

FCC Test Report

Report No.: FD181227C16

Test Model: AZ1801

Series Model: CQ-RZ38A0AN, CQ-RZ38A1AN, CQ-RZ38A2AN, CQ-RZ19A0AN,
CQ-RZ19A1AN, CQ-RZ39A0AN, CQ-RZ39A1AN, CQ-RZ39A2AN,
CQ-RZ1AA0AN, CQ-RZ1AA1AN, CQ-RZ1AA2AN

Received Date: Dec. 27, 2018

Test Date: Jan. 3 ~ 4, 2019

Issued Date: Jan. 17, 2019

Applicant: Panasonic Corporation of North America

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Manufacturer: Panasonic India Pvt Ltd.

Manufacture's address: Plot No.1, State Highway 15, 15A, Village Bid Dadri, Jhajjar-124103
Haryana, India

Factory: Panasonic India Pvt. Ltd.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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(R.O.C.)

**FCC Registration/
Designation Number:** 418586 / TW1078



Certificate #4327.01



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Modification Record	5
3 General Information	6
3.1 Description of EUT	6
3.2 Features of EUT	6
3.3 Operating Modes of EUT and Determination of Worst Case Operating Mode	7
3.4 Test Program Used and Operation Descriptions	7
3.5 Primary Clock Frequencies of Internal Source	7
4 Configuration and Connections with EUT	8
4.1 Connection Diagram of EUT and Peripheral Devices	8
4.2 Configuration of Peripheral Devices and Cable Connections	9
5 Radiated Emissions up to 1 GHz	10
5.1 Limits	10
5.2 Test Instruments	10
5.3 Test Arrangement	11
5.4 Test Results	12
6 Radiated Emissions above 1 GHz	16
6.1 Limits	16
6.2 Test Instruments	17
6.3 Test Arrangement	18
6.4 Test Results	19
7 Pictures of Test Arrangements	23
7.1 Radiated Emissions up to 1 GHz	23
7.2 Radiated Emissions above 1 GHz	24
Appendix – Information of the Testing Laboratories	25

Release Control Record

Issue No.	Description	Date Issued
FD181227C16	Original release.	Jan. 17, 2019

1 Certificate of Conformity

Product: Car Audio

Brand: Panasonic

Test Model: AZ1801

Series Model: CQ-RZ38A0AN, CQ-RZ38A1AN, CQ-RZ38A2AN, CQ-RZ19A0AN, CQ-RZ19A1AN, CQ-RZ39A0AN, CQ-RZ39A1AN, CQ-RZ39A2AN, CQ-RZ1AA0AN, CQ-RZ1AA1AN, CQ-RZ1AA2AN

Sample Status: Engineering sample

Applicant: Panasonic Corporation of North America

Test Date: Jan. 3 ~ 4, 2019

Standards: 47 CFR FCC Part 15, Subpart B, Class B
ICES-003:2016 Issue 6, Class B
ANSI C63.4:2014

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Jessica Cheng , **Date:** Jan. 17, 2019
Jessica Cheng / Senior Specialist

Approved by : Jim Hsiang , **Date:** Jan. 17, 2019
Jim Hsiang / Associate Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart B / ICES-003:2016 Issue 6, Class B

ANSI C63.4:2014

FCC Clause	ICES-003 Clause	Test Item	Result/Remarks	Verdict
15.107	6.1	AC Power Line Conducted Emissions	Without AC power port of the EUT	N/A
15.109	6.2.1	Radiated Emissions up to 1 GHz	Minimum passing Class B margin is -3.63 dB at 746.733 MHz	Pass
	6.2.2	Radiated Emissions above 1 GHz	Minimum passing Class B margin is -9.93 dB at 4294.830 MHz	Pass

Note:

1. There is no deviation to the applied test methods and requirements covered by the scope of this report.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
3. N/A: Not Applicable

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.92 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.12 dB
	Above 6GHz	5.09 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 Description of EUT

Product	Car Audio
Brand	Panasonic
Test Model	AZ1801
Series Model	CQ-RZ38A0AN, CQ-RZ38A1AN, CQ-RZ38A2AN, CQ-RZ19A0AN, CQ-RZ19A1AN, CQ-RZ39A0AN, CQ-RZ39A1AN, CQ-RZ39A2AN, CQ-RZ1AA0AN, CQ-RZ1AA1AN, CQ-RZ1AA2AN
Model Difference	For marketing difference
Sample Status	Engineering sample
Operating Software	N/A
Power Supply Rating	10Vdc~ 16Vdc
Accessory Device	N/A
Data Cable Supplied	N/A

3.2 Features of EUT

The tests reported herein were performed according to the method specified by Panasonic Corporation of North America, for detailed feature description, please refer to the manufacturer's specifications or user's manual.

3.3 Operating Modes of EUT and Determination of Worst Case Operating Mode

1. The EUT has been pre-tested under following test modes, and test **mode 3, mode 5** was the worst case for final test.

Mode	Test Condition
1	USB in
2	AUX in
3	Bluetooth Link
4	FM (88MHz)
5	FM (98MHz)
6	FM (108MHz)

2. Test modes are presented in the report as below.

Mode	Test Condition
Radiated emission test	
1	Bluetooth Link
2	FM (98MHz)

3.4 Test Program Used and Operation Descriptions

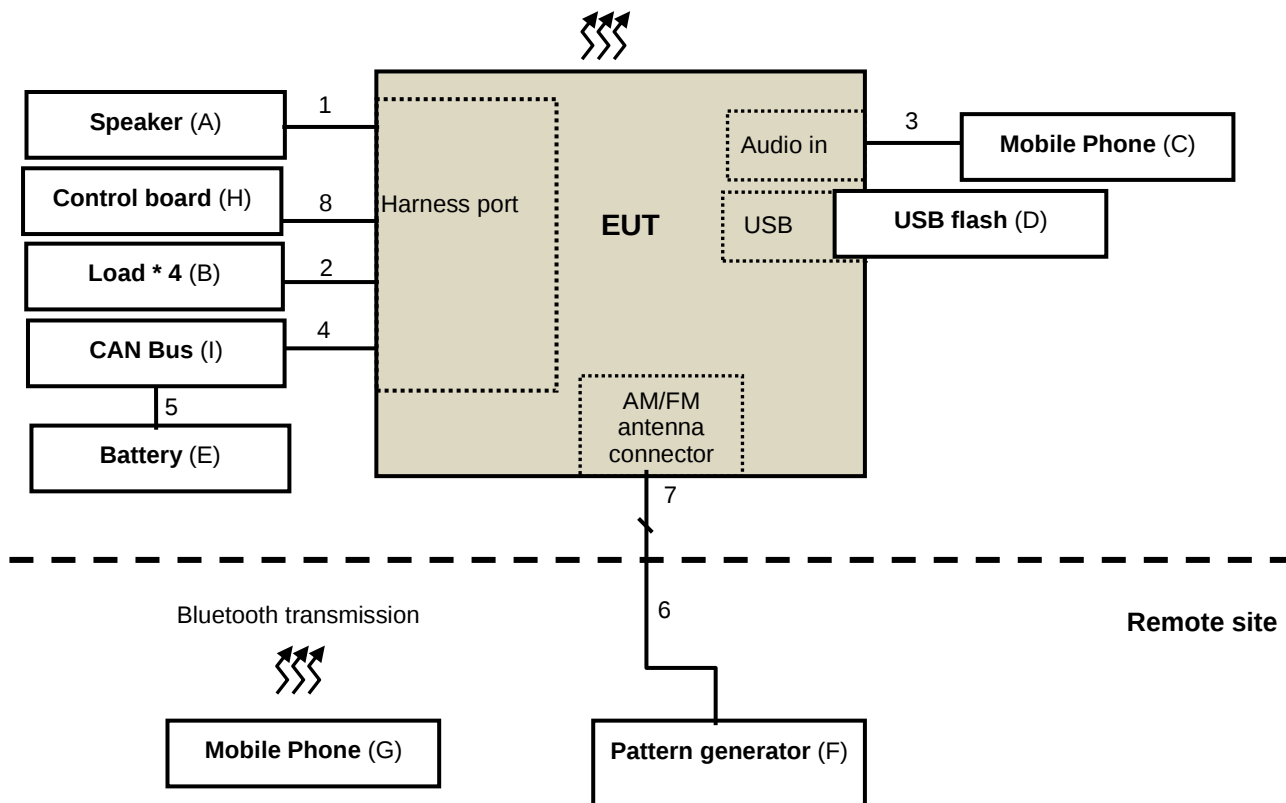
- a. Turned on the power of all equipment.
- b. Mobile Phone (kept in a remote area) sent audio signal to the speaker via EUT with Bluetooth transmission.) (For Mode 1)
- c. Pattern generator sent 1 kHz audio signal to the speaker via EUT. (For Mode 2)
- d. Mobile Phone sent audio signal to EUT.
- e. USB flash sent audio signal to EUT.
- f. Steps b-c were repeated.

3.5 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 2500MHz, provided by Panasonic Corporation of North America, for detailed internal source, please refer to the manufacturer's specifications.

4 Configuration and Connections with EUT

4.1 Connection Diagram of EUT and Peripheral Devices



4.2 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Speaker	N/A	N/A	N/A	N/A	Supplied by client
B.	LOAD* 3	N/A	N/A	N/A	N/A	Provided by Lab
	LOAD	N/A	N/A	N/A	N/A	Supplied by client
C.	Mobile Phone	HTC	PJ46100	HT261W101910	NM8PJ46100	Provided by Lab
D.	USB flash	HP	v250w	N/A	FCC DoC Approved	Provided by Lab
E.	Battery	NA	NA	NA	NA	Provided by Lab
F.	Signal Generator	R&S	SML03	102843	NA	Provided by Lab
G.	Mobile Phone	SAMSUNG	GALAXYS II	NA	NA	Provided by Lab
H.	Control board	NA	NA	NA	NA	Supplied by client
I.	CAN Bus	NA	NA	NA	NA	Supplied by client

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items F-G acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Audio cable	1	1.8	N	0	Supplied by client
2.	Audio cable	4	1.8	N	0	Supplied by client
3.	Audio cable	1	1.8	N	0	Provided by Lab
4.	DC power cable	1	1.8	N	0	Supplied by client
5.	DC power cable	1	2.1	N	0	Provided by Lab
6.	Coaxial cable	1	10	Y	0	Provided by Lab
7.	Coaxial cable	1	0.2	Y	0	Supplied by client
8.	Control cable	1	0.25	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

5 Radiated Emissions up to 1 GHz

5.1 Limits

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39	29.5	40	30
88-216	43.5	33.1		
216-230	46.4	35.6		
230-960			47	37
960-1000	49.5	43.5		

Radiated Emissions Limits at 3 meters (dBμV/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40	50.5	40.5
88-216	54	43.5		
216-230	56.9	46		
230-960			57.5	47.5
960-1000	60	54		

- Notes:
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (uV/m).
 3. QP detector shall be applied if not specified.

5.2 Test Instruments

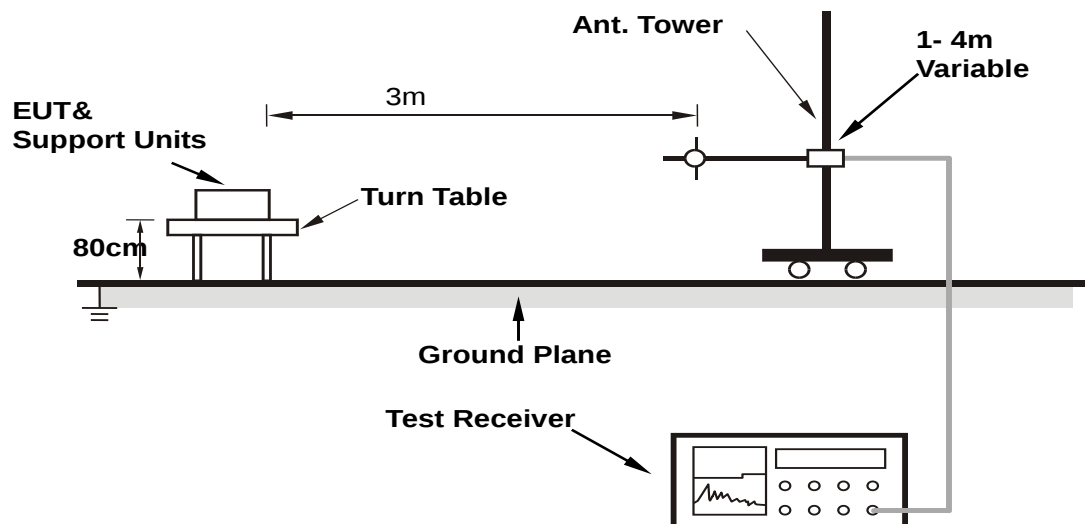
Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Agilent Preamplifier	8447D	2944A10386	Feb. 20, 2018	Feb. 19, 2019
Agilent Test Receiver	N9038A	MY50010135	Jun. 23, 2018	Jun. 22, 2019
Schwarzbeck Antenna	VULB9168	9168-434	Nov. 23, 2018	Nov. 22, 2019
Max Full. Turn Table & Tower	MF7802	MF780208103	NA	NA
Software	Radiated_V8.7.08	NA	NA	NA
WOKEN RF cable With 5dB PAD	8D	CABLE-CH7-01	Jan. 22, 2018	Jan. 21, 2019

- Notes:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in Chamber No. 7.
 3. The Industry Canada Reference No. IC 7450E-7.
 4. The VCCI Site Registration No. R-20008.
 5. Tested Date: Jan. 3, 2019

5.3 Test Arrangement

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna is a broadband antenna, and its height 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.
- 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.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is up to 1 GHz.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency up to 1GHz.



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

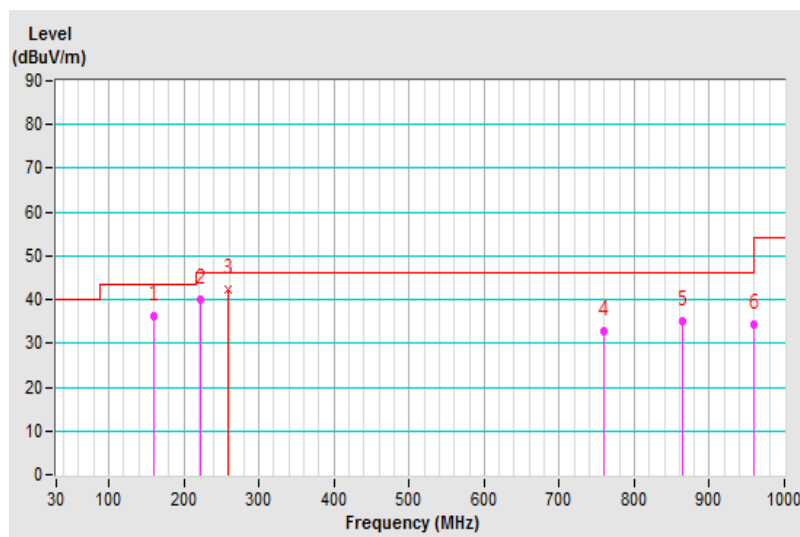
5.4 Test Results

Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	160.029	36.28 QP	43.50	-7.22	3.32 H	46	46.04	-9.76
2	221.187	39.95 QP	46.00	-6.05	1.58 H	26	51.54	-11.59
3	258.041	42.15 QP	46.00	-3.85	1.12 H	113	51.50	-9.35
4	759.876	32.72 QP	46.00	-13.28	1.42 H	176	31.96	0.76
5	863.497	35.10 QP	46.00	-10.90	2.38 H	43	33.07	2.03
6	959.987	34.23 QP	46.00	-11.77	1.00 H	18	30.65	3.58

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

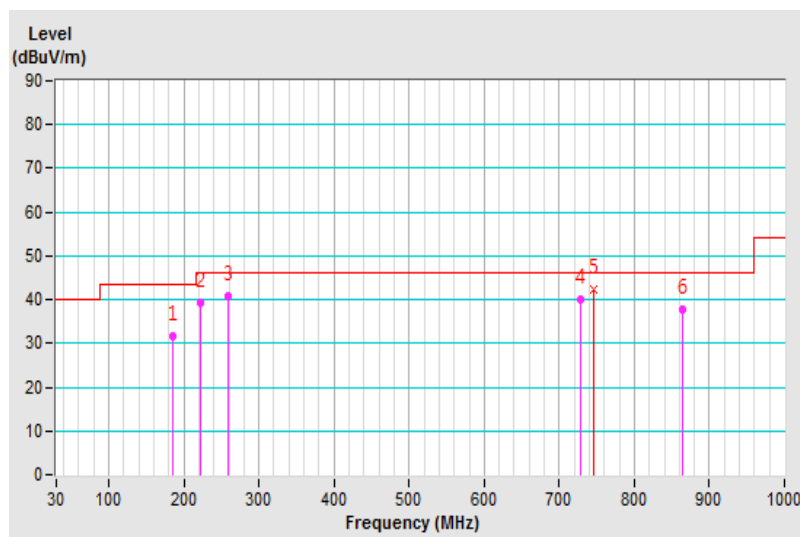


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	184.327	31.77 QP	43.50	-11.73	1.25 V	67	42.82	-11.05
2	221.187	39.11 QP	46.00	-6.89	1.00 V	248	50.70	-11.59
3	258.047	40.64 QP	46.00	-5.36	1.00 V	6	49.99	-9.35
4	729.273	40.06 QP	46.00	-5.94	2.00 V	2	39.96	0.10
5	746.733	42.37 QP	46.00	-3.63	1.42 V	360	41.80	0.57
6	865.097	37.69 QP	46.00	-8.31	1.69 V	164	35.61	2.08

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

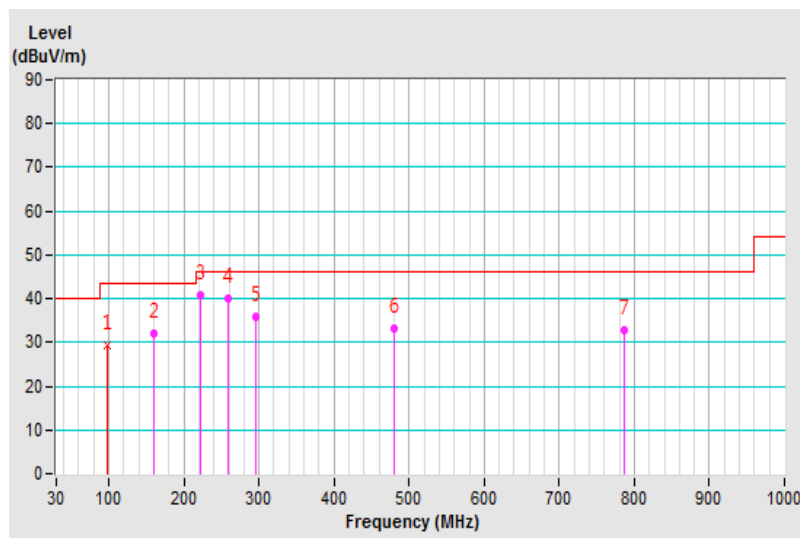


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	98.388	29.34 QP	43.50	-14.16	1.68 H	178	43.43	-14.09
2	160.053	32.12 QP	43.50	-11.38	1.85 H	282	41.87	-9.75
3	221.187	40.73 QP	46.00	-5.27	1.44 H	39	52.32	-11.59
4	258.047	39.93 QP	46.00	-6.07	1.37 H	262	49.28	-9.35
5	294.907	35.89 QP	46.00	-10.11	1.00 H	308	44.13	-8.24
6	479.231	33.29 QP	46.00	-12.71	1.00 H	143	37.77	-4.48
7	787.085	32.63 QP	46.00	-13.37	1.72 H	327	31.74	0.89

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

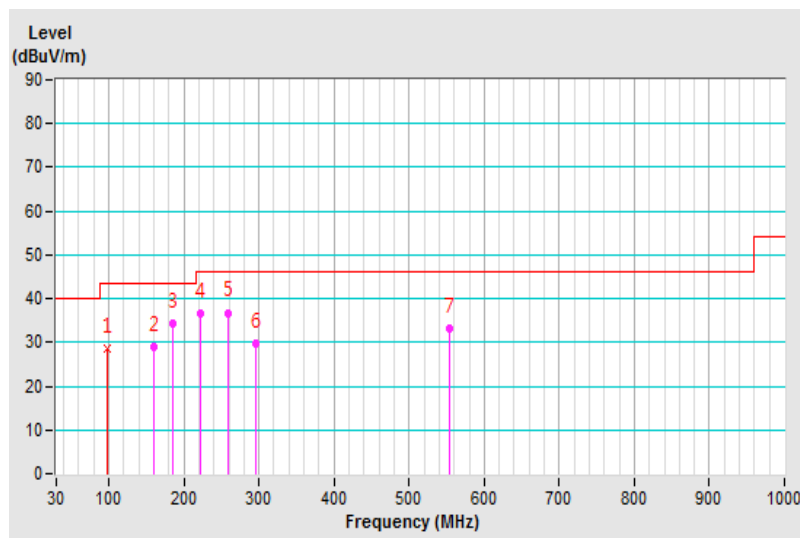


Frequency Range	30MHz ~ 1GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120kHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	98.388	28.67 QP	43.50	-14.83	1.00 V	172	42.76	-14.09
2	160.004	29.04 QP	43.50	-14.46	1.05 V	128	38.80	-9.76
3	184.327	34.34 QP	43.50	-9.16	1.18 V	61	45.39	-11.05
4	221.187	36.44 QP	46.00	-9.56	1.09 V	242	48.03	-11.59
5	258.047	36.76 QP	46.00	-9.24	2.05 V	355	46.11	-9.35
6	294.931	29.70 QP	46.00	-16.30	1.00 V	86	37.94	-8.24
7	552.976	33.13 QP	46.00	-12.87	1.25 V	234	36.74	-3.61

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value



6 Radiated Emissions above 1 GHz

6.1 Limits

Emissions radiated outside of the specified bands, shall be according to the general radiated limits as following:

Radiated Emissions Limits at 10 meters (dB μ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
1000-3000	Avg: 49.5	Avg: 43.5	Not defined	Not defined
Above 3000	Peak: 69.5	Peak: 63.5	Not defined	Not defined

Radiated Emissions Limits at 3 meters (dB μ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
1000-3000	Avg: 60	Avg: 54	Avg: 56 Peak: 76	Avg: 50 Peak: 70
Above 3000	Peak: 80	Peak: 74	Avg: 60 Peak: 80	Avg: 54 Peak: 74

Radiated Emissions Limits at 1.5 meters (dB μ V/m)				
Frequencies (MHz)	FCC 15B / ICES-003, Class A	FCC 15B / ICES-003, Class B	CISPR 22, Class A	CISPR 22, Class B
Above 18000	Avg: 66 Peak: 86	Avg: 60 Peak: 80	Avg: 66 Peak: 86	Avg: 60 Peak: 80

- Notes:
1. The lower limit shall apply at the transition frequencies.
 2. Emission level (dB μ V/m) = 20 log Emission level (uV/m).
 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, 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.

Frequency Range of Radiated Measurement (For unintentional radiators)

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
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40GHz, whichever is lower

6.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Agilent Spectrum	E4446A	MY51100009	Jun. 4, 2018	Jun. 3, 2019
Agilent Test Receiver	N9038A	MY50010135	Jun. 23, 2018	Jun. 22, 2019
Agilent Preamplifier	8449B	3008A02367	Feb. 22, 2018	Feb. 21, 2019
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2018	Feb. 20, 2019
EMCI Preamplifier	EMC184045B	980235	Feb. 22, 2018	Feb. 21, 2019
Schwarzbeck Horn Antenna	BBHA-9170	212	Nov. 25, 2018	Nov. 24, 2019
EMCO Horn Antenna	3115	9312-4192	Nov. 25, 2018	Nov. 24, 2019
Max Full. Turn Table & Tower	MF7802	MF780208103	NA	NA
Software	Radiated_V8.7.08	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF106-18	Cable-CH7-01	Aug. 13, 2018	Aug. 12, 2019
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH7-3.6m	Aug. 13, 2018	Aug. 12, 2019
MICRO-TRONICS Notch filter	BRC50703-01	010	May 31, 2018	May 30, 2019
MICRO-TRONICS Band Pass Filter	BRM17690	005	May 31, 2018	May 30, 2019

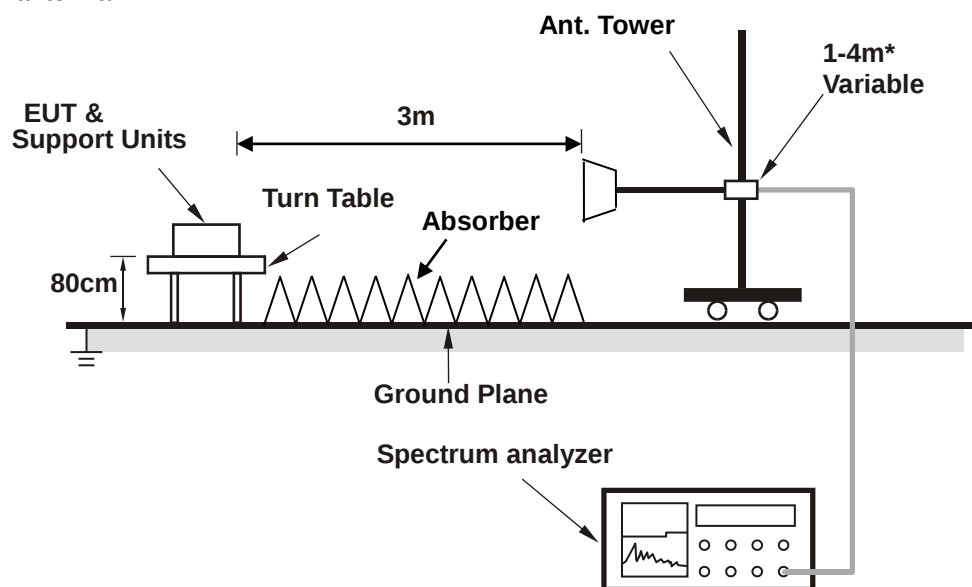
Notes: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Chamber No. 7.
3. The Industry Canada Reference No. IC 7450E-7.
4. The VCCI Site Registration No. G-10039
5. Tested Date: Jan. 3, 2019

6.3 Test Arrangement

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The spectrum analyzer system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

Note:

- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection (PK) at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
- For measurement of frequency 1 GHz ~ 18 GHz, the EUT was set 3 meters away from the receiver antenna



* :depends on the EUT height and the antenna 3dB beamwidth both.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

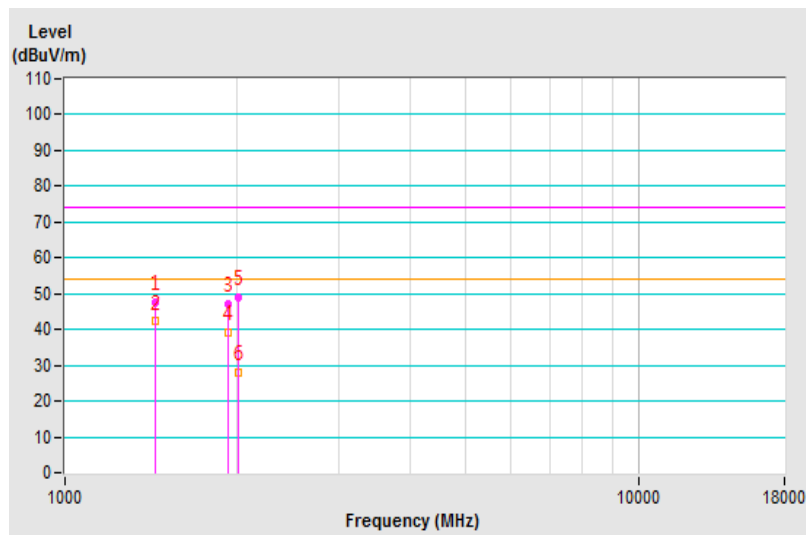
6.4 Test Results

Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1439.870	47.49 PK	74.00	-26.51	2.10 H	170	54.00	-6.51
2	1439.870	42.23 AV	54.00	-11.77	2.10 H	170	48.74	-6.51
3	1920.360	47.15 PK	74.00	-26.85	1.07 H	181	52.23	-5.08
4	1920.360	39.11 AV	54.00	-14.89	1.07 H	181	44.19	-5.08
5	2011.760	49.06 PK	74.00	-24.94	1.47 H	194	54.04	-4.98
6	2011.760	28.17 AV	54.00	-25.83	1.47 H	194	33.15	-4.98

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

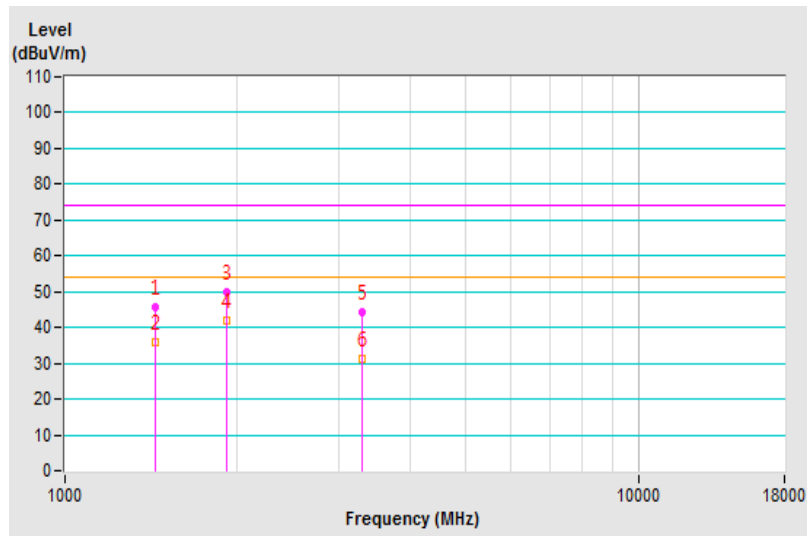


Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 1		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1439.620	45.58 PK	74.00	-28.42	1.01 V	200	52.09	-6.51
2	1439.620	36.11 AV	54.00	-17.89	1.01 V	200	42.62	-6.51
3	1919.570	50.08 PK	74.00	-23.92	1.02 V	73	55.16	-5.08
4	1919.570	42.15 AV	54.00	-11.85	1.02 V	73	47.23	-5.08
5	3308.170	44.37 PK	74.00	-29.63	1.25 V	215	45.64	-1.27
6	3308.170	31.41 AV	54.00	-22.59	1.25 V	215	32.68	-1.27

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

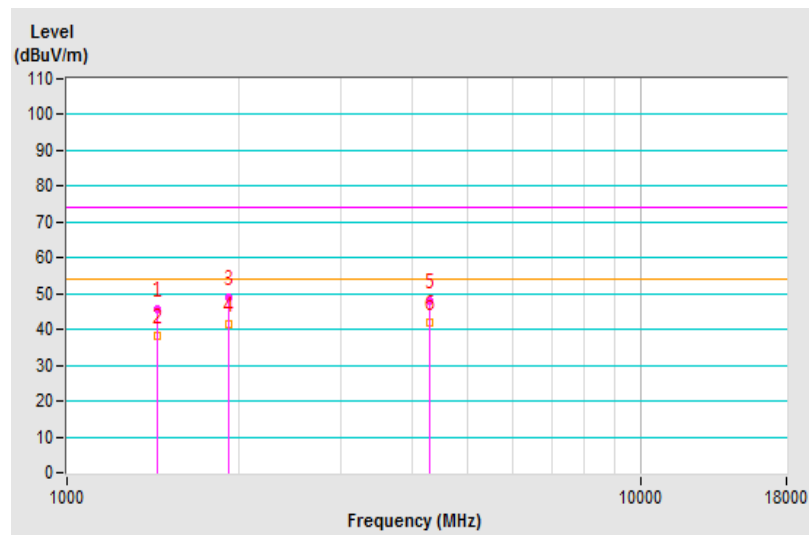


Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	12Vdc	Environmental Conditions	21°C, 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1439.960	45.72 PK	74.00	-28.28	1.25 H	64	52.23	-6.51
2	1439.960	38.20 AV	54.00	-15.80	1.25 H	64	44.71	-6.51
3	1919.850	48.99 PK	74.00	-25.01	1.50 H	76	54.07	-5.08
4	1919.850	41.41 AV	54.00	-12.59	1.50 H	76	46.49	-5.08
5	4294.890	47.91 PK	74.00	-26.09	1.01 H	154	46.66	1.25
6	4294.890	42.03 AV	54.00	-11.97	1.01 H	154	40.78	1.25

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

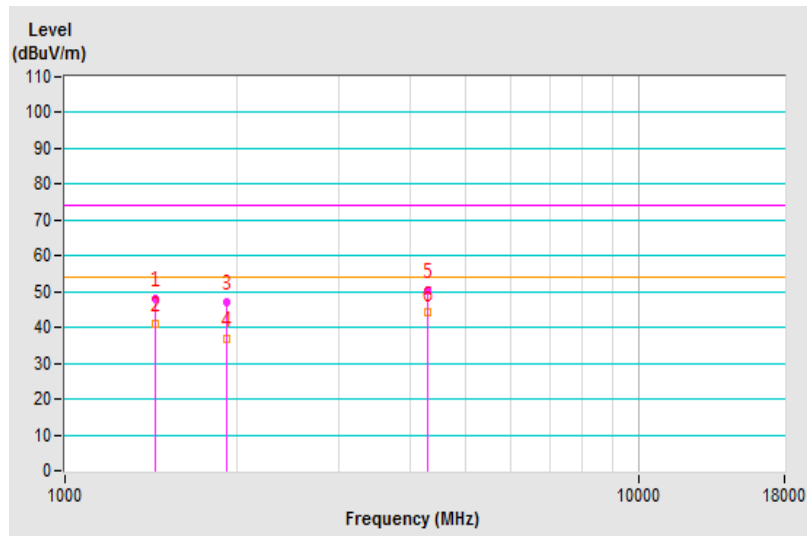


Frequency Range	1GHz ~ 12.5GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	12Vdc	Environmental Conditions	21°C , 73%RH
Tested by	Vincent Lin		
Test Mode	Mode 2		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1439.630	48.14 PK	74.00	-25.86	1.35 V	137	54.65	-6.51
2	1439.630	40.92 AV	54.00	-13.08	1.35 V	137	47.43	-6.51
3	1919.400	46.98 PK	74.00	-27.02	1.06 V	199	52.06	-5.08
4	1919.400	36.80 AV	54.00	-17.20	1.06 V	199	41.88	-5.08
5	4294.830	50.55 PK	74.00	-23.45	1.29 V	176	49.30	1.25
6	4294.830	44.07 AV	54.00	-9.93	1.29 V	176	42.82	1.25

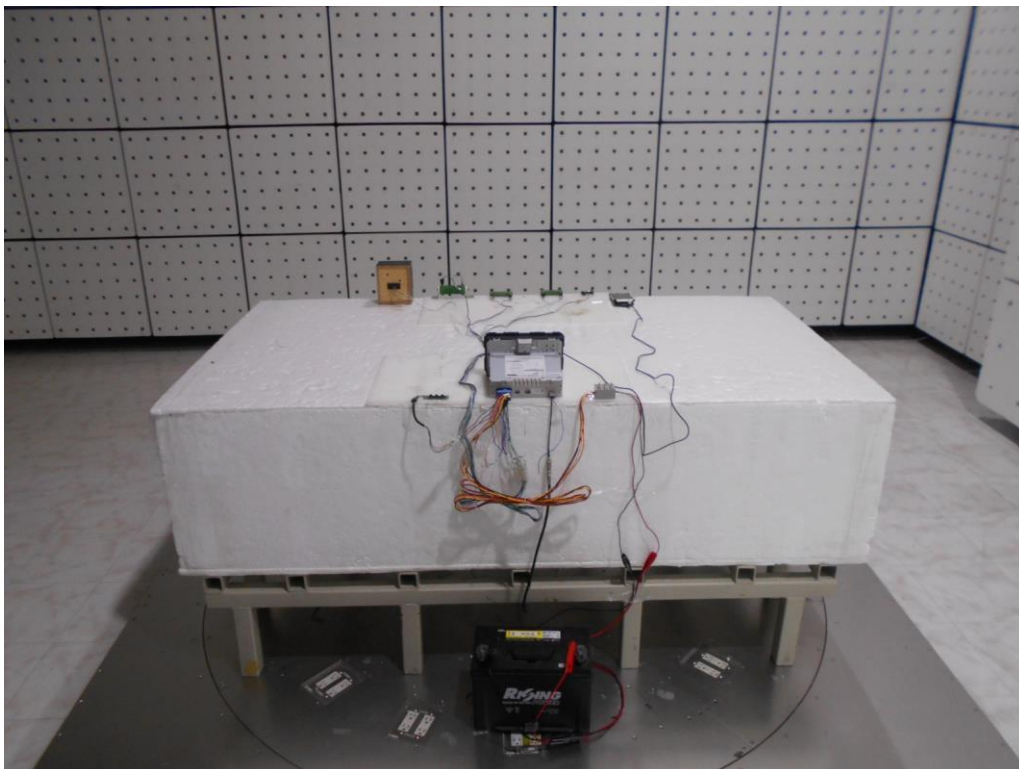
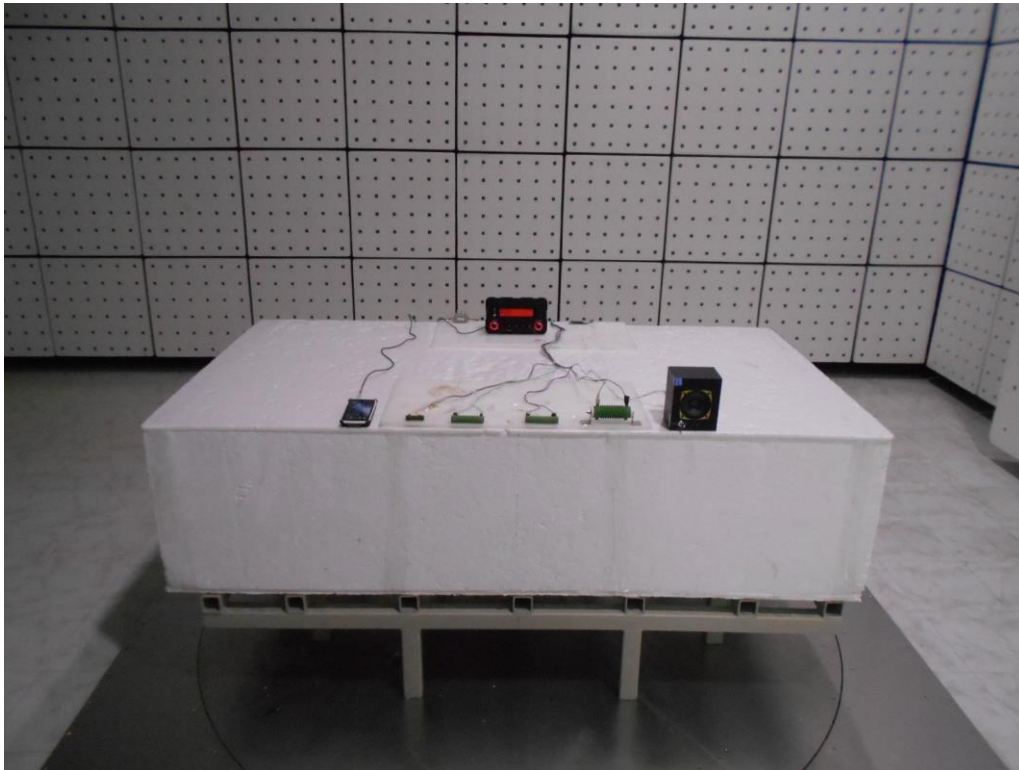
Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
– Pre-Amplifier Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value

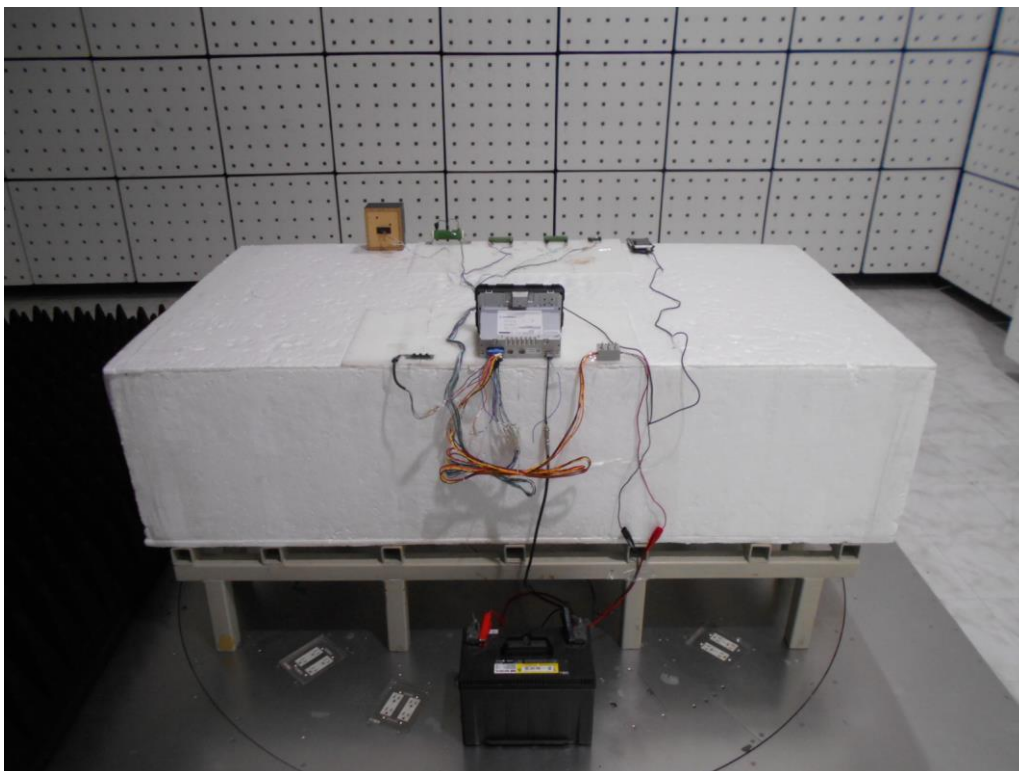
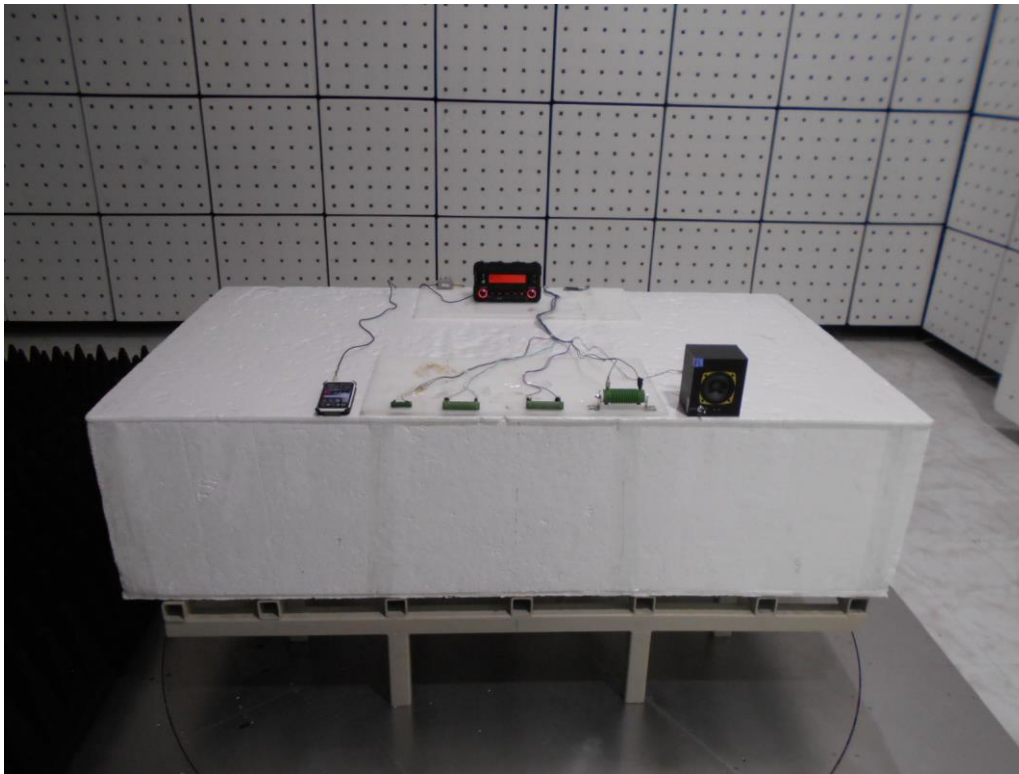


7 Pictures of Test Arrangements

7.1 Radiated Emissions up to 1 GHz



7.2 Radiated Emissions above 1 GHz



Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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