TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 15, Subpart C (Section 15.247)** **47 CFR FCC Part 27**
Report No.:	RFCVRG-WTW-P25050051-1
FCC ID:	TVE-250501
Product:	Secured Network Extension Device
Brand:	FORTINET
Model No.:	FEX-101G, FEX-211G
Series Model:	FortiExtender 101Gxxxxxxxxxx, FORTIEXTENDER-101Gxxxxxxxxxx, FEX-101Gxxxxxxxxxx, FortiExtender 211Gxxxxxxxxxx, FORTIEXTENDER-211Gxxxxxxxxxx, FEX-211Gxxxxxxxxxx, (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes or marketing purposes only) (Refer to item 3.1 for the more details)
Received Date:	2025/5/6
Test Date:	2025/6/13 ~ 2025/6/15
Issued Date:	2025/8/13
Applicant:	Fortinet Inc.
Address:	909 Kifer Road, Sunnyvale, CA. 94086 USA
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(1):	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
Test Location(2):	No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
FCC Registration / Designation Number:	Test Location:788550 / TW0003 for Test Location(1) 281270 / TW0032 for Test Location(2)

Approved by: Jeremy . Lin , **Date:** **2025/8/13**

Jeremy Lin / Project Engineer

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Prepared by : Gina Liu / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFCVRG-WTW-P25050051-1	Original release.	2025/8/13

1 Certificate

Product:	Secured Network Extension Device
Brand:	FORTINET
Test Model:	FEX-101G, FEX-211G
Series Model:	FortiExtender 101Gxxxxxxxxxx, FORTIEXTENDER-101Gxxxxxxxxxx, FEX-101Gxxxxxxxxxx, FortiExtender 211Gxxxxxxxxxx, FORTIEXTENDER-211Gxxxxxxxxxx, FEX-211Gxxxxxxxxxx, (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes or marketing purposes only) (Refer to item 3.1 for the more details)
Sample Status:	Engineering sample
Applicant:	Fortinet Inc.
Test Date:	2025/6/13 ~ 2025/6/15
Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 27
Measurement procedure:	ANSI C63.10-2013 ANSI C63.26-2015

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)	Unwanted Emissions below 1 GHz	Pass	Meet the requirement of limit.
Part 2.1053	Radiated Spurious Emissions below 1GHz	Pass	Meet the requirement of limit.
15.205 / 15.209 / 15.247(d)	Unwanted Emissions above 1 GHz	Pass	Meet the requirement of limit.
Part 2.1053	Radiated Spurious Emissions above 1GHz	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 dB
	30 MHz ~ 1 GHz	2.92 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 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	Secured Network Extension Device	
Brand	FORTINET	
Test Model	FEX-101G, FEX-211G	
Series Model	FortiExtender 101Gxxxxxxxxxx, FORTIEXTENDER-101Gxxxxxxxxxx, FEX-101Gxxxxxxxxxx, FortiExtender 211Gxxxxxxxxxx, FORTIEXTENDER-211Gxxxxxxxxxx, FEX-211Gxxxxxxxxxx, (where “x” can be used as “A-Z”, or “0-9”, or “-“, or blank for software changes or marketing purposes only)	
Modulation Type	BT-LE	GFSK
	LTE	Refer to note 1
Modulation Technology	BT-LE	DTS
	LTE	OFDM, OFDMA, SC-FDMA
Operating Frequency	BT	2402 ~ 2480 MHz
	LTE	LTE Band 41 : 2496 ~ 2690 MHz

Note:

1. All models are listed as below. Model: FEX-101G is representative for the final tests.

Model	FEX-101G	FEX-211G
Contain WWAN Module	Telit / LN920A6-WW	Telit / LN920A12-WW
Support Modulation Type	QPSK, 16QAM, 64QAM	QPSK, 16QAM, 64QAM, 256QAM
Contain WWAN Module FCC ID	RI7LN920	
Contain WWAN Module IC ID	5131A-LN920	

Model	Difference
FEX-101G	All models are electrically identical, different model names are for marketing purpose.
FortiExtender 101Gxxxxxxxxxx	
FORTIEXTENDER-101Gxxxxxxxxxx	
FEX-101Gxxxxxxxxxx	

Model	Difference
FEX-211G	All models are electrically identical, different model names are for marketing purpose.
FortiExtender 211Gxxxxxxxxxx	
FORTIEXTENDER-211Gxxxxxxxxxx	
FEX-211Gxxxxxxxxxx	

2. Simultaneously transmission combination.

Combination	Technology	
1	BT	WWAN
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

3.2 Antenna Description of EUT

The BT antenna information of EUT is listed as below.

Antenna NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type	Connector Type	*Cable Length
1	Dongguan RF Electronic Technology Co., Ltd	U00T02S000N07587	3.74	2.4~2.4835GHz	PIFA	ipex(MHF)	75mm

The WWAN antenna information of EUT is listed as below.

Antenna NO.	Brand	Model	Antenna Net Gain(dBi)	Frequency range	Antenna Type
1	INPAQ TECHNOLOGY CO., LTD	RFDPA171400SMTB802	2.45	2496~2690 MHz	Dipole

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

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis (antenna is 90 degrees) 2. For Adapter and PoE Worst Condition: Adapter

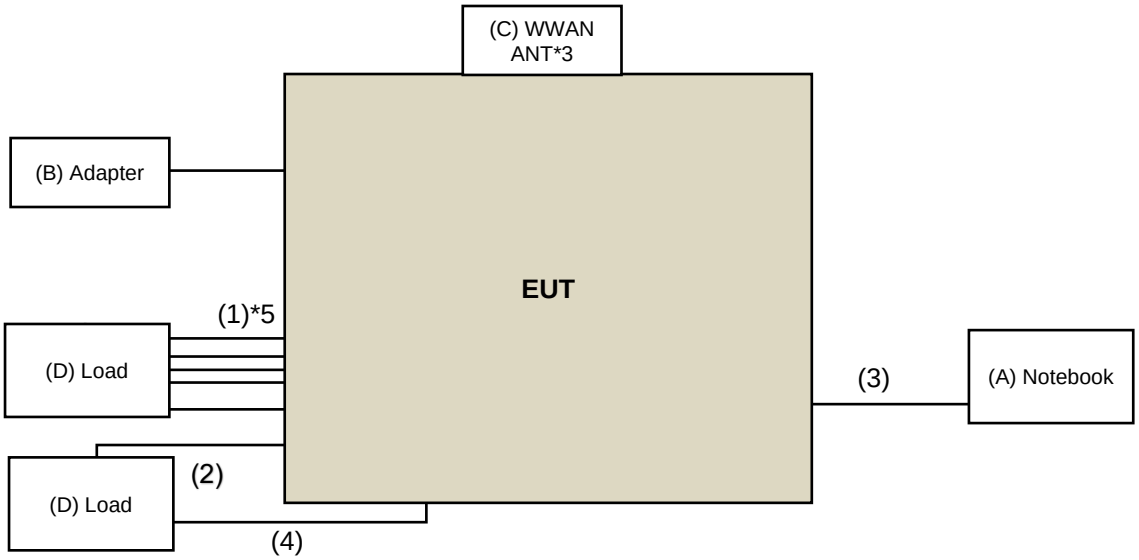
Following channel(s) was (were) selected for the final test as listed below:

Test Item	Combination	Mode	Tested Channel
Unwanted Emissions below 1 GHz	1	BT-LE 1M	39
Radiated Spurious Emissions below 1GHz		LTE B41	40620
Unwanted Emissions above 1 GHz	1	BT-LE 1M	39
Radiated Spurious Emissions above 1GHz		LTE B41	40620

3.4 Test Program Used and Operation Descriptions

Controlling software WWAN: EUT link Simulator ,BT：teraterm has been activated to set the EUT under transmission condition continuously at specific channel frequency.

3.5 Connection Diagram of EUT and Peripheral Devices



Under Table

3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	HP	15s-du0xxx	N/A	N/A	Provided by Lab
B	Adapter	APD	WA-36W12R	N/A	N/A	Supplied by applicant
C	WWAN ANT	N/A	N/A	N/A	N/A	Supplied by applicant
D	Load	N/A	N/A	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	RJ-45 Cable	5	1.5	N	0	Provided by Lab
2	RJ-45 Cable	1	1.5	N	0	Provided by Lab
3	Console Cable	1	0.5	N	0	Supplied by applicant
4	Console Cable	1	1.7	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 Unwanted Emissions below 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower KaiTuo	N/A	N/A	N/A	N/A
Antenna Tower Controller KaiTuo	KT-2000	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-995	2024/10/9	2025/10/8
Loop Antenna TESEQ	HLA 6121	45745	2024/8/21	2025/8/20
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier EMCI	EMC330N	980783	2025/1/14	2026/1/13
PXA Signal Analyzer Keysight	N9030B	MY57140488	2025/3/11	2026/3/10
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201245	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-3000	201250	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-9000	201252(with PAD)	2025/1/14	2026/1/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208675	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 7.
2. Tested Date: 2025/6/15

4.2 Radiated Spurious Emissions below 1GHz

Refer to section 4.1 to get the tested date and information of the instruments.

4.3 Unwanted Emissions above 1 GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower KaiTuo	N/A	N/A	N/A	N/A
Antenna Tower Controller KaiTuo	KT-2000	N/A	N/A	N/A
Horn Antenna RFSPIN	DRH18-E	210104A18E	2024/11/10	2025/11/9
Horn Antenna Schwarzbeck	BBHA 9170	9170-1048	2024/11/10	2025/11/9
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier EMCI	EMC118A45SE	980810	2024/12/26	2025/12/25
	EMC184045SE	980787	2025/1/14	2026/1/13
PXA Signal Analyzer Keysight	N9030B	MY57140488	2025/3/11	2026/3/10
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2025/1/14	2026/1/13
	EMC101G-KM-KM-3000	201258	2025/1/14	2026/1/13
	EMC101G-KM-KM-5000	201261	2025/1/14	2026/1/13
	EMC104-SM-SM-1000	210101	2025/1/14	2026/1/13
	EMC104-SM-SM-3000	201242	2025/1/14	2026/1/13
	EMC104-SM-SM-9000	201230	2025/1/14	2026/1/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208675	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 7.
2. Tested Date: 2025/6/13

4.4 Radiated Spurious Emissions above 1GHz

Refer to section 4.3 to get the tested date and information of the instruments.

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).

5.2 Radiated Spurious Emissions below 1GHz

For Part 27
According to FCC 47 CFR part 27.53(m)(4), on any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to –25 dBm.

5.3 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.

5.4 Radiated Spurious Emissions above 1GHz

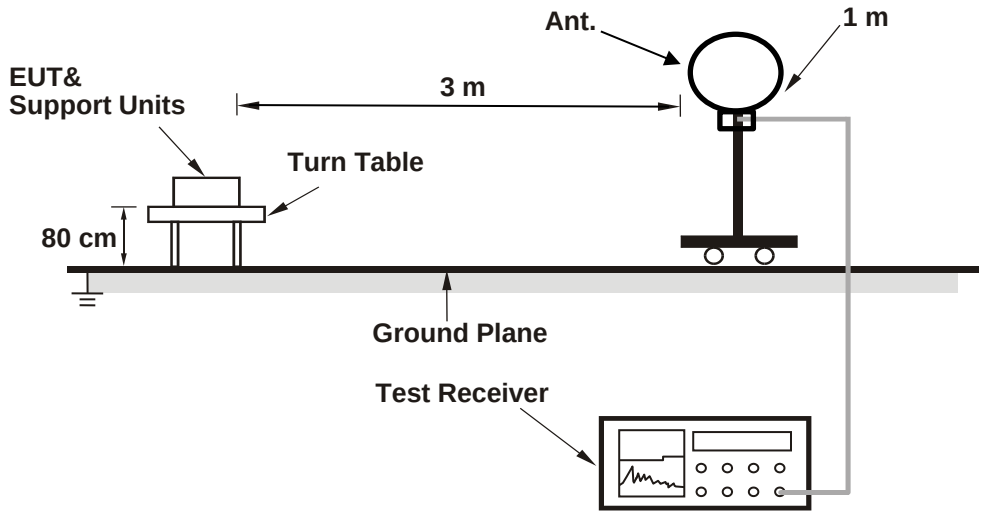
For Part 27
According to FCC 47 CFR part 27.53(m)(4), on any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to –25 dBm.

6 Test Arrangements

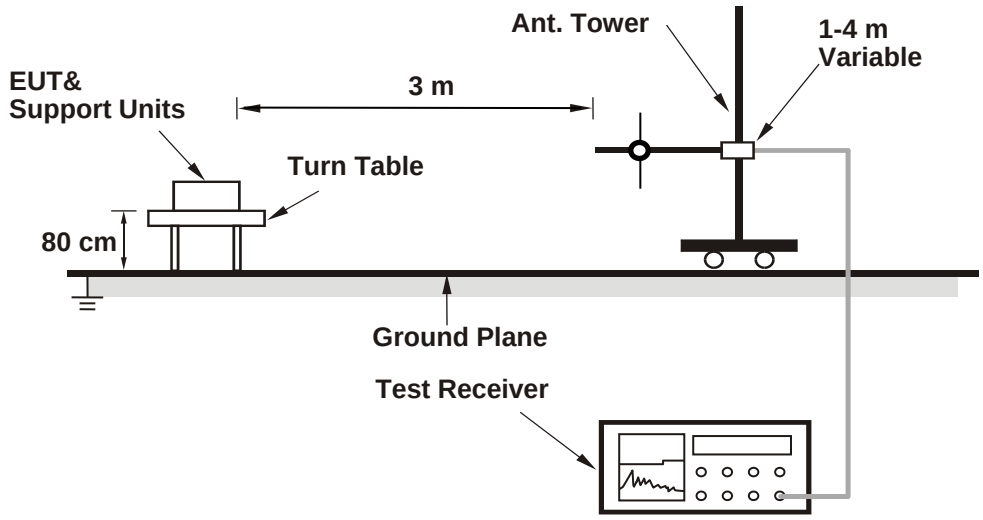
6.1 Unwanted Emissions below 1 GHz

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 detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

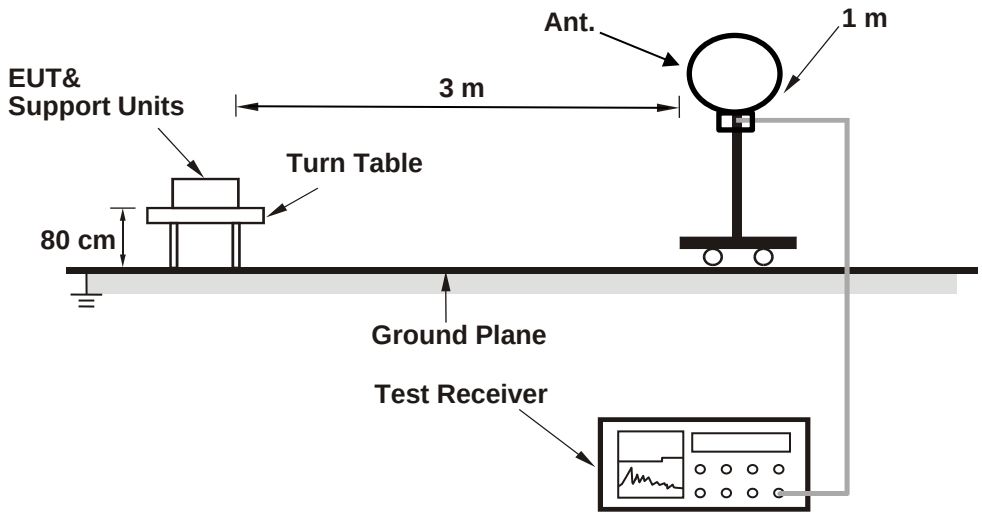
Notes:

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.
2. All modes of operation were investigated and the worst-case emissions are reported.

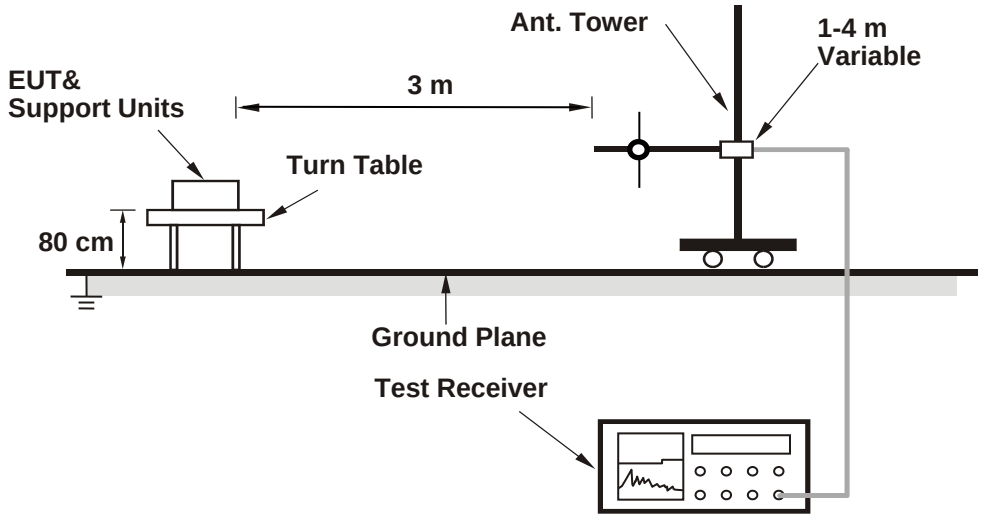
6.2 Radiated Spurious Emissions below 1GHz

6.2.1 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).

6.2.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. 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.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following ANSI C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

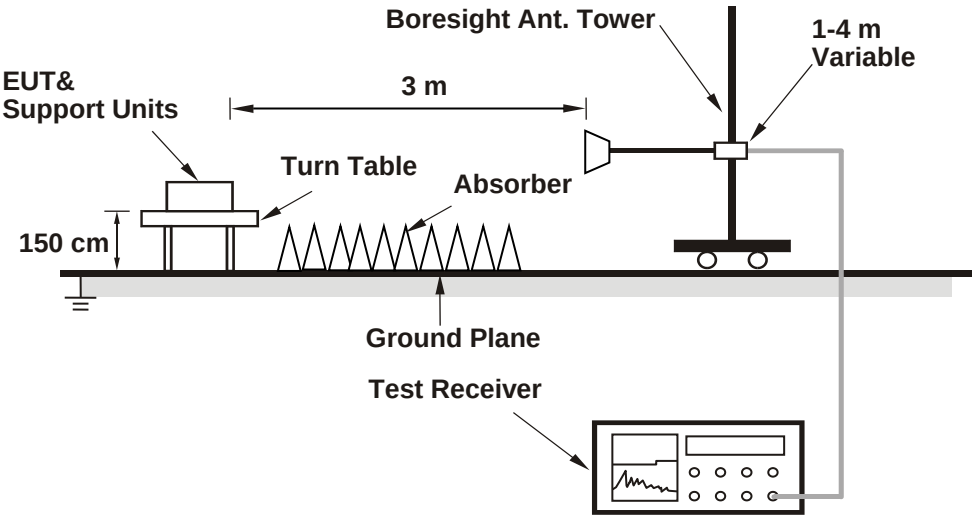
f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.
2. The amplitude of spurious emissions in the range 9 kHz to 30 MHz which are attenuated more than 20 dB below the permissible value need not be reported.

6.3 Unwanted Emissions above 1 GHz

6.3.1 Test Setup



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

6.3.2 Test Procedure

a. 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.

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 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.

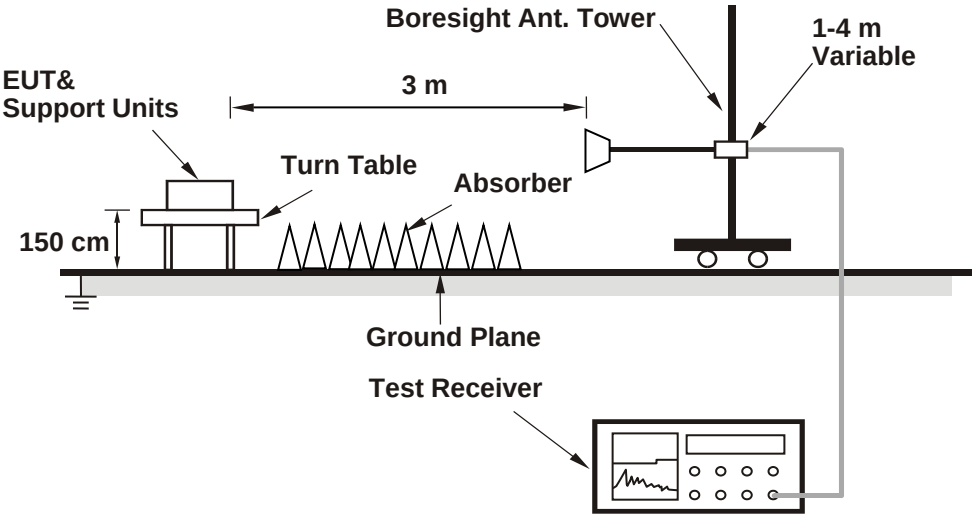
Notes:

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

6.4 Radiated Spurious Emissions above 1GHz

6.4.1 Test Setup

For radiated emission above 1 GHz



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

6.4.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 1.5 m height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. 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.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following ANSI C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.

7 Test Results of Test Item

7.1 Unwanted Emissions below 1 GHz

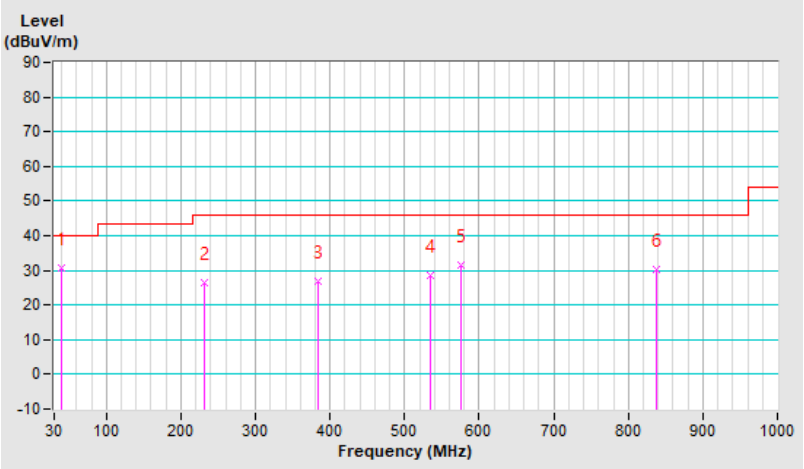
FCC 15.247

Combination	1		
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

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	**39.70**	**30.6 QP**	**40.0**	**-9.4**	**1.01 H**	**18**	**44.1**	**-13.5**
2	230.79	26.3 QP	46.0	-19.7	2.00 H	62	41.5	-15.2
3	384.05	26.8 QP	46.0	-19.2	1.01 H	64	36.8	-10.0
4	535.37	28.4 QP	46.0	-17.6	1.51 H	4	35.1	-6.7
5	576.11	31.6 QP	46.0	-14.4	1.51 H	2	37.0	-5.4
6	837.04	30.4 QP	46.0	-15.6	1.51 H	63	31.6	-1.2

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.

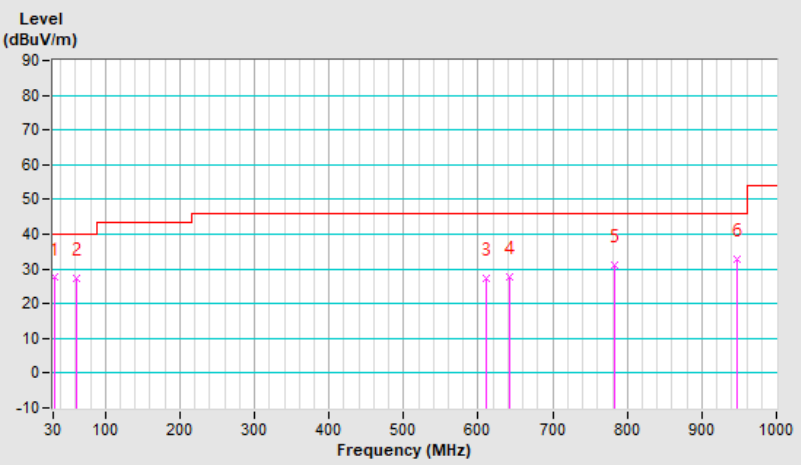


Combination	1		
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	QP: RB=120 kHz, DET=Quasi-Peak
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

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	31.94	27.5 QP	40.0	-12.5	1.49 V	350	41.7	-14.2
2	62.01	27.1 QP	40.0	-12.9	1.49 V	258	41.4	-14.3
3	610.06	27.3 QP	46.0	-18.7	1.99 V	320	31.7	-4.4
4	643.04	27.9 QP	46.0	-18.1	1.99 V	188	31.9	-4.0
5	783.69	31.0 QP	46.0	-15.0	1.99 V	228	32.5	-1.5
6	946.65	32.7 QP	46.0	-13.3	1.00 V	190	32.4	0.3

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 Radiated Spurious Emissions below 1GHz

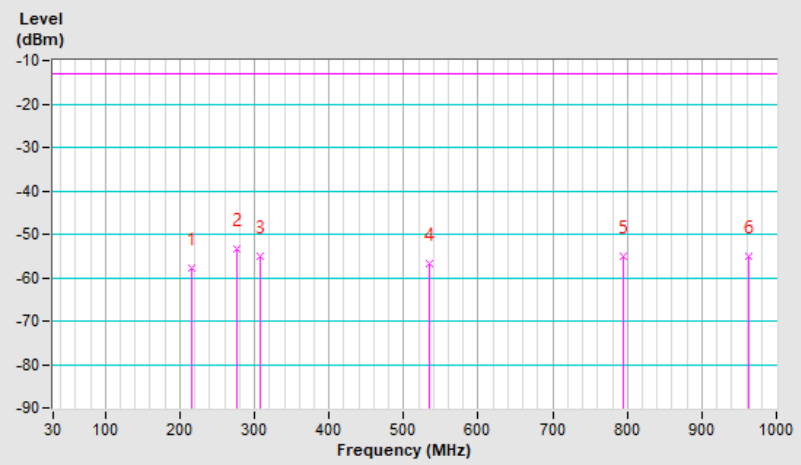
FCC Part 27

Combination	1		
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	216.24	-57.79	-13.00	-44.79	1.51 H	210	53.74	-111.53
2	277.35	-53.51	-13.00	-40.51	1.01 H	161	54.51	-108.02
3	307.42	-55.11	-13.00	-42.11	1.01 H	164	52.05	-107.16
4	535.37	-56.86	-13.00	-43.86	1.51 H	2	45.03	-101.89
5	794.36	-55.18	-13.00	-42.18	2.00 H	325	41.53	-96.71
6	962.17	-55.14	-13.00	-42.14	1.51 H	222	39.64	-94.78

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP 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.

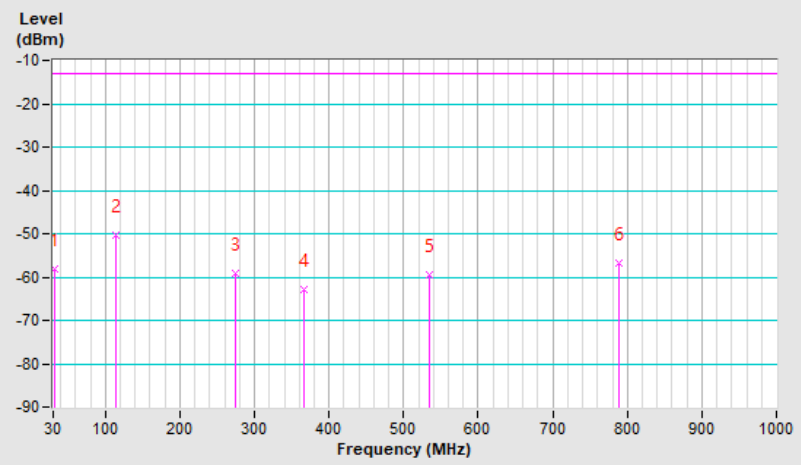


Combination	1		
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	31.94	-58.11	-13.00	-45.11	1.00 V	273	51.43	-109.54
2	**113.42**	**-50.36**	**-13.00**	**-37.36**	**1.99 V**	**2**	**60.47**	**-110.83**
3	275.41	-59.07	-13.00	-46.07	1.00 V	236	49.03	-108.10
4	366.59	-62.73	-13.00	-49.73	1.00 V	188	42.96	-105.69
5	535.37	-59.51	-13.00	-46.51	1.00 V	349	42.38	-101.89
6	789.51	-56.66	-13.00	-43.66	1.49 V	162	40.00	-96.66

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP 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.



7.3 Unwanted Emissions above 1 GHz

FCC 15.247

Combination	1		
Frequency Range	1 GHz ~ 25 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**	22 °C, 67% RH
Tested By	Wade Huang		

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	*2480	100.8 PK			1.28 H	346	70.2	30.6
2	*2480	100.2 AV			1.28 H	346	69.6	30.6
3	2483.5	56.1 PK	74.0	-17.9	1.28 H	346	25.4	30.7
4	2483.5	39.8 AV	54.0	-14.2	1.28 H	346	9.1	30.7
5	4960	48.4 PK	74.0	-25.6	1.02 H	311	40.2	8.2
6	4960	39.9 AV	54.0	-14.1	1.02 H	311	31.7	8.2
7	7440	59.3 PK	74.0	-14.7	1.55 H	75	46.0	13.3
8	7440	52.0 AV	54.0	-2.0	1.55 H	75	38.7	13.3
9	12400	60.5 PK	74.0	-13.5	1.53 H	197	43.7	16.8
10	12400	51.6 AV	54.0	-2.4	1.53 H	197	34.8	16.8
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	*2480	91.3 PK			1.43 V	141	60.7	30.6
2	*2480	90.6 AV			1.43 V	141	60.0	30.6
3	2483.5	56.2 PK	74.0	-17.8	1.43 V	141	25.5	30.7
4	2483.5	36.7 AV	54.0	-17.3	1.43 V	141	6.0	30.7
5	4960	46.2 PK	74.0	-27.8	1.54 V	40	38.0	8.2
6	4960	37.5 AV	54.0	-16.5	1.54 V	40	29.3	8.2
7	7440	59.6 PK	74.0	-14.4	1.51 V	13	46.3	13.3
8	**7440**	**53.5 AV**	**54.0**	**-0.5**	**1.51 V**	**13**	**40.2**	**13.3**
9	12400	61.3 PK	74.0	-12.7	2.22 V	181	44.5	16.8
10	12400	53.1 AV	54.0	-0.9	2.22 V	181	36.3	16.8

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.
5. " * ": Fundamental frequency, the limit was restricted at the RF Output Power.

7.4 Radiated Spurious Emissions above 1GHz

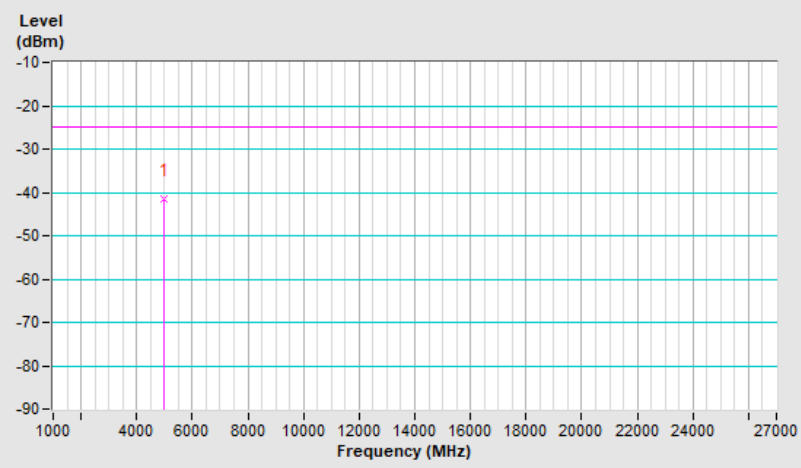
FCC Part 27

Combination	1		
Frequency Range	1 GHz ~ 27 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**5007.00**	**-41.69**	**-25.00**	**-16.69**	**1.34 H**	**225**	**45.96**	**-87.65**

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

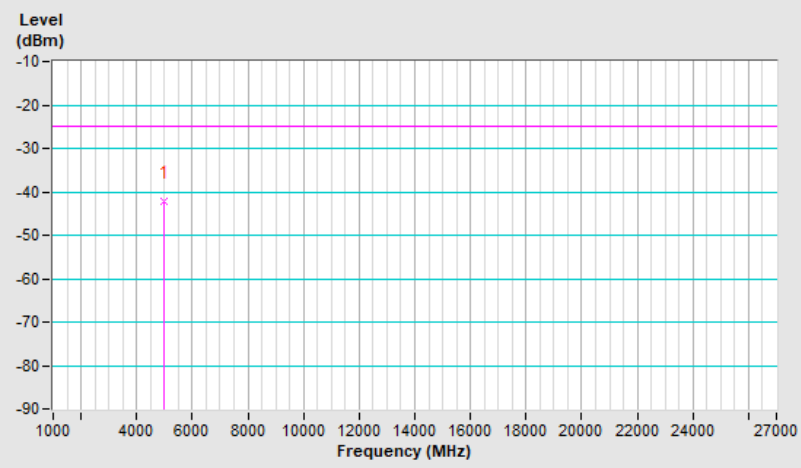


Combination	1		
Frequency Range	1 GHz ~ 27 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	22 °C, 67% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5007.00	-42.18	-25.00	-17.18	1.65 V	173	45.47	-87.65

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP 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.

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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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