

# TEST REPORT

**FCC ID: 2AEXY507DRX**

**Product: X4 STAR FPV**

**Model No.: H507D**

**Additional Model: N/A**

**Trade Mark: Hubsan**

**Report No.: TCT161201E014**

**Issued Date: Dec. 12, 2016**

Issued for:

**SHENZHEN HUBSAN INTELLIGENT COMPANY LIMITED**

**13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road,  
Nanshan District, Shenzhen, China**

Issued By:

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## Test Certification

<b>Product:</b>	X4 STAR FPV
<b>Model No.:</b>	H507D
<b>Additional Model:</b>	N/A
<b>Applicant:</b>	SHENZHEN HUBSAN INTELLIGENT COMPANY LIMITED
<b>Address:</b>	13th Floor, Bldg 1C, Shenzhen Software Industry Base, Xuefu Road, Nanshan District, Shenzhen, China
<b>Manufacturer:</b>	DONGGUAN TENGSHENG INDUSTRIAL CO., LTD
<b>Address:</b>	A22# Luyi Street, Tianxin Village, Tangxia Town, Dongguan, China
<b>Date of Test:</b>	Dec. 01 – Dec. 09, 2016
<b>Applicable Standards:</b>	FCC CFR Title 47 Part 15 Subpart C Section 15.249

The above equipment has been tested by Shenzhen Tongce Testing Lab. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:



Garen

Date:

Dec. 09, 2016

Reviewed By:



Joe Zhou

Date:

Dec. 12, 2016

Approved By:



Tomsin

Date:

Dec. 12, 2016

## Test Result Summary

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Field Strength of Fundamental	§15.249 (a)	PASS
Spurious Emissions	§2.1053 §15.249 (a) (d)/ §15.209	PASS
Band Edge	§2.1053 §15.249 (d)/ §15.205	PASS
20dB Occupied Bandwidth	§2.1049 §15.215 (c)	PASS

**Note:**

1. Pass: Test item meets the requirement.
2. Fail: Test item does not meet the requirement.
3. N/A: Test case does not apply to the test object.
4. The test result judgment is decided by the limit of test standard.

## EUT Description

<b>Product Name:</b>	X4 STAR FPV
<b>Model :</b>	H507D
<b>Additional Model:</b>	N/A
<b>Trade Mark:</b>	Hubsan
<b>Operation Frequency:</b>	2410-2465MHz
<b>Number of Channel:</b>	12
<b>Modulation Technology:</b>	GFSK
<b>Antenna Type:</b>	Integral Antenna
<b>Antenna Gain:</b>	2dBi
<b>Power Supply:</b>	Rechargeable Li-ion Battery DC7.6V

### Operation Frequency Each of Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2410 MHz	5	2430MHz	9	2450MHz
2	2415 MHz	6	2435MHz	10	2455MHz
3	2420 MHz	7	2440MHz	11	2460MHz
4	2425 MHz	8	2445MHz	12	2465MHz

#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2410MHz
The middle channel	2435MHz
The Highest channel	2465MHz

## General Information

### 1.1. Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel
<p>The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y &amp; Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

### 1.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Adapter	XC-0500-100U	/	/	/

**Note:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

## Facilities and Accreditations

### 1.3. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 572331

Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

- CNAS - Registration No.: CNAS L6165

Shenzhen TCT Testing Technology Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6165.

### 1.4. Location

Shenzhen Tongce Testing Lab

Address: 1F, Leinuo Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China

Tel: 86-755-36638142

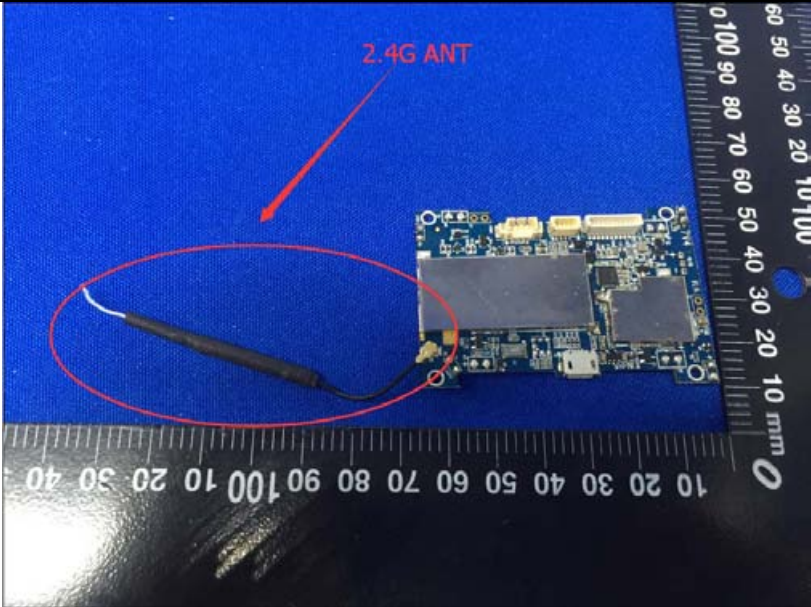
### 1.5. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	$\pm 2.56\text{dB}$
2	RF power, conducted	$\pm 0.12\text{dB}$
3	Spurious emissions, conducted	$\pm 0.11\text{dB}$
4	All emissions, radiated(<1GHz)	$\pm 3.92\text{dB}$
5	All emissions, radiated(>1GHz)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^{\circ}\text{C}$
7	Humidity	$\pm 1.0\%$

## Test Results and Measurement Data

### 1.6. Antenna Requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<p>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</p>	
<b>E.U.T Antenna:</b>	
<p>The EUT antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 2.0dBi.</p>	
	

## 1.7. Conducted Emission

### 1.7.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Frequency Range:	150 kHz to 30 MHz														
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto														
Limits:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	Frequency range (MHz)	Limit (dBuV)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dBuV)														
	Quasi-peak	Average													
0.15-0.5	66 to 56*	56 to 46*													
0.5-5	56	46													
5-30	60	50													
Test Setup:	<div><p>Reference Plane</p><p>40cm 80cm</p><p>LISN</p><p>AUX Equipment</p><p>E.U.T</p><p>Test table/Insulation plane</p><p>LISN</p><p>Filter</p><p>AC power</p><p>EMI Receiver</p><p>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p></div>														
Test Mode:	Transmitting mode with modulation														
Test Procedure:	<div><div>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.</div><div>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</div><div>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.</div></div>														
Test Result:	PASS														

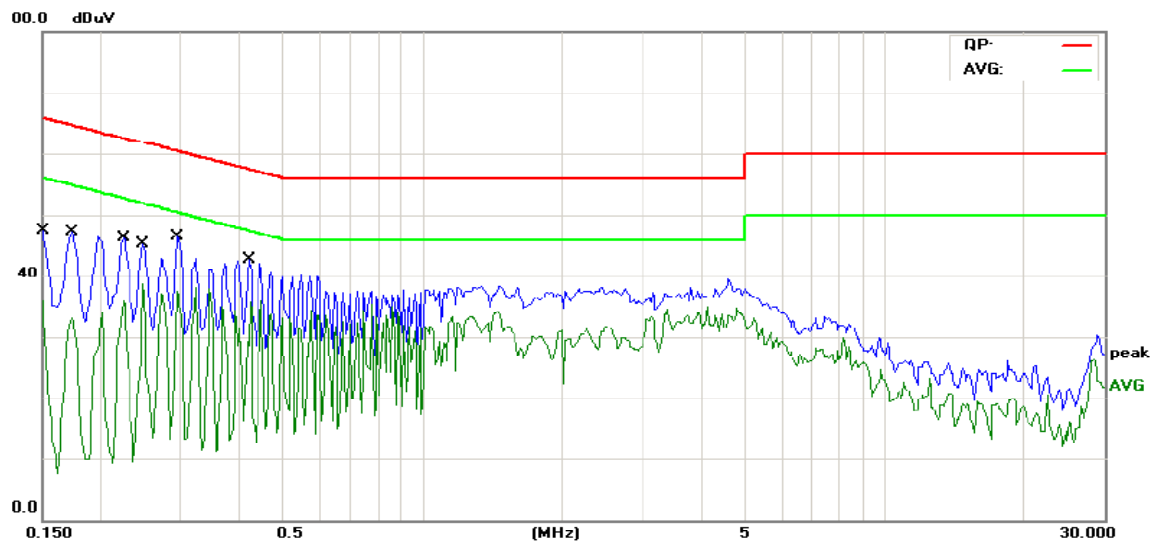
### 1.7.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	100139	Aug. 11, 2017
LISN	Schwarzbeck	NSLK 8126	8126453	Aug. 16, 2017
Coax cable	TCT	CE-05	N/A	Aug. 11, 2017
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

### 1.7.3. Test data

Please refer to following diagram for individual  
Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site Chamber #2 Phase: **L1** Temperature: 25 (C)  
Limit: FCC Part 15B Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 54 %

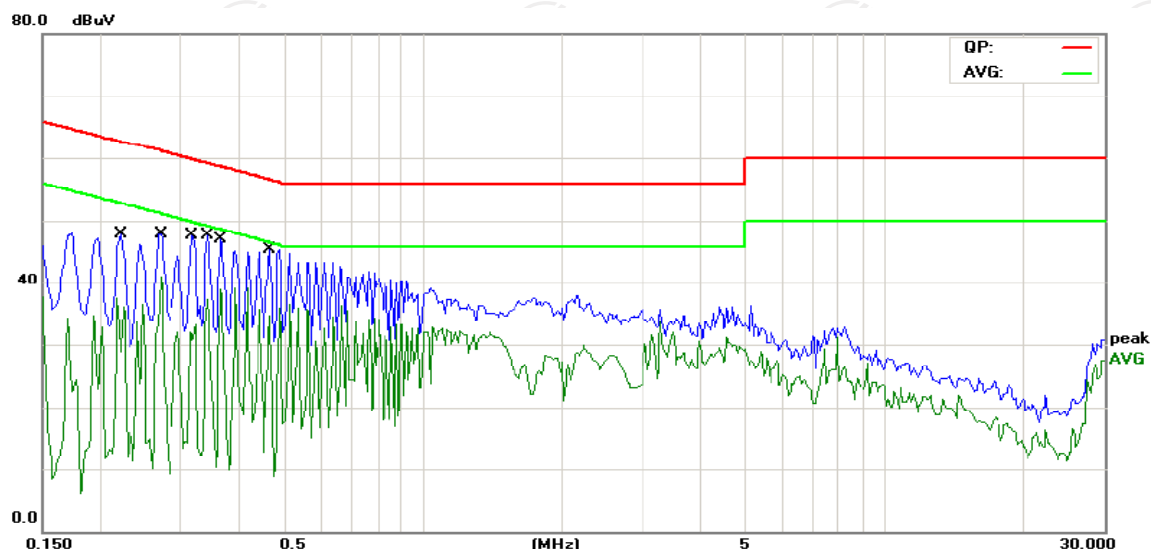
No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector	Comment
1		0.1500	35.06	11.52	46.58	65.99	-19.41	QP	
2		0.1500	22.13	11.52	33.65	55.99	-22.34	AVG	
3		0.1734	34.32	11.50	45.82	64.79	-18.97	QP	
4		0.1734	24.07	11.50	35.57	54.79	-19.22	AVG	
5		0.2242	33.58	11.47	45.05	62.66	-17.61	QP	
6	*	0.2242	24.92	11.47	36.39	52.66	-16.27	AVG	
7		0.2477	32.40	11.46	43.86	61.83	-17.97	QP	
8		0.2477	21.33	11.46	32.79	51.83	-19.04	AVG	
9		0.2945	29.87	11.43	41.30	60.39	-19.09	QP	
10		0.2945	19.81	11.43	31.24	50.39	-19.15	AVG	
11		0.4195	26.86	11.35	38.21	57.46	-19.25	QP	
12		0.4195	15.41	11.35	26.76	47.46	-20.70	AVG	

**Note:**

Freq. = Emission frequency in MHz  
Reading level (dBμV) = Receiver reading  
Corr. Factor (dB) = Antenna factor + Cable loss  
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)  
Limit (dBμV) = Limit stated in standard  
Margin (dB) = Measurement (dBμV) – Limits (dBμV)  
Q.P. =Quasi-Peak  
AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz

## Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site Chamber #2

Phase: **N**

Temperature: 25 (C)

Limit: FCC Part 15B Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 54 %

No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector	Comment
1		0.2203	35.03	11.17	46.50	62.80	-16.30	QP	
2		0.2203	23.47	11.47	34.94	52.80	-17.86	AVG	
3		0.2711	35.02	11.44	47.26	61.00	-13.02	QP	
4	*	0.2711	26.46	11.44	37.90	51.08	-13.18	AVG	
5		0.3180	34.29	11.42	45.71	59.76	-14.05	QP	
6		0.3180	23.39	11.42	34.81	49.76	-14.95	AVG	
7		0.3414	32.61	11.41	44.02	59.17	-15.15	QP	
8		0.3414	22.01	11.41	33.42	49.17	-15.75	AVG	
9		0.3648	29.06	11.39	40.45	58.62	-18.17	QP	
10		0.3648	10.08	11.39	27.47	48.02	-21.15	AVG	
11		0.4664	32.05	11.33	43.38	56.58	-13.20	QP	
12		0.4664	21.87	11.33	33.20	46.58	-13.38	AVG	

### Note1:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

## 1.8. Radiated Emission Measurement

### 1.8.1. Test Specification

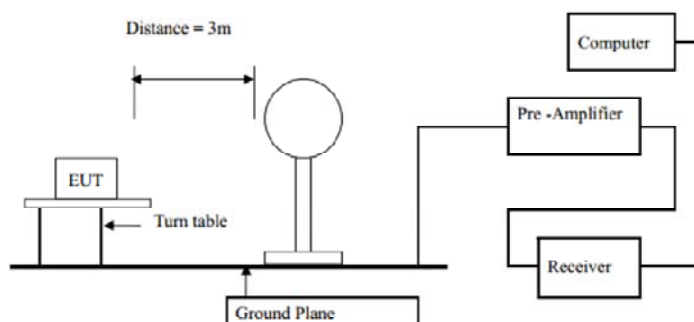
Test Requirement:	FCC Part15 C Section 15.209/ Part 2 J Section 2.1053				
Test Method:	ANSI C63.10:2013				
Frequency Range:	9 kHz to 25 GHz				
Measurement Distance:	3 m				
Antenna Polarization:	Horizontal & Vertical				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit(Field strength of the fundamental signal):	Frequency		Limit (dBuV/m @3m)		Remark
	2400MHz-2483.5MHz		94.00		Average Value
			114.00		Peak Value
Limit(Spurious Emissions):	Frequency		Limit (dBuV/m @3m)		Remark
	0.009-0.490		2400/F(KHz)		Quasi-peak Value
	0.490-1.705		24000/F(KHz)		Quasi-peak Value
	1.705-30		30		Quasi-peak Value
	30MHz-88MHz		40.0		Quasi-peak Value
	88MHz-216MHz		43.5		Quasi-peak Value
	216MHz-960MHz		46.0		Quasi-peak Value
	960MHz-1GHz		54.0		Quasi-peak Value
	Above 1GHz		54.0		Average Value
			74.0		Peak Value
Limit (band edge) :	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test Procedure:	<div>1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber in below 1GHz, 1.5m above the ground in above 1GHz. The table was rotated 360 degrees to determine the position of the highest radiation.</div> <div>2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</div> <div>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make</div>				

**Test setup:**

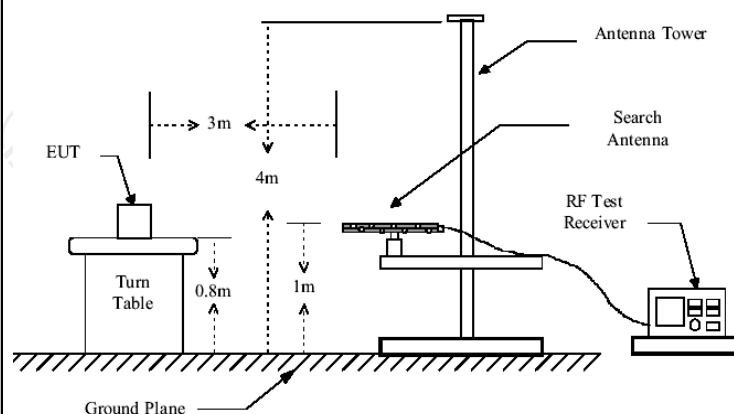
the measurement.

4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

For radiated emissions below 30MHz

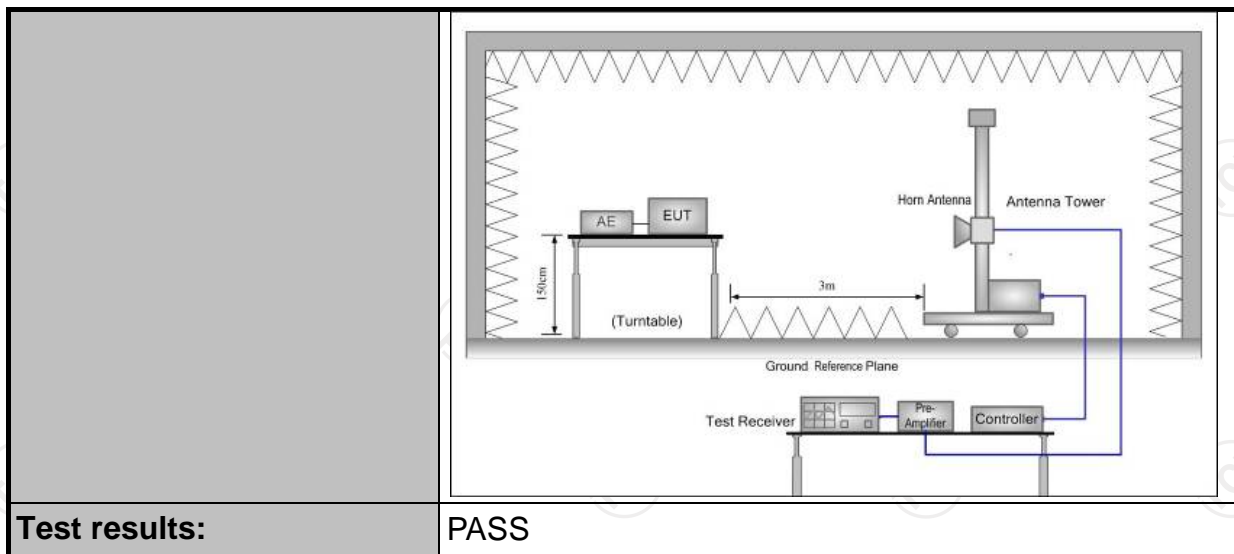


30MHz to 1GHz



Above 1GHz

(The diagram below shows the test setup that is utilized to make the measurements for emission from 1GHz to the tenth harmonic of the highest fundamental frequency or to 40GHz emissions, whichever is lower.)



### 1.8.2. Test Instruments

ESPI Test Receiver	ROHDE&SCHW ARZ	ESVD	100008	Aug. 11, 2017
Spectrum Analyzer	ROHDE&SCHW ARZ	FSEM	848597/001	Aug. 11, 2017
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 12, 2017
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Aug. 11, 2017
Pre-amplifier	HP	8447D	2727A05017	Aug. 11, 2017
Loop antenna	ZHINAN	ZN30900A	12024	Aug. 13, 2017
Broadband Antenna	Schwarzbeck	VULB9163	340	Aug. 13, 2017
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Aug. 13, 2017
Horn Antenna	Schwarzbeck	BBHA 9170	373	Aug. 13, 2017
Coax cable	TCT	RE-low-01	N/A	Aug. 11, 2017
Coax cable	TCT	RE-high-02	N/A	Aug. 11, 2017
Coax cable	TCT	RE-low-03	N/A	Aug. 11, 2017
Coax cable	TCT	RE-high-04	N/A	Aug. 11, 2017
Antenna Mast	CCS	CC-A-4M	N/A	N/A
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

### 1.8.3. Test Data

#### Field Strength of Fundamental

Frequency (MHz)	Emission PK/AV (dBuV/m)	Horizontal /Vertical	Limits PK/AV (dBuV/m)	Margin (dB)
2410	84.05(PK)	H	114(PK)	-29.95
2410	83.45(AV)	H	94(AV)	-10.55
2435	83.59(PK)	H	114(PK)	-30.41
2435	82.84(AV)	H	94(AV)	-11.16
2465	82.08(PK)	H	114(PK)	-31.92
2465	81.55(AV)	H	94(AV)	-12.45
2410	89.35(PK)	V	114(PK)	-24.65
2410	88.64(AV)	V	94(AV)	-5.36
2435	88.95(PK)	V	114(PK)	-25.05
2435	88.23(AV)	V	94(AV)	-5.77
2465	87.83(PK)	V	114(PK)	-26.17
2465	87.08(AV)	V	94(AV)	-6.92

#### Spurious Emissions

##### Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBuV/m)	Limit@3m (dBuV/m)
--	--	--
--	--	--
--	--	--
--	--	--

**Note:** 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement

## Frequency Range (30MHz-1GHz)

Horizontal:



Site: Polarization: **Horizontal** Temperature: 25  
Limit: FCC Part 15B Class B RE\_3 m Power: DC 7.6V Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		67.3110	36.27	-13.95	22.32	40.00	-17.68	QP	0	
2		180.0302	34.23	-13.85	20.38	43.50	-23.12	QP	0	
3		252.2521	43.10	-10.00	33.10	46.00	-12.90	QP	0	
4	*	322.5896	50.30	-7.64	42.66	46.00	-3.34	QP	0	
5		505.7891	31.78	-2.69	29.09	46.00	-16.91	QP	0	
6		765.6480	26.83	4.41	31.24	46.00	-14.76	QP	0	

Vertical:



Site: Polarization: **Vertical** Temperature: 25  
Limit: FCC Part 15B Class B RE\_3 m Power: DC 7.6V Humidity: 54 %

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Antenna Height cm	Table Degree	Comment
1	*	47.3688	41.54	-10.93	30.61	40.00	-9.39	QP	0	
2		67.3110	36.17	-13.95	22.22	40.00	-17.78	QP	0	
3		121.4621	43.25	-14.10	29.15	43.50	-14.35	QP	0	
4		322.5896	37.02	-7.64	29.38	46.00	-16.62	QP	0	
5		484.9067	29.48	-3.56	25.92	46.00	-20.08	QP	0	
6		749.8761	26.18	4.78	30.96	46.00	-15.04	QP	0	

**Note:** Measurements were conducted in all channels (high, middle, low), and the worst case (low channel) was submitted only.

## Above 1GHz

### Low channel: 2410MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
2390.00	H	52.48		-4.2	48.28	---	74.00	54.00	-5.72
2390.00	H		49.27	-4.2		45.07	74.00	54.00	-8.93
4820.00	H	51.35		-3.94	47.41	---	74.00	54.00	-6.59
7230.00	H	49.03		0.52	49.55	---	74.00	54.00	-4.45
---	---	---	---	---	---	---	---	---	---
2390.00	V	50.25		-4.2	46.05		74.00	54.00	-7.95
2390.00	V		48.99	-4.2		44.79	74.00	54.00	-9.21
4820.00	V	48.39		3.94	52.33		74.00	54.00	-1.67
7230.00	V	46.33		0.52	46.85		74.00	54.00	-7.15
---	---	---	---	---	---	---	---	---	---

### Middle channel: 2435MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
4870.00	H	52.16	---	-3.98	48.18	---	74.00	54.00	-5.82
7305.00	H	49.27	---	0.57	49.84	---	74.00	54.00	-4.16
---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---
4870.00	V	51.26		-3.98	47.28		74.00	54.00	-6.72
7305.00	V	49.05		0.57	49.62		74.00	54.00	-4.38
---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---

### High channel: 2465MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
					Peak (dBμV/m)	AV (dBμV/m)			
2486.58	H	51.85		-2.38	49.47		74.00	54.00	-4.53
2486.58	H		43.01	-2.38		40.63	74.00	54.00	-13.37
4930.00	H	53.01		-3.98	49.03		74.00	54.00	-4.97
7395.00	H	48.69		0.57	49.26		74.00	54.00	-4.74
---	---	---	---	---	---	---	---	---	---
2483.51	V	51.04		-2.38	48.66		74.00	54.00	-5.34
2483.51	V		43.82	-2.38		41.44	74.00	54.00	-12.56
4930.00	V	51.62		-3.98	47.64		74.00	54.00	-6.36
7395.00	V	50.37		0.57	50.94		74.00	54.00	-3.06
---	---	---	---	---	---	---	---	---	---

#### Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
5. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

## Band Edge Requirement

Low channel: 2410 MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
2400	H	52.07	---	-4.2	Peak	AV	74.00	---	-26.13
2400	H	---	42.48	-4.2	---	---	---	54.00	-15.72
---	---	---	---	---	---	---	---	---	---
2400	V	50.16	---	-4.2	Peak	AV	74.00	---	-28.04
2400	V	---	41.73	-4.2	---	---	---	54.00	-16.47
---	---	---	---	---	---	---	---	---	---

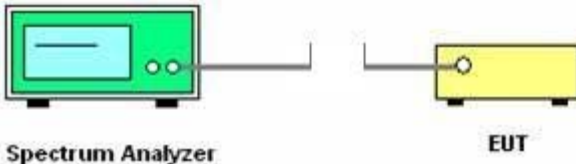
High channel: 2465MHz									
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	AV reading (dBμV)	Correction Factor (dB/m)	Emission Level		Peak limit (dBμV/m)	AV limit (dBμV/m)	Margin (dB)
2483.5	H	51.97	---	-4.2	Peak	AV	74.00	---	-26.23
2483.5	H	---	41.39	-4.2	---	---	---	54.00	-16.81
---	---	---	---	---	---	---	---	---	---
2483.5	V	52.43	---	-4.2	Peak	AV	74.00	---	-25.77
2483.5	V	---	42.65	-4.2	---	---	---	54.00	-15.55
---	---	---	---	---	---	---	---	---	---

### Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
2. Margin (dB) = Emission Level (Peak/Average)(dBμV/m)-(Peak/Average) limit (dBμV/m)
3. The emission levels of other frequencies are very lower than the limit and not show in test report.
4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
5. Data of measurement shown "---" in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

## 1.9.20dB Occupied Bandwidth

### 1.9.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)/ Part 2 J Section 2.1049
Test Method:	ANSI C63.10: 2013
Limit:	N/A
	<ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW<math>\geq</math>1% of the 20 dB bandwidth; VBW<math>\geq</math>RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>4. Measure and record the results in the test report.</li> </ol>
Test setup:	 <p>The diagram illustrates the test setup. On the left is a green Spectrum Analyzer with a screen and two knobs. A cable connects its output to the input of a yellow EUT (Equipment Under Test) on the right. The Spectrum Analyzer is labeled 'Spectrum Analyzer' and the EUT is labeled 'EUT'.</p>
Test Mode:	Transmitting mode with modulation
Test results:	PASS

### 1.9.2. Test Instruments

RF Test Room				
Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100060	Aug. 12, 2017

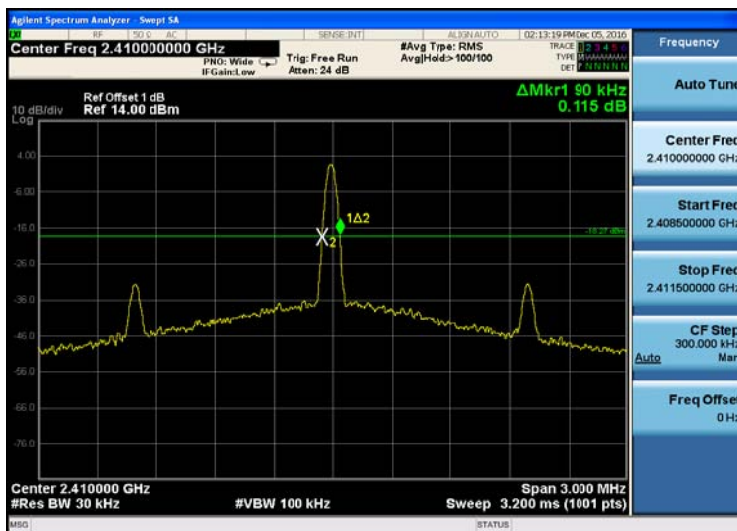
**Note:** The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

1.9.3. Test data

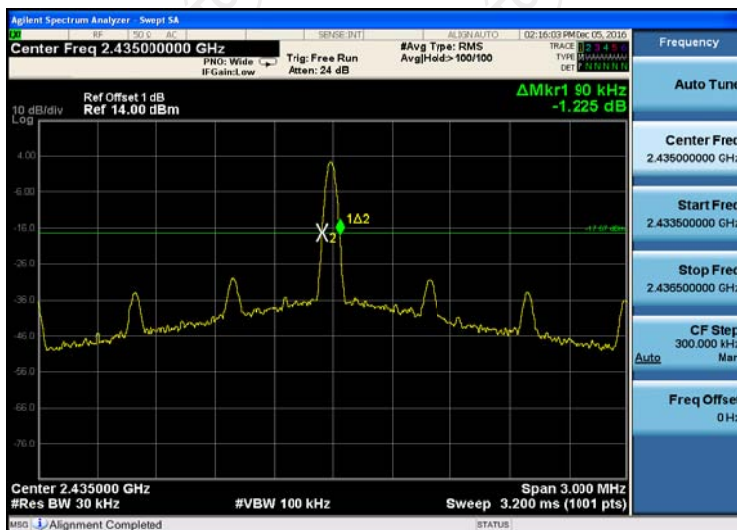
Test Channel	20dB Occupy Bandwidth (kHz)	Limit	Conclusion
Lowest	90	---	PASS
Middle	90	---	PASS
Highest	90	---	PASS

Test plots as follows:

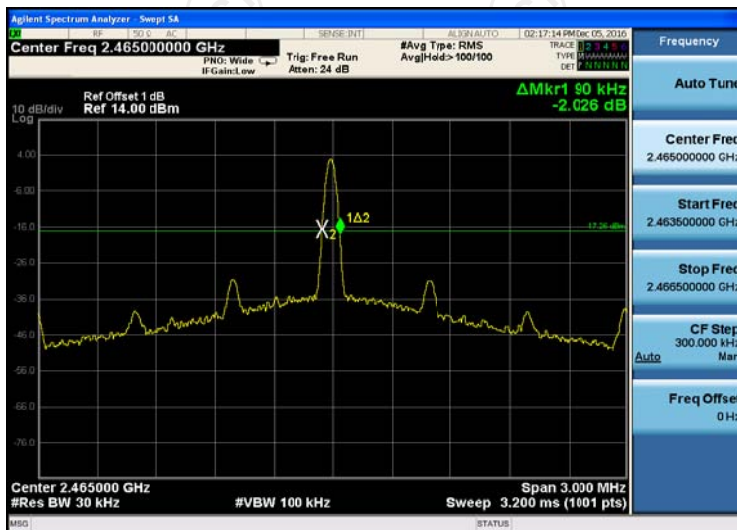
## Lowest channel



## Middle channel



## Highest channel

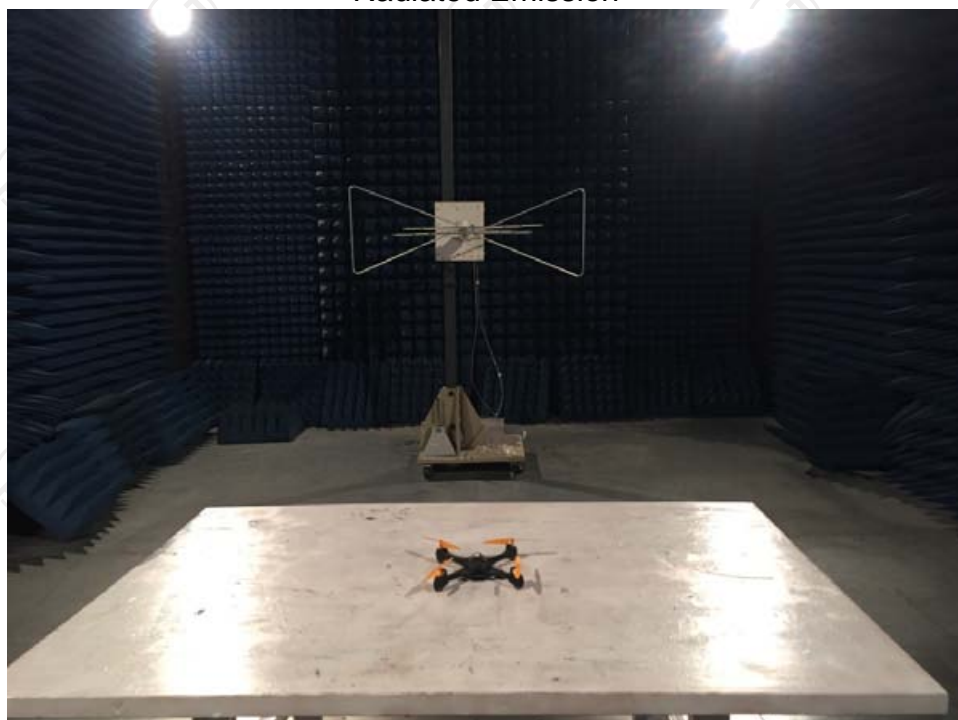


## Appendix A: Photographs of Test Setup

Product: X4 STAR FPV

Model: H507D

Radiated Emission



## Conducted Emission



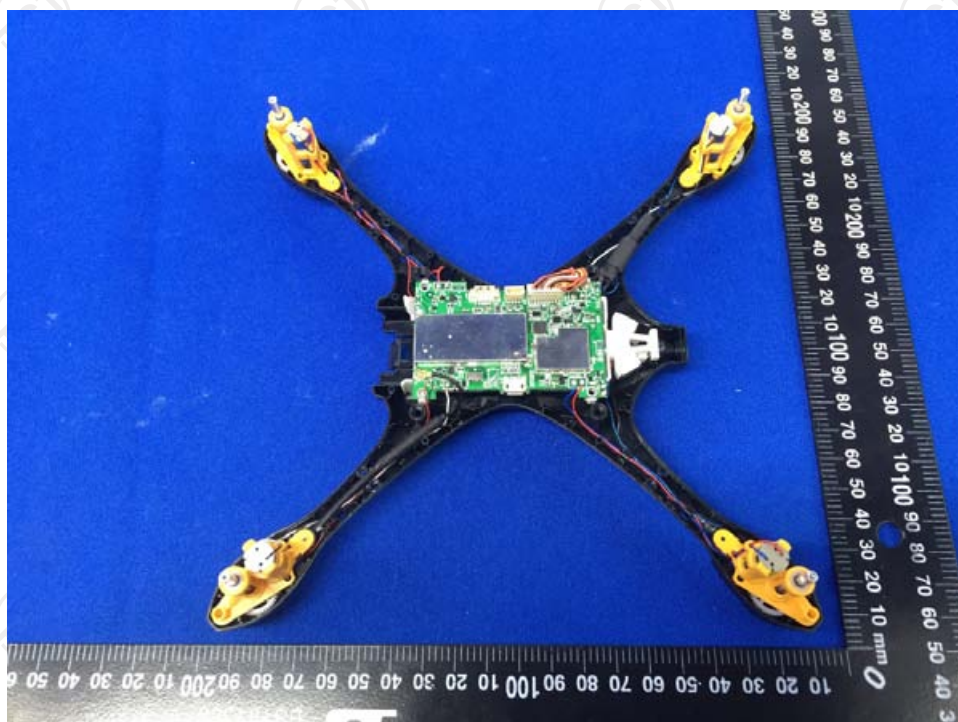
**Appendix B: Photographs of EUT**  
**Product: X4 STAR FPV**  
**Model: H507D**  
**External Photos**

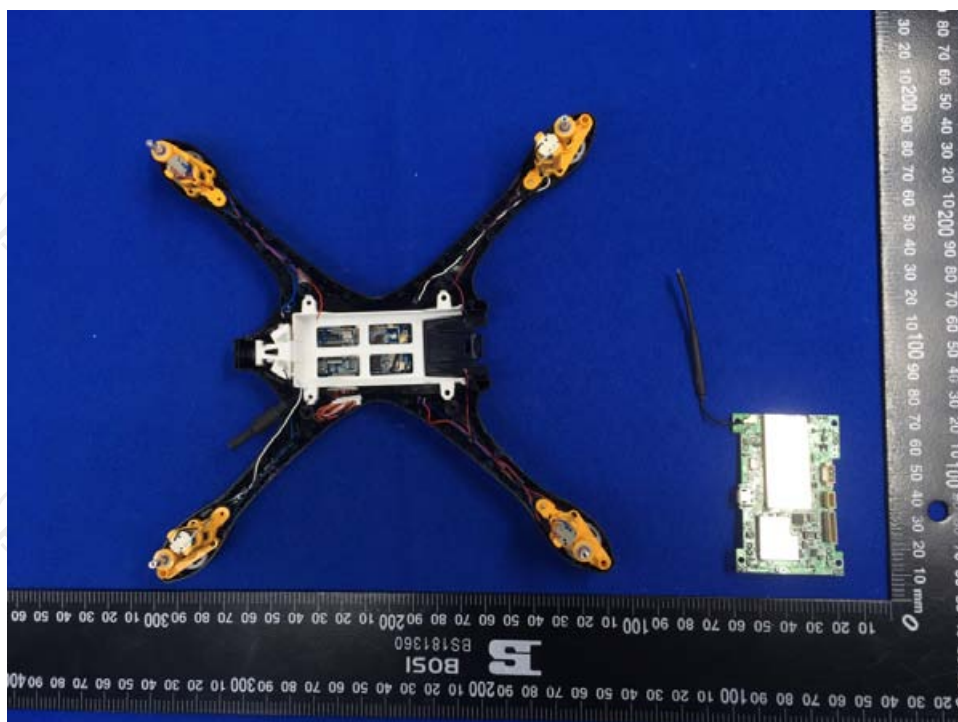


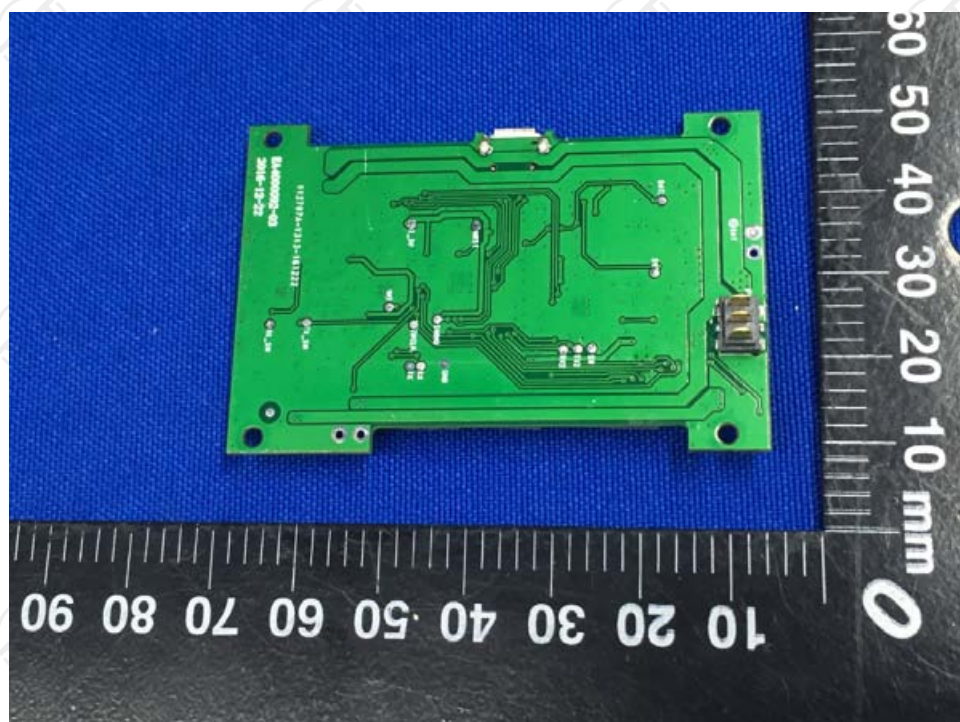
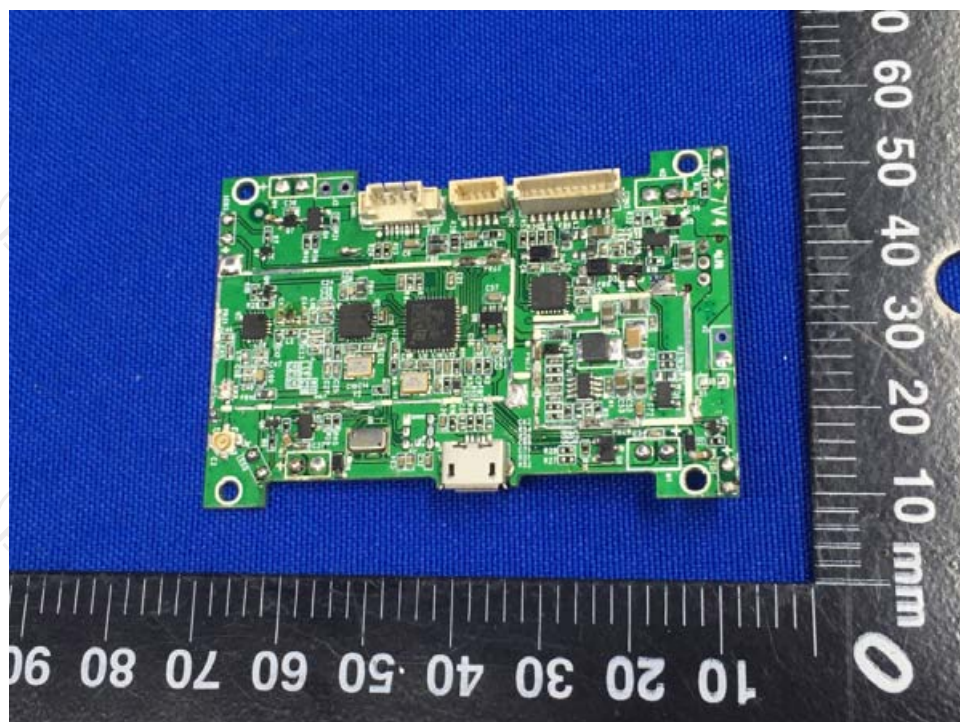


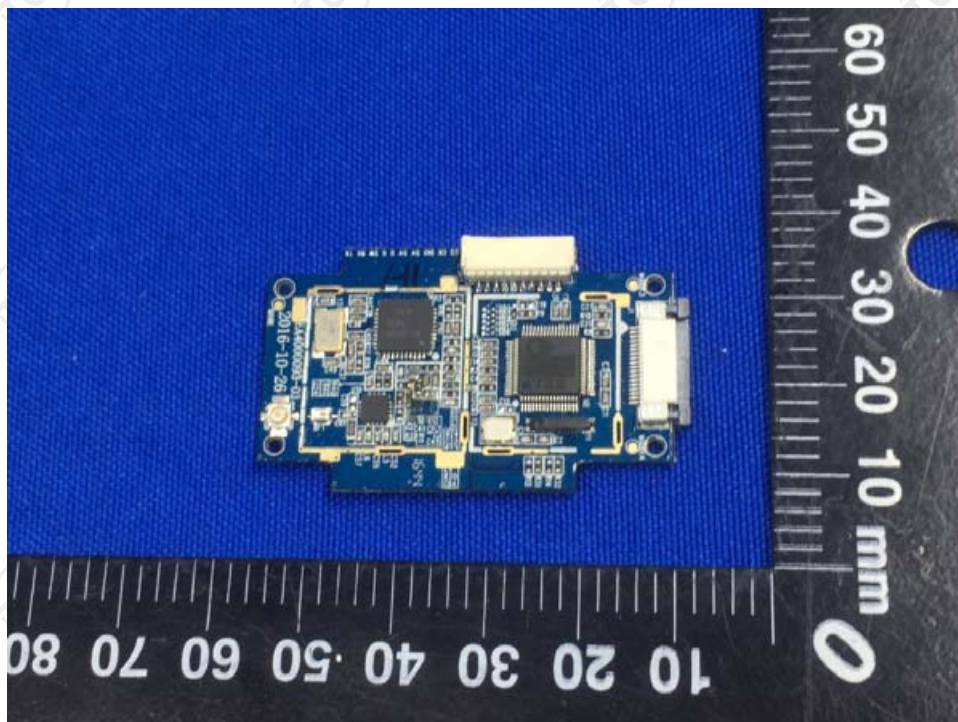


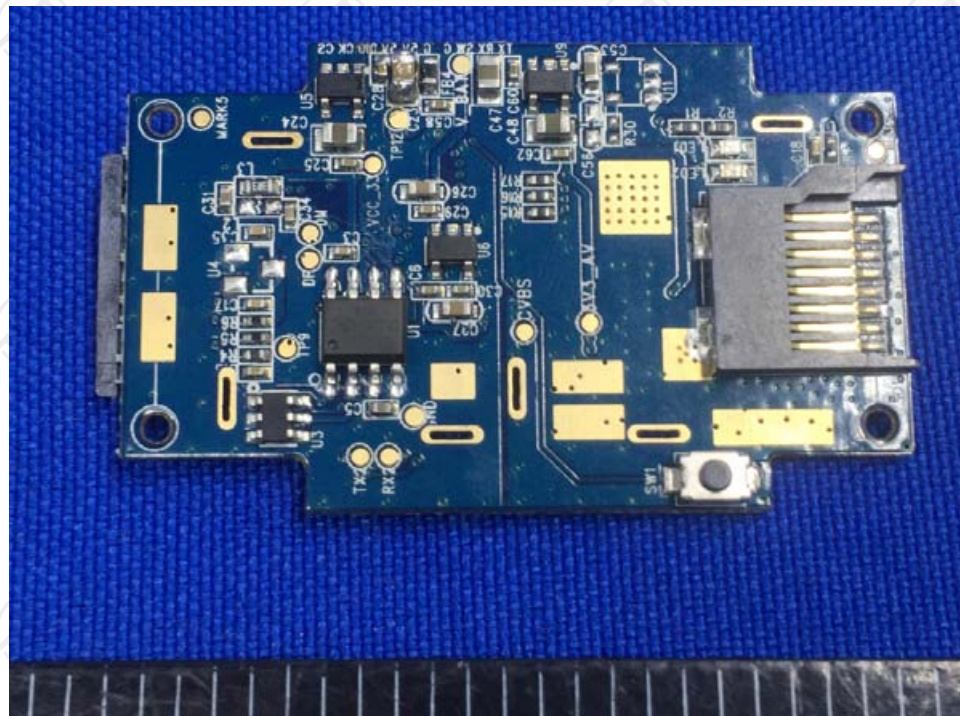
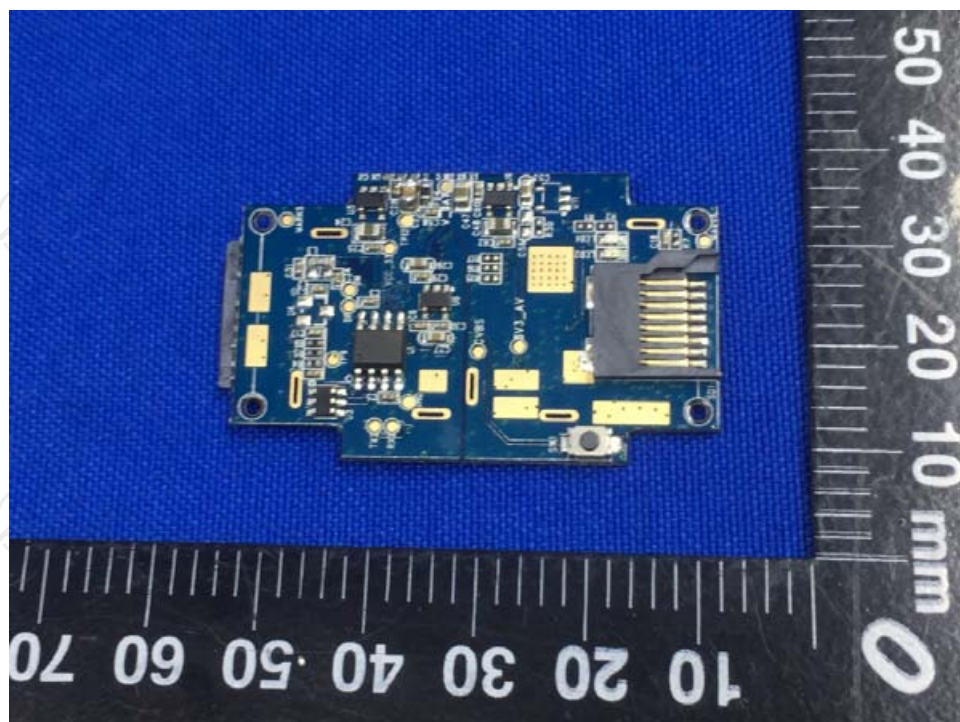
**Model: H507D**  
**Internal Photos**

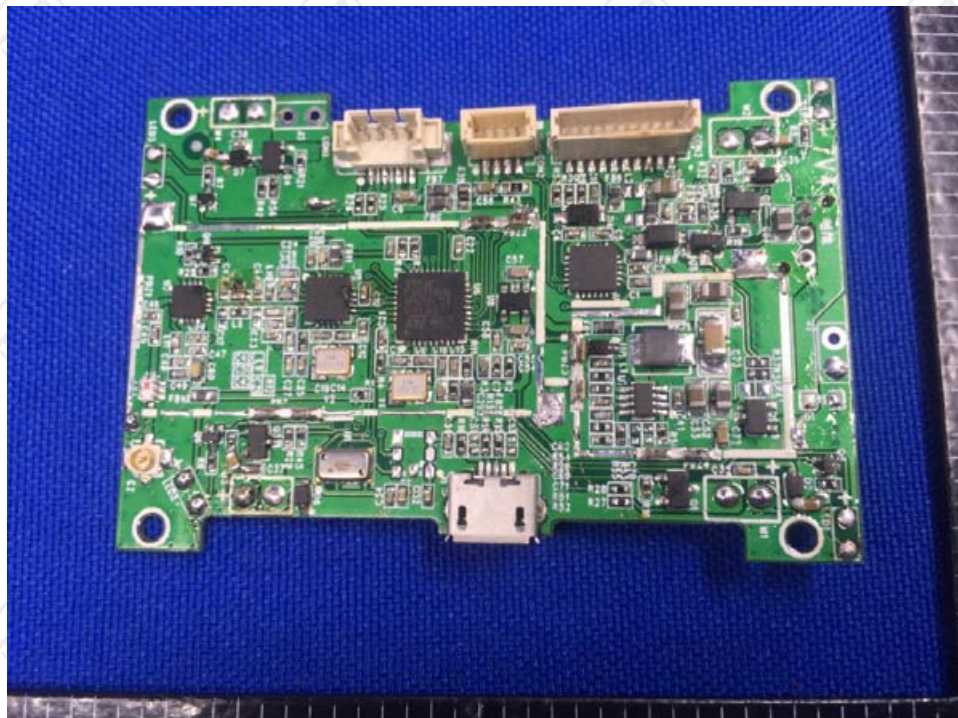
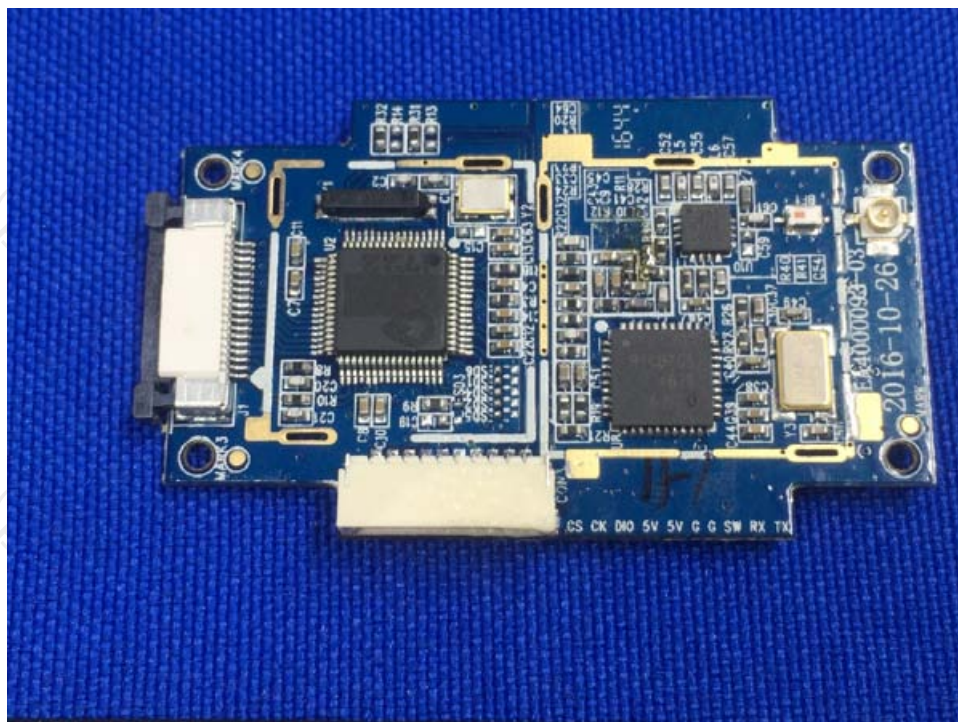


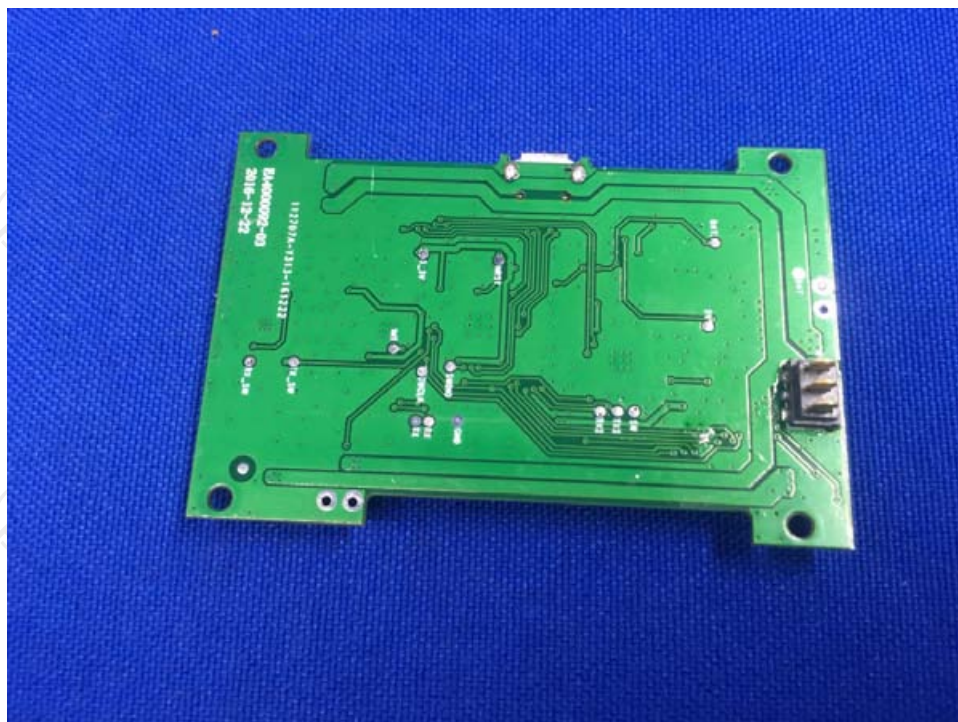


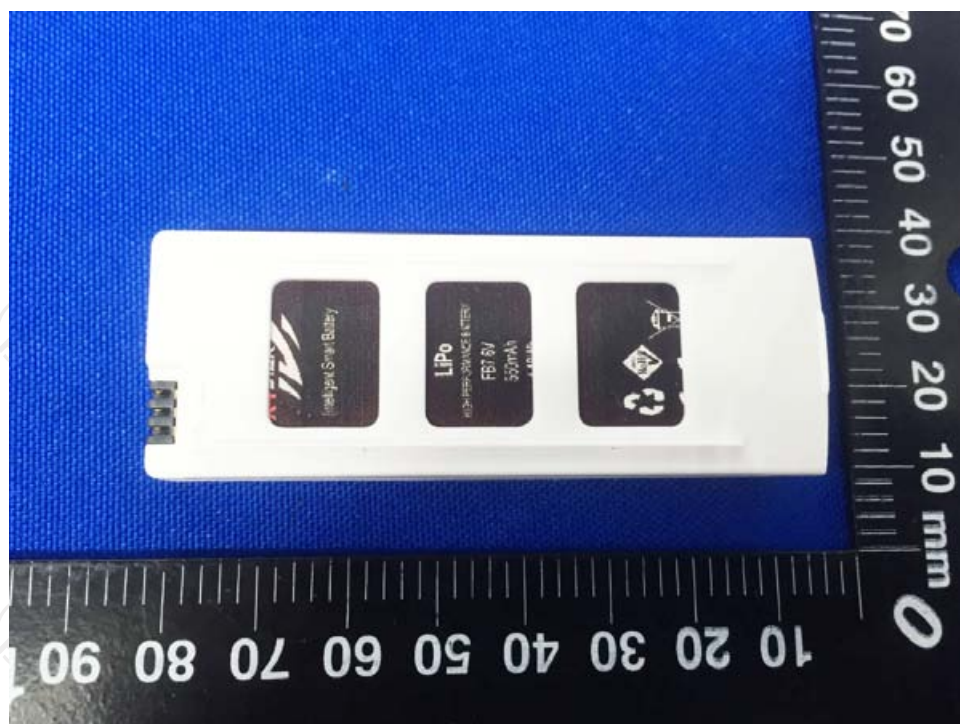












**\*\*\*\*\*END OF REPORT\*\*\*\*\***