EACHINE

AURORA 90

QUICK START GUIDE V1.0
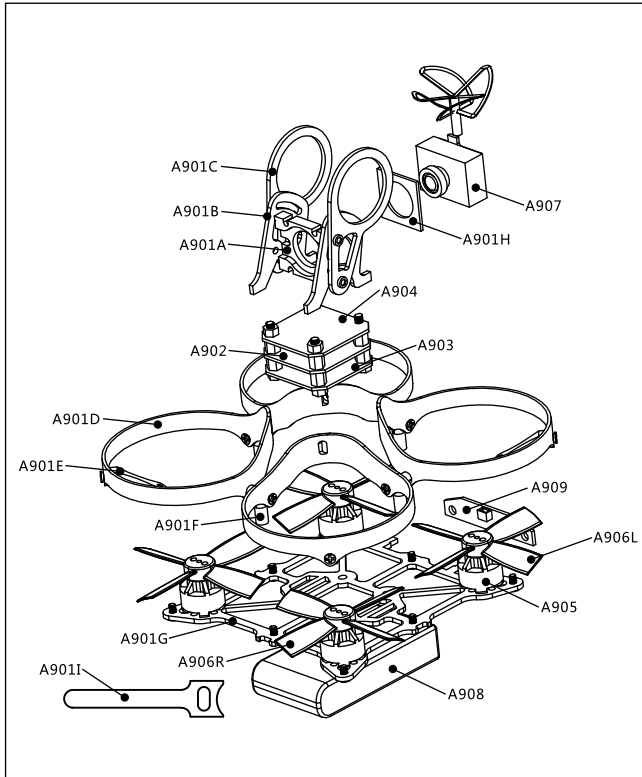
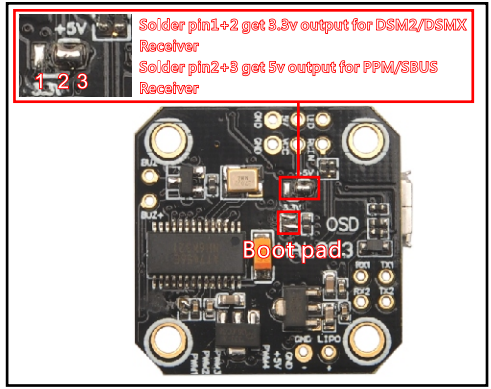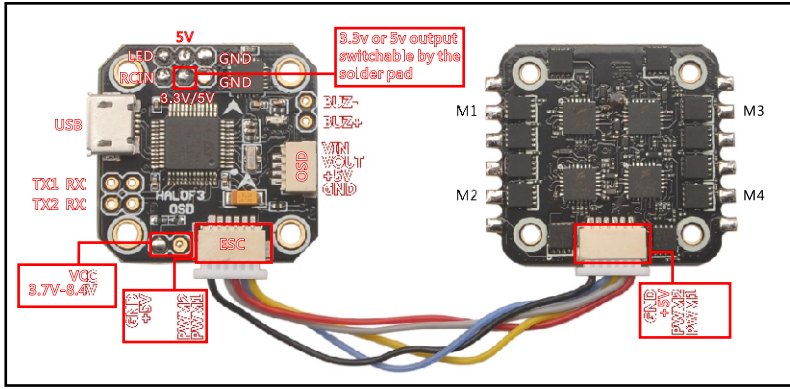| Item	Qty	Part No.	Option
Camera mount	1	A901A	
Camera Supports	2	A901B	
Antenna Protector	2	A901C	
Carbon Hoop	4	A901D	
Hoop Supports	4	A901E	
Spacer blocks	4	A901F	
Main Plate	1	A901G	
3M Sided adhesive	1	A901H	
Battery cable ties	1	A901I	
Flight controller	1	A902	
10A 4IN1 ESC	1	A903	
2.4G Receiver	1	A904	A904FR: FRSKY
			A904FL: FLSKY
			A904DX: DXM2/X
1104 KV7500 Motor	4	A905	
2035R 4leaf propeller	4	A906R	
2035L 4leaf propeller	4	A906L	
HC48D VTX&Camera	1	A907	
7.4V 450MAH battery	1	A908	
WS2812 LED board	1	A909	
B3PRO balance charger	1	A910	

1. Specification

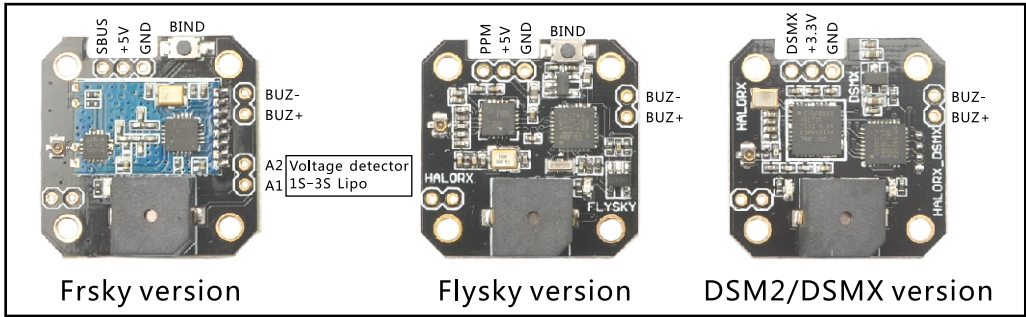| |
|---|
| Brand name: Eachine |
| Wheelbase: 90mm |
| Size: 118mm*118mm*70mm |
| Weight: 73g(battery not include) |
| Flight controller: Minicube Betaflight F3 6DOF built-in OSD |
| Motor: Eachine 1104 7500KV brushless motor |
| ESC: 10A BLHELI_S 16.5 1-2S 4 in 1 ESC Dshot600 |
| Propeller: 2035 4 leaf propeller |
| Receiver: Frsky/DSMX/Flysky AFHDS2A(optional) |
| Camera: 600TVL HD CMOS 1/4 inch |
| VTX: 5.8g 25MW 48CH NTSC/PAL video transmitter |
| OSD: Betaflight OSD |
| Firmware of flight controller: Betaflight 3.1 |
| Flight time : 3-4minutes |
| Rear LED Ready (LED_Strip function) |
| Buzzer Ready |
| Battery: 7.4V 450mah 80C lipo battery |
| Charger: B3PRO 2S balance charger |
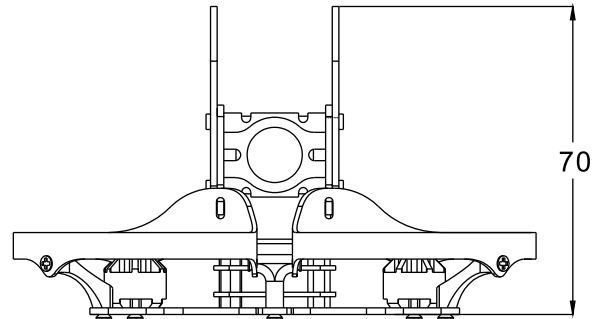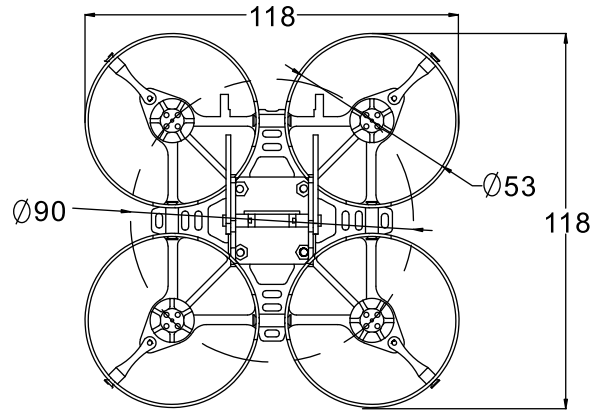
2. Components

2. Components	QTY	Part NO.
Aurora 90 Frame	1	A901
Minicube F3 6DOF flight controller integrated Betaflight OSD	1	A902
Minicube 4in1 10A BLheli_s ESC	1	A903
2.4G Receiver integrated Buzzer (Option: Frsky/Flysky/DSMX)	1	A904
Eachine 1104 KV7500 brushless motor	4	A905
2035 4-blades propeller	4	A906
3IN1 5.8G 48CH VTX&600TVL Camera	1	A907
Rear LED	1	A909
7.4V 450mah 80c Lipo battery	1	A908
B3PRO balance charger	1	A910

3. Flight controller connection diagram

4. 2.4G receiver pins diagram

Frsky version   Flysky version   DSM2/DSMX version

5. Frame type and ESC Connection diagram

Mixer

Quad X

Fix the 2035R propeller onto the M1 and M4 motor (CW motors)
Fix the 2035L propeller onto the M2 and M3 motor (CCW motors)

⚠ Cautions: Be sure to tighten the screws

M2   M4   M1   M3

VCC   GND
1S-2S Lipo battery
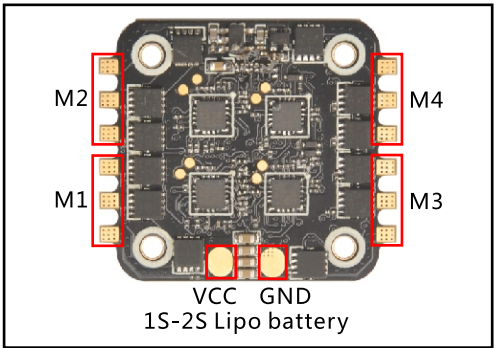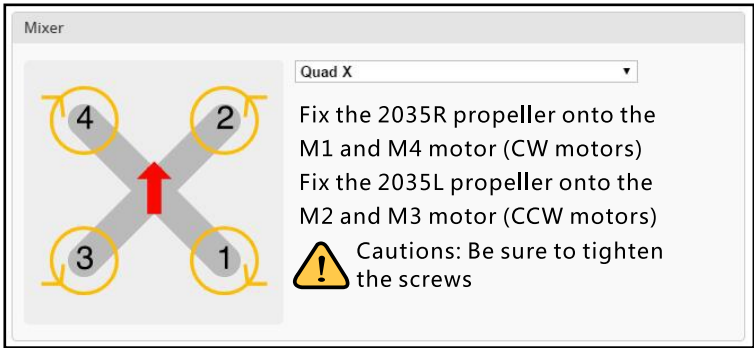
6. 5.8G VTX channels list

FR \ CH		FR					
		GA	GB	GC	GD	GE	GF
CH	CH1	5740MHz	5705MHz	5865MHz	5658MHz	5733MHz	5362MHz
	CH2	5760MHz	5685MHz	5845MHz	5695MHz	5752MHz	5399MHz
	CH3	5780MHz	5665MHz	5825MHz	5732MHz	5771MHz	5436MHz
	CH4	5800MHz	5645MHz	5805MHz	5769MHz	5790MHz	5473MHz
	CH5	5820MHz	5885MHz	5785MHz	5806MHz	5809MHz	5510MHz
	CH6	5840MHz	5905MHz	5765MHz	5843MHz	5828MHz	5547MHz
	CH7	5860MHz	5925MHz	5745MHz	5880MHz	5847MHz	5584MHz
	CH8	5880MHz	5945MHz	5725MHz	5917MHz	5866MHz	5621MHz

GC GD GE
GB GF
GA
CH8
CH1 CH7
CH2 CH6
CH3 CH4 CH5

Orange:Camera video signal
Blue:Video out
Red:+5V
Black:GND
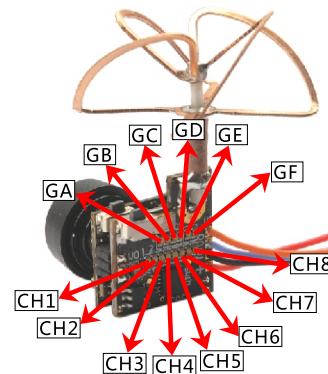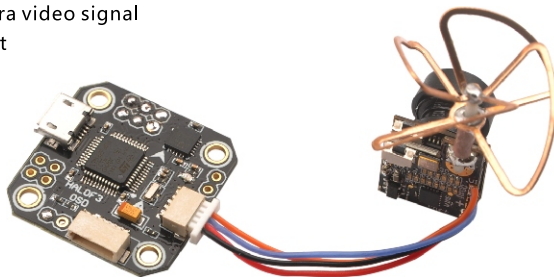
NTSC/PAL Switch still touch up 2S; Short touch switch to reverse video display

Frequency group A~F selected still touch up to 2S; Channel ch1~ch8 selected with short touch.

www.eachine.com
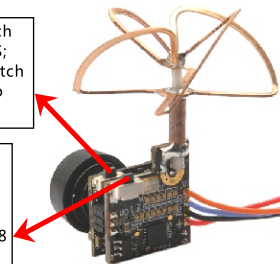
7. Charge the Battery

● First insert the LiPo battery balance plug into the B3 Compact charger.
● Connect the power-cable to the wall-outlet,the B3 Compact charger accept volage from 110v to 240v. When correctly powred the charger
   LED will be flashing orange
● During charging the LED will be solid RED. When charging is completed,the charger will display asolid GREEN LED.

⚠ **Attention**:

(1).When the Red LED light flashes,there may be something wrong with charger or battery,so please stop charging

(2). Can ONLY be used for charging 2S and 3S batteries.NEVER EVER attempt to charge more than ONE battery at any time，the charger may get damaged or catch fire

(3).During charging，the charger should be placed in a dry and ventilated place，far away from head sources and faraway from flamable or explosive substances.

(4).Always allow the battery to cool down before charging，at least 10 minutes.Overheated batteries may swell or catch fire while charging.

(5).DO NOT charge a dammaged battery, if the battery have cuts，swelling or bend，do NOT charge.

Power supply

B3 Compact charger

7.4V LiPo
battery
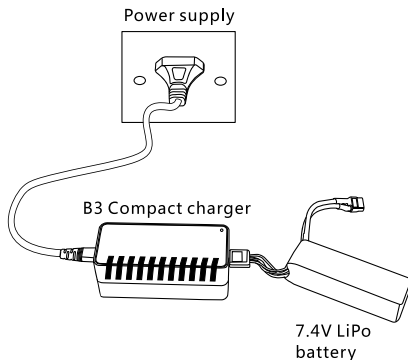
8. Aurora 90 Frsky BNF Version binding procedue

1. Power for the Aurora 90 while holding the Bind button, the blue LED on the receiver will getting to be solid, this means the Aurora 90 is in binding mode, then release the Bind button.
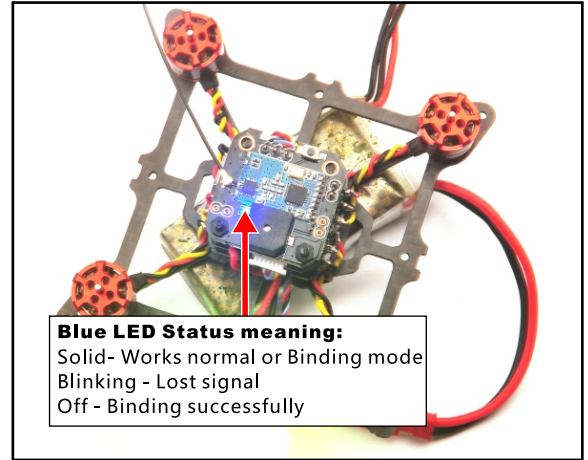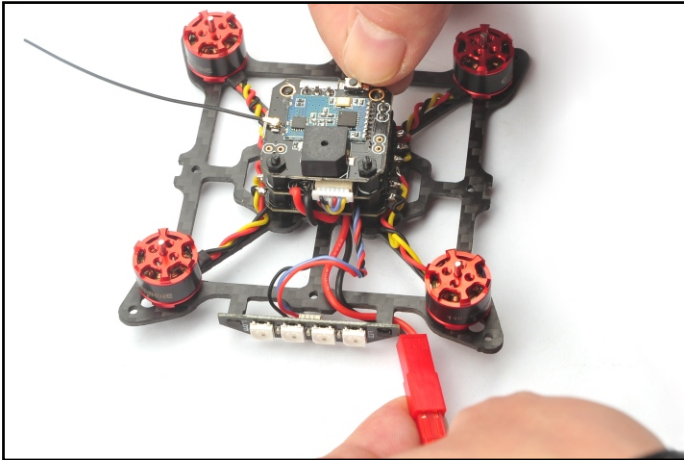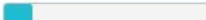

Blue LED Status meaning:
Solid- Works normal or Binding mode
Blinking - Lost signal
Off - Binding successfully

2. Turn on your Radio and select D8 mode for the Receiver. Then Go to the Receiver [Bind] option, and ENT to Binding with the Aurora 90. The Blue LED on the receiver will turning off, this indicates binding successfully.
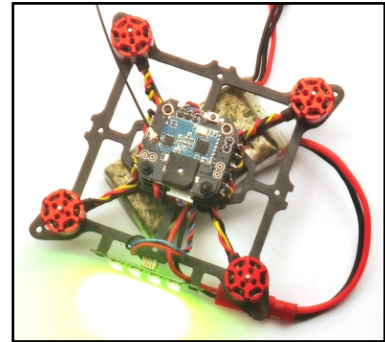
3. The default receiver channel map for Aurora 90 Frsky version is TAER1234, please ensure your transmitter is matched with it, otherwise it can't be armed. And the RSSI output was set CH9 . .

9. Arm/Disarm Aurora 90 Frsky BNF

1. The Default Arm/Disarm switch for Aurora 90 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.
We also set the AUX2(Channel 6) for change flight mode and AU3(Channel 7) for activate the buzzer which you can customize them too .

2. Set Arm/Disarm switch for your TARANIS X9D: Move to the MIXER interface, Set "SA" or "SB" switch etc. for Ch5 to ARM/DISARM the motor. Suggest use a 3-steps switch to change flight mode.

3. Toggle the AUX1 Switch, The buzzer starts beeps one time and the Red LED on the Flight controller will first turning off and get to be solid soon, this indicate the motor was armed. And also you can found "ARMED" shows on your FPV Goggles or the FPV Monitor. Be careful and enjoy your flight now!

⚠️ **Cautions**:
The motors will spinning low speed once the motors armed at Air mode.
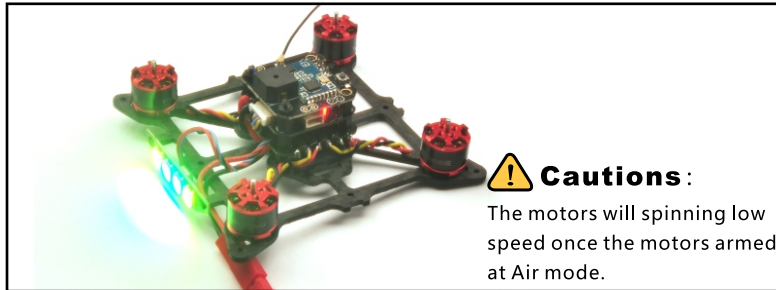
10. Aurora 90 Frsky BNF version receiver configuration

We have configured the frsky receiver for the Aurora 90 before shipping. If you flashed the firmware ,Please setup as the following steps: Enable Serial_RX for UART3, then select RX_SERIAL from the RECEIVER Mode and set the Serial Receiver Provider to be SBUS in Betaflight Configurator.

⚠ **Cautions** :
Because of the Dual way transmission, please keep the Aurora 90 away from the radio more than 50cm, otherwise it will lost telemetry signal

Receiver Mode

|	
○ RX_PPM	PPM RX input
◉ RX_SERIAL	Serial-based receiver (SPEKSAT, SBUS, SUMD)
○ RX_PARALLEL_PWM	PWM RX input (one wire per channel)
○ RX_MSP	MSP RX input (control via MSP port)

Serial Receiver Provider

Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.

SPEKTRUM1024
SPEKTRUM2048
SBUS
SUMD

11. Aurora 90 Flysky BNF Version binding procedue

1. Power for the Aurora 90 while holding the Bind button, the blue LED on the receiver will getting to be blinking fast, this means the Aurora 90 is in binding mode, then release the Bind button.
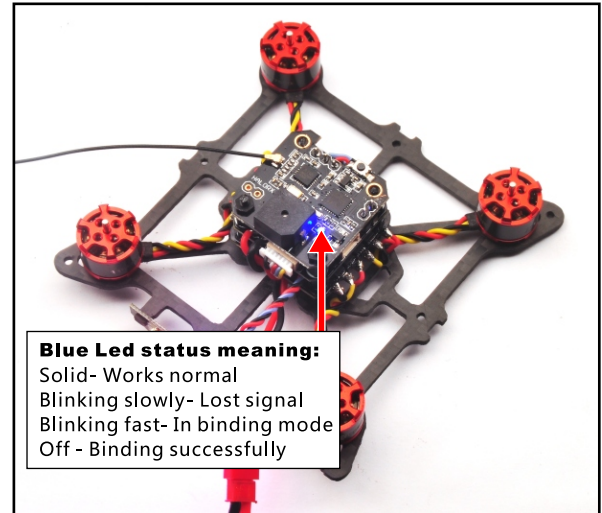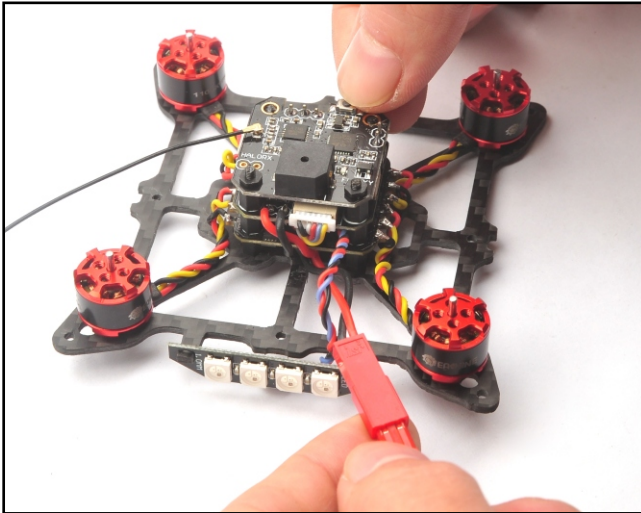

Blue Led status meaning:
Solid- Works normal
Blinking slowly- Lost signal
Blinking fast- In binding mode
Off - Binding successfully

2. Please Ensure the RX setup of your Flysky Radio is in AFHDS 2A Mode. Then Turn on your radio while holding the binding button to Binding with the Aurora 90. The Blue LED will turning off for a second and then starting to blinking slowly, this indicates binding successfully. The Blue led is Solid when the connection was established between the Aurora 90 and your Flysky radio.
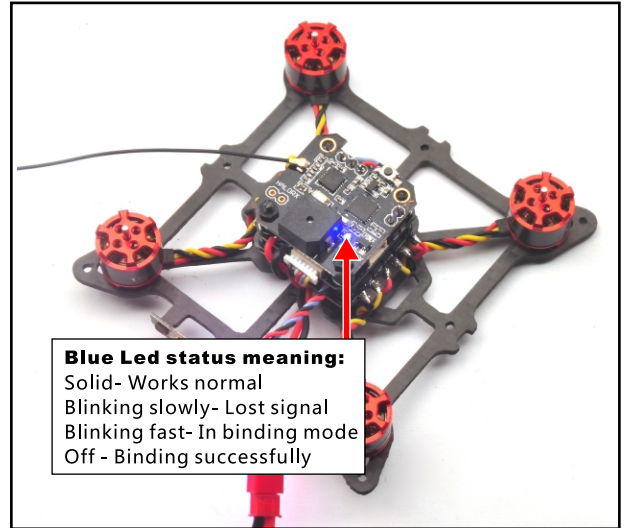


Blue Led status meaning:
Solid- Works normal
Blinking slowly- Lost signal
Blinking fast- In binding mode
Off - Binding successfully

3. The default receiver channel map for Aurora 90 Flysky version is AETR1234, please ensure your transmitter is matched with it, otherwise it can't be armed.
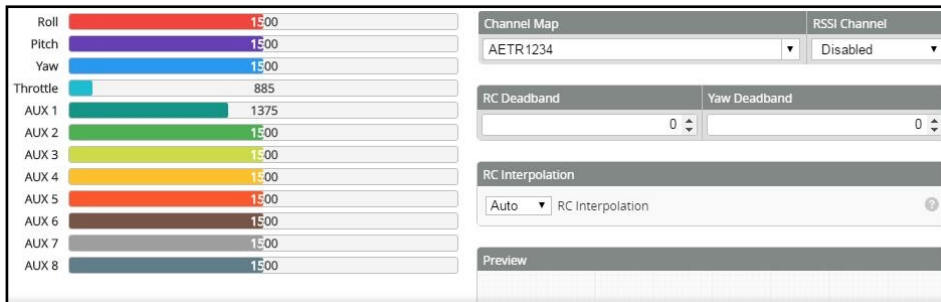
12．Arm/Disarm Aurora 90 Flysky BNF Version

1. The Default Arm/Disarm switch for Aurora 90 is AUX1(Channel 5),and you can also customize it with Betaflight Configurator.
We also set the AUX2(Channel 6) for change flight mode and AU3(Channel 7) for activate the buzzer which you can customize them too .
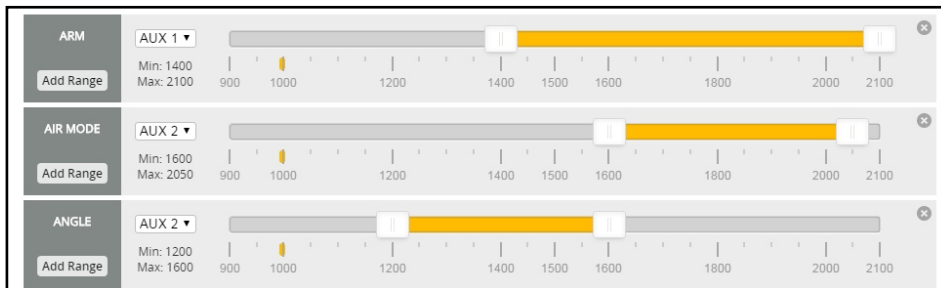
2. Set Arm/Disarm switch for your Flysky Radio: Move to the Aux.channels interface, Set "SWA" or "SWB" or "SWC" switch etc. for Ch5 to ARM/DISARM the motor. Suggest use a 3-steps switch (like "SWC" of the Flysky I6) to change flight mode .

3. Toggle the AUX1 Switch, The buzzer starts beeps one time and the Red LED on the Flight controller will first turning off and get to be solid soon, this indicate the motor was armed. And also you can found "ARMED" shows on your FPV Goggles or the FPV Monitor. Be careful and enjoy your flight now!

⚠ **Cautions** :

The motors will spinning low speed once the motors armed at Air mode.

13. Aurora 90 Flysky version receiver configuration

We have configured the flysky receiver for the Aurora 90 before shipping. If you flashed the firmware ,Please setup as the following steps: Select RX_PPM from the RECEIVER Mode.

14. Aurora 90 DSM2/DSMX BNF Version binding procedure and Satellite receiver setup

1.The Aurora 90 DSM2/DSMX BNF Version is integrate a DSM2/DSMX compatible Satellite receiver. The binding procedure is like following:

(1)Connect Aurora 90 DSM2/DSMX BNF Version to computer and open Betaflight configurator, From CLI tab type: "set spektrum_sat_bind = 9" for DSMX radio or "set spektrum_sat_bind = 5" for DSM2 radio

(2)Type "save" and after Flight controller reboot remove USB cable (=Power off the board)

(3)Wait a second and reconnect the USB cable. After cold start satellite led(Orange color LED) should start blinking and transmitter should be turned on while pressing the bind button

(4)After binding satellite led should be solid. Connect Betaflight and use receiver tab to test that satellite is working correctly.

(5)Final step is to go to CLI tab and type "set spektrum_sat_bind = 0" and then type "save". This must be done so that satellite doesn't go back to binding mode when the Aurora 90 is repowered again.

Orange LED Status meaning:
Solid- Works normal
Blingking fast - Binding mode
Off - Lost signal
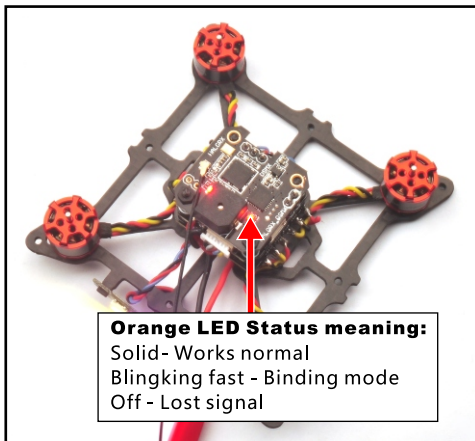
```
Entering CLI Mode, type 'exit' to return, or 'help'

# Set spektrum_sat_bind=9
spektrum_sat_bind set to 9
# save
```
For DSMX

```
Entering CLI Mode, type 'exit' to return, or 'help'

# Set spektrum_sat_bind=5
spektrum_sat_bind set to 5
# save
```
For DSM2

```
Entering CLI Mode, type 'exit' to return, or 'help'

# Set spektrum_sat_bind=0
spektrum_sat_bind set to 0
# save
```
Close Binding

⚠ **Cautions**:

The orange LED is blinking slowly after binding successfully for some DSM2 Radio

2. The default receiver channel map for Aurora 90 DSM2/DSMX Version is TAER1234, please ensure your transmitter is matched with it, otherwise it can't be armed.

15. Arm/Disarm Aurora 90 DSM2/DSMX BNF version

1. The Default Arm/Disarm switch for Aurora 90 DSM2/DSMX BNF Version is AUX1(Channel 5), for most of Spektrum radio the default channel 5 is Gear switch and you can also customize it with Betaflight Configurator. We also set the AUX2(Channel 6) for change flight mode and AU3(Channel 7) for activate the buzzer which you can customize them too . Suggest use a 3-steps switch to change flight mode.

2. Turn on the transmitter and set a switch for CH5 to ARM/DISARM the motor, some transmitter like SPECKTRUM DX6/DX6I, the default CH5 is GEAR Switch.

3. Toggle the AUX1 Switch, The buzzer starts beeps one time and the Red LED on the flight controller will first turning off and get be solid soon, this indicate the motor was armed. And also you can found "ARMED" shows on your FPV Goggles or the FPV Monitor. Be careful and enjoy your flight now!

⚠ **Cautions**:
The motors will spinning low speed once the motors armed at Air mode

16. Aurora 90 DSM2/DSMX BNF version receiver configuration

We have configured the satellite receiver for the Aurora 90 before shipping. If you flashed the firmware ,Please setup as the following steps: Enable Serial_RX for UART3 and Set Receiver mode RX_SERIAL ,Select SPEKTRUM1024 for DSM2 Radio and Select SPEKTRUM2048 for DSMX Radio in Betaflight Configurator.

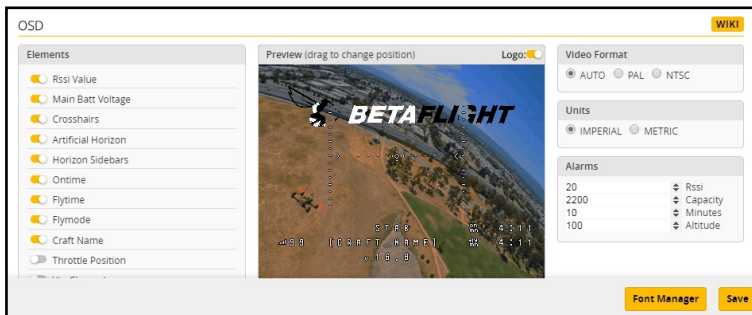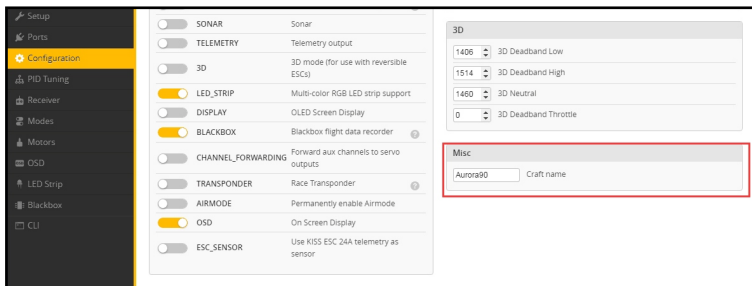For DSM2 Radio

For DSMX Radio

17. OSD configuration

1. Connect the Aurora 90 to the computer , open Betaflight Configurator , move to the OSD option, then you can configure the layout of the OSD.

2. Craft Name set is in configuration option

18. LED Strip function

19. LED Strip status

The flight controller of Aurora 90 can control colors an effects of individual LEDS on a strip. The default setup is like this, you can also customize by yourself effects.

	Disarmed
	Armed
4 LEDS Blinking Fast	Brake
	Throttle
2 LEDS Blinking Fast	Roll left
2 LEDS Blinking Fast	Roll right

EACHINE

www.eachine.com