EACHINE



| Item | Part No. | RTF | FLY More |
|---|----------|-----|----------|
| 120mm toothpick frame | NC1210 | 1 | 1 |
| NanoX F4FS V1.0 flight controller | NC1204 | 1 | 1 |
| Eachine NC1103 KV8500 | NC1205 | 4 | 4 |
| HQPROP T65 bi-blade propeller | NC1206 | 2 | 2 |
| Caddx EOS2 v2 version 4:3 | NC1207 | 1 | 1 |
| VTX: 5.8g 25mw~200mw switchable Whoop VTX | NC1203 | 1 | 1 |
| 3.8v 460mah battery | NC1212 | 2 | 10 |
| 6in1 6-way LIPO/LIHV Charger | | 1 | 1 |
| FS-I6 2.4G radio transmitter | | 1 | 1 |
| Eachine VR009 5.8G 40CH goggles | | 1 | 1 |
| Propeller disassemble tool | | 1 | 1 |
| Screwdriver | | 1 | 1 |
| LED&Buzzer PCB top board | NC1201 | 1 | 1 |
| M2*D3.5*L20 Aluminum Alloy column | NC1208 | 4 | 4 |
| Damping ball | NC1209 | 4 | 4 |
| Battery mounted tray | NC1211 | 2 | 2 |

| 1. Specification |
|---|
| Brand Name: Eachine |
| Item Name: NOVICE-II 1-2S Toothpick RTF & Fly more |
| Wheelbase: 120mm |
| Size: 100mm*100mm*40mm |
| Weight: 50g(without battery) |
| 2. Features |
| Nano X F4 pro flight controller |
| Powerful and smoothly |
| Led Strip ready |
| Built-in Buzzer |
| New design 1103 KV8500 motors |
| Camera Angle adjustable |
| VTX power switchable 25mw~200mw |
| Smartaudio ready , change VTX bands, powers, channels via OSD |
| Ready to fly |
| Compatible both for 1s-2s Lipo/LIHV |



3. Start FPV Flight

Start by powering on your Radio and Goggles. NOVICE-II comes already bound to your radio and on the right video channel matched with your goggles. Power on NOVICE-II by sliding the battery into the battery tray and plugging it in. Once the battery is plugged in, set NOVICE-II on a stable surface so it can calibrate. Calibration takes a few seconds then NOVICE-II is ready to fly.



Install 4x AA 1.5v battery to the radio and push the power switch to turn on the radio. If the throttle stick was not at the bottom position the radioter will alarm.



Connect the battery for the NOVICE-II



.Turn on the Vr009 goggles and check the Video



Toggle SWA(AUX1) switch to arm the NOVICE-II, you will find "ARMED" notice in the screen of the Goggles. Recommend Toggle SWC(AUX2) to choose Stable mode for the beginner. Happy flight and keep it safe.

EACHINE



Toggle SWC(AUX2) switch to select flight mode (Default is Acro mode)

4. Charger the Lipo Battery



 \triangle Ports are numbered 1-6. Do not put more than one battery on a single port. For example: do not insert one battery on the Picoblade 1.25 plug and another on the same port with the PH 2.0 plug.

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-II. The right stick controls pitch and roll of the aircraft.

Left Stick Diagram



Right Stick Diagram



Important notice:

 The belowing content are regarding the advanced tutorial. The drone comes out already finished all the settings and bound with the radio.
 Don't mod to XT30 Plug, it will burnt the flight controller if mod to xt30 and use high discharge rating battery.

6.Flight controller connection diagram





7.Binding procedure

1.Plug the usb and go to the CLI command tab in the betaflight configurator, then type "bind_rx_spi" ,the receiver will getting into bind mode , and then make your Flysky radio to bind mode.

\$#>De`DDD:DDDDDDDDDDDDDDDDDDDDDB#> nDDDDDDDDD Entering CLI Mode, type 'exit' to return, or 'help' # bind_rx_spi Binding...

2.Please Ensure the RX setup of your transmitter is in AFHDS 2A Mode. Then get your transmitter into binding mode : Turn on the transmitter while holding the bind button. The White and red LED on the flight controller should blinking fast first and then blinking slowly, this indicates binding successfully. Now you need to exit binding mode of the transmitter and re-connect the Novice-II to the computer, then the Red and white LED should be getting to be solid , this indicates the connection was established between the NOVICE-II and your transmitter.





8.Receiver configuration

Please set Receiver mode to be SPI RX Support from the Configuration tab of the Betaflight Configurator, then select A7105_Flysky_2A Provider for AFHDS-2A Protocol Radio transmitter or Select A7105_Flysky Provider for AFHDS Protocol Radio transmitter, don't enable Serial RX since the Flight controller is integrated SPI BUS Receiver

| USB VCP | 115200 🔻 | | Disabled • AUTO • | Disabled • AUTO • | Disabled • AUTO • |
|--|---|-------------|---------------------------|-------------------------------------|-----------------------|
| UART1 | 115200 • | | Disabled • AUTO • | Disabled • AUTO • | Disabled • AUTO • |
| UART2 | 115200 • | | Disabled • AUTO • | Disabled • AUTO • | TBS SmartAuc • AUTO • |
| Receive | er | | | | |
| SPLR) | Csunnort | | Receiver Mode | | |
| 01110 | coopport | | | | |
| | | | | | |
| Note: | The SPI RX provider | will only v | work if the required hard | lware is on board or con | nected to an SPI bus. |
| Note: | The SPI RX provider | will only v | | ware is on board or con | nected to an SPI bus. |
| Note: A7105 | The SPI RX provider _FLYSKY_2A | will only v | work if the required hard | ware is on board or con | nected to an SPI bus. |
| Note: A7105 Receive | The SPI RX provider _FLYSKY_2A er | will only v | work if the required hard | ware is on board or con 두너아DS-2A | nected to an SPI bus. |
| Note: A7105 Receive SPI RX | The SPI RX provider _FLYSKY_2A er K support | will only v | work if the required hard | ware is on board or con | nected to an SPI bus. |
| Note: A7105 Receive SPI R) | The SPI RX provider _FLYSKY_2A er K support | will only v | vork if the required hard | ware is on board or con 두너이S-2A | nected to an SPI bus. |
| Note: A7105 Receive SPI RX Note: | The SPI RX provider _FLYSKY_2A er < support The SPI RX provider | will only v | work if the required hard | ware is on board or con | nected to an SPI bus. |

9.VTX Bands and Channels setup



Notes:

Default vtx setting is 200mw but the VTX power LED indicate will always show 25mw when the quad was disarmed, because we have "set vtx_low_power_disarm=on" There are 3 ways to switch the vtx channels:

 Short press 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)

2.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

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



10.Goggles and VTX Receiver channel setting



| Band | CH1 | CH2 | CH3 | CH4 | CH5 | CH6 | CH7 | CH8 |
|------|------|------|------|------|------|------|------|------|
| Α | 5865 | 5845 | 5825 | 5805 | 5785 | 5765 | 5745 | 5725 |
| В | 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 and ESC/motor protocol



| ESC/Motor Features | |
|---|---|
| DSHOT600 ESC/Motor protocol | 0 |
| MOTOR_STOP Don't spin the mo | tors when armed |
| Disarm motors regardless of throttle value (Whe | n ARM is configured in Modes tab via AUX channel) |
| 5 Disarm motors after set delay [seconds] (Requir | es MOTOR_STOP feature) |
| 4.5 AMOTOR Idle Throttle Value [percent] | 0 |

12.Default PID setting and currents setting

| | | | | | | | | | Max Vel [deg/s] | | |
|------------|----|----|----|----------|-----------|------------|------------|----|--------------------|---------|--|
| Basic/Acro | | | | | | | | | | 0 | |
| ROLL | 40 | ÷ | 50 | \$ 32 | \$ 60 | \$ 1.00 | \$ 0.76 | ¢ | 833 | 0.10 \$ | |
| PITCH | 42 | \$ | 50 | \$ 37 | \$ 60 | \$ 1.00 | \$ 0.76 | \$ | 833 | 0.10 \$ | |
| YAW | 65 | ÷ | 55 | \$ 0 | \$ 100 | \$ 1.00 | \$ 0.70 | \$ | 667 | 0.10 \$ | |

| Voltage Meter | | |
|---------------|--------|----------------------------|
| | | 110 💠 Scale |
| Battery | 0 V | 10 Divider Value |
| | | 1 SMultiplier Value |
| Amperage Mete | er | |
| Ratten | 0.00 A | 1175 🗘 Scale [1/10th mV/A] |
| Dattery | 0.00 A | 0 🗘 Offset [mA] |

EACHINE





14.AUX Channel set up



15.LED Strip Setting



16.ESC Check and Flash firmware

1.Download New release Blhelisuite from:

https://www.mediafire.com/folder/dx6kfaasyo24l/BLHeliSuite 2.Connect the NOVICE-II 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 :

| | Mice a Monit Monit Netwo Ports | ind other point ors ork adapters (COM & LPT) | ting devices | | | STM | eroelee nera F | Port Settings |) Details |) Properties. | × |
|-------------------|--|--|--|------------------|---|-----------------------|-------------------|--------------------------|---|-----------------|--------------|
| Recycle Bin | Sound Sound Syste Unive | Microelectro sors d, video and g m devices rsal Serial Bus | ame controller | 4 Port (COM436 | | | | Bits ; | Data bits: 8 | × | 1 |
| Vervanced Setting | gs for COM4 O buffers (req. ower settings to igher settings f | ires 16550 ci correct conr or faster perfo | mpatible UAR ection problem mance. | 1 <u>]</u> s. | 1 | | | OK Cancel Defaults | Parity: None Btop bits: 1 v control: None Advanced. | Restore Default |]] to |
| Transmit Buffe | er: Low (1) er: Low (1) | 1 | | • | | ign (14) ligh (16) | (14) | | | | |
| COM Port Numbe | er: COM256 | | | | | | | | | OK Canc | cel |

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 BLHEILISUITE, the firmware Target is "S-H-50"

| @BLHeliSuite 16.7.1 | 4.9.0.1 [m4w] | CIntf SiLabs-BLB | ecom20] | |
|--------------------------|----------------------------|--------------------------------------|--|--|
| ESC setup ESC tools S | S <u>e</u> lect ATMEL / SI | LABS Interface Opt: | ions ? <u>B</u> LHeli info <u>S</u> ave Scre | enshot |
| SiLabs ESC Setup | ESC overview | Motors | Make interfaces | |
| ESC# 1 - Name | S-H-5 for N | o Firmware targ Iulticopter Motor | s Misc | |
| EMPTY | BLHe | S Revision: 16.2 | Programming by TX | |
| Startup Power | Moto | Direction Normal | PPM Min Throttle | Startup Beep Volume |
| Temperature Protecti | ion Dema | g Compensation Low | PPM Max Throttle 1832 205 | Beacon/Signal Volume |
| Low RPM Power Prot | Moto | Timing Medium | PPM Center Throttle 1488 122 • • | Beacon Delay |
| | FI | ash firmware | Brake On Stop | Click check to see the details of the 4in1 ESC |
| Read Setup | 🕞 Write Setup | 🕎 Flash BLHeli | 👔 Flash Other | |
| Port: COM 20 💌 Baud: | 115200 💌 🚺 | Disconnect | ble ESC / Master#1 | Check |
| Found Multiple ESC: ESC4 | 41 ;ESC#2 ;ESC#3 | :ESC#4 ; | | |
| | | | | |

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)

3.0pen Betaflight configurator and choose firmware target "CrazybeeF4FS", 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 betaflight 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.

| evice | Options Help | | |
|--------|--------------------|-----------------------------|-------------------------------------|
| STM32 | BOOTLOADER | | - Ed |
| Driver | STTub30 (v3.0.4.0) | WinUSB (v6. 1. 7600. 16385) | More Information WinUS8 (libusb) |
| US8 ID | 0483 DF11 | | ibusb-win32 |
| wcip2 | × | Replace Driver | WinUS8 (Microsoft) |