

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 22
47 CFR FCC Part 27
47 CFR FCC Part 90
47 CFR FCC Part 2

Report No.: RFBCKS-WTW-P23060549A

FCC ID: NKR-VMC-9628RV1

Product: 2G/3G/4G Module

Brand: WNC

Model No.: VMC-9628RV1

Received Date: 2023/6/21

Test Date: 2024/9/25~2024/9/26

Issued Date: 2024/9/30

Applicant: Wistron NeWeb Corporation

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 281270 / TW0032

Designation Number:

Approved by: _____

Jeremy Lin

Date: _____

2024/9/30

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P23060549A	Original release.	2024/9/30

1 Certificate

Product: 2G/3G/4G Module

Brand: WNC

Test Model: VMC-9628RV1

Sample Status: Engineering sample

Applicant: Wistron NeWeb Corporation

Test Date: 2024/9/25~2024/9/26

Standard: 47 CFR FCC Part 22
47 CFR FCC Part 27
47 CFR FCC Part 90
47 CFR FCC Part 2

Measurement procedure: ANSI/TIA/EIA-603-E 2016
ANSI C63.26-2015
KDB 971168 D01 Power Meas License Digital Systems v03r01
KDB 971168 D02 Misc Rev Approv License Devices v02r02

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

47 CFR FCC Part 22 47 CFR FCC Part 27 47 CFR FCC Part 90 47 CFR FCC Part 2			
Standard / Clause	Test Item	Result	Remark
FCC 47 CFR Part 2.1046 FCC 47 CFR Part 22.913 (a) FCC 47 CFR Part 27.50(d) FCC 47 CFR Part 27.50(h) FCC 47 CFR Part 27.50(c) FCC 47 CFR Part 27.50(b) FCC 47 CFR Part 27.50(a) FCC 47 CFR Part 90.635(b)	Effective Radiated Power and Equivalent Isotropically Radiated Power	NA	Refer to Note 1 below
FCC 47 CFR Part 2.1047	Modulation Characteristics	NA	Refer to Note 1 below
FCC 47 CFR Part 22.913 (d) FCC 47 CFR Part 27.50(d)	Peak to Average Ratio	NA	Refer to Note 1 below
FCC 47 CFR Part 2.1049	Bandwidth	NA	Refer to Note 1 below
FCC 47 CFR Part 2.1051 FCC 47 CFR Part 22.917 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(m) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 27.53(a) FCC 47 CFR Part 90.691	Conducted Spurious Emissions	NA	Refer to Note 1 below
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 22.917 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(m) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 27.53(a) FCC 47 CFR Part 90.691	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -21.79 dB at 947.62 MHz
FCC 47 CFR Part 2.1053 FCC 47 CFR Part 22.917 FCC 47 CFR Part 27.53(h) FCC 47 CFR Part 27.53(m) FCC 47 CFR Part 27.53(g) FCC 47 CFR Part 27.53(c)(f) FCC 47 CFR Part 27.53(a) FCC 47 CFR Part 90.691	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -16.33 dB at 5190.00 MHz
FCC 47 CFR Part 2.1055 FCC 47 CFR Part 22.355 FCC 47 CFR Part 27.54 FCC 47 CFR Part 90.231	Frequency Stability	NA	Refer to Note 1 below

Note:

1. Only Radiated Spurious Emission were verified according to original worst case mode and recorded in this report. The others testing data refer to original test report.
2. 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) (±)
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	3.59 dB
	30 MHz ~ 1 GHz	3.64 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	2.29 dB
	18 GHz ~ 40 GHz	2.29 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	2G/3G/4G Module
Brand	WNC
Test Model	VMC-9628RV1
Status of EUT	Engineering sample
Power Supply Rating	3.8Vdc (From DC power supply or host)

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report of BV CPS report no.: RFBCKS-WTW-P23060549. Compared with the original report, the difference is that the software in this report disabled LTE Band 41 data, verified the Radiated Spurious Emissions worst mode and the others testing data refer to original test report.

2. EUT Overview

Band / Bandwidth	TX Frequency Range (MHz)	Max. ERP Power	Emission Designator
WCDMA Band 5	826.4-846.6	216.272mW(23.35dBm)	4M14F9W

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power		Emission Designator	
		QPSK	16QAM	QPSK	16QAM
LTE Band 7 (Channel Bandwidth 5MHz)	2502.5-2567.5	299.916mW (24.77dBm)	242.661mW (23.85dBm)	4M50G7D	4M49D7W
LTE Band 7 (Channel Bandwidth 10MHz)	2505.0-2565.0	304.089mW (24.83dBm)	243.220mW (23.86dBm)	8M96G7D	8M95D7W
LTE Band 7 (Channel Bandwidth 15MHz)	2507.5-2562.5	301.995mW (24.80dBm)	244.343mW (23.88dBm)	13M4G7D	13M4D7W
LTE Band 7 (Channel Bandwidth 20MHz)	2510.0-2560.0	306.196mW (24.86dBm)	246.604mW (23.92dBm)	17M9G7D	17M9D7W
LTE Band 38 (Channel Bandwidth 5MHz)	2572.5-2617.5	274.789mW (24.39dBm)	221.309mW (23.45dBm)	4M50G7D	4M49D7W
LTE Band 38 (Channel Bandwidth 10MHz)	2575.0-2615.0	275.423mW (24.40dBm)	222.331mW (23.47dBm)	8M95G7D	8M95D7W
LTE Band 38 (Channel Bandwidth 15MHz)	2577.5-2612.5	277.971mW (24.44dBm)	226.986mW (23.56dBm)	13M4G7D	13M4D7W
LTE Band 38 (Channel Bandwidth 20MHz)	2580.0-2610.0	289.068mW (24.61dBm)	234.963mW (23.71dBm)	17M9G7D	17M9D7W

Band / Bandwidth		TX Frequency Range (MHz)	Max. ERP Power		Emission Designator	
			QPSK	16QAM	QPSK	16QAM
LTE Band 5 (Channel Bandwidth 1.4MHz)		824.7-848.3	236.048mW (23.73dBm)	191.426mW (22.82dBm)	1M09G7D	1M09D7W
LTE Band 5 (Channel Bandwidth 3MHz)		825.5-847.5	236.048mW (23.73dBm)	189.671mW (22.78dBm)	2M70G7D	2M70D7W
LTE Band 5 (Channel Bandwidth 5MHz)		826.5-846.5	237.137mW (23.75dBm)	192.309mW (22.84dBm)	4M50G7D	4M49D7W
LTE Band 5 (Channel Bandwidth 10MHz)		829.0-844.0	238.232mW (23.77dBm)	192.752mW (22.85dBm)	8M96G7D	8M97D7W
For Part 22	LTE Band 26 (Channel Bandwidth 1.4MHz)	824.7-848.3	215.774mW (23.34dBm)	175.792mW (22.45dBm)	1M09G7D	1M09D7W
	LTE Band 26 (Channel Bandwidth 3MHz)	825.5-847.5	216.272mW (23.35dBm)	177.011mW (22.48dBm)	2M70G7D	2M70D7W
	LTE Band 26 (Channel Bandwidth 5MHz)	826.5-846.5	220.800mW (23.44dBm)	178.238mW (22.51dBm)	4M50G7D	4M49D7W
	LTE Band 26 (Channel Bandwidth 10MHz)	829.0-844.0	218.776mW (23.40dBm)	178.649mW (22.52dBm)	8M96G7D	8M96D7W
	LTE Band 26 (Channel Bandwidth 15MHz)	831.5-841.5	218.776mW (23.40dBm)	177.419mW (22.49dBm)	13M4G7D	13M4D7W
For Part 90	LTE Band 26 (Channel Bandwidth 1.4MHz)	814.7-823.3	215.278mW (23.33dBm)	176.198mW (22.46dBm)	1M09G7D	1M09D7W
	LTE Band 26 (Channel Bandwidth 3MHz)	815.5-822.5	214.783mW (23.32dBm)	175.792mW (22.45dBm)	2M70G7D	2M70D7W
	LTE Band 26 (Channel Bandwidth 5MHz)	816.5-821.5	220.293mW (23.43dBm)	177.419mW (22.49dBm)	4M50G7D	4M49D7W
	LTE Band 26 (Channel Bandwidth 10MHz)	819.0	216.770mW (23.36dBm)	173.380mW (22.39dBm)	8M96G7D	8M96D7W

3. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type		Dipole	
Antenna Connector		SMA	
Item	Antenna No.	Band	Gain (dBi)
LTE	ANT1/ ANT2	Band 5	2
		Band 7	2
		Band 26	2
		Band 38	2
WCDMA	ANT0	Band 5	2

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	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:	X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis For radiated spurious emission testing, proceed to the worst case in the original report. Details are as follows.

For WCDMA Band 5

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	4233 (846.60 MHz)	-	-	WCDMA

For LTE Band 5

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	20525 (836.50 MHz)	10 MHz	QPSK	1 RB

For LTE Band 7

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	21100 (2535.00 MHz)	20 MHz	QPSK	1 RB

For LTE Band 26 (Part 22)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	26915 (836.50 MHz)	15 MHz	QPSK	1 RB

For LTE Band 26 (Part 90)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	26740 (819.00 MHz)	10 MHz	QPSK	1 RB

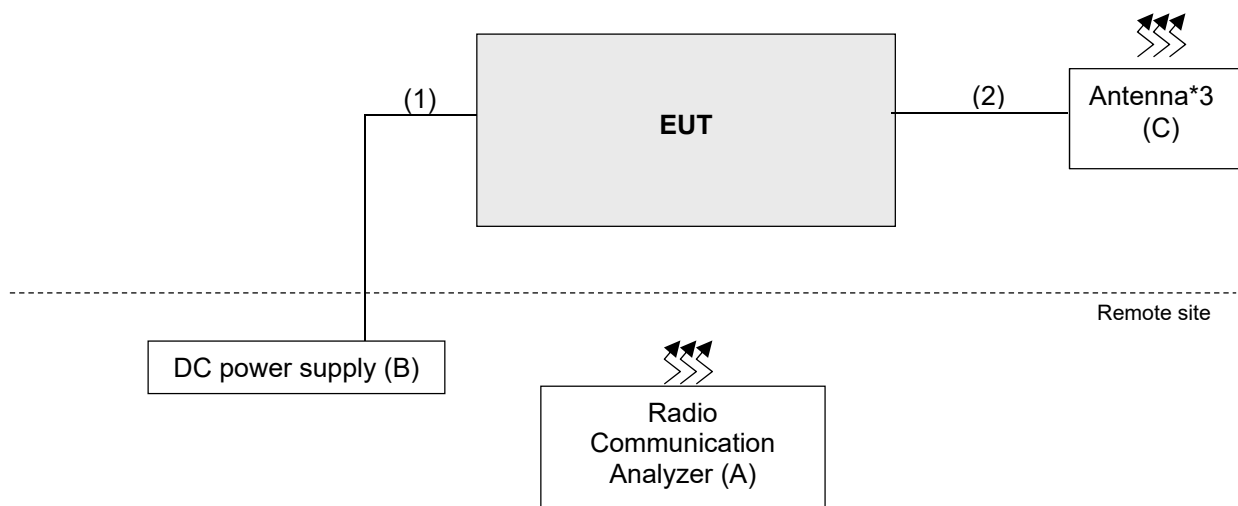
For LTE Band 38

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	38000 (2595.00MHz)	20MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	38000 (2595.00MHz)	20MHz	QPSK	1 RB

3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the Radio Communication Analyzer to test the connection when it is powered on.

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	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	N/A	Provided by Lab
B	DC power supply	JIN YIH Technology	SP3051	N/A	N/A	Provided by Lab
C	Antenna*3	N/A	N/A	N/A	N/A	Supplied by applicant

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1	DC Cable	1	1	No	0	Supplied by applicant
2	Antenna Cable	3	1.6	Yes	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 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1214	2023/10/17	2024/10/16
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
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	980798	2024/1/15	2025/1/14
	EMC001340	980201	2024/9/24	2025/9/23
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201248	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-3000	201249	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-9000	201251(with PAD)	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2024/9/26

4.2 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFA-515BSN	N/A	N/A	N/A
EXA Signal Analyzer Agilent	N9010A	MY52220207	2023/12/28	2024/12/27
Horn Antenna RFSPIN	DRH18-E	210104A18E	2023/11/12	2024/11/11
Horn Antenna Schwarzbeck	BBHA 9170	9170-1049	2023/11/12	2024/11/11
MXE EMI Receiver Agilent	N9038A	MY52260177	2024/9/19	2025/9/18
Preamplifier Agilent	83017A	MY39501357	2024/6/12	2025/6/11
Preamplifier EMCI	EMC184045SE	980788	2024/1/15	2025/1/14
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2024/1/15	2025/1/14
	EMC101G-KM-KM-3000	201258	2024/1/15	2025/1/14
	EMC101G-KM-KM-5000	201261	2024/1/15	2025/1/14
	EMC104-SM-SM-1000	210103	2024/1/15	2025/1/14
	EMC104-SM-SM-3000	201241	2024/1/15	2025/1/14
	EMC104-SM-SM-9000	201244	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-201SS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208676	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 9.
2. Tested Date: 2024/9/25

5 Limits of Test Items

5.1 Radiated Spurious Emissions below 1GHz

For WCDMA Band 5, LTE Band 5, LTE Band 26 (Part 22):

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13 dBm.

For LTE Band 7, LTE Band 38:

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.

For LTE Band 26 (Part 90):

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

For §90.691(a), RBW = 100 kHz for offset greater than 37.5 kHz from channel edge is allowed.

5.2 Radiated Spurious Emissions above 1GHz

LTE Band 38:

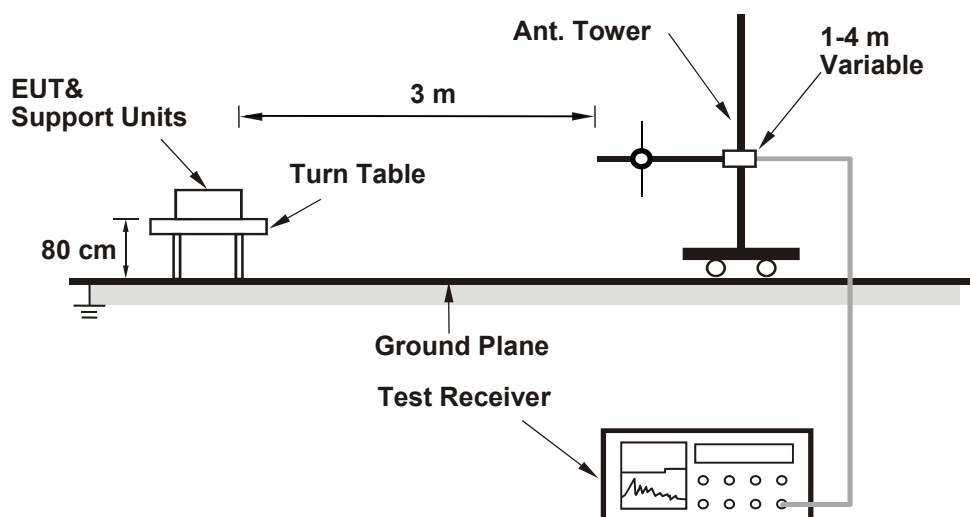
According to FCC 47 CFR part 27.53(m)(4), on any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least $55 + 10 \log(P)$ dB. The emission limit equal to -25 dBm.

6 Test Arrangements

6.1 Radiated Spurious Emissions below 1GHz

6.1.1 Test Setup

For radiated emission 30 MHz to 1 GHz



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

6.1.2 Test Procedure

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

- 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.
- 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.
- 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.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

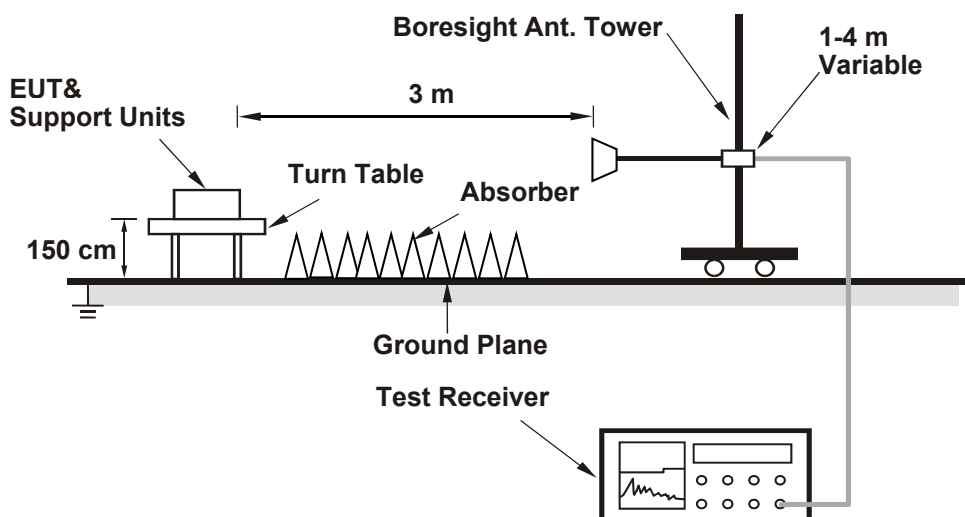
Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
- The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

6.2 Radiated Spurious Emissions above 1GHz

6.2.1 Test Setup

For radiated emission above 1 GHz



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

6.2.2 Test Procedure

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

- 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.
- 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.
- 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.
- Following C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; 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.

7 Test Results of Test Item

7.1 Radiated Spurious Emissions below 1GHz

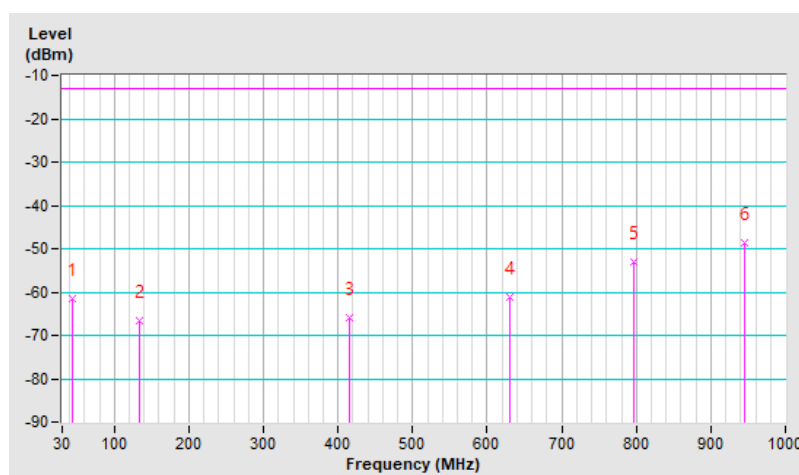
7.1.1 WCDMA Band V

RF Mode	WCDMA Band V	Channel	CH 4233 : 846.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.58	-61.54	-13.00	-48.54	1.50 H	163	49.20	-110.74
2	132.82	-66.72	-13.00	-53.72	1.25 H	4	44.79	-111.51
3	416.06	-65.89	-13.00	-52.89	1.00 H	265	41.12	-107.01
4	629.46	-61.05	-13.00	-48.05	1.25 H	14	40.97	-102.02
5	796.30	-52.92	-13.00	-39.92	1.00 H	332	46.78	-99.70
6	944.71	-48.80	-13.00	-35.80	1.00 H	314	48.94	-97.74

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP 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.

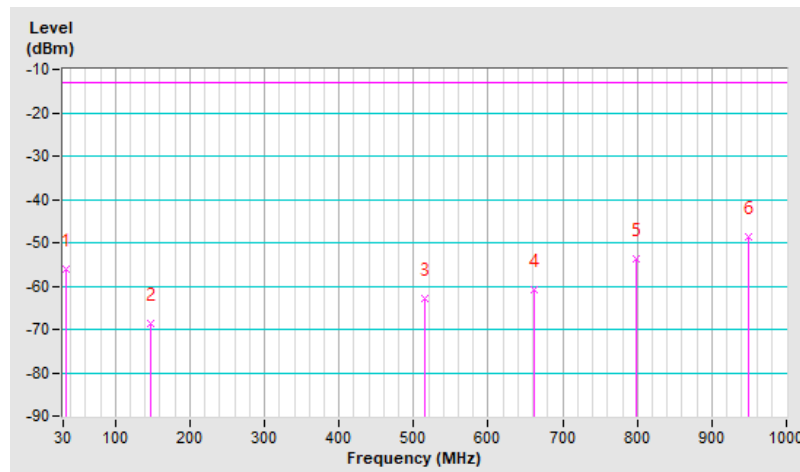


RF Mode	WCDMA Band V	Channel	CH 4233 : 846.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.85	-55.97	-13.00	-42.97	1.25 V	2	55.69	-111.66
2	147.37	-68.64	-13.00	-55.64	1.00 V	18	41.89	-110.53
3	515.97	-62.86	-13.00	-49.86	1.50 V	358	41.75	-104.61
4	661.47	-60.94	-13.00	-47.94	1.00 V	10	40.86	-101.80
5	798.24	-53.89	-13.00	-40.89	1.00 V	5	45.73	-99.62
6	948.59	-48.53	-13.00	-35.53	1.25 V	19	49.17	-97.70

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP 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.



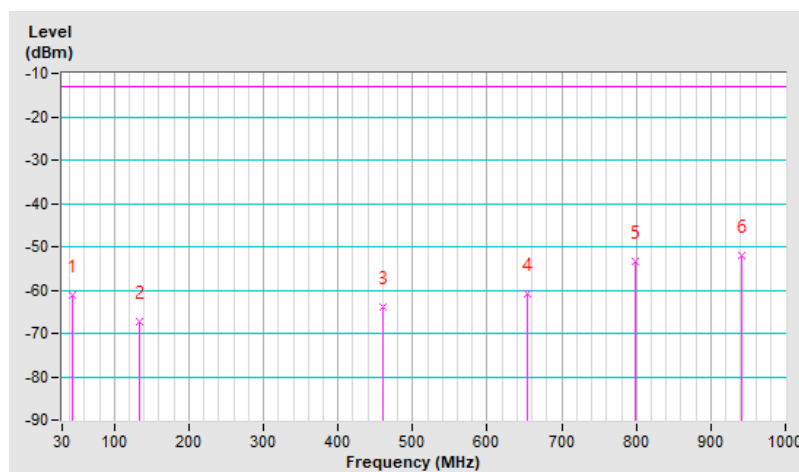
7.1.2 LTE Band 5

RF Mode	LTE Band 5 Channel Bandwidth: 10MHz	Channel	CH 20525 : 836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.58	-61.17	-13.00	-48.17	1.25 H	69	49.57	-110.74
2	132.82	-67.42	-13.00	-54.42	1.00 H	335	44.09	-111.51
3	459.71	-64.03	-13.00	-51.03	1.50 H	184	41.67	-105.70
4	654.68	-60.74	-13.00	-47.74	1.00 H	106	41.02	-101.76
5	799.21	-53.47	-13.00	-40.47	1.25 H	127	46.12	-99.59
6	940.83	-51.99	-13.00	-38.99	1.00 H	211	45.74	-97.73

Remarks:

- ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
+ 20log(D) – 104.8 – 2.15
- Margin value = ERP – Limit value
- The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
- 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.

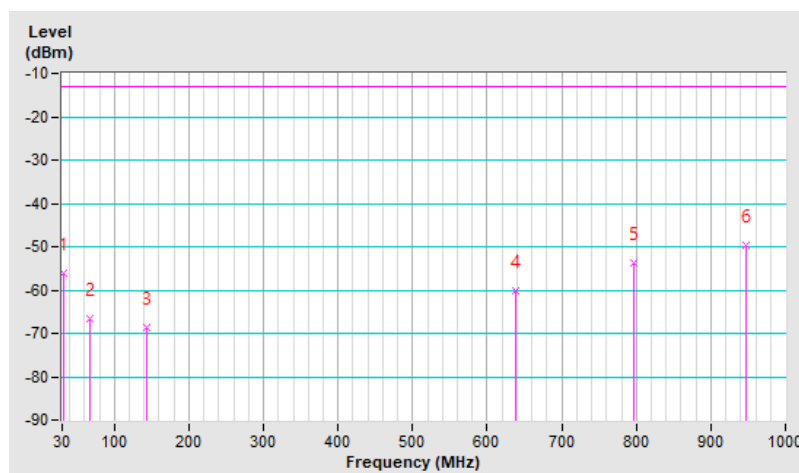


RF Mode	LTE Band 5 Channel Bandwidth: 10MHz	Channel	CH 20525 : 836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-55.99	-13.00	-42.99	1.25 V	132	55.83	-111.82
2	67.83	-66.65	-13.00	-53.65	1.00 V	9	45.71	-112.36
3	142.52	-68.59	-13.00	-55.59	1.50 V	343	42.16	-110.75
4	639.16	-60.16	-13.00	-47.16	1.25 V	37	41.64	-101.80
5	797.27	-53.67	-13.00	-40.67	1.00 V	285	45.99	-99.66
6	946.65	-49.61	-13.00	-36.61	1.25 V	137	48.11	-97.72

Remarks:

1. $ERP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8 - 2.15$
3. $Margin\ value = ERP - Limit\ value$
4. The other ERP 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.



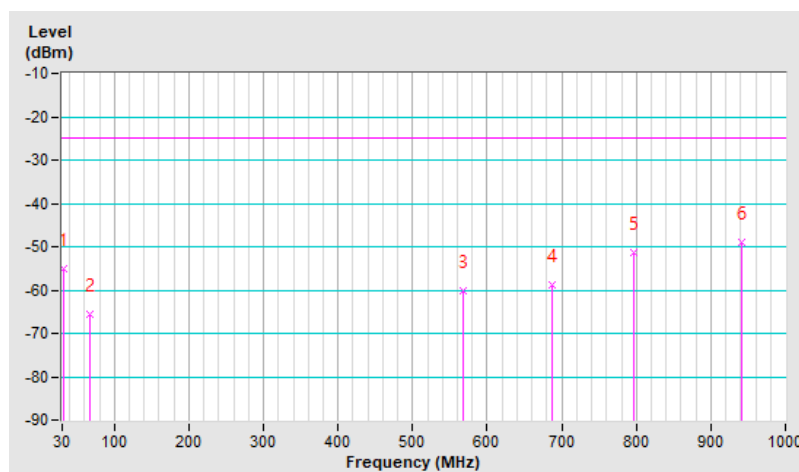
7.1.3 LTE Band 7

RF Mode	LTE Band 7 Channel Bandwidth: 20MHz	Channel	CH 21100 : 2535 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

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	31.94	-54.95	-25.00	-29.95	1.25 H	34	54.72	-109.67
2	67.83	-65.54	-25.00	-40.54	1.00 H	239	44.67	-110.21
3	567.38	-60.30	-25.00	-35.30	1.50 H	285	41.22	-101.52
4	687.66	-58.89	-25.00	-33.89	1.00 H	35	40.27	-99.16
5	796.30	-51.41	-25.00	-26.41	1.25 H	322	46.14	-97.55
6	940.83	-48.95	-25.00	-23.95	1.00 H	130	46.63	-95.58

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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.

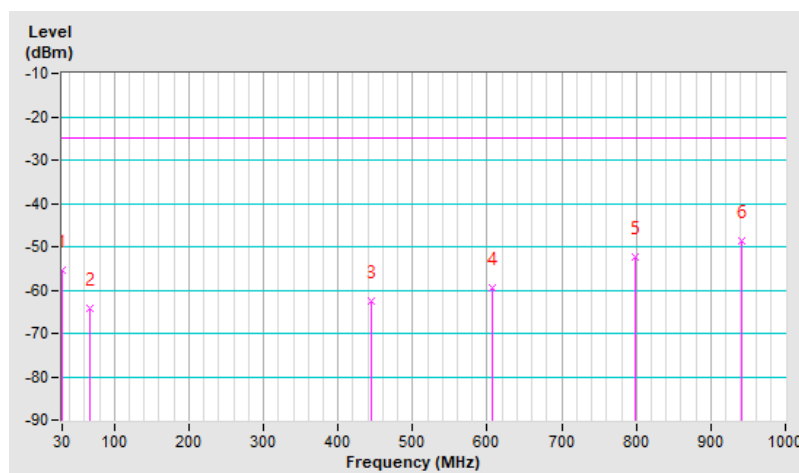


RF Mode	LTE Band 7 Channel Bandwidth: 20MHz	Channel	CH 21100 : 2535 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

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	30.97	-55.51	-25.00	-30.51	1.00 V	19	54.37	-109.88
2	66.86	-64.31	-25.00	-39.31	1.50 V	234	45.73	-110.04
3	445.16	-62.44	-25.00	-37.44	1.25 V	77	41.41	-103.85
4	606.18	-59.44	-25.00	-34.44	1.25 V	101	40.85	-100.29
5	798.24	-52.50	-25.00	-27.50	1.00 V	223	44.97	-97.47
6	941.80	-48.52	-25.00	-23.52	1.50 V	5	47.05	-95.57

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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.



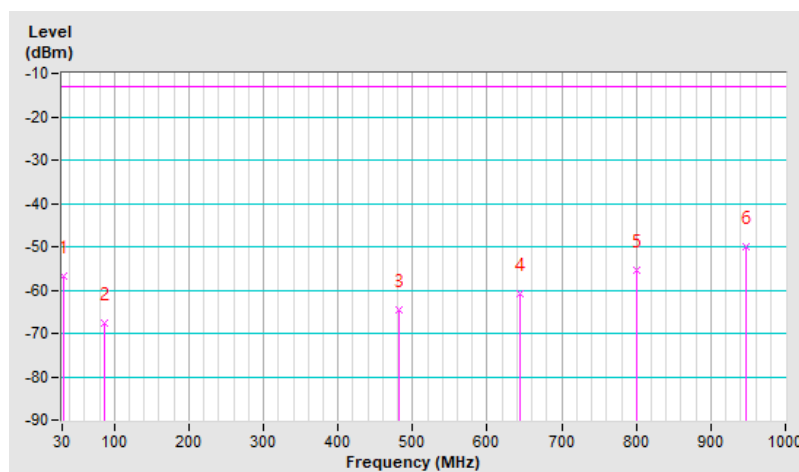
7.1.4 LTE Band 26 (Part 22)

RF Mode	LTE Band 26 Channel Bandwidth: 15MHz	Channel	CH 26915 : 836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-56.76	-13.00	-43.76	1.25 H	156	55.06	-111.82
2	86.26	-67.68	-13.00	-54.68	1.25 H	161	48.70	-116.38
3	481.05	-64.44	-13.00	-51.44	1.50 H	351	40.83	-105.27
4	644.01	-60.83	-13.00	-47.83	1.00 H	327	40.88	-101.71
5	801.15	-55.40	-13.00	-42.40	1.00 H	12	44.18	-99.58
6	946.65	-49.99	-13.00	-36.99	1.25 H	37	47.73	-97.72

Remarks:

- ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + $20\log(D) - 104.8 - 2.15$
- Margin value = ERP – Limit value
- The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
- 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.

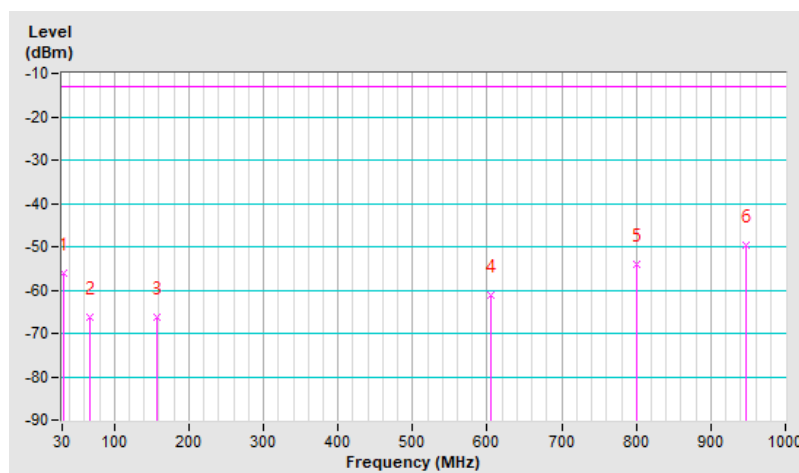


RF Mode	LTE Band 26 Channel Bandwidth: 15MHz	Channel	CH 26915 : 836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-56.20	-13.00	-43.20	1.00 V	336	55.62	-111.82
2	67.83	-66.35	-13.00	-53.35	1.50 V	172	46.01	-112.36
3	157.07	-66.41	-13.00	-53.41	1.00 V	326	44.00	-110.41
4	604.24	-61.16	-13.00	-48.16	1.25 V	76	41.33	-102.49
5	801.15	-53.91	-13.00	-40.91	1.00 V	233	45.67	-99.58
6	947.62	-49.61	-13.00	-36.61	1.25 V	17	48.10	-97.71

Remarks:

- ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + $20\log(D) - 104.8 - 2.15$
- Margin value = ERP – Limit value
- The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
- 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.



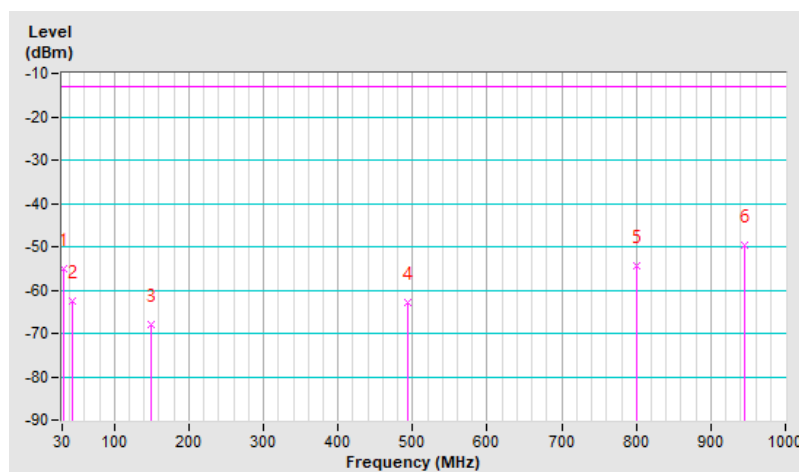
7.1.5 LTE Band 26 (Part 90)

RF Mode	LTE Band 26 Channel Bandwidth: 10MHz	Channel	CH 26740 : 819 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-55.18	-13.00	-42.18	1.00 H	360	56.64	-111.82
2	43.58	-62.46	-13.00	-49.46	1.25 H	325	48.28	-110.74
3	148.34	-68.09	-13.00	-55.09	1.50 H	18	42.46	-110.55
4	493.66	-62.81	-13.00	-49.81	1.00 H	256	42.32	-105.13
5	801.15	-54.34	-13.00	-41.34	1.25 H	42	45.24	-99.58
6	945.68	-49.72	-13.00	-36.72	1.00 H	16	48.01	-97.73

Remarks:

- ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
- Margin value = ERP – Limit value
- The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
- 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.

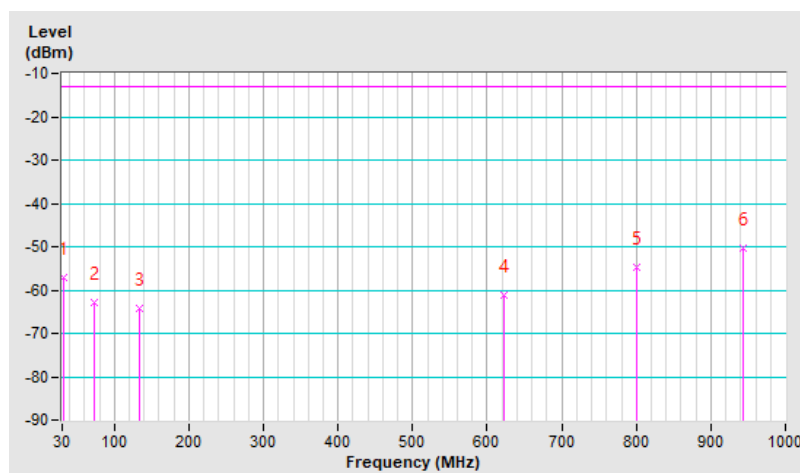


RF Mode	LTE Band 26 Channel Bandwidth: 10MHz	Channel	CH 26740 : 819 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-56.97	-13.00	-43.97	1.25 V	4	54.85	-111.82
2	73.65	-62.98	-13.00	-49.98	1.50 V	198	50.82	-113.80
3	132.82	-64.14	-13.00	-51.14	1.50 V	142	47.37	-111.51
4	622.67	-61.35	-13.00	-48.35	1.00 V	204	40.83	-102.18
5	801.15	-54.86	-13.00	-41.86	1.25 V	315	44.72	-99.58
6	943.74	-50.33	-13.00	-37.33	1.00 V	351	47.41	-97.74

Remarks:

- ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
- Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
- Margin value = ERP – Limit value
- The other ERP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
- 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.



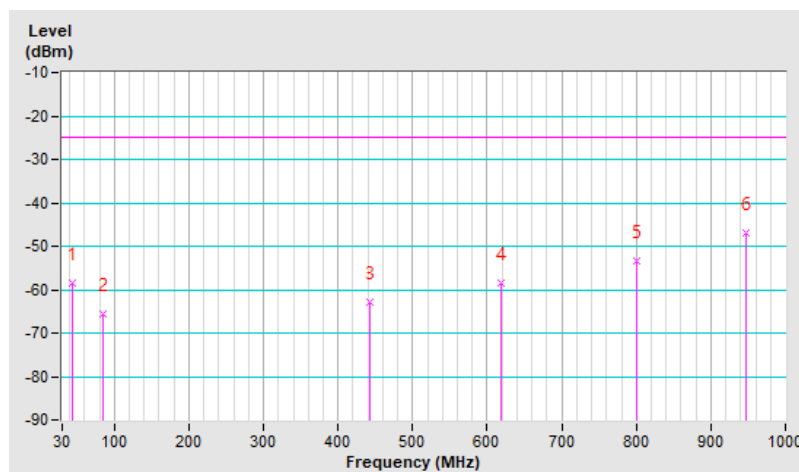
7.1.6 LTE Band 38

RF Mode	LTE Band 38 Channel Bandwidth: 20MHz	Channel	CH 38000 : 2595 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

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	43.58	-58.60	-25.00	-33.60	1.50 H	4	49.99	-108.59
2	85.29	-65.65	-25.00	-40.65	1.25 H	300	48.51	-114.16
3	443.22	-63.02	-25.00	-38.02	1.00 H	358	40.87	-103.89
4	617.82	-58.48	-25.00	-33.48	1.25 H	294	41.64	-100.12
5	801.15	-53.34	-25.00	-28.34	1.00 H	350	44.09	-97.43
6	947.62	-46.79	-25.00	-21.79	1.50 H	356	48.77	-95.56

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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.

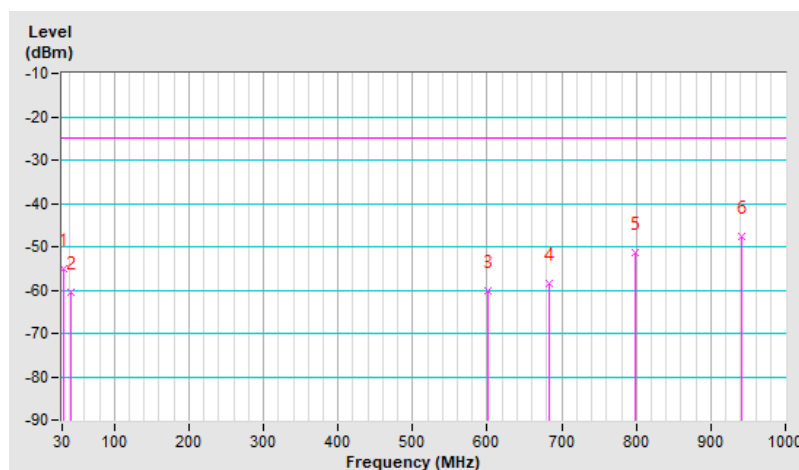


RF Mode	LTE Band 38 Channel Bandwidth: 20MHz	Channel	CH 38000 : 2595 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Edison Lee		

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	-55.22	-25.00	-30.22	1.00 V	351	54.45	-109.67
2	42.61	-60.61	-25.00	-35.61	1.25 V	294	48.01	-108.62
3	601.33	-60.20	-25.00	-35.20	1.00 V	206	40.23	-100.43
4	683.78	-58.62	-25.00	-33.62	1.25 V	2	40.62	-99.24
5	798.24	-51.50	-25.00	-26.50	1.00 V	158	45.97	-97.47
6	940.83	-47.71	-25.00	-22.71	1.50 V	163	47.87	-95.58

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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.



7.2 Radiated Spurious Emissions above 1GHz

7.2.1 LTE Band 38

RF Mode	LTE Band 38 Channel Bandwidth: 20MHz	Channel	CH 38000 : 2595 MHz
Frequency Range	1 GHz ~ 27 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	21 °C, 69 % RH
Tested By	Greg Lin		

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	5190.00	-45.87	-25.00	-20.87	2.85 H	194	46.54	-92.41
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	5190.00	-41.33	-25.00	-16.33	3.43 V	246	51.08	-92.41

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
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.

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

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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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