

TEST REPORT

CERTIFICATE OF CONFORMITY

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

Report No.: FCBEMI-WTW-P22080178

FCC ID: NOIKBN605

Product: Electronic Display Device

Brand: Rakuten kobo

Model No.: N605

Received Date: 2022/8/4

Test Date: 2022/10/6

Issued Date: 2022/11/18

Applicant: NETRONIX, INC.

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

FCC Registration /

Designation Number: 960022 / TW1058

Approved by: _____



, Date: _____

2022/11/18

Ken Lu / Manager

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Prepared by : Luna Yu / Specialist

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Table of Contents

Release Control Record	3
1 Certificate.....	4
2 Summary of Test Results	5
2.1 Measurement Uncertainty	5
2.2 Supplementary Information	5
3 General Information	6
3.1 Description of EUT	6
3.2 Primary Clock Frequencies of Internal Source.....	6
3.3 Features of EUT	6
3.4 Operating Modes of EUT and Determination of Worst Case Operating Mode	7
3.5 Test Program Used and Operation Descriptions	8
3.6 Connection Diagram of EUT and Peripheral Devices	8
3.7 Configuration of Peripheral Devices and Cable Connections	8
4 Test Instruments	9
4.1 Conducted Emissions from Power Ports	9
4.2 Radiated Emissions up to 1 GHz	10
4.3 Radiated Emissions above 1 GHz.....	11
5 Limits of Test Items.....	12
5.1 Conducted Emissions from Power Ports	12
5.2 Radiated Emissions up to 1 GHz	12
5.3 Radiated Emissions above 1 GHz.....	12
6 Test Arrangements.....	13
6.1 Conducted Emissions from Power Ports	13
6.2 Radiated Emissions up to 1 GHz	14
6.3 Radiated Emissions above 1 GHz.....	15
7 Test Results of Test Item	16
7.1 Conducted Emissions from Power Ports	16
7.2 Radiated Emissions up to 1 GHz	18
7.3 Radiated Emissions above 1 GHz.....	20
8 Pictures of Test Arrangements	24
9 Information of the Testing Laboratories	25



Release Control Record

Issue No.	Description	Date Issued
FCBEMI-WTW-P22080178	Original release.	2022/11/18

1 Certificate

Product: Electronic Display Device

Brand: Rakuten kobo

Test Model: N605

Sample Status: Engineering sample

Applicant: NETRONIX, INC.

Test Date: 2022/10/6

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 -13.49 dB at 0.15000 MHz
FCC Part 15.109	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class B margin is -3.36 dB at 240.05 MHz
FCC Part 15.109	Radiated Emissions above 1 GHz	Pass	Minimum passing Class B margin is -4.31 dB at 16657.85 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	150 kHz ~ 30 MHz	1.8 dB	3.4 dB (U_{CISPR})
Radiated Emissions above 1 GHz	30 MHz ~ 1 GHz	5.8 dB	6.3 dB (U_{CISPR})
	1 GHz ~ 6 GHz	4.85 dB	5.2 dB (U_{CISPR})
	6 GHz ~ 18 GHz	4.66 dB	5.5 dB (U_{CISPR})
	18 GHz ~ 40 GHz	5.07 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	Electronic Display Device
Brand	Rakuten kobo
Test Model	N605
Sample Status	Engineering sample
Operating Software	NA
Power Supply Rating	3.7 Vdc from battery or 5 Vdc from USB interface
Accessory Device	Refer to Note
Data Cable Supplied	Refer to Note

Note:

1. The EUT uses following accessories.

USB Cable		
Brand	Model	Signal Line
Yih Fone	SH-0381	Shielded: Y, 1.0 m, Core: N/A
Pen		
Brand	Model	
Rakuten kobo	ME-MPP702-K	

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4 GHz)	Bluetooth
2	WLAN (5 GHz)	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

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 5850 MHz, provided by NETRONIX, INC., 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 NETRONIX, INC., 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	Radiated Emissions up to 1 GHz
1	USB Mode+BT + Input Power(5 Vdc from host)
2	2.4G Mode+BT + Input Power(3.7 Vdc from battery)
3	5G Mode+BT + Input Power(3.7 Vdc from battery)
Note: The worst case is that mode 1 is shown in bold.	

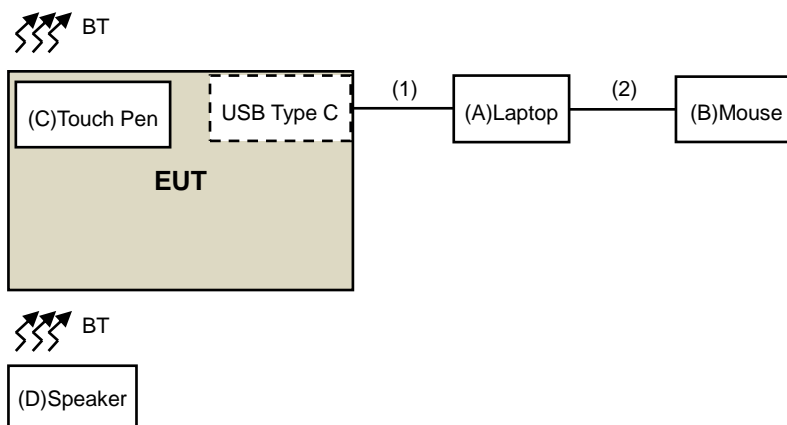
Test modes are presented in the report as below.

Test Condition	
Mode	Conducted Emissions from Power Ports
A	USB Mode+BT + Input Power(5 Vdc from host)
Mode	Radiated Emissions up to 1 GHz
A	USB Mode+BT + Input Power(5 Vdc from host)
Mode	Radiated Emissions above 1 GHz
A	USB Mode+BT + Input Power(5 Vdc from host)

3.5 Test Program Used and Operation Descriptions

1. Turn on the power of all equipment.
2. EUT is charging from support unit A (Laptop) via USB cable.
3. Support unit D (Speaker) links with EUT via BT.
4. Support unit A (Laptop) reads and writes messages from EUT via USB cable.
5. Support unit A (Laptop) runs “EMC test.exe” then sends “H” messages to itself.

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	Laptop	Lenovo	IdeaPad 5 15ITL05	PF31T9GP	DoC	Provided by Lab
B	Mouse	Logitech	M-U0026	810-002182_002	N/A	Provided by Lab
C	Touch Pen	rakuten kobo	N/A	N/A	N/A	Provided by applicant
D	Speaker	ULTIMATE EARS	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB cable	1	1	Yes	0	Provided by applicant
2	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
50 ohm terminal resistance	N/A	EMC-03	2022/9/27	2023/9/26
		EMC-04	2021/10/27	2022/10/26
DC LISN TESEQ	HV-AN 150	45176	2022/5/11	2023/5/10
		45177	2022/5/11	2023/5/10
Fixed attenuator STI	STI02-2200-10	006	2022/8/24	2023/8/23
LISN R&S	ENV216	100071	2021/10/27	2022/10/26
LISN Schwarzbeck	NNLK 8121	0809	2022/3/4	2023/3/3
	NSLK 8127	8127-522	2022/9/16	2023/9/15
RF Coaxial Cable JYEBO	5D-FB	COACAB-002	2022/8/24	2023/8/23
Software BV	BVADT_Cond_ V7.3.7.4	N/A	N/A	N/A
Test Receiver R&S	ESR3	102982	2022/5/25	2023/5/24

Notes:

1. The test was performed in HC - Conduction 3.
2. Tested Date: 2022/10/15

4.2 Radiated Emissions up to 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table CT	N/A	N/A	N/A	N/A
Fixed attenuator Marvelous Microwave Inc.	MVE2252-05	MVE2252-05-001	2022/9/8	2023/9/7
Pre_Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-03	2021/10/19	2022/10/18
RF Coaxial Cable COMMATE/PEWC	8D	CHGCAB-005	2022/9/8	2023/9/7
	8D-FB	CHGCAB-001-2	2022/9/8	2023/9/7
RF Coaxial Cable	RF-141	CHGCAB-004	2022/9/8	2023/9/7
Software BV	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Test Receiver Agilent	N9038A	MY51210105	2022/6/14	2023/6/13
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-360	2021/10/28	2022/10/27

Notes:

1. The test was performed in HC - 966 chamber 1. The test site validated date: 2022/9/8 (NSA)
2. Tested Date: 2022/10/6

4.3 Radiated Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower & Turn Table CT	N/A	N/A	N/A	N/A
Fix tool for Boresight BV	BAF-01	5	N/A	N/A
Horn Antenna FT-RF	HA-07M18G-NF	0000320091110	2021/11/14	2022/11/13
Horn Antenna Schwarzbeck	BBHA 9170	9170-424	2021/11/14	2022/11/13
Pre_Amplifier Agilent	8449B	3008A02578	2022/6/6	2023/6/5
Pre_Amplifier EMCI	EMC118A45SE	980817	2022/7/8	2023/7/7
	EMC184045SE	980770	2022/7/8	2023/7/7
RF Cable(46GHz /1.5M) SUHNER	SUCOFLEX 102	36432/2	2022/1/4	2023/1/3
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	181208	2022/8/15	2023/8/14
	EMC104-SM-SM-6000	181209	2022/8/15	2023/8/14
	EMC104-SM-SM-8500	181211	2022/8/15	2023/8/14
RF Coaxial Cable EMEC	EM102-KMKM-450	21090302	2022/9/8	2023/9/7
Software BV	ADT_Radiated_V8.7.08	N/A	N/A	N/A
Spectrum Keysight	N9020B	MY60112816	2022/5/20	2023/5/19
Test Receiver Agilent	N9038A	MY51210105	2022/6/14	2023/6/13

Notes:

1. The test was performed in HC - 966 chamber 1. The test site validated date: 2022/8/13 (VSWR)
2. Tested Date: 2022/9/23 ~ 2022/10/6

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				
960-1000	49.5	43.5	47	37

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				
960-1000	60.0	54.0	57.5	47.5

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

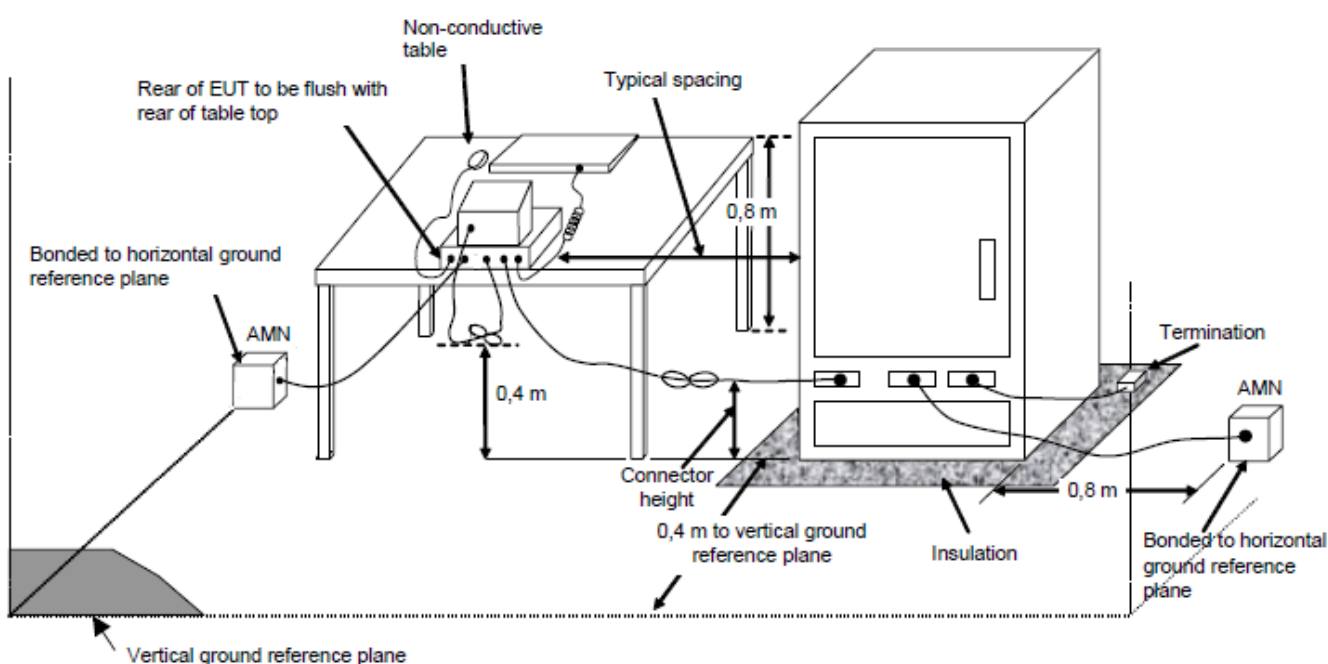
Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far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

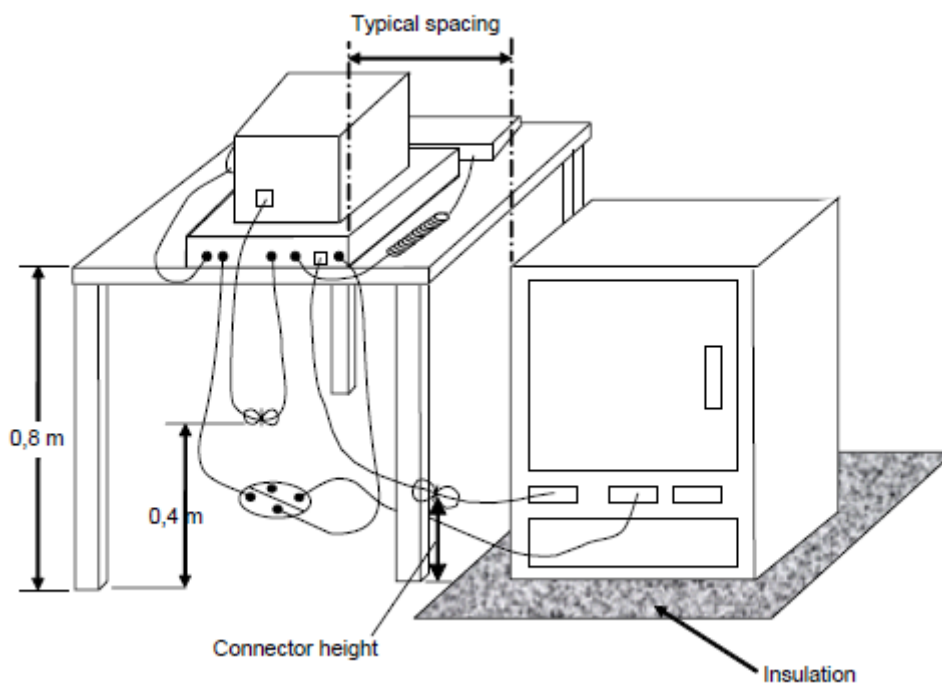


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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 3 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.

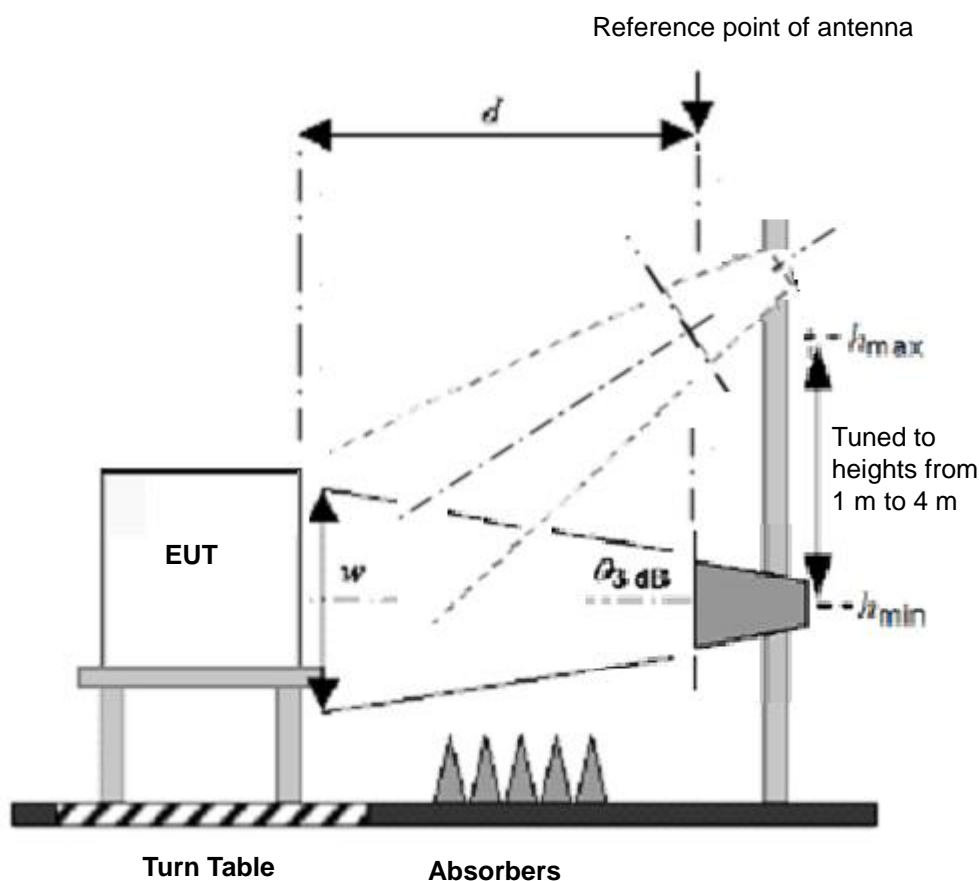


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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 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

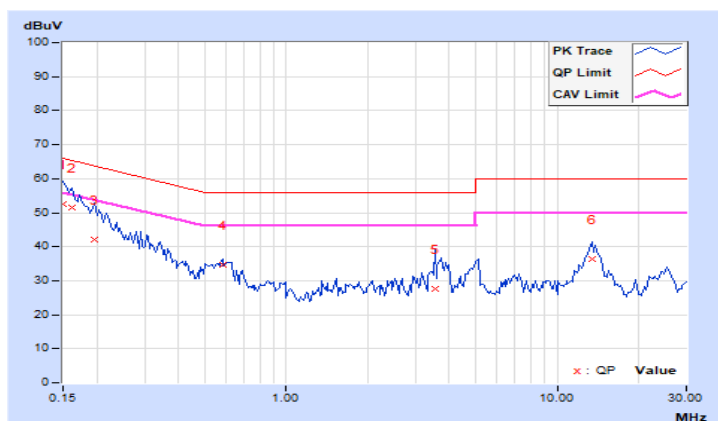
Mode A

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	5 Vdc from host	Environmental Conditions	25°C, 75% RH
Tested by	Gillian Peng		

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	0.15000	9.99	42.52	26.39	52.51	36.38	66.00	56.00	-13.49	-19.62
2	0.16172	10.00	41.46	26.41	51.46	36.41	65.38	55.38	-13.92	-18.97
3	0.19687	10.00	32.13	15.32	42.13	25.32	63.74	53.74	-21.61	-28.42
4	0.58359	10.02	24.66	18.88	34.68	28.90	56.00	46.00	-21.32	-17.10
5	3.53516	10.13	17.57	7.51	27.70	17.64	56.00	46.00	-28.30	-28.36
6	13.43750	10.41	26.05	18.37	36.46	28.78	60.00	50.00	-23.54	-21.22

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

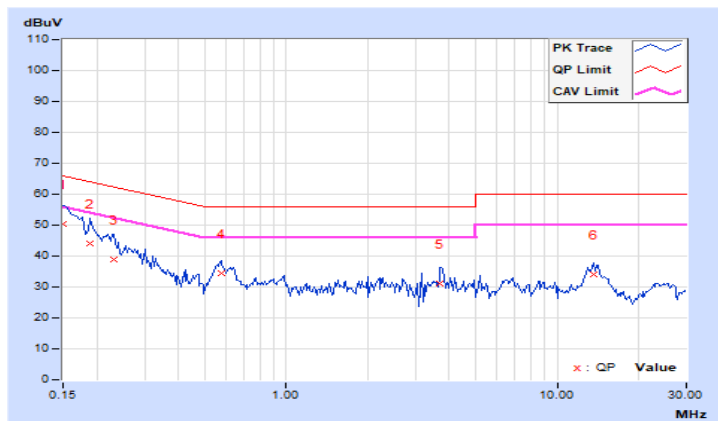


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	5 Vdc from host	Environmental Conditions	25°C, 75% RH
Tested by	Gillian Peng		

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	0.15000	10.00	40.31	27.91	50.31	37.91	66.00	56.00	-15.69	-18.09
2	0.18906	10.00	34.00	20.55	44.00	30.55	64.08	54.08	-20.08	-23.53
3	0.23203	10.00	28.93	14.58	38.93	24.58	62.38	52.38	-23.45	-27.80
4	0.57578	10.01	24.52	19.75	34.53	29.76	56.00	46.00	-21.47	-16.24
5	3.70313	10.11	21.07	11.32	31.18	21.43	56.00	46.00	-24.82	-24.57
6	13.59375	10.40	23.50	16.49	33.90	26.89	60.00	50.00	-26.10	-23.11

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

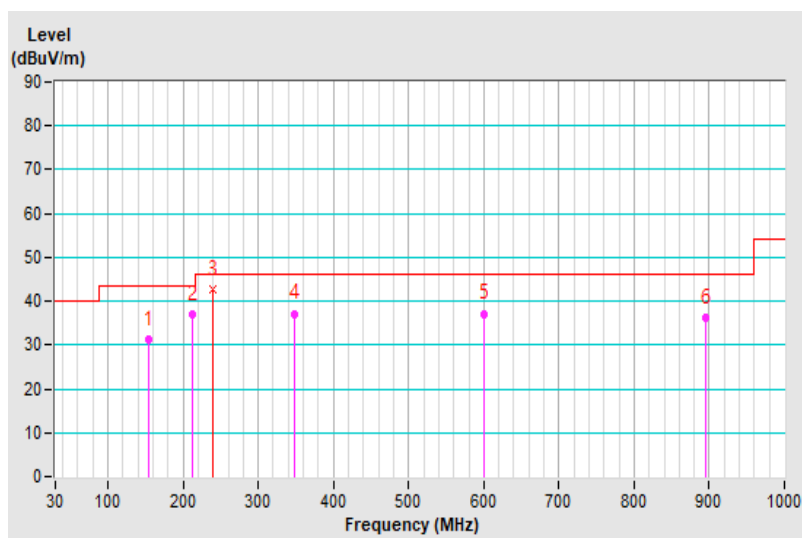
Mode A

Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	5 Vdc from host	Environmental Conditions	26°C, 58% RH
Tested By	Gillian Peng		

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	153.77	31.29 QP	43.50	-12.21	2.00 H	360	39.18	-7.89
2	211.90	36.92 QP	43.50	-6.58	2.00 H	160	47.95	-11.03
3	240.05	42.64 QP	46.00	-3.36	1.04 H	321	52.23	-9.59
4	348.74	37.17 QP	46.00	-8.83	1.00 H	327	43.20	-6.03
5	600.00	37.14 QP	46.00	-8.86	2.00 H	316	36.81	0.33
6	894.37	36.08 QP	46.00	-9.92	3.00 H	132	31.08	5.00

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

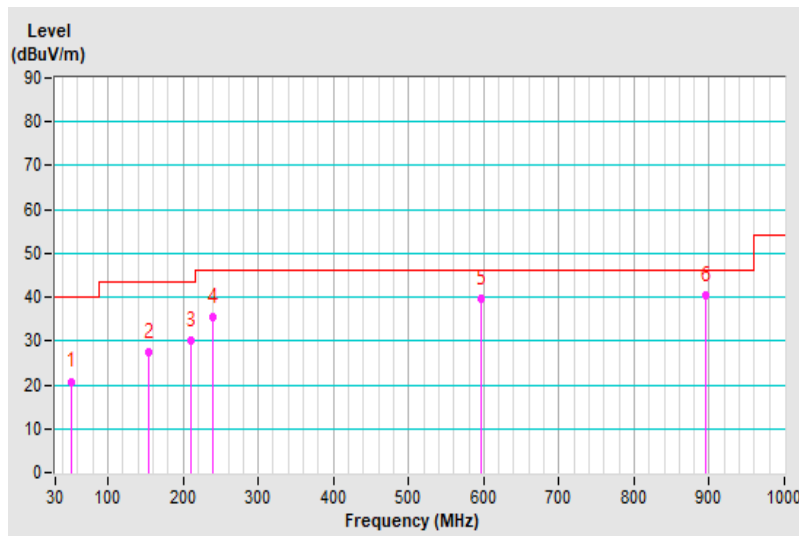


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	5 Vdc from host	Environmental Conditions	26°C, 58% RH
Tested By	Gillian Peng		

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	50.61	20.76 QP	40.00	-19.24	1.00 V	273	29.02	-8.26
2	153.77	27.50 QP	43.50	-16.00	1.00 V	65	35.39	-7.89
3	210.01	30.10 QP	43.50	-13.40	1.00 V	246	41.19	-11.09
4	240.08	35.51 QP	46.00	-10.49	2.00 V	315	45.10	-9.59
5	597.18	39.67 QP	46.00	-6.33	1.00 V	311	39.41	0.26
6	894.46	40.49 QP	46.00	-5.51	2.01 V	282	35.50	4.99

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

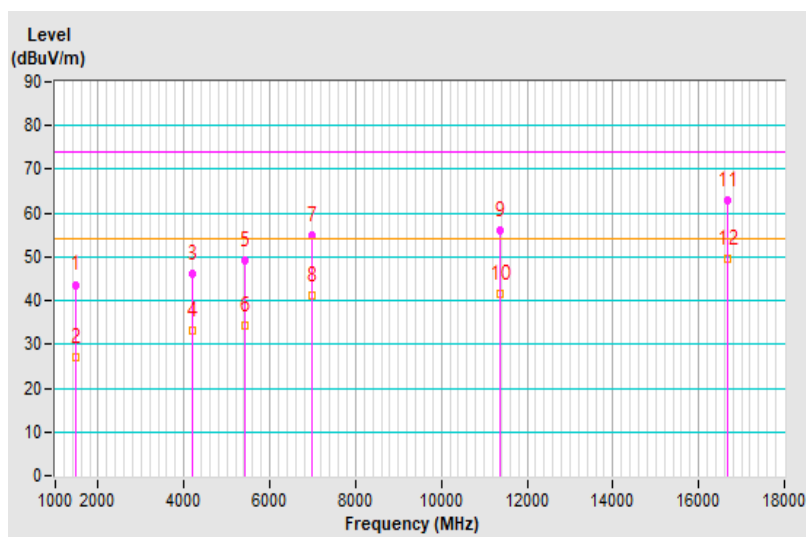
Mode A

Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	5 Vdc from host	Environmental Conditions	24°C, 56% RH
Tested By	Gillian Peng		

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	1468.35	43.63 PK	74.00	-30.37	1.00 H	86	48.42	-4.79
2	1468.35	27.16 AV	54.00	-26.84	1.00 H	2	31.95	-4.79
3	4210.45	46.27 PK	74.00	-27.73	2.00 H	247	38.27	8.00
4	4210.45	33.12 AV	54.00	-20.88	2.00 H	360	25.12	8.00
5	5431.05	49.25 PK	74.00	-24.75	1.00 H	249	37.99	11.26
6	5431.05	34.33 AV	54.00	-19.67	1.00 H	177	23.07	11.26
7	6977.20	54.87 PK	74.00	-19.13	1.00 H	120	36.59	18.28
8	6977.20	41.10 AV	54.00	-12.90	1.00 H	360	22.82	18.28
9	11385.30	55.88 PK	74.00	-18.12	1.00 H	157	36.13	19.75
10	11385.30	41.70 AV	54.00	-12.30	1.00 H	162	21.95	19.75
11	16657.85	62.99 PK	74.00	-11.01	1.50 H	316	35.97	27.02
12	16657.85	49.69 AV	54.00	-4.31	1.51 H	360	22.67	27.02

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

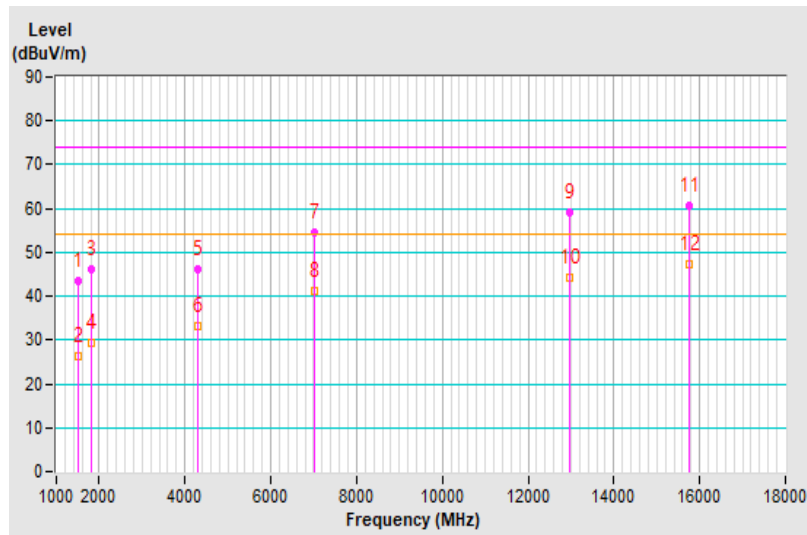


Frequency Range	1GHz ~ 18GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	5 Vdc from host	Environmental Conditions	24°C, 56% RH
Tested By	Gillian Peng		

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	1498.10	43.49 PK	74.00	-30.51	1.00 V	212	48.21	-4.72
2	1498.10	26.23 AV	54.00	-27.77	1.00 V	144	30.95	-4.72
3	1799.00	46.14 PK	74.00	-27.86	1.00 V	22	48.73	-2.59
4	1799.00	29.45 AV	54.00	-24.55	1.00 V	1	32.04	-2.59
5	4286.10	46.17 PK	74.00	-27.83	1.50 V	108	37.96	8.21
6	4286.10	33.29 AV	54.00	-20.71	1.50 V	53	25.08	8.21
7	7005.25	54.47 PK	74.00	-19.53	2.00 V	126	36.21	18.26
8	7005.25	41.14 AV	54.00	-12.86	2.00 V	55	22.88	18.26
9	12981.60	59.10 PK	74.00	-14.90	1.50 V	283	35.87	23.23
10	12981.60	44.24 AV	54.00	-9.76	1.50 V	314	21.01	23.23
11	15771.30	60.69 PK	74.00	-13.31	1.50 V	0	36.48	24.21
12	15771.30	47.23 AV	54.00	-6.77	1.44 V	0	23.02	24.21

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

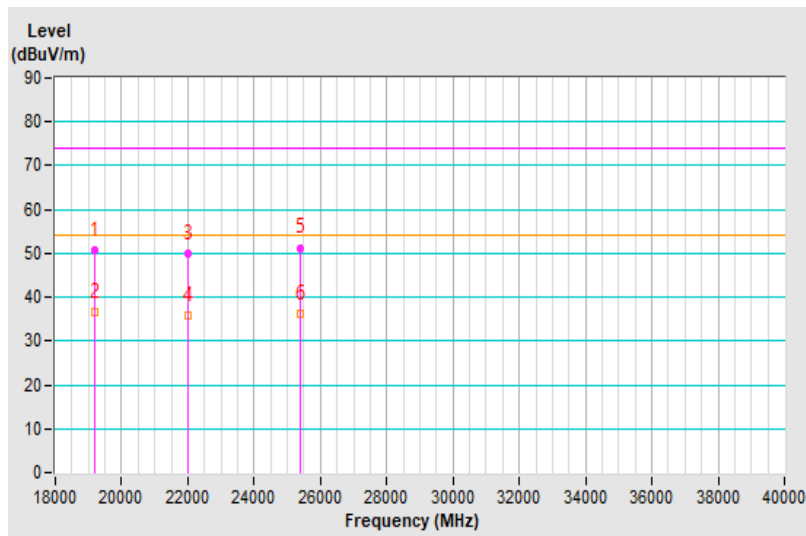


Frequency Range	18GHz ~ 29.250GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	5 Vdc from host	Environmental Conditions	24°C, 64% RH
Tested By	Gillian Peng		

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	19205.60	50.77 PK	74.00	-23.23	1.00 H	360	55.32	-4.55
2	19205.60	36.75 AV	54.00	-17.25	1.09 H	276	41.30	-4.55
3	22007.40	49.87 PK	74.00	-24.13	1.50 H	84	51.93	-2.06
4	22007.40	35.96 AV	54.00	-18.04	1.50 H	16	38.02	-2.06
5	25412.90	51.28 PK	74.00	-22.72	1.00 H	158	51.39	-0.11
6	25412.90	36.27 AV	54.00	-17.73	1.00 H	156	36.38	-0.11

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

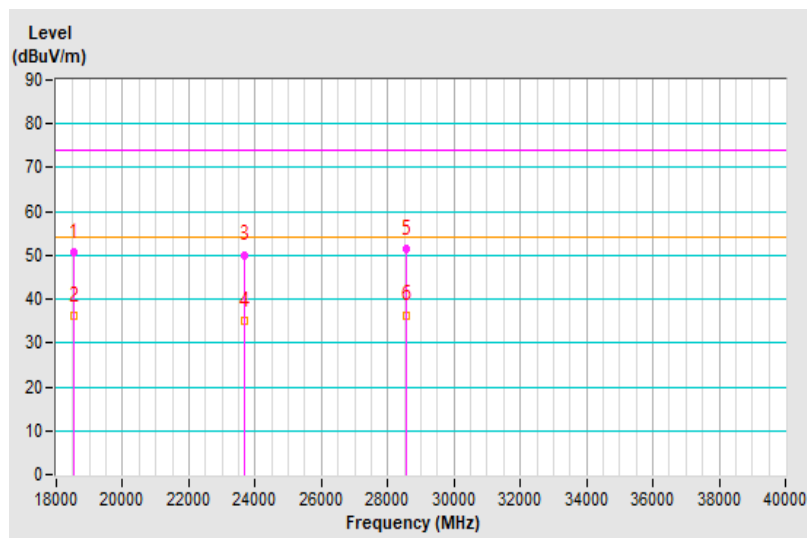


Frequency Range	18GHz ~ 29.250GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1MHz
Input Power	5 Vdc from host	Environmental Conditions	24°C, 64% RH
Tested By	Gillian Peng		

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	18536.80	50.75 PK	74.00	-23.25	1.50 V	132	55.86	-5.11
2	18536.80	36.34 AV	54.00	-17.66	1.50 V	130	41.45	-5.11
3	23677.10	50.11 PK	74.00	-23.89	1.00 V	152	51.36	-1.25
4	23677.10	35.21 AV	54.00	-18.79	1.00 V	106	36.46	-1.25
5	28538.00	51.53 PK	74.00	-22.47	1.00 V	315	51.68	-0.15
6	28538.00	36.41 AV	54.00	-17.59	1.04 V	360	36.56	-0.15

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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