FCC Test Report
(Part 22 – WCDMA B5, LTE B5)

Report No.:	RFBBQZ-WTW-P20120749-3
FCC ID:	PY320400515
Test Model:	MR5100C
Received Date:	Dec. 23, 2020
Test Date:	Jan. 05 ~ Jan. 28, 2021
Issued Date:	Feb. 01, 2021
Applicant and Manufacturer:	NETGEAR INC.
Address:	350 East Plumeria Drive, San Jose, CA 95134, 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:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBBQZ-WTW-P20120749-3	Original release	Feb. 01, 2021

1 Certificate of Conformity

Product:	5G MHS Travel Router
Brand:	Netgear
Test Model:	MR5100C
Sample Status:	Engineering sample
Applicant:	NETGEAR INC.
Test Date:	Jan. 05 ~ Jan. 28, 2021
Standards:	FCC Part 22, Subpart H

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.

Prepared by : Celine Chou , **Date:** Feb. 01, 2021

Celine Chou / Senior Specialist

Approved by : Bruce Chen , **Date:** Feb. 01, 2021

Bruce Chen / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement
22.913 (d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
22.917	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -27.60dB at 131.85MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 16, 2020	Apr. 15, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 12, 2020	Jun. 11, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSW43	101582	Mar. 31, 2020	Mar. 30, 2021
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 25, 2020	Nov. 24, 2021
5G Wireless Test Platforms Keysight	E7515B	MY58300759	Apr. 18, 2020	Apr. 17, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 22, 2020	Nov. 21, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 06, 2020	Nov. 05, 2021
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 22, 2020	Nov. 21, 2021
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 22, 2020	Nov. 21, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 08, 2020	Jun. 07, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 18, 2020	Feb. 17, 2021
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 18, 2020	Jan. 17, 2021
			Jan. 16, 2021	Jan. 15, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 18, 2020	Jan. 17, 2021
			Jan. 16, 2021	Jan. 15, 2022
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 08, 2020	Jun. 07, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2020	Sep. 09, 2021

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 06, 2020	Jun. 05, 2021
DC power supply Keysight	U8002A	MY56330015	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

3 General Information

3.1 General Description of EUT

Product	5G MHS Travel Router				
Brand	Netgear				
Test Model	MR5100C				
Sample Status	Engineering sample				
Power Supply Rating	5 or 9Vdc (adapter) 5Vdc (host equipment) 3.85Vdc (battery)				
Modulation Type	WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM, 64QAM, 256QAM				
Operating Frequency	WCDMA Band 5	826.4MHz ~ 846.6MHz			
	LTE Band 5 (Channel Bandwidth 1.4MHz)	824.7MHz ~ 848.3MHz			
	LTE Band 5 (Channel Bandwidth 3MHz)	825.5MHz ~ 847.5MHz			
	LTE Band 5 (Channel Bandwidth 5MHz)	826.5MHz ~ 846.5MHz			
	LTE Band 5 (Channel Bandwidth 10MHz)	829.0MHz ~ 844.0MHz			
Max. ERP Power (Internal Antenna)	WCDMA Band 5	113.501mW (20.55dBm)			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	142.889mW (21.55dBm)	96.605mW (19.85dBm)	84.140mW (19.25dBm)	66.834mW (18.25dBm)
	LTE Band 5 (Channel Bandwidth 3MHz)	127.350mW (21.05dBm)	98.855mW (19.95dBm)	90.157mW (19.55dBm)	71.614mW (18.55dBm)
	LTE Band 5 (Channel Bandwidth 5MHz)	124.451mW (20.95dBm)	96.605mW (19.85dBm)	86.099mW (19.35dBm)	68.391mW (18.35dBm)
	LTE Band 5 (Channel Bandwidth 10MHz)	124.451mW (20.95dBm)	103.514mW (20.15dBm)	94.406mW (19.75dBm)	74.989mW (18.75dBm)
Max. ERP Power (External Antenna)	WCDMA Band 5	118.850mW (20.75dBm)			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	114.815mW (20.60dBm)	91.201mW (19.60dBm)	81.283mW (19.10dBm)	64.565mW (18.10dBm)
	LTE Band 5 (Channel Bandwidth 3MHz)	125.893mW (21.00dBm)	100.000mW (20.00dBm)	87.096mW (19.40dBm)	70.795mW (18.50dBm)
	LTE Band 5 (Channel Bandwidth 5MHz)	120.226mW (20.80dBm)	95.499mW (19.80dBm)	85.114mW (19.30dBm)	67.608mW (18.30dBm)
	LTE Band 5 (Channel Bandwidth 10MHz)	128.825mW (21.10dBm)	93.325mW (19.70dBm)	83.176mW (19.20dBm)	66.069mW (18.20dBm)

Emission Designator	WCDMA Band 5	4M17F9W			
		QPSK	16QAM	64QAM	256QAM
	LTE Band 5 (Channel Bandwidth 1.4MHz)	1M09G7D	1M09D7W	1M09D7W	1M08D7W
	LTE Band 5 (Channel Bandwidth 3MHz)	2M70G7D	2M70D7W	2M70D7W	2M70D7W
	LTE Band 5 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M49D7W	4M48D7W
	LTE Band 5 (Channel Bandwidth 10MHz)	8M97G7D	8M95D7W	8M96D7W	8M96D7W
Antenna Type	Refer to Note				
Antenna Connector	Refer to Note				
Accessory Device	Adapter x1, battery x1				
Cable Supplied	1m shielded USB cable without core (Brand: NIENYI, model: NYS2371-1)				

Note:

1. The EUT uses following adapter and battery.

Adapter	
Brand	NETGEAR
Model	AD2122F20
P/N	332-11106-01
Input Power	100-240Vac, 50-60Hz, 0.5A
Output Power	5Vdc, 2.0A 9Vdc, 1.8A

Battery	
Brand	NETGEAR
Model	W-20
Rating	3.85Vdc ,19.40Wh

2. The following antennas were provided to the EUT.

Internal Antenna

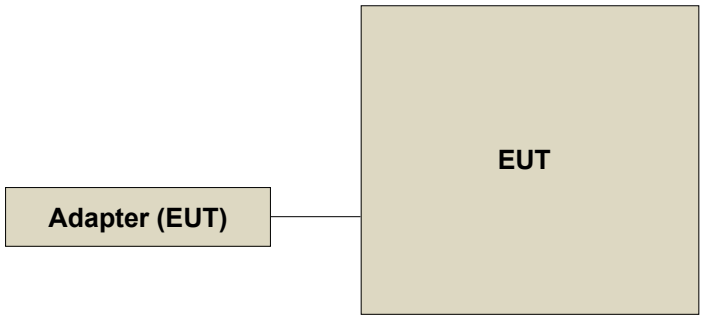
No.	Type	Connector	Gain (dBi)												
			B2	B4	B5	B7	B12	B13	B17	B25	B30	B38	B41	B66	B71
1	Monopole	NA	1.83	-0.01	-0.23	2.66	1.24	0.16	1.24	1.83	2.81	2.66	2.66	-0.01	0.91
2	Monopole	NA	1.03	-	-0.38	2.56	-	-	-	1.03	-	-	-	0.34	-

External Antenna

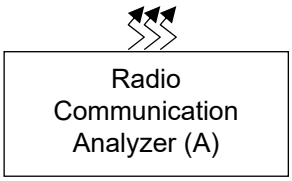
No.	Type	Connector	Gain (dBi)												
			B2	B4	B5	B7	B12	B13	B17	B25	B30	B38	B41	B66	B71
1	Monopole	TS-9 plugs	0.48	0.48	0.54	0.24	0.54	0.54	0.54	0.48	0.24	0.24	0.24	0.48	0.54
2	Monopole	TS-9 plugs	0.25	0.25	0.48	0.28	0.48	0.48	0.48	0.25	0.28	0.28	0.28	0.25	0.48

* 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.

3.2 Configuration of System under Test



Remote site



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

Band	ERP		Radiated Emission	
	Internal Antenna	External Antenna	Internal Antenna	External Antenna
WCDMA Band 5	X-plane	Z-plane	Z-plane	Z-plane
LTE Band 5	X-plane	Z-plane	X-plane	Z-plane

WCDMA Band 5

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	ERP	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA
-	Modulation Characteristics	4132 to 4233	4182 (836.4MHz)	WCDMA
-	Frequency Stability	4132 to 4233	4132 (826.4MHz), 4233 (846.6MHz)	WCDMA
-	Occupied Bandwidth	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA
-	Band Edge	4132 to 4233	4132 (826.4MHz), 4233 (846.6MHz)	WCDMA
-	Peak To Average Ratio	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA
-	Conducted Emission	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA
-	Radiated Emission Below 1GHz	4132 to 4233	4182 (836.4MHz)	WCDMA
-	Radiated Emission Above 1GHz	4132 to 4233	4132 (826.4MHz), 4182 (836.4MHz), 4233 (846.6MHz)	WCDMA

Note: For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.

LTE Band 5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
-	Modulation characteristics	20450 to 20600	20525 (836.5MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50 RB / 0 RB Offset
-	Frequency Stability	20407 to 20643	20407 (824.7MHz), 20643 (848.3MHz)	1.4MHz	QPSK	6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20635 (847.5MHz)	3MHz	QPSK	15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20625 (846.5MHz)	5MHz	QPSK	25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20600 (844.0MHz)	10MHz	QPSK	50 RB / 0 RB Offset
-	Occupied Bandwidth	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	6 RB / 0RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	15 RB / 0RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	25RB / 0RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	50RB / 0RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	20407 to 20643	20407 (824.7MHz), 20643 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20635 (847.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20600 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
-	Peak to Average Ratio	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB / 0 RB Offset
-	Conducted Emission	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		20415 to 20635	20415 (825.5MHz), 20525 (836.5MHz), 20635 (847.5MHz)	3MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	20407 to 20643	20525 (836.5MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	20407 to 20643	20407 (824.7MHz), 20525 (836.5MHz), 20643 (848.3MHz)	1.4MHz	QPSK	1 RB / 0 RB Offset
		20425 to 20625	20425 (826.5MHz), 20525 (836.5MHz), 20625 (846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		20450 to 20600	20450 (829.0MHz), 20525 (836.5MHz), 20600 (844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, select the worst radiated emission channel (above 1GHz) for final testing.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The output power for QPSK, 16QAM, 64QAM and 256QAM, measured value of QPSK is higher than 16QAM, 64QAM and 256QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM, 64QAM and 256QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	22deg. C, 66%RH	120Vac, 60Hz	Han Wu
Modulation Characteristics	22deg. C, 66%RH	120Vac, 60Hz	Gavin Wu
Frequency Stability	22deg. C, 66%RH	3.85Vdc	Gavin Wu
Occupied Bandwidth	22deg. C, 66%RH	120Vac, 60Hz	Gavin Wu
Band Edge	22deg. C, 66%RH	120Vac, 60Hz	Gavin Wu
Peak To Average Ratio	22deg. C, 66%RH	120Vac, 60Hz	Gavin Wu
Conducted Emission	22deg. C, 66%RH	120Vac, 60Hz	Gavin Wu
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	Han Wu

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test Standard:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) 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 1m to 4m 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 C63.26 section 5.2.7 and 5.2.2.4
   - EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   - ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

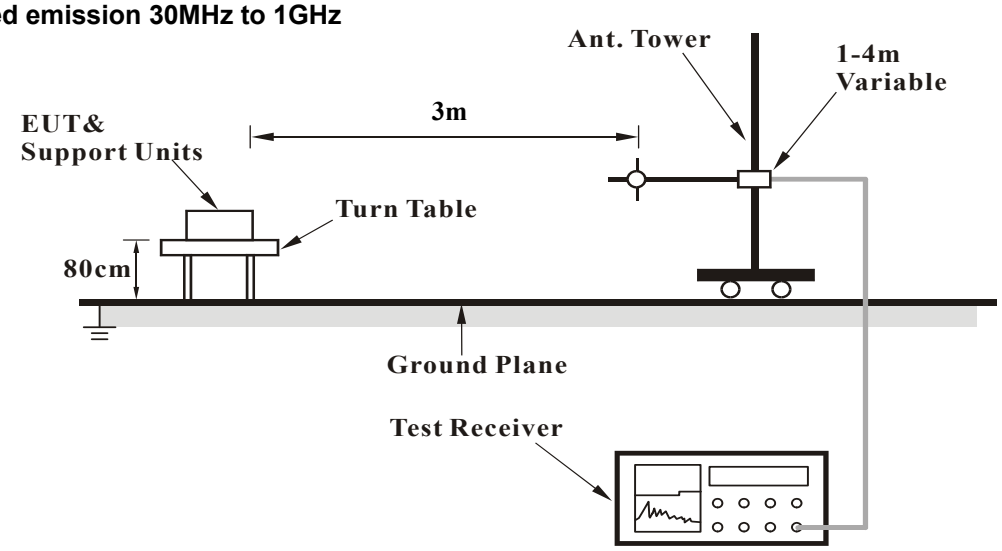
Conducted Power Measurement:

The EUT was set up for the maximum power with WCDMA, LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

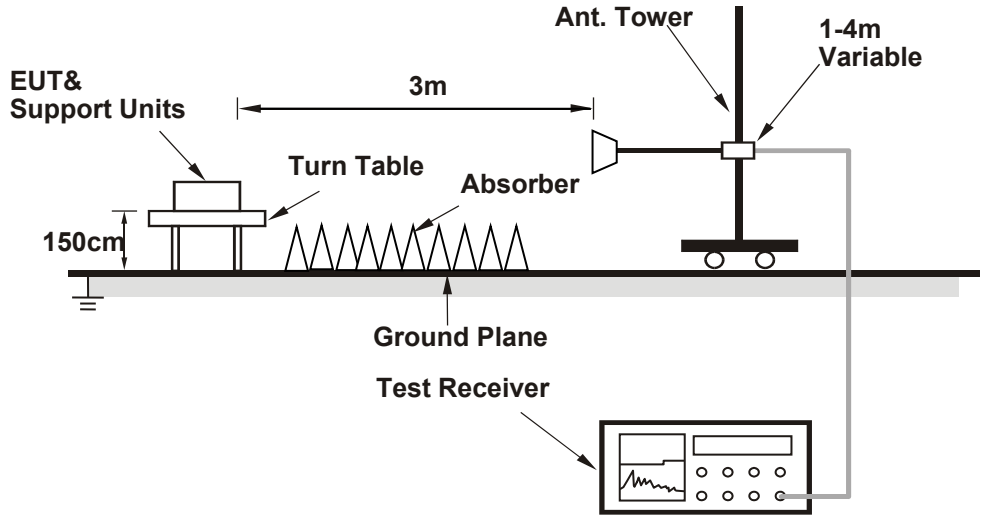
4.1.3 Test Setup

EIRP / ERP Measurement:

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

Conducted Power Measurement:

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

4.1.4 Test Results

Note: Conducted output power is for reference, and its ERP power is mainly tested in radiated mode.

Conducted Output Power (dBm)

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	21.93	21.99	22.00
HSDPA Subtest-1	21.90	21.95	21.94
HSDPA Subtest-2	21.86	21.90	21.86
HSDPA Subtest-3	21.38	21.47	21.50
HSDPA Subtest-4	21.34	21.45	21.33
DC-HSDPA Subtest-1	21.79	21.85	21.86
DC-HSDPA Subtest-2	21.74	21.79	21.75
DC-HSDPA Subtest-3	21.30	21.36	21.40
DC-HSDPA Subtest-4	21.26	21.37	21.28
HSUPA Subtest-1	21.93	21.92	21.97
HSUPA Subtest-2	19.87	19.92	20.00
HSUPA Subtest-3	20.84	20.87	21.00
HSUPA Subtest-4	19.85	19.95	20.00
HSUPA Subtest-5	21.90	21.90	21.94

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	22.78	22.66	22.88
		1	24	22.79	22.61	22.82
		1	49	22.69	22.58	22.81
		25	0	21.87	21.73	21.95
		25	12	21.83	21.69	21.90
		25	25	21.75	21.65	21.90
		50	0	21.84	21.66	21.89
	16QAM	1	0	21.79	21.61	21.88
		1	24	21.75	21.59	21.84
		1	49	21.61	21.51	21.81
		25	0	20.84	20.68	20.95
		25	12	20.85	20.71	20.94
		25	25	20.83	20.63	20.92
		50	0	20.87	20.70	20.90
	64QAM	1	0	20.94	20.78	20.98
		1	24	20.91	20.73	20.96
		1	49	20.87	20.69	20.91
		25	0	19.84	19.71	20.00
		25	12	19.90	19.72	19.97
		25	25	19.76	19.66	19.93
		50	0	19.89	19.70	19.99
	256QAM	1	0	17.88	17.73	17.95
		1	24	17.75	17.60	17.90
		1	49	17.84	17.64	17.90
		25	0	17.69	17.55	17.85
		25	12	17.76	17.60	17.81
		25	25	17.67	17.55	17.80
		50	0	17.79	17.62	17.90

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	22.76	22.56	22.80
		1	12	22.78	22.54	22.76
		1	24	22.61	22.51	22.75
		12	0	21.85	21.65	21.93
		12	6	21.73	21.65	21.88
		12	13	21.71	21.64	21.90
		25	0	21.82	21.60	21.83
	16QAM	1	0	21.69	21.59	21.84
		1	12	21.68	21.59	21.82
		1	24	21.55	21.44	21.74
		12	0	20.79	20.63	20.88
		12	6	20.81	20.61	20.87
		12	13	20.74	20.59	20.82
		25	0	20.85	20.61	20.86
	64QAM	1	0	20.85	20.72	20.98
		1	12	20.91	20.64	20.86
		1	24	20.79	20.66	20.87
		12	0	19.84	19.67	19.98
		12	6	19.81	19.68	19.94
		12	13	19.76	19.62	19.85
		25	0	19.81	19.60	19.90
	256QAM	1	0	17.78	17.66	17.88
		1	12	17.72	17.50	17.85
		1	24	17.79	17.58	17.84
		12	0	17.61	17.50	17.79
		12	6	17.75	17.55	17.75
		12	13	17.58	17.53	17.78
		25	0	17.77	17.59	17.88

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	22.57	22.56	22.63
		1	7	22.66	22.51	22.73
		1	14	22.56	22.56	22.74
		8	0	21.82	21.63	21.84
		8	3	21.73	21.61	21.71
		8	7	21.61	21.63	21.89
		15	0	21.72	21.53	21.75
	16QAM	1	0	21.71	21.51	21.85
		1	7	21.71	21.43	21.67
		1	14	21.45	21.44	21.58
		8	0	20.63	20.53	20.86
		8	3	20.80	20.54	20.85
		8	7	20.65	20.49	20.84
		15	0	20.66	20.57	20.75
	64QAM	1	0	20.75	20.60	20.91
		1	7	20.70	20.62	20.83
		1	14	20.70	20.53	20.80
		8	0	19.81	19.69	19.87
		8	3	19.74	19.56	19.90
		8	7	19.63	19.61	19.72
		15	0	19.70	19.59	19.96
	256QAM	1	0	17.82	17.58	17.73
		1	7	17.72	17.42	17.70
		1	14	17.68	17.45	17.81
		8	0	17.61	17.51	17.66
		8	3	17.60	17.55	17.63
		8	7	17.53	17.40	17.55
		15	0	17.68	17.50	17.77

LTE Band 5						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	22.67	22.44	22.77
		1	2	22.65	22.44	22.46
		1	5	22.57	22.48	22.63
		3	0	21.73	21.68	21.63
		3	1	21.66	21.55	21.75
		3	3	21.61	21.47	21.70
		6	0	21.66	21.47	21.76
	16QAM	1	0	21.68	21.50	21.76
		1	2	21.57	21.45	21.71
		1	5	21.51	21.41	21.68
		3	0	20.68	20.45	20.86
		3	1	20.77	20.66	20.88
		3	3	20.78	20.46	20.81
		6	0	20.79	20.55	20.80
	64QAM	1	0	20.84	20.73	20.91
		1	2	20.90	20.61	20.89
		1	5	20.76	20.61	20.73
		3	0	19.67	19.60	19.90
		3	1	19.84	19.51	19.84
		3	3	19.74	19.46	19.76
		6	0	19.71	19.51	19.95
	256QAM	1	0	17.77	17.60	17.79
		1	2	17.64	17.43	17.78
		1	5	17.81	17.57	17.84
		3	0	17.68	17.46	17.65
		3	1	17.67	17.55	17.73
		3	3	17.43	17.35	17.62
		6	0	17.61	17.44	17.88

ERP Power (dBm)

Internal Antenna

WCDMA Band 5

Mode	TX channel 4132, 4182, 4233

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	826.40	20.05	38.45	-18.40	1.72 H	190	85.76	-65.71
2	836.40	20.55	38.45	-17.90	1.73 H	193	86.21	-65.66
3	846.60	20.15	38.45	-18.30	1.72 H	192	85.69	-65.54
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	826.40	16.65	38.45	-21.80	1.84 V	194	82.36	-65.71
2	836.40	17.30	38.45	-21.15	1.79 V	190	82.96	-65.66
3	846.60	17.25	38.45	-21.20	1.84 V	191	82.79	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: QPSK

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	21.55	38.45	-16.90	1.68 H	145	87.26	-65.71
2	836.50	21.35	38.45	-17.10	1.56 H	140	87.01	-65.66
3	848.30	21.33	38.45	-17.12	1.62 H	152	86.85	-65.52
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	824.70	14.59	38.45	-23.86	1.82 V	12	80.30	-65.71
2	836.50	14.43	38.45	-24.02	1.67 V	11	80.09	-65.66
3	848.30	13.37	38.45	-25.08	1.63 V	10	78.89	-65.52

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	20.45	38.45	-18.00	1.56 H	144	86.15	-65.70
2	836.50	21.05	38.45	-17.40	1.53 H	142	86.71	-65.66
3	847.50	21.05	38.45	-17.40	1.51 H	144	86.58	-65.53
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	825.50	14.05	38.45	-24.40	1.66 V	9	79.75	-65.70
2	836.50	14.05	38.45	-24.40	1.71 V	14	79.71	-65.66
3	847.50	14.35	38.45	-24.10	1.66 V	10	79.88	-65.53

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	20.95	38.45	-17.50	1.60 H	139	86.66	-65.71
2	836.50	20.55	38.45	-17.90	1.59 H	141	86.21	-65.66
3	846.50	20.55	38.45	-17.90	1.59 H	144	86.09	-65.54
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	826.50	13.75	38.45	-24.70	1.68 V	13	79.46	-65.71
2	836.50	13.65	38.45	-24.80	1.65 V	13	79.31	-65.66
3	846.50	13.55	38.45	-24.90	1.70 V	16	79.09	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	20.35	38.45	-18.10	1.58 H	143	86.07	-65.72
2	836.50	20.95	38.45	-17.50	1.52 H	144	86.61	-65.66
3	844.00	20.35	38.45	-18.10	1.60 H	137	85.91	-65.56
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	829.00	13.50	38.45	-24.95	1.64 V	18	79.22	-65.72
2	836.50	13.70	38.45	-24.75	1.62 V	16	79.36	-65.66
3	844.00	13.20	38.45	-25.25	1.60 V	21	78.76	-65.56

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 16QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	19.25	38.45	-19.20	1.61 H	143	84.96	-65.71
2	836.50	19.65	38.45	-18.80	1.59 H	141	85.31	-65.66
3	848.30	19.85	38.45	-18.60	1.52 H	142	85.37	-65.52
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	824.70	13.05	38.45	-25.40	1.67 V	9	78.76	-65.71
2	836.50	12.95	38.45	-25.50	1.70 V	12	78.61	-65.66
3	848.30	13.05	38.45	-25.40	1.70 V	12	78.57	-65.52

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	19.85	38.45	-18.60	1.51 H	143	85.55	-65.70
2	836.50	19.75	38.45	-18.70	1.53 H	144	85.41	-65.66
3	847.50	19.95	38.45	-18.50	1.52 H	141	85.48	-65.53
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	825.50	13.25	38.45	-25.20	1.70 V	12	78.95	-65.70
2	836.50	12.65	38.45	-25.80	1.69 V	13	78.31	-65.66
3	847.50	12.95	38.45	-25.50	1.70 V	12	78.48	-65.53

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	19.85	38.45	-18.60	1.54 H	140	85.56	-65.71
2	836.50	19.75	38.45	-18.70	1.52 H	141	85.41	-65.66
3	846.50	19.75	38.45	-18.70	1.60 H	142	85.29	-65.54
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	826.50	12.85	38.45	-25.60	1.72 V	11	78.56	-65.71
2	836.50	12.85	38.45	-25.60	1.69 V	14	78.51	-65.66
3	846.50	12.75	38.45	-25.70	1.62 V	13	78.29	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	19.25	38.45	-19.20	1.55 H	139	84.97	-65.72
2	836.50	20.15	38.45	-18.30	1.57 H	142	85.81	-65.66
3	844.00	19.45	38.45	-19.00	1.56 H	144	85.01	-65.56
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	829.00	12.75	38.45	-25.70	1.63 V	14	78.47	-65.72
2	836.50	12.65	38.45	-25.80	1.68 V	14	78.31	-65.66
3	844.00	12.35	38.45	-26.10	1.63 V	10	77.91	-65.56

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 64QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	18.75	38.45	-19.70	1.56 H	139	84.46	-65.71
2	836.50	19.05	38.45	-19.40	1.51 H	141	84.71	-65.66
3	848.30	19.25	38.45	-19.20	1.59 H	139	84.77	-65.52
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	824.70	12.55	38.45	-25.90	1.62 V	13	78.26	-65.71
2	836.50	12.35	38.45	-26.10	1.65 V	12	78.01	-65.66
3	848.30	12.55	38.45	-25.90	1.67 V	15	78.07	-65.52

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	19.45	38.45	-19.00	1.61 H	144	85.15	-65.70
2	836.50	19.15	38.45	-19.30	1.57 H	144	84.81	-65.66
3	847.50	19.55	38.45	-18.90	1.51 H	138	85.08	-65.53
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	825.50	12.75	38.45	-25.70	1.64 V	15	78.45	-65.70
2	836.50	12.15	38.45	-26.30	1.65 V	15	77.81	-65.66
3	847.50	12.35	38.45	-26.10	1.69 V	16	77.88	-65.53

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	19.25	38.45	-19.20	1.57 H	140	84.96	-65.71
2	836.50	19.35	38.45	-19.10	1.61 H	142	85.01	-65.66
3	846.50	19.35	38.45	-19.10	1.57 H	137	84.89	-65.54
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	826.50	12.35	38.45	-26.10	1.71 V	11	78.06	-65.71
2	836.50	12.35	38.45	-26.10	1.62 V	13	78.01	-65.66
3	846.50	12.15	38.45	-26.30	1.62 V	13	77.69	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	18.85	38.45	-19.60	1.51 H	143	84.57	-65.72
2	836.50	19.75	38.45	-18.70	1.60 H	142	85.41	-65.66
3	844.00	18.85	38.45	-19.60	1.54 H	144	84.41	-65.56
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	829.00	12.35	38.45	-26.10	1.65 V	10	78.07	-65.72
2	836.50	12.25	38.45	-26.20	1.63 V	10	77.91	-65.66
3	844.00	11.95	38.45	-26.50	1.69 V	15	77.51	-65.56

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 256QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	17.75	38.45	-20.70	1.56 H	139	83.46	-65.71
2	836.50	18.05	38.45	-20.40	1.51 H	141	83.71	-65.66
3	848.30	18.25	38.45	-20.20	1.59 H	139	83.77	-65.52
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	824.70	11.55	38.45	-26.90	1.62 V	13	77.26	-65.71
2	836.50	11.35	38.45	-27.10	1.65 V	12	77.01	-65.66
3	848.30	11.55	38.45	-26.90	1.67 V	15	77.07	-65.52

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	18.45	38.45	-20.00	1.61 H	144	84.15	-65.70
2	836.50	18.15	38.45	-20.30	1.57 H	144	83.81	-65.66
3	847.50	18.55	38.45	-19.90	1.51 H	138	84.08	-65.53
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	825.50	11.75	38.45	-26.70	1.64 V	15	77.45	-65.70
2	836.50	11.15	38.45	-27.30	1.65 V	15	76.81	-65.66
3	847.50	11.35	38.45	-27.10	1.69 V	16	76.88	-65.53

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	18.25	38.45	-20.20	1.57 H	140	83.96	-65.71
2	836.50	18.35	38.45	-20.10	1.61 H	142	84.01	-65.66
3	846.50	18.35	38.45	-20.10	1.57 H	137	83.89	-65.54
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	826.50	11.35	38.45	-27.10	1.71 V	11	77.06	-65.71
2	836.50	11.35	38.45	-27.10	1.62 V	13	77.01	-65.66
3	846.50	11.15	38.45	-27.30	1.62 V	13	76.69	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	17.85	38.45	-20.60	1.51 H	143	83.57	-65.72
2	836.50	18.75	38.45	-19.70	1.60 H	142	84.41	-65.66
3	844.00	17.85	38.45	-20.60	1.54 H	144	83.41	-65.56
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	829.00	11.35	38.45	-27.10	1.65 V	10	77.07	-65.72
2	836.50	11.25	38.45	-27.20	1.63 V	10	76.91	-65.66
3	844.00	10.95	38.45	-27.50	1.69 V	15	76.51	-65.56

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

External Antenna

WCDMA Band 5

Mode	TX channel 4132, 4182, 4233

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	826.40	17.25	38.45	-21.20	1.00 H	162	82.96	-65.71
2	836.40	17.65	38.45	-20.80	1.00 H	158	83.31	-65.66
3	846.60	17.55	38.45	-20.90	1.03 H	155	83.09	-65.54
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	826.40	20.45	38.45	-18.00	1.11 V	6	86.16	-65.71
2	836.40	20.75	38.45	-17.70	1.09 V	5	86.41	-65.66
3	846.60	20.45	38.45	-18.00	1.10 V	7	85.99	-65.54

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: QPSK

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	20.50	38.45	-17.95	1.07 H	11	91.29	-70.79
2	836.50	20.60	38.45	-17.85	1.10 H	10	91.34	-70.74
3	848.30	20.50	38.45	-17.95	1.07 H	14	91.10	-70.60
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	824.70	10.95	38.45	-27.50	1.09 V	11	81.74	-70.79
2	836.50	11.25	38.45	-27.20	1.06 V	10	81.99	-70.74
3	848.30	10.95	38.45	-27.50	1.02 V	12	81.55	-70.60

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	21.00	38.45	-17.45	1.07 H	10	91.78	-70.78
2	836.50	20.50	38.45	-17.95	1.10 H	13	91.24	-70.74
3	847.50	20.60	38.45	-17.85	1.01 H	7	91.21	-70.61
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	825.50	11.40	38.45	-27.05	1.05 V	12	82.18	-70.78
2	836.50	11.35	38.45	-27.10	1.08 V	11	82.09	-70.74
3	847.50	11.05	38.45	-27.40	1.02 V	13	81.66	-70.61

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	20.80	38.45	-17.65	1.04 H	8	91.59	-70.79
2	836.50	20.60	38.45	-17.85	1.01 H	13	91.34	-70.74
3	846.50	20.50	38.45	-17.95	1.09 H	14	91.12	-70.62
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	826.50	10.95	38.45	-27.50	1.03 V	14	81.74	-70.79
2	836.50	10.85	38.45	-27.60	1.00 V	13	81.59	-70.74
3	846.50	11.65	38.45	-26.80	1.00 V	10	82.27	-70.62

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	21.10	38.45	-17.35	1.08 H	11	91.90	-70.80
2	836.50	20.50	38.45	-17.95	1.04 H	9	91.24	-70.74
3	844.00	20.60	38.45	-17.85	1.00 H	9	91.24	-70.64
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	829.00	10.85	38.45	-27.60	1.05 V	17	81.65	-70.80
2	836.50	10.75	38.45	-27.70	1.01 V	16	81.49	-70.74
3	844.00	11.35	38.45	-27.10	1.01 V	12	81.99	-70.64

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 16QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	19.50	38.45	-18.95	1.07 H	11	90.29	-70.79
2	836.50	19.60	38.45	-18.85	1.10 H	10	90.34	-70.74
3	848.30	19.50	38.45	-18.95	1.07 H	14	90.10	-70.60
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	824.70	9.85	38.45	-28.60	1.00 V	14	80.64	-70.79
2	836.50	10.35	38.45	-28.10	1.00 V	16	81.09	-70.74
3	848.30	10.05	38.45	-28.40	1.07 V	10	80.65	-70.60

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	20.00	38.45	-18.45	1.07 H	10	90.78	-70.78
2	836.50	19.50	38.45	-18.95	1.10 H	13	90.24	-70.74
3	847.50	19.60	38.45	-18.85	1.01 H	7	90.21	-70.61
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	825.50	10.15	38.45	-28.30	1.02 V	17	80.93	-70.78
2	836.50	10.55	38.45	-27.90	1.07 V	15	81.29	-70.74
3	847.50	10.25	38.45	-28.20	1.09 V	17	80.86	-70.61

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	19.80	38.45	-18.65	1.04 H	8	90.59	-70.79
2	836.50	19.60	38.45	-18.85	1.01 H	13	90.34	-70.74
3	846.50	19.50	38.45	-18.95	1.09 H	14	90.12	-70.62
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	826.50	10.05	38.45	-28.40	1.10 V	11	80.84	-70.79
2	836.50	9.95	38.45	-28.50	1.10 V	10	80.69	-70.74
3	846.50	10.45	38.45	-28.00	1.07 V	16	81.07	-70.62

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	19.70	38.45	-18.75	1.08 H	11	90.50	-70.80
2	836.50	19.50	38.45	-18.95	1.04 H	9	90.24	-70.74
3	844.00	19.60	38.45	-18.85	1.00 H	9	90.24	-70.64
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	829.00	9.95	38.45	-28.50	1.03 V	13	80.75	-70.80
2	836.50	9.55	38.45	-28.90	1.10 V	10	80.29	-70.74
3	844.00	10.15	38.45	-28.30	1.00 V	10	80.79	-70.64

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 64QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	19.00	38.45	-19.45	1.07 H	11	89.79	-70.79
2	836.50	19.10	38.45	-19.35	1.10 H	10	89.84	-70.74
3	848.30	19.00	38.45	-19.45	1.07 H	14	89.60	-70.60
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	824.70	9.35	38.45	-29.10	1.05 V	16	80.14	-70.79
2	836.50	9.85	38.45	-28.60	1.08 V	17	80.59	-70.74
3	848.30	9.55	38.45	-28.90	1.05 V	13	80.15	-70.60

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	19.40	38.45	-19.05	1.07 H	10	90.18	-70.78
2	836.50	19.00	38.45	-19.45	1.10 H	13	89.74	-70.74
3	847.50	19.20	38.45	-19.25	1.01 H	7	89.81	-70.61
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	825.50	9.75	38.45	-28.70	1.01 V	17	80.53	-70.78
2	836.50	9.95	38.45	-28.50	1.01 V	14	80.69	-70.74
3	847.50	9.65	38.45	-28.80	1.02 V	12	80.26	-70.61

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	19.30	38.45	-19.15	1.04 H	8	90.09	-70.79
2	836.50	19.10	38.45	-19.35	1.01 H	13	89.84	-70.74
3	846.50	19.00	38.45	-19.45	1.09 H	14	89.62	-70.62
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	826.50	9.65	38.45	-28.80	1.01 V	17	80.44	-70.79
2	836.50	9.55	38.45	-28.90	1.03 V	15	80.29	-70.74
3	846.50	9.85	38.45	-28.60	1.07 V	10	80.47	-70.62

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	19.20	38.45	-19.25	1.08 H	11	90.00	-70.80
2	836.50	19.10	38.45	-19.35	1.04 H	9	89.84	-70.74
3	844.00	19.00	38.45	-19.45	1.00 H	9	89.64	-70.64
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	829.00	9.40	38.45	-29.05	1.03 V	10	80.20	-70.80
2	836.50	9.15	38.45	-29.30	1.03 V	17	79.89	-70.74
3	844.00	9.75	38.45	-28.70	1.08 V	10	80.39	-70.64

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

Modulation Type: 256QAM

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407, 20525, 20643							
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	824.70	18.00	38.45	-20.45	1.07 H	11	88.79	-70.79
2	836.50	18.10	38.45	-20.35	1.10 H	10	88.84	-70.74
3	848.30	18.00	38.45	-20.45	1.07 H	14	88.60	-70.60
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	824.70	7.75	38.45	-30.70	1.08 V	11	78.54	-70.79
2	836.50	8.35	38.45	-30.10	1.05 V	14	79.09	-70.74
3	848.30	8.15	38.45	-30.30	1.08 V	12	78.75	-70.60

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 3MHz

Mode	TX channel 20415, 20525, 20635							
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	825.50	18.50	38.45	-19.95	1.07 H	10	89.28	-70.78
2	836.50	18.50	38.45	-19.95	1.10 H	13	89.24	-70.74
3	847.50	18.40	38.45	-20.05	1.01 H	7	89.01	-70.61
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	825.50	8.35	38.45	-30.10	1.02 V	12	79.13	-70.78
2	836.50	8.35	38.45	-30.10	1.07 V	14	79.09	-70.74
3	847.50	8.05	38.45	-30.40	1.06 V	10	78.66	-70.61

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425, 20525, 20625							
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	826.50	18.30	38.45	-20.15	1.04 H	8	89.09	-70.79
2	836.50	18.10	38.45	-20.35	1.01 H	13	88.84	-70.74
3	846.50	18.00	38.45	-20.45	1.09 H	14	88.62	-70.62
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	826.50	8.25	38.45	-30.20	1.05 V	15	79.04	-70.79
2	836.50	7.95	38.45	-30.50	1.03 V	12	78.69	-70.74
3	846.50	8.25	38.45	-30.20	1.02 V	10	78.87	-70.62

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450, 20525, 20600							
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	829.00	18.20	38.45	-20.25	1.08 H	11	89.00	-70.80
2	836.50	18.10	38.45	-20.35	1.04 H	9	88.84	-70.74
3	844.00	18.00	38.45	-20.45	1.00 H	9	88.64	-70.64
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	829.00	7.75	38.45	-30.70	1.07 V	15	78.55	-70.80
2	836.50	7.55	38.45	-30.90	1.06 V	14	78.29	-70.74
3	844.00	8.35	38.45	-30.10	1.06 V	11	78.99	-70.64

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

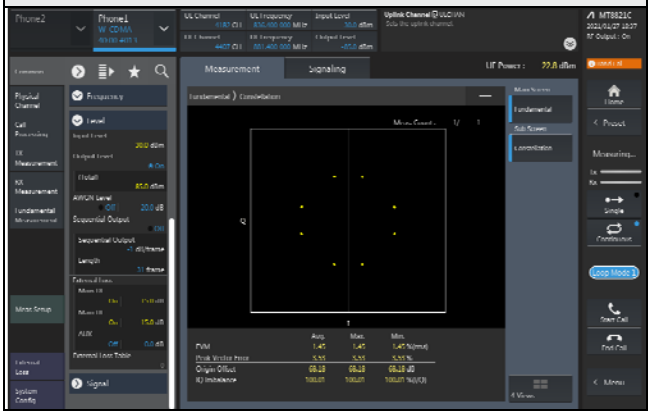
N/A

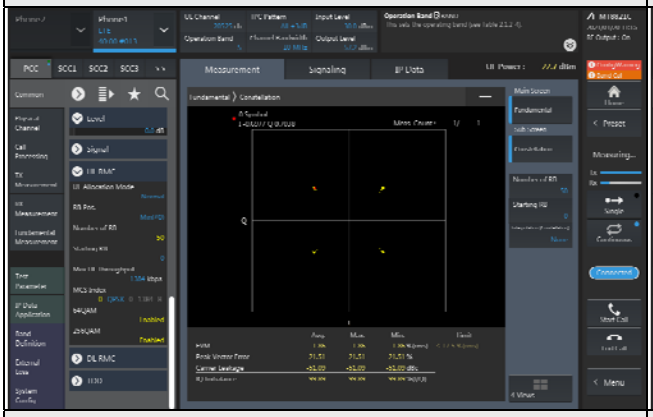
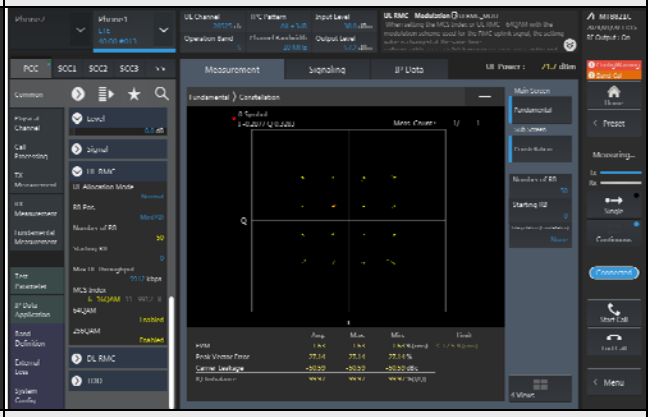
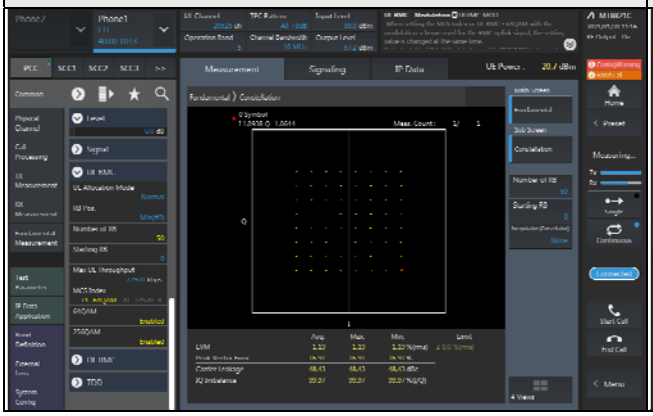
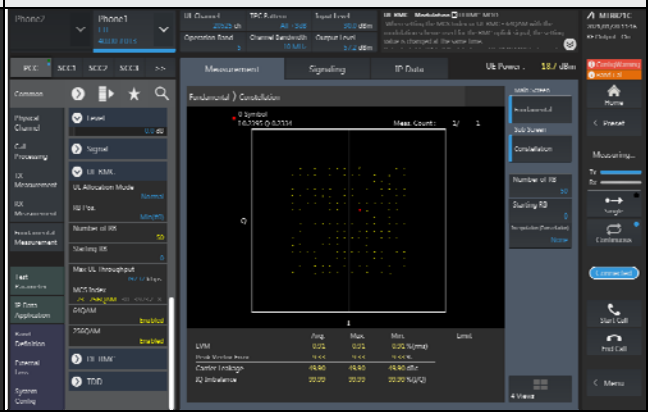
4.2.2 Test Procedure

Connect the EUT to Communication Simulator via the antenna connector, The frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.3 Test Setup

4.2.4 Test Results

WCDMA Band 5
Spectrum Plot of Measurement Value
Channel: 4182 / Frequency (MHz): 836.4MHz
WCDMA


LTE Band 5	
Spectrum Plot of Measurement Value	
Channel: 20525 / Frequency (MHz): 836.5MHz	
QPSK	16QAM
	
64QAM	256QAM
	

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5 ℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

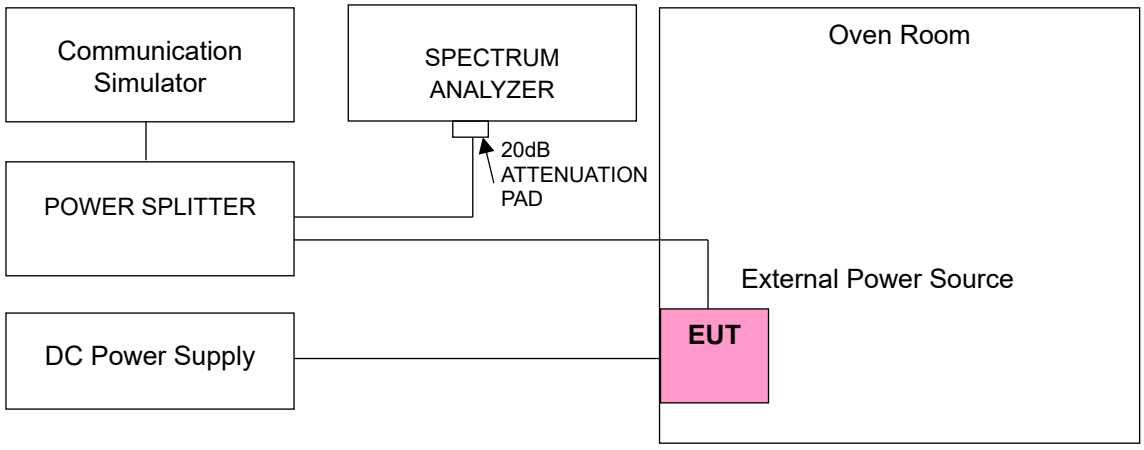
Note: The frequency error was recorded frequency error from the communication simulator.

4.3.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Radio Communication Analyzer Anritsu	MT8820C	6201010284	Dec. 28, 2020	Dec. 27, 2021
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	Dec. 24, 2020	Dec. 23, 2021
Digital Multimeter Fluke	87-III	70360742	Jun. 23, 2020	Jun. 22, 2021
DC Power Supply Topward	6306A	727263	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.3.4 Test Setup



4.3.5 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	WCDMA Band 5			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	826.400002	0.001815	846.600004	0.004252
3.40	826.400001	0.001331	846.600002	0.002717
4.40	826.400002	0.001936	846.600003	0.003662

Note: The applicant defined the normal working voltage is from 3.40Vdc to 4.40Vdc.

Frequency Error vs. Temperature

Temp. (℃)	WCDMA Band 5			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.400001	0.001573	846.600003	0.003425
-20	826.400003	0.003388	846.600001	0.001299
-10	826.400002	0.002783	846.600003	0.004016
0	826.400004	0.004477	846.600001	0.001417
10	826.399999	-0.001694	846.599998	-0.002362
20	826.399997	-0.003267	846.599996	-0.004252
30	826.399998	-0.003025	846.599998	-0.002717
40	826.399996	-0.004840	846.599998	-0.002835
50	826.399996	-0.004477	846.599999	-0.001181

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	824.700002	0.002183	848.300003	0.003065
3.40	824.700003	0.003031	848.300002	0.002358
4.40	824.700003	0.003759	848.300003	0.003772

Note: The applicant defined the normal working voltage is from 3.40Vdc to 4.40Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 1.4 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	824.700004	0.004486	848.300001	0.001179
-20	824.700004	0.004850	848.300002	0.002358
-10	824.700003	0.003153	848.300003	0.003419
0	824.700002	0.002183	848.300004	0.004362
10	824.699997	-0.004001	848.300004	0.004597
20	824.699998	-0.002183	848.300001	0.001532
30	824.699996	-0.004486	848.300001	0.001532
40	824.699998	-0.002304	848.299996	-0.004362
50	824.699997	-0.003638	848.299996	-0.004715

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	825.500002	0.002665	847.500003	0.003068
3.40	825.500001	0.001696	847.500002	0.002360
4.40	825.500001	0.001575	847.500003	0.003776

Note: The applicant defined the normal working voltage is from 3.40Vdc to 4.40Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 3 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	825.500002	0.002059	847.500003	0.004012
-20	825.500004	0.004240	847.500001	0.001180
-10	825.500004	0.004240	847.500002	0.002124
0	825.500004	0.004846	847.500003	0.003068
10	825.499997	-0.003513	847.500004	0.004720
20	825.499999	-0.001333	847.500003	0.003304
30	825.499997	-0.003150	847.500002	0.002832
40	825.499997	-0.003634	847.499998	-0.002950
50	825.499999	-0.001211	847.499997	-0.003186

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	826.500004	0.004235	846.500003	0.003071
3.40	826.500003	0.003630	846.500002	0.002363
4.40	826.500003	0.003146	846.500003	0.003780

Note: The applicant defined the normal working voltage is from 3.40Vdc to 4.40Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.500004	0.004477	846.500004	0.004253
-20	826.500003	0.003146	846.500004	0.004253
-10	826.500004	0.004235	846.500001	0.001418
0	826.500002	0.002783	846.500004	0.004135
10	826.499997	-0.004114	846.500002	0.001890
20	826.499996	-0.004477	846.500002	0.002245
30	826.499998	-0.003025	846.500003	0.002953
40	826.499997	-0.003509	846.499997	-0.003898
50	826.499996	-0.004598	846.499998	-0.002126

Frequency Error vs. Voltage

Voltage (Volts)	LTE Band 5			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.85	829.000003	0.003619	844.000003	0.003081
3.40	829.000002	0.002774	844.000002	0.002370
4.40	829.000001	0.001206	844.000003	0.003791

Note: The applicant defined the normal working voltage is from 3.40Vdc to 4.40Vdc.

Frequency Error vs. Temperature

Temp. (℃)	LTE Band 5			
	Channel Bandwidth 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	829.000003	0.003378	844.000003	0.003436
-20	829.000002	0.001809	844.000003	0.002962
-10	829.000004	0.004825	844.000003	0.004028
0	829.000003	0.003619	844.000004	0.004384
10	828.999998	-0.002051	844.000002	0.001896
20	828.999998	-0.002413	844.000003	0.003436
30	828.999998	-0.002171	844.000001	0.001540
40	828.999997	-0.003257	843.999999	-0.001185
50	828.999998	-0.002654	843.999998	-0.002844

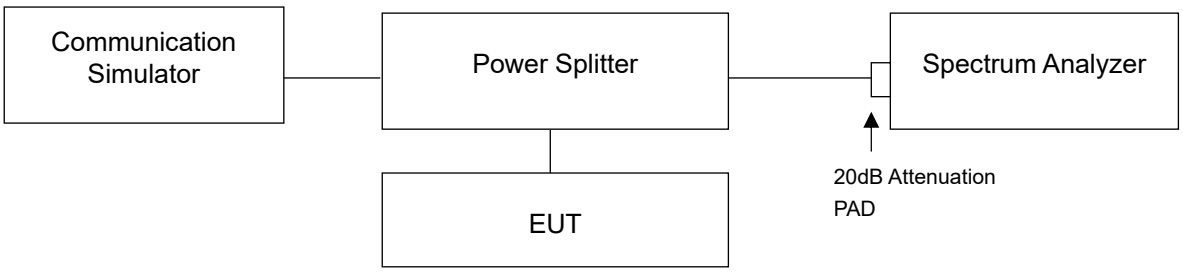
4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Measurement method, please refer to section 5.4.4 of ANSI C63.26. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

For the 26dBc bandwidth measurement method, please refer to section 5.4.3 of ANSI C63.26.

4.4.2 Test Setup



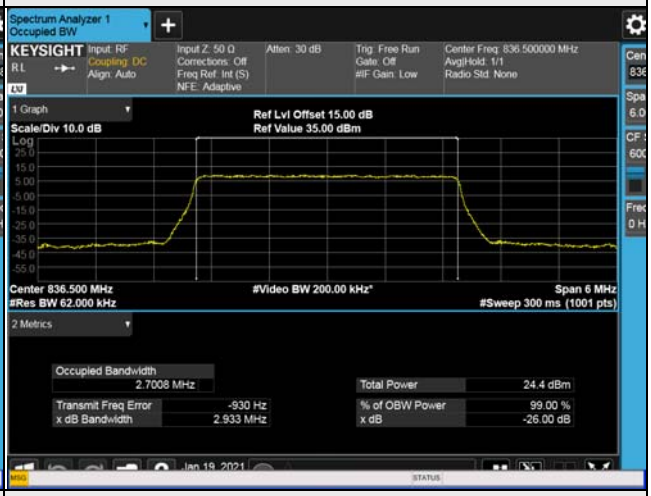
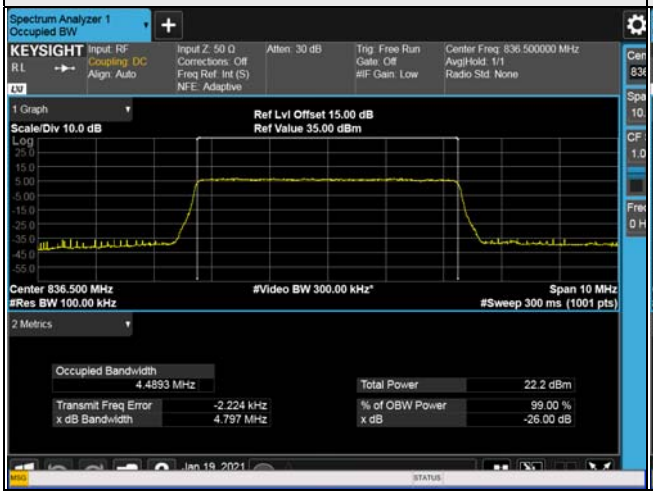
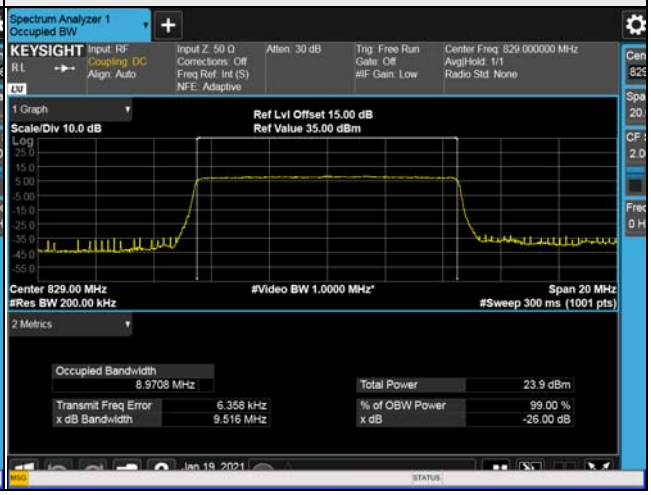
4.4.3 Test Result

Occupied Bandwidth

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
		WCDMA
4132	826.4	4.15
4182	836.4	4.16
4233	846.6	4.17

Spectrum Plot of Worst Value
WCDMA

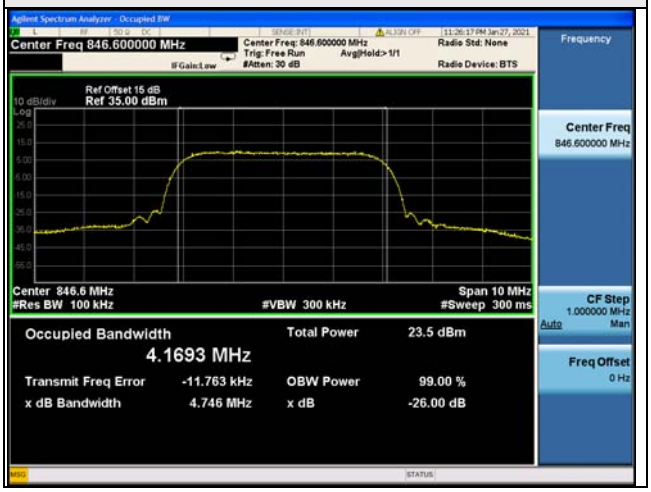
LTE Band 5, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20407	824.7	1.09	1.09	1.09	1.08
20525	836.5	1.09	1.09	1.09	1.08
20643	848.3	1.09	1.09	1.09	1.08
LTE Band 5, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20415	825.5	2.70	2.70	2.70	2.70
20525	836.5	2.70	2.70	2.70	2.70
20635	847.5	2.70	2.70	2.70	2.69
LTE Band 5, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20425	826.5	4.49	4.49	4.49	4.48
20525	836.5	4.49	4.49	4.49	4.48
20625	846.5	4.49	4.49	4.49	4.48
LTE Band 5, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20450	829.0	8.97	8.95	8.96	8.96
20525	836.5	8.97	8.95	8.95	8.95
20600	844.0	8.96	8.95	8.95	8.95

Spectrum Plot of Worst Value	
1.4MHz / 64QAM	3MHz / QPSK
	
5MHz / 64QAM	10MHz / QPSK
	

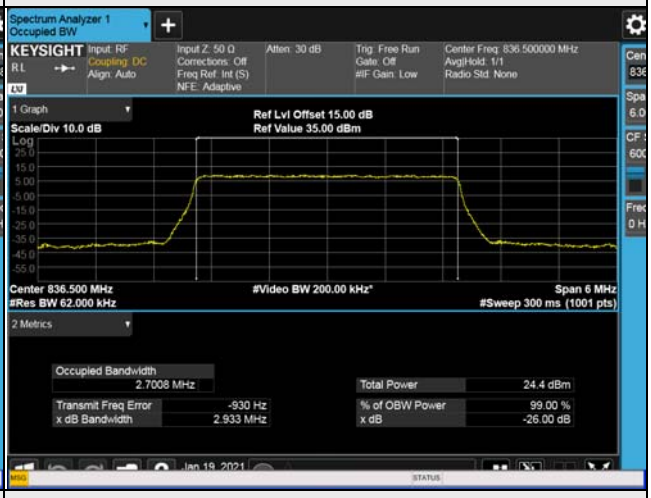
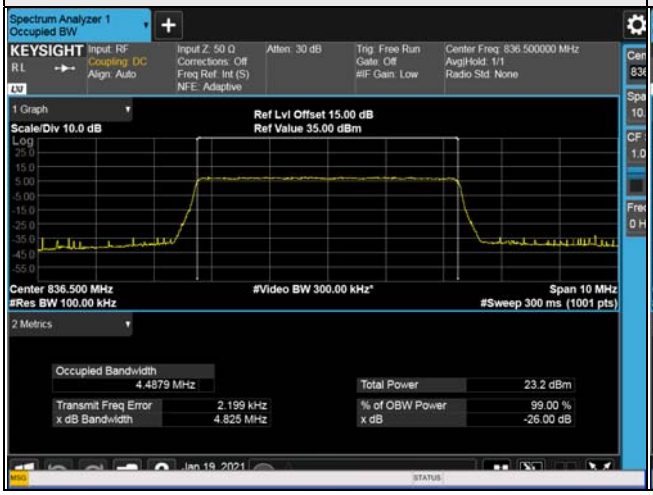
26dB Bandwidth

Channel	Frequency (MHz)	26dB Bandwidth (MHz)
		WCDMA
4132	826.4	4.74
4182	836.4	4.73
4233	846.6	4.75

Spectrum Plot of Worst Value
WCDMA



LTE Band 5, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20407	824.7	1.21	1.21	1.21	1.21
20525	836.5	1.21	1.21	1.22	1.21
20643	848.3	1.22	1.22	1.22	1.21
LTE Band 5, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20415	825.5	2.93	2.90	2.90	2.92
20525	836.5	2.93	2.90	2.91	2.92
20635	847.5	2.93	2.91	2.92	2.92
LTE Band 5, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20425	826.5	4.82	4.79	4.80	4.80
20525	836.5	4.81	4.83	4.80	4.79
20625	846.5	4.81	4.80	4.80	4.79
LTE Band 5, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	26dB Bandwidth (MHz)			
		QPSK	16QAM	64QAM	256QAM
20450	829.0	9.52	9.51	9.51	9.50
20525	836.5	9.54	9.51	9.51	9.50
20600	844.0	9.50	9.49	9.50	9.51

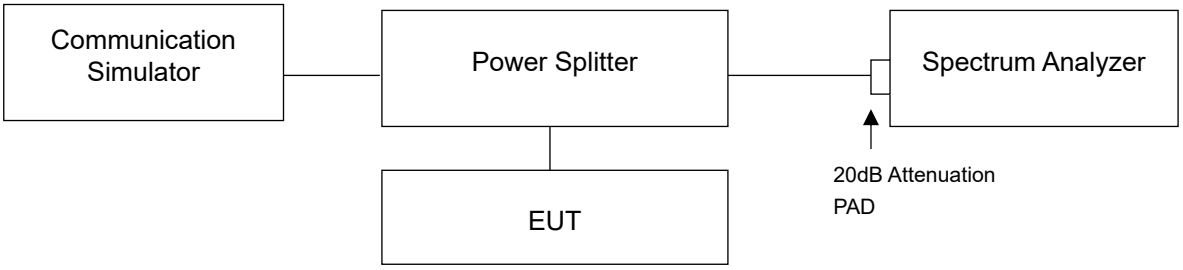
Spectrum Plot of Worst Value	
1.4MHz / 64QAM	3MHz / QPSK
	
5MHz / 16QAM	10MHz / QPSK
	

4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

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. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 Test Setup

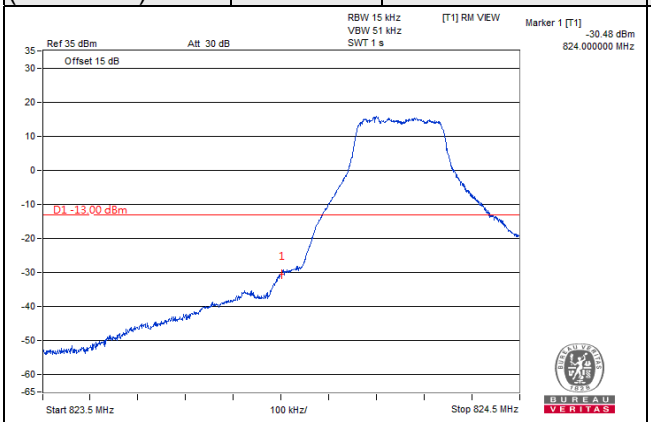
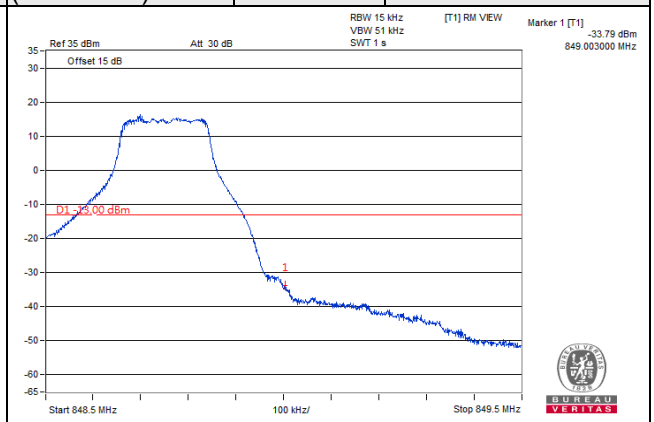
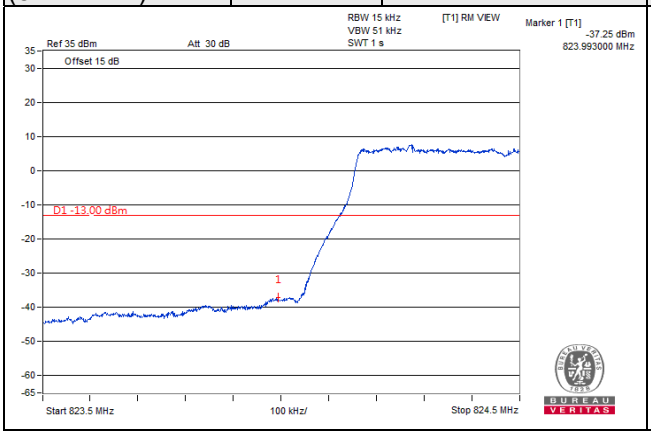
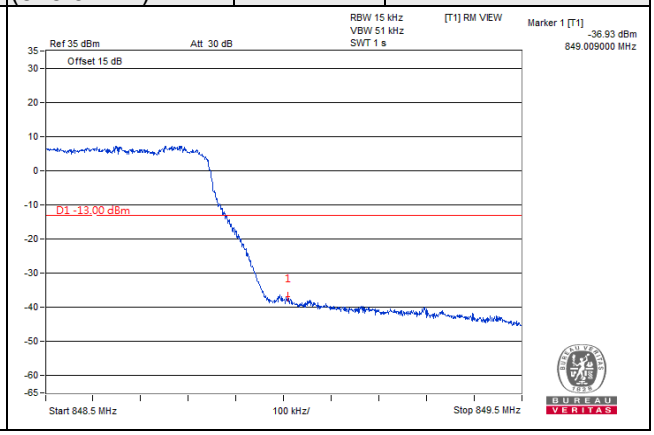


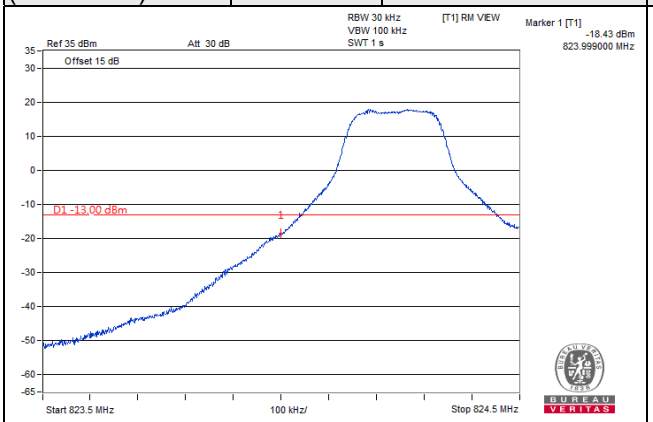
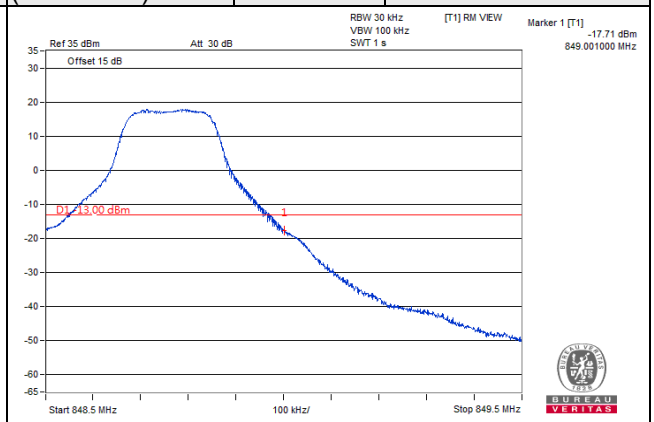
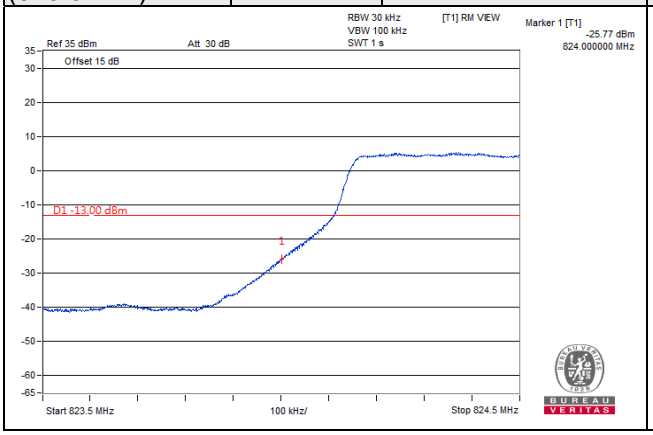
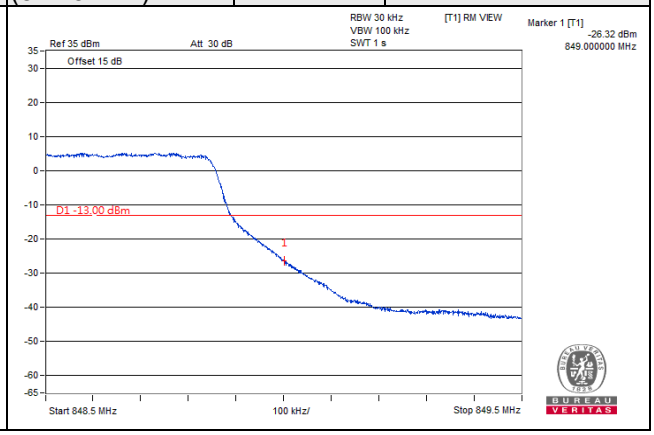
4.5.3 Test Procedures

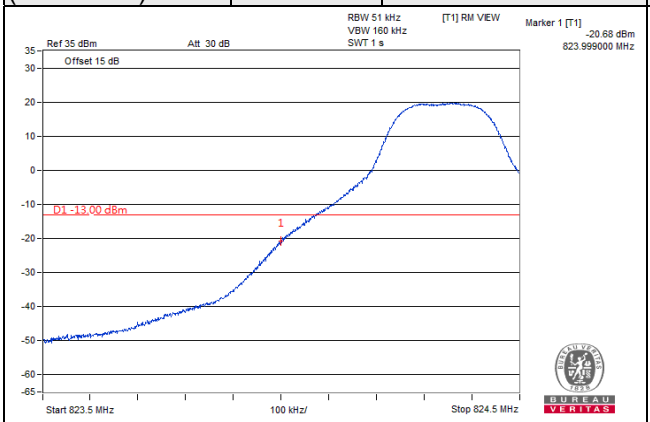
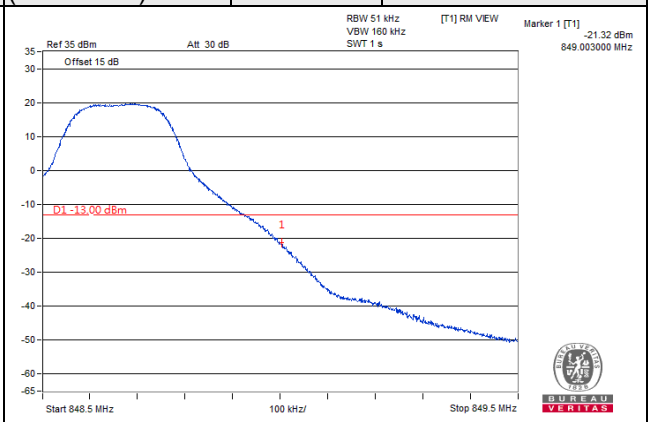
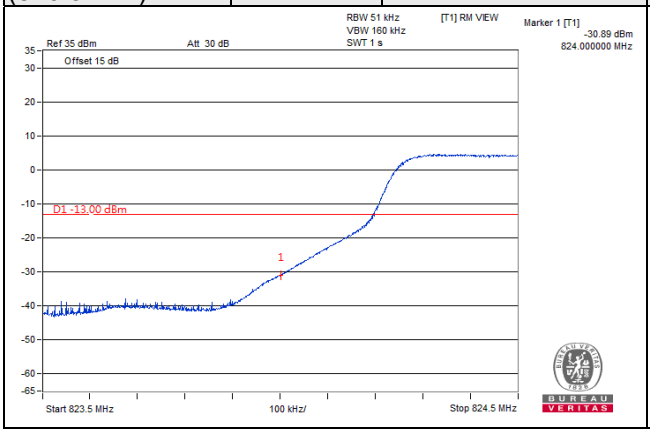
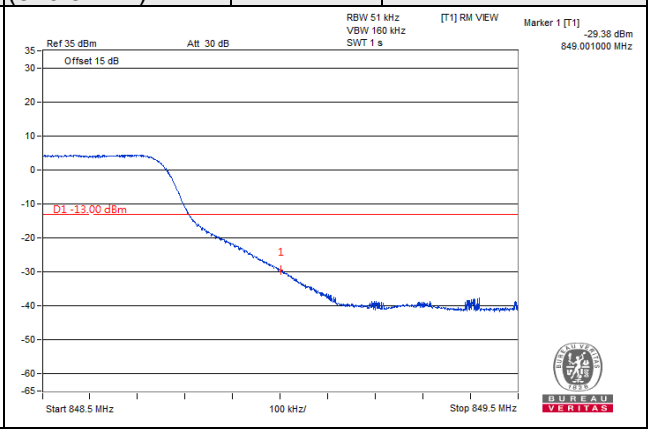
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and span is 5MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (WCDMA).
c. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 15kHz and VB of the spectrum is 51kHz (LTE Channel Bandwidth 1.4MHz).
d. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 30kHz and VB of the spectrum is 100kHz (LTE Channel Bandwidth 3MHz).
e. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (LTE Channel Bandwidth 5MHz).
f. The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Channel Bandwidth 10MHz).
g. Record the max trace plot into the test report.

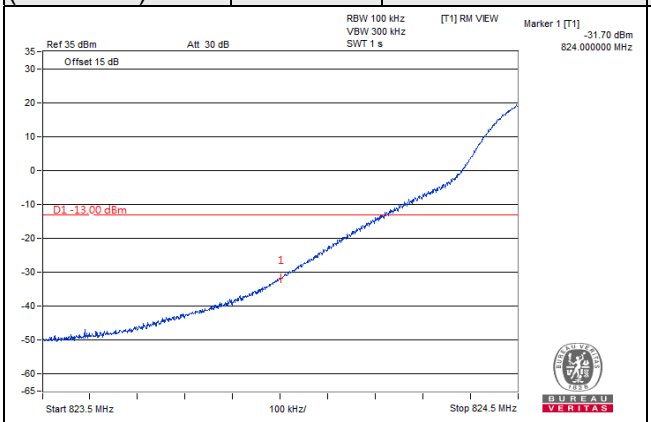
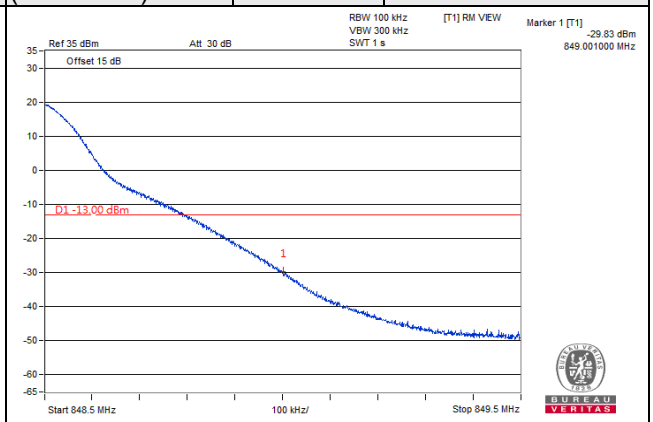
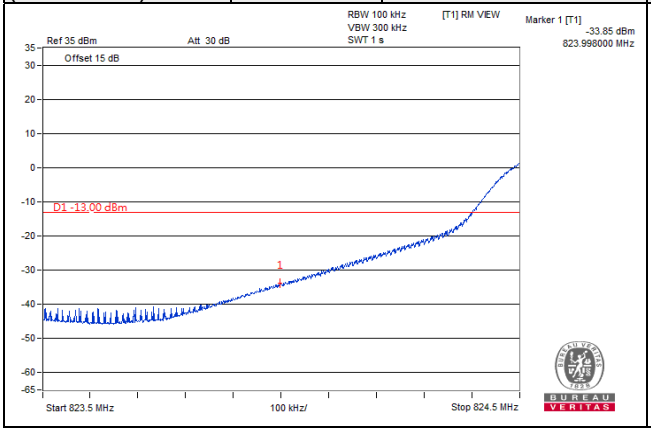
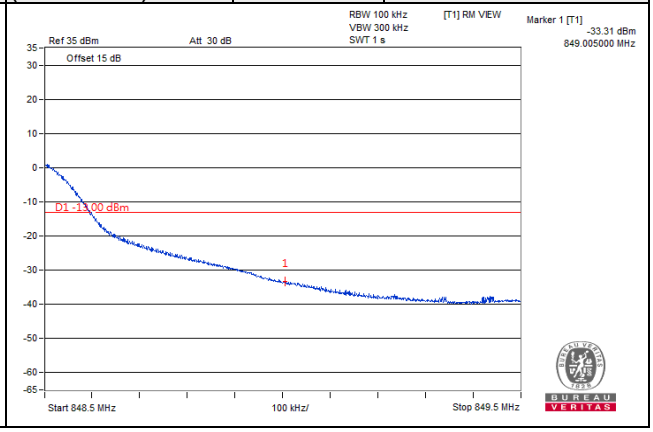
4.5.4 Test Results

WCDMA			
Channel	4132 (826.4MHz)	Channel	4233 (846.6MHz)
			

LTE Band 5, Channel Bandwidth 1.4MHz					
Channel 20407 (824.7MHz)	QPSK	1 RB / 0 RB Offset	Channel 20643 (848.3MHz)	QPSK	1 RB / 5 RB Offset
					
Channel 20407 (824.7MHz)	QPSK	6 RB / 0 RB Offset	Channel 20643 (848.3MHz)	QPSK	6 RB / 0 RB Offset
					

LTE Band 5, Channel Bandwidth 3MHz					
Channel 20415 (825.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20635 (847.5MHz)	QPSK	1 RB / 14 RB Offset
					
Channel 20415 (825.5MHz)	QPSK	15 RB / 0 RB Offset	Channel 20635 (847.5MHz)	QPSK	15 RB / 0 RB Offset
					

LTE Band 5, Channel Bandwidth 5MHz					
Channel 20425 (826.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 20625 (846.5MHz)	QPSK	1 RB / 24 RB Offset
					
Channel 20425 (826.5MHz)	QPSK	25 RB / 0 RB Offset	Channel 20625 (846.5MHz)	QPSK	25 RB / 0 RB Offset
					

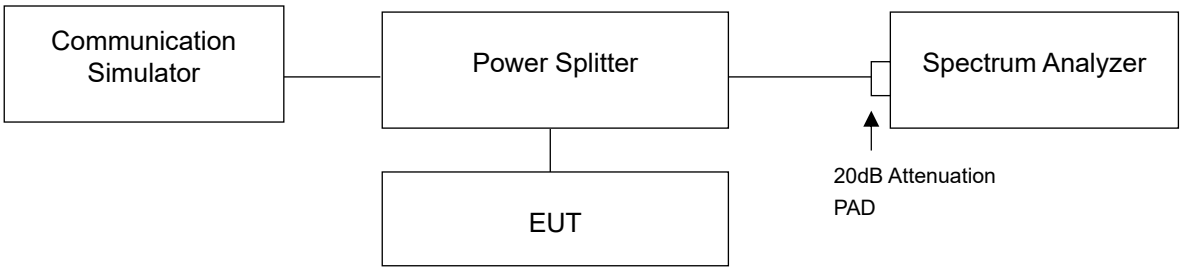
LTE Band 5, Channel Bandwidth 10MHz					
Channel 20450 (829.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 20600 (844.0MHz)	QPSK	1 RB / 49 RB Offset
					
Channel 20450 (829.0MHz)	QPSK	50 RB / 0 RB Offset	Channel 20600 (844.0MHz)	QPSK	50 RB / 0 RB Offset
					

4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup



4.6.3 Test Procedures

a. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
b. Set the number of counts to a value that stabilizes the measured CCDF curve;
c. Record the maximum PAPR level associated with a probability of 0.1%.

4.6.4 Test Results

Channel	Frequency (MHz)	Peak To Average Ratio (dB)
		WCDMA
4132	826.4	2.87
4182	836.4	2.81
4233	846.6	2.81

Spectrum Plot of Worst Value
WCDMA

LTE Band 5, Channel Bandwidth 1.4MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
20407	824.7	4.01	5.87	6.98	7.29
20525	836.5	3.96	5.76	6.87	7.03
20643	848.3	3.84	5.55	6.63	6.77
LTE Band 5, Channel Bandwidth 3MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
20415	825.5	3.74	5.65	7.01	7.30
20525	836.5	3.68	5.61	6.87	7.03
20635	847.5	3.55	5.38	6.62	6.91
LTE Band 5, Channel Bandwidth 5MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
20425	826.5	3.75	5.62	7.06	7.35
20525	836.5	3.70	5.57	6.83	7.19
20625	846.5	3.64	5.43	6.80	7.08
LTE Band 5, Channel Bandwidth 10MHz					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			
		QPSK	16QAM	64QAM	256QAM
20450	829.0	3.86	5.73	6.92	7.49
20525	836.5	3.81	5.68	6.91	7.48
20600	844.0	3.71	5.57	6.86	7.10

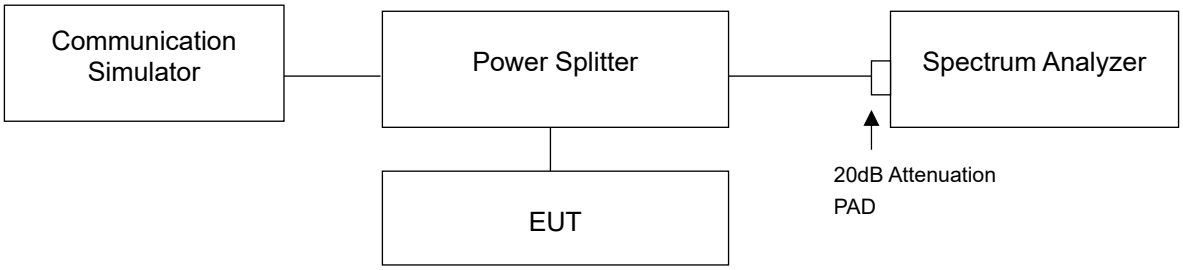
Spectrum Plot of Worst Value	
1.4MHz / 256QAM	3MHz / 256QAM
	
5MHz / 256QAM	10MHz / 256QAM
	

4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

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 –13dBm.

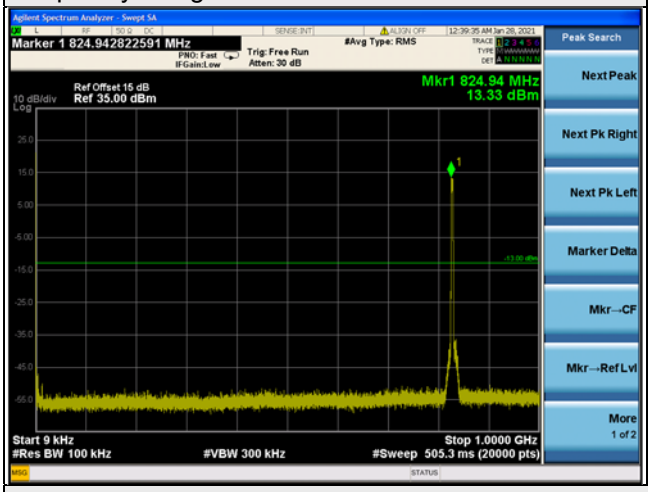
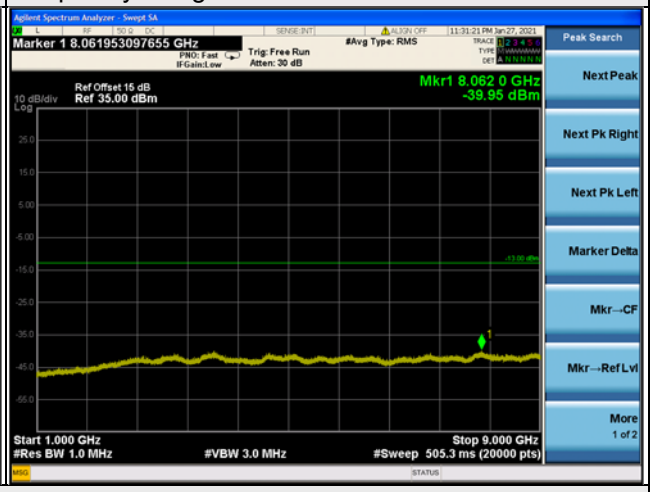
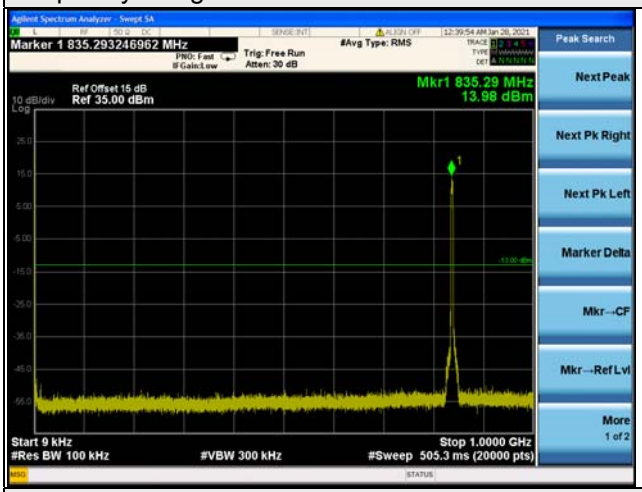
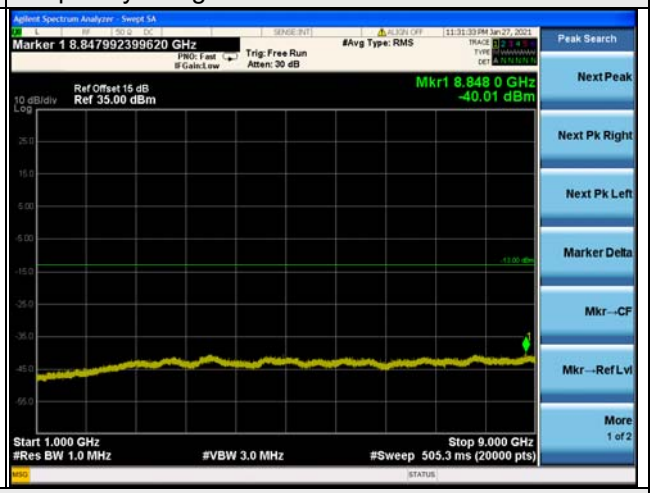
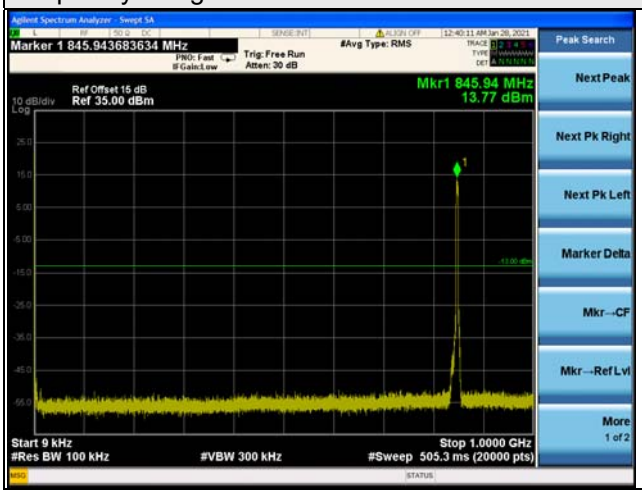
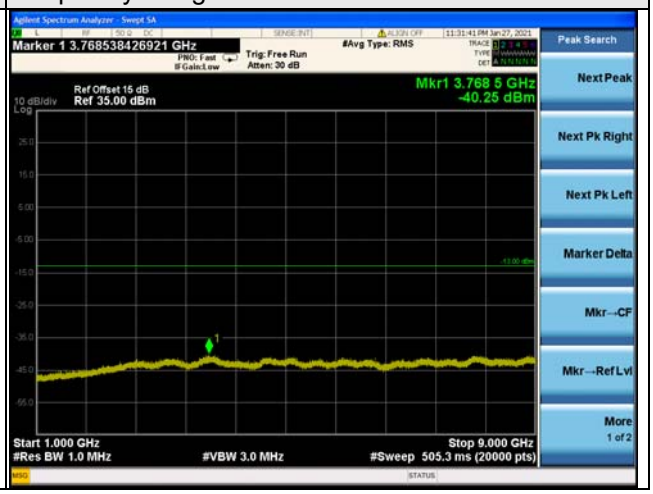
4.7.2 Test Setup



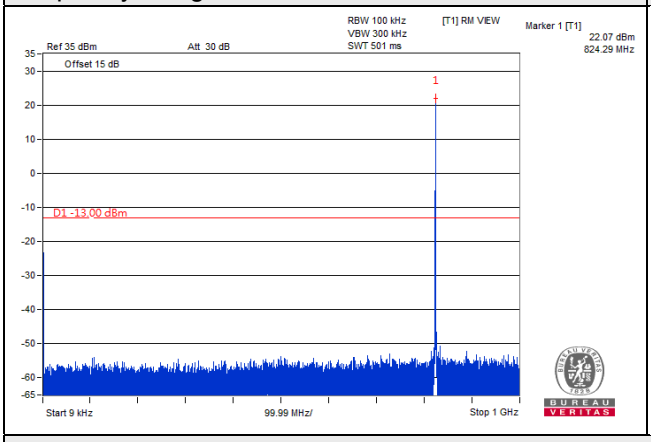
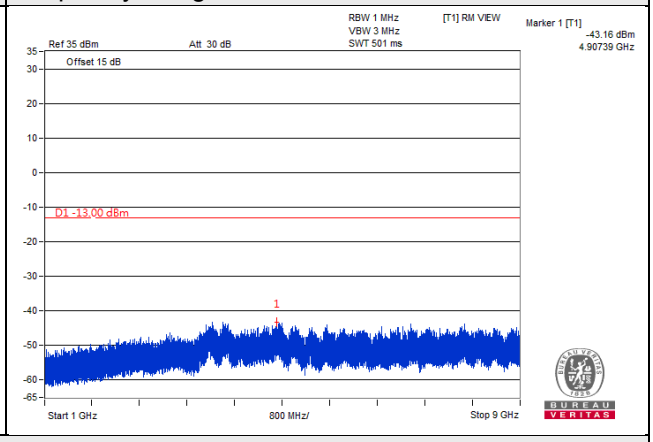
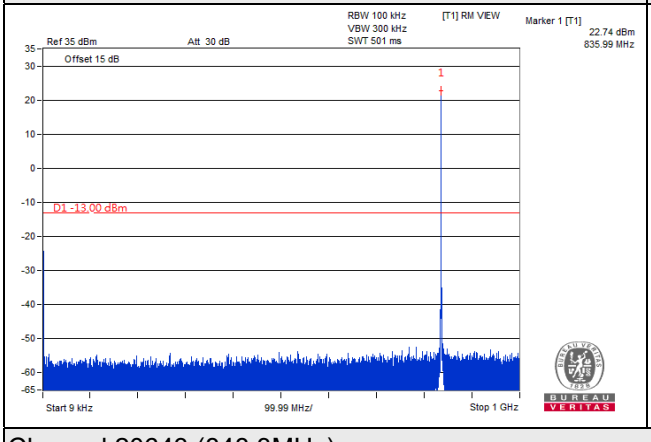
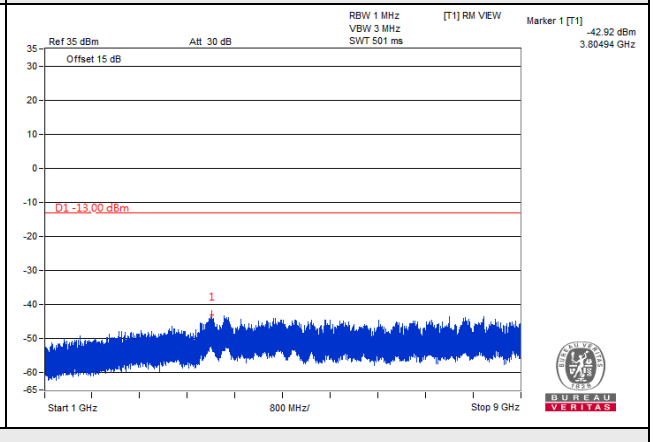
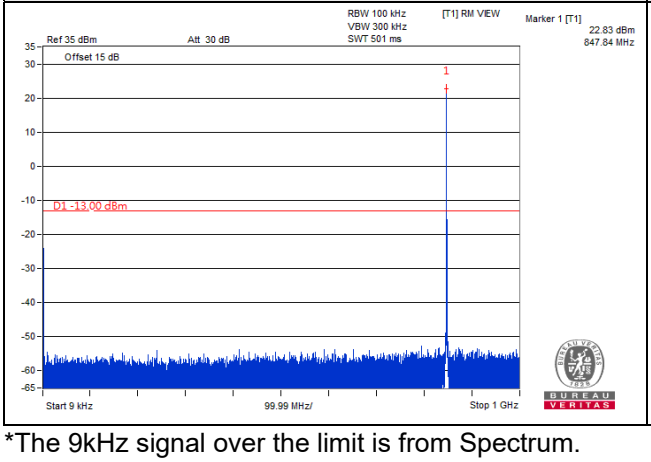
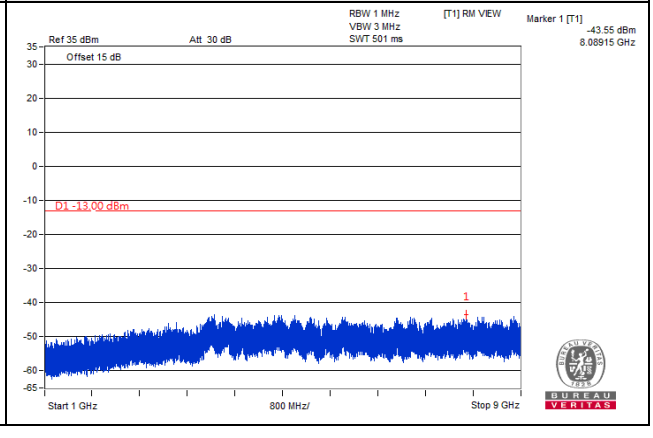
4.7.3 Test Procedure

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9kHz to 9GHz. 20dB attenuation pad is connected with spectrum. RBW=100kHz and VBW=300kHz for 9kHz to 1GHz and RBW=1MHz and VBW=3MHz for 1 GHz to 9GHz are used for WCDMA and LTE band conducted emission measurement.

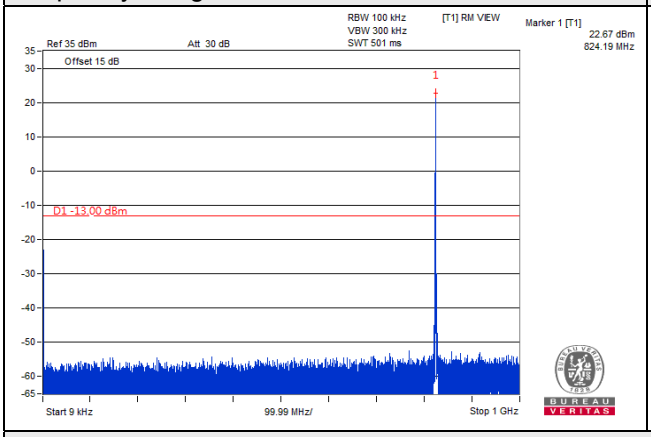
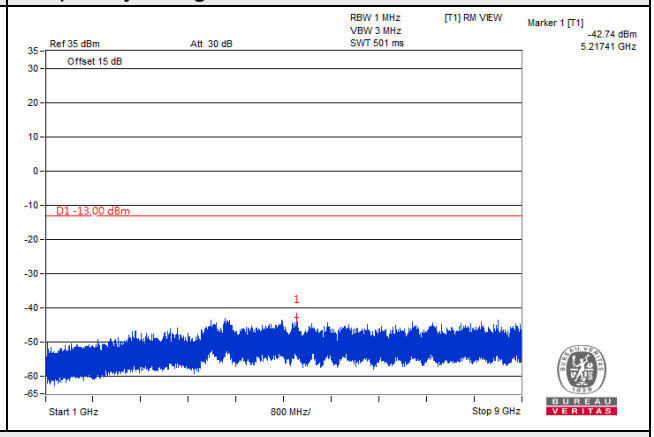
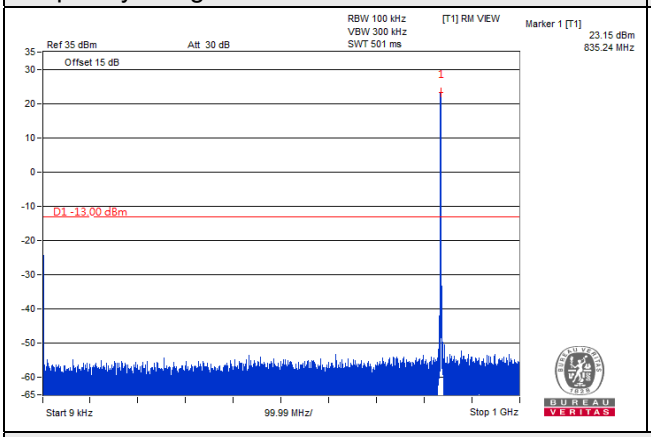
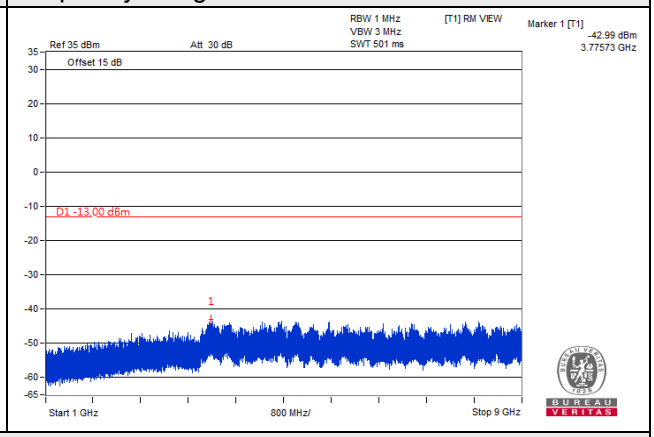
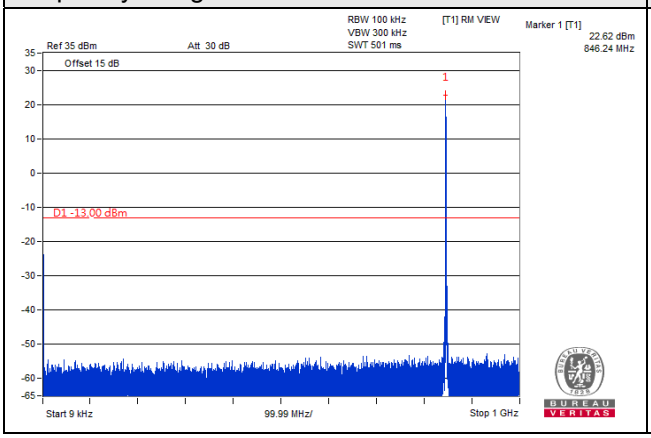
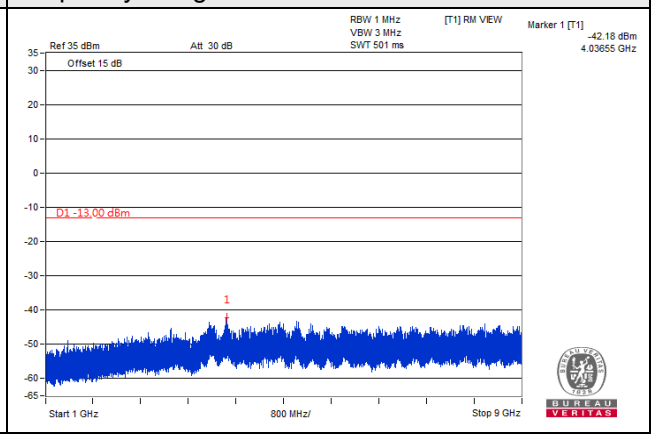
4.7.4 Test Results

WCDMA	
Channel 4132 (826.4MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 4182 (836.4MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 4233 (846.6MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	

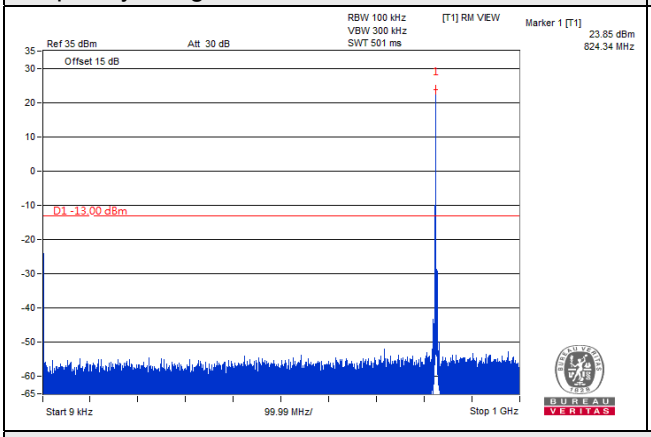
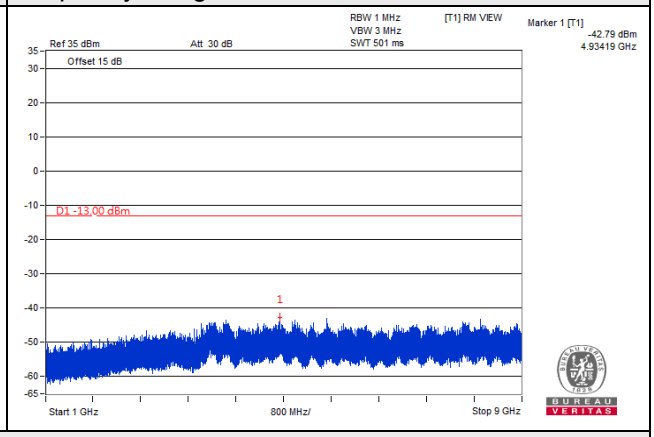
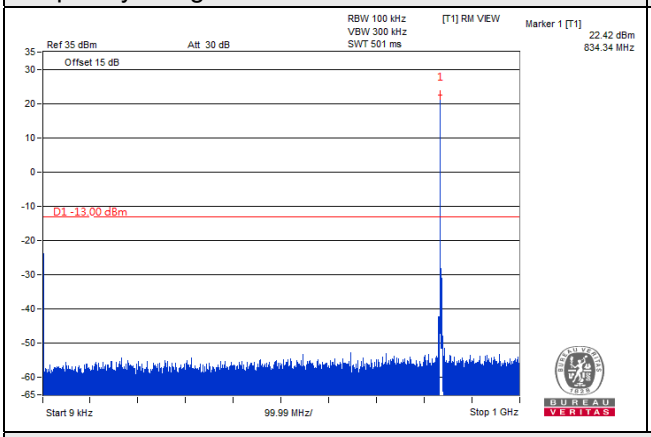
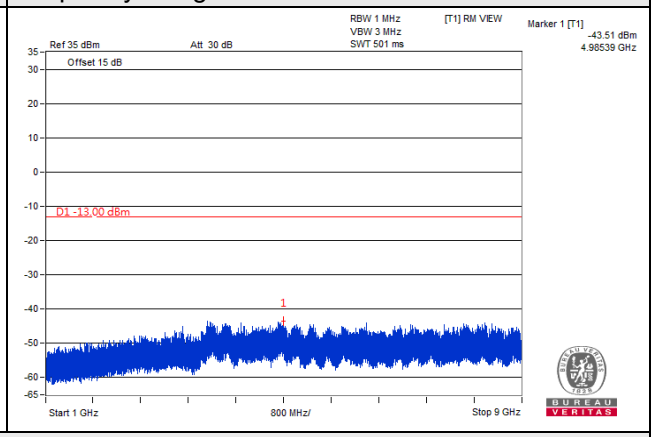
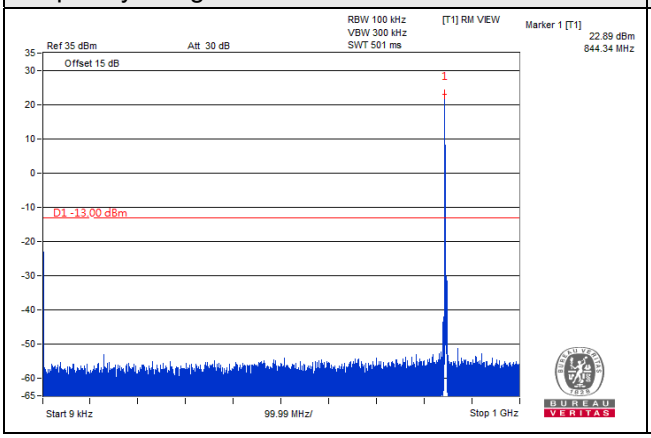
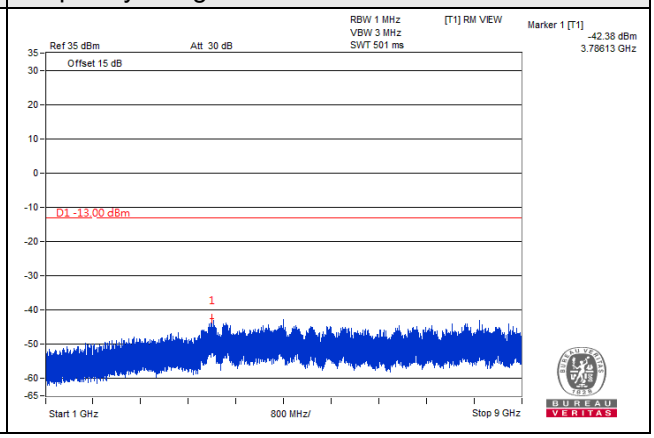
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5, Channel Bandwidth 1.4MHz	
Channel 20407 (824.7MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20525 (836.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20643 (848.3MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	

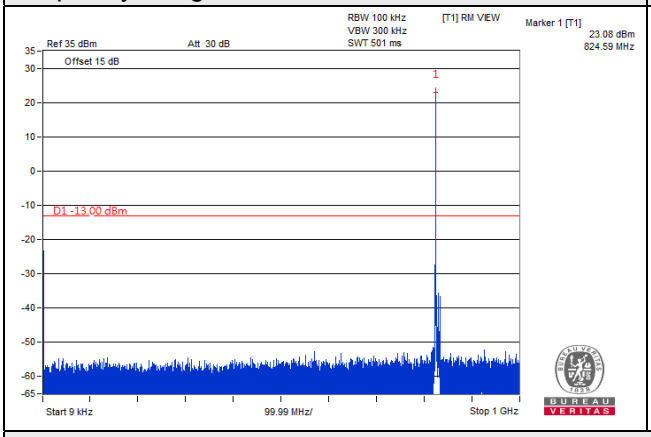
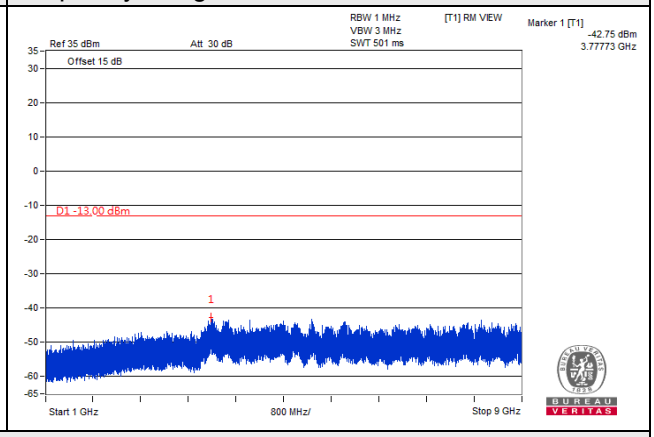
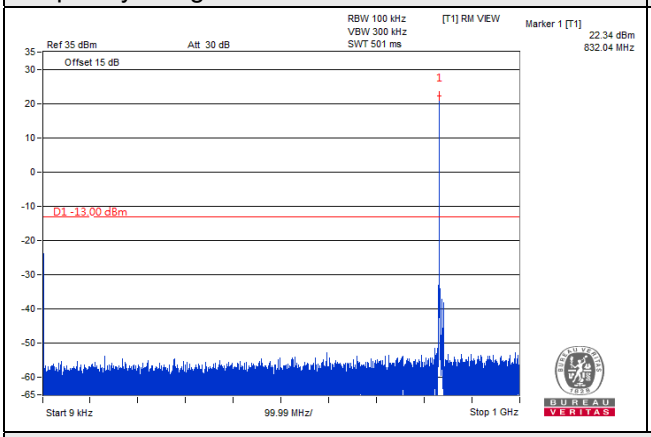
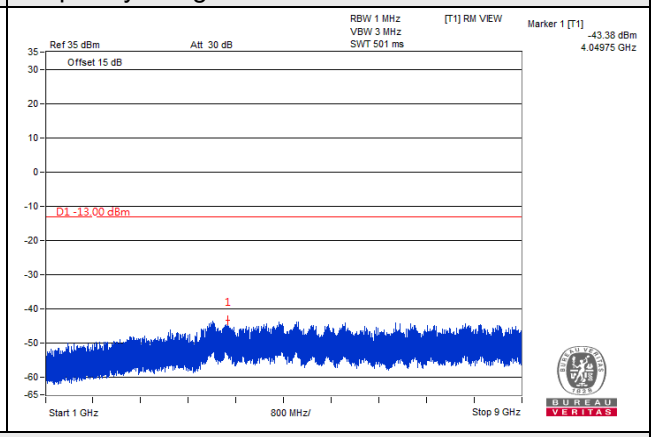
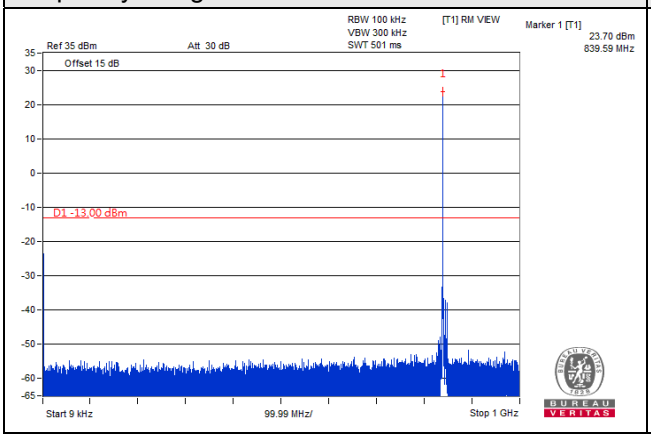
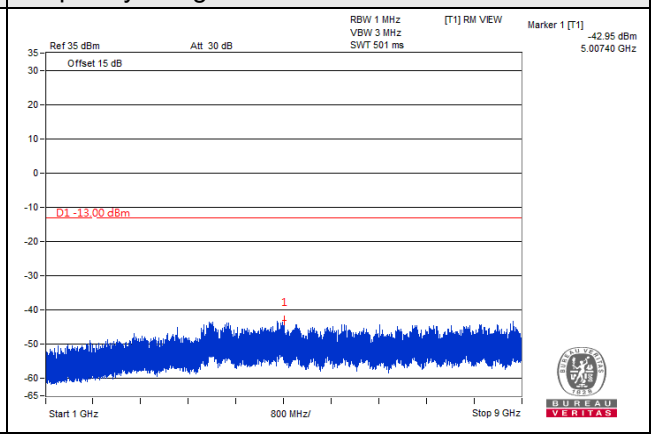
*The 9kHz signal over the limit is from Spectrum.

LTE Band 5, Channel Bandwidth 3MHz	
Channel 20415 (825.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20525 (836.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20635 (847.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	

*The 9kHz signal over the limit is from Spectrum.

LTE Band 5, Channel Bandwidth 5MHz	
Channel 20425 (826.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20525 (836.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20625 (846.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	

*The 9kHz signal over the limit is from Spectrum.

LTE Band 5, Channel Bandwidth 10MHz	
Channel 20450 (829.0MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20525 (836.5MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	
Channel 20600 (844.0MHz)	
Frequency Range : 9kHz ~ 1GHz	Frequency Range : 1GHz ~ 9GHz
	

*The 9kHz signal over the limit is from Spectrum.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

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 –13dBm.

4.8.2 Test Procedure

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) 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 1m to 4m 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 C63.26 section 5.5 and 5.2.7
   - EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.
   - ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

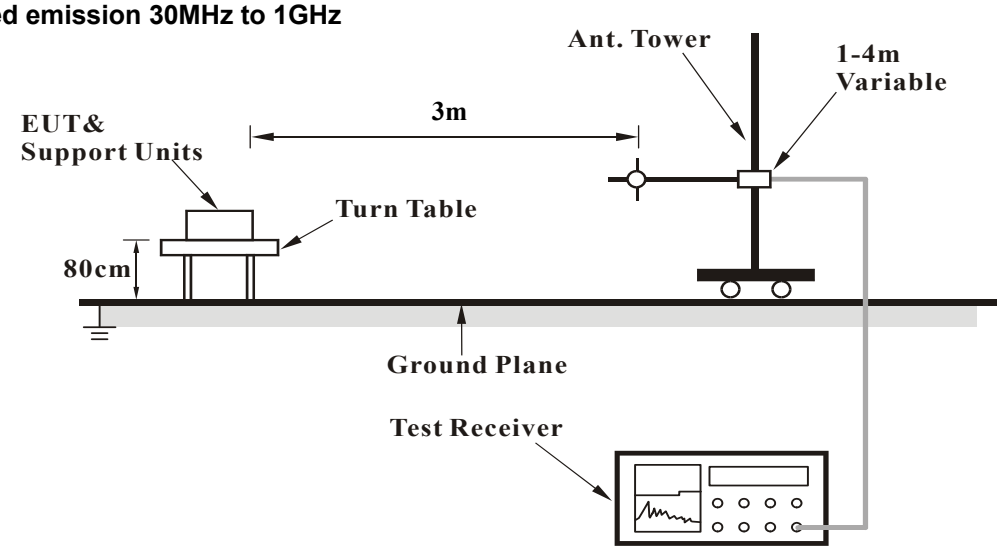
Note:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.8.3 Deviation from Test Standard

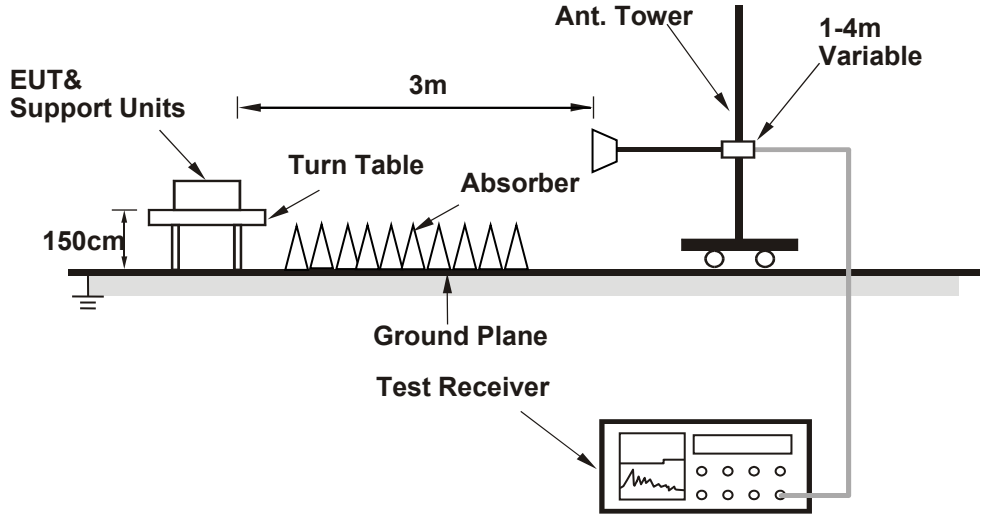
No deviation.

4.8.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

4.8.5 Test Results

Internal Antenna

Below 1GHz

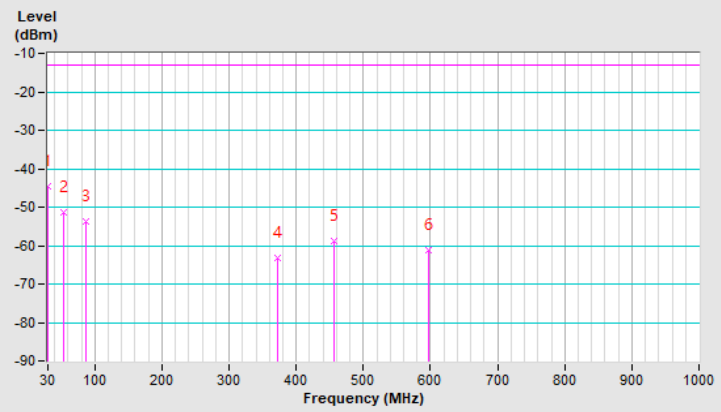
WCDMA Band 5

Mode	TX channel 4182 (836.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	30.00	-44.70	-13.00	-31.70	1.25 H	22	63.03	-107.73
2	53.28	-51.51	-13.00	-38.51	1.00 H	19	54.87	-106.38
3	87.23	-53.80	-13.00	-40.80	2.00 H	289	57.95	-111.75
4	372.41	-63.20	-13.00	-50.20	1.25 H	126	39.34	-102.54
5	455.83	-58.90	-13.00	-45.90	1.25 H	126	41.80	-100.70
6	596.48	-61.21	-13.00	-48.21	1.00 H	337	36.82	-98.03

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

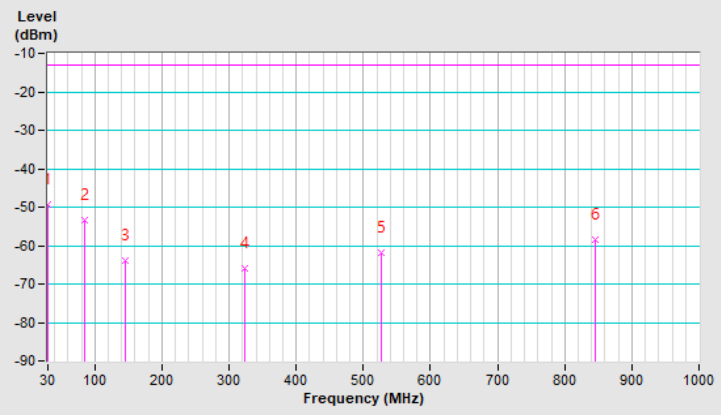


Mode	TX channel 4182 (836.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-49.40	-13.00	-36.40	2.00 V	307	58.33	-107.73
2	84.32	-53.30	-13.00	-40.30	1.25 V	194	58.14	-111.44
3	144.46	-63.90	-13.00	-50.90	1.00 V	67	42.08	-105.98
4	323.91	-66.00	-13.00	-53.00	2.00 V	101	37.55	-103.55
5	526.64	-62.00	-13.00	-49.00	1.25 V	126	37.61	-99.61
6	845.77	-58.31	-13.00	-45.31	1.00 V	50	35.25	-93.56

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



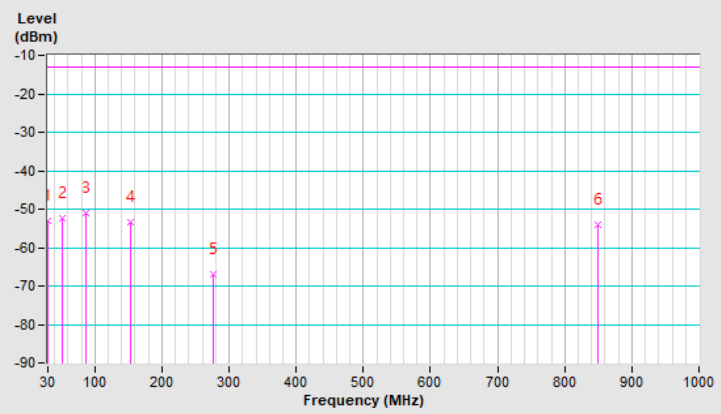
LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	30.00	-53.20	-13.00	-40.20	1.50 H	10	54.53	-107.73
2	52.31	-52.32	-13.00	-39.32	1.00 H	58	54.03	-106.35
3	87.23	-51.10	-13.00	-38.10	1.25 H	18	60.65	-111.75
4	154.16	-53.50	-13.00	-40.50	1.50 H	55	52.06	-105.56
5	276.38	-67.00	-13.00	-54.00	2.00 H	253	37.77	-104.77
6	849.65	-54.22	-13.00	-41.22	1.00 H	50	39.27	-93.49

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

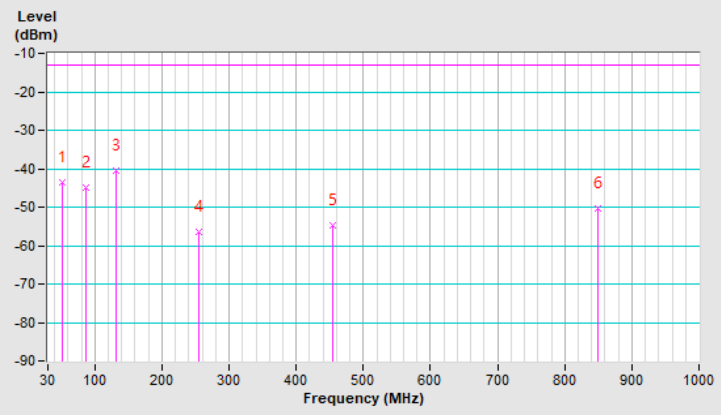


Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	52.31	-43.60	-13.00	-30.60	1.25 V	6	62.75	-106.35
2	86.26	-44.80	-13.00	-31.80	1.50 V	194	66.92	-111.72
3	**131.85**	**-40.60**	**-13.00**	**-27.60**	**1.25 V**	**138**	**66.44**	**-107.04**
4	254.07	-56.30	-13.00	-43.30	2.00 V	138	49.63	-105.93
5	454.86	-54.71	-13.00	-41.71	1.00 V	135	46.00	-100.71
6	849.65	-50.40	-13.00	-37.40	1.25 V	17	43.09	-93.49

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



Above 1GHz
WCDMA Band 5

Mode	TX channel 4132 (826.4MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1652.80	-55.65	-13.00	-42.65	1.54 H	53	47.51	-103.16
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1652.80	-59.13	-13.00	-46.13	1.58 V	222	44.03	-103.16

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 4182 (836.4MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1672.80	-55.25	-13.00	-42.25	1.58 H	56	47.86	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1672.80	-58.55	-13.00	-45.55	1.55 V	213	44.56	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 4233 (846.6MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1693.20	-55.95	-13.00	-42.95	1.56 H	56	47.11	-103.06
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.20	-58.80	-13.00	-45.80	1.51 V	228	44.26	-103.06

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407 (824.7MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1649.40	-54.35	-13.00	-41.35	1.93 H	31	48.82	-103.17
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1649.40	-60.05	-13.00	-47.05	1.00 V	284	43.12	-103.17

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-53.55	-13.00	-40.55	2.14 H	38	49.56	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-60.55	-13.00	-47.55	1.11 V	284	42.56	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20643 (848.3MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1696.60	-54.41	-13.00	-41.41	1.83 H	37	48.64	-103.05
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1696.60	-61.30	-13.00	-48.30	1.06 V	289	41.75	-103.05

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425 (826.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1653.00	-55.45	-13.00	-42.45	1.92 H	34	47.71	-103.16
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1653.00	-60.75	-13.00	-47.75	1.02 V	275	42.41	-103.16

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-55.55	-13.00	-42.55	2.10 H	45	47.56	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-61.75	-13.00	-48.75	1.08 V	276	41.36	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20625 (846.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1693.00	-55.65	-13.00	-42.65	2.09 H	32	47.41	-103.06
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-62.65	-13.00	-49.65	1.12 V	284	40.41	-103.06

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450 (829.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1658.00	-56.45	-13.00	-43.45	1.93 H	34	46.70	-103.15
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1658.00	-62.25	-13.00	-49.25	1.06 V	277	40.90	-103.15

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-57.40	-13.00	-44.40	2.21 H	37	45.71	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-62.80	-13.00	-49.80	1.10 V	272	40.31	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20600 (844.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1688.00	-56.55	-13.00	-43.55	2.11 H	31	46.52	-103.07
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1688.00	-62.85	-13.00	-49.85	1.11 V	281	40.22	-103.07

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

External Antenna

Below 1GHz

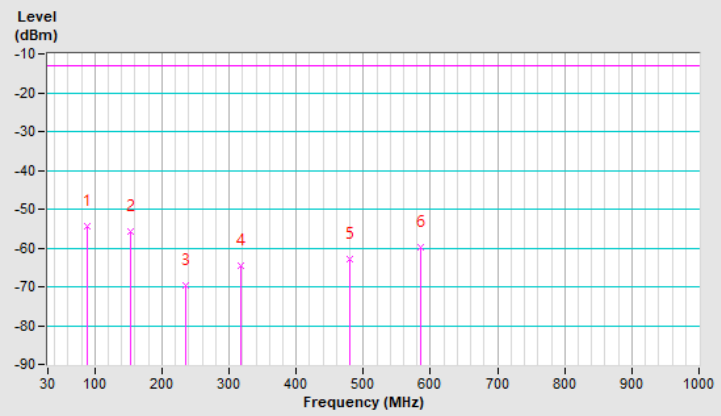
WCDMA Band 5

Mode	TX channel 4182 (836.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	89.17	-54.40	-13.00	-41.40	1.00 H	161	57.32	-111.72
2	153.19	-55.72	-13.00	-42.72	1.00 H	250	50.00	-105.72
3	235.64	-69.52	-13.00	-56.52	1.00 H	153	37.47	-106.99
4	317.12	-64.45	-13.00	-51.45	1.00 H	238	39.23	-103.68
5	480.08	-62.81	-13.00	-49.81	1.00 H	16	37.55	-100.36
6	584.84	-59.98	-13.00	-46.98	1.00 H	203	38.41	-98.39

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

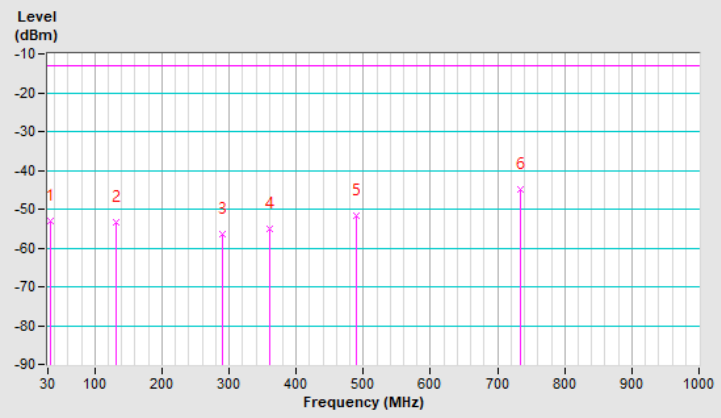


Mode	TX channel 4182 (836.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.88	-53.05	-13.00	-40.05	1.00 V	14	54.45	-107.50
2	130.88	-53.55	-13.00	-40.55	1.00 V	299	53.52	-107.07
3	289.96	-56.45	-13.00	-43.45	1.00 V	12	47.98	-104.43
4	360.77	-55.05	-13.00	-42.05	1.00 V	142	47.84	-102.89
5	489.78	-51.55	-13.00	-38.55	1.00 V	289	48.67	-100.22
6	734.22	-44.95	-13.00	-31.95	1.00 V	4	50.58	-95.53

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



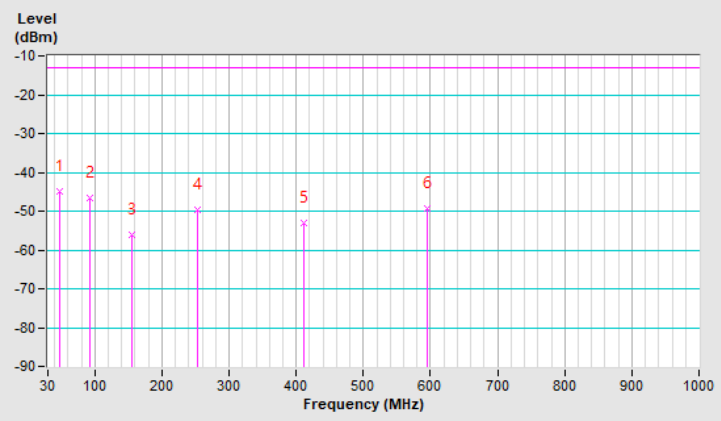
LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	48.43	-44.75	-13.00	-31.75	1.00 H	12	61.57	-106.32
2	93.05	-46.55	-13.00	-33.55	1.00 H	61	64.93	-111.48
3	156.10	-56.05	-13.00	-43.05	1.00 H	220	49.59	-105.64
4	252.13	-49.75	-13.00	-36.75	1.00 H	159	56.24	-105.99
5	412.18	-52.95	-13.00	-39.95	1.00 H	107	49.01	-101.96
6	594.54	-49.25	-13.00	-36.25	1.00 H	253	48.83	-98.08

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

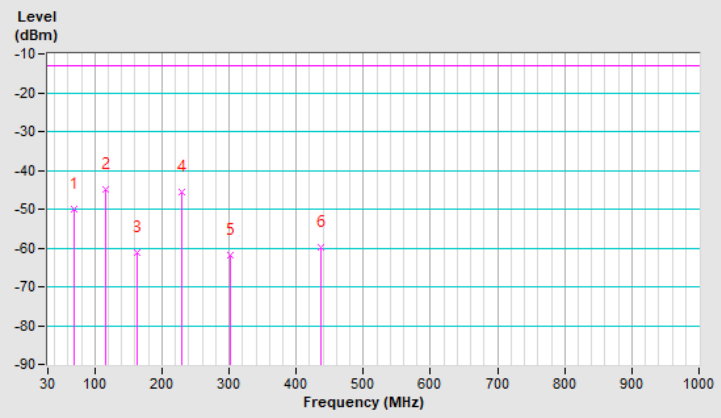


Mode	TX channel 20525 (836.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	68.80	-49.99	-13.00	-36.99	1.00 V	123	58.08	-108.07
2	116.33	-45.00	-13.00	-32.00	1.00 V	98	63.47	-108.47
3	162.89	-61.26	-13.00	-48.26	1.00 V	98	44.48	-105.74
4	228.85	-45.70	-13.00	-32.70	1.00 V	98	62.32	-108.02
5	301.60	-61.80	-13.00	-48.80	1.00 V	98	42.32	-104.12
6	437.40	-59.78	-13.00	-46.78	1.00 V	264	41.36	-101.14

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



Above 1GHz
WCDMA Band 5

Mode	TX channel 4132 (826.4MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1652.80	-56.40	-13.00	-43.40	3.78 H	8	46.76	-103.16
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1652.80	-51.45	-13.00	-38.45	1.19 V	100	51.71	-103.16

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 4182 (836.4MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1672.80	-55.60	-13.00	-42.60	3.78 H	11	47.51	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1672.80	-51.20	-13.00	-38.20	1.22 V	99	51.91	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 4233 (846.6MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1693.20	-55.85	-13.00	-42.85	3.82 H	10	47.21	-103.06
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.20	-51.50	-13.00	-38.50	1.21 V	102	51.56	-103.06

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 1.4MHz

Mode	TX channel 20407 (824.7MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1649.40	-51.15	-13.00	-38.15	3.85 H	9	52.02	-103.17
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1649.40	-46.55	-13.00	-33.55	1.20 V	106	56.62	-103.17

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-50.25	-13.00	-37.25	3.85 H	7	52.86	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-45.65	-13.00	-32.65	1.20 V	102	57.46	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20643 (848.3MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1696.60	-50.35	-13.00	-37.35	3.82 H	13	52.70	-103.05
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1696.60	-46.45	-13.00	-33.45	1.24 V	107	56.60	-103.05

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 5MHz

Mode	TX channel 20425 (826.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1653.00	-51.25	-13.00	-38.25	3.78 H	13	51.91	-103.16
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1653.00	-46.15	-13.00	-33.15	1.26 V	104	57.01	-103.16

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-51.05	-13.00	-38.05	3.77 H	9	52.06	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-46.15	-13.00	-33.15	1.25 V	103	56.96	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20625 (846.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1693.00	-51.15	-13.00	-38.15	3.79 H	10	51.91	-103.06
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1693.00	-45.75	-13.00	-32.75	1.26 V	107	57.31	-103.06

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 5, Channel Bandwidth 10MHz

Mode	TX channel 20450 (829.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1658.00	-51.30	-13.00	-38.30	3.86 H	7	51.85	-103.15
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1658.00	-46.55	-13.00	-33.55	1.24 V	104	56.60	-103.15

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20525 (836.5MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1673.00	-50.95	-13.00	-37.95	3.79 H	11	52.16	-103.11
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1673.00	-45.50	-13.00	-32.50	1.18 V	103	57.61	-103.11

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

Mode	TX channel 20600 (844.0MHz)	Frequency Range	1GHz ~ 9GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Han Wu		

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	1688.00	-51.15	-13.00	-38.15	3.77 H	14	51.92	-103.07
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1688.00	-45.95	-13.00	-32.95	1.23 V	106	57.12	-103.07

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) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – 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 and approved according to ISO/IEC 17025.

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

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

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