



REPORT No. : XM19030037W01

# TEST REPORT

**MANUFACTURER** : DOUBLE BULL(XIAMEN)MACHINERY CO.,LTD

**PRODUCT NAME** : Gesin Electric Adjustable Bed Control System

**MODEL NAME** : GXRC18

**BRAND NAME** : N/A

**FCC ID** : 2ARF4-WAD1

**STANDARD(S)** : 47 CFR Part 15 Subpart C

**TEST DATE** : 2019-03-26 to 2019-03-29

**ISSUE DATE** : 2019-04-01

Tested by:

Handwritten signature of Jinxin Huang in black ink.

Jinxin Huang (Test engineer)

Approved by:

Handwritten signature of Anne Liu in black ink.

Anne Liu ( Supervisor )

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Change History		
Version	Date	Reason for change
1.0	2019-04-01	First edition



# 1. Technical Information

**Note:** Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	DOUBLE BULL(XIAMEN)MACHINERY CO.,LTD
<b>Applicant Address:</b>	No.69,Road 2nd Xinglinbei, Jimei District, Xiamen City, Fujian Province, China
<b>Manufacturer:</b>	DOUBLE BULL(XIAMEN)MACHINERY CO.,LTD
<b>Manufacturer Address:</b>	No.69,Road 2nd Xinglinbei, Jimei District, Xiamen City, Fujian Province, China

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Gesin Electric Adjustable Bed Control System
<b>Serial No:</b>	(N/A, marked #1 by test site)
<b>Hardware Version:</b>	V1.2
<b>Software Version:</b>	V1.5
<b>Operating Frequency:</b>	2450 MHz
<b>Modulation</b>	GFSK
<b>Channel Number:</b>	1
<b>Antenna Type:</b>	PCB Antenna
<b>Antenna Gain:</b>	3 dBi

**Note 1:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



### 1.3. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.203	Antenna Requirement	N/A	N/A	PASS
2	15.215	Bandwidth	Mar 29, 2019	Jinxin Huang	PASS
3	15.207	Conducted Emission	N/A	N/A	PASS
4	15.249	Field strength & Bandedge	Mar 26, 2019	Jinxin Huang	PASS
5	15.209, 15.249	Radiated Emission and field strength of harmonics	Mar 26, 2019	Jinxin Huang	PASS

**Note 1:** The tests were performed according to the method of measurements prescribed in ANSIC63.10-2013.

**Note 2:** Measurement to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from AC power lines or contain provisions for operation while connected to the AC power lines.

### 1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106



## **2. 47 CFR Part 15C Requirements**

### **2.1. Antenna requirement**

#### **2.1.1. Applicable Standard**

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

#### **2.1.2. Result: Compliant**

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

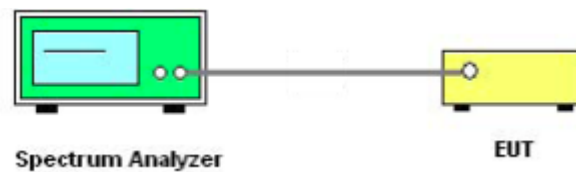
## 2.2. Bandwidth

### 2.2.1. Requirement

Refer to FCC 15.215

### 2.2.2. Test Description

#### A. Test Set:



The EUT is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

#### B. Equipments List:

Please reference ANNEX B(4).

### 2.2.3. Test Result

#### A. Test Verdict:

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	Result
1	2450	3.877	PASS

**B. Test Plots:**

(Channel 1, 2450MHz)

## 2.3. Conducted Emission

### 2.3.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 $\mu$ H/50 $\Omega$  line impedance stabilization network (LISN).

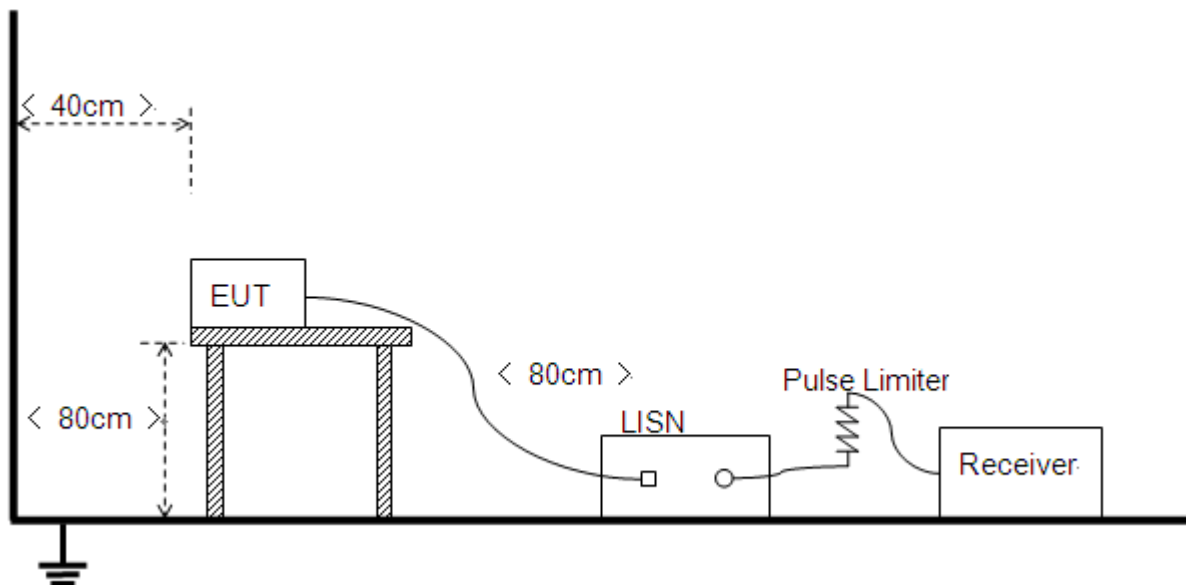
Frequency (MHz)	range	Conducted Limit (dB $\mu$ V)	
		Quai-peak	Average
0.15 - 0.50		66 to 56	56 to 46
0.50 - 5		56	46
5 - 30		60	50

NOTE:

- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

### 2.3.2. Test Description

#### A. Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.





**B. Equipments List:**

Please reference ANNEX B(4).

**2.3.3. Test Result**

Measurement to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from AC power lines or contain provisions for operation while connected to the AC power lines

This test case does not apply this kind of EUT

## 2.4. Fundamental&Bandedge

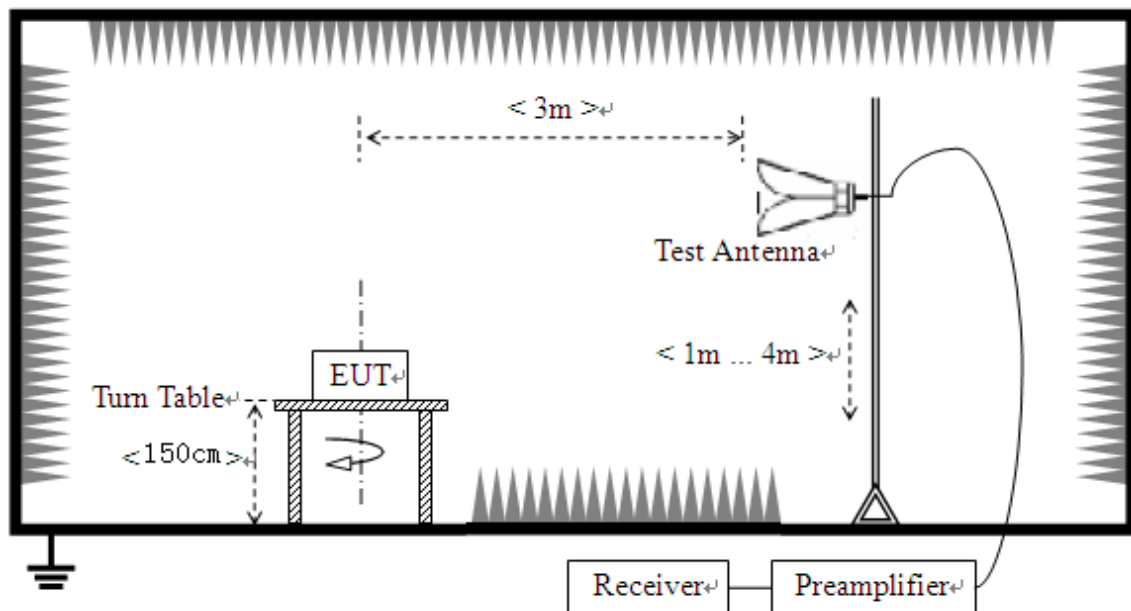
### 2.4.1. Requirement

According to FCC section 15.249(a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

### 2.4.2. Test Description

#### A. Test Setup:



The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the



ground to determine the maximum value of the field strength.

**B. Equipments List:**

Please reference ANNEX B(4).

**2.4.3. Test Procedure**

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report

**For Radiated emission below 30MHz**

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

**NOTE:**

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

**For Radiated emission above 30MHz**

- The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

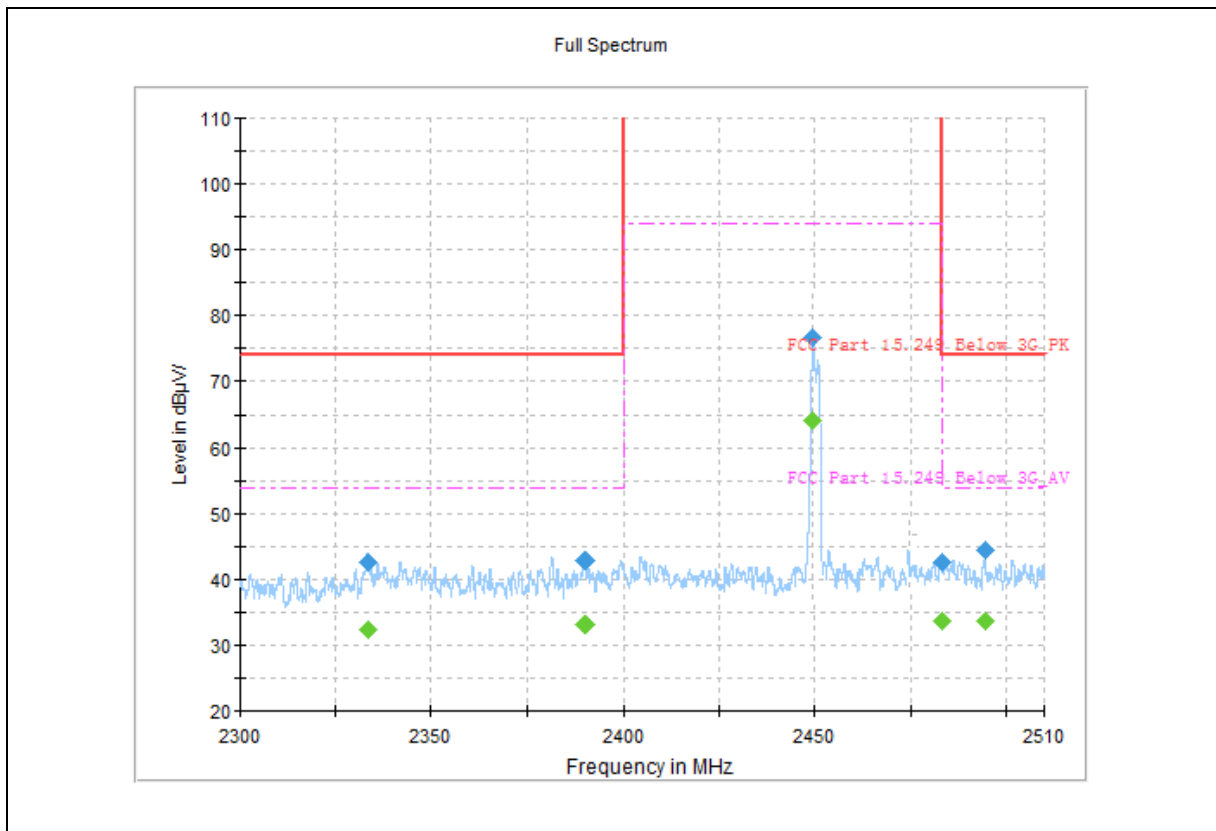
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

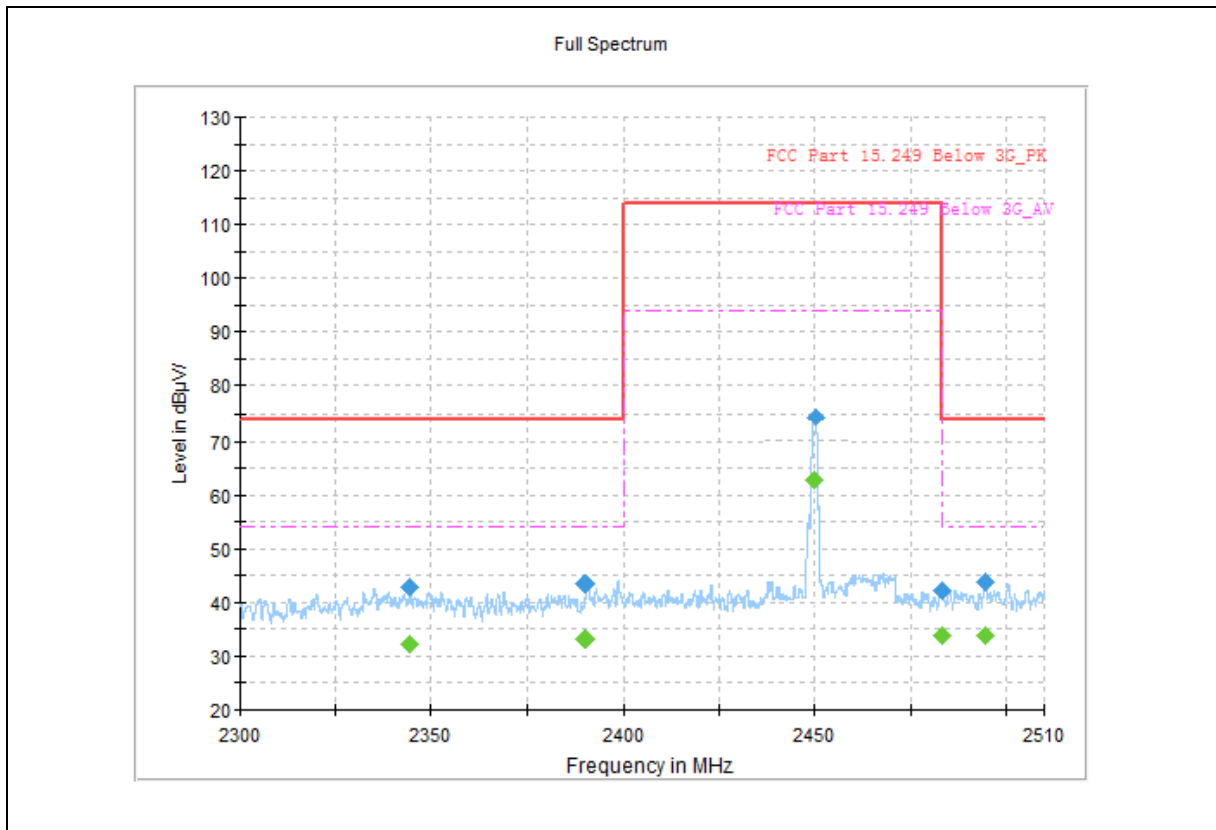
**Note:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

#### 2.4.4. Test Result



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
2333.366667	42.63	---	74.00	31.37	H	7.4
2333.366667	---	32.27	54.00	21.73	H	7.4
2390.008333	---	33.22	54.00	20.78	H	8.0
2390.008333	42.77	---	74.00	31.23	H	8.0
2450.021667	76.55	---	114.00	37.45	H	7.7
2450.021667	---	64.33	94.00	29.67	H	7.7
2483.505000	42.66	---	74.00	31.34	H	8.3
2483.505000	---	33.71	54.00	20.29	H	8.3
2494.413333	44.47	---	74.00	29.53	H	8.4
2494.413333	---	33.73	54.00	20.27	H	8.4



Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
2344.578333	---	32.30	54.00	21.70	V	7.6
2344.578333	42.77	---	74.00	31.23	V	7.6
2390.008333	43.52	---	74.00	30.48	V	8.0
2390.008333	---	33.19	54.00	20.81	V	8.0
2450.616667	74.57	---	114.00	39.43	V	7.7
2450.616667	---	63.36	94.00	30.64	V	7.7
2483.505000	42.21	---	74.00	31.79	V	8.3
2483.505000	---	33.69	54.00	20.31	V	8.3
2494.658333	43.75	---	74.00	30.25	V	8.4
2494.658333	---	33.74	54.00	20.26	V	8.4

## 2.5. Radiated Emission and field strength of harmonics

### 2.5.1. Requirement

According to section 15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

According to section 15.249(d), Emission Radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in Section 15.209:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)	Field Strength Limitation at 3m Measurement Distance	
			(uV/m)	(dBuV/m)
0.009 - 0.490	2400/F(kHz)	300	10000* 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 - 1.705	24000/F(kHz)	30	100* 2400/F(KHz)	20log 2400/F(KHz) + 40
1.705 - 30.0	30	30	100*30	20log 30 + 40
30 - 88	100	3	100	20log 100
88 - 216	150	3	150	20log 150
216 - 960	200	3	200	20log 200
Above 960	500	3	500	20log 500

According to section 15.249(e), for frequencies above 1000MHz, the above field strength limits are based on average limits. 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.

**Note:**

- 1) The tighter limit shall apply at the boundary between two frequency range.
- 2) Limitation expressed in dBuV/m is calculated by 20log Emission Level(uV/m).
- 3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of  $Ld1 = Ld2 * (d2/d1)^2$ .

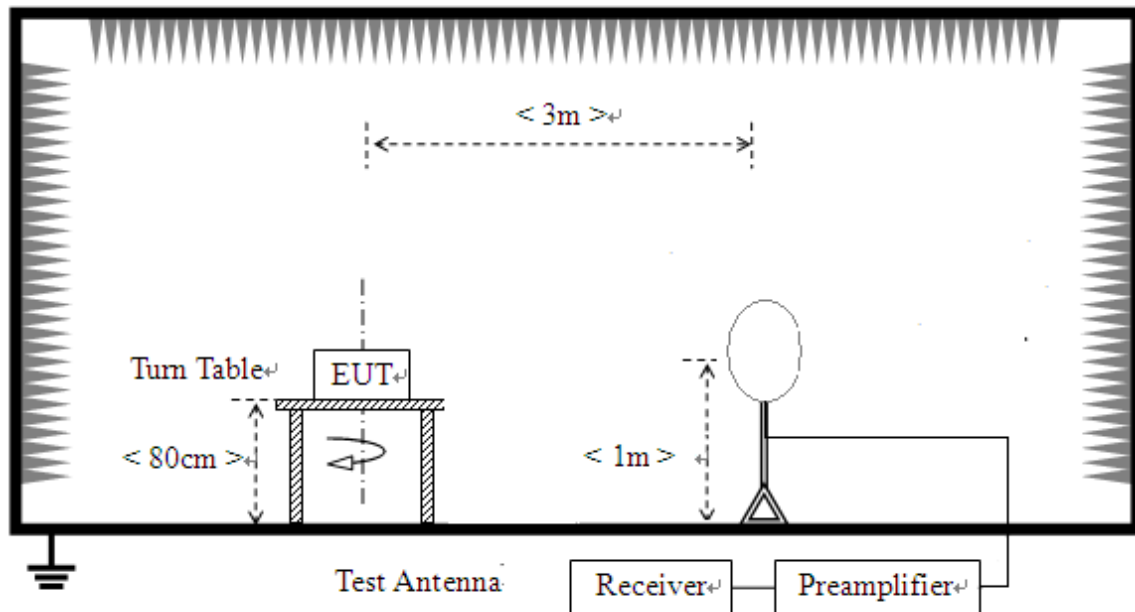
Example: F.S Limit at 30m distance is 30uV/m, then F.S Limitation at 3m distance is adjusted as

$$Ld1 = L1 = 30uV/m * (10)^2 = 100 * 30uV/m$$

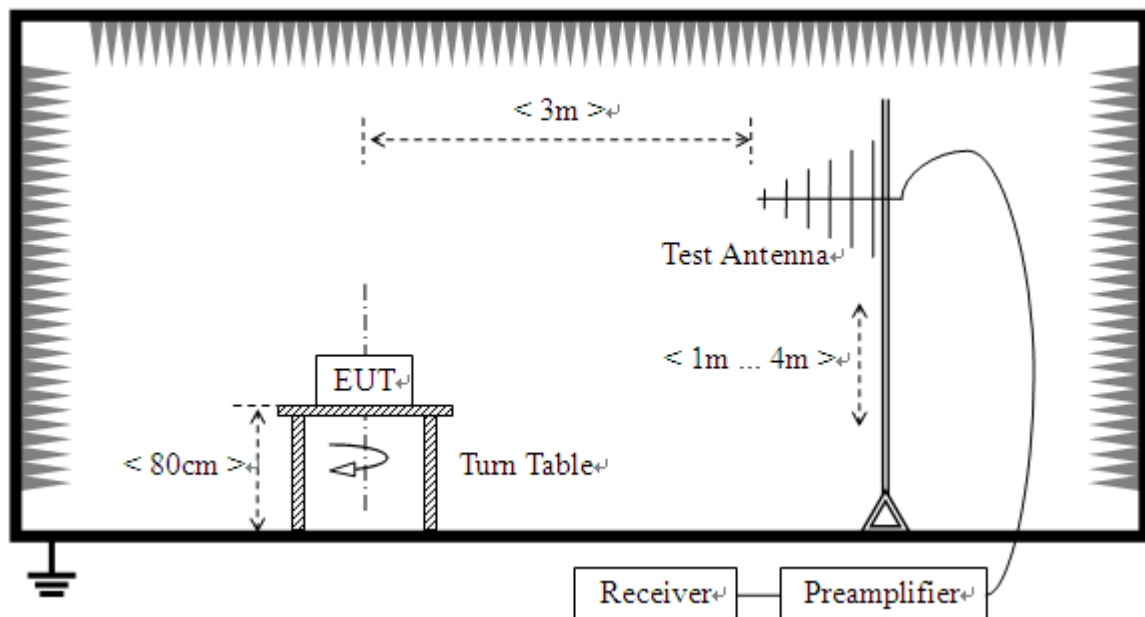
## 2.5.2. Test Description

### A. Test Setup:

- 1) For radiated emissions from 9kHz to 30MHz

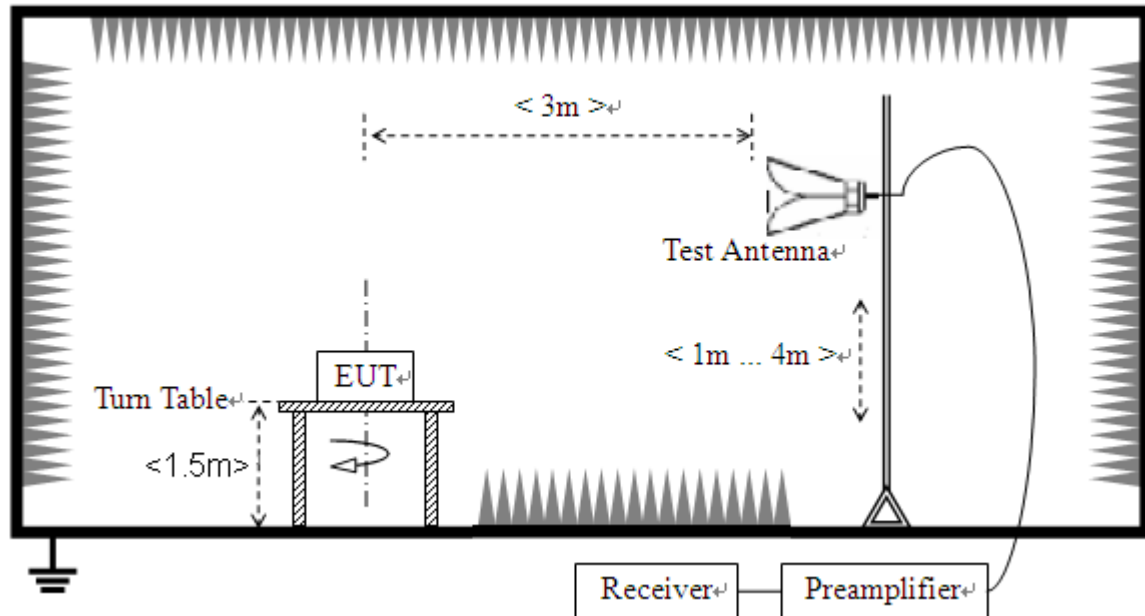


- 2) For radiated emissions from 30MHz to 1GHz





### 3) For radiated emissions above 1GHz



The RF absorbing material used on the reference ground plane and on the turntable have a maximum height (thickness) of 30 cm (12 in) and have a minimum-rated attenuation of 20 dB at all frequencies from 1 GHz to 18 GHz. Test site have a minimum area of the ground plane covered with RF absorbing material as specified in Figure 6 of ANSI C63.4: 2014.

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10:2013. For radiated emissions below or equal to 1GHz, The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10:2013.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

- In the frequency range of 9 kHz to 30MHz, magnetic field is measured with Loop Test Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Place the test antenna at 3m away from area of the EUT, while keeping the test antenna aimed at the source of emissions at each frequency of significant



emissions, with polarization oriented for maximum response. The test antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final test antenna elevation shall be that which maximizes the emissions. The test antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. The emission levels at both horizontal and vertical polarizations should be tested.

## B. Equipments List:

Please reference ANNEX B(4).

### 2.5.3. Test Procedure

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

$A_T$ : Total correction Factor except Antenna

$U_R$ : Receiver Reading

$G_{\text{preamp}}$ : Preamplifier Gain

$A_{\text{Factor}}$ : Antenna Factor at 3m

During the test, the total correction Factor  $A_T$  and  $A_{\text{Factor}}$  were built in test software.

**Note:** All radiated emission tests were performed in X, Y, Z axis direction. And only the worst case Y axis test condition was recorded in this test report.

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

### For Radiated emission below 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case 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 Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

**For Radiated emission above 30MHz**

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. 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 height of antenna 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 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

**Note:**

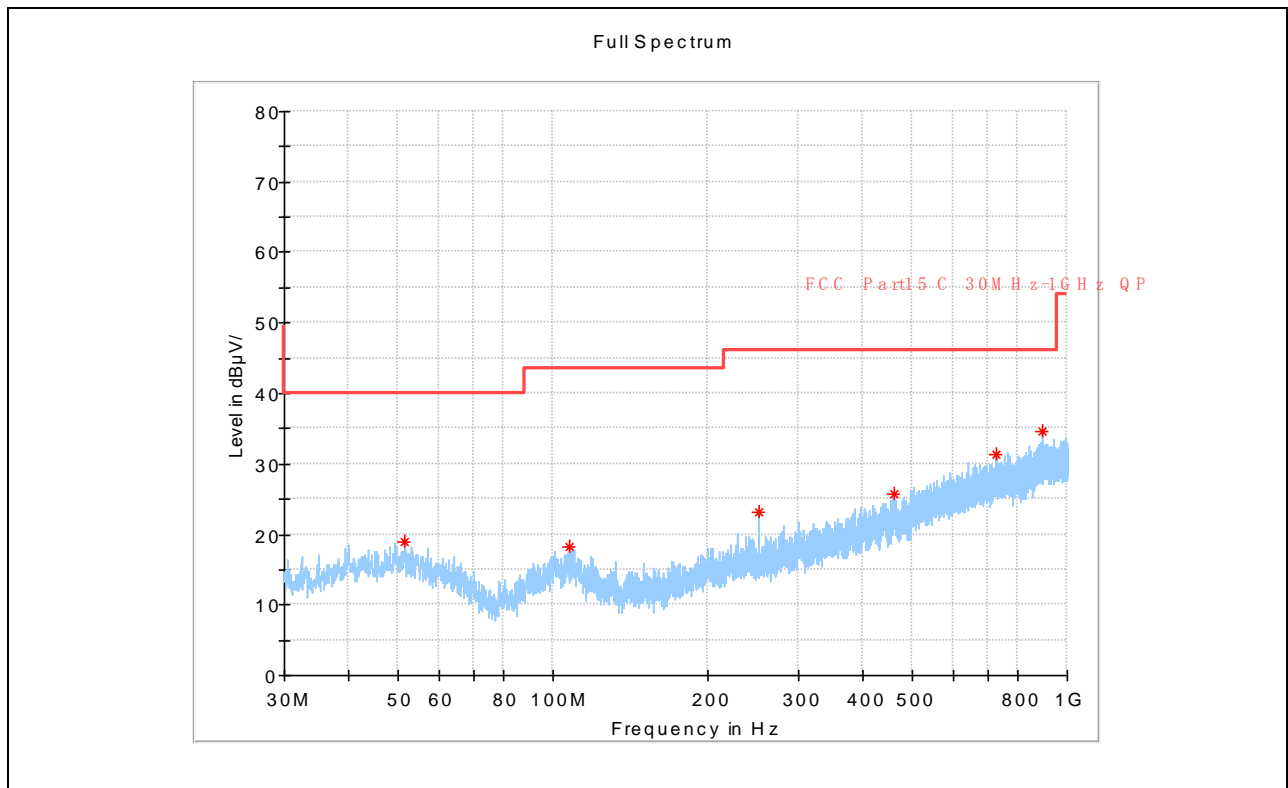
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz (Duty cycle  $\geq 98\%$ ) for Average detection (AV) at frequency above 1GHz.

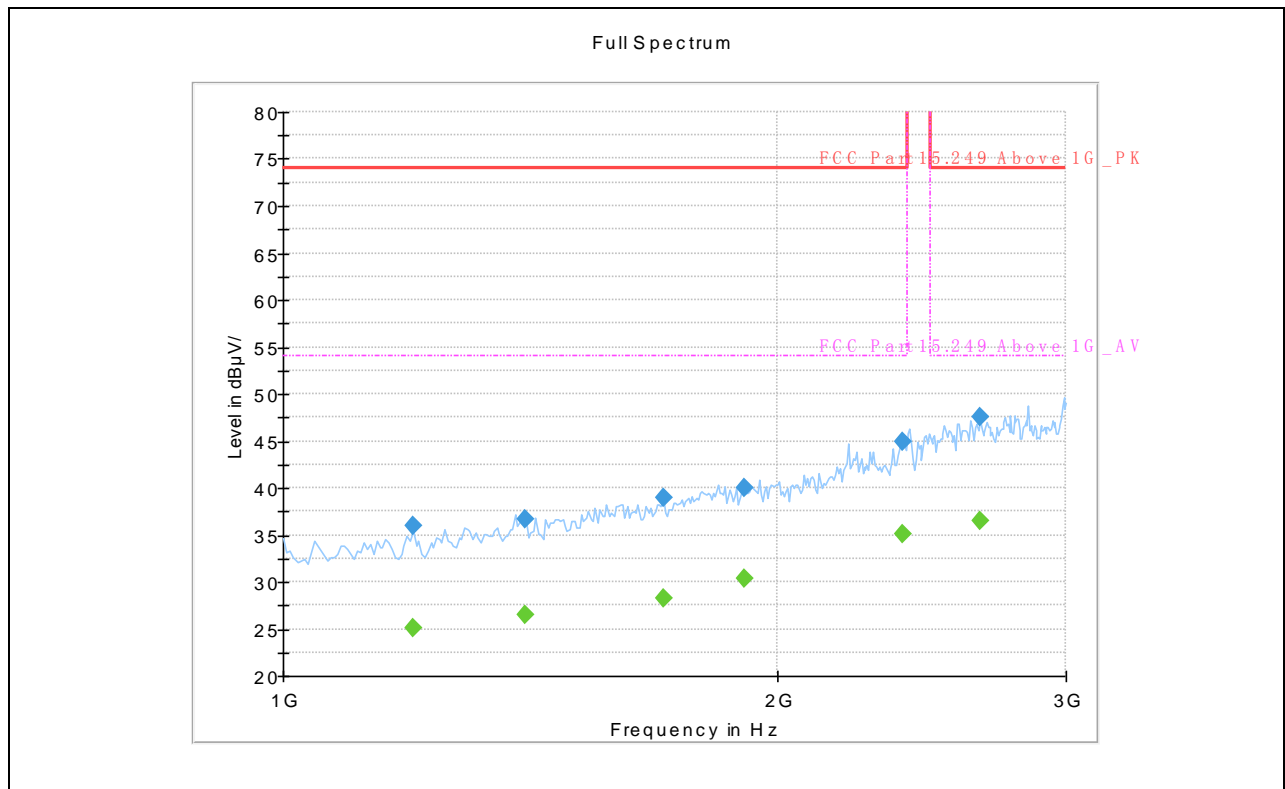
4. All modes of operation were investigated and the worst-case emissions are reported.

## 2.5.4. Test Result



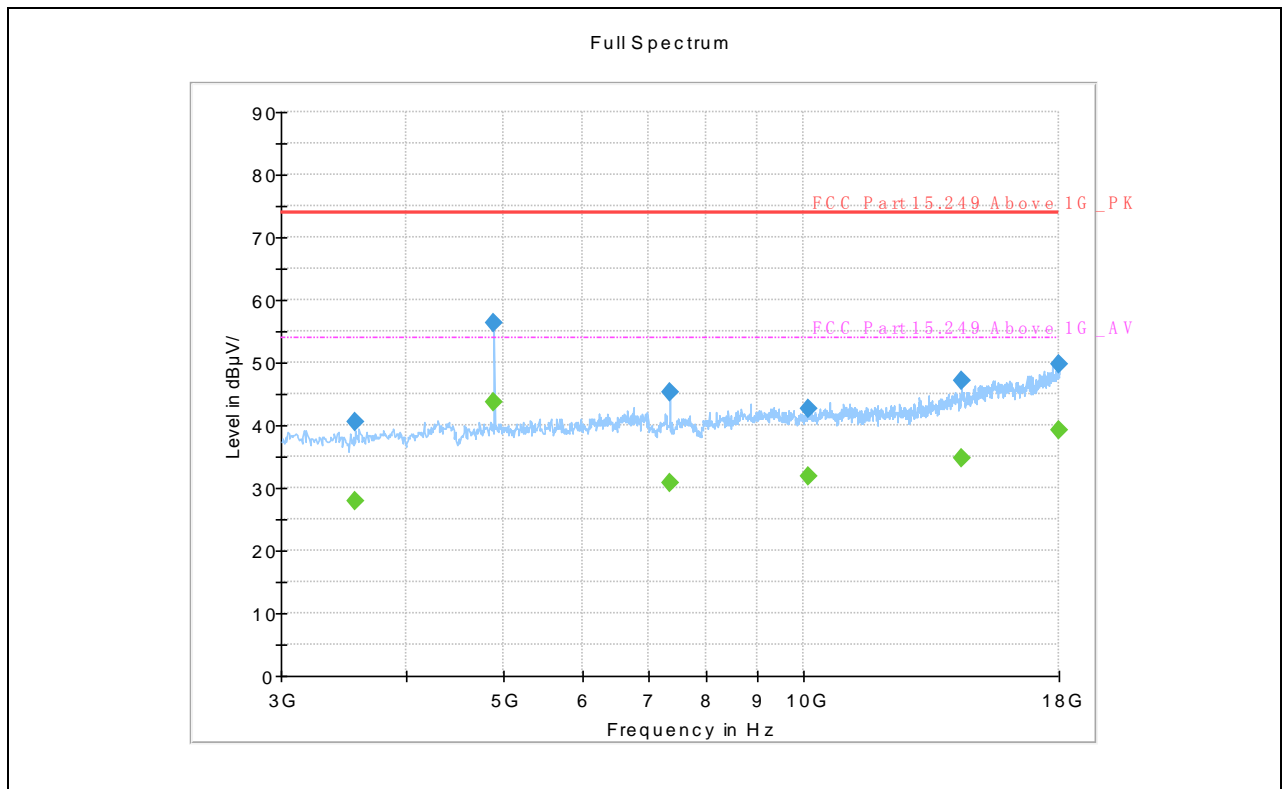
(Channel 1\_2450MHz\_30MHz to 1GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dBμV/m)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
51.420833	18.94	---	40.00	21.06	H	15.7
107.842500	18.15	---	43.50	25.35	H	14.6
252.008750	23.05	---	46.00	22.95	H	15.0
459.144167	25.67	---	46.00	20.33	H	21.1
727.268333	31.40	---	46.00	14.60	H	25.2
894.229583	34.64	---	46.00	11.36	H	27.9



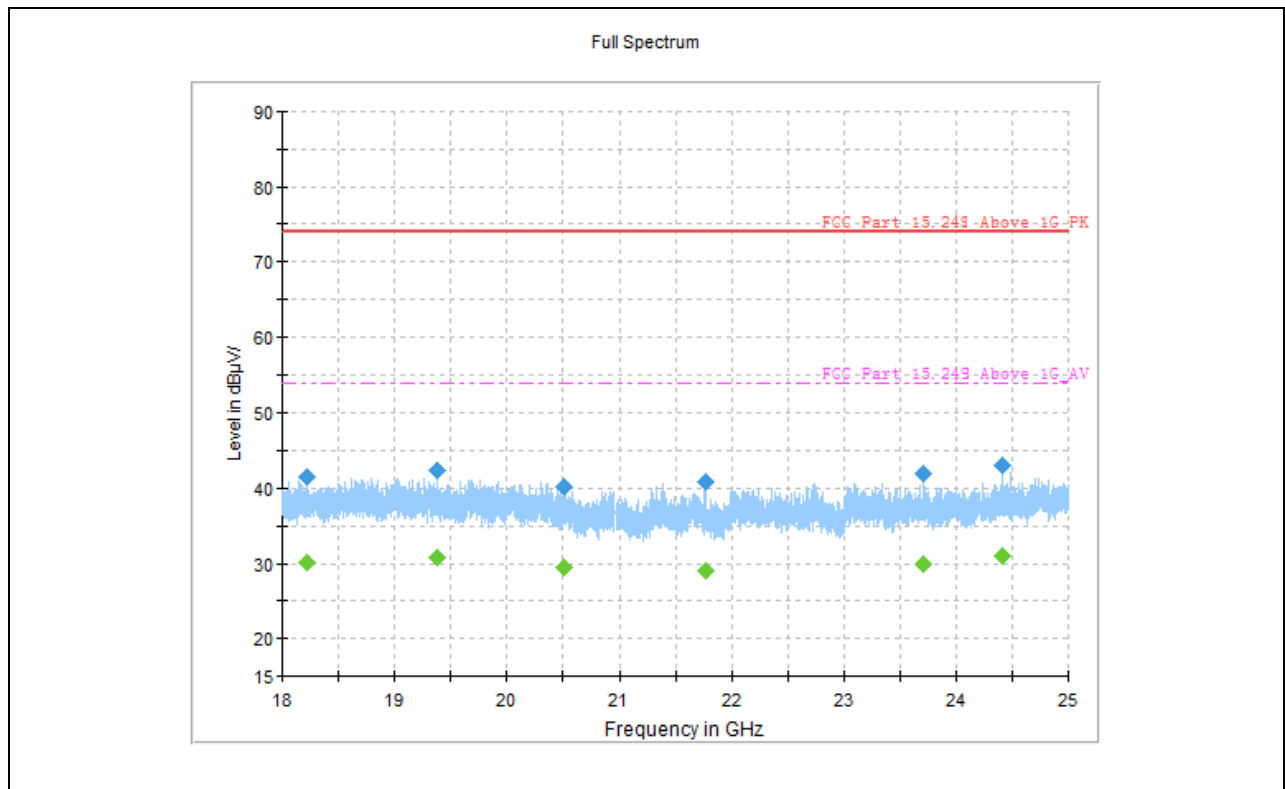
(Channel 1\_2450MHz\_1GHz to 3GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
1200.000000	---	25.07	54.00	28.93	H	-0.4
1200.000000	36.00	---	74.00	38.00	H	-0.4
1405.000000	---	26.49	54.00	27.51	H	1.5
1405.000000	36.63	---	74.00	37.37	H	1.5
1705.000000	39.01	---	74.00	34.99	H	4.0
1705.000000	---	28.27	54.00	25.73	H	4.0
1910.000000	40.04	---	74.00	33.96	H	6.2
1910.000000	---	30.28	54.00	23.72	H	6.2
2385.000000	44.98	---	74.00	29.02	H	12.3
2385.000000	---	35.03	54.00	18.97	H	12.3
2660.000000	47.52	---	74.00	26.48	H	15.1
2660.000000	---	36.57	54.00	17.43	H	15.1



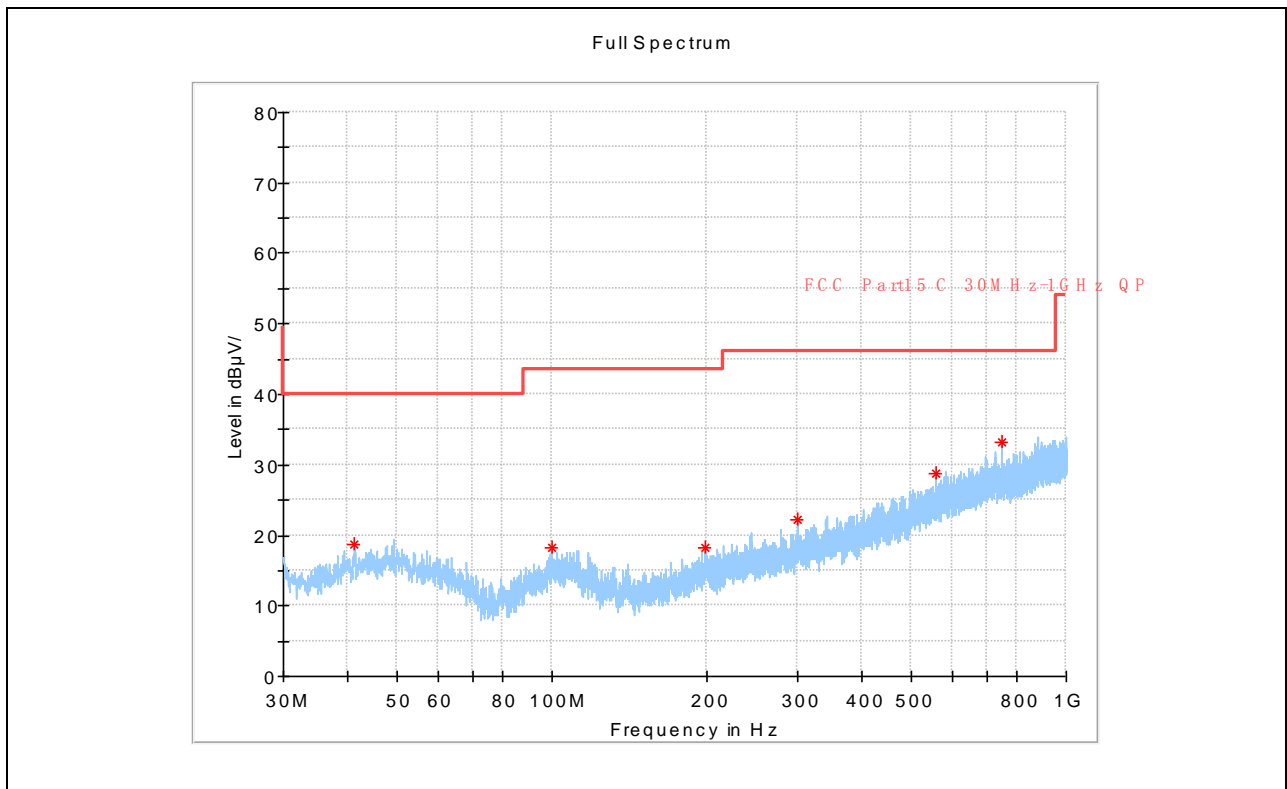
(Channel 1\_2450MHz \_3GHz to 18GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
3562.500000	---	28.00	54.00	26.00	H	-5.7
3562.500000	40.53	---	74.00	33.47	H	-5.7
4897.500000	---	43.73	54.00	10.27	H	-2.7
4897.500000	56.29	---	74.00	17.71	H	-2.7
7350.000000	---	30.76	54.00	23.24	H	-0.2
7350.000000	45.15	---	74.00	28.85	H	-0.2
10125.000000	42.55	---	74.00	31.45	H	2.2
10125.000000	---	31.97	54.00	22.03	H	2.2
14370.000000	47.06	---	74.00	26.94	H	9.4
14370.000000	---	34.67	54.00	19.33	H	9.4
18000.000000	---	39.15	54.00	14.85	H	14.9
18000.000000	49.66	---	74.00	24.34	H	14.9



(Channel 1\_2450MHz \_18GHz to 25GHz, Antenna Horizontal)

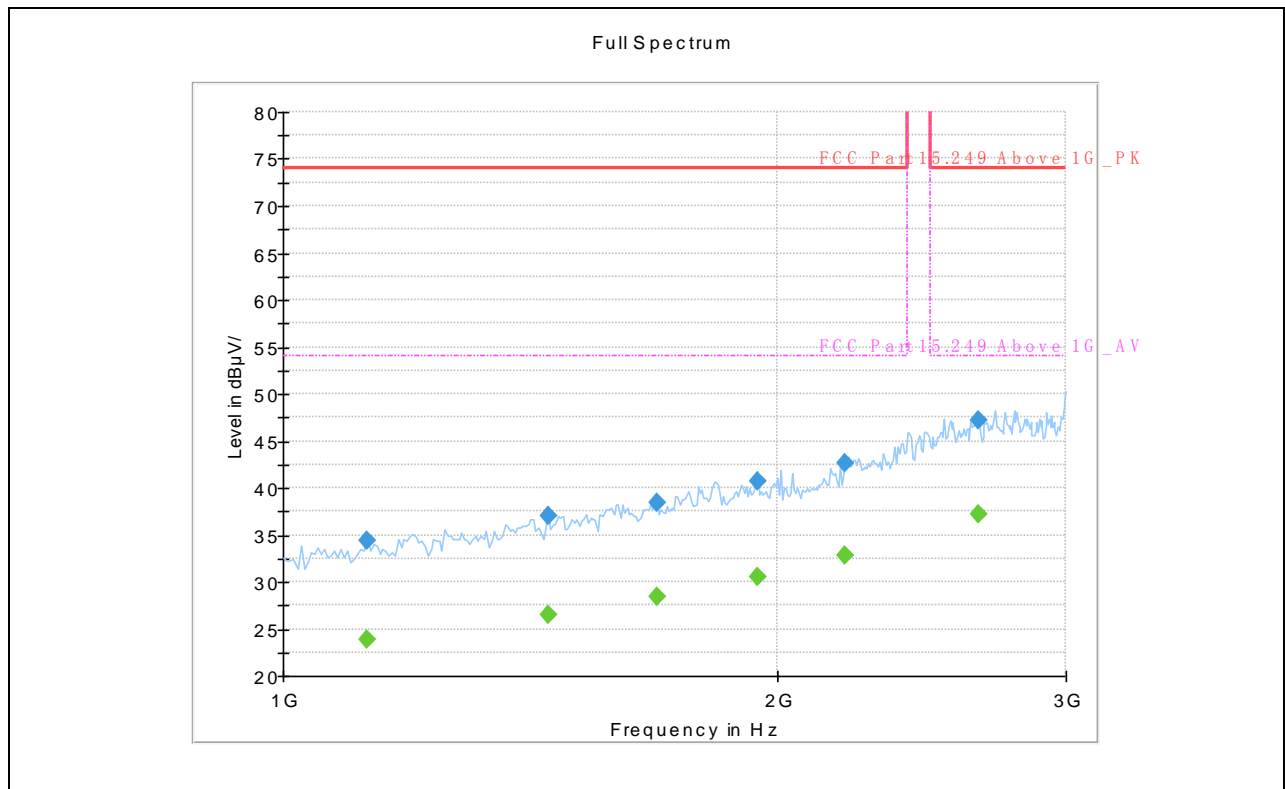
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
18218.555556	41.53	---	74.00	32.47	H	-5.5
18218.555556	---	30.27	54.00	23.73	H	-5.5
19377.444444	42.43	---	74.00	31.57	H	-5.4
19377.444444	---	30.87	54.00	23.13	H	-5.4
20520.000000	---	29.41	54.00	24.59	H	-5.1
20520.000000	40.13	---	74.00	33.87	H	-5.1
21757.444444	40.84	---	74.00	33.16	H	-5.1
21757.444444	---	29.06	54.00	24.94	H	-5.1
23705.777778	42.08	---	74.00	31.92	H	-5.0
23705.777778	---	29.94	54.00	24.06	H	-5.0
24408.111111	---	31.06	54.00	22.94	H	-4.6
24408.111111	43.07	---	74.00	30.93	H	-4.6



(Channel 1\_2450MHz \_30MHz to 1GHz, Antenna Vertical)

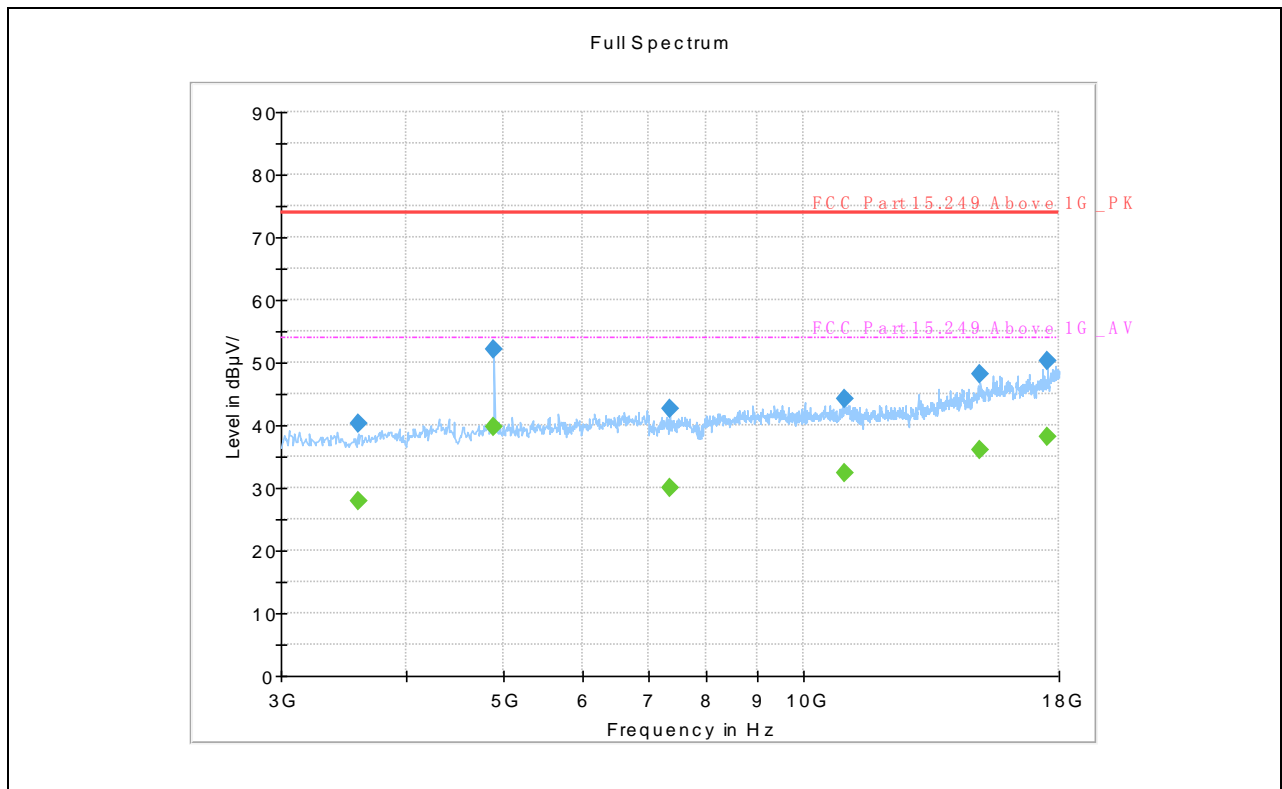
Frequency (MHz)	MaxPeak (dBμV/m)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
41.357083	18.73	---	40.00	21.27	V	14.9
99.759167	18.23	---	43.50	25.27	V	15.0
198.052500	18.18	---	43.50	25.32	V	14.0
301.115000	22.25	---	46.00	23.75	V	17.3
558.407500	28.66	---	46.00	17.34	V	22.7
751.801250	33.12	---	46.00	12.88	V	26.0





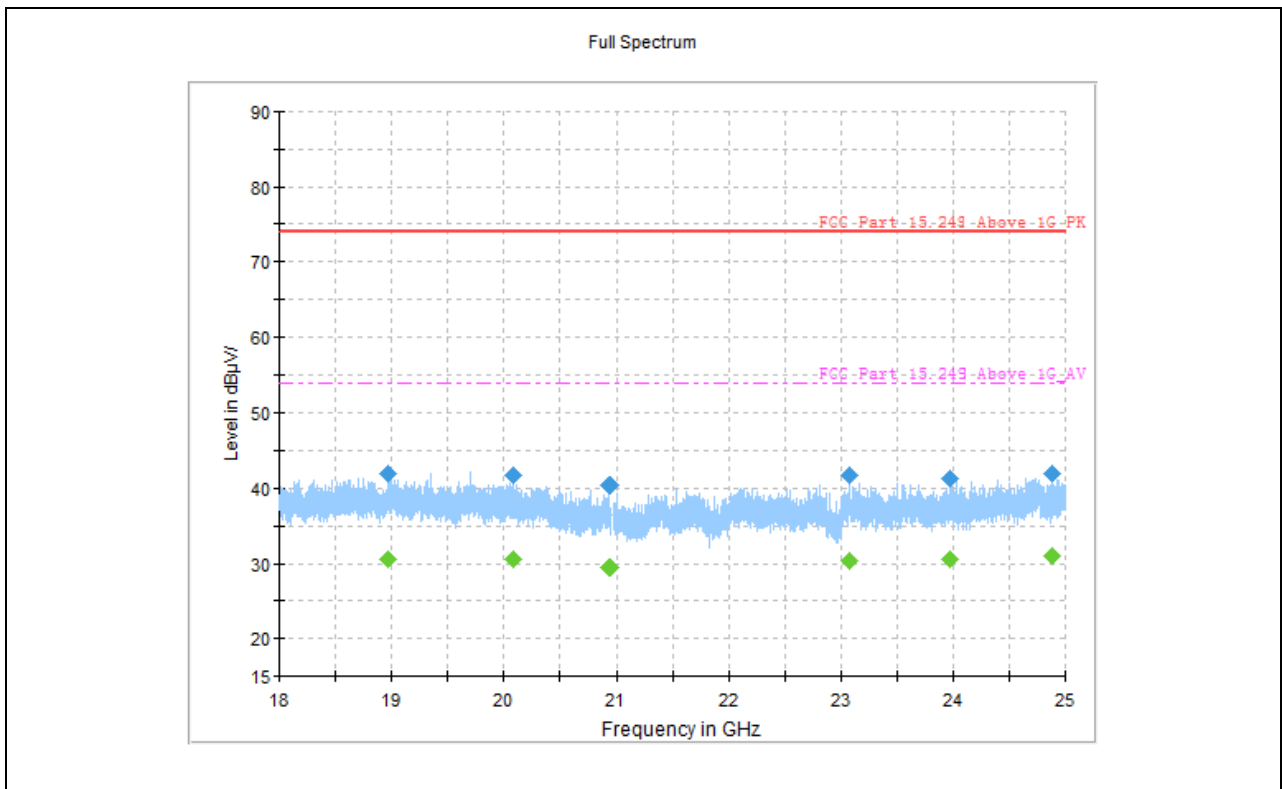
(Channel 1\_2450MHz\_1GHz to 3GHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
1125.000000	---	23.89	54.00	30.11	V	-2.0
1125.000000	34.44	---	74.00	39.56	V	-2.0
1450.000000	36.99	---	74.00	37.01	V	1.2
1450.000000	---	26.42	54.00	27.58	V	1.2
1690.000000	38.44	---	74.00	35.56	V	3.7
1690.000000	---	28.41	54.00	25.59	V	3.7
1945.000000	40.76	---	74.00	33.24	V	6.8
1945.000000	---	30.58	54.00	23.42	V	6.8
2200.000000	---	32.84	54.00	21.16	V	9.3
2200.000000	42.57	---	74.00	31.43	V	9.3
2655.000000	47.19	---	74.00	26.81	V	15.3
2655.000000	---	37.20	54.00	16.80	V	15.3



(Channel 1\_2450MHz \_3GHz to 18GHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
3585.000000	40.23	---	74.00	33.77	V	-5.7
3585.000000	---	27.77	54.00	26.23	V	-5.7
4897.500000	52.11	---	74.00	21.89	V	-2.7
4897.500000	---	39.66	54.00	14.34	V	-2.7
7350.000000	---	30.07	54.00	23.93	V	-0.2
7350.000000	42.61	---	74.00	31.39	V	-0.2
11002.500000	---	32.31	54.00	21.69	V	3.4
11002.500000	44.18	---	74.00	29.82	V	3.4
15030.000000	---	35.95	54.00	18.05	V	10.6
15030.000000	48.10	---	74.00	25.90	V	10.6
17535.000000	---	38.06	54.00	15.94	V	13.7
17535.000000	50.28	---	74.00	23.72	V	13.7



(Channel 1\_2450MHz\_18GHz to 25GHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Pol	Corr. (dB/m)
18964.055556	---	30.64	54.00	23.36	V	-5.3
18964.055556	41.92	---	74.00	32.08	V	-5.3
20083.277778	---	30.60	54.00	23.40	V	-5.0
20083.277778	41.75	---	74.00	32.25	V	-5.0
20945.833333	40.41	---	74.00	33.59	V	-5.1
20945.833333	---	29.49	54.00	24.51	V	-5.1
23070.333333	41.78	---	74.00	32.22	V	-5.0
23070.333333	---	30.44	54.00	23.56	V	-5.0
23964.000000	41.41	---	74.00	32.59	V	-4.7
23964.000000	---	30.46	54.00	23.54	V	-4.7
24881.777778	42.02	---	74.00	31.98	V	-4.8
24881.777778	---	30.99	54.00	23.01	V	-4.8



## Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Bandwidth	$\pm 5\%$
Radiated Emission	$\pm 2.95\text{dB}$

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

<b>Company Name:</b>	Kehu-Morlab Test Laboratory
<b>Address:</b>	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian), P.R. China
<b>Responsible Test Lab Manager:</b>	Mr. Di Dehai
<b>Telephone:</b>	+86-592-5612050
<b>Facsimile:</b>	+86-592-5612095

### 2. Identification of the Responsible Testing Location

<b>Name:</b>	Kehu-Morlab Test Laboratory
<b>Address:</b>	Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian), P.R. China

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at Unit 101, No.1732 Gangzhong Road, Xiamen Area, Pilot Free Trade Zone (Fujian), P.R. China.

The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1249.

### 4. Test Equipments Utilized

#### 4.1 Conducted Test Equipments

No.	Equipment Name	Serial No.	Model No.	Manufacturer	Cal.Date	Cal.Due Date
1	MXA Signal Analyzer	MY53421845	N9020A	Keysight	2019.01.04	2020.01.03
2	RF cable (30MHz-26.5GHz)	RF01	N/A	Morlab	2019.03.20	2020.03.19
3	SMA connector	RF03	N/A	Xingbo	N/A	N/A

NOTE: RF cable (30MHz-26.5GHz), Annual internal calibration.

#### 4.2 List of Software Used

No.	Model	Version Number	Producer	Test Item
1	EMC32	V10.00.00	Rode&Schwarz	RE

**4.3 Radiated Test Equipments**

No.	Equipment Name	Serial No.	Model No.	Manufacturer	Cal. Date	Cal.Due Date
1	Anechoic Chamber	N/A	9m*6m*6m	ETS-Lindgren	2017.07.21	2020.07.20
2	Signal Analyzer	101294	FSV40	R&S	2019.01.04	2020.01.03
3	Active Ring Antenna	FMZB 1513 #269	FMZB 1513	Schwarzbeck	2019.01.12	2020.01.11
4	Linear Log Periodic Broad Band Antenna	949	VULB 9163	Schwarzbeck	2018.09.25	2019.09.24
5	Ultra-Wideband Horn Antenna	102615	HF907	R&S	2019.01.19	2020.01.18
6	Steatite Antennas	17868	QSH-SL-18 -26-S-20	Seibersdorf	2019.01.12	2020.01.11
7	RF Switch and Control Platform	N/A	RSC	CDSI	N/A	N/A
8	Coaxial cable (N male) (9kHz -3GHz)	EMC02	N/A	Morlab	2019.03.20	2020.03.19
9	Coaxial cable (N male) (9kHz -3GHz)	EMC03	N/A	Morlab	2019.03.20	2020.03.19
10	Coaxial cable (N male) (1GHz-26.5GHz)	EMC04	N/A	Morlab	2019.03.20	2020.03.19
11	Coaxial cable (N male) (1GHz-26.5GHz)	EMC05	N/A	Morlab	2019.03.20	2020.03.19
12	Pre-amplifier (1GHz-18GHz)	8810011	PAP-1G18	CDSI	2019.01.04	2020.01.03
13	Pre-amplifier (18GHz-40GHz)	17021-17024	PAP-1840	CDSI	2018.07.05	2019.07.04
14	Band stop Filter	EMC11	BJF2400/2485-60	CDSI	N/A	N/A
15	High Pass Filter	EMC12	HFP-3.0/18G-60	CDSI	N/A	N/A

NOTE: Coaxial cable, Annual internal calibration.

— END OF REPORT —