



FCC Part 15C Test Report

FCC ID: 2AE4OGINT

Product Name:	Drones/Quadcopter/uav
Trademark:	keyshare
Model Name :	Glint
Prepared For :	Hunan Keyshare Information Technology Co., Ltd.
Address :	No.1 and No.19 Building, No.39 Jianshan Rod , Changsha CEC Software Park Headquarter, High-tech Development Zone, Changsha, Hunan Province, China
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
Address :	No.101,Yousong Road,Longhua New District, Shenzhen,China
Test Date:	Jun. 8 - Jun. 15, 2015
Date of Report :	Jun. 17, 2015
Report No.:	BCTC-15060082



TEST RESULT CERTIFICATION

Applicant's name : Hunan Keyshare Information Technology Co., Ltd.

Address : No.1 and No.19 Building, No.39 Jianshan Rod , Changsha CEC
Software Park Headquarter, High-tech Development Zone,
Changsha, Hunan Province, China

Manufacture's Name : Hunan Keyshare Information Technology Co., Ltd.

Address : No.1 and No.19 Building, No.39 Jianshan Rod , Changsha CEC
Software Park Headquarter, High-tech Development Zone,
Changsha, Hunan Province, China

Product description

Product name : Drones/Quadcopter/uav

Model and/or type reference : Glint

Serial Model : N/A

Standards : FCC Part15.247

Test procedure ANSI C63.10-2013

This device described above has been tested by BCTC, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Casey Wang

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)	Peak Output Power	PASS	
15.247 (c)	Radiated Spurious Emission	PASS	
15.247 (d)	Power Spectral Density	PASS	
15.205	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report



1.1 TEST FACILITY

Shenzhen BCTC Technology Co., Ltd.

Add. : No.101,Yousong Road,Longhua New District, Shenzhen,China

FCC Registered No.: 187086

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded 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	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Drones/Quadcopter/uav										
Trade Name	keyshare										
Model Name	Glint										
Serial Model	N/A										
Model Difference	All the model are the same circuit and RF module,except model names.										
Product Description	<table><tr><td>Operation Frequency:</td><td>2405~2479 MHz 5733~5866MHz(Receiver only)</td></tr><tr><td>Modulation Type:</td><td>DSSS</td></tr><tr><td>Channel separation is:</td><td>1MHz</td></tr><tr><td>Antenna Designation:</td><td>Please see Note 3.</td></tr><tr><td>Antenna Gain (dBi)</td><td>3.0dbi</td></tr></table> <p>Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.</p>	Operation Frequency:	2405~2479 MHz 5733~5866MHz(Receiver only)	Modulation Type:	DSSS	Channel separation is:	1MHz	Antenna Designation:	Please see Note 3.	Antenna Gain (dBi)	3.0dbi
Operation Frequency:	2405~2479 MHz 5733~5866MHz(Receiver only)										
Modulation Type:	DSSS										
Channel separation is:	1MHz										
Antenna Designation:	Please see Note 3.										
Antenna Gain (dBi)	3.0dbi										
Channel List	Please refer to the Note 2.										
Adapter	N/A										
Battery	DC 7.4V 800mA										
Connecting I/O Port(s)	Please refer to the User's Manual										

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.

Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
A	N/A	N/A	Dipole Antenna	N/A	3.0	



2.2 DESCRIPTION OF TEST MODES

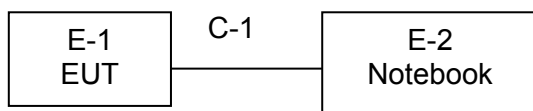
To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Alltest Mode	Description
Mode 1	TX Mode

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Drones/Quadcopter/uav	keyshare	Glint	N/A	EUT
E-2	Notebook	N/A	X550C	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.8M	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Spectrum Analyzer	Agilent	E4407B	MY45109572	2014.08.25	2015.08.24	1 year
2	Test Receiver	R&S	ESPI	101396	2014.08.25	2015.08.24	1 year
3	Bilog Antenna	SCHWARZBECK	VULB9160	VULB9160-3369	2014.08.25	2015.08.24	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2015.06.07	2016.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2015.06.07	2016.06.06	1 year
6	Horn Antenna	SCHWARZBECK	9120D	9120D-1275	2014.08.25	2015.08.24	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05	1 year
8	Amplifier	SCHWARZBECK	BBV9718	9718-270	2014.08.25	2015.08.24	1 year
9	Amplifier	SCHWARZBECK	BBV9743	9743-119	2014.08.25	2015.08.24	1 year
10	Loop Antenna	ARA	PLA-1030/B	1029	2015.06.08	2016.06.07	1 year
11	Power Meter	R&S	NRVS	100696	2014.07.06	2015.07.05	1 year
12	Power Sensor	R&S	URV5-Z4	0395.1619.05	2014.07.06	2015.07.05	1 year
13	RF cables	R&S	N/A	N/A	2014.07.06	2015.07.05	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101421	2014.08.25	2015.08.24	1 year
2	LISN	SCHWARZBECK	NSLK8127	812779	2014.08.25	2015.08.24	1 year
3	LISN	EMCO	Feb-16	42990	2014.08.24	2015.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2015.06.07	2016.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2015.06.07	2016.06.06	1 year



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class B (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	CISPR
0.50 -5.0	56.00	46.00	CISPR
5.0 -30.0	60.00	50.00	CISPR

0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

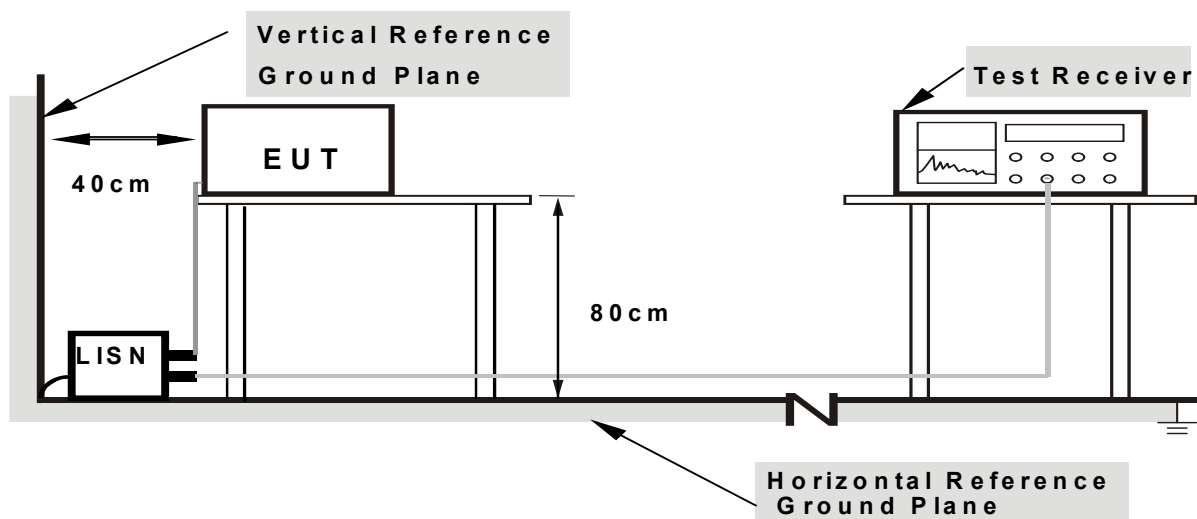
3.1.2 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



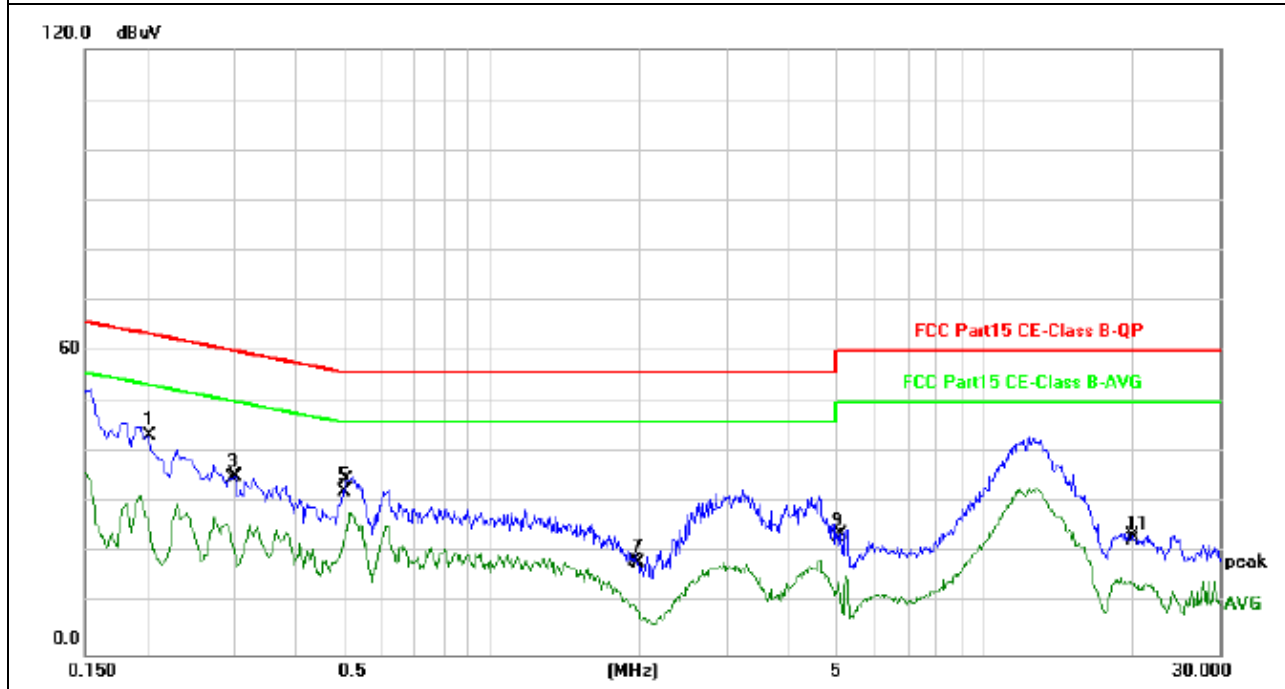
3.1.6 TEST RESULTS

EUT :	Drones/Quadcopter/uav	Model Name. :	Glint
Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	L
Test Voltage :	AC120V/60Hz	Test Mode :	TX

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Detector Type
0.2007	33.46	10.07	43.53	63.58	-20.05	QP
0.2007	17.12	10.07	27.19	53.58	-26.39	AVG
0.2987	25.13	10.09	35.22	60.28	-25.06	QP
0.3003	10.56	10.09	20.65	50.23	-29.58	AVG
0.5060	22.12	10.12	32.24	56.00	-23.76	QP
0.5060	13.67	10.12	23.79	46.00	-22.21	AVG
1.9820	9.93	10.18	20.11	56.00	-35.89	QP
1.9820	5.22	10.18	15.40	46.00	-30.60	AVG
5.0340	13.09	10.15	23.24	60.00	-36.76	QP
5.0860	6.34	10.14	16.48	50.00	-33.52	AVG
19.8620	12.51	10.17	22.68	60.00	-37.32	QP
19.9740	5.85	10.17	16.02	50.00	-33.98	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



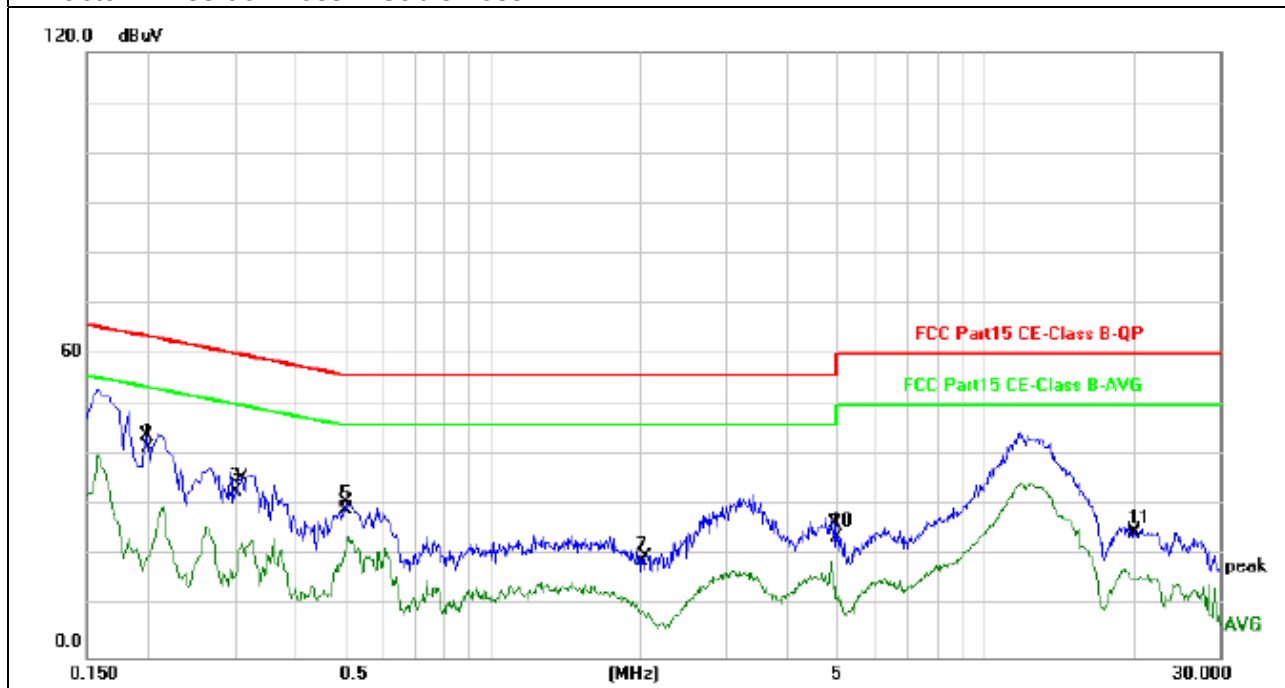


EUT :	Drones/Quadcopter/uav	Model Name. :	Glint
Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010hPa	Phase :	N
Test Voltage :	AC120V/60Hz	Test Mode :	TX

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.1997	31.54	10.06	41.60	63.62	-22.02	QP
0.1997	10.88	10.06	20.94	53.62	-32.68	AVG
0.3003	22.88	10.09	32.97	60.23	-27.26	QP
0.3035	9.65	10.09	19.74	50.14	-30.40	AVG
0.5060	19.13	10.12	29.25	56.00	-26.75	QP
0.5060	11.95	10.12	22.07	46.00	-23.93	AVG
2.0220	8.96	10.18	19.14	56.00	-36.86	QP
2.0220	4.05	10.18	14.23	46.00	-31.77	AVG
4.9820	14.11	10.15	24.26	46.00	-21.74	QP
5.0220	5.85	10.15	16.00	60.00	-44.00	AVG
20.2060	14.26	10.17	24.43	60.00	-35.57	QP
20.3140	5.55	10.17	15.72	50.00	-34.28	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below 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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP



3.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz, the height was 1.5m) above the ground at a 3 meter Chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m(above 1GHz, the height was 1.5m); the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

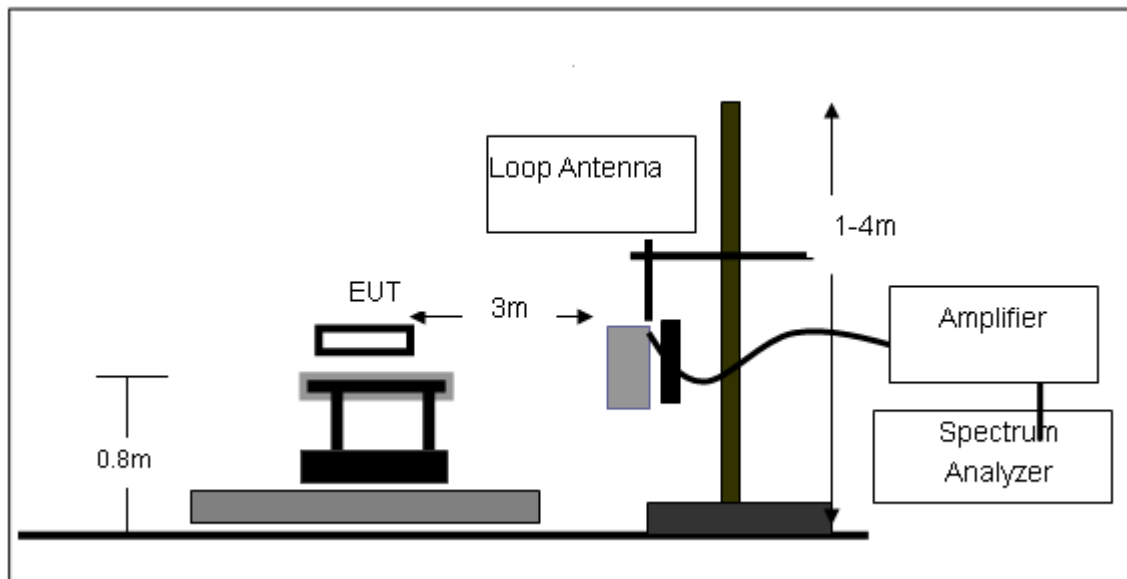
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3 DEVIATION FROM TEST STANDARD

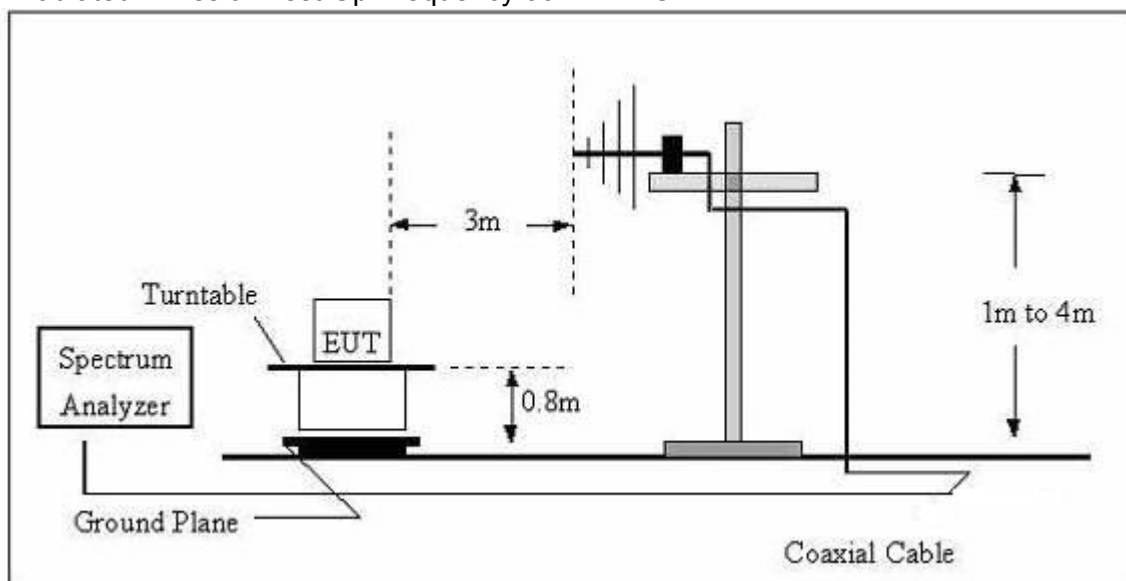
No deviation

3.2.4 TEST SETUP

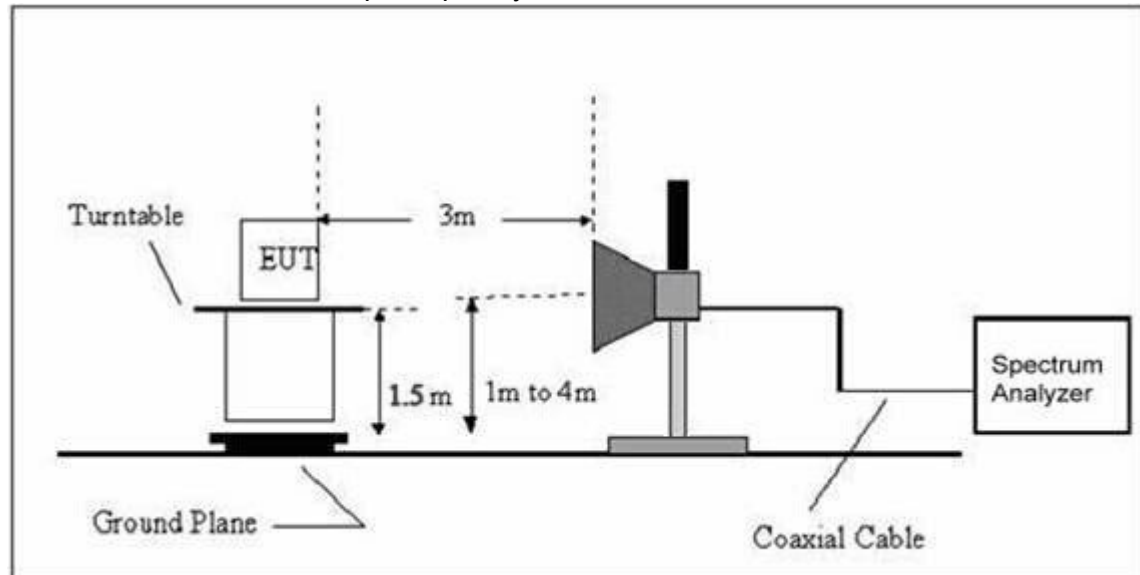
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

**3.2.6 TEST RESULTS (BETWEEN 9KHZ – 30 MHZ)**

EUT:	Drones/Quadcopter/uav	Model Name. :	Glint
Temperature:	20℃	Relative Humidity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 7.4V
Test Mode :	TX	Polarization :	--

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

**3.2.7 TEST RESULTS (BETWEEN 30MHZ – 1GHZ)**

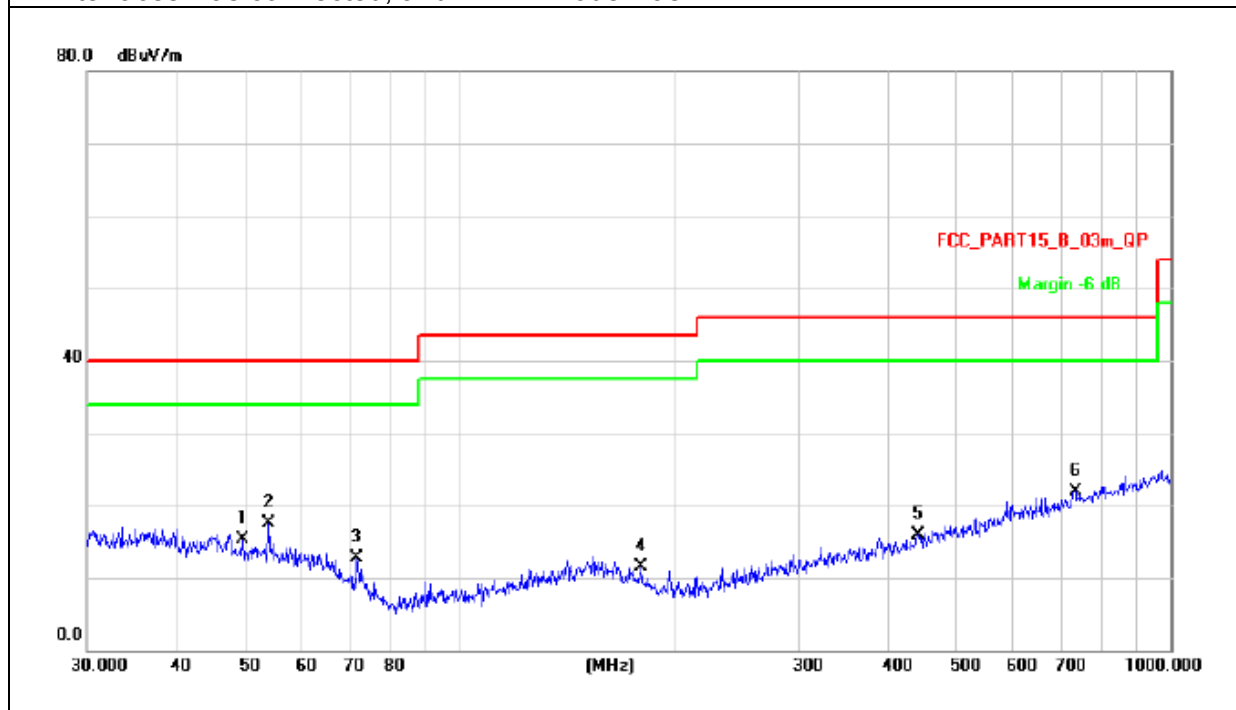
EUT :	Drones/Quadcopter/uav	Model Name :	Glint
Temperature :	26°C	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 7.4V		
Test Mode :	TX		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
49.5328	25.57	-10.20	15.37	40.00	-24.63	QP
53.8818	28.55	-10.93	17.62	40.00	-22.38	QP
71.8320	28.12	-15.19	12.93	40.00	-27.07	QP
180.0165	25.96	-14.34	11.62	43.50	-31.88	QP
441.7426	25.14	-9.16	15.98	46.00	-30.02	QP
734.4913	25.83	-3.69	22.14	46.00	-23.86	QP

Remark:

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

All interfaces was connected, and BT TX mode was link.





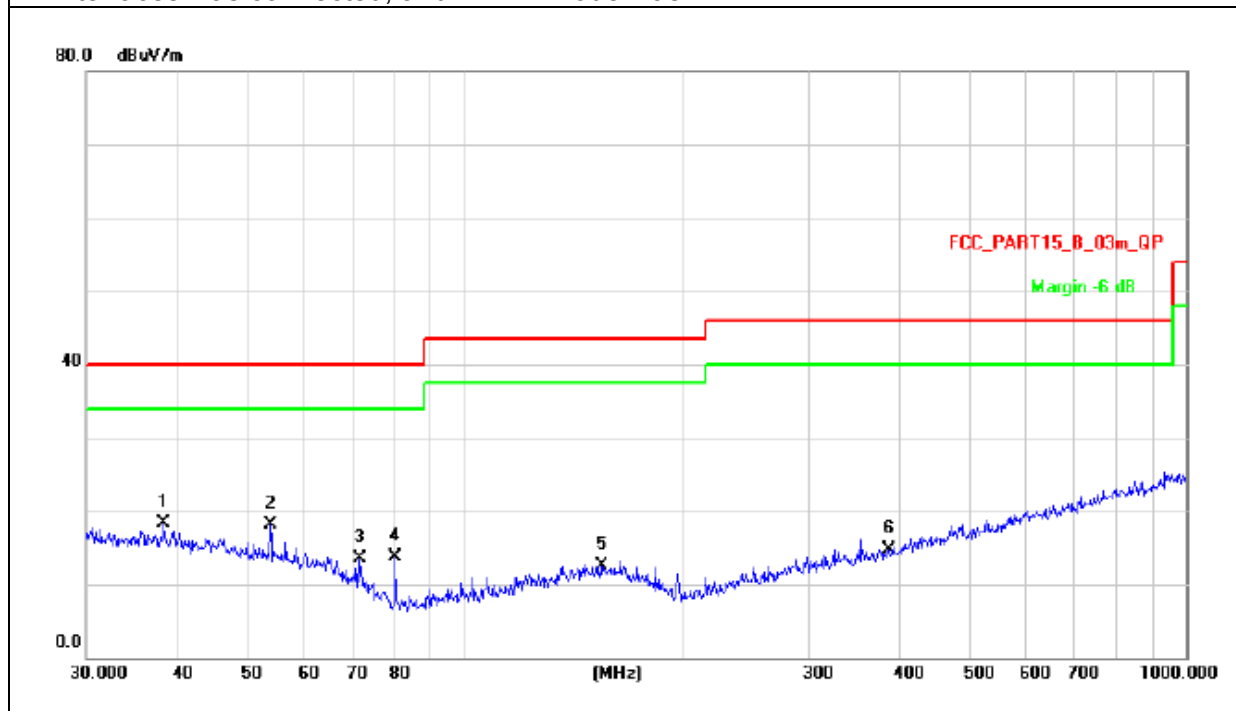
EUT :	Drones/Quadcopter/uav	Model Name :	Glint
Temperature :	26℃	Relative Humidity :	54%
Pressure :	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 7.4V		
Test Mode :	TX		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
38.3462	27.15	-8.77	18.38	40.00	-21.62	QP
53.8818	29.23	-10.93	18.30	40.00	-21.70	QP
71.8320	28.95	-15.19	13.76	40.00	-26.24	QP
80.3619	32.01	-18.10	13.91	40.00	-26.09	QP
154.8204	25.52	-12.86	12.66	43.50	-30.84	QP
387.9920	25.40	-10.47	14.93	46.00	-31.07	QP

Remark:

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

All interfaces was connected, and BT TX mode was link.



**3.2.8 TEST RESULTS (ABOVE 1000 MHZ)****Low**

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2405							
V	4810.00	53.52	-3.58	49.94	74	-24.06	PK
V	4810.00	44.44	-3.58	40.86	54	-13.14	AV
V	7215.00	54.16	-4.16	50.00	74	-24.00	PK
V	7215.00	45.62	-4.16	41.46	54	-12.54	AV
H	4810.00	55.65	-3.58	52.07	74	-21.93	PK
H	4810.00	46.54	-3.58	42.96	54	-11.04	AV
H	7215.00	55.32	-4.16	51.16	74	-22.84	PK
H	7215.00	46.28	-4.16	42.12	54	-11.88	AV

Middle

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2441							
V	4882.00	53.84	-3.64	50.20	74	-23.80	PK
V	4882.00	44.62	-3.64	40.98	54	-13.02	AV
V	7323.00	54.66	-4.53	50.13	74	-23.87	PK
V	7323.00	44.89	-4.53	40.36	54	-13.64	AV
H	4882.00	54.02	-3.64	50.38	74	-23.62	PK
H	4882.00	45.84	-3.64	42.20	54	-11.80	AV
H	7323.00	55.67	-4.53	51.14	74	-22.86	PK
H	7323.00	46.87	-4.53	42.34	54	-11.66	AV

High

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
operation frequency:2479							
V	4958.00	54.28	-3.92	50.36	74	-23.64	PK
V	4958.00	45.39	-3.92	41.47	54	-12.53	AV
V	7437.00	55.06	-5.18	49.88	74	-24.12	PK
V	7437.00	45.84	-5.18	40.66	54	-13.34	AV
H	4958.00	55.76	-3.92	51.84	74	-22.16	PK
H	4958.00	46.27	-3.92	42.35	54	-11.65	AV
H	7437.00	54.89	-5.18	49.71	74	-24.29	PK
H	7437.00	45.67	-5.18	40.49	54	-13.51	AV

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Limit- Absolute Level



4. POWER SPECTRAL DENSITY TEST

4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247	Power Spectral Density	8 dBm (in any 3KHz)	2400-2483.5	PASS

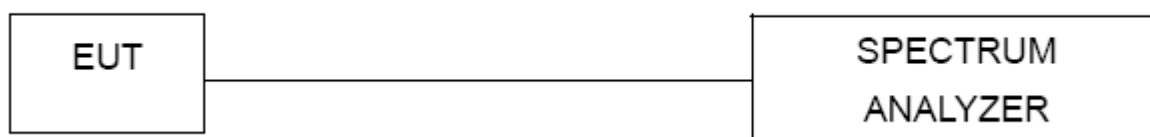
4.1.1 TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW ≥ 30 kHz.
4. Set the VBW $\geq 3 \times$ RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

4.1.2 DEVIATION FROM STANDARD

No deviation.

4.1.3 TEST SETUP



4.1.4 EUT OPERATION CONDITIONS

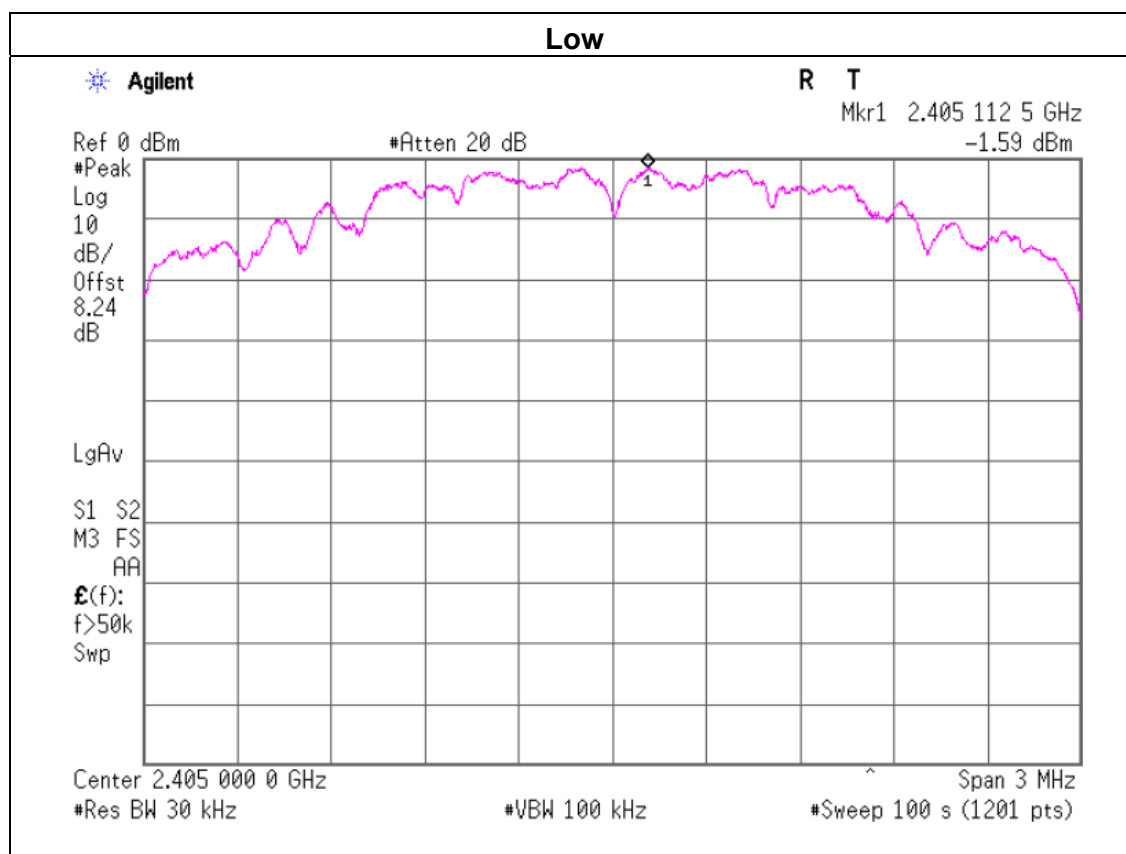
The EUT tested system was configured as the statements of 2.1 Unless otherwise a special operating condition is specified in the follows during the testing.

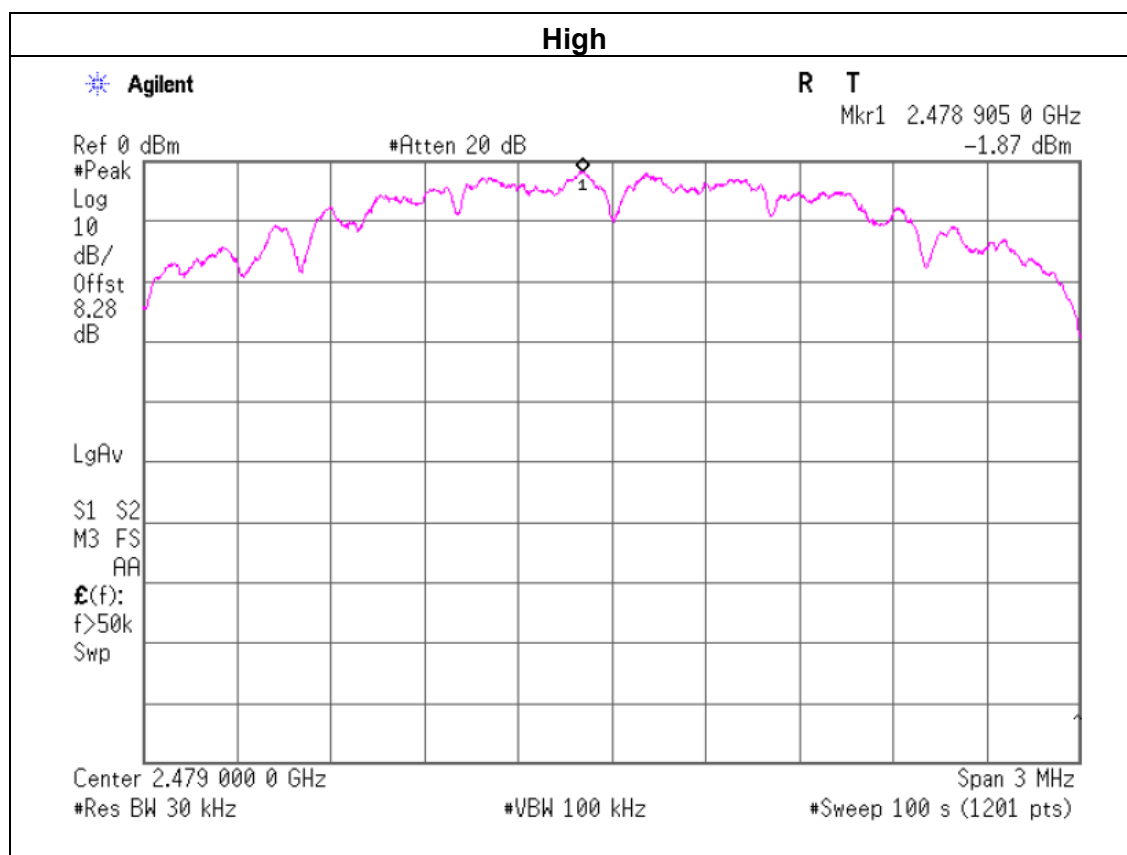
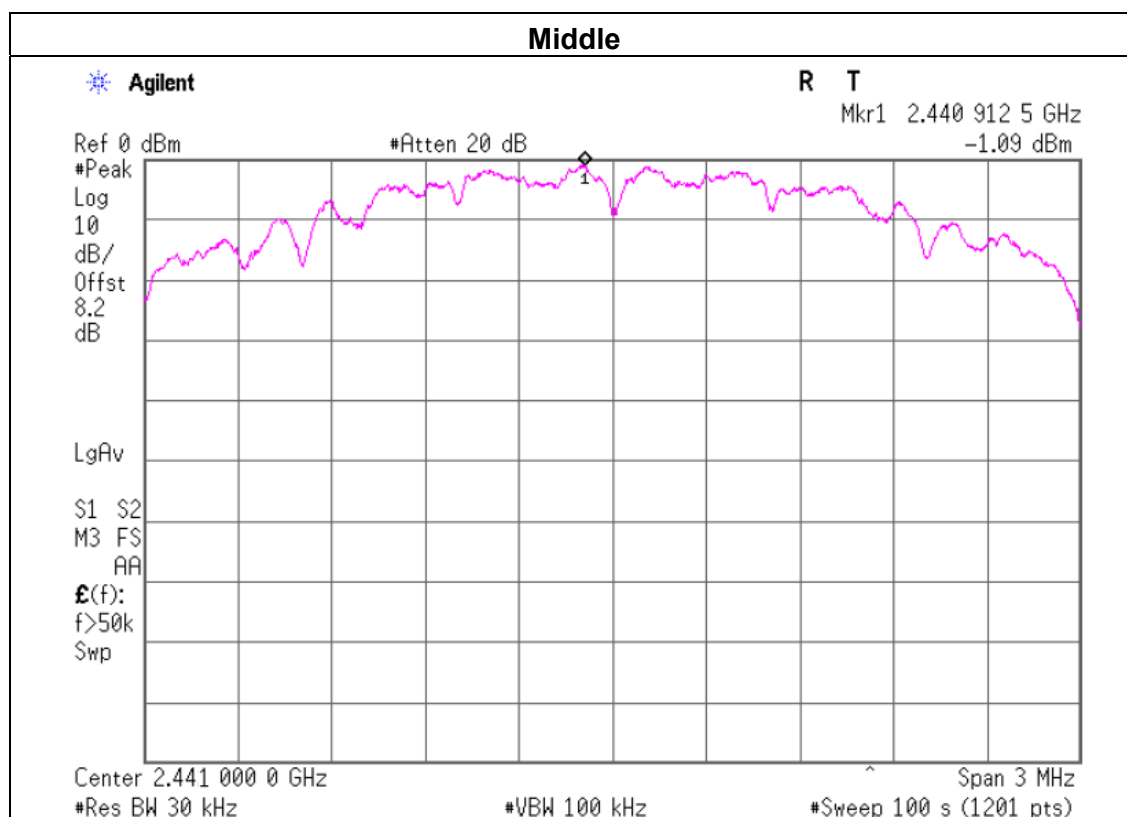


4.1.5 TEST RESULTS

EUT :	Drones/Quadcopter/uav	Model Name :	Glint
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1015 hPa	Test Voltage :	DC 7.4V
Test Mode :	TX		

Channel	Power Density (dBm)	Limit (dBm)	Result
Low	-1.59	8	PASS
Middle	-1.09	8	PASS
High	-1.87	8	PASS







5. BANDWIDTH TEST

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(a)(2)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

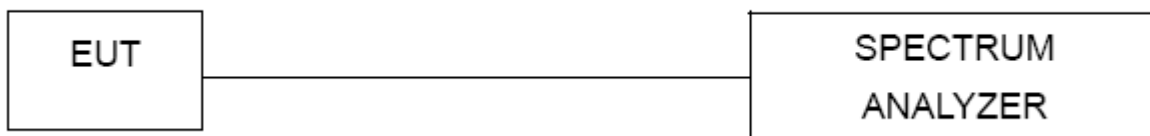
5.1.1 TEST PROCEDURE

1. Set resolution bandwidth (RBW) = 180kHz
2. Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

5.1.2 DEVIATION FROM STANDARD

No deviation.

5.1.3 TEST SETUP



5.1.4 EUT OPERATION CONDITIONS

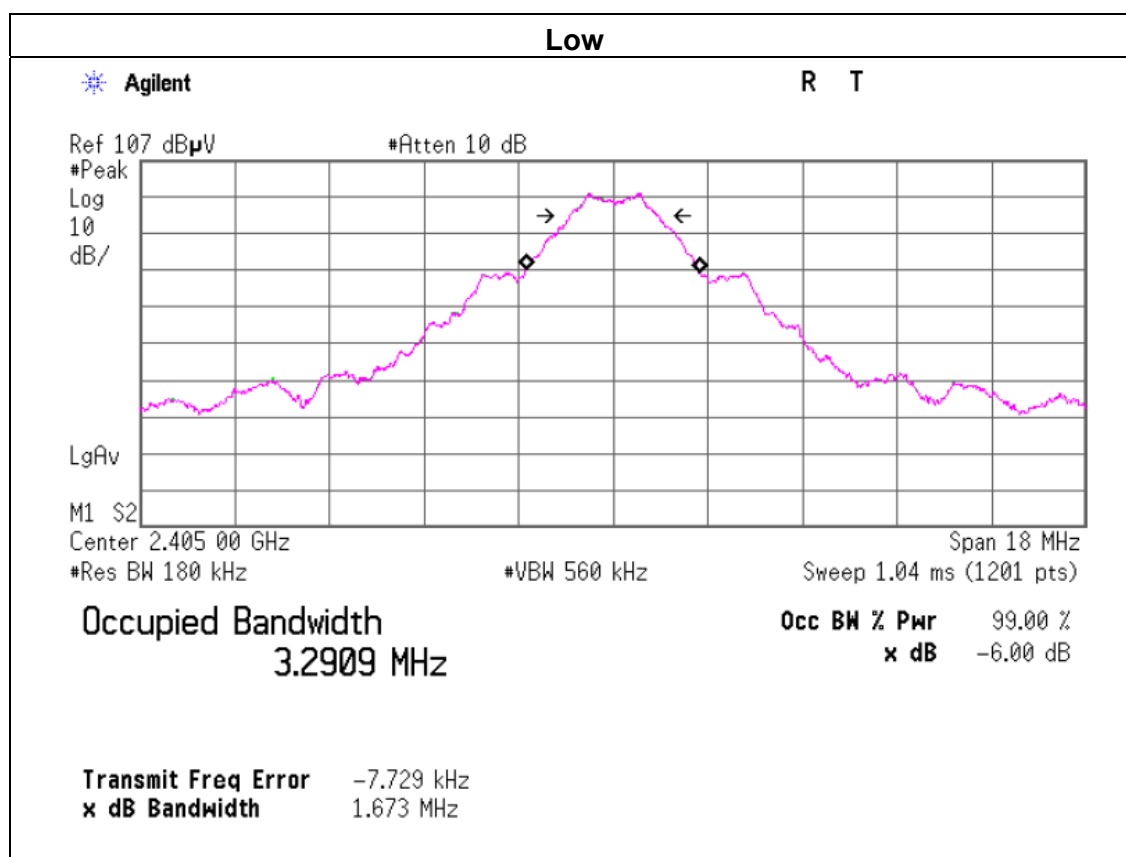
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



5.1.5 TEST RESULTS

EUT :	Drones/Quadcopter/uav	Model Name :	Glint
Temperature :	25°C	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 7.4V
Test Mode :	TX		

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2405	1.673	500	Pass
Middle	2441	1.649	500	Pass
High	2479	1.638	500	Pass



**Middle**

Agilent

R T

Ref 107 dBμV

#Atten 10 dB

#Peak

Log

10

dB/

LgAv

M1 S2

Center 2.441 000 GHz

#Res BW 180 kHz

#VBW 560 kHz

Span 18 MHz

Sweep 1.04 ms (1201 pts)

Occupied Bandwidth**3.1378 MHz****Occ BW % Pwr** 99.00 %**x dB** -6.00 dB**Transmit Freq Error** -13.560 kHz**x dB Bandwidth** 1.649 MHz**High**

Agilent

R T

Ref 107 dBμV

#Atten 10 dB

#Peak

Log

10

dB/

LgAv

M1 S2

Center 2.479 000 GHz

#Res BW 180 kHz

#VBW 560 kHz

Span 18 MHz

Sweep 1.04 ms (1201 pts)

Occupied Bandwidth**3.1073 MHz****Occ BW % Pwr** 99.00 %**x dB** -6.00 dB**Transmit Freq Error** -15.155 kHz**x dB Bandwidth** 1.638 MHz



6. PEAK OUTPUT POWER TEST

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

6.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the Power meter

6.1.2 DEVIATION FROM STANDARD

No deviation.

6.1.3 TEST SETUP



6.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

**6.1.5 TEST RESULTS**

EUT :	Drones/Quadcopter/uav	Model Name :	Glint
Temperature :	25℃	Relative Humidity :	60%
Pressure :	1012 hPa	Test Voltage :	DC 7.4V
Test Mode :	TX		

Test Channe	Frequency	Maximum Conducted Output Power(AV)	LIMIT
	(MHz)	(dBm)	dBm
Low	2405	9.42	30
Middle	2441	9.37	30
High	2479	9.41	30



7. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE

APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated 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) (see §15.205(c)).

TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters(above 1GHz, the height was 1.5m) above the ground at a 3 meter Chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m(above 1GHz, the height was 1.5m); the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Average Mode Limit, the EUT shall be deemed to meet AV Limits and then no additional AV Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

7.1 DEVIATION FROM STANDARD

No deviation.

7.2 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



7.3 TEST RESULTS

Frequency (MHz)	Antenna polarization (H/V)	Test Frequency (MHz)	Emission (dBuV/m)	Band edge Limit (dBuV/m)		Result
			PK	PK	AV	
<2400	H	2397.72	50.52	74.00	54.00	Pass
<2400	V	2395.49	50.84	74.00	54.00	Pass
>2483.5	H	2486.37	50.94	74.00	54.00	Pass
>2483.5	V	2485.61	50.23	74.00	54.00	Pass



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

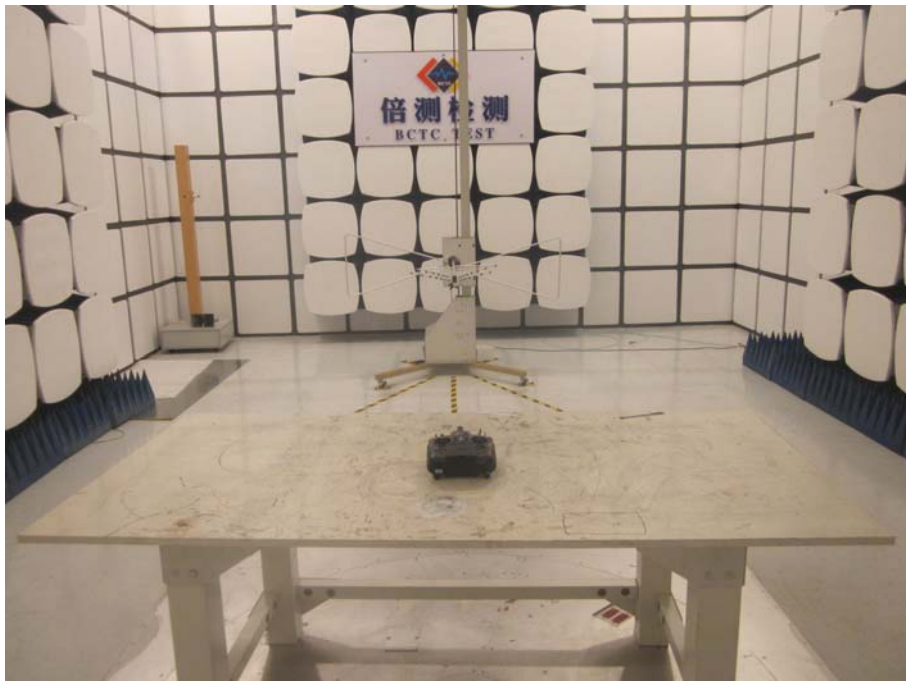
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

8.2 EUT ANTENNA

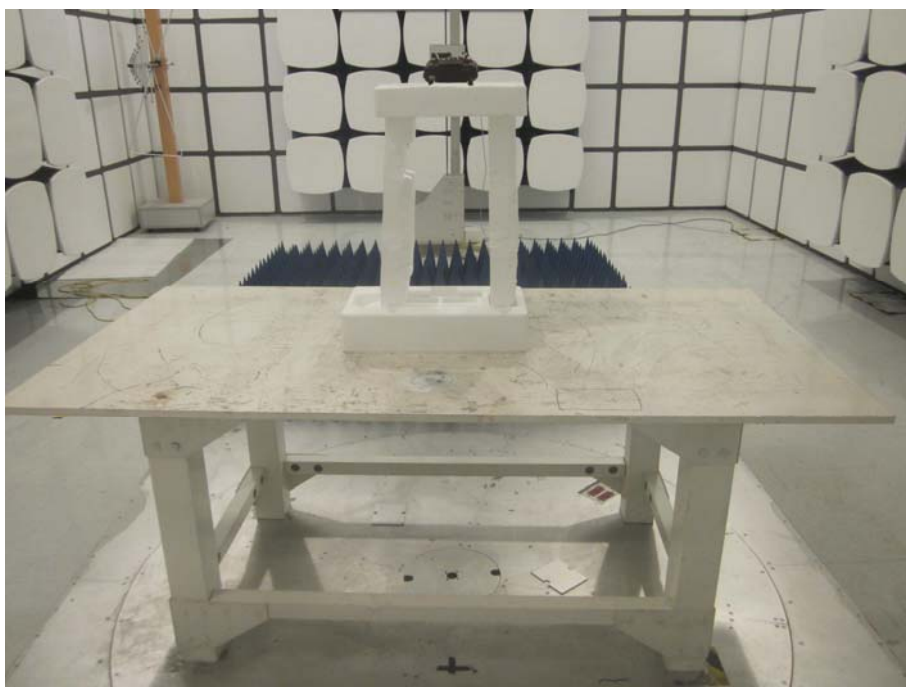
The EUT antenna is Permanently attached antenna. It comply with the standard requirement.

9. EUT TEST PHOTO

Radiated Measurement Photos



Radiated Measurement Photos





Conducted Measurement Photos

