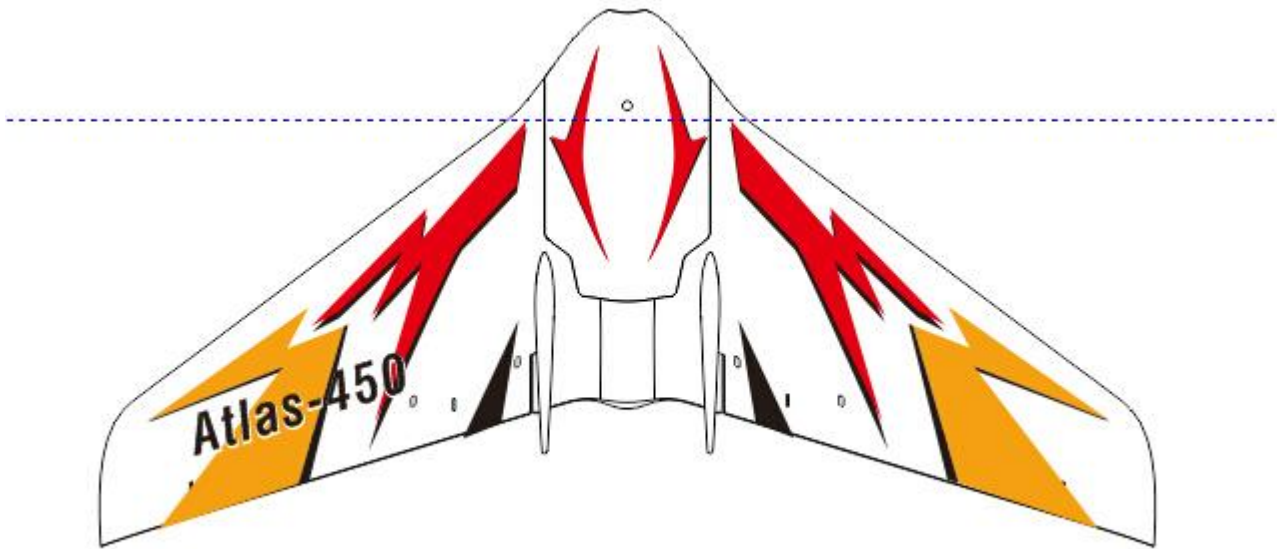


## Atlas-450 FPV Brushless FPV



Atlas-450 is a kind of micro brushless FPV delta-wing airplane based on the design idea of reliability, safety and concise, her flight time is as long as 20 minutes! Park flying or indoor flying is suitable for Atlas-450, flying in even more difficult environment will be suitable too. Innovative design concepts for electronic parts on Atlas-450 FPV (no matter on its hardware or software) are high efficiency/concise/online upgrading. The power switchable analog onboard VTX is very effective on power saving and avoids signal interference with other on scene VTXs. Power system. Our engineers spent many hours perfecting the construction and power system of this aircraft and tested many prototypes to make sure Atlas-450 lived up to expectations, powerful performance, flight speed and flight time are well balanced and perfected!

Besides, as Atlas-450 provides as many as 7 optional onboard compatible receivers of different protocols, such as DSMX/DSM2, DEVO, Futaba-SFHSS, FrSky-D8, FlySky-AFHDS(2A), Hubsan compatible, if modelers already have those transmitters, they don't need to pay for a transmitter again.

### Features:

- 1) Length: 230mm (9.0 in.)
- 2) Wing span: 450mm (17.7 in.)
- 3) Height: 43mm (1.7 in.)
- 4) Flight weight: 67g (including a 500mAh/2S/25C)
- 5) Flight time: 20 minutes (Note 1)
- 6) Flight distance: 250~300 meters (Note 2)
- 7) Onboard receiver (Note 3): 1->A1- DSMX/2; 2-> A2-DEVO (on testing); 3-> B1- Futaba-SFHSS; 4-> B2-FrSky-D8; 5-> C1-FS-AFHDS; 6-> C2-FS-AFHDS -2A; 7->C3- Hubsan
- 8) Motor: brushless motor MX-T 1103 (6400KV)
- 9) ESC: MU-3A
- 10) Prop: MX-P2425(60mm)
- 11) Servo:LSM1300 \*2
- 12) Video transmitter: 2-gear power switchable VTX(25mw/150mw), 40CH frequencies (can be upgraded online)

13) Camera: 600TVL, 120 degree wide angle, CMOS PAL.

**Note 1:** Flight time was with 500mAh 7.4V25C lipoly battery, 50% throttle was the lowest during the flight (no zero power gliding), 100% throttle when it was climbing, default of VTX is 25mw, outdoor flight within a radius of 300 meters, breeze or no wind.

**Note 2:** The VTX was 25mw while it was flying within a radius of 20~300 meters, it was a distance that pilot couldn't judge the real flying position of Atlas-450 from the third view.

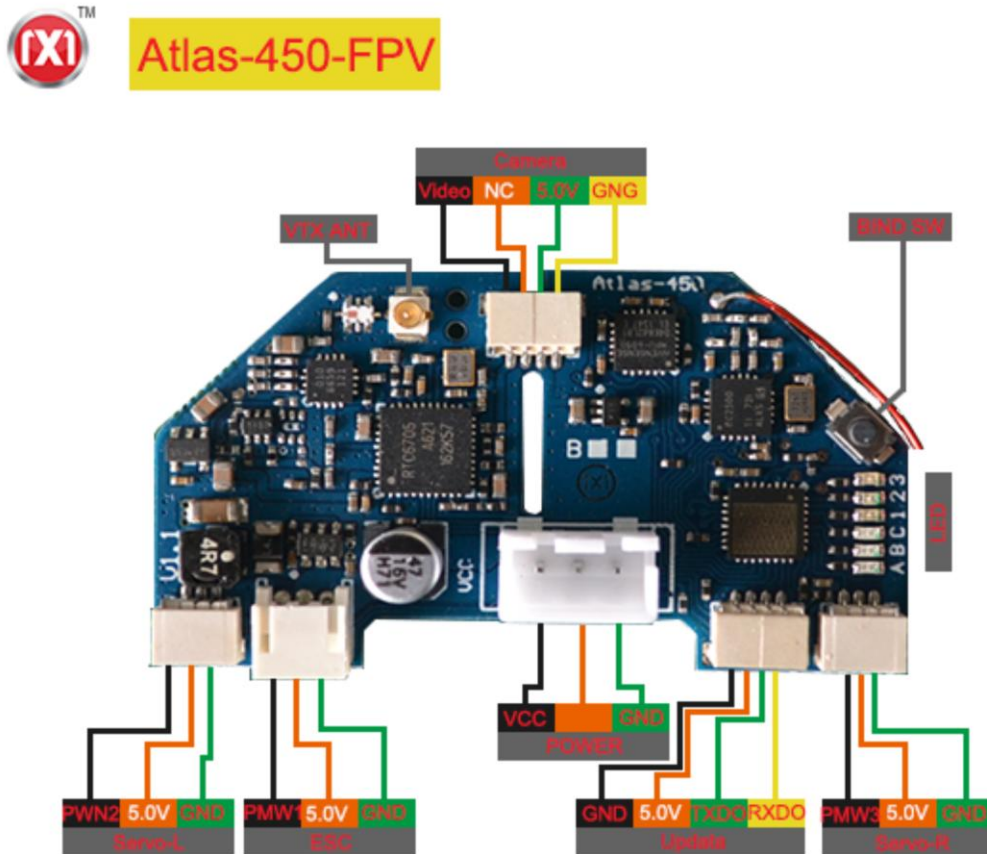
**Note 3:** There are 3 types of hardware for the built-in receivers: A-CYRF6936; B-CC2500; C-A7105, among them, one hardware can support several receiver protocols, that is to say, dealers or customers only need to change the receiver's firmware to support a different receiver protocol by using just one receiver hardware. But hardware A can't support protocols that hardware B or C supported, it would be same to hardware B or C to A, for example: B-CC2500 hardware can support B1- Futaba SFHSS and B2- FrSky-D8 protocols, but it can't support A1-DSMX/2 or C1-FlySky-AFHDS protocols etc. Besides, an outside receiver can also be connected to the control board even it already gets a built-in receiver.

**Package including:** BNF Atlas-450 FPV micro-wing( with FPV equipments, compatible receivers, VTX etc.)

**Customer required:**

**Transmitter, charger, FPV monitor or a VR goggles, and lipoly battery (300mAh~600mAh 7.4V20C)**

**Ports distribution diagram:**



**LED light explanation ( for indicating compatible receiver, VTX working frequency and power, stabilizing function)**

There are 6 LED lights on board in total, they are LEDA, LEDB, LEDC, LED1, LED2, LED3, they can help you to figure out the version of the compatible receiver, VTX power and frequency, stabilizing function and firmware upgrading etc.

All of the 6 LEDs will be on for one second when the board is power, and then each LED light will be on one after another, after that, all of the 6 LEDs will be on again for 2 seconds, then some of the LED light will be blinks twice indicating VTX working frequency, the last state of LEDs is: LEDA, LEDB, LEDC is solid on, one of LED1, LED2, LED3 will be blinking, it means: LEDA and LEDB indicates VTX power, LEDC indicates if the stabilizing function is turned on, the blinking LED1, LED2 and LED3 indicating the version of compatible receiver and its working state. The details are the following:

VTX power: 1) LEDA---ON; LEDB---OFF, VTX power is 25MW  
2) LEDA---OFF; LEDB---ON VTX power is 150MW

Stabilizing function: 1) LEDC---ON stabilizing function is turned on;  
2) LEDC--- OFF stabilizing function is turned off;

Compatible receiver version: 1) LED1 blinking means receiver with DSMX/2 protocol, solid on indicates the receiver binds  
2) LED2 blinking means receiver with Futaba or FrSky D8 protocol, solid on indicates the receiver binds  
3) LED3 blinking means receiver with FS-AFHDS-2A protocol, solid on indicates the receiver binds

### **Binding operation:**

Power Atlas-450 FPV micro wing waiting till only one LED blinking which indicates receiver, press BIND SW for 2 seconds, the slow blinking LED will be turned to fast blinking, it indicates entering binding mode, then binds receiver according your transmitter manual. As soon as the binding process is finished, the fast blinking LED will be turned to slow blinking, it will turned to solid on when the receiver has received signal from transmitter.

### **Set up parameters on transmitter before flight:**

- 1) Turn off mixture control function on the transmitter;
- 2) THR range set on 120%, THR reverse which is only for Futaba receiver;
- 3) Set AIL and ELE range on 65%, customer can tune the range according pilot's experience.
- 4) Set up CH5 on a 2-gear or 3-gear switch for controlling stabilizing function on and off.
- 5) Set up CH6 on a 2-gear or 3-gear switch for controlling VTX power output (LEDA is on indicating 25MW, LED is on indicating 150MW output.

The next step is to power Atlas-450 micro wing, turn on your transmitter and check the position of servo on Atlas-450 ( The correct servo position is that the servo surface should be same as that of the back edge surface of the wing)and the motion direction is same as the stick movement direction. If the servo position is not correct, please try to fine-tune the servo surface to its correct position; if the servo surface movement direction is not same as the stick direction, reverse function needs to be set up on transmitter.

### **Position of Gravity center and Battery:**

Atlas-450' gravity center is at the 75mm point from the aircraft's head, please check the following picture for reference (the position marked G)



Battery position (you can move the battery to right or left in reality):



**Note:** please try to press the battery cable lower so that it won't jack up the cover.

### How to check and set up VTX working frequency:

6 LED lights on the board indicate the working frequency of the video transmitter in binary calculation way, (LEDA, LEDB, LEDC represent 5 groups of frequency, LED 1, LED 2 and LED 3 show 8 frequencies. When the board is powered, you can press the button at any time, 6 LEDs group flash 2 times indicating the present working frequency.

Operation of setting up VTX working frequency:

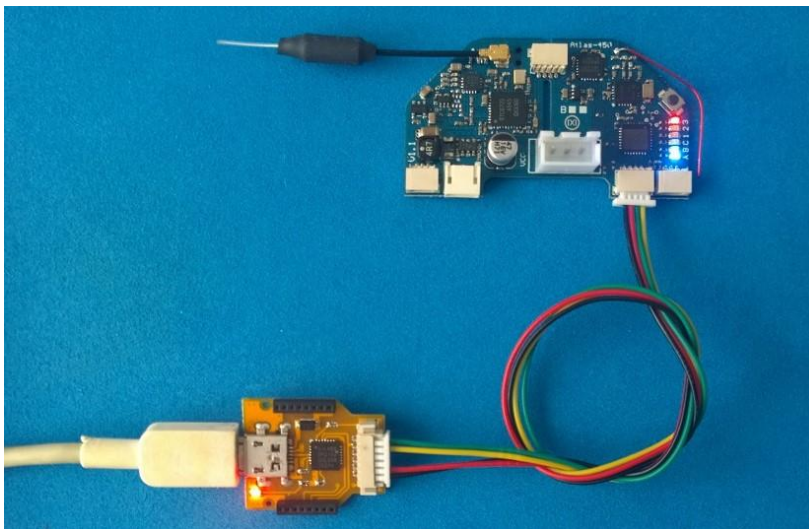
- 1) Power the transmitter, put the throttle stick at the middle position (so that it won't start the motor when VTX working frequency is setting up)
- 2) Power Atlas-450, after the receiver has get signal from transmitter, press BIND SW button twice continuously, it will enter VTX working frequency set up mode;
- 3) Push ELE channel stick up and down, you can change the frequency group (5 groups LEDA, B,C); Push AIL channel stick right and left, you can change the frequency (LED1,2,3, 8 frequency points in total).
- 4) As soon as the VTX working frequency is set up, push THR stick to lowest position, it will exit VTX working frequency set up mode, and save the frequency which was set up for VTX, LED group will blink twice and starting the motor is allowed

LEDA	LEDB	LEDC	LED1 LED2 LED3							
			000	001	010	011	100	101	110	111
0	0	0	5740M	5760M	5780M	5800M	5820M	5840M	5860M	5880M
0	0	1	5865M	5845M	5825M	5805M	5785M	5765M	5745M	5725M
0	1	0	5733M	5762M	5771M	5790M	5809M	5828M	5847M	5866M
0	1	1	5705M	5685M	5665M	5645M	5885M	5905M	5925M	5945M
1	0	0	5658M	5695M	5732M	5769M	5806M	5843M	2880M	5917M

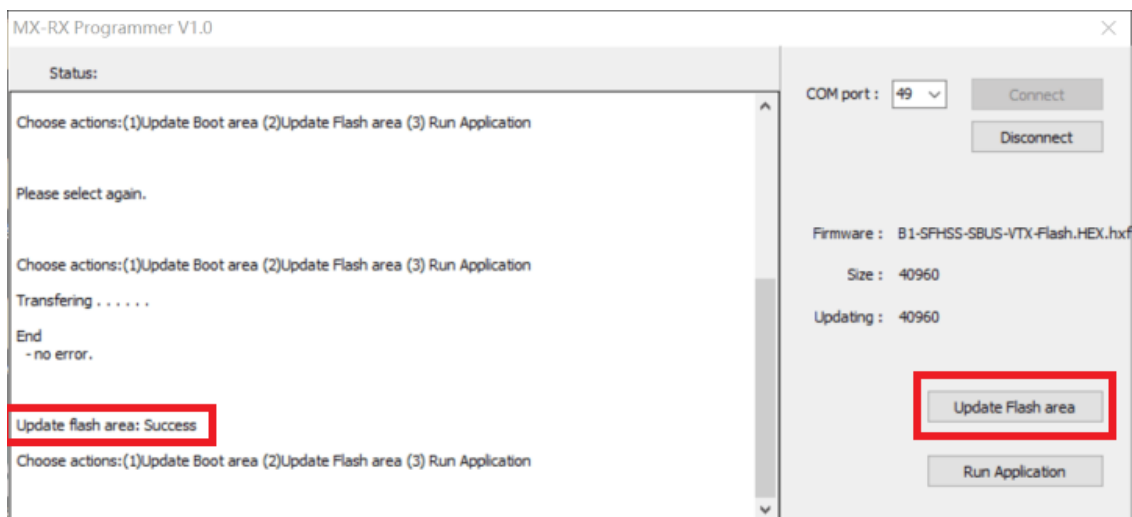
Note: 0 --- LED\_OFF, 1 --- LED\_ON.

**How to upgrade firmware online ( including compatible receiver protocol upgrading, VTX frequency form upgrading, 3-axis stabilizing software upgrading etc.)**

- 1) Connect FTDI or CP2102 programmer to PC;
- 2) Disconnect power on Atlas-450, press the button on the control board, then plug the cable from FTDI or CP2102 programmer to Updata connector on control board, release the binding button when LEDA and LEDB is solid bright.



- 3) Open MX-RX Programmer software, select serial port, click Connect, select the firmware, waiting for the upgrading to be finished, then turn off MX-RX programmer software, disconnect flight control board and PC connection.



**Note: the compatible receiver protocols, VTX working frequency form and 3-axis stabilizing software are within the same firmware pack.**

**Order information:**

- 1) Atlas-450-A FPV- Brushless: Comes with built-in DSMX/2 compatible receiver or A2-DEVO (on testing);
- 2) Atlas-450-B FPV- Brushless: Comes with built-in B1- Futaba-SFHSS or B2-FrSky-D8 compatible receiver;
- 3) Atlas-450-C FPV- Brushless: Comes with built-in C1-FS-AFHDS or C2-FS-AFHDS -2A or C3- Hubsan compatible receiver.

Note: a low cost brushed version of Atlas-450 is on designing; we can develop receiver firmware based on the above 3 types of hardware according to customer's requirement.

The picture for the painting of Atlas-450 is just for reference.