

EMC Test Report

Applicant : LEXON
Product Type : OBLIO
Trade Name : LEXON
Model Number : LH59
FCC ID : 2ARD3-LH059
EUT Rated Voltage : DC 9 V, 2 A
Test Voltage : 120 Vac / 60 Hz
Test Specification : FCC 47 CFR PART 18 Subpart C
MP-5 : 1986
Receive Date : Apr. 12, 2019
Test Period : Apr. 26 ~ May 14, 2019
Issue Date : Jul. 24, 2019

Issue by

A Test Lab Techno Corp.

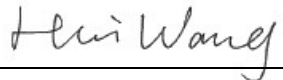
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Taoyuan street, Nanshan district, Shenzhen

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American Association for Laboratory Accreditation number: 3464.02



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Approved By	:		Reviewed By	:	
(Manager)		(Hai. Wang)	(Testing Engineer)		(Simon. Hu)



Revision History

Rev.	Issue Date	Revisions
00	May 28, 2019	Initial Issue.
01	Jul. 24, 2019	Page 1 and 5 added FCC ID.

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1 General Information

1.1 Summary of Test Result

Emission			
Standard	Item	Result	Remark
FCC 47 CFR PART 18 §18.307 (b)	Conducted Emission	PASS	Consumer Equipment
FCC 47 CFR PART 18 §18.305 (b)	Radiated Emission	PASS	Consumer Equipment

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Testing Location

Site Name: A Test Lab Techno Corp.
 Site Address: 101-104, 1F, A building, Safflower ridge industrial area,
 Taoyuan street, Nanshan district, Shenzhen
 Tel : +86-755-23987770
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1.3 Measurement Uncertainty

Test Item		Frequency Range	Uncertainty (dB)
Conducted Emission	AC Power Port	150 kHz ~ 30 MHz	2.8

Test Item	Test Site	Frequency Range	Uncertainty (dB)
Radiated Emission	RE-026	9 kHz ~ 30 MHz	6.3

The Vertical and Horizontal measurement uncertainty of 30 MHz to 1GHz is evaluated and choose which polarity is worst value.

1.4 Test Site Environment

Test Item	Items	Required (IEC 60068-1)	Actual
Conducted Emission	Temperature (°C)	15-35	26
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	990
Radiated Emission	Temperature (°C)	15-35	26
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	990

2 EUT Description

Applicant	LEXON 91 avenue Jean-Baptiste Clément - 92100 Boulogne - FRANCE
Manufacturer	LEXON 91 avenue Jean-Baptiste Clément - 92100 Boulogne - FRANCE
Product Type	OBLIO
Trade Name	LEXON
Model Number	LH59
FCC ID	2ARD3-LH059
I/O Ports	Refer to User Manual
Highest Operating Frequency	210 kHz

3 Test Methodology

3.1. Decision of Test Mode

3.1.1. The following test mode(s) were scanned during the preliminary test:

Pre-Test Mode
Mode 1: Normal operation mode(AC 120 V / 60 Hz)

3.1.2. After the preliminary scan, the following test mode was found to produce the highest emission level.

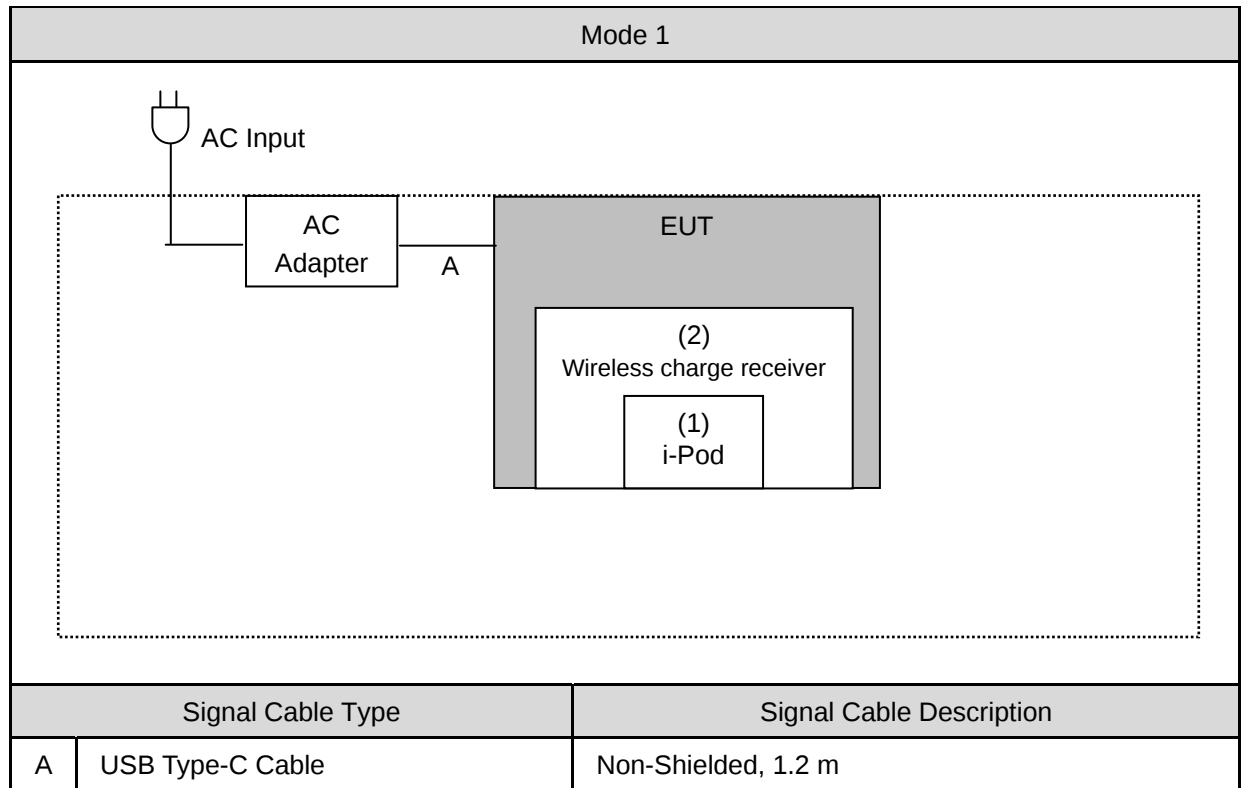
Final Test Mode		
Emission	Conducted Emission	Mode 1
	Radiated Emission	Mode 1

Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.

3.2. EUT Exercise Software

1. Setup the EUT and simulators as shown on 3.3.
2. Turn on the power of all the equipment.
3. Make the i-Pod charging with EUT.
4. Start to test get the worst reading

3.3. Configuration of Test System Details



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	i-Pod	Apple	A1574	N/A	N/A
(2)	Wireless charge receiver	PZOZ	JDHZ21	N/A	N/A



3.4. Test Instruments

Test Period : Apr. 26, 2019

Conducted Emission test site					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESR3	101923	09/14/2018	1 year
LISN	R&S	ENV216	101942	09/18/2018	1 year
LISN	R&S	ENV216	101943	09/18/2018	1 year
RF	EMCI	EMCCFD400	433LFC	09/18/2018	1 year
Test Site	ATL	CE	CE	N.C.R.	-----

Test Period : May 14, 2019

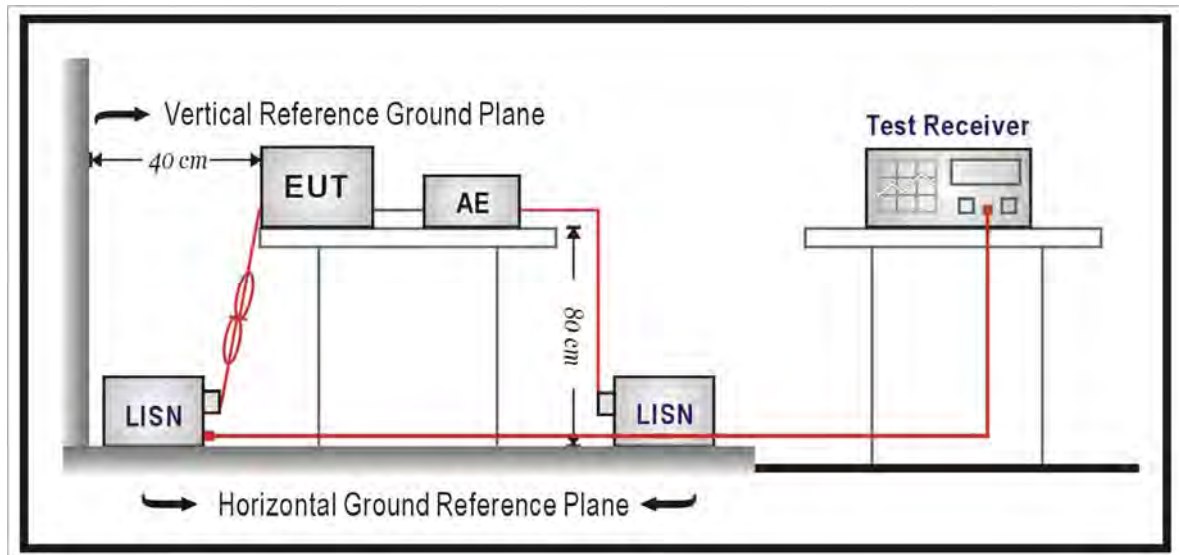
Radiated Emission - 3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Preamplifier (10 kHz~3 GHz)	EMCI	EMC001330	980300	09/18/2018	1 year
Preamplifier (0.1 GHz~26.5 GHz)	EMCI	EMC012645SE	980318	09/18/2018	1 year
Preamplifier (26.5 GHz~40 GHz)	EMCI	EMC2654045	980028	09/18/2018	1 year
Bilog Antenna (30 MHz~1.4 GHz)	Schwarzbeck	VULB 9168	672	11/21/2018	1 year
Horn Antenna (1 GHz~18 GHz)	ETS	3117	00204949	11/16/2018	1 year
Receiver (3 Hz~26.5 GHz)	Keysight	N9038A	MY51210179	09/18/2018	1 year
Spectrum Analyzer (3 Hz~43 GHz)	Keysight	N9030A	MY55410268	09/18/2018	1 year
Cable (30 MHz~1 GHz)	EMCI	N/A	1066LFC	09/18/2018	1 year
Cable (1 GHz~18 GHz)	EMCI	N/A	160719	09/18/2018	1 year
Cable (1 GHz~18 GHz)	EMCI	N/A	160324	09/18/2018	1 year
Cable (1 GHz~18 GHz)	EMCI	N/A	160322	09/18/2018	1 year
Loop Antenna	EMCI	LPA600	272	02/21/2019	1 year
Test Site	OuHeng	MFAC3M	RE-026	02/14/2019	1 year

Note: N.C.R. = No Calibration Request.

4 Emission Test

4.1. Conducted Emission

■ Test Setup



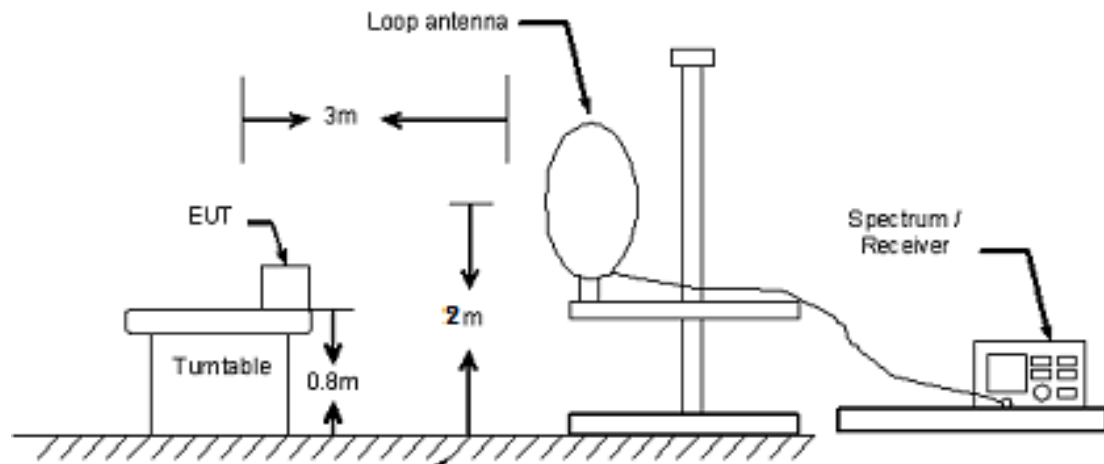
■ Test Procedure

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated. If required, using the correct terminating impedance. The overall length shall not exceed 1m.
- LISN at least 80cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related item "Configuration of Test System Details" (section 3.3).

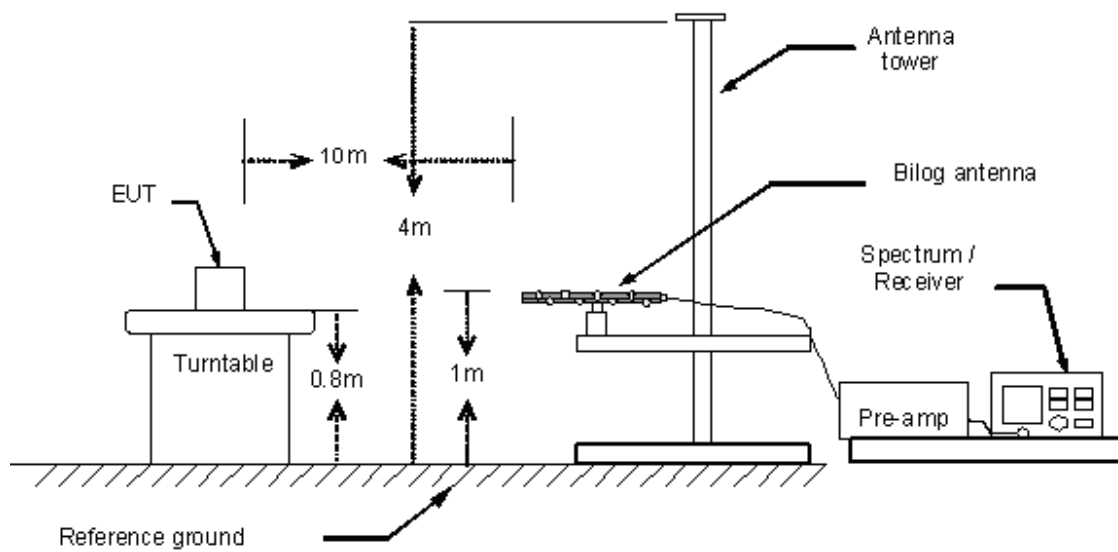
4.2. Radiated Emission

■ Setup

9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



■ Test Procedure

- a) The measuring distance of at 3 m shall be used for measurement at frequency above 30 MHz. For frequencies above 30 MHz, any suitable measuring distance may be used.
- b) The EUT was placed on the top of a rotating table 0.8 m above the ground at 3m open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The height of the equipment or the substitution antenna shall be 0.8m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are marked and then Quasi Peak detector mode re-measured.
- e) If the Peak mode measured value compliance with and lower than Quasi Peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
- f) In case the emission is lower than 30MHz, loop antenna has be used for measurement and the recorded data should be QP measured by receiver. High – low scan is not required in this case.
- g) In the frequency range of 9kHz – 30MHz, magnetic field measurements may be performed. The method is applicable for radiated radio noise from all units, cables, power coeds and interconnect cabling or wring. A calibrated loop antenna as specified in ANSI C63.4 (4.5.2) shall be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. For certain application, the loop antenna may also need to be positioned horizontally at the specified distance from the EUT. The center of the loop shall be 1 m above the round.
- h) For field strength measurements:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 30	400
30 - 500	Tenth harmonic or 1000 MHz, whichever is higher.
500 - 1000	Tenth harmonic
Above 1000	Tenth harmonic or highest detectable emission



5 Test Result

5.1. Conducted Emission

■ Limit

Power Line

Frequency (MHz)	Quasi-peak (dBuV)	Average (dBuV)
0.15 - 0.5	66-56 *	56-46 *
0.50 - 5.0	56.00	46.00
5.0 - 30.0	60.00	50.00

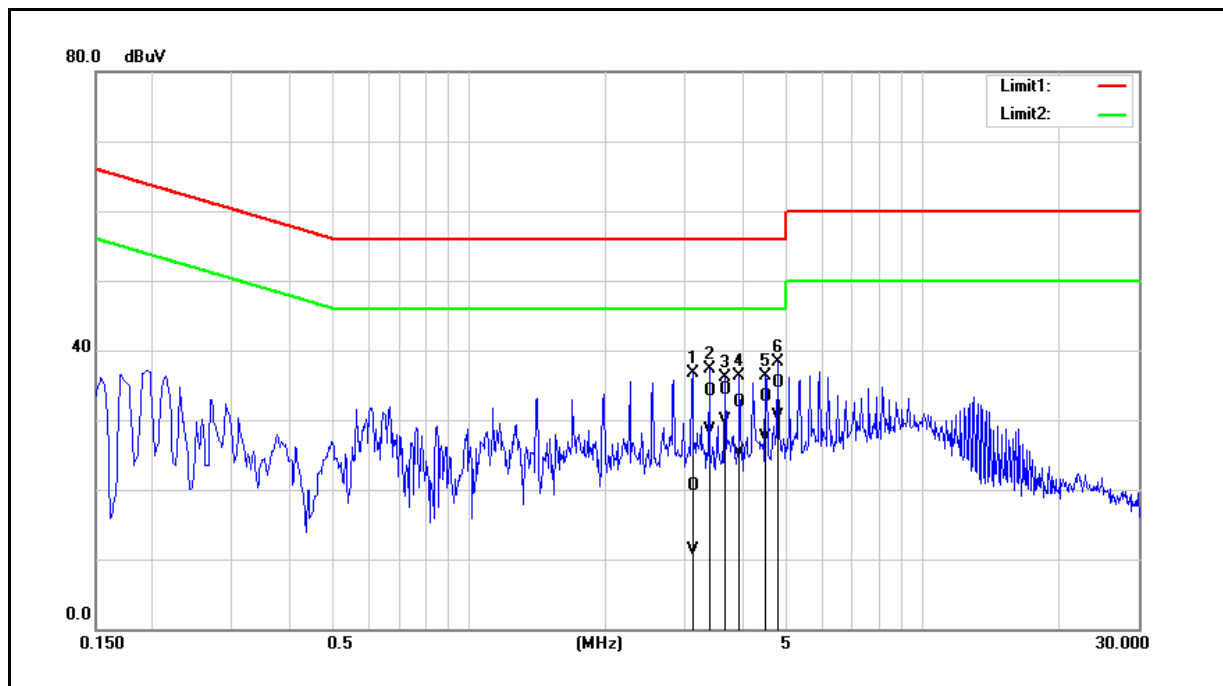
Note: (1) The Equipment is for 18.307(b) other part 18 consumer devices.

(2) The tighter limit applies at the band edges.

(3) The limit of "*" marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

■ Test Result

Standard:	FCC Part 18 §18.307(b)	Line:	L1
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Description:			



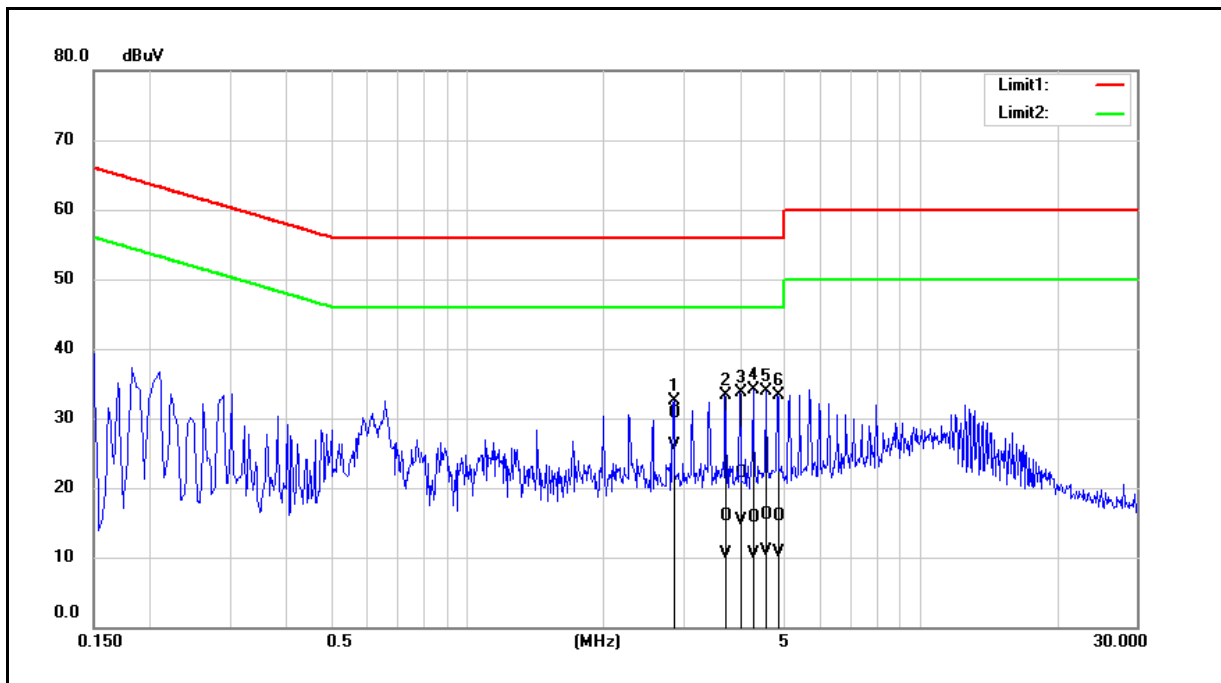
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	3.1100	10.80	1.43	9.79	20.59	11.22	56.00	46.00	-35.41	-34.78	Pass
2	3.3940	24.25	18.62	9.80	34.05	28.42	56.00	46.00	-21.95	-17.58	Pass
3	3.6700	24.54	20.09	9.82	34.36	29.91	56.00	46.00	-21.64	-16.09	Pass
4	3.9500	22.61	15.43	9.83	32.44	25.26	56.00	46.00	-23.56	-20.74	Pass
5	4.5140	23.38	17.71	9.86	33.24	27.57	56.00	46.00	-22.76	-18.43	Pass
6	4.8020	25.51	20.62	9.87	35.38	30.49	56.00	46.00	-20.62	-15.51	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

Example: $20.59 = 9.79 + 10.80$

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 18 §18.307(b)	Line:	N
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Mode 1	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	2.8580	20.79	16.20	9.88	30.67	26.08	56.00	46.00	-25.33	-19.92	Pass
2	3.7060	5.94	0.57	9.90	15.84	10.47	56.00	46.00	-40.16	-35.53	Pass
3	4.0020	12.12	5.48	9.91	22.03	15.39	56.00	46.00	-33.97	-30.61	Pass
4	4.2780	5.81	0.49	9.92	15.73	10.41	56.00	46.00	-40.27	-35.59	Pass
5	4.5660	6.23	1.04	9.94	16.17	10.98	56.00	46.00	-39.83	-35.02	Pass
6	4.8460	6.02	0.75	9.95	15.97	10.70	56.00	46.00	-40.03	-35.30	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

Example: $30.67 = 9.88 + 20.79$

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

5.2. Radiated Emission

■ Limit

9 k~30 MHz

Operating Frequency (MHz)	Measurement Distance at 300 meters		Measurement Distance at 3 meters
	(uV/m)	(dBuV/m)	(dBuV/m)
Any ISM	25	27.96	107.96
Any non-ISM	15	23.52	103.52

Note:

- (1) The Equipment is for 18.305(b). Any type unless otherwise specified (miscellaneous) operating frequency in any non-ISM frequency.
- (2) Limitation expressed in dBuV/m is calculated by $20\log$ emission level (uV/m).
- (3) Distance extrapolation factor = $40\log$ (specific distance / test distance) (dB), Limit line = specific limits (dBuV/m) + distance extrapolation factor.

Above 30 MHz

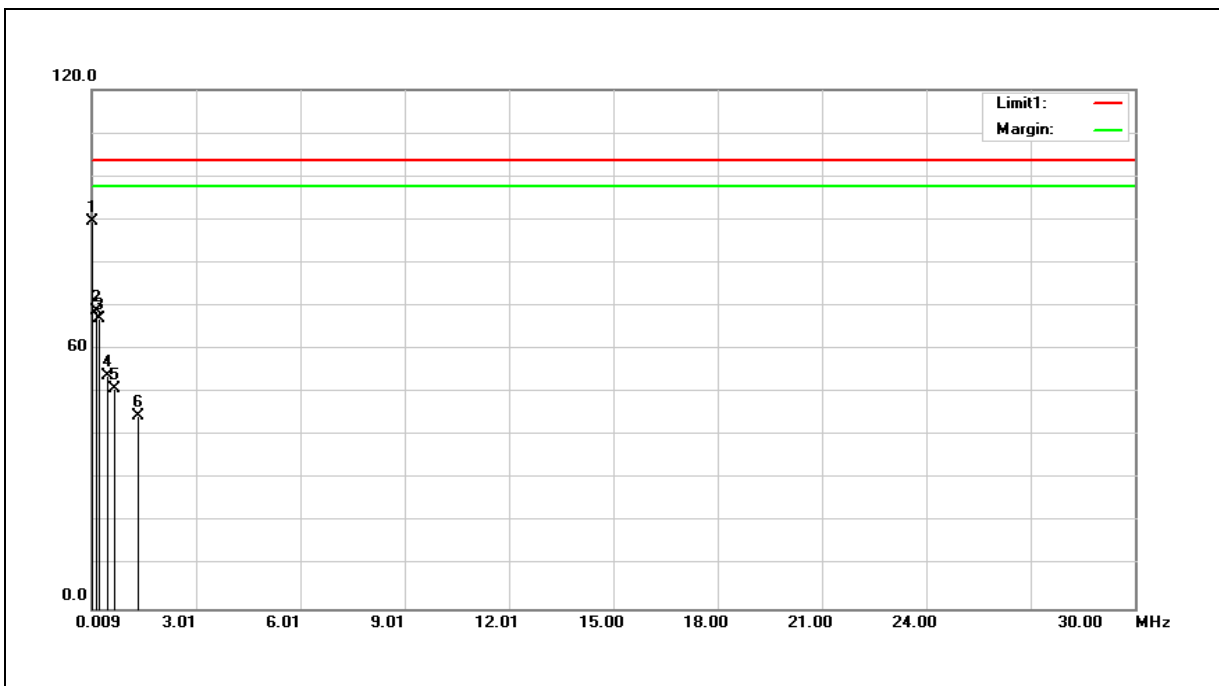
Operating Frequency (MHz)	Measurement Distance at 300 meters		Measurement Distance at 3 meters
	(uV/m)	(dBuV/m)	(dBuV/m)
Any ISM	25	27.96	67.96
Any non-ISM	15	23.52	63.52

Note:

- (1) The Equipment is for 18.305(b). Any type unless otherwise specified (miscellaneous) operating frequency in any non-ISM frequency.
- (2) Limitation expressed in dBuV/m is calculated by $20\log$ emission level (uV/m).
- (3) Distance extrapolation factor = $20\log$ (specific distance / test distance) (dB), Limit line = specific limits (dBuV/m) + distance extrapolation factor.

■ Test Result

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3 m
Test item:	Radiated Emission	Power:	AC 120 V/60 Hz
Mode:	Mode 1 (9 kHz~30 MHz)	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	0.0090	119.58	-30.04	89.54	103.50	-13.96	100	180	peak
2	0.1590	39.20	29.55	68.75	103.50	-34.75	100	360	peak
3	0.2190	40.09	26.84	66.93	103.50	-36.57	100	15	peak
4	0.4601	32.67	21.08	53.75	103.50	-49.75	100	124	peak
5	0.6790	32.41	18.41	50.82	103.50	-52.68	100	54	peak
6	1.3286	28.85	15.57	44.42	103.50	-59.08	100	281	peak

Note1:(1) Result (dBuV) = Correction factor (dB) + Reading(dBuV).

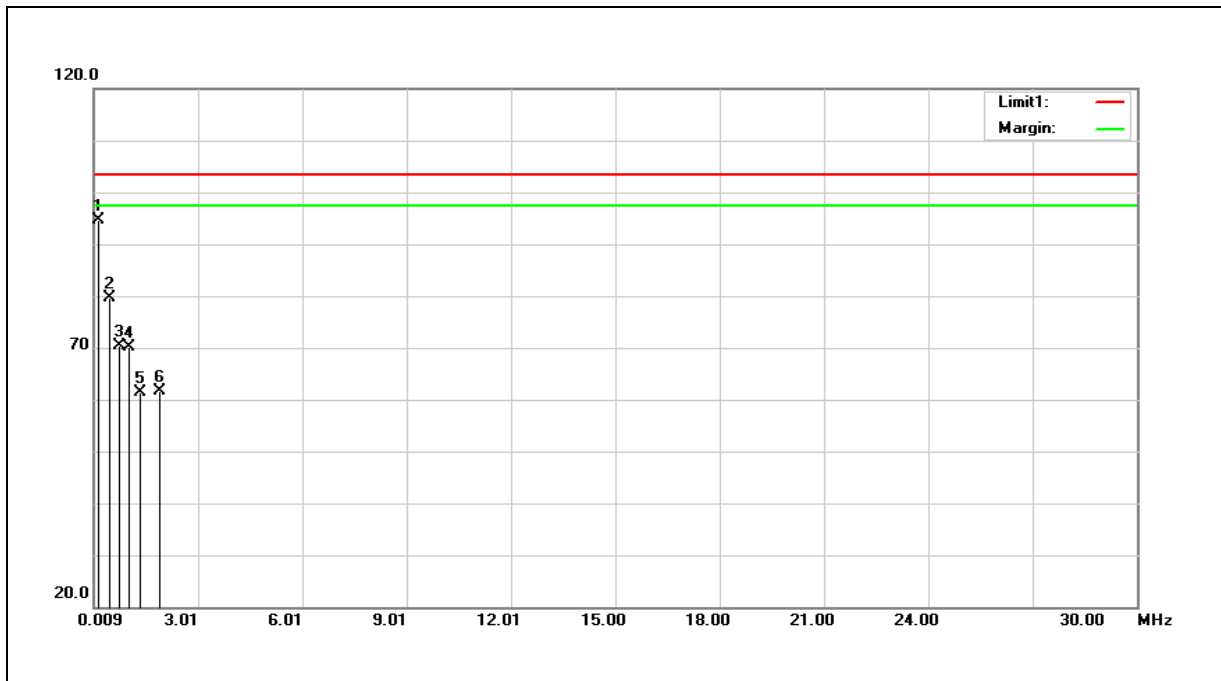
Example: 89.54 = -30.04 + 119.58

(2) Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

Note2: The level is measured at 3 meter and is converted into result at 300 meter.

300 m Limit (dBuV/m) change 3 m Limit (dBuV/m) = 300 m Limit (dBuV/m) + 40 log(300/3)

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3 m
Test item:	Radiated Emission	Power:	AC 120 V/60 Hz
Mode:	Mode 1 (9 kHz~30 MHz)	Temp.(°C)/Hum.(%RH):	26(°C)/60 %RH
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	0.1590	65.08	29.55	94.63	103.50	-8.87	100	145	peak
2	0.4588	58.41	21.11	79.52	103.50	-23.98	100	123	peak
3	0.7288	52.55	17.89	70.44	103.50	-33.06	100	274	peak
4	1.0286	53.93	16.13	70.06	103.50	-33.44	100	0	peak
5	1.3286	45.73	15.57	61.30	103.50	-42.20	100	186	peak
6	1.9281	47.32	14.43	61.75	103.50	-41.75	100	312	peak

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

Example: 94.63 = 29.55 + 65.08

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).