REPORT No.: SZ22110197W01

TEST REPORT

APPLICANT	:	Airtouch (Shanghai) Intelligent Technology Co., Ltd
PRODUCT NAME	:	5.8G radar sensor
MODEL NAME	:	AT58L4LDB-2020
BRAND NAME	:	Airtouch
FCC ID	:	2AVK2-AT5815B
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2022-11-21
TEST DATE	:	2022-11-25 to 2022-12-06
ISSUE DATE	:	2022-12-19

Edited by: Zeng Xiaoying (Rapporteur)

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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2022-12-19	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Airtouch (Shanghai) Intelligent Technology Co., Ltd
Applicant Address:	11th Floor, Building 4, Lane 388, Shengrong Road, Pudong New District, Shanghai, China
Manufacturer:	Airtouch (Shanghai) Intelligent Technology Co., Ltd
Manufacturer Address:	11th Floor, Building 4, Lane 388, Shengrong Road, Pudong New District, Shanghai, China

1.2. Equipment Under Test (EUT) Description

Product Name:	5.8G radar sensor
Sample No:	4#, 5#
Hardware Version:	N/A
Software Version:	N/A
Modulation Type:	CW
Operating Frequency Range:	5735MHz-5864.4MHz
Channel Number:	260
Antenna Type:	Patch Antenna
Antenna Gain:	0.35dBi

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

1.3. The Channel Number and Frequency

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	**5735**	34	5751.5	67	5768	100	5784.5
2	5735.5	35	5752	68	5768.5	101	5785
3	5736	36	5752.5	69	5769	102	5785.5
4	5736.5	37	5753	70	5769.5	103	5786
5	5737	38	5753.5	71	5770	104	5786.5
6	5737.5	39	5754	72	5770.5	105	5787
7	5738	40	5754.5	73	5771	106	5787.5
8	5738.5	41	5755	74	5771.5	107	5788
9	5739	42	5755.5	75	5772	108	5788.5
10	5739.5	43	5756	76	5772.5	109	5789
11	5740	44	5756.5	77	5773	110	5789.5
12	5740.5	45	5757	78	5773.5	111	5790
13	5741	46	5757.5	79	5774	112	5790.5
14	5741.5	47	5758	80	5774.5	113	5791
15	5742	48	5758.5	81	5775	114	5791.5
16	5742.5	49	5759	82	5775.5	115	5792
17	5743	50	5759.5	83	5776	116	5792.5
18	5743.5	51	5760	84	5776.5	117	5793
19	5744	52	5760.5	85	5777	118	5793.5
20	5744.5	53	5761	86	5777.5	119	5794
21	5745	54	5761.5	87	5778	120	5794.5
22	5745.5	55	5762	88	5778.5	121	5795
23	5746	56	5762.5	89	5779	122	5795.5
24	5746.5	57	5763	90	5779.5	123	5796
25	5747	58	5763.5	91	5780	124	5796.5
26	5747.5	59	5764	92	5780.5	125	5797
27	5748	60	5764.5	93	5781	126	5797.5
28	5748.5	61	5765	94	5781.5	127	5798
29	5749	62	5765.5	95	5782	128	5798.5
30	5749.5	63	5766	96	5782.5	129	5799
31	5750	64	5766.5	97	5783	130	5799.5
32	5750.5	65	5767	98	5783.5	131	5800
33	5751	66	5767.5	99	5784	132	5800.5

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
133	**5801**	169	5819	205	5837	241	5855
134	5801.5	170	5819.5	206	5837.5	242	5855.5
135	5802	171	5820	207	5838	243	5856
136	5802.5	172	5820.5	208	5838.5	244	5856.5
137	5803	173	5821	209	5839	245	5857
138	5803.5	174	5821.5	210	5839.5	246	5857.5
139	5804	175	5822	211	5840	247	5858
140	5804.5	176	5822.5	212	5840.5	248	5858.5
141	5805	177	5823	213	5841	249	5859
142	5805.5	178	5823.5	214	5841.5	250	5859.5
143	5806	179	5824	215	5842	251	5860
144	5806.5	180	5824.5	216	5842.5	252	5860.5
145	5807	181	5825	217	5843	253	5861
146	5807.5	182	5825.5	218	5843.5	254	5861.5
147	5808	183	5826	219	5844	255	5862
148	5808.5	184	5826.5	220	5844.5	256	5862.5
149	5809	185	5827	221	5845	257	5863
150	5809.5	186	5827.5	222	5845.5	258	5863.5
151	5810	187	5828	223	5846	259	5864
152	5810.5	188	5828.5	224	5846.5	**260**	**5864.4**
153	5811	189	5829	225	5847		
154	5811.5	190	5829.5	226	5847.5		
155	5812	191	5830	227	5848		
156	5812.5	192	5830.5	228	5848.5		
157	5813	193	5831	229	5849		
158	5813.5	194	5831.5	230	5849.5		
159	5814	195	5832	231	5850		
160	5814.5	196	5832.5	232	5850.5		
161	5815	197	5833	233	5851		
162	5815.5	198	5833.5	234	5851.5		
163	5816	199	5834	235	5852		
164	5816.5	200	5834.5	236	5852.5		
165	5817	201	5835	237	5853		
166	5817.5	202	5835.5	238	5853.5		
167	5818	203	5836	239	5854		
168	5818.5	204	5836.5	240	5854.5		

Note 1: The black bold channels were selected for test.

1.4. 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	Method Determination /Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	No deviation
2	15.215	Bandwidth	Nov. 25, 2022	Su Xiaoxian	PASS	No deviation
3	15.207	Conducted Emission	Dec. 01, 2022	Fan Zehang	PASS	No deviation
4	15.249	Field strength	Nov. 30, 2022 Dec. 05, 2022	Gao Jianrou	PASS	No deviation
5	15.209, 15.249	Radiated Emission and field strength of harmonics	Dec. 01, 2022	Gao Jianrou	PASS	No deviation

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

Note 2: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

Note 3: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.5. 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.

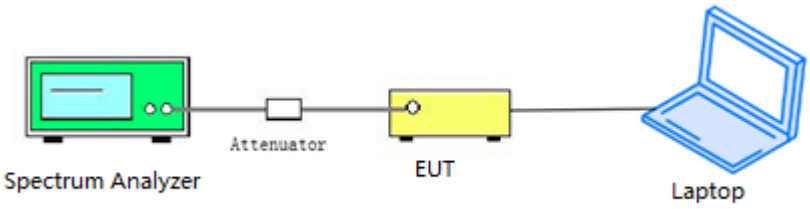
2.2. Bandwidth

2.2.1. Requirement

Refer to FCC 15.215

2.2.2. Test Description

Test Setup:



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) in the range of 1% to 5% of the measured bandwidth and video bandwidth (VBW) shall be approximately three times RBW.

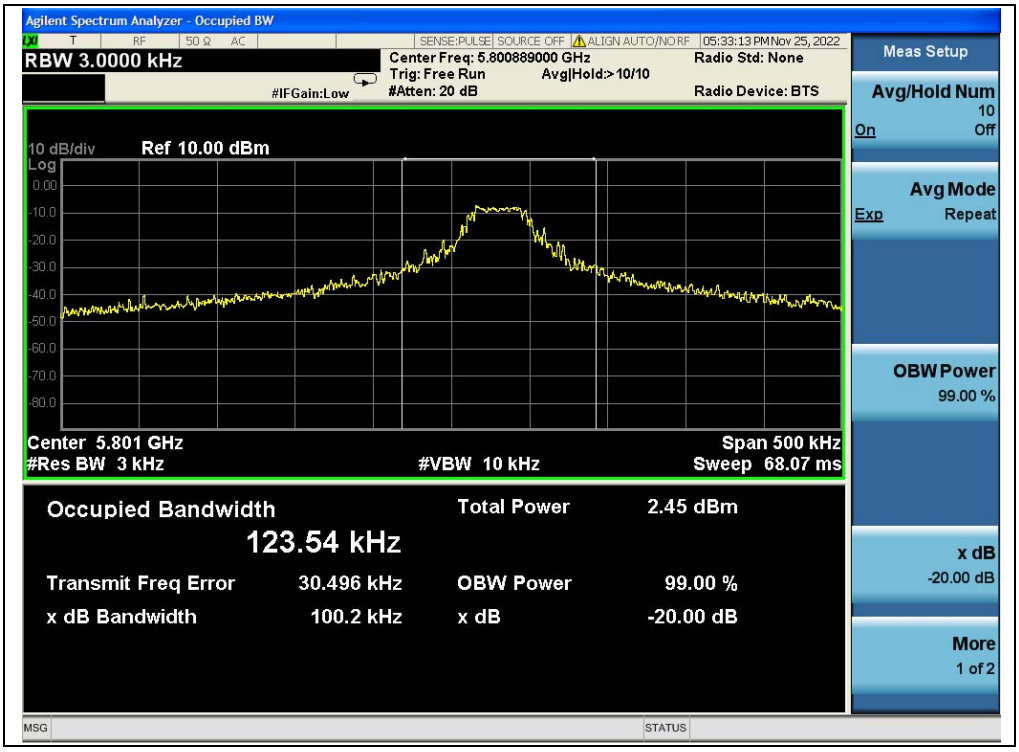
2.2.3. Test Result

A.Test Verdict:

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	Result
1	5735	109.1	PASS
133	5801	100.2	PASS
260	5864.4	115.2	PASS

B.Test Plot:

(Channel 1, 5735MHz)



(Channel 133, 5801MHz)

(Channel 260, 5864.4MHz)

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 50μH/50Ω line impedance stabilization network (LISN).

Frequency Range (MHz)	Conducted Limit (dBμV)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

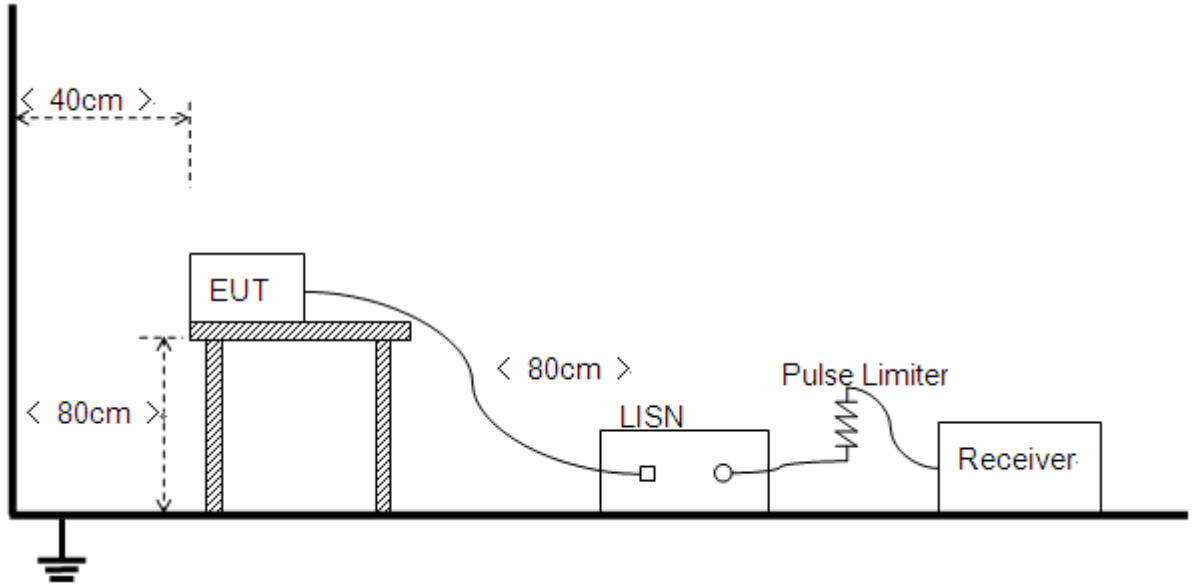
Note:

(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

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.

2.3.1. Test Result

The maximum conducted interference is searched using Peak (PK), if the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. Set RBW=9kHz, VBW=30kHz. Refer to recorded points and plots below.

Note: Both of the test voltage AC 120V/60Hz and AC 230V/50Hz were considered and tested respectively, only the results of the worst case AC 120V/60Hz were recorded in this report.

A.Test Setup:

Test Mode: EUT + DC SOURCE + 5.8GHz TX

Test voltage: AC 120V/60Hz

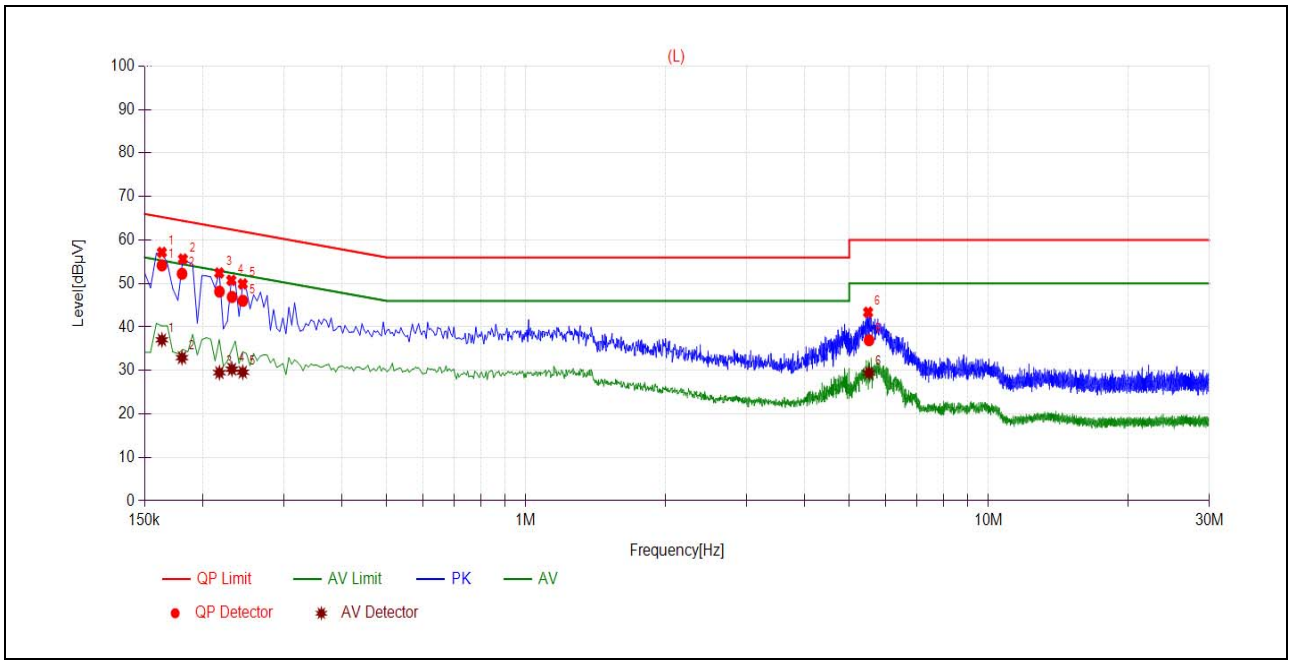
The measurement results are obtained as below:

$E\ [dB\mu V] = U_R + L_{Cable\ loss}\ [dB] + A_{Factor}$

U_R: Receiver Reading

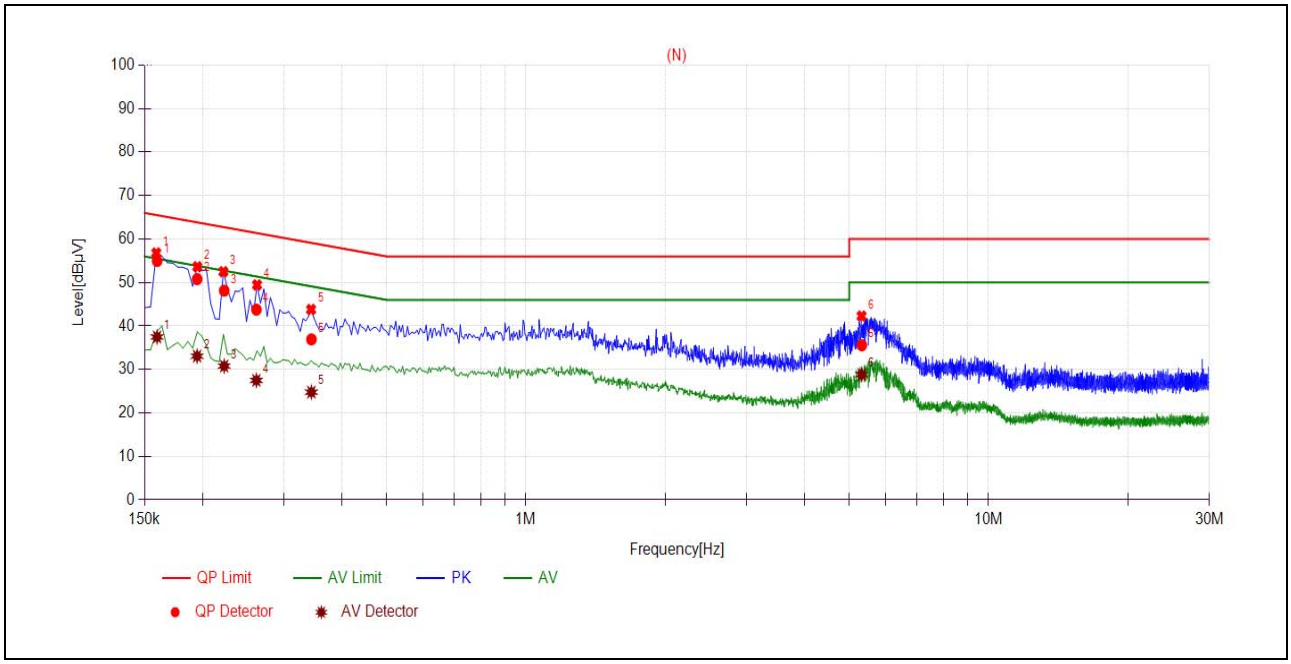
A_{Factor}: Voltage division factor of LISN

B.Test Plot:



(2402MHz, L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1635	54.16	37.03	65.28	55.28	Line	PASS
2	0.1807	52.24	32.94	64.45	54.45		PASS
3	0.2177	48.13	29.50	62.91	52.91		PASS
4	0.2317	46.90	30.27	62.39	52.39		PASS
5	0.2445	46.03	29.60	61.94	51.94		PASS
6	5.5157	36.94	29.44	60.00	50.00		PASS



(2402MHz, N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1596	54.95	37.46	65.48	55.48	Neutral	PASS
2	0.1948	50.77	33.05	63.83	53.83		PASS
3	0.2229	48.13	30.77	62.71	52.71		PASS
4	0.2616	43.76	27.48	61.38	51.38		PASS
5	0.3440	36.91	24.77	59.11	49.11		PASS
6	5.3201	35.55	28.82	60.00	50.00		PASS

2.4. Field Strength of Fundamental

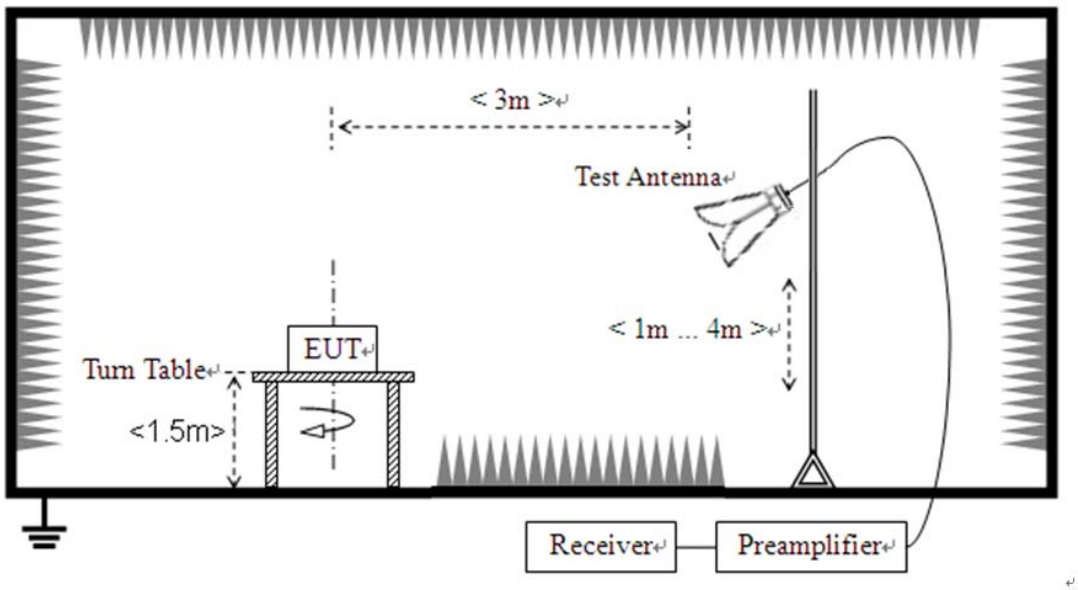
2.4.1. Requirement

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

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.

2.4.3. Test Procedure

Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

2.4.4. Test Result

The measurement results are obtained as below:
E [dBμV/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 AT 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

A.Test Verdict:

Frequency (MHz)	Detector	ANT	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	AV Limit (dBμV/m)	Verdict
5735	PK	H	78.21	-19.01	32.2	91.40	113.97	PASS
	AV	H	77.87	-19.01	32.2	91.06	93.97	PASS
	PK	V	76.17	-19.01	32.2	89.36	113.97	PASS
	AV	V	74.85	-19.01	32.2	88.04	93.97	PASS
5801	PK	H	79.72	-19.01	32.2	92.91	113.97	PASS
	AV	H	78.67	-19.01	32.2	91.86	93.97	PASS
	PK	V	77.51	-19.01	32.2	90.70	113.97	PASS
	AV	V	76.73	-19.01	32.2	89.92	93.97	PASS
5864.4	PK	H	79.56	-19.01	32.2	92.75	113.97	PASS
	AV	H	79.32	-19.01	32.2	92.51	93.97	PASS
	PK	V	75.51	-19.01	32.2	88.70	113.97	PASS
	AV	V	75.23	-19.01	32.2	88.42	93.97	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 (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).

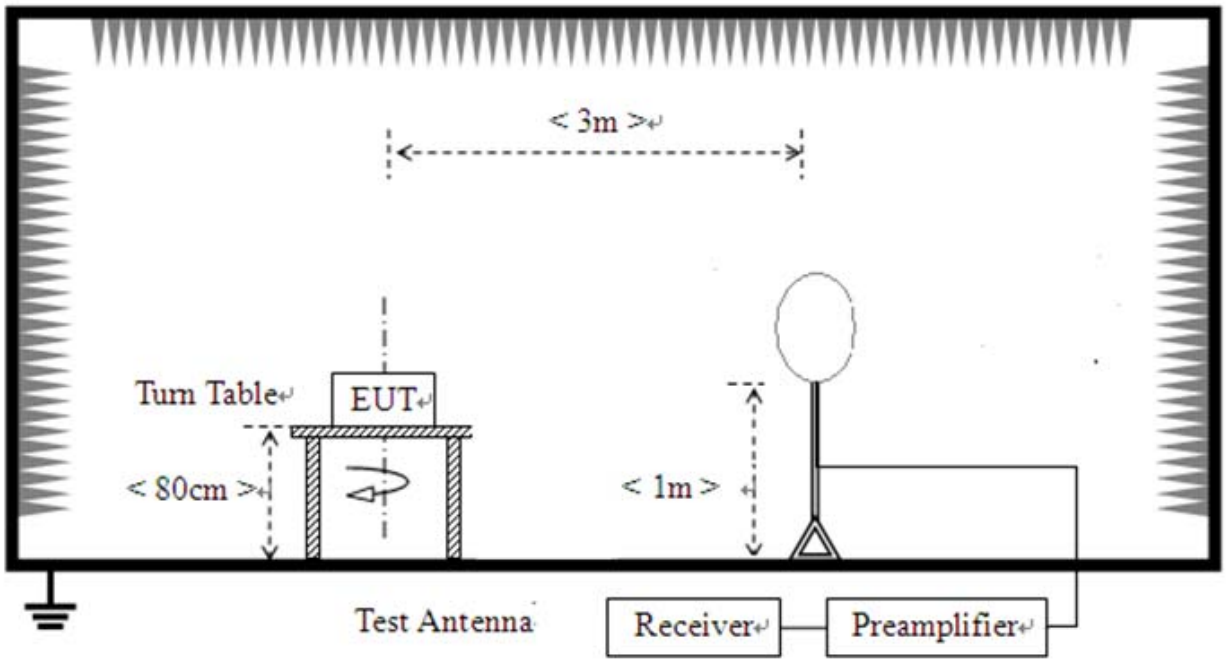
3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

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

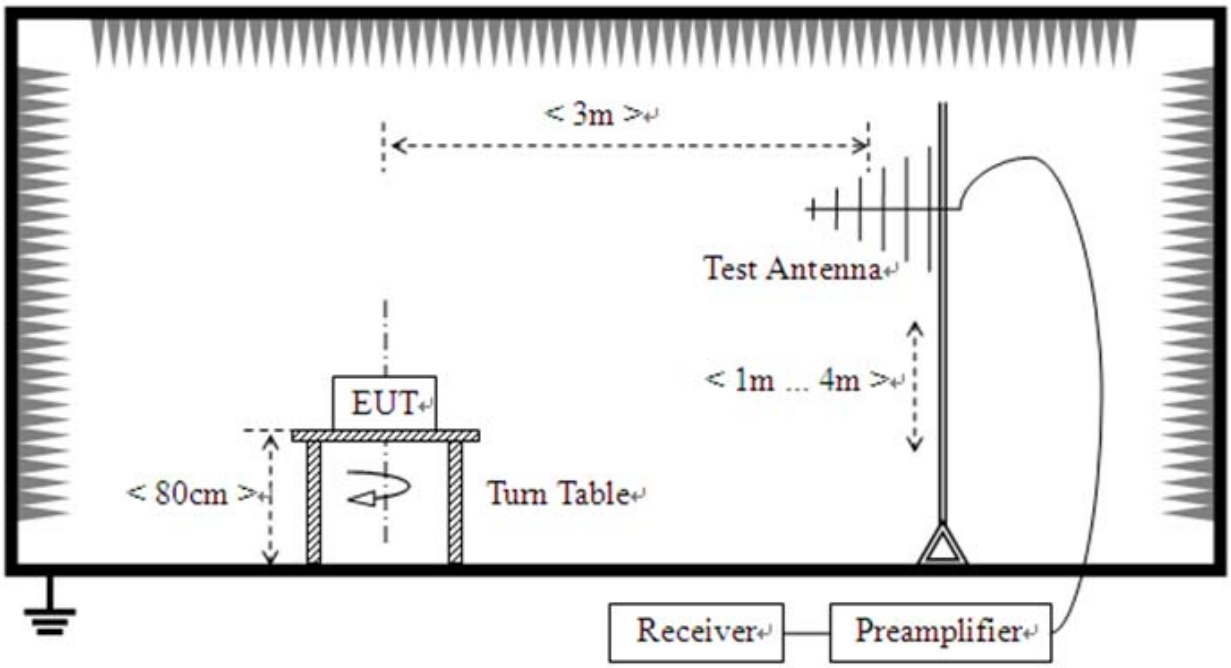
2.5.2. Test Description

A.Test Setup:

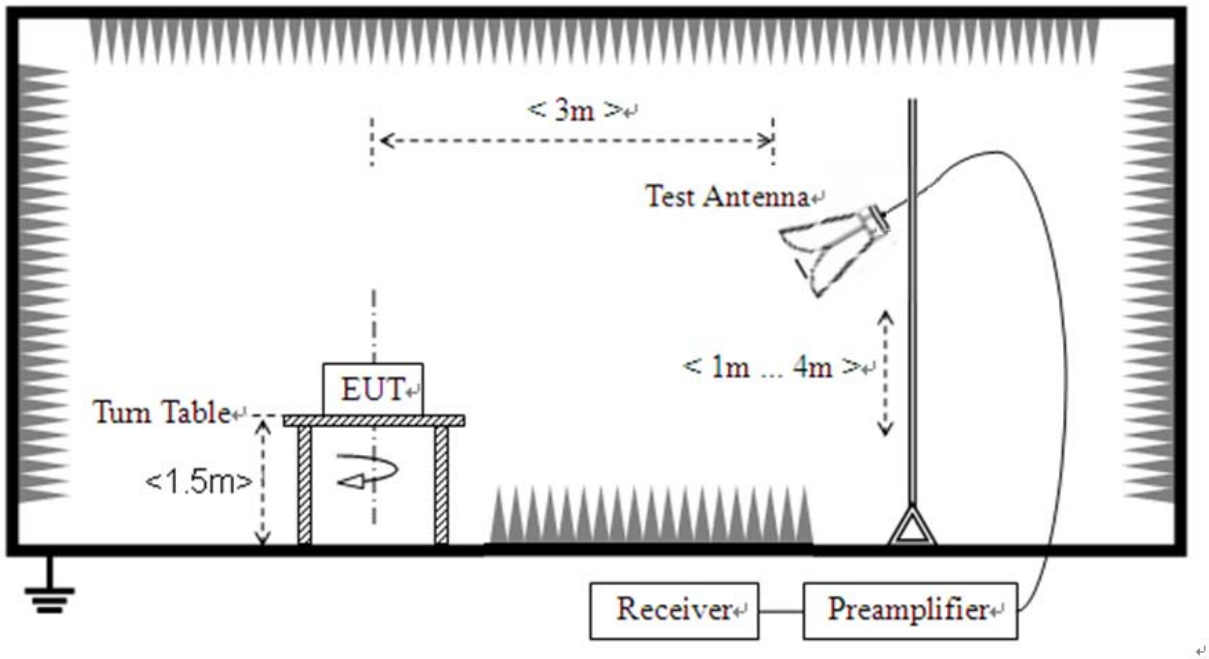
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz.The antenna to EUT distance is 3meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

2.5.3. Test Result

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 (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

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

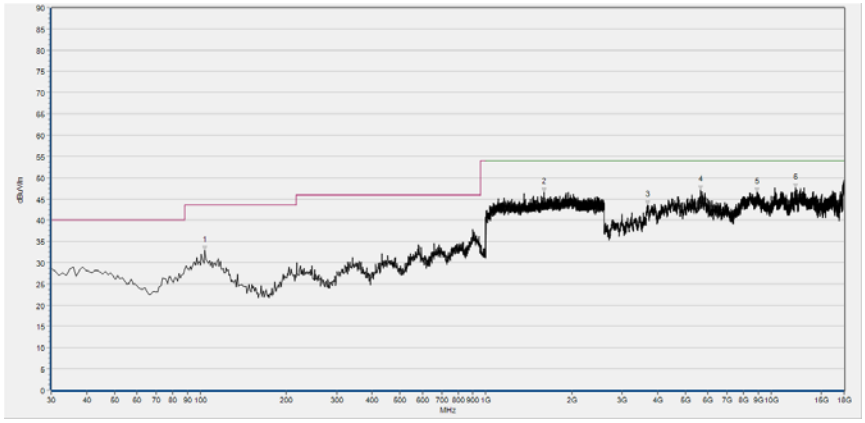
During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note 1: 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.

Note 2: 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.

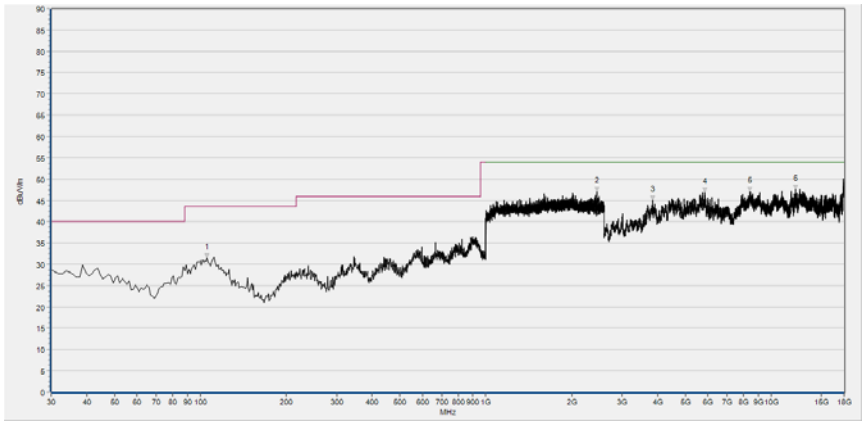
Note3: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

Plot for 5735MHz



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
103.720	32.87	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1599.467	46.62	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
3684.160	43.55	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
5639.960	47.08	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
8898.600	46.63	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
12169.560	47.63	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS

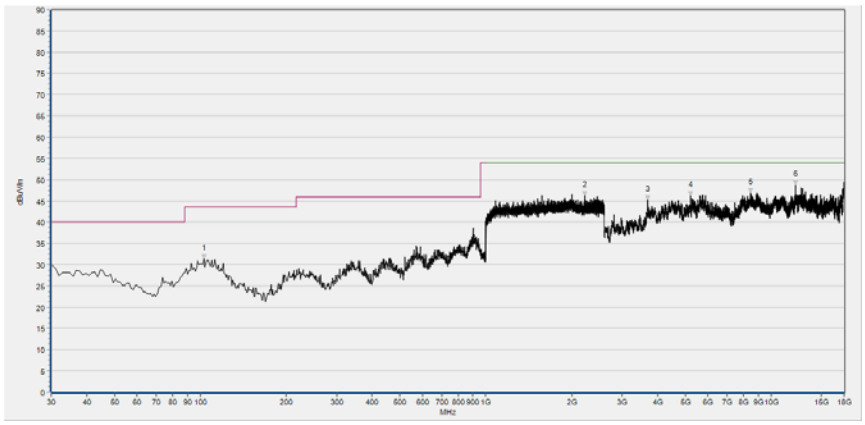
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
105.660	31.54	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2449.067	47.03	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
3844.320	45.11	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
5858.640	46.93	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
8408.880	47.16	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
12154.160	47.65	N/A	N/A	N/A	N/A	54.00	Vertical	PASS

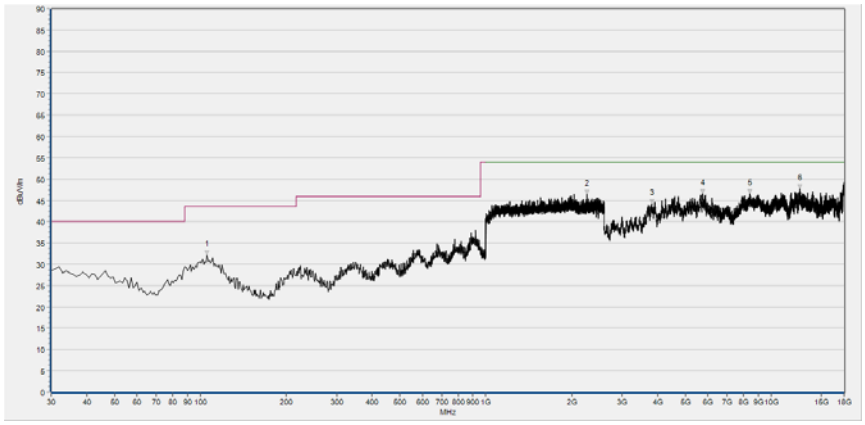
(Antenna Vertical, 30MHz to 18GHz)

Plot for 5801MHz



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
102.750	31.32	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
2221.333	46.20	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
3690.320	45.25	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
5211.840	46.29	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
8439.680	46.90	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
12157.240	48.77	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS

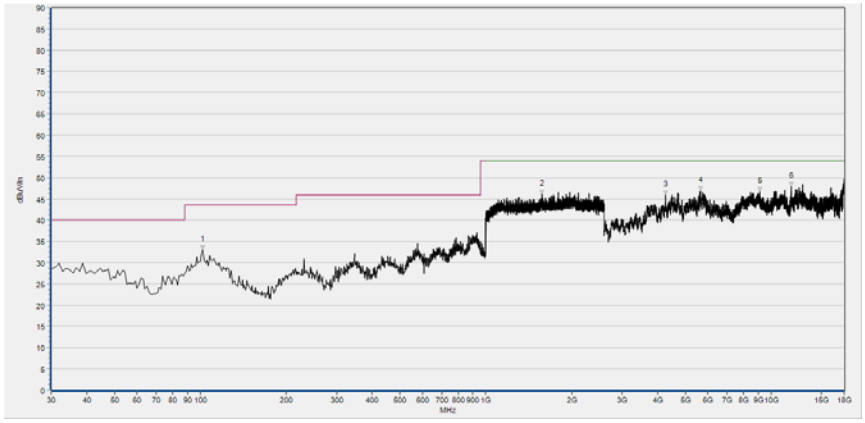
(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
105.660	32.10	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
2264.000	46.40	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
3810.440	44.18	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
5747.760	46.57	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
8424.280	46.65	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
12622.320	47.73	N/A	N/A	N/A	N/A	54.00	Vertical	PASS

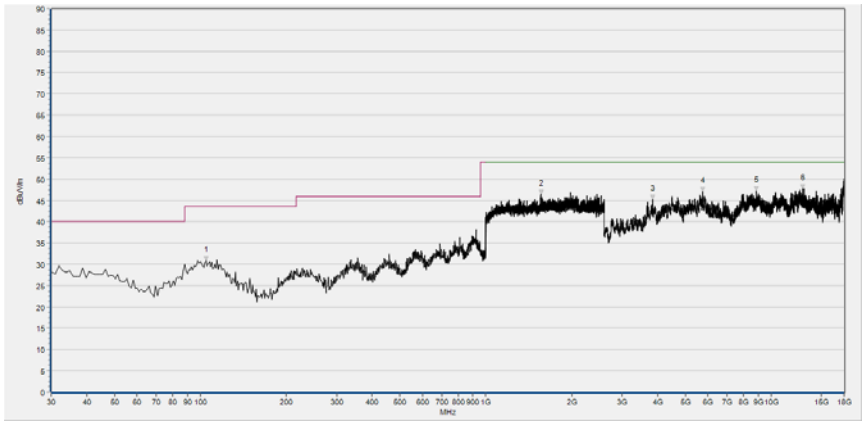
(Antenna Vertical, 30MHz to 18GHz)

Plot for 5864.4MHz



Fre. (MHz)	PK (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
101.780	33.04	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
1573.333	46.12	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
4260.120	45.86	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
5649.200	46.88	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
9108.040	46.69	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS
11747.600	47.93	N/A	N/A	N/A	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 18GHz)



Fre. (MHz)	Pk (dBμV/m)	QP (dBμV/m)	AV (dBμV/m)	Limit-PK (dBμV/m)	Limit-QP (dBμV/m)	Limit-AV (dBμV/m)	Antenna	Verdict
104.690	30.82	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
1558.933	46.35	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
3835.080	45.30	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
5757.000	47.17	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
8873.960	47.20	N/A	N/A	N/A	N/A	54.00	Vertical	PASS
12902.600	47.78	N/A	N/A	N/A	N/A	54.00	Vertical	PASS

(Antenna Vertical, 30MHz to 18GHz)

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	±5%
Radiated Emission	±2.95dB

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

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 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 CN1192, the test firm registration number is 226174.

4. Test Equipments Utilized

4.1 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY54130016	N9038A	Agilent	2022.07.06	2023.07.05
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2022.05.25	2025.05.24
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2022.02.11	2025.02.10
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2022.07.13	2025.07.12
Test Antenna – Horn	BBHA9170 #773	BBHA9170	Schwarzbeck	2022.07.14	2025.07.13
Preamplifier (10MHz-6GHz)	46732	S10M100L3802	LUCIX CORP.	2022.07.08	2023.07.07
Preamplifier (2GHz-18GHz)	61171/61172	S020180L3203	LUCIX CORP.	2022.07.08	2023.07.07
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2022.07.23	2023.07.22
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-KK-0.5	Qualwave	2022.07.08	2023.07.07
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-KKF-2	Qualwave	2022.07.08	2023.07.07
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18-NN-5	Qualwave	2022.07.08	2023.07.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2020.01.06	2023.01.05

4.2 Conducted Emission Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Receiver	MY56400093	N9038A	KEYSIGHT	2022.03.03	2023.03.02
LISN	8127449	NSLK 8127	Schwarzbeck	2022.03.03	2023.03.02
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2022.07.06	2023.07.05
RF Coaxial Cable (DC-100MHz)	BNC	MRE04	Qualwave	2022.07.08	2023.07.07
DC Source	097850427	N/A	VICTORY	N/A	N/A

END OF REPORT