

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)

Report No.: RFBCKS-WTW-P25070483-3 R1

FCC ID: NKRATTBGW720

Product: Wi-Fi 7 Residential Gateway

Brand: AT&T

Model No.: BGW720-400

Received Date: 2025/7/31

Test Date: 2025/11/7 ~ 2025/12/18

Issued Date: 2025/12/19

Applicant: WNC Corporation

Address: 20 Park Avenue II, Hsinchu Sciencer Park, Hsinchu 308, Taiwan, R.O.C

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

FCC Registration / 723255 / TW2022

Designation Number:

Approved by: _____

Wen Yu / Assistant Manager

Date: _____

2025/12/19

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Prepared by : Phoenix Huang / Specialist



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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P25070483-3	Original release.	2025/12/8
RFBCKS-WTW-P25070483-3 R1	Add the full continuous spectral plots for unwanted emissions measurements above and below 1 GHz.	2025/12/19

1 Certificate

Product: Wi-Fi 7 Residential Gateway

Brand: AT&T

Test Model: BGW720-400

Sample Status: Engineering sample

Applicant: WNC Corporation

Test Date: 2025/11/7 ~ 2025/12/18

Standard: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)

Measurement procedure: ANSI C63.10-2020

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 RF characteristics under the conditions specified in this report.

2 Summary of Test Results

Standard / Clause	Test Item	Result	Remark
15.205 /15.209 /15.247(d) 15.407(b)(9)	Unwanted Emissions below 1 GHz	Pass	Meet the requirement of limit.
15.205 /15.209 /15.247(d) 15.407(b) (1/2/3/4(i)/10) 15.407(b)(6)/15.407(b)(10)	Unwanted Emissions above 1 GHz	Pass	Meet the requirement of limit.
15.247(d)	Conducted Out of Band Emissions	Pass	Meet the requirement of limit.

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:

Parameter	Specification	Uncertainty (±)
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	3.1 dB
	30 MHz ~ 1 GHz	5.5 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	5.1 dB
	18 GHz ~ 40 GHz	5.3 dB
Conducted Out of Band Emissions	9 kHz ~ 40 GHz	2.6 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 General Description of EUT

Product	Wi-Fi 7 Residential Gateway
Brand	AT&T
Test Model	BGW720-400
Modulation Technology	DSSS, OFDM, OFDMA
Operating Frequency	WLAN (2.4 GHz): 2.412 GHz ~ 2.462 GHz WLAN (5 GHz): 5.18 GHz ~ 5.25 GHz 5.25 GHz ~ 5.32 GHz 5.5 GHz ~ 5.72 GHz 5.745 GHz ~ 5.825 GHz WLAN (6 GHz): 5.955 GHz ~ 6.415 GHz 6.425 GHz ~ 6.525 GHz 6.535 GHz ~ 6.865 GHz 6.875 GHz ~ 7.115 GHz

Note:

1. The EUT uses following accessories.

Item	Brand	Model	Specification
AC Adapter 1	AT&T	EPS48R1-16	AC Input: 120 V~, 1.1 A, 60 Hz DC Output: 12 V=, 4 A, 48 W DC Output Cable: 1.2 m, unshielded, with core AC Input Cable: 1.8 m, unshielded, without core Plug: US
AC Adapter 2	AT&T	EPS48R1-36	AC Input: 120 V~, 1.1 A, 60 Hz DC Output: 12 V=, 4 A, 48 W DC Output Cable: 1.2 m, unshielded, with core AC Input Cable: 1.8 m, unshielded, without core Plug: US

2. There are WLAN (2.4 GHz), WLAN (5 GHz) and WLAN (6 GHz) technology used for the EUT.

3. Simultaneously transmission combination.

Combination	Technology		
1	WLAN (2.4 GHz)	WLAN (5 GHz)	WLAN (6 GHz)

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna NO.	RF Chain NO.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type
1	0	WNC	48XPAB0F	3.91	2.4 ~ 2.4835	Dipole	ipex(MHF)
	3			6.27	5.15 ~ 5.25		
				6.27	5.25 ~ 5.35		
				5.73	5.47 ~ 5.725		
				5.47	5.725 ~ 5.85		
2	1	WNC	48XPAB0G	3.67	2.4 ~ 2.4835	Dipole	ipex(MHF)
	2			3.81	5.15 ~ 5.25		
				3.85	5.25 ~ 5.35		
				5.12	5.47 ~ 5.725		
				3.62	5.725 ~ 5.85		
3	2	WNC	48XPAB0H	3.45	2.4 ~ 2.4835	Dipole	ipex(MHF)
	1			4.07	5.15 ~ 5.25		
				4.83	5.25 ~ 5.35		
				4.51	5.47 ~ 5.725		
				4.51	5.725 ~ 5.85		
4	3	WNC	48XPAB0J	3.61	2.4 ~ 2.4835	Dipole	ipex(MHF)
	0			6.03	5.15 ~ 5.25		
				6.03	5.25 ~ 5.35		
				5.09	5.47 ~ 5.725		
				4.70	5.725 ~ 5.85		
8	0	WNC	48XPAB0N	4.53	5.925 ~ 6.425	Dipole	ipex(MHF)
				4.70	6.425 ~ 6.525		
				5.89	6.525 ~ 6.875		
				6.23	6.875 ~ 7.125		
7	1	WNC	48XPAB0M	5.44	5.925 ~ 6.425	Dipole	ipex(MHF)
				6.26	6.425 ~ 6.525		
				6.33	6.525 ~ 6.875		
				5.24	6.875 ~ 7.125		
6	2	WNC	48XPAB0L	5.54	5.925 ~ 6.425	Dipole	ipex(MHF)
				4.76	6.425 ~ 6.525		
				5.20	6.525 ~ 6.875		
				5.20	6.875 ~ 7.125		
5	3	WNC	48XPAB0K	2.96	5.925 ~ 6.425	Dipole	ipex(MHF)
				3.56	6.425 ~ 6.525		
				3.63	6.525 ~ 6.875		
				3.65	6.875 ~ 7.125		
9 (Rx only)	-	WNC	48XPAB0P	-	5.25 ~ 5.35	Dipole	ipex(MHF)
					5.47 ~ 5.725		

* Detail antenna specification please refer to antenna datasheet and/or antenna measurement report.

2. The directional antenna gain, please refer to the following table:

Frequency Range (GHz)	Directional Antenna Gain (dBi)
2.4 ~ 2.4835	5.81
5.15 ~ 5.25	6.31
5.25 ~ 5.35	6.31
5.47 ~ 5.725	6.38
5.725 ~ 5.85	6.38

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. The AC Adapter has the following models: EPS48R1-16 / EPS48R1-36. Pre-scan these models of AC Adapters and find the worst case as a representative test condition.
Worst Case:	1. AC Adapter worst condition: EPS48R1-16

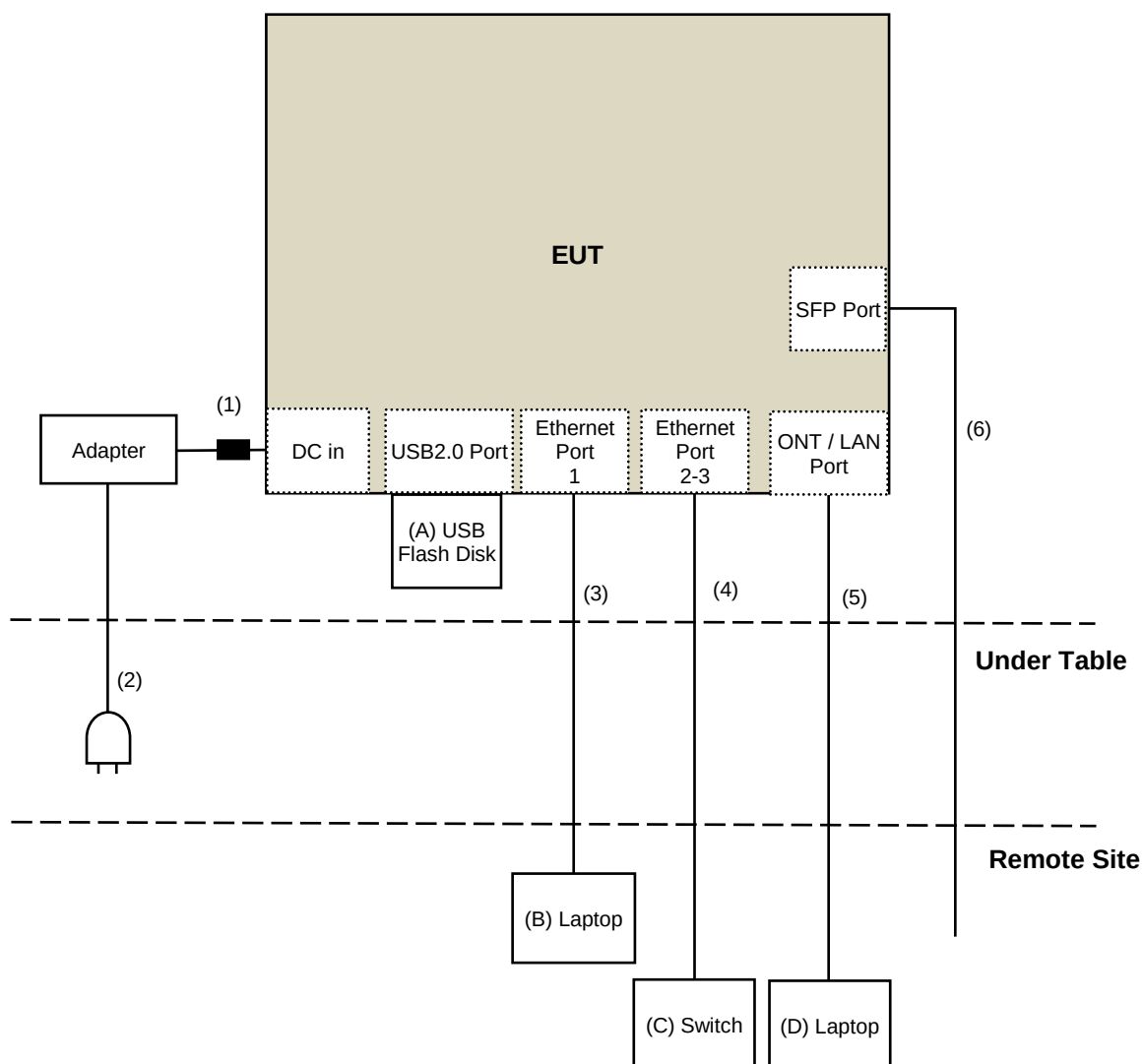
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Combination	Mode	Tested Channel
Unwanted Emissions below 1 GHz	1	802.11be (EHT40)	6
		802.11a	48
		802.11be (EHT320)	31
Unwanted Emissions above 1 GHz	1	802.11be (EHT40)	6
		802.11a	48
		802.11be (EHT320)	31
Conducted Out of Band Emissions	1	802.11be (EHT40)	6
		802.11a	48

3.4 Test Program Used and Operation Descriptions

Controlling software (DUT GUI-Version 2.25.2(r1044+a+165+a+9-fd22a4)) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.5 Connection Diagram of EUT and Peripheral Devices



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	USB Flash Disk	SanDisk	SDDDC3-032G-I35NB	BM22065835SW	N/A	Provided by Lab
B	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
C	SWITCH	D-Link	DGS-1005D	DR8WC92000523	N/A	Provided by Lab
D	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1.2	No	1	Supplied by applicant
2	AC Cable	1	1.8	No	0	Supplied by applicant
3	RJ-45 Cable	1	10	No	0	Provided by Lab
4	RJ-45 Cable	2	10	No	0	Provided by Lab
5	RJ-45 Cable	1	10	No	0	Provided by Lab
6	Fiber Cable	1	10	No	0	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-406	2025/9/17	2026/9/16
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Fixed Attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2025/2/15	2026/2/14
Loop Antenna TESEQ	HLA 6121	63620	2025/10/20	2026/10/19
MXE EMI Receiver Agilent	N9038A	MY51210202	2025/7/30	2026/7/29
Preamplifier EMCI	EMC330N	980701	2025/2/15	2026/2/14
	EMC001340	980142	2025/2/17	2026/2/16
RF Coaxial Cable mTJ	100100-CFD400LW-200	CFD400-200	2025/2/15	2026/2/14
	100100-CFD400LW-400	CFD400-400	2025/2/15	2026/2/14
	100100-CFD400LW-800	CFD400-800	2025/2/15	2026/2/14
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2025/12/18

4.2 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	N/A	N/A
Horn Antenna Schwarzbeck	BBHA 9120D	9120D-783	2024/11/10 2025/11/9	2025/11/9 2026/11/8
	BBHA 9170	9170-739	2024/11/10 2025/11/9	2025/11/9 2026/11/8
MXA Signal Analyzer Keysight	N9020B	MY60112410	2025/3/17	2026/3/16
Preamplifier EMCI	EMC12630SE	980688	2025/8/7	2026/8/6
	EMC184045SE	980387	2025/8/7	2026/8/6
RF Coaxial Cable EMCI	EMC102-KM-KM-1200	160924	2025/1/24	2026/1/23
	EMC102-KM-KM-4000	200214	2025/1/24	2026/1/23
	EMC104-SM-SM-1200	160922	2025/1/14	2026/1/13
	EMC104-SM-SM-2000	180502	2025/1/14	2026/1/13
	EMC104-SM-SM-6000	210704	2025/10/22	2026/10/21
Software	ADT_Radiated_V8.7.08	N/A	N/A	N/A

Notes:

1. The test was performed in 966 Chamber No. 4.
2. Tested Date: 2025/11/7 ~ 2025/12/18

4.3 Conducted Out of Band Emissions

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
MXA Signal Analyzer Keysight	N9020B	MY60112408	2025/3/12	2026/3/11
Software	ADT_RF Test Software V8	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room 2.
2. Tested Date: 2025/11/7

5 Limits of Test Items

5.1 Unwanted Emissions below 1 GHz

For FCC 15.247:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

For FCC 15.407:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).

5.2 Unwanted Emissions above 1 GHz

For FCC 15.247:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

For FCC 15.407 transmitters operating in the 5.150-5.850 GHz band:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To	Limit	
789033 D02 General UNII Test Procedure New Rules v02r01	Field Strength at 3 m	
	PK: 74 (dBμV/m)	AV: 54 (dBμV/m)

Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m) *
15.407(b)(2)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m) *
15.407(b)(3)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m) *
15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBμV/m) ^{*1} PK: 105.2 (dBμV/m) ^{*2} PK: 110.8 (dBμV/m) ^{*3} PK: 122.2 (dBμV/m) ^{*4}

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts).}$$

For FCC 15.407 transmitters operating in the 5.925-7.125 GHz band:

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
Above 960	500	3

Notes:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Frequencies (MHz)	EIRP Limit	Equivalent Field Strength at 3 m
5925 MHz > F > 7125 MHz	Peak: -7 (dBm/MHz)	88.2 (dBuV/m)
	Average: -27 (dBm/MHz)	68.2 (dBuV/m)

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

5.3 Conducted Out of Band Emissions

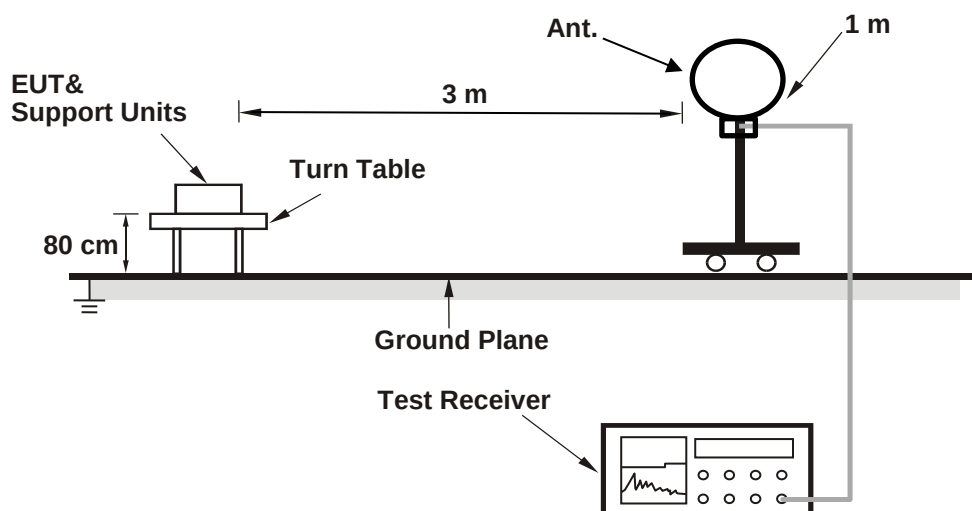
Below 30 dB of the highest emission level of operating band (in 100 kHz Resolution Bandwidth).

6 Test Arrangements

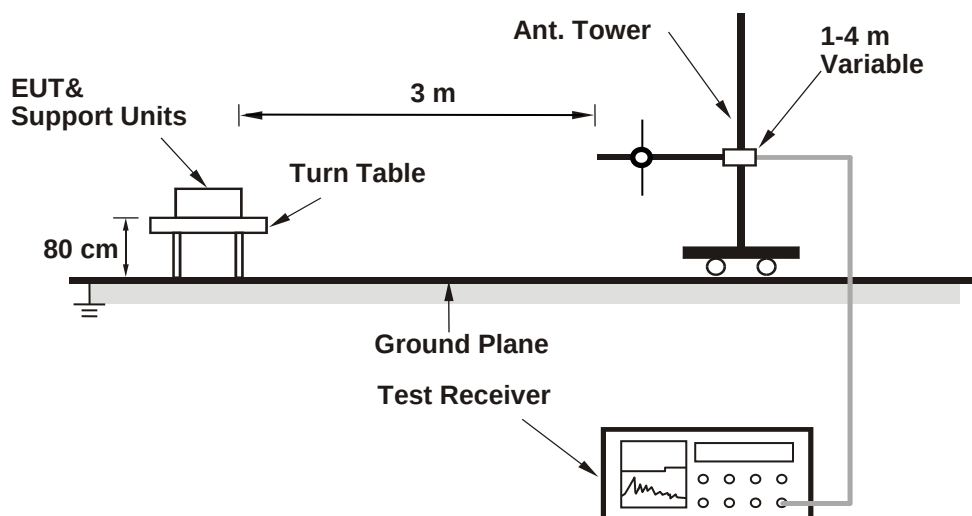
6.1 Unwanted Emissions below 1 GHz

6.1.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.1.2 Test Procedure

For Radiated emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- 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. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case 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, except for the frequency band (9 kHz to 90 kHz and 110 kHz to 490 kHz) set to average detect function and peak detect function.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 200 Hz at frequency below 150 kHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz or 10 kHz at frequency (150 kHz to 30 MHz).
3. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated emission above 30 MHz

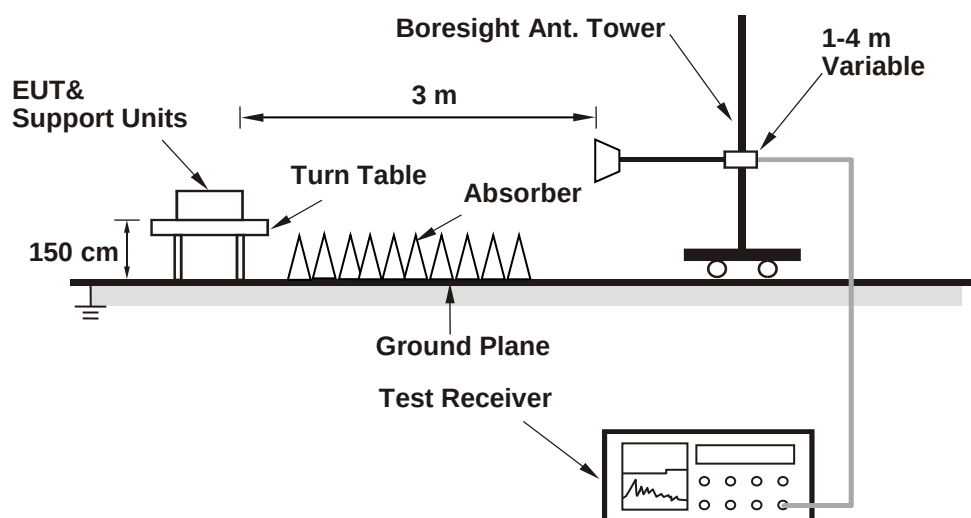
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna 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(QP) detect function, Average(AV) detect function, Peak(PK) detect function and specified bandwidth with maximum hold mode when the test frequencies less than or equal to 1 GHz.

Notes:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz (however, peak detector measurements may be used to determine compliance with QP requirements).
2. All modes of operation were investigated and the worst-case emissions are reported.

6.2 Unwanted Emissions above 1 GHz

6.2.1 Test Setup



For the actual test configuration, please refer to the attached file (Test Setup Photo).

6.2.2 Test Procedure

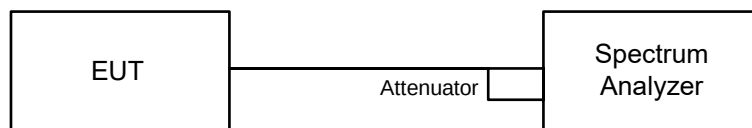
- The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna 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 peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Notes:

- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) and Average detection (AV) at frequency above 1 GHz.
- For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

6.3 Conducted Out of Band Emissions

6.3.1 Test Setup



6.3.2 Test Procedure

MEASUREMENT PROCEDURE REF

- Set instrument center frequency to DTS channel center frequency.
- Set the span to ≥ 1.5 times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW ≥ 300 kHz.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum PSD level.

MEASUREMENT PROCEDURE OOB

- Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
- Set RBW = 100 kHz.
- Set VBW ≥ 300 kHz.
- Detector = peak.
- Sweep = No faster than coupled (auto) time.
- Trace Mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level.

7 Test Results of Test Item

7.1 Unwanted Emissions below 1 GHz

FCC 15.247

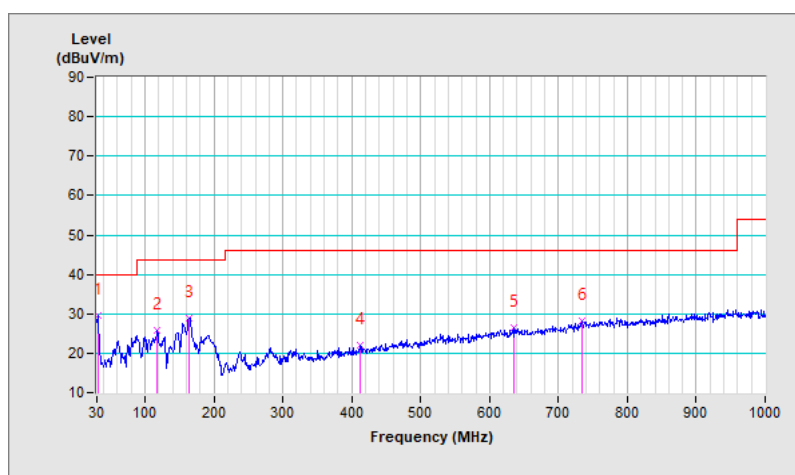
FCC 15.407

Combination	1		
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	PK: RB=120 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 65% RH
Tested By	Wayne 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	30.97	29.5 PK	40.0	-10.5	1.01 H	88	43.5	-14.0
2	117.30	25.8 PK	43.5	-17.7	1.99 H	263	40.7	-14.9
3	163.86	28.8 PK	43.5	-14.7	1.01 H	157	41.8	-13.0
4	413.15	22.0 PK	46.0	-24.0	1.01 H	326	31.3	-9.3
5	635.28	26.6 PK	46.0	-19.4	1.01 H	280	30.9	-4.3
6	734.22	28.3 PK	46.0	-17.7	1.01 H	182	31.0	-2.7

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

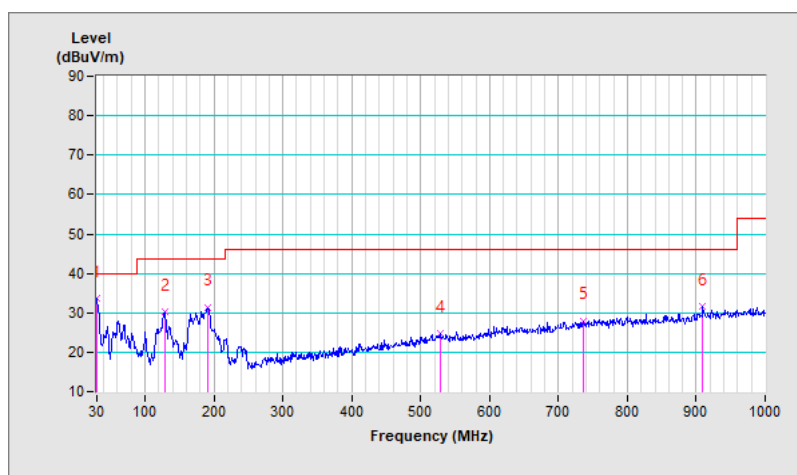


Combination	1		
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	PK: RB=120 kHz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	23 °C, 65% RH
Tested By	Wayne Chen		

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	30.00	33.7 PK	40.0	-6.3	1.99 V	191	47.2	-13.5
2	128.94	30.2 PK	43.5	-13.3	1.99 V	183	44.3	-14.1
3	191.02	31.5 PK	43.5	-12.0	1.99 V	132	47.0	-15.5
4	527.61	24.9 PK	46.0	-21.1	1.01 V	129	31.7	-6.8
5	735.19	28.1 PK	46.0	-17.9	1.99 V	348	30.7	-2.6
6	908.82	31.7 PK	46.0	-14.3	1.01 V	224	31.9	-0.2

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 of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.2 Unwanted Emissions above 1 GHz

FCC 15.247

FCC 15.407

Combination	1		
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75% RH
Tested By	Wayne 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	4874	42.6 PK	74.0	-31.4	1.41 H	240	38.2	4.4
2	4874	30.5 AV	54.0	-23.5	1.41 H	240	26.1	4.4
3	7311	45.6 PK	74.0	-28.4	1.51 H	211	34.7	10.9
4	7311	32.6 AV	54.0	-21.4	1.51 H	211	21.7	10.9
5	10480	49.9 PK	68.2	-18.3	2.75 H	351	35.2	14.7
6	15720	51.2 PK	74.0	-22.8	1.51 H	239	34.7	16.5
7	15720	39.1 AV	54.0	-14.9	1.51 H	239	22.6	16.5

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	4874	37.9 PK	74.0	-36.1	1.66 V	234	33.5	4.4
2	4874	26.1 AV	54.0	-27.9	1.66 V	234	21.7	4.4
3	7311	48.0 PK	74.0	-26.0	1.34 V	280	37.1	10.9
4	7311	34.7 AV	54.0	-19.3	1.34 V	280	23.8	10.9
5	10480	51.3 PK	68.2	-16.9	1.97 V	295	36.6	14.7
6	15720	53.7 PK	74.0	-20.3	2.11 V	256	37.2	16.5
7	15720	41.8 AV	54.0	-12.2	2.11 V	256	25.3	16.5

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.

Combination	1		
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=10 Hz, DET=Peak
Input Power	120 Vac, 60 Hz	Environmental Conditions	25 °C, 75% RH
Tested By	Wayne 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	12210	52.6 PK	74.0	-21.4	2.88 H	181	37.1	15.5
2	12210	41.3 AV	54.0	-12.7	2.88 H	181	25.8	15.5
3	18315	62.3 PK	74.0	-11.7	2.58 H	216	67.5	-5.2
4	18315	49.2 AV	54.0	-4.8	2.58 H	216	54.4	-5.2
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	12210	55.2 PK	74.0	-18.8	3.05 V	75	39.7	15.5
2	12210	44.7 AV	54.0	-9.3	3.05 V	75	29.2	15.5
3	18315	63.3 PK	74.0	-10.7	2.98 V	66	68.5	-5.2
4	18315	50.4 AV	54.0	-3.6	2.98 V	66	55.6	-5.2

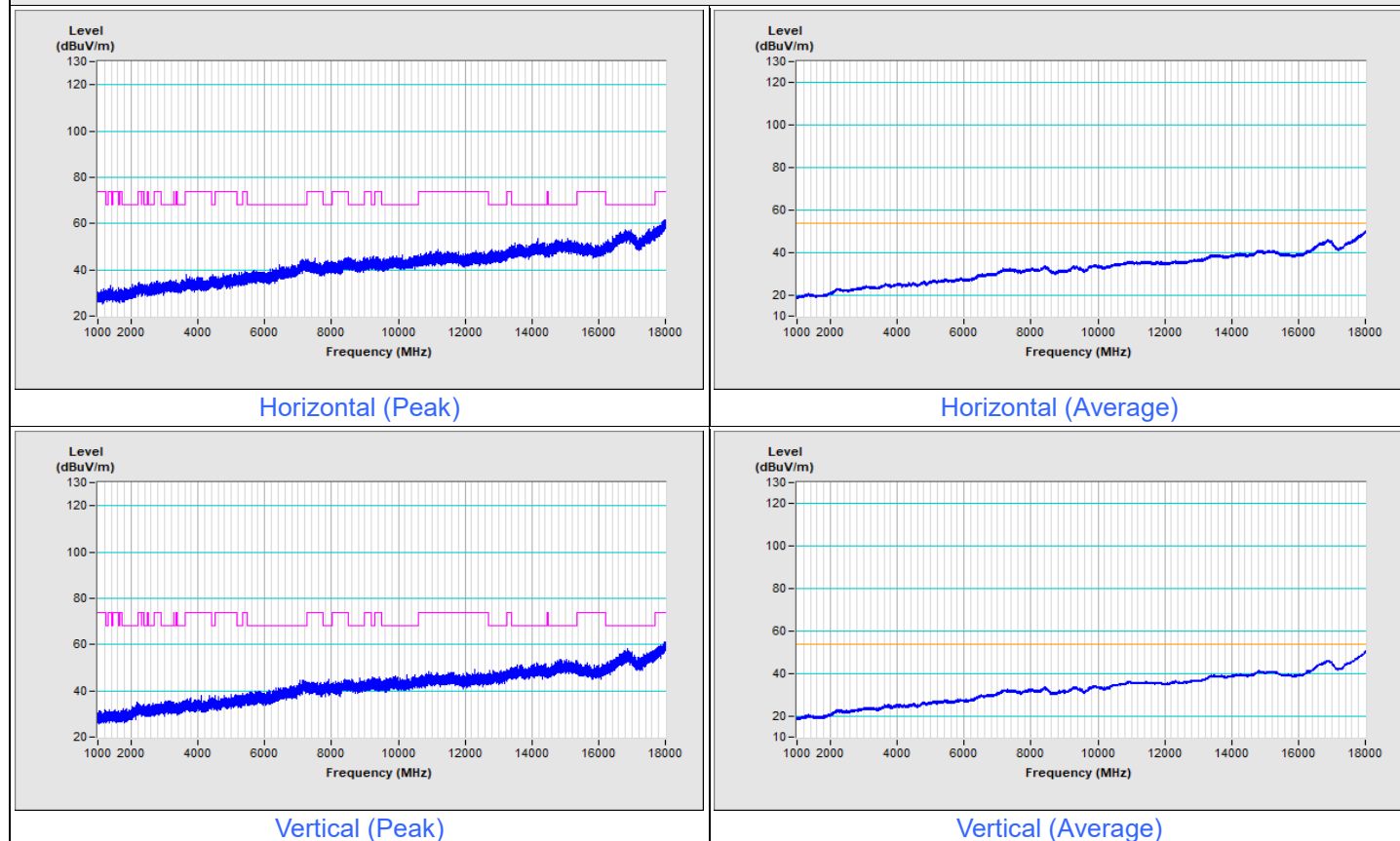
Remarks:

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.

Plot of Other Emission

Frequency Range	1 GHz ~ 18 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
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Combination 1

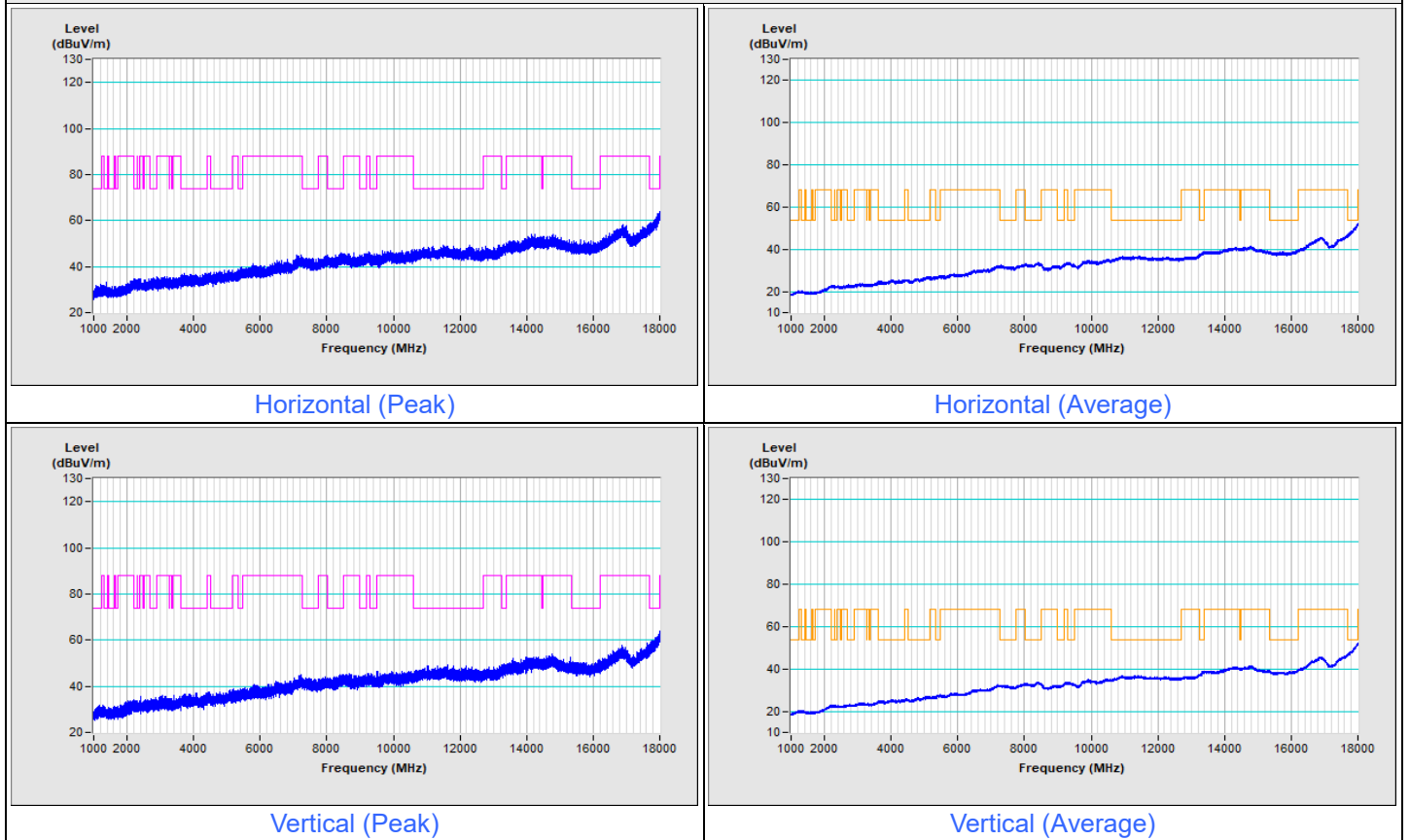


Notes:

1. For radiated emission test data, complete spectral plots shall be presented in the report only for the worst-case scenarios of each mode within each operating frequency band.
2. The frequency range 18 GHz ~ 40 GHz: After investigation, no any emissions were found to exist, therefore they are not recorded in this report.

Frequency Range	1 GHz ~ 18 GHz	Detector Function & Bandwidth	PK: RB=1 MHz, VB=3 MHz, DET=Peak AV: RB=1 MHz, VB=3 MHz, DET=RMS
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Combination 1



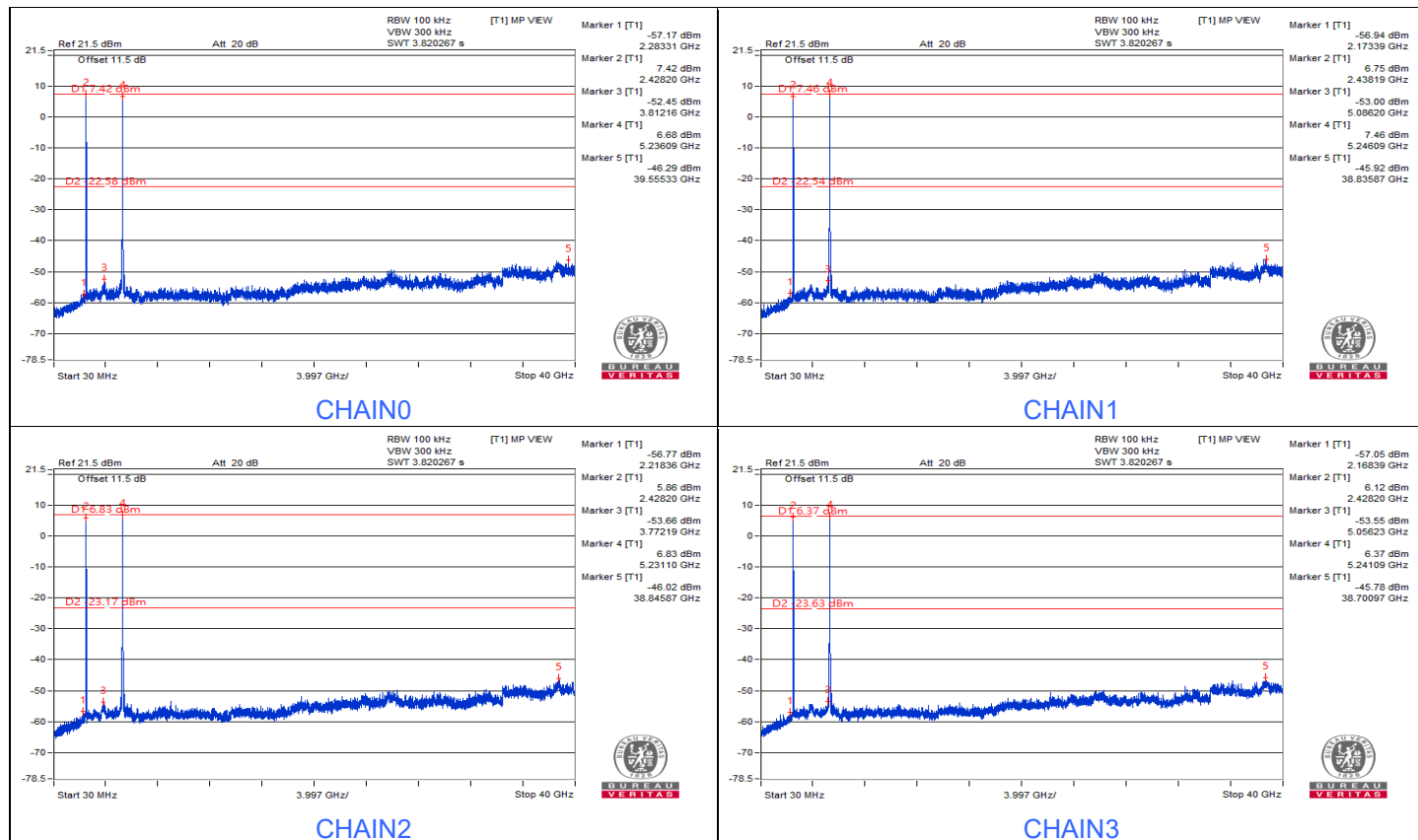
Notes:

1. For radiated emission test data, complete spectral plots shall be presented in the report only for the worst-case scenarios of each mode within each operating frequency band.
2. The frequency range 18 GHz ~ 40 GHz: After investigation, no any emissions were found to exist, therefore they are not recorded in this report.

7.3 Conducted Out of Band Emissions

Input Power:	120 Vac, 60 Hz	Environmental Conditions:	21°C, 55% RH	Tested By:	Henry Hsu
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Combination 1



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.

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