



Test Report No.: RF191217W002-3



FCC TEST REPORT (PART 27)



Applicant:	Gosuncn Technology Group Co., Ltd.
Address:	6F, 2819 KaiChuang Blvd., Science Town, Huangpu District, Guangzhou City, Guangdong, China.

Manufacturer or Supplier:	Gosuncn Technology Group Co., Ltd.
Address:	6F, 2819 KaiChuang Blvd., Science Town, Huangpu District, Guangzhou City, Guangdong, China.
Product:	Wearable
Brand Name:	GOSUNCN
Model Name:	GT105
FCC ID:	2APNR-GT105
Date of tests:	Dec. 28, 2019 ~ Jan. 07, 2020

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

- FCC Part 27, Subpart C, L 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 Alex Chen Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Jan. 08, 2020	 Date: Jan. 08, 2020

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



TABLE OF CONTENTS

RELEASE CONTROL RECORD 4

1 SUMMARY OF TEST RESULTS 5

1.1 MEASUREMENT UNCERTAINTY 5

1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION..... 7

2.1 GENERAL DESCRIPTION OF EUT 7

2.2 CONFIGURATION OF SYSTEM UNDER TEST 10

2.3 DESCRIPTION OF SUPPORT UNITS11

2.4 DESCRIPTION OF TEST MODES.....11

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS 13

3 TEST TYPES AND RESULTS 14

3.1 OUTPUT POWER MEASUREMENT 14

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 14

3.1.2 TEST PROCEDURES 14

3.1.3 TEST SETUP 15

3.1.4 TEST RESULTS 16

3.2 FREQUENCY STABILITY MEASUREMENT 25

3.2.1 LIMITS OF FREQUENCY STABILIIY MEASUREMENT 25

3.2.2 TEST PROCEDURE 25

3.2.3 TEST SETUP 25

3.2.4 TEST RESULTS 26

3.3 OCCUPIED BANDWIDTH MEASUREMENT 28

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT 28

3.3.2 TEST SETUP 28

3.3.3 TEST PROCEDURES 28

3.3.4 TEST RESULTS 29

3.4 PEAK TO AVERAGE RATIO 30

3.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 30

3.4.2 TEST SETUP 30

3.4.3 TEST PROCEDURES 30

3.4.4 TEST RESULTS 31

3.5 BAND EDGE MEASUREMENT 32

3.5.1 LIMITS OF BAND EDGE MEASUREMENT 32

3.5.2 TEST SETUP 32

3.5.3 TEST PROCEDURES 33

3.5.4 TEST RESULTS 34

3.6 CONDUCTED SPURIOUS EMISSIONS..... 36

3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 36

3.6.2 TEST PROCEDURE 36

3.6.3 TEST SETUP 36

3.6.4 TEST RESULTS 37

3.7 RADIATED EMISSION MEASUREMENT 45

3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT 45

3.7.2 TEST PROCEDURES 45

3.7.3 DEVIATION FROM TEST STANDARD 45

3.7.4 TEST SETUP 46

3.7.5 TEST RESULTS 48



**BUREAU
VERITAS**

Test Report No.: RF191217W002-3

4	INFORMATION ON THE TESTING LABORATORIES	58
5	APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	59



Test Report No.: RF191217W002-3

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF190123W002-4	Original release	Mar. 26, 2019
RF191217W002-3	Based on the original product changing product name, SW version, changing LTE B12 to LTE B13, delete LTE B5 and remove 3G feature by software. In this report LTE B13 had full test, verified LTE B4 conducted power and RSE worst case, other test data is refer to the original test report RF190123W002-4 (FCC ID: 2APNR-GT105).	Jan. 08, 2020

1 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
2.1046 27.50(b)(10) 27.50(d)(4)	Maximum Peak Output Power	PASS
2.1055 27.54	Frequency Stability	PASS
2.1049	Occupied Bandwidth	PASS
27.50(d)(5)	Peak to average ratio	PASS
27.53(c)(2)(4) 27.53(h)	Band Edge Measurements	PASS
2.1051 27.53(h) 27.53(c)(2) 27.53(f)	Conducted Spurious Emissions	PASS
2.1053 27.53(h) 27.53(c)(2) 27.53(f)	Radiated Spurious Emissions	PASS

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
Maximum Peak Output Power	±1dB
Frequency Stability	± 39.27Hz
Radiated emissions	±4.48dB
Conducted emissions	±2 dB
Occupied Channel Bandwidth	±21.7KHz
Band Edge Measurements	±4.48dB
Peak to average ratio	±0.76dB

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	Feb. 26,19	Feb. 25,20
EXA Signal Analyzer	KEYSIGHT	N9010A-526	MY54510322	Feb. 26,19	Feb. 25,20
Bilog Antenna 1	ETS-LINDGREN	3143B	00161964	Feb. 26,19	Feb. 25,20
Bilog Antenna 2	ETS-LINDGREN	3143B	00161965	Feb. 26,19	Feb. 25,20
Horn Antenna 1	ETS-LINDGREN	3117	00168728	Feb. 26,19	Feb. 25,20
Horn Antenna 2	ETS-LINDGREN	3117	00168692	Nov. 24, 19	Nov. 23, 20
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40 -K-SG/QMS-00 361	15433	Nov. 24, 19	Nov. 23, 20
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 26,19	Feb. 25,20
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 24,19	Jun. 23,20
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Jun. 24,19	Jun. 23,20
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn- CT0001143-1216	Feb. 26,19	Feb. 25,20
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. 24,19	Jun. 23,20
Power Meter	Anritsu	ML2495A	1506002	Feb. 26,19	Feb. 25,20
Power Sensor	Anritsu	MA2411B	1339352	Feb. 26,19	Feb. 25,20
Humid & Temp Programmable Tester	Juyi	ITH-120-45-CP -AR	IAA1504-001	Jun. 24,19	Jun. 23,20
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 26,19	Feb. 25,20

- 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 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	Wearable	
MODEL NAME	GT105	
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.8Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM
FREQUENCY RANGE	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
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720.0MHz ~ 1745.0MHz
	LTE Band 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782.0MHz
EMISSION DESIGNATOR	LTE Band 4 Channel Bandwidth: 1.4MHz	QPSK: 1M09G7D 16QAM: 1M08W7D
	LTE Band 4 Channel Bandwidth: 3MHz	QPSK: 2M69G7D 16QAM: 2M68W7D
	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 4M48G7D 16QAM: 4M46W7D
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK: 8M94G7D
	LTE Band 4 Channel Bandwidth: 15MHz	QPSK: 13M4G7D

EMISSION DESIGNATOR	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK: 8M89G7D
MAX. ERP/EIRP POWER	LTE Band 4 Channel Bandwidth: 1.4MHz	275mW
	LTE Band 4 Channel Bandwidth: 3MHz	275mW
	LTE Band 4 Channel Bandwidth: 5MHz	277mW
	LTE Band 4 Channel Bandwidth: 10MHz	280mW
	LTE Band 4 Channel Bandwidth: 15MHz	284mW
	LTE Band 4 Channel Bandwidth: 20MHz	286mW
	LTE Band 13 Channel Bandwidth: 5MHz	111mW
	LTE Band 13 Channel Bandwidth: 10MHz	111mW
ANTENNA TYPE	Fixed Internal Antenna with 2.4dBi for LTE Band 4 Fixed Internal Antenna with -0.3dBi for LTE Band 13	
HW VERSION	SD2000.H02	
SW VERSION	EN_K2000VLV1.0.0B01	
ACCESSORY DEVICE	Refer to note as below	
DATA CABLE	USB cable: non-shielded, detachable, 1.0m	



Test Report No.: RF191217W002-3

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT was powered by the following adapter:

ADAPTER	
BRAND:	GOSUNCN
MODEL:	RD0501000-USBA-18MG
NPUT:	AC 100-240V, 250mA
OUTPUT:	DC 5V, 1000mA

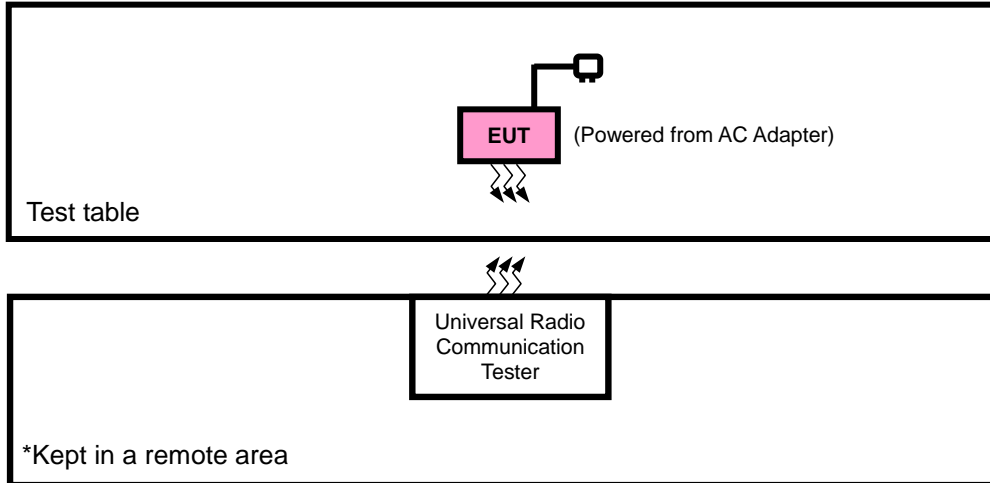
3. The EUT matched the following USB cable:

USB CABLE	
BRAND:	Zhanxin Technology Company Ltd.
MODEL:	C-ZX-10104
SIGNAL LINE:	1.0 METER

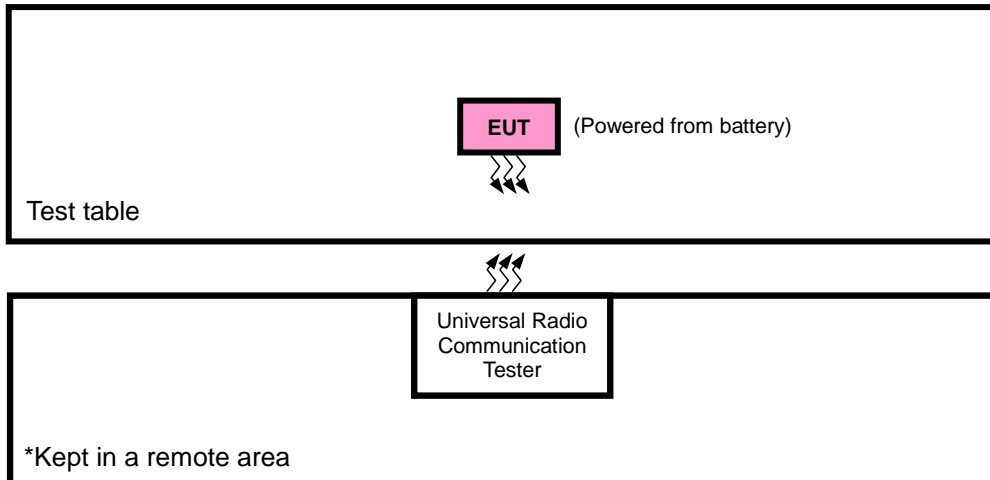
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION



FOR CONDUCTED & E.R.P. 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
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

2.4 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 ERP/EIRP and radiated emission was found when positioned on X-plane for WCDMA/LTE. Following channel(s) was (were) selected for the final test as listed below:

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



**BUREAU
VERITAS**

Test Report No.: RF191217W002-3

LTE BAND 4

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	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
		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
A	RADIATED EMISSION	20000 to 20350	20000, 20175, 20350	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	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23205 to 23255	23205, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	25 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	50 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
B	BAND EDGE	23205 to 23255	23205	5MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23255	5MHz	QPSK	1 RB / 24 RB Offset
		23230				25 RB / 0 RB Offset
			23230	10MHz	QPSK	1 RB / 0 RB Offset
			23230	10MHz	QPSK	50 RB / 0 RB Offset
B	CONDCUETED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23205 to 23255	23230,	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.

TEST CONDITION:



**BUREAU
VERITAS**

Test Report No.: RF191217W002-3

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	3.8Vdc from Battery	Tony Xiong
FREQUENCY STABILITY	24deg. C, 61%RH	DC 3.5V/3.8V/4.2V	Big Wang
OCCUPIED BANDWIDTH	24deg. C, 61%RH	3.8Vdc from Battery	Big Wang
PEAK TO AVERAGE RATIO	24deg. C, 61%RH	3.8Vdc from Battery	Big Wang
BAND EDGE	24deg. C, 61%RH	3.8Vdc from Battery	Big Wang
CONDCUDED EMISSION	24deg. C, 61%RH	3.8Vdc from Battery	Big Wang
RADIATED EMISSION	24deg. C, 60%RH	5Vdc from adapter	Tony Xiong

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

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 776-788 MHz bands are limited to 3 watts ERP.

3.1.2 TEST PROCEDURES

EIRP/ERP 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:

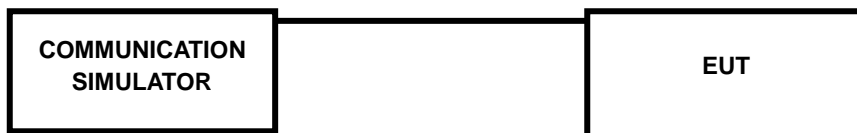
- a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



Test Report No.: RF191217W002-3

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:





Test Report No.: RF191217W002-3

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

The test results verified worst case, more detail please refer to Reports No.:
RF190123W002-4 (FCC ID: 2APNR-GT105)

LTE Band 4							
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	
1.4MHz	QPSK	1	0	21.94	21.96	21.99	0
		1	2	21.92	21.94	21.98	0
		1	5	21.74	21.85	21.95	0
		3	0	21.92	21.94	21.97	0
		3	1	21.90	21.92	21.96	0
		3	3	21.72	21.83	21.93	0
	16QAM	6	0	20.89	21.00	21.14	1
		1	0	20.67	20.78	20.97	1
		1	2	20.62	20.73	20.87	1
		1	5	20.60	20.71	20.88	1
		3	0	19.74	19.85	20.02	1
		3	1	19.64	19.75	19.92	1
		3	3	19.59	19.70	19.87	1
		6	0	19.64	19.75	19.92	2
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	
3 MHz	QPSK	1	0	21.95	21.97	22.00	0
		1	7	21.93	21.95	21.99	0
		1	14	21.75	21.86	21.96	0
		8	0	20.97	21.08	21.21	1
		8	3	20.93	21.04	21.18	1
		8	7	20.89	21.00	21.16	1
		15	0	20.90	21.01	21.15	1
	16QAM	1	0	20.68	20.79	20.98	1
		1	7	20.63	20.74	20.88	1
		1	14	20.61	20.72	20.89	1
		8	0	19.75	19.86	20.03	2
		8	3	19.65	19.76	19.93	2
		8	7	19.60	19.71	19.88	2
		15	0	19.65	19.76	19.93	2

LTE Band 4							
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	
5 MHz	QPSK	1	0	21.98	22.00	22.03	0
		1	12	21.96	21.98	22.02	0
		1	24	21.78	21.89	21.99	0
		12	0	21.00	21.11	21.24	1
		12	6	20.96	21.07	21.21	1
		12	13	20.92	21.03	21.19	1
		25	0	20.93	21.04	21.18	1
	16QAM	1	0	20.71	20.82	21.01	1
		1	12	20.66	20.77	20.91	1
		1	24	20.64	20.75	20.92	1
		12	0	19.78	19.89	20.06	2
		12	6	19.68	19.79	19.96	2
		12	13	19.63	19.74	19.91	2
		25	0	19.68	19.79	19.96	2
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	
10 MHz	QPSK	1	0	22.02	22.04	22.07	0
		1	24	22.00	22.02	22.06	0
		1	49	21.82	21.93	22.03	0
		25	0	21.04	21.15	21.28	1
		25	12	21.00	21.11	21.25	1
		25	25	20.96	21.07	21.23	1
		50	0	20.97	21.08	21.22	1
	16QAM	1	0	20.75	20.86	21.05	1
		1	24	20.70	20.81	20.95	1
		1	49	20.68	20.79	20.96	1

LTE Band 4							
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	
15 MHz	QPSK	1	0	22.08	22.10	22.13	0
		1	37	22.06	22.08	22.12	0
		1	74	21.88	21.99	22.09	0
		36	0	21.10	21.21	21.34	1
		36	19	21.06	21.17	21.31	1
		36	39	21.02	21.13	21.29	1
	75	0	21.03	21.14	21.28	1	
	16QAM	1	0	20.81	20.92	21.11	1
		1	37	20.76	20.87	21.01	1
1		74	20.74	20.85	21.02	1	
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	
20MHz	QPSK	1	0	22.11	22.13	22.16	0
		1	50	22.09	22.11	22.15	0
		1	99	21.91	22.02	22.12	0
		50	0	21.13	21.24	21.37	1
		50	25	21.09	21.20	21.34	1
		50	50	21.05	21.16	21.32	1
	100	0	21.06	21.17	21.31	1	
	16QAM	1	0	20.84	20.95	21.14	1
		1	50	20.79	20.90	21.04	1
1		99	20.77	20.88	21.05	1	



Test Report No.: RF191217W002-3

LTE Band 13							
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	
5 MHz	QPSK	1	0	22.46	22.51	22.49	0
		1	12	22.68	22.73	22.71	0
		1	24	22.86	22.91	22.89	0
		12	0	21.74	21.79	21.77	1
		12	6	21.90	21.95	21.93	1
		12	13	21.91	21.96	21.94	1
		25	0	21.87	21.92	21.90	1

LTE Band 13							
BW	Modulation	RB Size	RB Offset	CH	CH 23230	CH	MPR
				Frequency MHz	Frequency 782.0 MHz	Frequency MHz	
10 MHz	QPSK	1	0	-	22.52	-	0
		1	24	-	22.75	-	0
		1	49	-	22.92	-	0
		25	0	-	21.88	-	1
		25	12	-	21.79	-	1
		25	25	-	21.89	-	1
		50	0	-	21.85	-	1



EIRP / ERP

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	21.94	2.40	24.34	271.64	1
20175	1732.5	21.96	2.40	24.36	272.90	1
20393	1754.3	21.99	2.40	24.39	274.79	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	20.67	2.40	23.07	202.77	1
20175	1732.5	20.78	2.40	23.18	207.97	1
20393	1754.3	20.97	2.40	23.37	217.27	1

LTE BAND 4

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	21.95	2.40	24.35	272.27	1
20175	1732.5	21.97	2.40	24.37	273.53	1
20385	1753.5	22.00	2.40	24.40	275.42	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	20.68	2.40	23.08	203.24	1
20175	1732.5	20.79	2.40	23.19	208.45	1
20385	1753.5	20.98	2.40	23.38	217.77	1



BUREAU
VERITAS

Test Report No.: RF191217W002-3

LTE BAND 4

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	21.98	2.40	24.38	274.16	1
20175	1732.5	22.00	2.40	24.40	275.42	1
20375	1752.5	22.03	2.40	24.43	277.33	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	20.71	2.40	23.11	204.64	1
20175	1732.5	20.82	2.40	23.22	209.89	1
20375	1752.5	21.01	2.40	23.41	219.28	1

LTE BAND 4

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715.0	22.02	2.40	24.42	276.69	1
20175	1732.5	22.04	2.40	24.44	277.97	1
20350	1750.0	22.07	2.40	24.47	279.90	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715.0	20.75	2.40	23.15	206.54	1
20175	1732.5	20.86	2.40	23.26	211.84	1
20350	1750.0	21.05	2.40	23.45	221.31	1



BUREAU
VERITAS

Test Report No.: RF191217W002-3

LTE BAND 4

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	22.08	2.40	24.48	280.54	1
20175	1732.5	22.10	2.40	24.50	281.84	1
20325	1747.5	22.13	2.40	24.53	283.79	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	20.81	2.40	23.21	209.41	1
20175	1732.5	20.92	2.40	23.32	214.78	1
20325	1747.5	21.11	2.40	23.51	224.39	1

LTE BAND 4

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720.0	22.11	2.40	24.51	282.49	1
20175	1732.5	22.13	2.40	24.53	283.79	1
20300	1745.0	22.16	2.40	24.56	285.76	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720.0	20.84	2.40	23.24	210.86	1
20175	1732.5	20.95	2.40	23.35	216.27	1
20300	1745.0	21.14	2.40	23.54	225.94	1



BUREAU
VERITAS

Test Report No.: RF191217W002-3

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducte d Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	22.86	-0.30	20.41	109.9	3
23230	782.0	22.91	-0.30	20.46	111.17	3
23255	784.5	22.89	-0.30	20.44	110.66	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducte d Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23230	782.0	22.92	-0.30	20.47	111.43	3

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

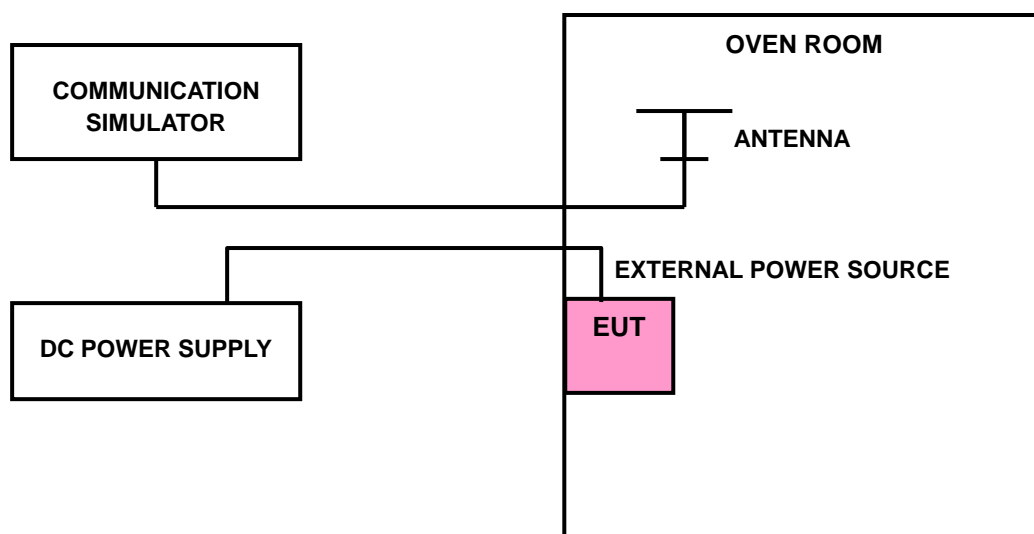
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- 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 $\pm 0.5^{\circ}\text{C}$ 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

LTE BAND 13

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
3.8	0.0021	0.0025	2.5
3.5	-0.0023	-0.0030	2.5
4.2	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.5Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (°C)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0123	-0.0114	2.5
-20	-0.0107	-0.0108	2.5
-10	-0.0084	-0.0083	2.5
0	-0.0078	-0.0074	2.5
10	-0.0056	-0.0044	2.5
20	-0.0043	-0.0043	2.5
30	-0.0026	-0.0029	2.5
40	-0.0022	-0.0020	2.5
50	-0.0003	-0.0002	2.5



Test Report No.: RF191217W002-3

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Channel 23230	
3.8	0.0024	2.5
3.5	-0.0030	2.5
4.4	0.0024	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.5Vdc to 4.2Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

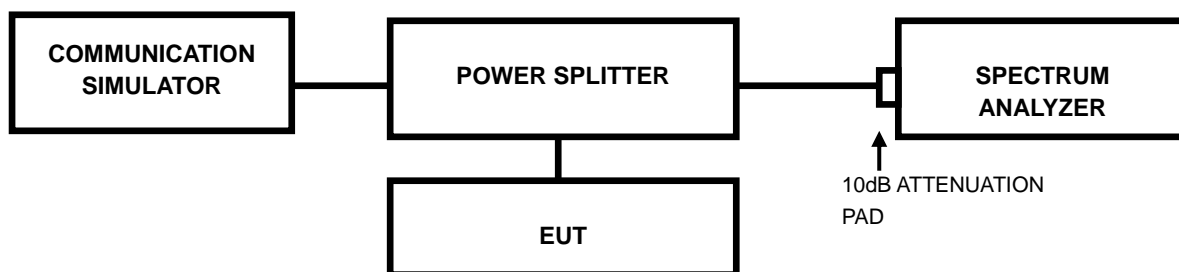
TEMP. (°C)	10MHz	LIMIT (ppm)
	FREQUENCY ERROR (ppm)	
	Channel 23230	
-30	-0.0116	2.5
-20	-0.0104	2.5
-10	-0.0080	2.5
0	-0.0075	2.5
10	-0.0045	2.5
20	-0.0039	2.5
30	-0.0031	2.5
40	-0.0021	2.5
50	-0.0002	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 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.

3.3.2 TEST SETUP



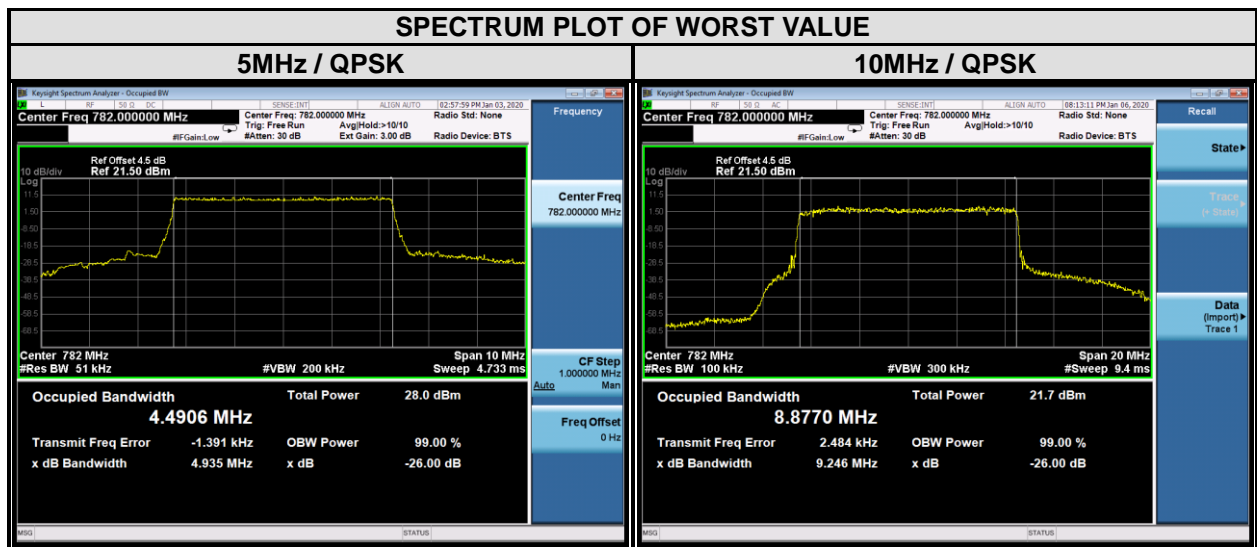
3.3.3 TEST PROCEDURES

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

3.3.4 TEST RESULTS

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz			CHANNEL BANDWIDTH: 10MHz		
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		QPSK			QPSK
23205	779.5	4.47	-	-	-
23230	793	4.49	23230	782	8.88
23255	784.5	4.48	-	-	-

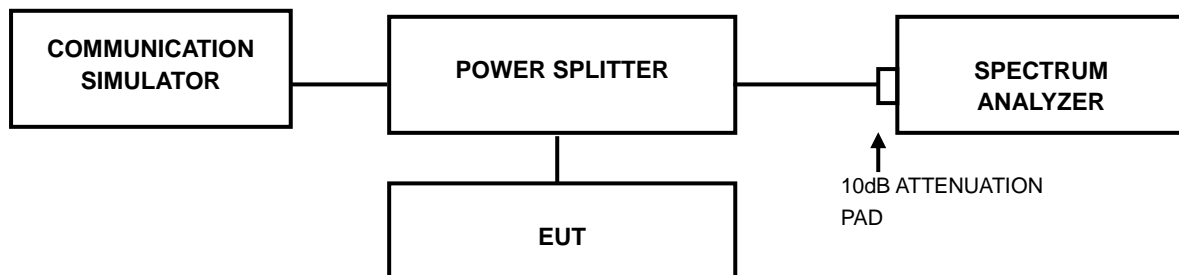


3.4 PEAK TO AVERAGE RATIO

3.4.1 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

3.4.2 TEST SETUP



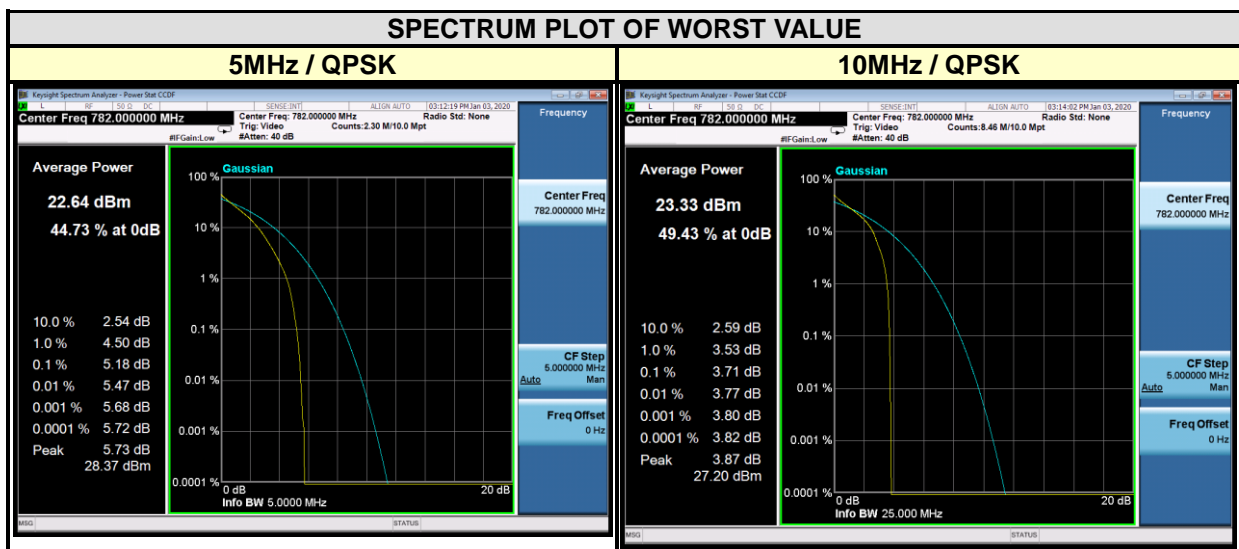
3.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth \geq 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%.

3.4.4 TEST RESULTS

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz			CHANNEL BANDWIDTH: 10MHz		
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
		QPSK			QPSK
23205	779.5	5.06	-	-	-
23230	793	5.18	23230	782	3.71
23255	784.5	5.15	-	-	-



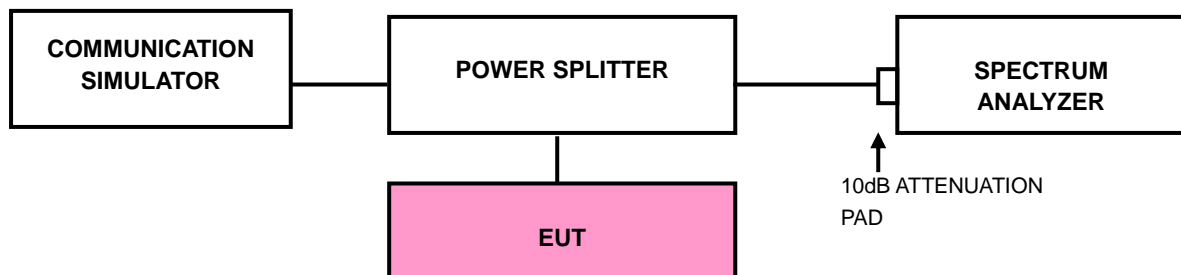
3.5 BAND EDGE MEASUREMENT

3.5.1 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.

3.5.2 TEST SETUP



3.5.3 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 10MHz. RBW of the spectrum is 100kHz and VBW of the spectrum is 300kHz (WCDMA).
- 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 100 kHz. (LTE bandwidth 1.4MHz)
- e. 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)
- f. 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)
- g. 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)
- 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 15MHz)
- i. 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)
- j. Record the max trace plot into the test report.



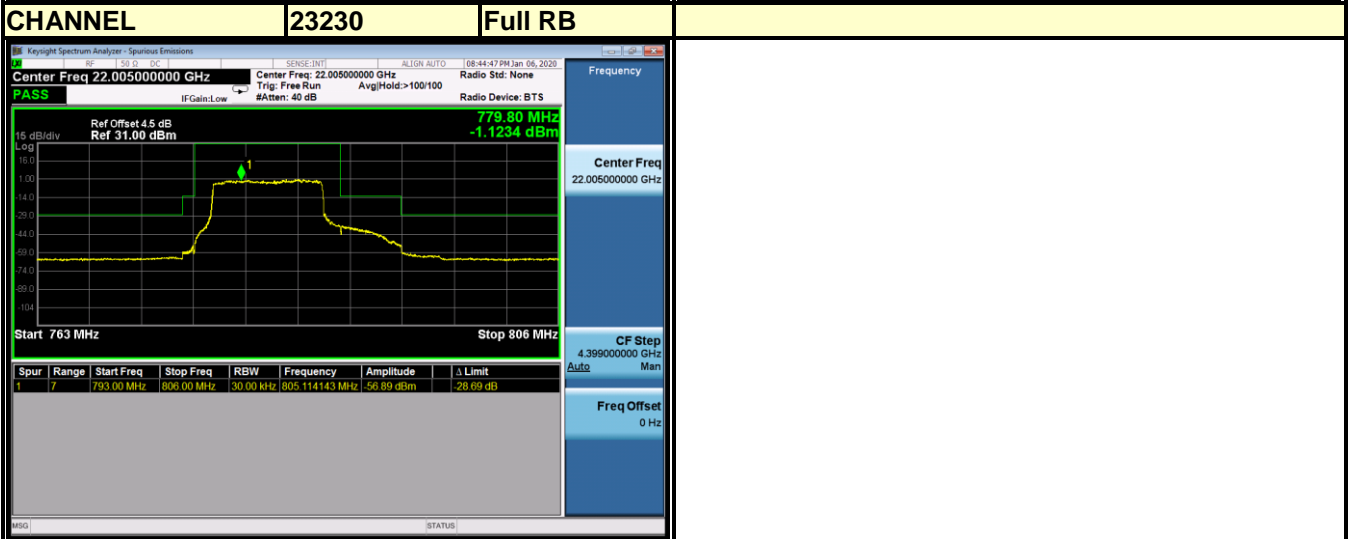
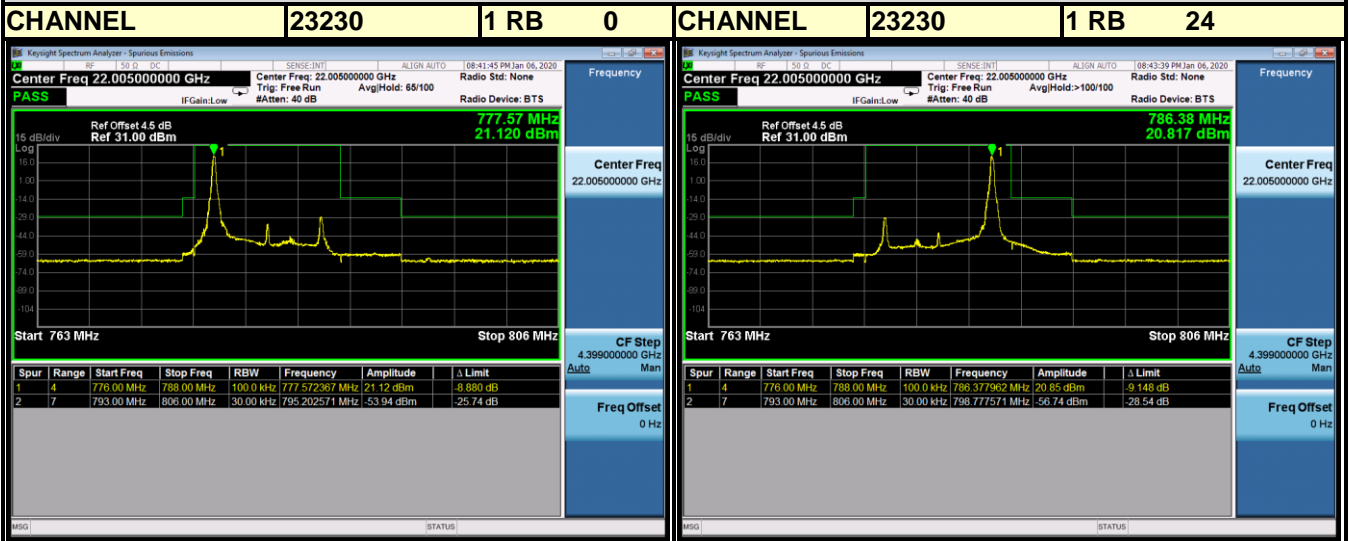
3.5.4 TEST RESULTS

LTE BAND 13





Channel Bandwidth: 10MHz QPSK



3.6 CONDUCTED SPURIOUS EMISSIONS

3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

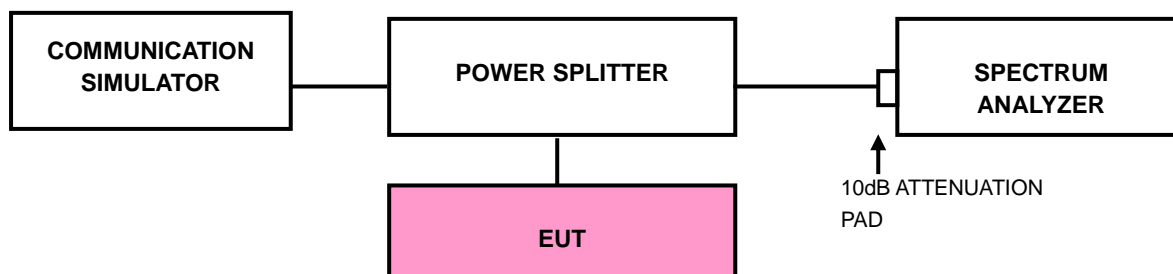
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

3.6.2 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 WCDMA Band 4 & LTE Band 4. and 30 MHz to 9GHz for LTE Band 13. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz are used for conducted emission measurement.

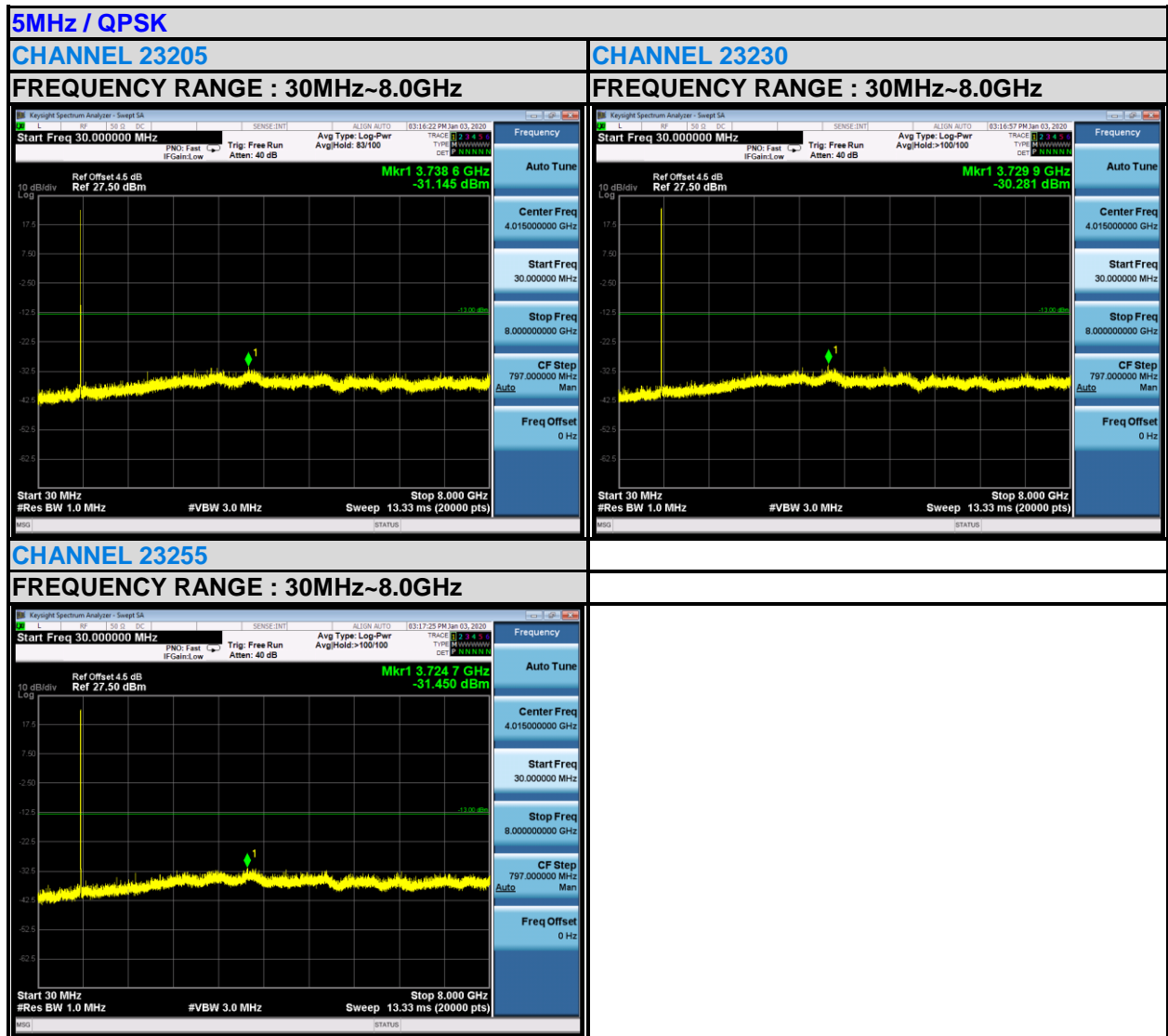
3.6.3 TEST SETUP





3.6.4 TEST RESULTS

LTE BAND 13





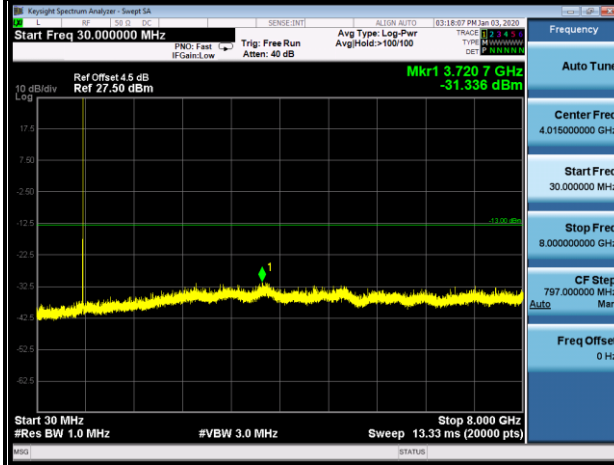
BUREAU VERITAS

Test Report No.: RF191217W002-3

10MHz / QPSK

CHANNEL 23230

FREQUENCY RANGE : 30MHz~8.0GHz





BUREAU VERITAS

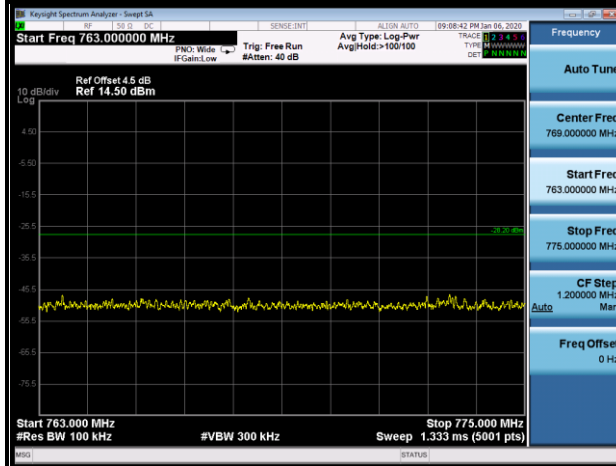
Test Report No.: RF191217W002-3

LTE BAND 13

5MHz / QPSK

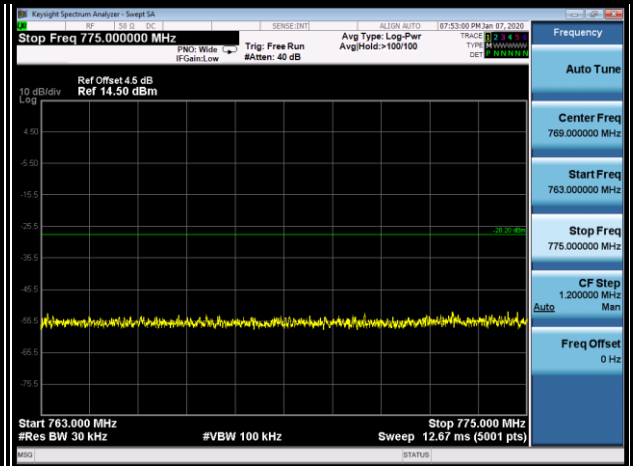
CHANNEL 23205

FREQUENCY RANGE : 763MHz~775MHz



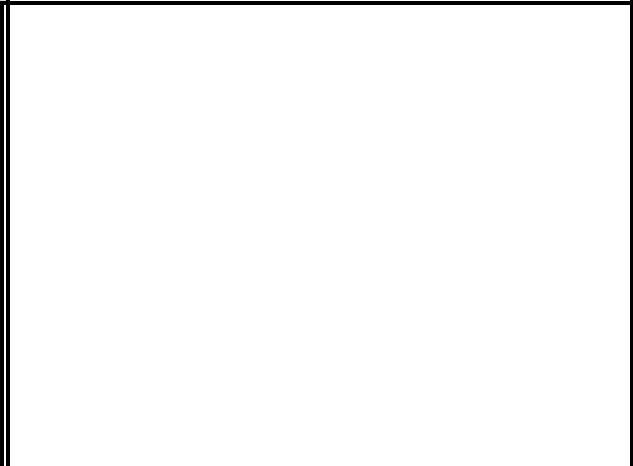
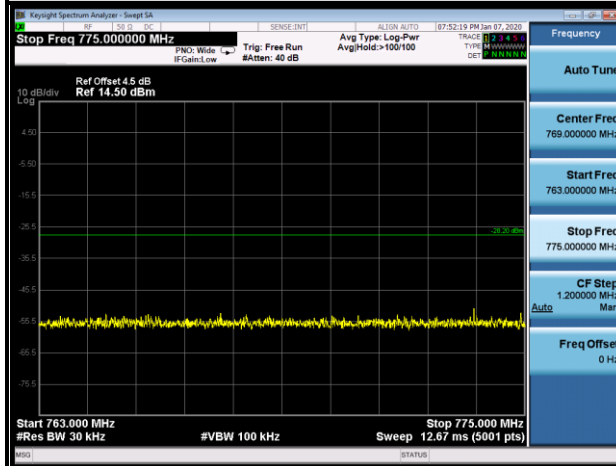
CHANNEL 23230

FREQUENCY RANGE : 763MHz~775MHz



CHANNEL 23255

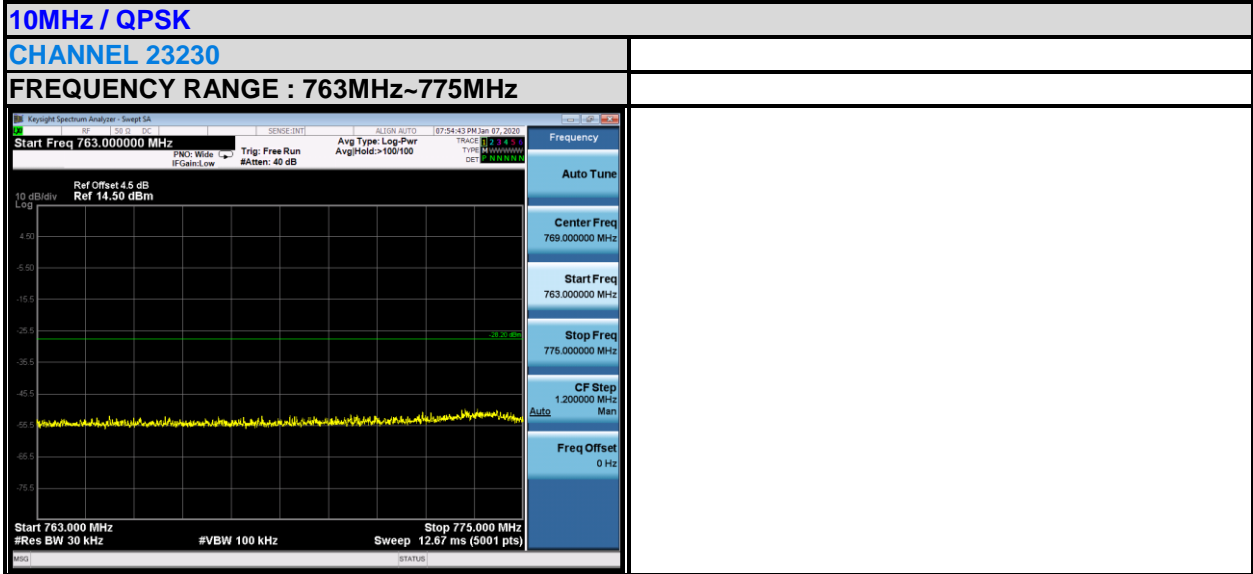
FREQUENCY RANGE : 763MHz~775MHz





BUREAU VERITAS

Test Report No.: RF191217W002-3





BUREAU VERITAS

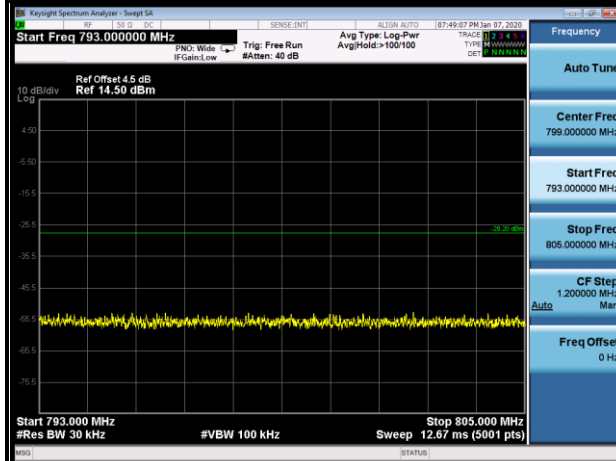
Test Report No.: RF191217W002-3

LTE BAND 13

5MHz / QPSK

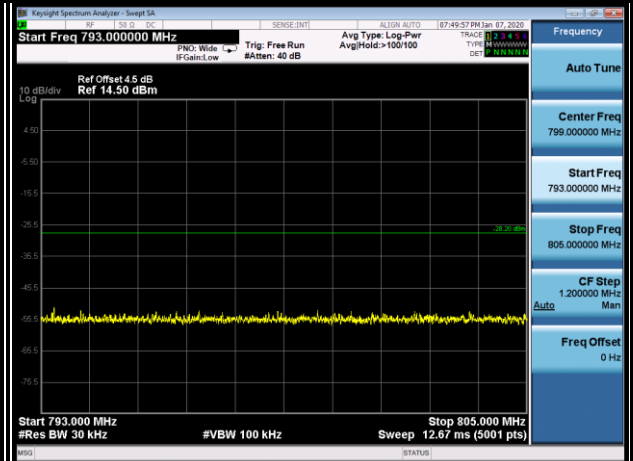
CHANNEL 23205

FREQUENCY RANGE : 793MHz~805MHz



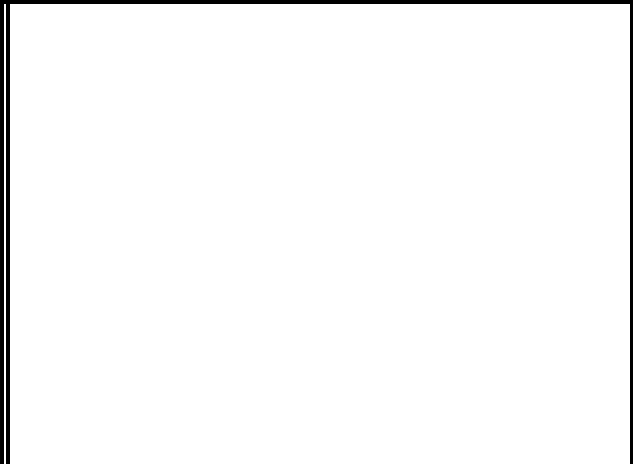
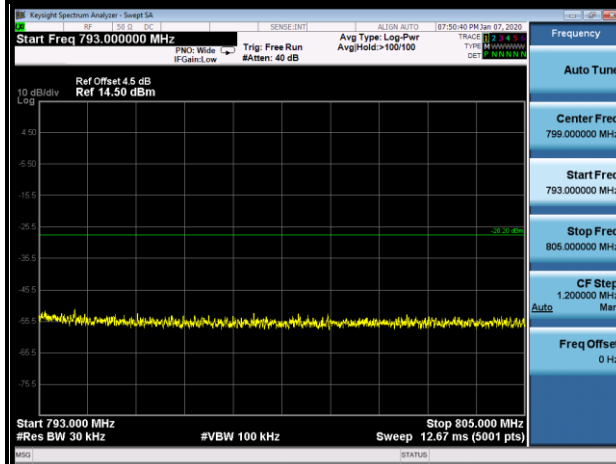
CHANNEL 23230

FREQUENCY RANGE : 793MHz~805MHz



CHANNEL 23255

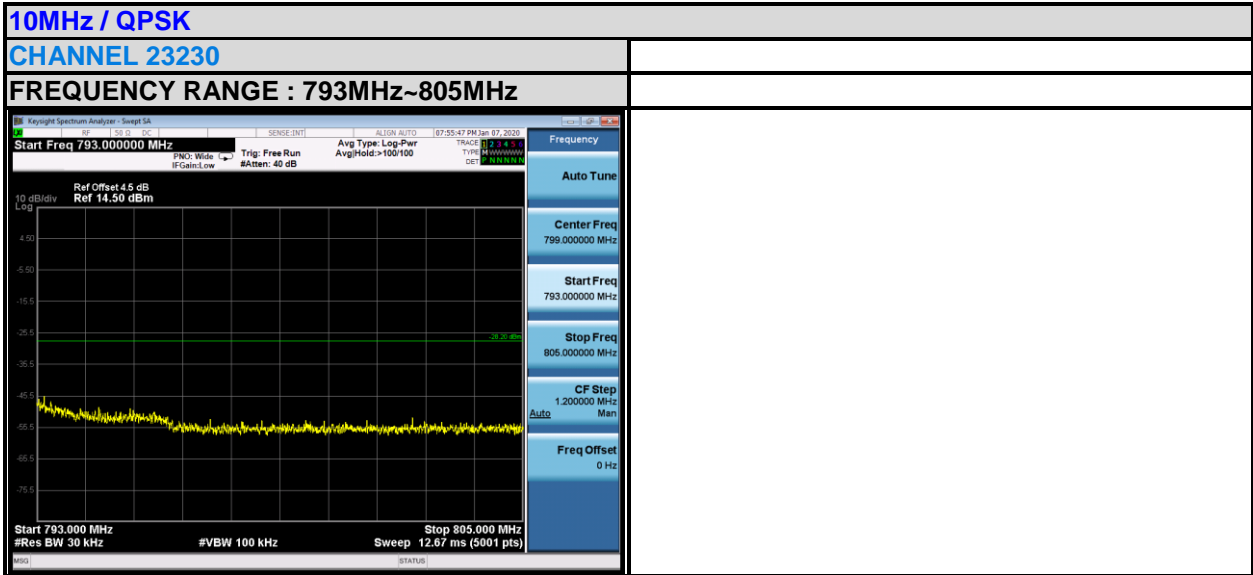
FREQUENCY RANGE : 793MHz~805MHz





BUREAU
VERITAS

Test Report No.: RF191217W002-3





BUREAU VERITAS

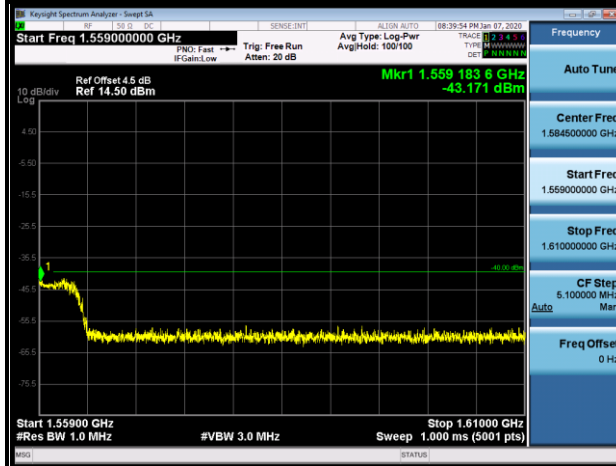
Test Report No.: RF191217W002-3

LTE BAND 13

5MHz / QPSK

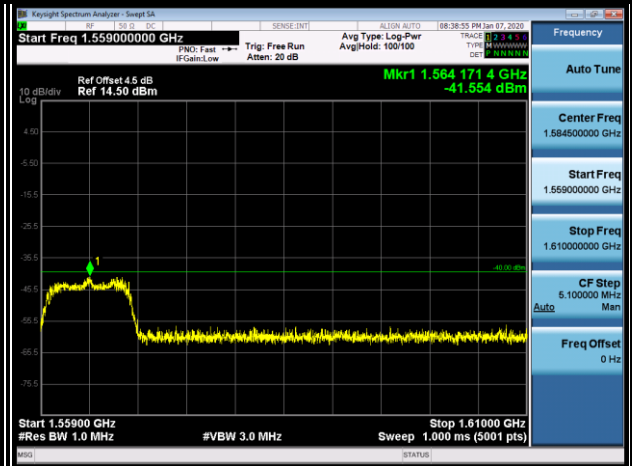
CHANNEL 23205

FREQUENCY RANGE : 1559MHz~1610MHz



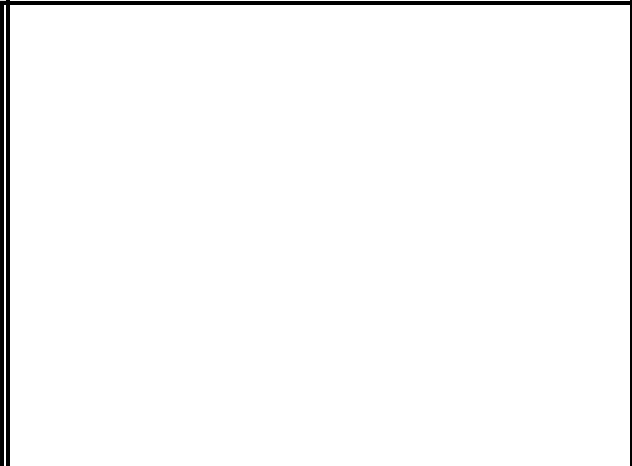
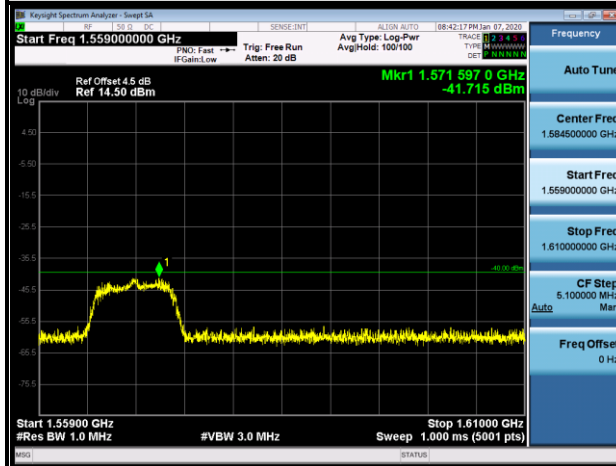
CHANNEL 23230

FREQUENCY RANGE : 1559MHz~1610MHz



CHANNEL 23255

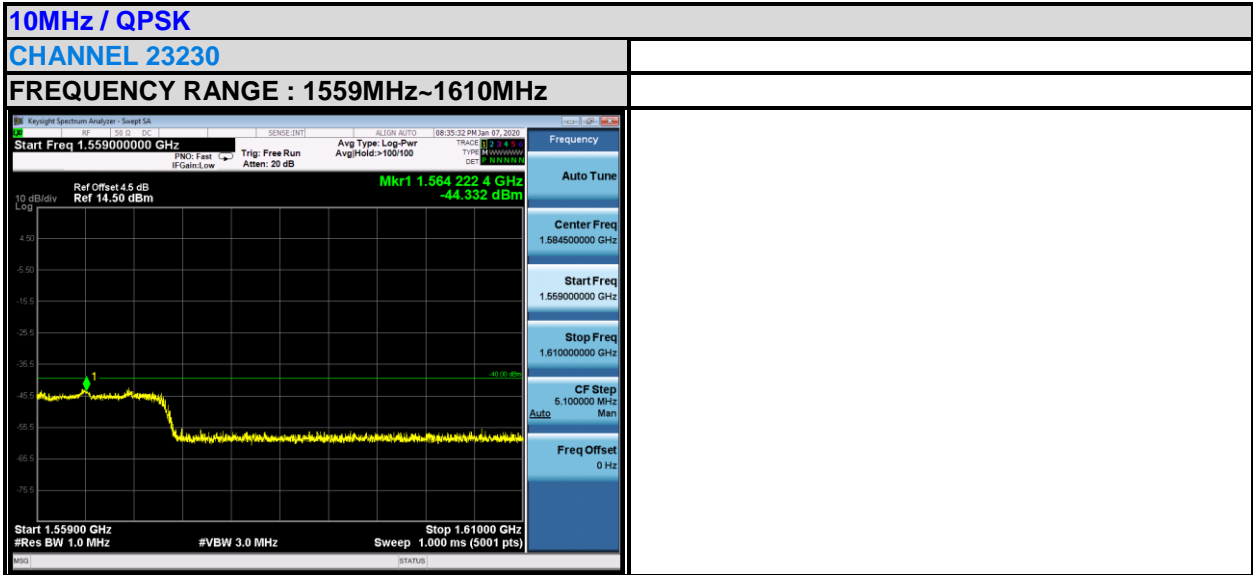
FREQUENCY RANGE : 1559MHz~1610MHz





BUREAU
VERITAS

Test Report No.: RF191217W002-3





3.7 RADIATED EMISSION MEASUREMENT

3.7.1 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 $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

3.7.2 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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi.}$

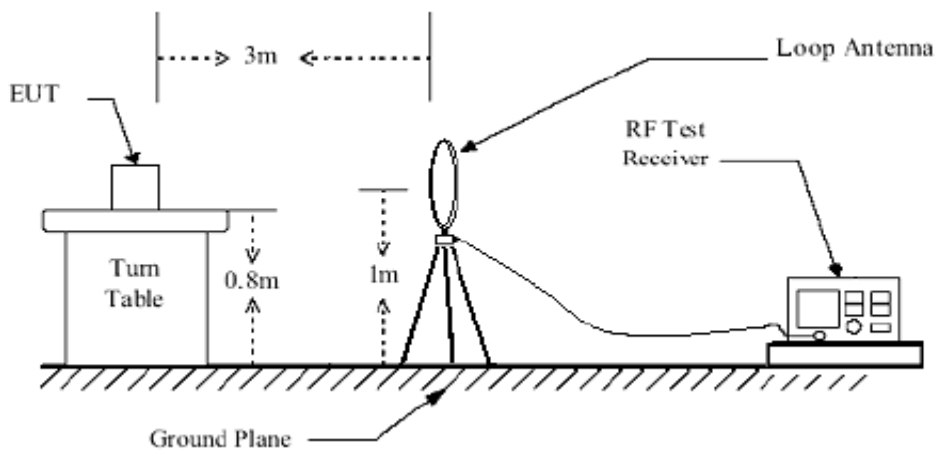
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.7.3 DEVIATION FROM TEST STANDARD

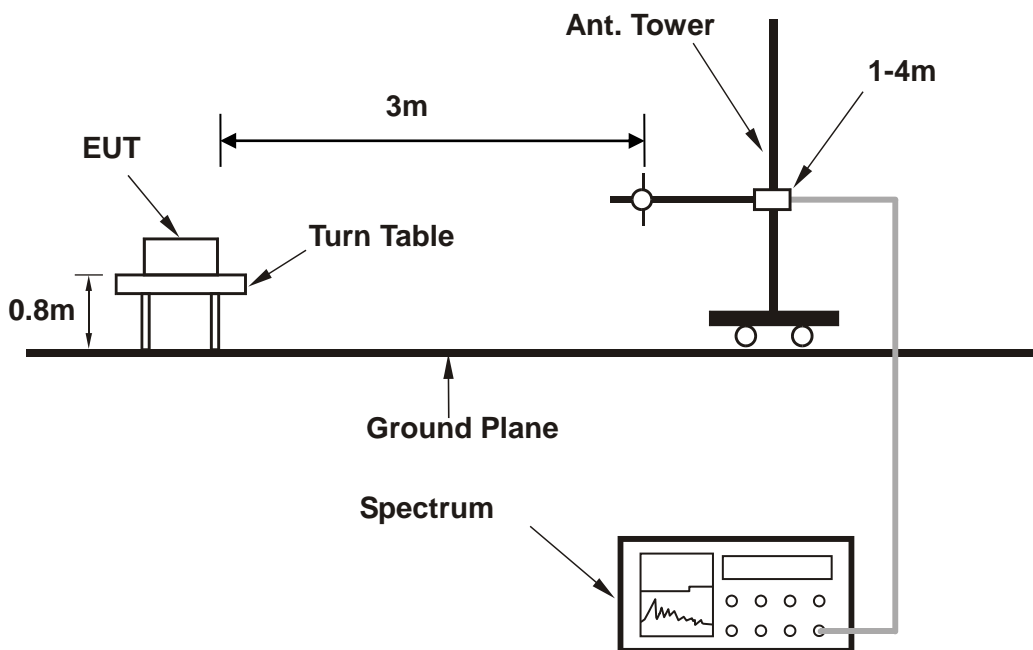
No deviation

3.7.4 TEST SETUP

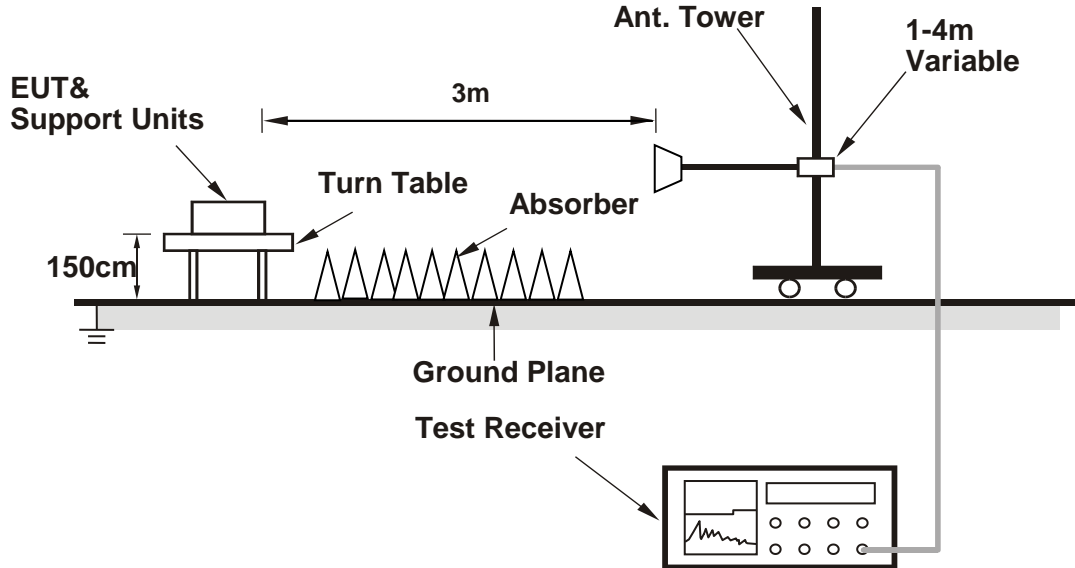
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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



Test Report No.: RF191217W002-3

3.7.5 TEST RESULTS

ABOVE 1GHz

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

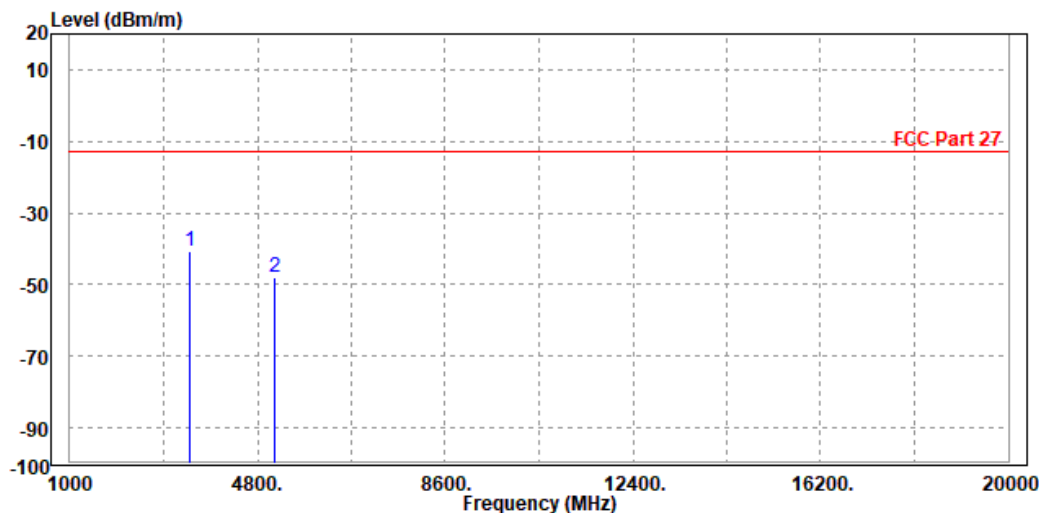
LTE BAND 4

CHANNEL BANDWIDTH: 10MHz / QPSK

CH20000

MODE	TX channel 20000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3432.000	-40.70	-49.29	-13.00	-27.70	8.59	Peak	Horizontal
2	5145.000	-48.03	-56.99	-13.00	-35.03	8.96	Peak	Horizontal

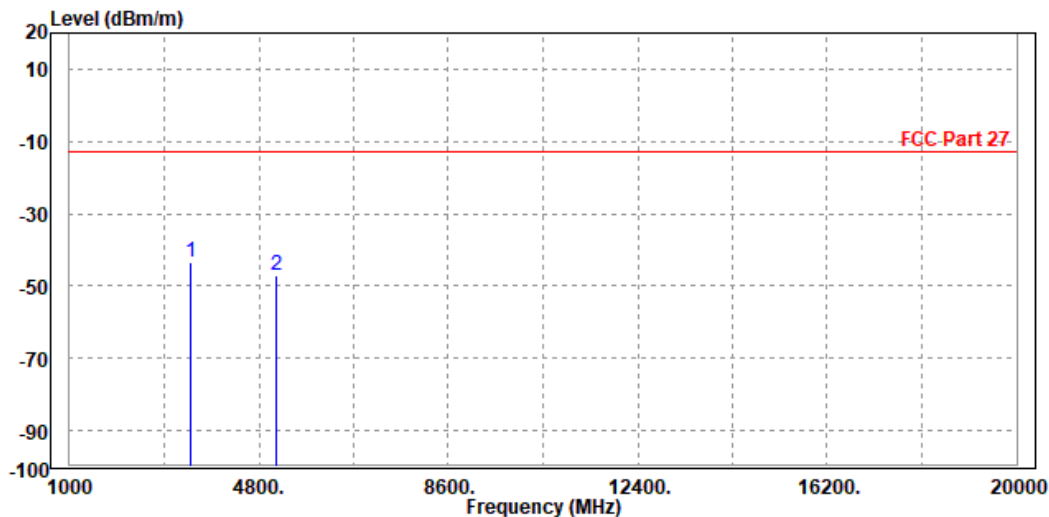




Test Report No.: RF191217W002-3

MODE	TX channel 20000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3432.000	-43.59	-52.72	-13.00	-30.59	9.13	Peak	Vertical
2	5145.000	-46.97	-56.81	-13.00	-33.97	9.84	Peak	Vertical



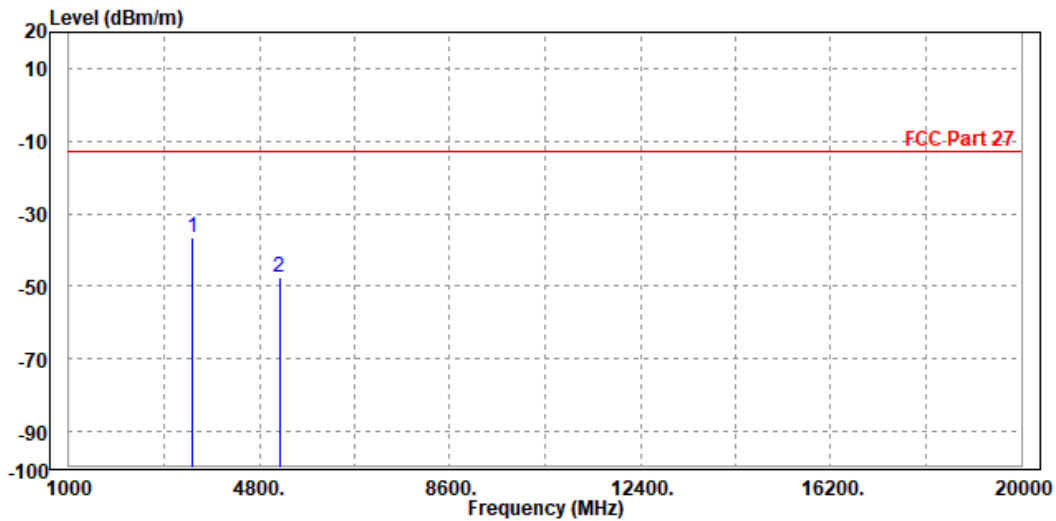


Test Report No.: RF191217W002-3

CH20175

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3470.000	-36.47	-45.05	-13.00	-23.47	8.58	Peak	Horizontal
2	5197.500	-47.58	-56.70	-13.00	-34.58	9.12	Peak	Horizontal

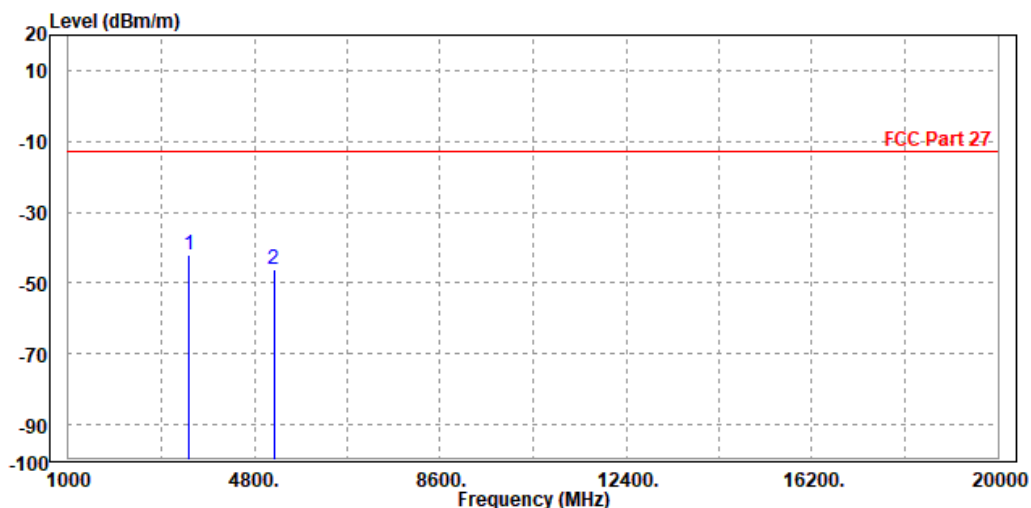




Test Report No.: RF191217W002-3

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3470.000	-41.88	-51.04	-13.00	-28.88	9.16	Peak	Vertical
2	5197.500	-46.19	-56.01	-13.00	-33.19	9.82	Peak	Vertical



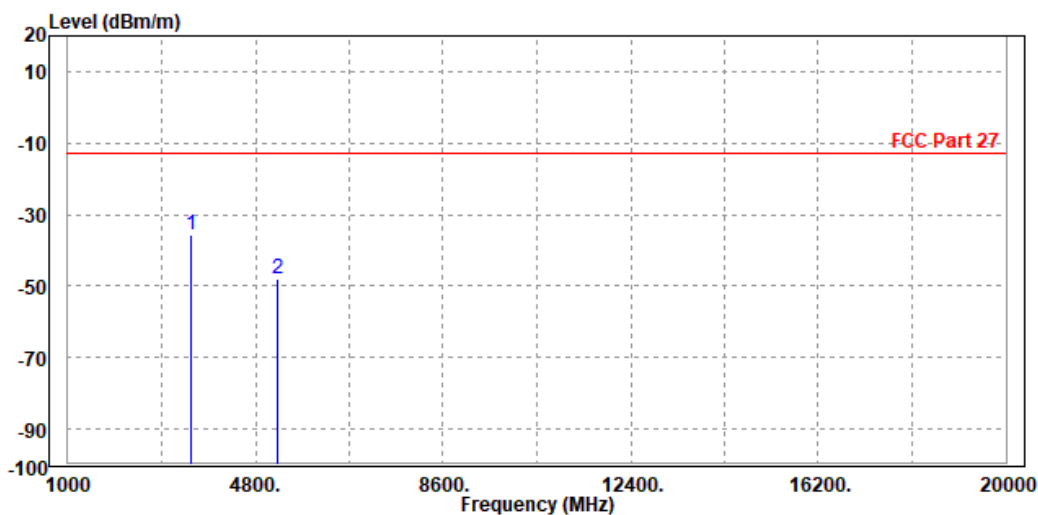


Test Report No.: RF191217W002-3

CH20350

MODE	TX channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3508.000	-35.44	-44.02	-13.00	-22.44	8.58	Peak	Horizontal
2	5250.000	-47.96	-57.23	-13.00	-34.96	9.27	Peak	Horizontal

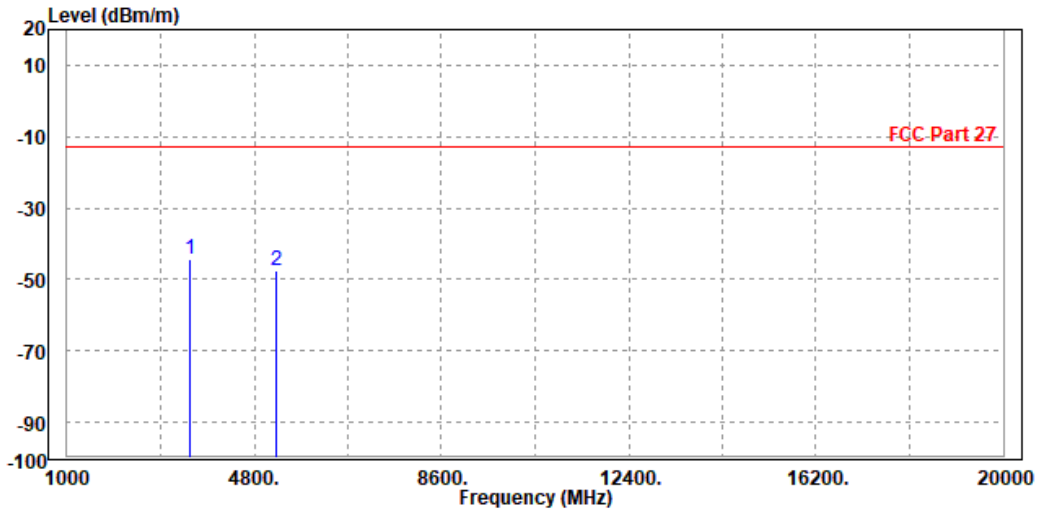




Test Report No.: RF191217W002-3

MODE	TX channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3508.000	-44.24	-53.43	-13.00	-31.24	9.19	Peak	Vertical
2	5250.000	-47.60	-57.40	-13.00	-34.60	9.80	Peak	Vertical





BUREAU VERITAS

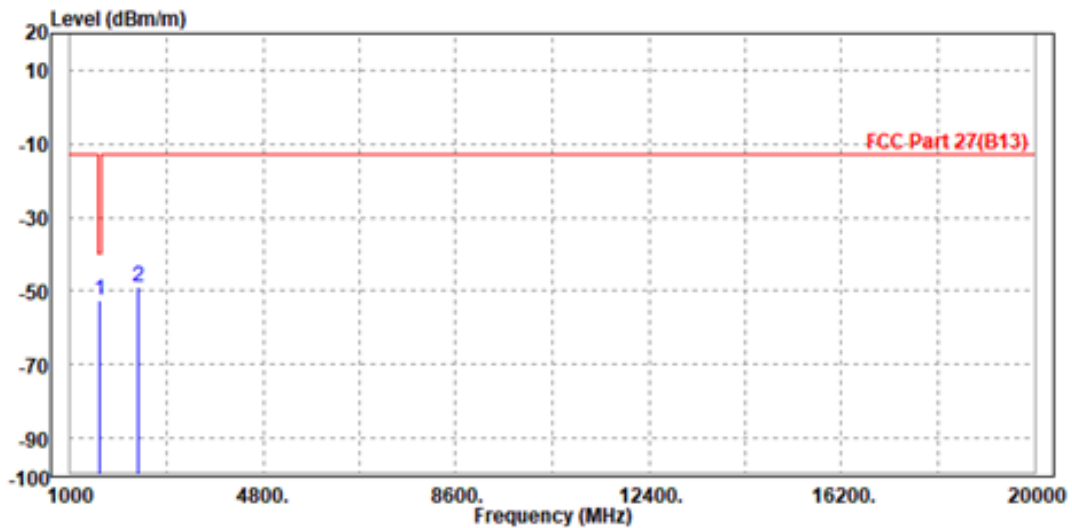
Test Report No.: RF191217W002-3

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1570.000	-52.41	-54.71	-40.00	-12.41	2.30	Peak	Horizontal
2	2346.000	-48.76	-56.66	-13.00	-35.76	7.90	Peak	Horizontal

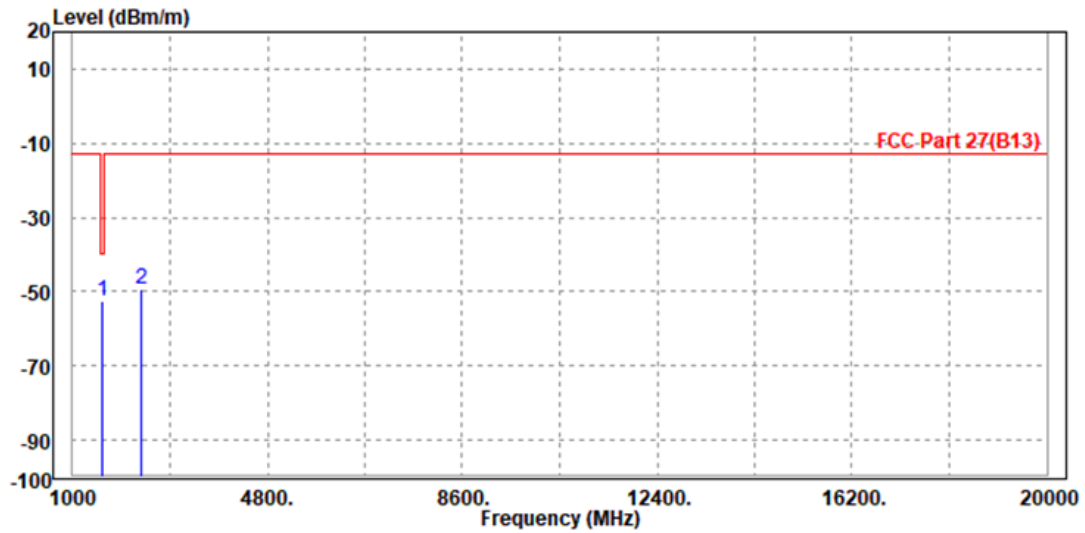




Test Report No.: RF191217W002-3

MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1570.000	-52.73	-55.41	-40.00	-12.73	2.68	Peak	Vertical
2	2346.000	-49.42	-56.33	-13.00	-36.42	6.91	Peak	Vertical



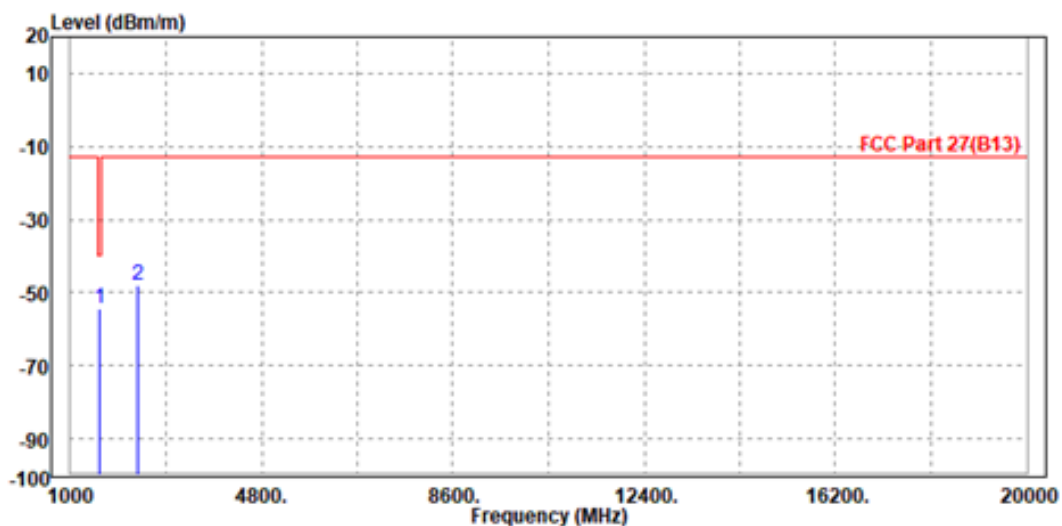


Test Report No.: RF191217W002-3

CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1570.000	-54.30	-56.60	-40.00	-14.30	2.30	Peak	Horizontal
2	2346.000	-47.86	-55.76	-13.00	-34.86	7.90	Peak	Horizontal

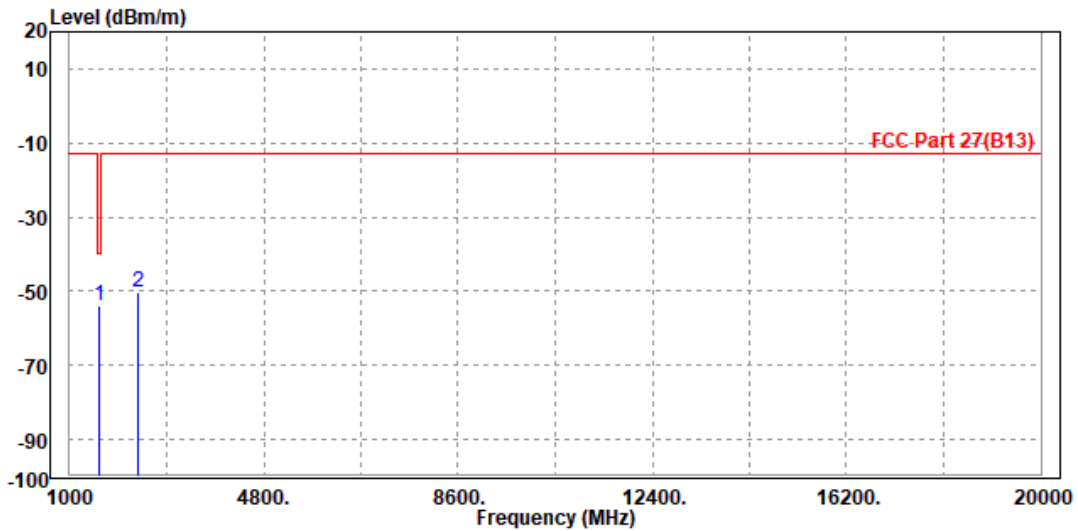




Test Report No.: RF191217W002-3

MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V from adapter
TESTED BY	Tony		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1570.000	-53.93	-56.61	-40.00	-13.93	2.68	Peak	Vertical
2	2346.000	-50.09	-57.00	-13.00	-37.09	6.91	Peak	Vertical





Test Report No.: RF191217W002-3

4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 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:

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.dg@cn.bureauveritas.com

Web Site: www.adt.com.tw

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



Test Report No.: RF191217W002-3

5 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---