

XAircraft Black Box and Flight Report Guide

General

Black box is an online analyzing service for XAircraft SuperX flight controller. It can playback your flights and provide report for each flight.

Black box can record about 40 minutes flight. The data is being recorded after you start the motors. If the black box is full, the new record will overwrite the oldest record.

Upload Log File

XAIRCRAFT

Blackbox Beta 0.5

Upload LOG/X.LOG file in SuperX:

No file chosen

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Select the **X.LOG** file which is located in Log folder in SuperX disk root, then click

Upload button.

Suggestion:

1. You can copy out the X.LOG file as a backup, then rename the backup as you like,

such as '2013052 normal.log' , '20130601 some glitches.log' , '20130605 crash.log' etc.. You can upload the copy at any time.

2. Delete the X.LOG file in SuperX after you backup it.

The suggestion will make the logs very clear. And it's a good habit that to always check the report after each flying. That might find hidden problem before next flying.

Play Back

XAIRCRAFT Blackbox Beta 0.5

Share this link: http://www.xaircraft.com/blackbox/blackbox.htm#2013_08_07_061741.500_170.1.05.34 Click and Ctrl+C to copy the link.

Map Satellite

Flights: 170.1.05.34 Show Report

Time(UTC): 2013-08-07 01:15:41 00:05:34.570

SuperX Info

Hardware	v1.00	Firmware	v1.07
Battery	15.1 V		

Copter Attitude

	ATT Angle	Angle Rate
Pitch	4.6	-12.50
Roll	8.7	50.90
Heading	-179.7	-1.40

Position and Movement

FIX	3D	NumSV	8
Longitude	121.3778072	H:121.3779335	
Latitude	30.9847545	H:30.9849615	
Height	-1.89m	H:20.90m	
Speed	2.40 km/h		
VSPEED	0.0m/s		

Input / Output

Input		Output	
A 14%	M ATT	M1 53%	M5 0%
E 9%	S OFF	M2 26%	M6 0%
T 35%	G 0%	M3 29%	M7 0%
R 0%	X 0	M4 35%	M8 0%

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If you feel good or bad in this flight, you can share the link to others to share you happiness or to find help from others.

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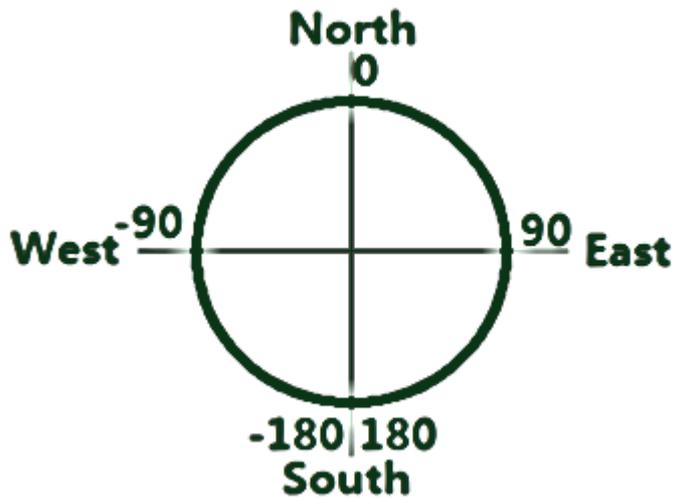
5 ⏪ × 1.5 ▶ ▶ ⏩ ⏮ ⏭ 🔍

1. There' s one flight from when you start the motors to when you throttle down to lowest. The flight is identified like '170.2.11:22' , that means it' s the 170th power-on and the second arming of the motors, and the fly time is 11 minutes 22 seconds. You may have several flights in one power-on.
2. Click this to view the report of this flight.
3. UTC Time, you need to add or minus hours to get the local time. For example, XAircraft is in China which is in +8 time zone, so the local time(Beijing time) is 2013-08-07 09:15:41 in the screen shot.
4. Data region shows the play back data.
5. Play control. You can speed up/down, play/pause, step back/forward and replay the records.

About the direction of attitude and remote controller input:

	-	+
Pitch/E	Forward	Backward
Roll/A	Left	Right
Yaw(Heading)/R	Left	Right

About Heading:

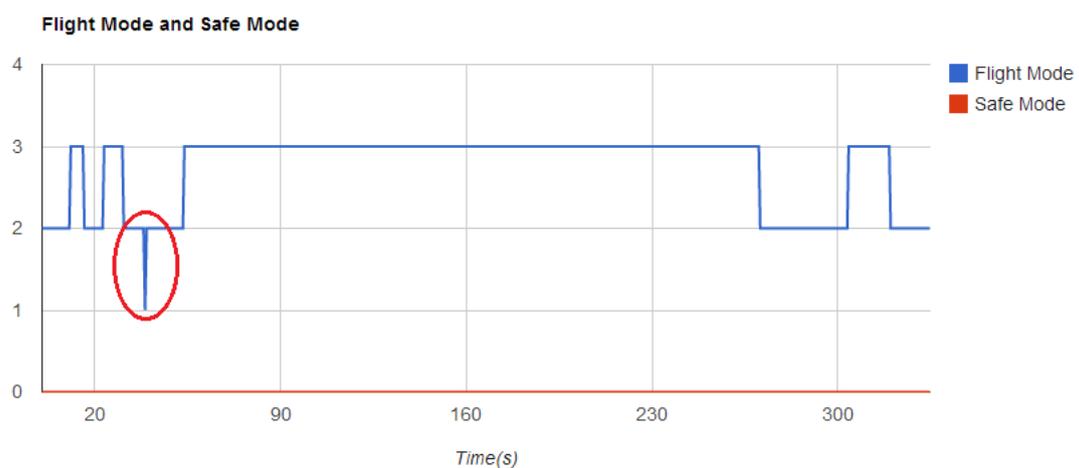


Flight Report

Flight report can show several useful charts including flight mode, remote control, attitude, number of satellites, motor outputs and compass for analyzing the flight.

Most of the meaning of numbers are marked under the chart, here shows some useful analysis as demonstration.

Remote Control



Flight Mode: 1 = Manual, 2 = Attitude, 3 = GPS Attitude
Safe Mode: 0 = OFF, 1 = ON

This chart shows a glitch on Flight mode, it jumps to Manual mode at 38s. If this glitch is not operated by you, that means you have to check the receiver and the connection between

receiver and IO module. The glitch might be caused by:

1. The receiver outputs a glitch. Maybe the signal is interfered, or the signal is not good, or the hardware of receiver has some problem.
2. The cable gets loosen.

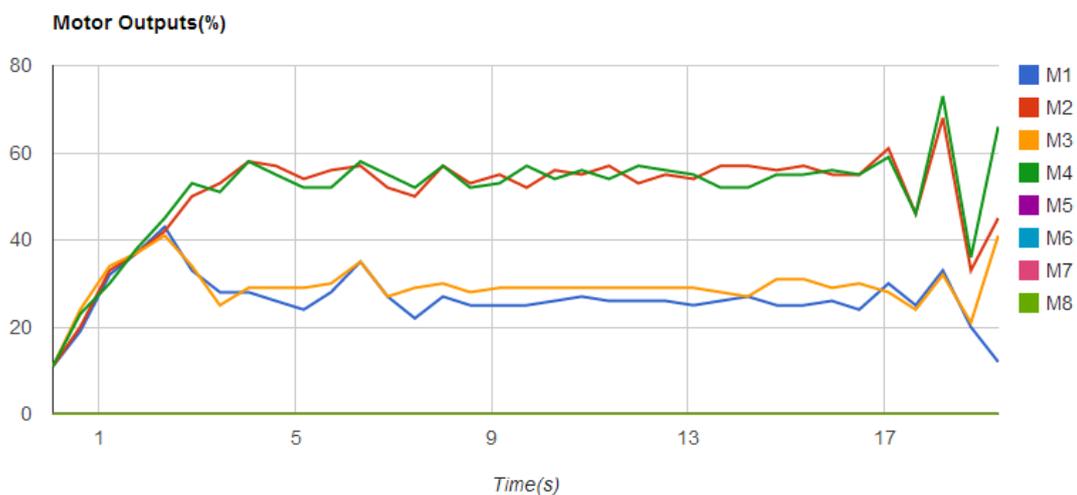
This glitch can cause any danger even crash since it turns to be Manual mode which has no auto-leveling ability. It's lucky in this case; it just caused a glitch on attitude.

RC signal glitches can also appears on any other input.

Motor Outputs

1. Case 1: Motor(s) might be not installed leveled.

	Voltage	M1	M2	M3	M4	M5	M6	M7	M8
Max.	16.50V	43%	68%	41%	73%	0%	0%	0%	0%
Min	16.00V	11%	11%	11%	11%	0%	0%	0%	0%
Avg.	16.22V	26%	50%	29%	51%	0%	0%	0%	0%

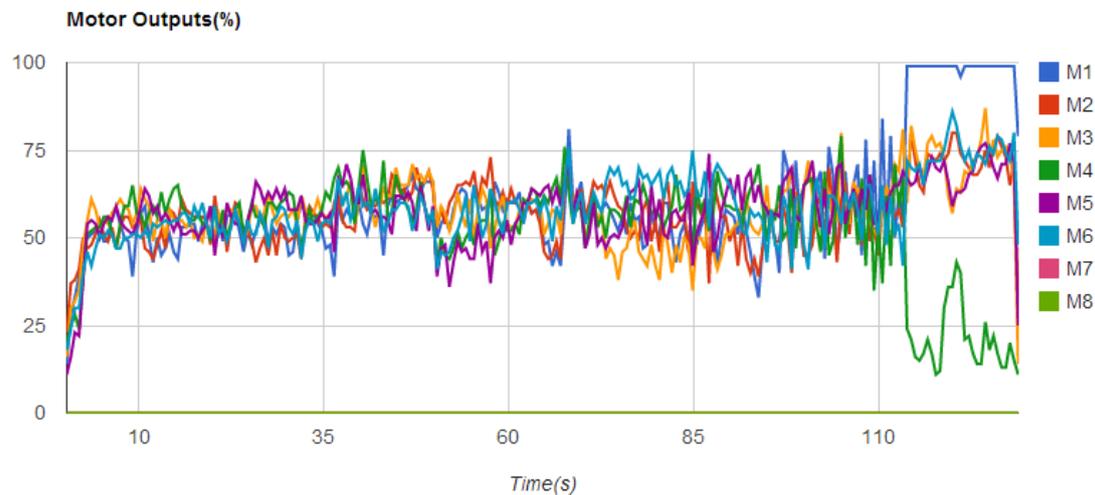


In this case, you can see the odd motors is outputting less power than even ones.

The odd ones M1 and M3 is taking effect on right rotation (yaw to right), they use less power to keep the heading when hovering. It means the copter might have this reaction: to your yaw control, the copter turns to right very easy; but when yaw to left, the copter seems labored.

Solution: check the motor installation; reinstall the arms or motor mounts if needed.

2. Case 2: motor or esc failure.



First, this guy is lucky. This is a Hexa(+), and M1 is the front motor. In this case the M1 motor suddenly got full output, and M4 (opposite to M1) dropped down its output. The pilot said, he saw the M1 was stopped in the air, and he managed to land safely without any crash. And he found that there' s a bad soldering between motor and ESC.

More information:

For Hexa(+) frame, if only M1 or M4 fails, SuperX can hover the copter as normal and the pilot can land in emergency. When M1 and M4 stopped, it' s similar to X4 quad.

Similarly, for Hexa(X), SuperX can still hover the copter when there' s failure on M3 or M6.