

# Logbook Programming FW

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# 1. Definisi

## 1. Perangkat Keras

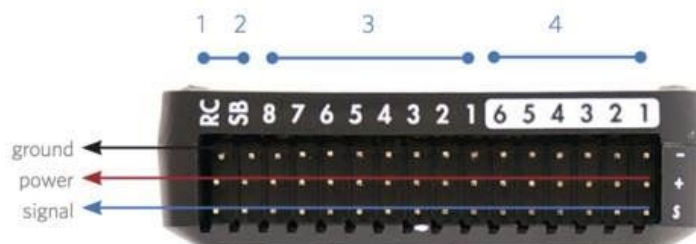
### a. Pixhawk



- 1 Spektrum DSM receiver
- 2 Telemetry (on-screen display)
- 3 Telemetry (radio telemetry)
- 4 USB
- 5 SPI (serial peripheral interface) bus
- 6 Power module
- 7 Safety switch button
- 8 Buzzer
- 9 Serial
- 10 GPS module
- 11 CAN (controller area network) bus
- 12 I<sup>2</sup>C splitter or compass module
- 13 Analog to digital converter 6.6 V
- 14 Analog to digital converter 3.3 V
- 15 LED indicator

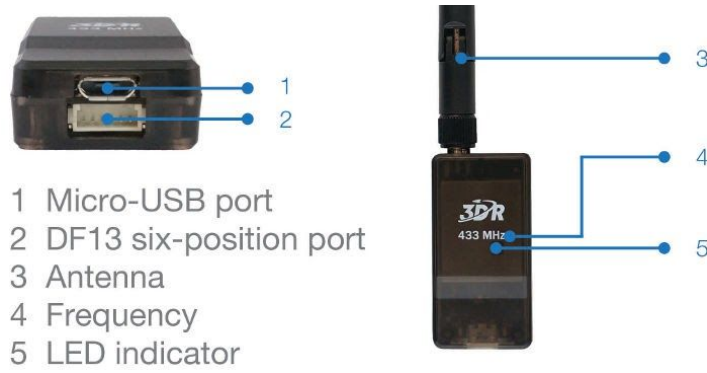


- 1 Input/output reset button
- 2 SD card
- 3 Flight management reset button
- 4 Micro-USB port



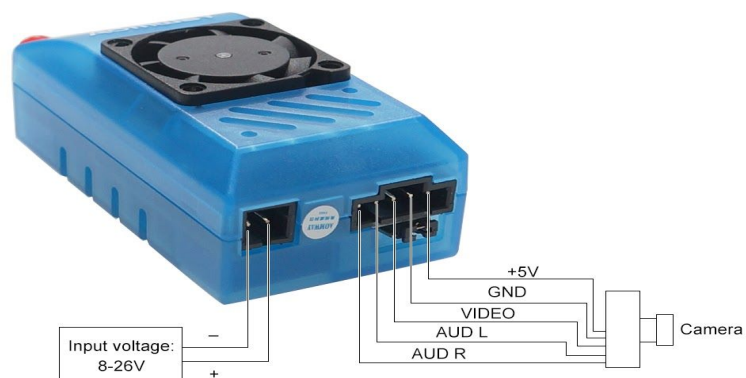
- 1 Radio control receiver input
- 2 S.Bus output
- 3 Main outputs
- 4 Auxiliary outputs

b. Antenna Telemetry 433MHz



Antenna Toha: <https://www.youtube.com/watch?v=6oQkxkd7XxA>

c. Video Transmitter (5.8GHz 1000mW)



Aomway Video Transmitter 5.8 GHz 1000mW

d. Video Receiver (5.8GHz)



Boscam RC805 5.8GHz Receiver

e. Kamera Monitoring



Xiaomi 4K

f. Kamera Mapping



Sony A5000

g. Baterai LiPo

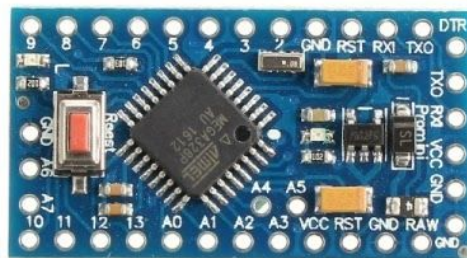


LiPo Battery 3300 mAh

h. Antenna Tracker

*Dalam Pengembangan*

i. Arduino Pro Mini



## 2. Perangkat Lunak

### a. Mission Planner



### b. Image Stitching Software



### c. Firmware

List parameter, firmware, dan waypoint bisa diakses di  
<https://github.com/farhanoktvn/ubioda>

## 2. Tata Cara

### 1. Rangkaian Elektronik

#### a. Pixhawk

- Power module > POWER
- GPS > GPS & 12C
- Telemetry > TELEM1/2
- Sayap kanan > Main Out 1
- Sayap kiri > Main Out 2
- Throttle/ESC (hitamputih) > Main Out 3
- Lampu kanan > Main Out 7
- Lampu kiri > Main Out 8
- UBEC dari ESC > Main Out 6
- Remote Receiver > Dari SBUS receiver (hitam di kanan) ke Pixhawk RCIN
- Trigger Kamera > AUX 1/AUX 5

#### b. Telemetry

- USB Antenna > Laptop

#### c. Monitoring

- Baterai LiPo > Transmitter
- Baterai LiPo > Receiver
- Kamera Out > Transmitter
- Receiver Out > Kabel AV/Monitor

#### d. Antenna Tracker

*Dalam Pengembangan*

## 2. Pengaturan Misi

Load Parameter:

- ☐ CONFIG/TUNING
- ☐ Full Parameter List
- ☐ Load from file (kanan atas)
- ☐ Write params
- ☐ Cek FailSafe

Write WP:

- ☐ FLIGHT PLAN
- ☐ Load WP File
- ☐ Cek Altitude (relative, 150m)
- ☐ Write WPs



### 3. Checklist Praterbang

- ☐ Cek MicroSD pixhawk
- ☐ Kalibrasi pesawat
- ☐ Cek orientasi pesawat Roll, Pitch, Yaw (Arah pesawat di peta)
- ☐ Cek waypoint pertama di flight plan
- ☐ Kasih tau pilot untuk mengarah kesana

### 4. Ketika Menjalankan Misi

#### Manual Takeoff:

- Cek aba2 pilot
- Arm pesawat
- Terbang
- Pas udah stabil ganti jadi auto di remote

#### Auto Takeoff

- Cek aba2 pilot
- Arm
- Mode Auto
- Injek launcher

#### Flight:

- Cek Altitude
- Cek Speed
- Cek Arah

### 5. Pengolahan Data

- Pastikan pesawat mati
- Ambil SD card dari kamera
- Olah data di laptop

### 3. Studi Kasus

#### 1. Koneksi

##### a. Telemetry

Telemetry tidak nyala

- ☐ Daya baterai
- ☐ Sambungan kabel
- ☐ Kabel USB Laptop ke Antenna

Telemetry tidak menyambung

- ☐ Daya baterai
- ☐ Kabel Pixhawk ke Telemetry
- ☐ Firmware Telemetry
- ☐ Cabut baterai
- ☐ Kabel USB Laptop ke Antenna
- ☐ Baud Rate (57600)
- ☐ COM Laptop

##### b. Video Monitoring

Video tidak muncul

- ☐ Daya baterai
- ☐ Sambungan baterai ke transmitter
- ☐ Sambungan baterai ke receiver
- ☐ Output kamera ke transmitter
- ☐ Pastikan colokan sudah benar
- ☐ Kabel receiver ke monitor
- ☐ Output receiver
- ☐ Channel Transmitter dan Receiver

#### 2. Sikap Terbang Pesawat

*Dalam Pengembangan*

## 4. Informasi Tambahan

Dokumentasi ArduPlane:

<https://ardupilot.org/plane/>

Video Tambahan Tentang Mission Planner:

[https://www.youtube.com/watch?v=s-SFkydG\\_QY](https://www.youtube.com/watch?v=s-SFkydG_QY)

Informasi Tentang Setup Video Monitoring:

<https://oscarliang.com/fpv-guide/>

<https://www.youtube.com/watch?v=wUDZpSSRQ1E>

Antenna Toha:

<https://www.youtube.com/watch?v=6oQkxkd7XxA>

Link Github:

<https://github.com/farhanoktvn/ubioda>

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