

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: ICES-003:2020 Issue 7, Class B

ICES-Gen:2018 Issue 1 +A1:2021

ANSI C63.4-2014 amended as per ANSI C63.4a-2017

Report No.: CICDBM-WTW-P22060902

Model No.: MGM240S22A

Series Model: BGM240S22A (Refer to item 3.1 for more details)

Received Date: 2022/7/6

Test Date: 2022/7/16 ~ 2022/7/21

Issued Date: 2022/8/10

Applicant: Silicon Laboratories Finland Oy

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Approved by: _____, **Date:** 2022/8/10
Ace Wu / Project Engineer

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Prepared by : Anna Lee / Specialist

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Release Control Record

Issue No.	Description	Date Issued
CICDBM-WTW-P22060902	Original release.	2022/8/10

1 Certificate

Product: Bluetooth Low Energy and 802.15.4 wireless radio module

Brand: SILICON LABS

Test Model: MGM240S22A

Series Model: BGM240S22A (Refer to item 3.1 for more details)

Sample Status: Engineering sample fully representing the production module

Applicant: Silicon Laboratories Finland Oy

Test Date: 2022/7/16 ~ 2022/7/21

Standard: ICES-003:2020 Issue 7, Class B
ICES-Gen:2018 Issue 1 +A1:2021
ANSI C63.4-2014 amended as per ANSI C63.4a-2017

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.

2 Summary of Test Results

The test items that the EUT need to perform in accordance with its interfaces, evaluated functions, are as follows:

Standard	Test Item	Result	Remark
ICES-003	Conducted Emissions from Power Ports	Pass	Minimum passing Class B margin is -18.95 dB at 0.15800, 2.57400 MHz
ICES-003	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class B margin is -4.72 dB at 480.01 MHz
ICES-003	Radiated Emissions above 1 GHz	Pass	Minimum passing Class B margin is -9.75 dB at 6964.84 MHz

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Specification	Expanded Uncertainty (k=2) (±)	Maximum allowable uncertainty (±)
Conducted Emissions from Power Ports	9 kHz ~ 30 MHz	2.79 dB	3.4 dB (U_{CISPR})
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	4.14 dB	6.3 dB (U_{CISPR})
Radiated Emissions above 1 GHz	1 GHz ~ 6 GHz	5.04 dB	5.2 dB (U_{CISPR})
	6 GHz ~ 18 GHz	4.94 dB	5.5 dB (U_{CISPR})

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 Description of EUT

Product	Bluetooth Low Energy and 802.15.4 wireless radio module
Brand	SILICON LABS
Test Model	MGM240S22A
Series Model	BGM240S22A
Model Difference	Refer to note
Sample Status	Engineering sample fully representing the production module
Operating Software	N/A
Power Supply Rating	1.8V to 3.8V, with nominal supply voltage of 3.0V
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

1.The models difference are as below .

Note: The models difference are as below:				
Product Spec.	Model			
	Main Model: MGM240S22A		Series Model: BGM240S22A	
	Power rating: Low-Power Wireless protocols: BLE and 802.15.4		Power rating: Low-Power Wireless protocols: BLE	
Test mode	To be tested as DTS for both 802.15.4 and BLE In the case of BLE, two PHYs to test: 2Mbps and 125Kbps		Testing of the Main Model will cover this Series Model / In fact, the hardware and software are exactly the same, except for one single software-related difference: the 802.15.4 protocol is disabled in the factory for marketing differentiation	
RF nominal max TX output power	10dBm			
Antenna type	Integral antenna	RF pin	Integral antenna	RF pin
Hardware	Hardware-wise, the main model and the first series model are identical. Supply voltage range: 1V8 to 3V8 (nominal 3V0) / Fully internally regulated, including the RF PA. Temperature range: -40C to +105C.			
	The BLE wireless protocol is indential in all the models. The 802.15.4 wireless protocol is made available only for the main model.			
	The module's RF OUT pin exposes the 50Ω-matched RF port of the embedded radio chipset. Conducted measurements are taken at the module's RF OUT pin.			
	The RF OUT pin can be further connected either to the adjacent RF ANT IN pin (using a 0Ω resistor), so that the integral antenna can be used, or directly to an external antenna. All radiated tests are taken both with a sample using the integral antenna, and with a sample where the RF signal from the RF OUT pin is routed instead to an external reference dipole antenna.			

3.2 Primary Clock Frequencies of Internal Source

The highest frequency generated or used within the EUT or on which the EUT operates or tunes is 2.48 GHz, provided by Silicon Laboratories Finland Oy, for detailed internal source, please refer to the manufacturer's specifications.

3.3 Features of EUT

The tests reported herein were performed according to the method specified by Silicon Laboratories Finland Oy, for detailed feature description, please refer to the manufacturer's specifications or user's manual.

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

The EUT has been pre-tested under following test modes.

Test Condition	
Mode	Conducted Emissions from Power Ports
1	EUT + BT link + USB link Notebook
2	EUT + 802.15.4 link + USB link Notebook
Note: The worst case is that mode 1 is shown in bold.	
Mode	Radiated Emissions up to 1 GHz
1	EUT + BT link + USB link Notebook
2	EUT + 802.15.4 link + USB link Notebook
Note: The worst case is that mode 1 is shown in bold.	

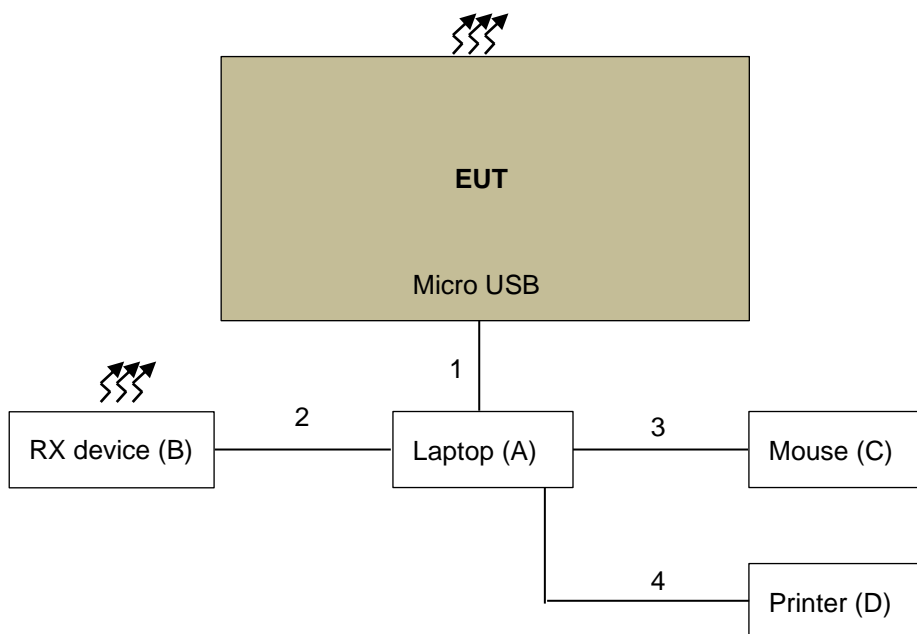
Test modes are presented in the report as below.

Test Condition	
Mode	Conducted Emissions from Power Ports
A	EUT + BT link + USB link Notebook
Mode	Radiated Emissions up to 1 GHz
A	EUT + BT link + USB link Notebook
Mode	Radiated Emissions above 1 GHz
A	EUT + BT link + USB link Notebook

3.5 Test Program Used and Operation Descriptions

- Turned on the power of all equipment.
- EUT and RX device connects to the laptop via microUSB cable , and laptop runs the test script.
- EUT connects to RX device via Bluetooth low energy and performs data transmission.

3.6 Connection Diagram of EUT and Peripheral Devices



Remote Site

3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Dell	E5420	FHP55S1	N/A	Provided by Lab
B	RX device	Silicon	MGM240S22A	N/A	N/A	Supplied by applicant
C	Mouse	Dell	MOCZUL	CN-049TWY- PRC00-79E-02GB	N/A	Provided by Lab
D	Printer	Epson	T22	MEEZ070220	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Cable	1	0.9	Yes	0	Supplied by applicant
2	USB Cable	1	0.9	Yes	0	Supplied by applicant
3	USB Cable	1	1.8	Yes	0	Provided by Lab
4	USB Cable	1	1.8	Yes	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Conducted Emissions from Power Ports

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
DC LISN R&S	ESH3-Z6	100219	2021/7/25	2022/7/24
		844950/018	2021/7/25	2022/7/24
DC-LISN SCHWARZBECK MESS- ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH2-Z5	100100	2022/2/17	2023/2/16
	ESH3-Z5	100312	2021/9/17	2022/9/16
RF Coaxial Cable WORKEN	5D-FB	Cable-cond2-01	2021/9/4	2022/9/3
Software BVADT	BVADT_Conc_ V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102783	2021/12/20	2022/12/19
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2021/8/20	2022/8/19

Notes:

1. The test was performed in HY - Conduction 2.
2. Tested Date: 2022/7/18

4.2 Radiated Emissions up to 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower (H)	MFA-440	970705	N/A	N/A
Antenna Tower (V)	MFA-440	9707	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB9168	9168-148	2021/10/19	2022/10/18
		9168-156	2021/10/19	2022/10/18
Controller (H)	MF7802	08093	N/A	N/A
Controller (V)	MF7802	074	N/A	N/A
Pre_Amplifier Sonoma	310N	352924	2022/5/14	2023/5/13
		352923	2022/5/14	2023/5/13
RF Coaxial Cable TIMES	LMR-600(18M)+LMR-400 (7M)	CABLE-CH1(VER)-01	2021/9/4	2022/9/3
	LMR-600(11.8M)+LMR-400 (7M)	CABLE-CH1(HOR)-01	2021/9/4	2022/9/3
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Test Receiver ESR7 R&S	ESR	101240	2021/11/3	2022/11/2
		101264	2022/4/11	2023/4/10
Turn Table	DS430	50303	N/A	N/A

Notes:

1. The test was performed in HY - 10M Chamber. The test site validated date: 2021/8/07 (NSA)
2. Tested Date: 2022/7/21

4.3 Radiated Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower BVADT	AT100	AT93021702	N/A	N/A
BandPass Filter MICRO-TRONICS	BRM17690-01	003	2021/9/4	2022/9/3
	BRM50716-01	G011	2021/9/4	2022/9/3
Controller BVADT	SC100	SC93021702	N/A	N/A
Fix tool for Boresight antenna tower BV	BAF-01	2	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-405	2021/11/14	2022/11/13
Pre-Amplifier Agilent	8449B	3008A01961	2021/9/4	2022/9/3
RF Coaxial Cable EMCI	EMC102-KM-KM-1000	170820	2022/1/15	2023/1/14
RF Coaxial Cable Rosnol	K1K50-UP0279-K1K50-3000	181129-2	2022/1/15	2023/1/14
RF Coaxial Cable ATK+EMC	EM104-SMSM-600&EM104-SMSM-500	Cable-CH2-02	2022/1/15	2023/1/14
Software BVADT	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Analyzer Agilent	E4446A	MY51100039	2021/12/7	2022/12/6
Turn Table BVADT	TT100	TT93021702	N/A	N/A

Notes:

1. The test was performed in HY - 966 chamber 1. The test site validated date: 2022/1/8 (VSWR)
2. Tested Date: 2022/7/16

5 Limits of Test Items

5.1 Conducted Emissions from Power Ports

Frequency (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Notes: 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases linearly with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

5.2 Radiated Emissions up to 1 GHz

Frequency range (MHz)	Class A (3 m) Quasi-peak dBμV/m	Class A (10 m) Quasi-peak dBμV/m	Class B (3 m) Quasi-peak dBμV/m	Class B (10 m) Quasi-peak dBμV/m
30-88	50.0	40.0	40.0	30.0
88-216	54.0	43.5	43.5	33.1
216-230	56.9	46.4	46.0	35.6
230-960	57.0	47.0	47.0	37.0
960-1000	60.0	49.5	54.0	43.5

Notes: 1. The lower limit shall apply at the transition frequencies.

5.3 Radiated Emissions above 1 GHz

Required highest measurement frequency

Highest internal frequency (F_x)	Highest measurement frequency (F_M) (GHz)
$F_x \leq 108 \text{ MHz}$	1
$108 \text{ MHz} < F_x \leq 500 \text{ MHz}$	2
$500 \text{ MHz} < F_x \leq 1 \text{ GHz}$	5
$F_x > 1 \text{ GHz}$	$5 \times F_x$ up to a maximum of 40 GHz

F_x is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.

Radiated Emissions Limits at 3 meters (dBμV/m)		
Frequency range (GHz)	Class A	Class B
$1 - F_M$	Avg: 60 Peak: 80	Avg: 54 Peak: 74

Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far field of the ITE or digital apparatus under test.

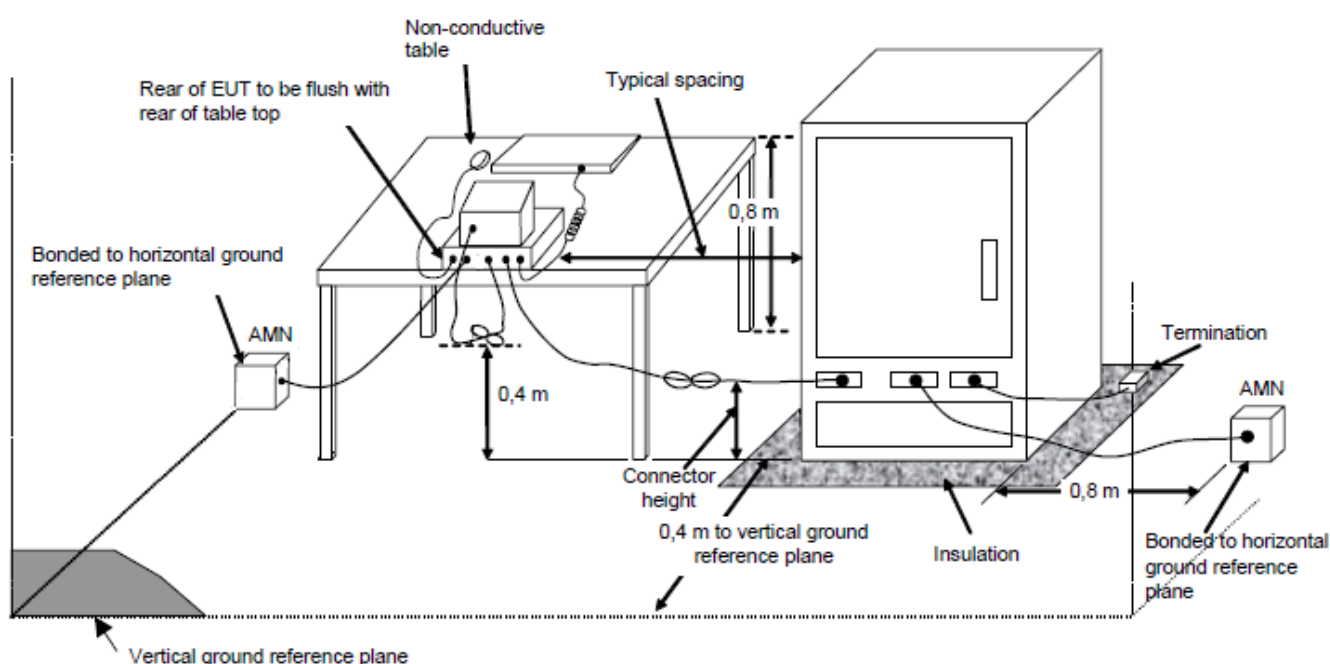
At and above 1 GHz, if the ITE or digital apparatus is an outdoor unit of home satellite receiving systems, it shall comply with the limits in Table A.7 in clause A.2 of CAN/CSA-CISPR 32:17 (in Annex A therein). For these types of ITE or digital apparatus, the highest measurement frequency shall be 18 GHz.

6 Test Arrangements

6.1 Conducted Emissions from Power Ports

- For the table-top EUT is placed on a 0.8 meter insulation table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The EUT is placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units are connected to the power mains through another LISN. They provide coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The test results of conducted emissions at mains ports are recorded of six worst margins for quasi-peak (mandatory) [and average (if necessary)] values against the limits at frequencies of interest unless the margin is 20 dB or greater.

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

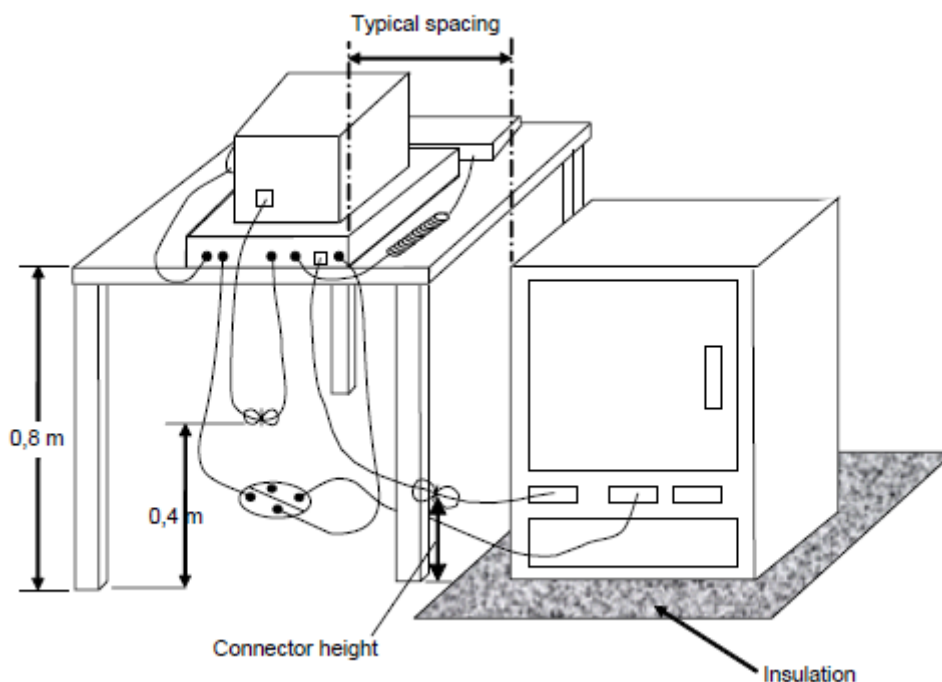


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

6.2 Radiated Emissions up to 1 GHz

- For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The rotating table is rotated 360 degrees to determine the position of the highest radiation. If the equipment requires a dedicated ground connection, this shall be provided and bonded to the RGP.
- The EUT was set 10 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.

7 Test Results of Test Item

7.1 Conducted Emissions from Power Ports

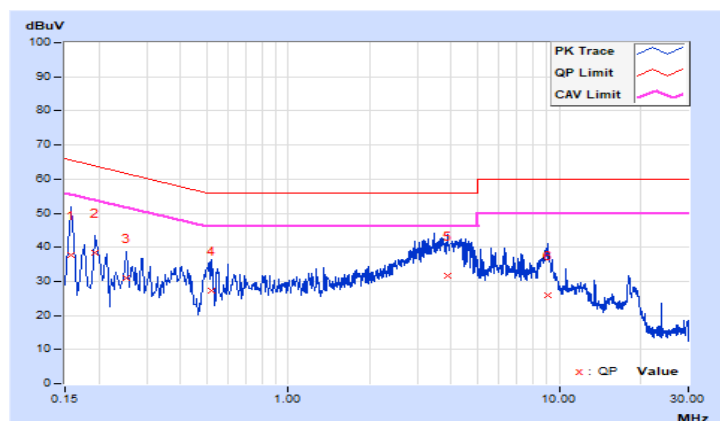
Mode A

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 71% RH
Tested by	Daniel Lin		

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	10.13	27.60	12.55	37.73	22.68	65.57	55.57	-27.84	-32.89
2	0.19400	10.14	28.12	15.52	38.26	25.66	63.86	53.86	-25.60	-28.20
3	0.25400	10.15	20.89	11.70	31.04	21.85	61.63	51.63	-30.59	-29.78
4	0.51800	10.17	17.22	10.71	27.39	20.88	56.00	46.00	-28.61	-25.12
5	3.87000	10.25	21.27	10.91	31.52	21.16	56.00	46.00	-24.48	-24.84
6	9.09400	10.28	15.48	7.67	25.76	17.95	60.00	50.00	-34.24	-32.05

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

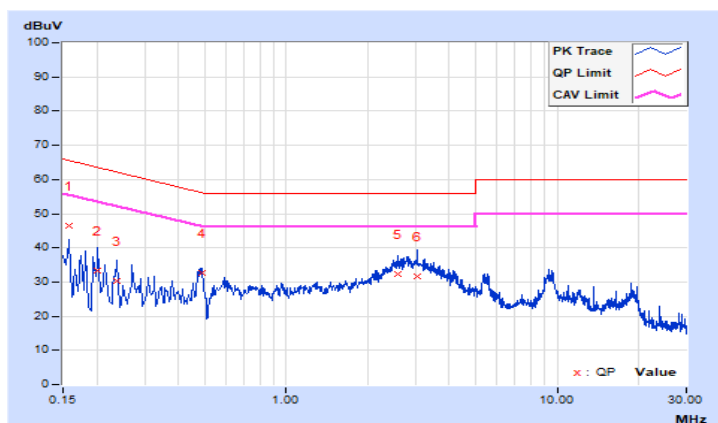


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	26°C, 71% RH
Tested by	Daniel Lin		

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15800	10.14	36.48	15.86	46.62	26.00	65.57	55.57	-18.95	-29.57
2	0.20200	10.15	23.06	8.43	33.21	18.58	63.53	53.53	-30.32	-34.95
3	0.23785	10.15	20.19	7.56	30.34	17.71	62.17	52.17	-31.83	-34.46
4	0.48600	10.17	22.39	13.65	32.56	23.82	56.24	46.24	-23.68	-22.42
5	2.57400	10.24	22.09	16.81	32.33	27.05	56.00	46.00	-23.67	-18.95
6	3.05400	10.25	21.49	15.87	31.74	26.12	56.00	46.00	-24.26	-19.88

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



7.2 Radiated Emissions up to 1 GHz

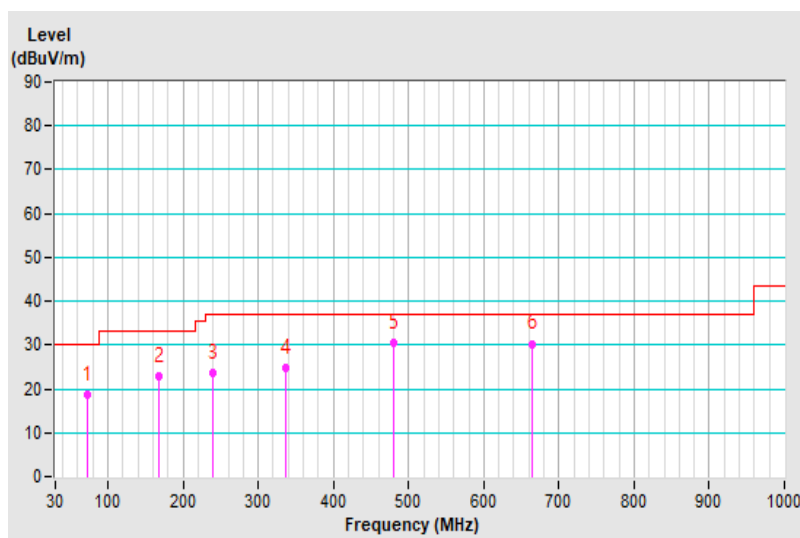
Mode A

Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 67% RH
Tested By	Mick Chou		

Antenna Polarity & Test Distance : Horizontal at 10 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	71.95	18.70 QP	30.00	-11.30	3.00 H	206	34.15	-15.45
2	167.99	22.76 QP	33.10	-10.34	4.00 H	257	36.44	-13.68
3	239.97	23.49 QP	37.00	-13.51	3.00 H	112	38.06	-14.57
4	336.00	24.75 QP	37.00	-12.25	4.00 H	16	36.10	-11.35
5	480.01	30.61 QP	37.00	-6.39	2.50 H	127	38.56	-7.95
6	663.88	30.28 QP	37.00	-6.72	1.50 H	82	34.65	-4.37

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

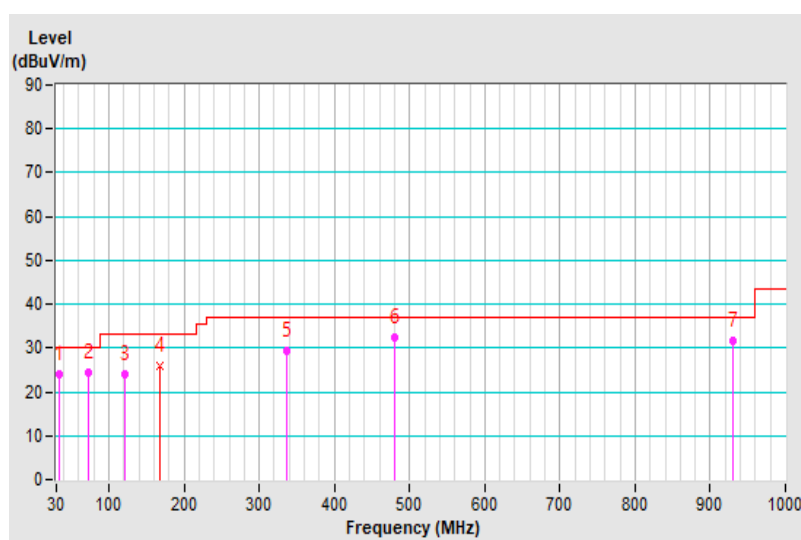


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	24°C, 67% RH
Tested By	Mick Chou		

Antenna Polarity & Test Distance : Vertical at 10 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	33.25	23.84 QP	30.00	-6.16	1.00 V	150	39.02	-15.18
2	72.00	24.27 QP	30.00	-5.73	2.00 V	236	39.99	-15.72
3	120.85	23.99 QP	33.10	-9.11	1.50 V	262	39.97	-15.98
4	168.00	26.07 QP	33.10	-7.03	1.00 V	147	39.66	-13.59
5	336.00	29.51 QP	37.00	-7.49	1.00 V	343	40.44	-10.93
6	480.01	32.28 QP	37.00	-4.72	1.00 V	116	39.69	-7.41
7	930.93	31.68 QP	37.00	-5.32	2.00 V	66	31.22	0.46

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



7.3 Radiated Emissions above 1 GHz

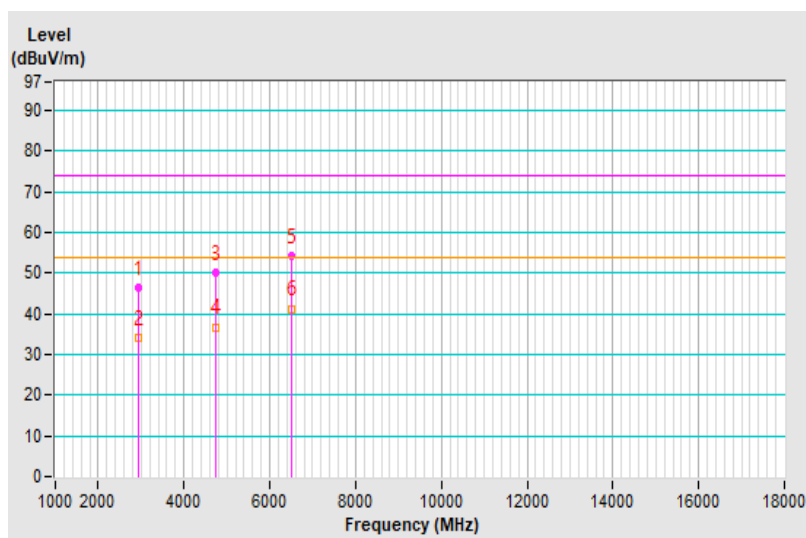
Mode A

Frequency Range	1GHz ~ 13GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 74% RH
Tested By	Slash Huang		

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	2948.85	46.40 PK	74.00	-27.60	1.75 H	267	41.30	5.10
2	2948.85	33.92 AV	54.00	-20.08	1.75 H	267	28.82	5.10
3	4756.56	50.07 PK	74.00	-23.93	1.50 H	86	40.12	9.95
4	4756.56	36.76 AV	54.00	-17.24	1.50 H	86	26.81	9.95
5	6516.54	54.14 PK	74.00	-19.86	1.50 H	280	38.61	15.53
6	6516.54	41.24 AV	54.00	-12.76	1.50 H	280	25.71	15.53

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

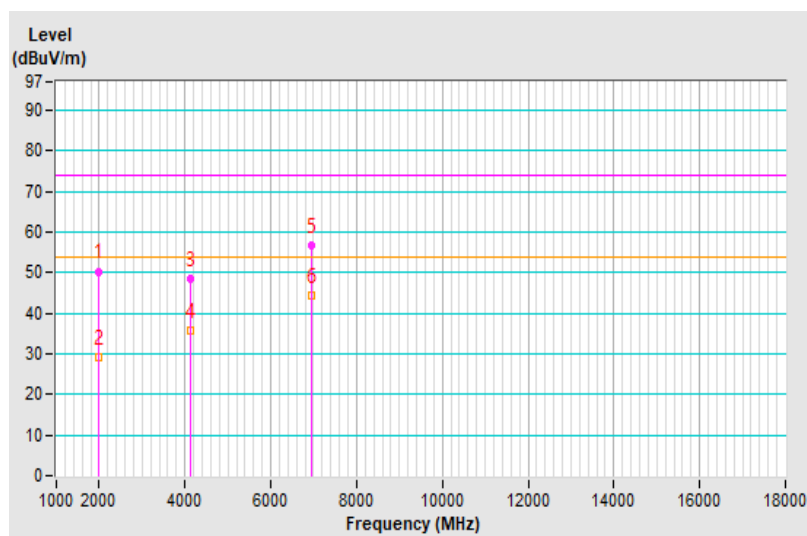


Frequency Range	1GHz ~ 13GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 74% RH
Tested By	Slash Huang		

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	1969.23	50.32 PK	74.00	-23.68	1.50 V	360	49.70	0.62
2	1969.23	29.21 AV	54.00	-24.79	1.50 V	360	28.59	0.62
3	4111.10	48.38 PK	74.00	-25.62	1.75 V	241	40.43	7.95
4	4111.10	35.77 AV	54.00	-18.23	1.75 V	241	27.82	7.95
5	6964.84	56.57 PK	74.00	-17.43	1.50 V	253	39.21	17.36
6	6964.84	44.25 AV	54.00	-9.75	1.50 V	253	26.89	17.36

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



8 Pictures of Test Arrangements

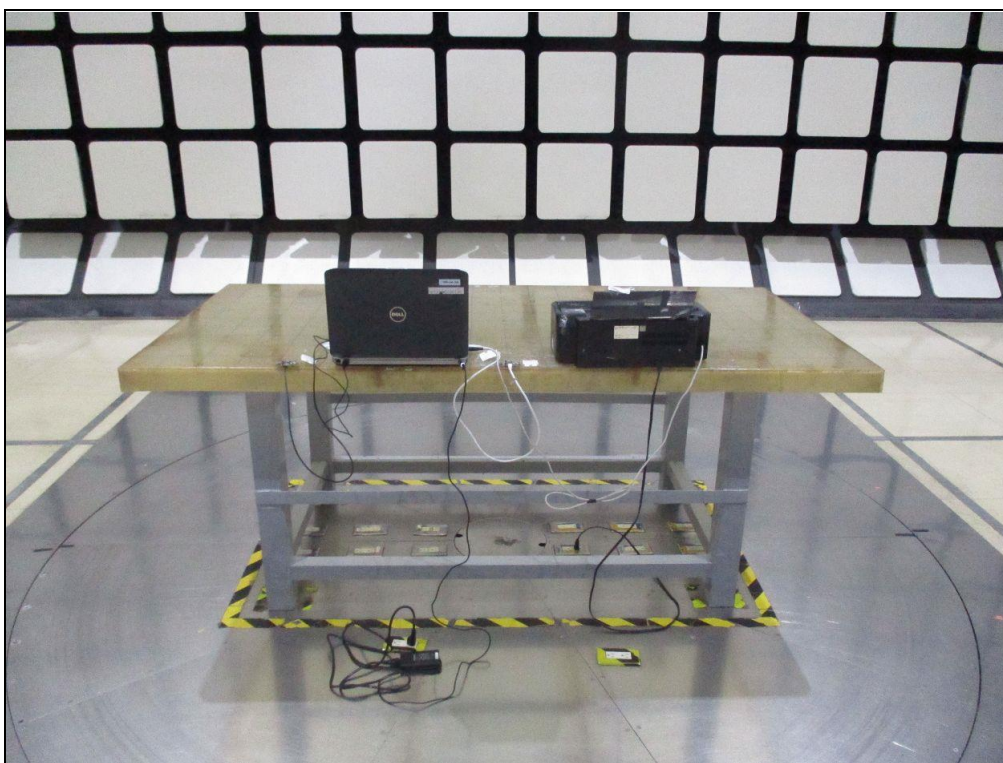
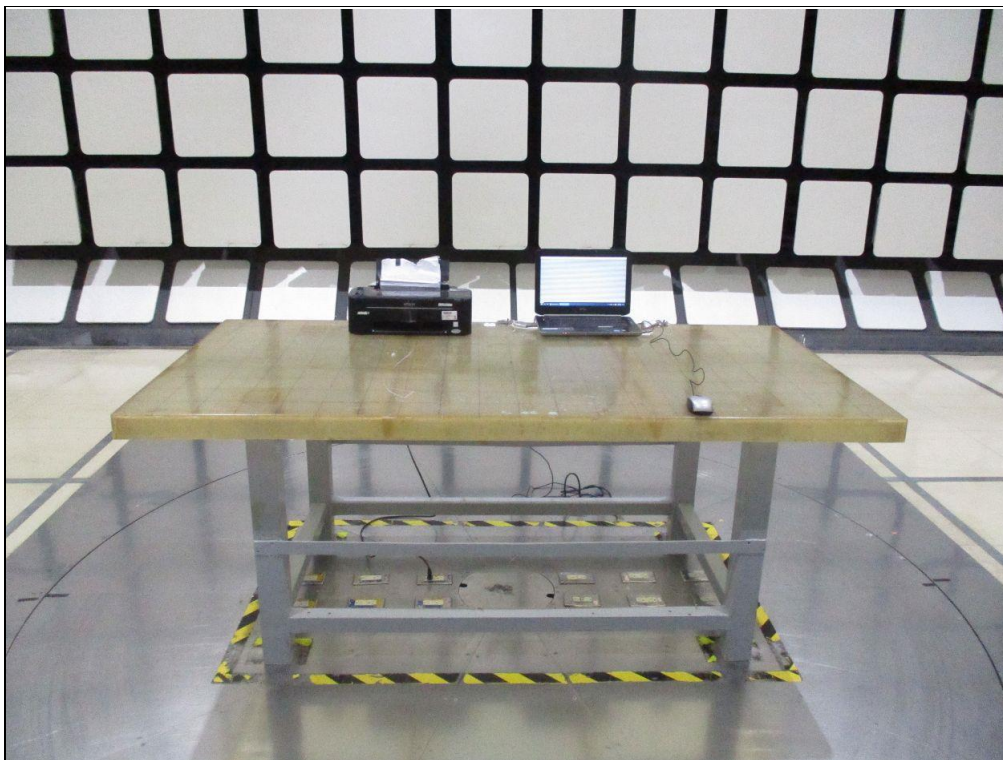
8.1 Conducted Emissions from Power Ports

Mode A



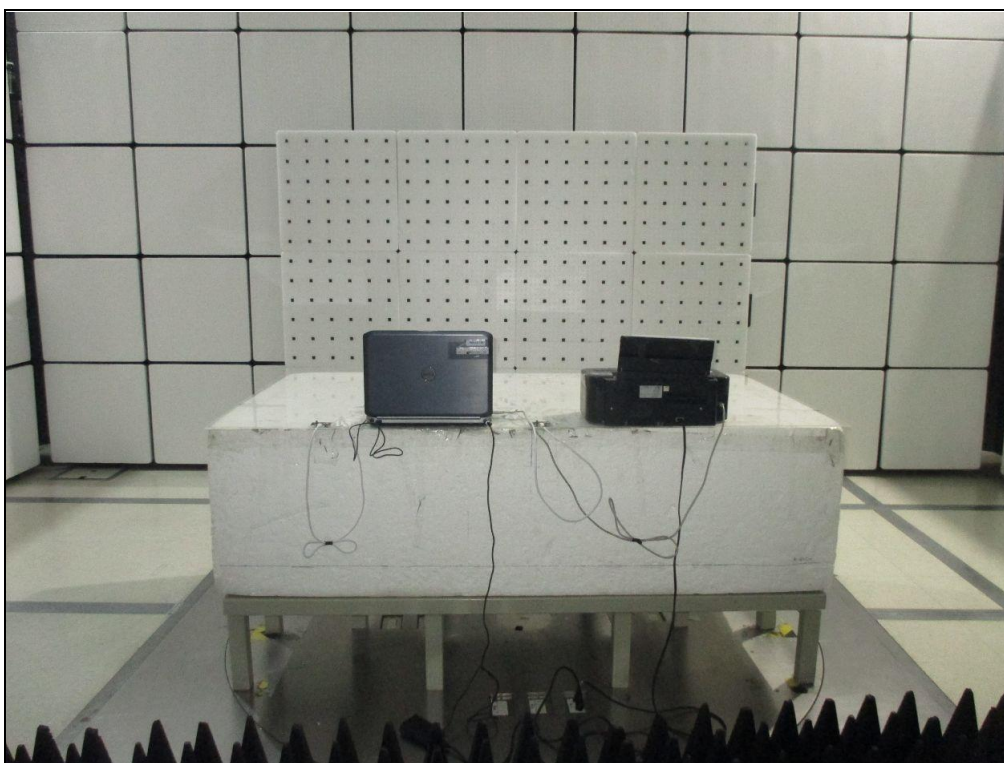
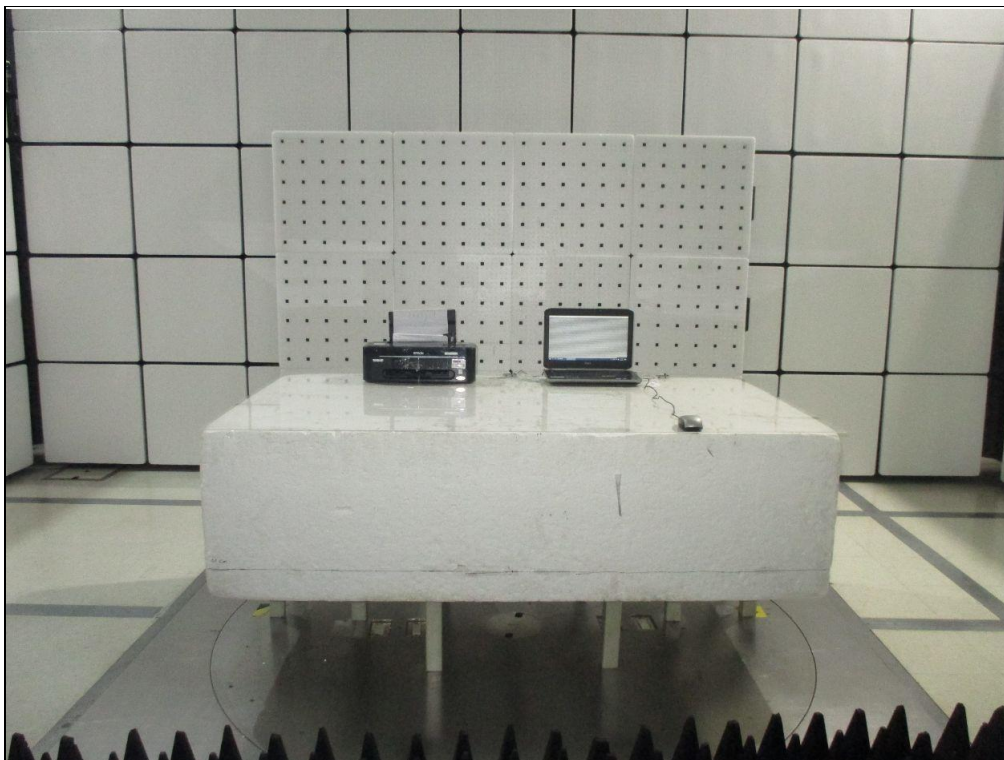
8.2 Radiated Emissions up to 1 GHz

Mode A



8.3 Radiated Emissions above 1 GHz

Mode A



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

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