



REPORT No.: XM19080044W01

TEST REPORT

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

PRODUCT NAME : Gesin Electric Adjustable Bed Control System

MODEL NAME : GXRC07

BRAND NAME : N/A

FCC ID : 2ARF4-WAM2

STANDARD(S) : 47 CFR Part 15 Subpart C

TEST DATE : 2019-09-25 to 2019-09-26

ISSUE DATE : 2019-09-27

Tested by:

Hao Wang

Hao Wang (Test engineer)

Approved by:

Anne Liu

Anne Liu (Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2019-09-27	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

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

1.2. Equipment Under Test (EUT) Description

Product Name:	Gesin Electric Adjustable Bed Control System
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	V2.2
Software Version:	V4.2
Operating Frequency:	2450 MHz
Modulation	GFSK
Channel Number:	1
Antenna Type:	PCB Antenna
Antenna Gain:	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	Sep 26, 2019	Hao Wang	PASS
3	15.207	Conducted Emission	N/A	N/A	PASS
4	15.209, 15.249	Radiated Emission and field strength of harmonics	Sep 26, 2019	Hao Wang	PASS

Note 1: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2013.

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.

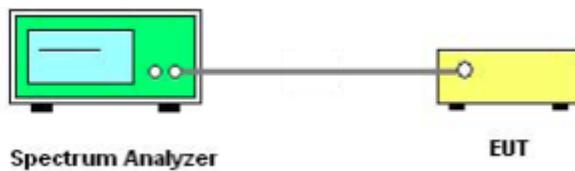
2.2. Bandwidth

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.

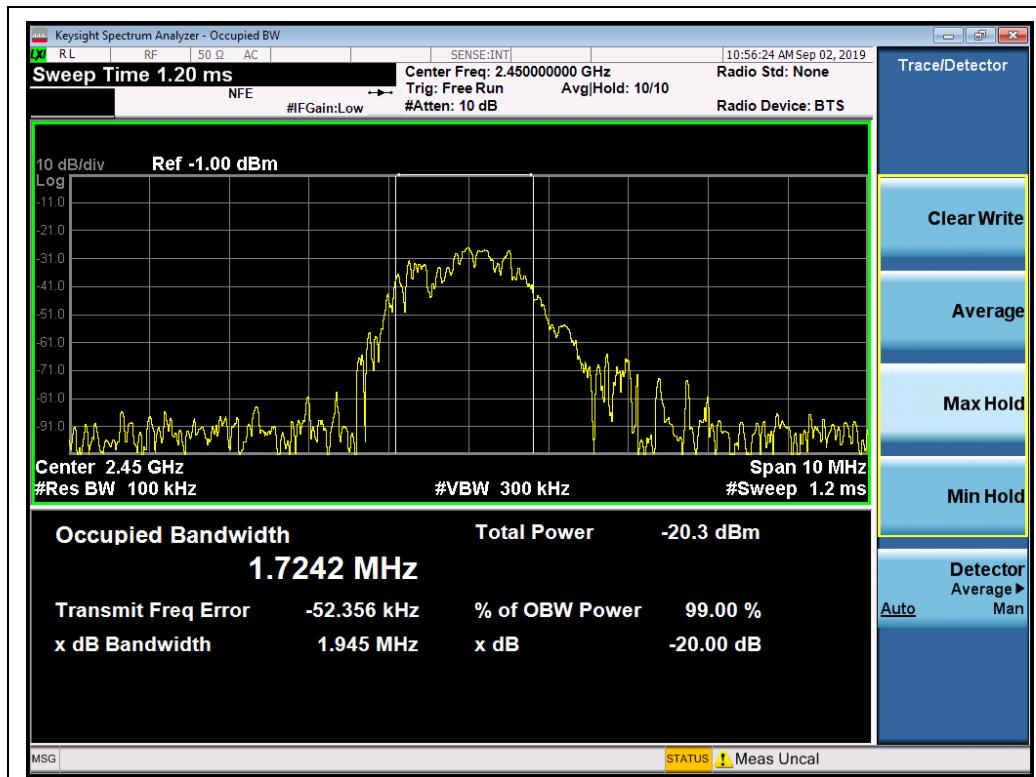
B. Equipments List:

Please reference ANNEX B(4).

2.2.3. Test Result

A. Test Verdict:

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	Result
1	2450	1.945	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 μ H/50 Ω line impedance stabilization network (LISN).

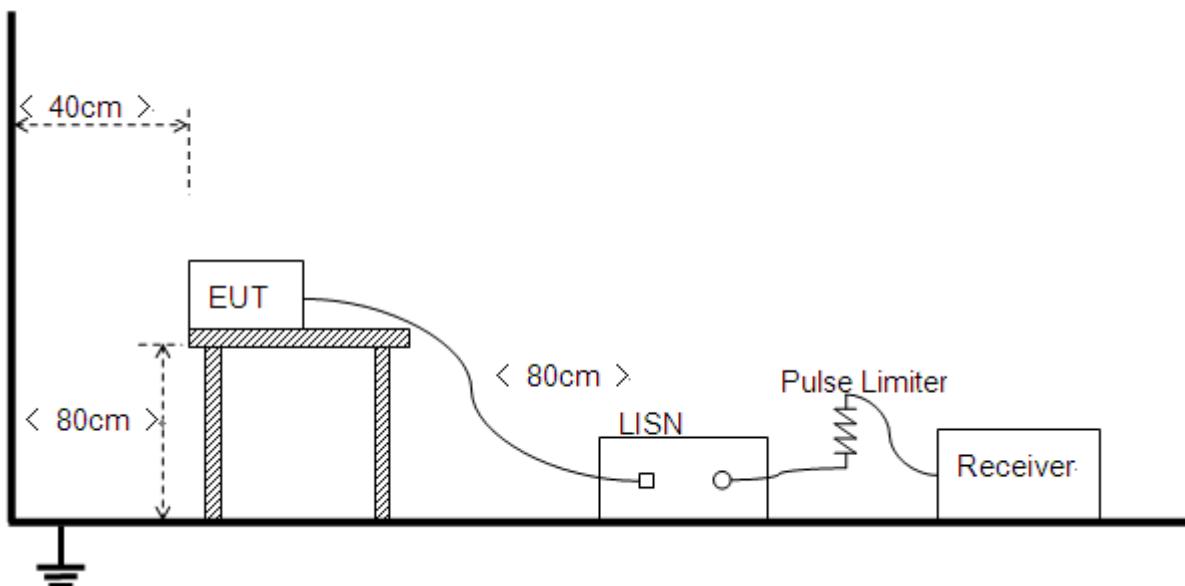
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- (a) The lower limit shall apply at the band edges.
- (b) 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

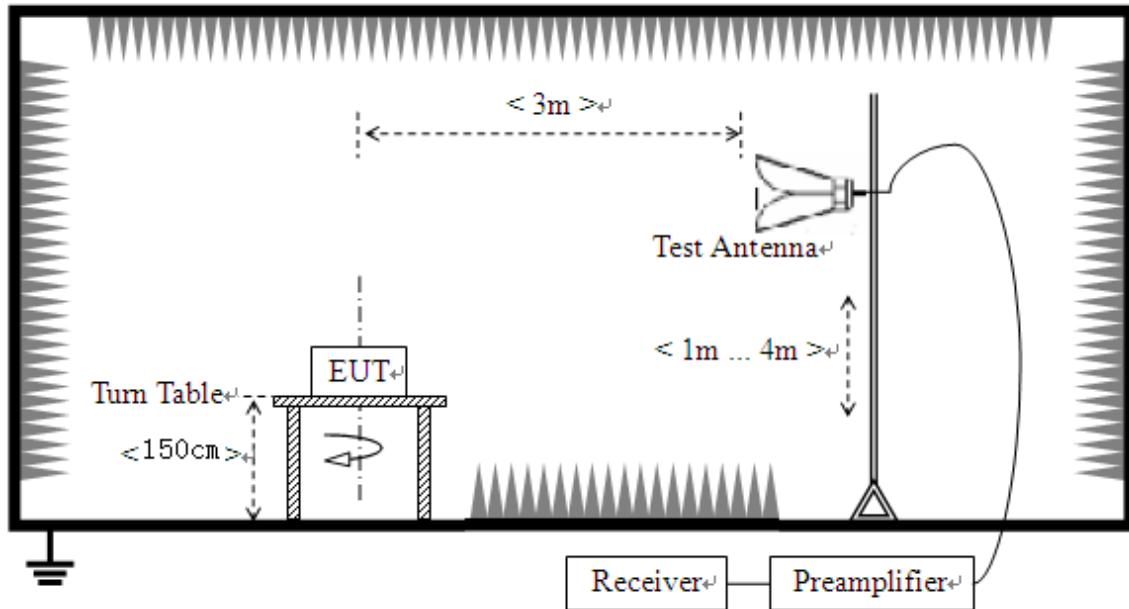
2.4.1. Requirement

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:

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

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{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

- a. 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.
- 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. 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



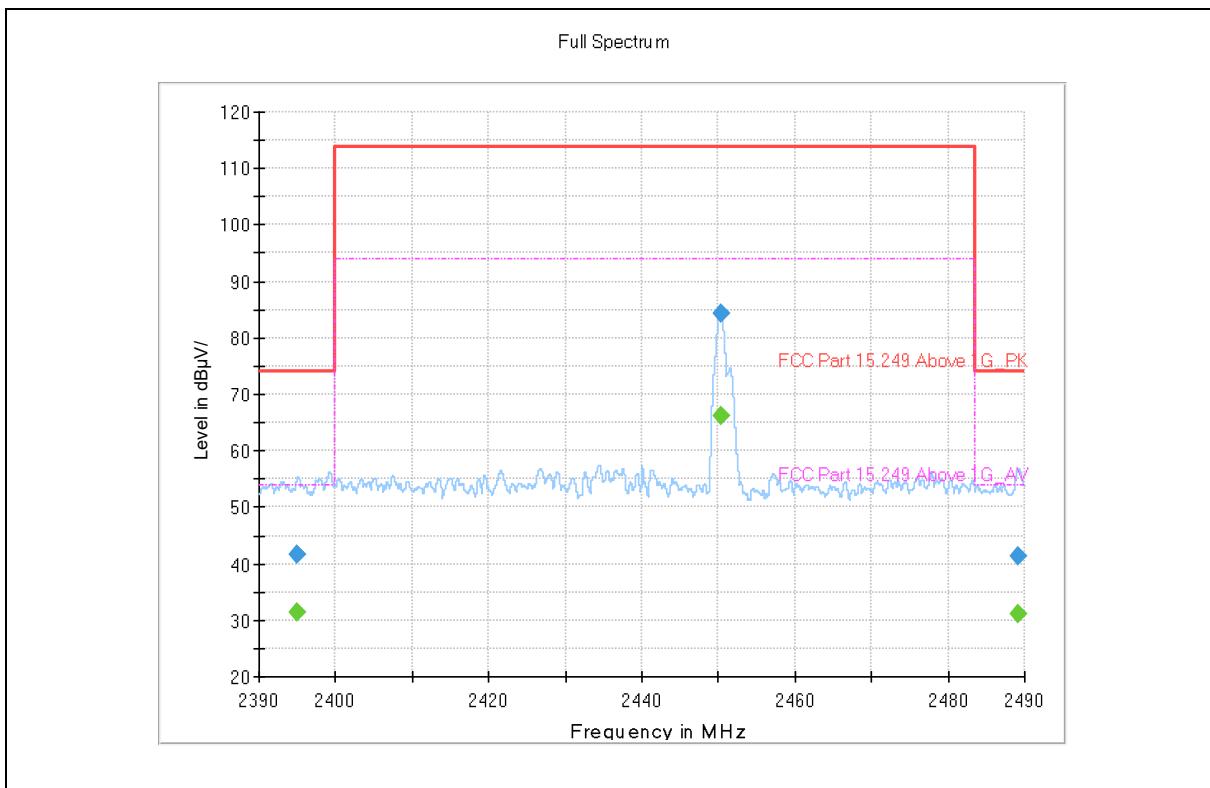
maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

- 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.

2.4.4. Test Result

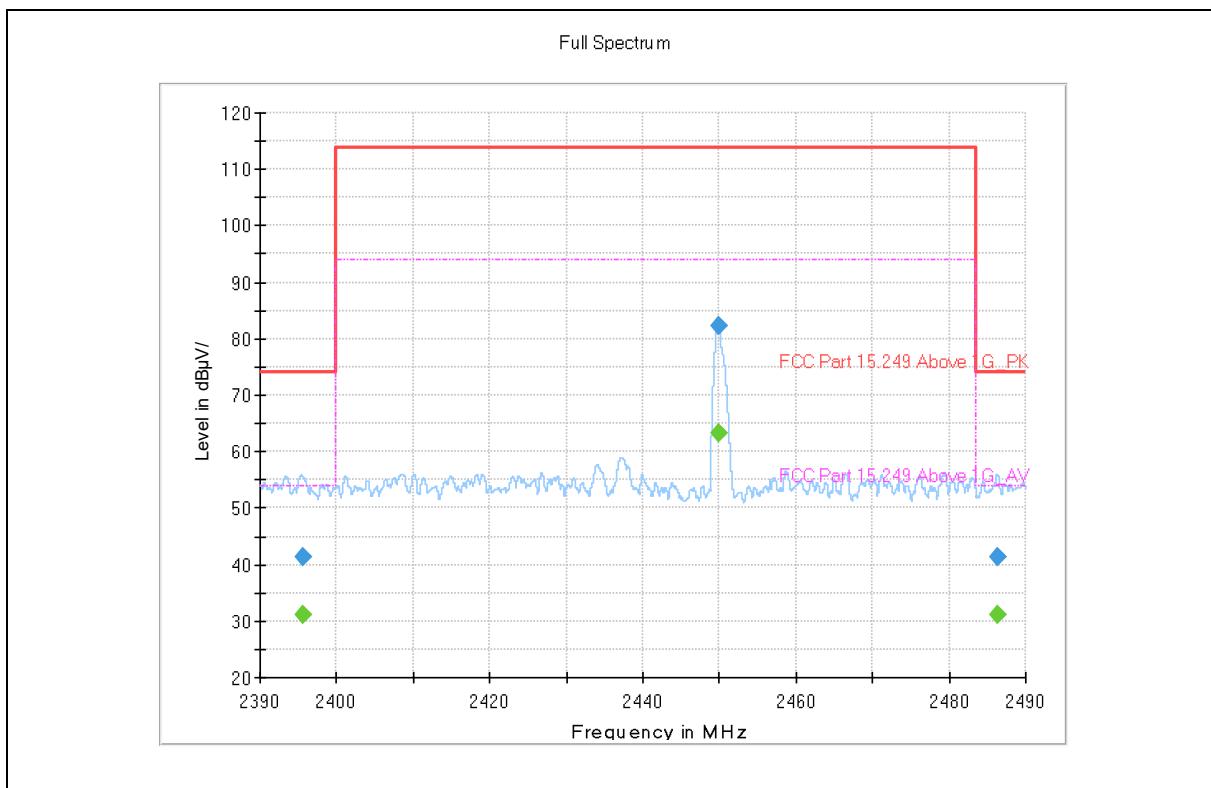


(Channel 1, 2450MHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
2395.061111	41.66	---	74.00	32.34	H	8.4	PASS
2395.061111	---	31.26	54.00	22.74	H	8.4	PASS
2450.272222	---	66.33	94.00	27.67	H	7.7	PASS
2450.272222	84.31	---	114.00	29.69	H	7.7	PASS
2489.222222	41.31	---	74.00	32.69	H	8.4	PASS
2489.222222	---	31.06	54.00	22.94	H	8.4	PASS



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(Channel 1, 2450MHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
2395.538889	41.40	---	74.00	32.60	V	8.4	PASS
2395.538889	---	31.24	54.00	22.76	V	8.4	PASS
2449.838889	82.34	---	114.00	31.66	V	7.7	PASS
2449.838889	---	63.30	94.00	30.70	V	7.7	PASS
2486.333333	---	31.04	54.00	22.96	V	8.3	PASS
2486.333333	41.26	---	74.00	32.74	V	8.3	PASS



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 (μ V/m)	Measurement Distance (m)	Field Strength Limitation at 3m Measurement Distance	
			(μ V/m)	(dB μ V/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:

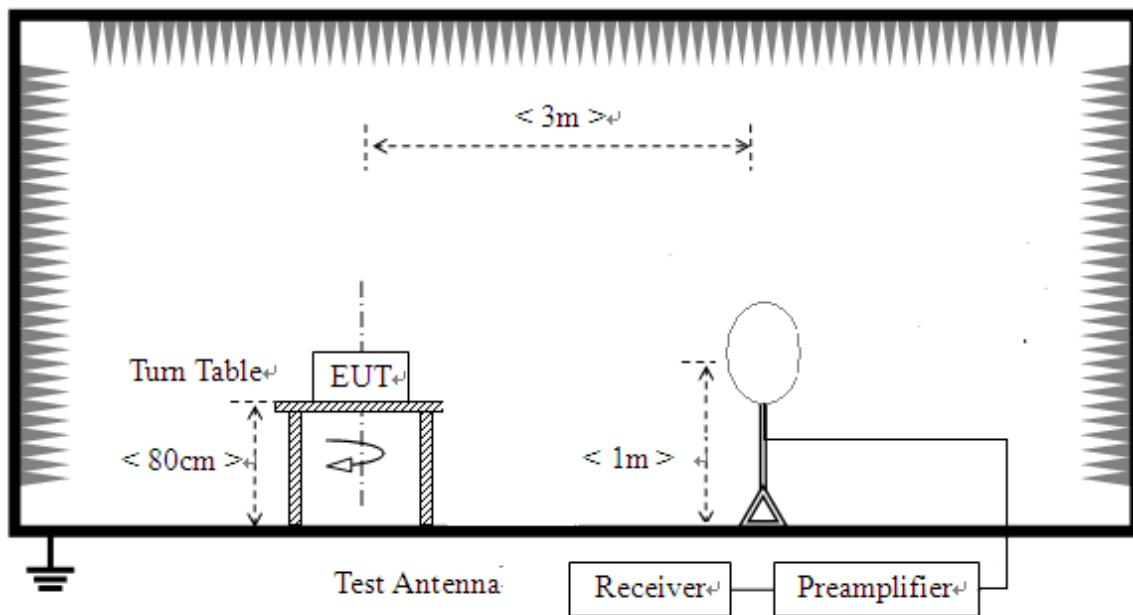
- 1) The tighter limit shall apply at the boundary between two frequency range.
- 2) Limitation expressed in dB μ V/m is calculated by 20log Emission Level(μ V/m).
- 3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

Example: F.S Limit at 30m distance is 30uV/m, then F.S Limitation at 3m distance is adjusted as $Ld1 = L1 = 30uV/m * (10)^2 = 100 * 30uV/m$

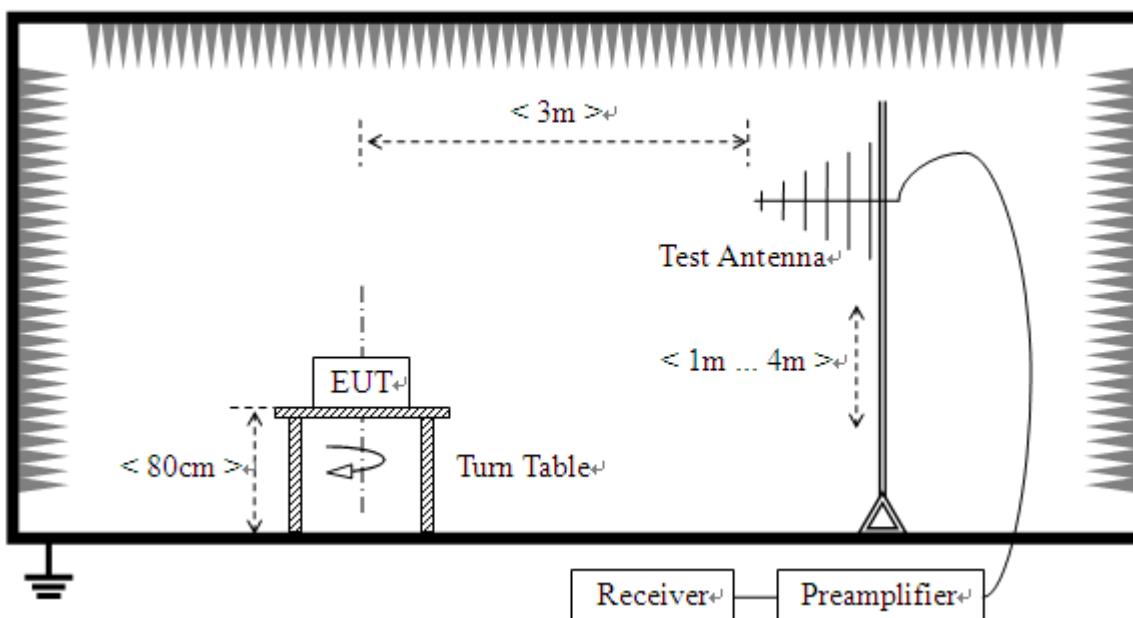
2.5.2. Test Description

A. Test Setup:

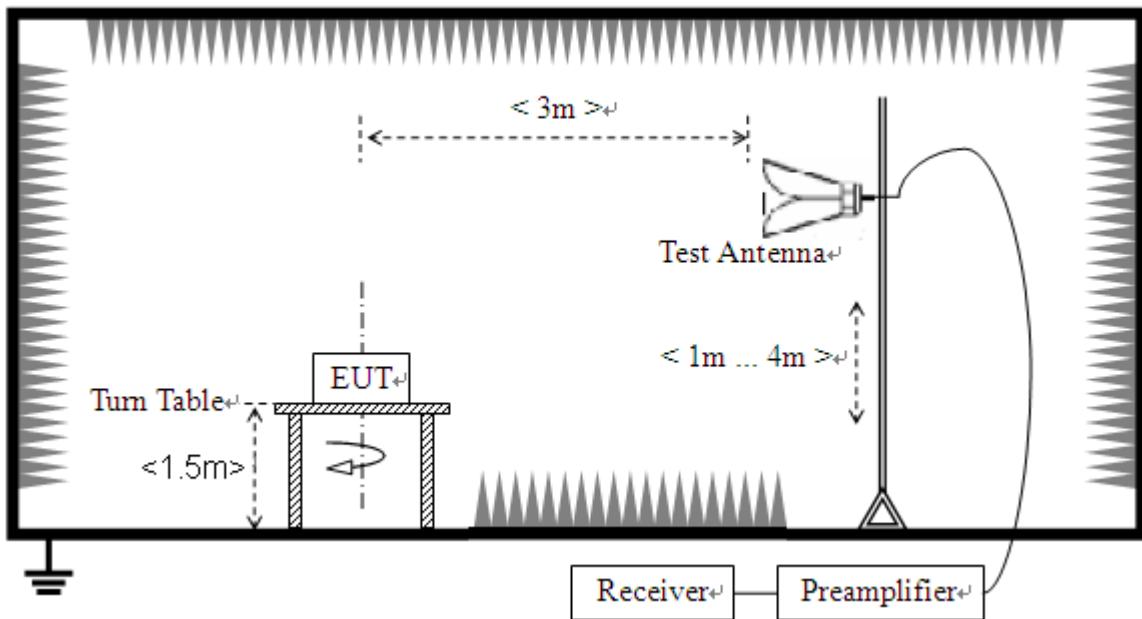
- 1) For radiated emissions from 9kHz to 30MHz



- 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_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{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

- a. 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.
- 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. 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:

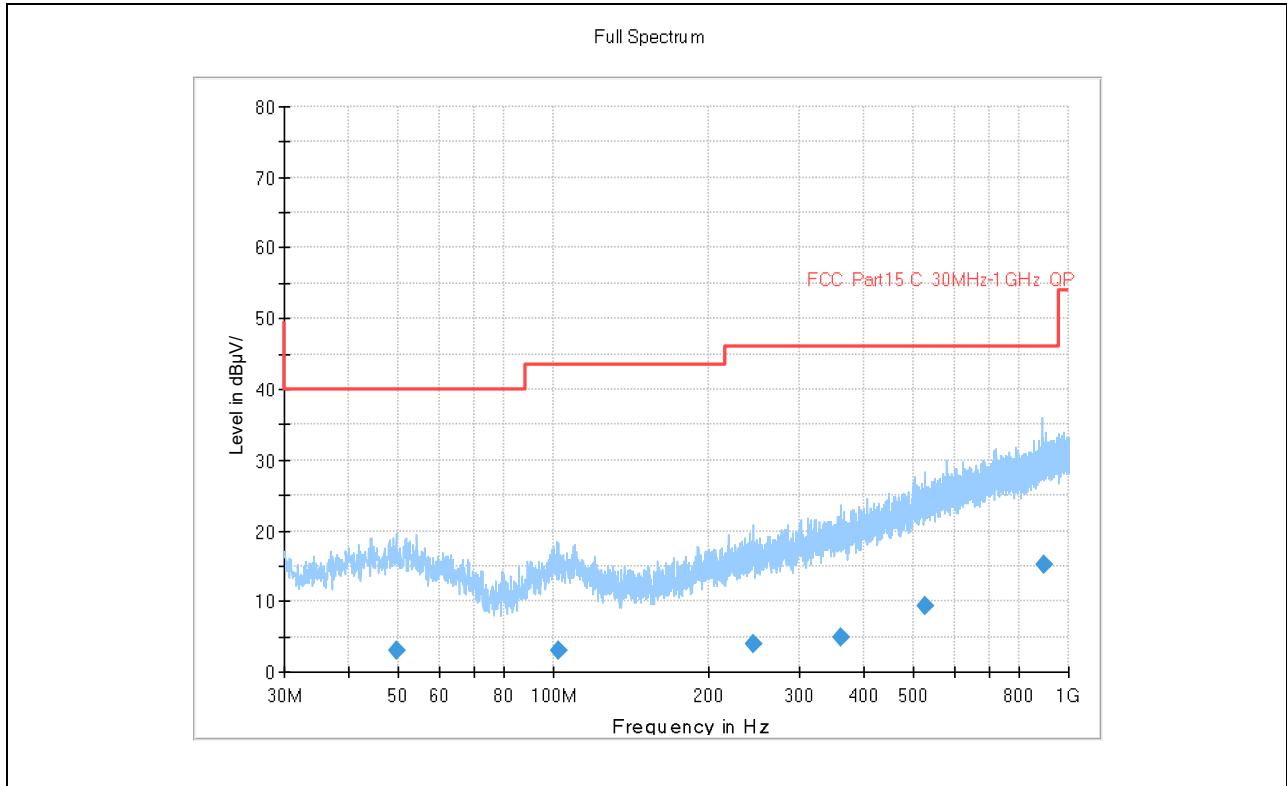
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasipeak detection (QP) at frequency below 1GHz.

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.

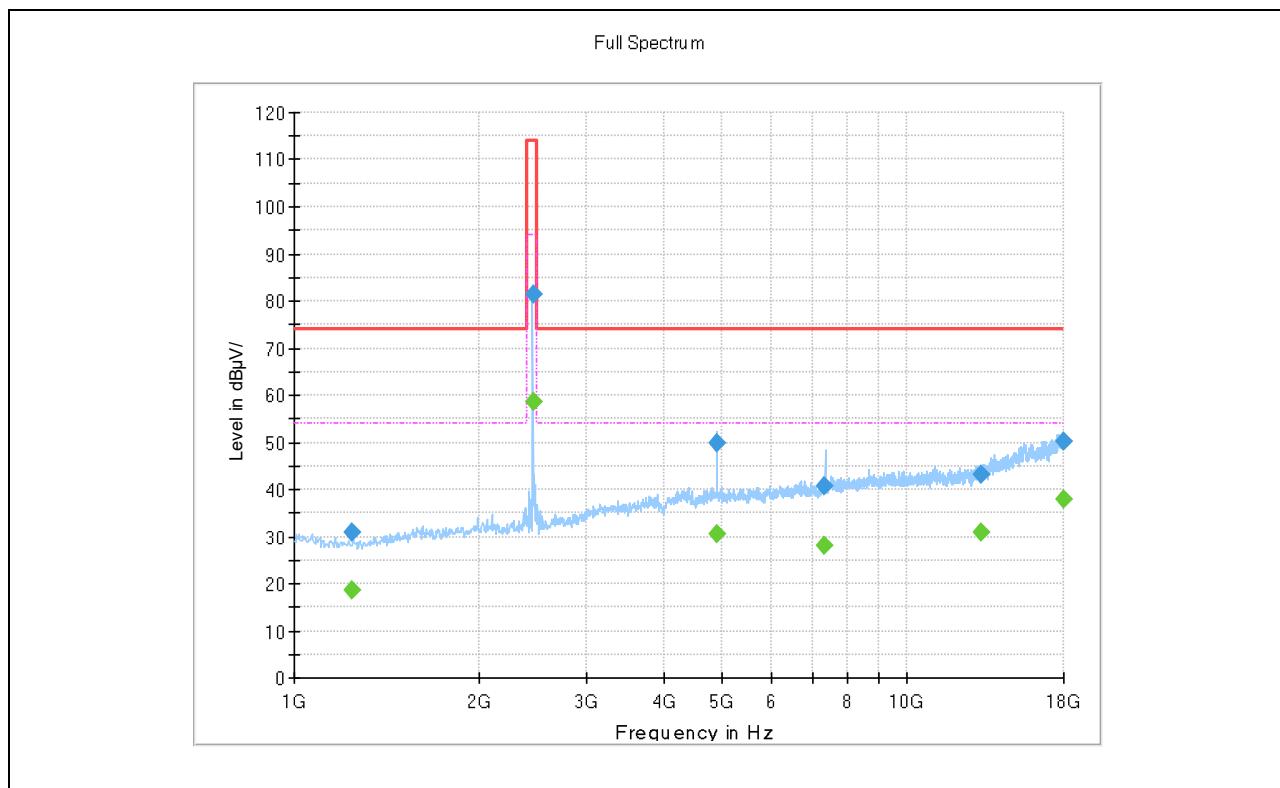
4. All modes of operation were investigated and the worst-case emissions are reported.

2.5.4. Test Result



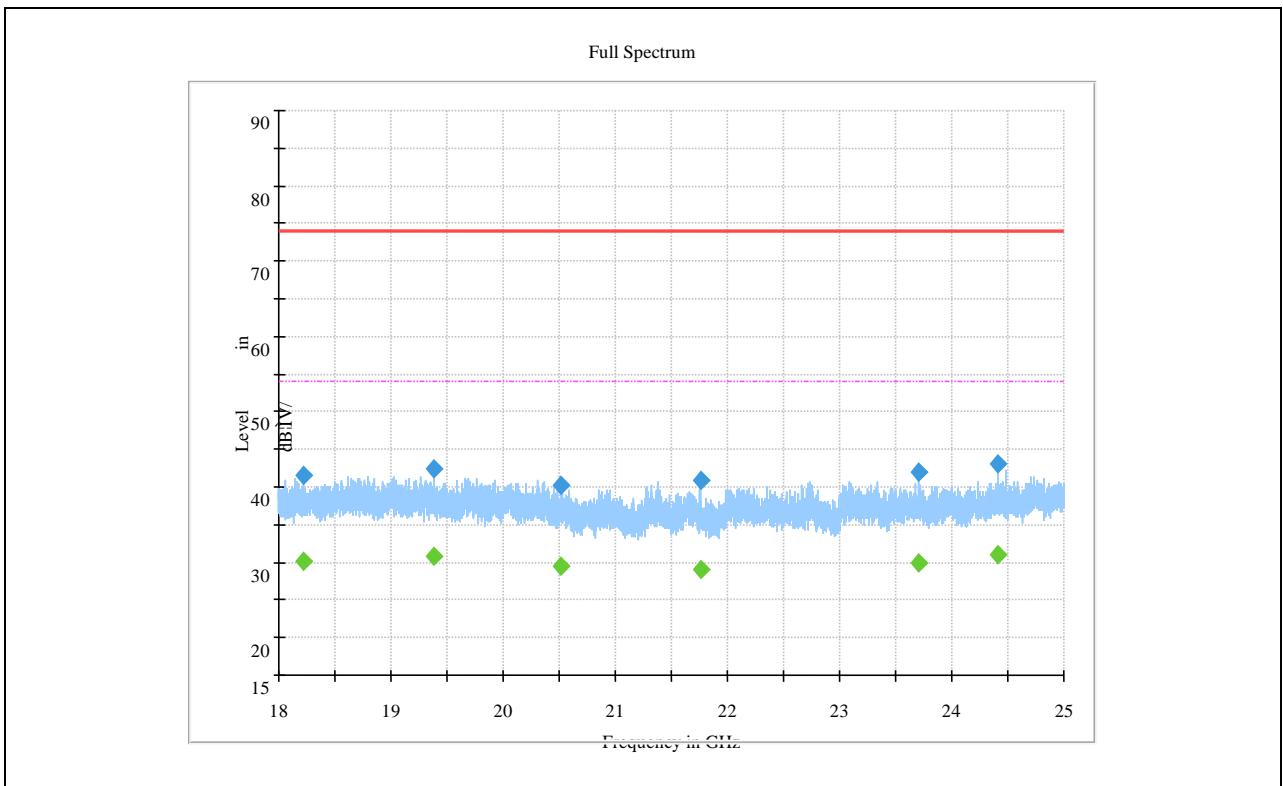
(Channel 1_2450MHz_30MHz to 1GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dB μ V/m)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
40.058750	18.46	4.50	40.00	35.50	H	15.7	PASS
61.277083	16.92	2.75	40.00	37.25	H	14.1	PASS
108.038750	18.30	4.13	43.50	39.37	H	14.6	PASS
237.580833	20.38	3.73	46.00	42.27	H	14.9	PASS
500.570000	26.85	9.08	46.00	36.93	H	22.0	PASS
947.697083	34.07	15.35	46.00	30.65	H	28.3	PASS



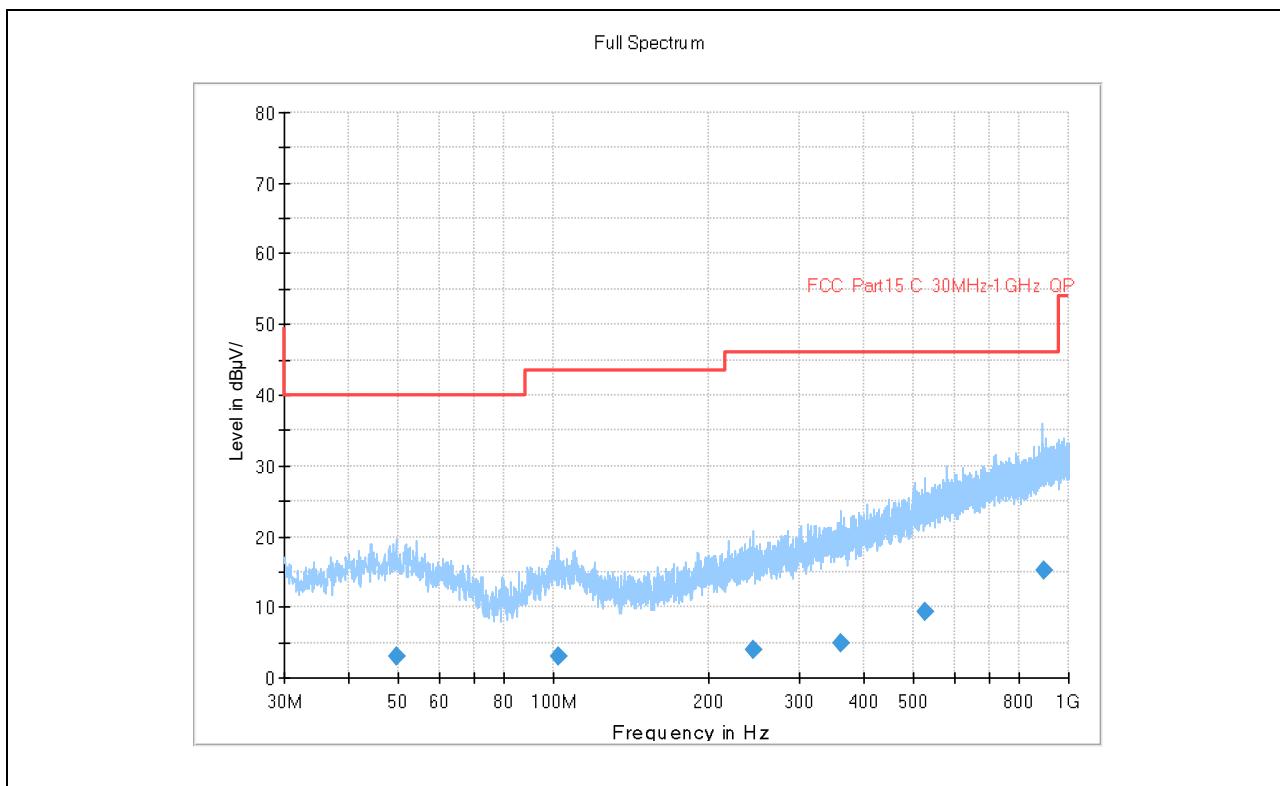
(Channel 1_2450MHz_1GHz to 18GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
1241.691626	---	18.58	54.00	35.42	H	-17.5	PASS
1241.691626	30.81	---	74.00	43.19	H	-17.5	PASS
2450.713397	81.57	---	114.00	32.43	H	-11.7	PASS
2450.713397	---	58.64	94.00	35.36	H	-11.7	PASS
4901.144641	49.81	---	74.00	24.19	H	-3.8	PASS
4901.144641	---	30.49	54.00	23.51	H	-3.8	PASS
7317.713413	40.64	---	74.00	33.36	H	-1.3	PASS
7317.713413	---	28.22	54.00	25.78	H	-1.3	PASS
13237.524330	---	30.95	54.00	23.05	H	5.0	PASS
13237.524330	43.27	---	74.00	30.73	H	5.0	PASS
17987.040000	50.34	---	74.00	23.66	H	14.2	PASS
17987.040000	---	37.82	54.00	16.18	H	14.2	PASS



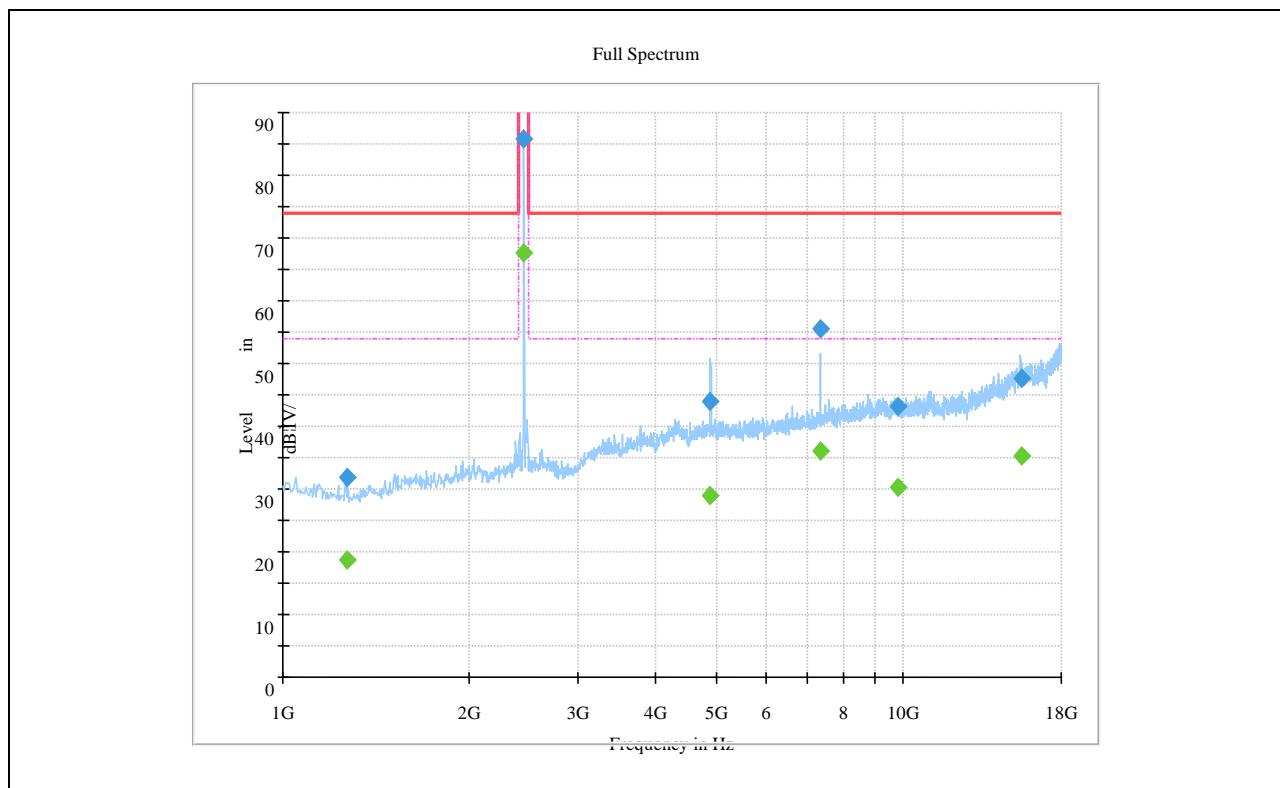
(Channel 1_2450MHz_18GHz to 25GHz, Antenna Horizontal)

Frequency (MHz)	MaxPeak (dB μ V/m)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
18218.555556	41.63	---	74.00	32.37	H	-5.5	PASS
18218.555556	---	30.17	54.00	23.83	H	-5.5	PASS
19377.444444	42.43	---	74.00	31.57	H	-5.4	PASS
19377.444444	---	30.87	54.00	23.13	H	-5.4	PASS
20520.000000	---	29.41	54.00	24.59	H	-5.1	PASS
20520.000000	40.13	---	74.00	33.87	H	-5.1	PASS
21757.444444	40.84	---	74.00	33.16	H	-5.1	PASS
21757.444444	---	29.06	54.00	24.94	H	-5.1	PASS
23705.777778	42.08	---	74.00	31.92	H	-5.0	PASS
23705.777778	---	29.94	54.00	24.06	H	-5.0	PASS
24408.111111	---	31.06	54.00	22.94	H	-4.6	PASS
24408.111111	43.07	---	74.00	30.93	H	-4.6	PASS



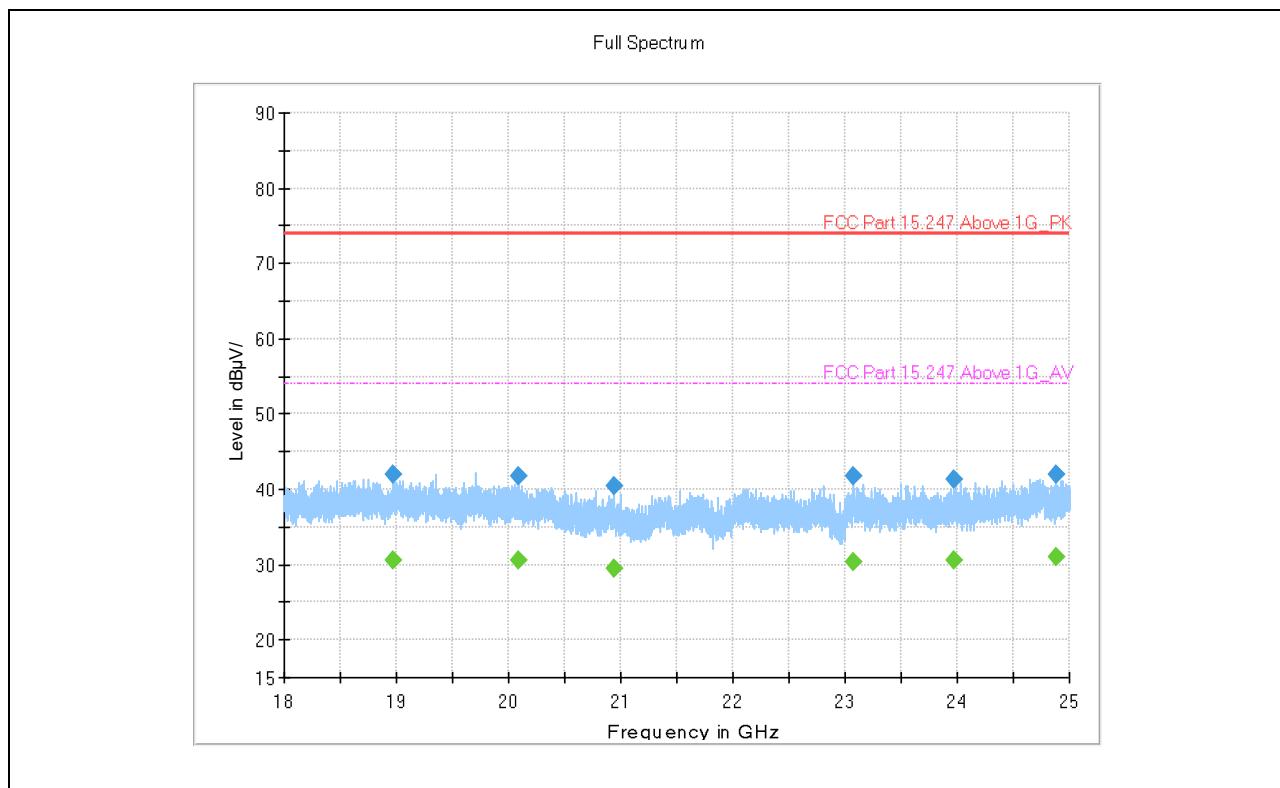
(Channel 1_2450MHz _30MHz to 1GHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dB μ V/m)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
49.520000	19.74	3.00	40.00	37.00	V	15.9	PASS
101.858750	18.55	3.10	43.50	40.40	V	14.8	PASS
244.692500	20.50	4.01	46.00	41.99	V	14.9	PASS
360.280417	23.53	4.81	46.00	41.19	V	18.6	PASS
526.398750	28.41	9.24	46.00	36.76	V	22.2	PASS
892.084167	36.09	15.23	46.00	30.77	V	27.9	PASS



(Channel 1_2450MHz_1GHz to 18GHz, Antenna Vertical)

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Pol	Corr. (dB/m)	Verdict
1268.614016	31.81	---	74.00	42.19	V	-17.5	PASS
1268.614016	---	18.80	54.00	35.20	V	-17.5	PASS
2449.960268	---	67.53	94.00	26.47	V	-11.7	PASS
2449.960268	85.69	---	114.00	28.31	V	-11.7	PASS
4898.988506	44.00	---	74.00	30.00	V	-3.8	PASS
4898.988506	---	28.95	54.00	25.05	V	-3.8	PASS
7350.510556	---	36.02	54.00	17.98	V	-1.5	PASS
7350.510556	55.47	---	74.00	18.53	V	-1.5	PASS
9818.168508	---	30.31	54.00	23.69	V	0.7	PASS
9818.168508	43.21	---	74.00	30.79	V	0.7	PASS
15532.817296	---	35.22	54.00	18.78	V	10.7	PASS
15532.817296	47.54	---	74.00	26.46	V	10.7	PASS



(Channel 1_2450MHz_18GHz to 25GHz, Antenna Vertical)

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



Annex A Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2U _c (y))	150kHz-30MHz	±2.61dB
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Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2U _c (y))	30MHz-200MHz	±3.87dB
	200MHz-1000MHz	±4.07dB
	1GHz-6GHz	±4.25dB
	6GHz-18GHz	±5.00dB



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Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

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

2. Identification of the Responsible Testing Location

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

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1249. (Kehu-Morlab Test Laboratory)
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4. Test Equipment Utilized

List of Software Used

No.	Model	Version Number	Producer	Test Item
1	EMC 32	V10.00.00	R&S	RE
2	EMC 32	V10.20.01	R&S	CE

Conducted Test Equipments

No.	Equipment Name	Serial No.	Model No.	Manufacturer	Cal.Date	Cal.Due Date
1	MXA Signal Analyzer	MY57150136	N9030A	Keysight	2019.01.05	2020.01.04
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

**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	2020.09.24
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) (1GHz-26.5GHz)	EMC04	N/A	Morlab	2019.03.20	2020.03.19
10	Pre-amplifier (1GHz-18GHz)	8810011	PAP-1G18	CDSI	2019.01.04	2020.01.03
11	Pre-amplifier (18GHz-40GHz)	17021-17024	PAP-1840	CDSI	2019.01.29	2020.01.29
12	Band stop Filter	EMC11	BJF2400/2485-60	CDSI	N/A	N/A
13	High Pass Filter	EMC12	HFP-3.0/18G-60	CDSI	N/A	N/A

— END OF REPORT —