
FCC Test Report

Report No.: AGC00056150701FE08

FCC ID : 2AFDWRTF
APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : 280 Multicopter
BRAND NAME : Nighthawk
MODEL NAME : RTF, ARF
CLIENT : Dongguan Yinyan Electric Tech. Ltd.
DATE OF ISSUE : Jul.27, 2015
STANDARD(S) : FCC Part 15.247
TEST PROCEDURE(S) : KDB 558074 v03r02
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul.27, 2015	Valid	Original Report

TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	5
2. GENERAL INFORMATION	6
2.1 PRODUCT DESCRIPTION	6
2.2 RELATED SUBMITTAL(S)/GRANT(S)	6
2.3 TEST METHODOLOGY	6
2.4 TEST FACILITY	7
2.5 SPECIAL ACCESSORIES	7
2.6 EQUIPMENT MODIFICATIONS	7
3. SYSTEM TEST CONFIGURATION	8
3.1 CONFIGURATION OF TESTED SYSTEM	8
3.2 EQUIPMENT USED IN TESTED SYSTEM	8
4. SUMMARY OF TEST RESULTS	8
5. DESCRIPTION OF TEST MODE	9
6. ANTENNA REQUIREMENT	9
6.1. STANDARD APPLICABLE	9
6.2. TEST RESULT	9
7. RADIATED EMISSION	10
7.1 MEASUREMENT PROCEDURE	10
7.2 TEST SETUP	11
7.3 LIMITS AND MEASUREMENT RESULT	12
7.4 TEST RESULT	12
8. BAND EDGE EMISSION	17
8.1. MEASUREMENT PROCEDURE	17
8.2. TEST SET-UP	17
8.3. RADIATED TEST RESULT	18
9. BANDWIDTH	22
9.1. TEST PROCEDURE	22
9.2. SUMMARY OF TEST RESULTS/PLOTS	22
10. CONDUCTED SPURIOUS EMISSION	24
10.1. MEASUREMENT PROCEDURE	24
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	24
10.3. LIMITS AND MEASUREMENT RESULT	24
11. CONDUCTED OUTPUT POWER	28
11.1. MEASUREMENT PROCEDURE	28
11.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	28
11.3. LIMITS AND MEASUREMENT RESULT	28
12. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY	31
12.1 MEASUREMENT PROCEDURE	31

12.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	31
12.3 LIMITS AND MEASUREMENT RESULT	31
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	33
APPENDIX B: PHOTOGRAPHS OF EUT	34

1. VERIFICATION OF COMPLIANCE

Applicant	Dongguan Yinyan Electric Tech. Ltd.
Address	EMAX Industrial Park, Gao-Long Industrial Zone, Huanzhuli Village, Changping Town, Dongguan, Guangdong Province, China
Manufacturer	Dongguan Yinyan Electric Tech. Ltd.
Address	EMAX Industrial Park, Gao-Long Industrial Zone, Huanzhuli Village, Changping Town, Dongguan, Guangdong Province, China
Product Designation	280 Multicopter
Brand Name	Nighthawk
Test Model	RTF
Series Model	ARF
Model Difference	RTF can pair one more remote controller.
Date of test	Jul.16, 2015 to Jul.17, 2015
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BLE/RF

WE HEREBY CERTIFY THAT:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By Sally Wu
Sally Wu Jul.27, 2015

Checked By Steven Zhou
Steven Zhou Jul.27, 2015

Authorized By Solger Zhang
Solger Zhang Jul.27, 2015

2.GENERAL INFORMATION
2.1PRODUCT DESCRIPTION

The EUT is designed as “Nighthawk”. It is designed by way of utilizing the F technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	5740 MHz to 5840MHz			
Modulation	FSK			
Number of channels	16 Channel			
Antenna Designation	Detachable Antenna for SMA connector			
Antenna Gain	3dBi			
Hardware Version	V1.0			
Software Version	V1.0			
Power Supply	DC12.6V by Battery			
Channel List	5740MHz	5745MHz	5752MHz	5760MHz
	5765MHz	5771MHz	5780MHz	5785MHz
	5790MHz	5800MHz	5805MHz	5809MHz
	5820MHz	5825MHz	5828MHz	5840MHz

2.2 RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: 2AFDWRTF** filing to comply with Section 15.247of the FCC Part 15, Subpart C Rules.

2.3TEST METHODOLOGY

All measurements contained in this report were conducted with KDB 558074 D01 DTS Meas Guidance v03r02, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

2.4 TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D, Baoding Technology Park, Guangming Road2, Dongcheng District, Dongguan, Guangdong, China.
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009.

ALL TEST EQUIPMENT LIST

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2015	July 3, 2016
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2015	July 3, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 6, 2015	June 5, 2016
Spectrum analyzer	Agilent	E4407B	MY46185649	June 6, 2015	June 5, 2016
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	June 6, 2015	June 5, 2016
Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 6, 2015	June 5, 2016

2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

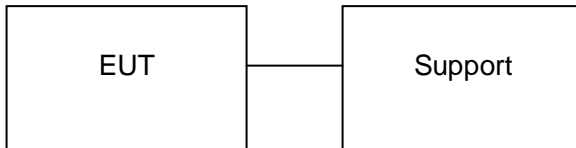
2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. SYSTEM TEST CONFIGURATION

3.1 CONFIGURATION OF TESTED SYSTEM

Configuration:



3.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Note
1	280 Multicopter	N/A	RTF	EUT
2	Battery	N/A	368B	Support

4. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§ 15.203	Antenna Requirement	Compliant
§15.209 §15.247(d)	Radiated Emission	Compliant
§15.247(d)	Band Edges	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247(d)	Conducted Spurious	Compliant
§15.247(b)	Conducted Power	Compliant
§15.247(e)	Maximum Conducted Output Power SPECTRAL Density	Compliant

5. DESCRIPTION OF TEST MODE

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX

Note:

1. All the test modes can be supply by Built-in Li-ion battery, only the result of the worst case was recorded in the report if no any records.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. Eut is operating at its maximum duty cycle>or equal 98%

6. ANTENNA REQUIREMENT

6.1. STANDARD APPLICABLE

According to FCC 15.203, 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 shall be considered sufficient to comply with the provisions of this Section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

6.2. TEST RESULT

This product has a Detachable Antenna for SMA connector; fulfill the requirement of this section.

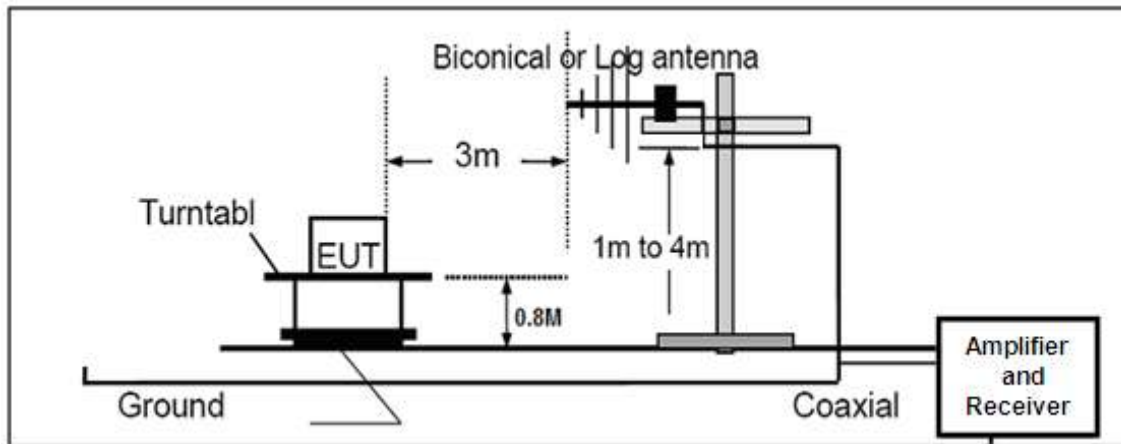
7. RADIATED EMISSION

7.1 MEASUREMENT PROCEDURE

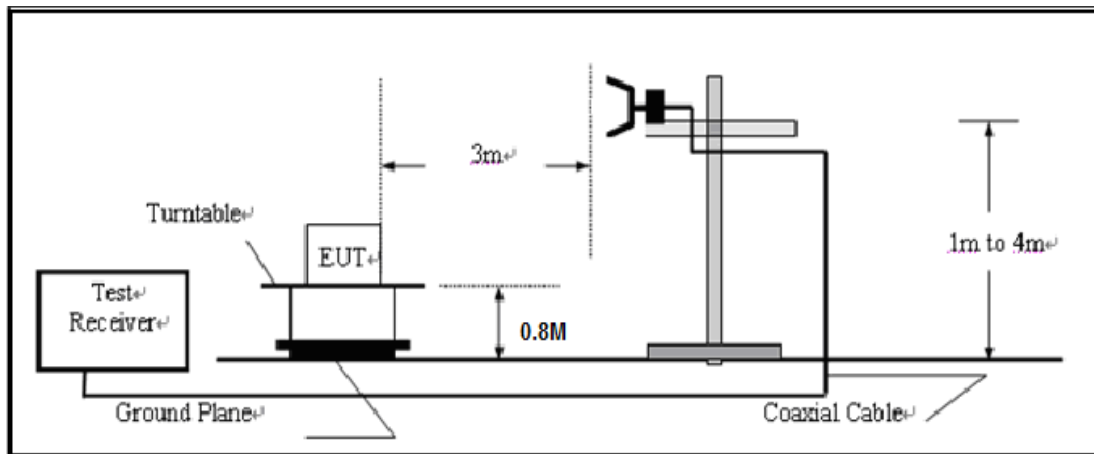
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

7.2 TEST SETUP

RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



7.3 LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

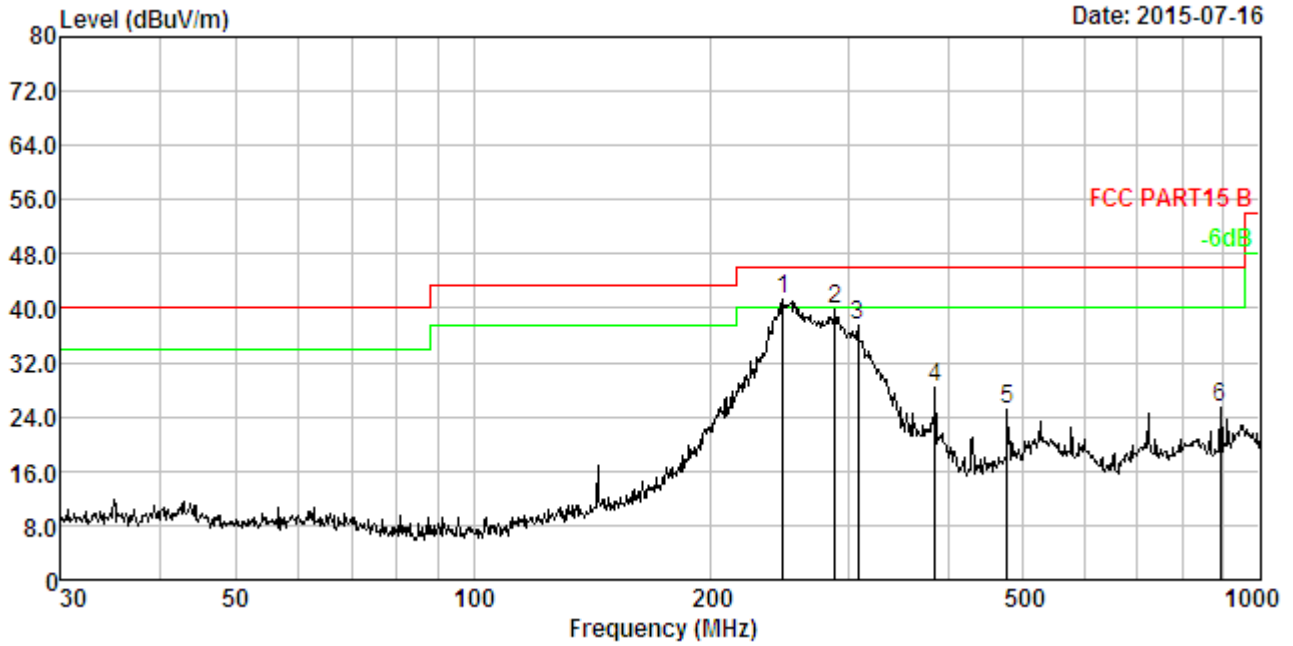
7.4 TEST RESULT

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ

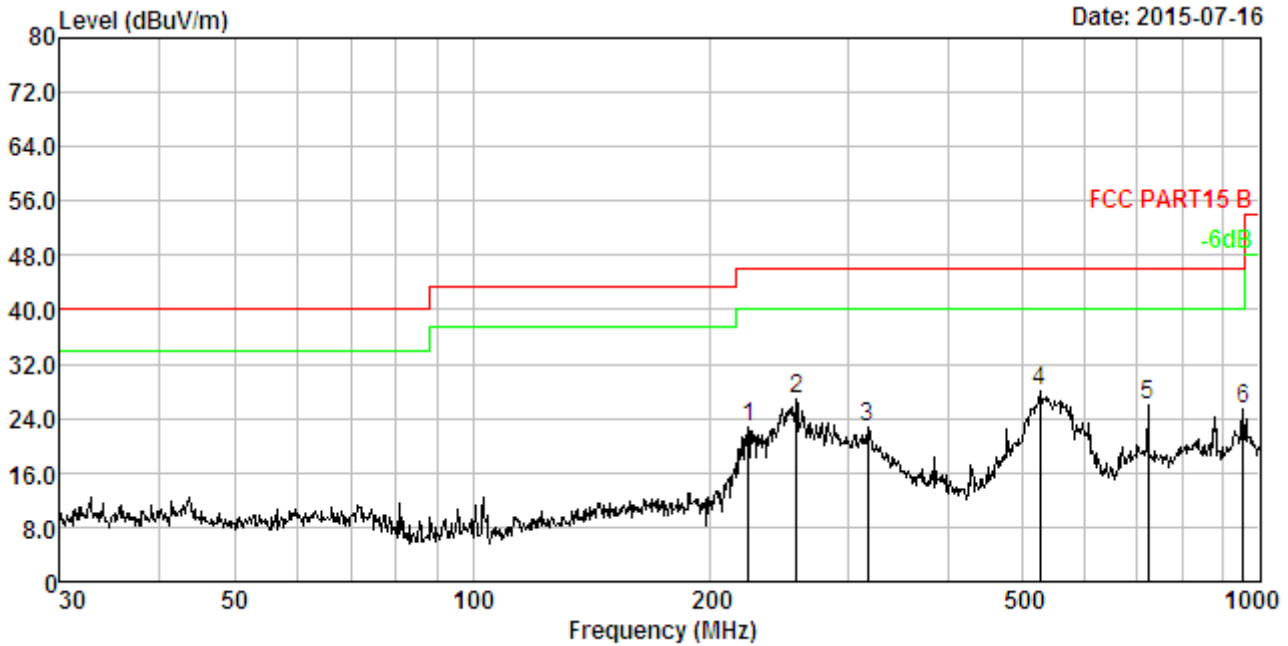
RADIATED EMISSION TEST -HORIZONTAL



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	246.815	2.96	11.86	57.22	30.70	41.34	46.00	-4.66	Peak
2.	287.990	3.10	12.96	54.53	30.76	39.83	46.00	-6.17	Peak
3.	307.831	3.16	13.37	51.76	30.78	37.51	46.00	-8.49	Peak
4.	385.281	3.37	15.00	40.92	30.86	28.43	46.00	-17.57	Peak
5.	478.846	3.56	16.87	35.55	30.93	25.05	46.00	-20.95	Peak
6.	890.728	4.13	22.39	29.88	31.15	25.25	46.00	-20.75	Peak

RESULT: PASS

RADIATED EMISSION TEST -VERTICAL



No.	Freq MHz	Cable Loss dB	ANT Factor dB/m	Receiver Reading dBuV	Preamp Factor dB	Emission Level dBuV/m	Limit dBuV/m	Over Limit dB	Remark
1.	223.733	2.87	10.94	39.61	30.67	22.75	46.00	-23.25	Peak
2.	257.422	3.00	12.08	42.52	30.72	26.88	46.00	-19.12	Peak
3.	316.589	3.19	13.57	36.69	30.79	22.66	46.00	-23.34	Peak
4.	526.397	3.65	17.44	37.78	30.97	27.90	46.00	-18.10	Peak
5.	721.726	3.93	20.54	32.46	31.08	25.85	46.00	-20.15	Peak
6.	952.094	4.19	23.43	29.06	31.17	25.51	46.00	-20.49	Peak

RESULT: PASS

Note:

1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.
2. The "Factor" value can be calculated automatically by software of measurement system.
3. All test modes had been pre-tested. The Mode 1 is the worst case and recorded in the report.

RADIATED EMISSION ABOVE 1GHZ

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Type	
Low Channel (5740 MHz)							
5740	92.67	10.98	103.65	--	--	Pk	Horizontal
5740	89.35	10.98	100.33	--	--	AV	Horizontal
11480	53.08	1.23	54.31	74	-19.69	Pk	Horizontal
11480	47.19	1.23	48.42	54	-5.58	AV	Horizontal
17220	52.36	2.19	54.55	74	-19.45	pk	Horizontal
17220	46.25	2.19	48.44	54	-5.56	AV	Horizontal
5740	91.24	10.98	102.22	--	--	Pk	Vertical
5740	87.83	10.98	98.81	--	--	AV	Vertical
11480	52.21	1.23	53.44	74	-20.56	Pk	Vertical
11480	46.61	1.23	47.84	54	-6.16	AV	Vertical
17220	51.07	2.19	53.26	74	-20.74	Pk	Vertical
17220	45.03	2.19	47.22	54	-6.78	AV	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Type	
Mid Channel (5790 MHz)							
5790	93.16	11.16	104.32	--	--	Pk	Horizontal
5790	89.75	11.16	100.91	--	--	AV	Horizontal
11580	53.43	1.31	54.74	74	-19.26	Pk	Horizontal
11580	47.26	1.31	48.57	54	-5.43	AV	Horizontal
17370	52.75	2.54	55.29	74	-18.71	pk	Horizontal
17370	47.18	2.54	49.72	54	-4.28	AV	Horizontal
5790	92.13	11.16	103.29	--	--	Pk	Vertical
5790	88.41	11.16	99.57	--	--	AV	Vertical
11580	52.09	1.31	53.4	74	-20.6	Pk	Vertical
11580	46.36	1.31	47.67	54	-6.33	AV	Vertical
17370	51.19	2.54	53.73	74	-20.27	Pk	Vertical
17370	45.27	2.54	47.81	54	-6.19	AV	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Type	
High Channel (5840 MHz)							
5840	93.86	11.26	105.12	--	--	Pk	Horizontal
5840	91.57	11.26	102.83	--	--	AV	Horizontal
11680	53.75	1.31	55.06	74	-18.94	Pk	Horizontal
11680	47.86	1.31	49.17	54	-4.83	AV	Horizontal
17520	53.29	2.54	55.83	74	-18.17	pk	Horizontal
17520	47.83	2.54	50.37	54	-3.63	AV	Horizontal
5840	91.37	11.26	102.63	--	--	Pk	Vertical
5840	89.28	11.26	100.54	--	--	AV	Vertical
11680	53.04	1.31	54.35	74	-19.65	Pk	Vertical
11680	47.13	1.31	48.44	54	-5.56	AV	Vertical
17520	52.39	2.54	54.93	74	-19.07	Pk	Vertical
17520	46.37	2.54	48.91	54	-5.09	AV	Vertical

RESULT: PASS

Note: No recording in the test report at least have 20dB margin.

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Meter Reading + Factor

Margin = Emission - Leve Limit

8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

1) Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

2) Conducted Emissions at the bang edge

a) The transmitter output was connected to the spectrum analyzer

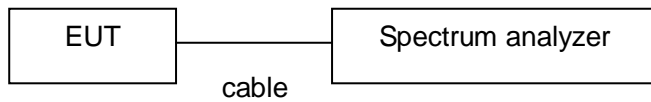
b) Set RBW=100kHz, VBW=300kHz

c) Suitable frequency span including 100kHz bandwidth from band edge

8.2. TEST SET-UP

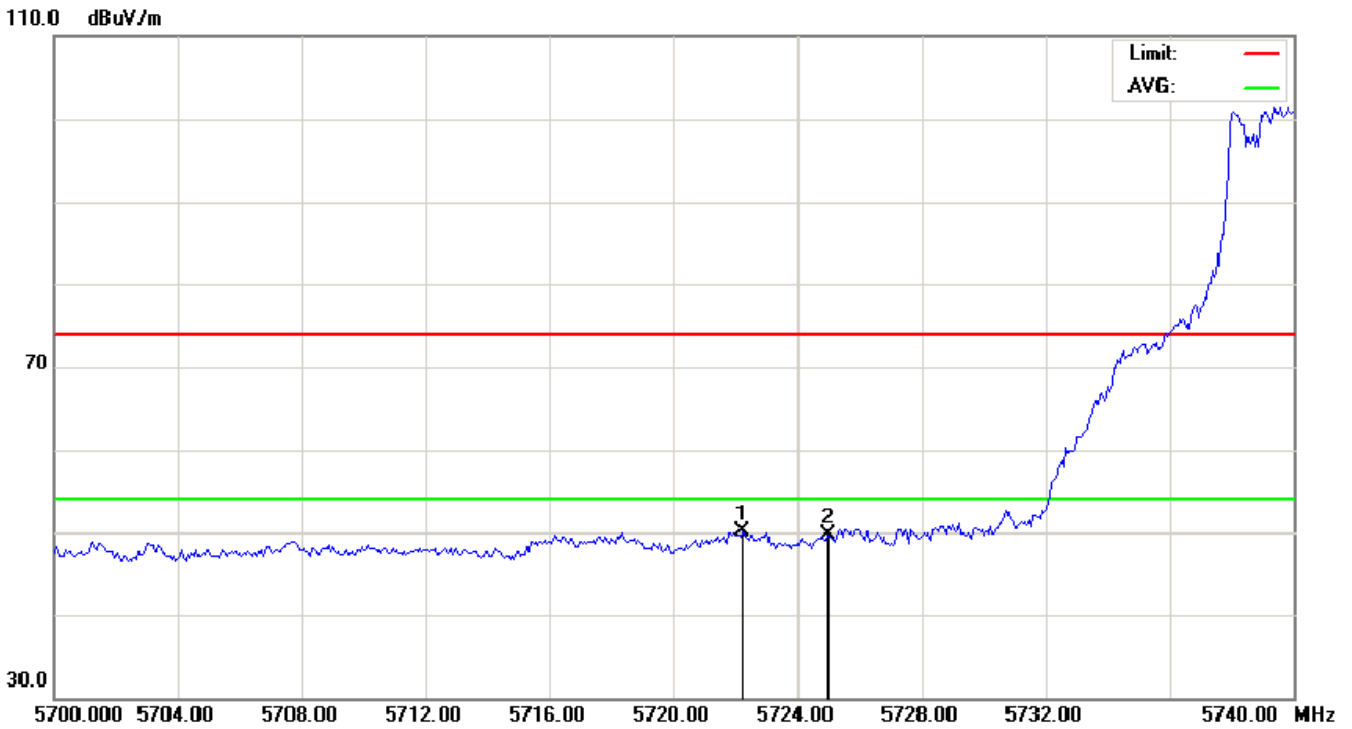
Radiated same as 6.2

Conducted set up



8.3. Radiated Test Result

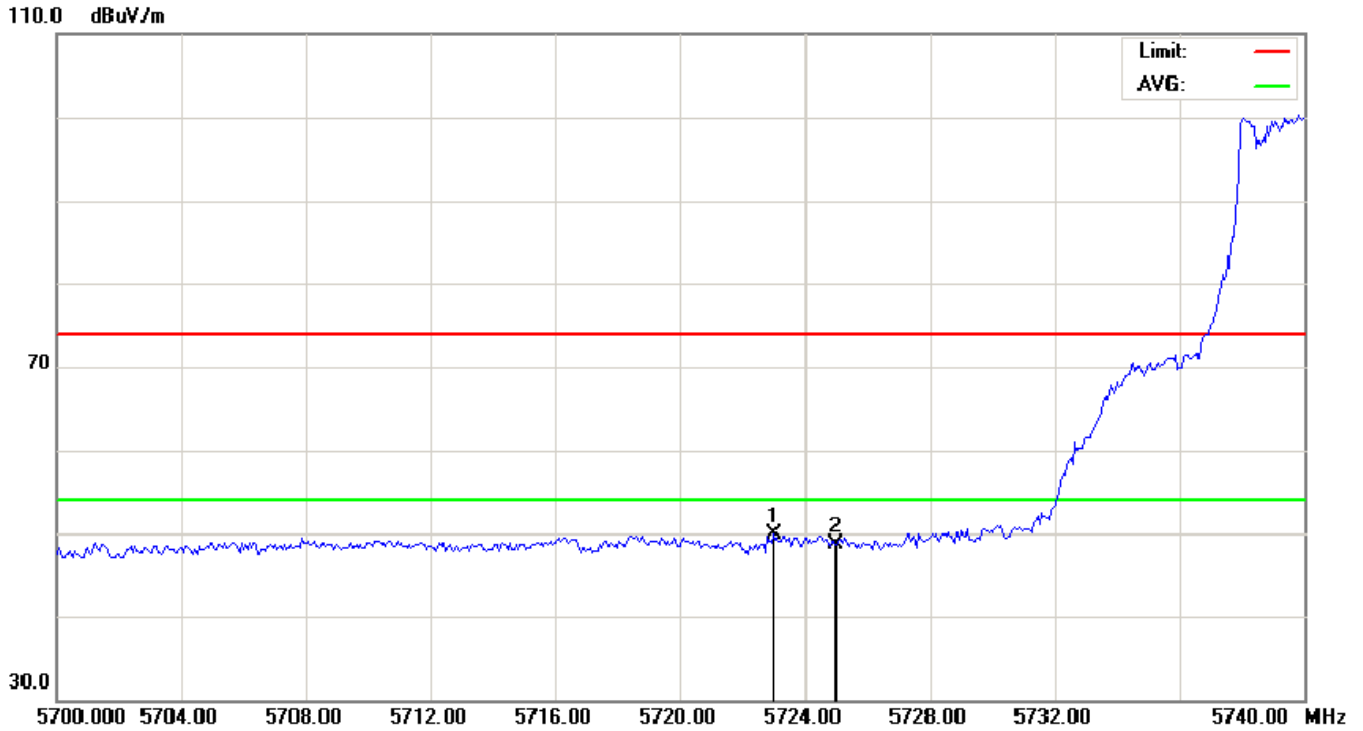
EUT:	280 Multicopter	Model Name. :	RTF
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC12V
Test Mode :	Mode 1	Polarization :	Horizontal



Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
5722.200	40.23	10.98	51.21	74	-22.79	peak
5725.000	39.18	10.98	50.16	74	-23.84	peak

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

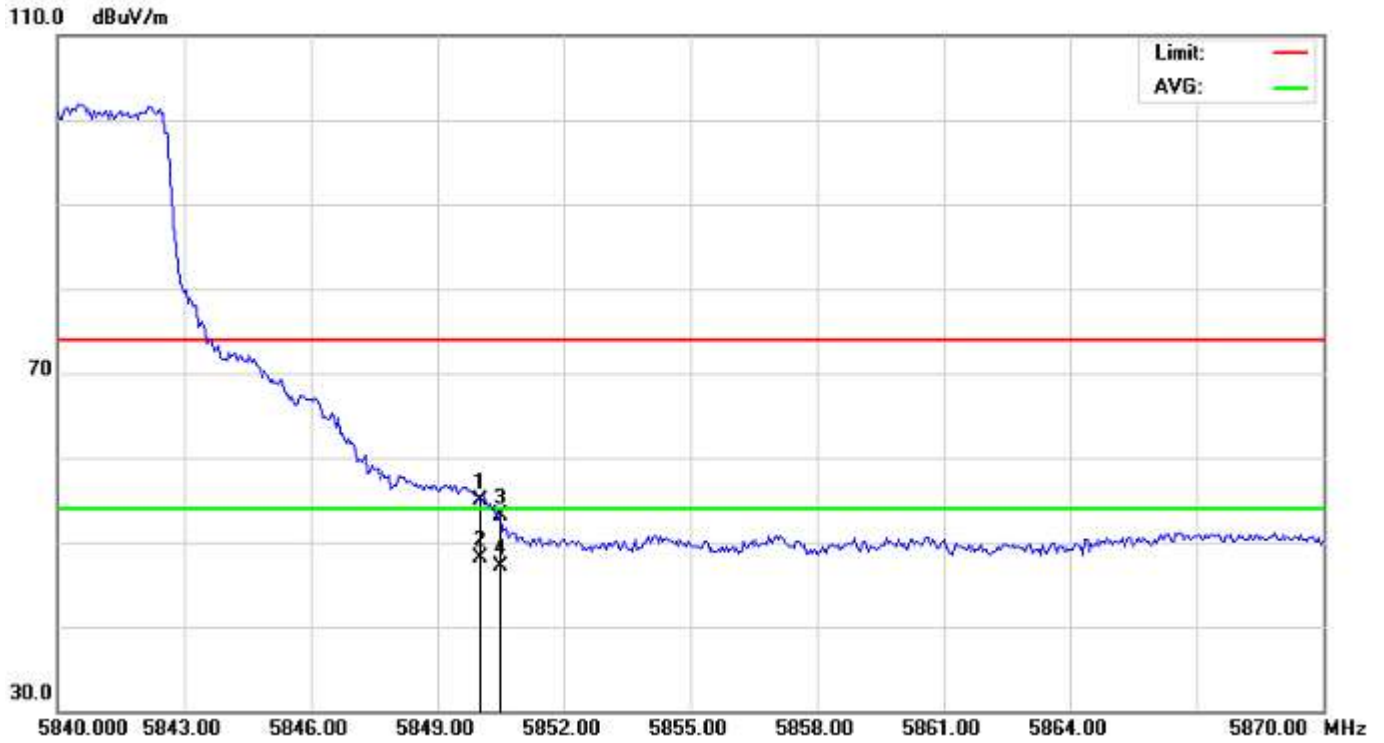
EUT:	280 Multicopter	Model Name. :	RTF
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC12V
Test Mode :	Mode 1	Polarization :	Vertical



Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
5723.000	38.53	10.98	49.51	74	-24.49	peak
5725.000	37.28	10.98	48.26	74	-25.74	peak

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

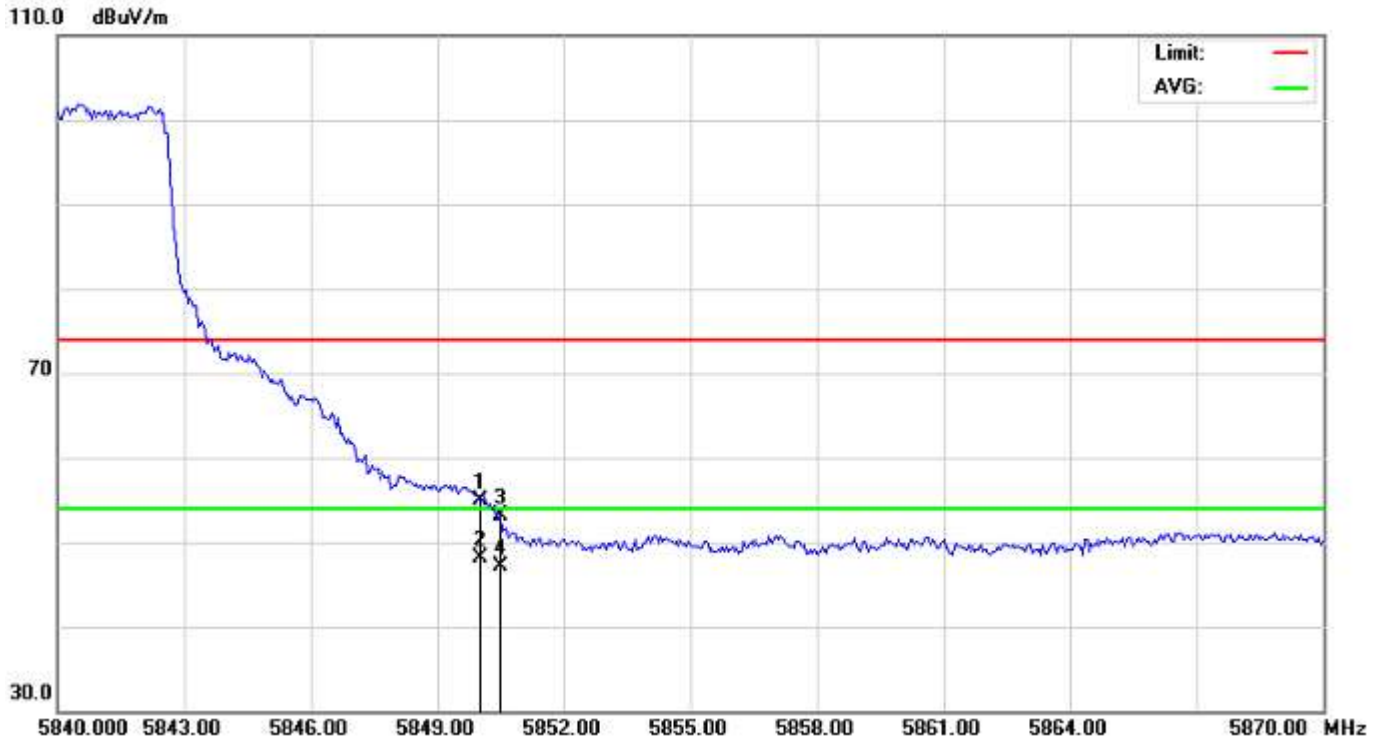
EUT:	280 Multicopter	Model Name. :	RTF
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC12V
Test Mode :	Mode 3	Polarization :	Horizontal



Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Value Type
5850.000	43.61	11.27	54.88	74	-19.12	peak
5850.500	42.17	11.27	53.44	74	-20.56	peak
5850.000	37.28	11.27	48.55	54	-5.45	AV
5850.500	36.75	11.27	48.02	54	-5.98	AV

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

EUT:	280 Multicopter	Model Name. :	RTF
Temperature:	20 °C	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC12V
Test Mode :	Mode 3	Polarization :	Vertical



Frequency (MHz)	Meter Reading (dBµV)	Factor (dB)	Emission Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Value Type
5850.000	43.24	11.27	54.51	74	-19.49	peak
5850.500	42.07	11.27	53.34	74	-20.66	peak
5850.000	36.21	11.27	47.48	54	-6.52	AV
5850.500	35.76	11.27	47.03	54	-6.97	AV

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

RESULT: PASS

Note: Factor=Antenna Factor + Cable loss - Amplifier gain

Emission Level = Meter Reading + Factor

Margin= Emission Level -Limit.

The “Factor” value can be calculated automatically by software of measurement system.

9. BANDWIDTH

9.1. TEST PROCEDURE

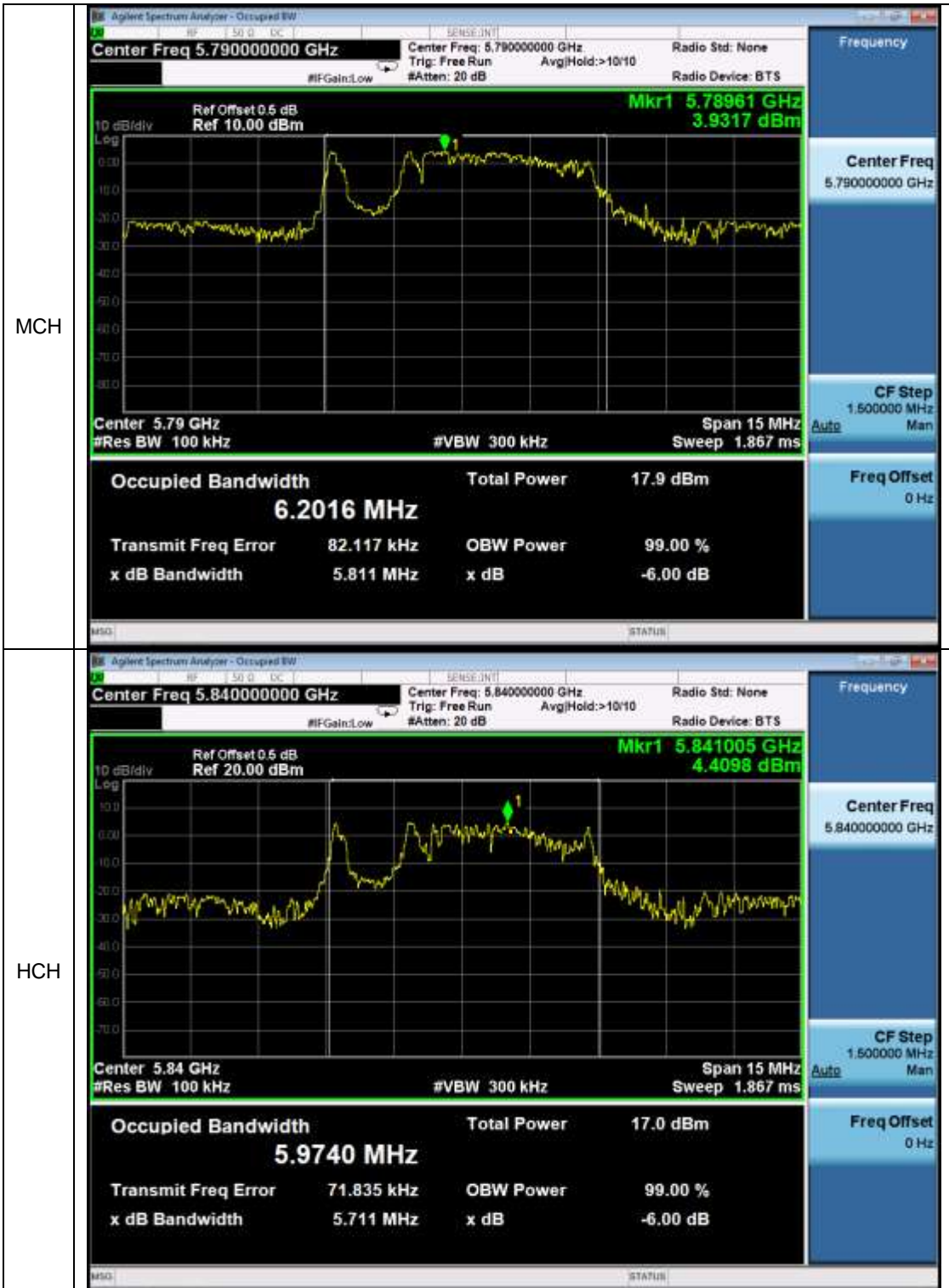
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW ≥ RBW.
4. Set SPA Trace 1 Max hold, then View.

9.2. SUMMARY OF TEST RESULTS/PLOTS

Mode	Channel	6dB Bandwidth [MHz]	OBW[MHz]	Verdict
BLE	LCH	5.8200	6.0901	PASS
BLE	MCH	5.8110	6.2016	PASS
BLE	HCH	5.7110	5.9740	PASS

Test Graph





10. CONDUCTED SPURIOUS EMISSION

10.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
3. Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.
RBW = 100 kHz; VBW \geq RBW; Sweep = auto; Detector function = peak.
4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to DA000705 for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW >RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW >RBW) are conform to the requirement.

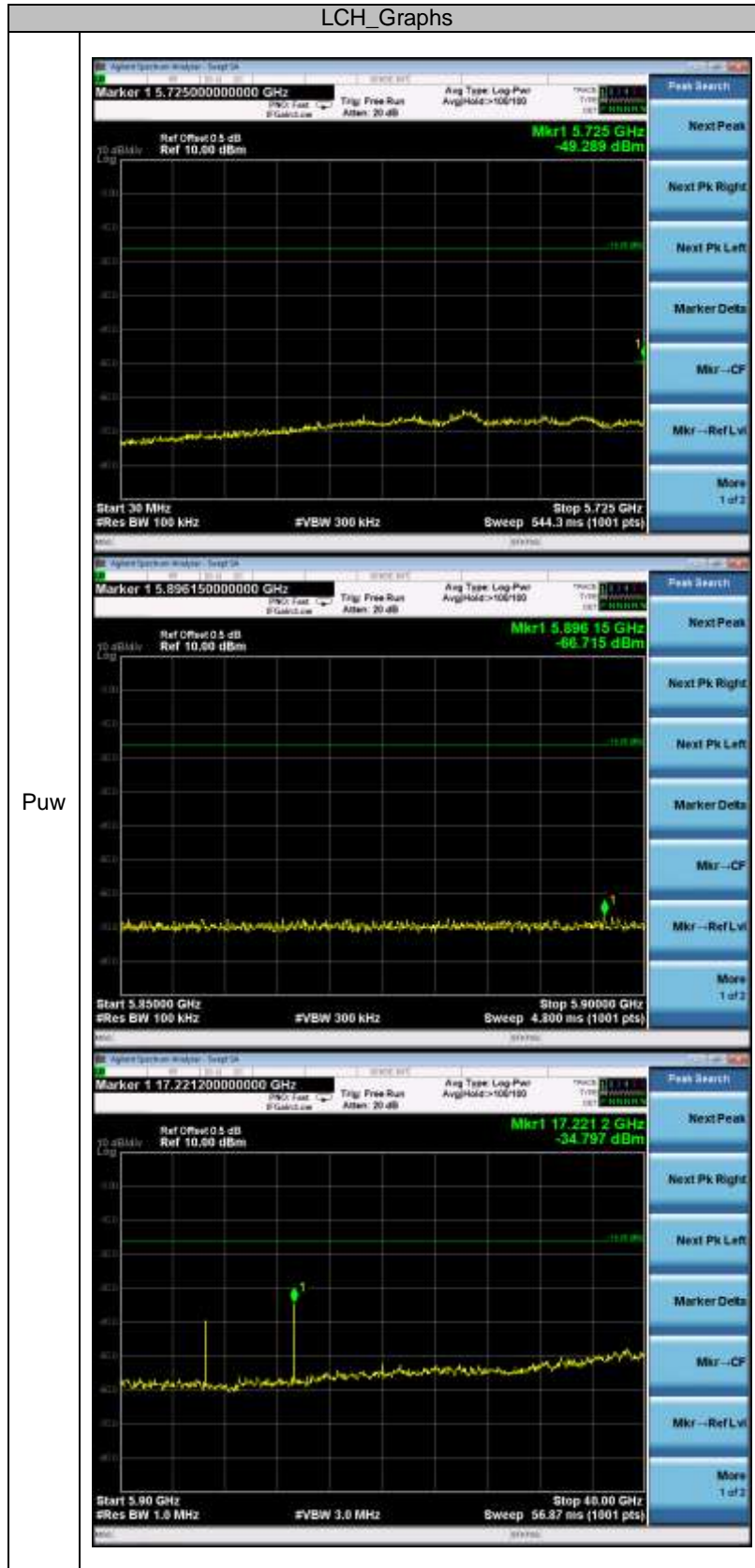
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 9.2

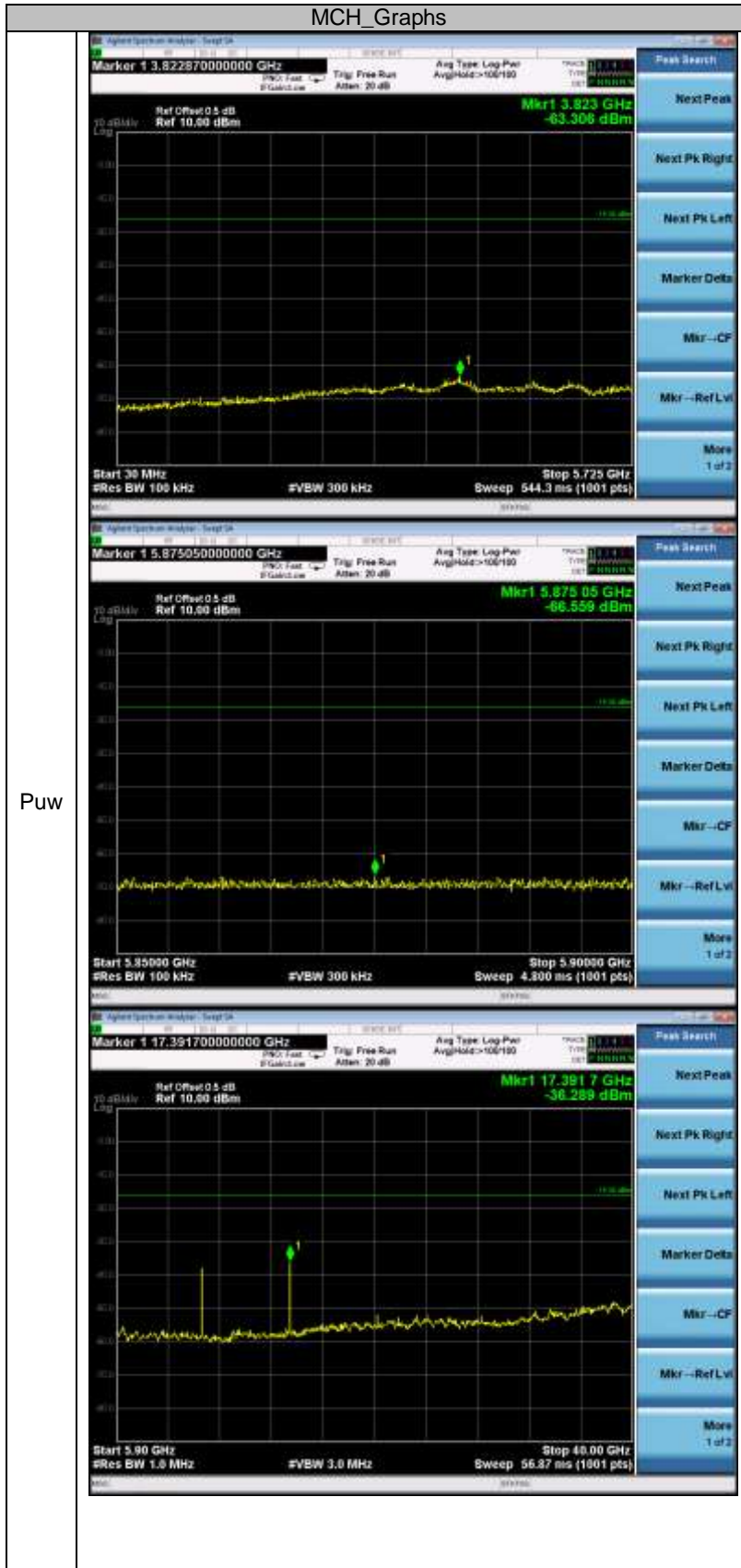
10.3. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
	At least -20dBc than the limit Specified on the TOP Channel	PASS

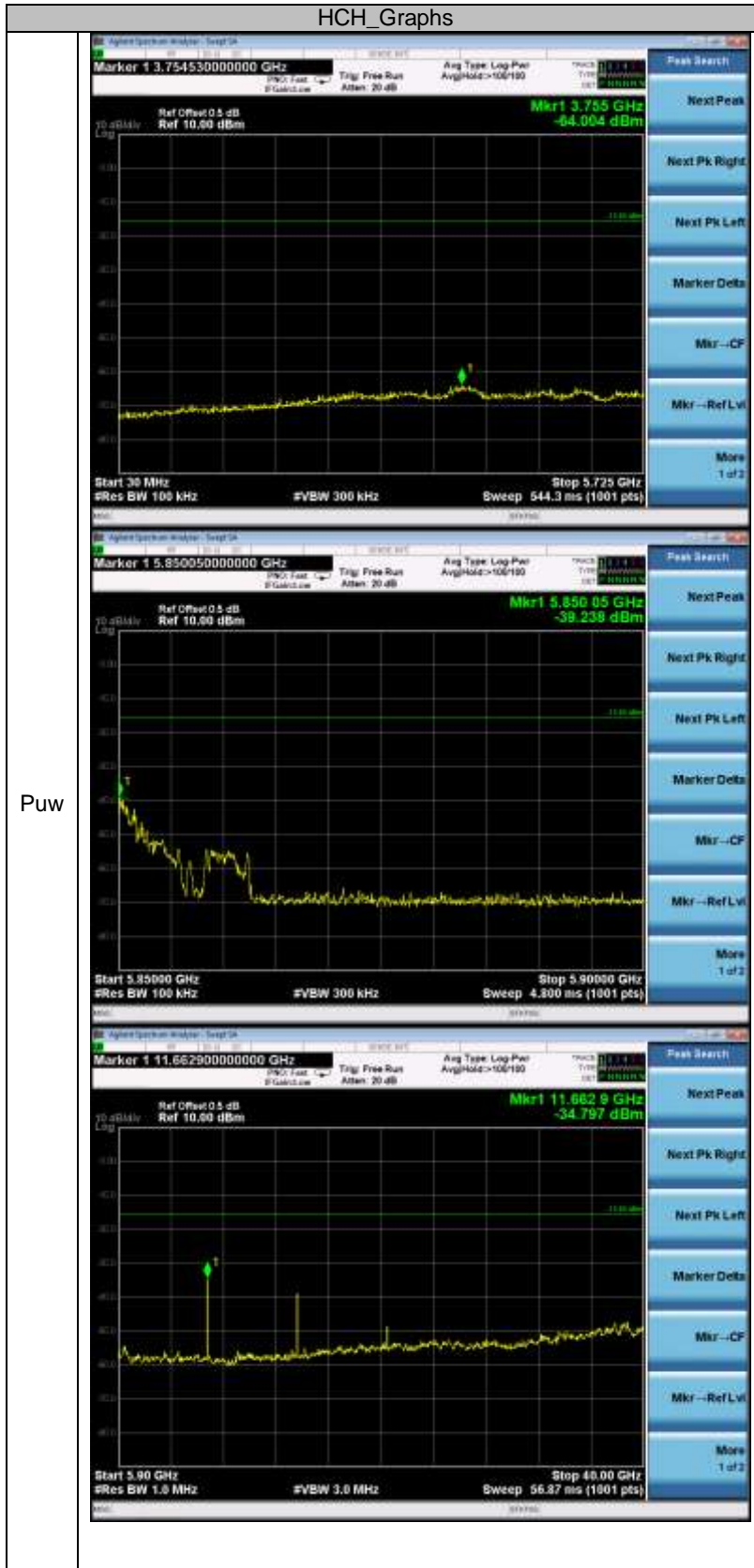
Test Graph



MCH_Graphs



HCH_Graphs



Puw

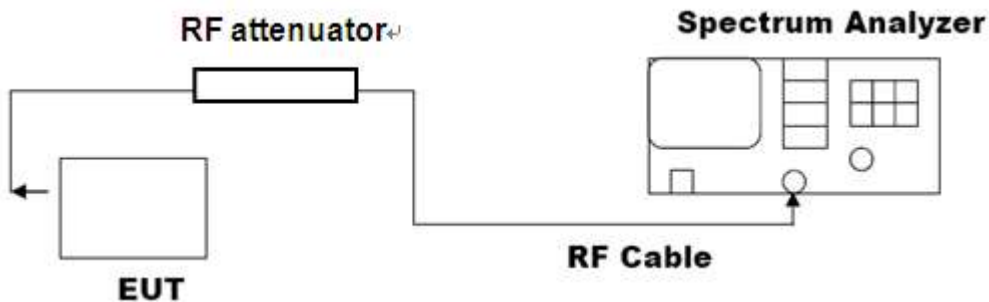
11. CONDUCTED OUTPUT POWER

11.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, middle and the bottom operation frequency individually.
3. Use the following spectrum analyzer settings:
 - Set the RBW \geq DTS bandwidth
 - Set the VBW \geq 3 x RBW
 - Set the span \geq 3 x RBW
 - Detector = peak
 - Sweep time = auto couple
 - Trace mode = max hold
4. Allow the trace to stabilize. Use peak marker function to determine the peak amplitude level
5. Record the result form the Spectrum Analyzer.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

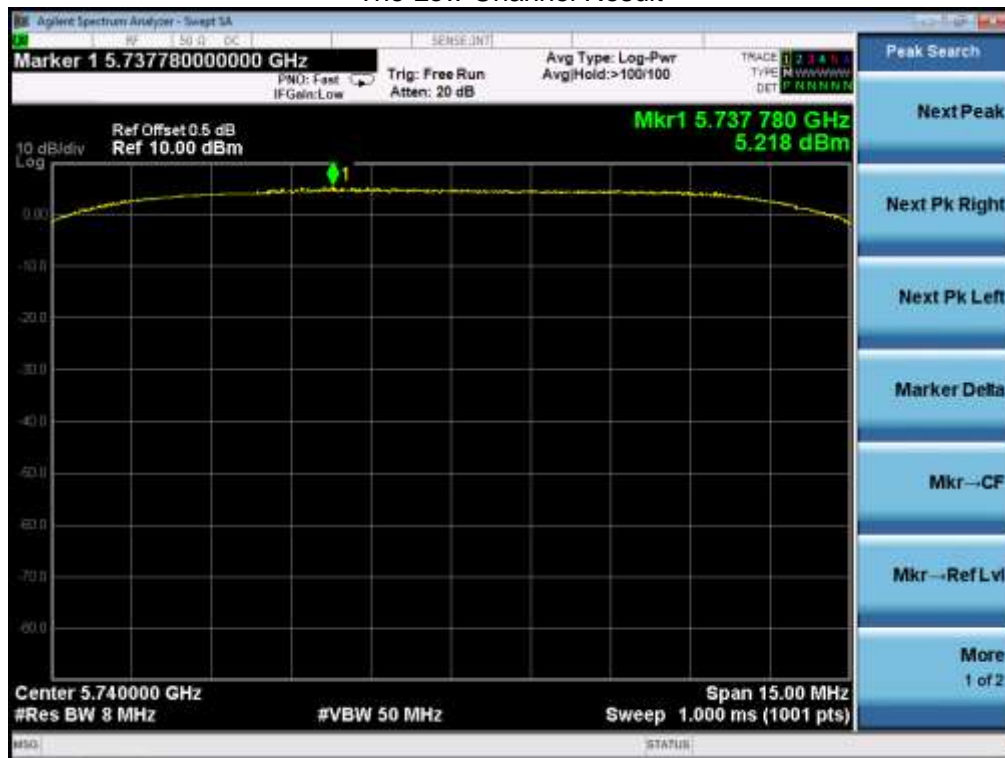
11.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



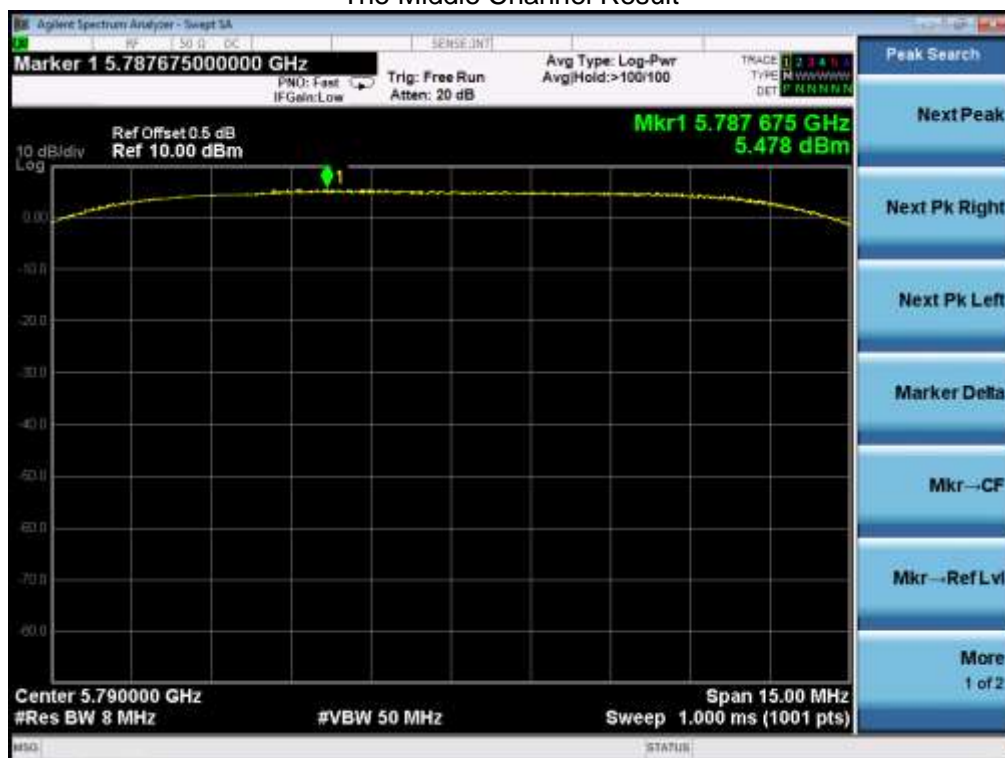
11.3. LIMITS AND MEASUREMENT RESULT

Channel	Peak Power (dBm)	Applicable Limits (dBm)	Pass/Fail
Low Channel	5.218	20	Pass
Middle Channel	5.478	20	Pass
High Channel	6.129	20	Pass

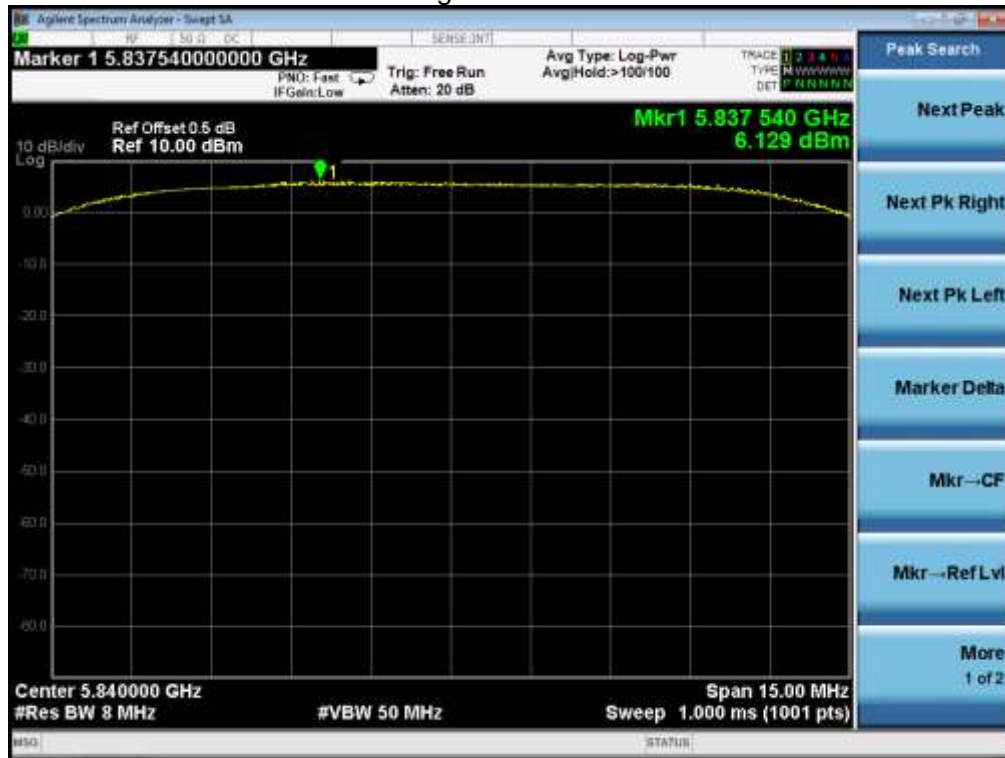
The Low Channel Result



The Middle Channel Result



The High Channel Result



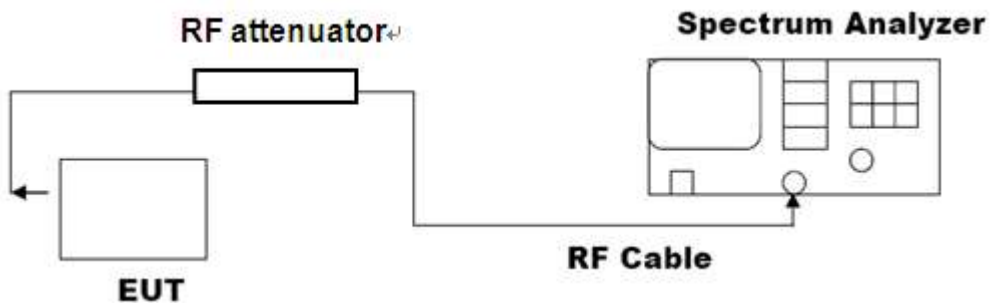
12. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

12.1 MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

12.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



12.3 LIMITS AND MEASUREMENT RESULT

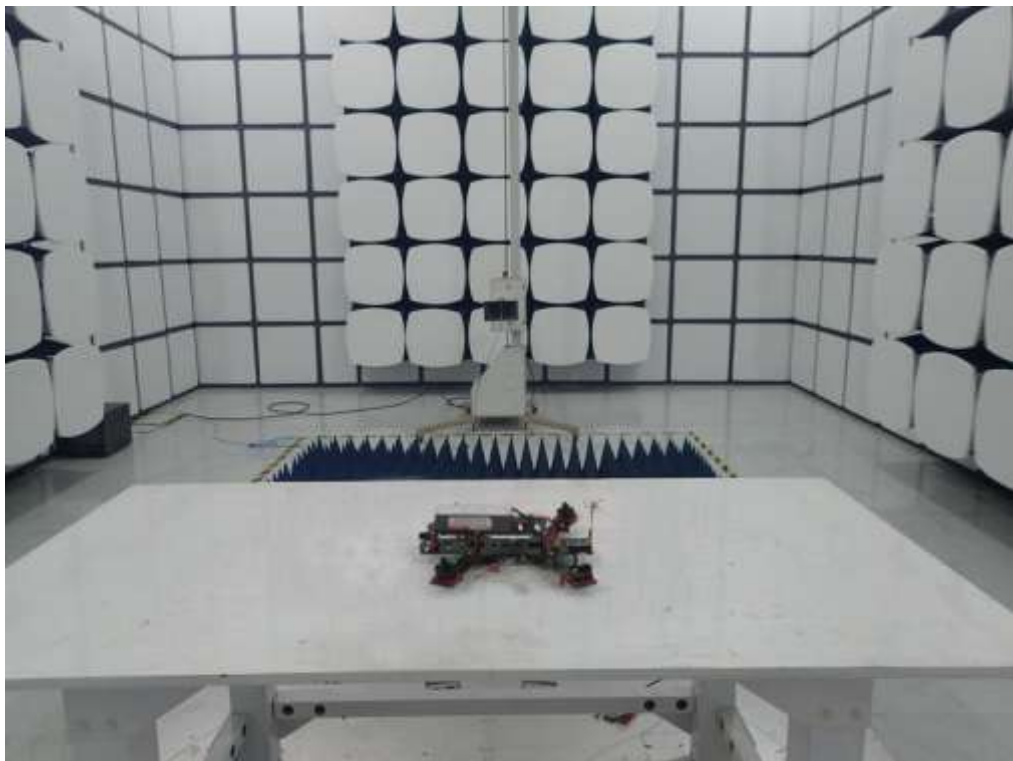
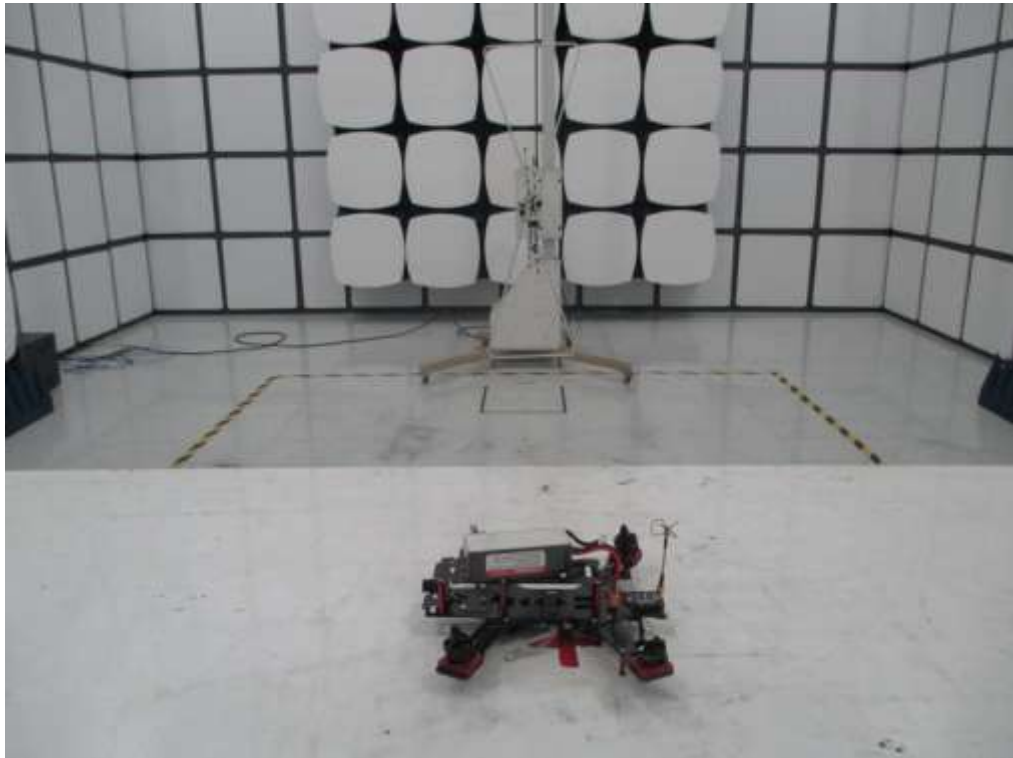
Mode	Channel	PSD [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
BLE	LCH	2.635	8	PASS
BLE	MCH	3.519	8	PASS
BLE	HCH	3.671	8	PASS

Test Graph



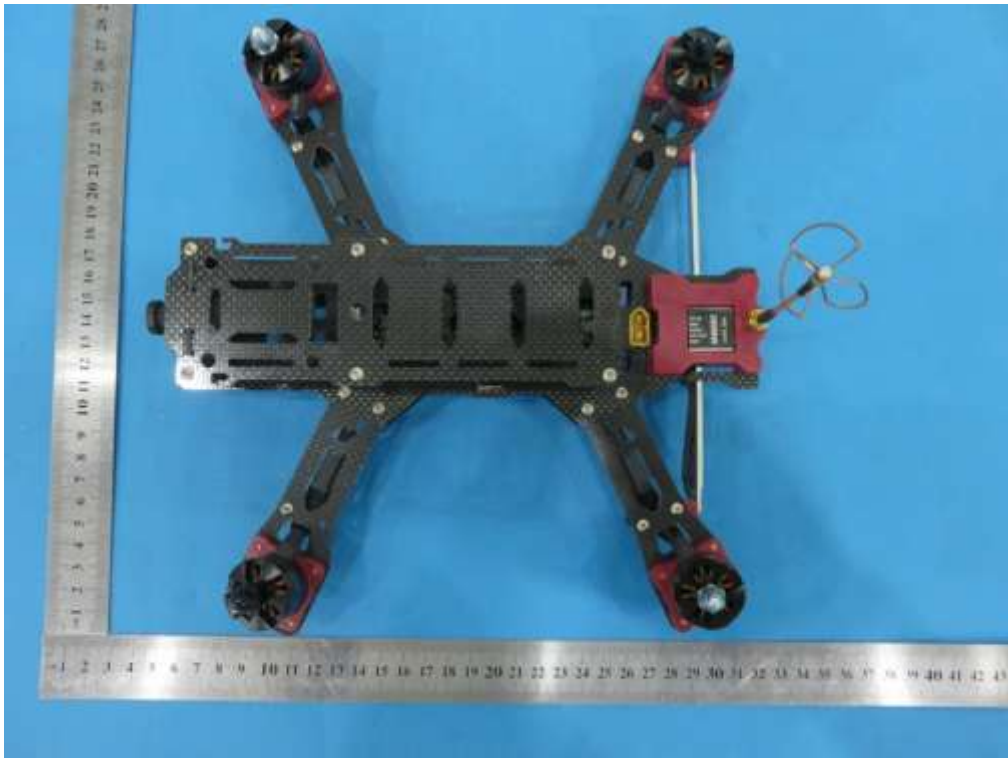
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP

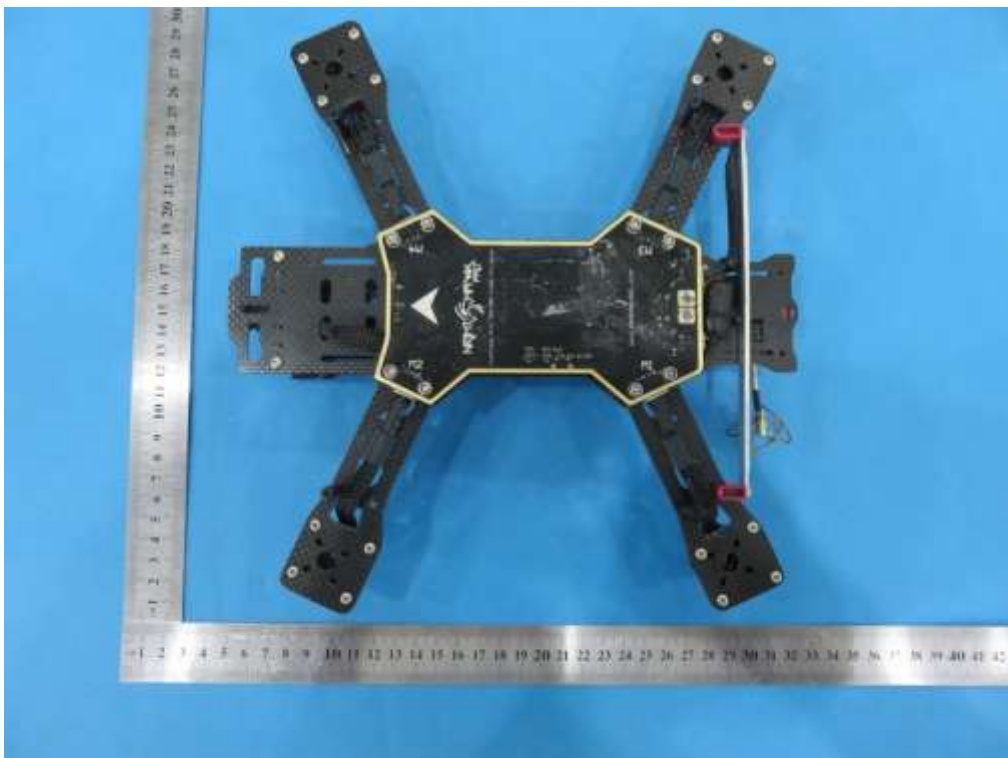


APPENDIX B: PHOTOGRAPHS OF EUT

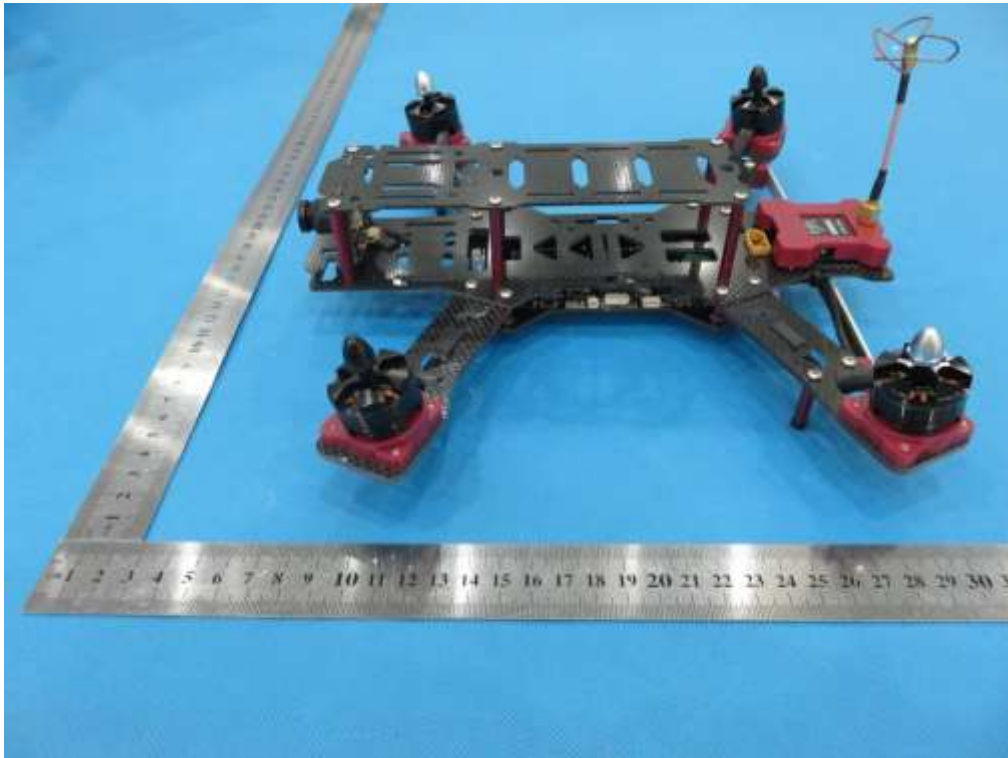
TOP VIEW OF EUT



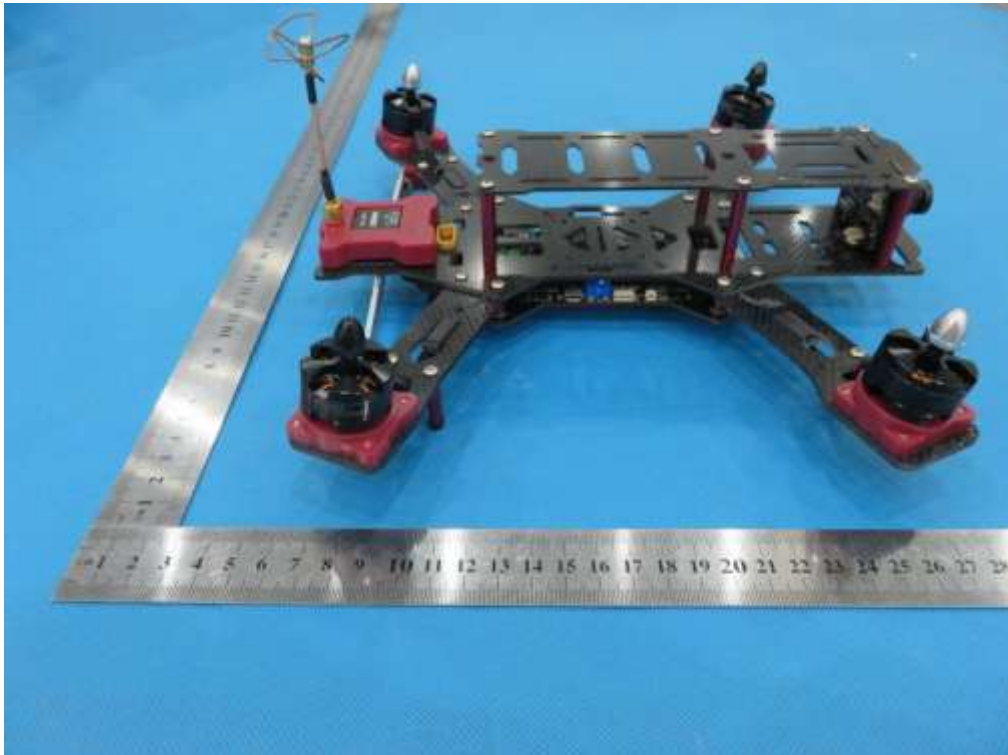
BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT



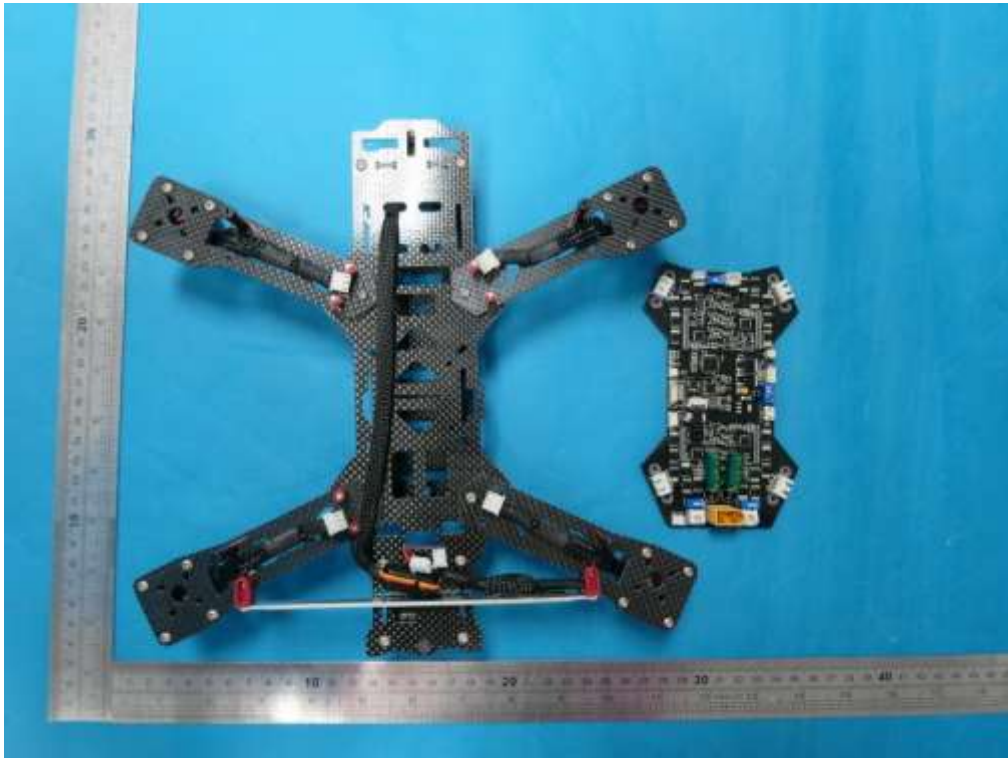
LEFT VIEW OF EUT



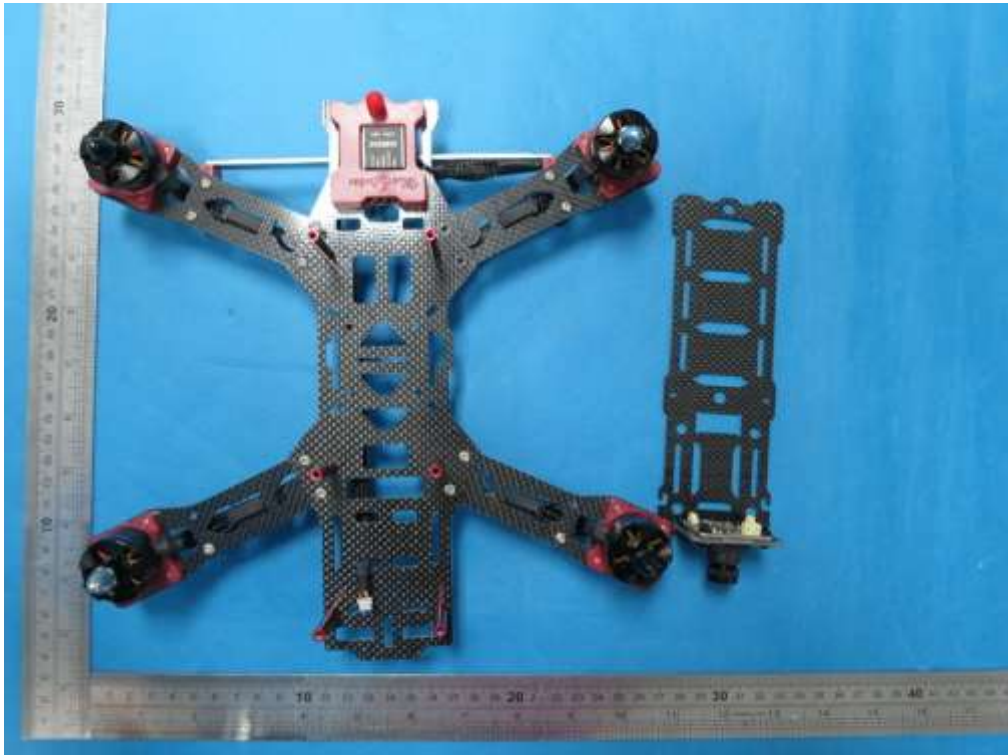
RIGHT VIEW OF EUT



OPEN VIEW OF EUT



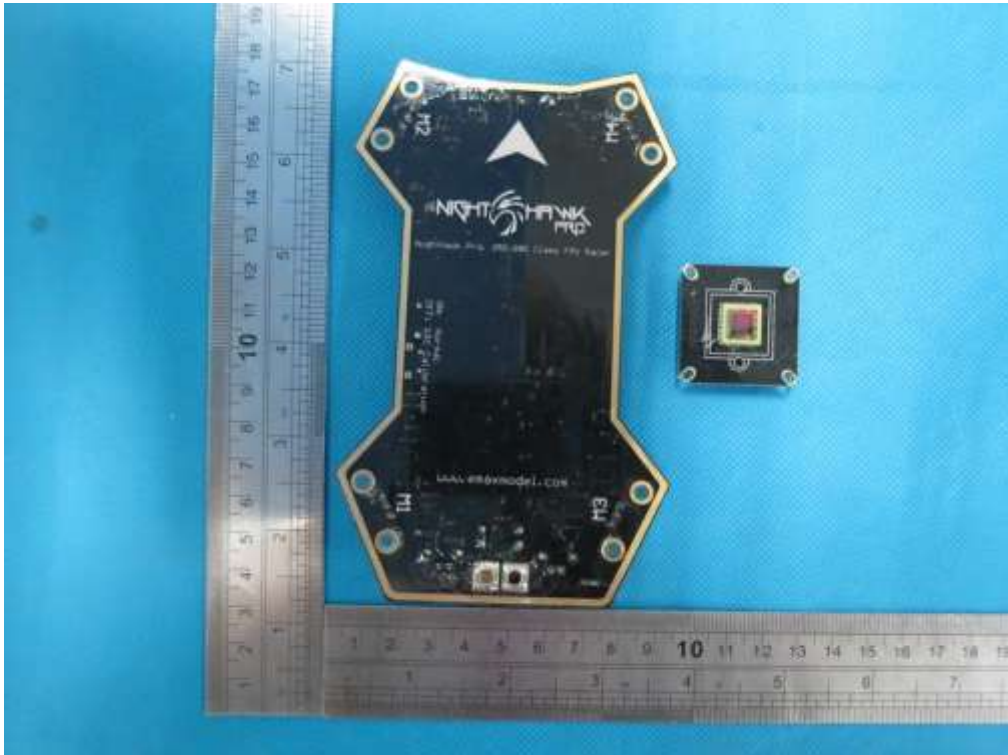
INTERNAL VIEW OF EUT-1



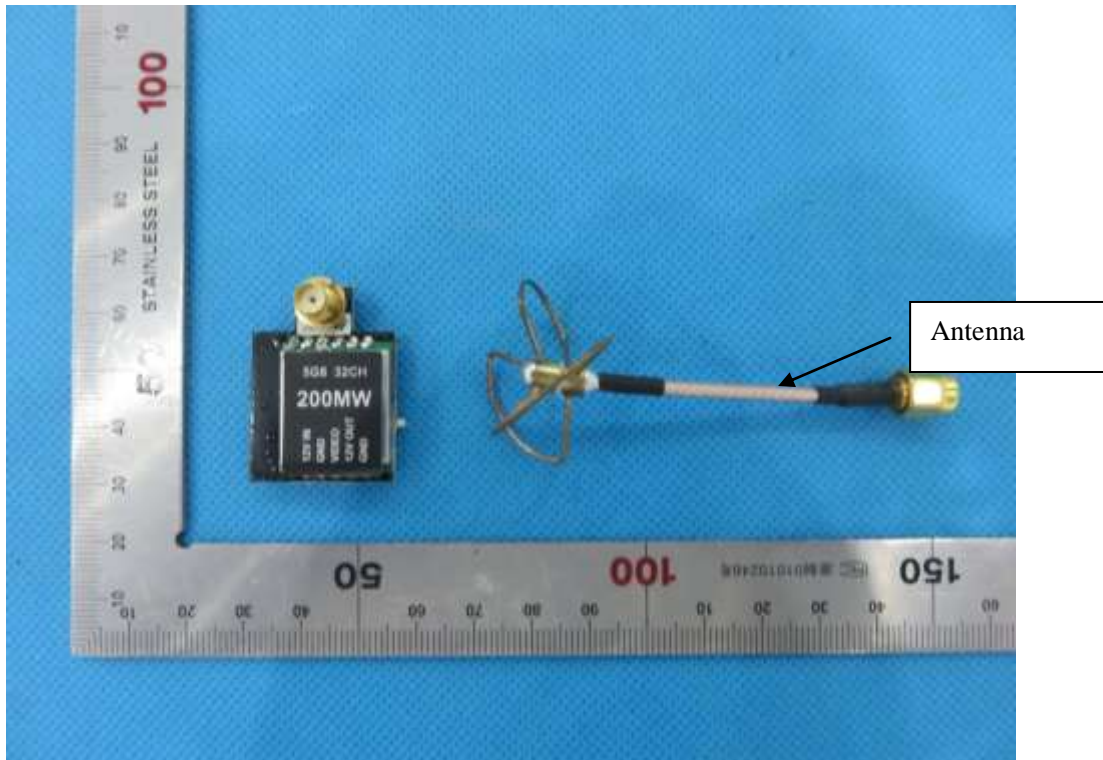
INTERNAL VIEW OF EUT-2



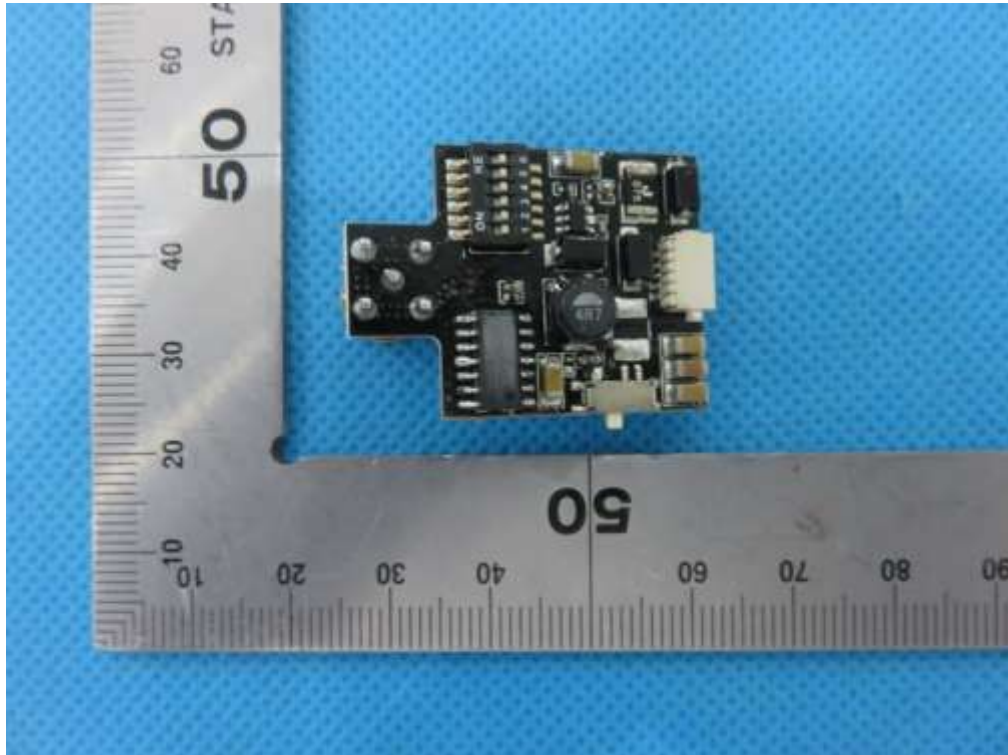
INTERNAL VIEW OF EUT-2



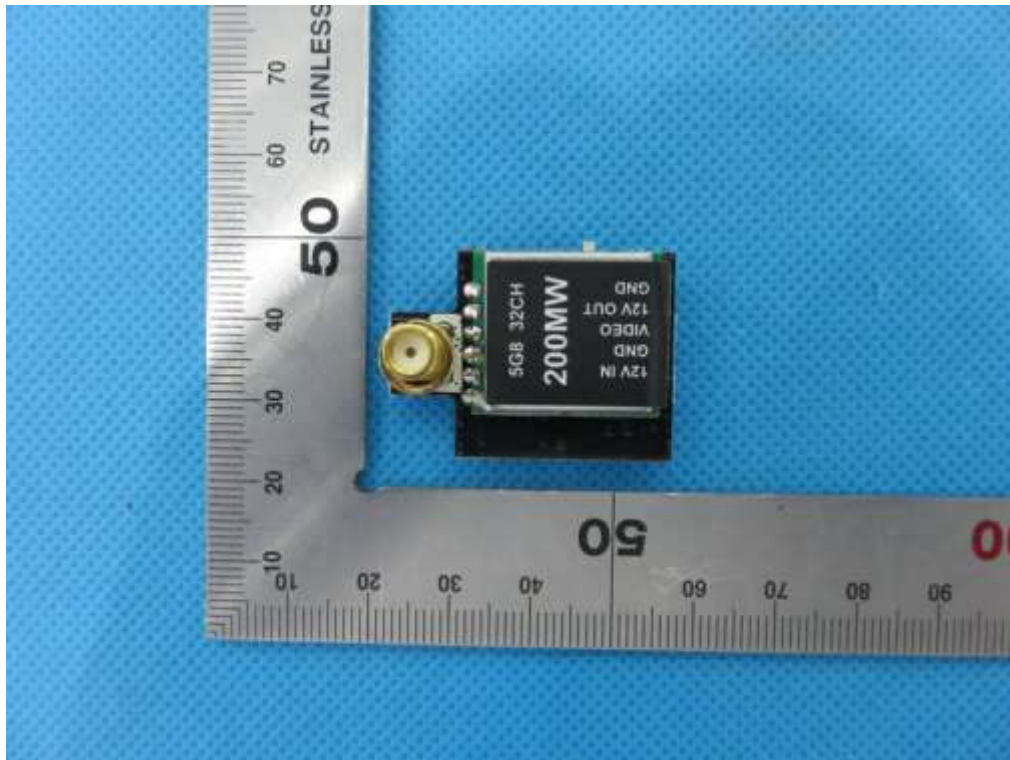
INTERNAL VIEW OF EUT-3



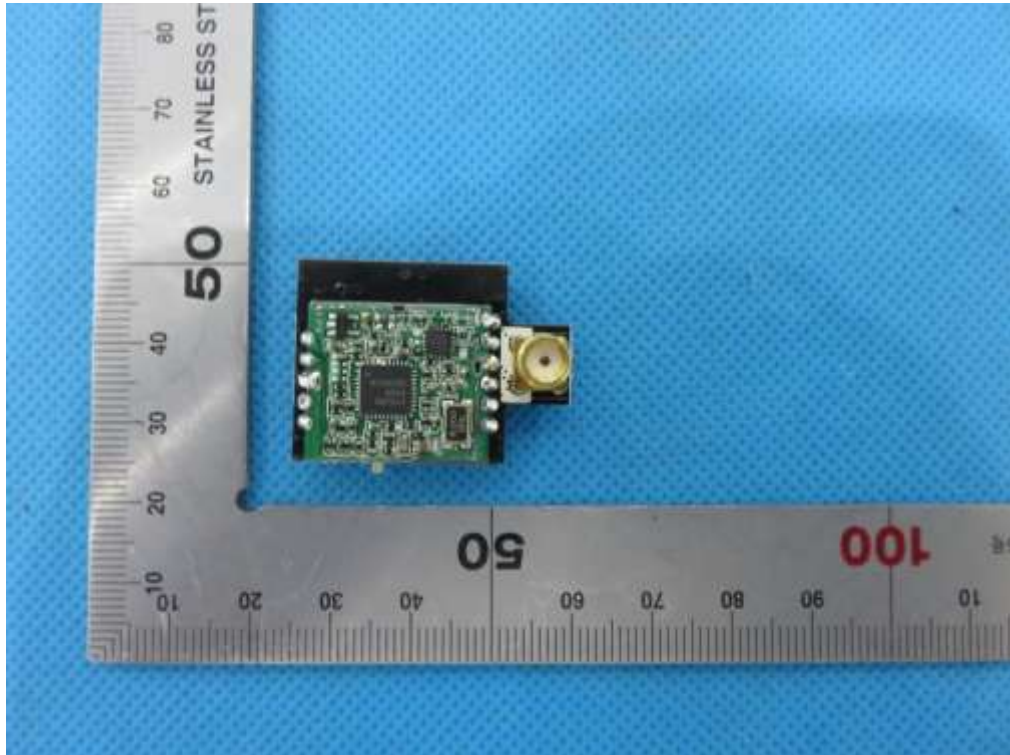
INTERNAL VIEW OF EUT-4



INTERNAL VIEW OF EUT-5



INTERNAL VIEW OF EUT-6



----END OF REPORT----