

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart B, Class B

ANSI C63.4-2014

ANSI C63.4a-2017

Report No.: FDCVSF-WTW-P25090815

FCC ID: PKRISGM4020

Product: Wireless Hotspot

Brand: Inseego

Model No.: M4020

Received Date: 2025/11/17

Test Date: 2025/11/21 ~ 2025/11/25

Issued Date: 2025/12/31

Applicant: Inseego Corp.

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

Designation Number: 328930 / TW1050

Approved by:



Mart Su / Senior Manager

, **Date:**

2025/12/31

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Prepared by : Vida Chen / Specialist

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Release Control Record

Issue No.	Description	Date Issued
FDCVSF-WTW-P25090815	Original release.	2025/12/31

1 Certificate

Product: Wireless Hotspot

Brand: Inseego

Test Model: M4020

Sample Status: Engineering sample

Applicant: Inseego Corp.

Test Date: 2025/11/21 ~ 2025/11/25

Standard: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4–2014
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 / Clause	Test Item	Result	Remark
FCC Part 15.107	Conducted Emissions from Power Ports	Pass	Minimum passing Class B margin is -4.47 dB at 0.73000 MHz
FCC Part 15.109	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class B margin is -4.31 dB at 41.80 MHz
FCC Part 15.109	Radiated Emissions above 1 GHz	Pass	Minimum passing Class B margin is -11.67 dB at 6965.12 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	2.88 dB	3.4 dB (U_{CISPR})
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	4.24 dB	6.3 dB (U_{CISPR})
Radiated Emissions above 1 GHz	1 GHz ~ 6 GHz	4.93 dB	5.2 dB (U_{CISPR})
	6 GHz ~ 18 GHz	4.54 dB	5.5 dB (U_{CISPR})
	18 GHz ~ 40 GHz	4.52 dB	-

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	Wireless Hotspot
Brand	Inseego
Test Model	M4020
Market Model Name	M4000
Sample Status	Engineering sample
Power Supply Rating	Refer to note

Note: The EUT uses following accessories.

Item	Brand	Model	Specification	P/N
AC Adapter 1	SUNUN	P181	AC Input : 100-240V, 50/60H, 0.5A MAX DC Output : 5V, 3A ; 9V, 2A ; 12V 1.5A	-
AC Adapter 2	Orbic	OACH023US1	AC Input : 100-240V, 50/60H, 0.5A MAX DC Output : 5V, 3A; 9V, 2A; 12V 1.5A	-
USB Cable 1	inseego	-	Signal Line : 1.0m, shielded	CAB-60723090
USB Cable 2	KANGYIN	-	Signal Line : 1.0m, shielded	OAUC023US1
Battery	inseego	754685	3.85V, 5050mAh, 19.44Wh	-

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 5.85 GHz, provided by Inseego Corp., 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 Inseego Corp., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

Please refer to appendix of the report if the applicant has provided additional descriptions of the EUT.

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	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
2	WWAN(5G NR n5 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
3	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + NB Link
4	WWAN(LTE Band 5 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
5	WWAN(LTE Band 5 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
6	WWAN(LTE Band 5 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
7	WWAN(LTE Band 12 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
8	WWAN(LTE Band 12 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
9	WWAN(LTE Band 12 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
10	WWAN(LTE Band 26 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
11	WWAN(LTE Band 26 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
12	WWAN(LTE Band 26 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
13	WWAN(LTE Band 71 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
14	WWAN(LTE Band 71 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
15	WWAN(LTE Band 71 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
16	WWAN(5G NR Band 5 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
17	WWAN(5G NR Band 5 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
18	WWAN(5G NR Band 5 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
19	WWAN(5G NR Band 71 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
20	WWAN(5G NR Band 71 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
21	WWAN(5G NR Band 71 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
22	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(KANGYIN) + Adapter(OACH023US1)
Notes:	
1. There are both AC 240V/60Hz and AC 120V/60Hz to be pre-tested then AC () has the highest emission value. 2. There are both standby mode and normal mode to be pre-tested then normal mode has the highest emission value. 3. The worst case is mode 1 shown in bold.	
Mode	Radiated Emissions up to 1 GHz
1	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
2	WWAN(5G NR n5 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
3	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + NB Link

4	WWAN(LTE Band 5 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
5	WWAN(LTE Band 5 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
6	WWAN(LTE Band 5 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
7	WWAN(LTE Band 12 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
8	WWAN(LTE Band 12 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
9	WWAN(LTE Band 12 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
10	WWAN(LTE Band 26 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
11	WWAN(LTE Band 26 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
12	WWAN(LTE Band 26 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
13	WWAN(LTE Band 71 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
14	WWAN(LTE Band 71 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
15	WWAN(LTE Band 71 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
16	WWAN(5G NR Band 5 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
17	WWAN(5G NR Band 5 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
18	WWAN(5G NR Band 5 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
19	WWAN(5G NR Band 71 Rx (Low Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
20	WWAN(5G NR Band 71 Rx (Middle Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
21	WWAN(5G NR Band 71 Rx (High Channel)) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
22	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(KANGYIN) + Adapter(OACH023US1)

Notes:

1. There are both standby mode and normal mode to be pre-tested then normal mode has the highest emission value.
2. The worst case is mode 1 shown in bold.

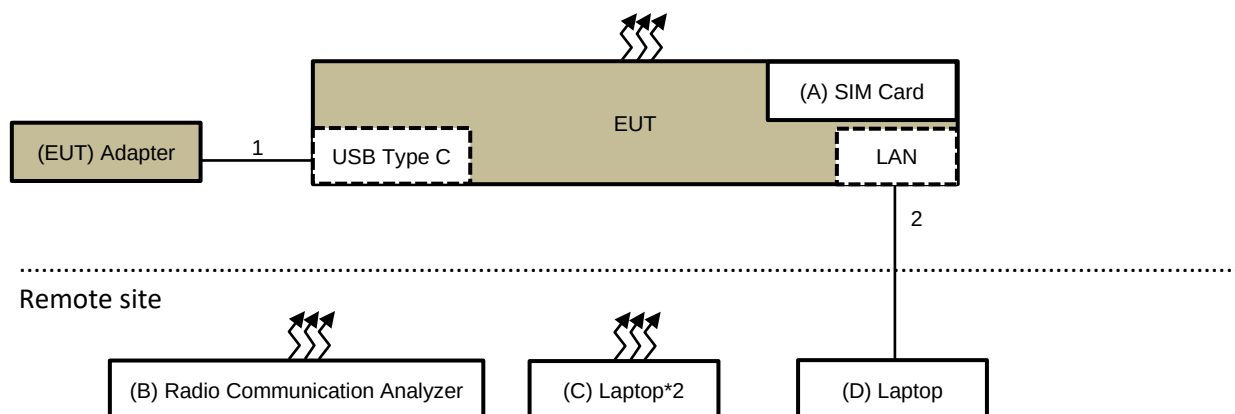
Test modes are presented in the report as below.

Test Condition	
Mode	Conducted Emissions from Power Ports
A	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
Mode	Radiated Emissions up to 1 GHz
A	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)
Mode	Radiated Emissions above 1 GHz
A	WWAN(LTE Band 2 Link) + WLAN(2.4GHz & 5GHz) + LAN Link + USB Cable(inseego) + Adapter(P181)

3.5 Test Program Used and Operation Descriptions

- The EUT was charged from adapter.
- The EUT communicated data with the Radio Communication Analyzer which acted as a communication partner.
- The EUT linked with Laptop, which acted as a communication partners via LAN cable and WLAN 2.4G / 5G.
- The communication partners sent data to the EUT via LAN and WLAN and transmission.

3.6 Connection Diagram of EUT and Peripheral Devices



3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	SIM Card	R&S	CMW-Z05	N/A	N/A	Provided by Lab
B	Radio Communication Analyzer	Anritsu	MT8821C	6272374636	N/A	Provided by Lab
C	Laptop	DELL	Latitude 5420	6RS33F3	N/A	Provided by Lab
	Laptop	DELL	Latitude 5420	C6F33F3	N/A	Provided by Lab
D	Laptop	DELL	Latitude 5501	F42VP13	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB Type C	1	1	Yes	0	Supplied by applicant
2	Cat.5e	1	10	No	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
50 ohm terminal resistance	E1-011279	04	2024/11/28	2025/11/27
	E1-011280	05	2024/11/28	2025/11/27
	E1-011311	09	2024/11/28	2025/11/27
Diode Pulse Limiter Schwarzbeck	VTSD 9561 F-N	01445	2025/4/27	2026/4/26
EMI Test Receiver R&S	ESCI	100613	2024/11/25	2025/11/24
LISN R&S	ENV216	101826	2025/3/24	2026/3/23
	ESH3-Z5	100311	2025/8/28	2026/8/27
RF Coaxial Cable Woken	5D-FB	Cable-cond1-01	2025/1/5	2026/1/4
Software BVADT	BVADT_Conc_ V7.4.1.0	N/A	N/A	N/A
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2025/8/27	2026/8/26

Notes:

1. The test was performed in HY - Conduction 1.
2. The VCCI Site Registration No. is C-12040.
3. Tested Date: 2025/11/21

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	VULB 9168	9168-148	2024/12/4	2025/12/3
		9168-156	2024/12/4	2025/12/3
Controller (H)	MF7802	08093	N/A	N/A
Controller (V)	MF7802	074	N/A	N/A
EMI Test Receiver R&S	ESR7	101240	2025/11/19	2026/11/18
		101264	2025/4/16	2026/4/15
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-CH(H)-01	2025/8/23	2026/8/22
		PAD-CH(V)-01	2025/8/23	2026/8/22
Preamplifier Sonoma	310N	352923	2025/4/27	2026/4/26
		352924	2025/4/27	2026/4/26
RF Coaxial Cable TIMES	LMR-600(11.8M)+LMR-400 (7M)	CABLE-CH1(HOR)-01	2025/8/23	2026/8/22
	LMR-600(18M)+LMR-400 (7M)	CABLE-CH1(VER)-01	2025/8/23	2026/8/22
Software	ADT_Radiated_V8.8.09	N/A	N/A	N/A
Turn Table	DS430	50303	N/A	N/A

Notes:

1. The test was performed in HY - 10M Chamber. The test site validated date: 2025/7/19 (NSA)
2. The VCCI Site Registration No. is R-11893.
3. Tested Date: 2025/11/25

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
Boresight antenna tower fixture BV	BAF-02	3	N/A	N/A
Controller BVADT	SC100	SC93021702	N/A	N/A
Fixed Attenuator Mini-Circuits	BW-K3-2W44+	PAD-CH3-04	2025/6/30	2026/6/29
	BW-N4W5+	PAD-CH3-03	2025/6/30	2026/6/29
Horn Antenna ETS-Lindgren	3117	00034126	2025/10/28	2026/10/27
		00143293	2025/11/9	2026/11/8
Horn Antenna Schwarzbeck	BBHA 9120D	209	2025/11/9	2026/11/8
	BBHA 9170	148	2025/11/9	2026/11/8
		BBHA9170241	2025/10/28	2026/10/27
Notch Filter Micro-Tronics	BRM17690-01	002	2025/8/23	2026/8/22
	BRM50716-01	G010	2025/8/23	2026/8/22
Preamplifier Agilent	8449B	3008A02465	2025/1/5	2026/1/4
Preamplifier EMCI	EMC012645SE	980338	2025/4/27	2026/4/26
	EMC051845SE	981117	2025/8/23	2026/8/22
	EMC184045SE	980610	2025/4/27	2026/4/26
		980856	2025/9/21	2026/9/20
PXA Signal Analyzer Keysight	N9030B	MY60070562	2025/2/25	2026/2/24
RF Coaxial Cable EMCI	EM102-KMKM-1M	#01	2025/8/23	2026/8/22
	EM102-KMKM-3M	#01	2025/8/23	2026/8/22
	EMC102-KM-KM-1000	200311	2025/6/30	2026/6/29
	EMC102-KM-KM-3000	200313	2025/6/30	2026/6/29
Software BVADT	ADT_Radiated_V8.8.09	N/A	N/A	N/A
Turn Table BVADT	TT100	TT93021702	N/A	N/A

Notes:

1. The test was performed in HY - 966 Chamber 2. The test site validated date: 2025/4/26 (VSWR)
2. The VCCI Site Registration No. is G-20126.
3. Tested Date: 2025/11/22

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

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, Class A	FCC 15B, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	39.1	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, Class A	FCC 15B, Class B	CISPR 22, Class A	CISPR 22, Class B
30-88	49.5	40.0	50.5	40.5
88-216	54.0	43.5		
216-230	56.9	46.0		
230-960			57.5	47.5
960-1000	60.0	54.0		

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

5.3 Radiated Emissions above 1 GHz

Frequency Range (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

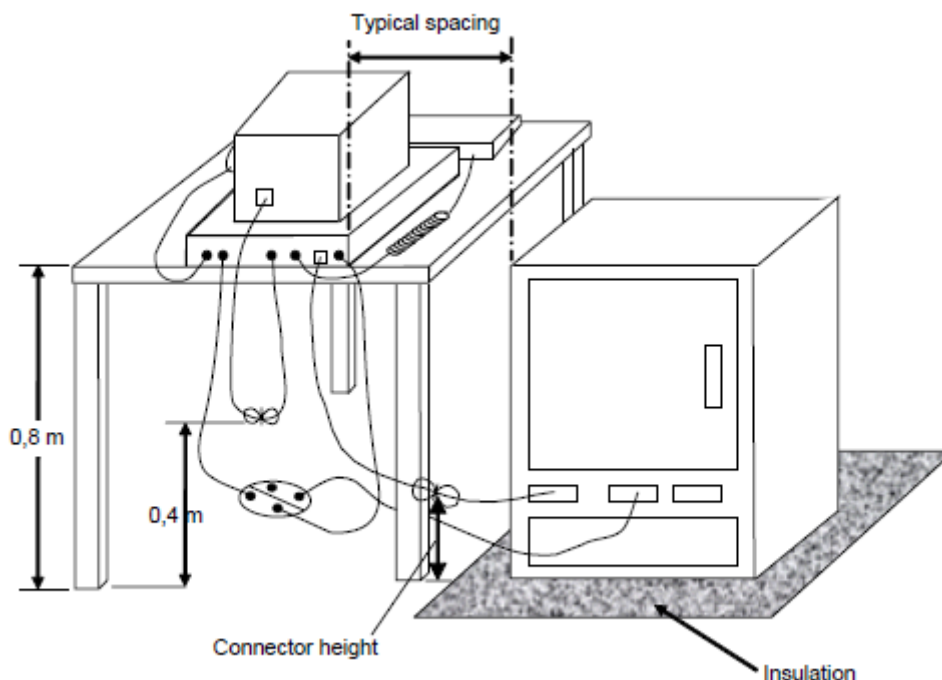
Radiated Emissions Limits at 3 meters (dBμV/m)		
Frequency range	Class A	Class B
Above 1GHz	Avg: 60 Peak: 80	Avg: 54 Peak: 74

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.

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.

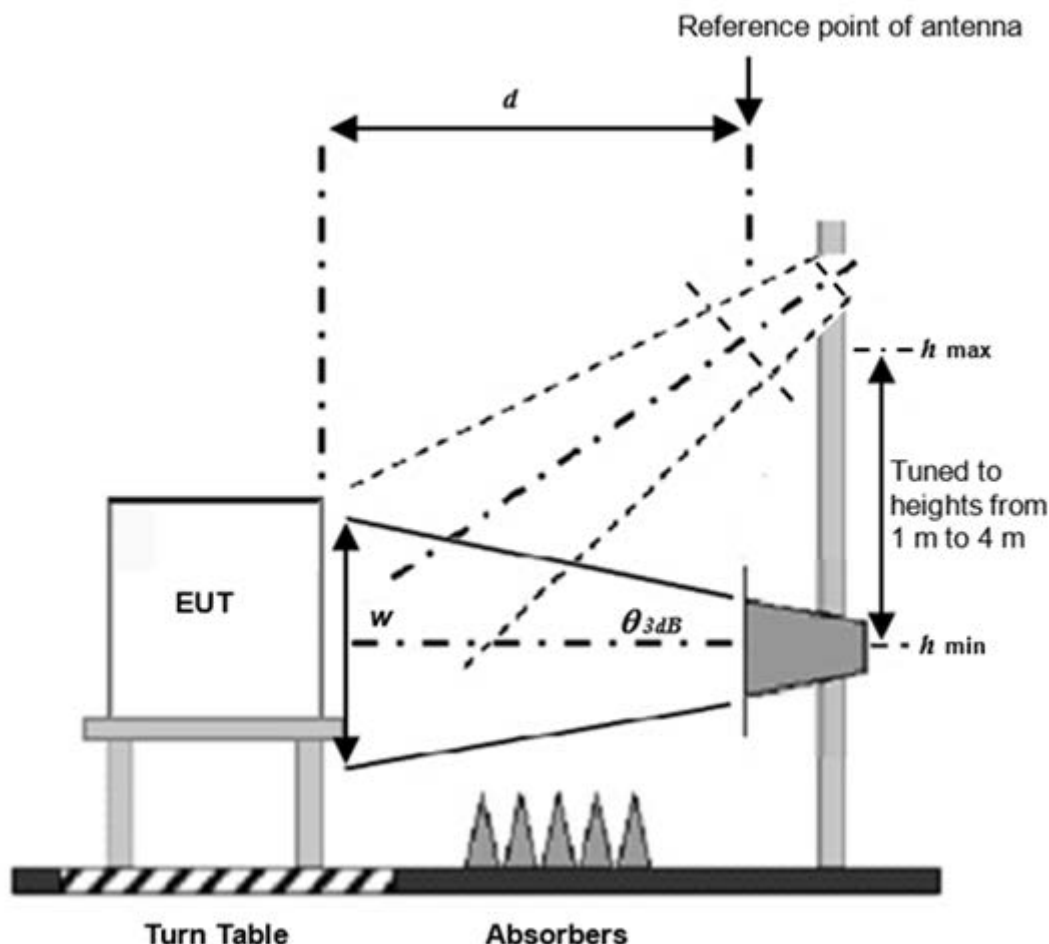


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

6.3 Radiated Emissions above 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 $d = 3$ meters for 1 GHz to 18 GHz and $d = 1.5$ meters for 18 GHz to 40 GHz 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 detects 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 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

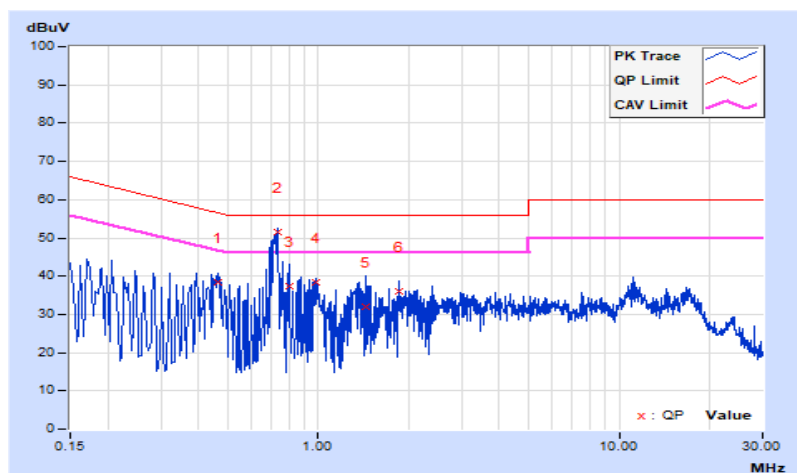
Mode A

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 62% RH, 992.4 mbar
Tested by	Bryant Hsu		

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	0.46200	9.89	28.40	17.07	38.29	26.96	56.66	46.66	-18.37	-19.70
2	0.73000	9.94	41.59	23.64	51.53	33.58	56.00	46.00	-4.47	-12.42
3	0.80200	9.95	27.51	2.38	37.46	12.33	56.00	46.00	-18.54	-33.67
4	0.98600	9.99	28.27	17.27	38.26	27.26	56.00	46.00	-17.74	-18.74
5	1.43800	10.00	22.13	2.41	32.13	12.41	56.00	46.00	-23.87	-33.59
6	1.85000	10.01	25.85	16.87	35.86	26.88	56.00	46.00	-20.14	-19.12

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

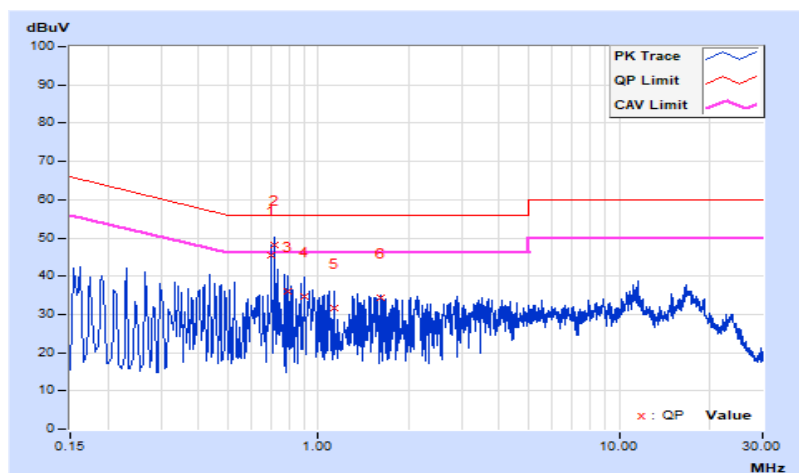


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 62% RH, 992.4 mbar
Tested by	Bryant Hsu		

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	0.70200	9.97	35.49	16.46	45.46	26.43	56.00	46.00	-10.54	-19.57
2	0.71400	9.97	38.31	18.07	48.28	28.04	56.00	46.00	-7.72	-17.96
3	0.79000	9.99	25.94	11.41	35.93	21.40	56.00	46.00	-20.07	-24.60
4	0.90200	10.01	24.79	7.80	34.80	17.81	56.00	46.00	-21.20	-28.19
5	1.12600	10.05	21.52	9.97	31.57	20.02	56.00	46.00	-24.43	-25.98
6	1.61000	10.11	24.38	12.44	34.49	22.55	56.00	46.00	-21.51	-23.45

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

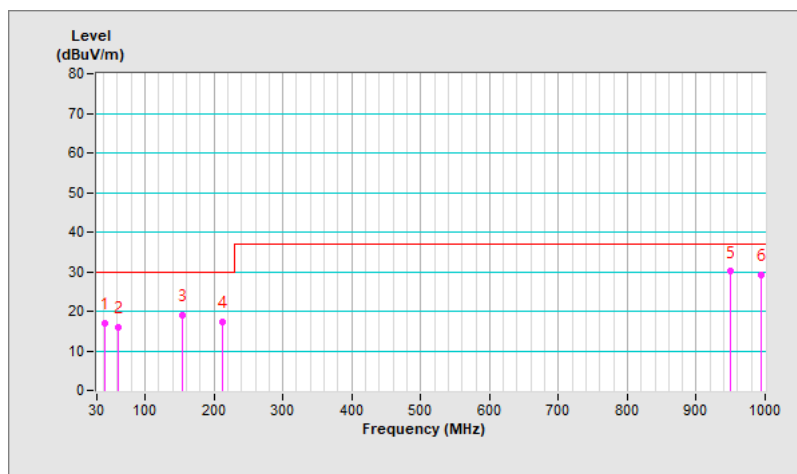
Mode A

Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 73% RH, 989.4 mbar
Tested By	Brian Kuo		

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	41.67	17.12 QP	30.00	-12.88	2.00 H	255	30.32	-13.20
2	60.91	15.88 QP	30.00	-14.12	1.00 H	346	29.28	-13.40
3	154.48	19.03 QP	30.00	-10.97	4.00 H	244	31.88	-12.85
4	213.07	17.39 QP	30.00	-12.61	3.50 H	284	33.19	-15.80
5	948.82	30.00 QP	37.00	-7.00	2.50 H	35	28.84	1.16
6	994.28	29.27 QP	37.00	-7.73	3.00 H	338	27.08	2.19

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.

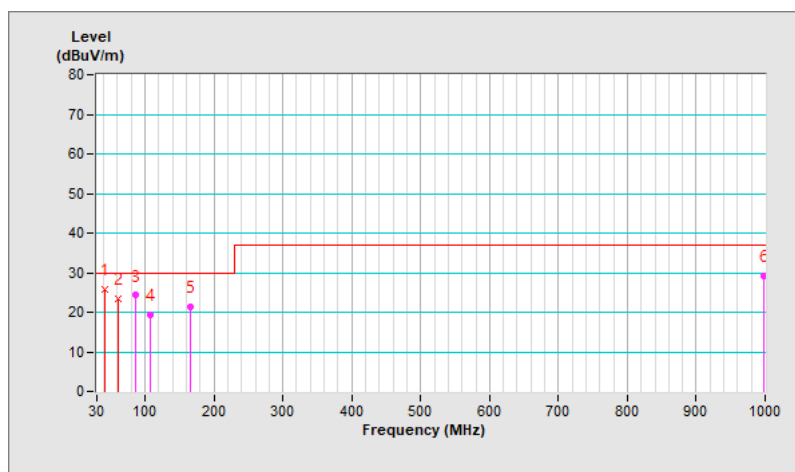


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 73% RH, 989.4 mbar
Tested By	Brian Kuo		

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	41.80	25.69 QP	30.00	-4.31	3.00 V	267	39.11	-13.42
2	61.43	23.53 QP	30.00	-6.47	3.10 V	121	37.27	-13.74
3	86.10	24.26 QP	30.00	-5.74	1.50 V	34	43.37	-19.11
4	107.08	19.27 QP	30.00	-10.73	3.00 V	99	36.14	-16.87
5	166.29	21.36 QP	30.00	-8.64	3.00 V	45	35.04	-13.68
6	998.71	29.21 QP	37.00	-7.79	4.00 V	342	27.01	2.20

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.



7.3 Radiated Emissions above 1 GHz

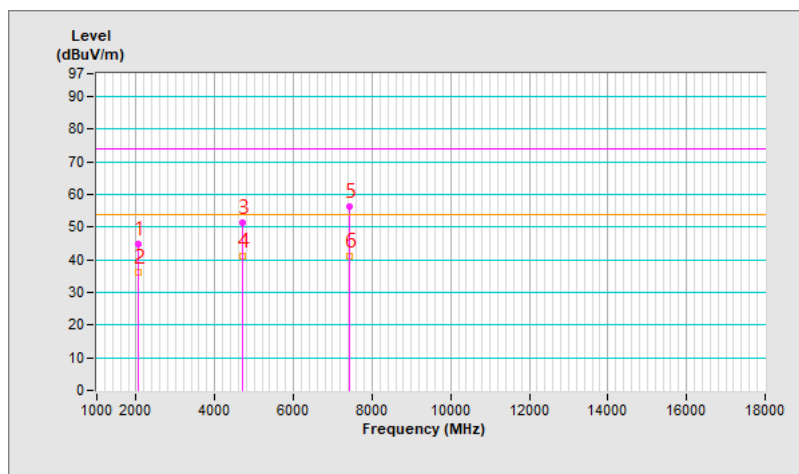
Mode A

Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20 °C, 63% RH, 992.9 mbar
Tested By	Daniel Lin		

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	2068.12	44.86 PK	74.00	-29.14	1.15 H	262	44.77	0.09
2	2068.12	36.10 AV	54.00	-17.90	1.15 H	262	36.01	0.09
3	4699.68	51.24 PK	74.00	-22.76	1.00 H	195	44.45	6.79
4	4699.68	40.90 AV	54.00	-13.10	1.00 H	195	34.11	6.79
5	7418.30	56.35 PK	74.00	-17.65	1.00 H	195	43.49	12.86
6	7418.30	40.96 AV	54.00	-13.04	1.00 H	195	28.10	12.86

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.

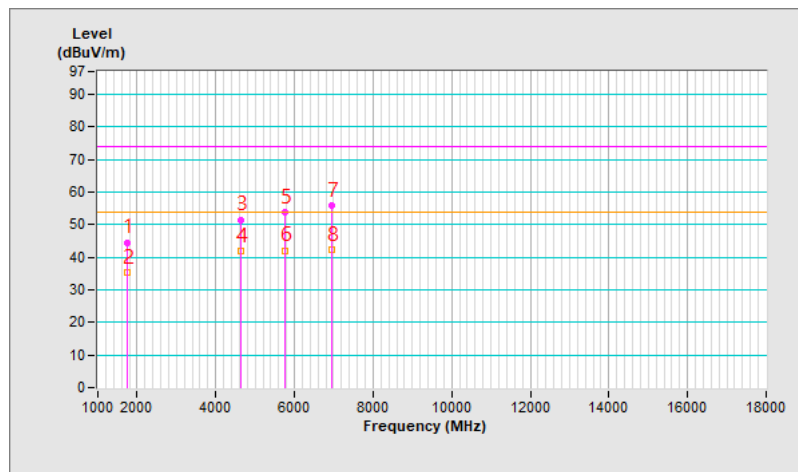


Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20 °C, 63% RH, 993.1 mbar
Tested By	Daniel Lin		

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	1757.23	44.56 PK	74.00	-29.44	1.12 V	262	45.94	-1.38
2	1757.23	35.20 AV	54.00	-18.80	1.12 V	262	36.58	-1.38
3	4652.13	51.52 PK	74.00	-22.48	1.00 V	262	44.25	7.27
4	4652.13	41.90 AV	54.00	-12.10	1.00 V	262	34.63	7.27
5	5751.16	53.90 PK	74.00	-20.10	1.05 V	118	46.28	7.62
6	5751.16	42.10 AV	54.00	-11.90	1.05 V	118	34.48	7.62
7	6965.12	55.90 PK	74.00	-18.10	1.00 V	195	43.49	12.41
8	6965.12	42.33 AV	54.00	-11.67	1.00 V	195	29.92	12.41

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.

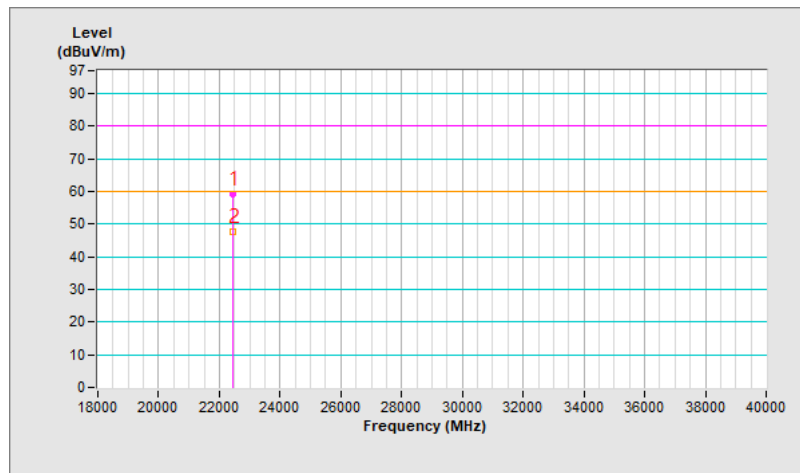


Frequency Range	18 GHz ~ 40 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20 °C, 63% RH, 992.9 mbar
Tested By	Daniel Lin		

Antenna Polarity & Test Distance : Horizontal at 1.5 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	22451.30	59.20 PK	80.00	-20.80	1.00 H	162	59.80	-0.60
2	22451.30	47.55 AV	60.00	-12.45	1.00 H	162	48.15	-0.60

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.

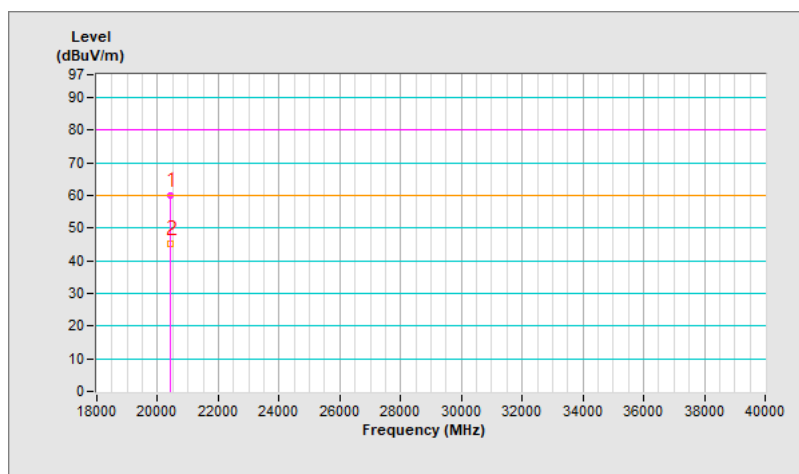


Frequency Range	18 GHz ~ 40 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	20 °C, 63% RH, 992.9 mbar
Tested By	Daniel Lin		

Antenna Polarity & Test Distance : Vertical at 1.5 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	20415.33	60.10 PK	80.00	-19.90	1.00 V	188	63.39	-3.29
2	20415.33	45.30 AV	60.00	-14.70	1.00 V	188	48.59	-3.29

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. Margin value = Emission level – Limit value
4. The other emission levels were very low against the limit.



8 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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