



# FCC TEST REPORT (PART 27)

Product: smartphone

Model Name: Ilium L1120

FCC ID: ZC4L1120

**Applicant:** Corporativo Lanix S.A. de C.V.

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Report No.: RF170324W002-5

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**Test Date:** Mar. 25, 2017 ~ Apr. 13, 2017

**Issued Date:** Apr. 14, 2017

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# **RELEASE CONTROL RECORD**

ISSUE NO.	SSUE NO. REASON FOR CHANGE	
RF170324W002-5	Original release	Apr. 14, 2017

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# 1 CERTIFICATION

**PRODUCT:** smartphone

**BRAND NAME: LANIX** 

MODEL NAME: Ilium L1120

**APPLICANT:** Corporativo Lanix S.A. de C.V.

**TESTED:** Mar. 25, 2017 ~ Apr. 13, 2017

**TEST SAMPLE:** Identical Prototype

TEST STANDARDS: FCC Part 27, Subpart C, L

FCC Part 2

ANSI/TIE/EIA-603-D

The above equipment has been tested by **Bureau Veritas Shenzhen Co.**, **Ltd. Dongguan 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 EMC characteristics under the conditions specified in this report.

PREPARED BY: \_\_\_\_\_\_\_, DATE: \_\_\_\_\_\_\_, DATE: \_\_\_\_\_\_\_\_\_, Apr. 14, 2017

**APPROVED BY:** 

(Sam Tung / Manager)

**DATE**: A

Apr. 14, 2017

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# 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 27 & Part 2							
STANDARD SECTION TEST TYPE AND LIMIT		RESULT	REMARK				
2.1046 27.50(d)(4)	Maximum Peak Output Power	PASS	Meet the requirement of limit.				
2.1055 27.54 Frequency Stability		PASS	Meet the requirement of limit.				
2.1049 27.53(h) Occupied Bandwidth		PASS	Meet the requirement of limit.				
27.50(d)(5) Peak to average ratio		PASS	Meet the requirement of limit.				
27.53(h)	Band Edge Measurements	PASS	Meet the requirement of limit.				
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.				
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -8.16dB at 37.76MHz.				

#### 2.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.70dB
	9KHz ~ 30MHz	2.90dB
Radiated emissions	30MHz ~ 1GMHz	4.06dB
Naciated emissions	1GHz ~ 18GHz	4.58dB
	18GHz ~ 40GHz	1.94dB

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

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# 2.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Mar. 05,17	Mar. 04,18
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV7	102331	Nov. 04,16	Nov. 03,17
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 05,17	Mar. 04,18
Bilog Antenna 1	Teseq	CBL 6111D	30643	Jul. 14, 16	Jul. 13, 17
Bilog Antenna 2	Teseq	CBL 6111D	27089	Jul. 14, 16	Jul. 13, 17
Loop antenna	Daze	ZN30900A	0708	Nov. 28, 16	Nov. 27, 17
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062558	May 18,16	May 17,17
Horn Antenna (1GHz -18GHz)	ETS -Lindgren	3117	00062557	May 18,16	May 17,17
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8 .8m	NSEMC006	Mar. 12,16	Mar. 11,18
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	Jul. 27, 16	Jul. 26, 17
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170147	Mar. 02,17	Mar. 01,18
Horn Antenna (15GHz-40GHz)	SCHWARZBECK	BBHA 9170	BBHA9170242	Mar. 02,17	Mar. 01,18
Amplifier	Burgeon	BPA-530	100220	Mar. 05,17	Mar. 04,18
Amplifier (9kHz-1GHz)	SONOMA	310D	186955	Feb. 10,17	Feb. 09,18
Pre-Amplifier(1-18G)	HP	8449B	3008A00409	Apr. 25,16	Apr. 24,17
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 04,16	Nov. 03,17
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Sep.05,16	Sep. 04,17
Signal Generator	Agilent	N5183A	MY50140980	Nov. 04,16	Nov. 03,17

NOTE: 1. The calibration interval of the above test instruments is 12 months or 24 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

- 2. The test was performed in 10m 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 502831.



# **3 GENERAL INFORMATION**

# 3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	smartphone			
MODEL NAME	Ilium L1120			
POWER SUPPLY	5.0Vdc (adapter or host equipm 3.85Vdc (Li-ion, battery)	nent)		
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM		
	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	1715.0MHz ~ 1750.0MHz		
FREQUENCY RANGE	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5MHz		
	LTE Band 4 Channel Bandwidth: 20MHz	1720.0MHz ~ 1745.0MHz		
	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	704.0MHz ~ 711.0MHz		
	LTE Band 4	QPSK: 1M09G7D		
	Channel Bandwidth: 1.4MHz	16QAM: 1M09W7D		
	LTE Band 4	QPSK: 2M69G7D		
	Channel Bandwidth: 3MHz	16QAM: 2M69W7D		
	LTE Band 4	QPSK: 4M49G7D		
EMISSION	Channel Bandwidth: 5MHz	16QAM: 4M48W7D		
DESIGNATOR	LTE Band 4	QPSK: 8M95G7D		
	Channel Bandwidth: 10MHz	16QAM: 8M95W7D		
	LTE Band 4	QPSK: 13M4G7D		
	Channel Bandwidth: 15MHz	16QAM: 13M4W7D		
	LTE Band 4	QPSK: 17M9G7D		
	Channel Bandwidth: 20MHz	16QAM: 17M9W7D		

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	LTE Band 12	QPSK: 1M09G7D	
	Channel Bandwidth: 1.4MHz	16QAM: 1M09W7D	
	LTE Band 12	QPSK: 2M69G7D	
EMISSION	Channel Bandwidth: 3MHz	16QAM: 2M69W7D	
DESIGNATOR	LTE Band 12	QPSK: 4M50G7D	
	Channel Bandwidth: 5MHz	16QAM: 4M48W7D	
	LTE Band 12	QPSK: 8M97G7D	
	Channel Bandwidth: 10MHz	16QAM: 8M98W7D	
	LTE Band 4 Channel Bandwidth: 1.4MHz	309mW	
	LTE Band 4 Channel Bandwidth: 3MHz	312mW	
	LTE Band 4 Channel Bandwidth: 5MHz	301mW	
	LTE Band 4 Channel Bandwidth: 10MHz	307mW	
MAX. ERP/EIRP	LTE Band 4 Channel Bandwidth: 15MHz	305mW	
POWER	LTE Band 4 Channel Bandwidth: 20MHz	273mW	
	LTE Band 12 Channel Bandwidth: 1.4MHz	118mW	
	LTE Band 12 Channel Bandwidth: 3MHz	119mW	
	LTE Band 12 Channel Bandwidth: 5MHz	117mW	
	LTE Band 12 Channel Bandwidth: 10MHz	106mW	
ANTENNA TYPE	LTE Band 4	Fixed Internal Antenna with 0.5dBi	
ANTENNA TYPE	LTE Band 12	Fixed Internal Antenna with 0.45dBi	
HW VERSION	V1		
SW VERSION	Ilium L1120_TELCEL_SW_01		
ACCESSORY DEVICE	Refer to note as below		
DATA CABLE NOTE:	USB cable: non-shielded, detachable, 1.0m Earphone cable: non-shielded, detachable, 1.0m		

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

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2. The EUT was powered by the following adapter:

ADAPTER	ADAPTER		
BRAND:	Lanix		
MODEL:	llium L1120-C		
INPUT:	AC 100-240V, 250mA		
OUTPUT:	DC 5V, 1550mA		

3. The EUT matched the following USB cable and Earphone:

USB CABLE	•
BRAND:	LANIX
MODEL:	Ilium L1120
SIGNAL LINE:	1.0 METER

EARPHONE		
BRAND:	LANIX	
MODEL:	Ilium L1120	
SIGNAL LINE:	1.0 METER	

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

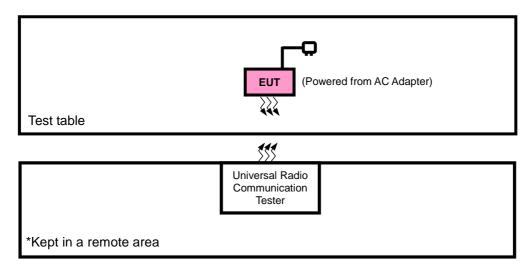
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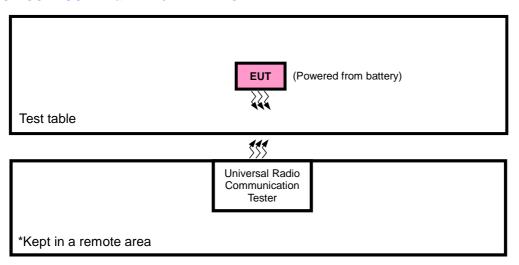


# 3.2 CONFIGURATION OF SYSTEM UNDER TEST

#### FOR RADIATION EMISSION TEST



#### FOR CONDUCTED & E.R.P./E.I.R.P TEST



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#### 3.3 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
2	PC	HP	A6608CN	3CR83825X3	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m
2	AC Line: Unshielded, Detachable 1.5m

#### NOTE:

#### 3.4 DESCRIPTION OF TEST MODES

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 in EIRP and radiated emission was found when positioned Z-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
Α	EUT + Adapter + USB Cable + Earphone with LTE link
В	EUT + Battery with LTE link

<sup>1.</sup> All power cords of the above support units are non shielded (1.8m).



# LTE BAND 4

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE	
		19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
Б	FIDD	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
В	EIRP	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	
		19957 to 20393	19957, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset	
		19965 to 20385	19965, 20385	3MHz	QPSK	1 RB / 0 RB Offset	
В	FREQUENCY	19975 to 20375	19975, 20375	5MHz	QPSK	1 RB / 0 RB Offset	
Б	STABILITY	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	
		19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset	
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset	
В	OCCUPIED	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset	
В	BANDWIDTH	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	
		19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset	
В	PEAK TO	PEAK TO	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Б	AVERAGE RATIO	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	
			19957	1.4MHz	QPSK	1 RB / 0 RB Offset	
		19957 to 20393				6 RB / 0 RB Offset	
			20393	1.4MHz	QPSK	1 RB / 5 RB Offset	
						6 RB / 0 RB Offset	
			19965	3MHz	QPSK	1 RB / 0 RB Offset	
		19965 to 20385				15 RB / 0 RB Offset	
			20385	3MHz	QPSK	1 RB / 14 RB Offset	
В	BAND EDGE					15 RB / 0 RB Offset	
			19975	5MHz	QPSK	1 RB / 0 RB Offset	
		19975 to 20375				25 RB / 0 RB Offset	
			20375	5MHz	QPSK	1 RB / 24 RB Offset	
						25 RB / 0 RB Offset	
			20000	10MHz	QPSK	1 RB / 0 RB Offset	
		20000 to 20350		. 01111112	QI OIN	50 RB / 0 RB Offset	
			20350	10MHz	QPSK	1 RB / 49 RB Offset	
						50 RB / 0 RB Offset	

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1						
			20025	15MHz	OBSK	1 RB / 0 RB Offset
		20025 to 20225	20020	1011112	QFSK	75 RB / 0 RB Offset
		20025 10 20325	20325	151111→	ODSK	1 RB / 74 RB Offset
B CONDCUDETED 19965 to 20388 20000 to 20350 20050 to 20300 19965 to 20388 2050 to 20378 2050 t	20323	TOME	QFSK	75 RB / 0 RB Offset		
В	BAND EDGE		20050	15MHz QPSK 75 RB  15MHz QPSK 75 RB  20MHz QPSK 1 RB  20MHz QPSK 100 RE  1.4MHz QPSK 1 RB  3MHz QPSK 1 RB  5MHz QPSK 1 RB  10MHz QPSK 1 RB  15MHz QPSK 1 RB  15MHz QPSK 1 RB  15MHz QPSK 1 RB  15MHz QPSK 1 RB  20MHz QPSK 1 RB  15MHz QPSK 1 RB  20MHz QPSK 1 RB  20MHz QPSK 1 RB  20MHz QPSK 1 RB  20MHz QPSK 1 RB  5MHz QPSK 1 RB  3MHz QPSK 1 RB  5MHz QPSK 1 RB  5MHz QPSK 1 RB	ODOK	1 RB / 0 RB Offset
		20050 +- 20200	20030		100 RB / 0 RB Offset	
		20050 to 20300	00000	00041.1-	ODOK	1 RB / 99 RB Offset
			20300	20MHZ	QPSK	100 RB / 0 RB Offset
	CONDCUDETED	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
Ь		19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
	EMISSION	20000 to 20350	20175	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
		19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
Α	RADIATED	19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
A	EMISSION	20000 to 20350	20175	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.

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#### LTE BAND 12

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
		23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
В	ERP	23025 to 23165	23025, 23095 ,23165	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
	LIKI	23035 to 23155	23035, 23095 ,23155	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		23017 to 23173	23017, 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
В	FREQUENCY	23025 to 23165	23025, 23165	3MHz	QPSK	1 RB / 0 RB Offset
	STABILITY	23035 to 23155	23035, 23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10MHz	QPSK	1 RB / 0 RB Offset
		23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
В	OCCUPIED	23025 to 23165	23025, 23095 ,23165	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
В	BANDWIDTH	23035 to 23155	23035, 23095 ,23155	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
В	PEAK TO	23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
В	AVERAGE RATIO	23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
			23017	1.4MHz	QPSK	1 RB / 0 RB Offset
		23017 to 23173	25017	1.41011 12	QPSK	6 RB / 0 RB Offset
			23173	4 45 41 1	0.0014	1 RB / 5 RB Offset
				1.4MHz	QPSK	6 RB / 0 RB Offset
			23025	3MHz	QPSK	1 RB / 0 RB Offset
		00005 / 00405				15 RB / 0 RB Offset
		23025 to 23165		3MHz	OBOK	1 RB / 14 RB Offset
	5.115 =5.0=		23165	SIVITZ	QPSK	15 RB / 0 RB Offset
В	BAND EDGE		22025	EMILI-	0.0017	1 RB / 0 RB Offset
			23035	5MHz	QPSK	25 RB / 0 RB Offset
		23035 to 23155			0.0017	1 RB / 24 RB Offset
			23155	5MHz	QPSK	25 RB / 0 RB Offset
			22060	40141-	0.001/	1 RB / 0 RB Offset
			23060	10MHz	QPSK	50 RB / 0 RB Offset
		23060 to 23130				1 RB / 49 RB Offset
			23130	10MHz	QPSK	50 RB / 0 RB Offset
		23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
	CONDCUDETED	23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
В	EMISSION	23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23095	10MHz	QPSK	1 RB / 0 RB Offset
		23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
	RADIATED	23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
Α	EMISSION	23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23095	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.

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# **TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	3.85Vdc from Battery	Wenliang Wu
FREQUENCY STABILITY	24deg. C, 61%RH	3.85Vdc from Battery	Wenliang Wu
OCCUPIED BANDWIDTH	24deg. C, 61%RH	3.85Vdc from Battery	Wenliang Wu
PEAK TO AVERAGE RATIO	24deg. C, 61%RH	3.85Vdc from Battery	Moon Xiong
BAND EDGE	24deg. C, 61%RH	3.85Vdc from Battery	Moon Xiong
CONDCUDETED EMISSION	24deg. C, 61%RH	3.85Vdc from Battery	Moon Xiong
RADIATED EMISSION	23deg. C, 60%RH	5Vdc from adapter	Tony Zou

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# 3.5 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 v02r02
ANSI/TIA/EIA-603-D

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



#### 4 TEST TYPES AND RESULTS

#### 4.1 OUTPUT POWER MEASUREMENT

#### 4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

Portable stations (hand-held devices) operating in the 704-716 MHz bands are limited to 3 watts ERP.

#### 4.1.2 TEST PROCEDURES

#### **EIRP / ERP MEASUREMENT:**

- a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RBW and VBW is 10MHz for LTE.
- b. E.I.R.P power measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- d. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn
- e. E.R.P = E.I.R.P- 2.15 dB

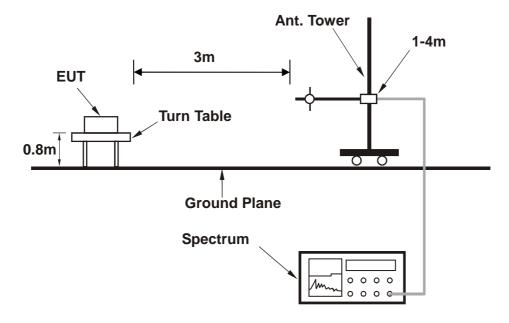
# **CONDUCTED POWER MEASUREMENT:**

- 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.



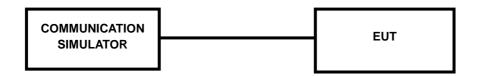
#### 4.1.3 TEST SETUP

#### **EIRP / ERP MEASUREMENT:**



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

### **CONDUCTED POWER MEASUREMENT:**



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

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# 4.1.4 TEST RESULTS

# AVERAGE CONDUCTED OUTPUT POWER (dBm)

				LTE Band 4			
BW	Modulation	RB	RB	Low CH 19957	Mid CH 20175	High CH 20393	MPR
BW	Woddiation	Size	Offset	Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz	IVIPR
		1	0	22.58	22.50	22.47	0
		1	2	22.54	22.46	22.43	0
		1	5	22.52	22.44	22.41	0
	QPSK	3	0	22.56	22.48	22.45	0
		3	1	22.52	22.44	22.41	0
		3	3	22.50	22.42	22.39	0
4 48811-		6	0	21.54	21.46	21.43	1
1.4MHz		1	0	21.81	21.73	21.70	1
		1	2	21.62	21.54	21.51	1
		1	5	21.82	21.74	21.71	1
	16QAM	3	0	21.80	21.72	21.69	1
		3	1	21.61	21.53	21.50	1
		3	3	21.81	21.73	21.70	1
		6	0	20.55	20.47	20.44	2
		RB	RB	Low CH 19965	Mid CH 20175	High CH 20385	
BW	Modulation	Size	Offset	Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz	MPR
		1	0	22.59	22.51	22.48	0
		1	7	22.55	22.47	22.44	0
		1	14	22.53	22.45	22.42	0
	QPSK	8	0	21.60	21.52	21.49	1
		8	3	21.55	21.47	21.44	1
		8	7	21.57	21.49	21.46	1
		15	0	21.55	21.47	21.44	1
3 MHz		1	0	21.82	21.74	21.71	1
		1	7	21.63	21.55	21.52	1
		1	14	21.83	21.75	21.72	1
	16QAM	8	0	20.57	20.49	20.46	2
		8	3	20.55	20.47	20.44	2
		8	7	20.52	20.44	20.41	2
		15	0	20.56	20.48	20.45	2

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				LTE Band 4			
BW	Modulation	RB	RB	Low CH 19975	Mid CH 20175	High CH 20375	мор
BW	Modulation	Size	Offset	Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz	MPR
		1	0	22.62	22.54	22.51	0
		1	12	22.58	22.50	22.47	0
		1	24	22.56	22.48	22.45	0
	QPSK	12	0	21.63	21.55	21.52	1
		12	6	21.58	21.50	21.47	1
		12	13	21.60	21.52	21.49	1
5 MHz		25	0	21.58	21.50	21.47	1
2 IVITZ		1	0	21.85	21.77	21.74	1
		1	12	21.66	21.58	21.55	1
	16QAM	1	24	21.86	21.78	21.75	1
		12	0	20.60	20.52	20.49	2
		12	6	20.58	20.50	20.47	2
		12	13	20.55	20.47	20.44	2
		25	0	20.59	20.51	20.48	2
BW	Modulation	RB Size	RB	Low CH 20000	Mid CH 20175	High CH 20350	MPR
DW			Offset	Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz	IVIPR
		1	0	22.66	22.58	22.55	0
		1	24	22.62	22.54	22.51	0
		1	49	22.60	22.52	22.49	0
	QPSK	25	0	21.67	21.59	21.56	1
		25	12	21.62	21.54	21.51	1
		25	25	21.64	21.56	21.53	1
10 MU-		50	0	21.62	21.54	21.51	1
10 MHz		1	0	21.89	21.81	21.78	1
		1	24	21.70	21.62	21.59	1
	16QAM	1	49	21.90	21.82	21.79	1
		25	0	20.64	20.56	20.53	2
		25	12	20.62	20.54	20.51	2
		25	25	20.59	20.51	20.48	2
		50	0	20.63	20.55	20.52	2

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				LTE Band 4			
BW	Modulation	RB	RB	Low CH 20025	Mid CH 20175	High CH 20325	MDD
BW	Woddiation	Size	Offset	Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz	MPR
		1	0	22.72	22.64	22.61	0
		1	37	22.68	22.60	22.57	0
		1	74	22.66	22.58	22.55	0
	QPSK	36	0	21.73	21.65	21.62	1
		36	19	21.68	21.60	21.57	1
		36	39	21.70	21.62	21.59	1
15 MHz		75	0	21.68	21.60	21.57	1
13 WITZ		1	0	21.95	21.87	21.84	1
		1	37	21.76	21.68	21.65	1
		1	74	21.96	21.88	21.85	1
	16QAM	36	0	20.70	20.62	20.59	2
		36	19	20.68	20.60	20.57	2
		36	39	20.65	20.57	20.54	2
		75	0	20.69	20.61	20.58	2
514		RB	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300	
BW	Modulation	Size		Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz	MPR
		1	0	22.75	22.67	22.64	0
		1	50	22.71	22.63	22.60	0
		1	99	22.69	22.61	22.58	0
	QPSK	50	0	21.76	21.68	21.65	1
		50	25	21.71	21.63	21.60	1
		50	50	21.73	21.65	21.62	1
001411		100	0	21.71	21.63	21.60	1
20MHz		1	0	21.98	21.90	21.87	1
		1	50	21.79	21.71	21.68	1
		1	99	21.99	21.91	21.88	1
	16QAM	50	0	20.73	20.65	20.62	2
		50	25	20.71	20.63	20.60	2
		50	50	20.68	20.60	20.57	2
		100	0	20.72	20.64	20.61	2

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				LTE Band 12			
BW	Modulation	RB Size	RB Offset	Low CH 23017 Frequency	Mid CH 23095 Frequency	High CH 23173 Frequency	MPR
		OILO	011001	699.7 MHz	707.5 MHz	715.3 MHz	
		1	0	22.48	22.54	22.59	0
		1	2	22.45	22.51	22.56	0
		1	5	22.43	22.49	22.54	0
	QPSK	3	0	22.46	22.52	22.57	0
		3	1	22.43	22.49	22.54	0
		3	3	22.41	22.47	22.52	0
1.4 MHz		6	0	21.62	21.68	21.73	1
1.4 IVITIZ		1	0	21.65	21.71	21.76	1
		1	2	21.60	21.66	21.71	1
		1	5	21.54	21.60	21.65	1
	16QAM	3	0	21.64	21.70	21.75	1
		3	1	21.59	21.65	21.70	1
		3	3	21.53	21.59	21.64	1
		6	0	20.59	20.65	20.70	2
BW	Modulation	RB	RB	Low CH 23025	Mid CH 23095	High CH 23165	MDD
DW	Wodulation	Size	Offset	Frequency 700.5 MHz	Frequency 707.5 MHz	Frequency 714.5 MHz	MPR
		1	0	22.52	22.58	22.63	0
		1	7	22.49	22.55	22.60	0
		1	14	22.47	22.53	22.58	0
	QPSK	8	0	21.65	21.71	21.76	1
		8	3	21.61	21.67	21.72	1
		8	7	21.57	21.63	21.68	1
0.8411		15	0	21.66	21.72	21.77	1
3 MHz		1	0	21.69	21.75	21.80	1
		1	7	21.64	21.70	21.75	1
		1	14	21.58	21.64	21.69	1
	16QAM	8	0	20.66	20.72	20.77	2
		8	3	20.64	20.70	20.75	2
		8	7	20.59	20.65	20.70	2
		15	0	20.63	20.69	20.74	2

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				LTE Band 12			
BW	Modulation	RB	RB	Low CH 23035	Mid CH 23095	High CH 23155	мрр
DVV	Wodulation	Size	Offset	Frequency 701.5 MHz	Frequency 707.5 MHz	Frequency 713.5 MHz	MPR
		1	0	22.58	22.64	22.69	0
		1	12	22.55	22.61	22.66	0
		1	24	22.53	22.59	22.64	0
	QPSK	12	0	21.71	21.77	21.82	1
		12	6	21.67	21.73	21.78	1
		12	13	21.63	21.69	21.74	1
5 MII-		25	0	21.72	21.78	21.83	1
5 MHz		1	0	21.75	21.81	21.86	1
		1	12	21.70	21.76	21.81	1
		1	24	21.64	21.70	21.75	1
	16QAM	12	0	20.72	20.78	20.83	2
		12	6	20.70	20.76	20.81	2
		12	13	20.65	20.71	20.76	2
		25	0	20.69	20.75	20.80	2
		RB	RB Offset	Low CH 23060	Mid CH 23095	High CH 23130	
BW	Modulation	Size		Frequency 704 MHz	Frequency 707.5 MHz	Frequency 711 MHz	MPR
		1	0	22.61	22.67	22.72	0
		1	24	22.58	22.64	22.69	0
		1	49	22.56	22.62	22.67	0
	QPSK	25	0	21.74	21.80	21.85	1
		25	12	21.70	21.76	21.81	1
		25	25	21.66	21.72	21.77	1
40 1411		50	0	21.75	21.81	21.86	1
10 MHz		1	0	21.78	21.84	21.89	1
		1	24	21.73	21.79	21.84	1
		1	49	21.67	21.73	21.78	1
	16QAM	25	0	20.75	20.81	20.86	2
		25	12	20.73	20.79	20.84	2
		25	25	20.68	20.74	20.79	2
		50	0	20.72	20.78	20.83	2

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#### **EIRP**

#### LTE BAND 4

#### **CHANNEL BANDWIDTH: 1.4MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19957	1710.7	-24.19	41.29	17.10	51.33	Н	1
20175	1732.5	-25.09	41.36	16.27	42.36	Н	1
20393	1754.3	-25.94	42.74	16.80	47.84	Н	1
19957	1710.7	-19.34	44.25	24.91	309.39	V	1
20175	1732.5	-20.22	44.20	23.98	250.03	V	1
20393	1754.3	-19.89	44.09	24.20	262.72	V	1

#### **CHANNEL BANDWIDTH: 1.4MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19957	1710.7	-25.06	41.29	16.23	42.01	Н	1
20175	1732.5	-26.02	41.36	15.34	34.20	Н	1
20393	1754.3	-26.90	42.74	15.84	38.35	Н	1
19957	1710.7	-20.21	44.25	24.04	253.22	V	1
20175	1732.5	-21.15	44.20	23.05	201.84	V	1
20393	1754.3	-20.85	44.09	23.24	210.62	V	1

# LTE BAND 4

#### **CHANNEL BANDWIDTH: 3MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19965	1711.5	-24.17	41.27	17.10	51.25	Н	1
20175	1732.5	-25.15	41.36	16.21	41.78	н	1
20385	1753.5	-25.89	42.76	16.87	48.61	н	1
19965	1711.5	-19.32	44.26	24.94	312.03	V	1
20175	1732.5	-20.28	44.20	23.92	246.60	V	1
20385	1753.5	-19.84	44.23	24.39	274.92	V	1

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#### **CHANNEL BANDWIDTH: 3MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19965	1711.5	-25.24	41.27	16.03	40.06	Н	1
20175	1732.5	-26.04	41.36	15.32	34.04	Н	1
20385	1753.5	-26.88	42.76	15.88	38.70	Н	1
19965	1711.5	-20.39	44.26	23.87	243.89	V	1
20175	1732.5	-21.17	44.20	23.03	200.91	V	1
20385	1753.5	-20.83	44.23	23.40	218.88	V	1

#### LTE BAND 4

#### **CHANNEL BANDWIDTH: 5MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19975	1712.5	-24.23	41.39	17.16	51.99	Н	1
20175	1732.5	-25.10	41.36	16.26	42.27	Н	1
20375	1752.5	-25.84	42.63	16.79	47.74	Н	1
19975	1712.5	-19.38	44.17	24.79	301.02	V	1
20175	1732.5	-20.23	44.20	23.97	249.46	V	1
20375	1752.5	-19.79	44.35	24.56	285.43	V	1

#### **CHANNEL BANDWIDTH: 5MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
19975	1712.5	-25.06	41.39	16.33	42.94	Н	1
20175	1732.5	-26.12	41.36	15.24	33.42	Н	1
20375	1752.5	-26.94	42.63	15.69	37.06	Н	1
19975	1712.5	-20.21	44.17	23.96	248.66	V	1
20175	1732.5	-21.25	44.20	22.95	197.24	V	1
20375	1752.5	-20.89	44.35	23.46	221.56	V	1

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# LTE BAND 4

#### **CHANNEL BANDWIDTH: 10MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20000	1715.0	-24.04	41.49	17.45	55.54	Н	1
20175	1732.5	-25.04	41.36	16.32	42.85	Н	1
20350	1750.0	-25.71	42.28	16.57	45.43	Н	1
20000	1715.0	-19.19	44.06	24.87	307.11	V	1
20175	1732.5	-20.17	44.20	24.03	252.93	V	1
20350	1750.0	-19.66	44.43	24.77	299.92	V	1

#### **CHANNEL BANDWIDTH: 10MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20000	1715.0	-25.19	41.49	16.30	42.62	Н	1
20175	1732.5	-26.14	41.36	15.22	33.27	Н	1
20350	1750.0	-26.87	42.28	15.41	34.78	Н	1
20000	1715.0	-20.34	44.06	23.72	235.67	V	1
20175	1732.5	-21.27	44.20	22.93	196.34	V	1
20350	1750.0	-20.82	44.43	23.61	229.61	V	1

#### LTE BAND 4

#### **CHANNEL BANDWIDTH: 15MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20025	1717.5	-24.05	41.34	17.29	53.55	Н	1
20175	1732.5	-25.11	41.36	16.25	42.17	Н	1
20325	1747.5	-25.78	42.09	16.31	42.72	Н	1
20025	1717.5	-19.20	44.04	24.84	305.07	V	1
20175	1732.5	-20.24	44.20	23.96	248.89	V	1
20325	1747.5	-19.73	44.22	24.49	280.87	V	1

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#### **CHANNEL BANDWIDTH: 15MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20025	1717.5	-24.91	41.34	16.43	43.93	Н	1
20175	1732.5	-25.98	41.36	15.38	34.51	Н	1
20325	1747.5	-26.63	42.09	15.46	35.12	Н	1
20025	1717.5	-20.06	44.04	23.98	250.26	V	1
20175	1732.5	-21.11	44.20	23.09	203.70	V	1
20325	1747.5	-20.58	44.22	23.64	230.94	V	1

#### LTE BAND 4

#### **CHANNEL BANDWIDTH: 20MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20050	1720.0	-24.63	41.28	16.65	46.25	Н	1
20175	1732.5	-25.56	41.36	15.80	38.03	Н	1
20300	1745.0	-26.36	41.96	15.60	36.28	Н	1
20050	1720.0	-19.78	44.14	24.36	272.58	V	1
20175	1732.5	-20.69	44.20	23.51	224.18	V	1
20300	1745.0	-20.31	43.88	23.57	227.61	V	1

#### **CHANNEL BANDWIDTH: 20MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
20050	1720.0	-25.56	41.28	15.72	37.33	Н	1
20175	1732.5	-26.63	41.36	14.73	29.72	Н	1
20300	1745.0	-27.19	41.96	14.77	29.97	Н	1
20050	1720.0	-20.71	44.14	23.43	220.04	V	1
20175	1732.5	-21.76	44.20	22.44	175.23	V	1
20300	1745.0	-21.14	43.88	22.74	188.02	V	1

**REMARKS:** 1. EIRP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB).

2. Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss

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# LTE BAND 12

#### **CHANNEL BANDWIDTH: 1.4MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23017	699.7	-11.06	32.77	19.56	90.36	Н	3
23095	707.5	-10.37	33.23	20.71	117.76	Н	3
23173	715.3	-11.05	33.14	19.94	98.58	Н	3
23017	699.7	-18.98	32.42	11.29	13.45	V	3
23095	707.5	-18.45	32.60	12.00	15.85	V	3
23173	715.3	-19.11	32.19	10.93	12.38	V	3

#### **CHANNEL BANDWIDTH: 1.4MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23017	699.7	-11.89	32.77	18.73	74.64	Н	3
23095	707.5	-11.39	33.23	19.69	93.11	Н	3
23173	715.3	-12.15	33.14	18.84	76.52	Н	3
23017	699.7	-19.81	32.42	10.46	11.11	V	3
23095	707.5	-19.47	32.60	10.98	12.53	V	3
23173	715.3	-20.21	32.19	9.83	9.61	V	3

#### LTE BAND 12

#### **CHANNEL BANDWIDTH: 3MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23025	700.5	-10.87	32.63	19.61	91.43	Н	3
23095	707.5	-10.31	33.23	20.77	119.40	Н	3
23165	714.5	-10.92	33.21	20.14	103.16	Н	3
23025	700.5	-18.79	32.33	11.39	13.76	V	3
23095	707.5	-18.39	32.60	12.06	16.07	V	3
23165	714.5	-18.98	32.30	11.17	13.09	V	3

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#### **CHANNEL BANDWIDTH: 3MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23025	700.5	-12.02	32.63	18.46	70.16	Н	3
23095	707.5	-11.41	33.23	19.67	92.68	Н	3
23165	714.5	-12.08	33.21	18.98	78.98	Н	3
23025	700.5	-19.94	32.33	10.24	10.56	V	3
23095	707.5	-19.49	32.60	10.96	12.47	V	3
23165	714.5	-20.14	32.30	10.01	10.03	V	3

#### LTE BAND 12

#### **CHANNEL BANDWIDTH: 5MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23035	701.5	-10.88	32.53	19.50	89.02	Н	3
23095	707.5	-10.38	33.23	20.70	117.44	Н	3
23155	713.5	-10.99	33.29	20.15	103.44	Н	3
23035	701.5	-18.80	32.25	11.30	13.50	V	3
23095	707.5	-18.46	32.60	11.99	15.81	V	3
23155	713.5	-19.05	32.39	11.19	13.14	V	3

#### **CHANNEL BANDWIDTH: 5MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23035	701.5	-11.74	32.53	18.64	73.03	Н	3
23095	707.5	-11.25	33.23	19.83	96.12	Н	3
23155	713.5	-11.84	33.29	19.30	85.06	Н	3
23035	701.5	-19.66	32.25	10.44	11.08	V	3
23095	707.5	-19.33	32.60	11.12	12.94	V	3
23155	713.5	-19.90	32.39	10.34	10.80	V	3

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#### LTE BAND 12

#### **CHANNEL BANDWIDTH: 10MHz QPSK**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23060	704.0	-11.46	32.68	19.07	80.78	Н	3
23095	707.5	-10.83	33.23	20.25	105.93	Н	3
23130	711.0	-11.57	33.39	19.67	92.62	Н	3
23060	704.0	-19.38	32.37	10.84	12.13	V	3
23095	707.5	-18.91	32.60	11.54	14.26	V	3
23130	711.0	-19.63	32.56	10.78	11.95	V	3

#### **CHANNEL BANDWIDTH: 10MHz 16QAM**

Channel	Frequency (MHz)	SPA LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)	Polarization (H/V)	LIMIT (W)
23060	704.0	-12.39	32.68	18.14	65.21	Н	3
23095	707.5	-11.90	33.23	19.18	82.79	Н	3
23130	711.0	-12.40	33.39	18.84	76.51	н	3
23060	704.0	-20.31	32.37	9.91	9.79	V	3
23095	707.5	-19.98	32.60	10.47	11.14	V	3
23130	711.0	-20.46	32.56	9.95	9.87	V	3

**REMARKS:** 1. EIRP Output Power (dBm) = SPA LVL (dBm) + Correction Factor (dB).

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<sup>2.</sup> Correction factor (dB) = Free Space Loss + Antenna Factor + Cable Loss



#### 4.2 FREQUENCY STABILITY MEASUREMENT

#### 4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

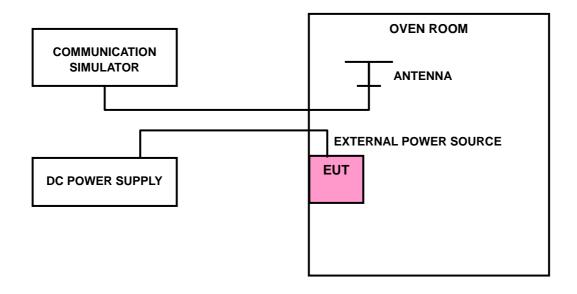
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

#### 4.2.2 TEST PROCEDURE

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}$ 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.

#### 4.2.3 TEST SETUP



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# 4.2.4 TEST RESULTS

#### LTE BAND 4

#### FREQUENCY ERROR VS. VOLTAGE

	1.4			
VOLTAGE (Volts)	FREQUENCY	LIMIT (ppm)		
	Low Channel High Channel			
3.85	0.0014	0.0016	2.5	
3.44	0.0012	0.0014	2.5	
4.4	0.0011	0.0013	2.5	

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	1.4		
TEMP. (℃)	FREQUENCY	LIMIT (ppm)	
	Low Channel	High Channel	
-30	-0.0060	-0.0062	2.5
-20	-0.0056	-0.0057	2.5
-10	-0.0047	-0.0048	2.5
0	-0.0040	-0.0041	2.5
10	-0.0034	-0.0034	2.5
20	-0.0026	-0.0027	2.5
30	-0.0023	-0.0023	2.5
40	-0.0018	-0.0019	2.5
50	-0.0014	-0.0015	2.5
60	-0.0007	-0.0007	2.5



# FREQUENCY ERROR VS. VOLTAGE

	3M		
VOLTAGE (Volts)	FREQUENCY	LIMIT (ppm)	
	Low Channel		
3.85	0.0014	0.0015	2.5
3.44	0.0013	0.0013	2.5
4.4	0.0011	0.0012	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

	3M		
TEMP. (℃)	FREQUENCY	LIMIT (ppm)	
	Low Channel	High Channel	
-30	-0.0065	-0.0064	2.5
-20	-0.0059	-0.0058	2.5
-10	-0.0056	-0.0055	2.5
0	-0.0048	-0.0047	2.5
10	-0.0041	-0.0040	2.5
20	-0.0033	-0.0032	2.5
30	-0.0026	-0.0025	2.5
40	-0.0023	-0.0022	2.5
50	-0.0018	-0.0018	2.5
60	-0.0012	-0.0011	2.5

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#### FREQUENCY ERROR VS. VOLTAGE

	5M		
VOLTAGE (Volts)	VOLTAGE (Volts) FREQUENCY ERROR (ppm)		
	Low Channel		
3.85	0.0017	0.0017	2.5
3.44	0.0012	0.0015	2.5
4.4	0.0012	0.0012	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

	5MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0066	-0.0063	2.5
-20	-0.0061	-0.0058	2.5
-10	-0.0055	-0.0053	2.5
0	-0.0051	-0.0049	2.5
10	-0.0041	-0.0039	2.5
20	-0.0036	-0.0034	2.5
30	-0.0030	-0.0029	2.5
40	-0.0022	-0.0021	2.5
50	-0.0019	-0.0018	2.5
60	-0.0014	-0.0013	2.5

Dongguan Branch



# FREQUENCY ERROR VS. VOLTAGE

	10MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0014	0.0015	2.5
3.44	0.0013	0.0011	2.5
4.4	0.0012	0.0008	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

#### FREQUENCY ERROR vs. TEMPERATURE.

	10MHz		LIMIT (ppm)
TEMP. (℃)	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0061	-0.0063	2.5
-20	-0.0058	-0.0059	2.5
-10	-0.0050	-0.0052	2.5
0	-0.0046	-0.0048	2.5
10	-0.0039	-0.0039	2.5
20	-0.0031	-0.0032	2.5
30	-0.0029	-0.0030	2.5
40	-0.0022	-0.0023	2.5
50	-0.0014	-0.0015	2.5
60	-0.0010	-0.0010	2.5



### FREQUENCY ERROR VS. VOLTAGE

	15MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0015	0.0016	2.5
3.44	0.0013	0.0013	2.5
4.4	0.0012	0.0011	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	15MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0061	-0.0062	2.5
-20	-0.0056	-0.0057	2.5
-10	-0.0049	-0.0050	2.5
0	-0.0043	-0.0043	2.5
10	-0.0036	-0.0037	2.5
20	-0.0033	-0.0034	2.5
30	-0.0029	-0.0029	2.5
40	-0.0024	-0.0024	2.5
50	-0.0018	-0.0019	2.5
60	-0.0015	-0.0015	2.5



### FREQUENCY ERROR VS. VOLTAGE

	20MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0019	0.0013	2.5
3.44	0.0012	0.0013	2.5
4.4	0.0008	0.0011	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	20MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0064	-0.0064	2.5
-20	-0.0059	-0.0060	2.5
-10	-0.0052	-0.0053	2.5
0	-0.0044	-0.0045	2.5
10	-0.0038	-0.0038	2.5
20	-0.0031	-0.0032	2.5
30	-0.0029	-0.0029	2.5
40	-0.0022	-0.0022	2.5
50	-0.0018	-0.0018	2.5
60	-0.0013	-0.0013	2.5



### LTE BAND 12

# FREQUENCY ERROR VS. VOLTAGE

	1.4MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0018	0.0019	2.5
3.44	0.0016	0.0015	2.5
4.4	0.0010	0.0012	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	1.4MHz		
TEMP. (°C)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0064	-0.0065	2.5
-20	-0.0058	-0.0059	2.5
-10	-0.0053	-0.0054	2.5
0	-0.0047	-0.0048	2.5
10	-0.0040	-0.0041	2.5
20	-0.0032	-0.0033	2.5
30	-0.0029	-0.0030	2.5
40	-0.0024	-0.0024	2.5
50	-0.0017	-0.0017	2.5
60	-0.0012	-0.0012	2.5

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### FREQUENCY ERROR VS. VOLTAGE

	3MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0018	0.0017	2.5
3.44	0.0012	0.0013	2.5
4.4	0.0010	0.0010	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	3MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0063	-0.0062	2.5
-20	-0.0060	-0.0060	2.5
-10	-0.0056	-0.0055	2.5
0	-0.0048	-0.0047	2.5
10	-0.0043	-0.0042	2.5
20	-0.0036	-0.0035	2.5
30	-0.0029	-0.0028	2.5
40	-0.0023	-0.0023	2.5
50	-0.0019	-0.0018	2.5
60	-0.0013	-0.0012	2.5



# FREQUENCY ERROR VS. VOLTAGE

	5MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0018	0.0018	2.5
3.44	0.0014	0.0015	2.5
4.4	0.0012	0.0012	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	5MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0064	-0.0061	2.5
-20	-0.0061	-0.0058	2.5
-10	-0.0055	-0.0053	2.5
0	-0.0049	-0.0047	2.5
10	-0.0042	-0.0040	2.5
20	-0.0038	-0.0036	2.5
30	-0.0031	-0.0029	2.5
40	-0.0025	-0.0024	2.5
50	-0.0020	-0.0019	2.5
60	-0.0016	-0.0015	2.5

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### FREQUENCY ERROR VS. VOLTAGE

	10MHz		
VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
3.85	0.0017	0.0018	2.5
3.44	0.0013	0.0015	2.5
4.4	0.0012	0.0013	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.44Vdc to 4.4Vdc.

# FREQUENCY ERROR vs. TEMPERATURE.

	10MHz		
TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0060	-0.0061	2.5
-20	-0.0053	-0.0055	2.5
-10	-0.0048	-0.0049	2.5
0	-0.0042	-0.0043	2.5
10	-0.0035	-0.0036	2.5
20	-0.0029	-0.0030	2.5
30	-0.0024	-0.0025	2.5
40	-0.0019	-0.0019	2.5
50	-0.0017	-0.0018	2.5
60	-0.0012	-0.0012	2.5

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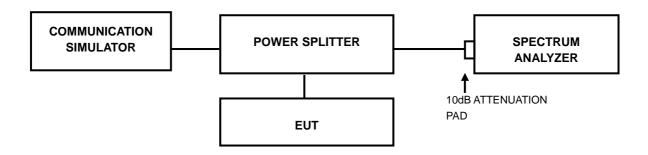


### 4.3 OCCUPIED BANDWIDTH MEASUREMENT

### 4.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

# 4.3.2 TEST SETUP



### 4.3.3 TEST PROCEDURES

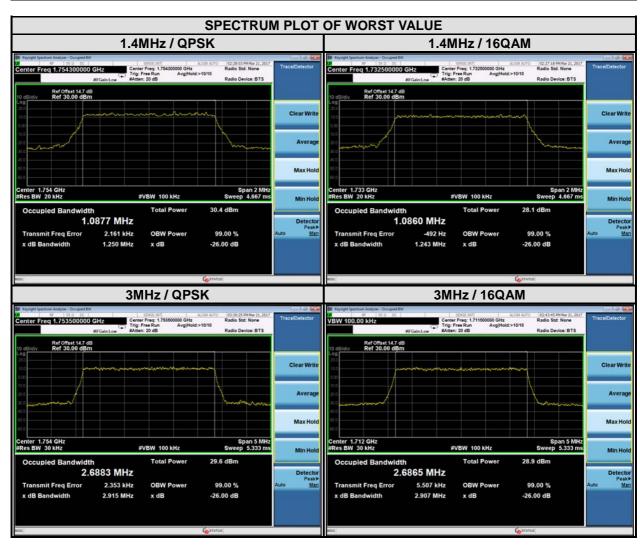
- a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



# 4.3.4 TEST RESULTS

### LTE BAND 4

CHA	NNEL BAND	WIDTH: 1.4N	ИHz	CHANNEL BANDWIDTH: 3MHz				
CHANNEL	Frequency		CUPIED Ith (MHz)	CHANNEL	Frequency	99% OCCUPIED Bandwidth (MHz)		
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM	
19957	1710.7	1.09	1.09	19965	1711.5	2.69	2.69	
20175	1732.5	1.09	1.09	20175	1732.5	2.69	2.68	
20393	1754.3	1.09	1.09	20385	1753.5	2.69	2.68	



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#### LTE BAND 4

СН	ANNEL BAND	WIDTH: 5M	Hz	Cł	HANNEL BAND	WIDTH: 10M	Hz
CHANNEL	Frequency	99% OCCUPIED Bandwidth (MHz)		CHANNEL	Frequency	99% OCCUPIED Bandwidth (MHz)	
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM
19975	1712.5	4.49	4.48	20000	1715	8.95	8.93
20175	1732.5	4.48	4.47	20175	1732.5	8.95	8.95
20375	1752.5	4.49	4.48	20350	1750	8.94	8.94



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### LTE BAND 4

СН	CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz				
CHANNEL	FREQUENC BAND		CUPIED OTH (MHz)	CHANNEL	FREQUENCY		99% OCCUPIED BANDWIDTH (MHz)		
	Y (MHz)	(MHz) QPSK 16QAM	16QAM		(MHz)	QPSK	16QAM		
20025	1717.5	13.42	13.44	20050	1720	17.90	17.89		
20175	1732.5	13.38	13.39	20175	1732.5	17.90	17.83		
20325	1747.5	13.43	13.42	20300	1745	17.90	17.88		





### LTE BAND 12

CHA	NNEL BAND	WIDTH: 1.4N	ИHz	CHANNEL BANDWIDTH: 3MHz				
CHANNEL	FREQUENC		CUPIED OTH (MHz)	CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		
	Y (MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM	
23017	699.7	1.08	1.09	23025	700.5	2.68	2.68	
23095	707.5	1.09	1.08	23095	707.5	2.69	2.69	
23173	715.3	1.09	1.08	23165	714.5	2.69	2.68	

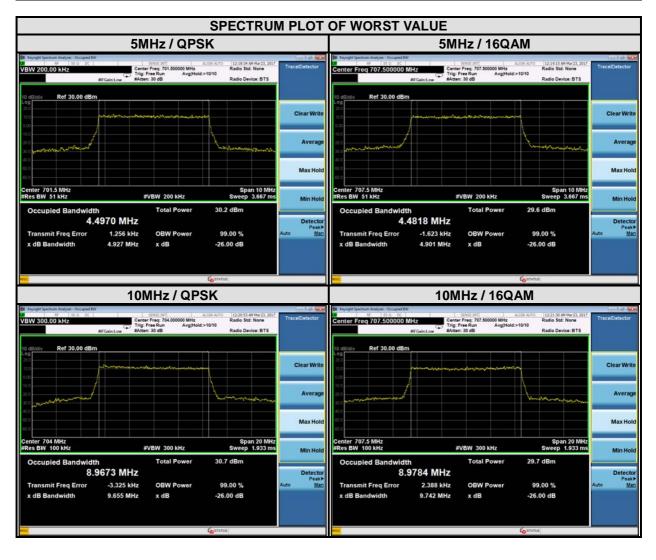


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#### LTE BAND 12

СН	ANNEL BAND	WIDTH: 5M	Hz	CI	CHANNEL BANDWIDTH: 10MHz				
CHANNEL	Frequency		CUPIED Ith (MHz)	CHANNEL	Frequency	99% OCCUPIED Bandwidth (MHz)			
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM		
23035	701.5	4.50	4.47	23060	704	8.97	8.94		
23095	707.5	4.50	4.48	23095	707.5	8.96	8.98		
23155	713.5	4.48	4.48	23130	711	8.93	8.93		



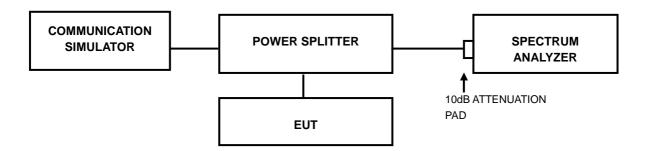


### 4.4 PEAK TO AVERAGE RATIO

# 4.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

# 4.4.2 TEST SETUP



### 4.4.3 TEST PROCEDURES

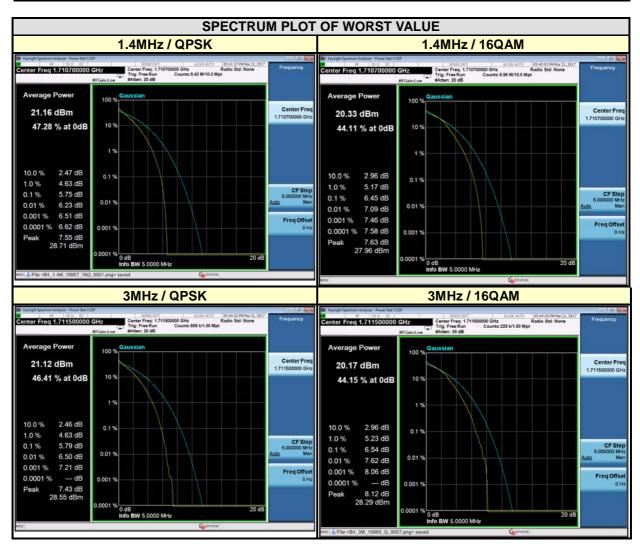
- 1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
- 2. Set the number of counts to a value that stabilizes the measured CCDF curve;
- 3. Record the maximum PAPR level associated with a probability of 0.1%.



# 4.4.4 TEST RESULTS

#### LTE BAND 4

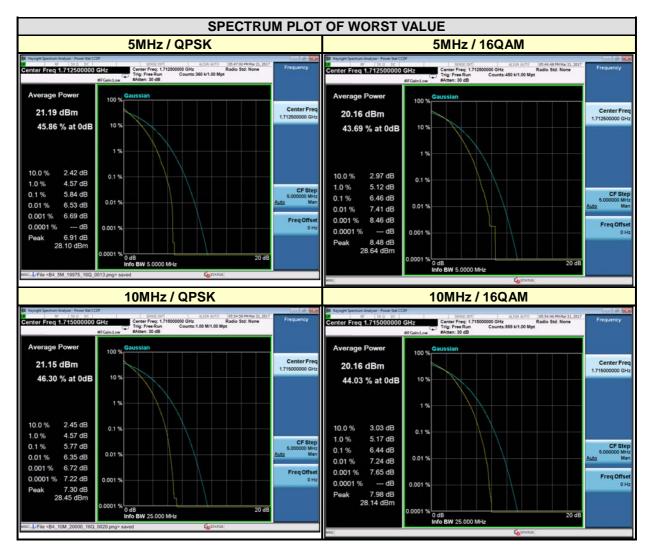
СНА	NNEL BANDW	IDTH: 1.4M	Hz	CHANNEL BANDWIDTH: 3MHz				
CHANNEL	FREQUENCY	PEAK TO		CHANNEL	FREQUENCY	PEAK TO AVERAGE RATIO (dB)		
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM	
19957	1710.7	5.75	6.45	19965	1711.5	5.79	6.54	
20175	1732.5	5.11	5.94	20175	1732.5	5.28	5.95	
20393	1754.3	5.37	6.05	20385	1753.5	5.55	6.27	



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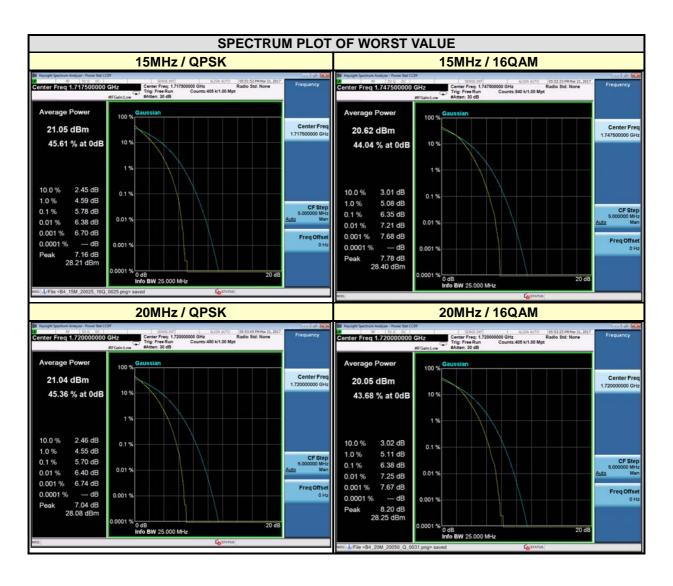
CH	ANNEL BANDV	VIDTH: 5MI	Ηz	СН	ANNEL BANDV	VIDTH: 10N	/IHz
CHANNEL	FREQUENCY	PEAK TO RATIO	AVERAGE (dB)	CHANNEL	FREQUENCY	PEAK TO AVERAGE RATIO (dB)	
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM
19975	1712.5	5.84	6.46	20000	1715	5.77	6.44
20175	1732.5	5.44	6.09	20175	1732.5	5.24	6.02
20375	1752.5	5.62	6.35	20350	1750	5.68	6.32



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CHA	NNEL BANDW	IDTH: 15M	Hz	CHANNEL BANDWIDTH: 20MHz				
CHANNEL	FREQUENCY	PEAK TO RATIO		CHANNEL	FREQUENCY	PEAK TO AVERAGE RATIO (dB)		
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM	
20025	1717.5	5.78	6.34	20050	1720	5.70	6.38	
20175	1732.5	5.35	6.08	20175	1732.5	5.38	6.16	
20325	1747.5	5.69	6.35	20300	1745	5.63	6.32	

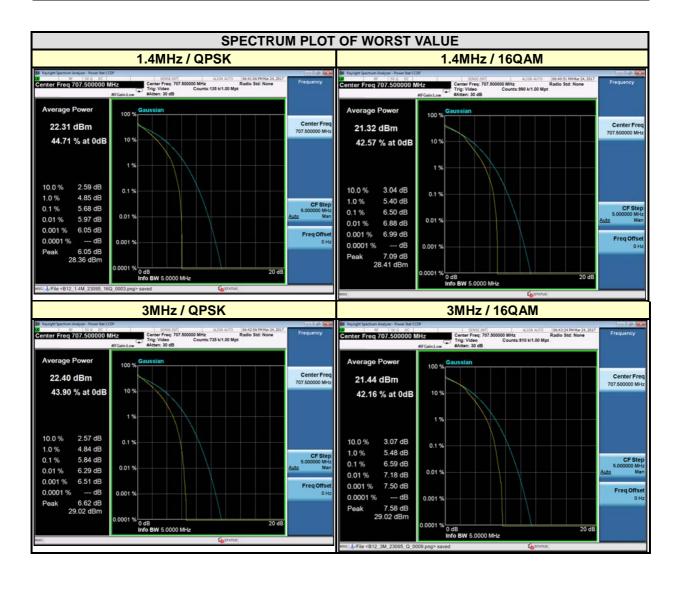


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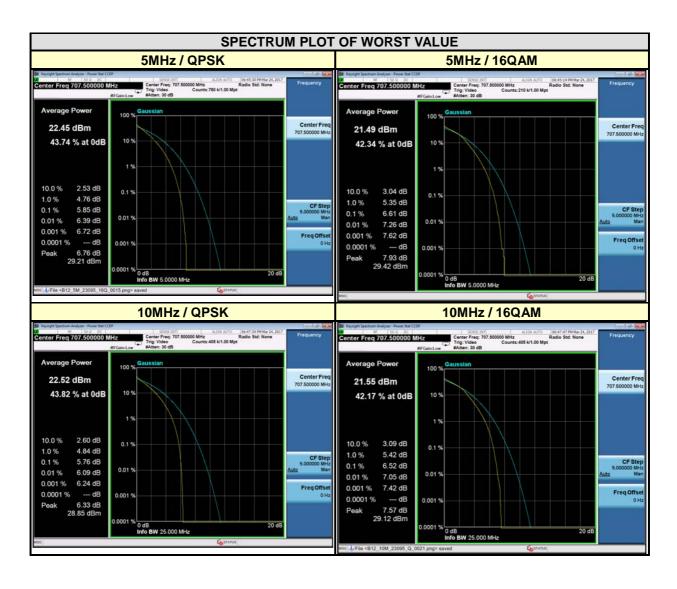
#### LTE BAND 12

CHA	NNEL BANDW	IDTH: 1.4M	lHz	CHANNEL BANDWIDTH: 3MHz				
CHANNEL	FREQUENCY	PEAK TO RATIO	AVERAGE D (dB)	CHANNEL	FREQUENCY	I RATIO (d		
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM	
23017	699.7	5.45	6.27	23025	700.5	5.60	6.35	
23095	707.5	5.68	6.50	23095	707.5	5.84	6.59	
23173	715.3	5.09	5.95	23165	714.5	5.40	6.16	





CH	ANNEL BANDV	VIDTH: 5MI	-lz	СН	ANNEL BANDV	VIDTH: 10N	1Hz
CHANNEL	FREQUENCY	PEAK TO RATIO	AVERAGE D (dB)	CHANNEL	FREQUENCY PEAK TO A		AVERAGE O (dB)
	(MHz)	QPSK	16QAM		(MHz)	QPSK	16QAM
23035	701.5	5.64	6.37	23060	704	5.69	6.42
23095	707.5	5.85	6.61	23095	707.5	5.76	6.52
23155	713.5	5.60	6.38	23130	711	5.65	6.44



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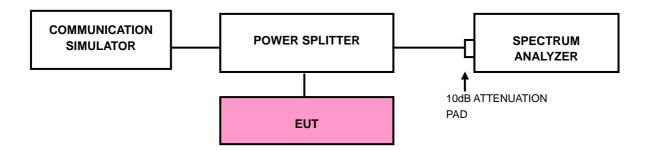
### **BAND EDGE MEASUREMENT**

# 4.5.1 LIMITS OF BAND EDGE MEASUREMENT

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. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

# 4.5.2 TEST SETUP



Dongguan Branch



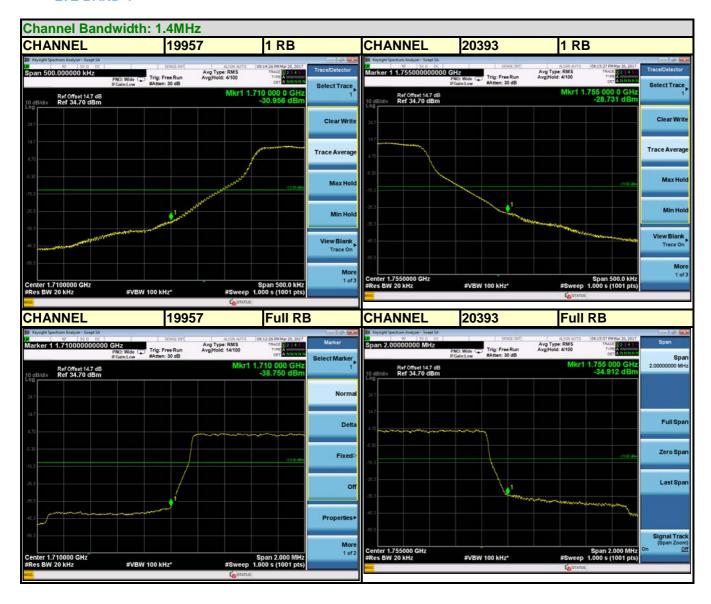
#### 4.5.3 TEST PROCEDURES

- a. The EUT was set up for the maximum peak power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 2 channels (low and high operational frequency range.).
- b. The band edge measurement used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- c. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20kHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz)
- d. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 30kHz and VBW of the spectrum is 100kHz. (LTE bandwidth 3MHz)
- e. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 50kHz and VBW of the spectrum is 200kHz. (LTE bandwidth 5MHz)
- f. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz. (LTE bandwidth 10MHz)
- g. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 15MHz)
- h. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 200kHz and VBW of the spectrum is 1MHz. (LTE bandwidth 20MHz)
- i. Record the max trace plot into the test report.



# 4.5.4 TEST RESULTS

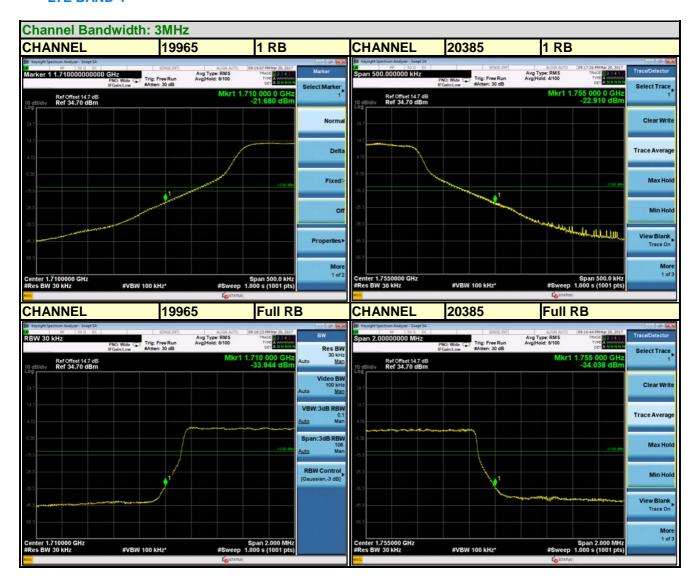
### LTE BAND 4



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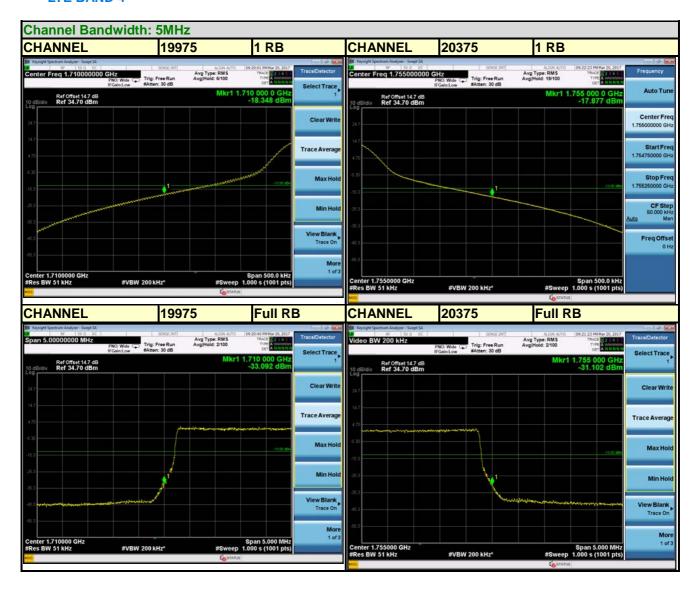
### LTE BAND 4



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### LTE BAND 4



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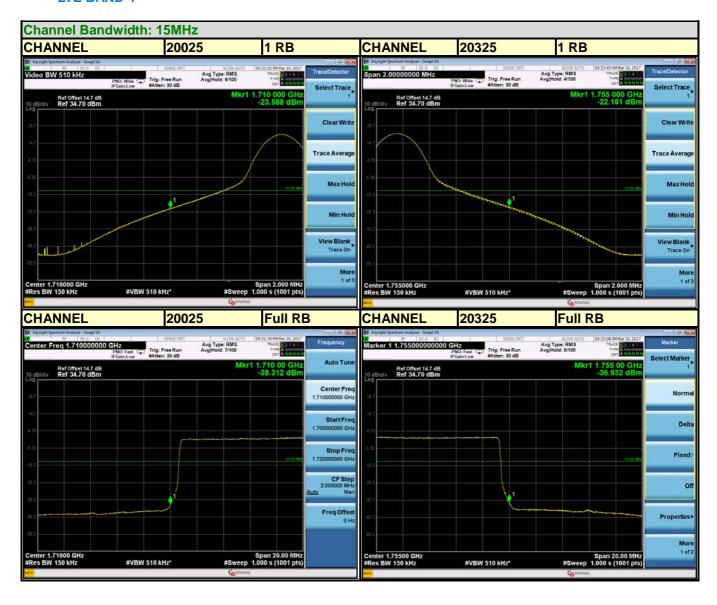
### LTE BAND 4



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### LTE BAND 4



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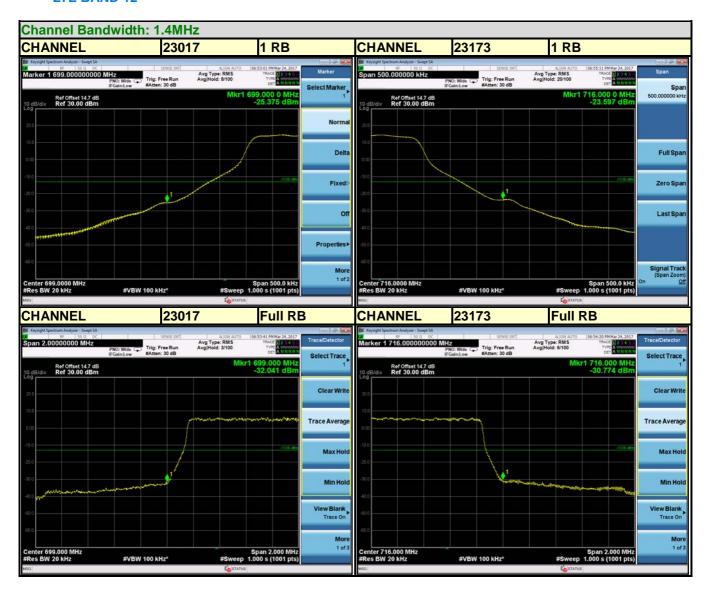
### LTE BAND 4



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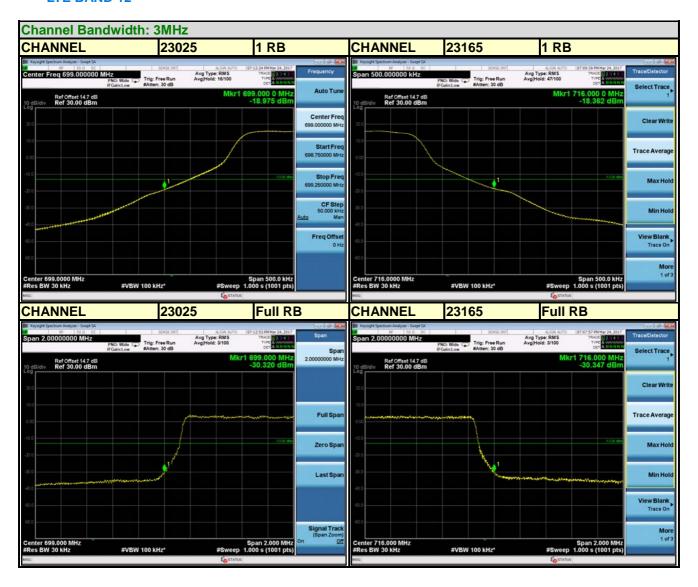
### LTE BAND 12



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### LTE BAND 12



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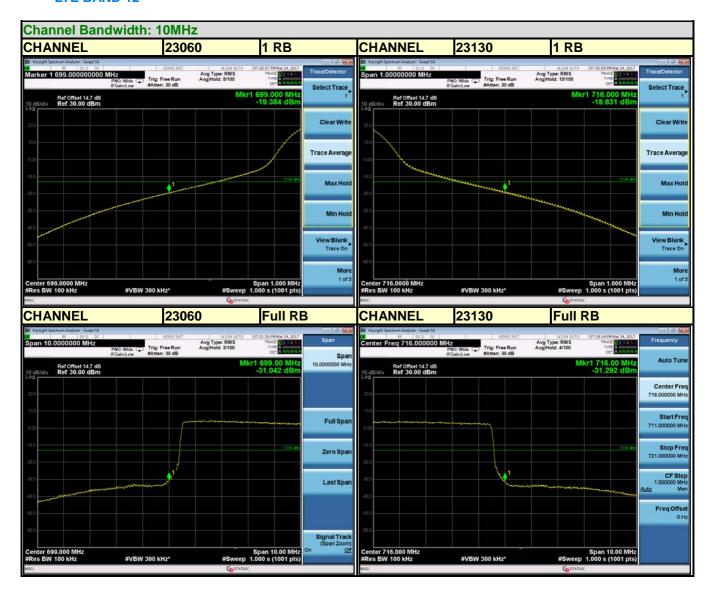
# LTE BAND 12



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### LTE BAND 12



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### 4.6 CONDUCTED SPURIOUS EMISSIONS

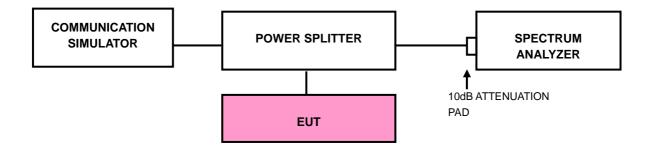
### 4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to -13dBm

### 4.6.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at middle operational frequency range.
- b. Measuring frequency range is from 30 MHz to 19.1GHz for LTE Band 4 and 30 MHz to 9GHz for LTE Band 12. 10dB attenuation pad is connected with spectrum.
   RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

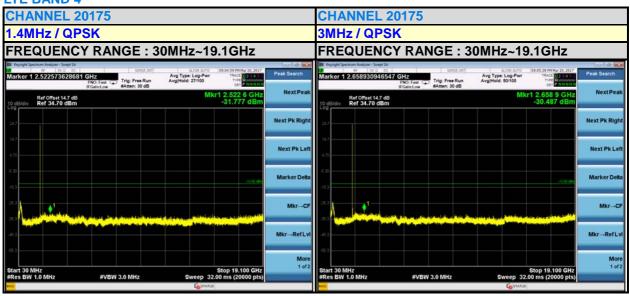
#### 4.6.3 TEST SETUP



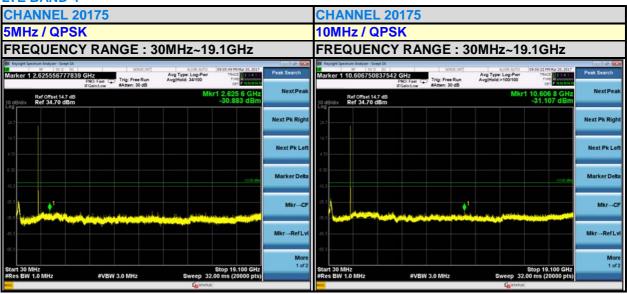


# 4.6.4 TEST RESULTS

# LTE BAND 4



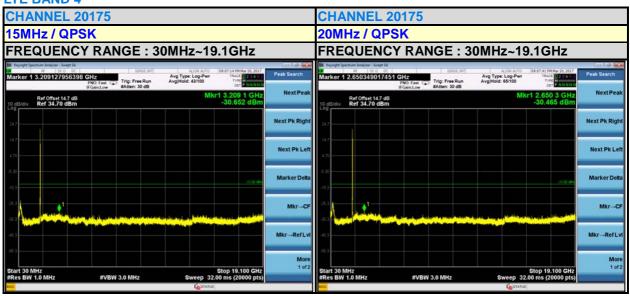
# LTE BAND 4



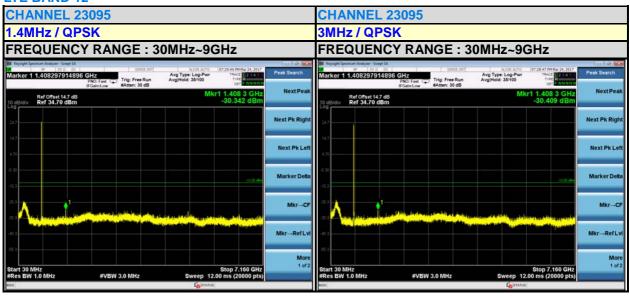
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# LTE BAND 4



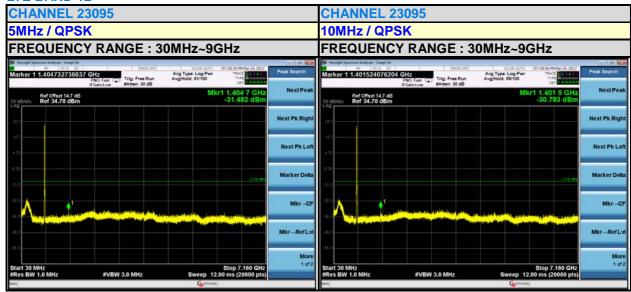
### LTE BAND 12



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# LTE BAND 12



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### 4.7 RADIATED EMISSION MEASUREMENT

### 4.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to -13dBm

#### 4.7.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c. EIRP = Output power level of S.G TX cable loss + Antenna gain of substitution horn.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power 2.15dBi.

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

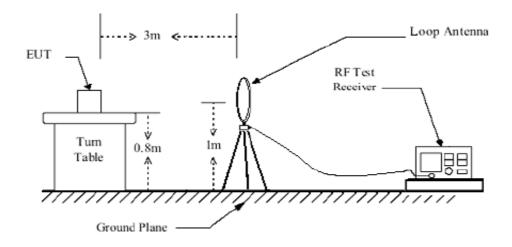
### 4.7.3 DEVIATION FROM TEST STANDARD

No deviation

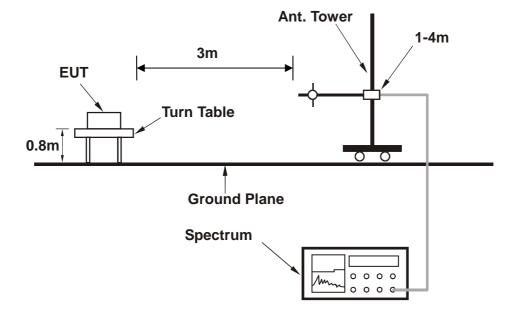


# 4.7.4 TEST SETUP

# <Below 30MHz>



# <Above 30MHz>



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

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## 4.7.5 TEST RESULTS

#### **BELOW 1GHz WORST-CASE DATA**

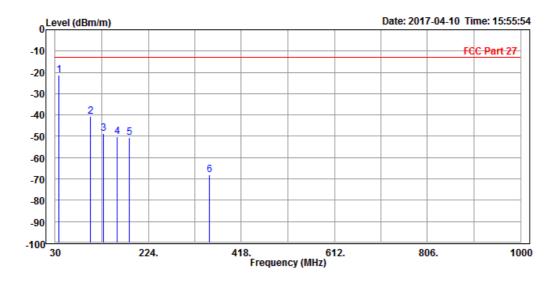
9 KHz – 30 KHz data: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

## 30 MHz – 1GHz data:

#### LTE Band 4:

MODE	TX channel 20175	FREQUENCY RANGE	Below 1000MHz					
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter					
TESTED BY	Tony Zou	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	-							
_	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
		,		,		,		
1 PP	37.760	-21.16	-33.40	-13.00	-8.16	12.24	Peak	Horizontal
2	102.750	-40.67	-28.94	-13.00	-27.67	-11.73	Peak	Horizontal
3	130.880	-48.56	-32.01	-13.00	-35.56	-16.55	Peak	Horizontal
4	159.010	-50.08	-31.55	-13.00	-37.08	-18.53	Peak	Horizontal
5	184.230	-50.73	-33.08	-13.00	-37.73	-17.65	Peak	Horizontal
6	352.040	-68.02	-55.95	-13.00	-55.02	-12.07	Peak	Horizontal

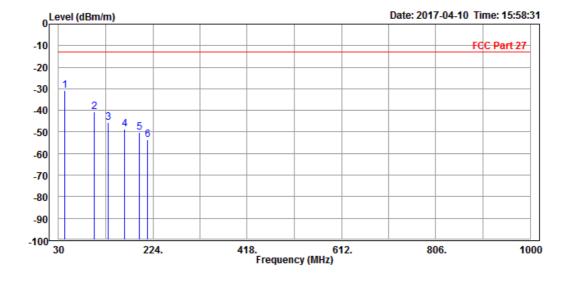


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MODE	TX channel 20175	FREQUENCY RANGE	Below 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level	Read Level	Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	42.610	-30.81	-28.54	-13.00	-17.81	-2.27	Peak	Vertical
2	102.750	-40.75	-29.71	-13.00	-27.75	-11.04	Peak	Vertical
3	131.850	-45.45	-33.43	-13.00	-32.45	-12.02	Peak	Vertical
4	165.800	-48.59	-33.93	-13.00	-35.59	-14.66	Peak	Vertical
5	196.840	-50.27	-39.23	-13.00	-37.27	-11.04	Peak	Vertical
6	213.330	-53.61	-42.74	-13.00	-40.61	-10.87	Peak	Vertical



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#### **ABOVE 1GHz**

**Note:** For higher frequency, the emission is too low to be detected.

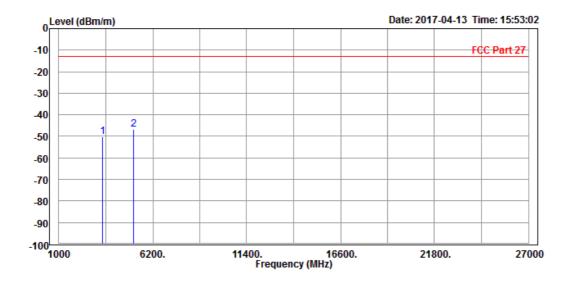
## LTE BAND 4

**CHANNEL BANDWIDTH: 1.4MHz / QPSK** 

## **CH 19957**

MODE	TX channel 19957	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	TESTED BY Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

		Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		3418.000 5130.000							Horizontal Horizontal

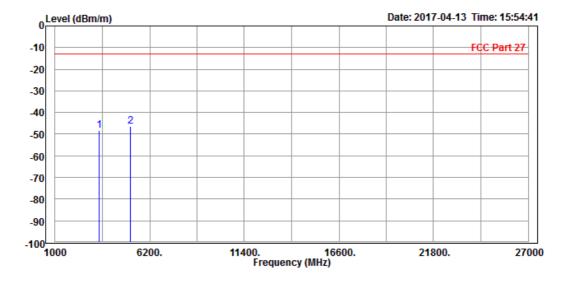


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MODE	TX channel 19957	FREQUENCY RANGE	Above 1000MHz			
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter			
TESTED BY	Tony Zou					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 2 PP	3418.000 5130.000							Vertical Vertical



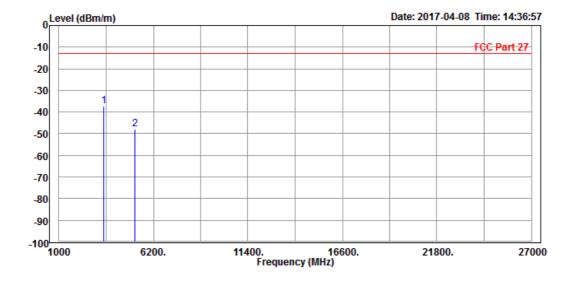
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



#### CH 20175

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz			
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter			
TESTED BY Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						

				Read	Limit	0ver			
		Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	_								
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3456.000	-37.21	-39.20	-13.00	-24.21	1.99	Peak	Horizontal
2		5197.500	-47.98	-56.59	-13.00	-34.98	8.61	Peak	Horizontal

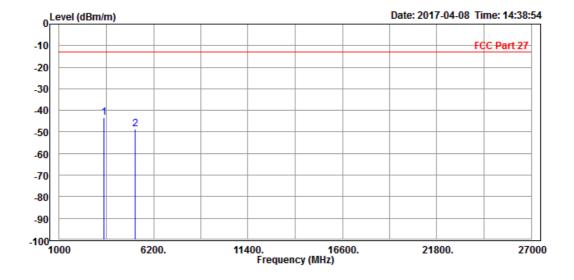


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MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	_			Limit				
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
								·
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3456.000	-43.43	-45.94	-13.00	-30.43	2.51	Peak	Vertical
2	5197.500	-48.56	-56.54	-13.00	-35.56	7.98	Peak	Vertical



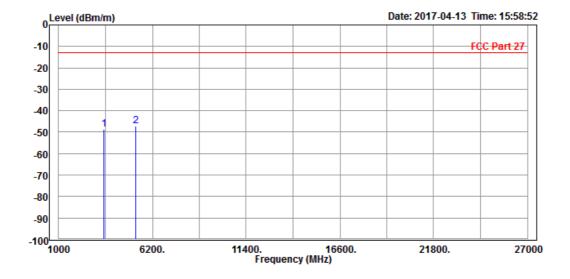
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



#### CH 20393

MODE	TX channel 20393	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	TESTED BY Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	•							
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
		,		,		,		
1	3496.000	18 53	50 68	13 00	35 53	2 15	Dook	Horizontal
1	3430.000	-40.55	-30.00	-13.00	-55.55	2.13	reak	HOPIZOHCAI
2 P	P 5262.000	-47.13	-55.81	-13.00	-34.13	8.68	Peak	Horizontal

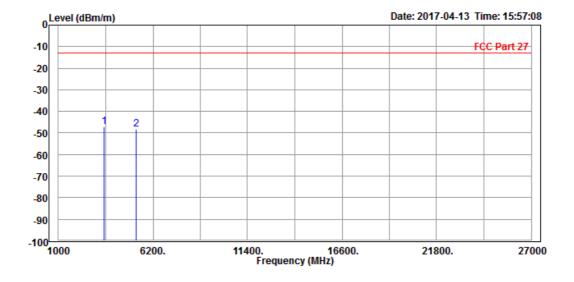


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MODE	TX channel 20393	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	TESTED BY Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PF	3496.000 5262.000							Vertical Vertical



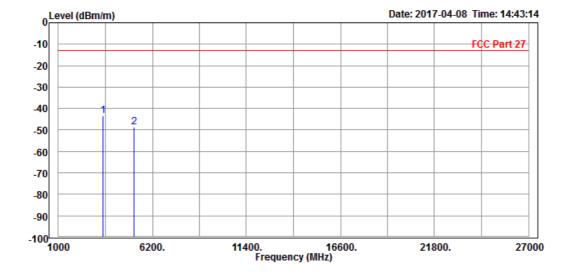
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



## **CHANNEL BANDWIDTH: 3MHz / QPSK**

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz  DC 5V from adapter				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER					
TESTED BY	Tony Zou	Tony Zou					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

				Read	Limit	0ver			
		Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
		-							
	_	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
							•		
1	PP	3456.000	-43.25	-45.24	-13.00	-30.25	1.99	Peak	Horizontal
2		5197.500	-48.64	-57.25	-13.00	-35.64	8.61	Peak	Horizontal



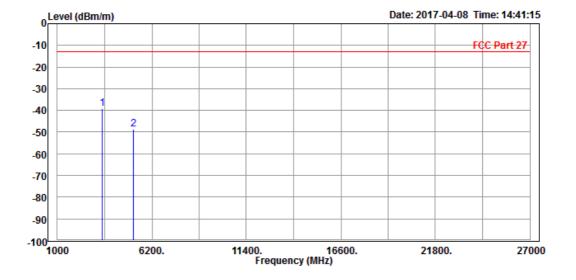
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080

Email: <u>customerservice.dg@cn.bureauveritas.com</u>



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Enoa	Lovel		Limit		Factor	Remark	Pol/Phase
	rreq	revei	revei	Line	LIMIT	ractor	Kelliark	ro1/rnase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PF	3456.000	-39.01	-41.52	-13.00	-26.01	2.51	Peak	Vertical
2	5197.500	-48.79	-56.77	-13.00	-35.79	7.98	Peak	Vertical



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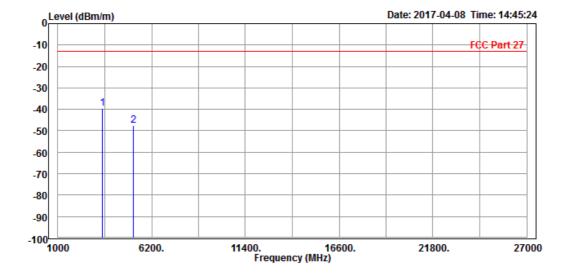
Email: customerservice.dg@cn.bureauveritas.com



## **CHANNEL BANDWIDTH: 5MHz / QPSK**

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	TESTED BY Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
		,		,		,		
1 DD 3/	456.000	-39 67	_/11_66	_13_00	-26 67	1 99	Dook	Horizontal
111 3	+50.000	-33.07	41.00	-13.00	-20.07	1.00	I Cak	noi izontai
2 53	197.500	-47.71	-56.32	-13.00	-34.71	8.61	Peak	Horizontal

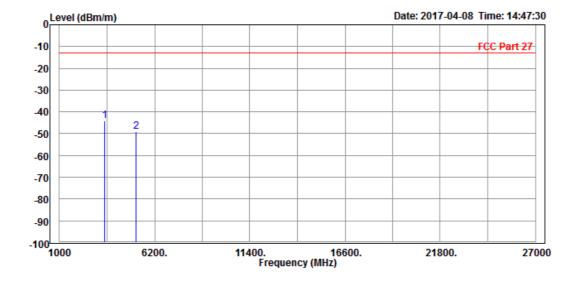


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MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
	3456.000 5197.500							Vertical Vertical



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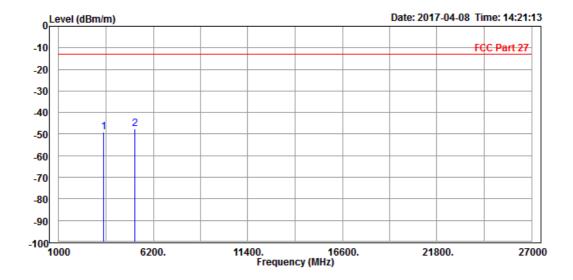
Email: customerservice.dg@cn.bureauveritas.com



## **CHANNEL BANDWIDTH: 10MHz/QPSK**

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz					
ENVIRONMENTAL CONDITIONS	123deg C 60%RH		DC 5V from adapter					
TESTED BY	Tony Zou	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								

	Freq	Level		Limit Over Line Limit	Factor	Remark	Pol/Phase	
-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
	3456.000 5197.500							Horizontal Horizontal

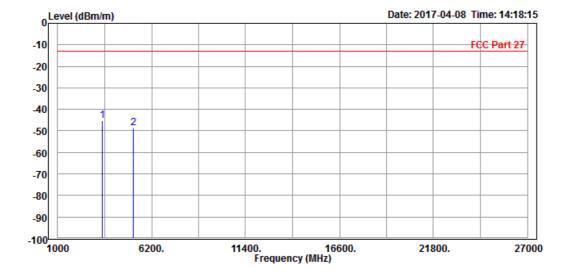


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MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3456.000 5197.500							Vertical Vertical



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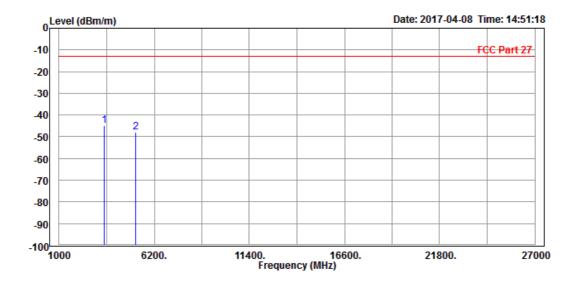
 $\textbf{Email:} \ \underline{\texttt{customerservice.dg@cn.bureauveritas.com}}$ 



## **CHANNEL BANDWIDTH: 15MHz/QPSK**

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz					
ENVIRONMENTAL CONDITIONS	123deg C 60%RH		DC 5V from adapter					
TESTED BY	Tony Zou	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								

				Read	Limit	0ver			
		Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
	1 PP	3456.000	-44.86	-46.85	-13.00	-31.86	1.99	Peak	Horizontal
1	2	5197.500	-47.98	-56.59	-13.00	-34.98	8.61	Peak	Horizontal

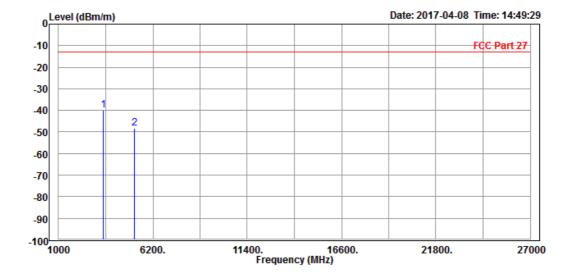


Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

		Freq	Level		Limit Line		Factor	Remark	Pol/Phase	
	-	MHz	dBm/m	dBm	dBm/m	——dB	dB/m			
1		3456.000 5197.500							Vertical Vertical	



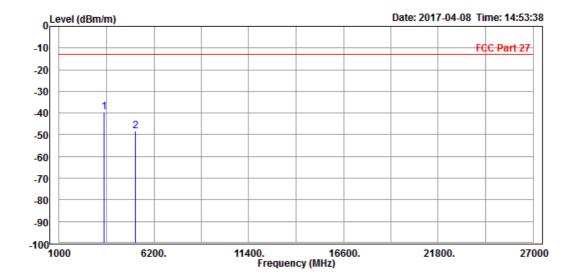
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



## **CHANNEL BANDWIDTH: 20MHz / QPSK**

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

				Read	Limit	0ver			
		Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 F	р	3456.000	-39.64	-41.63	-13.00	-26.64	1.99	Peak	Horizontal
2		5197.500	-48.21	-56.82	-13.00	-35.21	8.61	Peak	Horizontal



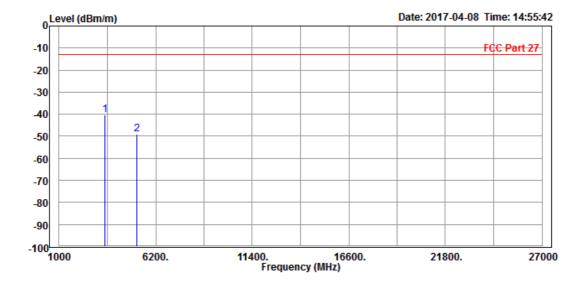
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080

Email: <u>customerservice.dg@cn.bureauveritas.com</u>



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	_			Limit				
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
-								
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3456.000	-40.32	-42.83	-13.00	-27.32	2.51	Peak	Vertical
2	5197.500	-48.96	-56.94	-13.00	-35.96	7.98	Peak	Vertical





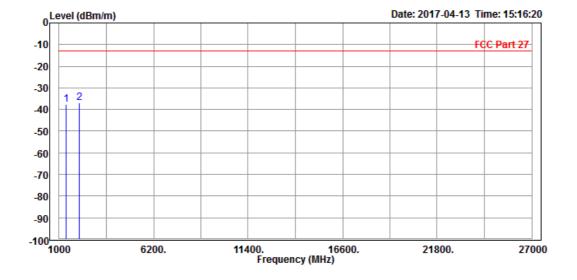
#### LTE BAND 12

#### **CHANNEL BANDWIDTH: 1.4MHz/QPSK**

## CH 23017

MODE	TX channel 23017	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	Tony Zou					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		_
1 2 PF	1390.000							Horizontal Horizontal

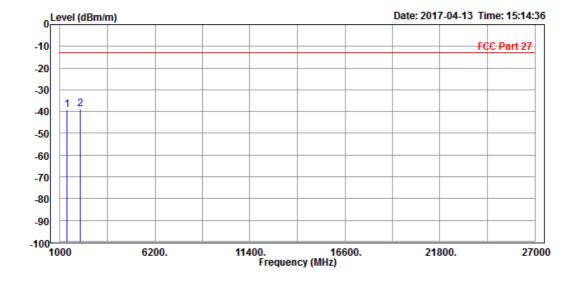


Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



MODE	TX channel 23017	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

		Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1390.000 2092.000							Vertical Vertical



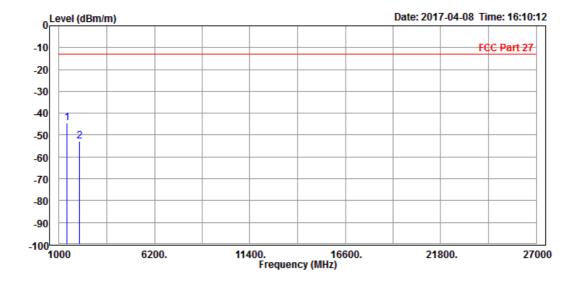
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



#### CH 23095

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
_								
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1416.000	-44.44	-37.72	-13.00	-31.44	-6.72	Peak	Horizontal
2	2122.500	-52.74	-50.81	-13.00	-39.74	-1.93	Peak	Horizontal



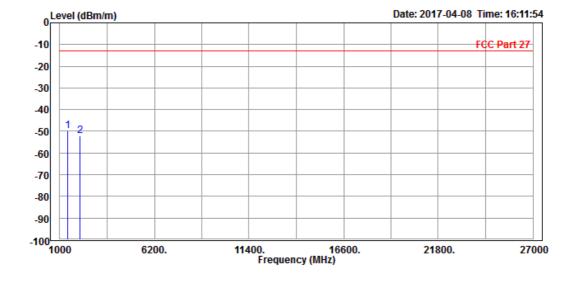
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080

 $\textbf{Email:} \ \underline{\texttt{customerservice.dg@cn.bureauveritas.com}}$ 



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou						
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1416.000 2122.500							Vertical Vertical



Tel: +86 769 8593 5656 Fax: +86 769 8593 1080

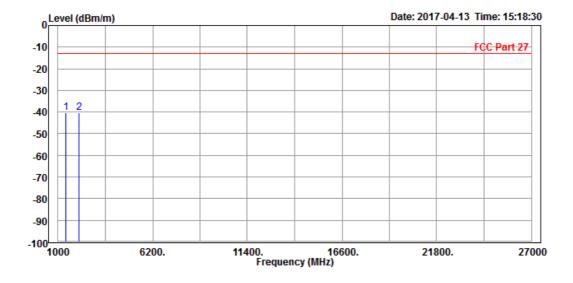
 $\textbf{Email:} \ \underline{\texttt{customerservice.dg@cn.bureauveritas.com}}$ 



#### CH 23173

MODE	TX channel 23173	FREQUENCY RANGE	Above 1000MHz			
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter			
TESTED BY	Tony Zou	ony Zou				
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
	1416.000 2144.000							Horizontal Horizontal

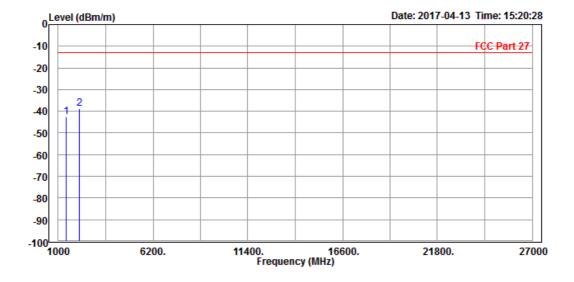


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MODE	TX channel 23173	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

		Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1		1416.000 2144.000							Vertical Vertical



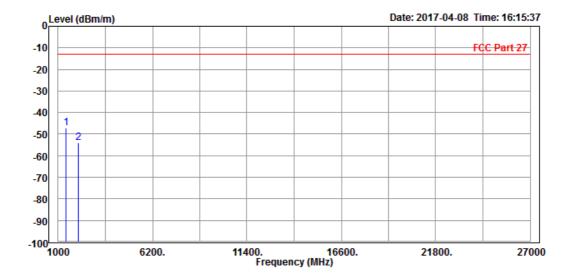
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## **CHANNEL BANDWIDTH: 3MHz / QPSK**

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

		Freq	Level		Limit Line		Factor	Remark	Pol/Phase
	-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 2		1416.000 2122.500							Horizontal Horizontal



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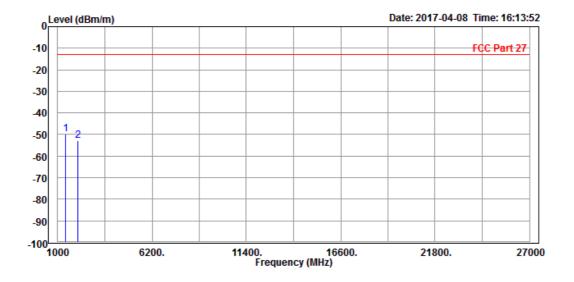


1 2

# Test Report No.: RF170324W002-5

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz			
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter			
TESTED BY	Tony Zou	ony Zou				
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M						

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
PP	1416.000							Vertical Vertical



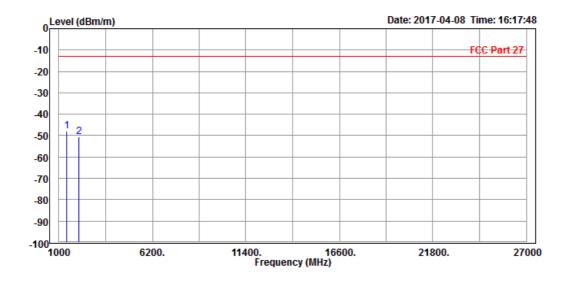
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



## **CHANNEL BANDWIDTH: 5MHz / QPSK**

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
		•		•		•		
1 PP	1416.000	-47.84	-41.12	-13.00	-34.84	-6.72	Peak	Horizontal
2	2122.500	-50.69	-48.76	-13.00	-37.69	-1.93	Peak	Horizontal



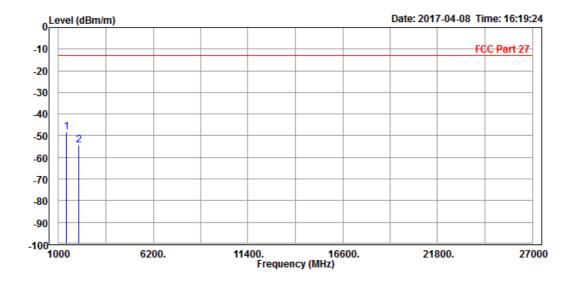
Tel: +86 769 8593 5656 Fax: +86 769 8593 1080

Email: <u>customerservice.dg@cn.bureauveritas.com</u>



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

	Freq	Level		Limit Line		Factor	Remark	Pol/Phase
-	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
	1416.000 2122.500							Vertical Vertical



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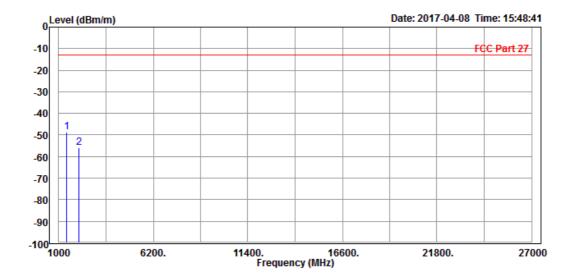
 $\textbf{Email:} \ \underline{\text{customerservice.dg@cn.bureauveritas.com}}$ 



## **CHANNEL BANDWIDTH: 10MHz/QPSK**

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz			
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter			
TESTED BY	Tony Zou					
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M						

			Read	Limit	0ver			
	Freq	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
		,		,		,		
1 DD	1416.000	10 00	12 10	13 00	35 93	6 72	Dook	Horizontal
T 1.1	1410.000	-40.02	-42.10	-13.00	-55.02	-0.72	reak	HOPIZOHCAI
2	2122.500	-55.86	-53.93	-13.00	-42.86	-1.93	Peak	Horizontal

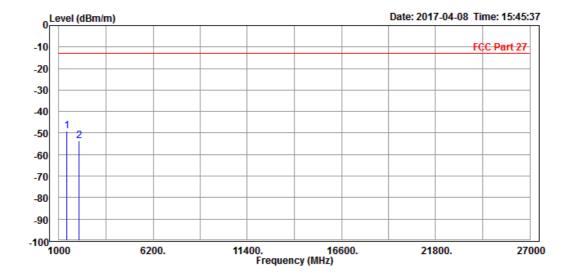


Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz				
ENVIRONMENTAL CONDITIONS	23deg. C, 60%RH	INPUT POWER	DC 5V from adapter				
TESTED BY	Tony Zou	ony Zou					
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							

Freq	Level		Limit Line		Factor	Remark	Pol/Phase
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
 1416.000 2122.500							Vertical Vertical



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## 5 INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Shenzhen Co., Ltd. Dongguan Branch, were founded in 2002 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

## **Dongguan EMC/RF Lab:**

Tel: +86-769-85935656 Fax: +86-769-85931080

Email: <u>customerservice.dg@cn.bureauveritas.com</u>

Web Site: www.adt.com.tw

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

Tel: +86 769 8593 5656 Fax: +86 769 8593 1080



# 6 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.

---END---

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