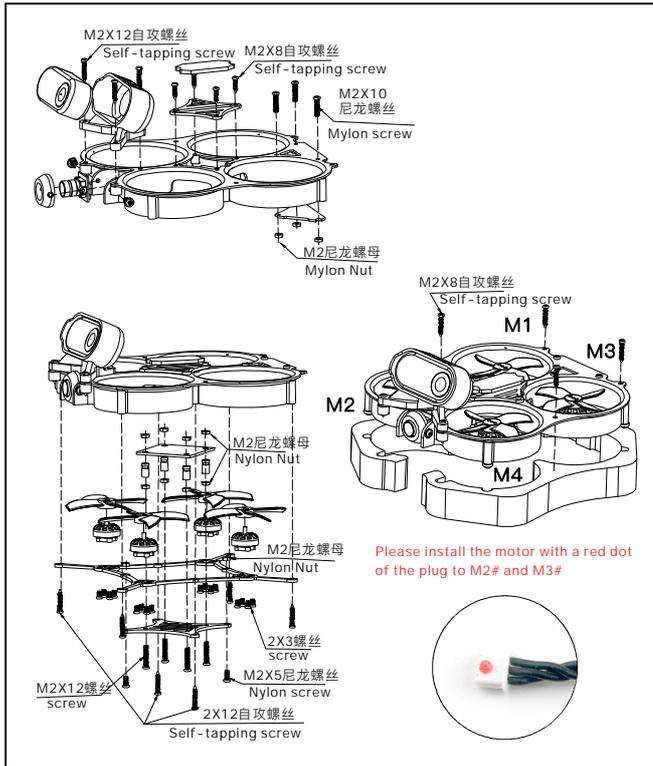
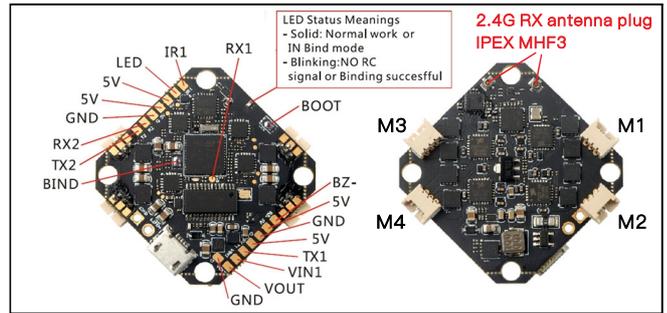


1. Frame assembly exploded view



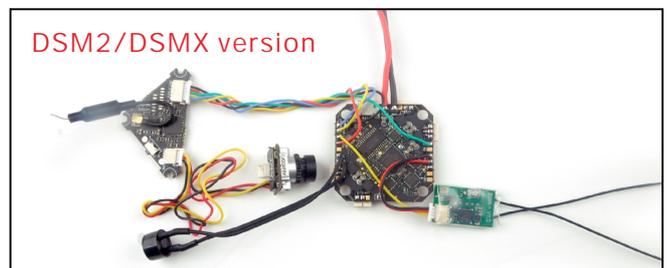
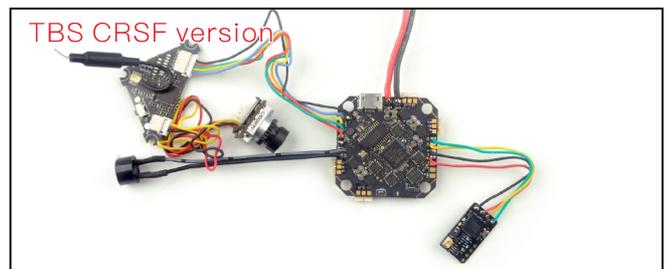
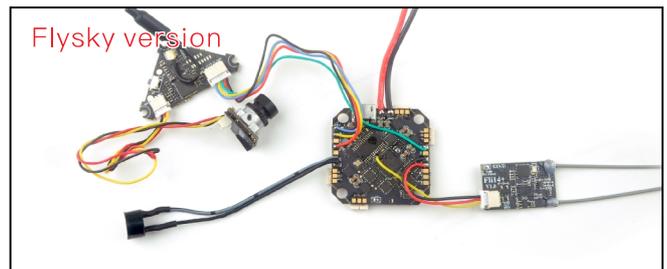
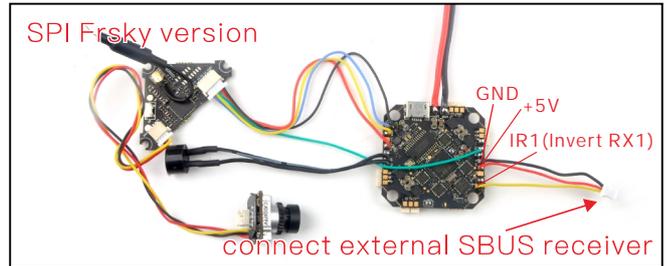
3. Flight controller Pinout schematics



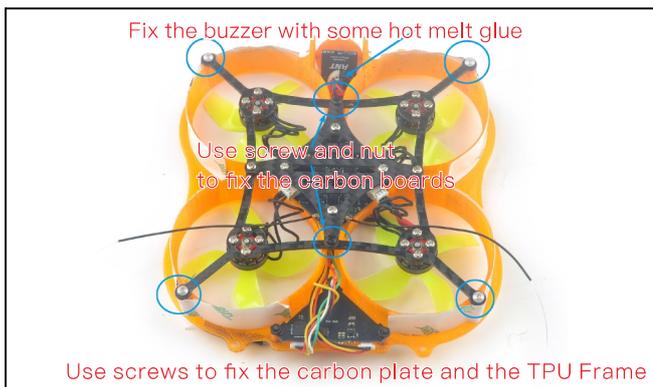
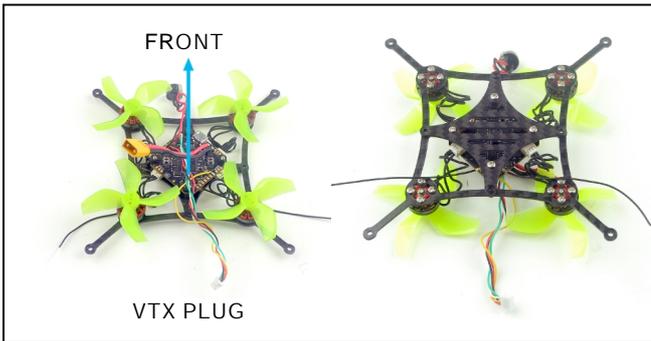
Default Betaflight firmware version is 4.2.5 MATEKF411RX
 Deafault BLHELIS firmware version is JazzMaverick 16.8 Target F_H_40_48_REV16_8.HEX

All the settings are ready before out of factory , you just need to assemble the frame and then bind and fly . If you try to flash firmware then you need to setting the flight controller like the following pictures.

4. Flight controller connection diagram



2. Major component assembly procedure



5. General settings of Betaflight 4.2.5

Mixer
Quad X
Motor direction is reversed

ESC/Motor Features
DSHOT600
ESC/Motor protocol
MOTOR_STOP: Don't spin the motors when armed
ESC_SENSOR: Use KISS/BLHeli_32 ESC telemetry over a separate wire
Bidirectional Dshot (requires supported ESC firmware)
12: Motor poles (number of magnets on the motor bell)
5.5: Motor Idle Throttle Value [percent]

Board and Sensor Alignment
Roll Degrees: 0, Pitch Degrees: 0, Yaw Degrees: 0
First: GYRO/ACCEL, CW 18C, First GYRO

Voltage Meter
Battery: 0.4 V
Scale: 110
Divider Value: 10
Multiplier Value: 1

Amperage Meter
Battery: 0.00 A
Scale [1/10th mV/A]: 470
Offset [mA]: 0

PID Profile Settings
Note: D Min feature is disabled and its parameters are hidden. To use D Min please enable it in PID Controller Settings.
Note: Sliders are disabled because values were changed manually. Clicking the 'Enable Sliders' button will activate them again. This will reset the values and any unsaved changes will be lost.

PID Controller Settings
Feedforward transition: 0
Axis Trainer Angle Limit: 20
Throttle Boost: 5
Dynamic site value (*100 RPM): 0
Absolute Control: 0
I Term Saturation: 0
What PID Compensation: 0
Integrated Trim: 0
I Term Saturation: RPY, Axis, Setpoint, Trim, 10, Cutoff
D Min: 0
Anti Gravity: 0

6. Settings of the different versions

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	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	115200	Disabled	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	115200	Disabled	Disabled AUTO	Disabled AUTO	VTX (TBS Srs) AUTO

Receiver
SPEKTRUM2048/SRXL
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

Channel Map
TAER1234
RSSI Channel
Disabled

Flysky version

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	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	115200	Disabled	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	115200	Disabled	Disabled AUTO	Disabled AUTO	VTX (TBS Srs) AUTO

Receiver
Serial-based receiver (SPEKSAT, S)
Receiver Mode
Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.
IBUS
Serial Receiver Provider

Channel Map
AETR1234
RSSI Channel
AUX 10

DSMX version

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	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	115200	Disabled	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART2	115200	Disabled	Disabled AUTO	Disabled AUTO	VTX (TBS Srs) AUTO

Receiver
Serial-based receiver (SPEKSAT, S)
Receiver Mode
Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.
SPEKTRUM2048/SRXL
Serial Receiver Provider

Channel Map
TAER1234
RSSI Channel
AUX 8

TBS CRSF version

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	Disabled AUTO	Disabled AUTO	Disabled AUTO
UART1	115200	Disabled	Disabled AUTO	Disabled AUTO	VTX (TBS Srs) AUTO
UART2	115200	Disabled	Disabled AUTO	Disabled AUTO	Disabled AUTO

Receiver
Serial-based receiver (SPEKSAT, S)
Receiver Mode
Note: Remember to configure a Serial Port (via Ports tab) and choose a Serial Receiver Provider when using RX_SERIAL feature.
CRSF
Serial Receiver Provider

Channel Map
TAER1234
RSSI Channel
AUX 8

7. Bind procedure

SPI FRSKY

Frsky_D protocol is for D8 mode, Frsky_X protocol is for Frsky ACCST D16 mode, Frsky_X_LBT is for EU-LBT Frsky ACCST D16 mode, S-FHSS protocol is for Futaba S-FHSS mode, Redpine is for some multi protocol radio transmitter with Redpine mode.

Plug the USB and go to the CLI command tab from the Betaflight configurator, then type "Bind_rx", the red LED will getting to be solid, and it means the receiver is in bind mode. Make your radio transmitter get into bind mode, the red led would shining slowly if bound successful.

It should be noted that when you use some new version of Access remote controller to run ACCSTD16 mode for binding, even if the binding is successful, the red LED will not flash slowly, you need to manually enter "save" from the CLI command of the configurator to finished the binding procedure.

```

Entering CLI Mode, type 'exit' to return, or 'help'
#
# Building AutoComplete Cache ... Done!
#
# Bind_rx
Binding...
# save
    
```

FLYSKY

Plug the usb of the flight controller to the computer while holding the binding button of the Flysky fli14+ receiver, then released the bind button, the red LED on the receiver will blinking fast, this indicates the receiver is in binding mode. Set the Receiver RX Setup to AFHDS-2A mode for your radio transmitter, and get the transmitter into binding mode, the Red LED will getting to be solid and the transmitter will auto exist binding mode, this indicates binding successfully.

DSM2/DSMX

Plug the USB of the flight controller to the computer while holding the binding button of the the Speki+ receiver. The red LED of the receiver start to blinking fast, this indicate the receiver is in bind mode, then make your radio transmitter get into bind mode. If the red LED on the receiver turned off, this indicate bind is successful then quit bind mode for the radio transmitter The red LED on the Speki+ receiver is solid, now the radio transmitter and the receiver are working fine.

TBS CRSF VERSION

1. Just power up the TBS CROSSFIRE transmitter
2. On the standard transmitter, enter the configuration menu by pressing and holding the joystick for 3 seconds, select "General" and "Binding" - a message "Binding" will start blinking, waiting for the receiver. On the micro transmitter, a short press on the button will initiate binding mode.
3. Now, plug the USB of the flight controller to power up the receiver (without pressing the Bind button!), if your receiver has not been previously bound, it will automatically bind. Otherwise, press and release the "BIND" button on the receiver to initiate binding. On the receiver is a timeout of one minute for after power up to enter bind mode. If the status LED will start blinking slowly the receiver has switched successfully to bind mode.
4. Within a few seconds the process will finish with a "Binding complete" message on the standard transmitter, or a solid green LED on the micro transmitter. The receiver has now stored the unique serial number of that particular CROSSFIRE transmitter. If it doesn't bind, please verify that your firmware is to the newest version on both the receiver and the transmitter.