

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart B, Class B
ANSI C63.4:2014

Report No.: FDCDVB-WTW-P22100074A

FCC ID: QYLAX211NG

Product: Notebook

Brand: Getac

Model No.: V110, V110G7, V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose) (refer to item 3.1 for more details)

Received Date: 2022/10/25

Test Date: 2022/10/29 ~ 2022/10/30

Issued Date: 2023/1/11

Applicant: Getac Technology Corporation.

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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: _____


Ace Wu / Project Engineer

Date: _____

2023/1/11

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Prepared by : Polly Chien / Specialist

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Release Control Record

Issue No.	Description	Date Issued
FDCDVB-WTW-P22100074A	Original release.	2023/1/11

1 Certificate

Product: Notebook

Brand: Getac

Model: V110, V110G7, V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_ " or blank for marketing purpose) (refer to item 3.1 for more details)

Sample Status: Engineering sample

Applicant: Getac Technology Corporation.

Test Date: 2022/10/29 ~ 2022/10/30

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

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 -3.86 dB at 0.39400 MHz
FCC Part 15.109	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class B margin is -4.44 dB at 67.88 MHz
FCC Part 15.109	Radiated Emissions above 1 GHz	Pass	Minimum passing Class B margin is -16.68 dB at 2848.83 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	2.99 dB	3.4 dB (U_{CISPR})
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	4.72 dB	6.3 dB (U_{CISPR})
Radiated Emissions above 1 GHz	1 GHz ~ 6 GHz	4.97 dB	5.2 dB (U_{CISPR})
	6 GHz ~ 18 GHz	4.79 dB	5.5 dB (U_{CISPR})
	18 GHz ~ 40 GHz	4.67 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	Notebook
Brand	Getac
Model	V110, V110G7, V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_ " or blank for marketing purpose)
Model Difference	Refer to note
Sample Status	Engineering sample
Operating Software	Windows 11
Power Supply Rating	Refer to note
Accessory Device	Refer to note
Data Cable Supplied	NA

Note:

1. This report is issued as a duplicate report to the original BV CPS report no.: FDCDVB-WTW-P22100074. The differences compared with original report are removing related data of SKU 4 & SKU 5 & SKU 6. Due to no effect on any test item and we didn't re-test.
2. All models are listed as below.

Brand	Model	Difference
Getac	V110	marketing purpose
	V110G7	
	V110Y (Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_ " or blank for marketing purpose)	

3. The EUT uses following accessories.

Battery 1	
Brand	Getac
Model	BP3S1P2100-S
Power Rating	Rating: 11.1Vdc, 2040mAh, 23Wh Typical name: 2100mAh, 24Wh

Adapter 1	
Brand	FSP
Model	FSP065-RBBN3
Input Power	100-240Vac, 50-60 Hz, 1.5 A
Output Power	19.0Vdc, 3.42A
Power Line	1.5m, with one core

Adapter 2	
Brand	Getac
Model	MTA190474W4
Input Power	100-240 Vac, 50-60Hz Hz, 1.6 A
Output Power	19.0Vdc, 4.74A
Power Line	1.55m, with two cores

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 5800MHz, provided by Getac Technology Corporation., 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 Getac Technology Corporation., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

EUT has been pre-tested under following configurations.

Part	Brand	Model	Specification	Configuration		
				SKU 1	SKU 2	SKU 3
CPU	Intel	Alder Lake	i5-1235U (Non Vpro)	V		V
			i7-1265U (Vpro)		V	
DDR	Kingston	---	16GB (8GB+8GB)	V		
		---	32GB (16GB+16GB)		V	
		---	64GB (32GB+32GB)			V
SSD	SSSTC	---	256GB	V		
		---	512GB		V	
		---	1TB			V
LCD Panel	AUO	G116HAN01	11.6"	V	V	V
Touchscreen	Getac	---	---	V	V	V
Finger Print	Egistec	---	---	V	V	V
WLAN Module	Intel	AX211NGW	---	V	V	V
GPS	GlobalSat	MC1010G	---	V	V	V
RFID Module	NXP	PN-7462	---		V	V
Digitizer Module	Getac	EMR116-UA00	---		V	V
Bottom Camera	FOXLINK	FN80AF-443H	---	V	V	V
	Chicony	CKAM816	---	V	V	V
Camera	FOXLINK	FN20FF-679H	---	V	V	V
IR Camera	FOXLINK	FN23FF-678H	---		V	V
Option Bay	Honeywell	N6703	Barcode	V		V
	Getac	---	SD Card reader		V	
	Getac	---	Smart Card		V	

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 (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen + adapter 1
2	EUT (SKU 2) + laptop mode + bottom Camera + "H" pattern + bt Link + wifi 5g link + GPS link + RFID link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C link monitor (3840*2160) + COM link modem + earphone + sd card r/w + IC card r/w + lan 1Gbps link + finger printer + touch pen + adapter 2
3	EUT (SKU 3) + table mode + front camera + "H" pattern + bt Link + wifi 6e link + GPS link + RFID link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C with USB-C adapter + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen
Notes:	
1. There are both AC 240V/60Hz and AC 120V/60Hz to be pre-tested then AC 120V/60Hz has the highest emission value. 2. The worst case is that mode 1 is shown in bold.	

Test Condition	
Mode	Radiated Emissions up to 1 GHz
1	EUT (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen + adapter 1
2	EUT (SKU 2) + laptop mode + bottom Camera + "H" pattern + bt Link + wifi 5g link + GPS link + RFID link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C link monitor (3840*2160) + COM link modem + earphone + sd card r/w + IC card r/w + lan 1Gbps link + finger printer + touch pen + adapter 2
3	EUT (SKU 3) + table mode + front camera + "H" pattern + bt Link + wifi 6e link + GPS link + RFID link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C with USB-C adapter + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen
4	EUT (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen
Notes:	
1. There are both AC 240V/60Hz and AC 120V/60Hz to be pre-tested then AC 120V/60Hz has the highest emission value. 2. The worst case is that mode 1 is shown in bold.	

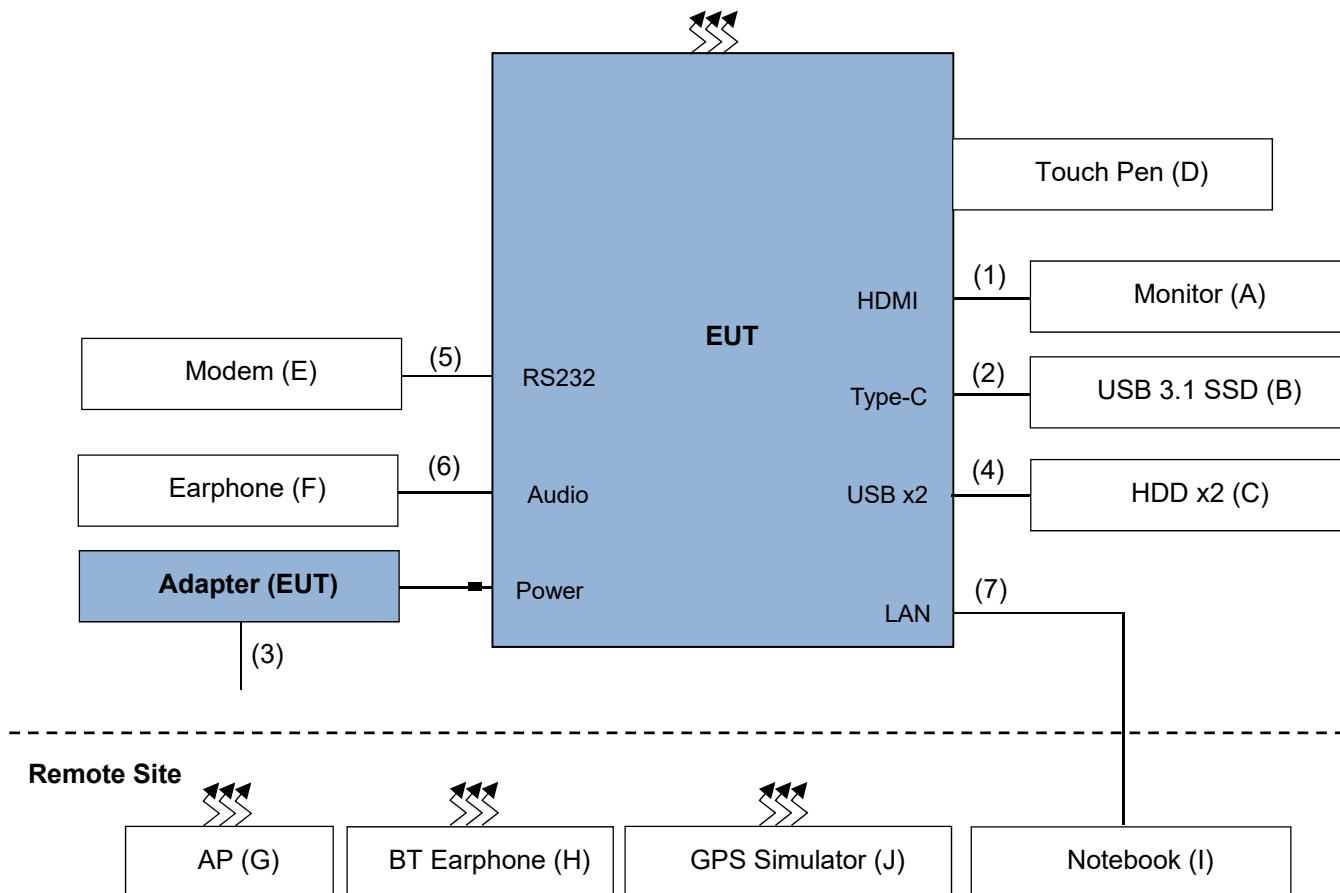
Test modes are presented in the report as below.

Test Condition	
Mode	Conducted Emissions from Power Ports
-	EUT (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen + adapter 1
Mode	Radiated Emissions up to 1 GHz
-	EUT (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen + adapter 1
Mode	Radiated Emissions above 1 GHz
-	EUT (SKU 1) + laptop mode + front camera + "H" pattern + bt Link + wifi 2.4g link + GPS link + HDMI link monitor (3840*2160) + USB-A HDD r/w + USB-C HDD r/w + COM link modem + earphone + barcode scan + lan 1Gbps link + finger printer + touch pen + adapter 1

3.5 Test Program Used and Operation Descriptions

- a. The EUT was charged from adapter.
- b. The EUT linked with BT earphone via BT function.
- c. The barcode, camera and GPS function were activated.
- d. The EUT read and wrote data with HDDs and USB 3.1 SSD via USB Cable.
- e. The EUT sent "H" pattern to the monitor via HDMI cable, and monitor displayed them.
- f. The EUT sent audio signal to earphone.
- g. The EUT communicated data with the Notebook and AP, which acted as communication partners, via LAN and WLAN function.

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	Monitor	ASUS	MX27U	J3LMRS000059	FCC DoC Approved	-
B	USB 3.1 SSD	Transcend	ESD370C	G88779-0016	FCC DoC Approved	-
C	HDD x2	Transcend	25M3	G02688-0207	N/A	-
				G02688-0210	N/A	-
D	Touch Pen	N/A	N/A	N/A	N/A	Supplied by applicant
E	Modem	ACEEX	1414V/3	401008255	IFAXDM1414	-
F	Earphone	Apple	MB770FE/B	N/A	N/A	-
G	AP	D-LINK	DIR-815	PVK21B5000399	KA21R815A1	-
H	BT Earphone	ELECOM	LBT-MPHS400	N/A	N/A	-
I	Notebook	DELL	Latitude 5420	C6F33F3	FCC DoC Approved	-
J	GPS simulator	PENDULUM	GSG-54	191121	N/A	-

Note:

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

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	HDMI Cable	1	2	Yes	0	HDMI 2.0 (Brand: Amber, Model: HDMI-AA120)
2	USB-C Cable	1	0.5	Yes	0	-
3	Power Cable	1	1.8	No	0	Supplied by applicant
4	USB Cable	2	0.5	Yes	0	-
5	RS232 Cable	1	1.2	Yes	0	-
6	Audio Cable	1	1.2	Yes	0	-
7	LAN Cable	1	10	No	0	RJ45 Cat.5e, 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 SCHWARZBECK MESS- ELETRONIK	NNBM 8126G	8126G-069	2021/11/10	2022/11/9
LISN R&S	ESH3-Z5	100311	2022/9/12	2023/9/11
LISN ROHDE & SCHWARZ	ENV216	101826	2022/3/14	2023/3/13
RF Coaxial Cable WOKEN	5D-FB	Cable-cond1-01	2022/1/15	2023/1/14
Software BVADT	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver Rohde&Schwarz	ESCI	100613	2021/12/3	2022/12/2
V-LISN Schwarzbeck	NNBL 8226-2	8226-142	2022/8/31	2023/8/30

Notes:

1. The test was performed in HY - Conduction 1.
2. The VCCI Site Registration No. is C-12040.
3. Tested Date: 2022/10/30

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 Schwarbeck	VULB9168	9168-151	2022/10/24	2023/10/23
		9168-154	2022/10/20	2023/10/19
Controller (H)	MF7802	08093	N/A	N/A
Controller (V)	MF7802	074	N/A	N/A
Pre_Amplifier Sonoma	310N	352923	2022/5/14	2023/5/13
		352924	2022/5/14	2023/5/13
RF Coaxial Cable TIMES	LMR-600(11.8M)+LMR-400 (7M)	CABLE-CH1(HOR)-01	2022/9/3	2023/9/2
	LMR-600(18M)+LMR-400 (7M)	CABLE-CH1(VER)-01	2022/9/3	2023/9/2
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: 2022/8/6 (NSA)
2. The VCCI Site Registration No. is R-11893.
3. Tested Date: 2022/10/29

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
Attenuator Mini-Circuits	BW-K3-2W44+	PAD-CH3-04	2022/7/9	2023/7/8
	BW-N4W5+	PAD-CH3-03	2022/7/9	2023/7/8
BandPass Filter MICRO-TRONICS	BRM17690-01	002	2022/9/3	2023/9/2
	BRM50716-01	G010	2022/9/3	2023/9/2
Boresight antenna tower fixture BV	BAF-02	3	N/A	N/A
Controller BVADT	SC100	SC93021702	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120 D	209	2021/11/14	2022/11/13
	BBHA 9170	148	2021/11/14	2022/11/13
N9030B - PXA Signal Analyzer KEYSIGHT	N9030B	MY60070562	2022/1/6	2023/1/5
Pre_Amplifier Agilent	8449B	3008A02465	2022/3/19	2023/3/18
Pre_Amplifier EMCI	EMC184045SE	980856	2021/11/22	2022/11/21
RF Coaxial Cable EMCI	EMC102-KM-KM-1000	200311	2022/7/9	2023/7/8
	EMC102-KM-KM-3000	200313	2022/7/9	2023/7/8
RF Coaxial Cable HUBER+SUHNER&EMCI	SUCOFLEX 104&EMC104-SM-SM- 8000	Cable-CH3- 03(309224+170907)	2022/7/9	2023/7/8
Software BVADT	ADT_Radiated_V8.7.08	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: 2022/5/21 (VSWR)
2. The VCCI Site Registration No. is G-20126.
3. Tested Date: 2022/10/29

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 (dB μ V/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 (dB μ V/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 (dB μ V/m)		
Frequency range	Class A	Class B
Above 1GHz	Avg: 60 Peak: 80	Avg: 54 Peak: 74

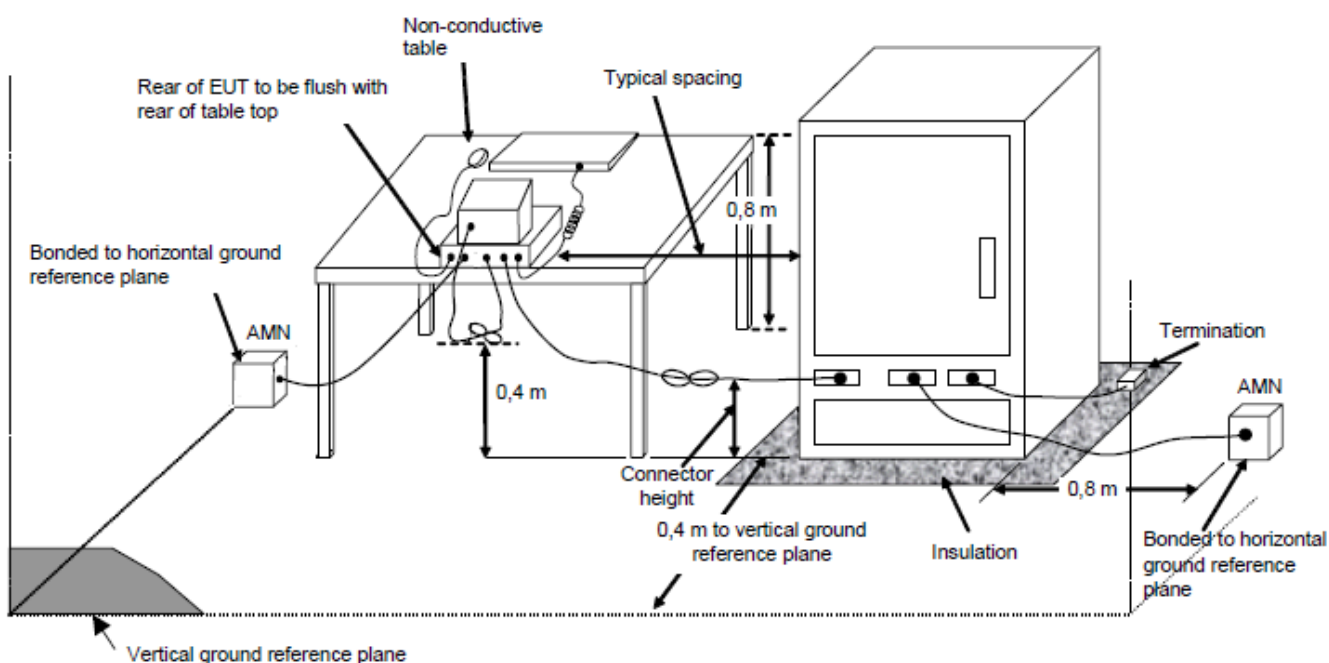
Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far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

6 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.

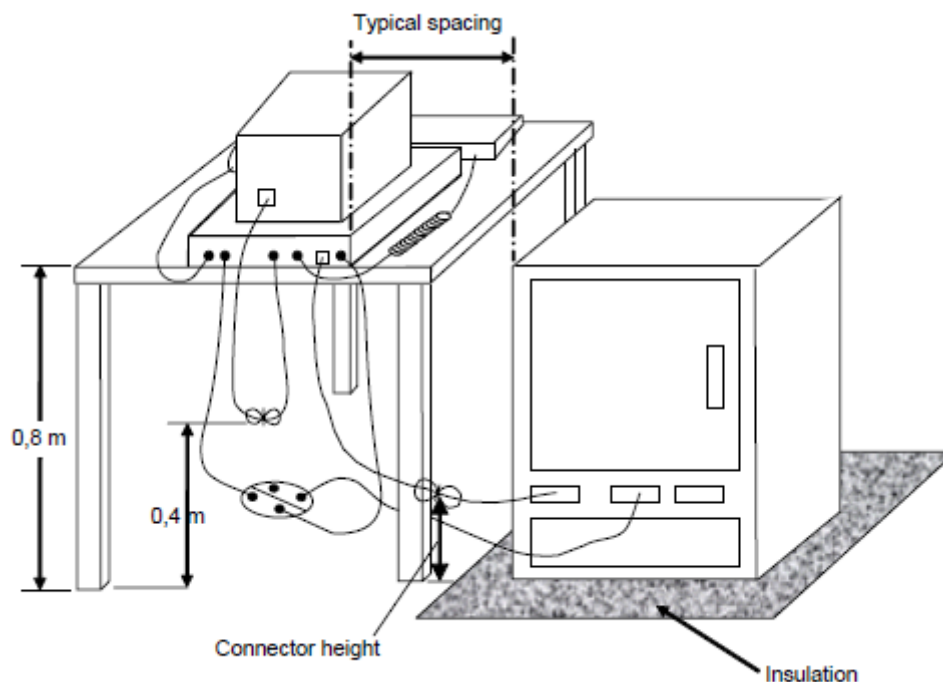


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

6.2 Radiated Emissions up to 1 GHz

- a. 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.
- b. The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. 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.
- d. 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.
- e. 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.

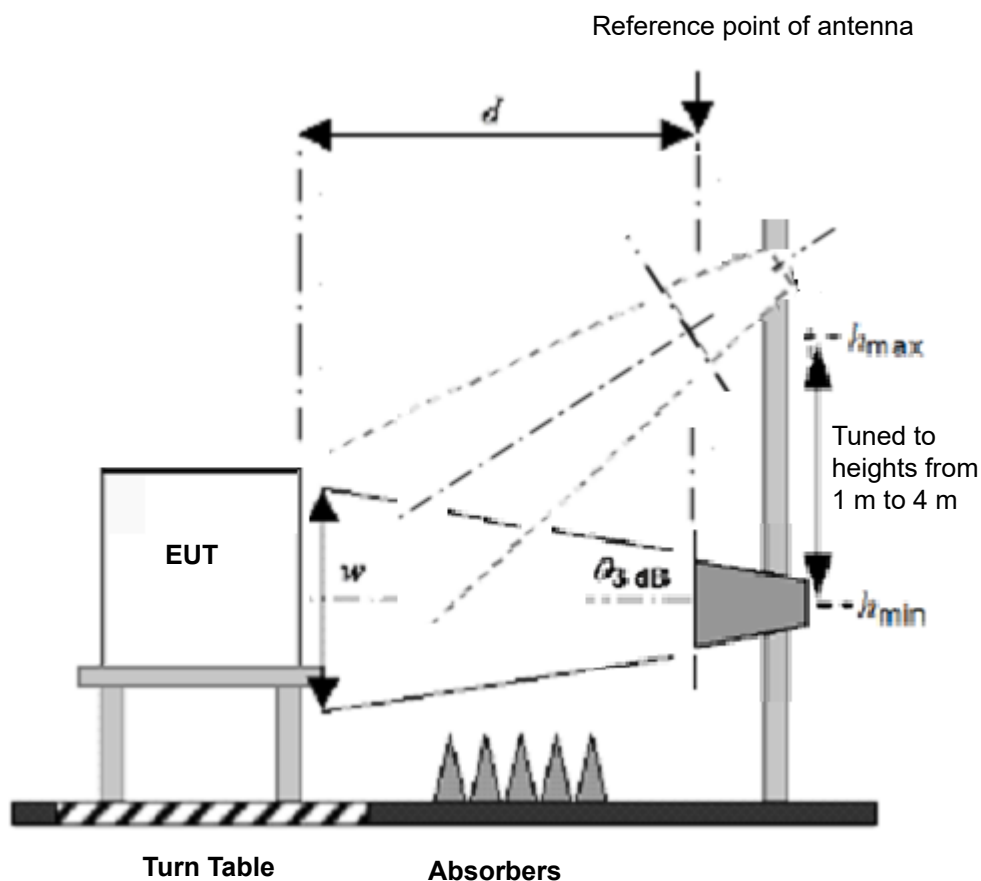


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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 30 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

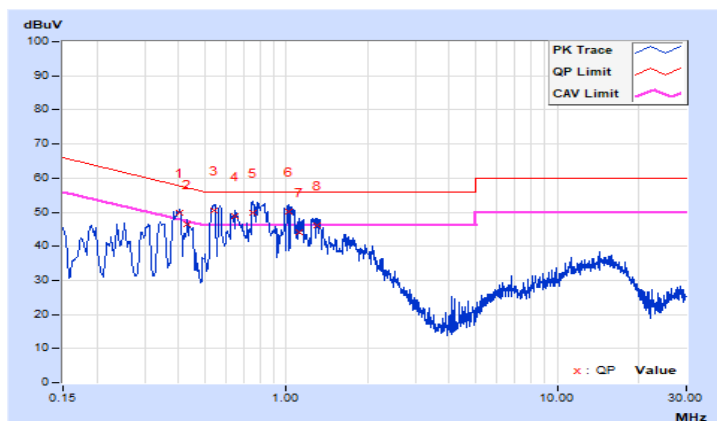
7.1 Conducted Emissions from Power Ports

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested by	Slash Huang		

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	0.40600	9.69	40.13	29.36	49.82	39.05	57.73	47.73	-7.91	-8.68
2	0.43000	9.69	36.74	28.01	46.43	37.70	57.25	47.25	-10.82	-9.55
3	0.54257	9.69	40.83	32.29	50.52	41.98	56.00	46.00	-5.48	-4.02
4	0.64600	9.69	38.98	29.02	48.67	38.71	56.00	46.00	-7.33	-7.29
5	0.75000	9.70	40.06	27.70	49.76	37.40	56.00	46.00	-6.24	-8.60
6	1.01800	9.70	40.34	28.22	50.04	37.92	56.00	46.00	-5.96	-8.08
7	1.11400	9.70	34.39	26.43	44.09	36.13	56.00	46.00	-11.91	-9.87
8	1.29400	9.71	36.31	25.22	46.02	34.93	56.00	46.00	-9.98	-11.07

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

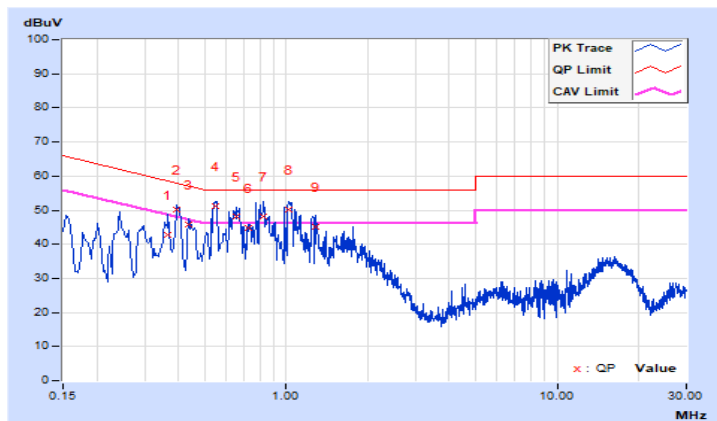


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120 Vac, 60 Hz	Environmental Conditions	23°C, 71% RH
Tested by	Slash Huang		

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	0.36600	9.68	32.94	20.84	42.62	30.52	58.59	48.59	-15.97	-18.07
2	0.39400	9.69	40.39	34.43	50.08	44.12	57.98	47.98	-7.90	-3.86
3	0.43400	9.69	36.18	26.81	45.87	36.50	57.18	47.18	-11.31	-10.68
4	0.54544	9.69	41.37	32.25	51.06	41.94	56.00	46.00	-4.94	-4.06
5	0.65800	9.69	38.36	28.41	48.05	38.10	56.00	46.00	-7.95	-7.90
6	0.72880	9.70	35.04	25.10	44.74	34.80	56.00	46.00	-11.26	-11.20
7	0.82200	9.70	38.56	26.96	48.26	36.66	56.00	46.00	-7.74	-9.34
8	1.01800	9.70	40.58	30.15	50.28	39.85	56.00	46.00	-5.72	-6.15
9	1.28600	9.71	35.24	24.51	44.95	34.22	56.00	46.00	-11.05	-11.78

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



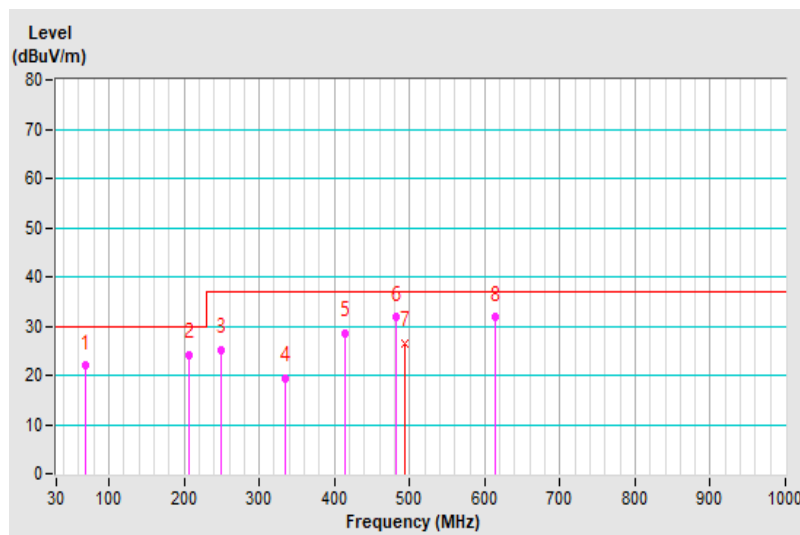
7.2 Radiated Emissions up to 1 GHz

Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Tested By	Rolan Zheng	Environmental Conditions	21°C, 65% RH

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	69.53	21.88 QP	30.00	-8.12	3.00 H	125	37.73	-15.85
2	207.32	24.11 QP	30.00	-5.89	3.50 H	146	41.27	-17.16
3	248.26	25.14 QP	37.00	-11.86	4.00 H	86	40.10	-14.96
4	333.96	19.38 QP	37.00	-17.62	4.00 H	62	31.47	-12.09
5	413.22	28.44 QP	37.00	-8.56	2.50 H	69	38.45	-10.01
6	482.19	31.77 QP	37.00	-5.23	2.00 H	68	40.20	-8.43
7	494.54	26.55 QP	37.00	-10.45	2.00 H	49	34.72	-8.17
8	614.60	31.76 QP	37.00	-5.24	1.50 H	115	37.15	-5.39

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

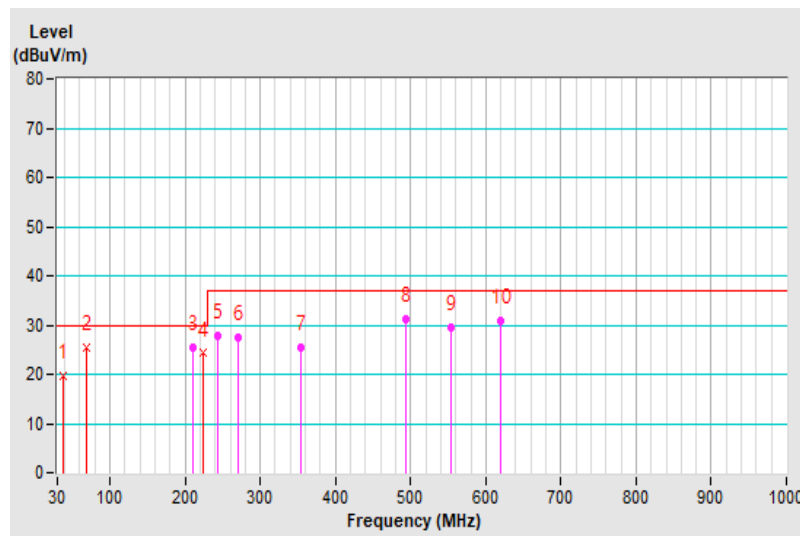


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Tested By	Rolan Zheng	Environmental Conditions	21°C, 65% RH

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	37.59	19.81 QP	30.00	-10.19	2.00 V	285	33.40	-13.59
2	67.88	25.56 QP	30.00	-4.44	1.00 V	53	40.03	-14.47
3	210.28	25.53 QP	30.00	-4.47	1.50 V	77	41.21	-15.68
4	224.67	24.27 QP	30.00	-5.73	1.50 V	315	39.97	-15.70
5	243.99	27.84 QP	37.00	-9.16	1.00 V	166	41.79	-13.95
6	271.30	27.55 QP	37.00	-9.45	1.00 V	168	40.22	-12.67
7	353.03	25.50 QP	37.00	-11.50	4.00 V	150	36.02	-10.52
8	494.60	31.24 QP	37.00	-5.76	2.50 V	324	38.38	-7.14
9	554.07	29.63 QP	37.00	-7.37	3.00 V	212	35.72	-6.09
10	619.60	30.80 QP	37.00	-6.20	3.00 V	305	35.23	-4.43

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



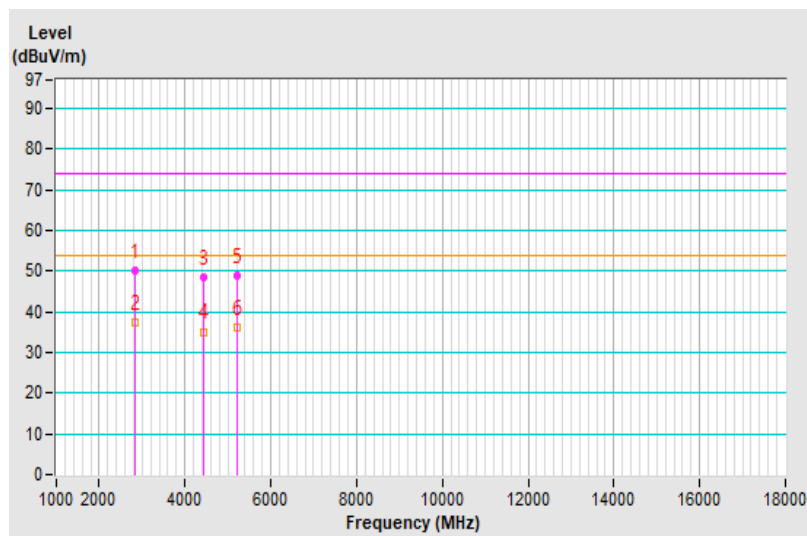
7.3 Radiated Emissions above 1 GHz

Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested By	Nick Wu	Environmental Conditions	25°C, 75% RH

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	2848.83	49.94 PK	74.00	-24.06	1.00 H	189	47.55	2.39
2	2848.83	37.32 AV	54.00	-16.68	1.00 H	189	34.93	2.39
3	4419.51	48.63 PK	74.00	-25.37	1.35 H	154	42.60	6.03
4	4419.51	35.08 AV	54.00	-18.92	1.35 H	154	29.05	6.03
5	5224.12	48.71 PK	74.00	-25.29	1.63 H	346	41.09	7.62
6	5224.12	36.16 AV	54.00	-17.84	1.63 H	346	28.54	7.62

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





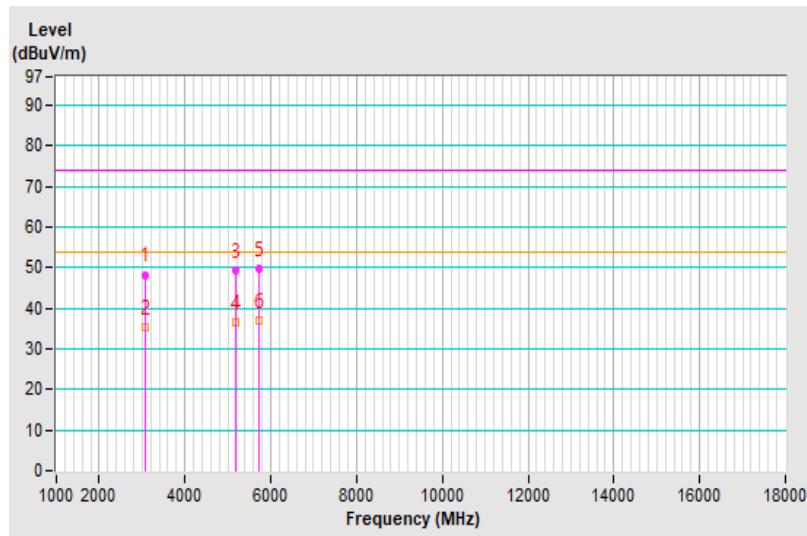
Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested By	Nick Wu	Environmental Conditions	25°C, 75% RH

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	3081.99	48.24 PK	74.00	-25.76	1.21 V	141	45.04	3.20
2	3081.99	35.24 AV	54.00	-18.76	1.21 V	141	32.04	3.20
3	5184.30	49.33 PK	74.00	-24.67	1.44 V	336	41.78	7.55
4	5184.30	36.50 AV	54.00	-17.50	1.44 V	336	28.95	7.55
5	5733.54	49.85 PK	74.00	-24.15	1.00 V	327	42.06	7.79
6	5733.54	36.96 AV	54.00	-17.04	1.00 V	327	29.17	7.79

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

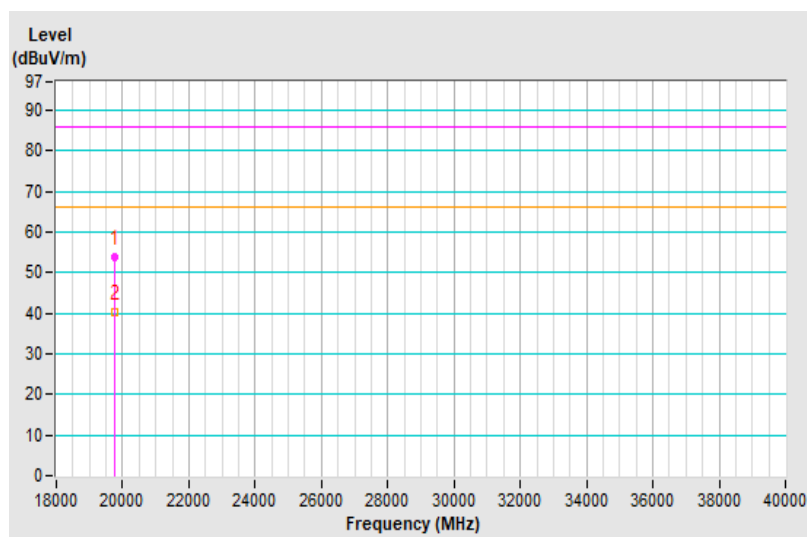


Frequency Range	18GHz ~ 30GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested By	Nick Wu	Environmental Conditions	23°C, 63% RH

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	19772.68	53.76 PK	86.00	-32.24	1.00 H	116	58.81	-5.05
2	19772.68	40.40 AV	66.00	-25.60	1.00 H	116	45.45	-5.05

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



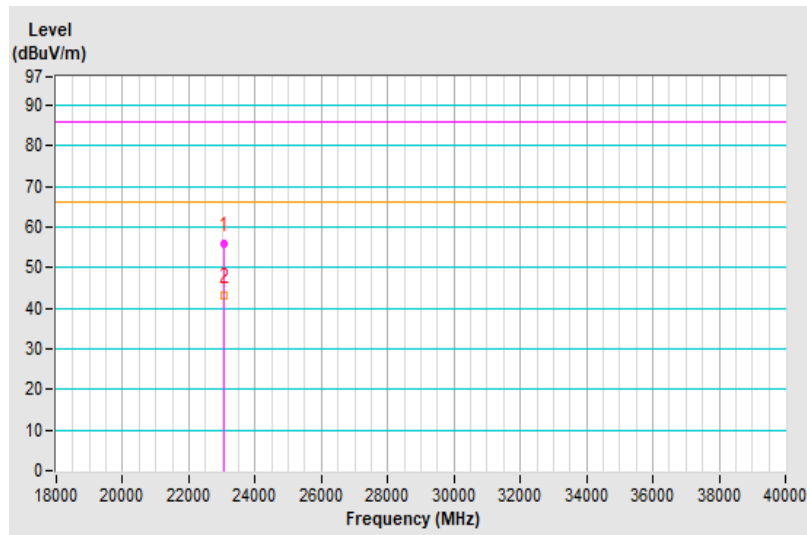


Frequency Range	18GHz ~ 30GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Tested By	Nick Wu	Environmental Conditions	23°C, 63% RH

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	23068.25	55.74 PK	86.00	-30.26	1.00 V	166	57.77	-2.03
2	23068.25	43.27 AV	66.00	-22.73	1.00 V	166	45.30	-2.03

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

Please refer to the attached file (Test Setup Photo).

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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