

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.: FDBEMI-WTW-P25060631

Product: Electronic Display Device

FCC ID: NOIKBN428B

Brand: Rakuten kobo

Model No.: N428B

Received Date: 2025/6/30

Test Date: 2025/7/25 ~ 2025/7/31

Issued Date: 2025/9/18

Applicant: NETRONIX, INC.

Address: No. 945, Boai St., Jubei City, Hsin-Chu, 30265, Taiwan

Factory: (1) NETRONIX, INC.

(2) NTX Electronics YANGZHOU CO., LTD.

Address: (1) No. 945, Boai St., Jubei City, Hsin-Chu, 30265, Taiwan

(2) No. 8, Wuzhou West Road, Economic and technological Development Zone,
Yangzhou, Jiangsu Province, 225009, China

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

Lab Address: E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan

Test Location: No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307,
Taiwan

FCC Registration /

Designation Number: 960022 / TW1058

Approved by: _____



Ken Lu / Manager

Date: _____

2025/9/18

This test report consists of 25 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The test results in the report only apply to the tested sample. The test results in this report are traceable to the national or international standards.



Prepared by: Vito Lung / Specialist

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/>, and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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.....	7
3.3 Features of EUT	7
3.4 Operating Modes of EUT and Determination of Worst Case Operating Mode	8
3.5 Test Program Used and Operation Descriptions	9
3.6 Connection Diagram of EUT and Peripheral Devices	9
3.7 Configuration of Peripheral Devices and Cable Connections	9
4 Test Instruments	10
4.1 Conducted Emissions from Power Ports	10
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
FDBEMI-WTW-P25060631	Original release.	2025/9/18

1 Certificate

Product: Electronic Display Device

Brand: Rakuten kobo

Test Model: N428B

Sample Status: Engineering sample

Applicant: NETRONIX, INC.

Test Date: 2025/7/25 ~ 2025/7/31

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 -14.70 dB at 0.56406 MHz
FCC Part 15.109	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class B margin is -3.09 dB at 180.02 MHz
FCC Part 15.109	Radiated Emissions above 1 GHz	Pass	Minimum passing Class B margin is -7.42 dB at 16806.60 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	1.9 dB	3.4 dB (U_{cispr})
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	5.57 dB	6.3 dB (U_{cispr})
Radiated Emissions above 1 GHz	1 GHz ~ 6 GHz	4.77 dB	5.2 dB (U_{cispr})
	6 GHz ~ 18 GHz	4.78 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	N428B
Sample Status	Engineering sample
Power Supply Rating	3.87 Vdc from battery 5 Vdc from USB interface

Note:

1. The EUT models are listed as below.

No.	Model	Color	Different
1	N428B	Black	EUT has two colors: only the color is different, the circuit design is the same.
2		White	

2. The EUT must be supplied with a battery as the following table:

Item	Brand	Model	Specification
Battery	DESAY BATTERY TECHNOLOGY CO., LTD.	K24072300-2410878	Power Rating:3.87 Vdc, 8.91Wh, 2300mAh

3. The EUT uses following accessories.

Item	Brand	Model	Supplier Model	Color	Specification	Material	TID number
1st source USB Cable	Yih Fone	SH-0846	YF-USB2-A-C-1M(K)	Black	Shielded, 1.0M	TPE	12574
	Yih Fone	SH-0837	YF-USB2-A-C-1M-WH(K)	White	Shielded, 1.0M	TPE	12575
2nd source USB Cable	LUXSHARE-ICT	LB93US005-1H	---	Black	Shielded, 1.0M	TPE	---
	LUXSHARE-ICT	LB93US006-1H	---	White	Shielded, 1.0M	TPE	---

From the above USB cables, model: **LB93US006-1H** was selected as representative model for the test and its data was recorded in this report.

4. The EUT will be supported with the following eMMC and DRAM source.

Source	Item	Brand	Model
Main Source	1st source eMMC	PHISON	PTE7A0YJ-32GE
	1st source DRAM	MICRON	MT53D512M16D1DS-046 WT:D
2nd Source	2nd source eMMC	MK FOUNDER	MKEMF032GT1E-C
	1st source DRAM	MICRON	MT53D512M16D1DS-046 WT:D
3rd Source	3rd source eMMC	FORESEE	FEMDNN032G-C9A55
	2nd source DRAM	KINGSTON	D0811PM2FDGUK

5. There are Bluetooth and WLAN (2.4 GHz & 5 GHz) technology used for the EUT.

6. Simultaneously transmission combination.

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

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 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	EUT(Main Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)
2	EUT(2nd Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)
3	EUT(3rd Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)
4	EUT(Main Source) + USB Mode SH-0837(TPE)(White) + Input Power(5 Vdc from host)
5	EUT(Main Source) + WiFi 2.4G+BT + Input Power(3.7 Vdc from battery)
6	EUT(Main Source) + WiFi 5G+BT + Input Power(3.7 Vdc from battery)

Note: The worst case is mode 1 shown in bold.

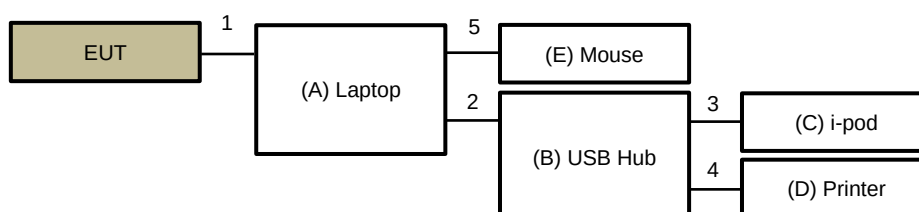
Test modes are presented in the report as below.

Test Condition	
Mode	Conducted Emissions from Power Ports
A	EUT(Main Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)
Mode	Radiated Emissions up to 1 GHz
A	EUT(Main Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)
Mode	Radiated Emissions above 1 GHz
A	EUT(Main Source) + USB Mode LB93US006-1H(TPE)(White) + Input Power(5 Vdc from host)

3.5 Test Program Used and Operation Descriptions

- Turned on the power of all equipment.
- EUT is charging from support unit A (Laptop) via USB-A to C cable.
- Support unit A (Laptop) reads and writes messages from EUT via USB-A to C cable.
- Support unit A (Laptop) plays "H" pattern 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	DELL	Latitude 5420	B8F33F3	FCC DOC	Provided by Lab
B	USB Hub	ESENSE	01-ELS647	N/A	N/A	Provided by Lab
C	i-pod	Apple	MD778TA/A	CC4JMCMXF4T1	N/A	Provided by Lab
D	Printer	EPSON	LQ-300+II	G88Y074085	DoC	Provided by Lab
E	Mouse	Logitech	M-U0026	810-002182_008	DoC	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	USB-A to C	1	1	Yes	0	Provided by Applicant
2	USB-A	1	0.15	Yes	0	Provided by Lab
3	USB-A	1	0.1	Yes	0	Provided by Lab
4	USB-A to B	1	1.8	Yes	0	Provided by Lab
5	USB-A	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-01	2024/9/25	2025/9/24
		EMC-03	2024/9/25	2025/9/24
DC LISN TESEQ	HV-AN 150	45176	2025/6/10	2026/6/9
		45177	2025/6/10	2026/6/9
Diode Pulse Limiter Schwarzbeck	VTSD 9561 F-N	01584	2025/4/20	2026/4/19
EMI Test Receiver R&S	ESCS 30	100375	2025/5/21	2026/5/20
LISN R&S	ENV216	100071	2024/10/24	2025/10/23
LISN Schwarzbeck	NNLK 8121	0809	2025/3/17	2026/3/16
	NSLK 8127	8127-522	2024/9/9	2025/9/8
RF Coaxial Cable JYBAO	5D-FB	CONCAB-002	2025/6/28	2026/6/27
Software BV	BVADT_Conc_ V7.4.1.0	N/A	N/A	N/A

Notes:

1. The test was performed in HC - Conduction 3.
2. The VCCI Shielded room C Registration No. is C-13611.
3. Tested Date: 2025/7/30 ~ 2025/7/31

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
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-360	2024/10/9	2025/10/8
EMI Test Receiver R&S	ESR3	102982	2025/5/29	2026/5/28
Fixed Attenuator MVE	MVE2252-05	MVE2252-05-001	2025/5/10	2026/5/9
Preamplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-03	2025/5/10	2026/5/9
RF Coaxial Cable	RF-141	CHGCAB-004	2025/5/20	2026/5/19
RF Coaxial Cable PEWC	8D-FB	CHGCAB-001-2	2025/5/20	2026/5/19
		CHGCAB-005	2025/5/20	2026/5/19
Software BV	ADT_Radiated_V8.8.09	N/A	N/A	N/A

Notes:

1. The test was performed in HC - 966 chamber 1. The test site validated date: 2025/5/10 (NSA)
2. The VCCI Site Registration No. is R-20009.
3. Tested Date: 2025/7/25

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
EMI Test Receiver R&S	ESR3	102982	2025/5/29	2026/5/28
Fix tool for Boresight BV	BAF-01	5	N/A	N/A
Horn Antenna FT-RF	HA-07M18G-NF	0000320091110	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	01168	2024/11/10	2025/11/9
Preamplifier Agilent	8449B	3008A02578	2024/8/10	2025/8/9
Preamplifier EMCI	EMC118A45SE	980817	2024/8/10	2025/8/9
Preamplifier SPACEK LABS	SLKKa-48-6	9K16	2024/8/10	2025/8/9
PXA Signal Analyzer Keysight	N9030B	MY57141885	2025/5/29	2026/5/28
RF Coaxial Cable EMCI	EMC101G-KM-KM-1200	210505	2025/1/24	2026/1/23
	EMC104-SM-SM-2000	181208	2024/8/10	2025/8/9
	EMC104-SM-SM-6000	181209	2024/8/10	2025/8/9
	EMC104-SM-SM-8500	181211	2024/8/10	2025/8/9
RF Coaxial Cable EMEC	EMC101G-KM-KM-3600	230805	2024/8/15	2025/8/14
Software BV	ADT_Radiated_V8.8.09	N/A	N/A	N/A

Notes:

1. The test was performed in HC - 966 chamber 1. The test site validated date: 2024/8/10 (VSWR)
2. The VCCI Site Registration No. is G-10137.
3. Tested Date: 2025/7/25

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				
960-1000	49.5	43.5	47	37

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

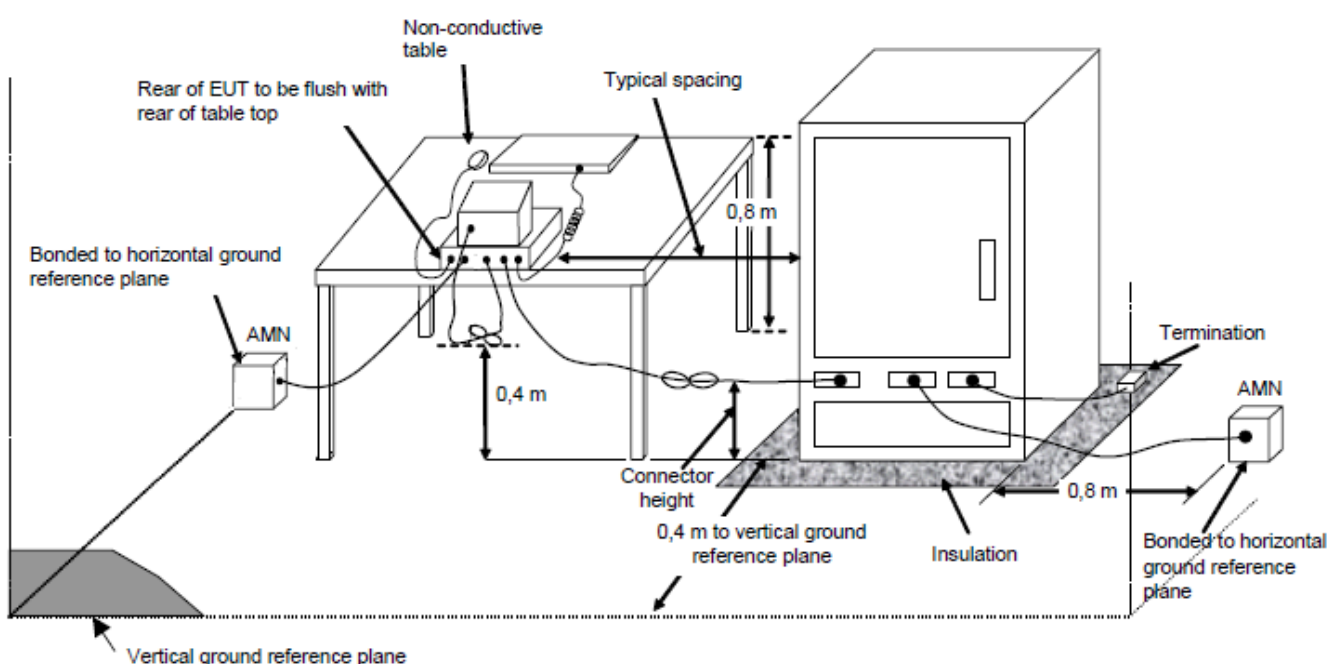
Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far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

6 Test Arrangements

6.1 Conducted Emissions from Power Ports

- a. 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.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. 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.

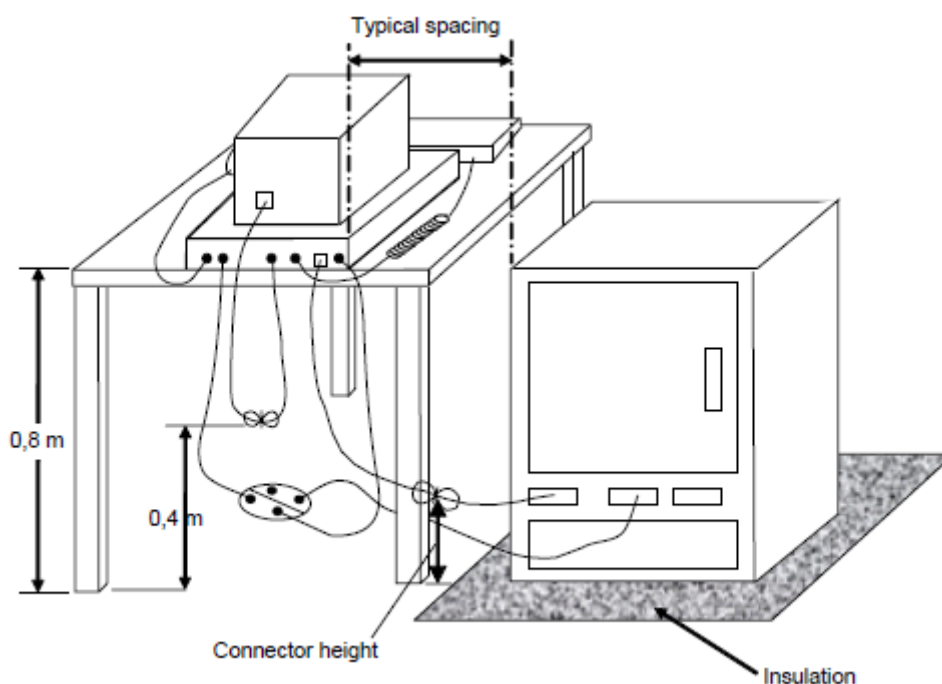


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is up to 1 GHz.

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

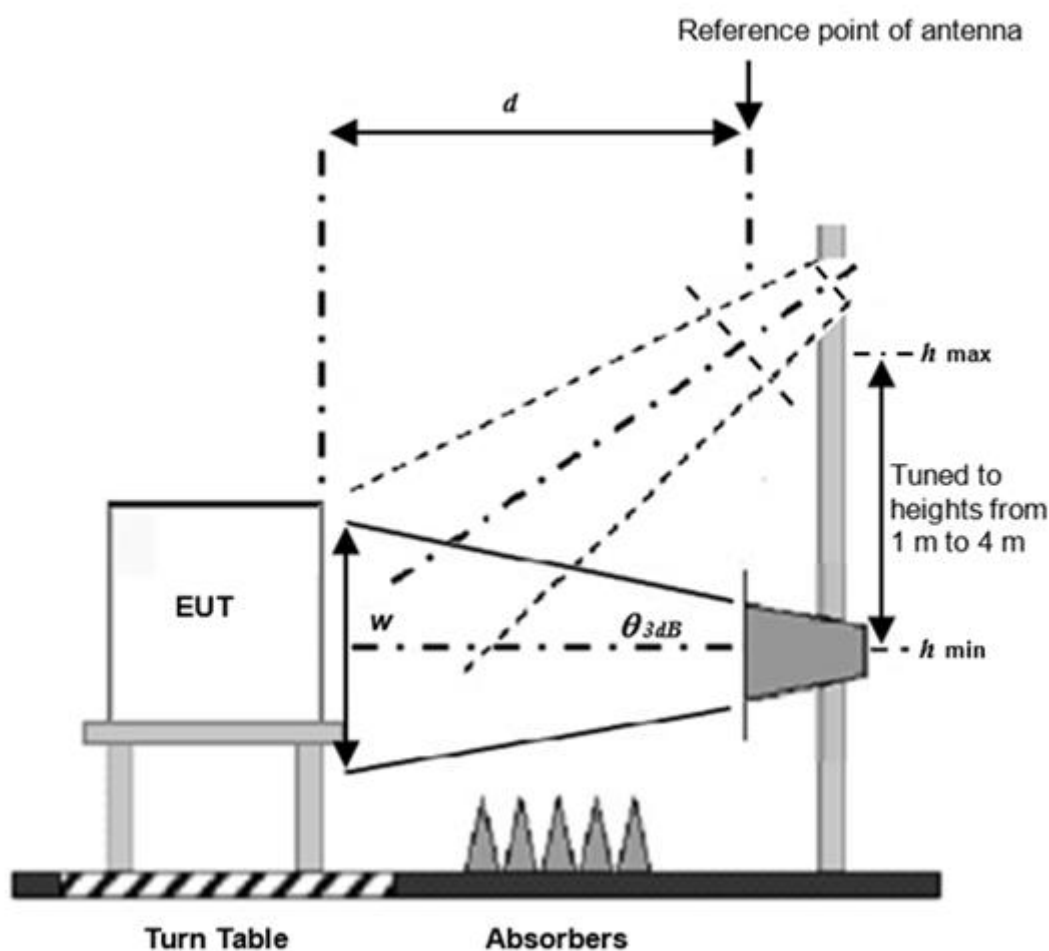


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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

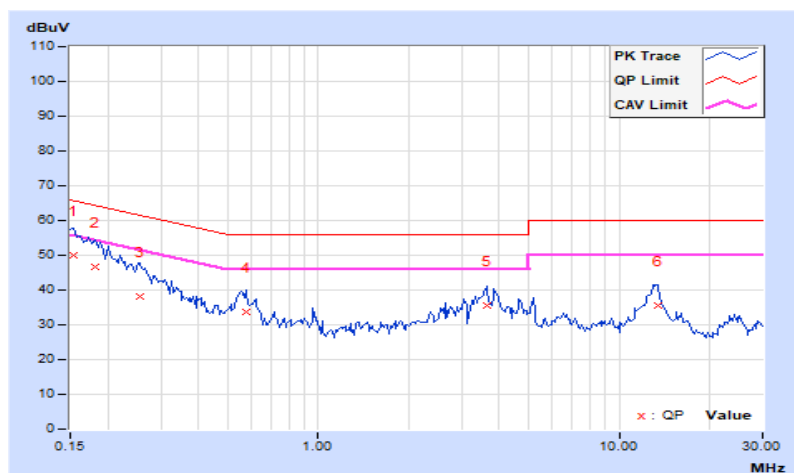
Mode A

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	5 Vdc from host	Environmental Conditions	25 °C, 75% RH, 986.3 mbar
Tested by	Nick Lo		

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	0.15391	10.11	39.96	26.75	50.07	36.86	65.79	55.79	-15.72	-18.93
2	0.18125	10.11	36.74	23.95	46.85	34.06	64.43	54.43	-17.58	-20.37
3	0.25547	10.11	27.93	13.95	38.04	24.06	61.58	51.58	-23.54	-27.52
4	0.57578	10.13	23.50	17.32	33.63	27.45	56.00	46.00	-22.37	-18.55
5	3.64453	10.25	25.28	15.64	35.53	25.89	56.00	46.00	-20.47	-20.11
6	13.47266	10.57	24.86	19.63	35.43	30.20	60.00	50.00	-24.57	-19.80

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

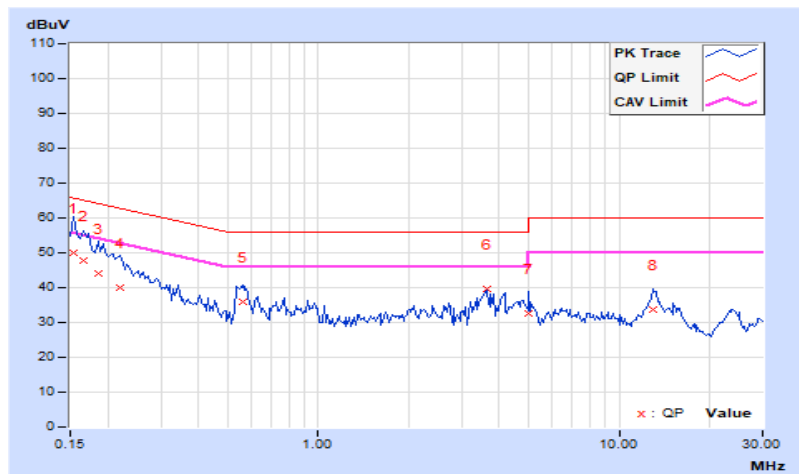


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	5 Vdc from host	Environmental Conditions	25 °C, 75% RH, 986.2 mbar
Tested by	Nick Lo		

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	0.15391	10.09	39.76	24.21	49.85	34.30	65.79	55.79	-15.94	-21.49
2	0.16562	10.09	37.73	27.45	47.82	37.54	65.18	55.18	-17.36	-17.64
3	0.18516	10.10	34.03	19.74	44.13	29.84	64.25	54.25	-20.12	-24.41
4	0.22031	10.10	30.07	18.45	40.17	28.55	62.81	52.81	-22.64	-24.26
5	0.56406	10.11	25.69	21.19	35.80	31.30	56.00	46.00	-20.20	-14.70
6	3.63672	10.23	29.27	16.96	39.50	27.19	56.00	46.00	-16.50	-18.81
7	5.02344	10.27	22.29	17.72	32.56	27.99	60.00	50.00	-27.44	-22.01
8	12.96094	10.50	23.21	16.20	33.71	26.70	60.00	50.00	-26.29	-23.30

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

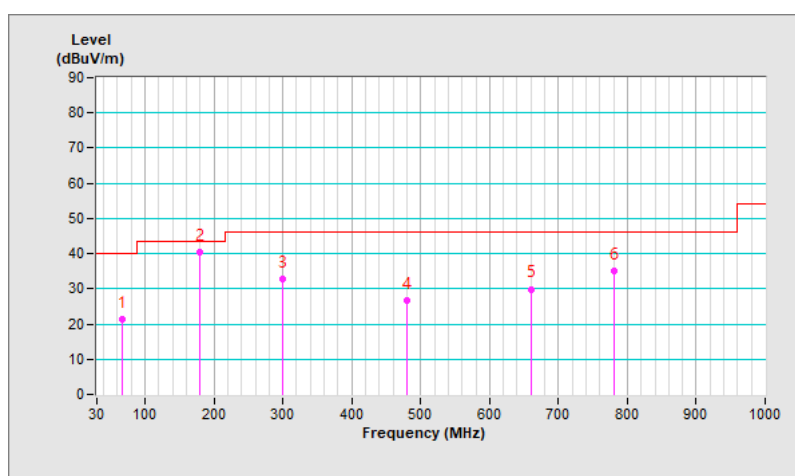
Mode A

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, 71% RH, 986.1 mbar
Tested By	Eagle Chen		

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	65.94	21.44 QP	40.00	-18.56	4.00 H	353	31.41	-9.97
2	180.02	40.41 QP	43.50	-3.09	2.02 H	331	50.19	-9.78
3	300.01	32.78 QP	46.00	-13.22	1.00 H	349	40.08	-7.30
4	480.05	26.60 QP	46.00	-19.40	2.00 H	331	29.47	-2.87
5	660.05	29.93 QP	46.00	-16.07	3.00 H	225	29.20	0.73
6	780.04	34.93 QP	46.00	-11.07	1.00 H	114	31.85	3.08

Remarks:

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

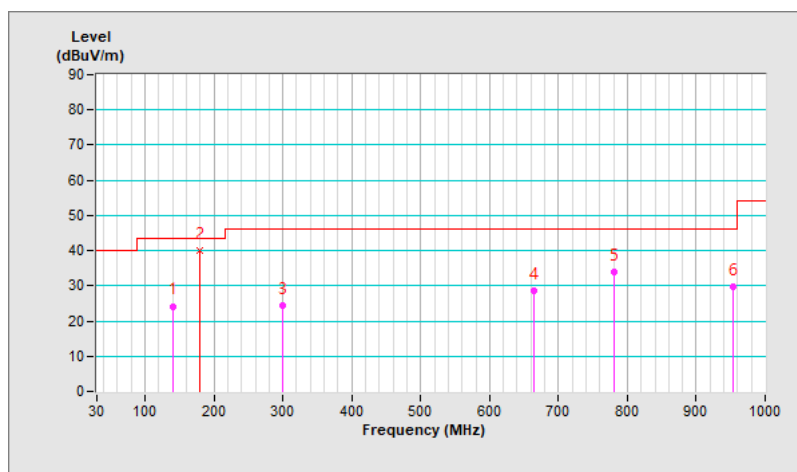


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	5 Vdc (from host)	Environmental Conditions	26 °C, 71% RH, 986.1 mbar
Tested By	Eagle Chen		

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	141.02	24.20 QP	43.50	-19.30	1.00 V	253	32.63	-8.43
2	180.01	40.17 QP	43.50	-3.33	1.03 V	224	49.95	-9.78
3	300.01	24.28 QP	46.00	-21.72	1.00 V	272	31.58	-7.30
4	663.88	28.74 QP	46.00	-17.26	2.00 V	1	27.95	0.79
5	780.04	33.80 QP	46.00	-12.20	2.00 V	1	30.72	3.08
6	952.95	29.86 QP	46.00	-16.14	4.00 V	307	24.60	5.26

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

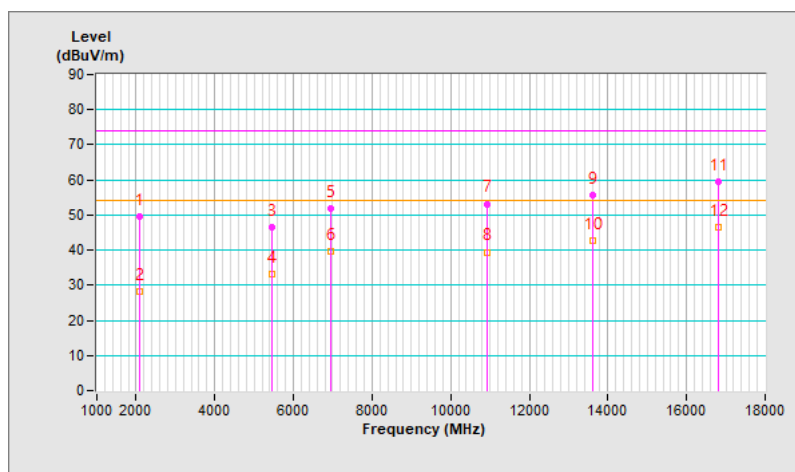
Mode A

Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	5 Vdc (from host)	Environmental Conditions	27 °C, 70% RH, 985.7 mbar
Tested By	Eagle Chen		

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	2093.67	49.52 PK	74.00	-24.48	1.50 H	230	51.72	-2.20
2	2093.67	28.17 AV	54.00	-25.83	1.50 H	211	30.37	-2.20
3	5450.03	46.35 PK	74.00	-27.65	2.00 H	80	40.34	6.01
4	5450.03	33.32 AV	54.00	-20.68	2.00 H	80	27.31	6.01
5	6960.77	51.99 PK	74.00	-22.01	1.50 H	37	39.27	12.72
6	6960.77	39.74 AV	54.00	-14.26	1.50 H	72	27.02	12.72
7	10923.47	53.16 PK	74.00	-20.84	1.00 H	273	41.19	11.97
8	10923.47	39.45 AV	54.00	-14.55	1.00 H	295	27.48	11.97
9	13606.07	55.49 PK	74.00	-18.51	2.00 H	360	40.16	15.33
10	13606.07	42.77 AV	54.00	-11.23	2.00 H	360	27.44	15.33
11	16806.60	59.34 PK	74.00	-14.66	2.00 H	360	40.99	18.35
12	16806.60	46.58 AV	54.00	-7.42	2.00 H	353	28.23	18.35

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.

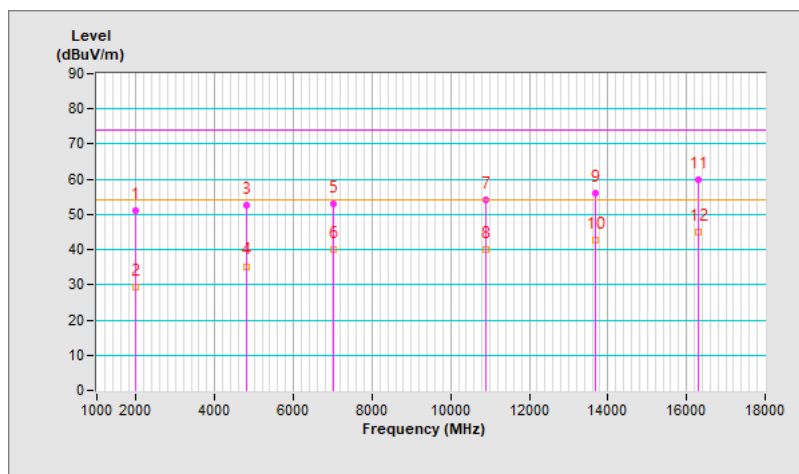


Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	5 Vdc (from host)	Environmental Conditions	27 °C, 70% RH, 985.9 mbar
Tested By	Eagle Chen		

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	1996.77	51.11 PK	74.00	-22.89	1.00 V	73	54.90	-3.79
2	1996.77	29.35 AV	54.00	-24.65	1.00 V	269	33.14	-3.79
3	4792.13	52.55 PK	74.00	-21.45	1.50 V	352	48.76	3.79
4	4792.13	35.27 AV	54.00	-18.73	1.50 V	171	31.48	3.79
5	7004.97	52.97 PK	74.00	-21.03	1.50 V	276	40.44	12.53
6	7004.97	40.03 AV	54.00	-13.97	1.50 V	293	27.50	12.53
7	10888.90	54.04 PK	74.00	-19.96	2.00 V	357	42.05	11.99
8	10888.90	39.86 AV	54.00	-14.14	2.00 V	326	27.87	11.99
9	13679.73	55.96 PK	74.00	-18.04	2.00 V	360	40.20	15.76
10	13679.73	42.83 AV	54.00	-11.17	2.00 V	360	27.07	15.76
11	16303.97	59.71 PK	74.00	-14.29	1.50 V	97	43.36	16.35
12	16303.97	45.09 AV	54.00	-8.91	1.50 V	85	28.74	16.35

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.

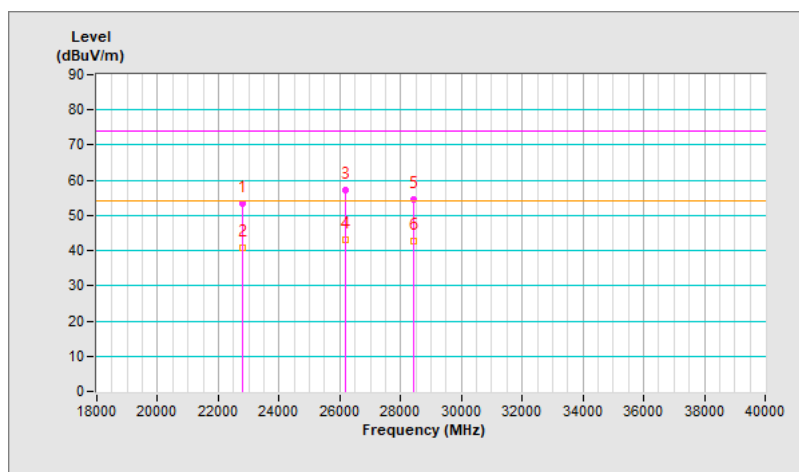


Frequency Range	18 GHz ~ 40 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	5 Vdc (from host)	Environmental Conditions	28 °C, 67% RH, 985.3 mbar
Tested By	Eagle Chen		

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	22801.87	53.50 PK	74.00	-20.50	1.50 H	1	55.76	-2.26
2	22801.87	40.91 AV	54.00	-13.09	1.50 H	27	43.17	-2.26
3	26201.60	57.35 PK	74.00	-16.65	2.00 H	360	57.64	-0.29
4	26201.60	43.15 AV	54.00	-10.85	2.00 H	360	43.44	-0.29
5	28444.87	54.38 PK	74.00	-19.62	2.00 H	171	56.85	-2.47
6	28444.87	42.54 AV	54.00	-11.46	2.00 H	171	45.01	-2.47

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.

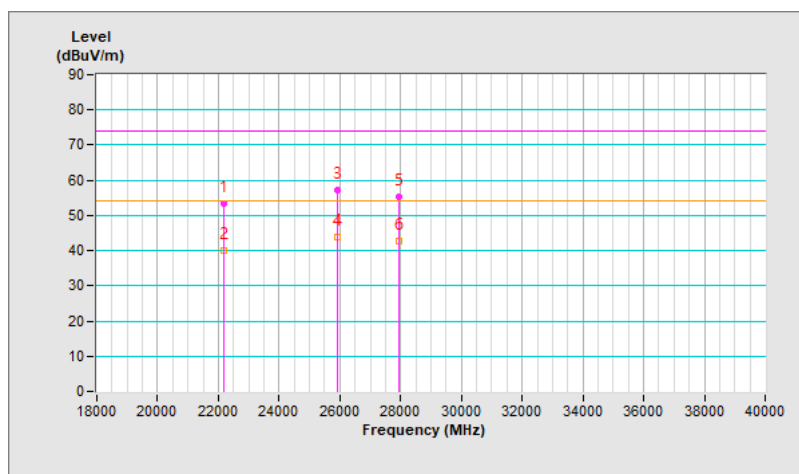


Frequency Range	18 GHz ~ 40 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	5 Vdc (from host)	Environmental Conditions	28 °C, 67% RH, 985.3 mbar
Tested By	Eagle Chen		

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	22183.67	53.39 PK	74.00	-20.61	1.00 V	358	56.49	-3.10
2	22183.67	40.12 AV	54.00	-13.88	1.00 V	332	43.22	-3.10
3	25933.93	57.08 PK	74.00	-16.92	2.00 V	73	56.89	0.19
4	25933.93	43.73 AV	54.00	-10.27	2.00 V	73	43.54	0.19
5	27958.67	55.17 PK	74.00	-18.83	2.00 V	1	57.13	-1.96
6	27958.67	42.57 AV	54.00	-11.43	2.00 V	1	44.53	-1.96

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 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.

If you have any comments, please feel free to contact us at the following:

Lin Kou EMC/RF Lab

Tel: 886-2-26052180

Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab

Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@bureauveritas.com

Web Site: <http://ee.bureauveritas.com.tw>

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

--- END ---