

# TEST REPORT

**Applicant:** Quanzhou SKYDROID Technology Co., Ltd.

**Address of Applicant:** 2nd Floor, Building A, Yucheng Base, Fengze District,  
Quanzhou City, Fujian Province, China

**Manufacturer:** Quanzhou SKYDROID Technology Co., Ltd.

**Address of Manufacturer:** 2nd Floor, Building A, Yucheng Base, Fengze District,  
Quanzhou City, Fujian Province, China

**Factory:** Quanzhou SKYDROID Technology Co., Ltd.

**Address of Factory:** 2nd Floor, Building A, Yucheng Base, Fengze District,  
Quanzhou City, Fujian Province, China

**Equipment Under Test (EUT)**

Product Name: Remote control

Model No.: G20, G20Pro, G20/G20Pro,GR01

Trade Mark: SKYDROID

**FCC ID:** 2ATGZQZYSG20

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart E Section 15.407

**Date of sample receipt:** 01/15/2025

**Date of Test:** 01/15/2025~02/15/2025

**Date of report issued:** 02/19/2025

**Test Result :** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

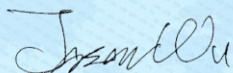
**Robinson Luo**  
**Laboratory Manager**

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## 2 Version

Version No.	Date	Description
00	02/19/2025	Original

Prepared By:



Date:

02/19/2025

Project Engineer

Check By:



Date:

02/19/2025

Reviewer

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## 4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203	Pass
AC Power Line Conducted Emission	FCC part 15.207	Pass
Maximum Conducted Output Power	FCC part 15.407(a)(3)	Pass
Channel Bandwidth and 99% Occupied Bandwidth	FCC part 15.407(e)	Pass
Power Spectral Density	FCC part 15.407(a)(3)	Pass
Band Edge	FCC part 15.407(b)(4)	Pass
Spurious Emission	FCC part 15.205/15.209/15.407(b)(4)	Pass
Frequency Stability	FCC part 15.407(g)	Pass

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10:2013.

### 4.1 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF conducted power	$\pm 0.75\text{dB}$
5	RF power density	$\pm 3\text{dB}$
6	Conducted Spurious emissions	$\pm 2.58\text{dB}$
7	AC Power Line Conducted Emission	$\pm 3.44\text{dB}$ (0.15MHz ~ 30MHz)
8	Radiated Spurious emission test	$\pm 3.1\text{dB}$ (9kHz-30MHz)
		$\pm 3.8039\text{dB}$ (30MHz-200MHz)
		$\pm 3.9679\text{dB}$ (200MHz-1GHz)
		$\pm 4.29\text{dB}$ (1GHz-18GHz)
		$\pm 3.30\text{dB}$ (18GHz-40GHz)
9	Temperature test	$\pm 1^\circ\text{C}$
10	Humidity test	$\pm 3\%$
11	Time	$\pm 3\%$

## 5 General Information

### 5.1 General Description of EUT

Product Name:	Remote control
Test Model No.:	G20
Family Model:	G20Pro, G20/G20Pro, GR01
Test sample(s) ID:	GTS2025020051-1
Sample(s) Status:	Engineer sample
S/N:	2024G20A0001
Operation Frequency:	5750~5820MHz
Channel numbers:	5
Channel bandwidth:	10/20MHz
Modulation technology:	OFDM
Antenna Type:	PIFA Antenna
Antenna gain:	ANT1/ANT2: 2.73dBi SISO/MIMO
Power supply:	AC Adapter(100~240VAC)

Remark:

1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.
3. The ANT1&ANT2 support both SISO, MIMO mode. And *ANT1+ANT2 uncorrelated* with each other, Directional gain =  $G_{ANT}$  dBi

Operation Frequency each of channel			
For 10/20 MHz bandwidth			
1	5750 MHz	3	5800 MHz
2	5780 MHz	4	5820 MHz
3			

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:

10 MHz bandwidth		20 MHz bandwidth	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
Lowest:	5750 MHz	Lowest:	5750 MHz
Middle:	5780 MHz	Middle:	5780 MHz
Highest:	5820 MHz	Highest:	5820 MHz



## 5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode <i>SRD ANT1+ANT2 uncorrelated</i> with each other, Directional gain = $G_{ANT}$ dBi
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## 5.3 Description of Support Units

ZTE WIFI Router, model P602
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## 5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>• <b>FCC —Registration No.: 381383</b> Designation Number: CN5029 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.</li> <li>• <b>ISED —Registration No.: 9079A</b> CAB identifier: CN0091 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of ISED for radio equipment testing.</li> <li>• <b>NVLAP (LAB CODE:600179-0)</b> Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).</li> </ul>
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## 5.5 Test Location

All tests were performed at:
<p>Global United Technology Services Co., Ltd. Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960</p>

## 5.6 Additional Instructions

Test Software	Special test software provided by manufacturer
Power level setup	Default

## 6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Jun. 22, 2024	Jun. 21, 2027
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Apr. 11, 2024	Apr. 10, 2025
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	Mar. 19, 2023	Mar. 18, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	Apr. 17, 2023	Apr. 16, 2025
6	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	Apr. 11, 2024	Apr. 10, 2025
7	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov.12, 2024	Nov.11, 2025
8	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	Apr. 11, 2024	Apr. 10, 2025
9	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	Apr. 11, 2024	Apr. 10, 2025
10	Horn Antenna (15GH-40GHz)	SCHWARZBECK	01296	GTS691	Mar. 07, 2024	Mar. 06, 2025
11	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	Mar. 12, 2024	Mar. 11, 2025
12	Amplifier	/	LNA-1000-30S	GTS650	Apr. 11, 2024	Apr. 10, 2025
13	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS692	Nov. 07, 2024	Nov. 06, 2025
14	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	Apr. 11, 2024	Apr. 10, 2025
15	Thermo meter	JINCHUANG	GSP-8A	GTS643	Apr. 18, 2024	Apr. 17, 2025
16	RE cable 1	GTS	N/A	GTS675	Jul. 02, 2024	Jul. 01, 2025
17	RE cable 2	GTS	N/A	GTS676	Jul. 02, 2024	Jul. 01, 2025
18	RE cable 3	GTS	N/A	GTS677	Jul. 02, 2024	Jul. 01, 2025
19	RE cable 4	GTS	N/A	GTS678	Jul. 02, 2024	Jul. 01, 2025
20	RE cable 5	GTS	N/A	GTS679	Jul. 02, 2024	Jul. 01, 2025
21	RE cable 6	GTS	N/A	GTS680	Jul. 02, 2024	Jul. 01, 2025
22	RE cable 7	GTS	N/A	GTS681	Jul. 05, 2024	Jul. 04, 2025
23	RE cable 8	GTS	N/A	GTS682	Jul. 05, 2024	Jul. 04, 2025
24	EMI Test Software	AUDIX	E3-6.100614a	GTS725	N/A	N/A



Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	Jul. 12, 2022	Jul. 11, 2027
2	EMI Test Receiver	R&S	ESCI 7	GTS552	Apr. 11, 2024	Apr. 10, 2025
3	LISN	ROHDE & SCHWARZ	ENV216	GTS226	Apr. 11, 2024	Apr. 10, 2025
4	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
5	Thermo meter	JINCHUANG	GSP-8A	GTS642	Apr. 18, 2024	Apr. 17, 2025
6	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	Apr. 11, 2024	Apr. 10, 2025
7	ISN	SCHWARZBECK	NTFM 8158	GTS565	Apr. 11, 2024	Apr. 10, 2025
8	High voltage probe	SCHWARZBECK	TK9420	GTS537	Apr. 11, 2024	Apr. 10, 2025
9	Antenna end assembly	Weinschel	1870A	GTS560	Apr. 11, 2024	Apr. 10, 2025
10	EMI Test Software	AUDIX	E3-6.100622	GTS726	N/A	N/A

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	Apr. 13, 2024	Apr. 12, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	Apr. 13, 2024	Apr. 12, 2025
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	Apr. 13, 2024	Apr. 12, 2025
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	Apr. 13, 2024	Apr. 12, 2025
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	Apr. 13, 2024	Apr. 12, 2025
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	Apr. 13, 2024	Apr. 12, 2025
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	Apr. 13, 2024	Apr. 12, 2025
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	Apr. 13, 2024	Apr. 12, 2025
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	Apr. 18, 2024	Apr. 17, 2025

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	KUMAO	SF132	GTS647	Apr. 18, 2024	Apr. 17, 2025

## 7 Test results and Measurement Data

### 7.1 Antenna requirement

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<i>15.203 requirement:</i> 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.	
<b>E.U.T Antenna:</b>	
The antenna is have a unique connector, reference to the appendix II for details	

## 7.2 Conducted Emissions

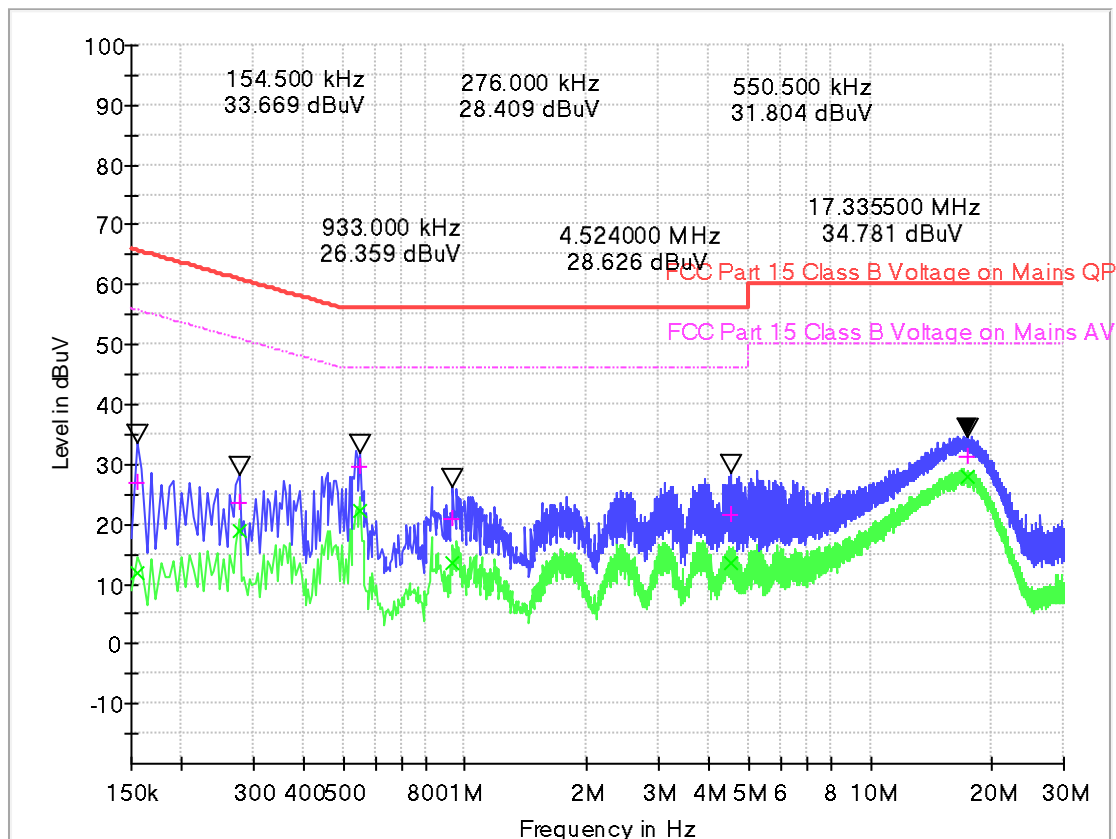
Test Requirement:	FCC Part15 C Section 15.207						
Test Method:	ANSI C63.10:2013						
Test Frequency Range:	150KHz to 30MHz						
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto						
Limit:	Frequency range (MHz)		Limit (dBuV)				
			Quasi-peak		Average		
	0.15-0.5		66 to 56*		56 to 46*		
	0.5-5		56		46		
	5-30		60		50		
* Decreases with the logarithm of the frequency.							
Test setup:	<div><p style="text-align: center;"><b>Reference Plane</b></p><p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p></div>						
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 Instruments:	Refer to section 6.0 for details						
Test mode:	Refer to section 5.2 for details						
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar	
Test voltage:	AC 120V, 60Hz						
Test results:	Pass						



## Measurement data

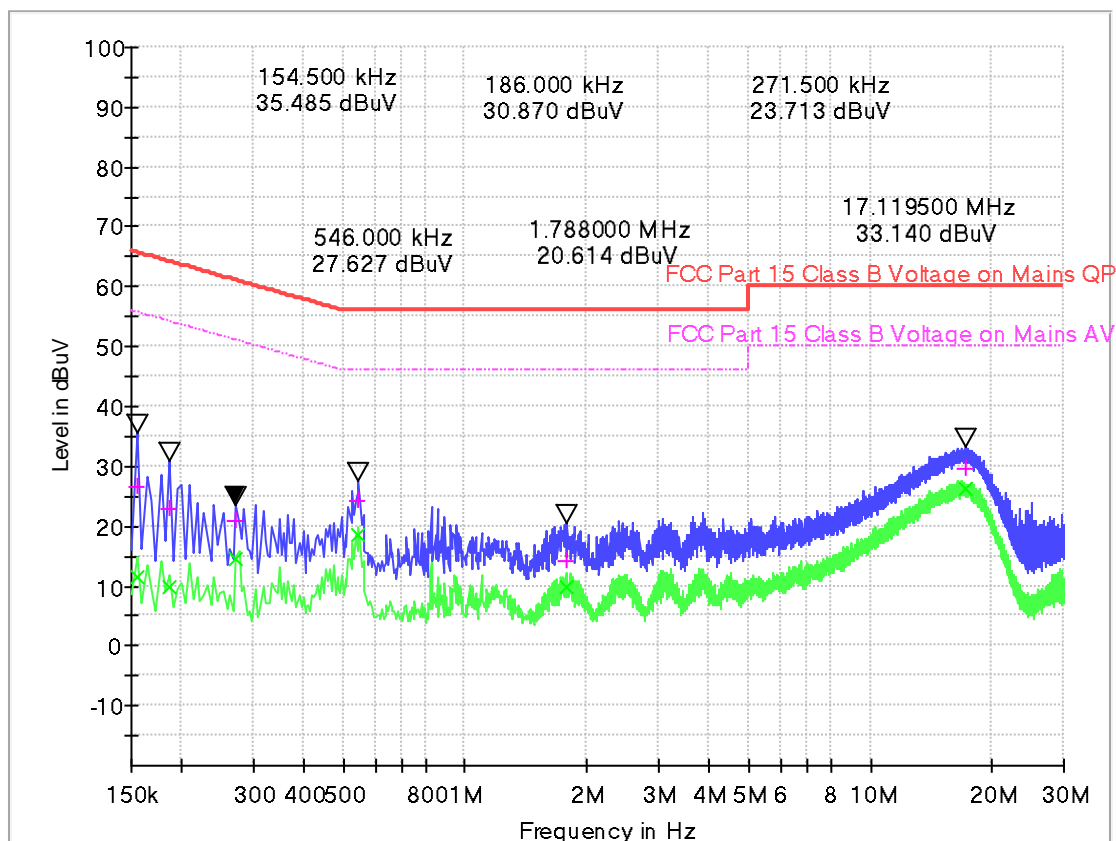
Pre-scan all test modes, found worst case at 5.8G-10M 5820MHz(Ant 2), and so only show the test result of 5.8G-10M 5820MHz(Ant 2).

Line:



Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV)	Margin - CAV (dB)	Limit - CAV (dBuV)
0.154500	27.00	11.86	10.1	38.75	65.8	43.89	55.8
0.276000	23.58	18.98	10.1	37.36	60.9	31.96	50.9
0.550500	29.52	22.20	10.1	26.48	56.0	23.80	46.0
0.933000	20.97	13.63	10.2	35.03	56.0	32.37	46.0
4.524000	21.63	13.45	10.5	34.37	56.0	32.55	46.0
17.335500	31.33	27.82	10.5	28.67	60.0	22.18	50.0

## Neutral:

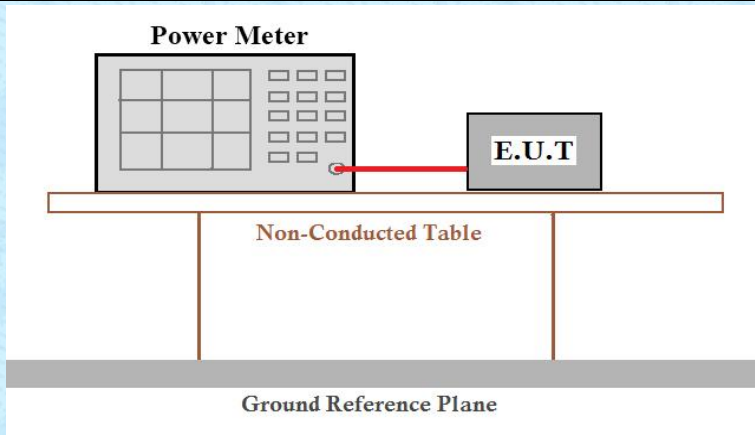


Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Corr. (dB)	Margin - QPK (dB)	Limit - QPK (dBuV)	Margin - CAV (dB)	Limit - CAV (dBuV)
0.154500	26.65	11.40	10.1	39.10	65.8	44.35	55.8
0.186000	23.05	9.86	10.1	41.16	64.2	44.35	54.2
0.271500	20.95	14.63	10.1	40.12	61.1	36.44	51.1
0.546000	24.36	18.38	10.1	31.64	56.0	27.62	46.0
1.788000	14.34	9.90	10.2	41.66	56.0	36.10	46.0
17.119500	29.66	26.15	10.5	30.34	60.0	23.85	50.0

### Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

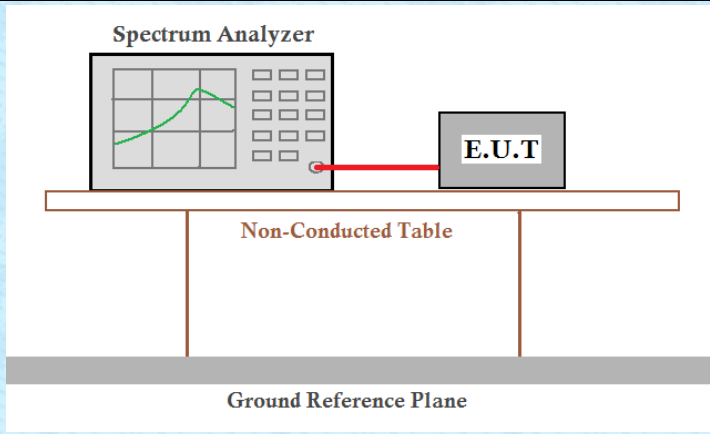
## 7.3 Maximum Conducted Output Power

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm
Duty Cycle set up:	RBW=1M, VBW=3MHz
Test setup:	 <p>The diagram illustrates the test setup. A 'Power Meter' is connected to an 'E.U.T' (Equipment Under Test) by a red cable. Both the Power Meter and the E.U.T are positioned on a 'Non-Conducted Table'. This table is supported by a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data:** The detailed test data see Appendix for FCC 5.8G-10M and FCC 5.8G-20M.

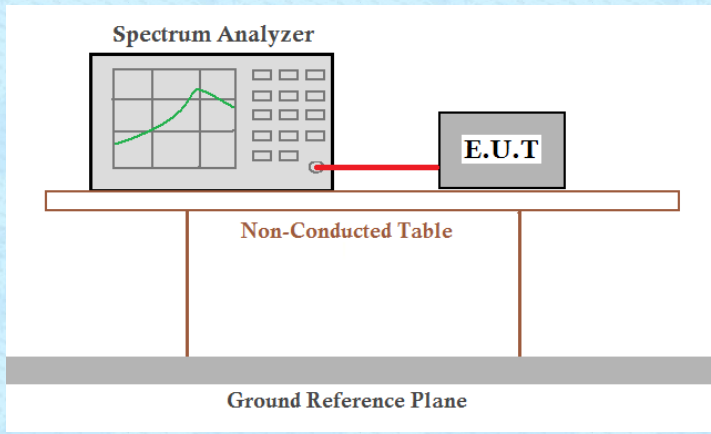


## 7.4 Channel Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	>500KHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data:** The detailed test data see Appendix for FCC 5.8G-10M and FCC 5.8G-20M.

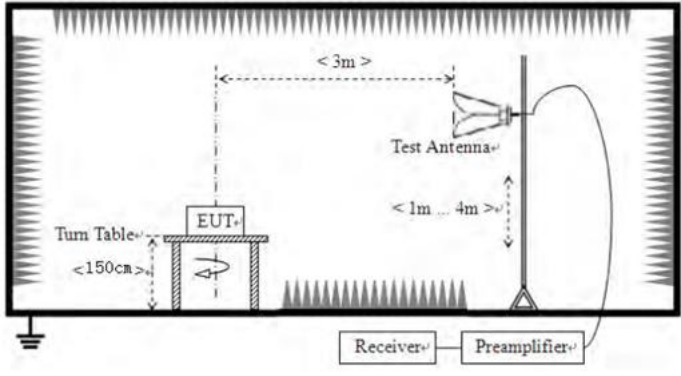
## 7.5 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 and KDB 789033 D02 General U-NII Test Procedures New Rules v02r01
Limit:	30dBm/500kHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data:** The detailed test data see Appendix for FCC 5.8G-10M and FCC 5.8G-20M.

## 7.6 Band edge

### 7.6.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	9kHz to 40GHz, only worse case is reported				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
		RMS	1MHz	3MHz	RMS
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.				
Test setup:					
Test Procedure:	<ol style="list-style-type: none"> <li>1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>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.</li> <li>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 the measurement.</li> <li>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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> <li>7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test</li> </ol>				



	worst case mode is recorded in the report.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

## Remarks:

1. *Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*
3. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
4. *All antennas were tested and passed, only an1 report*
5. *According to KDB 789033 D02v02r01 section G) 1) d), for measurements above 1000 MHz @3m distance, the limit of field strength is computed as follows:*  

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$

$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$

$$E[\text{dBuV/m}] = 10 + 95.2 = 105.2\text{dBuV/m}.$$

$$E[\text{dBuV/m}] = 15.6 + 95.2 = 110.8\text{dBuV/m}.$$

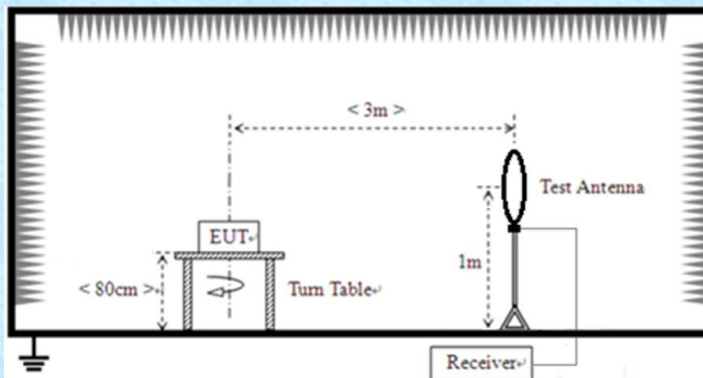
$$E[\text{dBuV/m}] = 27 + 95.2 = 122.2\text{dBuV/m}$$

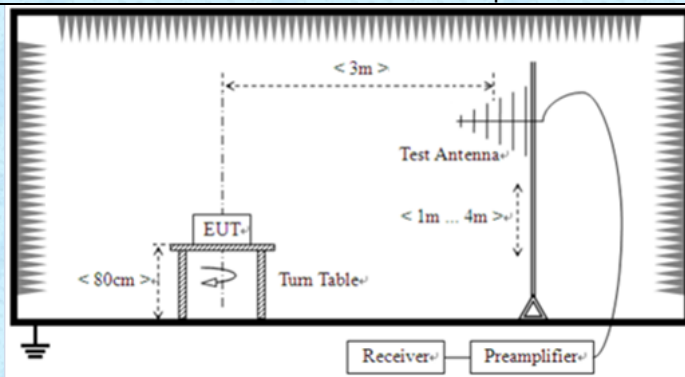
## Measurement data:

Detailed test data can be found in Section 7.7.

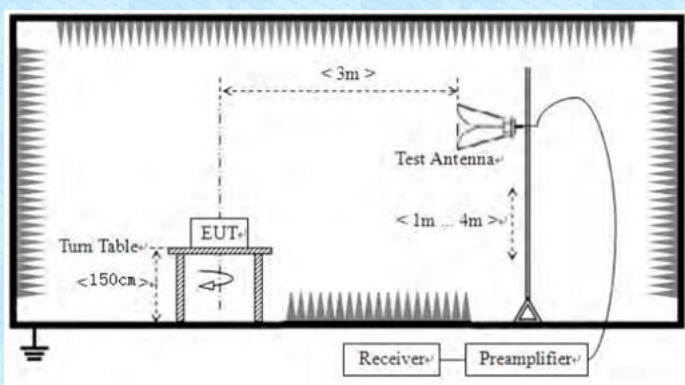
## 7.7 Spurious Emission

### 7.7.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)																												
Test Method:	ANSI C63.10:2013																												
Test Frequency Range:	9kHz to 40GHz																												
Test site:	Measurement Distance: 3m																												
Receiver setup:	Frequency	Detector	RBW	VBW	Value																								
	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																								
		AV	1MHz	3MHz	Average Value																								
Note: For Duty cycle ≥ 98%, average detector set as above For Duty cycle < 98%, average detector set as below: VBW ≥ 1 / T																													
Limit:	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100**</td><td>3</td></tr><tr><td>88-216</td><td>150**</td><td>3</td></tr><tr><td>216-960</td><td>200**</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table>					Frequency (MHz)	Field strength (microvolts/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
	Frequency (MHz)	Field strength (microvolts/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																										
	The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.																												
Test setup:	For radiated emissions from 9kHz to 30MHz																												
																													
For radiated emissions from 30MHz to1GHz																													



For radiated emissions above 1GHz



## Test Procedure:

1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.
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.
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 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 rota 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.
7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.



Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

*Remarks:*

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

**Measurement Data:**

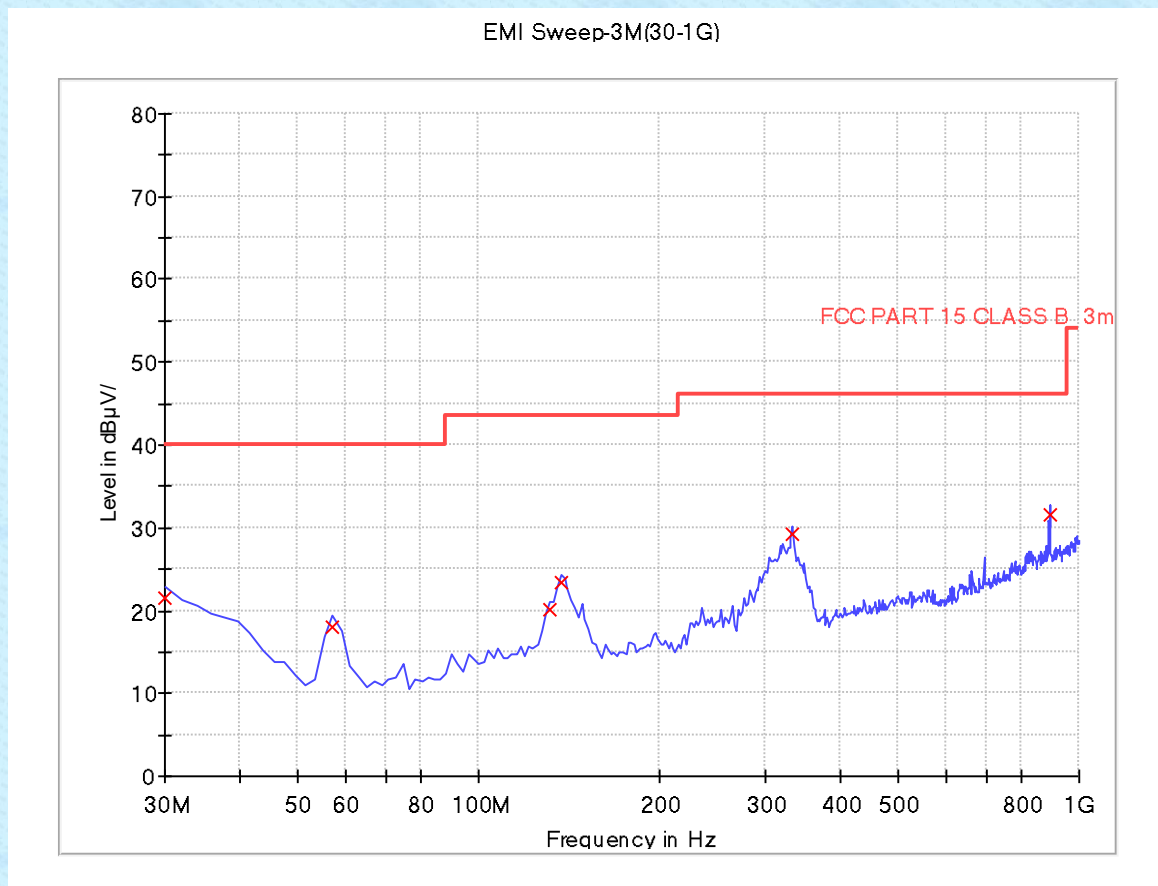
**9 kHz ~ 30 MHz**

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

## Below 1GHz

Pre-scan all test modes, found worst case at 5.8G-10M 5820MHz(Ant 2), and so only show the test result of 5.8G-10M 5820MHz(Ant 2).

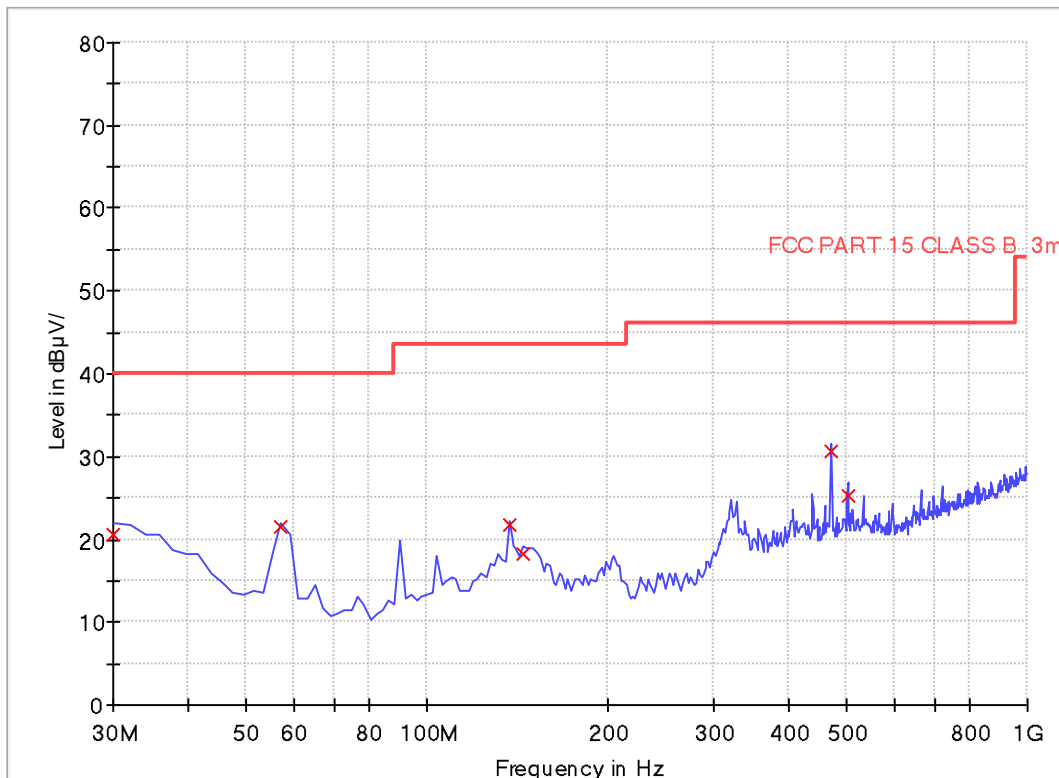
### Horizontal:



Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
30.000000	21.47	1000.	120.000	100.0	V	140.0	21.1	18.53	40.0
57.200000	18.08	1000.	120.000	100.0	V	137.0	8.0	21.92	40.0
131.080000	20.23	1000.	120.000	100.0	V	20.0	13.6	23.27	43.5
136.920000	23.50	1000.	120.000	100.0	V	119.0	13.8	20.00	43.5
333.240000	29.34	1000.	120.000	100.0	V	257.0	17.1	16.66	46.0
895.040000	31.58	1000.	120.000	100.0	V	321.0	24.3	14.42	46.0

Vertical:

EMI Sweep-3M(30-1G)



Frequency (MHz)	QuasiPeak (dBμV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Margin - QPK (dB)	Limit - QPK (dBμV/m)
30.000000	20.47	1000.	120.000	100.0	V	12.0	21.1	19.53	40.0
57.200000	21.51	1000.	120.000	100.0	V	297.0	8.0	18.49	40.0
136.920000	21.71	1000.	120.000	100.0	V	87.0	13.8	21.79	43.5
144.680000	18.17	1000.	120.000	100.0	V	147.0	13.8	25.33	43.5
471.280000	30.68	1000.	120.000	100.0	V	101.0	19.7	15.32	46.0
502.360000	25.28	1000.	120.000	100.0	V	331.0	20.2	20.72	46.0



## Above 1GHz:

5.8G 10M_5750MHz-Ant 2									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5750.00	50.17	122.20	-72.03	1.50	200	48.87	1.30	Horizontal	Peak
11500.00	54.23	68.20	-13.97	1.50	200	42.68	11.55	Horizontal	Peak
11500.00	44.93	54.00	-9.07	1.50	200	33.38	11.55	Horizontal	Average
5650.00	50.17	68.20	-18.03	1.50	180	49.37	0.80	Vertical	Peak
5700.00	51.01	105.20	-54.19	1.50	180	49.77	1.24	Vertical	Peak
5720.00	51.83	110.80	-58.97	1.50	180	50.55	1.28	Vertical	Peak
5750.00	51.84	122.20	-70.36	1.50	180	50.54	1.30	Vertical	Peak
11500.00	56.30	68.20	-11.90	1.50	180	44.75	11.55	Vertical	Peak
11500.00	46.30	54.00	-7.70	1.50	180	34.75	11.55	Vertical	Average
5.8G 10M_5820MHz-Ant 2									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5820.00	50.64	122.20	-71.56	1.50	200	48.82	1.82	Horizontal	Peak
5925.00	53.65	68.20	-14.55	1.50	200	51.53	2.12	Horizontal	Peak
11640.00	55.39	68.20	-12.81	1.50	200	43.75	11.64	Horizontal	Peak
11640.00	45.77	54.00	-8.23	1.50	200	34.13	11.64	Horizontal	Average
5820.00	50.57	122.20	-71.63	1.50	180	48.75	1.82	Vertical	Peak
5925.00	51.41	68.20	-16.79	1.50	180	49.29	2.12	Vertical	Peak
11640.00	56.52	68.20	-11.68	1.50	180	44.88	11.64	Vertical	Peak
11640.00	45.81	54.00	-8.19	1.50	180	34.17	11.64	Vertical	Average

5.8G 20M_5750MHz-Ant 2									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5750.00	50.46	122.20	-71.74	1.50	200	49.16	1.30	Horizontal	Peak
11500.00	54.62	68.20	-13.58	1.50	200	43.07	11.55	Horizontal	Peak
11500.00	45.06	54.00	-8.94	1.50	200	33.51	11.55	Horizontal	Average
5650.00	50.49	68.20	-17.71	1.50	180	49.69	0.80	Vertical	Peak
5700.00	50.97	105.20	-54.23	1.50	180	49.73	1.24	Vertical	Peak
5720.00	51.37	110.80	-59.43	1.50	180	50.09	1.28	Vertical	Peak
5725.00	52.33	122.20	-69.87	1.50	180	51.03	1.30	Vertical	Peak
11500.00	56.45	68.20	-11.75	1.50	180	44.90	11.55	Vertical	Peak
11500.00	45.65	54.00	-8.35	1.50	180	34.10	11.55	Vertical	Average
5.8G 20M_5820MHz-Ant 2									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5820.00	51.70	122.20	-70.50	1.50	200	49.88	1.82	Horizontal	Peak
5925.00	53.10	68.20	-15.10	1.50	200	50.98	2.12	Horizontal	Peak
11640.00	54.80	68.20	-13.40	1.50	200	43.16	11.64	Horizontal	Peak
11640.00	45.45	54.00	-8.55	1.50	200	33.81	11.64	Horizontal	Average
5820.00	50.84	122.20	-71.36	1.50	180	49.02	1.82	Vertical	Peak
5925.00	51.18	68.20	-17.02	1.50	180	49.06	2.12	Vertical	Peak
11640.00	56.70	68.20	-11.50	1.50	180	45.06	11.64	Vertical	Peak
11640.00	45.58	54.00	-8.42	1.50	180	33.94	11.64	Vertical	Average

5.8G 10M_5750MHz-MIMO									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5750.00	49.93	122.20	-72.27	1.50	200	48.63	1.30	Horizontal	Peak
11500.00	54.24	68.20	-13.96	1.50	200	42.69	11.55	Horizontal	Peak
11500.00	45.29	54.00	-8.71	1.50	200	33.74	11.55	Horizontal	Average
5650.00	49.97	68.20	-18.23	1.50	180	49.17	0.80	Vertical	Peak
5700.00	51.44	105.20	-53.76	1.50	180	50.20	1.24	Vertical	Peak
5720.00	51.39	110.80	-59.41	1.50	180	50.11	1.28	Vertical	Peak
5750.00	52.00	122.20	-70.20	1.50	180	50.70	1.30	Vertical	Peak
11500.00	55.97	68.20	-12.23	1.50	180	44.42	11.55	Vertical	Peak
11500.00	46.45	54.00	-7.55	1.50	180	34.90	11.55	Vertical	Average
5.8G 10M_5820MHz-MIMO									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5820.00	50.68	122.20	-71.52	1.50	200	48.86	1.82	Horizontal	Peak
5925.00	53.44	68.20	-14.76	1.50	200	51.32	2.12	Horizontal	Peak
11640.00	55.27	68.20	-12.93	1.50	200	43.63	11.64	Horizontal	Peak
11640.00	45.36	54.00	-8.64	1.50	200	33.72	11.64	Horizontal	Average
5820.00	50.28	122.20	-71.92	1.50	180	48.46	1.82	Vertical	Peak
5925.00	51.75	68.20	-16.45	1.50	180	49.63	2.12	Vertical	Peak
11640.00	56.26	68.20	-11.94	1.50	180	44.62	11.64	Vertical	Peak
11640.00	46.26	54.00	-7.74	1.50	180	34.62	11.64	Vertical	Average

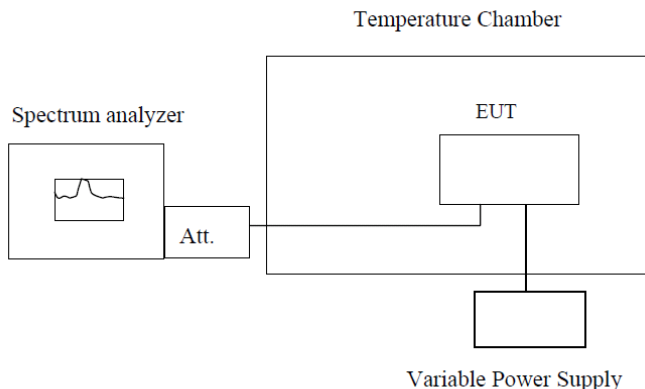


5.8G 20M_5750MHz-MIMO									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5750.00	50.85	122.20	-71.35	1.50	200	49.55	1.30	Horizontal	Peak
11500.00	54.87	68.20	-13.33	1.50	200	43.32	11.55	Horizontal	Peak
11500.00	45.36	54.00	-8.64	1.50	200	33.81	11.55	Horizontal	Average
5650.00	50.12	68.20	-18.08	1.50	180	49.32	0.80	Vertical	Peak
5700.00	51.34	105.20	-53.86	1.50	180	50.10	1.24	Vertical	Peak
5720.00	51.05	110.80	-59.75	1.50	180	49.77	1.28	Vertical	Peak
5725.00	52.59	122.20	-69.61	1.50	180	51.29	1.30	Vertical	Peak
11500.00	56.17	68.20	-12.03	1.50	180	44.62	11.55	Vertical	Peak
11500.00	45.28	54.00	-8.72	1.50	180	33.73	11.55	Vertical	Average
5.8G 20M_5820MHz-MIMO									
Fre. (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Correction Factor (dB/m)	Polarity	Detector
5820.00	51.59	122.20	-70.61	1.50	200	49.77	1.82	Horizontal	Peak
5925.00	53.54	68.20	-14.66	1.50	200	51.42	2.12	Horizontal	Peak
11640.00	54.33	68.20	-13.87	1.50	200	42.69	11.64	Horizontal	Peak
11640.00	45.69	54.00	-8.31	1.50	200	34.05	11.64	Horizontal	Average
5820.00	50.93	122.20	-71.27	1.50	180	49.11	1.82	Vertical	Peak
5925.00	51.54	68.20	-16.66	1.50	180	49.42	2.12	Vertical	Peak
11640.00	56.64	68.20	-11.56	1.50	180	45.00	11.64	Vertical	Peak
11640.00	45.76	54.00	-8.24	1.50	180	34.12	11.64	Vertical	Average

## Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) - Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. Only the antenna height (from 1m to 4m) and turntable angle (from 0 degrees to 360 degrees) at maximum reading are recorded.
6. For 1GHz to 18GHz, Only worst-case data is reported.
7. For above 18GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

## 7.8 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 <p><b>Note :</b> Measurement setup for testing on Antenna connector</p>
Test Instruments:	Refer to section 6 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

**Measurement Data:** The detailed test data see Appendix for FCC 5.8G-10M and FCC 5.8G-20M.

## 8 Test Setup Photo

Reference to the **appendix I** for details.

## 9 EUT Constructional Details

Reference to the **appendix II** for details.

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