The D210 combines the 5 main functions needed for drone or robotic battery based systems on the smallest for factor possible. Despite its tiny size, it supports very large currents for high performance systems.



Key Features

1. **Balancer**
   - precise cell balancing (10mV)
   - 2 options: 6S and 8S (other configurations on request)
   - low standby power consumption: 1uA
   - 9 pin connector (J4): JST XH (2.5mm pitch)
   - 2 temperature sensors: on board and J8

2. **Power Switch**
   - disconnect battery from system
   - pre-charging at startup (10Ohm)
   - low impedance switch (down to 0.16mOhm)
   - high current: >200A
   - 3.3mm holes for AWG10 cable (AS150 or XT90 connectors)

3. **Current Sense**
   - shunt: 0.125mOhm 1%
   - high current: >200A
   - I2C current/voltage measurement with INA228 (J2)

4. **Charge Control**
   - 8S Lilon, LiPo and LiFePo4 charge profiles
   - 5V to 48V input voltage
   - input under and overvoltage protection
   - battery overvoltage and overcurrent protection
   - battery short protection
   - thermal shutdown
   - buck/boost DC converter
   - input current sense and limiter
   - battery charge current sense and limiter
   - optional MPPT for direct charging from solar panel

5. **2 Power Supplies**
   - 12V power rail for mission computer (J1)
   - 5.2V power rail for flight controller (J2)

Technical Specification

Feature	D210
Batteries	6S / 8S (other configurations on request)
Types	Lilon, LiPo and LiFePo4
Current	>200A
Cabling	AWG10 (3.3mm)
Solar charger	MPPT optional
Size	48mm x 42mm
Mounting holes	M4 30.5 x 30.5mm
Weight	tbd
Model number	38748
SKU	70940

Additional Drone Boards

SKU	Product
70848-2	JNX110 carrier board with flight controller interface
70913	JNX120S smallest Jetson carrier board
70914	JNX120M small Jetson carrier board
38658-RT	M80 5 port 100Mbit embedded Ethernet switch
tbd	M82 5 port GbE embedded Ethernet switch
70643	Hailo-15 based AI camera

Additional Features

- UART and CAN
  - control all charging and discharging properties
  - inquire battery data and statistics
- Wake up from standby
  - press button: J7
  - connect external button: J3
  - automatically, when charger is connected
- tiny and lightweight
- key components made by TI (Texas Instruments)
- high quality
- stackable with the ESC
- standby current only 1 µA
- Made in Germany

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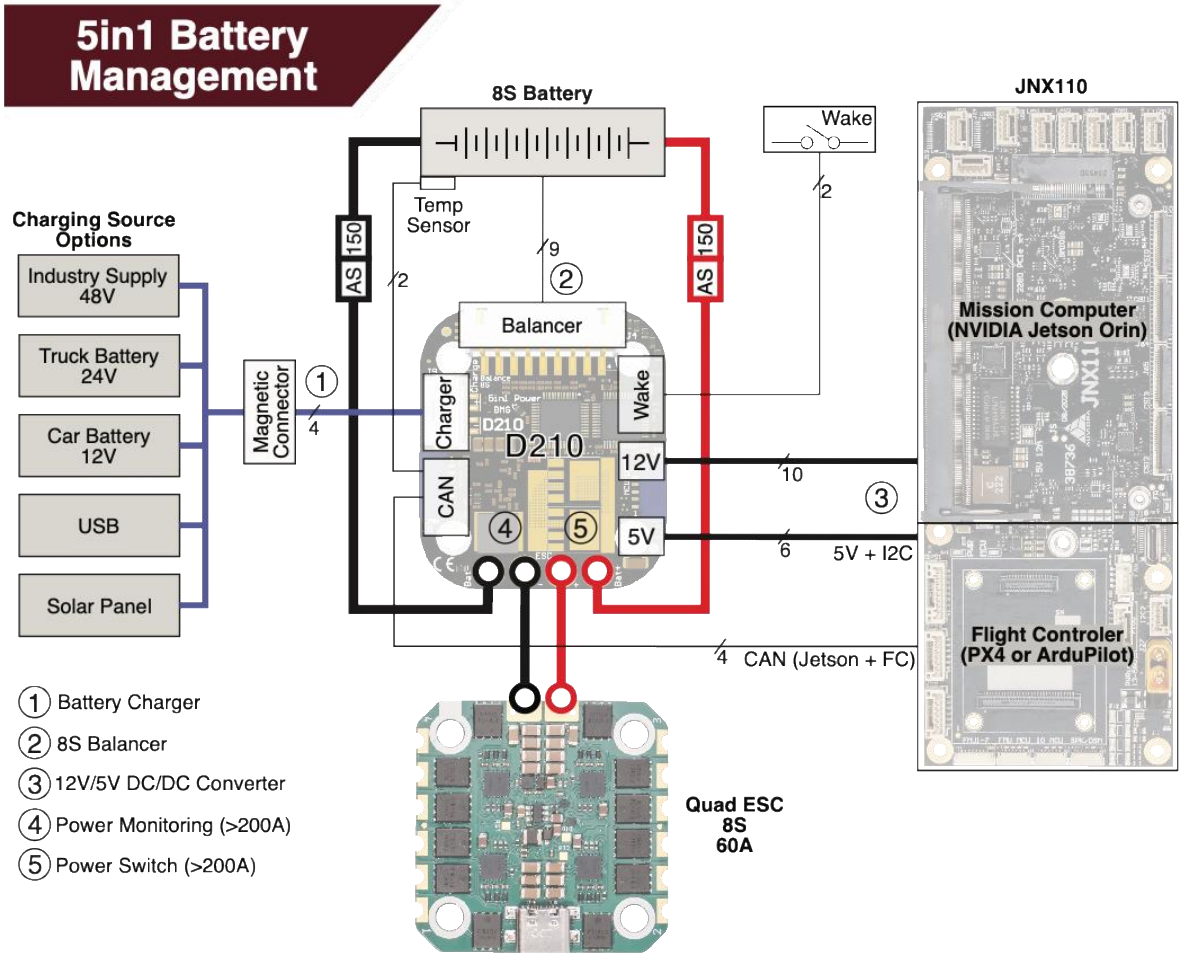
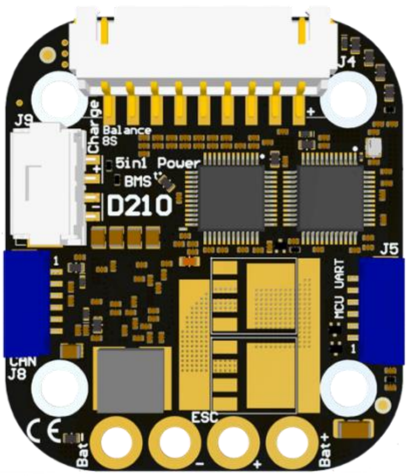
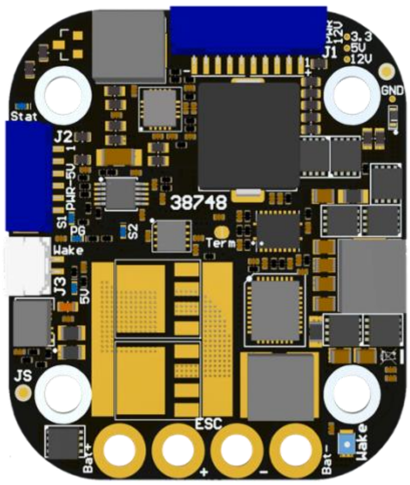
D210



D210 top	D210 bottom
	

D210 Pinout

J1 – Mission Computer Power

10 pin JST GH (1.25mm)

Pin	Board Signal
1	12V out
2	12V out
3	12V out
4	12V out
5	12V out
6	GND
7	GND
8	GND
9	GND
10	GND

J2 – FC Power

6 pin JST GH (1.25mm)

Pin	Board Signal
1	5.2V out
2	5.2V out
3	I2C SCL
4	I2C SDA
5	GND
6	GND

J3 – Wake

2 pin JST GH (1.25mm)

Pin	Board Signal
1	Wake (short 1 and 2)
2	GND

J4 – Balancer

9 pin JST XH (2.5mm)

Pin	Board Signal
1	8S
2	7S
3	6S
4	5S
5	4S
6	3S
7	2S
8	1S
9	GND

J5 – MCU

6 pin JST GH (1.25mm)

Pin	Board Signal
1	5.2V out
2	UART TX
3	UART RX
4	SWDCLK
5	SWDIO
6	GND

J8 – CAN and external temperature sensor

6 pin JST GH (1.25mm)

Pin	Board Signal
1	5.2V out
2	CAN-H
3	CAN-L
4	GND
5	GND
6	temperature sensor (10kOhm)

J9 – Charge

4 pin Molex Clik-Mate (2mm)

Pin	Board Signal
1	5 to 48V in
2	5 to 48V in
3	GND
4	GND