

# TEST REPORT

**Application No.:** SZCR2412004600AT  
**Applicant:** Fujian Newland Payment Technology Co.,Ltd.  
**Address of Applicant:** No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China  
**Manufacturer:** Fujian Newland Payment Technology Co.,Ltd.  
**Address of Manufacturer:** No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China  
**Equipment Under Test (EUT):**  
**EUT Description:** Unattended Terminal  
**Model No.:** U2000  
**Trade Mark:** Newland  
**FCC ID:** 2AM6U-U2000  
**Standard(s) :** 47 CFR Part 15, Subpart C 15.249  
**Date of Receipt:** 2024-12-06  
**Date of Test:** 2024-12-23 to 2025-01-08  
**Date of Issue:** 2025-01-14

<b>Test Result:</b>	<b>Pass*</b>
---------------------	--------------

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



Keny Xu  
EMC Laboratory Manager



## SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-01-14		Original

Authorized for issue by:				
		Donjon Huang		
		Donjon Huang/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



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## 2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.249	N/A	47 CFR Part 15, Subpart C 15.203	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Field Strength of the Fundamental Signal (15.249(a))		ANSI C63.10 (2013) Section 6.5&6.6	47 CFR Part 15, Subpart C 15.249(a)	Pass
Restricted Band Around Fundamental Frequency		ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.249(d) & 15.209	Pass
Radiated Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass
Radiated Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass



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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC 12V from internal rechargeable battery which can be charge by AC/DC adapter Adapter model: ADS-25SGP-12
Operation Frequency:	5800MHz to 5870MHz
Modulation Type:	GFSK
Number of Channels:	3
Antenna Type:	Integral Antenna
Antenna Gain:	3.00dBi
Cable Loss (for RF conducted test):	2dB

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

EUT 1	HDMI is not supported
EUT 2	HDMI is supported

Operation Frequency each of channel	
Channel	Frequency(MHz)
1	5807
2	5848.6
3	5865.6

### 4.2 Environment Parameter

Environment Parameter	1020 mbar Selected Values During Tests	
Relative Humidity	44.5-58.9 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	20~25	24
LTLV	-20	12
LTHV	-20	48
HTLV	70	12
HTHV	70	48

Note:

NV: Normal Voltage

LV: Low Extreme Test Voltage

HV: High Extreme Test Voltage

NT: Normal Temperature

LT: Low Extreme Test Temperature

HT: High Extreme Test Temperature



## 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 3.1\text{dB}$
Field Strength of the Fundamental Signal (15.249(a))	$\pm 4.5\text{dB}$ (Below 1GHz); $\pm 4.8\text{dB}$ (Above 1GHz)
Restricted Band Around Fundamental Frequency	$\pm 6.0\text{dB}$ (Below 1GHz); $\pm 4.6\text{dB}$ (Above 1GHz)
Radiated Emissions Below 1GHz	$\pm 6.0\text{dB}$ for 3m; $\pm 5.0\text{dB}$ for 10m
Radiated Emissions Above 1GHz	$\pm 4.6\text{dB}$ (1GHz-18GHz); $\pm 4.8\text{dB}$ (18MHz-40GHz)
20dB Bandwidth	$\pm 3\%$
<p>Remark:</p> <p>The <math>U_{\text{lab}}</math> (lab Uncertainty) is less than <math>U_{\text{CISPR/ETSI}}</math> (CISPR/ETSI Uncertainty), so the test results</p> <ul style="list-style-type: none"> <li>– compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;</li> <li>– non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.</li> </ul>	

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### 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

### 4.5 Test Facility

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

#### • A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

#### • VCCI (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

#### • FCC –Designation Number: CN1336

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1336. Test Firm Registration Number: 787754.

#### • Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

### 4.6 Deviation from Standards

None

### 4.7 Abnormalities from Standard Conditions

None



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## 5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2022-05-14	2025-05-13
EMI Test Receiver	Rohde&Schwarz	ESR	SZ-WRG-M-047	2024-01-30	2025-01-29
Measurement Software	AUDIX	e3 V8.2014-6-27a	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2024-07-06	2025-07-05
LISN	Rohde&Schwarz	ENV216	SEM007-01	2024-08-15	2025-08-14
LISN	ETS-LINDGREN	3816/2	SEM007-02	2024-03-14	2025-03-13

Field Strength of the Fundamental Signal (15.249(a))					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05

Restricted Band Around Fundamental Frequency					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2024-08-10	2025-08-09
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2024-03-15	2025-03-14





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Radiated Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2024-03-26	2025-03-25
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2024-08-14	2025-08-13
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2023-09-23	2025-09-22
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2024-03-27	2025-03-26
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2024-07-06	2025-07-05

Radiated Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
3m Fully-Anechoic Chamber	AUDIX	N/A	SEM001-02	2024-05-11	2027-05-10
Signal Analyzer	Rohde & Schwarz	FSV40	SEM008-04	2024-03-15	2025-03-14
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2023-07-23	2025-07-22
Microwave system amplifier	Agilent	83017A	SEM005-25	2024-09-14	2025-09-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2024-07-06	2025-07-05
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2024-08-10	2025-08-09
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2024-03-15	2025-03-14



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RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-14	2025-03-13
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-27	2025-03-26
Programmable Temperature & Humidity Chamber	Votsch Industrietechnik GmbH	VT 4002	SEM002-15	2024-03-19	2025-03-18

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17



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## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

#### 6.1.2 Conclusion

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is a Integrated Antenna, and the connection port is fixed with glue, and the antenna cannot be replaced.

5800MHz to 5870MHz: 3dBi;\*

*\*Note:*

*The antenna gain are derived from the gain information report provided by the manufacturer.*

*Remark:*

*As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.*





## 7 Radio Spectrum Matter Test Results

### 7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	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.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

#### 7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.5 °C

Humidity: 44.5 % RH

Atmospheric Pressure: 1020 mbar

#### 7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	18	Charge + TX mode_Keep the EUT1 in charging and transmitting with modulation mode.
Final test	19	Charge + TX mode_Keep the EUT2 in charging and transmitting with modulation mode.





### 7.1.3 Test Setup Diagram



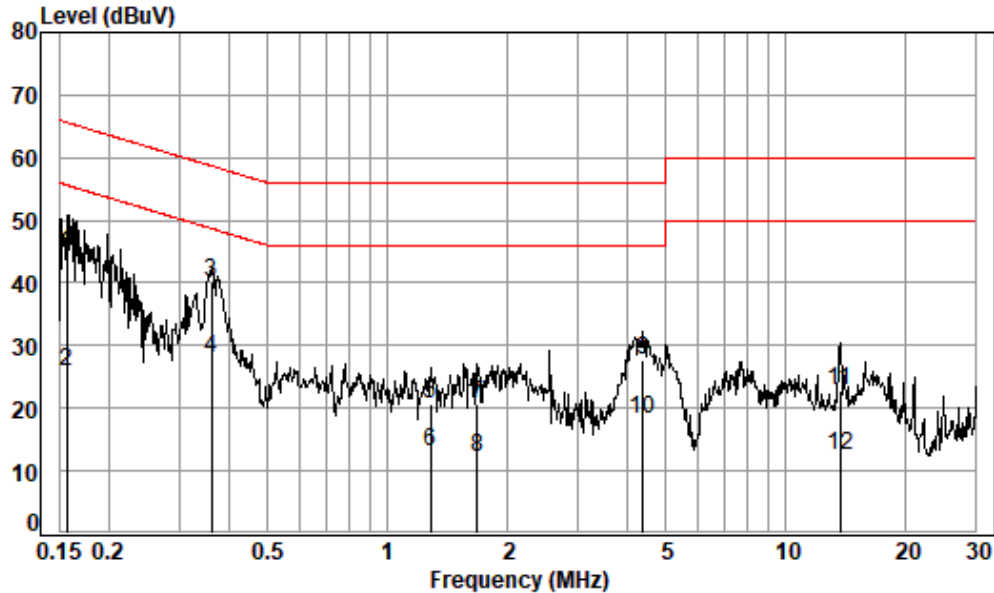
### 7.1.4 Measurement Procedure and Data

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50μH + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
- 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
- 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
- 5) 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 on conducted measurement.

Remark: Level=Read Level+ Cable Loss+ LISN Factor



Test Mode: 18; Line: Live line

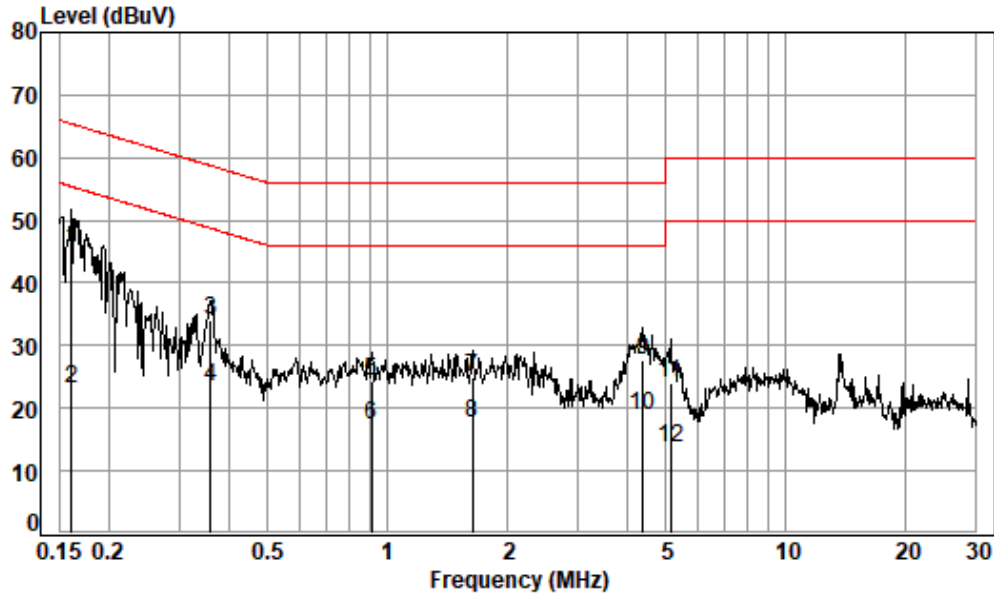


Site : Shielding Room  
Condition: Line  
Job No. : 04600AT  
Test mode: 18

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1573	0.06	10.18	34.61	44.85	65.60	-20.75	QP
2	0.1573	0.06	10.18	15.61	25.85	55.60	-29.75	Average
3 *	0.3615	0.07	9.74	30.24	40.05	58.69	-18.64	QP
4 *	0.3615	0.07	9.74	18.30	28.11	48.69	-20.58	Average
5	1.2824	0.09	9.58	11.09	20.76	56.00	-35.24	QP
6	1.2824	0.09	9.58	3.31	12.98	46.00	-33.02	Average
7	1.6802	0.10	9.58	11.03	20.71	56.00	-35.29	QP
8	1.6802	0.10	9.58	2.50	12.18	46.00	-33.82	Average
9	4.3838	0.12	9.66	17.88	27.66	56.00	-28.34	QP
10	4.3838	0.12	9.66	8.62	18.40	46.00	-27.60	Average
11	13.6228	0.25	9.87	12.78	22.90	60.00	-37.10	QP
12	13.6228	0.25	9.87	2.34	12.46	50.00	-37.54	Average



Test Mode: 18; Line: Neutral Line

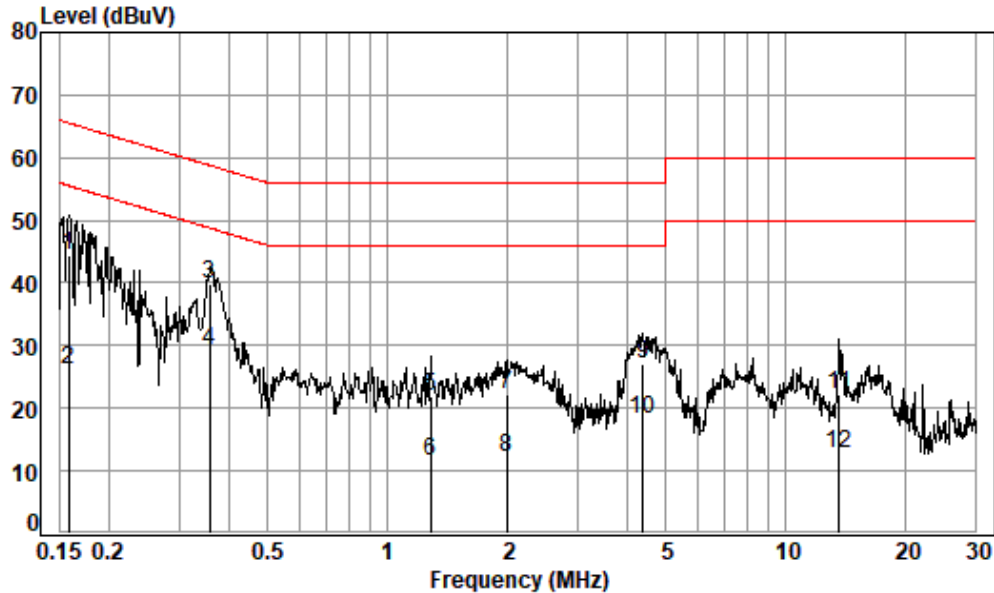


Site : Shielding Room  
Condition: Neutral  
Job No. : 04600AT  
Test mode: 18

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 *	0.1615	0.06	10.13	35.07	45.26	65.38	-20.12	QP
2	0.1615	0.06	10.13	12.88	23.07	55.38	-32.31	Average
3	0.3596	0.07	9.75	24.30	34.12	58.74	-24.62	QP
4 *	0.3596	0.07	9.75	13.56	23.38	48.74	-25.36	Average
5	0.9136	0.09	9.57	14.68	24.34	56.00	-31.66	QP
6	0.9136	0.09	9.57	7.66	17.32	46.00	-28.68	Average
7	1.6363	0.10	9.55	15.23	24.88	56.00	-31.12	QP
8	1.6363	0.10	9.55	8.12	17.77	46.00	-28.23	Average
9	4.3838	0.12	9.55	18.03	27.70	56.00	-28.30	QP
10	4.3838	0.12	9.55	9.12	18.79	46.00	-27.21	Average
11	5.1390	0.12	9.57	14.39	24.08	60.00	-35.92	QP
12	5.1390	0.12	9.57	4.04	13.73	50.00	-36.27	Average



Test Mode: 19; Line: Live line



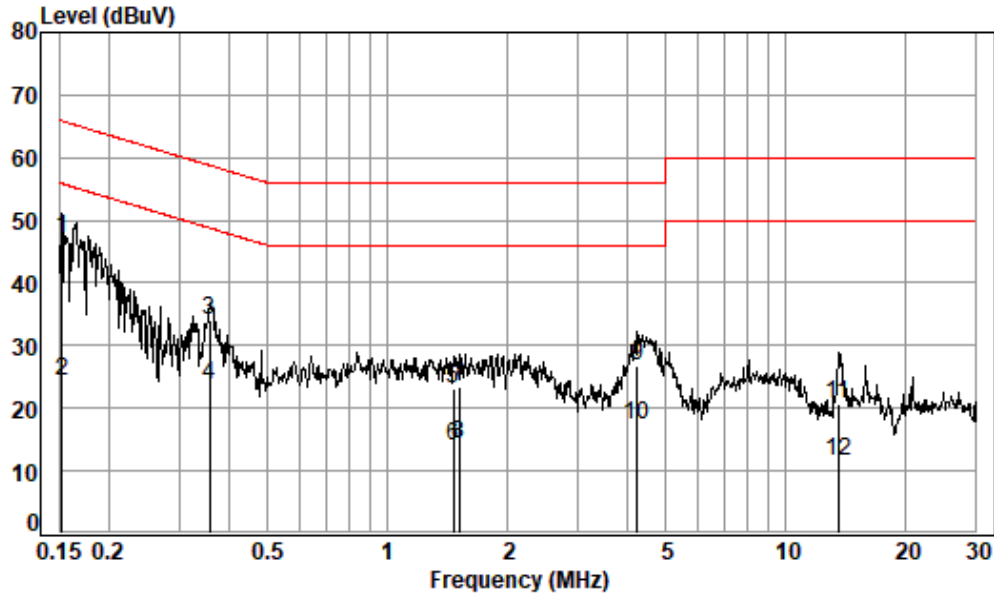
Site : Shielding Room  
Condition: Line  
Job No. : 04600AT  
Test mode: 19

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1590	0.06	10.18	34.31	44.55	65.52	-20.97	QP
2	0.1590	0.06	10.18	15.80	26.04	55.52	-29.48	Average
3 *	0.3577	0.07	9.74	29.93	39.74	58.78	-19.04	QP
4 *	0.3577	0.07	9.74	19.34	29.15	48.78	-19.63	Average
5	1.2824	0.09	9.58	12.30	21.97	56.00	-34.03	QP
6	1.2824	0.09	9.58	2.01	11.68	46.00	-34.32	Average
7	1.9906	0.10	9.58	12.66	22.34	56.00	-33.66	QP
8	1.9906	0.10	9.58	2.40	12.08	46.00	-33.92	Average
9	4.3606	0.12	9.66	17.36	27.14	56.00	-28.86	QP
10	4.3606	0.12	9.66	8.34	18.12	46.00	-27.88	Average
11	13.5509	0.24	9.86	12.14	22.24	60.00	-37.76	QP
12	13.5509	0.24	9.86	2.57	12.67	50.00	-37.33	Average





Test Mode: 19; Line: Neutral Line



Site : Shielding Room  
Condition: Neutral  
Job No. : 04600AT  
Test mode: 19

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 *	0.1524	0.06	10.15	36.84	47.05	65.87	-18.82	QP
2	0.1524	0.06	10.15	14.09	24.30	55.87	-31.57	Average
3	0.3577	0.07	9.75	24.17	33.99	58.78	-24.79	QP
4 *	0.3577	0.07	9.75	14.03	23.85	48.78	-24.93	Average
5	1.4640	0.10	9.55	13.52	23.17	56.00	-32.83	QP
6	1.4640	0.10	9.55	4.31	13.96	46.00	-32.04	Average
7	1.5113	0.10	9.55	13.71	23.36	56.00	-32.64	QP
8	1.5113	0.10	9.55	4.79	14.44	46.00	-31.56	Average
9	4.2242	0.12	9.55	16.96	26.63	56.00	-29.37	QP
10	4.2242	0.12	9.55	7.80	17.47	46.00	-28.53	Average
11	13.4793	0.24	9.78	10.58	20.60	60.00	-39.40	QP
12	13.4793	0.24	9.78	1.52	11.54	50.00	-38.46	Average





## 7.2 Field Strength of the Fundamental Signal (15.249(a))

Test Requirement 47 CFR Part 15, Subpart C 15.249(a)

Test Method: ANSI C63.10 (2013) Section 6.5&6.6

Measurement Distance: 3m

Limit:

Fundamental frequency(MHz)	Field strength of fundamental(millivolts/meter)	Field strength of harmonics(microvolts/meter)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

Remark: The frequencies above 1000MHz are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

For fundamental frequency in "902-928MHz", the field strength of fundamental is based on Quasi-Peak.

### 7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 21.2 °C

Humidity: 57.8 % RH

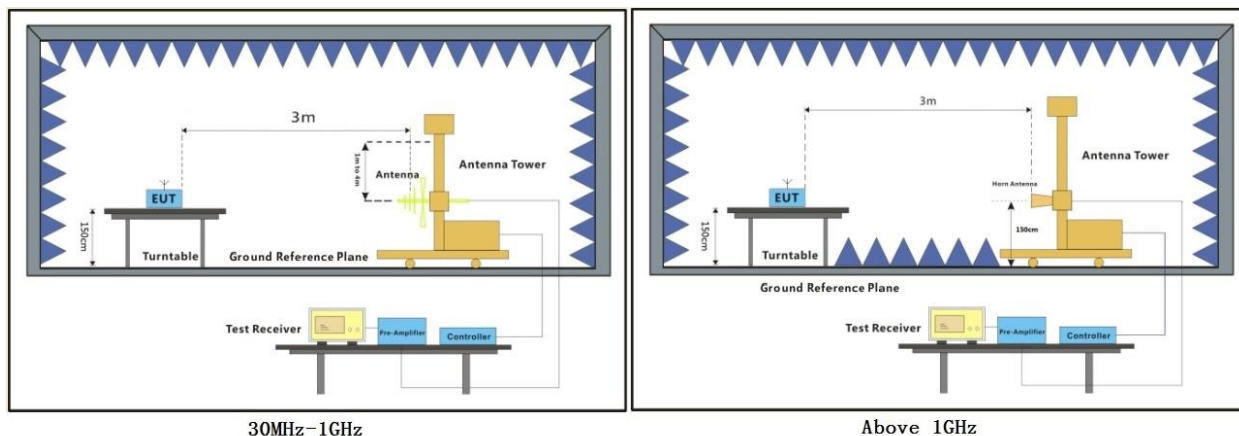
Atmospheric Pressure: 1020 mbar

### 7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT1 in transmitting with modulation mode.
Pre-scan	17	TX mode_Keep the EUT2 in transmitting with modulation mode.
Pre-scan	18	Charge + TX mode_Keep the EUT1 in charging and transmitting with modulation mode.
Final test	19	Charge + TX mode_Keep the EUT2 in charging and transmitting with modulation mode.



### 7.2.3 Test Setup Diagram

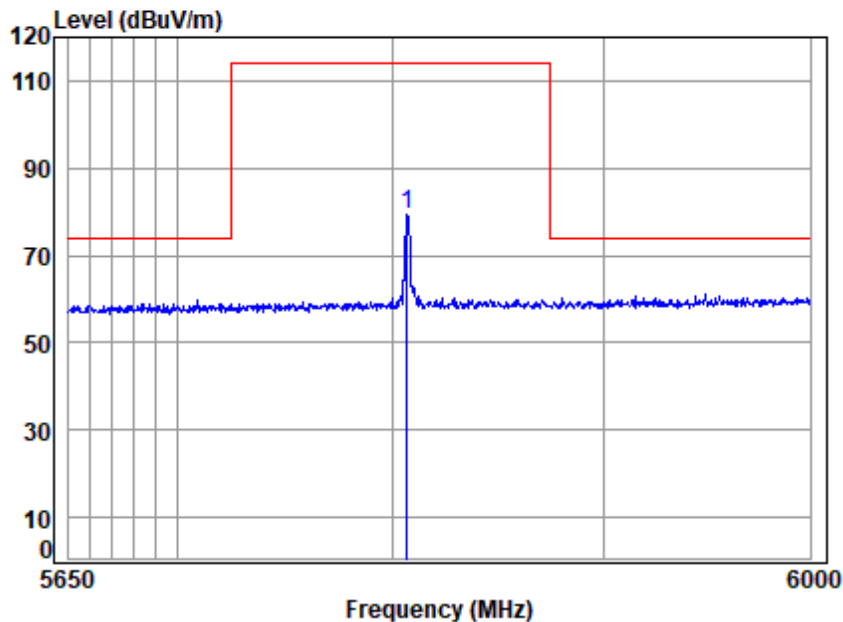


### 7.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

Job No : 04600AT/04601AT

Mode : 5807MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5807.000	11.01	33.43	30.58	65.53	79.39	114.00	-34.61	peak



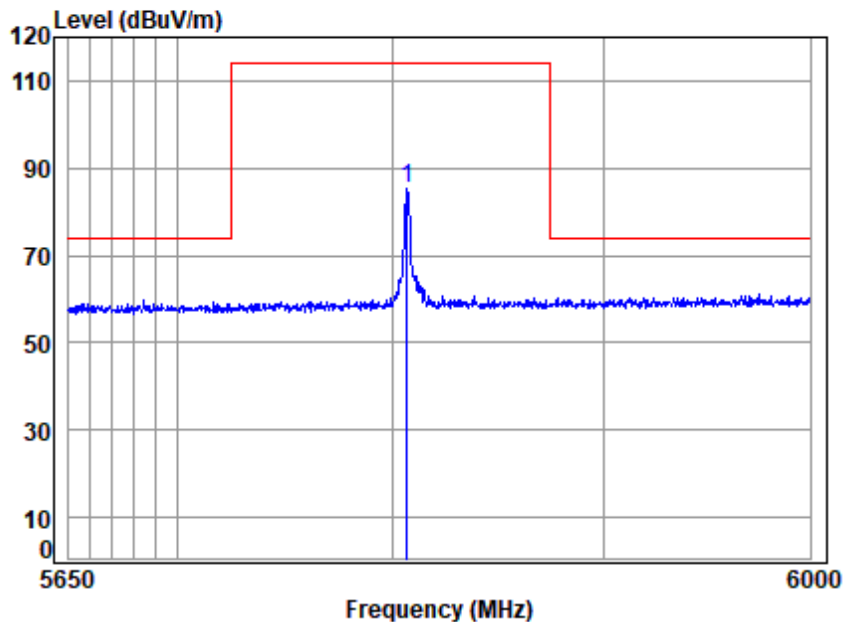
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中国·广东·深圳市南山区科技园中区M-10栋1号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

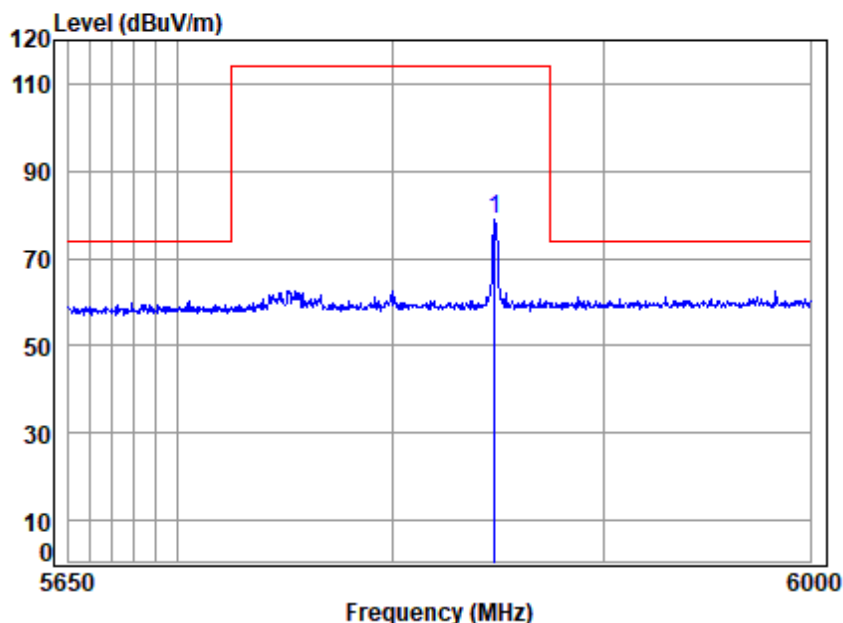
Mode : 5807MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5807.000	11.01	33.43	30.58	71.36	85.22	114.00	-28.78	peak





Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

Job No : 04600AT/04601AT

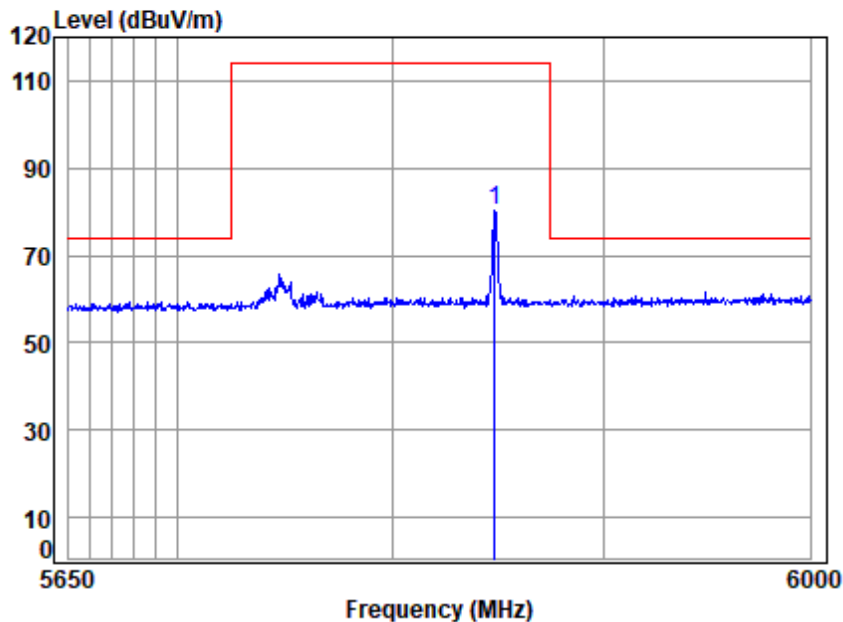
Mode : 5848.6MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5848.600	10.96	33.59	30.56	65.06	79.05	114.00	-34.95	Peak





Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

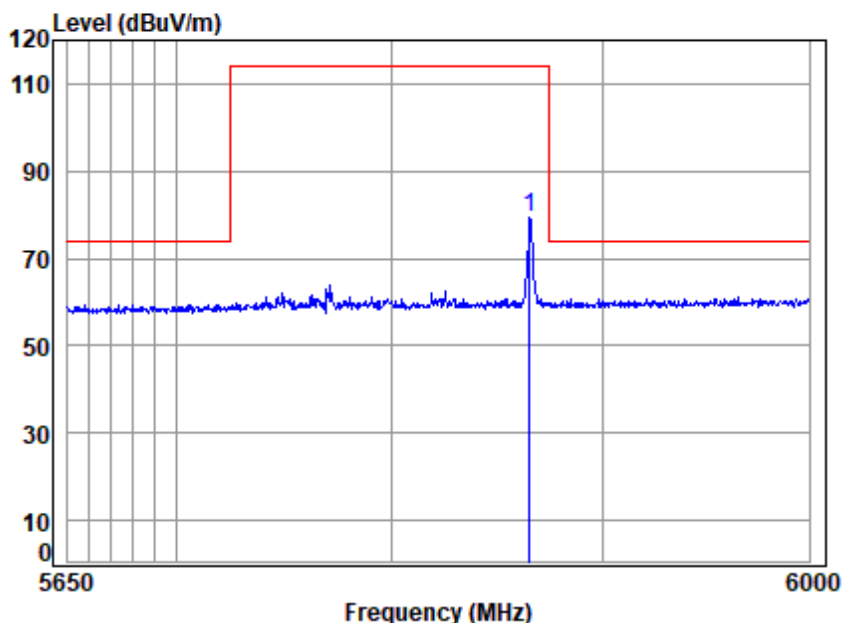
Job No : 04600AT/04601AT

Mode : 5848.6MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5848.600	10.96	33.59	30.56	66.42	80.41	114.00	-33.59	Peak



Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

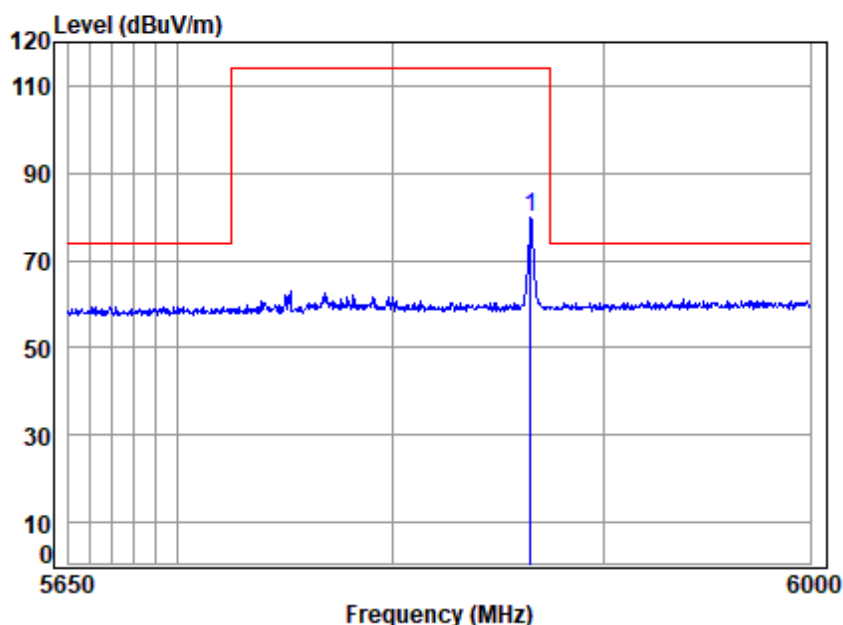
Job No : 04600AT/04601AT

Mode : 5865.6MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5865.600	10.93	33.57	30.55	65.29	79.24	114.00	-34.76	Peak



Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

Mode : 5865.6MHz

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 5865.600	10.93	33.57	30.55	65.91	79.86	114.00	-34.14	Peak

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:



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Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

- 2) The peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20dB under any condition of modulation. So, only the above measurement data were shown in the report.



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## 7.3 Restricted Band Around Fundamental Frequency

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.249(d) & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
Above 1GHz	74.0	Peak Value

Emission radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

### 7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22.2 °C

Humidity: 58.0 % RH

Atmospheric Pressure: 1020 mbar

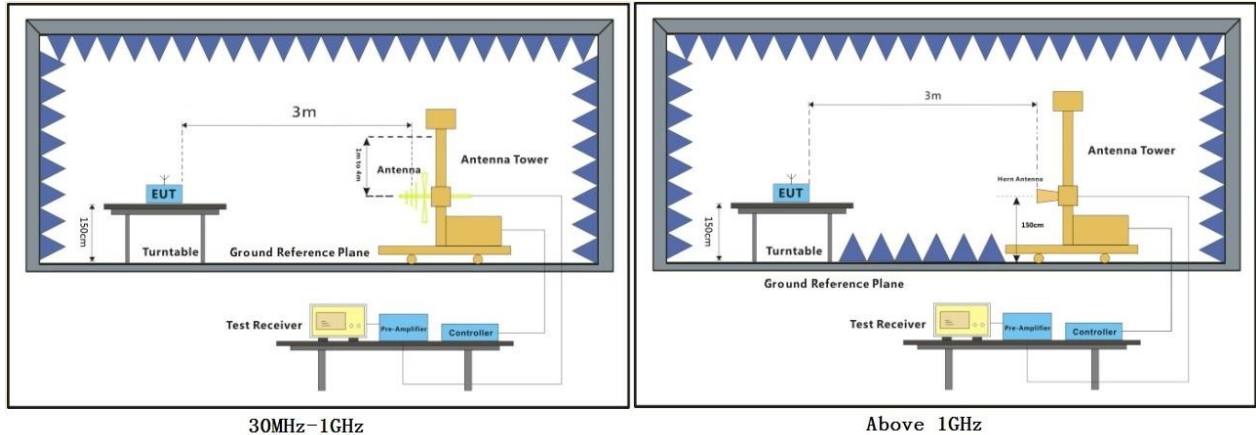
### 7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT1 in transmitting with modulation mode.
Pre-scan	17	TX mode_Keep the EUT2 in transmitting with modulation mode.
Pre-scan	18	Charge + TX mode_Keep the EUT1 in charging and transmitting with modulation mode.
Final test	19	Charge + TX mode_Keep the EUT2 in charging and transmitting with modulation mode.





### 7.3.3 Test Setup Diagram

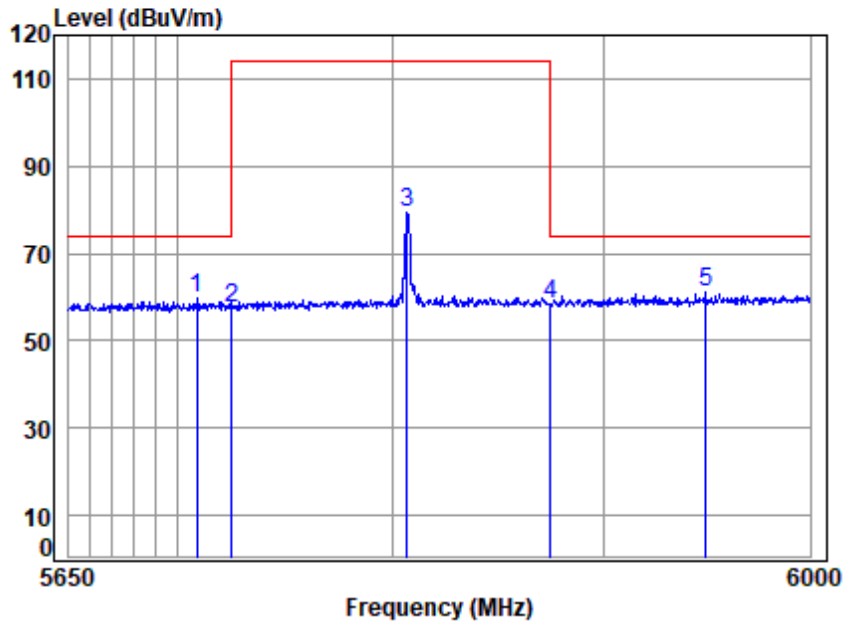


### 7.3.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

Job No : 04600AT/04601AT

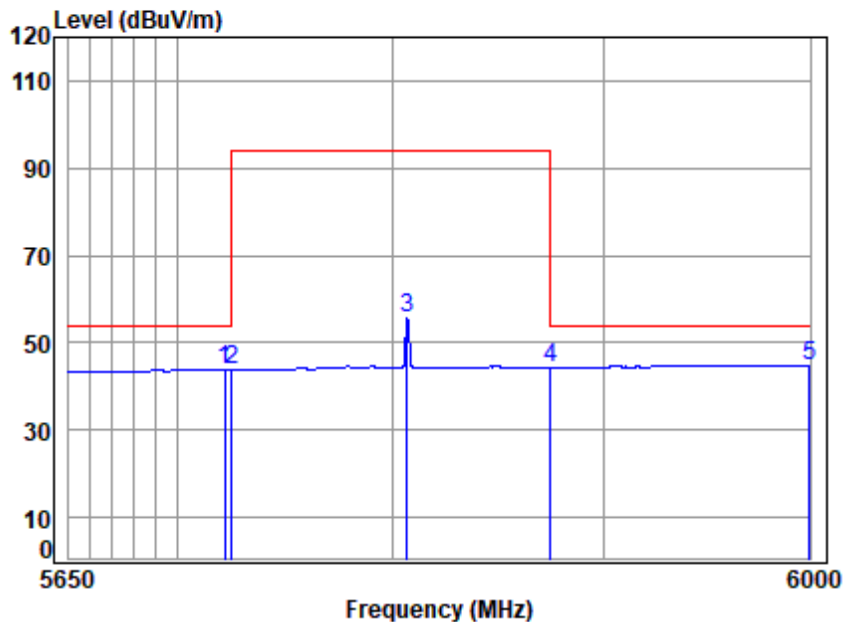
Mode : 5807 Band edge

: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5709.055	10.60	33.22	30.62	46.54	59.74	74.00	-14.26	peak
2	5725.000	10.68	33.25	30.61	44.11	57.43	74.00	-16.57	peak
3	5807.000	11.01	33.43	30.58	65.53	79.39	114.00	-34.61	peak
4	5875.000	10.92	33.55	30.55	44.36	58.28	74.00	-15.72	peak
5 pp	5949.725	10.85	33.60	30.52	47.02	60.95	74.00	-13.05	peak



Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

Job No : 04600AT/04601AT

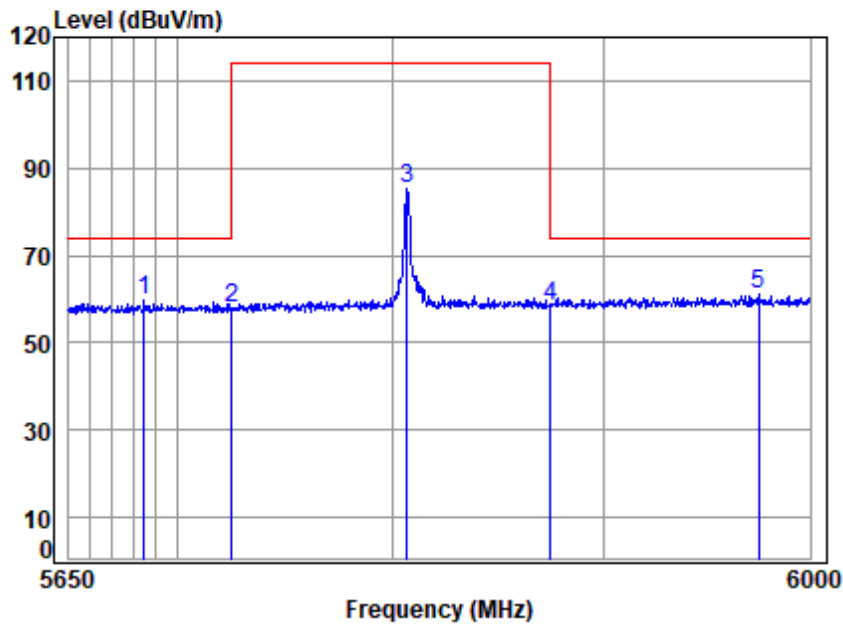
Mode : 5807 Band edge

: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5722.109	10.66	33.24	30.61	30.48	43.77	54.00	-10.23	Average
2	5725.000	10.68	33.25	30.61	30.41	43.73	54.00	-10.27	Average
3	5807.000	11.01	33.43	30.58	41.96	55.82	94.00	-38.18	Average
4	5875.000	10.92	33.55	30.55	30.47	44.39	54.00	-9.61	Average
5 pp	5999.639	10.81	33.80	30.50	30.82	44.93	54.00	-9.07	Average



Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

Mode : 5807 Band edge

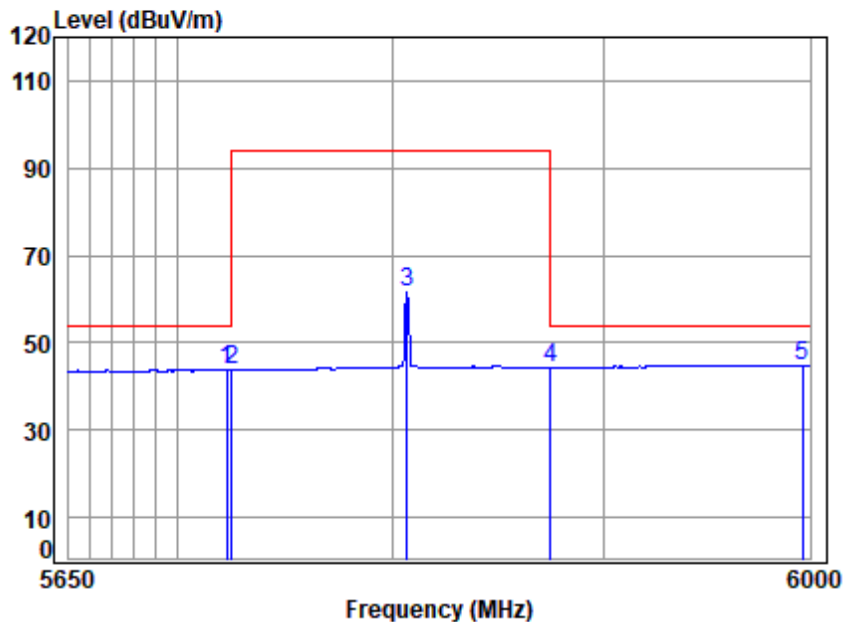
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5684.403	10.54	33.17	30.63	46.72	59.80	74.00	-14.20	peak
2	5725.000	10.68	33.25	30.61	44.78	58.10	74.00	-15.90	peak
3	5807.000	11.01	33.43	30.58	71.36	85.22	114.00	-28.78	peak
4	5875.000	10.92	33.55	30.55	44.49	58.41	74.00	-15.59	peak
5 pp	5974.810	10.83	33.70	30.51	46.98	61.00	74.00	-13.00	peak





Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

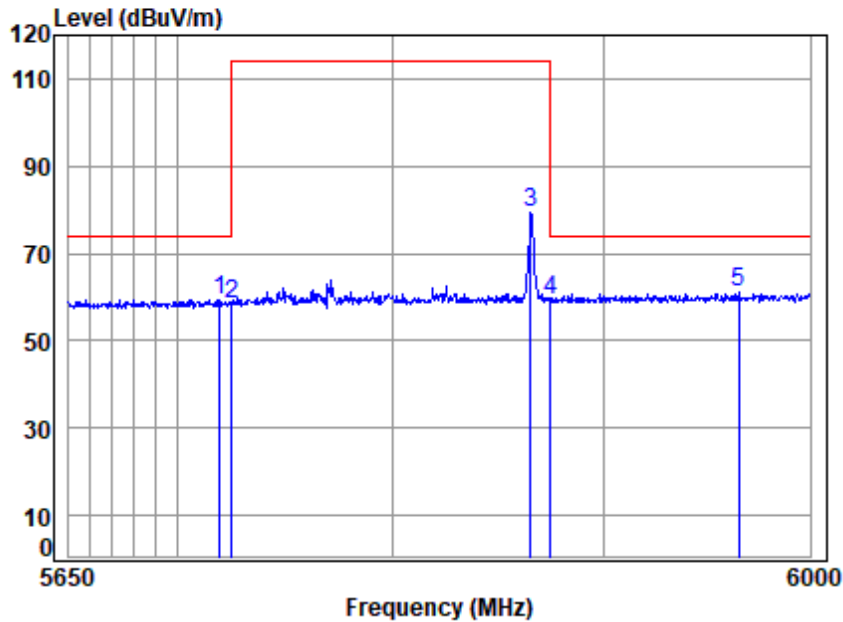
Job No : 04600AT/04601AT

Mode : 5807 Band edge  
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5722.797	10.66	33.25	30.61	30.48	43.78	54.00	-10.22	Average
2	5725.000	10.68	33.25	30.61	30.41	43.73	54.00	-10.27	Average
3	5807.000	11.01	33.43	30.58	47.79	61.65	94.00	-32.35	Average
4	5875.000	10.92	33.55	30.55	30.47	44.39	54.00	-9.61	Average
5 pp	5996.395	10.81	33.79	30.50	30.84	44.94	54.00	-9.06	Average



Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

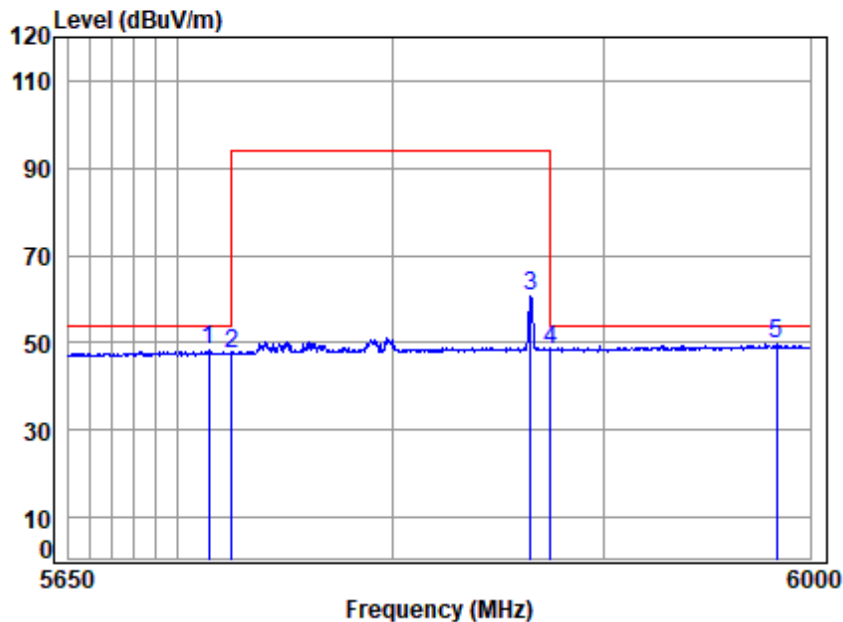
Job No : 04600AT/04601AT

Mode : 5865 Band edge  
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5719.702	10.65	33.24	30.61	46.20	59.48	74.00	-14.52	Peak
2	5725.000	10.67	33.25	30.61	45.15	58.46	74.00	-15.54	Peak
3	5865.600	10.93	33.57	30.55	65.29	79.24	114.00	-34.76	Peak
4	5875.000	10.92	33.55	30.55	45.34	59.26	74.00	-14.74	Peak
5 pp	5965.480	10.84	33.66	30.51	47.29	61.28	74.00	-12.72	Peak



Test Mode: 19; Polarity: Horizontal;



Condition: 3m HORIZONTAL

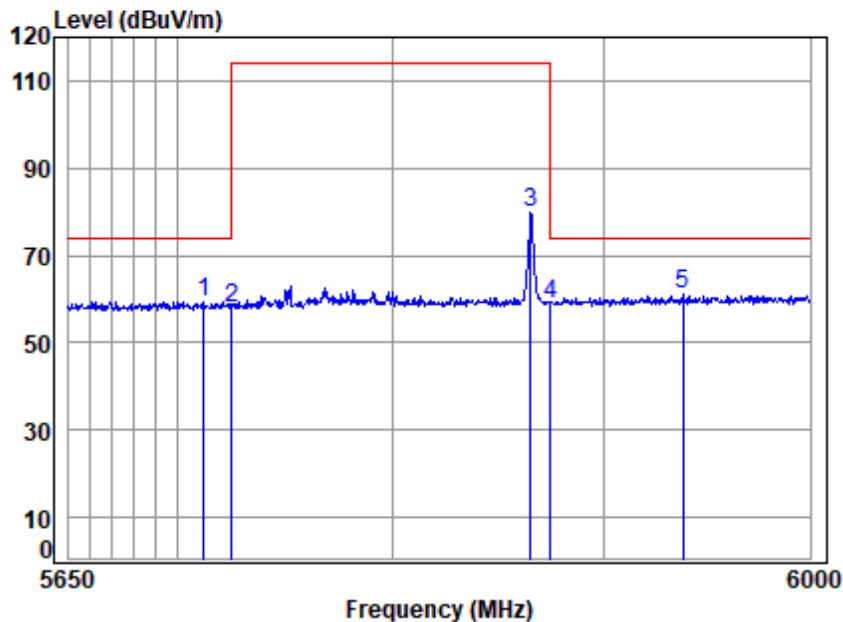
Job No : 04600AT/04601AT

Mode : 5865 Band edge  
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5714.548	10.63	33.23	30.61	34.89	48.14	54.00	-5.86	Average
2	5725.000	10.67	33.25	30.61	34.21	47.52	54.00	-6.48	Average
3	5865.600	10.93	33.57	30.55	46.53	60.48	94.00	-33.52	Average
4	5875.000	10.92	33.55	30.55	34.33	48.25	54.00	-5.75	Average
5 pp	5983.794	10.82	33.74	30.51	35.54	49.59	54.00	-4.41	Average



Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

Mode : 5865 Band edge

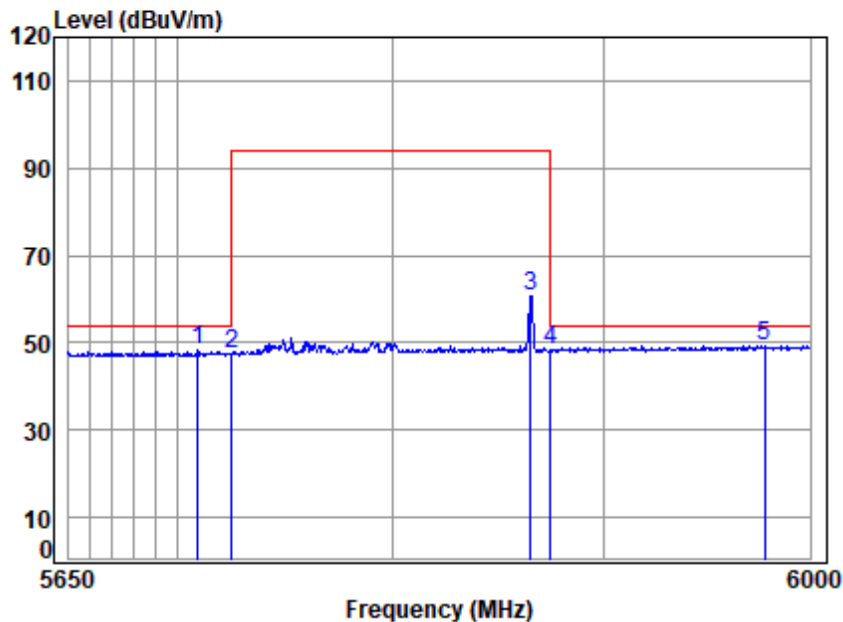
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5712.144	10.62	33.22	30.62	46.30	59.52	74.00	-14.48	Peak
2	5725.000	10.67	33.25	30.61	44.71	58.02	74.00	-15.98	Peak
3	5865.600	10.93	33.57	30.55	65.91	79.86	114.00	-34.14	Peak
4	5875.000	10.92	33.55	30.55	44.93	58.85	74.00	-15.15	Peak
5 pp	5938.292	10.86	33.58	30.52	47.00	60.92	74.00	-13.08	Peak





Test Mode: 19; Polarity: Vertical;



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

Mode : 5865 Band edge  
: 5.8G

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	5709.398	10.60	33.22	30.62	35.04	48.24	54.00	-5.76	Average
2	5725.000	10.67	33.25	30.61	34.16	47.47	54.00	-6.53	Average
3	5865.600	10.93	33.57	30.55	46.77	60.72	94.00	-33.28	Average
4	5875.000	10.92	33.55	30.55	34.47	48.39	54.00	-5.61	Average
5 pp	5978.042	10.83	33.71	30.51	35.42	49.45	54.00	-4.55	Average



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### 7.4 Radiated Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)

Test Method: ANSI C63.10 (2013) Section 6.4&6.5

Measurement Distance: 10m

Limit:

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
960-1000	500	3

#### 7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.6 °C

Humidity: 50.9 % RH

Atmospheric Pressure: 1020 mbar

#### 7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT1 in transmitting with modulation mode.
Pre-scan	17	TX mode_Keep the EUT2 in transmitting with modulation mode.
Final test	18	Charge + TX mode_Keep the EUT1 in charging and transmitting with modulation mode.
Final test	19	Charge + TX mode_Keep the EUT2 in charging and transmitting with modulation mode.



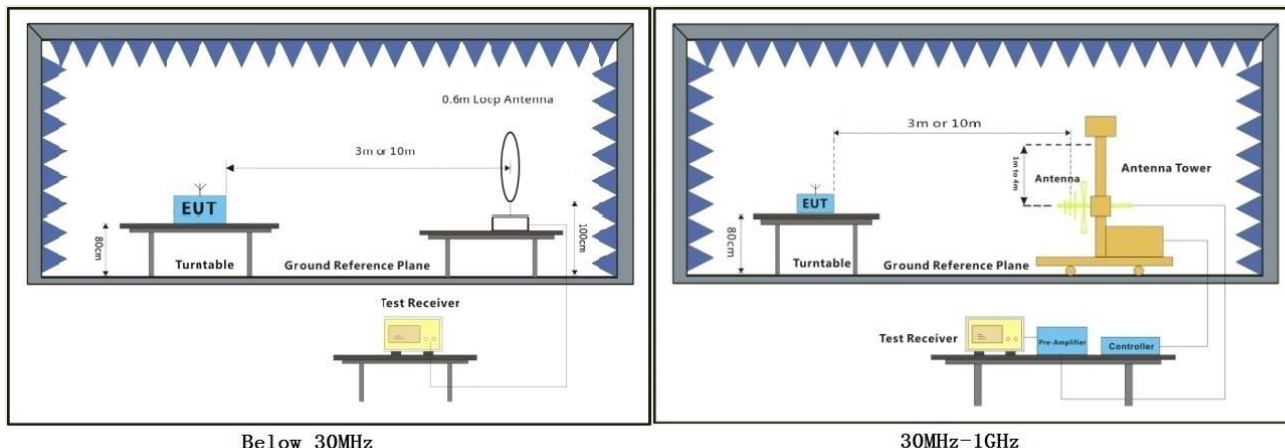
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### 7.4.3 Test Setup Diagram



### 7.4.4 Measurement Procedure and Data

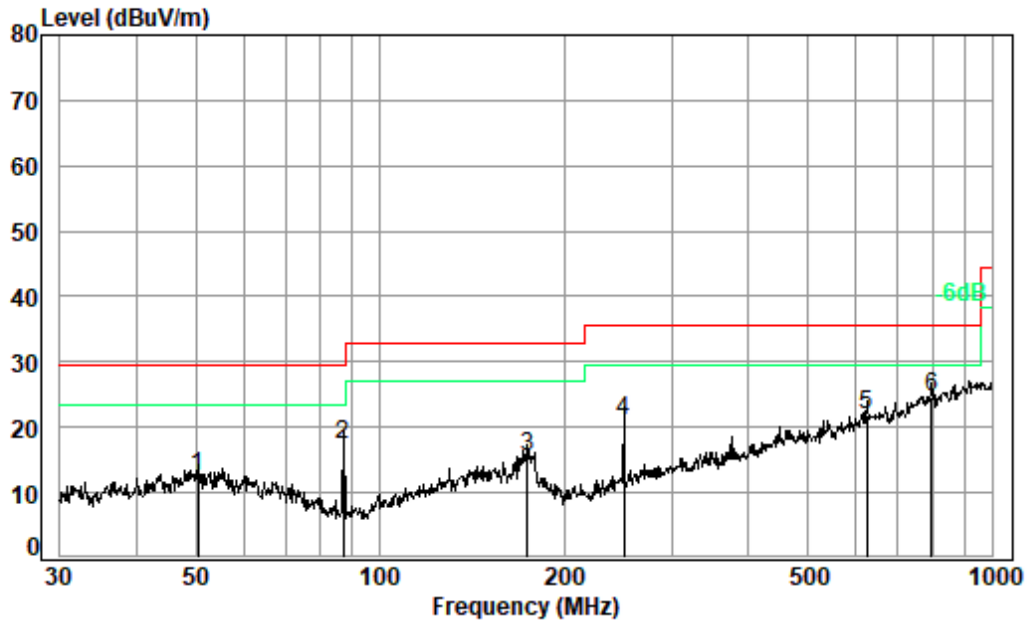
- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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 quasi-peak method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark:

- Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
- Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.



Test Mode: 18; Polarity: Horizontal



Condition: 10m HORIZONTAL  
Job No. : 04600AT/04601AT  
Test Mode: 18  
: EUT1

	Read Freq	Ant Level	Cable Factor	Preamp Loss	Level	Limit	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	50.409	26.15	18.23	0.54	32.50	12.42	29.50	-17.08 QP
2	87.112	37.07	11.98	0.71	32.44	17.32	29.50	-12.18 QP
3	174.424	30.25	16.62	1.05	32.50	15.42	33.00	-17.58 QP
4	250.301	36.31	15.91	1.30	32.45	21.07	35.60	-14.53 QP
5	625.078	27.99	24.59	2.16	32.75	21.99	35.60	-13.61 QP
6 pp	796.183	27.89	26.59	2.48	32.22	24.74	35.60	-10.86 QP





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The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$$L_3 / L_{10} = D_{10} / D_3$$

Note:

L<sub>3</sub>: Level @ 3m distance. Unit: uV/m;

L<sub>10</sub>: Level @ 10m distance. Unit: uV/m;

D<sub>3</sub>: 3m distance. Unit: m

D<sub>10</sub>: 10m distance. Unit: m

The level at 3m test distance is below:

3M HORIZONTAL							
Frequency MHz	Level @ 10m dBuV/m	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Limit @ 3m dBuV/m	Limit @ 3m dBuV/m	Over Limit dB	Remark
50.409	12.42	4.18	13.93	22.88	40.00	-17.12	QP
87.112	17.32	7.35	24.48	27.78	40.00	-12.22	QP
174.424	15.42	5.90	19.67	25.88	43.50	-17.62	QP
250.301	21.07	11.31	37.70	31.53	46.00	-14.47	QP
625.078	21.99	12.57	41.92	32.45	46.00	-13.55	QP
796.183	24.74	17.26	57.53	35.20	46.00	-10.80	QP



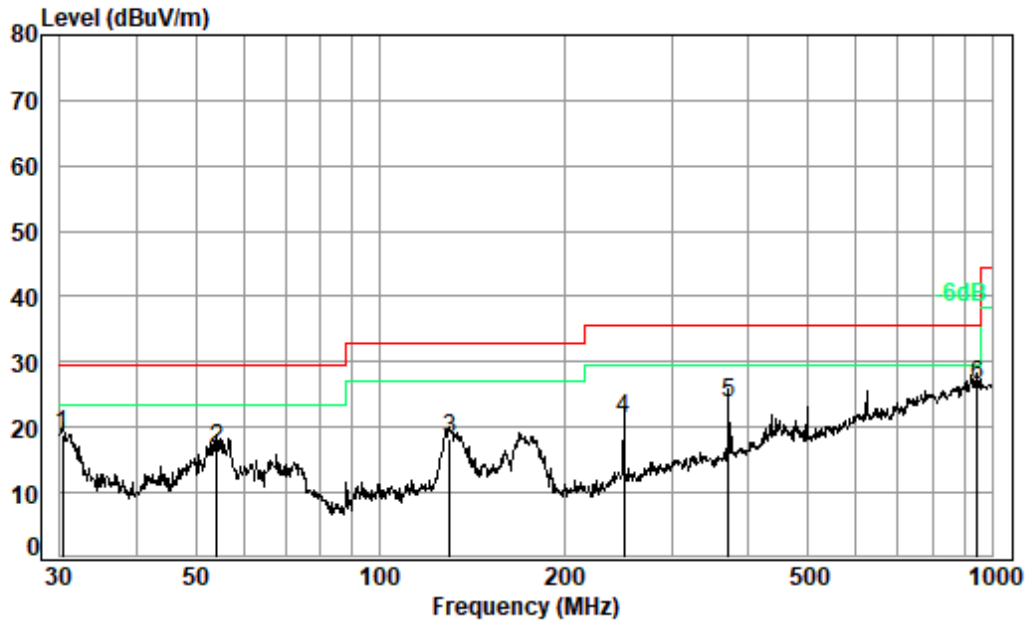
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Test Mode: 18; Polarity: Vertical



Condition: 10m VERTICAL  
Job No. : 04600AT/04601AT  
Test Mode: 18  
: EUT1

	Read Freq	Ant Level	Cable Factor	Preamp Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	30.317	35.43	15.48	0.42	32.50	18.83	29.50	-10.67 QP
2	54.071	30.59	18.06	0.56	32.49	16.72	29.50	-12.78 QP
3	129.923	33.55	16.25	0.87	32.50	18.17	33.00	-14.83 QP
4	250.301	36.42	15.91	1.30	32.45	21.18	35.60	-14.42 QP
5	370.702	35.52	19.14	1.60	32.40	23.86	35.60	-11.74 QP
6 pp	945.440	27.23	27.92	2.67	31.48	26.34	35.60	-9.26 QP

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The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$$L_3 / L_{10} = D_{10} / D_3$$

Note:

L<sub>3</sub>: Level @ 3m distance. Unit: uV/m;

L<sub>10</sub>: Level @ 10m distance. Unit: uV/m;

D<sub>3</sub>: 3m distance. Unit: m

D<sub>10</sub>: 10m distance. Unit: m

The level at 3m test distance is below:

3M VERTICAL							
Frequency MHz	Level @ 10m dBuV/m	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Limit @ 3m dBuV/m	Limit @ 3m dBuV/m	Over Limit dB	Remark
30.317	18.83	8.74	29.13	29.29	40.00	-10.71	QP
54.071	16.72	6.85	22.85	27.18	40.00	-12.82	QP
129.923	18.17	8.10	27.00	28.63	43.50	-14.87	QP
250.301	21.18	11.46	38.18	31.64	46.00	-14.36	QP
370.702	23.86	15.60	51.99	34.32	46.00	-11.68	QP
945.440	26.34	20.75	69.16	36.80	46.00	-9.20	QP



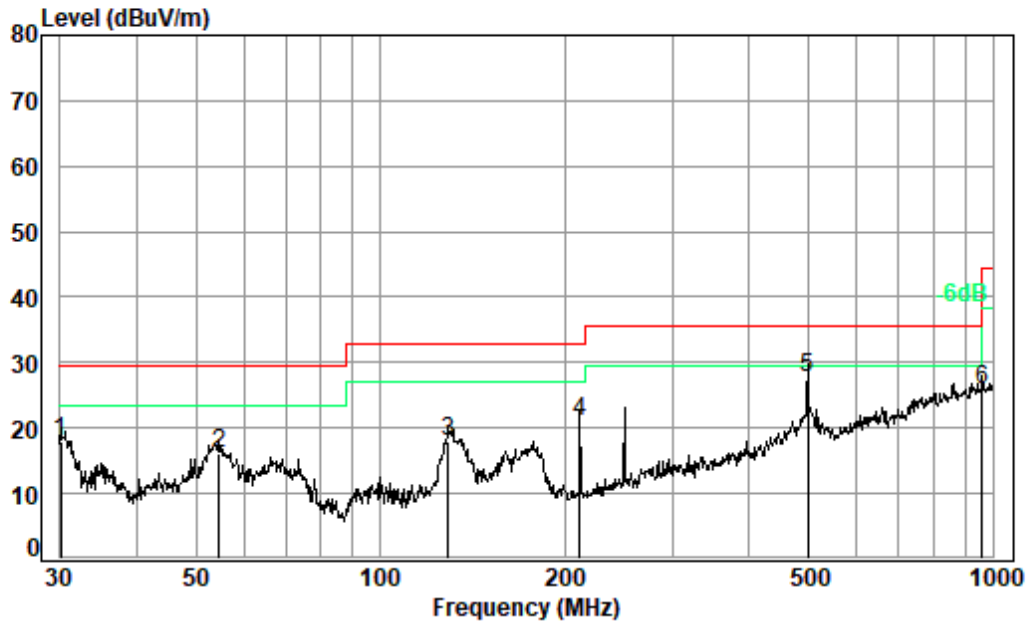
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Test Mode: 19; Polarity: Vertical



Condition: 10m VERTICAL

Job No. : 04600AT/04601AT

Test Mode: 19

: EUT2

		Read	Ant	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.105	34.65	15.41	0.42	32.50	17.98	29.50	-11.52	QP
2	54.643	29.97	17.97	0.56	32.48	16.02	29.50	-13.48	QP
3	129.015	33.42	16.17	0.87	32.50	17.96	33.00	-15.04	QP
4	211.527	38.11	14.06	1.18	32.49	20.86	33.00	-12.14	QP
5 pp	499.425	36.70	21.87	1.85	32.70	27.72	35.60	-7.88	QP
6	962.162	26.67	27.94	2.68	31.36	25.93	44.40	-18.47	QP





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The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$$L_3 / L_{10} = D_{10} / D_3$$

Note:

L<sub>3</sub>: Level @ 3m distance. Unit: uV/m;

L<sub>10</sub>: Level @ 10m distance. Unit: uV/m;

D<sub>3</sub>: 3m distance. Unit: m

D<sub>10</sub>: 10m distance. Unit: m

The level at 3m test distance is below:

3M VERTICAL							
Frequency MHz	Level @ 10m dBuV/m	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Limit @ 3m dBuV/m	Limit @ 3m dBuV/m	Over Limit dB	Remark
30.105	17.98	7.93	26.42	28.44	40.00	-11.56	QP
54.643	16.02	6.32	21.08	26.48	40.00	-13.52	QP
129.015	17.96	7.91	26.36	28.42	43.50	-15.08	QP
211.527	20.86	11.04	36.80	31.32	43.50	-12.18	QP
499.425	27.72	24.32	81.07	38.18	46.00	-7.82	QP
962.162	25.93	19.79	65.97	36.39	54.00	-17.61	QP



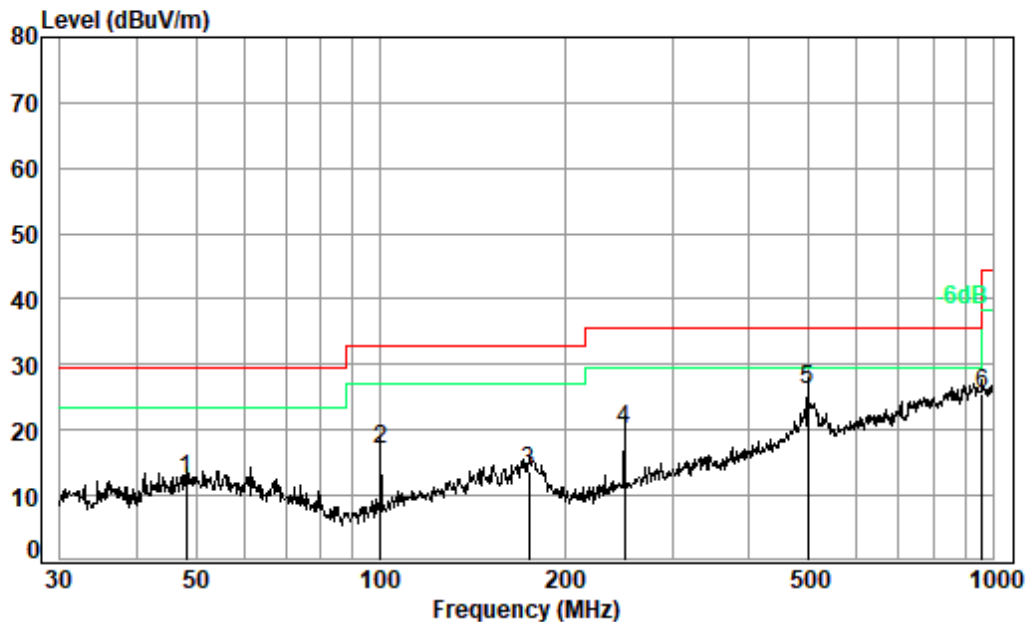
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Test Mode: 19; Polarity: Horizontal



Condition: 10m HORIZONTAL  
Job No. : 04600AT/04601AT  
Test Mode: 19  
: EUT2

		Read	Ant	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	48.163	26.36	17.97	0.53	32.50	12.36	29.50	-17.14	QP
2	100.229	35.50	13.21	0.75	32.50	16.96	33.00	-16.04	QP
3	175.037	28.59	16.56	1.05	32.50	13.70	33.00	-19.30	QP
4	250.301	35.41	15.91	1.30	32.45	20.17	35.60	-15.43	QP
5 pp	499.425	35.10	21.87	1.85	32.70	26.12	35.60	-9.48	QP
6	958.794	26.41	27.96	2.68	31.39	25.66	35.60	-9.94	QP



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The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$$L_3 / L_{10} = D_{10} / D_3$$

Note:

L<sub>3</sub>: Level @ 3m distance. Unit: uV/m;

L<sub>10</sub>: Level @ 10m distance. Unit: uV/m;

D<sub>3</sub>: 3m distance. Unit: m

D<sub>10</sub>: 10m distance. Unit: m

The level at 3m test distance is below:

3M HORIZONTAL							
Frequency MHz	Level @ 10m dBuV/m	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Limit @ 3m dBuV/m	Limit @ 3m dBuV/m	Over Limit dB	Remark
48.163	12.36	4.15	13.83	22.82	40.00	-17.18	QP
100.229	16.96	7.05	23.49	27.42	43.50	-16.08	QP
175.037	13.70	4.84	16.14	24.16	43.50	-19.34	QP
250.301	20.17	10.20	33.99	30.63	46.00	-15.37	QP
499.425	26.12	20.23	67.43	36.58	46.00	-9.42	QP
958.794	25.66	19.19	63.96	36.12	46.00	-9.88	QP



SGS-CSTC Standards Technical Services Co., Ltd.  
Shenzhen Branch Testing & Calibration Laboratory

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### 7.5 Radiated Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)

Test Method: ANSI C63.10 (2013) Section 6.6

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

#### 7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C

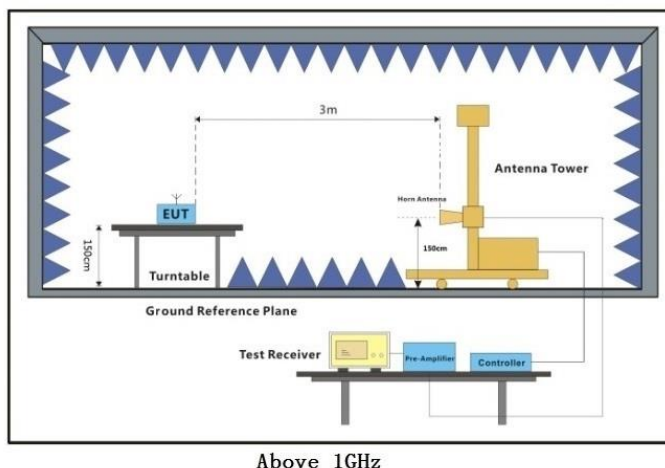
Humidity: 60.5 % RH

Atmospheric Pressure: 1020 mbar

#### 7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	16	TX mode_Keep the EUT1 in transmitting with modulation mode.
Pre-scan	17	TX mode_Keep the EUT2 in transmitting with modulation mode.
Pre-scan	18	Charge + TX mode_Keep the EUT1 in charging and transmitting with modulation mode.
Final test	19	Charge + TX mode_Keep the EUT2 in charging and transmitting with modulation mode.

#### 7.5.3 Test Setup Diagram





## 7.5.4 Measurement Procedure and Data

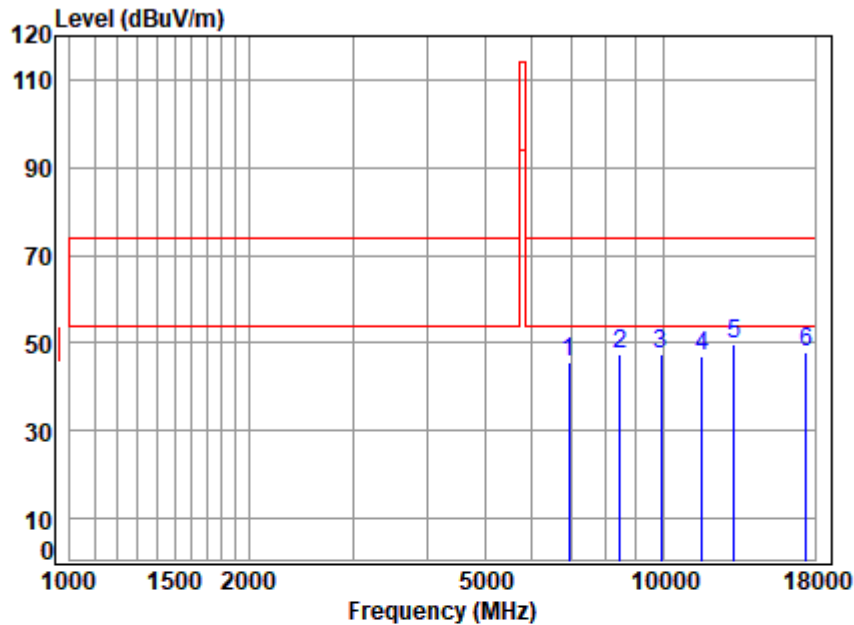
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. 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 or average method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor
2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



Test Mode: 19; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Condition: 3m HORIZONTAL

Job No : 04600AT/04601AT

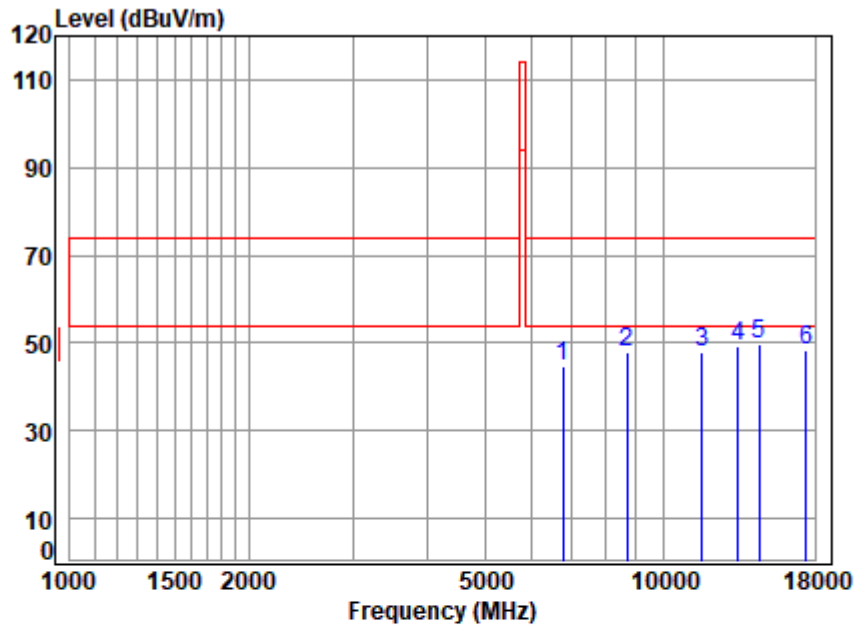
Mode : 5807 TX RSE

: 5.8G

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6944.911	11.37	36.11	56.71	54.65	45.42	74.00	-28.58 peak
2	8462.222	12.05	38.38	55.48	52.41	47.36	74.00	-26.64 Peak
3	9899.373	12.80	38.89	54.19	49.87	47.37	74.00	-26.63 peak
4	11614.000	14.67	39.59	53.68	46.43	47.01	74.00	-26.99 peak
5	pp13179.850	15.65	40.22	54.48	48.30	49.69	74.00	-24.31 peak
6	17421.000	18.20	40.51	54.38	43.67	48.00	74.00	-26.00 peak



Test Mode: 19; Polarity: Vertical; Modulation:GFSK; Channel:Low

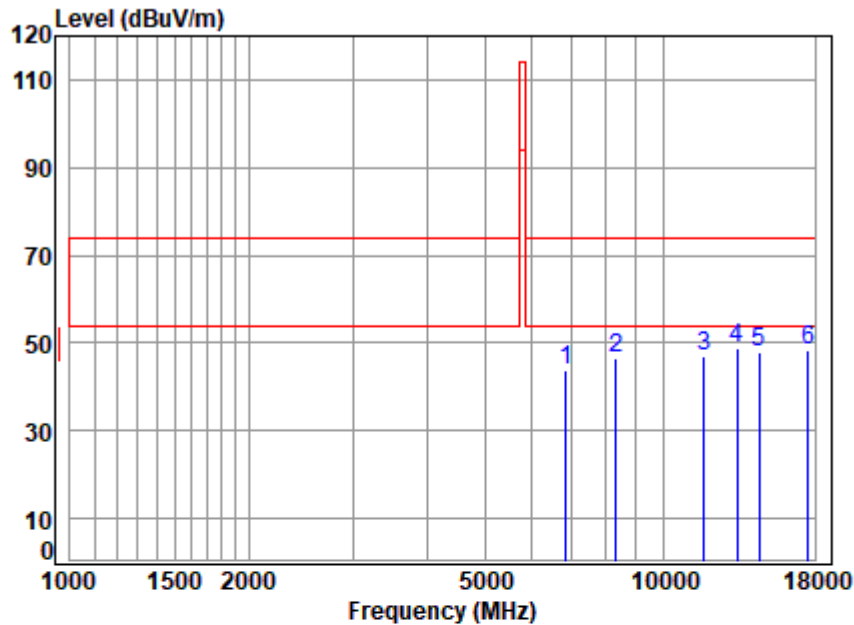


Condition: 3m VERTICAL  
Job No : 04600AT/04601AT  
Mode : 5807 TX RSE  
: 5.8G

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6763.404	11.38	35.75	56.75	54.46	44.84	74.00	-29.16 peak
2	8698.174	12.09	38.59	55.27	52.32	47.73	74.00	-26.27 peak
3	11614.000	14.67	39.59	53.68	47.30	47.88	74.00	-26.12 peak
4	13369.140	16.10	40.30	54.46	47.51	49.45	74.00	-24.55 peak
5	14518.930	16.92	39.46	54.35	47.50	49.53	74.00	-24.47 peak
6	17421.000	18.20	40.51	54.38	44.24	48.57	74.00	-25.43 peak



Test Mode: 19; Polarity: Horizontal; Modulation:GFSK; Channel:middle



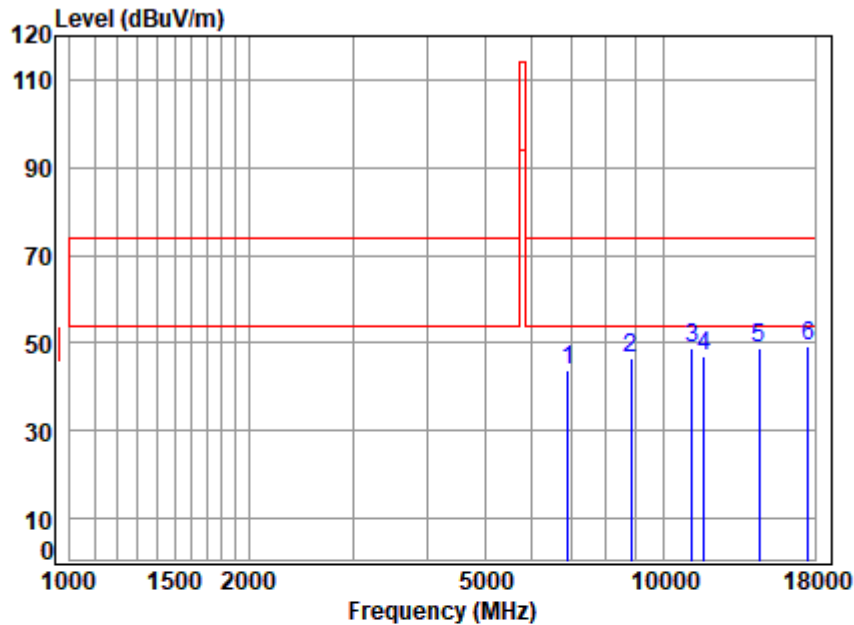
Condition: 3m HORIZONTAL  
Job No : 04600AT/04601AT  
Mode : 5848.6 TX RSE  
: 5.8G

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6860.542	11.37	36.04	56.73	53.16	43.84	74.00	-30.16 peak
2	8325.429	11.73	38.31	55.61	52.03	46.46	74.00	-27.54 peak
3	11697.200	14.72	39.52	53.70	46.36	46.90	74.00	-27.10 peak
4	pp13328.360	16.36	40.30	54.47	46.47	48.66	74.00	-25.34 peak
5	14504.150	17.05	39.49	54.35	45.84	48.03	74.00	-25.97 peak
6	17545.800	18.75	40.76	54.40	43.44	48.55	74.00	-25.45 peak





Test Mode: 19; Polarity: Vertical; Modulation:GFSK; Channel:middle



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

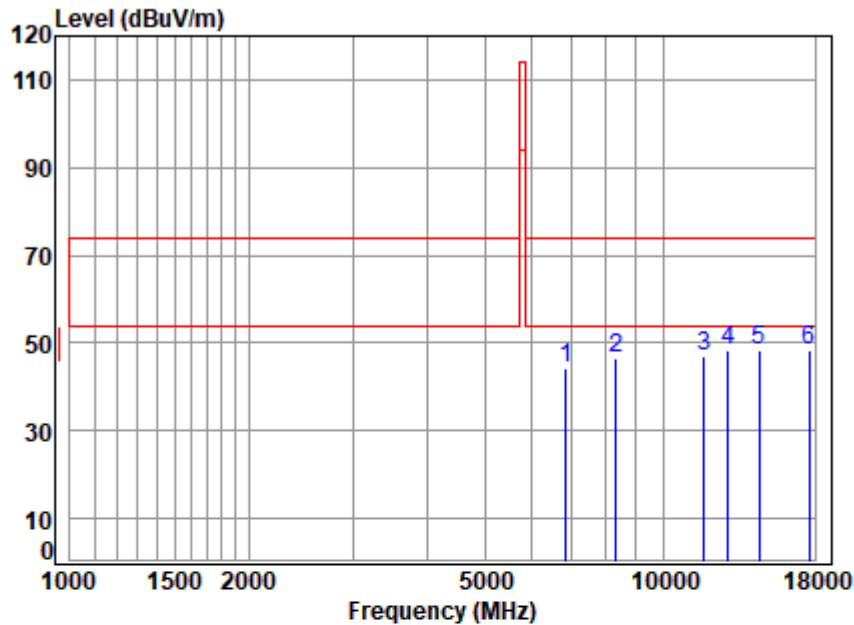
Mode : 5848.6 TX RSE

: 5.8G

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6902.598	11.37	36.19	56.72	52.78	43.62	74.00	-30.38 peak
2	8805.143	12.25	38.50	55.18	50.98	46.55	74.00	-27.45 peak
3	11175.020	14.74	39.58	53.55	48.01	48.78	74.00	-25.22 peak
4	11697.200	14.72	39.52	53.70	46.62	47.16	74.00	-26.84 peak
5	14504.150	17.05	39.49	54.35	46.59	48.78	74.00	-25.22 peak
6	pp17545.800	18.75	40.76	54.40	44.13	49.24	74.00	-24.76 peak



Test Mode: 19; Polarity: Horizontal; Modulation:GFSK; Channel:High

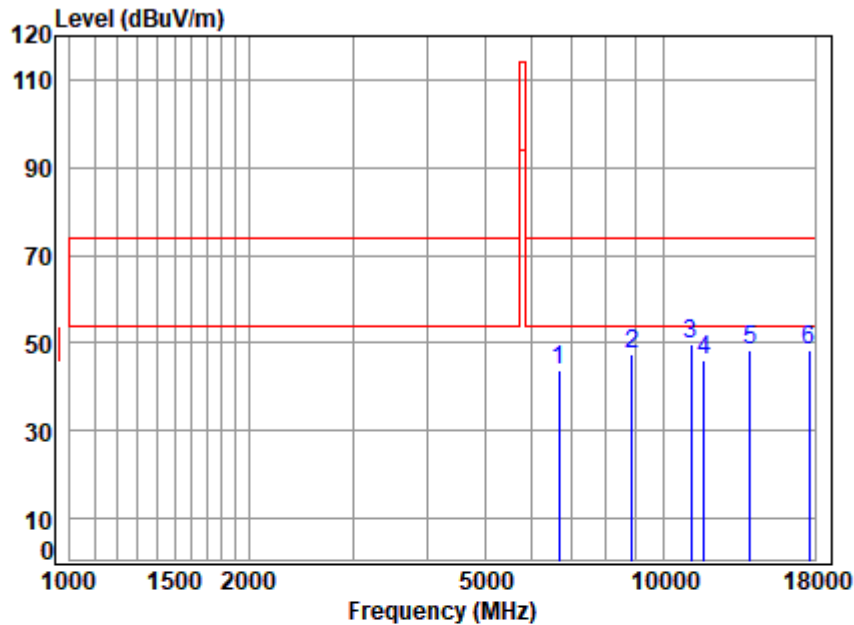


Condition: 3m HORIZONTAL  
Job No : 04600AT/04601AT  
Mode : 5865.6 TX RSE  
: 5.8G

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6853.557	11.37	36.01	56.73	53.63	44.28	74.00	-29.72 peak
2	8333.913	11.72	38.44	55.60	52.20	46.76	74.00	-27.24 peak
3	11731.200	14.69	39.53	53.72	46.45	46.95	74.00	-27.05 peak
4	pp12835.400	15.55	40.34	54.38	47.03	48.54	74.00	-25.46 peak
5	14504.150	17.05	39.49	54.35	46.20	48.39	74.00	-25.61 peak
6	17596.800	19.76	40.32	54.42	42.80	48.46	74.00	-25.54 peak



Test Mode: 19; Polarity: Vertical; Modulation:GFSK; Channel:High



Condition: 3m VERTICAL

Job No : 04600AT/04601AT

Mode : 5865.6 TX RSE

: 5.8G

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	6674.438	11.46	35.45	56.77	53.69	43.83	74.00	-30.17 peak
2	8868.147	12.23	38.54	55.12	51.59	47.24	74.00	-26.76 peak
3	pp11140.930	14.70	39.54	53.54	49.14	49.84	74.00	-24.16 peak
4	11731.200	14.69	39.53	53.72	45.59	46.09	74.00	-27.91 peak
5	14024.730	16.50	39.90	54.40	46.23	48.23	74.00	-25.77 peak
6	17596.800	19.76	40.32	54.42	42.52	48.18	74.00	-25.82 peak



### 7.6 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9

#### 7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23.2 °C

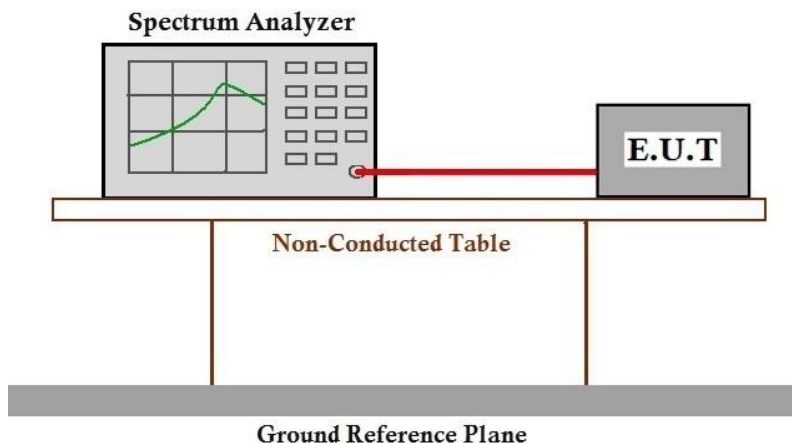
Humidity: 48.1 % RH

Atmospheric Pressure: 1020 mbar

#### 7.6.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	18	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.6.3 Test Setup Diagram



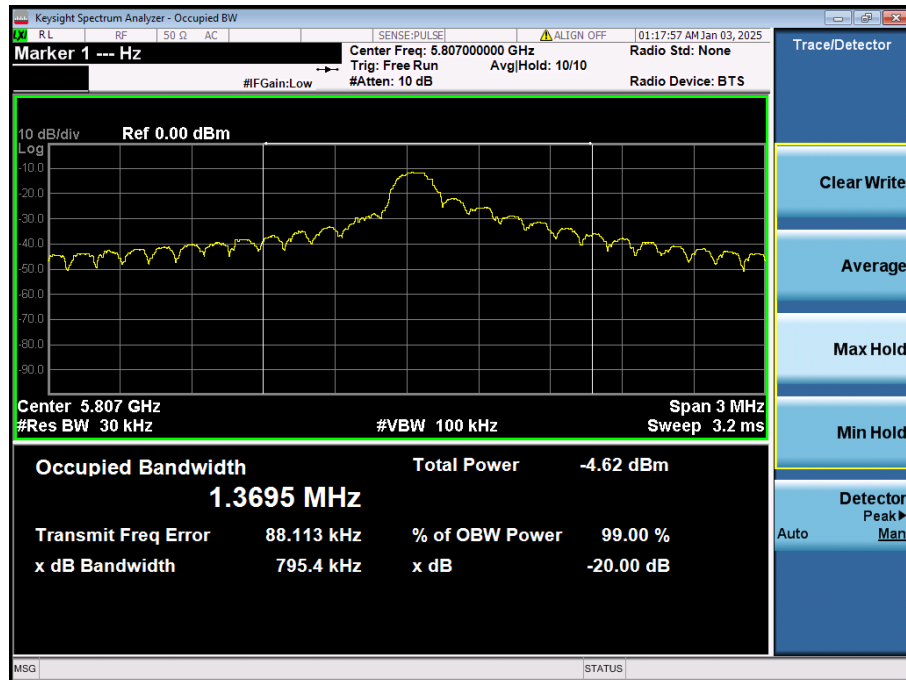
#### 7.6.4 Measurement Procedure and Data

Test Frequency	20dB bandwidth (kHz)	Results
Lowest	795.4	Pass
Middle	808.4	Pass
Highest	787.3	Pass

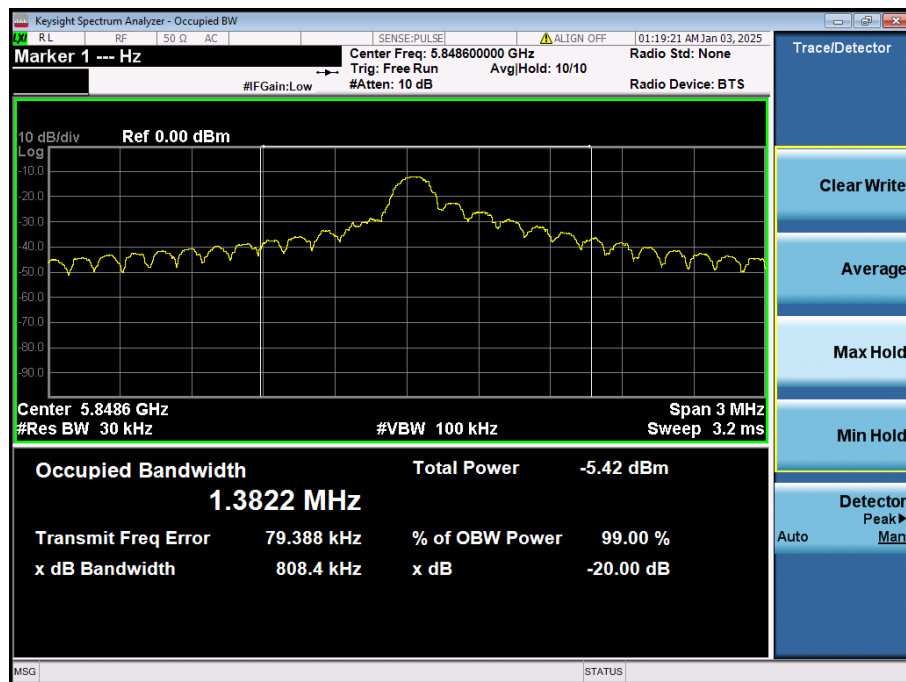




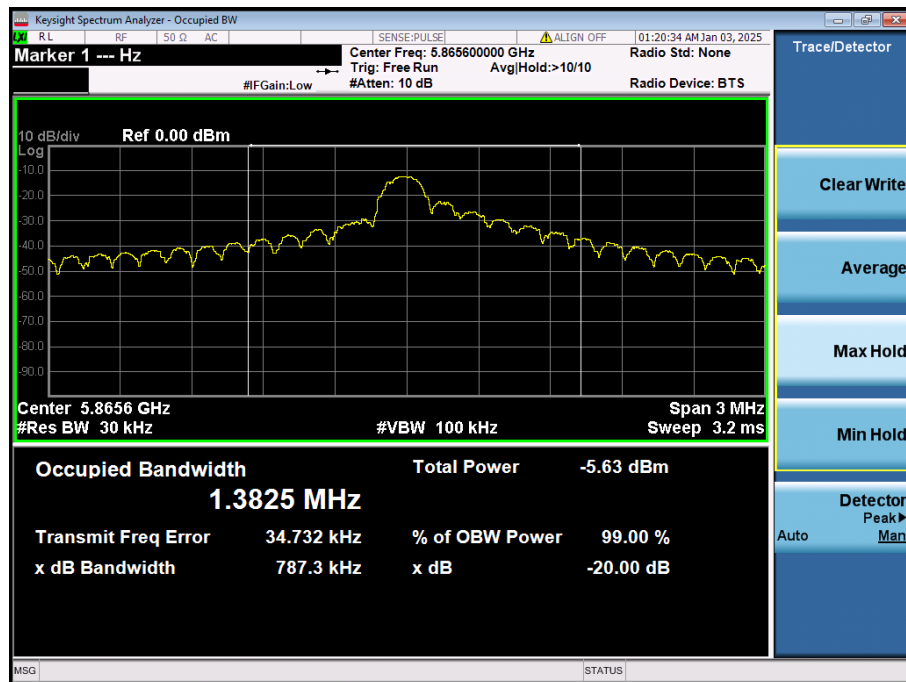
### 5807MHz



### 5848.6MHz



5865.6MHz



## 8 Test Setup Photo

Please refer to SZCR2412004600Appendix\_WLAN Setup Photo

## 9 EUT Constructional Details (EUT Photos)

Please refer to SZCR2412004600 Appendix\_External Photo and Internal Photo.

- End of the Report -

