

# TEST REPORT

## CERTIFICATE OF CONFORMITY

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

**ANSI C63.4-2014**

**ANSI C63.4a-2017**

**Report No.:** FDBDBO-WTW-P25070009

**Product:** QEC

**Brand:** iCOP

**Model No.:** M

**Series Model:** 02X-DXX ("X" can be A-Z, 0-9 or nil to indicate I/O port differentiation.)

**Received Date:** 2025/7/1

**Test Date:** 2025/7/2 ~ 2025/7/14

**Issued Date:** 2025/8/5

**Applicant:** ICOP Technology Inc.

**Address:** NO.15, Wugong 5th Rd., Xinzhuang Dist., New Taipei City 24890, Taiwan (R.O.C)

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Lin Kou Laboratories

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**Test Location:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan

**FCC Registration /**

**Designation Number:** 418586 / TW1078

**Approved by:**

  
Jim Hsiang / Associate Technical Manager

**Date:**

2025/8/5

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Prepared by : Vivian Chen / Senior Specialist

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## Release Control Record

Issue No.	Description	Date Issued
FDBDBO-WTW-P25070009	Original release.	2025/8/5

## 1 Certificate

**Product:** QEC

**Brand:** iCOP

**Test Model:** M

**Series Model:** 02X-DXX ("X" can be A-Z, 0-9 or nil to indicate I/O port differentiation.)

**Sample Status:** Engineering sample

**Applicant:** ICOP Technology Inc.

**Test Date:** 2025/7/2 ~ 2025/7/14

**Standard:** 47 CFR FCC Part 15, Subpart B, Class A  
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 A margin is -7.16 dB at 0.36902 MHz
FCC Part 15.109	Radiated Emissions up to 1 GHz	Pass	Minimum passing Class A margin is -0.54 dB at 175.01 MHz
FCC Part 15.109	Radiated Emissions above 1 GHz	Pass	Minimum passing Class A margin is -23.37 dB at 1766.39 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	2.9 dB	3.4 dB ( $U_{\text{CISPR}}$ )
Radiated Emissions up to 1 GHz	30 MHz ~ 1 GHz	3m : 5.54 dB 10m : 4.16 dB	6.3 dB ( $U_{\text{CISPR}}$ )
Radiated Emissions above 1 GHz	1 GHz ~ 6 GHz	4.64 dB	5.2 dB ( $U_{\text{CISPR}}$ )
	6 GHz ~ 18 GHz	4.46 dB	5.5 dB ( $U_{\text{CISPR}}$ )

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

### 2.2 Supplementary Information

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

### 3 General Information

#### 3.1 Description of EUT

Product	QEC
Brand	iCOP
Test Model	M
Series Model	02X-DXX ("X" can be A-Z, 0-9 or nil to indicate I/O port differentiation.)
Model Difference	Marketing Differentiation
Sample Status	Engineering sample
Power Supply Rating	DC 24V

#### 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 533 MHz, provided by ICOP Technology 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 ICOP Technology Inc., for detailed feature description, please refer to the manufacturer's specifications or user's manual.

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

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

Test modes are presented in the report as below.

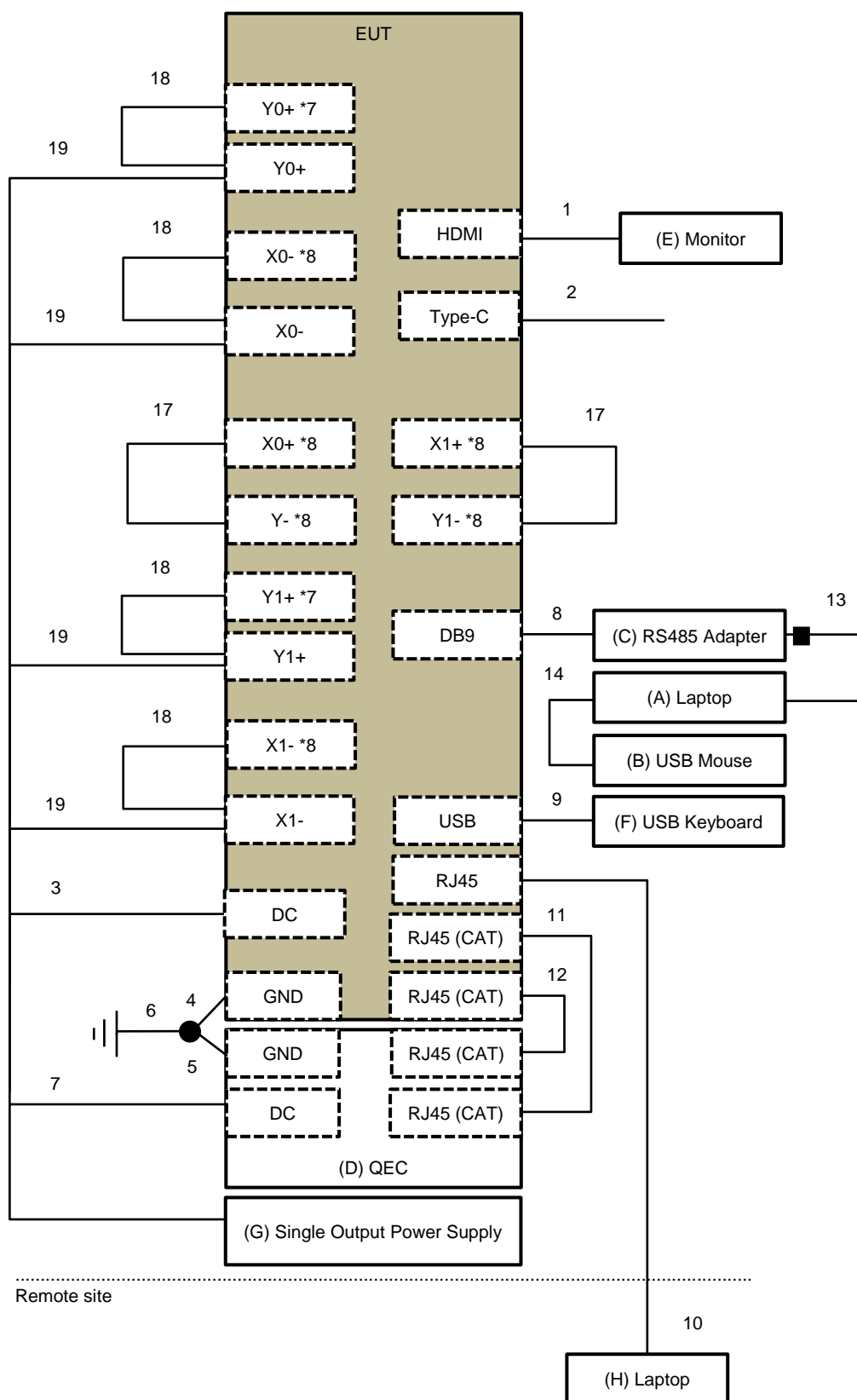
Test Condition	
Mode	Conducted Emissions from Power Ports
A	Operating mode + HDMI out + EtherCAT IN/OUT link + Lan_1Gbps ping + Input Power(24 Vdc)
Mode	Radiated Emissions up to 1 GHz
A	Operating mode + HDMI out + EtherCAT IN/OUT link + Lan_1Gbps ping + Input Power(24 Vdc)
Mode	Radiated Emissions above 1 GHz
A	Operating mode + HDMI out + EtherCAT IN/OUT link + Lan_1Gbps ping + Input Power(24 Vdc)

#### 3.5 Test Program Used and Operation Descriptions

- Turned on the power of all equipment.
- Laptop sent and received message to/ from EUT via RS485 Adapter.
- EUT sent (H) messages to monitor, and then displayed messages on its screen.
- Laptop sent and received messages to/ from EUT via LAN cable.
- EUT sent and received messages to/ from another QEC via wire cable.
- Laptop sent (H) messages to panel, and then displayed messages on its screen.



# For Radiated test





### 3.7 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Laptop	Lenovo	TP00050A	N/A	N/A	Supplied by applicant
B	USB Mouse	DELL	MOCZUL	CN-049TWY-PRC00-77B-007R	N/A	Provided by Lab
C	RS485 Adapter	SOYAL	AR-321-CM	N/A	N/A	Supplied by applicant
D	QEC	QEC	QEC-R11D88D-C	N/A	N/A	Supplied by applicant
E	Monitor	DELL	U2410	CN082WXD728720CC0KCL	DoC	Provided by Lab
F	USB Keyboard	Dell	KB216t	CN-0W33XP-LO300-7CL-1907	N/A	Provided by Lab
G	Single Output Power Supply	Agilent	U8002A	MY52140016	N/A	Provided by Lab
H	Laptop	LENOVO	T480	PF1EK03U	N/A	Provided by Lab
I	DC Power source	Chroma	62024P-80-60	62024PA00674	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	HDMI	1	2	Y	0	Provided by Lab
2	Type C	1	1	Y	0	Provided by Lab
3	Power	1	0.2	N	0	Supplied by applicant
4	GND (PE)	1	0.6	N	0	Supplied by applicant
5	GND (PE)	1	0.8	N	0	Supplied by applicant
6	GND (PE)	1	1.5	N	0	Provided by Lab
7	Power	1	0.4	N	0	Supplied by applicant
8	Data	1	0.6	N	0	Supplied by applicant
9	USB	1	1.8	Y	0	Provided by Lab
10	Cat. 5e	1	10	N	0	Provided by Lab
11	Cat. 5e	1	0.9	N	0	Supplied by applicant
12	Cat. 5e	1	0.9	N	0	Supplied by applicant
13	USB	1	0.9	Y	1	Supplied by applicant
14	USB	1	1.8	Y	0	Provided by Lab
15	Power	1	1.8	N	0	Provided by Lab
16	Power	1	10	N	0	Provided by Lab
17	Data	16	0.05	N	0	Supplied by applicant
18	Power	4	0.03	N	0	Supplied by applicant
19	Power	4	0.1	N	0	Supplied by applicant

## 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 LYNICS	0900510	E1-011284	2024/9/16	2025/9/15
		E1-011286	2024/9/25	2025/9/24
Diode Pulse Limiter Schwarzbeck	VTSD 9561 F-N	01587	2025/5/2	2026/5/1
EMI Test Receiver R&S	EPL 1000	101065	2025/4/22	2026/4/21
	ESR3	102414	2024/12/11	2025/12/10
Highpass filter EMCI	150HPF-ME	114005	2025/5/2	2026/5/1
		114006	2025/5/2	2026/5/1
	150HPF-MF	113009	2025/5/2	2026/5/1
LISN R&S	ENV216	101196	2025/5/19	2026/5/18
	ESH2-Z5	100104	2024/12/11	2025/12/10
	ESH3-Z5	847265/023	2024/10/23	2025/10/22
LISN Schwarzbeck	NNLK 8121	8121-00759	2024/8/20	2025/8/19
		8121-808	2025/4/23	2026/4/22
	NNLK 8129	00624	2024/10/9	2025/10/8
		8129229	2024/10/14	2025/10/13
RF Coaxial Cable PEWC	5D-FB	Cable-CO9-01	2025/7/4	2026/7/3
Software BVADT	Cond_V7.4.1.0	N/A	N/A	N/A

Notes:

1. The test was performed in Linkou Conduction 9.
2. The VCCI Site Registration No. C-11312.
3. Tested Date: 2025/7/14

## 4.2 Radiated Emissions up to 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
ADT. Tower	AT100	0205	N/A	N/A
ADT. Turn Table	TT100	0205	N/A	N/A
Bi_Log Antenna schaffner	CBL 6111D	22270	2024/10/8	2025/10/7
Coupling / Decoupling Network Schwarzbeck	CDNE-M2	00097	2025/5/28	2026/5/27
	CDNE-M3	00091	2025/3/20	2026/3/19
EMI Test Receiver R&S	ESCS 30	100292	2024/9/18	2025/9/17
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ST2-01	2024/10/19	2025/10/18
Preamplifier HP	8447D	2727A05786	2025/2/14	2026/2/13
RF Coaxial Cable Pacific	8D-FB	Cable-ST2-01	2024/11/6	2025/11/5
Software BVADT	Radiated_V8.8.09	N/A	N/A	N/A

### Notes:

1. The test was performed in Linkou Open Site2 , The test site validated date: 2024/7/13 (NSA)
2. The VCCI Site Registration No. R-10237.
3. Tested Date: 2025/7/2

### 4.3 Radiated Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fix tool for Boresight antenna tower BV	BAF-01	9	N/A	N/A
Fixed Attenuator Mini-Circuits	BW-K3-2W44+	PAD-CH7-03	2025/7/4	2026/7/3
	BW-N4W5+	PAD-CH10-02	2025/7/4	2026/7/3
Horn Antenna EMCO	3115	6714	2024/11/10	2025/11/9
Horn Antenna ETS-Lindgren	3117-PA	00215857	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	BBHA9170190	2024/11/10	2025/11/9
MXA Signal Analyzer Keysight	N9020B	MY60110438	2024/12/5	2025/12/4
		MY60112260	2025/5/26	2026/5/25
Notch Filter Micro-Tronics	BRC50703-01	010	2025/5/22	2026/5/21
	BRM17690	005	2025/5/22	2026/5/21
Preamplifier EMCI	EMC0126545	980076	2025/2/14	2026/2/13
	EMC184045B	980235	2025/2/14	2026/2/13
Preamplifier HP	8449B	3008A01292	2025/2/14	2026/2/13
RF Coaxial Cable EMEC	EM102-KMKM-100	02	2025/7/4	2026/7/3
	EM102-KMKM-350	01	2025/7/4	2026/7/3
Software BVADT	Radiated_V8.8.09	N/A	N/A	N/A
Turn Table & Tower Max Full	MF7802	MF780208216	N/A	N/A

Notes:

1. The test was performed in Linkou 966 Chamber 3 (CH 10).
2. The VCCI Site Registration No. G-10427.
3. Tested Date: 2025/7/14

## 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

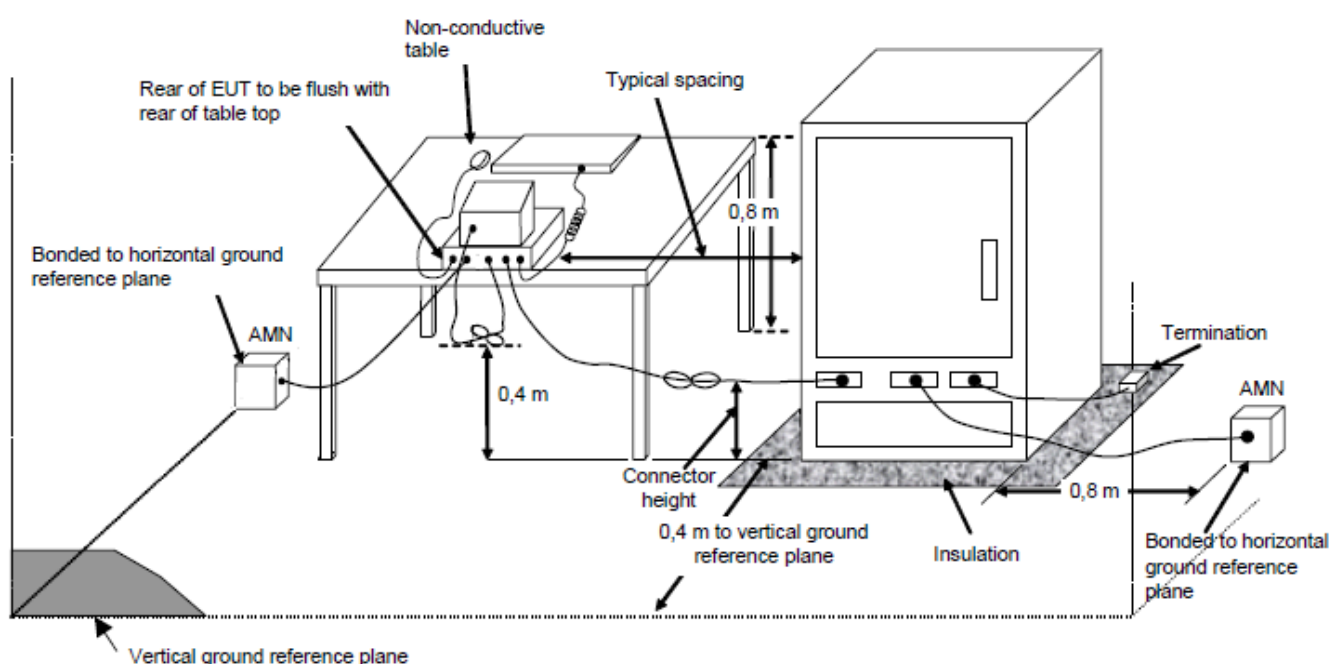
Notes: 1. These limit levels apply for a measurement distance of 3 m. If using a different measurement distance, the measured levels shall be extrapolated to the 3 m limit distance using a factor of 20 dB per decade of distance. The measurement distance shall place the measurement antenna in the far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

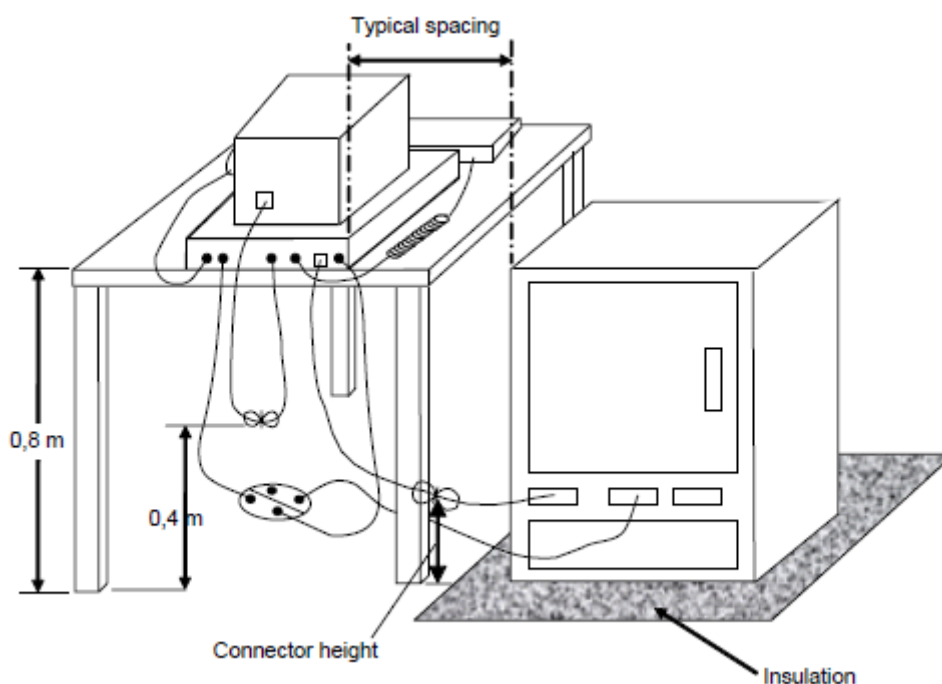


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

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

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

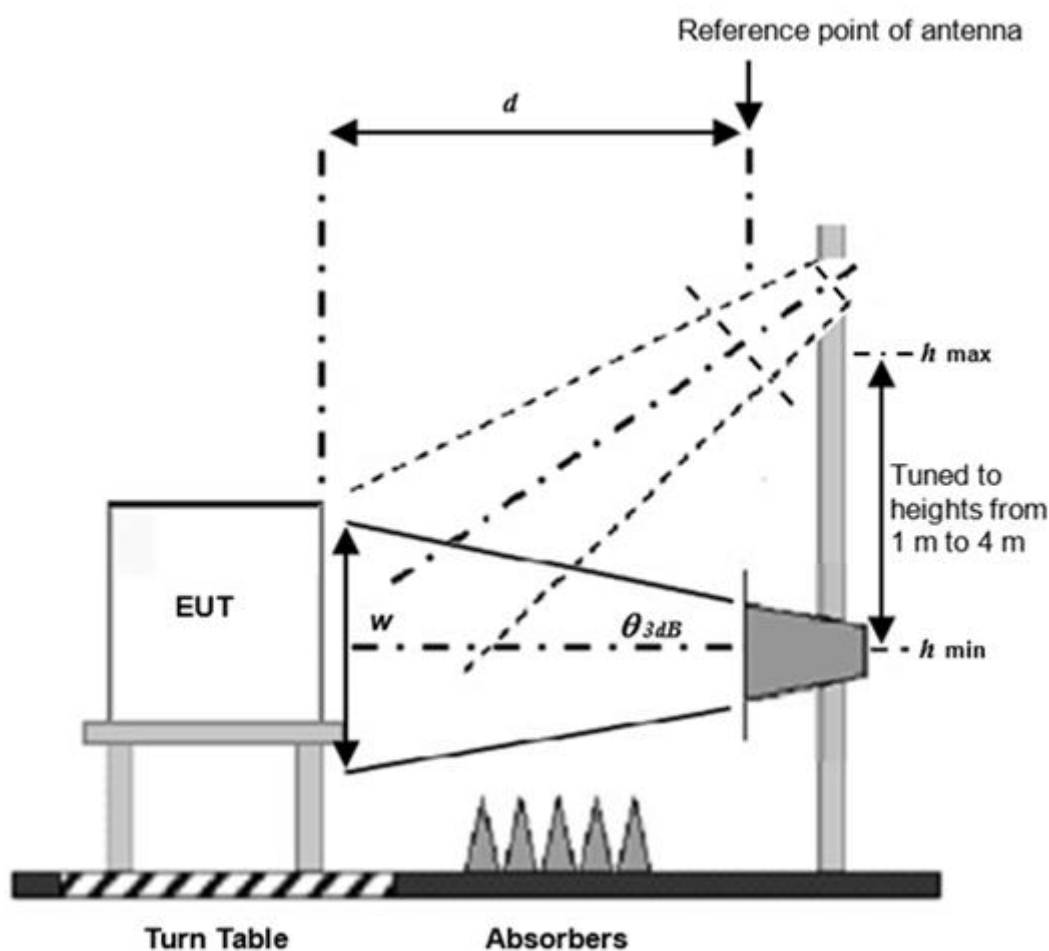


For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

### 6.3 Radiated Emissions above 1 GHz

- For the table-top EUT is placed on a 0.8 meter to the top of rotating table; for the floor standing EUT shall be insulated (by insulation of 12 mm) from the horizontal reference ground plane. The rotating table is rotated 360 degrees to determine the position of the highest radiation. If the equipment requires a dedicated ground connection, this shall be provided and bonded to the RGP.
- The EUT was set  $d = 3$  meters 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

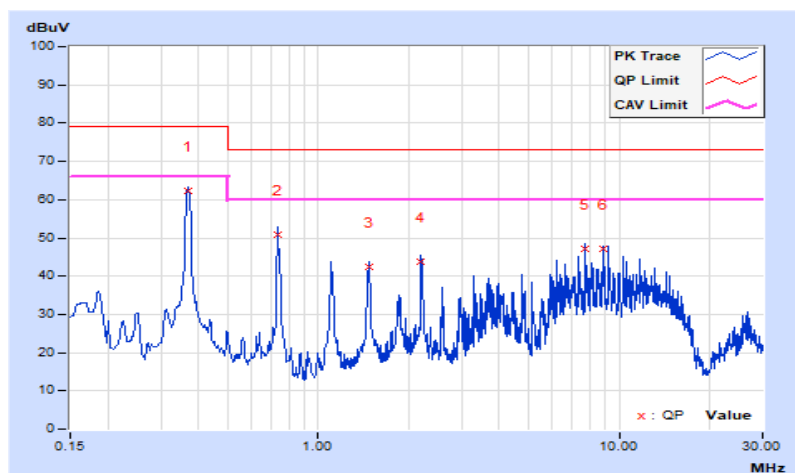
#### Mode A

Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	24 Vdc	Environmental Conditions	24 °C, 73% RH, 995.5 mbar
Tested by	Ed Lin		

Phase Of Power : Positive (+)										
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	0.36902	10.11	52.24	48.73	62.35	58.84	79.00	66.00	-16.65	-7.16
2	0.73466	10.13	40.72	40.40	50.85	50.53	73.00	60.00	-22.15	-9.47
3	1.46891	10.17	32.15	31.86	42.32	42.03	73.00	60.00	-30.68	-17.97
4	2.20128	10.20	33.71	33.50	43.91	43.70	73.00	60.00	-29.09	-16.30
5	7.71032	10.33	36.87	36.48	47.20	46.81	73.00	60.00	-25.80	-13.19
6	8.81156	10.35	36.63	35.93	46.98	46.28	73.00	60.00	-26.02	-13.72

#### 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

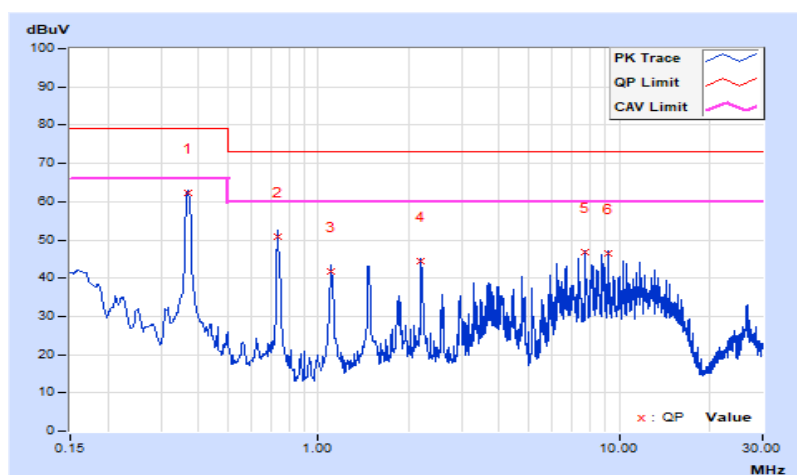


Frequency Range	150 kHz ~ 30 MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9 kHz
Input Power	24 Vdc	Environmental Conditions	24 °C, 73% RH, 995.5 mbar
Tested by	Ed Lin		

Phase Of Power : Negative (-)										
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	0.36902	10.11	52.14	48.58	62.25	58.69	79.00	66.00	-16.75	-7.31
2	0.73466	10.13	40.62	40.19	50.75	50.32	73.00	60.00	-22.25	-9.68
3	1.10179	10.15	31.69	31.22	41.84	41.37	73.00	60.00	-31.16	-18.63
4	2.20128	10.20	34.10	33.96	44.30	44.16	73.00	60.00	-28.70	-15.84
5	7.70545	10.32	36.61	36.29	46.93	46.61	73.00	60.00	-26.07	-13.39
6	9.17227	10.35	36.16	35.68	46.51	46.03	73.00	60.00	-26.49	-13.97

#### 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

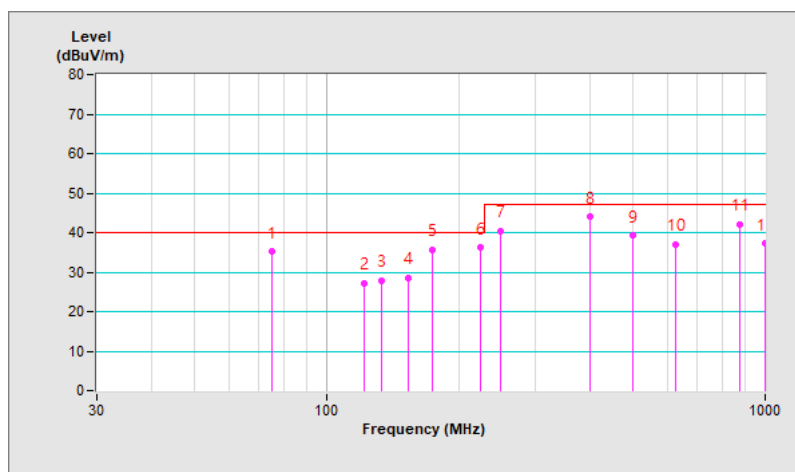
### Mode A

Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	24 Vdc	Environmental Conditions	32 °C, 77% RH, 1000 mbar
Tested By	Paul Chen		

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	75.02	35.13 QP	40.00	-4.87	4.00 H	111	49.65	-14.52
2	122.13	27.15 QP	40.00	-12.85	4.00 H	142	36.40	-9.25
3	133.26	27.94 QP	40.00	-12.06	4.00 H	38	37.09	-9.15
4	153.42	28.46 QP	40.00	-11.54	4.00 H	330	38.22	-9.76
5	175.02	35.67 QP	40.00	-4.33	4.00 H	193	46.78	-11.11
6	225.01	36.17 QP	40.00	-3.83	4.00 H	244	46.18	-10.01
7	250.01	40.44 QP	47.00	-6.56	3.83 H	249	47.58	-7.14
8	400.01	43.93 QP	47.00	-3.07	2.81 H	241	47.63	-3.70
9	499.99	39.16 QP	47.00	-7.84	2.07 H	14	41.24	-2.08
10	625.01	37.09 QP	47.00	-9.91	1.48 H	230	36.13	0.96
11	875.01	41.98 QP	47.00	-5.02	1.00 H	244	37.47	4.51
12	999.98	37.18 QP	47.00	-9.82	1.00 H	39	29.83	7.35

#### 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.

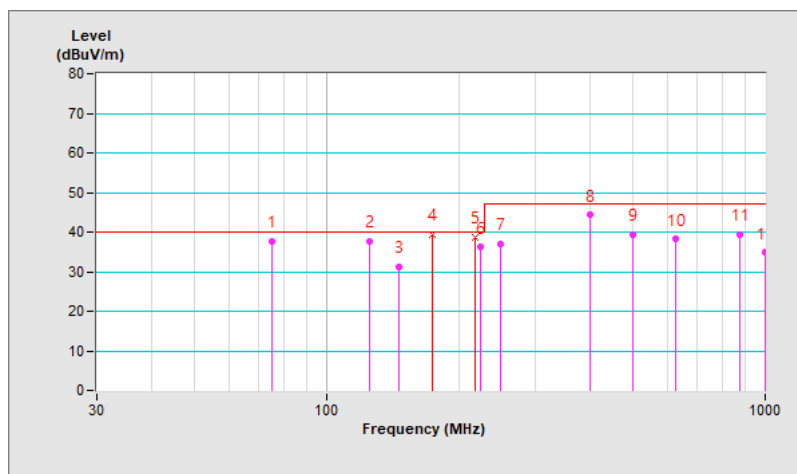


Frequency Range	30 MHz ~ 1 GHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP), 120 kHz
Input Power	24 Vdc	Environmental Conditions	32 °C, 77% RH, 1000 mbar
Tested By	Paul Chen		

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	74.98	37.61 QP	40.00	-2.39	1.87 V	232	52.14	-14.53
2	125.01	37.62 QP	40.00	-2.38	1.00 V	111	46.72	-9.10
3	146.64	31.15 QP	40.00	-8.85	1.00 V	192	40.60	-9.45
4	175.01	39.46 QP	40.00	-0.54	1.00 V	120	50.57	-11.11
5	218.00	38.69 QP	40.00	-1.31	1.00 V	312	49.36	-10.67
6	225.02	36.16 QP	40.00	-3.84	1.00 V	43	46.17	-10.01
7	250.01	37.11 QP	47.00	-9.89	1.00 V	358	44.25	-7.14
8	400.01	44.29 QP	47.00	-2.71	1.00 V	37	47.99	-3.70
9	500.01	39.28 QP	47.00	-7.72	1.00 V	344	41.36	-2.08
10	625.01	38.15 QP	47.00	-8.85	3.39 V	246	37.19	0.96
11	875.01	39.45 QP	47.00	-7.55	2.53 V	330	34.94	4.51
12	999.98	34.81 QP	47.00	-12.19	2.09 V	330	27.46	7.35

#### 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.



### 7.3 Radiated Emissions above 1 GHz

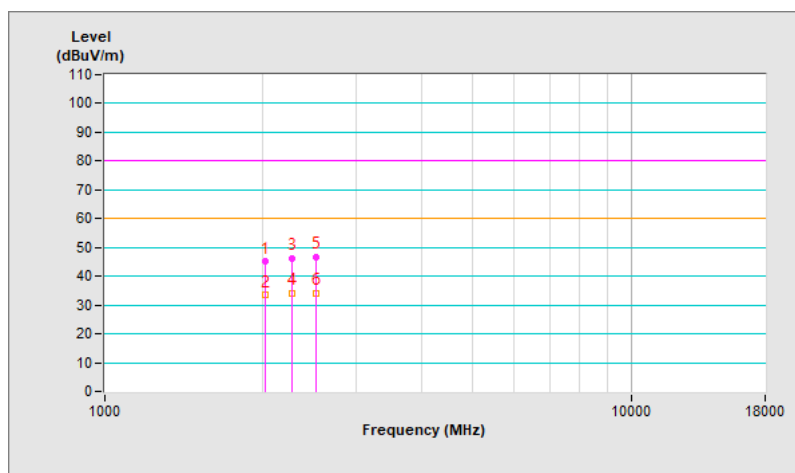
#### Mode A

Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	24 Vdc	Environmental Conditions	24 °C, 62% RH, 994.1 mbar
Tested By	Perry Yang		

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	2019.03	45.09 PK	80.00	-34.91	2.94 H	156	65.11	-20.02
2	2019.03	33.45 AV	60.00	-26.55	2.94 H	156	53.47	-20.02
3	2271.35	46.26 PK	80.00	-33.74	1.00 H	229	65.85	-19.59
4	2271.35	33.96 AV	60.00	-26.04	1.00 H	229	53.55	-19.59
5	2523.77	46.71 PK	80.00	-33.29	1.53 H	202	65.02	-18.31
6	2523.77	34.09 AV	60.00	-25.91	1.53 H	202	52.40	-18.31

#### 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.

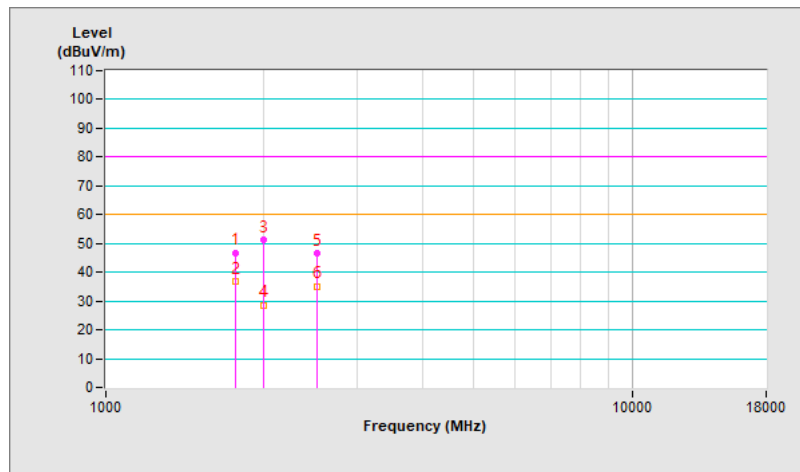


Frequency Range	1 GHz ~ 18 GHz	Detector Function & Resolution Bandwidth	Peak (PK) / Average (AV), 1 MHz
Input Power	24 Vdc	Environmental Conditions	24 °C, 62% RH, 994.1 mbar
Tested By	Perry Yang		

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	1766.39	46.66 PK	80.00	-33.34	1.04 V	160	67.91	-21.25
2	1766.39	36.63 AV	60.00	-23.37	1.04 V	160	57.88	-21.25
3	1993.67	51.11 PK	80.00	-28.89	2.20 V	0	71.29	-20.18
4	1993.67	28.64 AV	60.00	-31.36	2.20 V	0	48.82	-20.18
5	2523.77	46.48 PK	80.00	-33.52	1.72 V	166	64.79	-18.31
6	2523.77	34.93 AV	60.00	-25.07	1.72 V	166	53.24	-18.31

**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

### 8.1 Conducted Emissions from Power Ports

#### Mode A





## 8.2 Radiated Emissions up to 1 GHz

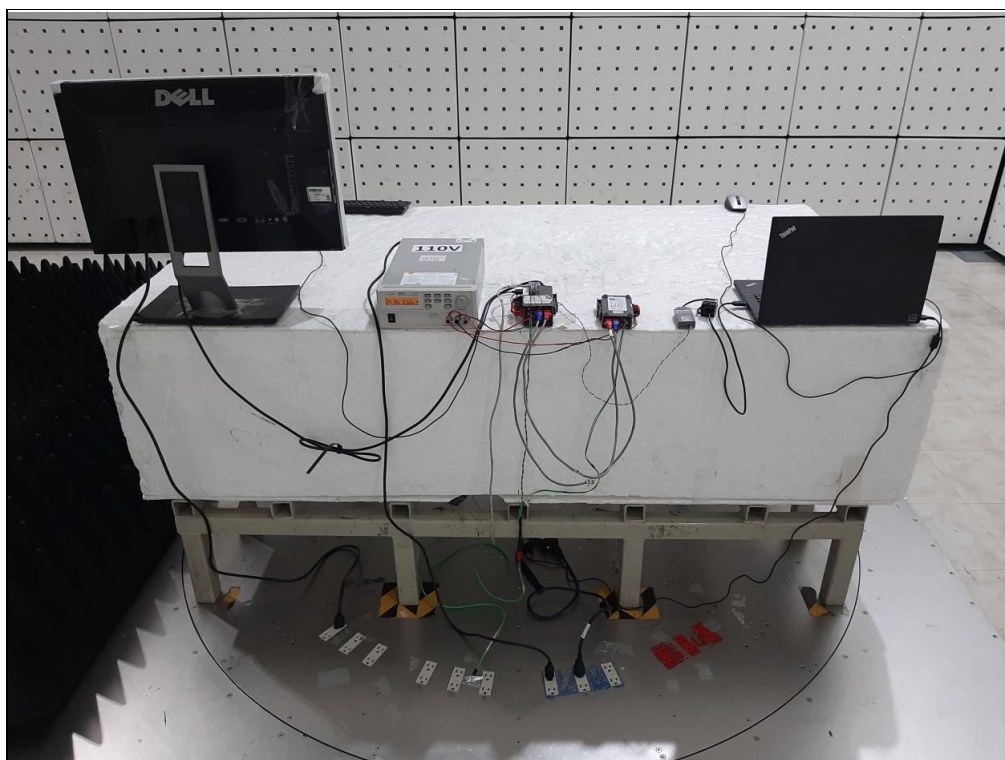
### Mode A





### 8.3 Radiated Emissions above 1 GHz

#### Mode A



## 9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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