TEST REPORT

CERTIFICATE OF CONFORMITY

Standard:	**47 CFR FCC Part 22** **47 CFR FCC Part 24** **47 CFR FCC Part 27** **47 CFR FCC Part 90** **47 CFR FCC Part 2**
Report No.:	RFBBQJ-WTW-P24040202
FCC ID:	ACJ9TGWW23C
Product:	Radio Module
Brand:	Panasonic
Model No.:	WW23C
Received Date:	2024/4/10
Test Date:	2024/4/17 ~ 2024/4/29
Issued Date:	2024/7/31
Applicant:	Panasonic Corporation of North America
Address:	Two Riverforont Plaza,Newark, NJ 07102-5490, USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location (1):	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kewi Shan Dist., Taoyuan City 33383, Taiwan
Test Location (2):	No. 70, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)
FCC Registration / Designation Number (1):	788550 / TW0003
FCC Registration / Designation Number (2):	281270 / TW0032

Approved by: Jeremy Lin , **Date:** **2024/7/31**

Jeremy Lin / Project Engineer

Prepared by : Gina Liu / Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFBBQJ-WTW-P24040202	Original release.	2024/7/31

1 Certificate

Product:	Radio Module
Brand:	Panasonic
Test Model:	WW23C
Sample Status:	Engineering sample
Applicant:	Panasonic Corporation of North America
Test Date:	2024/4/17 ~ 2024/4/29
Standard:	47 CFR FCC Part 22 47 CFR FCC Part 24 47 CFR FCC Part 27 47 CFR FCC Part 90 47 CFR FCC Part 2
Measurement procedure:	ANSI/TIA/EIA-603-E 2016 ANSI C63.26-2015 KDB 971168 D01 Power Meas License Digital Systems v03r01 KDB 971168 D02 Misc Rev Approv License Devices v02r02

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

2 Summary of Test Results

Standard / Clause	Test Item	Result	Remark
Part 2.1046 Part 22.913 (a) Part 24.232 (c) Part 27.50(d) Part 27.50(h) Part 27.50(c) Part 27.50(b) Part 27.50(k) Part 90.635(b) Part 90.542(a)(7)	Effective Radiated Power and Equivalent Isotropically Radiated Power	Pass	Meet the requirement of limit.
Part 2.1047	Modulation Characteristics	Pass	Meet the requirement of limit.
Part 27.50(k)	Peak to Average Ratio	Pass	Meet the requirement of limit.
Part 2.1049	Bandwidth	Pass	Meet the requirement of limit.
Part 2.1051 Part 27.53(n)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
Part 2.1053 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m) Part 27.53(n) Part 27.53(g) Part 27.53(c)(f) Part 90.691 Part 90.543(e)(f)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -38.50 dB at 39.70 MHz
Part 2.1053 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m) Part 27.53(n) Part 27.53(g) Part 27.53(c)(f) Part 90.691 Part 90.543(e)(f)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -20.18 dB at 1564.00 MHz
Part 2.1055 Part 27.54	Frequency Stability	Pass	Meet the requirement of limit.

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report to module report No.: FG242018A, FG242018B, FG242018C, FG242018E (Brand: AirPrime, Model: EM7595). The difference compared with original report are adding End-product disable LTE Band 41、Band 71 and cancel ULCA function via SW update & adding LTE Band 42. Therefore, LTE Band 42 full test, Other Band only test item of Effective Radiated Power, Equivalent Isotropically Radiated Power and Radiated Spurious Emissions were performed for this report. Other testing data please refer to SPORTON LAB report no.: FG242018A, FG242018B, FG242018C, FG242018E for module (Brand: AirPrime, Model: EM7595).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Parameter	Specification	Uncertainty (±)
Maximum Output Power / Peak to Average Ratio	-	1.371 dB
26dB Bandwidth / Occupied Bandwidth	-	453.93 Hz / 72 Hz
Conducted emission / Spectrum Emission Mask	-	2.120 dB / 1.899 dB
Frequency Stability	-	0.176 ppm
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	3.00 dB
	30 MHz ~ 1 GHz	2.93 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 dB

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

2.2 Supplementary Information

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

3 General Information

3.1 General Description of EUT

Product	Radio Module
Brand	Panasonic
Test Model	WW23C
Status of EUT	Engineering sample
Power Supply Rating	15.6 Vdc (Adapter) 10.8 Vdc (Battery)

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below for more details.

Product	Brand	Model
Personal Computer	Panasonic	FZ-55

2. The End-product contains following accessory devices.

Product	Brand	Model	Description
Adapter	Panasonic	CF-AA5713A	I/P: 100-240 Vac, 50/60 Hz, 1.5 A O/P: 15.6 Vdc, 7.05 A 1.46m DC power cable with one core attached on adapter
Battery	Panasonic	FZ-VZSU1HU / FZ-VZSU1HAU	10.8 Vdc; 68 Wh; 6300mAh
Touch Pen	Panasonic	FZ-VNP551U	-

3. EUT Overview

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power
WCDMA Band 2	1852.4-1907.6	207.014 mW (23.16dBm)
WCDMA Band 4	1712.4-1752.6	275.423 mW (24.40dBm)

Band / Bandwidth	TX Frequency Range (MHz)	Max. EIRP Power		
		QPSK	16QAM	64QAM
LTE Band 2 (Channel Bandwidth 20MHz)	1860.0-1900.0	177.828 mW (22.50dBm)	151.356 mW (21.80dBm)	118.032 mW (20.72dBm)
LTE Band 4 (Channel Bandwidth 20MHz)	1720.0-1745.0	246.037 mW (23.91dBm)	206.063 mW (23.14dBm)	158.855 mW (22.01dBm)
LTE Band 7 (Channel Bandwidth 20 MHz)	2510.0-2560.0	167.494 mW (22.24dBm)	136.458 mW (21.35dBm)	107.895 mW (20.33dBm)
LTE Band 25 (Channel Bandwidth 20 MHz)	1860.0-1905.0	183.654 mW (22.64dBm)	155.597 mW (21.92dBm)	121.339 mW (20.84dBm)
LTE Band 42 (Channel Bandwidth 5MHz)	3452.0-3547.5	102.565 mW (20.11dBm)	83.753 mW (19.23dBm)	65.013 mW (18.13dBm)
LTE Band 42 (Channel Bandwidth 10MHz)	3455.0-3545.0	102.329 mW (20.10dBm)	82.985 mW (19.19dBm)	65.163 mW (18.14dBm)
LTE Band 42 (Channel Bandwidth 15MHz)	3457.5-3542.5	102.565 mW (20.11dBm)	83.753 mW (19.23dBm)	64.269 mW (18.08dBm)
LTE Band 42 (Channel Bandwidth 20 MHz)	3460.0-3540.0	102.802 mW (20.12dBm)	84.333 mW (19.26dBm)	65.766 mW (18.18dBm)
LTE Band 66 (Channel Bandwidth 20 MHz)	1720.0-1770.0	239.332 mW (23.79dBm)	206.063 mW (23.14dBm)	158.855 mW (22.01dBm)

Band / Bandwidth	TX Frequency Range (MHz)	Max. ERP Power
WCDMA Band 5	826.4-846.6	110.154 mW (20.42dBm)

Band / Bandwidth	TX Frequency Range (MHz)	Max. ERP Power		
		QPSK	16QAM	64QAM
LTE Band 5 (Channel Bandwidth 10 MHz)	829.0-844.0	108.393 mW (20.35dBm)	92.470 mW (19.66dBm)	74.473 mW (18.72dBm)
LTE Band 12 (Channel Bandwidth 10 MHz)	704.0-711.0	143.219 mW (21.56dBm)	113.240 mW (20.54dBm)	91.201 mW (19.60dBm)
LTE Band 13 (Channel Bandwidth 10 MHz)	782.0	126.183 mW (21.01dBm)	97.724 mW (19.90dBm)	78.705 mW (18.96dBm)
LTE Band 14 (Channel Bandwidth 10 MHz)	793	124.451 mW (20.95dBm)	96.828 mW (19.86dBm)	77.983 mW (18.92dBm)
LTE Band 26 (Channel Bandwidth 5 MHz)	816.5-821.5	-	94.842 mW (19.77dBm)	76.736 mW (18.85dBm)
LTE Band 26 (Channel Bandwidth 10 MHz)	819.0	114.815 mW (20.60dBm)	-	-
LTE Band 26 (Channel Bandwidth 15 MHz)	831.5-841.5	116.681 mW (20.67dBm)	95.719 mW (19.81dBm)	77.090 mW (18.87dBm)

Band / Bandwidth	TX Frequency Range (MHz)	Emission Designator		
		QPSK	16QAM	64QAM
LTE Band 42 (Channel Bandwidth 5MHz)	3452.0-3547.5	4M50G7D	4M49D7W	4M50D7W
LTE Band 42 (Channel Bandwidth 10MHz)	3455.0-3545.0	8M97G7D	8M97D7W	8M97D7W
LTE Band 42 (Channel Bandwidth 15MHz)	3457.5-3542.5	13M4G7D	13M4D7W	13M4D7W
LTE Band 42 (Channel Bandwidth 20MHz)	3460.0-3540.0	17M9G7D	17M9D7W	17M9D7W

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

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Antenna Type	Monopole
Antenna Connector	ipex(MHF)
Band	Gain (dBi)
WCDMA Band 2	0.1
WCDMA Band 4	1.16
WCDMA Band 5	-0.65
LTE Band 2	0.1
LTE Band 4	1.16
LTE Band 5	-0.65
LTE Band 7	-0.24
LTE Band 12	0.36
LTE Band 13	-0.26
LTE Band 14	-0.26
LTE Band 25	0.1
LTE Band 26	-0.65
LTE Band 42	2.82
LTE Band 48	3.65
LTE Band 66	1.16

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

3.3 Test Mode Applicability and Tested Channel Detail

The EUT is designed to be positioned on the NB Mode only.

For WCDMA Band 2

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	9262 (1852.40 MHz) 9400 (1880.00 MHz) 9538 (1907.60 MHz)	-	-	WCDMA HSDPA HSUPA
Radiated Spurious Emissions below 1GHz	9400 (1880.00 MHz)	-	-	WCDMA
Radiated Spurious Emissions above 1GHz	9400 (1880.00 MHz)	-	-	WCDMA

For WCDMA Band 4

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	1312 (1712.40 MHz) 1413 (1732.60 MHz) 1513 (1752.60 MHz)	-	-	WCDMA HSDPA HSUPA
Radiated Spurious Emissions below 1GHz	1413 (1732.60 MHz)	-	-	WCDMA
Radiated Spurious Emissions above 1GHz	1413 (1732.60 MHz)	-	-	WCDMA

For WCDMA Band 5

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	4132 (826.40 MHz) 4182 (836.40 MHz) 4233 (846.60 MHz)	-	-	WCDMA HSDPA HSUPA
Radiated Spurious Emissions below 1GHz	4183 (836.60 MHz)	-	-	WCDMA
Radiated Spurious Emissions above 1GHz	4183 (836.60 MHz)	-	-	WCDMA

For LTE Band 2

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	18607 (1850.70 MHz) 18900 (1880.00 MHz) 19193 (1909.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	18615 (1851.50 MHz) 18900 (1880.00 MHz) 19185 (1908.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	18625 (1852.50 MHz) 18900 (1880.00 MHz) 19175 (1907.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	18650 (1855.00 MHz) 18900 (1880.00 MHz) 19150 (1905.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	18675 (1857.50 MHz) 18900 (1880.00 MHz) 19125 (1902.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	18700 (1860.00 MHz) 18900 (1880.00 MHz) 19100 (1900.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	18900 (1880.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	18900 (1880.00 MHz)	20 MHz	QPSK	1 RB

For LTE Band 4

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	19957 (1710.70 MHz) 20175 (1732.50 MHz) 20393 (1754.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	19965 (1711.50 MHz) 20175 (1732.50 MHz) 20385 (1753.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	19975 (1712.50 MHz) 20175 (1732.50 MHz) 20375 (1752.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20000 (1715.00 MHz) 20175 (1732.50 MHz) 20350 (1750.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20025 (1717.50 MHz) 20175 (1732.50 MHz) 20325 (1747.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20050 (1720.00 MHz) 20175 (1732.50 MHz) 20300 (1745.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	20175 (1732.50 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	20175 (1732.50 MHz)	20 MHz	QPSK	1 RB

For LTE Band 5

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	20407 (824.70 MHz) 20525 (836.50 MHz) 20643 (848.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20415 (825.50 MHz) 20525 (836.50 MHz) 20635 (847.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20425 (826.50 MHz) 20525 (836.50 MHz) 20625 (846.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20450 (829.00 MHz) 20525 (836.50 MHz) 20600 (844.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	20525 (836.50 MHz)	10 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	20525 (836.50 MHz)	10 MHz	QPSK	1 RB

For LTE Band 7

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	20775 (2502.50 MHz) 21100 (2535.00 MHz) 21425 (2567.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20800 (2505.00 MHz) 21100 (2535.00 MHz) 21400 (2565.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20825 (2507.50 MHz) 21100 (2535.00 MHz) 21375 (2562.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	20850 (2510.00 MHz) 21100 (2535.00 MHz) 21350 (2560.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	21100 (2535.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	21100 (2535.00 MHz)	20 MHz	QPSK	1 RB

For LTE Band 12

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	23017 (699.70 MHz) 23095 (707.50 MHz) 23173 (715.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	23025 (700.50 MHz) 23095 (707.50 MHz) 23165 (714.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	23035 (701.50 MHz) 23095 (707.50 MHz) 23155 (713.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	23060 (704.00 MHz) 23095 (707.50 MHz) 23130 (711.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	23095 (707.50 MHz)	10 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	23095 (707.50 MHz)	10 MHz	QPSK	1 RB

For LTE Band 13

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	23205 (779.50 MHz) 23230 (782.00 MHz) 23255 (784.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	23230 (782.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	23230 (782.00 MHz)	10 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	23230 (782.00 MHz)	10 MHz	QPSK	1 RB

For LTE Band 14

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	23305 (790.50 MHz) 23330 (793.00 MHz) 23355 (795.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	23330 (793.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	23330 (793.00 MHz)	10 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	23330 (793.00 MHz)	10 MHz	QPSK	1 RB

For LTE Band 25

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	26047 (1850.70 MHz) 26365 (1882.50 MHz) 26683 (1914.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26055 (1851.50 MHz) 26365 (1882.50 MHz) 26675 (1913.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26065 (1852.50 MHz) 26365 (1882.50 MHz) 26665 (1912.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26090 (1855.00 MHz) 26365 (1882.50 MHz) 26640 (1910.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26115 (1857.50 MHz) 26365 (1882.50 MHz) 26615 (1907.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26140 (1860.00 MHz) 26365 (1882.50 MHz) 26590 (1905.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	26365 (1882.50 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	26365 (1882.50 MHz)	20 MHz	QPSK	1 RB

For LTE Band 26 (814-824 MHz)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	26697 (814.70 MHz) 26740 (819.00 MHz) 26783 (823.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26705 (815.50 MHz) 26740 (819.00 MHz) 26775 (822.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26715 (816.50 MHz) 26740 (819.00 MHz) 26765 (821.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26740 (819.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26765 (821.5 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	26740 (819.00 MHz)	10 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	26740 (819.00 MHz)	10 MHz	QPSK	1 RB

For LTE Band 26 (824-849 MHz)

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	26797 (824.70 MHz) 26915 (836.50 MHz) 27033 (848.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26805 (825.50 MHz) 26915 (836.50 MHz) 27025 (847.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26815 (826.50 MHz) 26915 (836.50 MHz) 27015 (846.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26840 (829.00 MHz) 26915 (836.50 MHz) 26990 (844.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	26865 (831.50 MHz) 26915 (836.50 MHz) 26965 (841.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	26915 (836.50 MHz)	15 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	26915 (836.50 MHz)	15 MHz	QPSK	1 RB

For LTE Band 42

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	42115 (3452.50 MHz) 42590 (3500.00 MHz) 43065 (3547.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	42140 (3455.00 MHz) 42590(3500.00 MHz) 43040 (3545.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	42165 (3457.50 MHz) 42590 (3500.00 MHz) 43015 (3542.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
	42190 (3460.00 MHz) 42590 (3500.00 MHz) 42990 (3540.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB Half RB Full RB
Modulation Characteristics	42590 (3500.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM	Full RB
Frequency Stability	42115 (3452.50MHz) 42590 (3500.00MHz) 43065 (3547.50MHz)	5 MHz	QPSK	Full RB
	42140 (3455.00MHz) 42590 (3500.00MHz) 43040 (3545.00MHz)	10 MHz	QPSK	Full RB
	42165 (3457.50MHz) 42590 (3500.00MHz) 43015 (3542.50MHz)	15 MHz	QPSK	Full RB
	42190 (3460.00MHz) 42590 (3500.00MHz) 42990 (3540.00MHz)	20 MHz	QPSK	Full RB
Occupied Bandwidth	42115 (3452.50MHz) 42590 (3500.00MHz) 43065 (3547.50MHz)	5 MHz	QPSK / 16QAM / 64QAM	Full RB
	42140 (3455.00MHz) 42590 (3500.00MHz) 43040 (3545.00MHz)	10 MHz	QPSK / 16QAM / 64QAM	Full RB
	42165 (3457.50MHz) 42590 (3500.00MHz) 43015 (3542.50MHz)	15 MHz	QPSK / 16QAM / 64QAM	Full RB
	42190 (3460.00MHz) 42590 (3500.00MHz) 42990 (3540.00MHz)	20 MHz	QPSK / 16QAM / 64QAM	Full RB
Peak to Average Ratio	42115 (3452.50MHz) 42590 (3500.00MHz) 43065 (3547.50MHz)	5 MHz	QPSK / 16QAM / 64QAM	1 RB
	42140 (3455.00MHz) 42590 (3500.00MHz) 43040 (3545.00MHz)	10 MHz	QPSK / 16QAM / 64QAM	1 RB
	42165 (3457.50MHz) 42590 (3500.00MHz) 43015 (3542.50MHz)	15 MHz	QPSK / 16QAM / 64QAM	1 RB
	42190 (3460.00MHz) 42590 (3500.00MHz) 42990 (3540.00MHz)	20 MHz	QPSK / 16QAM / 64QAM	1 RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Emission	42115 (3452.50MHz) 42590 (3500.00MHz) 43065 (3547.50MHz)	5 MHz	QPSK	1 RB Full RB
	42140 (3455.00MHz) 42590 (3500.00MHz) 43040 (3545.00MHz)	10 MHz	QPSK	1 RB Full RB
	42165 (3457.50MHz) 42590 (3500.00MHz) 43015 (3542.50MHz)	15 MHz	QPSK	1 RB Full RB
	42190 (3460.00MHz) 42590 (3500.00MHz) 42990 (3540.00MHz)	20 MHz	QPSK	1 RB Full RB
Radiated Spurious Emissions below 1GHz	42590 (3500.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	42115 (3452.50 MHz) 42590 (3500.00 MHz) 43065 (3547.50 MHz)	5 MHz	QPSK	1 RB
	42190 (3460.00 MHz) 42590 (3500.00 MHz) 42990 (3540.00 MHz)	20 MHz	QPSK	1 RB

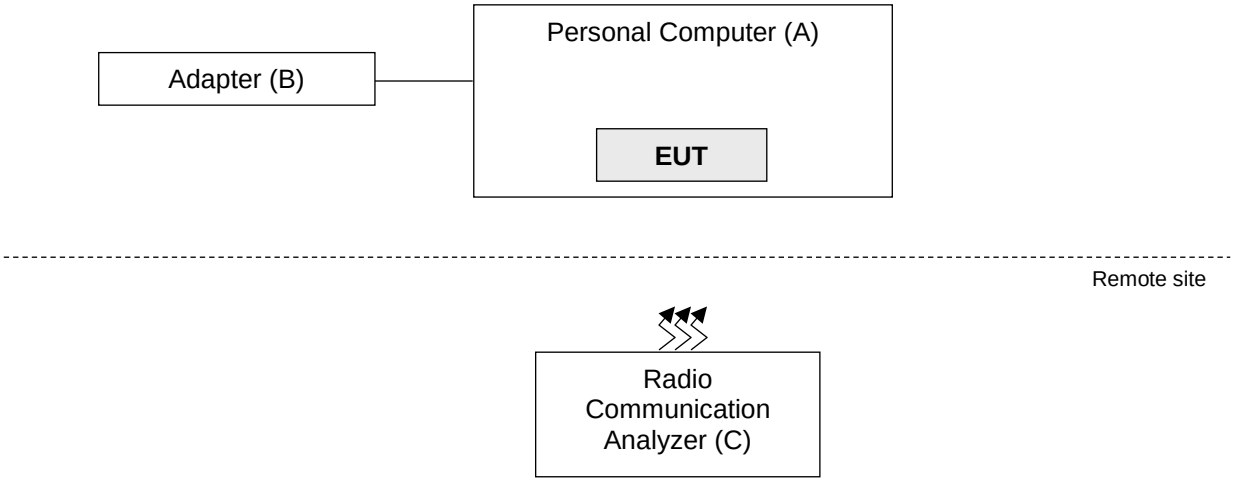
For LTE Band 66

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
EIRP	131979 (1710.70 MHz) 132322 (1745.00 MHz) 132665 (1779.30 MHz)	1.4 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	131987 (1711.50 MHz) 132322 (1745.00 MHz) 132657 (1778.50 MHz)	3 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	131997 (1712.50 MHz) 132322 (1745.00 MHz) 132647 (1777.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	132022 (1715.00 MHz) 132322 (1745.00 MHz) 132622 (1775.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	132047 (1717.50 MHz) 132322 (1745.00 MHz) 132597 (1772.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
Radiated Spurious Emissions below 1GHz	132322 (1745.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	132072 (1720.00 MHz) 132322 (1745.00 MHz) 132572 (1770.00 MHz)	20 MHz	QPSK	1 RB

3.4 Test Program Used and Operation Descriptions

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

3.5 Connection Diagram of EUT and Peripheral Devices



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Personal Computer	Panasonic	FZ-55	N/A	N/A	Supplied by applicant
B	Adapter	Panasonic	CF-AA5713A	N/A	N/A	Supplied by applicant
C	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	N/A	Provided by Lab

4 Test Instruments

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

4.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
PXA Signal Analyzer Keysight	N9030B	MY57140488	2024/3/6	2025/3/5
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2024/3/13	2025/3/12
		6272278312	2023/7/6	2024/7/5
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/4/29

4.2 Modulation Characteristics

Refer to section 4.1 to get information of the instruments.

4.3 Peak to Average Ratio

Refer to section 4.1 to get information of the instruments.

4.4 Bandwidth

Refer to section 4.1 to get information of the instruments.

4.5 Conducted Spurious Emissions

Refer to section 4.1 to get information of the instruments.

4.6 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-1213	2023/10/13	2024/10/12
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Loop Antenna Electro-Metrics	EM-6879	269	2023/9/23	2024/9/22
Loop Antenna TESEQ	HLA 6121	45745	2023/8/8	2024/8/7
MXA Signal Analyzer Keysight	N9020B	MY60110513	2023/12/22	2024/12/21
Preamplifier EMCI	EMC330N	980782	2024/1/15	2025/1/14
	EMC001340	980201	2023/9/27	2024/9/26
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201233	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-3000	201235	2024/1/15	2025/1/14
	EMCCFD400-NM-NM-9000	201236(with PAD)	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2024/4/18

4.7 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
EMI Test Receiver R&S	ESR3	102782	2023/12/7	2024/12/6
Horn Antenna RFSPIN	DRH18-E	210103A18E	2023/11/12	2024/11/11
MXA Signal Analyzer Keysight	N9020B	MY60110513	2023/12/22	2024/12/21
Preamplifier EMCI	EMC118A45SE	980808	2023/12/28	2024/12/27
RF Coaxial Cable EMCI	EMC104-SM-SM-1000	210102	2024/1/15	2025/1/14
	EMC104-SM-SM-3000	201231	2024/1/15	2025/1/14
	EMC104-SM-SM-9000	201243	2024/1/15	2025/1/14
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MF-7802BS	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208674	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 8.
2. Tested Date: 2024/4/17

4.8 Frequency Stability

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
3-channel DC power supply JIN YIH Technology	ODP3033	ODP30332128138	N/A	N/A
Digital Multimeter Fluke	87-III	70360742	2023/7/6	2024/7/5
Signal and spectrum analyzer R&S	FSV3044	101105	2024/2/27	2025/2/26
Software BV	ADT_RF Test Software V6.6.5.4	N/A	N/A	N/A
Temperature & Humidity Chamber TERCHY	HRM-120RF	931022	2023/12/19	2024/12/18
Radio Communication Analyzer Anritsu	MT8821C	6201462755	2024/3/13	2025/3/12

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2024/4/23

5 Limits of Test Items

5.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

For WCDMA Band 2, LTE Band 2, LTE Band 25:

Mobile and portable stations are limited to 2 watts EIRP.

For WCDMA Band 4, LTE Band 4, LTE Band 66:

Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

For WCDMA Band 5, LTE Band 5, LTE Band 26 (824-849 MHz):

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

For LTE Band 7:

Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

For LTE Band 12:

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

For LTE Band 13:

Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

For LTE Band 14:

Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

For LTE Band 26 (814-824 MHz):

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw) ERP.

For LTE Band 42:

Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

5.2 Modulation Characteristics

A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

5.3 Peak to Average Ratio

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.

5.4 Bandwidth

According to FCC 47 CFR part 2.1049, the occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5% of the total mean power radiated by a given emission.

5.5 Conducted Spurious Emissions

According to FCC 47 CFR part 27.53(n), for operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (n)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz.

5.6 Radiated Spurious Emissions below 1GHz

For WCDMA Band 2, WCDMA Band 5, LTE Band 2, LTE Band 5, LTE Band 25, LTE Band 26 (824-849 MHz):

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

For WCDMA Band 4, LTE Band 4, LTE Band 66:

According to FCC 47 CFR part 27.53(h), for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log (P) dB. The limit of emission is equal to -13 dBm.

For LTE Band 7:

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

For LTE Band 12:

According to FCC 47 CFR part 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.

For LTE Band 13:

According to FCC 47 CFR part 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.
For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For LTE Band 14:

According to FCC 47 CFR part 90.543 (e), for operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log (P) dB.

According to FCC 47 CFR part 90.543 (f), for operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

For LTE Band 26 (814-824 MHz):

For any frequency removed from the EA licensee’s frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
For §90.691(a), RBW = 100 kHz for offset grater than 37.5 kHz from channel edge is allowed.

For LTE Band 42:

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

5.7 Radiated Spurious Emissions above 1GHz

For WCDMA Band 2, WCDMA Band 5, LTE Band 2, LTE Band 5, LTE Band 25, LTE Band 26 (824-849 MHz):

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

For WCDMA Band 4, LTE Band 4:

According to FCC 47 CFR part 27.53(h), for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log (P) dB. The limit of emission is equal to -13 dBm.

For LTE Band 7:

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

For LTE Band 12:

According to FCC 47 CFR part 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.

For LTE Band 13:

According to FCC 47 CFR part 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.
For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For LTE Band 14:

According to FCC 47 CFR part 90.543 (e), for operations in the 758-768 MHz and the 788-798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log (P) dB.

According to FCC 47 CFR part 90.543 (f), for operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

For LTE Band 26 (814-824 MHz):

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 Log_{10}(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
For §90.691(a), RBW = 100 kHz for offset grater than 37.5 kHz from channel edge is allowed.

For LTE Band 42:

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

For LTE Band 66:

According to FCC 47 CFR part 27.53(h), for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log (P) dB. The limit of emission is equal to -13 dBm.

5.8 Frequency Stability

For LTE Band 42:

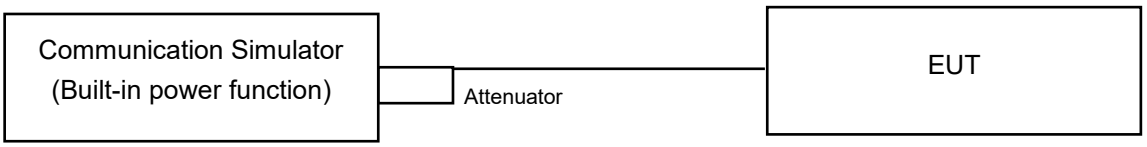
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation (authorized frequency block).

6 Test Arrangements

6.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

6.1.1 Test Setup

Conducted Power Measurement:



6.1.2 Test Procedure

Conducted Power Measurement:

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology. The power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Maximum EIRP / ERP

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

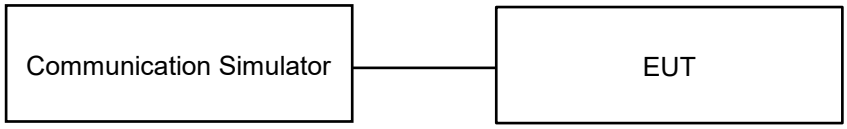
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

6.2 Modulation Characteristics

6.2.1 Test Setup

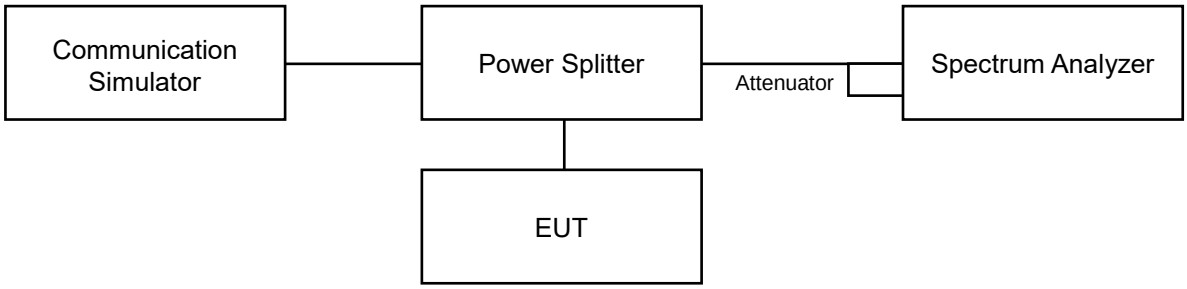


6.2.2 Test Procedure

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.

6.3 Peak to Average Ratio

6.3.1 Test Setup

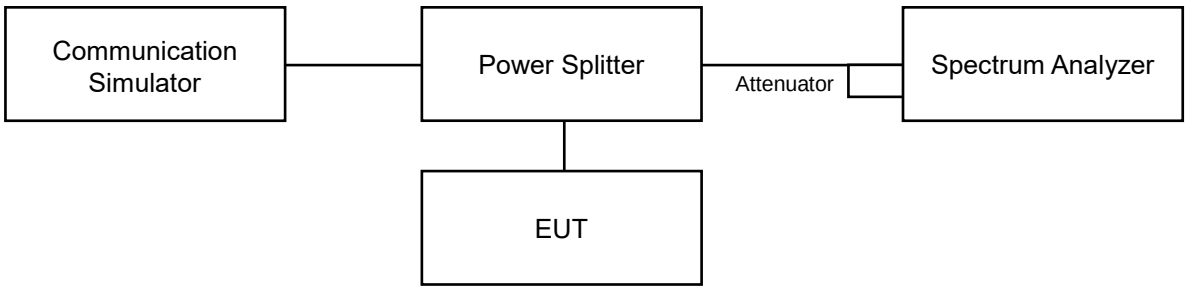


6.3.2 Test Procedure

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%.

6.4 Bandwidth

6.4.1 Test Setup



6.4.2 Test Procedure

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

d. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.

e. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.

f. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.

g. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.

h. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

i. Determine the following reference values: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

j. Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.

k. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.

l. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

For the occupied bandwidth measurement method, please refer to section 5.4.4 of ANSI C63.26.

m. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be wide enough to see sufficient roll off of the signal to make the measurement.

n. The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.

o. Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.

p. The dynamic range of the spectrum analyzer at the selected RBW shall be more than 10 dB below the target "−X dB" requirement, i.e., if the requirement calls for measuring the −26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be at least 36 dB below the reference level.

q. Set spectrum analyzer detection mode to peak, and the trace mode to max hold.

r. Determine the reference value by either of the following:

s. 1) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

t. 2) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.

u. Determine the "−X dB amplitude" as equal to (Reference Value − X). Alternatively, this calculation can be performed on the spectrum analyzer using the delta-marker measurement function.

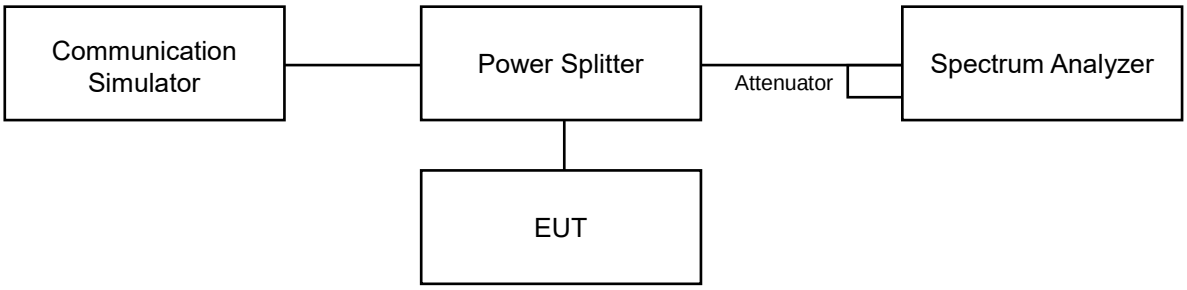
v. If the reference value was determined using an unmodulated carrier, turn the EUT modulation on, then either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise the trace from step f) shall be used for step i).

w. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "−X dB amplitude" determined in step f). If a marker is below this "−X dB amplitude" value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers. The spectral envelope can cross the "−X dB amplitude" at multiple points. The lowest or highest frequency shall be selected as the frequencies that are the farthest away from the center frequency at which the spectral envelope crosses the "−X dB amplitude."

x. The OBW shall be reported by providing plot(s) of the measuring instrument display, to include markers depicting the relevant frequency and amplitude information (e.g., marker table). The frequency and amplitude axis and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.5 Conducted Spurious Emissions

6.5.1 Test Setup



6.5.2 Test Procedure

y. Measurement refer to ANSI C63.26 section 5.7.

z. All measurements were done at 3 channels: low, middle and high operational frequency range.

aa. Measuring frequency range is from 9 kHz up to the tenth harmonic of the hightest fundamental frequency or to 40 GHz, whichever is lower. 20 dB attenuation pad is connected with spectrum.

bb. The fundamental frequency above 1 GHz, the spectrum set RBW = 1 MHz, VBW = 3 MHz, Detector = Average.

cc. The fundamental frequency below 1 GHz, the spectrum set RBW ≥ 100 kHz, VBW ≥ 3 x RBW, Detector = Average.

dd. Measuring frequency band edge, narrow RBW (no less than 1% of the OBW) is used for conducted emission measurement.

For Emission Mask:

ee. Measurement refer to ANSI C63.26 section 5.7.

ff. All measurements were done at 2 channels: low and high operational frequency range.

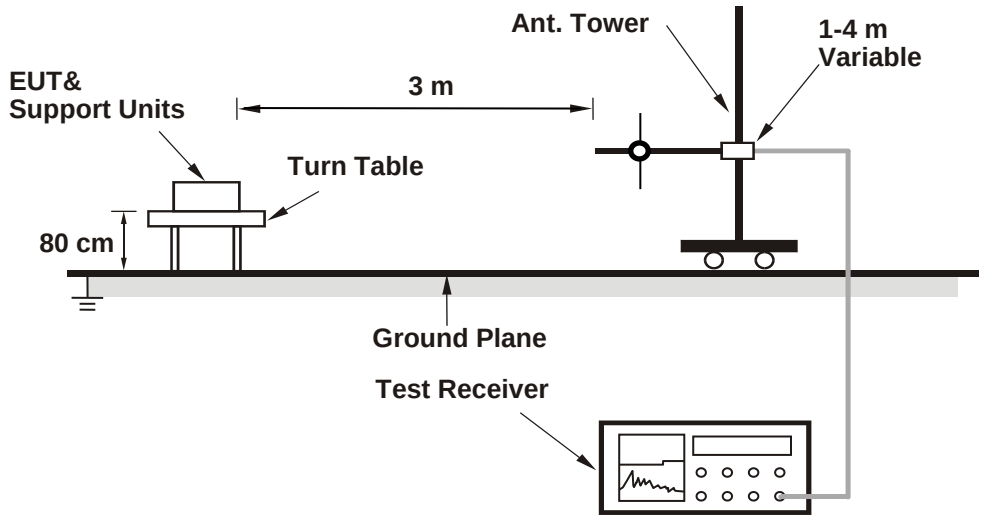
gg. Accoding to FCC 47 CFR part 90.691(a), the spectrum set RBW = 300 Hz for offset less than 37.5 kHz from channel edge and RBW = 100 kHz for offsets greater than 37.5 kHz is allowed.

hh. Record the maximum power value test plot.

6.6 Radiated Spurious Emissions below 1GHz

6.6.1 Test Setup

For radiated emission 30 MHz to 1 GHz



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

6.6.2 Test Procedure

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

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

jj. 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.

kk. 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.

ll. Following ANSI C63.26 section 5.5 and 5.2.7

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

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

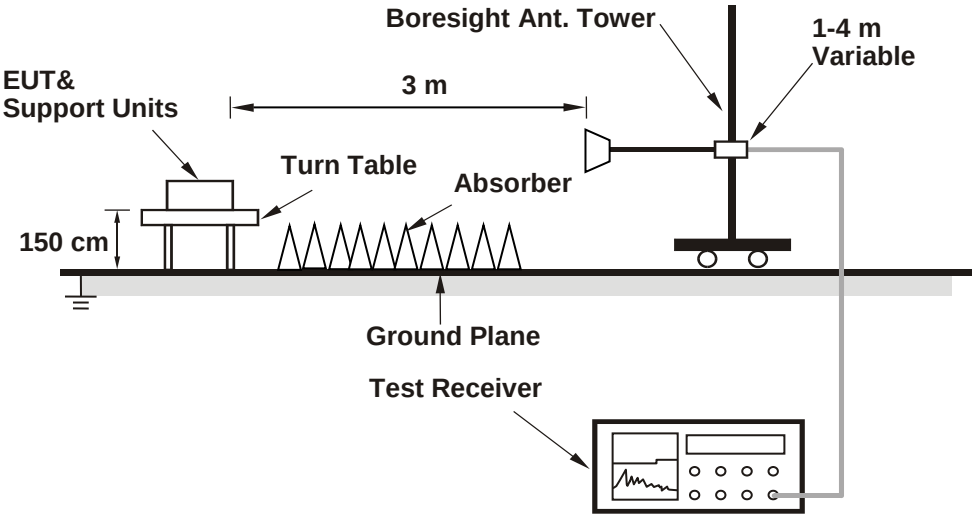
Note:

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

6.7 Radiated Spurious Emissions above 1GHz

6.7.1 Test Setup

For radiated emission above 1 GHz



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

6.7.2 Test Procedure

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

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

b. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

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

d. Following ANSI C63.26 section 5.5 and 5.2.7

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

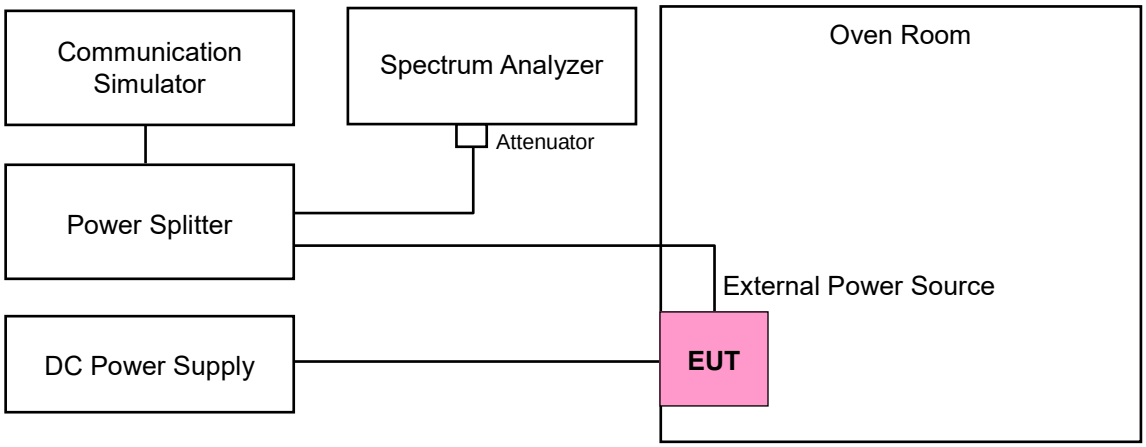
f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:

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

6.8 Frequency Stability

6.8.1 Test Setup



6.8.2 Test Procedure

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

g. 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.

h. 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.

i. 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.

7 Test Results of Test Item

7.1 Effective Radiated Power and Equivalent Isotropically Radiated Power

Input Power:	10.8 Vdc	Environmental Conditions:	22°C, 73% RH	Tested By:	Willy Cheng

7.1.1 WCDMA Band 2

Conducted Output Power (dBm)

Band	WCDMA II		
TX Channel	9262	9400	9538
Rx Channel	9662	9800	9938
Frequency	1852.4	1880	1907.6
RMC 12.2K	22.70	**23.06**	22.74
HSDPA Subtest-1	21.93	22.23	21.91
HSDPA Subtest-2	21.97	22.22	21.99
HSDPA Subtest-3	21.44	21.85	21.49
HSDPA Subtest-4	21.45	21.90	21.51
HSUPA Subtest-1	21.97	22.19	21.94
HSUPA Subtest-2	19.99	20.30	19.89
HSUPA Subtest-3	20.93	21.29	21.00
HSUPA Subtest-4	19.96	20.17	19.95
HSUPA Subtest-5	21.90	22.00	21.80

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	EIRP (dBm)
RMC 12.2K	23.06	23.16
HSDPA	22.23	22.33
HSUPA	22.19	22.29

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.2 WCDMA Band 4

Conducted Output Power (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	1537	1638	1738
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	23.22	**23.24**	22.91
HSDPA Subtest-1	22.33	21.85	22.42
HSDPA Subtest-2	21.85	21.91	22.46
HSDPA Subtest-3	21.8	21.92	21.92
HSDPA Subtest-4	21.89	21.91	21.98
HSUPA Subtest-1	22.27	22.31	22.36
HSUPA Subtest-2	20.35	20.34	20.47
HSUPA Subtest-3	21.28	21.43	21.4
HSUPA Subtest-4	20.23	20.31	20.42
HSUPA Subtest-5	22.3	22.2	22.4

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	EIRP (dBm)
RMC 12.2K	23.24	24.40
HSDPA	22.46	23.62
HSUPA	22.40	23.56

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.3 WCDMA Band 5

Conducted Output Power (dBm)

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	23.08	23.22	23.17
HSDPA Subtest-1	22.08	21.76	22.05
HSDPA Subtest-2	22.02	21.77	21.95
HSDPA Subtest-3	21.51	21.26	21.54
HSDPA Subtest-4	21.54	21.28	21.56
HSUPA Subtest-1	22.02	21.76	22.00
HSUPA Subtest-2	20.12	19.74	20.05
HSUPA Subtest-3	21.02	20.62	21.06
HSUPA Subtest-4	20.07	19.79	20.06
HSUPA Subtest-5	21.90	21.50	22.00

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
RMC 12.2K	23.22	20.42
HSDPA	22.08	19.28
HSUPA	22.02	19.22

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.4 LTE Band 2

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	22.37	22.40	22.31
		1	50	22.26	22.36	22.20
		1	99	22.29	22.33	22.29
		50	0	21.43	21.45	21.35
		50	25	21.43	21.43	21.39
		50	50	21.34	21.41	21.29
		100	0	21.45	21.53	21.35
	16QAM	1	0	21.62	21.70	21.57
		1	50	21.60	21.66	21.54
		1	99	21.63	21.63	21.57
		50	0	20.53	20.54	20.48
		50	25	20.35	20.43	20.35
		50	50	20.46	20.50	20.45
		100	0	20.45	20.48	20.36
	64QAM	1	0	20.62	20.62	20.58
		1	50	20.51	20.55	20.47
		1	99	20.47	20.57	20.46
		50	0	19.48	19.51	19.39
		50	25	19.37	19.46	19.31
		50	50	19.47	19.48	19.41
		100	0	19.54	19.54	19.52

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	22.31	22.32	22.21
		1	37	22.32	22.22	22.20
		1	74	22.28	22.23	22.28
		36	0	21.43	21.41	21.31
		36	19	21.39	21.35	21.29
		36	39	21.40	21.26	21.28
		75	0	21.45	21.37	21.30
	16QAM	1	0	21.65	21.57	21.54
		1	37	21.60	21.57	21.45
		1	74	21.53	21.53	21.51
		36	0	20.44	20.49	20.45
		36	19	20.33	20.25	20.27
		36	39	20.47	20.40	20.37
		75	0	20.44	20.41	20.30
	64QAM	1	0	20.54	20.53	20.51
		1	37	20.52	20.44	20.42
		1	74	20.48	20.40	20.41
		36	0	19.48	19.47	19.32
		36	19	19.40	19.27	19.31
		36	39	19.44	19.42	19.35
		75	0	19.50	19.45	19.51

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	22.38	22.30	22.29
		1	24	22.29	22.25	22.11
		1	49	22.25	22.28	22.22
		25	0	21.37	21.36	21.34
		25	12	21.38	21.41	21.33
		25	25	21.39	21.27	21.28
		50	0	21.43	21.39	21.33
	16QAM	1	0	21.63	21.57	21.57
		1	24	21.63	21.60	21.44
		1	49	21.62	21.57	21.47
		25	0	20.46	20.43	20.39
		25	12	20.40	20.35	20.25
		25	25	20.44	20.43	20.35
		50	0	20.46	20.42	20.28
	64QAM	1	0	20.62	20.54	20.50
		1	24	20.55	20.47	20.47
		1	49	20.55	20.44	20.45
		25	0	19.51	19.43	19.30
		25	12	19.39	19.34	19.31
		25	25	19.44	19.43	19.31
		50	0	19.51	19.44	19.48

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	22.35	22.28	22.31
		1	12	22.29	22.21	22.11
		1	24	22.30	22.21	22.28
		12	0	21.44	21.43	21.26
		12	6	21.43	21.38	21.32
		12	13	21.36	21.27	21.27
		25	0	21.51	21.42	21.30
	16QAM	1	0	21.60	21.61	21.54
		1	12	21.58	21.58	21.51
		1	24	21.56	21.57	21.52
		12	0	20.52	20.45	20.47
		12	6	20.36	20.29	20.26
		12	13	20.41	20.45	20.39
		25	0	20.46	20.43	20.34
	64QAM	1	0	20.59	20.57	20.57
		1	12	20.50	20.41	20.39
		1	24	20.49	20.44	20.41
		12	0	19.41	19.41	19.29
		12	6	19.41	19.30	19.23
		12	13	19.39	19.47	19.34
		25	0	19.49	19.48	19.46

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	22.30	22.27	22.26
		1	7	22.26	22.17	22.14
		1	14	22.25	22.23	22.27
		8	0	21.39	21.34	21.31
		8	3	21.37	21.34	21.30
		8	7	21.32	21.28	21.23
		15	0	21.43	21.43	21.32
	16QAM	1	0	21.61	21.56	21.51
		1	7	21.62	21.52	21.51
		1	14	21.54	21.63	21.54
		8	0	20.47	20.52	20.38
		8	3	20.34	20.33	20.26
		8	7	20.41	20.37	20.40
		15	0	20.43	20.36	20.36
	64QAM	1	0	20.57	20.57	20.55
		1	7	20.47	20.43	20.39
		1	14	20.50	20.38	20.41
		8	0	19.50	19.47	19.37
		8	3	19.43	19.34	19.25
		8	7	19.42	19.40	19.34
		15	0	19.48	19.46	19.51

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	22.31	22.21	22.22
		1	2	22.18	22.12	22.11
		1	5	22.21	22.10	22.20
		3	0	22.38	22.34	22.10
		3	1	22.21	22.26	22.23
		3	3	22.32	22.31	22.21
		6	0	21.37	21.35	21.25
	16QAM	1	0	21.65	21.51	21.35
		1	2	21.54	21.45	21.50
		1	5	21.44	21.52	21.43
		3	0	21.39	21.40	21.31
		3	1	21.34	21.35	21.26
		3	3	21.41	21.33	21.28
		6	0	20.47	20.35	20.20
	64QAM	1	0	20.43	20.45	20.40
		1	2	20.35	20.33	20.36
		1	5	20.41	20.34	20.40
		3	0	20.31	20.43	20.27
		3	1	20.27	20.23	20.14
		3	3	20.35	20.34	20.24
		6	0	19.51	19.43	19.40

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	EIRP (dBm)
QPSK	22.40	22.50
16QAM	21.70	21.80
64QAM	20.62	20.72

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.5 LTE Band 4

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.5	1745
20M	QPSK	1	0	22.69	22.75	22.57
		1	50	22.40	22.48	22.31
		1	99	22.32	22.37	22.29
		50	0	21.57	21.62	21.50
		50	25	21.48	21.56	21.46
		50	50	21.43	21.51	21.34
		100	0	21.48	21.50	21.47
	16QAM	1	0	21.92	21.98	21.91
		1	50	21.78	21.87	21.74
		1	99	21.53	21.58	21.50
		50	0	20.65	20.66	20.60
		50	25	20.49	20.53	20.39
		50	50	20.45	20.51	20.38
		100	0	20.48	20.56	20.47
	64QAM	1	0	20.82	20.85	20.73
		1	50	20.71	20.73	20.69
		1	99	20.49	20.49	20.42
		50	0	19.65	19.65	19.61
		50	25	19.54	19.58	19.48
		50	50	19.45	19.53	19.43
		100	0	19.52	19.55	19.45

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.5	1732.5	1747.5
15M	QPSK	1	0	22.62	22.69	22.52
		1	37	22.39	22.41	22.26
		1	74	22.22	22.37	22.28
		36	0	21.47	21.53	21.48
		36	19	21.47	21.51	21.44
		36	39	21.34	21.49	21.33
		75	0	21.38	21.49	21.42
	16QAM	1	0	21.91	21.89	21.81
		1	37	21.75	21.81	21.68
		1	74	21.49	21.53	21.46
		36	0	20.59	20.64	20.56
		36	19	20.40	20.53	20.35
		36	39	20.39	20.44	20.35
		75	0	20.40	20.53	20.39
	64QAM	1	0	20.77	20.79	20.66
		1	37	20.66	20.73	20.67
		1	74	20.42	20.48	20.37
		36	0	19.61	19.64	19.58
		36	19	19.46	19.52	19.48
		36	39	19.35	19.50	19.40
		75	0	19.43	19.49	19.45

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.5	1750
10M	QPSK	1	0	22.67	22.71	22.52
		1	24	22.38	22.46	22.21
		1	49	22.25	22.31	22.29
		25	0	21.57	21.58	21.43
		25	12	21.44	21.46	21.41
		25	25	21.42	21.43	21.33
		50	0	21.48	21.42	21.44
	16QAM	1	0	21.91	21.88	21.90
		1	24	21.71	21.82	21.74
		1	49	21.50	21.49	21.50
		25	0	20.56	20.60	20.56
		25	12	20.41	20.46	20.34
		25	25	20.35	20.51	20.34
		50	0	20.42	20.52	20.38
	64QAM	1	0	20.81	20.78	20.67
		1	24	20.70	20.65	20.60
		1	49	20.49	20.39	20.39
		25	0	19.60	19.55	19.51
		25	12	19.53	19.52	19.43
		25	25	19.42	19.44	19.38
		50	0	19.45	19.49	19.38

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.5	1732.5	1752.5
5M	QPSK	1	0	22.65	22.68	22.51
		1	12	22.35	22.44	22.23
		1	24	22.30	22.33	22.20
		12	0	21.53	21.57	21.49
		12	6	21.43	21.55	21.44
		12	13	21.38	21.41	21.33
		25	0	21.42	21.45	21.38
	16QAM	1	0	21.86	21.98	21.83
		1	12	21.69	21.77	21.64
		1	24	21.51	21.48	21.46
		12	0	20.56	20.58	20.56
		12	6	20.45	20.49	20.39
		12	13	20.37	20.41	20.36
		25	0	20.47	20.51	20.45
	64QAM	1	0	20.76	20.75	20.64
		1	12	20.69	20.64	20.65
		1	24	20.40	20.39	20.34
		12	0	19.55	19.64	19.58
		12	6	19.46	19.51	19.46
		12	13	19.38	19.49	19.34
		25	0	19.50	19.53	19.36

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.5	1732.5	1753.5
3M	QPSK	1	0	22.67	22.74	22.54
		1	7	22.33	22.40	22.31
		1	14	22.24	22.32	22.26
		8	0	21.53	21.57	21.49
		8	3	21.41	21.48	21.36
		8	7	21.40	21.43	21.33
		15	0	21.38	21.44	21.46
	16QAM	1	0	21.82	21.95	21.83
		1	7	21.68	21.86	21.71
		1	14	21.47	21.58	21.50
		8	0	20.63	20.57	20.58
		8	3	20.47	20.53	20.30
		8	7	20.43	20.51	20.36
		15	0	20.48	20.49	20.46
	64QAM	1	0	20.74	20.83	20.73
		1	7	20.61	20.73	20.61
		1	14	20.46	20.45	20.37
		8	0	19.64	19.61	19.55
		8	3	19.53	19.48	19.40
		8	7	19.42	19.47	19.40
		15	0	19.45	19.53	19.38

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.7	1732.5	1754.3
1.4M	QPSK	1	0	22.57	22.64	22.36
		1	2	22.31	22.36	22.24
		1	5	22.27	22.22	22.28
		3	0	22.50	22.60	22.39
		3	1	22.38	22.51	22.34
		3	3	22.32	22.39	22.29
		6	0	21.36	21.33	21.47
	16QAM	1	0	21.80	21.84	21.74
		1	2	21.63	21.75	21.58
		1	5	21.32	21.43	21.31
		3	0	21.51	21.52	21.55
		3	1	21.39	21.39	21.30
		3	3	21.24	21.33	21.24
		6	0	20.37	20.47	20.32
	64QAM	1	0	20.67	20.75	20.53
		1	2	20.58	20.56	20.61
		1	5	20.34	20.45	20.37
		3	0	20.53	20.61	20.51
		3	1	20.48	20.49	20.38
		3	3	20.25	20.37	20.33
		6	0	19.40	19.44	19.31

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	Max. EIRP (dBm)
QPSK	22.75	23.91
16QAM	21.98	23.14
64QAM	20.85	22.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.6 LTE Band 5

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.05	23.15	23.14
		1	24	23.08	23.13	23.13
		1	49	22.98	23.02	23.01
		25	0	22.25	22.35	22.34
		25	12	22.16	22.27	22.23
		25	25	22.20	22.23	22.23
		50	0	22.16	22.29	22.23
	16QAM	1	0	22.27	22.46	22.36
		1	24	22.26	22.34	22.33
		1	49	22.09	22.24	22.17
		25	0	21.29	21.31	21.30
		25	12	21.24	21.26	21.25
		25	25	21.06	21.24	21.15
		50	0	21.24	21.31	21.30
	64QAM	1	0	21.42	21.52	21.52
		1	24	21.18	21.33	21.23
		1	49	21.12	21.26	21.17
		25	0	20.26	20.34	20.30
		25	12	20.23	20.28	20.24
		25	25	20.17	20.23	20.23
		50	0	20.14	20.27	20.24

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	22.95	23.05	23.12
		1	12	23.00	23.09	23.12
		1	24	22.90	22.99	22.98
		12	0	22.24	22.33	22.28
		12	6	22.07	22.27	22.21
		12	13	22.12	22.15	22.19
		25	0	22.11	22.20	22.16
	16QAM	1	0	22.26	22.42	22.34
		1	12	22.24	22.33	22.32
		1	24	22.02	22.21	22.14
		12	0	21.29	21.29	21.24
		12	6	21.24	21.25	21.16
		12	13	21.05	21.15	21.11
		25	0	21.21	21.27	21.25
	64QAM	1	0	21.35	21.46	21.44
		1	12	21.08	21.32	21.21
		1	24	21.10	21.16	21.16
		12	0	20.23	20.25	20.23
		12	6	20.13	20.21	20.17
		12	13	20.12	20.22	20.17
		25	0	20.13	20.26	20.24

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	22.99	23.09	23.12
		1	7	23.06	23.13	23.08
		1	14	22.90	23.00	22.98
		8	0	22.17	22.27	22.34
		8	3	22.11	22.18	22.19
		8	7	22.19	22.17	22.15
		15	0	22.12	22.20	22.21
	16QAM	1	0	22.17	22.41	22.30
		1	7	22.22	22.27	22.26
		1	14	22.05	22.23	22.14
		8	0	21.24	21.22	21.26
		8	3	21.16	21.19	21.19
		8	7	20.98	21.22	21.09
		15	0	21.16	21.27	21.23
	64QAM	1	0	21.36	21.43	21.47
		1	7	21.10	21.32	21.18
		1	14	21.04	21.25	21.17
		8	0	20.19	20.34	20.28
		8	3	20.22	20.26	20.22
		8	7	20.17	20.13	20.14
		15	0	20.10	20.18	20.16

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	22.74	22.79	22.91
		1	2	22.69	22.79	22.87
		1	5	22.64	22.73	22.68
		3	0	22.43	22.60	22.60
		3	1	22.41	22.60	22.54
		3	3	22.45	22.48	22.36
		6	0	21.77	22.01	21.92
	16QAM	1	0	22.21	22.27	22.34
		1	2	22.12	22.21	22.32
		1	5	22.06	22.13	22.06
		3	0	22.10	22.11	22.25
		3	1	22.00	22.14	22.15
		3	3	21.96	22.07	22.07
		6	0	21.11	21.30	21.19
	64QAM	1	0	21.22	21.34	21.42
		1	2	21.13	21.12	21.13
		1	5	21.02	21.15	21.08
		3	0	21.07	21.16	21.19
		3	1	21.08	21.17	21.24
		3	3	20.93	21.14	21.21
		6	0	20.08	20.10	20.10

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.15	20.35
16QAM	22.46	19.66
64QAM	21.52	18.72

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.7 LTE Band 7

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20850	21100	21350
		Frequency (MHz)		2510	2535	2560
20M	QPSK	1	0	22.12	22.48	22.24
		1	50	22.11	22.45	22.43
		1	99	22.03	22.17	22.09
		50	0	21.24	21.50	21.40
		50	25	21.30	21.48	21.46
		50	50	21.11	21.34	21.28
		100	0	21.06	21.36	21.31
	16QAM	1	0	21.39	21.59	21.50
		1	50	21.37	21.55	21.49
		1	99	21.33	21.48	21.48
		50	0	20.14	20.47	20.38
		50	25	20.20	20.44	20.38
		50	50	20.22	20.32	20.30
		100	0	20.10	20.35	20.25
	64QAM	1	0	20.42	20.57	20.57
		1	50	20.17	20.42	20.39
		1	99	20.09	20.30	20.25
		50	0	19.29	19.50	19.41
		50	25	19.29	19.48	19.39
		50	50	19.13	19.37	19.36
		100	0	19.13	19.32	19.31

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20825	21100	21375
		Frequency (MHz)		2507.5	2535	2562.5
15M	QPSK	1	0	22.47	22.09	22.20
		1	37	22.39	22.11	22.39
		1	74	22.09	22.02	22.04
		36	0	21.44	21.24	21.32
		36	19	21.47	21.21	21.38
		36	39	21.32	21.05	21.24
		75	0	21.30	21.02	21.29
	16QAM	1	0	21.58	21.32	21.47
		1	37	21.47	21.35	21.45
		1	74	21.42	21.26	21.39
		36	0	20.45	20.04	20.33
		36	19	20.42	20.19	20.31
		36	39	20.28	20.19	20.24
		75	0	20.32	20.10	20.22
	64QAM	1	0	20.50	20.35	20.50
		1	37	20.39	20.13	20.38
		1	74	20.22	20.04	20.17
		36	0	19.41	19.29	19.40
		36	19	19.44	19.20	19.32
		36	39	19.37	19.06	19.26
		75	0	19.30	19.12	19.29

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20800	21100	21400
		Frequency (MHz)		2505	2535	2565
10M	QPSK	1	0	22.41	22.10	22.18
		1	24	22.36	22.03	22.38
		1	49	22.14	22.04	22.09
		25	0	21.48	21.17	21.38
		25	12	21.39	21.24	21.41
		25	25	21.34	21.01	21.23
		50	0	21.28	21.08	21.30
	16QAM	1	0	21.53	21.39	21.43
		1	24	21.52	21.35	21.42
		1	49	21.45	21.29	21.46
		25	0	20.38	20.06	20.34
		25	12	20.36	20.20	20.34
		25	25	20.23	20.17	20.30
		50	0	20.28	20.04	20.17
	64QAM	1	0	20.53	20.36	20.53
		1	24	20.36	20.13	20.33
		1	49	20.22	20.10	20.17
		25	0	19.50	19.21	19.36
		25	12	19.40	19.23	19.35
		25	25	19.33	19.12	19.34
		50	0	19.29	19.05	19.23

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		20775	21100	21425
		Frequency (MHz)		2502.5	2535	2567.5
5M	QPSK	1	0	22.39	22.06	22.15
		1	12	22.41	22.01	22.38
		1	24	22.09	22.10	22.08
		12	0	21.44	21.18	21.32
		12	6	21.47	21.26	21.43
		12	13	21.24	21.10	21.27
		25	0	21.31	21.05	21.28
	16QAM	1	0	21.57	21.36	21.44
		1	12	21.48	21.35	21.43
		1	24	21.48	21.31	21.48
		12	0	20.45	20.12	20.29
		12	6	20.40	20.11	20.28
		12	13	20.24	20.13	20.29
		25	0	20.29	20.10	20.21
	64QAM	1	0	20.56	20.39	20.56
		1	12	20.37	20.15	20.31
		1	24	20.30	20.09	20.18
		12	0	19.45	19.25	19.41
		12	6	19.38	19.19	19.39
		12	13	19.36	19.07	19.34
		25	0	19.27	19.10	19.25

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	EIRP (dBm)
QPSK	22.48	22.24
16QAM	21.59	21.35
64QAM	20.57	20.33

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.8 LTE Band 12

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23060	23095	23130
		Frequency (MHz)		704	707.5	711
10M	QPSK	1	0	23.17	23.35	23.23
		1	24	22.95	23.00	23.00
		1	49	22.85	22.89	22.88
		25	0	22.12	22.22	22.21
		25	12	22.03	22.14	22.10
		25	25	22.07	22.10	22.10
		50	0	22.03	22.16	22.10
	16QAM	1	0	22.14	22.33	22.23
		1	24	22.13	22.21	22.20
		1	49	21.96	22.11	22.04
		25	0	21.16	21.18	21.17
		25	12	21.11	21.13	21.12
		25	25	20.93	21.11	21.02
		50	0	21.11	21.18	21.17
	64QAM	1	0	21.29	21.39	21.39
		1	24	21.05	21.20	21.10
		1	49	20.99	21.13	21.04
		25	0	20.13	20.21	20.17
		25	12	20.10	20.15	20.11
		25	25	20.04	20.10	20.10
		50	0	20.01	20.14	20.11

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23035	23095	23155
		Frequency (MHz)		701.5	707.5	713.5
5M	QPSK	1	0	23.13	23.20	23.27
		1	12	22.94	22.99	22.95
		1	24	22.75	22.83	22.79
		12	0	22.10	22.19	22.18
		12	6	21.96	22.08	22.08
		12	13	22.00	22.01	22.00
		25	0	22.00	22.06	22.15
	16QAM	1	0	22.06	22.14	22.24
		1	12	22.12	22.18	22.12
		1	24	21.94	21.95	22.02
		12	0	21.06	21.16	21.09
		12	6	21.03	21.07	21.04
		12	13	20.86	20.98	21.06
		25	0	21.11	21.08	21.09
	64QAM	1	0	21.26	21.36	21.31
		1	12	21.01	21.02	21.12
		1	24	20.90	20.94	21.12
		12	0	20.03	20.17	20.19
		12	6	20.03	20.01	20.15
		12	13	19.98	20.02	20.00
		25	0	19.98	20.06	20.11

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23025	23095	23165
		Frequency (MHz)		700.5	707.5	714.5
3M	QPSK	1	0	23.15	23.14	23.29
		1	7	22.87	22.94	22.91
		1	14	22.80	22.82	22.80
		8	0	22.04	22.20	22.12
		8	3	22.03	22.03	22.12
		8	7	22.00	22.05	22.07
		15	0	21.93	22.04	22.10
	16QAM	1	0	22.05	22.18	22.31
		1	7	22.07	22.11	22.12
		1	14	21.91	21.99	22.03
		8	0	21.11	21.16	21.17
		8	3	21.06	21.09	21.03
		8	7	20.86	20.98	21.08
		15	0	21.10	21.09	21.11
	64QAM	1	0	21.20	21.30	21.35
		1	7	21.05	21.10	21.10
		1	14	20.91	20.99	21.12
		8	0	20.11	20.16	20.11
		8	3	20.05	20.04	20.12
		8	7	20.02	20.06	20.10
		15	0	19.98	20.05	20.05

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23017	23095	23173
		Frequency (MHz)		699.7	707.5	715.3
1.4M	QPSK	1	0	23.09	23.13	23.28
		1	2	22.92	22.95	22.99
		1	5	22.85	22.82	22.79
		3	0	22.08	22.21	22.02
		3	1	22.07	22.11	22.10
		3	3	22.05	22.04	22.09
		6	0	22.00	22.01	21.96
	16QAM	1	0	22.04	22.20	22.26
		1	2	22.08	22.10	22.15
		1	5	21.86	22.00	22.10
		3	0	21.11	21.15	21.13
		3	1	21.11	21.03	21.05
		3	3	21.03	21.10	21.10
		6	0	21.02	21.08	21.08
	64QAM	1	0	21.21	21.32	21.29
		1	2	21.03	21.04	21.14
		1	5	20.99	20.95	21.03
		3	0	20.11	20.13	20.13
		3	1	20.05	20.04	20.10
		3	3	20.04	20.08	20.02
		6	0	19.98	20.05	20.10

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.35	21.56
16QAM	22.33	20.54
64QAM	21.39	19.60

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.9 LTE Band 13

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid
		Channel		23230
		Frequency (MHz)		782
10M	QPSK	1	0	23.42
		1	24	22.98
		1	49	22.87
		25	0	22.20
		25	12	22.12
		25	25	22.08
		50	0	22.14
	16QAM	1	0	22.31
		1	24	22.19
		1	49	22.09
		25	0	21.16
		25	12	21.11
		25	25	21.09
		50	0	21.16
	64QAM	1	0	21.37
		1	24	21.18
		1	49	21.11
		25	0	20.19
		25	12	20.13
		25	25	20.08
		50	0	20.12

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23205	23230	23255
		Frequency (MHz)		779.5	782	784.5
5M	QPSK	1	0	23.36	23.33	23.37
		1	12	22.96	22.88	22.94
		1	24	22.84	22.87	22.80
		12	0	22.11	22.15	22.15
		12	6	22.03	22.05	22.02
		12	13	22.04	21.99	21.98
		25	0	22.06	22.04	22.04
	16QAM	1	0	22.26	22.21	22.30
		1	12	22.14	22.18	22.18
		1	24	22.08	22.02	22.09
		12	0	21.09	21.10	21.11
		12	6	21.09	21.05	21.01
		12	13	21.07	21.04	20.99
		25	0	21.07	21.09	21.11
	64QAM	1	0	21.34	21.29	21.35
		1	12	21.10	21.14	21.10
		1	24	21.02	21.04	21.04
		12	0	20.17	20.09	20.10
		12	6	20.11	20.08	20.09
		12	13	20.00	20.03	20.05
		25	0	20.12	20.07	20.06

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.42	21.01
16QAM	22.31	19.90
64QAM	21.37	18.96

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.10 LTE Band 14

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid
		Channel		23330
		Frequency (MHz)		793
10M	QPSK	1	0	23.36
		1	24	22.94
		1	49	22.83
		25	0	22.16
		25	12	22.08
		25	25	22.04
		50	0	22.10
	16QAM	1	0	22.27
		1	24	22.15
		1	49	22.05
		25	0	21.12
		25	12	21.07
		25	25	21.05
		50	0	21.12
	64QAM	1	0	21.33
		1	24	21.14
		1	49	21.07
		25	0	20.15
		25	12	20.09
		25	25	20.04
		50	0	20.08

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		23305	23330	23355
		Frequency (MHz)		790.5	793	795.5
5M	QPSK	1	0	23.26	23.27	23.26
		1	12	22.93	22.94	22.84
		1	24	22.73	22.74	22.75
		12	0	22.14	22.10	22.11
		12	6	22.07	22.08	21.99
		12	13	22.01	21.99	22.00
		25	0	22.04	22.08	22.08
	16QAM	1	0	22.19	22.17	22.25
		1	12	22.09	22.12	22.05
		1	24	22.03	21.95	22.04
		12	0	21.03	21.04	21.07
		12	6	21.03	21.06	21.01
		12	13	20.96	21.05	21.05
		25	0	21.04	21.08	21.11
	64QAM	1	0	21.33	21.26	21.30
		1	12	21.06	21.05	21.09
		1	24	21.00	20.98	21.03
		12	0	20.09	20.05	20.06
		12	6	20.06	20.08	20.08
		12	13	20.03	20.00	19.98
		25	0	20.03	19.99	19.99

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.36	20.95
16QAM	22.27	19.86
64QAM	21.33	18.92

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.11 LTE Band 25

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	22.49	22.54	22.41
		1	50	22.38	22.48	22.32
		1	99	22.41	22.45	22.41
		50	0	21.55	21.57	21.47
		50	25	21.55	21.55	21.51
		50	50	21.46	21.53	21.41
		100	0	21.57	21.65	21.47
	16QAM	1	0	21.74	21.82	21.69
		1	50	21.72	21.78	21.66
		1	99	21.75	21.75	21.69
		50	0	20.65	20.66	20.60
		50	25	20.47	20.55	20.47
		50	50	20.58	20.62	20.57
		100	0	20.57	20.60	20.48
	64QAM	1	0	20.74	20.74	20.70
		1	50	20.63	20.67	20.59
		1	99	20.59	20.69	20.58
		50	0	19.60	19.63	19.51
		50	25	19.49	19.58	19.43
		50	50	19.59	19.60	19.53
		100	0	19.66	19.66	19.64

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	22.47	22.48	22.36
		1	37	22.40	22.29	22.28
		1	74	22.45	22.38	22.31
		36	0	21.49	21.48	21.44
		36	19	21.45	21.53	21.48
		36	39	21.46	21.38	21.36
		75	0	21.61	21.49	21.37
	16QAM	1	0	21.79	21.64	21.64
		1	37	21.69	21.69	21.57
		1	74	21.72	21.68	21.59
		36	0	20.63	20.64	20.54
		36	19	20.50	20.43	20.46
		36	39	20.61	20.56	20.48
		75	0	20.53	20.49	20.43
	64QAM	1	0	20.70	20.72	20.64
		1	37	20.59	20.59	20.59
		1	74	20.61	20.49	20.53
		36	0	19.55	19.56	19.48
		36	19	19.58	19.47	19.40
		36	39	19.55	19.53	19.48
		75	0	19.61	19.65	19.58

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	22.44	22.46	22.32
		1	24	22.28	22.32	22.31
		1	49	22.32	22.32	22.41
		25	0	21.47	21.51	21.37
		25	12	21.41	21.46	21.41
		25	25	21.41	21.37	21.36
		50	0	21.45	21.57	21.38
	16QAM	1	0	21.75	21.70	21.64
		1	24	21.75	21.64	21.62
		1	49	21.66	21.68	21.65
		25	0	20.58	20.58	20.53
		25	12	20.55	20.39	20.44
		25	25	20.52	20.57	20.49
		50	0	20.58	20.50	20.47
	64QAM	1	0	20.64	20.74	20.64
		1	24	20.66	20.62	20.57
		1	49	20.60	20.52	20.50
		25	0	19.53	19.51	19.42
		25	12	19.56	19.42	19.37
		25	25	19.60	19.55	19.51
		50	0	19.58	19.57	19.59

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	22.49	22.42	22.34
		1	12	22.39	22.29	22.27
		1	24	22.40	22.31	22.39
		12	0	21.47	21.55	21.46
		12	6	21.50	21.55	21.42
		12	13	21.47	21.42	21.39
		25	0	21.61	21.57	21.37
	16QAM	1	0	21.75	21.69	21.62
		1	12	21.76	21.71	21.65
		1	24	21.75	21.66	21.65
		12	0	20.61	20.65	20.50
		12	6	20.47	20.46	20.44
		12	13	20.59	20.55	20.51
		25	0	20.57	20.52	20.38
	64QAM	1	0	20.69	20.65	20.69
		1	12	20.66	20.57	20.55
		1	24	20.62	20.49	20.54
		12	0	19.61	19.55	19.51
		12	6	19.57	19.48	19.37
		12	13	19.59	19.51	19.50
		25	0	19.63	19.63	19.54

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	22.51	22.46	22.33
		1	7	22.39	22.34	22.29
		1	14	22.39	22.34	22.38
		8	0	21.56	21.53	21.44
		8	3	21.52	21.47	21.50
		8	7	21.45	21.45	21.39
		15	0	21.61	21.49	21.39
	16QAM	1	0	21.77	21.64	21.62
		1	7	21.75	21.71	21.61
		1	14	21.69	21.65	21.67
		8	0	20.62	20.64	20.50
		8	3	20.45	20.38	20.39
		8	7	20.59	20.58	20.56
		15	0	20.52	20.49	20.42
	64QAM	1	0	20.74	20.64	20.68
		1	7	20.65	20.60	20.54
		1	14	20.61	20.52	20.53
		8	0	19.57	19.55	19.47
		8	3	19.50	19.49	19.36
		8	7	19.55	19.49	19.53
		15	0	19.59	19.60	19.64

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	22.37	22.37	22.40
		1	2	22.35	22.33	22.32
		1	5	22.29	22.23	22.27
		3	0	22.50	22.36	22.35
		3	1	22.35	22.43	22.44
		3	3	22.36	22.21	22.34
		6	0	21.45	21.48	21.37
	16QAM	1	0	21.67	21.70	21.64
		1	2	21.65	21.55	21.52
		1	5	21.54	21.60	21.64
		3	0	21.51	21.53	21.58
		3	1	21.47	21.40	21.31
		3	3	21.53	21.48	21.43
		6	0	20.46	20.47	20.44
	64QAM	1	0	20.68	20.63	20.59
		1	2	20.64	20.53	20.55
		1	5	20.57	20.48	20.46
		3	0	20.43	20.57	20.40
		3	1	20.51	20.33	20.24
		3	3	20.40	20.42	20.49
		6	0	19.55	19.47	19.50

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	EIRP (dBm)
QPSK	22.54	22.64
16QAM	21.82	21.92
64QAM	20.74	20.84

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.12 LTE Band 26 (814-824 MHz)

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Mid
		Channel		26765
		Frequency (MHz)		821.5
15M	QPSK	1	0	23.31
		1	24	23.21
		1	49	23.05
		25	0	22.48
		25	12	22.37
		25	25	22.32
		50	0	22.35
	16QAM	1	0	22.53
		1	24	22.40
		1	49	22.30
		25	0	21.39
		25	12	21.34
		25	25	21.34
		50	0	21.37
	64QAM	1	0	21.57
		1	24	21.44
		1	49	21.35
		25	0	20.46
		25	12	20.35
		25	25	20.31
		50	0	20.36

BW	MCS Index	RB Size	RB Offset	Mid
		Channel		26740
		Frequency (MHz)		819
10M	QPSK	1	0	23.40
		1	24	23.30
		1	49	23.04
		25	0	22.38
		25	12	22.34
		25	25	22.33
		50	0	22.40
	16QAM	1	0	22.55
		1	24	22.49
		1	49	22.25
		25	0	21.39
		25	12	21.37
		25	25	21.39
		50	0	21.41
	64QAM	1	0	21.61
		1	24	21.36
		1	49	21.39
		25	0	20.47
		25	12	20.38
		25	25	20.24
		50	0	20.34

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26715	26740	26765
		Frequency (MHz)		816.5	819	821.5
5M	QPSK	1	0	23.28	23.30	23.09
		1	12	23.20	22.98	23.03
		1	24	23.06	23.04	22.86
		12	0	22.32	22.35	22.11
		12	6	22.25	22.25	22.14
		12	13	22.26	22.20	22.14
		25	0	22.37	22.24	22.14
	16QAM	1	0	22.51	22.57	22.20
		1	12	22.49	22.29	22.18
		1	24	22.28	22.14	22.08
		12	0	21.37	21.33	21.19
		12	6	21.33	21.25	21.13
		12	13	21.25	21.32	21.07
		25	0	21.31	21.36	21.18
	64QAM	1	0	21.64	21.65	21.37
		1	12	21.34	21.24	21.06
		1	24	21.31	21.32	21.08
		12	0	20.41	20.36	20.15
		12	6	20.40	20.24	20.12
		12	13	20.15	20.21	20.06
		25	0	20.30	20.31	20.08

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26705	26740	26775
		Frequency (MHz)		815.5	819	822.5
3M	QPSK	1	0	23.29	23.35	23.09
		1	7	23.13	22.90	23.08
		1	14	22.98	23.02	22.86
		8	0	22.22	22.33	22.20
		8	3	22.27	22.13	22.08
		8	7	22.24	22.05	22.15
		15	0	22.31	22.12	22.02
	16QAM	1	0	22.44	22.49	22.20
		1	7	22.45	22.27	22.24
		1	14	22.23	22.08	22.03
		8	0	21.34	21.34	21.17
		8	3	21.29	21.18	21.20
		8	7	21.22	21.20	21.03
		15	0	21.27	21.30	21.23
	64QAM	1	0	21.52	21.57	21.43
		1	7	21.29	21.25	21.06
		1	14	21.22	21.23	21.04
		8	0	20.43	20.33	20.13
		8	3	20.30	20.19	20.13
		8	7	20.09	20.13	20.06
		15	0	20.30	20.19	20.07

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26697	26740	26783
		Frequency (MHz)		814.7	819	823.3
1.4M	QPSK	1	0	23.25	23.23	23.06
		1	2	23.08	22.83	22.92
		1	5	23.02	22.96	22.86
		3	0	22.18	22.23	23.14
		3	1	22.19	22.04	23.06
		3	3	22.20	22.03	23.00
		6	0	22.24	22.09	22.01
	16QAM	1	0	22.37	22.43	22.18
		1	2	22.41	22.21	22.21
		1	5	22.13	22.00	21.88
		3	0	21.24	21.36	22.12
		3	1	21.25	21.10	22.04
		3	3	21.24	21.10	21.93
		6	0	21.14	21.26	21.00
	64QAM	1	0	21.45	21.49	21.35
		1	2	21.25	21.16	21.09
		1	5	21.17	21.26	21.06
		3	0	20.37	20.23	21.13
		3	1	20.22	20.13	20.92
		3	3	20.03	20.09	21.03
		6	0	20.32	20.19	20.08

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.40	20.60
16QAM	22.57	19.77
64QAM	21.65	18.85

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.13 LTE Band 26 (824-849 MHz)

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.5	836.5	841.5
15M	QPSK	1	0	23.46	23.47	23.18
		1	37	23.23	23.28	23.08
		1	74	23.09	23.17	22.96
		36	0	22.49	22.50	22.29
		36	19	22.40	22.42	22.18
		36	39	22.34	22.38	22.18
		75	0	22.38	22.44	22.18
	16QAM	1	0	22.55	22.61	22.31
		1	37	22.41	22.49	22.28
		1	74	22.31	22.39	22.12
		36	0	21.44	21.46	21.25
		36	19	21.36	21.41	21.20
		36	39	21.38	21.39	21.10
		75	0	21.41	21.46	21.25
	64QAM	1	0	21.58	21.67	21.47
		1	37	21.47	21.48	21.18
		1	74	21.37	21.41	21.12
		36	0	20.47	20.49	20.25
		36	19	20.38	20.43	20.19
		36	39	20.33	20.38	20.18
		75	0	20.37	20.42	20.19

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.5	844
10M	QPSK	1	0	23.40	23.44	23.18
		1	24	23.28	23.11	23.05
		1	49	23.08	23.10	22.91
		25	0	22.41	22.37	22.20
		25	12	22.38	22.32	22.18
		25	25	22.36	22.25	22.10
		50	0	22.38	22.35	22.08
	16QAM	1	0	22.55	22.59	22.21
		1	24	22.47	22.36	22.26
		1	49	22.29	22.23	22.10
		25	0	21.39	21.41	21.16
		25	12	21.36	21.31	21.14
		25	25	21.39	21.35	21.10
		50	0	21.43	21.38	21.22
	64QAM	1	0	21.64	21.67	21.44
		1	24	21.38	21.33	21.12
		1	49	21.39	21.30	21.07
		25	0	20.46	20.40	20.20
		25	12	20.38	20.33	20.12
		25	25	20.28	20.28	20.16
		50	0	20.37	20.35	20.12

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.5	836.5	846.5
5M	QPSK	1	0	23.30	23.34	23.09
		1	12	23.19	23.02	23.07
		1	24	23.07	23.08	22.90
		12	0	22.31	22.34	22.11
		12	6	22.29	22.23	22.12
		12	13	22.29	22.18	22.14
		25	0	22.35	22.25	22.14
	16QAM	1	0	22.55	22.59	22.21
		1	12	22.47	22.32	22.18
		1	24	22.28	22.16	22.06
		12	0	21.35	21.37	21.18
		12	6	21.35	21.27	21.14
		12	13	21.29	21.30	21.09
		25	0	21.35	21.36	21.19
	64QAM	1	0	21.64	21.67	21.40
		1	12	21.38	21.24	21.10
		1	24	21.32	21.30	21.06
		12	0	20.44	20.40	20.15
		12	6	20.38	20.26	20.10
		12	13	20.19	20.19	20.10
		25	0	20.34	20.32	20.09

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.5	836.5	847.5
3M	QPSK	1	0	23.30	23.33	23.09
		1	7	23.11	22.94	23.08
		1	14	23.02	23.02	22.87
		8	0	22.25	22.33	22.19
		8	3	22.26	22.13	22.08
		8	7	22.28	22.09	22.17
		15	0	22.29	22.16	22.06
	16QAM	1	0	22.45	22.49	22.24
		1	7	22.47	22.29	22.23
		1	14	22.23	22.08	22.05
		8	0	21.32	21.36	21.18
		8	3	21.29	21.17	21.18
		8	7	21.23	21.22	21.01
		15	0	21.27	21.34	21.23
	64QAM	1	0	21.54	21.59	21.47
		1	7	21.30	21.23	21.09
		1	14	21.23	21.27	21.06
		8	0	20.43	20.32	20.16
		8	3	20.33	20.17	20.15
		8	7	20.11	20.15	20.10
		15	0	20.34	20.23	20.11

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.7	836.5	848.3
1.4M	QPSK	1	0	23.24	23.25	23.09
		1	2	23.08	22.85	22.95
		1	5	23.01	22.97	22.89
		3	0	22.20	22.27	23.17
		3	1	22.17	22.03	23.06
		3	3	22.20	22.01	23.01
		6	0	22.23	22.10	22.02
	16QAM	1	0	22.35	22.46	22.17
		1	2	22.40	22.20	22.20
		1	5	22.14	21.99	21.90
		3	0	21.24	21.34	22.16
		3	1	21.29	21.10	22.08
		3	3	21.22	21.12	21.94
		6	0	21.18	21.27	21.01
	64QAM	1	0	21.44	21.50	21.37
		1	2	21.24	21.19	21.10
		1	5	21.18	21.26	21.06
		3	0	20.40	20.27	21.13
		3	1	20.25	20.14	20.96
		3	3	20.04	20.11	21.02
		6	0	20.34	20.21	20.12

ERP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	ERP (dBm)
QPSK	23.47	20.67
16QAM	22.61	19.81
64QAM	21.67	18.87

Note:
EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)
ERP (dBm) = EIRP (dBm) - 2.15

7.1.14 LTE Band 42

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		42190	42590	42990
		Frequency (MHz)		3460	3500	3540
20M	QPSK	1	0	17.14	17.30	17.09
		1	50	17.09	17.29	17.06
		1	99	17.06	17.29	17.07
		50	0	16.17	16.40	16.16
		50	25	16.13	16.33	16.12
		50	50	16.04	16.37	16.03
		100	0	16.22	16.35	16.13
	16QAM	1	0	16.22	16.44	16.25
		1	50	16.09	16.34	16.07
		1	99	16.21	16.44	16.21
		50	0	15.30	15.45	15.21
		50	25	15.24	15.37	15.14
		50	50	15.19	15.37	15.18
		100	0	15.31	15.39	15.21
	64QAM	1	0	15.15	15.36	15.08
		1	50	15.11	15.10	15.13
		1	99	15.14	15.10	15.08
		50	0	14.08	14.32	14.04
		50	25	14.17	14.34	14.06
		50	50	14.15	14.30	14.04
		100	0	14.14	14.35	14.12

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		42165	42590	43015
		Frequency (MHz)		3457.5	3500	3542.5
15M	QPSK	1	0	17.11	17.25	17.07
		1	37	17.12	17.29	17.04
		1	74	17.10	17.17	17.05
		36	0	16.08	16.34	16.13
		36	19	16.06	16.23	16.13
		36	39	16.12	16.24	16.12
		75	0	16.20	16.31	16.14
	16QAM	1	0	16.14	16.41	16.22
		1	37	16.07	16.23	16.05
		1	74	16.20	16.40	16.18
		36	0	15.20	15.36	15.13
		36	19	15.23	15.33	15.15
		36	39	15.13	15.42	15.19
		75	0	15.20	15.32	15.13
	64QAM	1	0	15.11	15.26	15.13
		1	37	15.08	15.11	15.14
		1	74	15.06	15.05	15.03
		36	0	14.12	14.27	14.06
		36	19	14.04	14.27	14.10
		36	39	14.05	14.28	14.09
		75	0	14.06	14.36	14.03

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		42140	42590	43040
		Frequency (MHz)		3455	3500	3545
10M	QPSK	1	0	17.12	17.25	17.09
		1	24	17.09	17.28	17.10
		1	49	17.03	17.24	17.08
		25	0	16.16	16.33	16.20
		25	12	16.09	16.26	16.00
		25	25	16.10	16.34	16.14
		50	0	16.12	16.36	16.11
	16QAM	1	0	16.18	16.36	16.11
		1	24	16.07	16.25	16.11
		1	49	16.16	16.37	16.15
		25	0	15.24	15.42	15.15
		25	12	15.18	15.33	15.01
		25	25	15.22	15.39	15.14
		50	0	15.23	15.38	15.08
	64QAM	1	0	15.13	15.32	15.10
		1	24	15.09	15.05	15.06
		1	49	15.03	15.08	15.11
		25	0	14.06	14.32	14.12
		25	12	14.06	14.30	14.09
		25	25	14.09	14.27	14.07
		50	0	14.12	14.35	14.06

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		42115	42590	43065
		Frequency (MHz)		3452.5	3500	3547.5
5M	QPSK	1	0	17.07	17.29	17.09
		1	12	17.07	17.25	17.06
		1	24	17.13	17.24	17.07
		12	0	16.14	16.30	16.08
		12	6	16.02	16.25	16.08
		12	13	16.14	16.32	16.11
		25	0	16.17	16.36	16.13
	16QAM	1	0	16.22	16.39	16.15
		1	12	16.07	16.22	16.04
		1	24	16.22	16.41	16.10
		12	0	15.20	15.39	15.07
		12	6	15.17	15.39	15.08
		12	13	15.13	15.38	15.16
		25	0	15.28	15.27	15.20
	64QAM	1	0	15.10	15.31	15.06
		1	12	15.06	15.10	15.13
		1	24	15.09	15.09	15.09
		12	0	14.13	14.33	14.02
		12	6	14.19	14.35	14.08
		12	13	14.07	14.23	14.09
		25	0	14.09	14.31	14.11

EIRP Power (dBm)

Maximum Output Power		
Modulation	Cond. Power (dBm)	Max. EIRP (dBm)
QPSK	17.30	20.12
16QAM	16.44	19.26
64QAM	15.36	18.18

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

7.1.15 LTE Band 66

Conducted Output Power (dBm)

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132072	132322	132572
		Frequency (MHz)		1720	1745	1770
20M	QPSK	1	0	22.52	22.63	22.51
		1	50	22.40	22.48	22.31
		1	99	22.32	22.37	22.29
		50	0	21.57	21.62	21.50
		50	25	21.48	21.56	21.46
		50	50	21.43	21.51	21.34
		100	0	21.48	21.50	21.47
	16QAM	1	0	21.92	21.98	21.91
		1	50	21.78	21.87	21.74
		1	99	21.53	21.58	21.50
		50	0	20.65	20.66	20.60
		50	25	20.49	20.53	20.39
		50	50	20.45	20.51	20.38
		100	0	20.48	20.56	20.47
	64QAM	1	0	20.82	20.85	20.73
		1	50	20.71	20.73	20.69
		1	99	20.49	20.49	20.42
		50	0	19.65	19.65	19.61
		50	25	19.54	19.58	19.48
		50	50	19.45	19.53	19.43
		100	0	19.52	19.55	19.45

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132047	132322	132597
		Frequency (MHz)		1717.5	1745	1772.5
15M	QPSK	1	0	22.53	22.42	22.42
		1	37	22.40	22.37	22.25
		1	74	22.29	22.31	22.28
		36	0	21.60	21.53	21.42
		36	19	21.55	21.39	21.36
		36	39	21.49	21.42	21.32
		75	0	21.40	21.40	21.47
	16QAM	1	0	21.91	21.91	21.86
		1	37	21.80	21.70	21.68
		1	74	21.58	21.53	21.45
		36	0	20.65	20.62	20.50
		36	19	20.43	20.44	20.35
		36	39	20.48	20.38	20.36
		75	0	20.50	20.45	20.46
	64QAM	1	0	20.85	20.80	20.69
		1	37	20.69	20.64	20.61
		1	74	20.46	20.48	20.33
		36	0	19.57	19.58	19.53
		36	19	19.53	19.46	19.47
		36	39	19.47	19.44	19.41
		75	0	19.51	19.50	19.38

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		132022	132322	132622
		Frequency (MHz)		1715	1745	1775
10M	QPSK	1	0	22.60	22.52	22.49
		1	24	22.38	22.31	22.24
		1	49	22.34	22.31	22.29
		25	0	21.56	21.51	21.44
		25	12	21.47	21.46	21.43
		25	25	21.46	21.42	21.29
		50	0	21.45	21.42	21.37
	16QAM	1	0	21.95	21.84	21.85
		1	24	21.85	21.72	21.68
		1	49	21.54	21.52	21.45
		25	0	20.58	20.62	20.59
		25	12	20.46	20.47	20.33
		25	25	20.44	20.41	20.32
		50	0	20.51	20.38	20.44
	64QAM	1	0	20.82	20.81	20.68
		1	24	20.64	20.70	20.64
		1	49	20.41	20.43	20.33
		25	0	19.62	19.55	19.51
		25	12	19.57	19.44	19.41
		25	25	19.48	19.39	19.39
		50	0	19.50	19.45	19.41

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131997	132322	132647
		Frequency (MHz)		1712.5	1745	1777.5
5M	QPSK	1	0	22.60	22.50	22.48
		1	12	22.38	22.30	22.26
		1	24	22.31	22.29	22.25
		12	0	21.53	21.51	21.50
		12	6	21.53	21.39	21.37
		12	13	21.49	21.40	21.29
		25	0	21.44	21.47	21.43
	16QAM	1	0	21.91	21.91	21.84
		1	12	21.82	21.70	21.66
		1	24	21.51	21.52	21.45
		12	0	20.56	20.60	20.53
		12	6	20.52	20.49	20.35
		12	13	20.50	20.37	20.30
		25	0	20.46	20.38	20.45
	64QAM	1	0	20.77	20.78	20.64
		1	12	20.73	20.65	20.60
		1	24	20.45	20.48	20.40
		12	0	19.58	19.60	19.52
		12	6	19.54	19.52	19.45
		12	13	19.47	19.44	19.41
		25	0	19.53	19.52	19.38

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131987	132322	132657
		Frequency (MHz)		1711.5	1745	1778.5
3M	QPSK	1	0	22.61	22.42	22.46
		1	7	22.48	22.38	22.31
		1	14	22.36	22.32	22.21
		8	0	21.55	21.57	21.40
		8	3	21.47	21.48	21.44
		8	7	21.42	21.36	21.28
		15	0	21.45	21.40	21.47
	16QAM	1	0	21.98	21.90	21.91
		1	7	21.78	21.76	21.70
		1	14	21.55	21.51	21.47
		8	0	20.56	20.57	20.59
		8	3	20.49	20.42	20.31
		8	7	20.42	20.35	20.35
		15	0	20.55	20.39	20.45
	64QAM	1	0	20.75	20.82	20.67
		1	7	20.69	20.67	20.68
		1	14	20.48	20.39	20.34
		8	0	19.59	19.59	19.58
		8	3	19.56	19.46	19.44
		8	7	19.43	19.41	19.38
		15	0	19.52	19.52	19.42

BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		131979	132322	132665
		Frequency (MHz)		1710.7	1745	1779.3
1.4M	QPSK	1	0	22.50	22.46	22.36
		1	2	22.36	22.25	22.16
		1	5	22.26	22.23	22.23
		3	0	22.54	22.35	22.37
		3	1	22.40	22.33	22.33
		3	3	22.43	22.27	22.16
		6	0	21.29	21.40	21.33
	16QAM	1	0	21.84	21.78	21.81
		1	2	21.72	21.71	21.60
		1	5	21.43	21.38	21.45
		3	0	21.43	21.49	21.51
		3	1	21.48	21.33	21.18
		3	3	21.46	21.36	21.37
		6	0	20.34	20.37	20.37
	64QAM	1	0	20.70	20.75	20.50
		1	2	20.56	20.61	20.54
		1	5	20.41	20.29	20.30
		3	0	20.41	20.46	20.49
		3	1	20.45	20.29	20.35
		3	3	20.40	20.29	20.28
		6	0	19.45	19.45	19.36

EIRP Power (dBm)

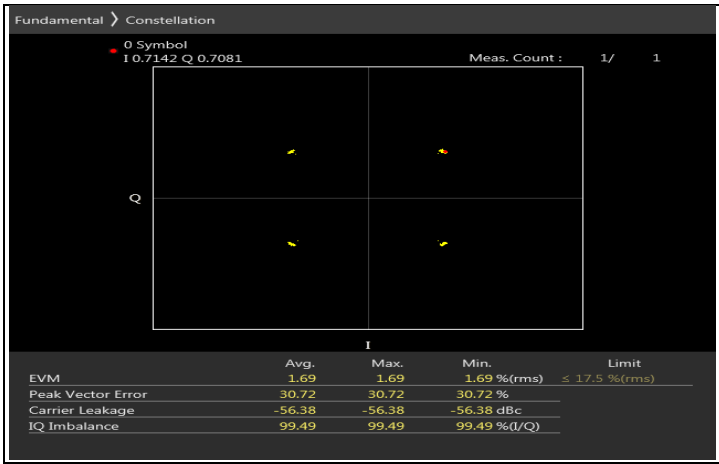
Maximum Output Power		
Modulation	Cond. Power (dBm)	Max. EIRP (dBm)
QPSK	22.63	23.79
16QAM	21.98	23.14
64QAM	20.85	22.01

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

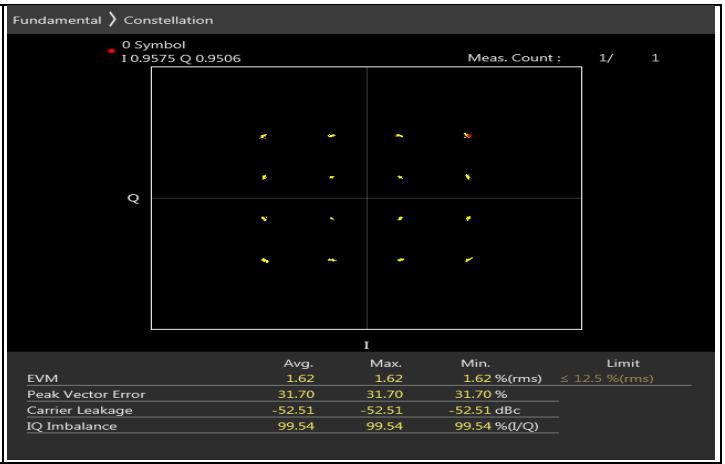
7.2 Modulation Characteristics

Input Power:	10.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang

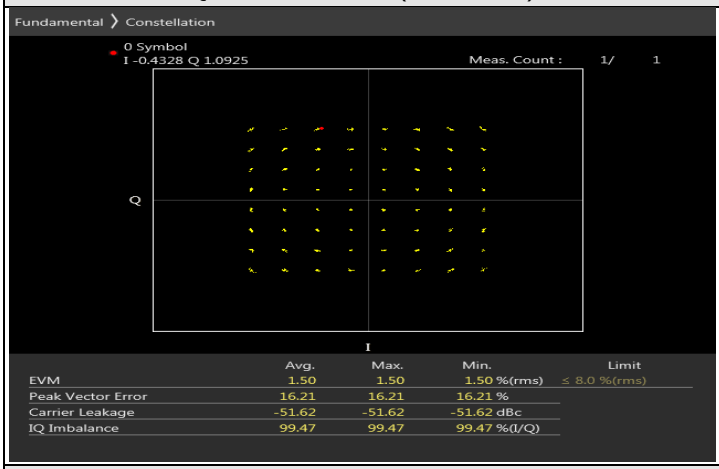
LTE Band 42, Channel Bandwidth: 20 MHz



QPSK CH 42590 (3500 MHz)



16QAM CH 42590 (3500 MHz)



64QAM CH 42590 (3500 MHz)

7.3 Peak to Average Ratio

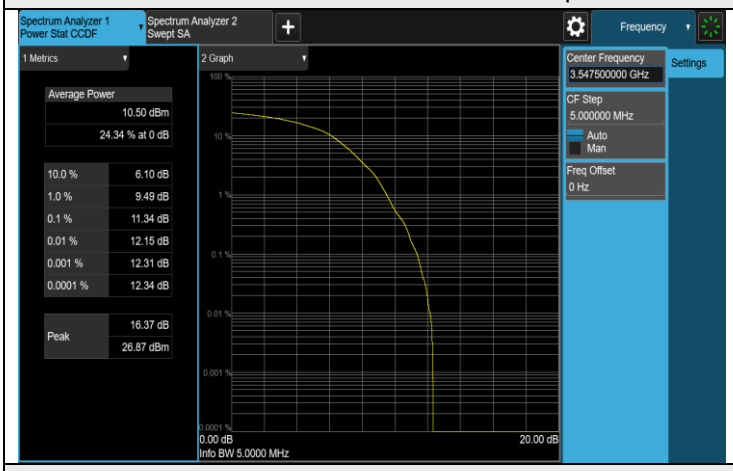
Input Power:	10.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang

7.3.1 LTE Band 42

LTE Band 42, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value((dB))	Limit ((dB))	Result
QPSK	42115	3452.5	9.28	13	PASS
QPSK	42590	3500	9.66	13	PASS
QPSK	43065	3547.5	9.91	13	PASS
16QAM	42115	3452.5	10.17	13	PASS
16QAM	42590	3500	10.13	13	PASS
16QAM	43065	3547.5	10.30	13	PASS
64QAM	42115	3452.5	9.80	13	PASS
64QAM	42590	3500	10.35	13	PASS
64QAM	43065	3547.5	11.34	13	PASS

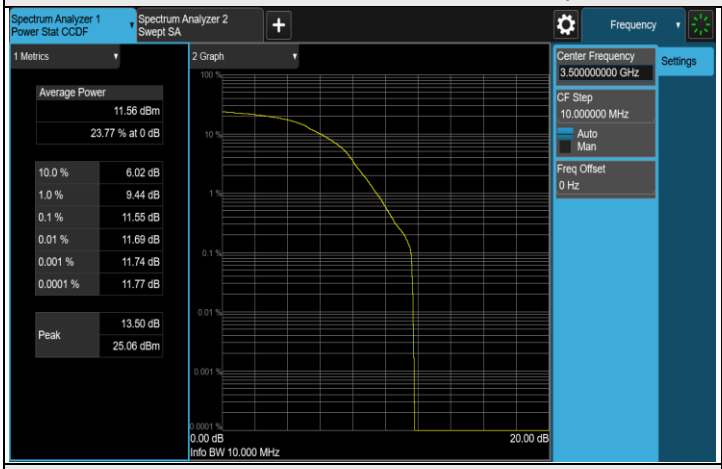
Spectrum Plot of Worst Value



64QAM CH 43065 (3547.5 MHz)

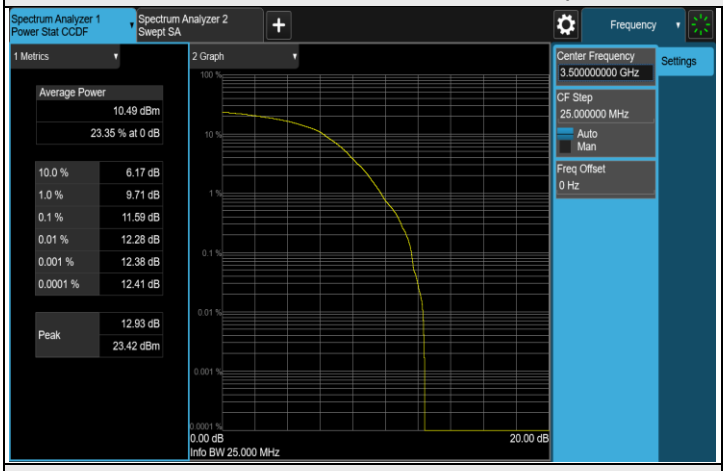
LTE Band 42, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value((dB))	Limit (\n(dB))	Result
QPSK	42140	3455	9.51	13	PASS
QPSK	42590	3500	9.41	13	PASS
QPSK	43040	3545	9.75	13	PASS
16QAM	42140	3455	10.23	13	PASS
16QAM	42590	3500	11.55	13	PASS
16QAM	43040	3545	11.47	13	PASS
64QAM	42140	3455	9.87	13	PASS
64QAM	42590	3500	9.83	13	PASS
64QAM	43040	3545	10.73	13	PASS

Spectrum Plot of Worst Value	
	
16QAM CH 42590 (3500 MHz)	

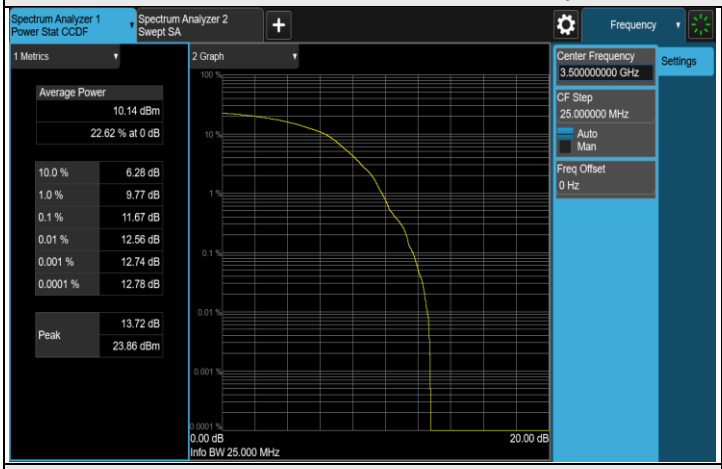
LTE Band 42, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value((dB))	Limit (\n(dB))	Result
QPSK	42165	3457.5	8.12	13	PASS
QPSK	42590	3500	10.38	13	PASS
QPSK	43015	3542.5	10.39	13	PASS
16QAM	42165	3457.5	10.06	13	PASS
16QAM	42590	3500	10.13	13	PASS
16QAM	43015	3542.5	10.80	13	PASS
64QAM	42165	3457.5	8.81	13	PASS
64QAM	42590	3500	11.59	13	PASS
64QAM	43015	3542.5	10.91	13	PASS

Spectrum Plot of Worst Value	
	
64QAM CH 42590 (3500 MHz)	

LTE Band 42, Channel Bandwidth: 20 MHz

Modulation	Channel	Frequency (MHz)	Measurement Value((dB))	Limit (\n(dB))	Result
QPSK	42190	3460	8.81	13	PASS
QPSK	42590	3500	8.51	13	PASS
QPSK	42990	3540	9.79	13	PASS
16QAM	42190	3460	11.44	13	PASS
16QAM	42590	3500	10.45	13	PASS
16QAM	42990	3540	9.36	13	PASS
64QAM	42190	3460	10.82	13	PASS
64QAM	42590	3500	11.67	13	PASS
64QAM	42990	3540	9.77	13	PASS

Spectrum Plot of Worst Value	
	
64QAM CH 42590 (3500 MHz)	

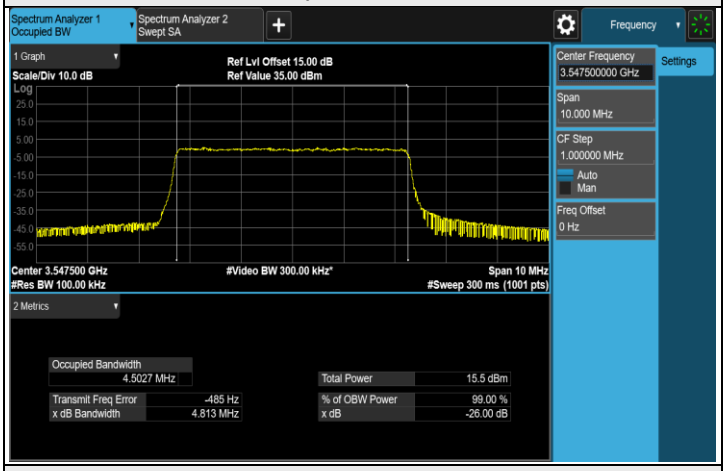
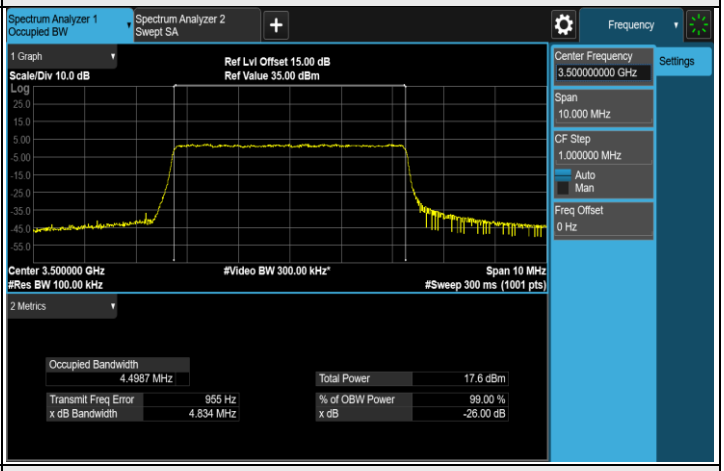
7.4 Bandwidth

Input Power:	10.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang

7.4.1 LTE Band 42

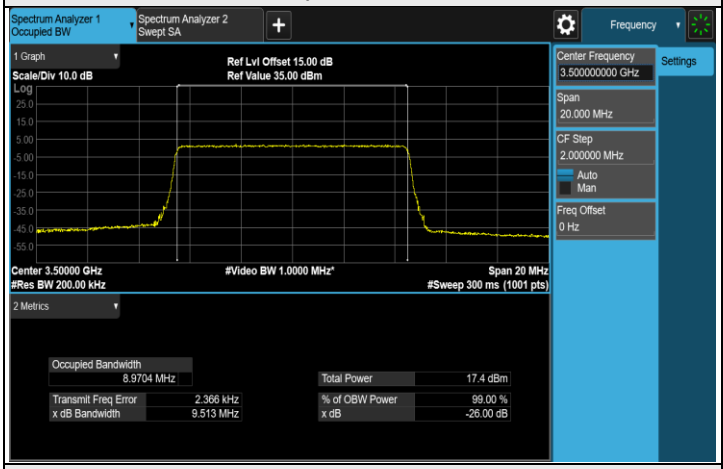
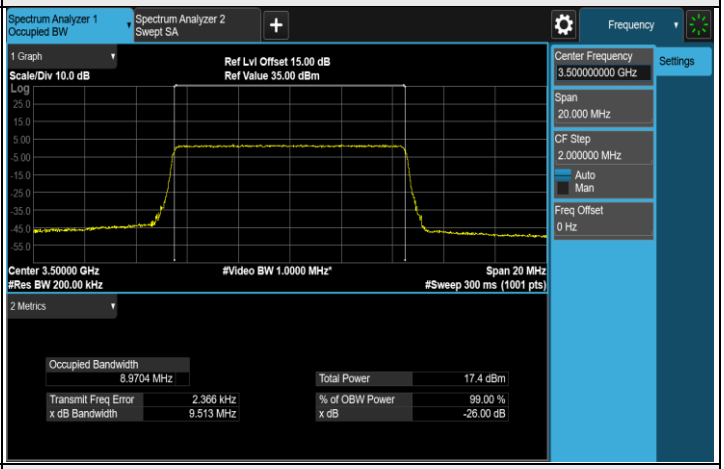
LTE Band 42, Channel Bandwidth: 5 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth ((MHz))	26 dB Bandwidth ((MHz))
QPSK	42115	3452.5	4.4961	4.790
QPSK	42590	3500	4.4987	4.834
QPSK	43065	3547.5	4.4994	4.818
16QAM	42115	3452.5	4.4923	4.782
16QAM	42590	3500	4.4906	4.793
16QAM	43065	3547.5	4.4930	4.795
64QAM	42115	3452.5	4.5021	4.797
64QAM	42590	3500	4.5007	4.809
64QAM	43065	3547.5	4.5027	4.813

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
64QAM CH 43065 (3547.5 MHz)	QPSK CH 42590 (3500 MHz)

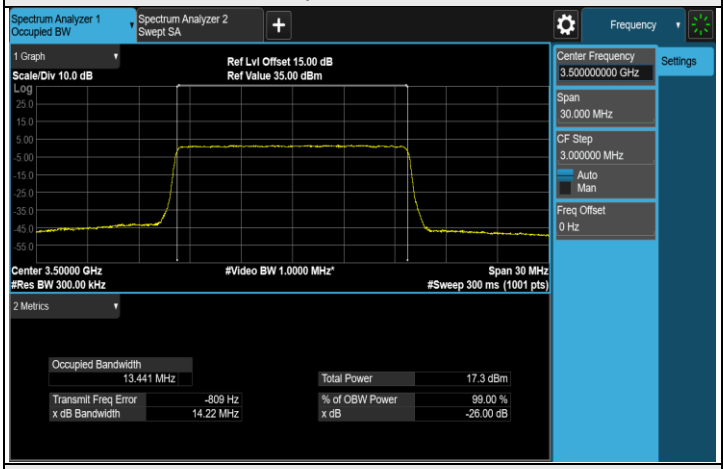
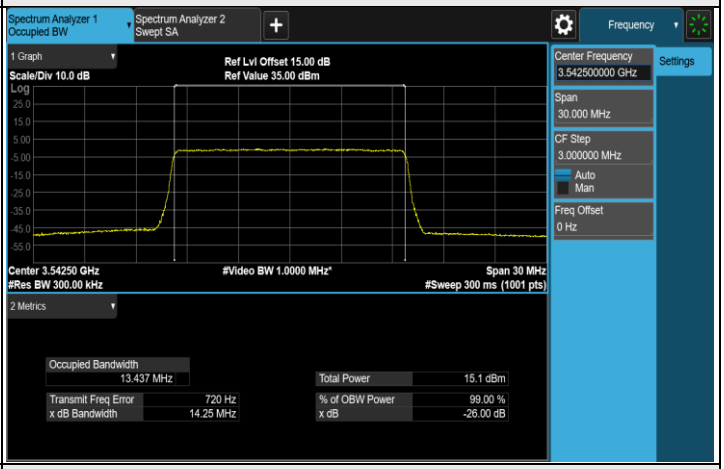
LTE Band 42, Channel Bandwidth: 10 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth ((MHz))	26 dB Bandwidth ((MHz))
QPSK	42140	3455	8.9649	9.499
QPSK	42590	3500	8.9704	9.513
QPSK	43040	3545	8.9660	9.491
16QAM	42140	3455	8.9681	9.494
16QAM	42590	3500	8.9697	9.499
16QAM	43040	3545	8.9665	9.499
64QAM	42140	3455	8.9661	9.499
64QAM	42590	3500	8.9681	9.509
64QAM	43040	3545	8.9658	9.493

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
QPSK CH 42590 (3500 MHz)	QPSK CH 42590 (3500 MHz)

LTE Band 42, Channel Bandwidth: 15 MHz

Modulation	Channel	Frequency (MHz)	Occupied Bandwidth ((MHz))	26 dB Bandwidth ((MHz))
QPSK	42165	3457.5	13.4385	14.215
QPSK	42590	3500	13.4413	14.219
QPSK	43015	3542.5	13.4385	14.223
16QAM	42165	3457.5	13.4351	14.231
16QAM	42590	3500	13.4369	14.233
16QAM	43015	3542.5	13.4328	14.228
64QAM	42165	3457.5	13.4368	14.246
64QAM	42590	3500	13.4342	14.240
64QAM	43015	3542.5	13.4374	14.247

<table>
<tr><td colspan="2">Spectrum Plot of Worst Value</td></tr>
<tr><td>Occupied bandwidth</td><td>26 dB Bandwidth</td></tr>
<tr><td> 
</td><td> 
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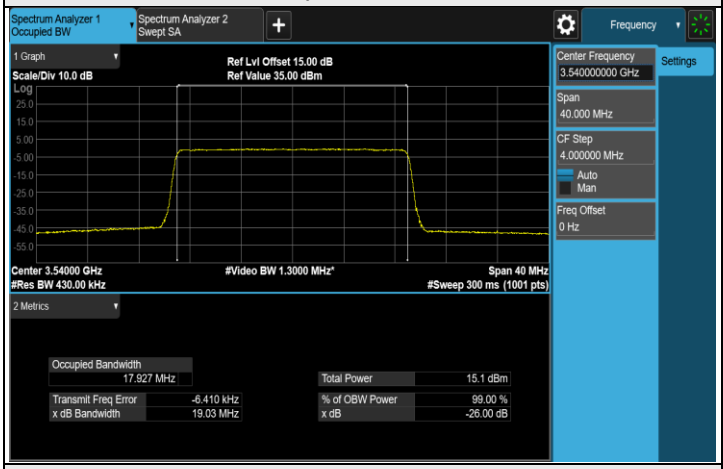
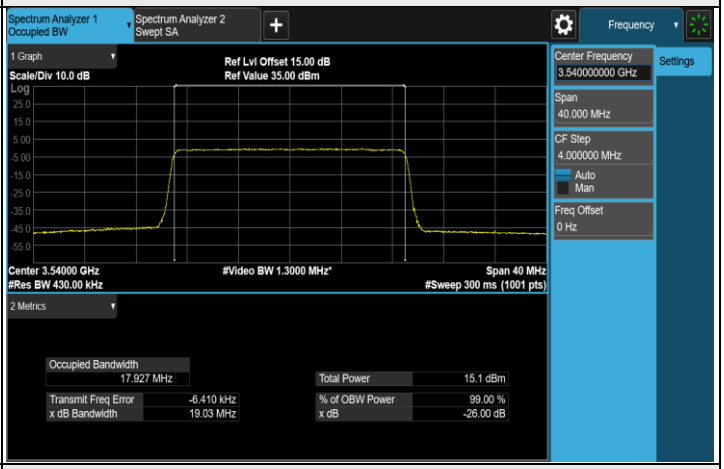
<tr><td>QPSK CH 42590 (3500 MHz)</td><td>64QAM CH 43015 (3542.5 MHz)</td></tr>
</table>

LTE Band 42, Channel Bandwidth: 20 MHz

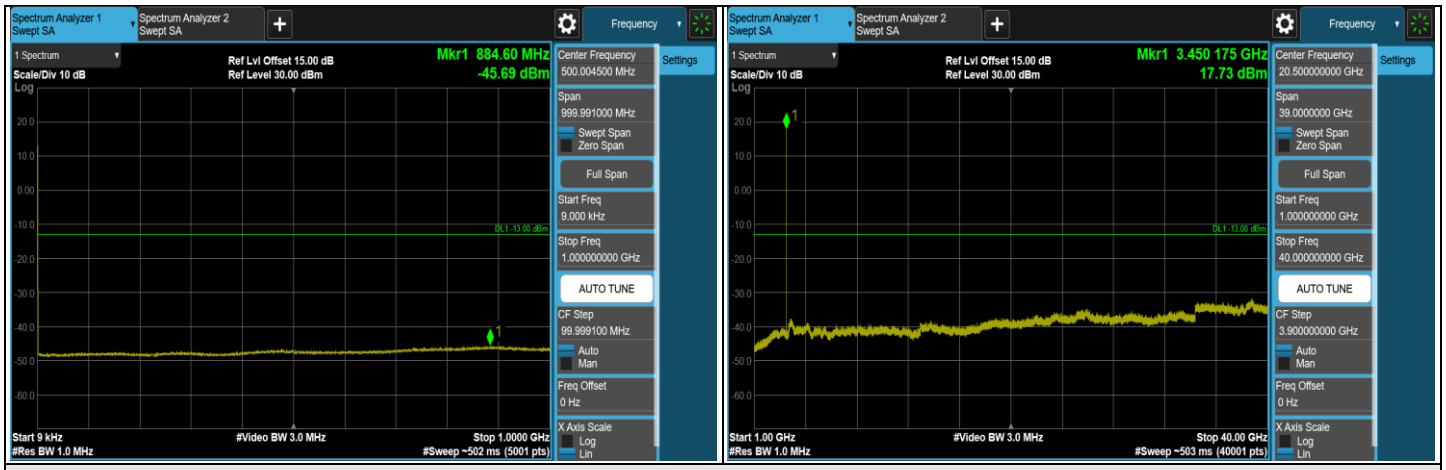
Modulation	Channel	Frequency (MHz)	Occupied Bandwidth ((MHz))	26 dB Bandwidth ((MHz))
QPSK	42190	3460	17.9066	18.990
QPSK	42590	3500	17.9133	18.993
QPSK	42990	3540	17.9056	19.001
16QAM	42190	3460	17.9099	19.000
16QAM	42590	3500	17.9030	19.008
16QAM	42990	3540	17.9090	19.004
64QAM	42190	3460	17.9194	19.024
64QAM	42590	3500	17.9221	19.012
64QAM	42990	3540	17.9265	19.025

Spectrum Plot of Worst Value	
Occupied bandwidth	26 dB Bandwidth
	
64QAM CH 42990 (3540 MHz)	64QAM CH 42990 (3540 MHz)

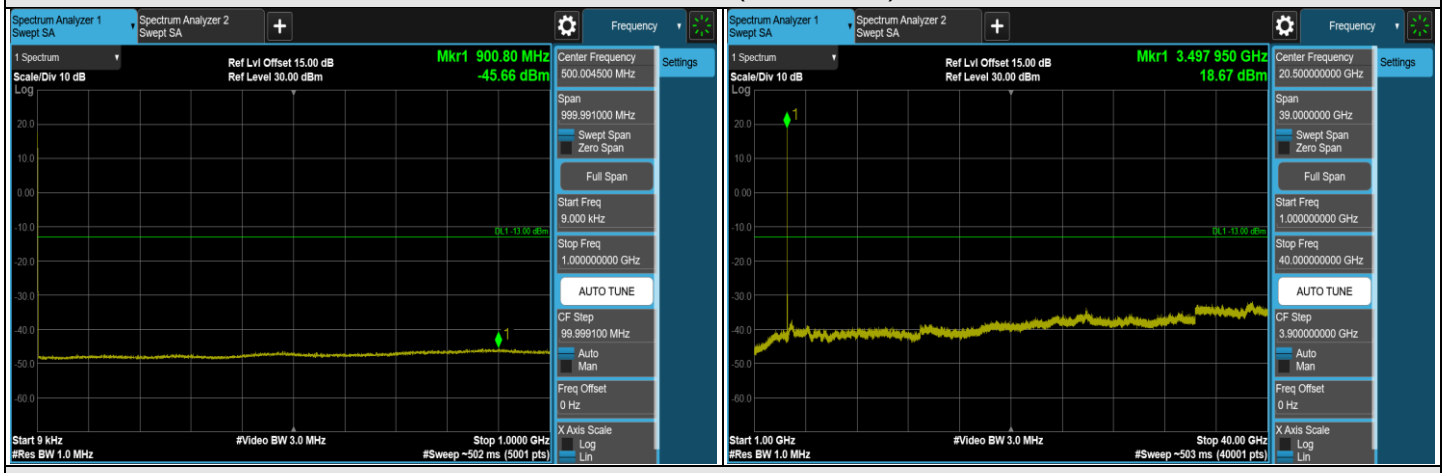
7.5 Conducted Spurious Emissions

Input Power:	10.8 Vdc	Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang

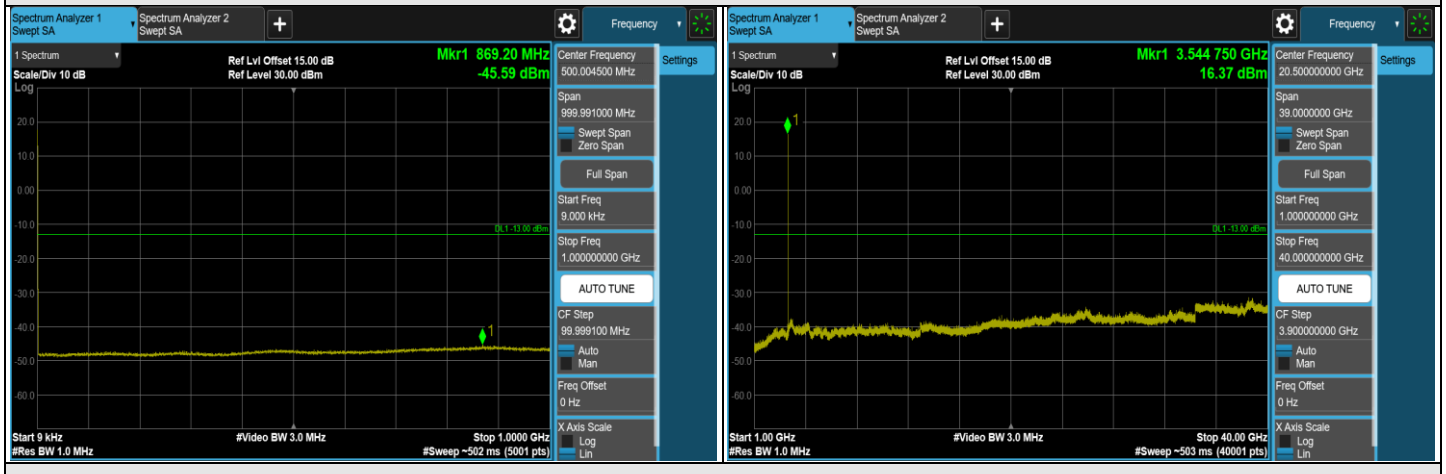
LTE Band 42, Channel Bandwidth: 5 MHz



Channel 42115 (3452.5 MHz)

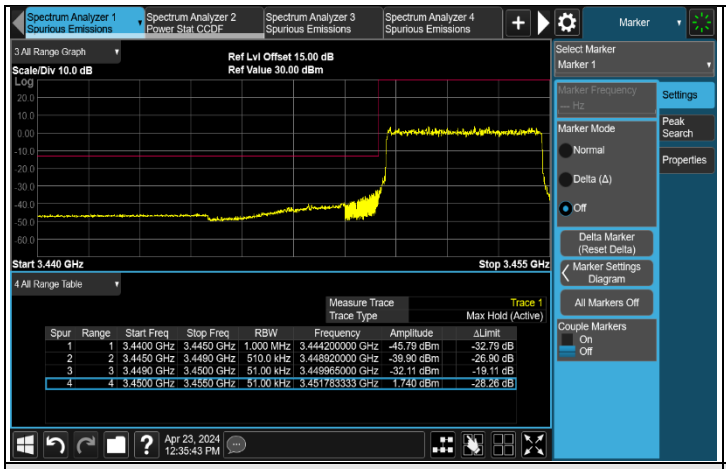


Channel 42590 (3500 MHz)

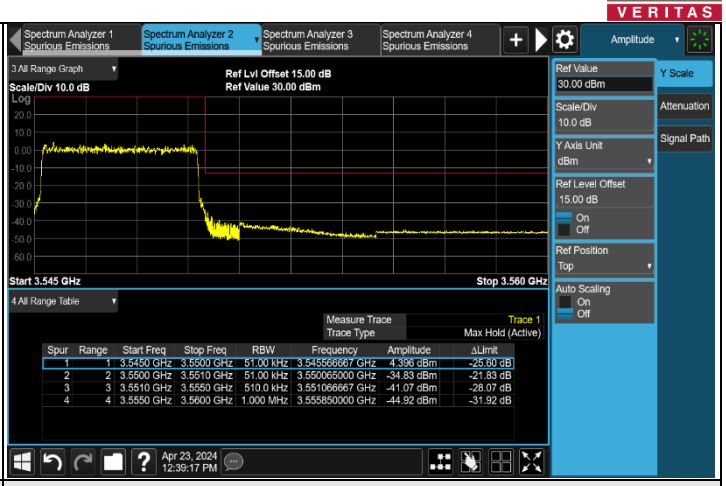


Channel 43065 (3547.5 MHz)

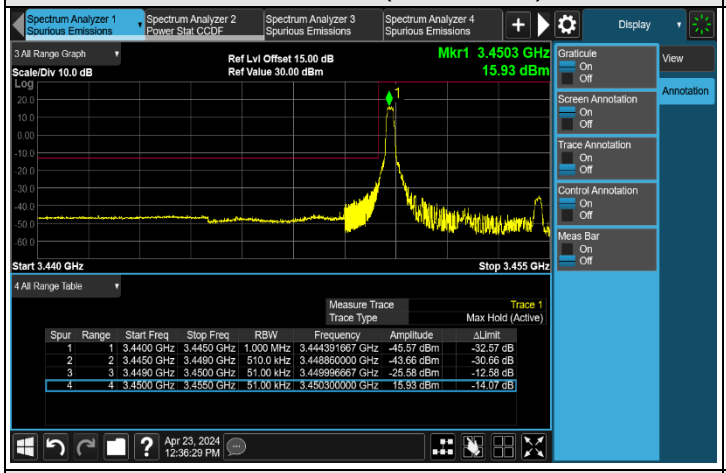
Note: The signal at 9 kHz is IF signal from spectrum analyzer.



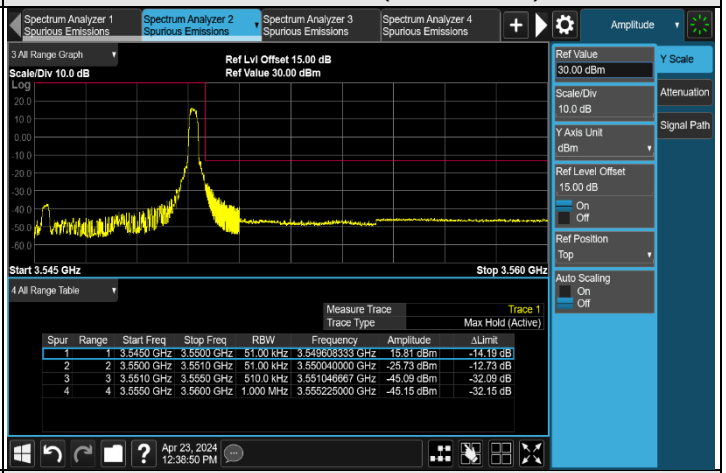
FULL CH 42115 (3452.5 MHz)



FULL CH 43065 (3547.5 MHz)

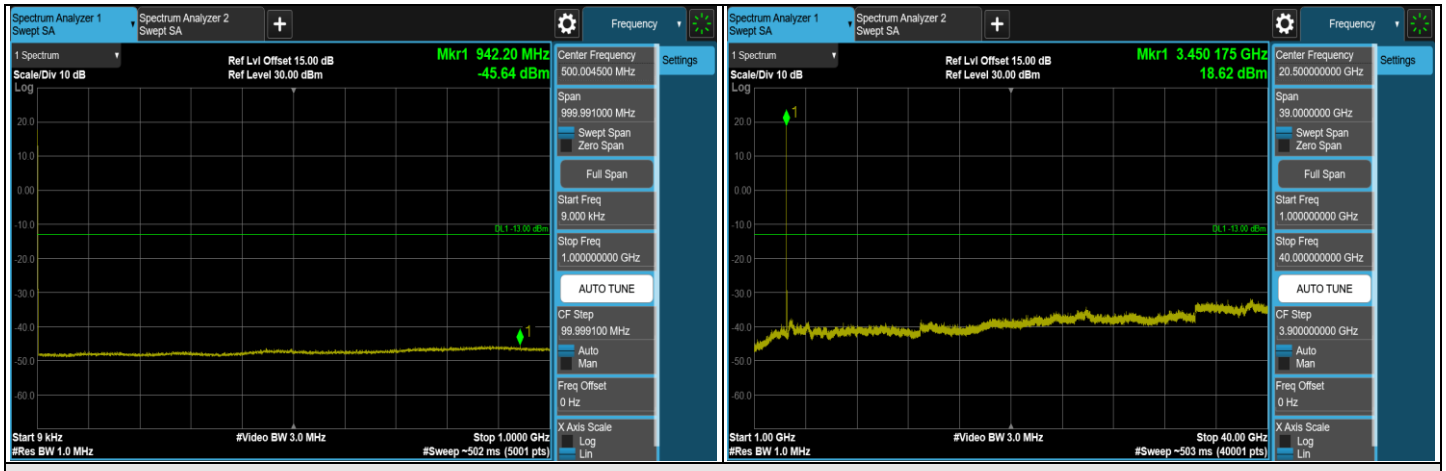


1RB CH 42115 (3452.5 MHz)

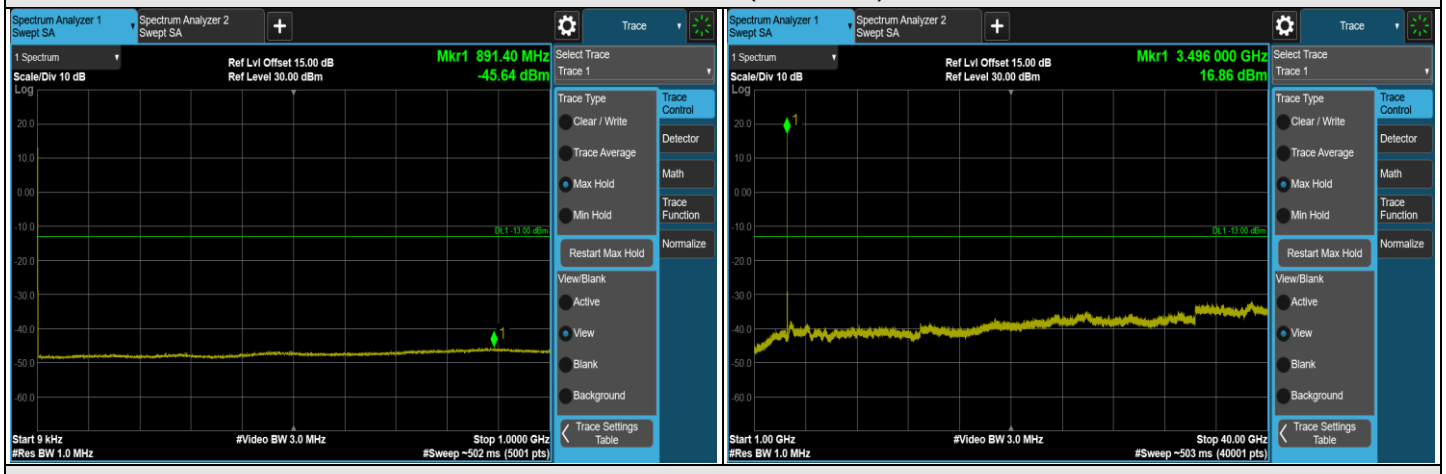


1RB CH 43065 (3547.5 MHz)

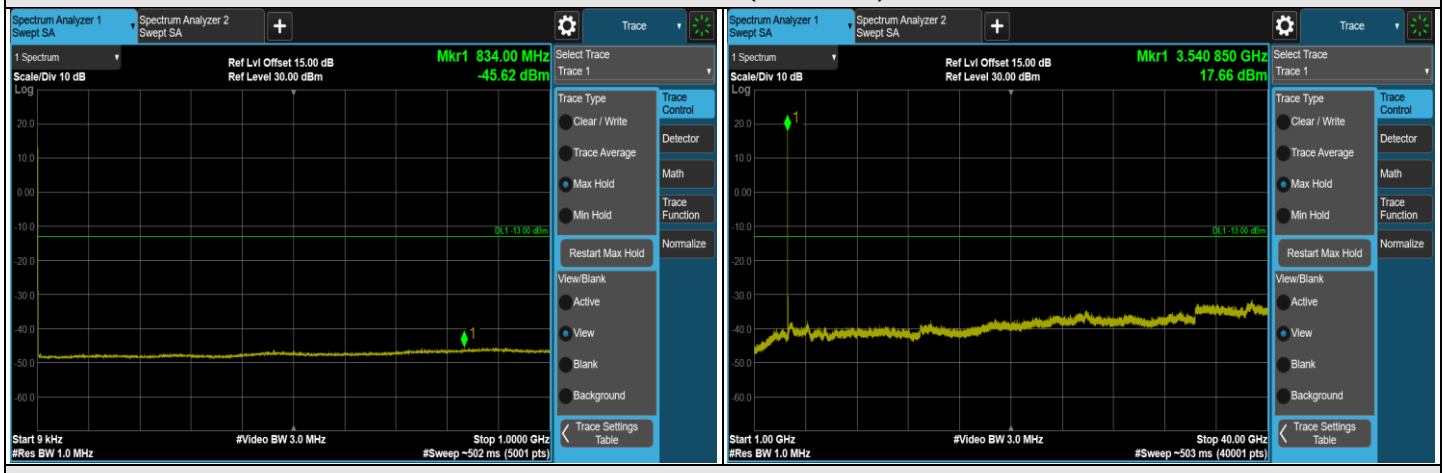
LTE Band 42, Channel Bandwidth: 10 MHz



Channel 42140 (3455 MHz)

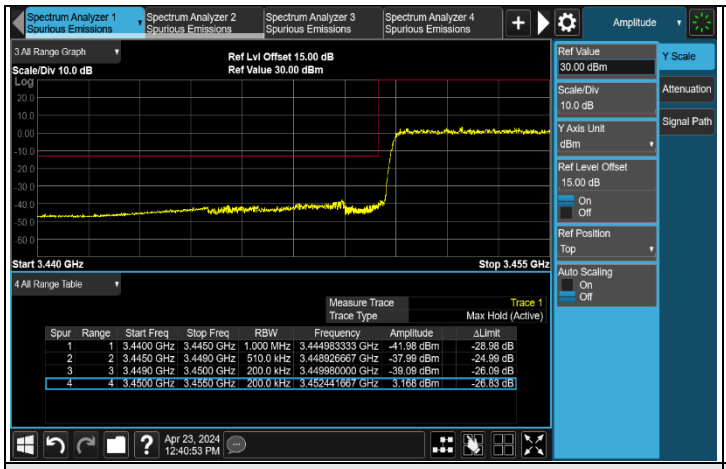


Channel 42590 (3500 MHz)

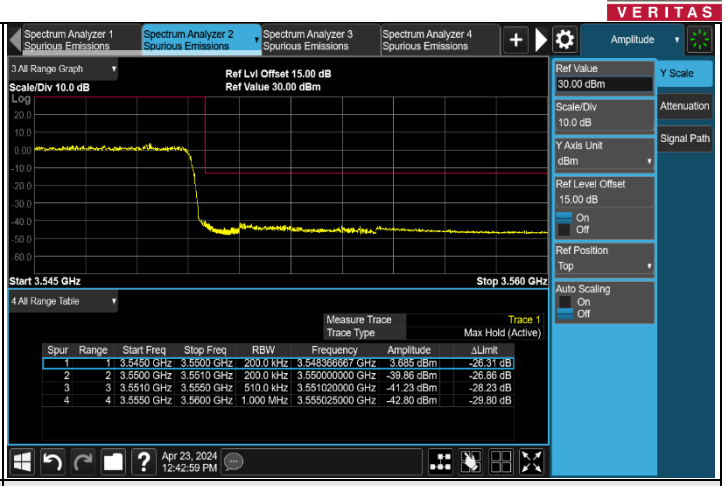


Channel 43040 (3545 MHz)

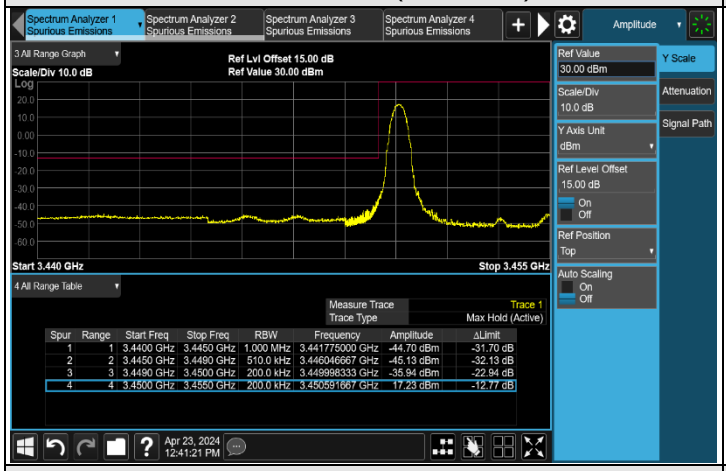
Note: The signal at 9 kHz is IF signal from spectrum analyzer.



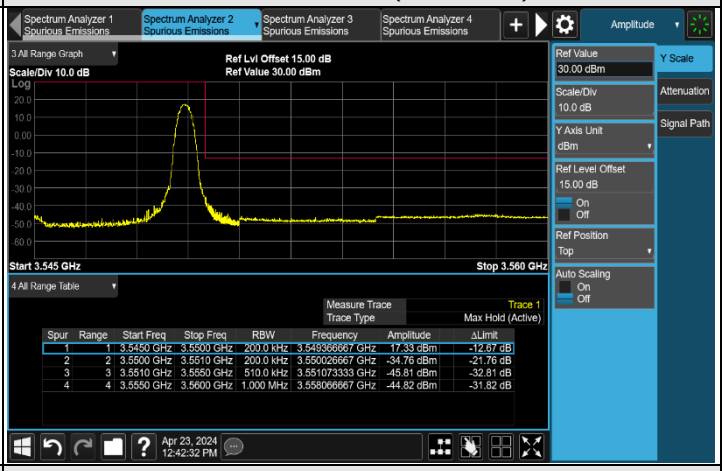
FULL CH 42140 (3455 MHz)



FULL CH 43040 (3545 MHz)

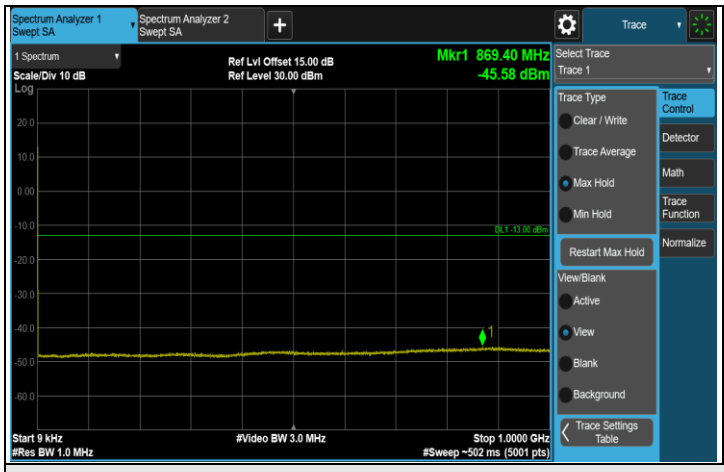


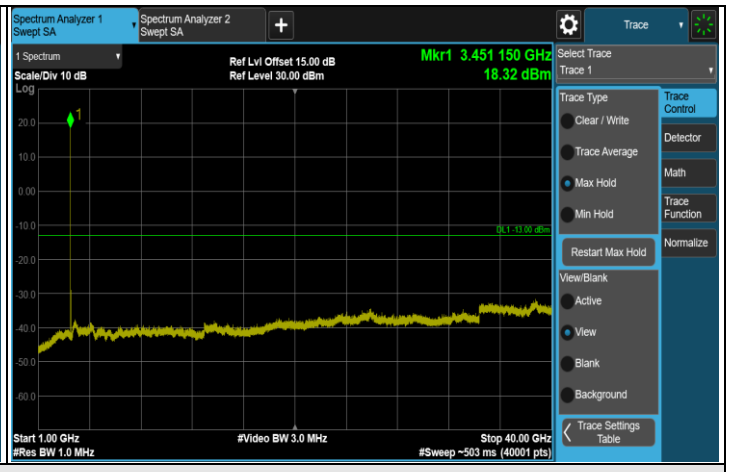
1RB CH 42140 (3455 MHz)



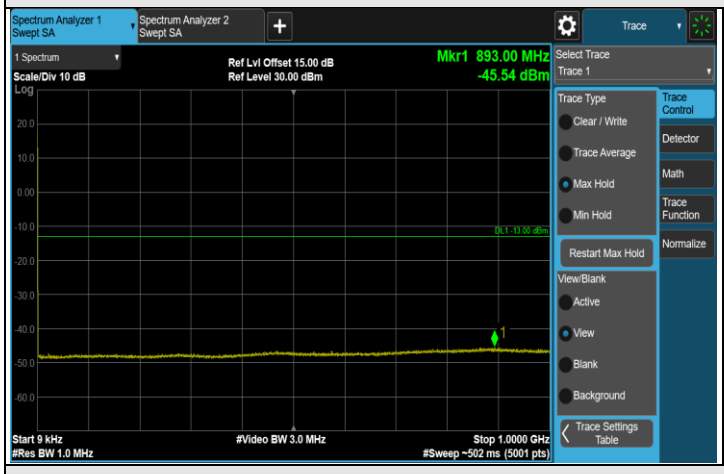
1RB CH 43040 (3545 MHz)

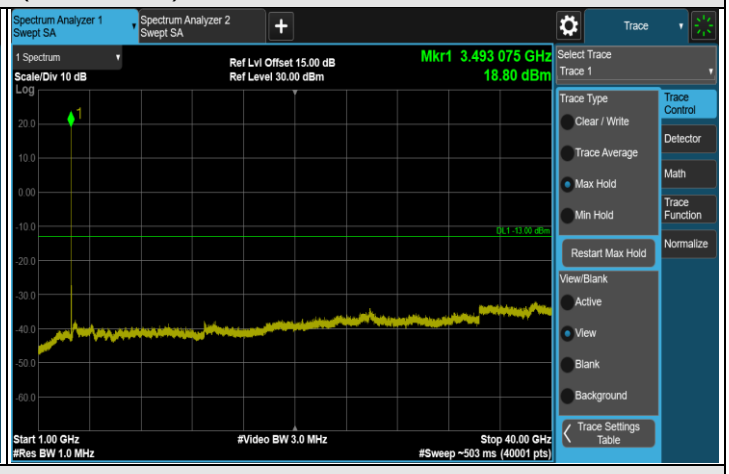
LTE Band 42, Channel Bandwidth: 15 MHz



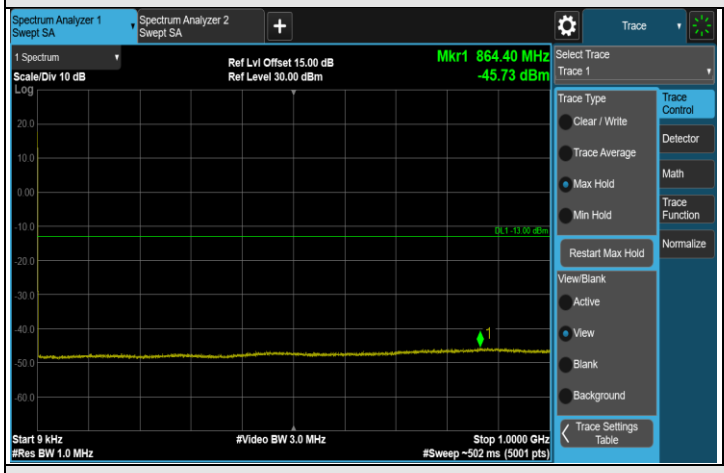


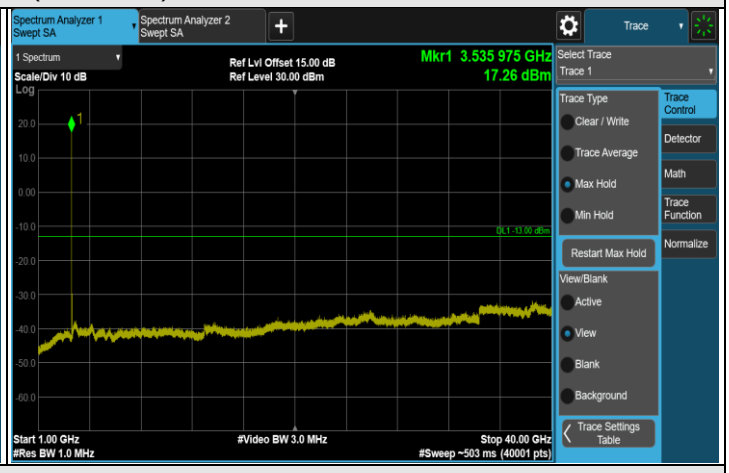
Channel 42165 (3457.5 MHz)





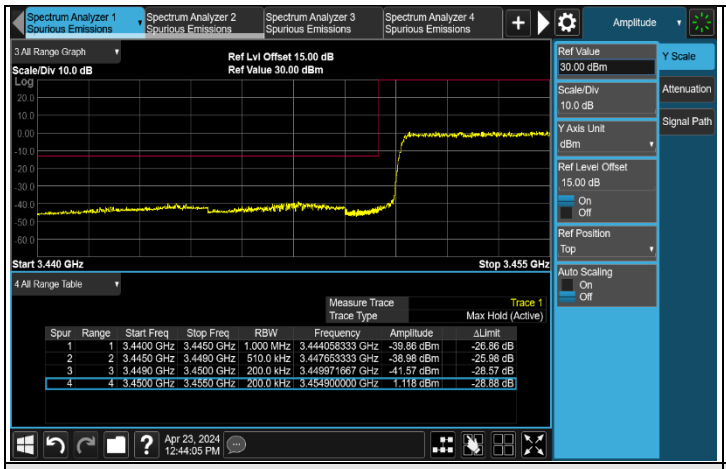
Channel 42590 (3500 MHz)



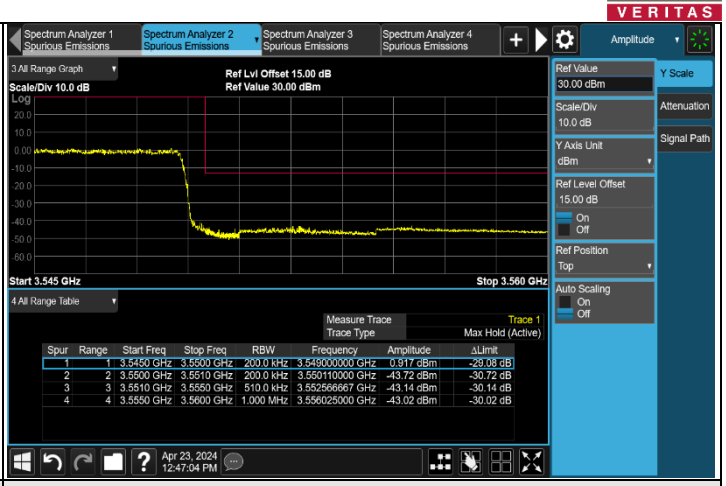


Channel 43015 (3542.5 MHz)

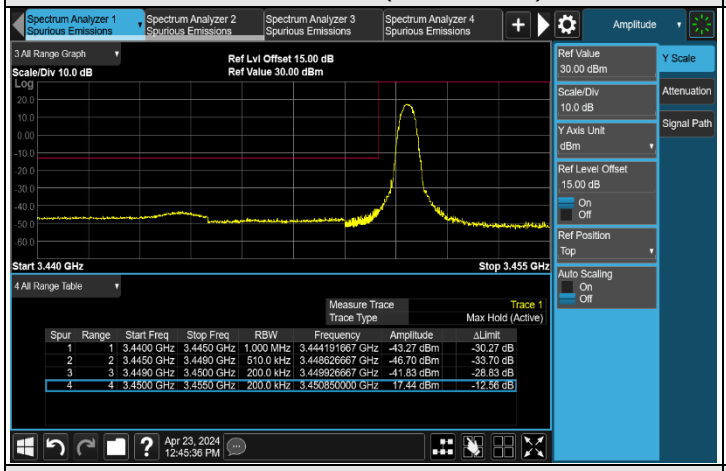
Note: The signal at 9 kHz is IF signal from spectrum analyzer.



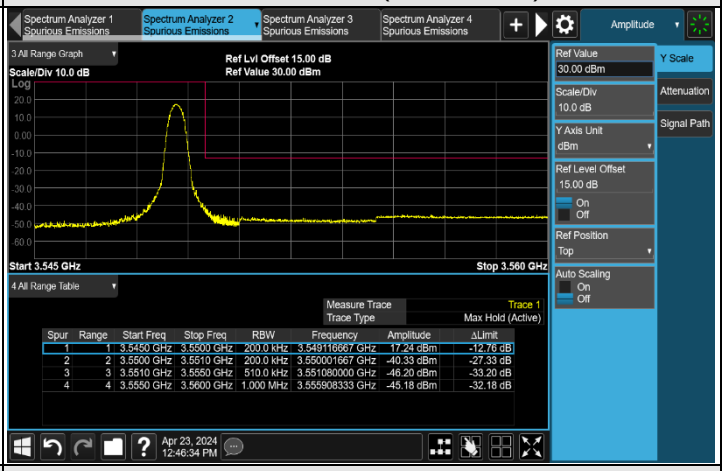
FULL CH 42165 (3457.5 MHz)



FULL CH 43015 (3542.5 MHz)

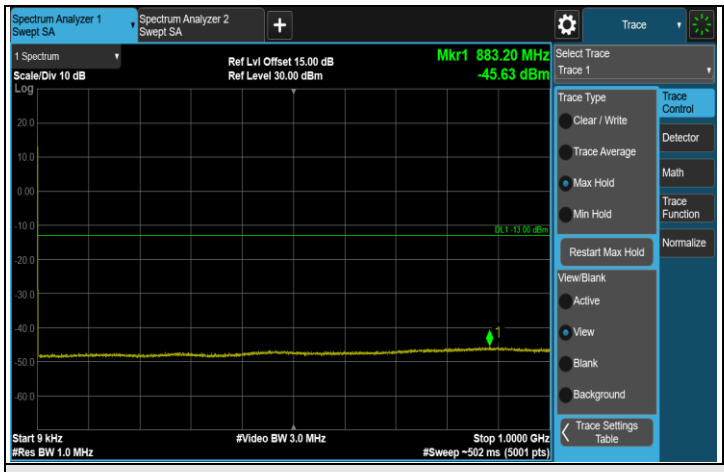


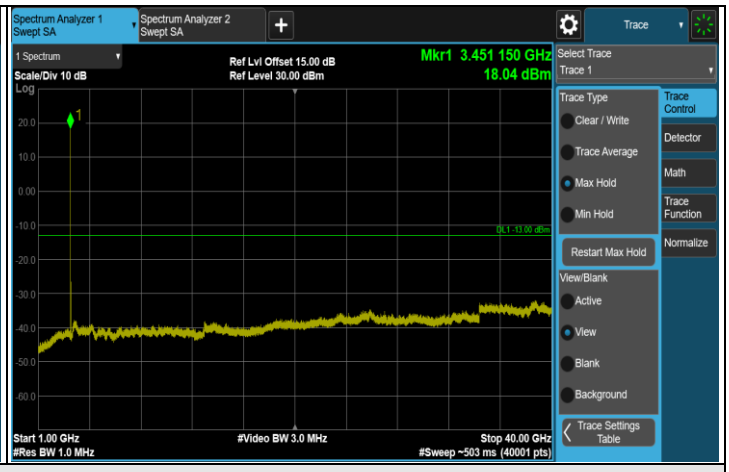
1RB CH 42165 (3457.5 MHz)



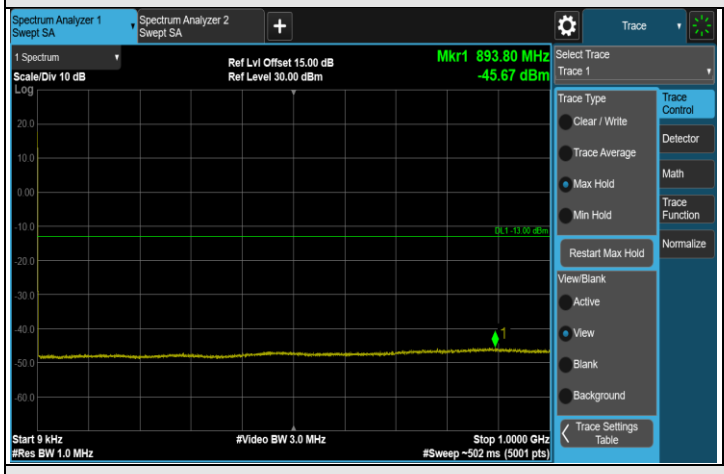
1RB CH 43015 (3542.5 MHz)

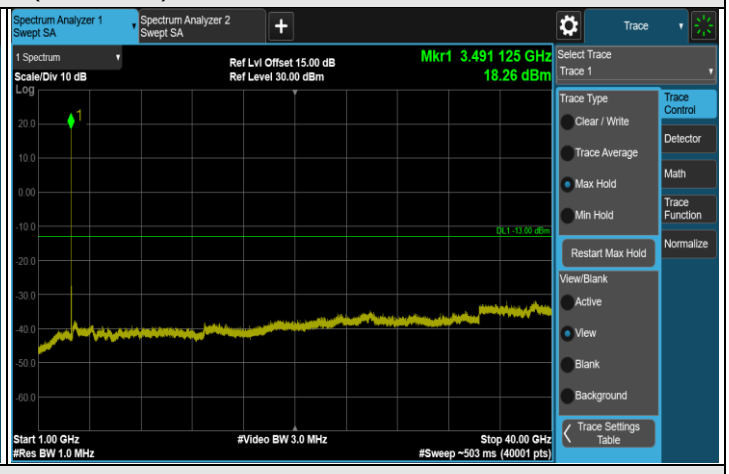
LTE Band 42, Channel Bandwidth: 20 MHz



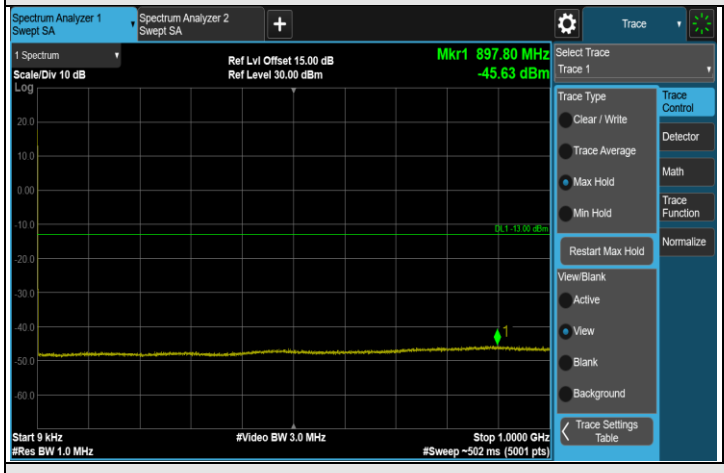


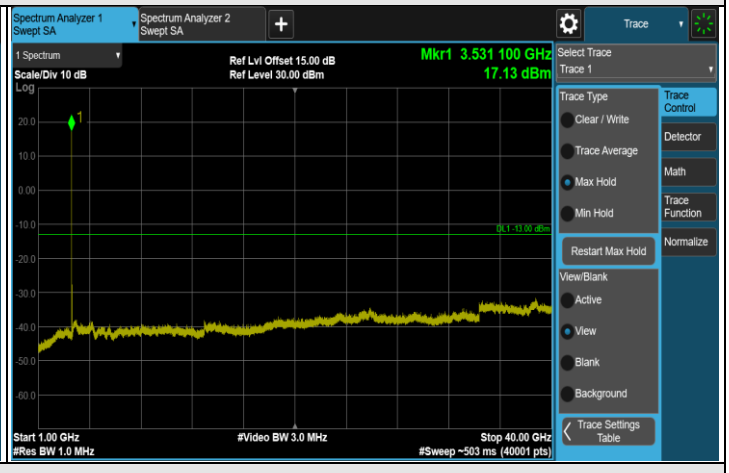
Channel 42190 (3460 MHz)





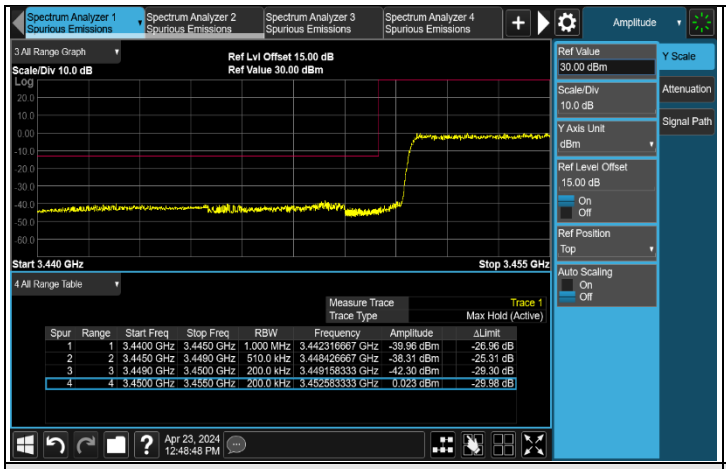
Channel 42590 (3500 MHz)



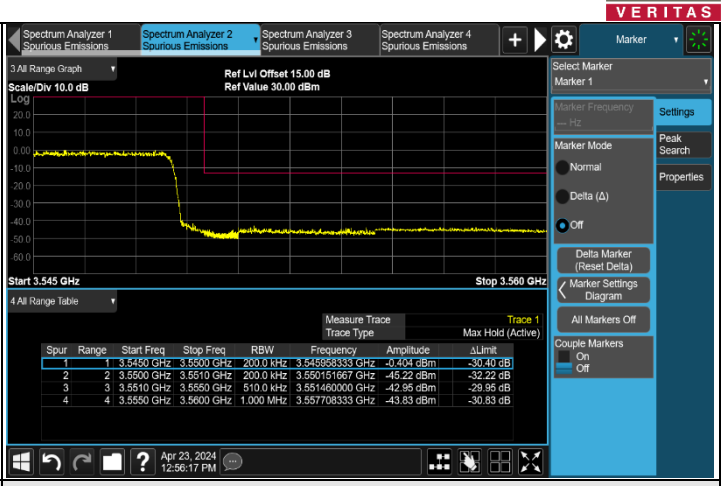


Channel 42990 (3540 MHz)

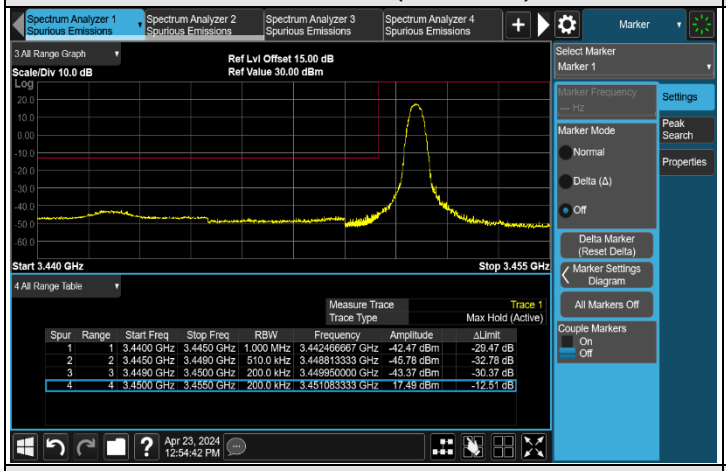
Note: The signal at 9 kHz is IF signal from spectrum analyzer.



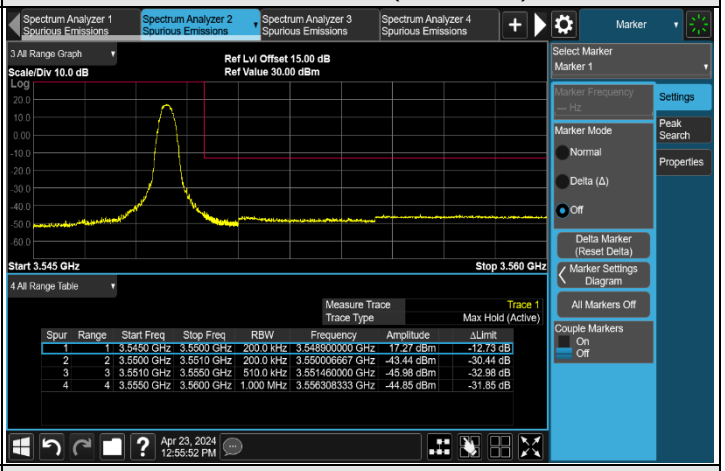
FULL CH 42190 (3460 MHz)



FULL CH 42990 (3540 MHz)



1RB CH 42190 (3460 MHz)



1RB CH 42990 (3540 MHz)

7.6 Radiated Spurious Emissions below 1GHz

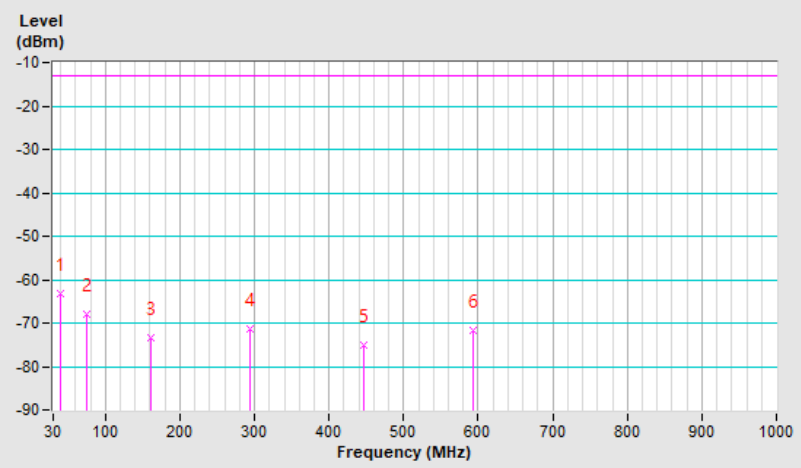
7.6.1 WCDMA Band II

RF Mode	WCDMA Band II	**Channel**	CH 9400：1880 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**39.70**	**-63.19**	**-13.00**	**-50.19**	**1.64 H**	**153**	**45.70**	**-108.89**
2	74.62	-68.06	-13.00	-55.06	2.94 H	225	43.81	-111.87
3	160.95	-73.34	-13.00	-60.34	1.74 H	259	34.83	-108.17
4	293.84	-71.45	-13.00	-58.45	1.88 H	253	36.53	-107.98
5	446.13	-74.93	-13.00	-61.93	1.51 H	48	29.08	-104.01
6	592.60	-71.79	-13.00	-58.79	1.29 H	306	29.14	-100.93

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

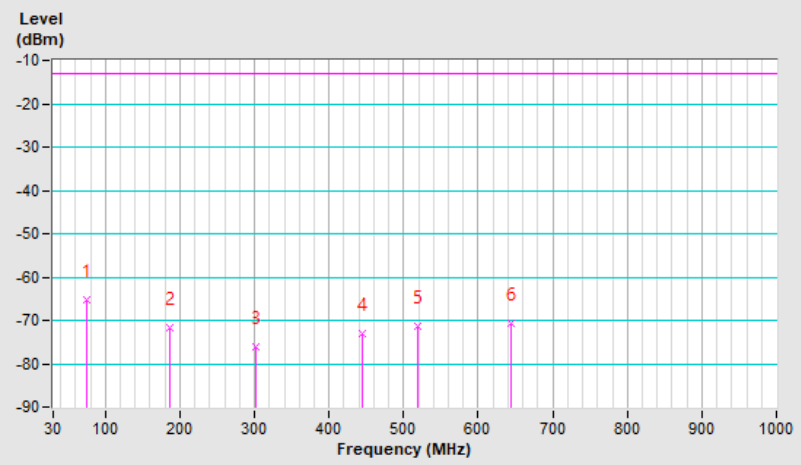


RF Mode	WCDMA Band II	Channel	CH 9400：1880 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-65.31	-13.00	-52.31	1.88 V	254	46.56	-111.87
2	186.17	-71.77	-13.00	-58.77	1.60 V	271	38.90	-110.67
3	302.57	-76.13	-13.00	-63.13	1.93 V	263	31.60	-107.73
4	445.16	-73.00	-13.00	-60.00	1.42 V	251	31.04	-104.04
5	519.85	-71.34	-13.00	-58.34	1.33 V	308	31.26	-102.60
6	644.01	-70.70	-13.00	-57.70	1.72 V	96	29.12	-99.82

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



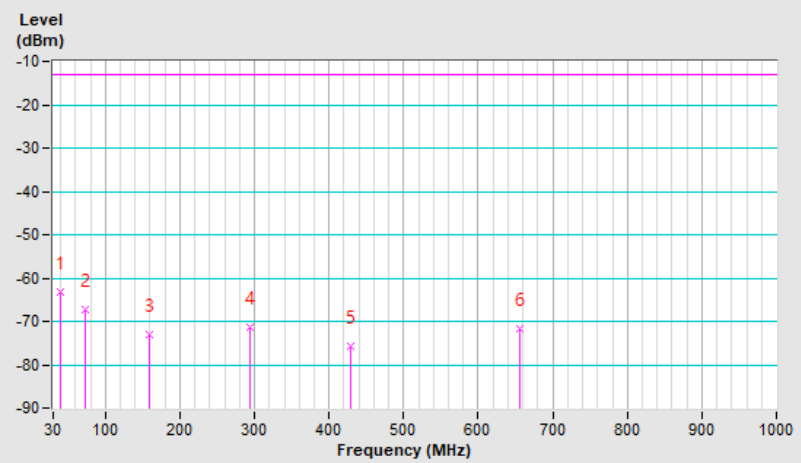
7.6.2 WCDMA Band IV

RF Mode	WCDMA Band IV	Channel	CH 1413：1732.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	39.70	-63.24	-13.00	-50.24	2.36 H	222	45.65	-108.89
2	73.65	-67.44	-13.00	-54.44	1.96 H	274	44.26	-111.70
3	159.98	-73.19	-13.00	-60.19	2.26 H	108	34.89	-108.08
4	293.84	-71.41	-13.00	-58.41	1.27 H	25	36.57	-107.98
5	429.64	-75.61	-13.00	-62.61	1.90 H	211	29.01	-104.62
6	656.62	-71.85	-13.00	-58.85	1.85 H	227	28.04	-99.89

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

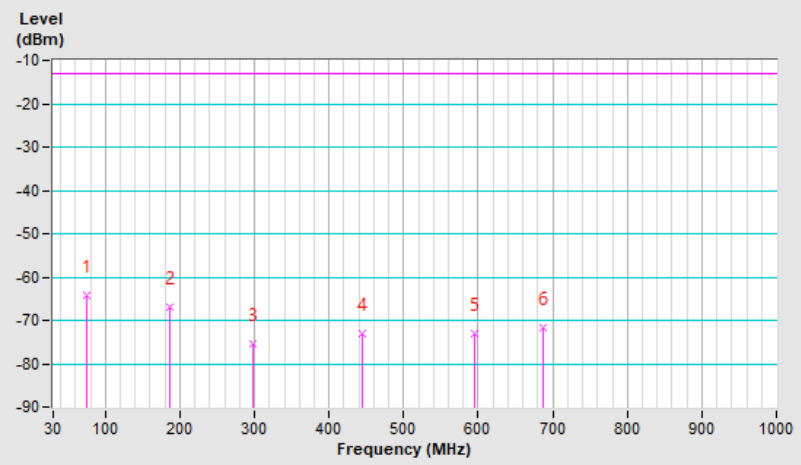


RF Mode	WCDMA Band IV	Channel	CH 1413：1732.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-64.13	-13.00	-51.13	2.53 V	194	47.74	-111.87
2	187.14	-66.93	-13.00	-53.93	1.88 V	241	43.93	-110.86
3	297.72	-75.32	-13.00	-62.32	1.63 V	241	32.54	-107.86
4	445.16	-73.08	-13.00	-60.08	1.93 V	214	30.96	-104.04
5	595.51	-72.95	-13.00	-59.95	1.77 V	152	27.87	-100.82
6	686.69	-71.59	-13.00	-58.59	1.09 V	122	27.94	-99.53

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



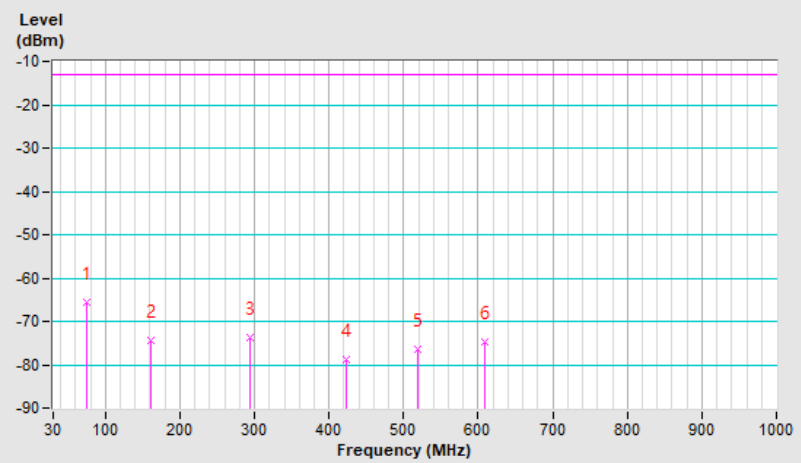
7.6.3 WCDMA Band V

RF Mode	WCDMA Band V	Channel	CH 4183：836.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-65.55	-13.00	-52.55	1.95 H	242	48.47	-114.02
2	160.95	-74.42	-13.00	-61.42	1.96 H	305	35.90	-110.32
3	294.81	-73.68	-13.00	-60.68	1.72 H	236	36.42	-110.10
4	422.85	-78.74	-13.00	-65.74	1.88 H	186	28.25	-106.99
5	519.85	-76.60	-13.00	-63.60	1.38 H	304	28.15	-104.75
6	608.12	-74.89	-13.00	-61.89	1.82 H	106	27.70	-102.59

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

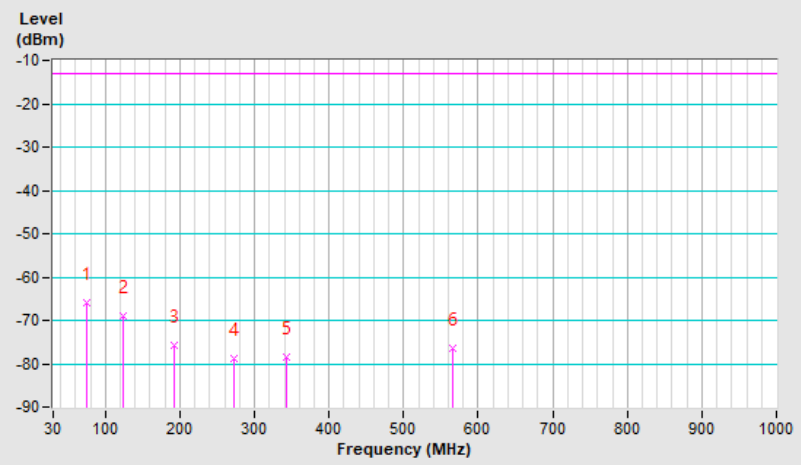


RF Mode	WCDMA Band V	Channel	CH 4183：836.6 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-65.98	-13.00	-52.98	1.72 V	146	48.04	-114.02
2	123.12	-68.82	-13.00	-55.82	1.93 V	45	43.68	-112.50
3	191.99	-75.88	-13.00	-62.88	1.66 V	304	37.78	-113.66
4	272.50	-78.72	-13.00	-65.72	2.63 V	71	32.13	-110.85
5	342.34	-78.46	-13.00	-65.46	1.61 V	250	30.49	-108.95
6	565.44	-76.45	-13.00	-63.45	1.93 V	353	27.48	-103.93

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



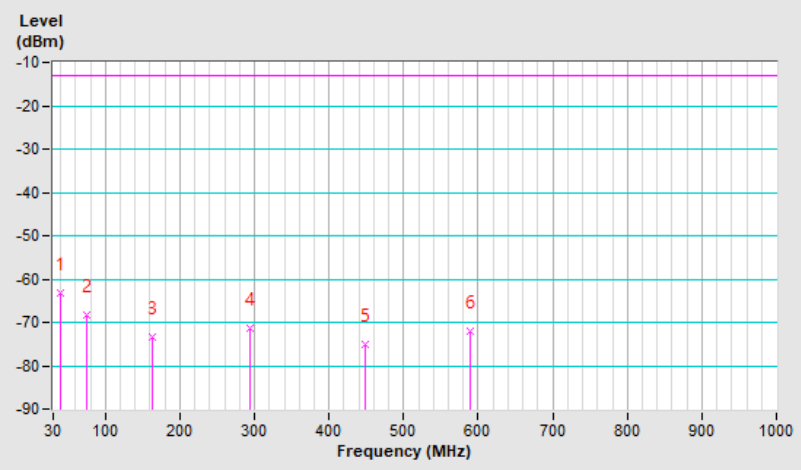
7.6.4 LTE Band 2

RF Mode	LTE Band 2 Channel Bandwidth: 20MHz	**Channel**	CH 18900：1880 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	40.21	-63.08	-13.00	-50.08	2.41 H	155	45.79	-108.87
2	75.26	-68.35	-13.00	-55.35	1.59 H	316	43.65	-112.00
3	162.04	-73.25	-13.00	-60.25	1.88 H	264	34.88	-108.13
4	294.23	-71.26	-13.00	-58.26	1.99 H	314	36.70	-107.96
5	448.36	-75.12	-13.00	-62.12	1.99 H	63	28.81	-103.93
6	589.64	-72.01	-13.00	-59.01	1.93 H	331	29.03	-101.04

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

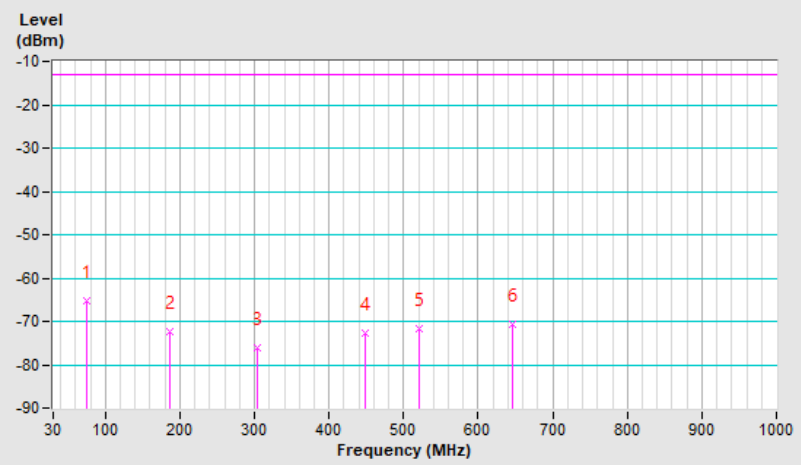


RF Mode	LTE Band 2 Channel Bandwidth: 20MHz	**Channel**	CH 18900：1880 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.68	-65.24	-13.00	-52.24	1.77 V	310	46.64	-111.88
2	186.29	-72.23	-13.00	-59.23	2.55 V	108	38.48	-110.71
3	303.36	-75.96	-13.00	-62.96	1.51 V	88	31.74	-107.70
4	448.16	-72.69	-13.00	-59.69	1.35 V	287	31.24	-103.93
5	520.21	-71.59	-13.00	-58.59	1.88 V	241	31.01	-102.60
6	645.29	-70.56	-13.00	-57.56	1.42 V	94	29.26	-99.82

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



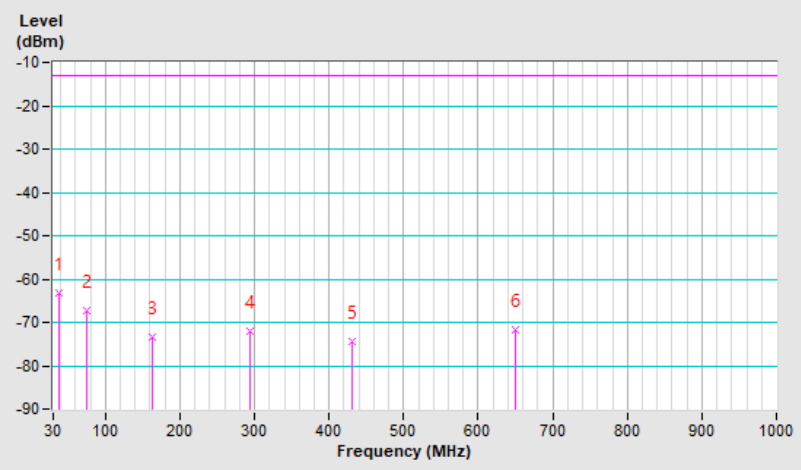
7.6.5 LTE Band 4

RF Mode	LTE Band 4 Channel Bandwidth: 20MHz	**Channel**	CH 20175：1732.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	38.69	-63.25	-13.00	-50.25	1.92 H	263	45.62	-108.87
2	74.21	-67.45	-13.00	-54.45	1.12 H	168	44.37	-111.82
3	162.34	-73.46	-13.00	-60.46	2.11 H	194	34.70	-108.16
4	294.36	-72.01	-13.00	-59.01	2.33 H	292	35.95	-107.96
5	430.38	-74.26	-13.00	-61.26	1.56 H	68	30.32	-104.58
6	649.77	-71.69	-13.00	-58.69	1.27 H	150	28.21	-99.90

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

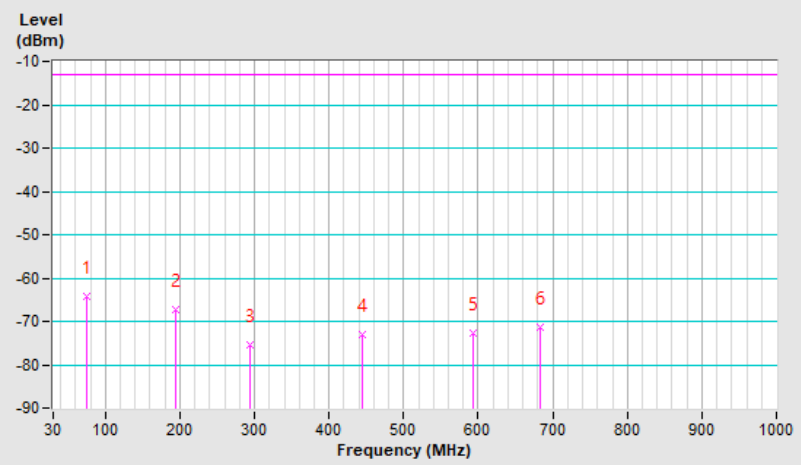


RF Mode	LTE Band 4 Channel Bandwidth: 20MHz	**Channel**	CH 20175：1732.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.59	-64.31	-13.00	-51.31	1.29 V	94	47.56	-111.87
2	194.25	-67.38	-13.00	-54.38	1.80 V	211	44.27	-111.65
3	294.58	-75.39	-13.00	-62.39	1.40 V	286	32.57	-107.96
4	444.92	-72.96	-13.00	-59.96	1.01 V	138	31.09	-104.05
5	592.84	-72.69	-13.00	-59.69	1.82 V	314	28.23	-100.92
6	682.62	-71.48	-13.00	-58.48	1.28 V	253	28.14	-99.62

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



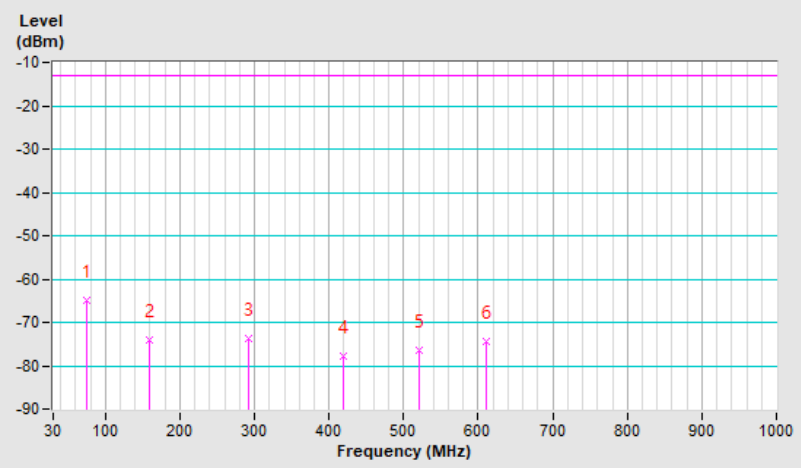
7.6.6 LTE Band 5

RF Mode	LTE Band 5 Channel Bandwidth: 10MHz	**Channel**	CH 20525：836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.39	-64.96	-13.00	-51.96	1.32 H	254	49.03	-113.99
2	158.66	-73.96	-13.00	-60.96	1.12 H	208	36.23	-110.19
3	292.25	-73.66	-13.00	-60.66	1.12 H	24	36.51	-110.17
4	419.69	-77.63	-13.00	-64.63	1.28 H	59	29.45	-107.08
5	520.12	-76.33	-13.00	-63.33	2.63 H	194	28.42	-104.75
6	610.28	-74.53	-13.00	-61.53	1.88 H	142	28.02	-102.55

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

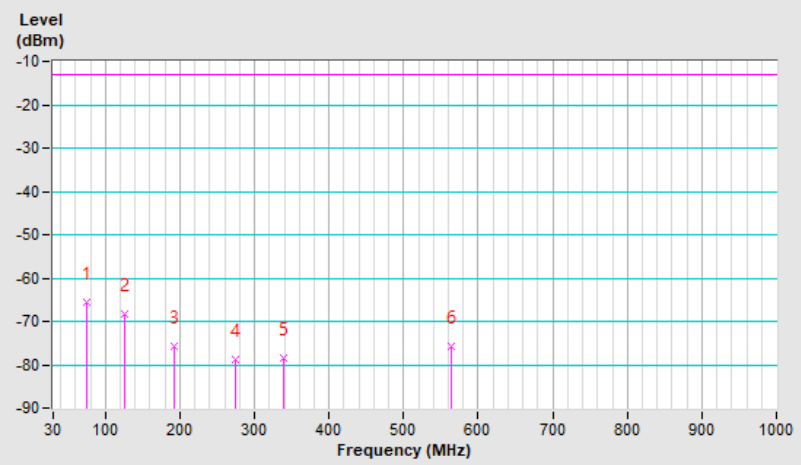


RF Mode	LTE Band 5 Channel Bandwidth: 10MHz	**Channel**	CH 20525：836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.78	-65.71	-13.00	-52.71	1.96 V	253	48.33	-114.04
2	125.27	-68.43	-13.00	-55.43	1.88 V	204	43.87	-112.30
3	193.28	-75.72	-13.00	-62.72	1.12 V	173	38.00	-113.72
4	274.28	-78.83	-13.00	-65.83	1.66 V	294	31.93	-110.76
5	338.69	-78.54	-13.00	-65.54	2.59 V	204	30.41	-108.95
6	564.77	-75.81	-13.00	-62.81	1.55 V	71	28.14	-103.95

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



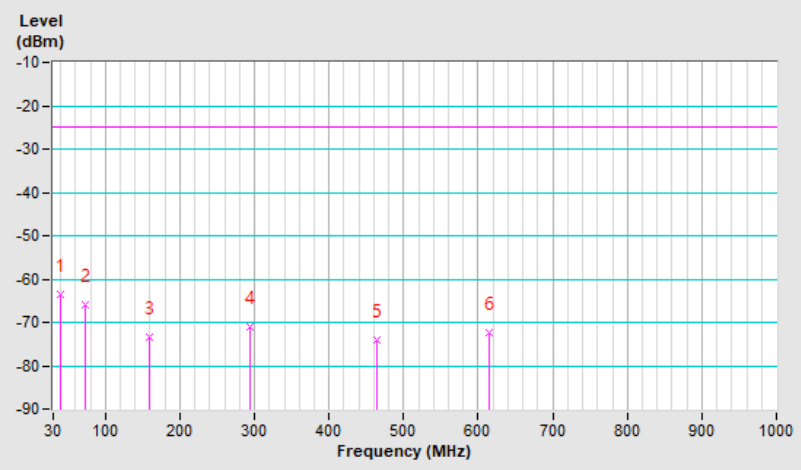
7.6.7 LTE Band 7

RF Mode	LTE Band 7 Channel Bandwidth: 20MHz	**Channel**	CH 21100：2535 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**39.70**	**-63.50**	**-25.00**	**-38.50**	**1.88 H**	**249**	**45.39**	**-108.89**
2	73.65	-66.06	-25.00	-41.06	2.14 H	221	45.64	-111.70
3	159.98	-73.23	-25.00	-48.23	1.88 H	162	34.85	-108.08
4	293.84	-70.93	-25.00	-45.93	1.63 H	8	37.05	-107.98
5	463.59	-74.22	-25.00	-49.22	2.92 H	41	29.32	-103.54
6	614.91	-72.47	-25.00	-47.47	1.74 H	326	27.86	-100.33

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

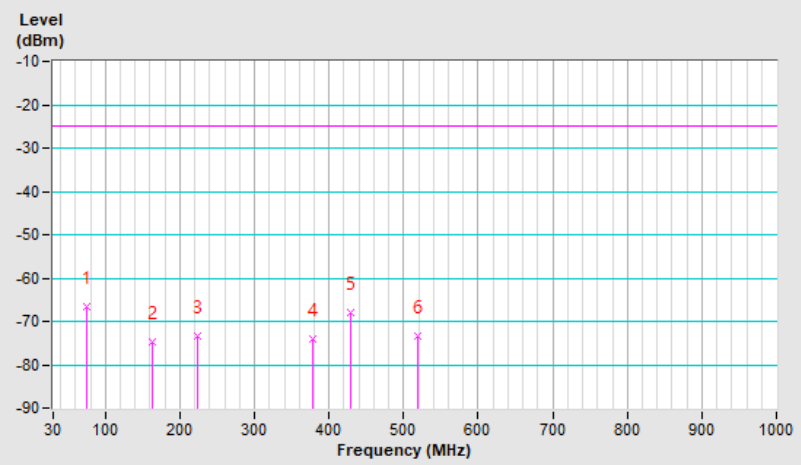


RF Mode	LTE Band 7 Channel Bandwidth: 20MHz	**Channel**	CH 21100：2535 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	75.59	-66.72	-25.00	-41.72	2.75 V	130	45.41	-112.13
2	163.86	-74.66	-25.00	-49.66	1.29 V	263	33.53	-108.19
3	223.03	-73.24	-25.00	-48.24	1.88 V	275	38.49	-111.73
4	378.23	-73.93	-25.00	-48.93	1.41 V	187	31.93	-105.86
5	428.67	-68.11	-25.00	-43.11	2.96 V	344	36.54	-104.65
6	519.85	-73.36	-25.00	-48.36	2.17 V	124	29.24	-102.60

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



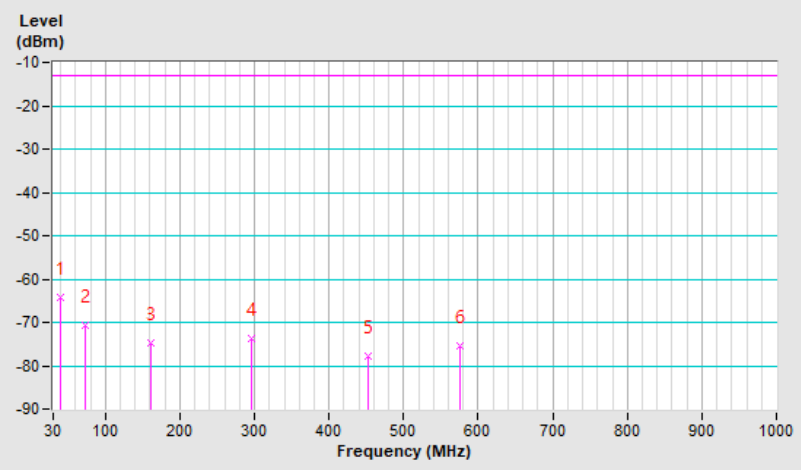
7.6.8 LTE Band 12

RF Mode	LTE Band 12 Channel Bandwidth: 10MHz	**Channel**	CH 23095：707.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	39.70	-64.39	-13.00	-51.39	1.73 H	210	46.65	-111.04
2	73.65	-70.64	-13.00	-57.64	2.93 H	53	43.21	-113.85
3	160.95	-74.65	-13.00	-61.65	1.84 H	253	35.67	-110.32
4	295.78	-73.66	-13.00	-60.66	1.64 H	92	36.42	-110.08
5	452.92	-77.70	-13.00	-64.70	1.08 H	114	28.22	-105.92
6	576.11	-75.50	-13.00	-62.50	1.72 H	296	28.13	-103.63

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

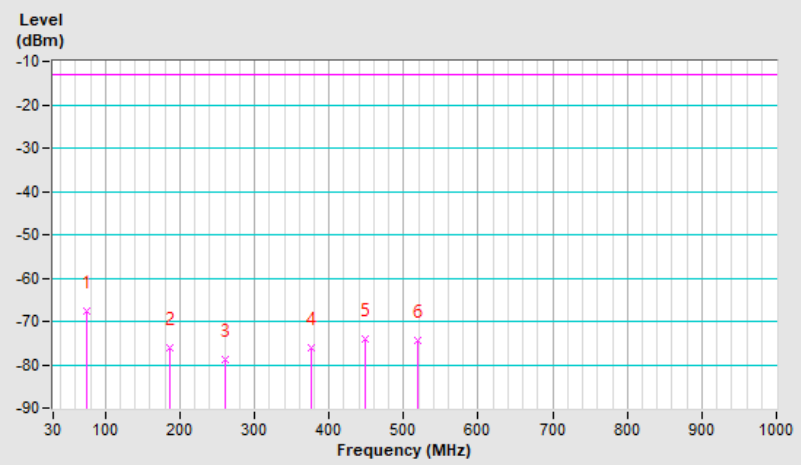


RF Mode	LTE Band 12 Channel Bandwidth: 10MHz	**Channel**	CH 23095：707.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.62	-67.66	-13.00	-54.66	1.55 V	271	46.36	-114.02
2	186.17	-75.94	-13.00	-62.94	2.69 V	332	36.88	-112.82
3	259.89	-78.83	-13.00	-65.83	1.51 V	284	32.64	-111.47
4	375.32	-76.08	-13.00	-63.08	1.96 V	304	32.01	-108.09
5	448.07	-74.01	-13.00	-61.01	1.75 V	21	32.07	-106.08
6	519.85	-74.28	-13.00	-61.28	1.94 V	161	30.47	-104.75

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



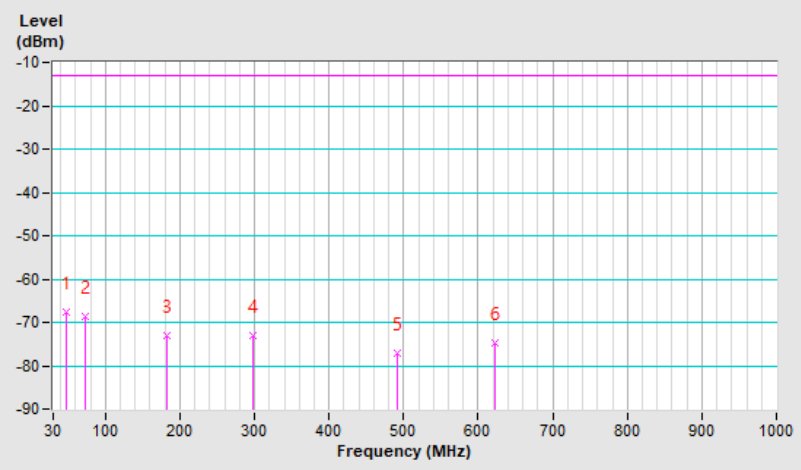
7.6.9 LTE Band 13

RF Mode	LTE Band 13 Channel Bandwidth: 10MHz	**Channel**	CH 23230：782 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	48.43	-67.55	-13.00	-54.55	2.65 H	38	42.87	-110.42
2	73.65	-68.73	-13.00	-55.73	1.97 H	222	45.12	-113.85
3	182.29	-73.13	-13.00	-60.13	1.93 H	161	39.12	-112.25
4	298.69	-73.21	-13.00	-60.21	1.74 H	293	36.78	-109.99
5	490.75	-77.10	-13.00	-64.10	1.48 H	281	28.08	-105.18
6	622.67	-74.82	-13.00	-61.82	1.66 H	315	27.53	-102.35

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

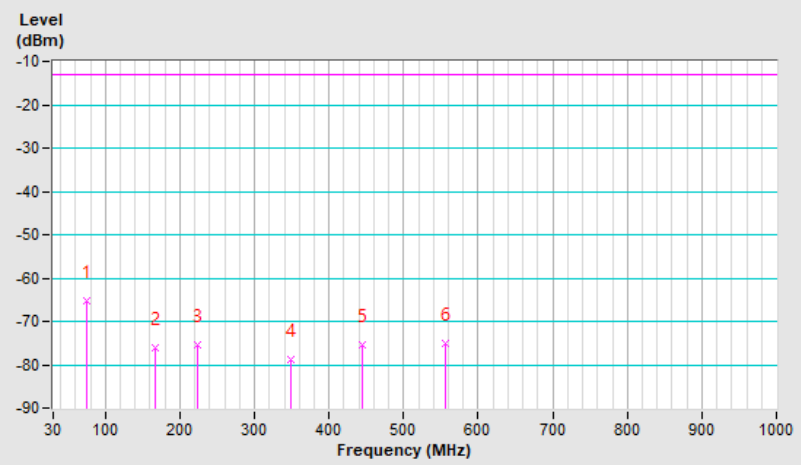


RF Mode	LTE Band 13 Channel Bandwidth: 10MHz	**Channel**	CH 23230：782 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.62	-65.40	-13.00	-52.40	1.61 V	28	48.62	-114.02
2	166.77	-76.19	-13.00	-63.19	1.94 V	336	34.25	-110.44
3	223.03	-75.38	-13.00	-62.38	2.84 V	152	38.50	-113.88
4	348.16	-78.66	-13.00	-65.66	1.64 V	106	30.26	-108.92
5	445.16	-75.49	-13.00	-62.49	1.79 V	154	30.70	-106.19
6	556.71	-74.95	-13.00	-61.95	1.95 V	332	29.22	-104.17

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



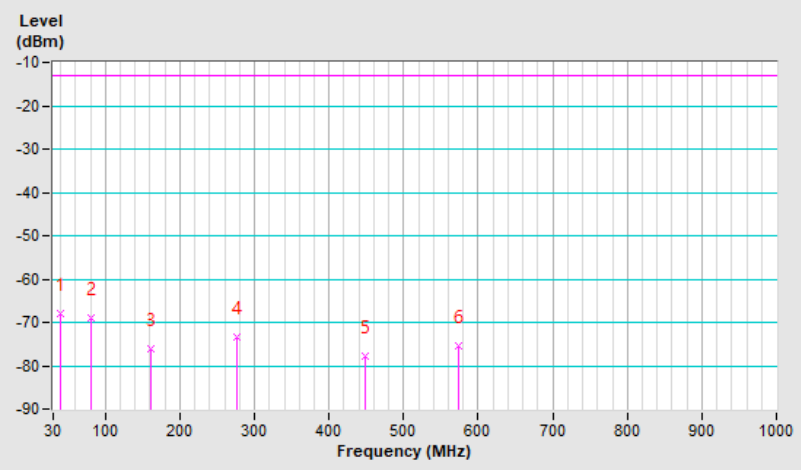
7.6.10 LTE Band 14

RF Mode	LTE Band 14 Channel Bandwidth: 10MHz	**Channel**	CH 23330：793 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	39.70	-67.93	-13.00	-54.93	1.67 H	251	43.11	-111.04
2	81.41	-68.96	-13.00	-55.96	1.89 H	293	46.76	-115.72
3	161.92	-75.96	-13.00	-62.96	1.70 H	152	34.32	-110.28
4	277.35	-73.40	-13.00	-60.40	2.61 H	51	37.23	-110.63
5	449.04	-77.86	-13.00	-64.86	1.74 H	260	28.18	-106.04
6	574.17	-75.37	-13.00	-62.37	1.94 H	258	28.32	-103.69

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

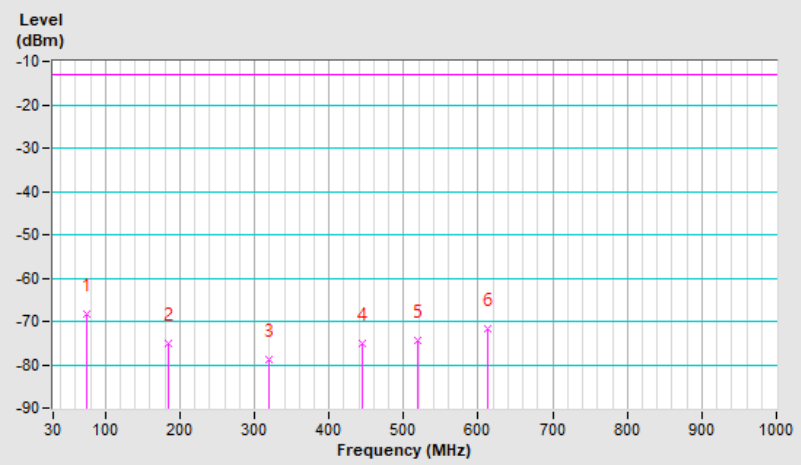


RF Mode	LTE Band 14 Channel Bandwidth: 10MHz	**Channel**	CH 23330：793 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.62	-68.17	-13.00	-55.17	1.88 V	325	45.85	-114.02
2	185.20	-75.21	-13.00	-62.21	1.72 V	158	37.51	-112.72
3	319.06	-78.88	-13.00	-65.88	1.90 V	304	30.41	-109.29
4	445.16	-75.01	-13.00	-62.01	1.88 V	261	31.18	-106.19
5	519.85	-74.41	-13.00	-61.41	1.49 V	263	30.34	-104.75
6	612.97	-71.86	-13.00	-58.86	1.75 V	142	30.64	-102.50

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



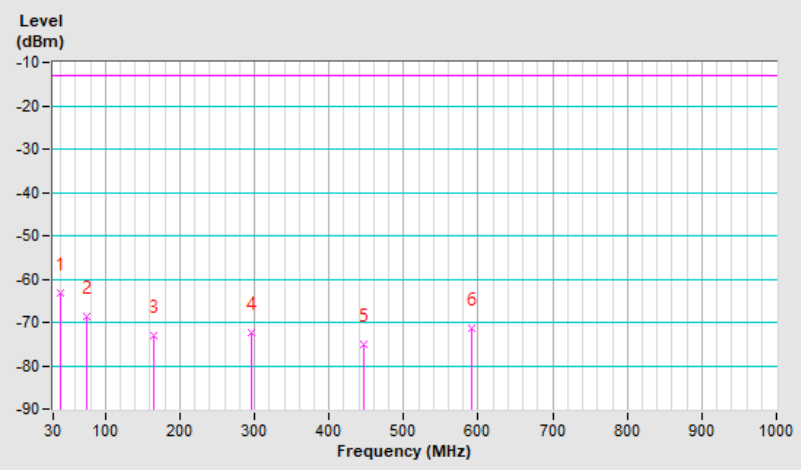
7.6.11 LTE Band 25

RF Mode	LTE Band 25 Channel Bandwidth: 20MHz	**Channel**	CH 26365：1882.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	40.28	-63.36	-13.00	-50.36	2.75 H	146	45.49	-108.85
2	75.26	-68.65	-13.00	-55.65	2.72 H	130	43.35	-112.00
3	164.29	-73.21	-13.00	-60.21	2.96 H	143	35.01	-108.22
4	295.11	-72.35	-13.00	-59.35	1.47 H	183	35.60	-107.95
5	445.84	-75.20	-13.00	-62.20	1.69 H	180	28.82	-104.02
6	590.38	-71.22	-13.00	-58.22	1.54 H	158	29.80	-101.02

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

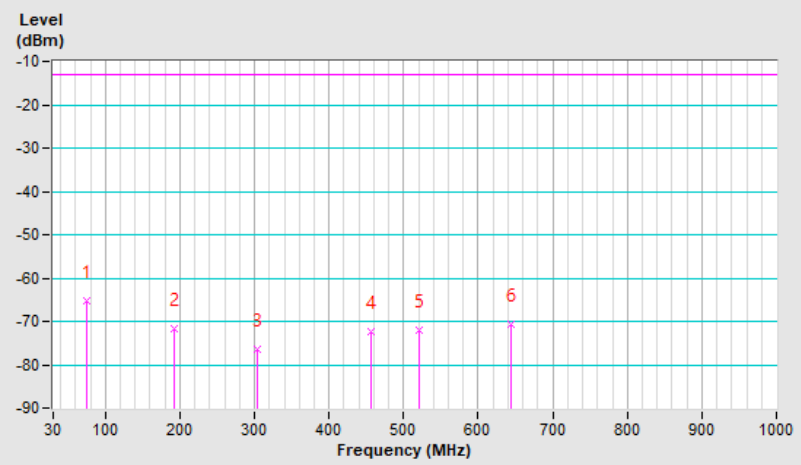


RF Mode	LTE Band 25 Channel Bandwidth: 20MHz	**Channel**	CH 26365：1882.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.46	-65.22	-13.00	-52.22	2.65 V	172	46.63	-111.85
2	192.26	-71.64	-13.00	-58.64	2.13 V	135	39.88	-111.52
3	304.15	-76.35	-13.00	-63.35	1.18 V	226	31.33	-107.68
4	457.18	-72.49	-13.00	-59.49	2.14 V	15	31.18	-103.67
5	520.39	-72.01	-13.00	-59.01	1.54 V	221	30.59	-102.60
6	643.89	-70.54	-13.00	-57.54	1.62 V	309	29.28	-99.82

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



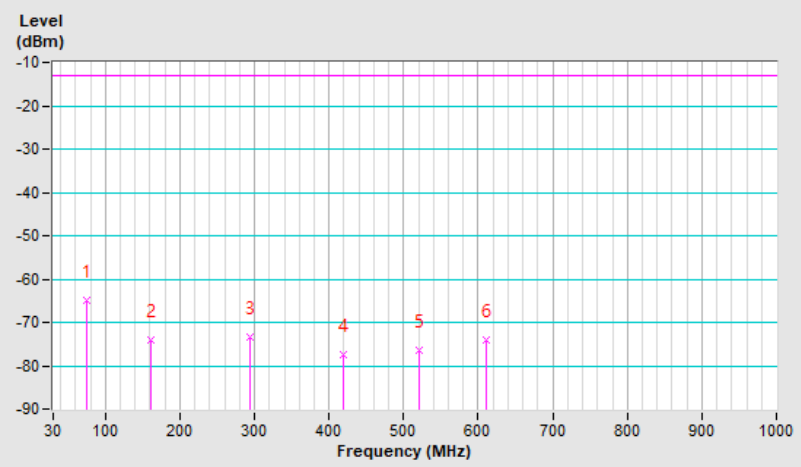
7.6.12 LTE Band 26 (814 MHz ~ 824 MHz)

RF Mode	LTE Band 26 (814 MHz ~ 824 MHz) Channel Bandwidth: 10MHz	**Channel**	CH 26740：819 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.25	-64.83	-13.00	-51.83	1.53 H	196	49.14	-113.97
2	161.41	-74.20	-13.00	-61.20	2.71 H	95	36.10	-110.30
3	294.06	-73.39	-13.00	-60.39	1.93 H	255	36.74	-110.13
4	419.51	-77.42	-13.00	-64.42	1.85 H	154	29.67	-107.09
5	521.29	-76.49	-13.00	-63.49	1.81 H	172	28.23	-104.72
6	609.96	-74.15	-13.00	-61.15	2.46 H	176	28.40	-102.55

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

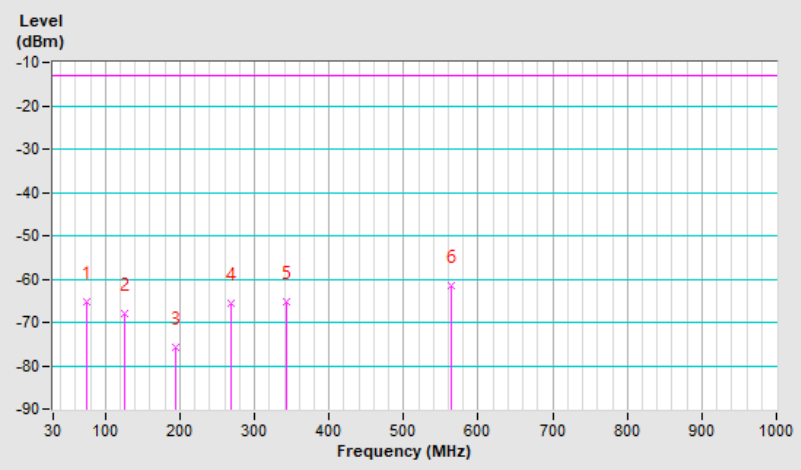


RF Mode	LTE Band 26 (814 MHz ~ 824 MHz) Channel Bandwidth: 10MHz	**Channel**	CH 26740：819 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.33	-65.23	-13.00	-52.23	1.66 V	293	48.75	-113.98
2	124.96	-68.11	-13.00	-55.11	1.92 V	301	44.25	-112.36
3	195.25	-75.93	-13.00	-62.93	1.02 V	263	37.93	-113.86
4	269.56	-65.63	-13.00	-52.63	1.95 V	164	45.39	-111.02
5	342.59	-65.39	-13.00	-52.39	1.51 V	274	43.57	-108.96
6	564.59	-61.50	-13.00	-48.50	2.71 V	51	42.45	-103.95

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



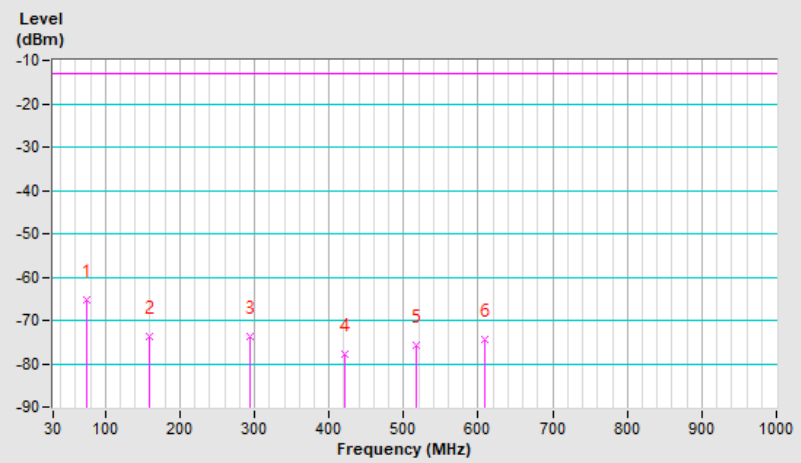
7.6.13 LTE Band 26 (824 MHz ~ 849 MHz)

RF Mode	LTE Band 26 (824 MHz ~ 849 MHz) Channel Bandwidth: 15MHz	**Channel**	CH 26915：836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.42	-65.21	-13.00	-52.21	1.64 H	147	48.78	-113.99
2	159.15	-73.69	-13.00	-60.69	2.41 H	108	36.50	-110.19
3	294.09	-73.63	-13.00	-60.63	1.94 H	81	36.49	-110.12
4	420.38	-77.72	-13.00	-64.72	1.62 H	305	29.34	-107.06
5	517.46	-75.93	-13.00	-62.93	2.61 H	212	28.87	-104.80
6	609.36	-74.38	-13.00	-61.38	1.82 H	155	28.18	-102.56

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

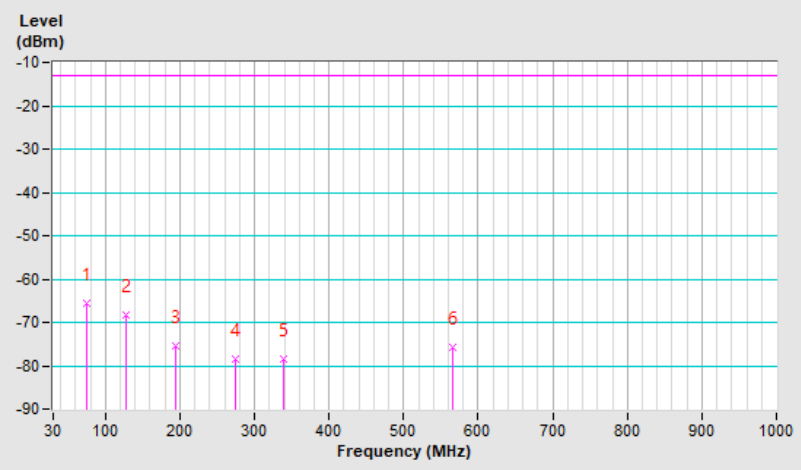


RF Mode	LTE Band 26 (824 MHz ~ 849 MHz) Channel Bandwidth: 15MHz	**Channel**	CH 26915：836.5 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	74.75	-65.49	-13.00	-52.49	1.53 V	280	48.55	-114.04
2	126.83	-68.25	-13.00	-55.25	1.72 V	56	43.96	-112.21
3	194.08	-75.49	-13.00	-62.49	1.03 V	295	38.30	-113.79
4	275.13	-78.54	-13.00	-65.54	1.86 V	305	32.17	-110.71
5	338.54	-78.39	-13.00	-65.39	1.09 V	152	30.56	-108.95
6	565.08	-75.90	-13.00	-62.90	1.24 V	271	28.04	-103.94

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



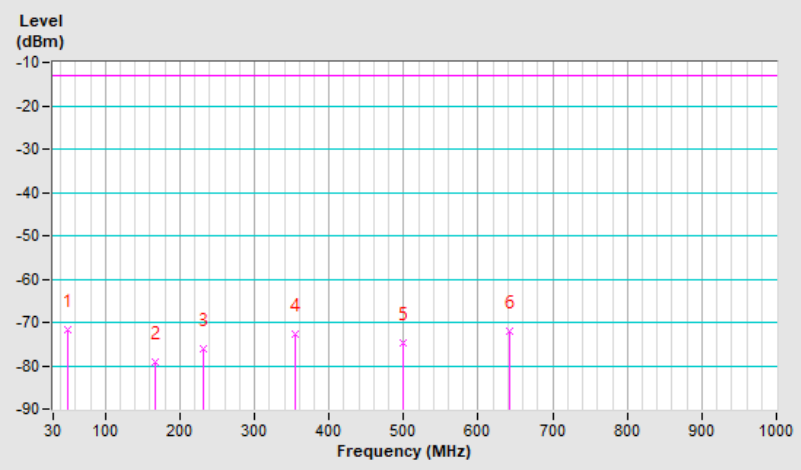
7.6.14 LTE Band 42

RF Mode	LTE Band 42 Channel Bandwidth: 20MHz	**Channel**	CH 42590：3500 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	49.40	-71.81	-13.00	-58.81	2.99 H	151	36.48	-108.29
2	166.77	-79.23	-13.00	-66.23	2.32 H	71	29.06	-108.29
3	231.76	-76.26	-13.00	-63.26	1.02 H	324	34.30	-110.56
4	354.95	-72.69	-13.00	-59.69	1.75 H	226	33.96	-106.65
5	498.51	-74.81	-13.00	-61.81	1.42 H	181	28.20	-103.01
6	642.07	-71.99	-13.00	-58.99	2.20 H	314	27.85	-99.84

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

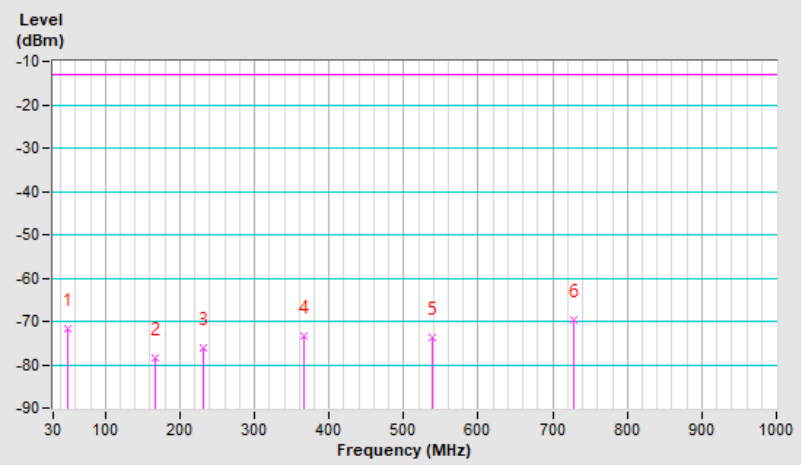


RF Mode	LTE Band 42 Channel Bandwidth: 20MHz	**Channel**	CH 42590：3500 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	49.40	-71.80	-13.00	-58.80	2.14 V	144	36.49	-108.29
2	166.77	-78.35	-13.00	-65.35	2.50 V	249	29.94	-108.29
3	231.76	-76.19	-13.00	-63.19	1.27 V	156	34.37	-110.56
4	365.62	-73.44	-13.00	-60.44	2.63 V	21	32.88	-106.32
5	539.25	-73.86	-13.00	-60.86	1.63 V	184	28.52	-102.38
6	**727.43**	**-69.77**	**-13.00**	**-56.77**	**1.26 V**	**301**	**29.01**	**-98.78**

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



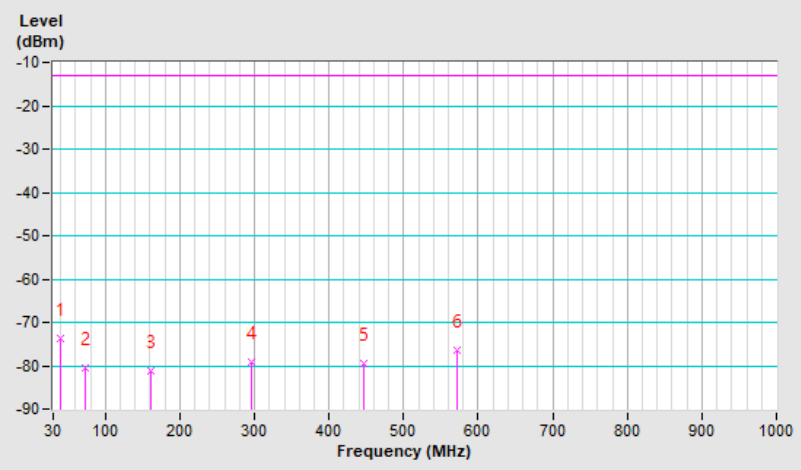
7.6.15 LTE Band 66

RF Mode	LTE Band 66 Channel Bandwidth: 20MHz	**Channel**	CH 132322：1745 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	40.67	-73.57	-13.00	-60.57	1.59 H	253	35.16	-108.73
2	73.65	-80.43	-13.00	-67.43	1.42 H	108	31.27	-111.70
3	160.95	-81.21	-13.00	-68.21	1.93 H	53	26.96	-108.17
4	295.78	-79.10	-13.00	-66.10	2.31 H	114	28.83	-107.93
5	446.13	-79.41	-13.00	-66.41	1.96 H	258	24.60	-104.01
6	572.23	-76.55	-13.00	-63.55	1.72 H	205	25.07	-101.62

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

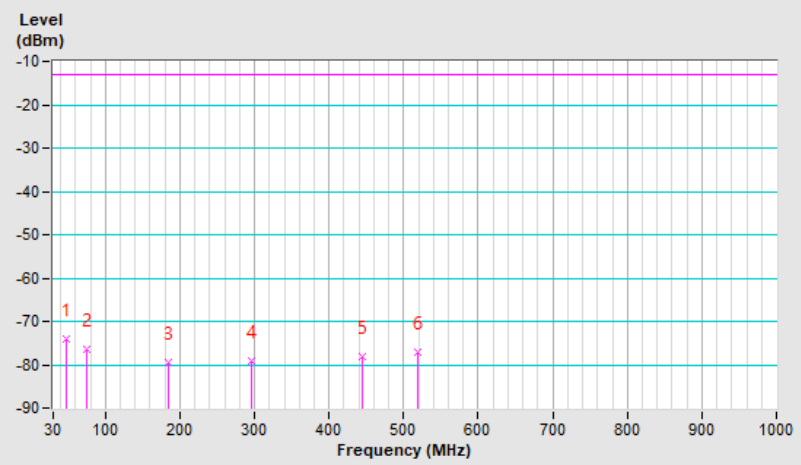


RF Mode	LTE Band 66 Channel Bandwidth: 20MHz	**Channel**	CH 132322：1745 MHz
Frequency Range	30 MHz ~ 1 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	48.43	-73.90	-13.00	-60.90	1.42 V	295	34.37	-108.27
2	74.62	-76.53	-13.00	-63.53	2.51 V	109	35.34	-111.87
3	184.23	-79.51	-13.00	-66.51	1.84 V	233	30.89	-110.40
4	295.78	-79.10	-13.00	-66.10	2.64 V	52	28.83	-107.93
5	445.16	-78.22	-13.00	-65.22	1.73 V	165	25.82	-104.04
6	519.85	-77.21	-13.00	-64.21	1.08 V	263	25.39	-102.60

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.7 Radiated Spurious Emissions above 1GHz

7.7.1 WCDMA Band II

RF Mode	WCDMA Band II	**Channel**	CH 9400：1880 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3760.00	-63.40	-13.00	-50.40	2.23 H	195	31.71	-95.11
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3760.00	-62.71	-13.00	-49.71	1.59 V	102	32.40	-95.11

Remarks:

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

7.7.2 WCDMA Band IV

RF Mode	WCDMA Band IV	Channel	CH 1413：1732.6 MHz
Frequency Range	1 GHz ~ 18 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3465.20	-63.54	-13.00	-50.54	1.88 H	22	32.78	-96.32
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3465.20	-62.60	-13.00	-49.60	2.63 V	121	33.72	-96.32

Remarks:

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

7.7.3 WCDMA Band V

RF Mode	WCDMA Band V	Channel	CH 4183：836.6 MHz
Frequency Range	1 GHz ~ 18 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**1672.80**	**-62.01**	**-13.00**	**-49.01**	**2.01 H**	**193**	**41.84**	**-103.85**
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	1672.80	-62.44	-13.00	-49.44	2.11 V	294	41.41	-103.85

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.

7.7.4 LTE Band 2

RF Mode	LTE Band 2 Channel Bandwidth: 20MHz	**Channel**	CH 18900：1880 MHz
Frequency Range	1 GHz ~ 20 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3760.00	-62.67	-13.00	-49.67	1.76 H	253	32.44	-95.11
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3760.00	-62.69	-13.00	-49.69	2.63 V	142	32.42	-95.11

Remarks:

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

7.7.5 LTE Band 4

RF Mode	LTE Band 4 Channel Bandwidth: 20MHz	**Channel**	CH 20175：1732.5 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3465.00	-60.11	-13.00	-47.11	1.93 H	204	36.21	-96.32
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3765.00	-59.15	-13.00	-46.15	1.09 V	31	35.94	-95.09

Remarks:

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

7.7.6 LTE Band 5

RF Mode	LTE Band 5 Channel Bandwidth: 10MHz	**Channel**	CH 20525：836.5 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	1673.00	-61.72	-13.00	-48.72	2.25 H	310	42.13	-103.85
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	1673.00	-61.36	-13.00	-48.36	1.22 V	314	42.49	-103.85

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.

7.7.7 LTE Band 7

RF Mode	LTE Band 7 Channel Bandwidth: 20MHz	**Channel**	CH 21100：2535 MHz
Frequency Range	1 GHz ~ 27 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5070.00	-61.61	-25.00	-36.61	2.41 H	163	31.00	-92.61
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	5070.00	-61.75	-25.00	-36.75	2.71 V	51	30.86	-92.61

Remarks:

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

7.7.8 LTE Band 12

RF Mode	LTE Band 12 Channel Bandwidth: 10MHz	**Channel**	CH 23095：707.5 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	1415.00	-61.45	-13.00	-48.45	2.36 H	244	42.60	-104.05
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	1415.00	-61.95	-13.00	-48.95	1.62 V	61	42.10	-104.05

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.

7.7.9 LTE Band 13

RF Mode	LTE Band 13 Channel Bandwidth: 10MHz	**Channel**	CH 23230：782 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**1564.00**	**-60.18**	**-40.00**	**-20.18**	**1.71 H**	**106**	**43.79**	**-103.97**
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	1564.00	-60.33	-40.00	-20.33	2.60 V	273	43.64	-103.97

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.

7.7.10 LTE Band 14

RF Mode	LTE Band 14 Channel Bandwidth: 10MHz	**Channel**	CH 23330：793 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	1586.00	-61.72	-40.00	-21.72	2.30 H	149	42.23	-103.95
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	1586.00	-61.18	-40.00	-21.18	1.86 V	106	42.77	-103.95

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.

7.7.11 LTE Band 25

RF Mode	LTE Band 25 Channel Bandwidth: 20MHz	**Channel**	CH 26365：1882.5 MHz
Frequency Range	1 GHz ~ 20 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3765.00	-61.28	-13.00	-48.28	1.53 H	227	33.81	-95.09
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3760.00	-61.47	-13.00	-48.47	2.92 V	131	33.64	-95.11

Remarks:

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

7.7.12 LTE Band 26 (814 MHz ~ 824 MHz)

RF Mode	LTE Band 26 (814 MHz ~ 824 MHz) Channel Bandwidth: 10MHz	**Channel**	CH 26740：819 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	1638.00	-60.56	-13.00	-47.56	1.92 H	63	43.31	-103.87
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	1638.00	-60.55	-13.00	-47.55	2.71 V	312	43.32	-103.87

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.

7.7.13 LTE Band 26 (824 MHz ~ 849 MHz)

RF Mode	LTE Band 26 (824 MHz ~ 849 MHz) Channel Bandwidth: 15MHz	**Channel**	CH 26915：836.5 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**ERP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	1673.00	-60.78	-13.00	-47.78	1.27 H	242	43.07	-103.85
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	1673.00	-61.13	-13.00	-48.13	2.65 V	153	42.72	-103.85

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.

7.7.14 LTE Band 42

RF Mode	LTE Band 42 Channel Bandwidth: 5MHz	**Channel**	CH 43065：3547.5 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7095.00	-62.32	-13.00	-49.32	2.96 H	105	25.32	-87.64
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7095.00	-62.60	-13.00	-49.60	1.10 V	183	25.04	-87.64

Remarks:

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

RF Mode	LTE Band 42 Channel Bandwidth: 5MHz	**Channel**	CH 42590：3500 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.00	-62.42	-13.00	-49.42	1.92 H	26	25.34	-87.76
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.00	-62.19	-13.00	-49.19	2.16 V	94	25.57	-87.76

Remarks:

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

RF Mode	LTE Band 42 Channel Bandwidth: 5MHz	**Channel**	CH 42115：3452.5 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6905.00	-62.73	-13.00	-49.73	1.53 H	301	25.00	-87.73
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6905.00	-62.39	-13.00	-49.39	1.80 V	341	25.34	-87.73

Remarks:

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

RF Mode	LTE Band 42 Channel Bandwidth: 20MHz	**Channel**	CH 42990：3540 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7080.00	-63.03	-13.00	-50.03	3.21 H	186	24.61	-87.64
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7080.00	-62.75	-13.00	-49.75	2.66 V	247	24.89	-87.64

Remarks:

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

RF Mode	LTE Band 42 Channel Bandwidth: 20MHz	**Channel**	CH 42590：3500 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.00	-62.39	-13.00	-49.39	1.86 H	115	25.37	-87.76
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	7000.00	-62.82	-13.00	-49.82	1.16 V	129	24.94	-87.76

Remarks:

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

RF Mode	LTE Band 42 Channel Bandwidth: 20MHz	**Channel**	CH 42190：3460 MHz
Frequency Range	1 GHz ~ 40 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6920.00	-62.52	-13.00	-49.52	1.22 H	185	25.23	-87.75
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	6920.00	-62.61	-13.00	-49.61	1.37 V	316	25.14	-87.75

Remarks:

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

7.7.15 LTE Band 66

RF Mode	LTE Band 66 Channel Bandwidth: 20MHz	**Channel**	CH 132572：1770 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3540.00	-62.39	-13.00	-49.39	1.88 H	207	33.63	-96.02
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3540.00	-62.55	-13.00	-49.55	1.25 V	344	33.47	-96.02

Remarks:

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

RF Mode	LTE Band 66 Channel Bandwidth: 20MHz	**Channel**	CH 132322：1745 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	**3490.00**	**-62.15**	**-13.00**	**-49.15**	**2.50 H**	**73**	**34.04**	**-96.19**
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3490.00	-62.55	-13.00	-49.55	1.96 V	256	33.64	-96.19

Remarks:

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

RF Mode	LTE Band 66 Channel Bandwidth: 20MHz	**Channel**	CH 132072：1720 MHz
Frequency Range	1 GHz ~ 18 GHz	**Detector Function & Bandwidth**	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	**Environmental Conditions**	25°C, 67% RH
Tested By	Karl Lee		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3440.00	-62.91	-13.00	-49.91	1.83 H	143	33.47	-96.38
Antenna Polarity & Test Distance : Vertical at 3 m								
No	**Frequency (MHz)**	**EIRP (dBm)**	**Limit (dBm)**	**Margin (dB)**	**Antenna Height (m)**	**Table Angle (Degree)**	**Raw Value (dBuV)**	**Correction Factor (dB/m)**
1	3440.00	-62.31	-13.00	-49.31	1.59 V	261	34.07	-96.38

Remarks:

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

7.8 Frequency Stability

Environmental Conditions:	25°C, 66% RH	Tested By:	Noah Chang

7.8.1 LTE Band 42

LTE Band 42, Channel Bandwidth: 5 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 42115 (3452.5 MHz)		CH 43065 (3547.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	3452.500002	0.001	3547.499996	-0.001
10.80	3452.499999	0.000	3547.499999	0.000
12.42	3452.499999	0.000	3547.499996	-0.001

Note: The applicant defined the normal working voltage is from 9.18 to 12.42 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 42115 (3452.5 MHz)		CH 43065 (3547.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3452.500004	0.001	3547.500001	0.000
-20	3452.500003	0.001	3547.499996	-0.001
-10	3452.500004	0.001	3547.500001	0.000
0	3452.499998	-0.001	3547.500002	0.001
10	3452.500001	0.000	3547.500001	0.000
20	3452.499997	-0.001	3547.499997	-0.001
30	3452.500003	0.001	3547.499999	0.000
40	3452.500002	0.001	3547.499999	0.000
50	3452.500001	0.000	3547.499998	-0.001

LTE Band 42, Channel Bandwidth: 10 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 42140 (3455 MHz)		CH 43040 (3545 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	3454.999997	-0.001	3545.000002	0.001
10.80	3455.000001	0.000	3544.999996	-0.001
12.42	3454.999999	0.000	3544.999998	-0.001

Note: The applicant defined the normal working voltage is from 4.50 to 5.50 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 42140 (3455 MHz)		CH 43040 (3545 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3454.999998	-0.001	3544.999997	-0.001
-20	3455.000004	0.001	3545.000002	0.001
-10	3454.999998	-0.001	3545.000002	0.001
0	3454.999996	-0.001	3545.000002	0.001
10	3455.000004	0.001	3544.999997	-0.001
20	3454.999996	-0.001	3544.999996	-0.001
30	3455.000004	0.001	3544.999999	0.000
40	3455.000002	0.001	3544.999996	-0.001
50	3454.999996	-0.001	3545.000004	0.001

LTE Band 42, Channel Bandwidth: 15 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 42165 (3457.5 MHz)		CH 43015 (3542.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	3457.499998	-0.001	3542.500001	0.000
10.80	3457.500002	0.001	3542.499996	-0.001
12.42	3457.499996	-0.001	3542.500002	0.001

Note: The applicant defined the normal working voltage is from 4.50 to 5.50 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 42165 (3457.5 MHz)		CH 43015 (3542.5 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3457.499996	-0.001	3542.499998	-0.001
-20	3457.499996	-0.001	3542.499999	0.000
-10	3457.499997	-0.001	3542.500004	0.001
0	3457.500004	0.001	3542.500001	0.000
10	3457.499999	0.000	3542.500003	0.001
20	3457.500001	0.000	3542.500003	0.001
30	3457.500001	0.000	3542.499998	-0.001
40	3457.500004	0.001	3542.500001	0.000
50	3457.499999	0.000	3542.500004	0.001

LTE Band 42, Channel Bandwidth: 20 MHz

Frequency Stability Versus Voltage				
Voltage (Vdc)	CH 42190 (3460 MHz)		CH 42990 (3540 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
9.18	3459.999999	0.000	3539.999999	0.000
10.80	3460.000001	0.000	3539.999996	-0.001
12.42	3459.999998	-0.001	3540.000004	0.001

Note: The applicant defined the normal working voltage is from 4.50 to 5.50 Vdc.

Frequency Stability Versus Temperature				
Temperature (℃)	CH 42190 (3460 MHz)		CH 42990 (3540 MHz)	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	3460.000003	0.001	3540.000001	0.000
-20	3460.000004	0.001	3539.999996	-0.001
-10	3460.000001	0.000	3540.000003	0.001
0	3460.000002	0.001	3539.999996	-0.001
10	3460.000001	0.000	3540.000002	0.001
20	3460.000003	0.001	3540.000001	0.000
30	3459.999998	-0.001	3540.000002	0.001
40	3459.999996	-0.001	3539.999998	-0.001
50	3460.000003	0.001	3539.999996	-0.001

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 Information of the Testing Laboratories

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

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

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