

FCC TEST REPORT

(PART 27)

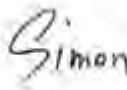
Applicant:	Lenovo (Shanghai) Electronics Technology Co., Ltd.
Address:	Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

Manufacturer or Supplier:	Lenovo PC HK Limited
Address:	23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong, P.R.China
Product:	Portable Tablet Computer
Brand Name:	Lenovo
Model Name:	Lenovo TB-X6C6L
FCC ID:	O57TBX6C6L
Date of tests:	Mar. 05, 2021 ~ Apr. 13, 2021

The tests have been carried out according to the requirements of the following standard:

☒ **FCC Part 27, Subpart C, M** ☒ **ANSI/TIA/EIA-603-D**
☒ **FCC Part 2** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Apr. 19, 2021	 Date: Apr. 19, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RFA210222W001-3	Original release	Apr. 19, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 27 & Part 2		
STANDARD SECTION	1.1.1.1.1 TEST TYPE AND LIMIT	RESULT
2.1046 27.50(h)(2)	Equivalent Isotropically Radiated Power	Compliance
2.1055 27.54	Frequency Stability	Compliance
2.1049 27.53(m)(6)	Occupied Bandwidth	Compliance
2.1051 27.53(m)(4)(6)	Band Edge Measurements	Compliance
2.1051 27.53(m)(4)(6)	Conducted Spurious Emissions	Compliance
2.1053 27.53(m)(4)(6)	Radiated Spurious Emissions	Compliance

1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions & Radiated Power (30MHz~1GMHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GMHz ~18GMHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GMHz ~40GMHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 27,20	Apr. 26,21
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 25,21	Feb. 24,22
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 26,21	Mar. 25,22
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 27,20	Mar. 26,21
Horn Antenna (1GHz-18GHz)	ETS-LINDGREN	3117	00168692	Mar. 26,21	Mar. 25,22
Horn Antenna (1GHz-18GHz)	ETS-LINDGREN	3117	00168692	Mar. 27,20	Mar. 26,21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Nov. 24, 20	Nov. 23, 21
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 26,21	Feb. 25,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 02,20	Jun. 01,21
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 30,20	Apr. 29,21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 19,21
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated V7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SM A	1505	Jun. 03,20	Jun. 02,21
Power Meter	Anritsu	ML2495A	1506002	Feb. 25,21	Feb. 24,22
Power Sensor	Anritsu	MA2411B	1339352	Feb. 25,21	Feb. 24,22
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP-AR	IAA1504-001	Jun. 02,20	Jun. 01,21
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 10,21	Mar. 09,22
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 11,20	Mar. 10,21
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
 3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Portable Tablet Computer	
BRAND NAME	Lenovo	
MODEL NAME	Lenovo TB-X6C6L	
NOMINAL VOLTAGE	5.0Vdc (adapter or host equipment) 3.86Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	WCDMA	BPSK, QPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	WCDMA IV	1712.4MHz ~ 1752.6MHz
	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~ 1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
	LTE Band 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 14 Channel Bandwidth: 5MHz	790.5MHz ~ 795.5MHz
	LTE Band 14 Channel Bandwidth: 10MHz	790.5MHz ~ 795.5MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711 MHz

FREQUENCY RANGE	LTE Band 30 Channel Bandwidth: 5MHz	2307.5MHz ~ 2312.5MHz
	LTE Band 30 Channel Bandwidth: 10MHz	2310MHz
	LTE Band 66 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1779.3MHz
	LTE Band 66 Channel Bandwidth: 3MHz	1711.5MHz ~ 1778.5MHz
	LTE Band 66 Channel Bandwidth: 5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band 66 Channel Bandwidth: 10MHz	1715MHz ~ 1775MHz
	LTE Band 66 Channel Bandwidth: 15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720MHz ~ 1770MHz
	LTE Band 71 Channel Bandwidth: 5MHz	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz
EMISSION DESIGNATOR	WCDMA IV	4M18F9W
	LTE Band 4 Channel Bandwidth: 1.4MHz	QPSK: 1M08G7D
		16QAM: 1M09W7D
	LTE Band 4 Channel Bandwidth: 3MHz	QPSK: 2M68G7D
		16QAM: 2M68W7D
	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 4M46G7D
		16QAM: 4M46W7D
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 8M94G7D
		16QAM: 8M94W7D
	LTE Band 4 Channel Bandwidth: 15MHz	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M08G7D
		16QAM: 1M09W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M68G7D
		16QAM: 2M68W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M48G7D
		16QAM: 4M48W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 8M95G7D
		16QAM: 8M96W7D

EMISSION DESIGNATOR	LTE Band 13	QPSK: 4M49G7D
	Channel Bandwidth: 5MHz	16QAM: 4M48W7D
	LTE Band 13	QPSK: 8M94G7D
	Channel Bandwidth: 10MHz	16QAM: 8M93W7D
	LTE Band 14	QPSK: 4M47G7D
	Channel Bandwidth: 5MHz	16QAM: 4M46W7D
	LTE Band 14	QPSK: 8M92G7D
	Channel Bandwidth: 10MHz	16QAM: 8M90W7D
	LTE Band 17	QPSK: 4M48G7D
	Channel Bandwidth: 5MHz	16QAM: 4M48W7D
	LTE Band 17	QPSK: 8M95G7D
	Channel Bandwidth: 10MHz	16QAM: 8M93W7D
	LTE Band 30	QPSK: 4M47G7D
	Channel Bandwidth: 5MHz	16QAM: 4M46W7D
	LTE Band 30	QPSK: 8M92G7D
	Channel Bandwidth: 10MHz	16QAM: 8M93W7D
	LTE Band 66	QPSK: 1M08G7D
	Channel Bandwidth: 1.4MHz	16QAM: 1M08W7D
	LTE Band 66	QPSK: 2M68G7D
	Channel Bandwidth: 3MHz	16QAM: 2M68W7D
	LTE Band 66	QPSK: 4M47G7D
	Channel Bandwidth: 5MHz	16QAM: 4M47W7D
	LTE Band 66	QPSK: 8M92G7D
	Channel Bandwidth: 10MHz	16QAM: 8M92W7D
	LTE Band 66	QPSK: 13M4G7D
	Channel Bandwidth: 15MHz	16QAM: 13M4W7D
	LTE Band 66	QPSK: 17M9G7D
	Channel Bandwidth: 20MHz	16QAM: 17M9W7D
	LTE Band 71	QPSK: 4M46G7D
	Channel Bandwidth: 5MHz	16QAM: 4M47W7D
	LTE Band 71	QPSK: 8M93G7D
	Channel Bandwidth: 10MHz	16QAM: 8M92W7D
	LTE Band 71	QPSK: 13M4G7D
	Channel Bandwidth: 15MHz	16QAM: 13M4W7D
	CLTE Band 71	QPSK: 17M9G7D
	Channel Bandwidth: 20MHz	16QAM: 17M9W7D

MAX. EIRP POWER	WCDMA IV	207mW
	LTE Band 4 Channel Bandwidth: 1.4MHz	306mW
	LTE Band 4 Channel Bandwidth: 3MHz	304mW
	LTE Band 4 Channel Bandwidth: 5MHz	304mW
	LTE Band 4 Channel Bandwidth: 10MHz	304mW
	LTE Band 4 Channel Bandwidth: 15MHz	301mW
	LTE Band 4 Channel Bandwidth: 20MHz	306mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	53mW
	LTE Band 12 Channel Bandwidth: 3MHz	52mW
	LTE Band 12 Channel Bandwidth: 5MHz	52mW
	LTE Band 12 Channel Bandwidth: 10MHz	45mW
	LTE Band 13 Channel Bandwidth: 5MHz	59mW
	LTE Band 13 Channel Bandwidth: 10MHz	59mW
	LTE Band 14 Channel Bandwidth: 5MHz	59mW
	LTE Band 14 Channel Bandwidth: 10MHz	59mW
	LTE Band 17 Channel Bandwidth: 5MHz	52mW
	LTE Band 17 Channel Bandwidth: 10MHz	53mW
	LTE Band 30 Channel Bandwidth: 5MHz	250mW
	LTE Band 30 Channel Bandwidth: 10MHz	251mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	309mW
	LTE Band 66 Channel Bandwidth: 3MHz	309mW
	LTE Band 66 Channel Bandwidth: 5MHz	309mW
	LTE Band 66 Channel Bandwidth: 10MHz	305mW
	LTE Band 66 Channel Bandwidth: 15MHz	301mW

	LTE Band 66 Channel Bandwidth: 20MHz	305mW
	LTE Band 71 Channel Bandwidth: 5MHz	47mW
	LTE Band 71 Channel Bandwidth: 10MHz	57mW
	LTE Band 71 Channel Bandwidth: 15MHz	47mW
	LTE Band 71 Channel Bandwidth: 20MHz	47mW
ANTENNA TYPE	Fixed Internal Antenna with -3.28dBi gain for LTE B12/17 Fixed Internal Antenna with -2.76dBi gain for LTE B13/14 Fixed Internal Antenna with -3.94dBi gain for LTE B71 Fixed Internal Antenna with 2.15dBi gain for WCDMA IV <E B4/66 Fixed Internal Antenna with 1.88dBi gain for LTE B30CCC	
HW VERSION	Lenovo TB-X6C6L	
SW VERSION	TB-X6C6L_RF01_210528	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable: shielded, detachable, 1meter	
EXTREME TEMPERATURE	-10-55 °C	
EXTREME VOLTAGE	3.6V- 4.4V	

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.



**BUREAU
VERITAS**

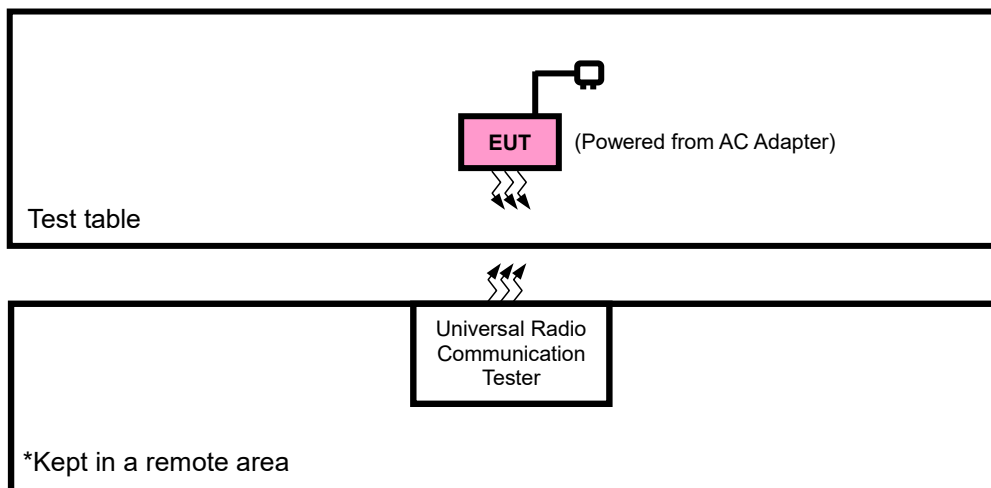
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List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery 1	Sunwoda	L20D1P32	Capacity : 3.86vdc 7500mAh
Battery 2	SCUD	L20D1P32	Capacity : 3.86vdc 7500mAh
AC Adapter 1	Salom	SC-41	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
AC Adapter 2	AcBel	SC-41	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable 1	BRL	GSZ-209H-A3120	Shielded, 1.0meter
USB Cable 2	Leagtech	CDG-203T-A05WF	Shielded, 1.0meter

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	LONG WEI	PS-6403D	010934269	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.8m

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with LTE link
B	EUT + Battery with LTE link

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
B	FREQUENCY STABILITY	1312 to 1513	1312, 1513	WCDMA
B	OCCUPIED BANDWIDTH	1312 to 1513	1312, 1413, 1513	WCDMA
B	BAND EDGE	1312 to 1513	1312, 1513	WCDMA
B	PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1413, 1513	WCDMA
B	CONDUCTED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
A	RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA

LTE BAND 4

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	19957 to 20393	18607, 20175, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	19957 to 20393	18607, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	19957 to 20393	18607, 20175, 19193	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	19957 to 20393	18607, 20175, 19193	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	BAND EDGE	19957 to 20393	18607	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19193	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	20000	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20350	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19965 to 20385	19975	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20375	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20000	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20350	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20000 to 20350	20025	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			20325	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20000 to 20350	20050	20MHz	QPSK,16QAM	1 RB / 0 RB Offset

						100 RB / 0 RB Offset
			20300	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCUDED EMISSION	19957 to 20393	18607, 20175, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 12

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23017 to 23173	23017, 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	BAND EDGE	23017 to 23173	23017	1.4MHz	QPSK	1 RB / 0 RB Offset
			23173	1.4MHz	QPSK	6 RB / 0 RB Offset
		23025 to 23165	23025	3MHz	QPSK	1 RB / 5 RB Offset
			23165	3MHz	QPSK	15 RB / 0 RB Offset
		23035 to 23155	23035	5MHz	QPSK	1 RB / 14 RB Offset
			23155	5MHz	QPSK	15 RB / 0 RB Offset
		23060 to 23130	23060	10MHz	QPSK	1 RB / 0 RB Offset
			23130	10MHz	QPSK	25 RB / 0 RB Offset
						1 RB / 24 RB Offset
						25 RB / 0 RB Offset
						1 RB / 0 RB Offset
						50 RB / 0 RB Offset
B	CONDCUETED EMISSION	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK	1 RB / 49 RB Offset
		23025 to 23165	23025, 23095, 23165	3MHz	QPSK	50 RB / 0 RB Offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 13

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23205 to 23255	20025, 20175, 20325	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23205 to 23255	20025, 20325	1.4MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23205 to 23255	20025, 20175, 20325	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
B	BAND EDGE	23205 to 23255	23250	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		23230	23255	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
			23230	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDED EMISSION	23205 to 23255	20025, 20175, 20325	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23205 to 23255	20025, 20175, 20325	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 14

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23305 to 23355	23305, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
B	BAND EDGE	23305 to 23355	23305	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23355	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23300	23330	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 17

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23755 to 23825	23755, 23825	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23800	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23755 to 23825	23755, 23790, 23825	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
B	BAND EDGE	23755 to 23825	23755	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23825	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23780 to 23800	23780	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDED EMISSION	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23755 to 23825	23790	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 30

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	27685 to 27735	27685, 27710, 27735	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	27685 to 27735	27685, 27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	27685 to 27735	27685, 27710, 27735	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
B	BAND EDGE	27685 to 27735	27685	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		27710	27735	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
			27710	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDED EMISSION	27685 to 27735	27685, 27710, 27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	27685 to 27735	27685, 27710, 27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 66

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	131979 to 132665	131979,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132572	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	BAND EDGE	131979 to 132322	131979	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			132322	1.4MHz	QPSK,16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			132657	3MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131987 to 132657	131987	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132657	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		131997 to 132647	131997	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132647	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		132072 to 132572	132072	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			132572	20MHz	QPSK,16QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCUDED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset



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A	RADIATED EMISSION	132022 to 132622	132022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK	1 RB / 0 RB Offset
		131979 to 132665	132322	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	132322	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132322	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132322	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132322	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 71

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	133147 to 133447	133147, 133247, 133447	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133172 to 133172	133172, 133272, 133172	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	133147 to 133447	133147, 133447	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133172	133172, 133172	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133197, 133397	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222, 133372	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133247, 133447	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		133172 to 133172	133172, 133272, 133172	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	BAND EDGE	133147 to 133447	133147	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
			133447	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		133172 to 133172	133172	10MHz	QPSK,16QAM	1 RB / 24 RB Offset
			133172	10MHz	QPSK,16QAM	25 RB / 0 RB Offset
		133197 to 133397	133172	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
			133172	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		133197 to 133397	133197	15MHz	QPSK,16QAM	1 RB / 49 RB Offset
			133397	15MHz	QPSK,16QAM	50 RB / 0 RB Offset
		133222 to 133372	133197	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
			133397	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		133222 to 133372	133222	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
			133372	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
B	CONDCUDED EMISSION	133147 to 133447	133147, 133247, 133447	5MHz	QPSK	1 RB / 99 RB Offset
		133172 to 133172	133172, 133272, 133172	10MHz	QPSK	100 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	133147 to 133447	133247	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133172	133272	10MHz	QPSK	1 RB / 0 RB Offset



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		133197 to 133397	133297	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



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TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP/EIRP	23deg. C, 70%RH	DC 5V By Adapter	Star Le
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.6V/3.8V/4.4V	Chase Zhou
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.86V By Battery	Chase Zhou
BAND EDGE	23deg. C, 70%RH	DC 3.86V By Battery	Chase Zhou
CONDCUDED EMISSION	23deg. C, 70%RH	DC 3.86V By Battery	Chase Zhou
RADIATED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Star Le



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2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

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

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

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);

L_{C} = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
Channel	1312	1413	1513
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	23.15	22.98	23.11
HSDPA Subtest-1	22.12	22.10	22.12
HSDPA Subtest-2	22.08	22.13	22.20
HSDPA Subtest-3	21.67	21.75	21.69
HSDPA Subtest-4	21.57	21.57	21.76
DC-HSDPA Subtest-1	22.11	22.00	22.07
DC-HSDPA Subtest-2	22.04	22.04	22.05
DC-HSDPA Subtest-3	21.67	21.83	21.62
DC-HSDPA Subtest-4	21.61	21.64	21.65
HSUPA Subtest-1	21.34	21.21	21.27
HSUPA Subtest-2	21.18	21.17	21.18
HSUPA Subtest-3	20.13	20.13	20.11
HSUPA Subtest-4	20.06	20.03	20.13
HSUPA Subtest-5	19.37	19.33	19.35
HSPA+ Subtest-1	21.85	21.54	21.60



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Band/BW	Modulation	RB Size	RB Offset	Low CH 19957	Mid CH 20175	High CH 20393	MPR
				Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz	
4/ 1.4	QPSK	1	0	22.20	22.28	22.30	0
		1	2	22.60	22.61	22.68	0
		1	5	22.20	22.19	22.24	0
		3	0	22.60	22.62	22.71	0
		3	1	22.62	22.65	22.62	0
		3	3	22.41	22.42	22.47	0
		6	0	21.59	21.58	21.65	1
	16QAM	1	0	21.54	21.56	21.61	1
		1	2	21.89	21.87	21.96	1
		1	5	21.46	21.47	21.57	1
		3	0	21.63	21.66	21.69	1
		3	1	21.57	21.68	21.67	1
		3	3	21.45	21.48	21.55	1
		6	0	20.54	20.62	20.62	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 19965	Mid CH 20175	High CH 20385	MPR
				Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz	
4/ 3	QPSK	1	0	22.22	22.30	22.29	0
		1	7	22.56	22.62	22.68	0
		1	14	22.16	22.19	22.24	0
		8	0	21.59	21.65	21.71	1
		8	3	21.55	21.65	21.64	1
		8	7	21.38	21.49	21.51	1
		15	0	21.56	21.59	21.59	1
	16QAM	1	0	21.51	21.62	21.64	1
		1	7	21.86	21.90	21.94	1
		1	14	21.49	21.47	21.57	1
		8	0	20.59	20.67	20.69	2
		8	3	20.62	20.63	20.70	2
		8	7	20.47	20.46	20.51	2
		15	0	20.54	20.56	20.65	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 19975	Mid CH 20175	High CH 20375	MPR
				Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz	
4/ 5	QPSK	1	0	22.23	22.25	22.30	0
		1	12	22.61	22.59	22.68	0
		1	24	22.17	22.18	22.28	0
		12	0	21.62	21.65	21.68	1
		12	6	21.55	21.66	21.65	1
		12	13	21.42	21.45	21.52	1
		25	0	21.54	21.62	21.62	1
	16QAM	1	0	21.52	21.58	21.64	1
		1	12	21.83	21.93	21.93	1
		1	24	21.49	21.47	21.56	1
		12	0	20.59	20.65	20.66	2
		12	6	20.59	20.67	20.66	2
		12	13	20.42	20.48	20.54	2
		25	0	20.54	20.57	20.62	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 20000	Mid CH 20175	High CH 20350	MPR
				Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz	
4/ 10	QPSK	1	0	22.20	22.28	22.30	0
		1	24	22.61	22.59	22.69	0
		1	49	22.14	22.22	22.24	0
		25	0	21.63	21.64	21.71	1
		25	12	21.61	21.60	21.65	1
		25	25	21.40	21.42	21.51	1
		50	0	21.59	21.62	21.59	1
	16QAM	1	0	21.52	21.55	21.60	1
		1	24	21.88	21.89	21.96	1
		1	49	21.49	21.48	21.53	1
		25	0	20.61	20.63	20.72	2
		25	12	20.63	20.61	20.71	2
		25	25	20.41	20.49	20.51	2
		50	0	20.58	20.56	20.66	2



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Band/BW	Modulation	RB Size	RB Offset	Low CH 20025	Mid CH 20175	High CH 20325	MPR
				Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz	
4/ 15	QPSK	1	0	22.27	22.28	22.27	0
		1	37	22.59	22.64	22.64	0
		1	74	22.20	22.25	22.25	1
		36	0	21.60	21.65	21.72	1
		36	19	21.62	21.65	21.65	1
		36	39	21.38	21.43	21.51	1
		75	0	21.59	21.60	21.64	1
	16QAM	1	0	21.56	21.62	21.60	1
		1	37	21.87	21.90	21.96	1
		1	74	21.45	21.53	21.55	2
		36	0	20.65	20.63	20.73	2
		36	19	20.57	20.65	20.67	2
		36	39	20.46	20.47	20.54	2
		75	0	20.59	20.59	20.59	0

Band/BW	Modulation	RB Size	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300	MPR
				Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz	
4/ 20	QPSK	1	0	22.28	22.32	22.35	0
		1	50	22.63	22.67	22.70	0
		1	99	22.22	22.26	22.29	0
		50	0	21.66	21.70	21.73	1
		50	25	21.63	21.67	21.70	1
		50	50	21.46	21.50	21.53	1
		100	0	21.60	21.64	21.67	1
	16QAM	1	0	21.59	21.63	21.66	1
		1	50	21.91	21.95	21.98	1
		1	99	21.51	21.55	21.58	1
		50	0	20.67	20.71	20.74	2
		50	25	20.65	20.69	20.72	2
		50	50	20.49	20.53	20.56	2
		100	0	20.60	20.64	20.67	2



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LTE Band 12

Band/BW	Modulation	RB Size	RB Offset	Low CH 23017	Mid CH 23095	High CH 23173	MPR
				Frequency 699.7 MHz	Frequency 707.5 MHz	Frequency 715.3 MHz	
12/ 1.4	QPSK	1	0	22.42	22.49	22.44	0
		1	2	22.58	22.58	22.58	0
		1	5	22.57	22.55	22.53	0
		3	0	22.48	22.49	22.51	0
		3	1	22.67	22.69	22.59	0
		3	3	22.60	22.60	22.58	0
		6	0	21.59	21.57	21.57	1
	16QAM	1	0	21.72	21.73	21.71	1
		1	2	21.92	21.89	21.91	1
		1	5	21.92	21.92	21.95	1
		3	0	21.50	21.52	21.48	1
		3	1	21.56	21.66	21.58	1
		3	3	21.59	21.61	21.61	1
		6	0	20.52	20.59	20.52	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23025	Mid CH 23095	High CH 23165	MPR
				Frequency 700.5 MHz	Frequency 707.5 MHz	Frequency 714.5 MHz	
12/ 3	QPSK	1	0	22.44	22.51	22.43	0
		1	7	22.54	22.59	22.58	0
		1	14	22.53	22.55	22.53	0
		8	0	21.47	21.52	21.51	1
		8	3	21.60	21.69	21.61	1
		8	7	21.57	21.67	21.62	1
		15	0	21.56	21.58	21.51	1
	16QAM	1	0	21.69	21.79	21.74	1
		1	7	21.89	21.92	21.89	1
		1	14	21.95	21.92	21.95	1
		8	0	20.46	20.53	20.48	2
		8	3	20.61	20.61	20.61	2
		8	7	20.61	20.59	20.57	2
		15	0	20.52	20.53	20.55	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23035	Mid CH 23095	High CH 23155	MPR
				Frequency 701.5 MHz	Frequency 707.5 MHz	Frequency 713.5 MHz	
12/ 5	QPSK	1	0	22.45	22.46	22.44	0
		1	12	22.59	22.56	22.58	0
		1	24	22.54	22.54	22.57	0
		12	0	21.50	21.52	21.48	1
		12	6	21.60	21.70	21.62	1
		12	13	21.61	21.63	21.63	1
		25	0	21.54	21.61	21.54	1
	16QAM	1	0	21.70	21.75	21.74	1
		1	12	21.86	21.95	21.88	1
		1	24	21.95	21.92	21.94	1
		12	0	20.46	20.51	20.45	2
		12	6	20.58	20.65	20.57	2
		12	13	20.56	20.61	20.60	2
		25	0	20.52	20.54	20.52	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23060	Mid CH 23095	High CH 23130	MPR
				Frequency 704 MHz	Frequency 707.5 MHz	Frequency 711 MHz	
12/ 10	QPSK	1	0	22.50	22.53	22.49	0
		1	24	22.61	22.64	22.60	0
		1	49	22.59	22.62	22.58	0
		25	0	21.54	21.57	21.53	1
		25	12	21.68	21.71	21.67	1
		25	25	21.65	21.68	21.64	1
		50	0	21.60	21.63	21.59	1
	16QAM	1	0	21.77	21.80	21.76	1
		1	24	21.94	21.97	21.93	1
		1	49	21.97	22.00	21.96	1
		25	0	20.54	20.57	20.53	2
		25	12	20.64	20.67	20.63	2
		25	25	20.63	20.66	20.62	2
		50	0	20.58	20.61	20.57	2

LTE Band 13

Band/BW	Modulation	RB Size	RB Offset	Low CH 23205	Mid CH 23230	High CH 23255	MPR
				Frequency 779.5 MHz	Frequency 782.0 MHz	Frequency 784.5 MHz	
13/ 5	QPSK	1	0	22.42	22.40	22.42	0
		1	12	22.60	22.54	22.60	0
		1	24	22.45	22.42	22.49	0
		12	0	21.50	21.49	21.49	1
		12	6	21.50	21.57	21.53	1
		12	13	21.53	21.52	21.56	1
		25	0	21.49	21.53	21.50	1
	16QAM	1	0	21.65	21.67	21.70	1
		1	12	21.81	21.87	21.84	1
		1	24	21.76	21.70	21.76	1
		12	0	20.55	20.57	20.55	2
		12	6	20.64	20.68	20.64	2
		12	13	20.59	20.61	20.64	2
		25	0	20.56	20.55	20.57	2

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 23230	/	MPR
				/	Frequency 782.0 MHz	/	
13/ 10	QPSK	1	0	/	22.47	/	0
		1	12	/	22.62	/	0
		1	24	/	22.50	/	0
		12	0	/	21.54	/	1
		12	6	/	21.58	/	1
		12	13	/	21.57	/	1
		25	0	/	21.55	/	1
	16QAM	1	0	/	21.72	/	1
		1	12	/	21.89	/	1
		1	24	/	21.78	/	1
		12	0	/	20.63	/	2
		12	6	/	20.70	/	2
		12	13	/	20.66	/	2
		25	0	/	20.62	/	2



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LTE Band 14

Band/BW	Modulation	RB Size	RB Offset	Low CH 23305	Mid CH 23330	High CH 23355	MPR
				Frequency 790.5 MHz	Frequency 793 MHz	Frequency 795.5 MHz	
14/ 5	QPSK	1	0	22.53	22.51	22.53	0
		1	12	22.63	22.57	22.63	0
		1	24	22.46	22.43	22.50	0
		12	0	21.53	21.52	21.52	1
		12	6	21.56	21.63	21.59	1
		12	13	21.54	21.53	21.57	1
		25	0	21.54	21.58	21.55	1
	16QAM	1	0	21.82	21.84	21.87	1
		1	12	21.84	21.90	21.87	1
		1	24	21.73	21.67	21.73	1
		12	0	20.58	20.60	20.58	2
		12	6	20.66	20.70	20.66	2
		12	13	20.61	20.63	20.66	2
		25	0	20.63	20.62	20.64	2

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 23330	/	MPR
				/	Frequency 793 MHz	/	
14/ 10	QPSK	1	0	/	22.58	/	0
		1	12	/	22.65	/	0
		1	24	/	22.51	/	0
		12	0	/	21.57	/	1
		12	6	/	21.64	/	1
		12	13	/	21.58	/	1
		25	0	/	21.60	/	1
	16QAM	1	0	/	21.89	/	1
		1	12	/	21.92	/	1
		1	24	/	21.75	/	1
		12	0	/	20.66	/	2
		12	6	/	20.72	/	2
		12	13	/	20.68	/	2
		25	0	/	20.69	/	2



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LTE Band 14

Band/BW	Modulation	RB Size	RB Offset	Low CH 23305	Mid CH 23330	High CH 23355	MPR
				Frequency 790.5 MHz	Frequency 793 MHz	Frequency 795.5 MHz	
14/ 5	QPSK	1	0	22.53	22.51	22.53	0
		1	12	22.63	22.57	22.63	0
		1	24	22.46	22.43	22.50	0
		12	0	21.53	21.52	21.52	1
		12	6	21.56	21.63	21.59	1
		12	13	21.54	21.53	21.57	1
		25	0	21.54	21.58	21.55	1
	16QAM	1	0	21.82	21.84	21.87	1
		1	12	21.84	21.90	21.87	1
		1	24	21.73	21.67	21.73	1
		12	0	20.58	20.60	20.58	2
		12	6	20.66	20.70	20.66	2
		12	13	20.61	20.63	20.66	2
		25	0	20.63	20.62	20.64	2

Band/BW	Modulation	RB Size	RB Offset	Low CH	Mid CH 23330	High CH	MPR
				-	Frequency 793 MHz	-	
14/ 5	QPSK	1	0	-	22.58	-	0
		1	24	-	22.65	-	0
		1	49	-	22.51	-	0
		25	0	-	21.57	-	1
		25	12	-	21.64	-	1
		25	25	-	21.58	-	1
		50	0	-	21.60	-	1
	16QAM	1	0	-	21.89	-	1
		1	24	-	21.92	-	1
		1	49	-	21.75	-	1
		25	0	-	20.66	-	2
		25	12	-	20.72	-	2
		25	25	-	20.68	-	2
		50	0	-	20.69	-	2



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LTE Band 17

Band/BW	Modulation	RB Size	RB Offset	Low CH 23755	Mid CH 23790	High CH 23825	MPR
				Frequency 706.5 MHz	Frequency 710 MHz	Frequency 713.5 MHz	
17/ 5	QPSK	1	0	22.42	22.37	22.36	0
		1	12	22.62	22.53	22.56	0
		1	24	22.52	22.46	22.50	0
		12	0	21.55	21.51	21.48	1
		12	6	21.58	21.62	21.55	1
		12	13	21.59	21.55	21.56	1
		25	0	21.54	21.55	21.49	1
	16QAM	1	0	21.70	21.69	21.69	1
		1	12	21.86	21.89	21.83	1
		1	24	21.89	21.80	21.83	1
		12	0	20.47	20.46	20.41	2
		12	6	20.56	20.57	20.50	2
		12	13	20.55	20.54	20.54	2
		25	0	20.53	20.49	20.48	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 23780	Mid CH 23790	High CH 23800	MPR
				Frequency 709 MHz	Frequency 710 MHz	Frequency 711 MHz	
17/ 10	QPSK	1	0	22.47	22.44	22.41	0
		1	24	22.64	22.61	22.58	0
		1	49	22.57	22.54	22.51	0
		25	0	21.59	21.56	21.53	1
		25	12	21.66	21.63	21.60	1
		25	25	21.63	21.60	21.57	1
		50	0	21.60	21.57	21.54	1
	16QAM	1	0	21.77	21.74	21.71	1
		1	24	21.94	21.91	21.88	1
		1	49	21.91	21.88	21.85	1
		25	0	20.55	20.52	20.49	2
		25	12	20.62	20.59	20.56	2
		25	25	20.62	20.59	20.56	2
		50	0	20.59	20.56	20.53	2



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LTE Band 30

Band/BW	Modulation	RB Size	RB Offset	Low CH 27685	Mid CH 27710	High CH 27735	MPR
				2307.5 MHz	2310.0 MHz	2312.5 MHz	
30/ 5	QPSK	1	0	22.61	22.70	22.58	0
		1	12	22.65	22.74	22.63	0
		1	24	22.64	22.61	22.68	0
		12	0	21.76	21.75	21.75	1
		12	6	21.75	21.82	21.78	1
		12	13	21.81	21.80	21.84	1
		25	0	21.77	21.81	21.78	1
	16QAM	1	0	22.02	22.04	22.07	1
		1	12	22.03	22.09	22.06	1
		1	24	21.89	21.83	21.89	1
		12	0	20.73	20.75	20.73	2
		12	6	20.78	20.82	20.78	2
		12	13	20.76	20.78	20.81	2
		25	0	20.78	20.77	20.79	2

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 27710	/	MPR
				/	2310.0 MHz	/	
30/ 10	QPSK	1	0	/	22.71	/	0
		1	24	/	22.75	/	0
		1	49	/	22.69	/	0
		25	0	/	21.80	/	1
		25	12	/	21.83	/	1
		25	25	/	21.85	/	1
		50	0	/	21.83	/	1
	16QAM	1	0	/	22.09	/	1
		1	24	/	22.11	/	1
		1	49	/	21.91	/	1
		25	0	/	20.81	/	2
		25	12	/	20.84	/	2
		25	25	/	20.83	/	2
		50	0	/	20.84	/	2



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LTE Band 66

Band/BW	Modulation	RB Size	RB Offset	Low CH 131979	Mid CH 132322	High CH 132665	MPR
				Frequency 1710.7MHz	Frequency 1745MHz	Frequency 1779.3MHz	
66/ 1.4	QPSK	1	0	22.12	22.21	22.29	0
		1	2	22.53	22.55	22.68	0
		1	5	22.09	22.09	22.20	0
		3	0	22.57	22.60	22.75	0
		3	1	22.51	22.55	22.58	0
		3	3	22.41	22.43	22.54	0
		6	0	21.51	21.51	21.64	1
	16QAM	1	0	21.50	21.53	21.64	1
		1	2	21.76	21.75	21.90	1
		1	5	21.32	21.34	21.50	1
		3	0	21.59	21.63	21.72	1
		3	1	21.42	21.54	21.59	1
		3	3	21.42	21.46	21.59	1
		6	0	20.47	20.56	20.62	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 131987	Mid CH 132322	High CH 132657	MPR
				Frequency 1711.5MHz	Frequency 1745MHz	Frequency 1778.5MHz	
66/ 3	QPSK	1	0	22.14	22.23	22.28	0
		1	7	22.49	22.56	22.68	0
		1	14	22.05	22.09	22.20	0
		8	0	21.56	21.63	21.75	1
		8	3	21.44	21.55	21.60	1
		8	7	21.38	21.50	21.58	1
		15	0	21.48	21.52	21.58	1
	16QAM	1	0	21.47	21.59	21.67	1
		1	7	21.73	21.78	21.88	1
		1	14	21.35	21.34	21.50	1
		8	0	20.55	20.64	20.72	2
		8	3	20.47	20.49	20.62	2
		8	7	20.44	20.44	20.55	2
		15	0	20.47	20.50	20.65	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 131997	Mid CH 132322	High CH 132647	MPR
				Frequency 1712.5MHz	Frequency 1745MHz	Frequency 1777.5MHz	
66/ 5	QPSK	1	0	22.15	22.18	22.29	0
		1	12	22.54	22.53	22.68	0
		1	24	22.06	22.08	22.24	0
		12	0	21.59	21.63	21.72	1
		12	6	21.44	21.56	21.61	1
		12	13	21.42	21.46	21.59	1
		25	0	21.46	21.55	21.61	1
	16QAM	1	0	21.48	21.55	21.67	1
		1	12	21.70	21.81	21.87	1
		1	24	21.35	21.34	21.49	1
		12	0	20.55	20.62	20.69	2
		12	6	20.44	20.53	20.58	2
		12	13	20.39	20.46	20.58	2
		25	0	20.47	20.51	20.62	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 132022	Mid CH 132322	High CH 132622	MPR
				Frequency 1715MHz	Frequency 1745MHz	Frequency 1775MHz	
66/ 10	QPSK	1	0	22.12	22.21	22.29	0
		1	24	22.54	22.53	22.69	0
		1	49	22.03	22.12	22.20	0
		25	0	21.60	21.62	21.75	1
		25	12	21.50	21.50	21.61	1
		25	25	21.40	21.43	21.58	1
		50	0	21.51	21.55	21.58	1
	16QAM	1	0	21.48	21.52	21.63	1
		1	24	21.75	21.77	21.90	1
		1	49	21.35	21.35	21.46	1
		25	0	20.57	20.60	20.75	2
		25	12	20.48	20.47	20.63	2
		25	25	20.38	20.47	20.55	2
		50	0	20.51	20.50	20.66	2



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Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572	MPR
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz	
66/ 15	QPSK	1	0	22.19	22.21	22.26	0
		1	37	22.52	22.58	22.64	0
		1	74	22.09	22.15	22.21	0
		36	0	21.57	21.63	21.76	1
		36	19	21.51	21.55	21.61	1
		36	39	21.38	21.44	21.58	1
		75	0	21.51	21.53	21.63	1
	16QAM	1	0	21.52	21.59	21.63	1
		1	37	21.74	21.78	21.90	1
		1	74	21.31	21.40	21.48	1
		36	0	20.61	20.60	20.76	2
		36	19	20.42	20.51	20.59	2
		36	39	20.43	20.45	20.58	2
		75	0	20.52	20.53	20.59	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572	MPR
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz	
66/ 20	QPSK	1	0	22.20	22.25	22.34	0
		1	50	22.56	22.61	22.70	0
		1	99	22.11	22.16	22.25	0
		50	0	21.63	21.68	21.77	1
		50	25	21.52	21.57	21.66	1
		50	50	21.46	21.51	21.60	1
		100	0	21.52	21.57	21.66	1
	16QAM	1	0	21.55	21.60	21.69	1
		1	50	21.78	21.83	21.92	1
		1	99	21.37	21.42	21.51	1
		50	0	20.63	20.68	20.77	2
		50	25	20.50	20.55	20.64	2
		50	50	20.46	20.51	20.60	2
		100	0	20.53	20.58	20.67	2



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LTE Band 71

Band/BW	Modulation	RB Size	RB Offset	Low CH 133147	Mid CH 133247	High CH 133447	MPR
				Frequency 665.5MHz	Frequency 675.5MHz	Frequency 695.5MHz	
71/ 5	QPSK	1	0	22.30	22.20	22.18	0
		1	12	22.80	22.66	22.68	0
		1	24	22.43	22.32	22.35	0
		12	0	21.55	21.46	21.42	1
		12	6	21.54	21.53	21.45	1
		12	13	21.71	21.62	21.62	1
		25	0	21.56	21.52	21.45	1
	16QAM	1	0	21.51	21.45	21.44	1
		1	12	22.07	22.05	21.98	1
		1	24	21.84	21.70	21.72	1
		12	0	20.49	20.43	20.37	2
		12	6	20.60	20.56	20.48	2
		12	13	20.66	20.60	20.59	2
		25	0	20.56	20.47	20.45	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133172	Mid CH 133272	High CH 133172	MPR
				Frequency 668MHz	Frequency 678MHz	Frequency 693MHz	
71/ 10	QPSK	1	0	22.27	22.23	22.18	0
		1	24	22.80	22.66	22.69	0
		1	49	22.40	22.36	22.31	0
		25	0	21.56	21.45	21.45	1
		25	12	21.60	21.47	21.45	1
		25	25	21.69	21.59	21.61	1
		50	0	21.61	21.52	21.42	1
	16QAM	1	0	21.51	21.42	21.40	1
		1	24	22.12	22.01	22.01	1
		1	49	21.84	21.71	21.69	1
		25	0	20.51	20.41	20.43	2
		25	12	20.64	20.50	20.53	2
		25	25	20.65	20.61	20.56	2
		50	0	20.60	20.46	20.49	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133197	Mid CH 133297	High CH 133397	MPR
				Frequency 670.5MHz	Frequency 680.5MHz	Frequency 690.5MHz	
71/ 15	QPSK	1	0	22.34	22.23	22.15	0
		1	37	22.78	22.71	22.64	0
		1	74	22.46	22.39	22.32	0
		36	0	21.53	21.46	21.46	1
		36	19	21.61	21.52	21.45	1
		36	39	21.67	21.60	21.61	1
		75	0	21.61	21.50	21.47	1
	16QAM	1	0	21.55	21.49	21.40	1
		1	37	22.11	22.02	22.01	1
		1	74	21.80	21.76	21.71	1
		36	0	20.55	20.41	20.44	2
		36	19	20.58	20.54	20.49	2
		36	39	20.70	20.59	20.59	2
		75	0	20.61	20.49	20.42	2

Band/BW	Modulation	RB Size	RB Offset	Low CH 133222	Mid CH 133322	High CH 133372	MPR
				Frequency 673MHz	Frequency 683MHz	Frequency 688MHz	
71/ 20	QPSK	1	0	22.35	22.27	22.23	0
		1	50	22.82	22.74	22.70	0
		1	99	22.48	22.40	22.36	0
		50	0	21.59	21.51	21.47	1
		50	25	21.62	21.54	21.50	1
		50	50	21.75	21.67	21.63	1
		100	0	21.62	21.54	21.50	1
	16QAM	1	0	21.58	21.50	21.46	1
		1	50	22.15	22.07	22.03	1
		1	99	21.86	21.78	21.74	1
		50	0	20.57	20.49	20.45	2
		50	25	20.66	20.58	20.54	2
		50	50	20.73	20.65	20.61	2
		100	0	20.62	20.54	20.50	2

EIRP

WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	23.15	2.15	23.15	206.54	1
1413	1732.6	22.98	2.15	22.98	198.61	1
1513	1752.6	23.11	2.15	23.11	204.64	1

LTE BAND 4

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	22.62	2.15	24.77	299.92	1
20175	1732.5	22.65	2.15	24.8	302	1
20393	1754.3	22.71	2.15	24.86	306.2	1

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	21.89	2.15	24.04	253.51	1
20175	1732.5	21.87	2.15	24.02	252.35	1
20393	1754.3	21.96	2.15	24.11	257.63	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	22.56	2.15	24.71	295.8	1
20175	1732.5	22.62	2.15	24.77	299.92	1
20385	1753.5	22.68	2.15	24.83	304.09	1

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	21.86	2.15	24.01	251.77	1
20175	1732.5	21.9	2.15	24.05	254.1	1
20385	1753.5	20.51	2.15	22.66	184.5	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	22.61	2.15	24.76	299.23	1
20175	1732.5	22.59	2.15	24.74	297.85	1
20375	1752.5	22.68	2.15	24.83	304.09	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	21.83	2.15	23.98	250.03	1
20175	1732.5	21.93	2.15	24.08	255.86	1
20375	1752.5	21.93	2.15	24.08	255.86	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	22.61	2.15	24.76	299.23	1
20175	1732.5	22.59	2.15	24.74	297.85	1
20350	1750	22.69	2.15	24.84	304.79	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	21.88	2.15	24.03	252.93	1
20175	1732.5	21.89	2.15	24.04	253.51	1
20350	1750	21.96	2.15	24.11	257.63	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	22.59	2.15	24.74	297.85	1
20175	1732.5	22.64	2.15	24.79	301.3	1
20325	1747.5	22.64	2.15	24.79	301.3	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	21.87	2.15	24.02	252.35	1
20175	1732.5	21.9	2.15	24.05	254.1	1
20325	1747.5	21.96	2.15	24.11	257.63	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.63	2.15	24.78	300.61	1
20175	1732.5	22.67	2.15	24.82	303.39	1
20300	1745	22.7	2.15	24.85	305.49	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	21.91	2.15	24.06	254.68	1
20175	1732.5	21.95	2.15	24.1	257.04	1
20300	1745	21.98	2.15	24.13	258.82	1

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	22.67	-3.28	17.24	52.97	3
23095	707.5	22.69	-3.28	17.26	53.21	3
23173	715.3	22.59	-3.28	17.16	52	3

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	21.92	-3.28	16.49	44.57	3
23095	707.5	21.92	-3.28	16.49	44.57	3
23173	715.3	21.95	-3.28	16.52	44.87	3

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	22.54	-3.28	17.11	51.4	3
23095	707.5	22.59	-3.28	17.16	52	3
23165	714.5	22.58	-3.28	17.15	51.88	3

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	21.95	-3.28	16.52	44.87	3
23095	707.5	21.92	-3.28	16.49	44.57	3
23165	714.5	21.95	-3.28	16.52	44.87	3

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	22.59	-3.28	17.16	52	3
23095	707.5	22.56	-3.28	17.13	51.64	3
23155	713.5	22.58	-3.28	17.15	51.88	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	21.95	-3.28	16.52	44.87	3
23095	707.5	21.95	-3.28	16.52	44.87	3
23155	713.5	21.94	-3.28	16.51	44.77	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	22.61	-3.28	17.18	52.24	3
23095	707.5	22.64	-3.28	17.21	52.6	3
23130	711	22.6	-3.28	17.17	52.12	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	21.97	-3.28	16.54	45.08	3
23095	707.5	22	-3.28	16.57	45.39	3
23130	711	21.96	-3.28	16.53	44.98	3

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).



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LTE BAND 13

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	22.6	-2.76	17.69	58.75	3
23230	782	22.54	-2.76	17.63	57.94	3
23255	784.5	22.6	-2.76	17.69	58.75	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	21.81	-2.76	16.9	48.98	3
23230	782	21.87	-2.76	16.96	49.66	3
23255	784.5	21.84	-2.76	16.93	49.32	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	22.62	-2.76	17.71	59.02	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	21.89	-2.76	16.98	49.89	3
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).

LTE BAND 14

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	22.63	-2.76	17.72	59.16	3
23330	793	22.57	-2.76	17.66	58.34	3
23355	795.5	22.63	-2.76	17.72	59.16	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23305	790.5	21.84	-2.76	16.93	49.32	3
23330	793	21.9	-2.76	16.99	50	3
23355	795.5	21.87	-2.76	16.96	49.66	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	22.65	-2.76	17.74	59.43	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23330	793	21.92	-2.76	17.01	50.23	3
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).

LTE BAND 17

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23755	706.5	22.62	-3.28	17.19	52.36	3
23790	710	22.53	-3.28	17.1	51.29	3
23825	713.5	22.56	-3.28	17.13	51.64	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23755	706.5	21.89	-3.28	16.46	44.26	3
23790	710	21.89	-3.28	16.46	44.26	3
23825	713.5	21.83	-3.28	16.4	43.65	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	22.64	-3.28	17.21	52.6	3
23790	710	22.61	-3.28	17.18	52.24	3
23800	711	22.58	-3.28	17.15	51.88	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	21.94	-3.28	16.51	44.77	3
23790	710	21.91	-3.28	16.48	44.46	3
23800	711	21.88	-3.28	16.45	44.16	3

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).

LTE BAND 30

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
27685	2307.5	22.65	1.18	23.83	241.55	0.25
27710	2310	22.74	1.18	23.92	246.60	0.25
27735	2312.5	22.68	1.18	23.86	243.22	0.25

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
27685	2307.5	22.03	1.18	23.21	209.41	0.25
27710	2310	22.09	1.18	23.27	212.32	0.25
27735	2312.5	22.07	1.18	23.25	211.35	0.25

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
27710	2310	22.75	1.18	23.93	247.17	0.25
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
27710	2310	22.11	1.18	23.29	213.30	0.25
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = ERP (dBm) -2.15(dB).

LTE BAND 66

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	22.57	2.15	24.72	296.48	1
132322	1745	22.6	2.15	24.75	298.54	1
132665	1779.3	22.75	2.15	24.9	309.03	1

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	21.76	2.15	23.91	246.04	1
132322	1745	21.75	2.15	23.9	245.47	1
132665	1779.3	21.9	2.15	24.05	254.1	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.49	2.15	24.64	291.07	1
132322	1745	22.56	2.15	24.71	295.8	1
132657	1778.5	22.68	2.15	24.83	304.09	1

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	21.73	2.15	23.88	244.34	1
132322	1745	21.78	2.15	23.93	247.17	1
132657	1778.5	21.88	2.15	24.03	252.93	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	22.54	2.15	24.69	294.44	1
132322	1745	22.53	2.15	24.68	293.76	1
132647	1777.5	22.68	2.15	24.83	304.09	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
C	1712.5	21.7	2.15	23.85	242.66	1
132322	1745	21.81	2.15	23.96	248.89	1
132647	1777.5	21.87	2.15	24.02	252.35	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	22.54	2.15	24.69	294.44	1
132322	1745	22.53	2.15	24.68	293.76	1
132622	1775	22.69	2.15	24.84	304.79	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
C	1715	21.75	2.15	23.9	245.47	1
132322	1745	21.77	2.15	23.92	246.6	1
132622	1775	21.9	2.15	24.05	254.1	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	22.52	2.15	24.67	293.09	1
132322	1745	22.58	2.15	24.73	297.17	1
132597	1772.5	22.64	2.15	24.79	301.3	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
C	1715	21.75	2.15	23.9	245.47	1
132322	1745	21.77	2.15	23.92	246.6	1
132622	1775	21.9	2.15	24.05	254.1	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	22.56	2.15	24.71	295.8	1
132322	1745	22.61	2.15	24.76	299.23	1
132572	1770	22.7	2.15	24.85	305.49	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	21.78	2.15	23.93	247.17	1
132322	1745	21.83	2.15	23.98	250.03	1
132572	1770	21.92	2.15	24.07	255.27	1

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 71

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	22.8	-3.94	16.71	46.88	1
133247	675.5	22.66	-3.94	16.57	45.39	1
133447	695.5	22.68	-3.94	16.59	45.6	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	22.07	-3.94	15.98	39.63	1
133247	675.5	22.05	-3.94	15.96	39.45	1
133447	695.5	21.98	-3.94	15.89	38.82	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	22.8	-3.94	16.71	46.88	1
133272	678	22.66	-3.94	16.57	45.39	1
133422	693	22.69	-3.94	16.6	45.71	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	22.12	-3.94	16.03	40.09	1
133272	678	22.01	-3.94	15.92	39.08	1
133422	693	22.01	-3.94	15.92	39.08	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	22.78	-3.94	16.69	46.67	1
133297	680.5	22.71	-3.94	16.62	45.92	1
133397	690.5	22.64	-3.94	16.55	45.19	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	22.11	-3.94	16.02	39.99	1
133297	680.5	22.02	-3.94	15.93	39.17	1
133397	690.5	22.01	-3.94	15.92	39.08	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	22.82	-3.94	16.73	47.1	1
133322	683	22.74	-3.94	16.65	46.24	1
133372	688	22.7	-3.94	16.61	45.81	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	22.15	-3.94	16.06	40.36	1
133322	683	22.07	-3.94	15.98	39.63	1
133372	688	22.03	-3.94	15.94	39.26	1

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

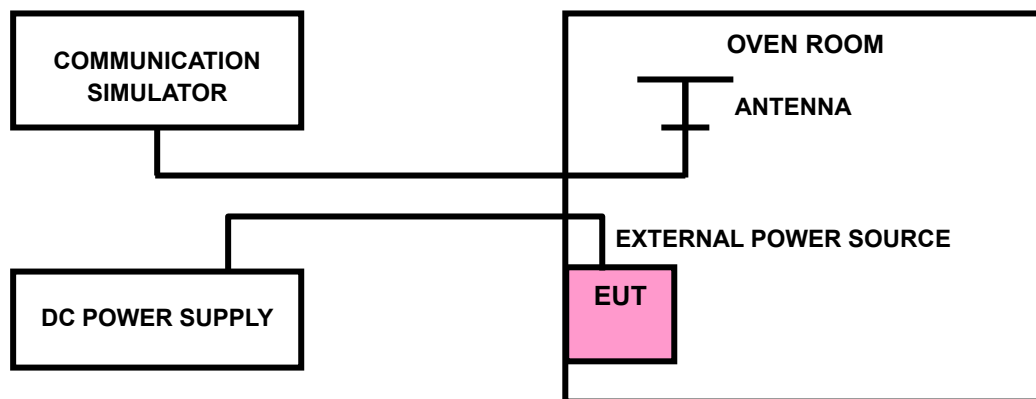
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- 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.
- 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.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ 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.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

WCDMA BAND IV

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
V_{nor}	0.0018	0.0030	2.5
V_{min}	-0.0021	0.0018	2.5
V_{max}	0.0010	0.0035	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0063	-0.0105	2.5
-20	-0.0058	-0.0102	2.5
-10	-0.0042	-0.0097	2.5
0	-0.0032	-0.0099	2.5
10	-0.0026	-0.0055	2.5
20	-0.0011	-0.0049	2.5
30	0.0005	-0.0018	2.5
40	0.0011	-0.0037	2.5
50	0.0021	0.0062	2.5

LTE BAND 4

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.002	0.0024	2.5
V _{min}	-0.0031	-0.003	2.5
V _{max}	0.0021	0.002	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0116	-0.0118	2.5
-20	-0.0112	-0.0096	2.5
-10	-0.0082	-0.0084	2.5
0	-0.0074	-0.0072	2.5
10	-0.005	-0.0052	2.5
20	-0.004	-0.004	2.5
30	-0.0031	-0.0027	2.5
40	-0.002	-0.0015	2.5
50	-0.0004	-0.0006	2.5



**BUREAU
VERITAS**

Test Report No.: RFA210222W001-3

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0021	0.0021	2.5
V _{min}	-0.0021	-0.0025	2.5
V _{max}	0.0018	0.0017	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0123	-0.0113	2.5
-20	-0.0109	-0.0097	2.5
-10	-0.0083	-0.0079	2.5
0	-0.0076	-0.0076	2.5
10	-0.0056	-0.0047	2.5
20	-0.004	-0.0043	2.5
30	-0.0033	-0.0035	2.5
40	-0.0023	-0.0017	2.5
50	-0.0004	-0.0005	2.5



**BUREAU
VERITAS**

Test Report No.: RFA210222W001-3

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0021	0.0023	2.5
V _{min}	-0.0024	-0.003	2.5
V _{max}	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0118	-0.0112	2.5
-20	-0.0107	-0.0097	2.5
-10	-0.0086	-0.0083	2.5
0	-0.0076	-0.0076	2.5
10	-0.005	-0.0052	2.5
20	-0.0041	-0.0042	2.5
30	-0.0027	-0.0026	2.5
40	-0.0022	-0.0017	2.5
50	-0.0002	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0026	0.0024	2.5
V _{min}	-0.0031	-0.003	2.5
V _{max}	0.0025	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.012	-0.012	2.5
-20	-0.0111	-0.0103	2.5
-10	-0.0086	-0.008	2.5
0	-0.0076	-0.0074	2.5
10	-0.005	-0.0044	2.5
20	-0.0043	-0.0042	2.5
30	-0.0029	-0.0038	2.5
40	-0.0021	-0.0021	2.5
50	-0.0002	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0026	0.0024	2.5
V _{min}	-0.0031	-0.003	2.5
V _{max}	0.0024	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0113	-0.0112	2.5
-20	-0.0101	-0.0105	2.5
-10	-0.0086	-0.0084	2.5
0	-0.0073	-0.0074	2.5
10	-0.0046	-0.0052	2.5
20	-0.0038	-0.0041	2.5
30	-0.0041	-0.004	2.5
40	-0.0022	-0.0019	2.5
50	-0.0003	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0025	0.0024	2.5
V _{min}	-0.0031	-0.003	2.5
V _{max}	0.0026	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0113	-0.0112	2.5
-20	-0.0101	-0.0105	2.5
-10	-0.0086	-0.0084	2.5
0	-0.0073	-0.0074	2.5
10	-0.0046	-0.0052	2.5
20	-0.0038	-0.0041	2.5
30	-0.0041	-0.004	2.5
40	-0.0022	-0.0019	2.5
50	-0.0003	-0.0005	2.5

LTE BAND 12

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0026	0.003	2.5
V _{min}	-0.0036	-0.0036	2.5
V _{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.014	-0.0138	2.5
-20	-0.0116	-0.0113	2.5
-10	-0.0097	-0.01	2.5
0	-0.0088	-0.0087	2.5
10	-0.0056	-0.0052	2.5
20	-0.0051	-0.0049	2.5
30	-0.0032	-0.0031	2.5
40	-0.0023	-0.0019	2.5
50	-0.0003	-0.0006	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0025	0.0024	2.5
V _{min}	-0.0025	-0.003	2.5
V _{max}	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0138	-0.014	2.5
-20	-0.0133	-0.012	2.5
-10	-0.0097	-0.0096	2.5
0	-0.0091	-0.0088	2.5
10	-0.0065	-0.0059	2.5
20	-0.0045	-0.005	2.5
30	-0.0047	-0.0035	2.5
40	-0.0017	-0.0025	2.5
50	-0.0004	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0025	0.0029	2.5
V _{min}	-0.0027	-0.0036	2.5
V _{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0138	-0.014	2.5
-20	-0.0133	-0.012	2.5
-10	-0.0097	-0.0096	2.5
0	-0.0091	-0.0088	2.5
10	-0.0065	-0.0059	2.5
20	-0.0045	-0.005	2.5
30	-0.0047	-0.0035	2.5
40	-0.0017	-0.0025	2.5
50	-0.0004	-0.0003	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0029	0.0029	2.5
V _{min}	-0.0037	-0.0036	2.5
V _{max}	0.003	0.0029	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0139	-0.014	2.5
-20	-0.013	-0.012	2.5
-10	-0.01	-0.0096	2.5
0	-0.0088	-0.0088	2.5
10	-0.0053	-0.0059	2.5
20	-0.0045	-0.005	2.5
30	-0.0032	-0.0035	2.5
40	-0.0022	-0.0025	2.5
50	-0.0005	-0.0003	2.5

LTE BAND 13

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0022	0.0025	2.5
V _{min}	-0.0025	-0.0033	2.5
V _{max}	0.0022	0.0023	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0129	-0.0125	2.5
-20	-0.0106	-0.0104	2.5
-10	-0.0091	-0.0085	2.5
0	-0.0081	-0.0081	2.5
10	-0.0056	-0.0059	2.5
20	-0.0045	-0.0042	2.5
30	-0.0042	-0.0038	2.5
40	-0.0019	-0.002	2.5
50	-0.0006	-0.0004	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Mid Channel	
V_{nor}	0.0028	2.5
V_{min}	-0.0033	2.5
V_{max}	0.0028	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Mid Channel	
-30	-0.0123	2.5
-20	-0.0115	2.5
-10	-0.0089	2.5
0	-0.0078	2.5
10	-0.0056	2.5
20	-0.0042	2.5
30	-0.0042	2.5
40	-0.0023	2.5
50	-0.0002	2.5

LTE BAND 14

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V _{nor}	0.0022	0.0026	2.5
V _{min}	-0.0024	-0.0032	2.5
V _{max}	0.0022	0.0022	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} Vdc to V_{max} Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0121	-0.0121	2.5
-20	-0.0103	-0.0113	2.5
-10	-0.0089	-0.0088	2.5
0	-0.008	-0.0078	2.5
10	-0.0056	-0.0047	2.5
20	-0.004	-0.0042	2.5
30	-0.0033	-0.0037	2.5
40	-0.0016	-0.002	2.5
50	-0.0006	-0.0003	2.5