

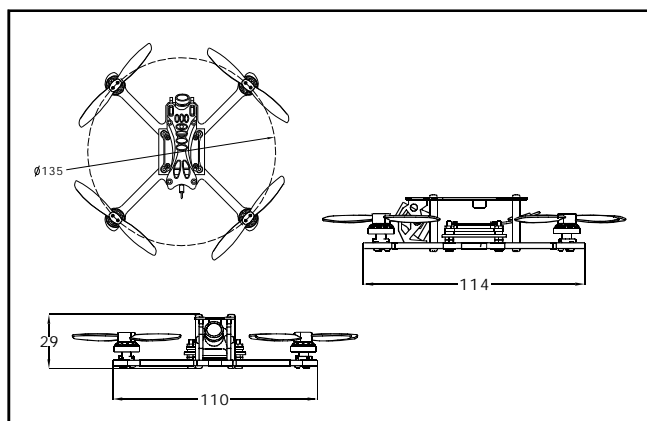
Item	Part No.	RTF	FLY More
135mm NOVICE-III Frame board	NC1301	1	1
toothpick F4 flight controller	NC1302	1	1
Eachine NC1203 KV5500 motor	NC1303	4	4
HQPROP T3*2 bi-blade propeller	NC1304	2	2
Caddx Ant ECO Camera	NC1305	1	1
Eachine Pegasus VTX: 5.8g 25mw~400mw switchable built-in 720p DVR	NC1306	1	1
LED&Buzzer Pcb Top board	NC1307	1	1
VTX mounted bracket	NC1308	1	1
Camera mounted bracket	NC1309	1	1
M2*D3.5*L22 Aluminum alloy Column	NC1310	1	1
Eachine 11.1v 450mah 75C battery		2	6
2-4S balance charger		1	1
Eachine EV800 Goggles		1	1
Jumper T-lite 2.4GHz CC2500 Radio Transmitter		1	1
Propeller disassemble tool		1	1
Screwdriver		1	1

1. Specification

Brand Name: Eachine
 Item Name: Novice-III 2-3S Toothpick RTF & Fly more
 Wheelbase: 135mm
 Size: 115mm*110mm*40mm
 Weight: 62g(without battery)

2. Features

New toothpick F4 flight controller
 Internal SPI Frsky D8/D16 receiver (Dual antenna and with PA)
 Powerful and smoothly and long flight time
 Led Strip ready
 Built-in Buzzer ready
 New design 1203 KV5500 motors
 Camera Angle adjustable
 VTX power switchable 25mw~400mw
 Smartaudio ready , change VTX bands, powers, channels via OSD
 720P DVR ready (Analog 1280*720)
 Real Ready to fly
 Compatible both for 2s-3s Lipo/LiHV



3. Start FPV Flight

Start by powering on your Radio and Goggles. NOVICE-III comes already bound to your radio and on the right video channel matched with your goggles. Power the battery is plugged in, set NOVICE-III on a stable surface so it can calibrate. Calibration takes a few seconds then NOVICE-III is ready to fly. Please fly in open areas and away from the crowd.



1. Install the battery to the radio (Make sure not to connect the wrong polarity of the battery), and turn on the "power switch", short press "RTN" button if any alarm appear on the screen to continue.



2. Connect the battery to the NOVICE-III Drone, and make sure to fixed the battery properly with the Lipo strap.



3. Turn on the EV800 Goggles, check the video on the status of the OSD info.



4. Keep the throttle stick lowest point and then toggle the SWA Switch to Arm the NOVICE-III drone, you will find "ARMED" notice on the screen of the goggles. Happy flight and keep it safe.



5. Toggle the SWB switch to change the flight mode (Default is Acro mode). We highly recommend to use stable mode for the beginners . The motors will auto-spin when armed if you selected the Air mode.

4.Charger the Lipo Battery



Charging Function After insert adapters, chargers "drop" sound, the display shows ;

Insert the battery charger "drip - drip" twice to start charging. Display cycles through each section

total battery voltage and the battery voltage;

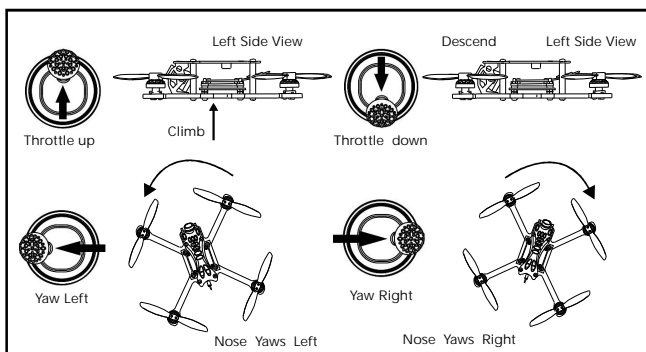
After the battery is fully charged, the charger automatically stops charging, the display shows "FULL" And flashing, buzzer once every five seconds.

Voltage Display Function Insert the battery (without connecting adapter),

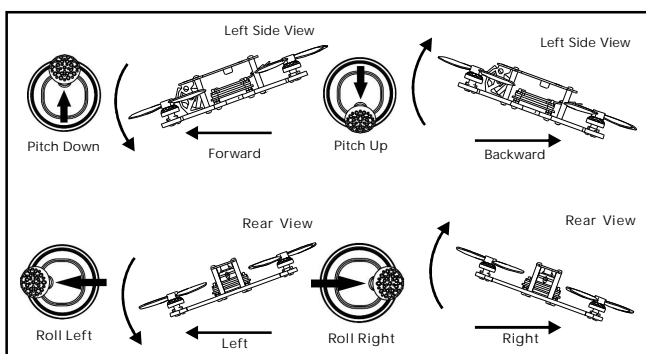
5.Flight and Radio Stick Controls

Always use caution when flying and operate in an open and controllable area. Please learn the flight controls first before powering on the aircraft to fly. The left stick controls throttle and yaw direction of NOVICE-III. The right stick controls pitch and roll of the aircraft.

Left Stick Diagram



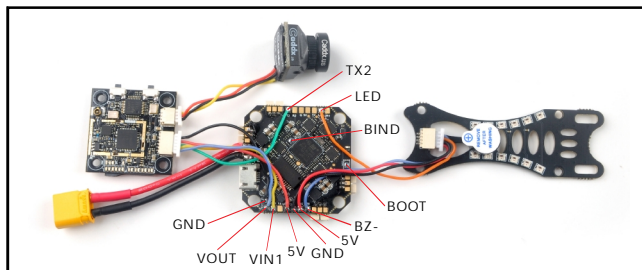
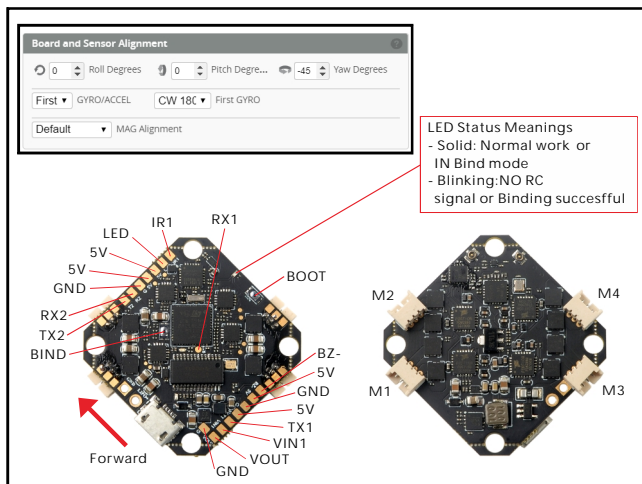
Right Stick Diagram



Important notice:

1. The belowing content are about advanced tutorial. The drone comes out already finished all the settings and bound with the radio .

6.Flight controller connection diagram

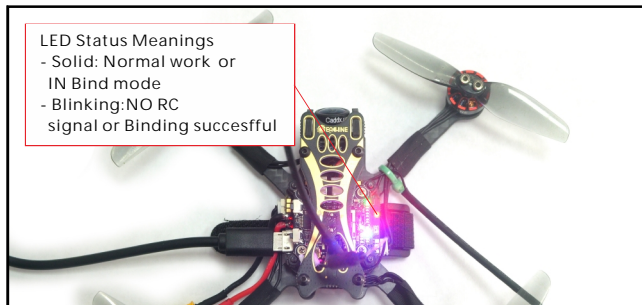


7.Binding procedure

1.Plug the usb and go to the CLI command tab in the betafight configurator, then type "bind_rx_spi", the receiver will getting into bind mode , and then make your Frsky radio to bind mode.For Betaflight firmware 4.1.0 or latest , the bind code is "bind_rx"

```
$M>0e~000!0000000!00000000000!> n000000000e
Entering CLI Mode, type 'exit' to return, or 'help'
# bind_rx_spi
Binding..
```

2.Press "MDL" button to get into Model interface, then Press "MDL" button again to get into model setup interface. Press "up" or "down" button to move to the "Receiver" tab and press "MDL" button to move "[Bnd] button and then Press "ENT" to bind with your Novice-III drone. If bind successfully the Red LED on the flight controller will blinking slowly. Then re-plug the USB and check the receiver tab in Betaflight Configurator .



3. If you want to use other Frsky radio . Please choose receiver mode D16 or D8 according to your betafight receiver configuration(Frsky_X= D16 mode, Frsky_D=D8 mode), we recommend use D8 mode.

8.Receiver configuration

Please set Receiver mode to be SPI RX from the Configuration tab of the Betaflight Configurator, then select Frsky_D for the stock Radio. If you use other radio which support D16 ,then you can select Frsky_X .

Ports

Note: not all combinations are valid. When the flight controller firmware detects this the serial port configuration will be reset.
Note: Do NOT disable MSP on the first serial port unless you know what you are doing. You may have to refresh and erase your configuration if you do.

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200	Disabled	AUTO	Disabled	AUTO
UART1	115200	Disabled	AUTO	Disabled	AUTO
UART2	115200	Disabled	AUTO	Disabled	VTX (TBS Sm) AUTO

Receiver

SPI RX support Receiver Mode

Note: The SPI RX provider will only work if the required hardware is on board or connected to an SPI bus.

FRSKY_D SPI Bus Receiver Provider **FRSKY D8 MODE**

Receiver

SPI RX support Receiver Mode

Note: The SPI RX provider will only work if the required hardware is on board or connected to an SPI bus.

FRSKY_X SPI Bus Receiver Provider **FRSKY D16 MODE**

For stock radio

9.VTX Bands and Channels setup

Blue LED5 and Green LED8 light,indicating frequency 5917MHZ(BAND5 and CH8)
Blue LED1 and Green LED2 light on,indicating frequency 5845MHZ(BAND1 and CH2)

400mw
200mw
25mw

RF out(ANT)
Red LED flash is Recording

Start/Stop Record

Channel/Band switch

Camera IN
+5V out
GND

Black GND
Red +5V Input
Green smare Audio
Yellow Video_IN
Blue Video_out

CH8
CH7
CH6
CH5
CH4
CH3
CH2
CH1

Frequency and channel frequency table:

FR	CH	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
BandA		5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
BandB		5733M	5752M	5771M	5790M	5809M	5828M	5847M	5866M
BandE		5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
BandF		5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
BandR		5658M	5695M	5732M	5769M	5806M	5843M	5880M	5917M

There are 3 ways to switch the vtx channels:

- Short press the Channel/Band switch to choose the VTX channel, press and holding the button to Choose the VTX Band (Can't save , it will lost the channel while power off)
- Go to Betaflight CLI ,type the command:

Set vtx_band=3

Set vtx_channel=1

Set vtx_freq=5705

save

Notes: The vtx_freq should match the vtx_band and vtx_channle as the VTX Channel list shows.

For example, if you set vtx_freq=5732, you should set vtx_band=5 and

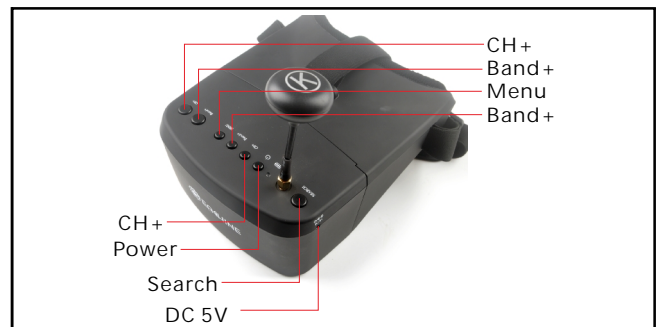
VTX_channel=3

- Enable Smartaudio for UART2, then move the stick of the transmitter (THR MID+ YAW LEFT+ PITCH UP) to enter OSD Menu, Enter to Features, then enter to VTX SA to set VTX Band and channel

Identifier	Configuration/MSP	Serial Rx	Telemetry Output	Sensor Input	Peripherals
USB VCP	115200	Disabled	AUTO	Disabled	AUTO
UART1	115200	Disabled	AUTO	Disabled	AUTO
UART2	115200	Disabled	AUTO	Disabled	VTX (TBS Sm) AUTO



10.Goggles and VTX Receiver channel setting



Description:

Power button: Long press it to turn on the goggles, Long press it for 3 seconds and release to turn off the goggles.

Search button: Short press it to Auto-search the video channel

Menu: Short press to change AV1/AV2 . Long press to Enter into Menu, short press to select menu(When in Menu mode)

CH+: Short press to Change another channel(Value- when in Menu mode)

Band+:Short press to Change another Band(Value+ when in Menu mode)

Band	CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
A	5865	5845	5825	5805	5785	5765	5745	5725
B	5733	5752	5771	5790	5809	5828	5847	5866
E	5705	5685	5665	5645	5885	5905	5925	5945
F	5740	5760	5780	5800	5820	5840	5860	5880
R	5658	5695	5732	5769	5806	5843	5880	5917

11.Mixer type,ESC/MOTOR protocol and Sensor alignment

Quad X

Props IN

Fix the CW propeller onto the M1 and M4 motor (CW motors)
Fix the CCW propellers onto the M2 and M3 motor (CCW motors)

Motor direction is reversed

ESC/Motor Features

DSHOT600 ESC/Motor protocol

MOTOR_STOP Don't spin the motors when armed

Disarm motors regardless of throttle value (When ARM is configured in Modes tab via AUX channel)

5 Disarm motors after set delay [seconds] (Requires MOTOR_STOP feature)

4.5 Motor Idle Throttle Value [percent]

Board and Sensor Alignment

Roll Degrees GYRO Alignment CW 180°

Pitch Degrees ACCEL Alignment CW 180°

-45 Yaw Degrees

*Notes: Because the installation direction of the flight controller , the yaw degree should set to be "-45"

12.Default PID setting and currents setting

	Proportional	Integral	Derivative	Feedforward	RC Rate	Super Rate	Max Vel [deg/s]	RC Expo
Basic/Acro								
ROLL	40	50	32	60	1.00	0.75	800	0.08
PITCH	42	50	37	60	1.00	0.75	800	0.08
YAW	65	55	0	100	1.00	0.70	667	0.10

Voltage Meter

Battery 1 V

110 Scale

10 Divider Value

1 Multiplier Value

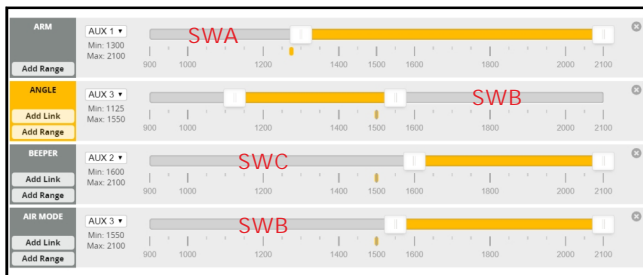
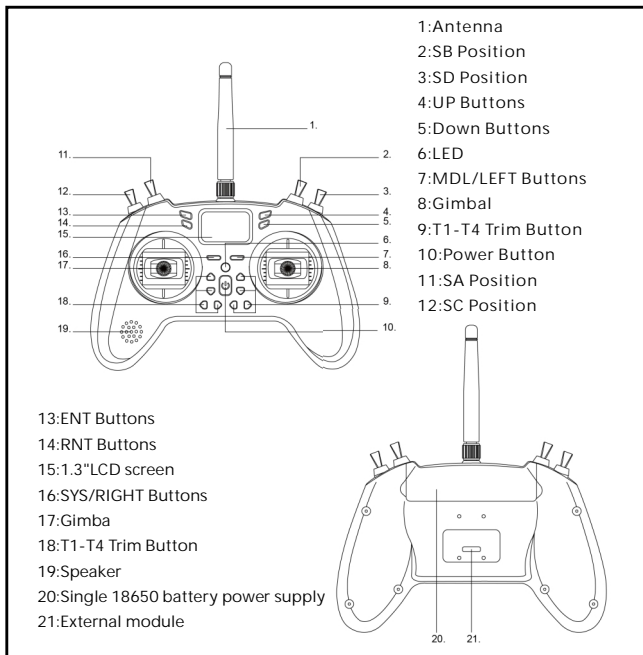
Amperage Meter

Battery 0.00 A

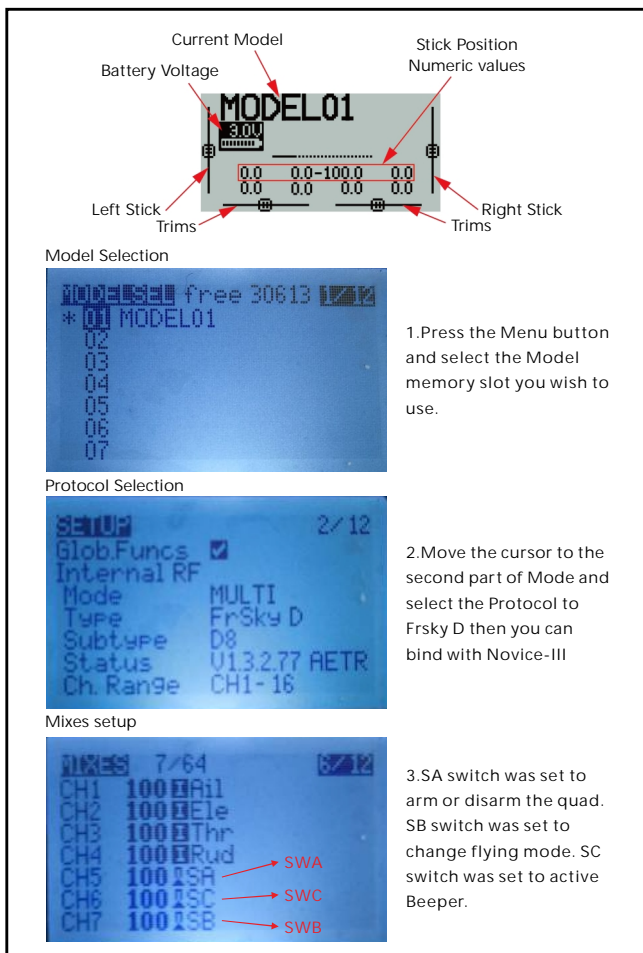
470 Scale [1/10th mV/A]

0 Offset [mA]

13. Radio channels/Switch and Betaflight mode setting

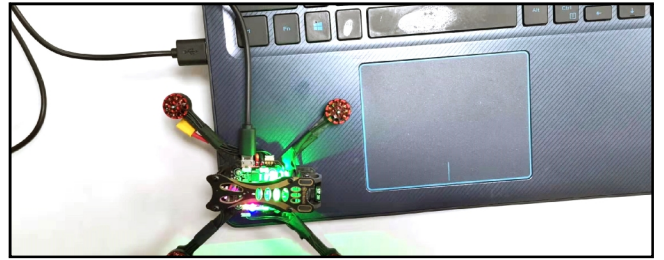


14. Menu Introduce

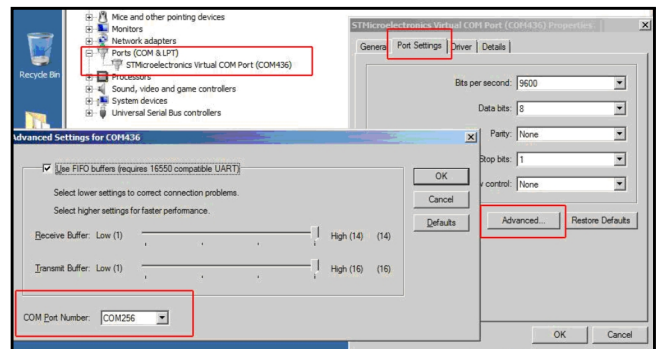


16. ESC Check and Flash firmware

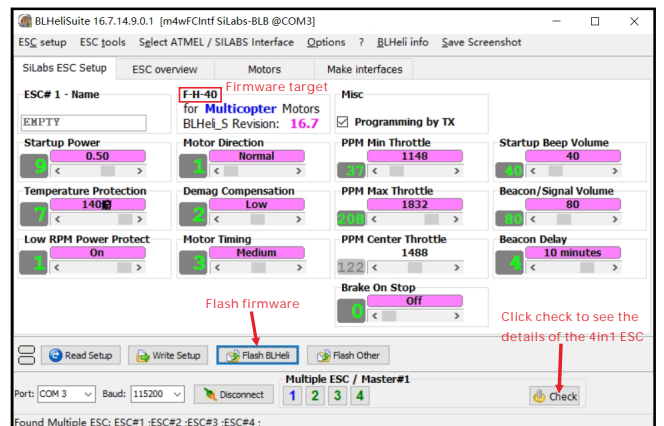
1. Download New release BLHeliSuite from:
<https://www.mediafire.com/folder/dx6kfaasyo241/BLHeliSuite>
2. Connect the NOVICE-III flight controller to computer



3. Open the Device Manager of your computer, find the Ports, please make sure the Com port Serial Number is under 255, otherwise it will can't connect to the BLHELISUITE. You can change the port serial number like the bellowing step :



4. Open the BLHELISUITE, Select SILABS BLHeli Bootloader (Cleanflight) from the third tab on the top side. Then Select the right Serial com port and Click connect. You can also Flash the new release BLHeli_s firmware via the BLHELISUITE, the firmware Target is "F-H-40"



17. Flight controller firmware update

1. Install latest STM32 Virtual COM Port Driver
<http://www.st.com/web/en/catalog/tools/PF257938>
2. Install STM BOOTLOAD Driver (STM Device in DFU MODE)
3. Open Betaflight configurator and choose firmware target "MATEKF411RX", then select the firmware version.
4. There are 2 ways to get in DFU Mode: 1). Press_and_hold_the_boot_button_then plug USB to computer 2). loading betafight firmware and hit "flash", then it will getting into DFU Mode automatically.
5. Open Zadig tools to replace the drivers from STM32 Bootloader to WINUSB Driver.
6. Reconnect the flight controller to the computer after replace driver done, and open Betaflight Configurator, loading firmware and flash.

