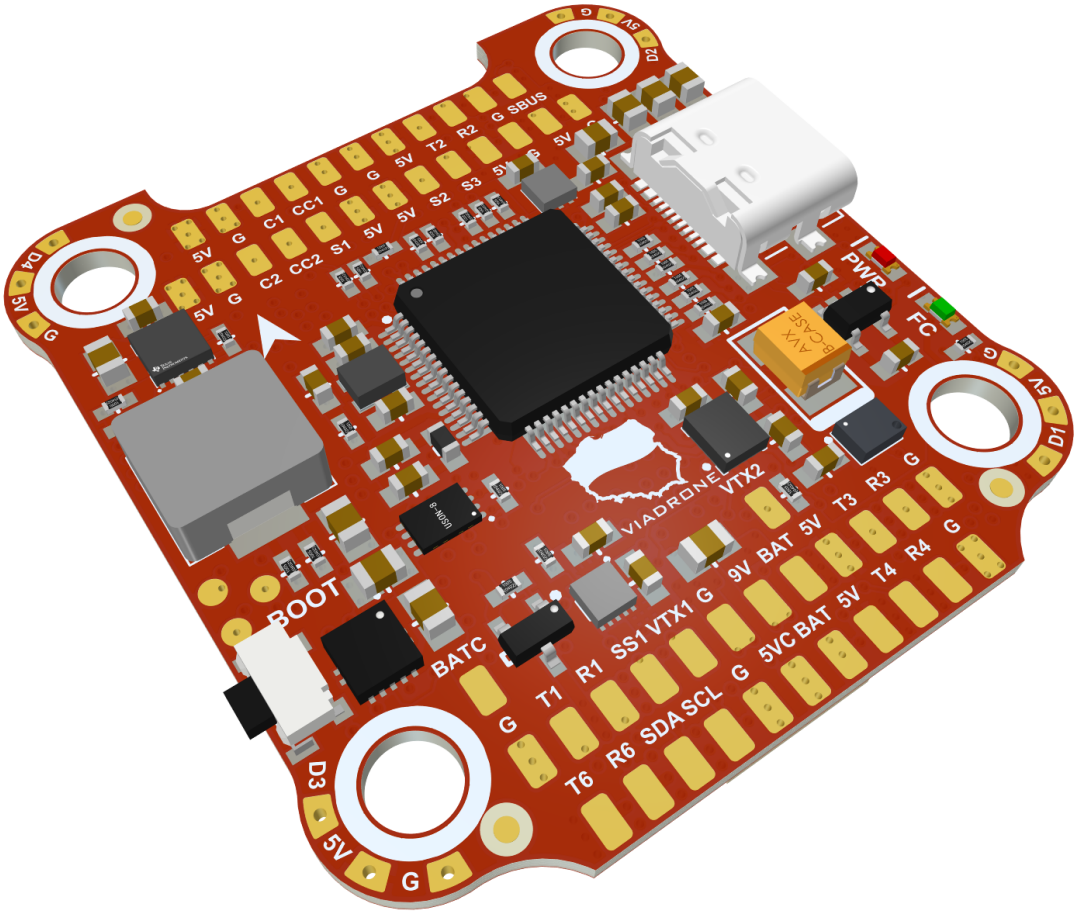
ViaDrone VIAF405V3-PL



Contents

Part I
Abstract

The ViaDrone VIAF405V3-PL is a versatile flight controller engineered for seamless compatibility with Betaflight, Ardupilot, and INAV. It features a high-efficiency power design capable of handling up to 35V input, delivering a stable *true* 5V supply with zero voltage drop. The board simplifies assembly and wiring by integrating an analog switch for dual camera setups, along with controllable 5V/3A and VBAT/1.5A outputs.

Part II
Technical Specification

1 Processors & Sensors

- FMU Processor: STM32F405

  32 Bit Arm® Cortex™-M4, 168MHz, 1MB flash memory, 192KB RAM

- On-board sensors
  - **IMU** ICM-42688-P
  - **BARO** DPS368 / SPA06-003

2 Features

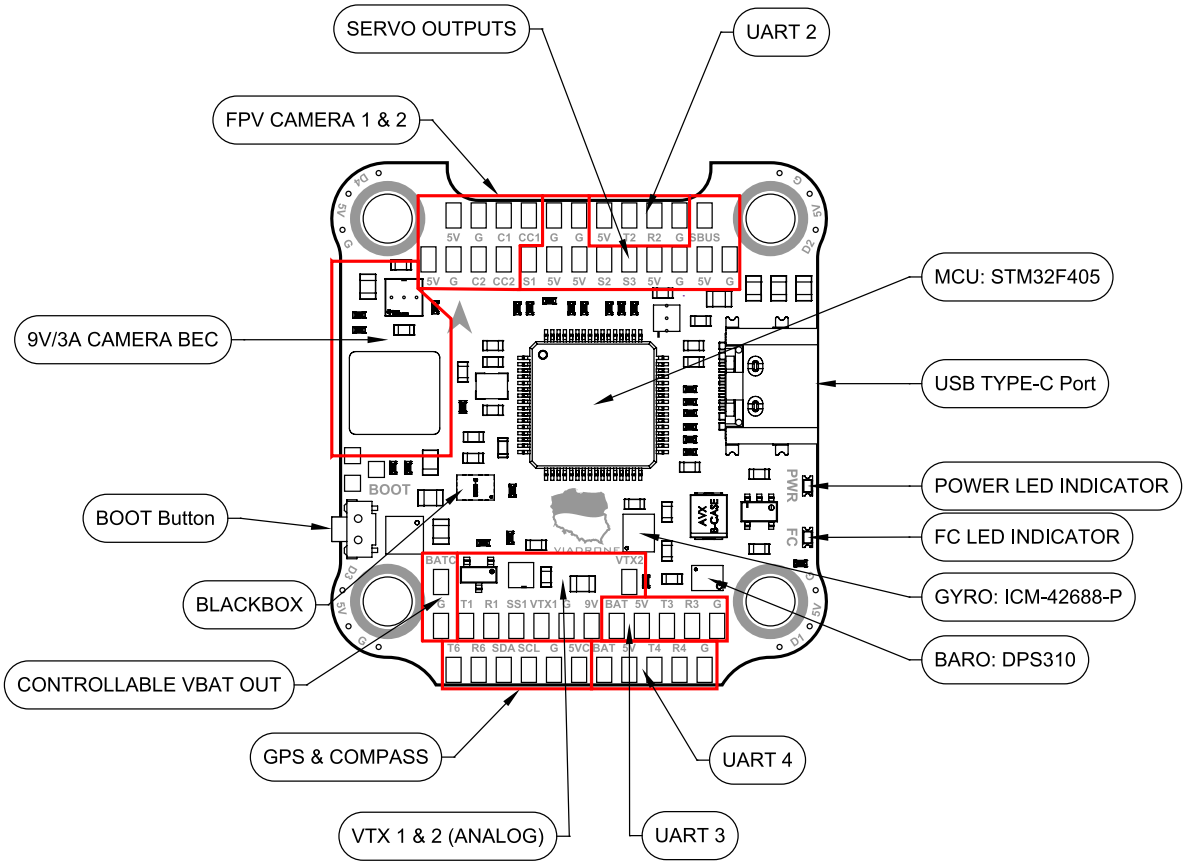
- 2x camera interface (analog input and camera control), switchable via PINIO (PA15)
- 2x analog VTX interface (analog signal is split into two outputs, configuration depending on software)
- 4 motor outputs with with DMA for BDshot (M1-4)
- 3 PWM outputs (S5-7) (possible to reconfigure LED output as 4th PWM)
- 1x external I2C - SDA & SCL pads on front side.
- 6x hardware serial ports S1 (On pads and VTX connector), S2 (With RX inverted for SBUS), S3, S4, S5 (RX only, on pad and ESC connector), S6
- Dedicated Sofware Serial (PB2)
- Internal VBAT monitoring (analog)
- RSSI input (analog)
- Current Sensor Input (analog)
- Buzzer - BZ+ and BZ- pads used for 5V Buzzer
- LED NZR output (for example WS2812b)
- Controllabe 5V/3A output (via PINIO - PC14)
- Controllabe VBAT/1.5A output (via PINIO - PB11)
- OSD (AT7456E)
- 16Mbit blackbox (w/o on request)

3 Electrical data

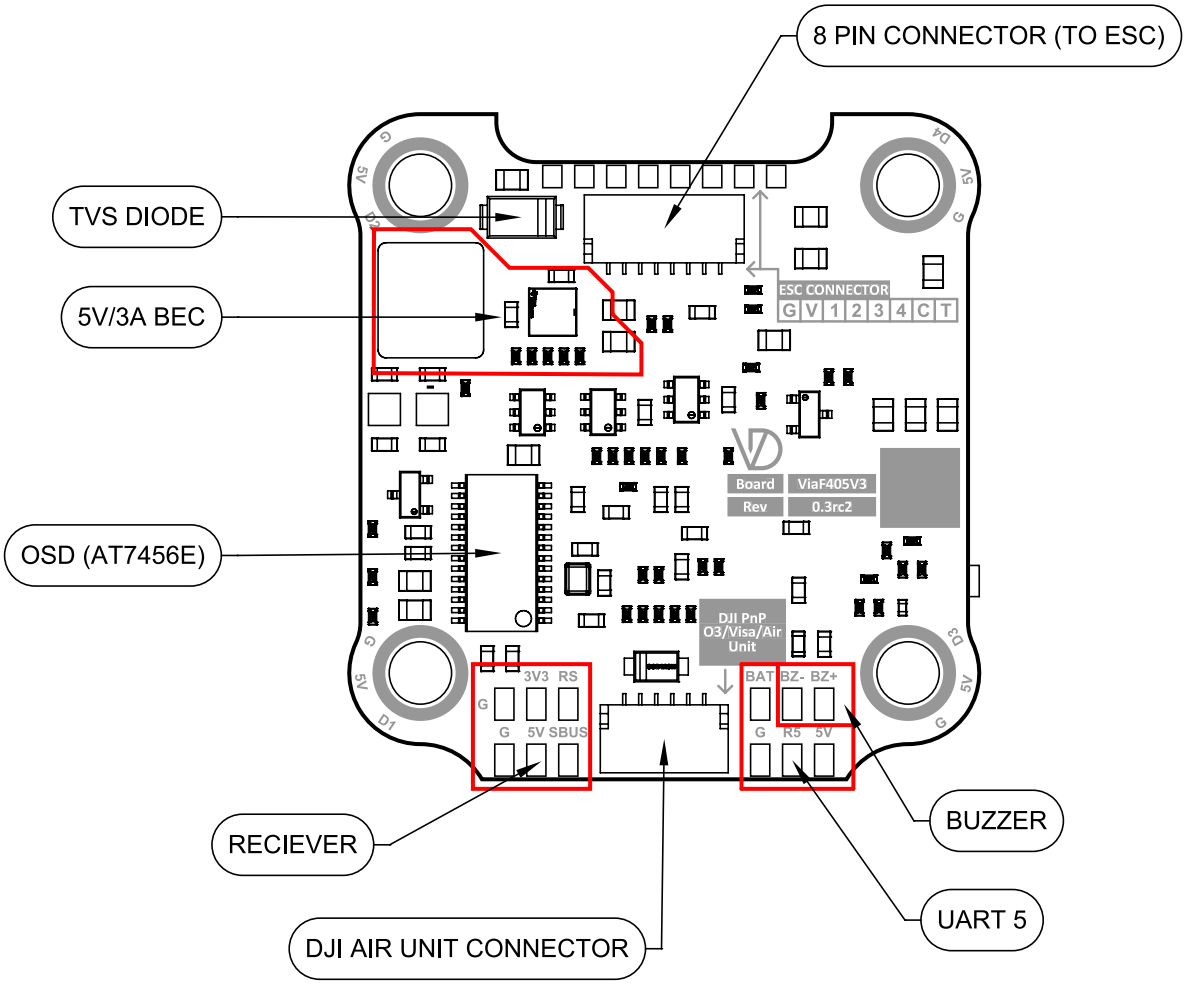
- 10-35V input with internal monitoring
- Available Power Domains:
  - 5V/3A (PEAK 4A) MCU and peripherals
  - 9V/3A (PEAK 4A) Cameras and VTXs
  - 3V3/200mA (300mA PEAK) Peripherals

4 Layout

4.1 Top layout



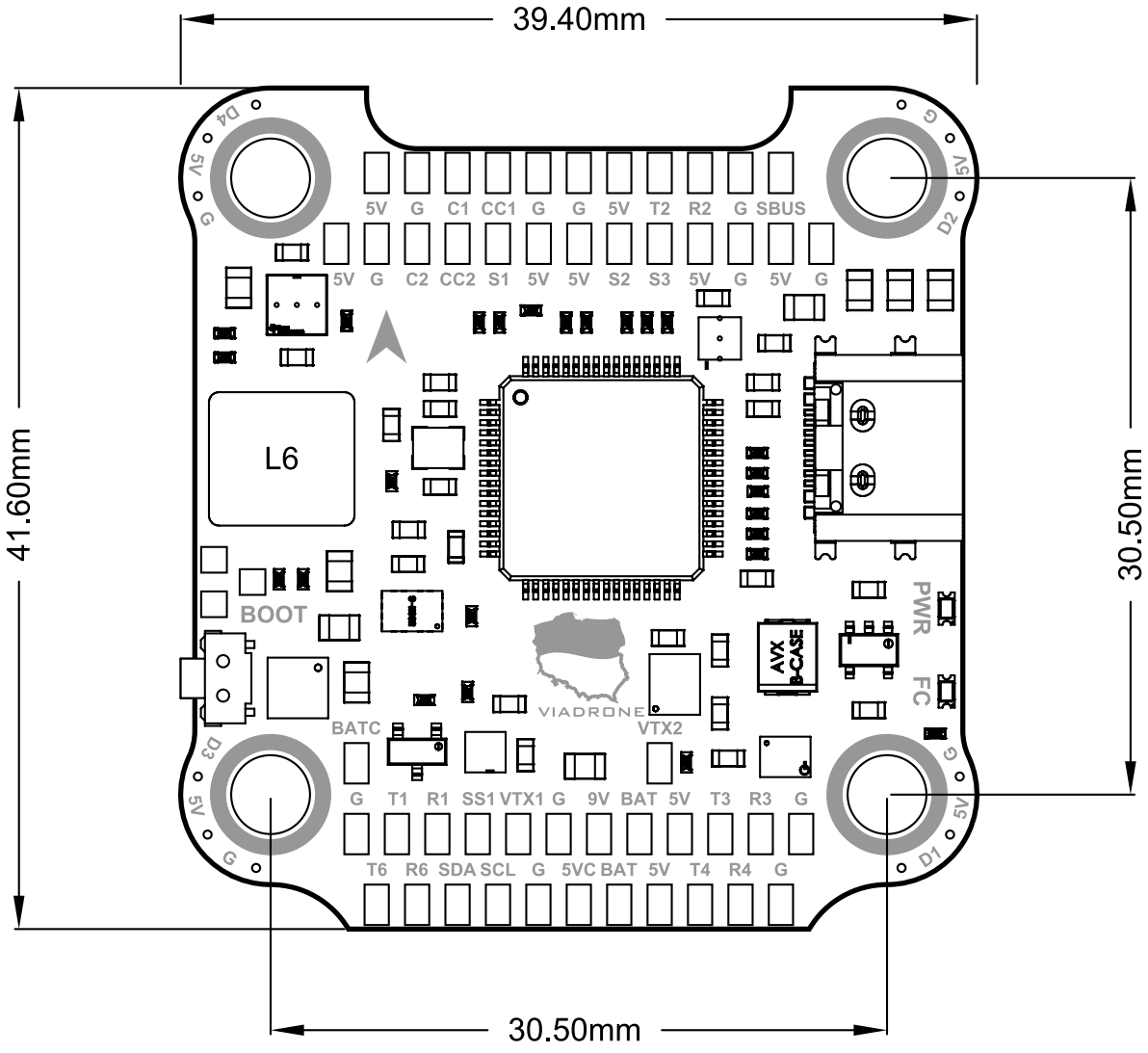
4.2 Bottom layout



5 Mechanical

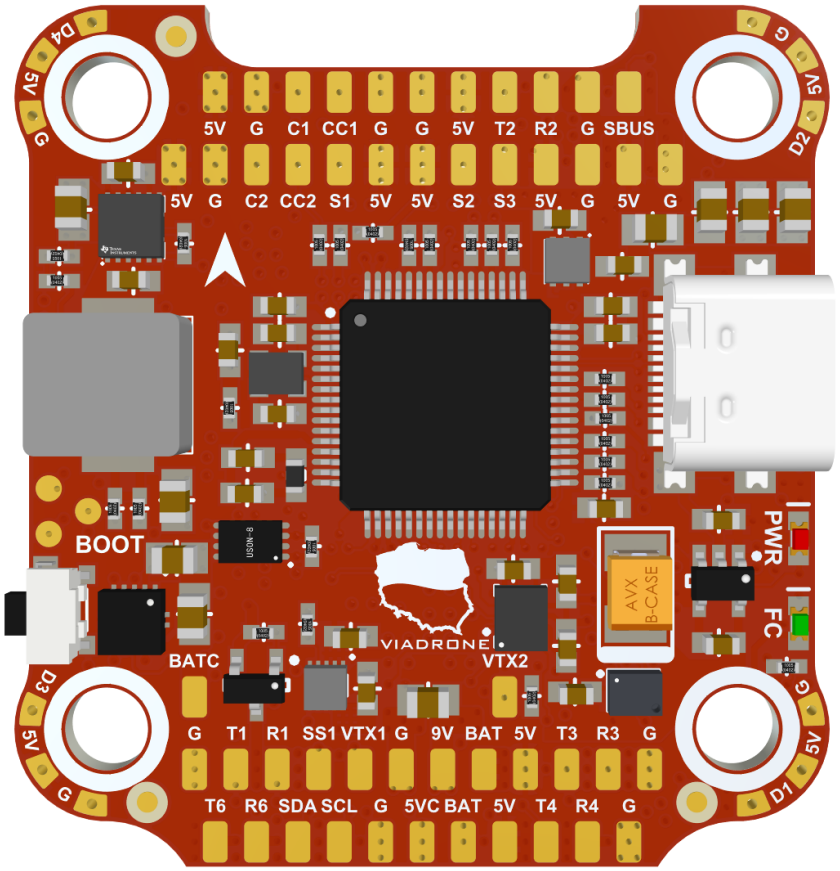
- Weight: 8.5g

5.1 Dimensions

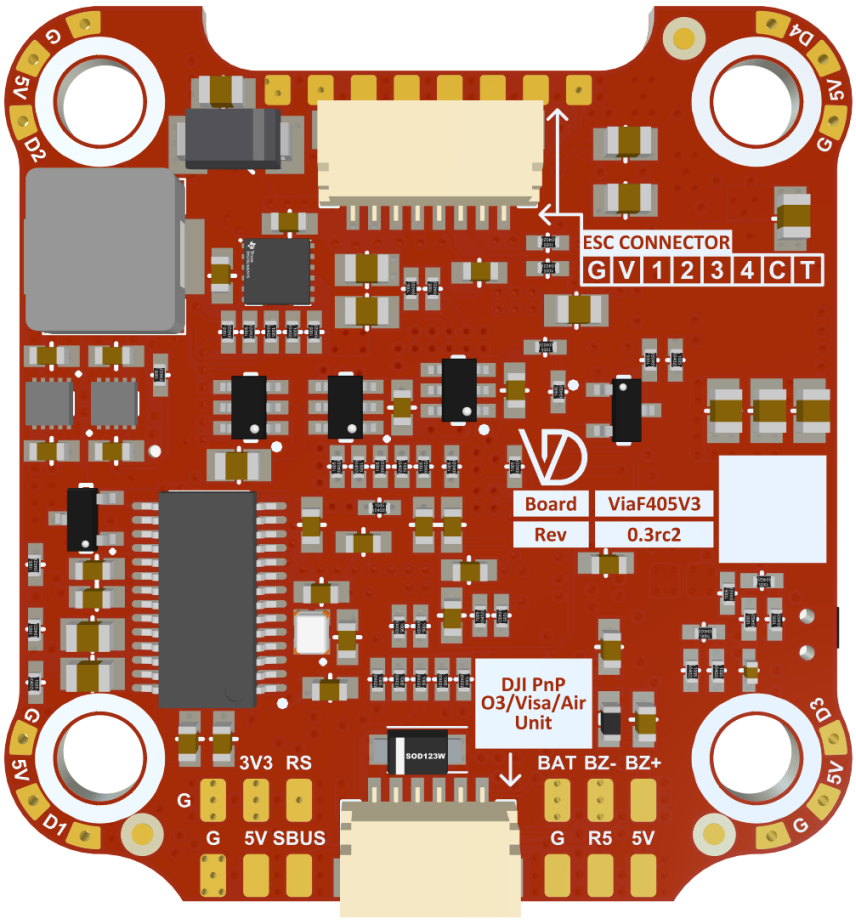


6 Pictures

6.1 Top



6.2 Bottom


G
5V
D2
D4
5V
G
ESC CONNECTOR
G V 1 2 3 4 C T
Board
ViaF405V3
Rev
0.3rc2
DJI PnP
O3/Visa/Air
Unit
G
5V
D1
D3
5V
G
3V3 RS
G 5V SBUS
BAT BZ- BZ+
G R5 5V

7 Betaflight

7.1 OSD

In order to enable the AT7456E chip following config needs to be set:

```
set osd_displayport_device = MAX7456
```

7.2 BDShot

```
set dshot_bidir = ON
set dshot_bitbang = OFF
```

7.3 PINIO

Following config will configure following mapping between modes and features:

```
resource PINIO 1 A15
resource PINIO 2 C14
resource PINIO 3 B11
set pinio_box = 40, 41, 42, 255
```

PIN	MODE	FEATURE
A15	USER1	CAMERA SELECT
C14	USER2	5VC ON/OFF
B11	USER3	BATC ON/OFF

END OF SECTION