REPORT No.: SZ20100057W01

TEST REPORT

APPLICANT	:	Golden Mark (HK) Limited
PRODUCT NAME	:	Plug-In Switch
MODEL NAME	:	PS700
BRAND NAME	:	N/A
FCC ID	:	2AMY9PS700
STANDARD(S)	:	47 CFR Part 15 Subpart C
RECEIPT DATE	:	2020-10-30
TEST DATE	:	2020-11-17 to 2020-11-26
ISSUE DATE	:	2020-12-18

Edited by: Zeng Xiaoying (Rapporteur)

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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2020-12-18	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Golden Mark (HK) Limited
Applicant Address:	6/F, Kimberley Plaza, 45-47 Kimberley Road, Tsim Sha Tsui, Kowloon, Hong Kong
Manufacturer:	Golden Mark (HK) Limited
Manufacturer Address:	6/F, Kimberley Plaza, 45-47 Kimberley Road, Tsim Sha Tsui, Kowloon, Hong Kong

1.2. Equipment Under Test (EUT) Description

Product Name:	Plug-In Switch
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	N/A
Software Version:	N/A
Equipment Type:	Z-Wave
Operating Frequency Range:	908.4MHz, 916.0MHz
Channel Number:	2
Antenna Type:	Through-hole Antenna
Antenna Gain:	0dBi

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)
1	908.4
2	916.0

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 26, 2020	Tu Yanan	PASS	No deviation
3	15.207	Conducted Emission	Nov 17, 2020	Huang Zhiye	PASS	No deviation
4	15.249	Field strength	Nov 17, 2020	Yang Jie	PASS	No deviation
5	15.209, 15.249	Radiated Emission and field strength of harmonics	Nov 17, 2020	Yang Jie	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% risk level.

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.

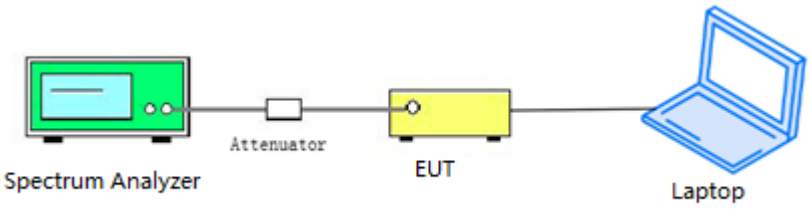
2.2. Bandwidth

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) = 10 kHz. In order to make an accurate measurement, set the span greater than RBW.

2.2.3.Test Result

A.Test Verdict:

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	Result
1	908.4	92.12	PASS
2	916.0	122.5	PASS

B.Test Plot:

(Channel 1, 908.4MHz)

(Channel 2, 916.0MHz)

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

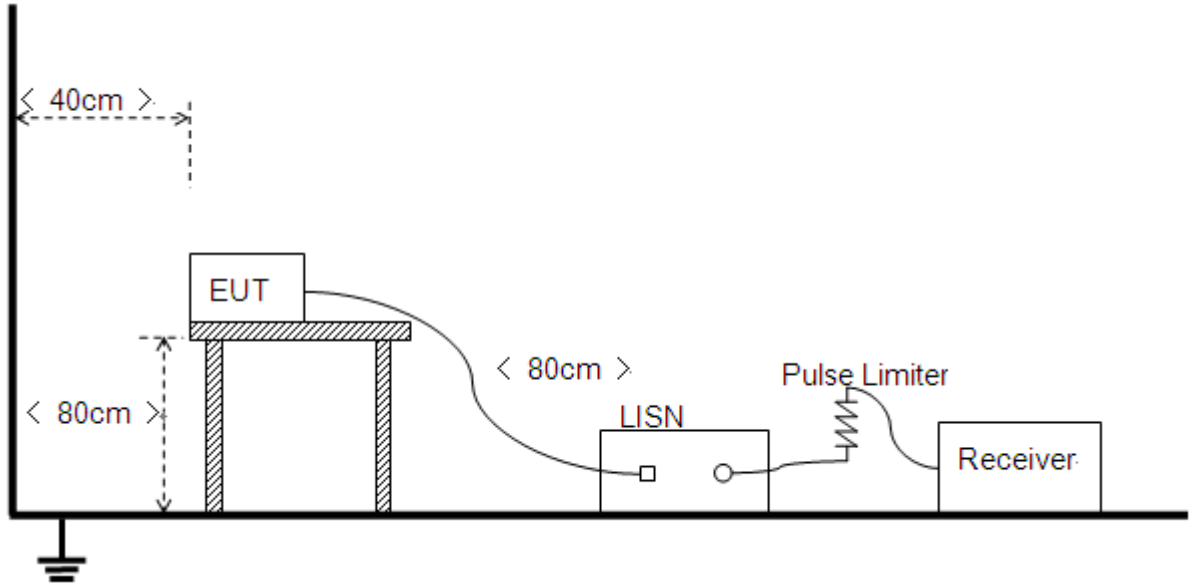
NOTE:

(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. 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+908MHz /916MHz TX

Test voltage: AC 120V/60Hz

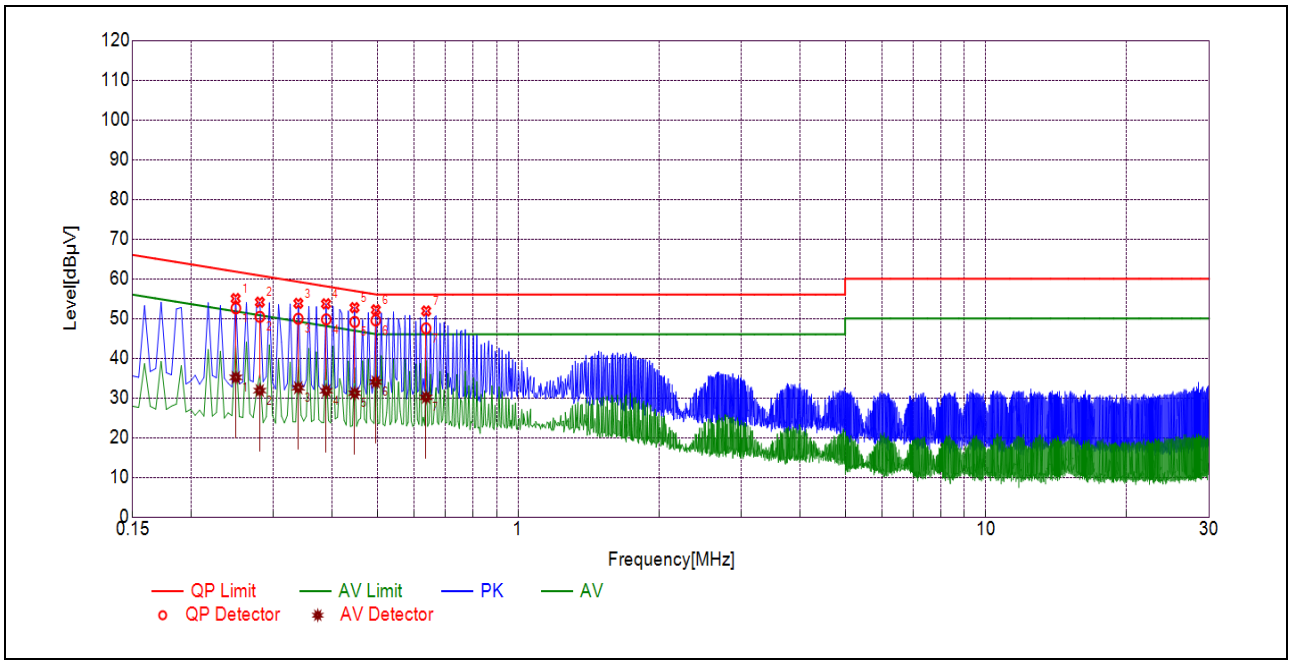
The measurement results are obtained as below:

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

U_R: Receiver Reading

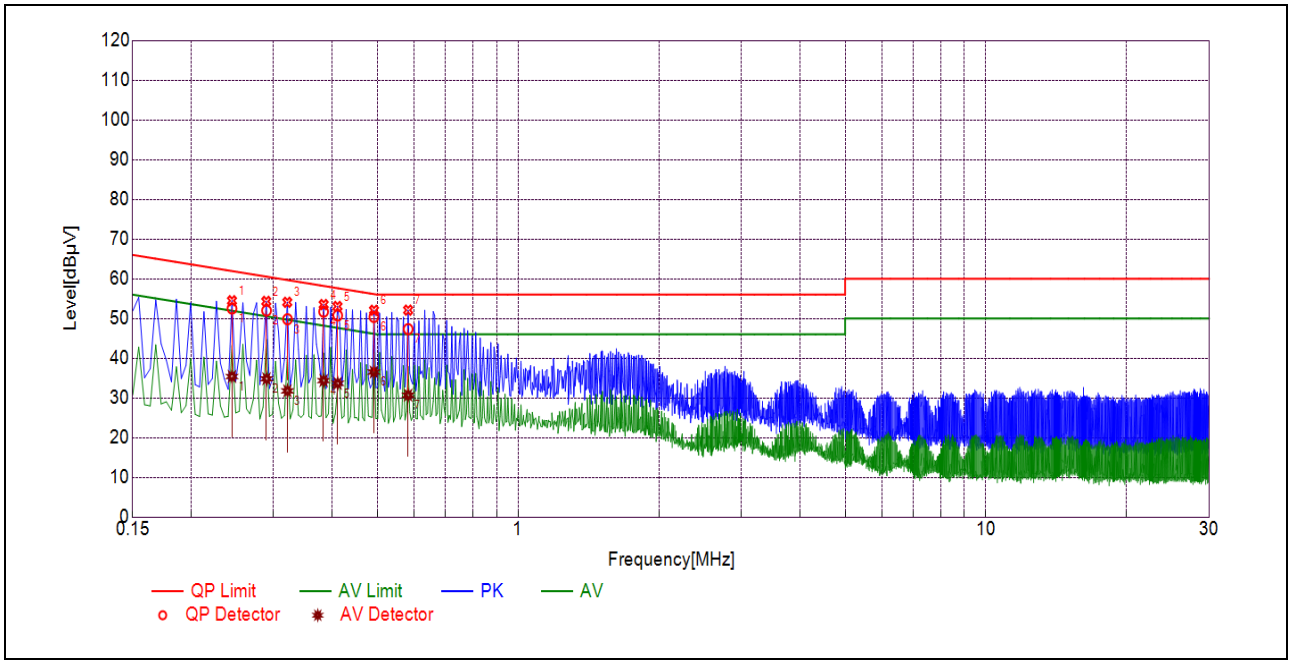
A_{Factor}: Voltage division factor of LISN

B.Test Plot:



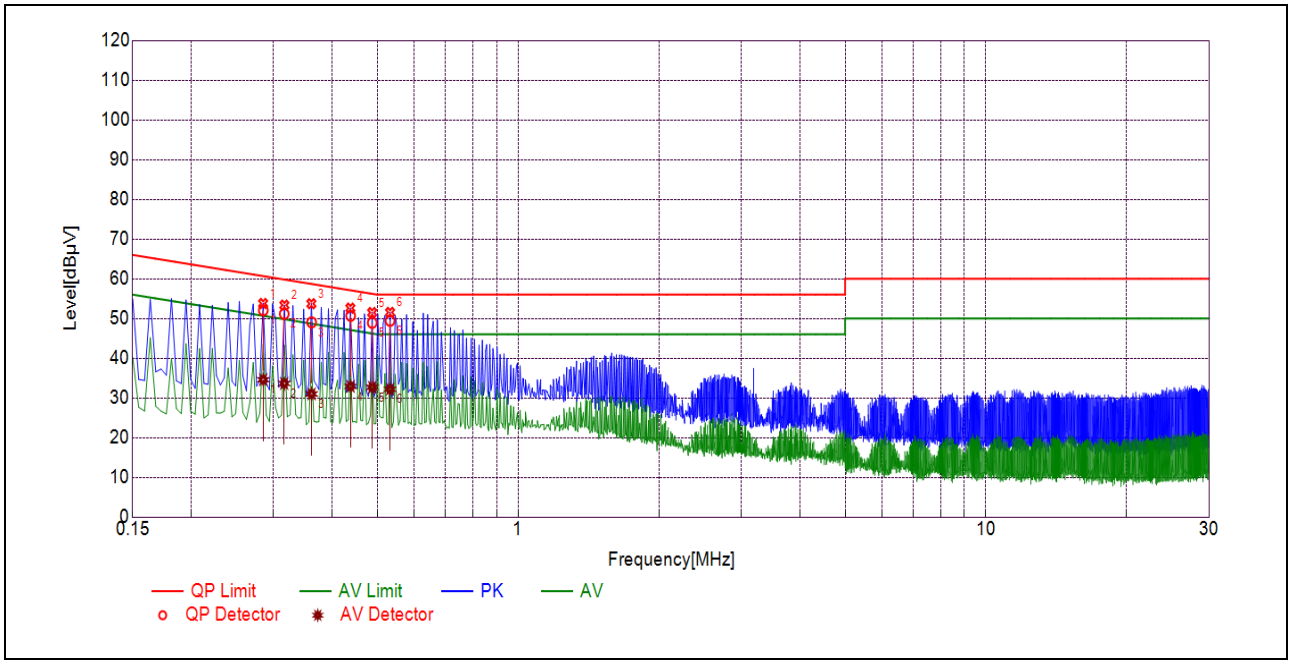
(908.4MHz, L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2492	52.56	35.16	61.78	51.78	Line	PASS
2	0.2804	50.41	31.85	60.80	50.80		PASS
3	0.3388	49.94	32.56	59.23	49.23		PASS
4	0.3889	49.78	31.79	58.09	48.09		PASS
5	0.4473	49.14	31.21	56.93	46.93		PASS
6	0.4961	49.54	34.01	56.06	46.06		PASS
7	0.6355	47.51	30.16	56.00	46.00		PASS



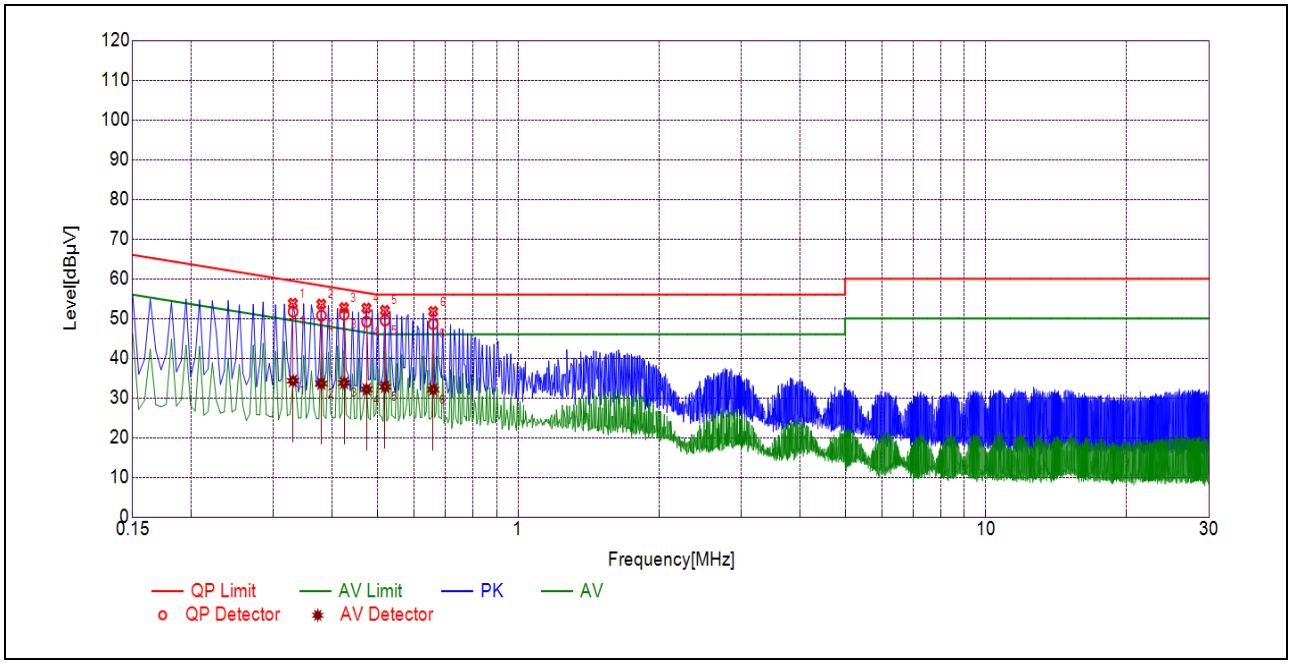
(908.4MHz, N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2445	52.51	35.39	61.94	51.94	Neutral	PASS
2	0.2898	51.98	34.81	60.53	50.53		PASS
3	0.3213	49.80	31.77	59.67	49.67		PASS
4	0.3838	51.71	34.36	58.20	48.20		PASS
5	0.4114	50.76	33.66	57.62	47.62		PASS
6	0.4916	50.38	36.51	56.14	46.14		PASS
7	0.5820	47.33	30.69	56.00	46.00		PASS



(916.0MHz, L Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.2852	52.06	34.57	60.66	50.66	Line	PASS
2	0.3162	51.16	33.64	59.81	49.81		PASS
3	0.3618	49.03	31.00	58.69	48.69		PASS
4	0.4384	50.67	32.89	57.09	47.09		PASS
5	0.4876	48.91	32.65	56.21	46.21		PASS
6	0.5323	49.42	32.17	56.00	46.00		PASS



(916.0MHz, N Phase)

No.	Fre. (MHz)	Emission Level (dBµV)		Limit (dBµV)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.3302	51.71	34.31	59.44	49.44	Neutral	PASS
2	0.3797	50.70	33.62	58.29	48.29		PASS
3	0.4247	50.97	33.76	57.36	47.36		PASS
4	0.4742	49.19	32.14	56.44	46.44		PASS
5	0.5194	49.51	32.80	56.00	46.00		PASS
6	0.6581	48.60	32.11	56.00	46.00		PASS

2.4. Field Strength of Fundamental

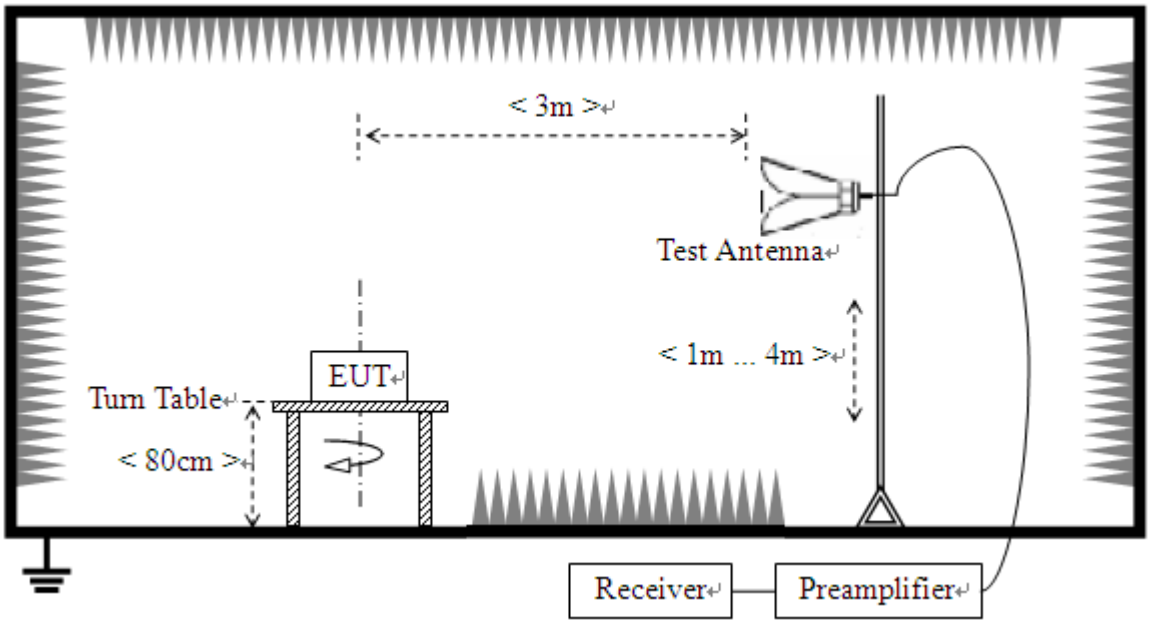
2.4.1.Requirement

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 = 120 kHz
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
908.4	QP	H	97.90	-34.00	22.20	86.10	93.97	PASS
	QP	V	92.13	-34.00	22.20	80.33	93.97	PASS
916.0	QP	H	99.91	-34.00	22.20	88.11	93.97	PASS
	QP	V	93.26	-34.00	22.20	81.46	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).

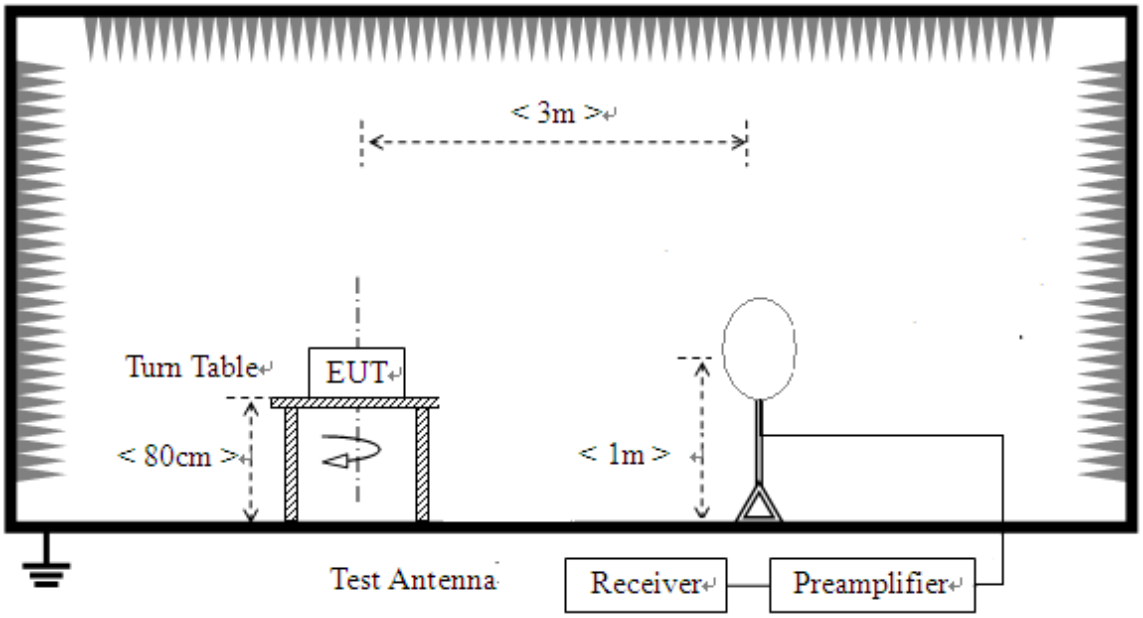
3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

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

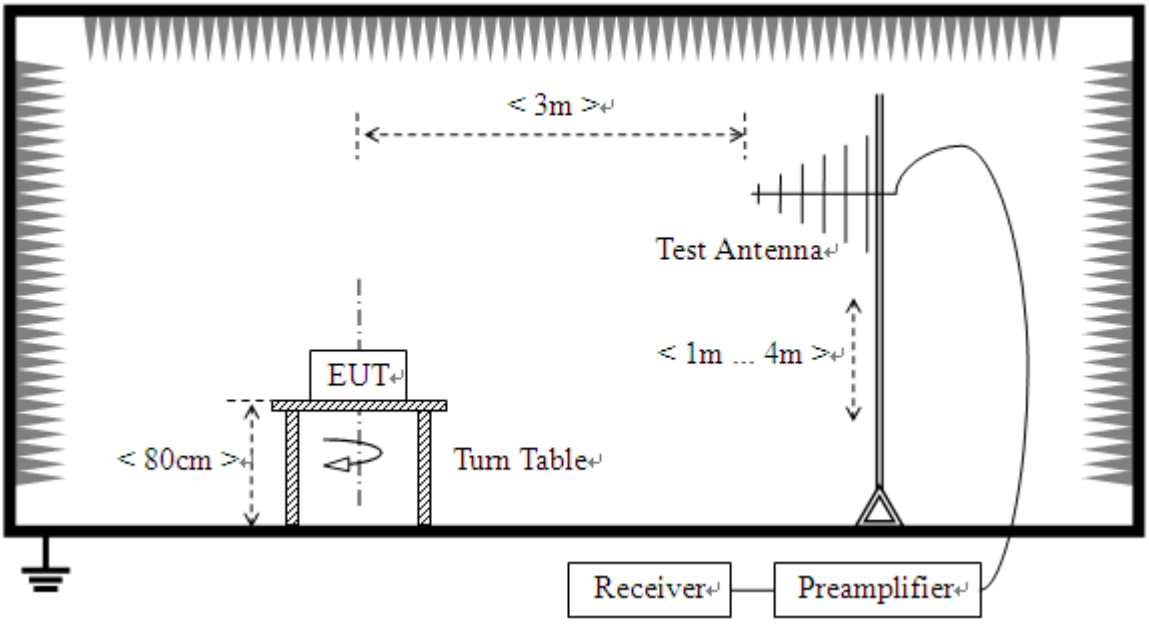
2.5.2.Test Description

A.Test Setup:

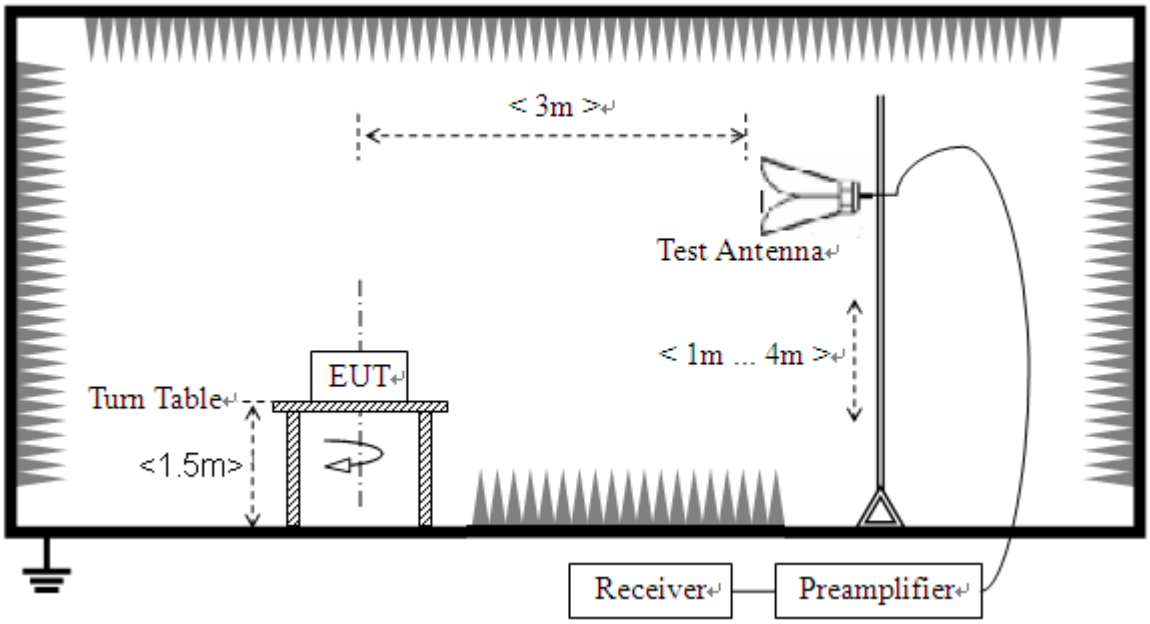
1) For radiated emissions from 9kHz to 30MHz



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

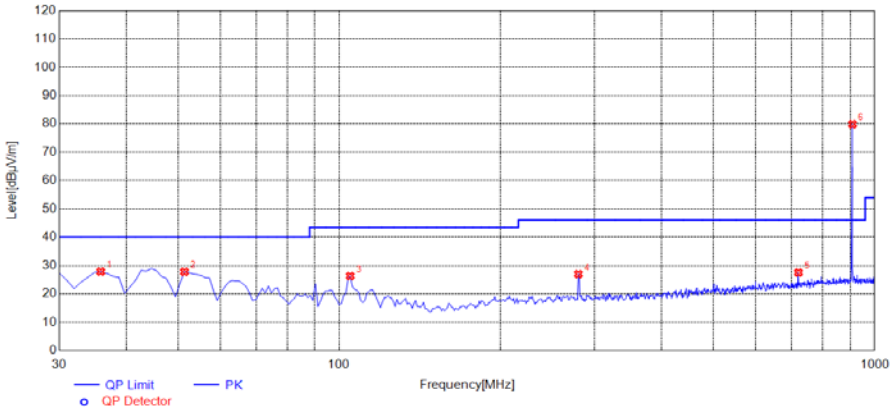
A_{Factor}: Antenna Factor at 3m

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.

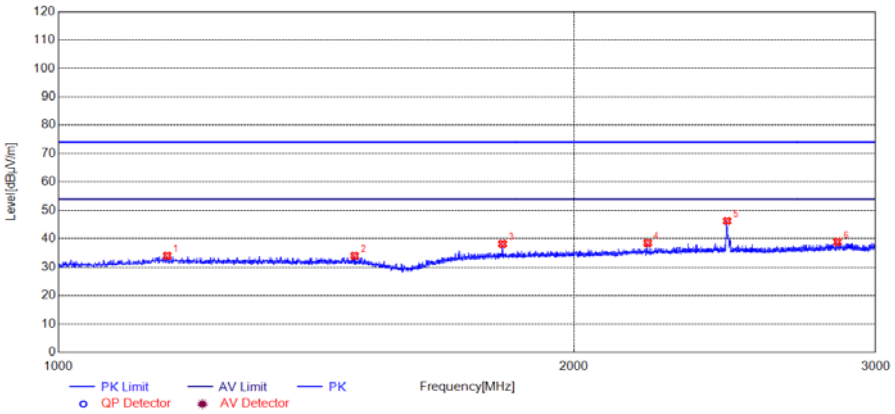
Note 2: The low frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Plot for 908.4MHz



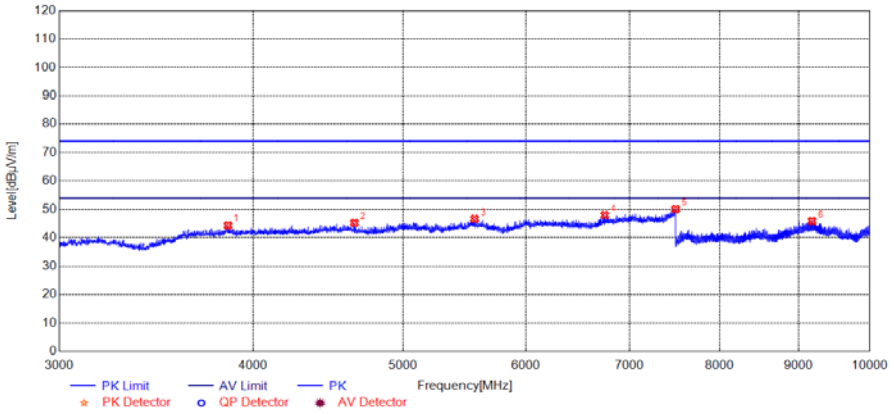
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
35.8258	27.87	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
51.3614	27.78	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
104.7648	26.29	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
279.5395	26.96	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
720.3604	27.51	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
908.7287	79.88	N/A	N/A	N/A	46.00	N/A	Horizontal	N/A

(Antenna Horizontal, 30MHz to 1GHz)



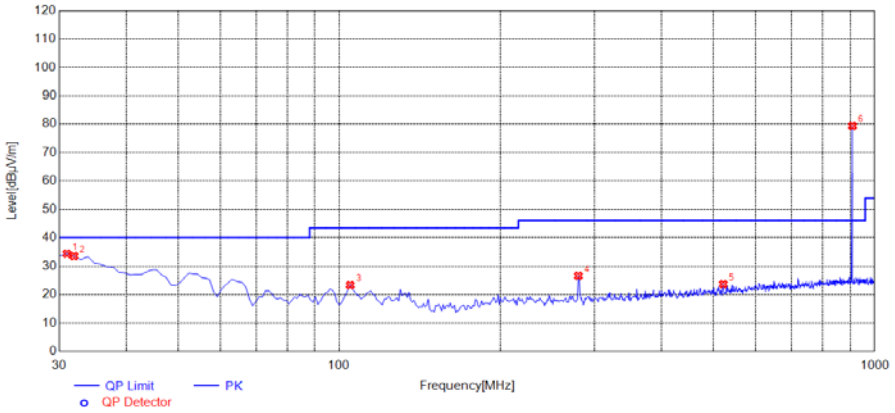
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1157.2314	34.02	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1488.8978	34.01	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1816.5633	38.20	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2208.2416	38.54	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2457.0914	46.29	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2849.9700	38.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



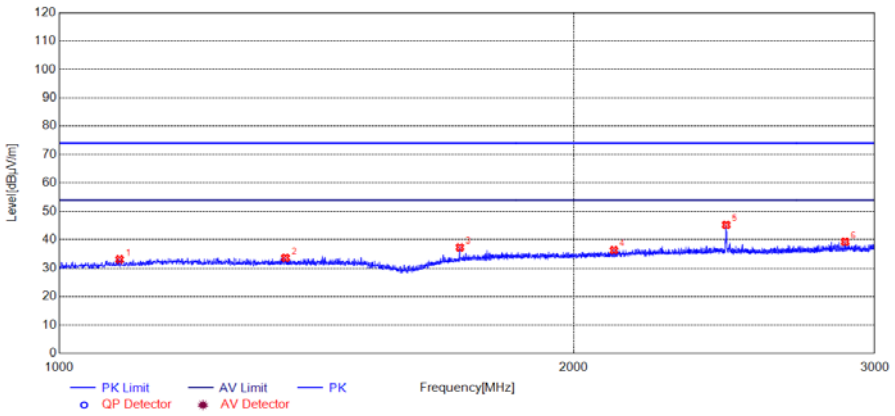
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
3853.3707	44.34	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4650.0300	45.21	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5559.2118	46.68	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6745.6491	48.00	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7494.5989	50.07	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9178.3357	45.88	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 10GHz)



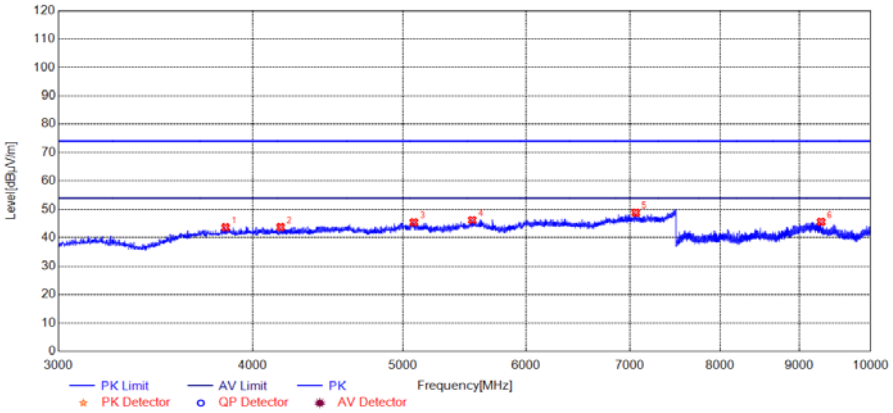
Fre. (MHz)	Pk (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
30.9710	34.41	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
31.9419	33.53	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
104.7648	23.34	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
279.5395	26.62	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
521.3113	23.70	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
908.7287	79.39	N/A	N/A	N/A	46.00	N/A	Vertical	N/A

(Antenna Vertical, 30MHz to 1GHz)



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
1084.4169	33.08	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1356.0712	33.60	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1715.3431	37.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2111.0222	36.33	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2455.8912	45.19	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2882.7766	39.24	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

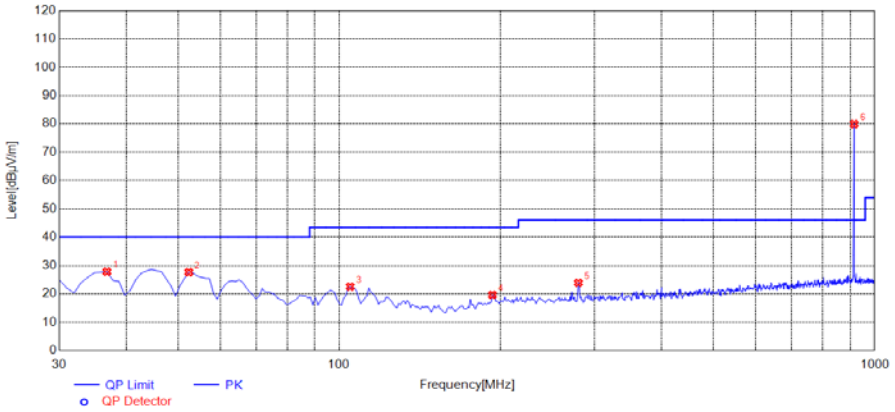
(Antenna Vertical, 1GHz to 3GHz)



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
3842.5685	43.64	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4169.3339	43.73	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5080.3161	45.41	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
5539.4079	46.25	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
7059.8120	48.87	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9292.8586	45.60	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

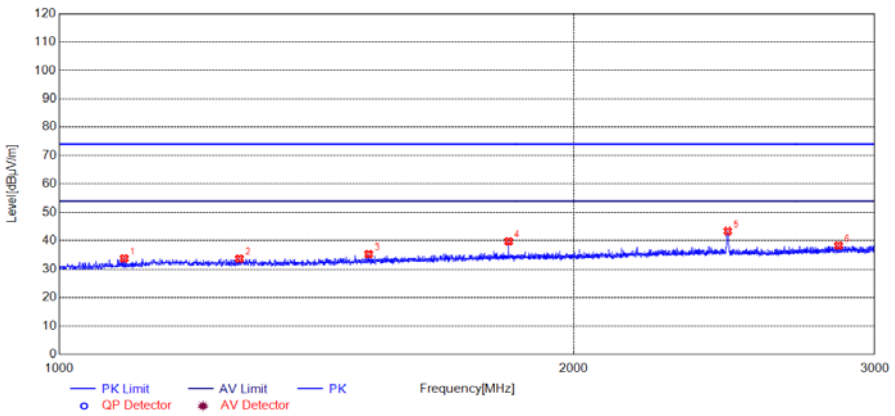
(Antenna Vertical, 3GHz to 10GHz)

Plot for 916.0MHz



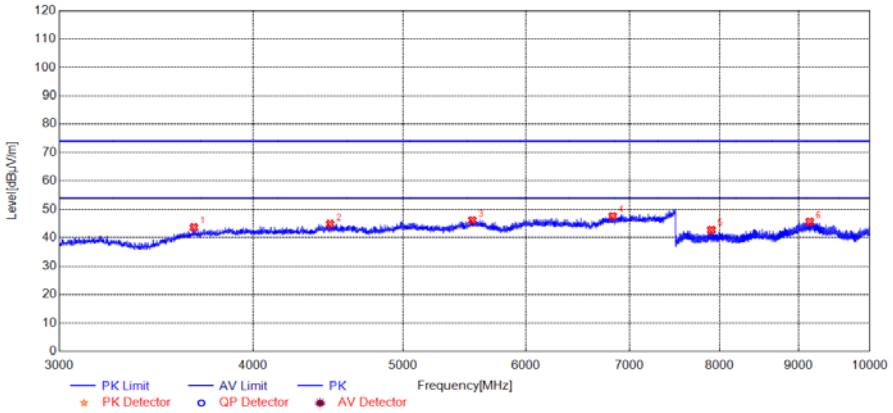
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
36.7968	27.82	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
52.3323	27.62	N/A	N/A	N/A	40.00	N/A	Horizontal	PASS
104.7648	22.52	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
193.1231	19.66	N/A	N/A	N/A	43.50	N/A	Horizontal	PASS
279.5395	23.91	N/A	N/A	N/A	46.00	N/A	Horizontal	PASS
915.5255	79.94	N/A	N/A	N/A	46.00	N/A	Horizontal	N/A

(Antenna Horizontal, 30MHz to 1GHz)



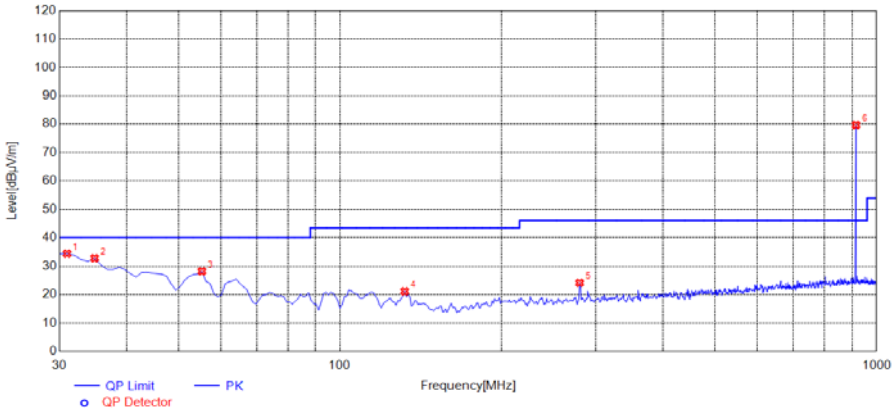
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
1091.2182	33.77	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1274.4549	33.67	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1516.9034	35.31	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
1831.7664	39.80	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2461.0922	43.40	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
2857.1714	38.33	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 1GHz to 3GHz)



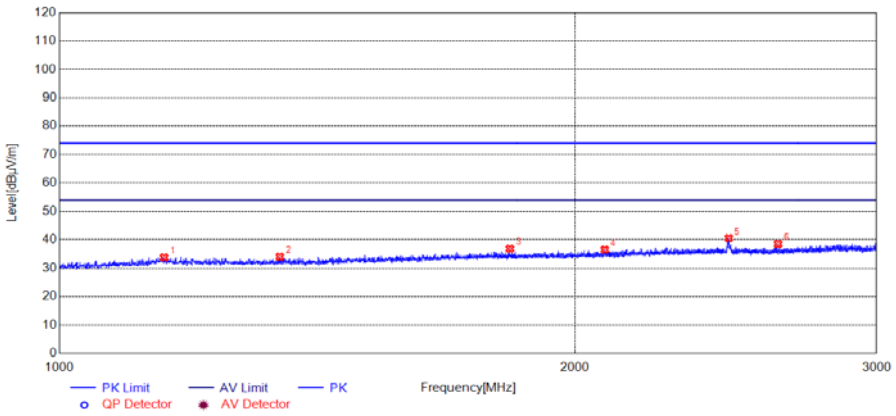
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
3663.4327	43.63	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
4485.2971	44.83	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
5540.3081	46.19	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
6825.7652	47.61	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
7904.0808	42.76	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS
9148.3297	45.63	N/A	N/A	74.00	N/A	54.00	Horizontal	PASS

(Antenna Horizontal, 3GHz to 10GHz)



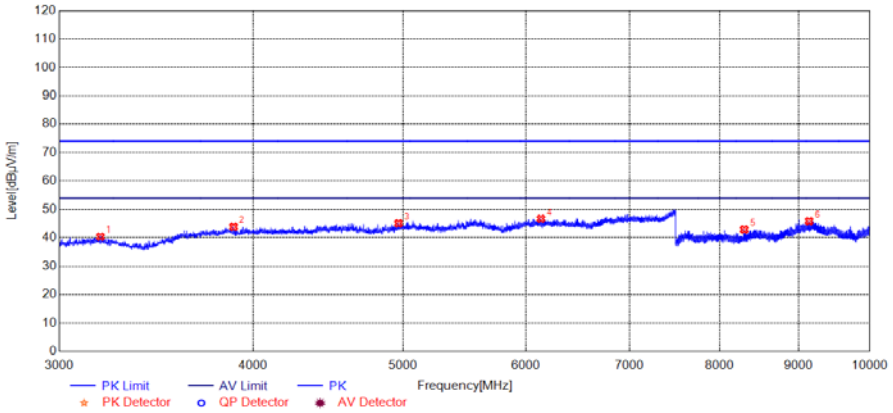
Fre. (MHz)	PK (dBµV/m)	QP (dBµV/m)	AV (dBµV/m)	Limit-PK (dBµV/m)	Limit-QP (dBµV/m)	Limit-AV (dBµV/m)	Antenna	Verdict
30.9710	34.43	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
34.8549	32.78	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
55.2452	28.18	N/A	N/A	N/A	40.00	N/A	Vertical	PASS
131.9520	21.11	N/A	N/A	N/A	43.50	N/A	Vertical	PASS
279.5395	24.14	N/A	N/A	N/A	46.00	N/A	Vertical	PASS
915.5255	79.71	N/A	N/A	N/A	46.00	N/A	Vertical	N/A

(Antenna Vertical, 30MHz to 1GHz)



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
1150.8302	33.78	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1344.4689	34.01	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
1832.1664	36.88	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2081.4163	36.52	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2459.0918	40.57	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
2627.5255	38.54	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 1GHz to 3GHz)



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
3188.1376	40.39	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
3885.7772	43.82	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
4965.0930	45.06	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
6135.3271	46.69	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
8299.1598	42.95	N/A	N/A	74.00	N/A	54.00	Vertical	PASS
9139.8280	45.83	N/A	N/A	74.00	N/A	54.00	Vertical	PASS

(Antenna Vertical, 3GHz to 10GHz)

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. Morlab Laboratory
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. Morlab Laboratory
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	2020.07.21	2021.07.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2019.02.14	2022.02.13
Test Antenna – Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L3203	Tonscend	2020.07.21	2021.07.20
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	2020.03.26	2021.03.25
LISN	812744	NSLK 8127	Schwarzbeck	2020.03.26	2021.03.25
Pulse Limiter (10dB)	VTSD 9561 F-B #206	VTSD 9561-F	Schwarzbeck	2020.07.24	2021.07.23
Coaxial cable(BNC) (30MHz-26GHz)	CB01	EMC01	Morlab	N/A	N/A

END OF REPORT