

FCC TEST REPORT

(PART 27)

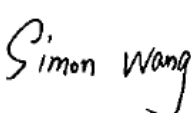
Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Manufacturer or Supplier:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Product:	Mobile Phone
Brand Name:	Redmi
Model Name:	23053RN02Y
FCC ID:	2AFZZRN02Y
Date of tests:	Mar. 06, 2023 ~ Mar. 29, 2023

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

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

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

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
 Date: Mar. 29, 2023	 Date: Mar. 29, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing 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. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. 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	7
1.2 TEST SITE AND INSTRUMENTS	8
2 GENERAL INFORMATION	10
2.1 GENERAL DESCRIPTION OF EUT	10
2.2 CONFIGURATION OF SYSTEM UNDER TEST	13
2.3 DESCRIPTION OF SUPPORT UNITS	14
2.4 TEST ITEM AND TEST CONFIGURATION	14
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	19
3 TEST TYPES AND RESULTS	20
3.1 OUTPUT POWER MEASUREMENT	20
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	20
3.1.2 TEST PROCEDURES	20
3.1.3 TEST SETUP	21
3.1.4 TEST RESULTS	22
3.2 FREQUENCY STABILITY MEASUREMENT	70
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	70
3.2.2 TEST PROCEDURE	70
3.2.3 TEST SETUP	70
3.2.4 TEST RESULTS	71
3.3 OCCUPIED BANDWIDTH MEASUREMENT	72
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT	72
3.3.2 TEST SETUP	72
3.3.3 TEST PROCEDURES	72
3.3.4 TEST RESULTS	73
3.4 BAND EDGE MEASUREMENT	74
3.4.1 LIMITS OF BAND EDGE MEASUREMENT	74
3.4.2 TEST SETUP	74
3.4.3 TEST PROCEDURES	75
3.4.4 TEST RESULTS	76
3.5 CONDUCTED SPURIOUS EMISSIONS	77
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	77
3.5.2 TEST PROCEDURE	77
3.5.3 TEST SETUP	77
3.5.4 TEST RESULTS	78
3.6 RADIATED EMISSION MEASUREMENT	79
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	79
3.6.2 TEST PROCEDURES	79
3.6.3 DEVIATION FROM TEST STANDARD	79
3.6.4 TEST SETUP	80
3.6.5 TEST RESULTS	82
3.7 PEAK TO AVERAGE RATIO	108
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT	108
3.7.2 TEST SETUP	108
3.7.3 TEST PROCEDURES	108
3.7.4 TEST RESULTS	109
4 INFORMATION ON THE TESTING LABORATORIES	110



Test Report No.: W7L-P23030004RF06

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB..	111
6 APPENDIX	112
LTE BAND7	112
LTE BAND41 (INDCLUDING LTE BAND38)	165



Test Report No.: W7L-P23030004RF06

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23030004RF06	Original release	Mar. 29, 2023

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	TEST LAB*
§2.1046	Conducted Output Power	Compliance	A
§27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 7) (Band 38) (Band 41)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 7) (Band 38) (Band 41)	Compliance	A
§2.1051 §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 7) (Band 38) (Band 41)	Compliance	A
§2.1053 §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 7) (Band 38) (Band 41)	Compliance	B
NA	Peak to average ratio	Compliance	A



Test Report No.: W7L-P23030004RF06

***Test Lab Information Reference**

Lab A:

BV 7Layers Communications Technology (Shenzhen) Co., Ltd

Lab Address:

No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China

Accredited Test Lab Cert 3939.01

The FCC Site Registration No. : 525120; Designation No. : CN1171;

Lab B:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

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

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Feb. 17,23	Feb. 16,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.14,22	May.13,23
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,22	Sep.02,23
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 05,23	Mar. 04,24
Horn Antenna	ETS-LINDGREN	3117	00168692	Mar. 05,23	Mar. 04,24
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40- K-SG/QMS-003 61	15433	Sep.04, 22	Sep.03, 23
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,23	Feb. 13,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,22	May.11,23
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,23	Feb.16,24
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn- CT0001143-121 6	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	N/A	May. 12,22	May. 11,23
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,23	Feb. 13,24
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,23	Feb. 13,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 12,22	May. 11,23
MXG Analog Microwave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,23	Feb. 13,24
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.12,22	May.11,23
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 12,22	Aug. 11,23

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



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Test Report No.: W7L-P23030004RF06

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,22	Aug.29,24
Pre-Amplifier	R&S	SCU08F1	101028	Sep.16,22	Sep.15,24
Vector Signal Generator	R&S	SMBV100B	102176	Feb.16,22	Feb.15,24
Signal Generator	R&S	SMB100A	182185	Feb.16,22	Feb.15,24
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Feb.25,22	Feb.24,24
EMI TEST Receiver	R&S	ESW44	101973	Feb.25,22	Feb.24,24
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.28,22	Feb.27,24
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.23,22	Feb.22,24
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,22	Feb.22,24
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.27,22	Jun.26,24
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Oct.01,22	Sep.30,24
DC Source	HYELEC	HY3010B	551016	Aug.31,22	Aug.30,24
Hygrothermograph	DELI	20210528	SZ014	Sep.06,22	Sep.05,24
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Oct.31,22	Apr.29,23
CABLE	R&S	W12.14	N/A	Oct.31,22	Apr.29,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Oct.31,22	Apr.29,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Oct.31,22	Apr.29,23
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,24

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
 3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mobile Phone	
BRAND NAME	Redmi	
MODEL NAME	23053RN02Y	
NOMINAL VOLTAGE	5V/9V/10V/12Vdc(adapter or host equipment) 3.8Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	LTE Band 7 Channel Bandwidth: 5MHz	2502.5MHz ~ 2567.5MHz
	LTE Band 7 Channel Bandwidth: 10MHz	2505MHz ~ 2565MHz
	LTE Band 7 Channel Bandwidth: 15MHz	2507.5MHz ~ 2562.5MHz
	LTE Band 7 Channel Bandwidth: 20MHz	2510MHz ~ 2560MHz
	LTE Band 38 Channel Bandwidth: 5MHz	2572.5MHz ~ 2617.5MHz
	LTE Band 38 Channel Bandwidth: 10MHz	2575MHz ~ 2615MHz
	LTE Band 38 Channel Bandwidth: 15MHz	2577.5MHz ~ 2612.5MHz
	LTE Band 38 Channel Bandwidth: 20MHz	2580MHz ~ 2610MHz
	LTE Band 41 Channel Bandwidth: 5MHz	2498.5MHz ~ 2687.5MHz
	LTE Band 41 Channel Bandwidth: 10MHz	2501MHz ~ 2685MHz
	LTE Band 41 Channel Bandwidth: 15MHz	2503.5MHz ~ 2682.5MHz
	LTE Band 41 Channel Bandwidth: 20MHz	2506MHz ~ 2680MHz
MAX. EIRP POWER	LTE Band 7 Channel Bandwidth: 5MHz	281.19mW
	LTE Band 7 Channel Bandwidth: 10MHz	283.14mW
	LTE Band 7 Channel Bandwidth: 15MHz	279.9mW
	LTE Band 7 Channel Bandwidth: 20MHz	285.76mW
	LTE Band 38 Channel Bandwidth: 5MHz	416.87mW

MAX. EIRP POWER	LTE Band 38 Channel Bandwidth: 10MHz	414.95mW
	LTE Band 38 Channel Bandwidth: 15MHz	417.83mW
	LTE Band 38 Channel Bandwidth: 20MHz	426.58mW
	LTE Band 41 Channel Bandwidth: 5MHz	864.97mW
	LTE Band 41 Channel Bandwidth: 10MHz	874.98mW
	LTE Band 41 Channel Bandwidth: 15MHz	857.04mW
	LTE Band 41 Channel Bandwidth: 20MHz	883.08mW
EMISSION DESIGNATOR	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M51W7D
		64QAM: 4M50W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 8M99G7D
		16QAM: 8M99W7D
		64QAM: 9M01W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 18M0W7D
	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M49W7D
		64QAM: 4M51W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M98W7D
		64QAM: 8M99W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D



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Test Report No.: W7L-P23030004RF06

	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 18M0W7D
ANTENNA TYPE	ANT 0: IFA Antenna with 0.45dBi gain for LTE7 IFA Antenna with 0.96dBi gain for LTE38 IFA Antenna with 0.96dBi gain for LTE41 ANT 4: IFA Antenna with 0.28dBi gain for LTE7 IFA Antenna with 2.21dBi gain for LTE38 IFA Antenna with 5.21dBi gain for LTE41	
HW VERSION	P1.1	
SW VERSION	MIUI14	
IMEI	867457060032244 867457060047483 867457060047491	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	USB cable1: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable2: non-shielded cable, with w/o ferrite core, 1.0 meter	
EXTREME TEMPERATURE	0-40 °C	
EXTREME VOLTAGE	3.5V - 4.2V	

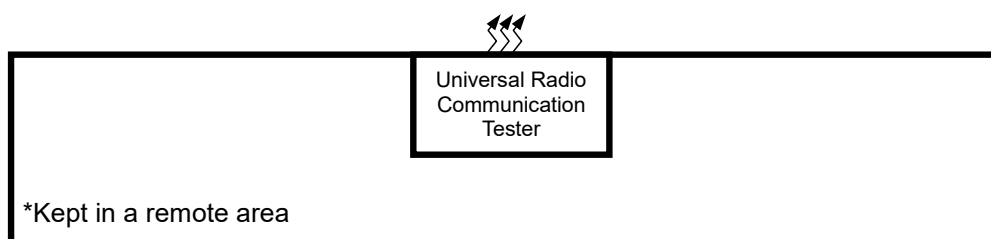
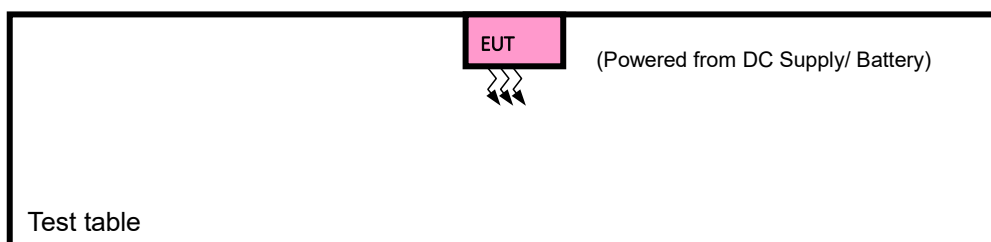
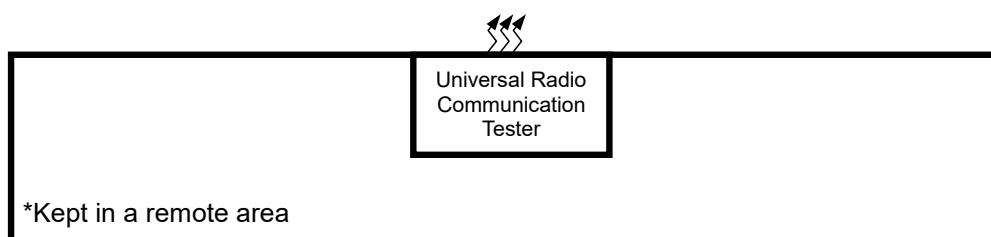
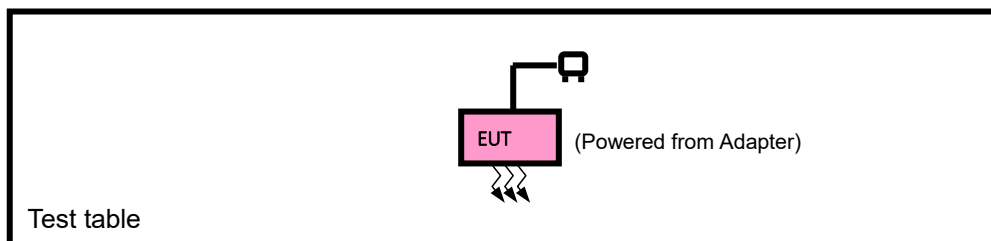
NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides two completed transmitter and two receiver.

MODULATION MODE	TX FUNCTION
LTE	2TX/2RX

3. 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 TEST



2.3 DESCRIPTION OF SUPPORT UNITS

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

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

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

2.4 TEST ITEM AND TEST CONFIGURATION

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

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

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset



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Test Report No.: W7L-P23030004RF06

						25 RB / 0 RB Offset		
		20800 to 21400	20800	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset		
			21400	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset		
		20825 to 21375	20825	15MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset		
			21375	15MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset		
		20850 to 21350	20850	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset		
			21350	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset		
		A	CONDCUDE TED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
				20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0RB Offset
				20825 to 21375	20825, 21100, 21375	15MHz	QPSK	1 RB / 0 RB Offset
20850 to 21350	20850, 21100, 21350			20MHz	QPSK	1 RB / 0 RB Offset		
A	RADIATED EMISSION	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset		
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0 RB Offset		
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset		
		20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB Offset		

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

LTE BAND 38 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset

Note: 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

2. LTE Band 38 are covered by LTE Band 41, Because it is a subset of LTE Band 41 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 41

LTE BAND 41 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	39750 to 41490	39750, 41490	20MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	39675 to 41565	39675	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		39700 to 41540	39700	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset

						50 RB / 0 RB Offset
		39725 to 41515	39725	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		39750 to 41490	39750	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			41490	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDUCTED EMISSION	39675 to 41565	39675, 40620, 41565	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	39700, 40620, 41540	10MHz	QPSK	1 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	39675 to 41565	40620	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	40620	10MHz	QPSK	1 RB / 0 RB Offset
		39725 to 41515	40620	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	39750, 40620, 41490	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.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	Jace Hu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.5/3.8/4.2 By DC Source	James Fu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	James Fu
BAND EDGE	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	James Fu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5V/9V/10V/12V By Adapter	James Fu



Test Report No.: W7L-P23030004RF06

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

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

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

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

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

Ant 0

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	23.92	23.87	23.82
		1	12	24.01	24.04	24.03
		1	24	23.92	23.85	23.94
		12	0	23.06	23.02	23.02
		12	6	23.10	23.07	23.17
		12	13	23.11	23.08	23.13
		25	0	23.06	23.01	23.07
	16QAM	1	0	22.96	22.89	22.95
		1	12	23.15	23.20	23.16
		1	24	23.03	22.99	23.07
		12	0	22.03	21.94	21.99
		12	6	22.05	22.02	22.12
		12	13	22.07	22.09	22.00
		25	0	22.02	22.03	22.05
	64QAM	1	0	22.08	21.99	22.01
		1	12	22.20	22.19	22.21
		1	24	21.95	21.89	21.93
		12	0	21.03	21.03	20.97
		12	6	21.04	21.07	21.09
		12	13	21.08	21.05	21.00
		25	0	21.04	20.99	21.06

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7/ 10	QPSK	1	0	23.90	23.84	23.85
		1	24	24.07	23.97	24.07
		1	49	23.88	23.86	23.90
		25	0	23.10	22.96	23.06
		25	12	23.09	23.08	23.14
		25	25	23.16	23.04	23.16
		50	0	23.06	23.02	23.04
	16QAM	1	0	22.98	22.87	23.01
		1	24	23.20	23.20	23.14
		1	49	23.05	22.96	23.03
		25	0	22.08	21.95	22.02
		25	12	22.10	21.99	22.13
		25	25	22.07	22.07	22.01
		50	0	22.08	21.96	22.06
	64QAM	1	0	22.04	22.00	22.04
		1	24	22.25	22.14	22.21
		1	49	21.97	21.87	21.96
		25	0	21.03	20.97	20.98
		25	12	21.11	21.06	21.03
		25	25	21.07	21.02	21.02
		50	0	21.09	20.95	21.07

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825	Mid CH 21100	High CH 21375
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz
7/ 15	QPSK	1	0	23.95	23.90	23.79
		1	37	24.02	23.97	24.02
		1	74	23.93	23.84	23.93
		36	0	23.10	22.97	23.02
		36	19	23.11	23.04	23.17
		36	39	23.17	23.02	23.17
		75	0	23.00	23.05	23.04
	16QAM	1	0	23.02	22.87	23.02
		1	37	23.13	23.18	23.17
		1	74	23.07	22.98	23.07
		36	0	22.07	21.94	21.99
		36	19	22.06	21.99	22.12
		36	39	22.14	22.09	21.98
		75	0	22.05	21.96	22.01
	64QAM	1	0	22.11	21.98	22.07
		1	37	22.26	22.13	22.18
		1	74	21.93	21.86	21.99
		36	0	21.08	21.03	20.92
		36	19	21.05	21.00	21.05
		36	39	21.10	21.09	21.04
		75	0	21.08	20.93	21.08

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850	Mid CH 21100	High CH 21350
				Frequency 2510 MHz	Frequency 2535 MHz	Frequency 2560 MHz
7/ 20	QPSK	1	0	23.98	23.94	23.99
		1	50	24.11	24.07	24.10
		1	99	23.98	24.02	23.97
		50	0	23.14	23.06	23.09
		50	25	23.19	23.14	23.21
		50	50	23.21	23.12	23.20
		100	0	23.10	23.11	23.11
	16QAM	1	0	23.06	22.97	23.05
		1	50	23.23	23.24	23.24
		1	99	23.12	23.06	23.11
		50	0	22.11	22.03	22.06
		50	25	22.14	22.09	22.16
		50	50	22.17	22.13	22.08
		100	0	22.12	22.06	22.09
	64QAM	1	0	22.14	22.06	22.11
		1	50	22.30	22.22	22.25
		1	99	22.01	21.96	22.03
		50	0	21.11	21.07	21.02
		50	25	21.14	21.10	21.13
		50	50	21.14	21.12	21.10
		100	0	21.12	21.03	21.11

LTE Band 38

Band/BW	Modulation	RB Size	RB Offset	Low CH 37775	Mid CH 38000	High CH 38225
				Frequency 2572.5 MHz	Frequency 2595 MHz	Frequency 2617.5MHz
38/ 5	QPSK	1	0	23.83	23.81	23.95
		1	12	24.06	24.04	24.09
		1	24	23.91	24.00	24.05
		12	0	22.89	22.91	22.92
		12	6	22.78	22.85	22.87
		12	13	22.83	22.86	22.96
		25	0	22.88	22.93	22.95
	16QAM	1	0	22.49	22.45	22.60
		1	12	22.76	22.76	22.84
		1	24	22.61	22.73	22.71
		12	0	21.87	21.87	22.00
		12	6	21.89	21.96	22.00
		12	13	21.89	21.92	22.02
		25	0	21.98	22.03	22.04
	64QAM	1	0	21.62	21.71	21.79
		1	12	21.87	21.89	21.83
		1	24	21.62	21.70	21.74
		12	0	20.92	20.90	20.94
		12	6	20.98	21.05	21.01
		12	13	20.92	21.02	20.98
		25	0	20.90	20.91	20.99

Band/BW	Modulation	RB Size	RB Offset	Low CH 37800	Mid CH 38000	High CH 38200
				Frequency 2575 MHz	Frequency 2595 MHz	Frequency 2615 MHz
38/ 10	QPSK	1	0	23.84	23.84	23.95
		1	24	24.04	24.07	24.09
		1	49	23.92	23.96	24.08
		25	0	22.85	22.94	22.88
		25	12	22.82	22.79	22.90
		25	25	22.82	22.85	22.90
		50	0	22.90	22.93	22.94
	16QAM	1	0	22.44	22.48	22.60
		1	24	22.78	22.75	22.87
		1	49	22.60	22.70	22.75
		25	0	21.86	21.90	21.96
		25	12	21.87	22.02	22.03
		25	25	21.92	21.92	21.96
		50	0	21.98	22.04	22.08
	64QAM	1	0	21.66	21.67	21.73
		1	24	21.85	21.92	21.88
		1	49	21.62	21.70	21.74
		25	0	20.89	20.90	21.00
		25	12	20.96	21.05	20.99
		25	25	20.98	20.95	20.98
		50	0	20.91	20.94	20.98

Band/BW	Modulation	RB Size	RB Offset	Low CH 37825	Mid CH 38000	High CH 38175
				Frequency 2577.5 MHz	Frequency 2595 MHz	Frequency 2612.5MHz
38/ 15	QPSK	1	0	23.85	23.83	23.94
		1	37	24.08	24.02	24.09
		1	74	23.93	23.93	24.08
		36	0	22.92	22.94	22.85
		36	19	22.77	22.79	22.86
		36	39	22.87	22.85	22.96
		75	0	22.94	22.88	22.95
	16QAM	1	0	22.45	22.45	22.60
		1	37	22.82	22.74	22.91
		1	74	22.59	22.71	22.72
		36	0	21.92	21.84	22.01
		36	19	21.87	21.99	22.00
		36	39	21.93	21.91	22.02
		75	0	22.04	21.98	22.05
	64QAM	1	0	21.64	21.64	21.79
		1	37	21.90	21.92	21.83
		1	74	21.65	21.63	21.70
		36	0	20.95	20.89	21.00
		36	19	21.03	21.05	20.96
		36	39	20.99	21.01	20.92
		75	0	20.95	20.89	20.96

Band/BW	Modulation	RB Size	RB Offset	Low CH 37850	Mid CH 38000	High CH 38150
				Frequency 2580 MHz	Frequency 2595 MHz	Frequency 2610 MHz
38/ 20	QPSK	1	0	24.02	24.01	24.04
		1	50	24.12	24.11	24.16
		1	99	24.01	24.03	24.12
		50	0	22.95	22.98	22.95
		50	25	22.86	22.89	22.94
		50	50	22.92	22.93	23.00
		100	0	22.98	22.97	23.02
	16QAM	1	0	22.53	22.55	22.64
		1	50	22.86	22.84	22.94
		1	99	22.69	22.77	22.79
		50	0	21.96	21.94	22.04
		50	25	21.97	22.05	22.07
		50	50	21.98	21.99	22.06
		100	0	22.08	22.07	22.12
	64QAM	1	0	21.72	21.74	21.83
		1	50	21.93	21.96	21.93
		1	99	21.72	21.73	21.78
		50	0	20.98	20.97	21.04
		50	25	21.06	21.09	21.06
		50	50	21.02	21.05	21.02
		100	0	20.99	20.98	21.03



**BUREAU
VERITAS**

Test Report No.: W7L-P23030004RF06

LTE Band 41

Band/BW	Modulation	RB Size	RB Offset	Low CH (39675)	Mid CH (40620)	High CH (41565)
				Frequency (2498.5)MHz	Frequency (2593)MHz	Frequency (2687.5)MHz
41/ 5	QPSK	1	0	23.95	23.90	23.97
		1	12	24.07	24.07	24.12
		1	24	23.94	23.98	23.97
		12	0	22.94	23.00	23.04
		12	6	22.96	22.97	22.98
		12	13	22.85	22.96	22.97
		25	0	22.92	22.93	23.00
	16QAM	1	0	22.63	22.67	22.74
		1	12	22.76	22.83	22.88
		1	24	22.53	22.58	22.60
		12	0	21.89	21.92	22.04
		12	6	21.86	21.91	21.98
		12	13	21.83	21.91	21.97
		25	0	21.97	21.93	22.05
	64QAM	1	0	21.63	21.72	21.78
		1	12	21.77	21.78	21.82
		1	24	21.46	21.58	21.66
		12	0	20.91	20.82	20.99
		12	6	20.75	20.84	20.89
		12	13	20.86	20.82	20.94
		25	0	20.90	20.96	20.95

Band/BW	Modulation	RB Size	RB Offset	Low CH (39700)	Mid CH (40620)	High CH (41540)
				Frequency (2501)MHz	Frequency (2593)MHz	Frequency (2685)MHz
41/ 10	QPSK	1	0	23.92	23.90	23.95
		1	24	24.07	24.08	24.17
		1	49	23.91	23.94	23.95
		25	0	22.95	23.03	23.08
		25	12	23.02	22.97	23.04
		25	25	22.83	22.95	22.98
		50	0	22.97	22.90	23.00
	16QAM	1	0	22.63	22.63	22.74
		1	24	22.81	22.86	22.87
		1	49	22.53	22.55	22.57
		25	0	21.91	21.98	22.00
		25	12	21.90	21.96	21.97
		25	25	21.82	21.88	21.92
		50	0	22.01	21.97	21.98
	64QAM	1	0	21.62	21.69	21.81
		1	24	21.82	21.82	21.79
		1	49	21.52	21.55	21.61
		25	0	20.89	20.88	20.94
		25	12	20.82	20.78	20.91
		25	25	20.85	20.84	20.96
		50	0	20.95	20.97	20.97

Band/BW	Modulation	RB Size	RB Offset	Low CH (39725)	Mid CH (40620)	High CH (41515)
				Frequency (2503.5)MHz	Frequency (2593)MHz	Frequency (2682.5)MHz
41/ 15	QPSK	1	0	23.99	23.87	23.97
		1	37	24.05	24.03	24.17
		1	74	23.97	23.95	23.97
		36	0	22.92	23.04	23.10
		36	19	23.03	22.97	22.99
		36	39	22.81	22.95	23.01
		75	0	22.97	22.95	22.97
	16QAM	1	0	22.67	22.63	22.77
		1	37	22.80	22.86	22.82
		1	74	22.49	22.57	22.61
		36	0	21.95	21.99	22.05
		36	19	21.84	21.92	21.98
		36	39	21.87	21.91	21.97
		75	0	22.02	21.90	22.00
	64QAM	1	0	21.64	21.70	21.82
		1	37	21.83	21.79	21.79
		1	74	21.48	21.58	21.66
		36	0	20.94	20.82	20.98
		36	19	20.76	20.80	20.90
		36	39	20.88	20.86	20.96
		75	0	20.94	20.98	21.00

Band/BW	Modulation	RB Size	RB Offset	Low CH (39750)	Mid CH (40620)	High CH (41490)
				Frequency (2506)MHz	Frequency (2593)MHz	Frequency (2680)MHz
41/ 20	QPSK	1	0	24.03	23.95	24.00
		1	50	24.19	24.09	24.09
		1	99	24.03	23.99	23.99
		50	0	23.11	23.05	22.98
		50	25	23.06	23.02	23.04
		50	50	23.03	22.97	22.89
		100	0	23.02	22.98	22.98
	16QAM	1	0	22.79	22.69	22.70
		1	50	22.89	22.88	22.84
		1	99	22.65	22.60	22.55
		50	0	22.06	22.00	21.97
		50	25	22.03	21.97	21.92
		50	50	21.99	21.93	21.90
		100	0	22.06	21.98	22.03
	64QAM	1	0	21.83	21.74	21.70
		1	50	21.87	21.84	21.85
		1	99	21.67	21.60	21.54
		50	0	21.01	20.90	20.95
		50	25	20.94	20.86	20.83
		50	50	20.98	20.90	20.90
		100	0	21.03	20.99	20.96

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LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/5	QPSK	1	0	23.06	23.01	22.95
		1	12	23.08	23.08	23.04
		1	24	23.07	22.95	23.12
		12	0	23.06	22.95	22.96
		12	6	23.08	22.98	23.09
		12	13	23.06	22.96	23.02
		25	0	23.04	22.92	22.99
	16QAM	1	0	22.95	22.81	22.88
		1	12	23.02	23.00	22.97
		1	24	22.94	22.83	22.92
		12	0	21.99	21.83	21.89
		12	6	22.04	21.94	22.05
		12	13	22.01	21.96	21.88
		25	0	21.99	21.93	21.96
	64QAM	1	0	22.00	21.84	21.87
		1	12	22.06	21.98	22.01
		1	24	22.00	21.87	21.92
		12	0	21.02	20.95	20.90
		12	6	21.01	20.97	21.00
		12	13	21.04	20.94	20.90
		25	0	21.00	20.88	20.96

Band/BW	Modulation	RB Size	RB Offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7/ 10	QPSK	1	0	23.06	23.02	23.01
		1	24	23.13	22.98	23.12
		1	49	23.00	23.02	23.04
		25	0	23.10	22.89	23.00
		25	12	23.07	22.99	23.06
		25	25	23.11	22.92	23.05
		50	0	23.04	22.93	22.96
	16QAM	1	0	22.97	22.79	22.94
		1	24	23.07	23.00	22.95
		1	49	22.96	22.80	22.88
		25	0	22.04	21.84	21.92
		25	12	22.09	21.91	22.06
		25	25	22.01	21.94	21.89
		50	0	22.05	21.86	21.97
	64QAM	1	0	21.96	21.85	21.90
		1	24	22.11	21.93	22.01
		1	49	22.02	21.85	21.95
		25	0	21.02	20.89	20.91
		25	12	21.08	20.96	20.94
		25	25	21.03	20.91	20.92
		50	0	21.05	20.84	20.97

Band/BW	Modulation	RB Size	RB Offset	Low CH 20825	Mid CH 21100	High CH 21375
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz
7/ 15	QPSK	1	0	23.14	23.07	23.03
		1	37	23.13	23.08	23.02
		1	74	23.05	22.95	23.07
		36	0	23.09	22.91	22.99
		36	19	23.13	22.96	23.06
		36	39	23.08	22.90	23.05
		75	0	23.04	22.92	23.00
	16QAM	1	0	22.95	22.83	22.91
		1	37	23.06	22.94	23.02
		1	74	22.93	22.84	22.89
		36	0	22.02	21.84	21.92
		36	19	22.09	21.92	22.02
		36	39	22.03	21.90	21.92
		75	0	22.06	21.92	21.90
	64QAM	1	0	21.99	21.81	21.89
		1	37	22.13	21.93	22.01
		1	74	22.02	21.85	21.95
		36	0	21.02	20.89	20.91
		36	19	21.08	20.96	20.94
		36	39	21.01	20.91	20.92
		75	0	21.04	20.89	20.95

Band/BW	Modulation	RB Size	RB Offset	Low CH 20850	Mid CH 21100	High CH 21350
				Frequency 2510 MHz	Frequency 2535 MHz	Frequency 2560 MHz
7/ 20	QPSK	1	0	23.15	23.08	23.14
		1	50	23.26	23.09	23.19
		1	99	23.17	23.01	23.14
		50	0	23.18	23.03	23.07
		50	25	23.21	23.09	23.17
		50	50	23.20	23.04	23.13
		100	0	23.12	23.06	23.07
	16QAM	1	0	23.09	22.93	23.02
		1	50	23.14	23.08	23.09
		1	99	23.07	22.94	23.00
		50	0	22.11	21.96	22.00
		50	25	22.17	22.05	22.13
		50	50	22.15	22.04	22.00
		100	0	22.13	22.00	22.04
	64QAM	1	0	22.10	21.95	22.01
		1	50	22.20	22.05	22.09
		1	99	22.10	21.98	22.06
		50	0	21.14	21.03	20.99
		50	25	21.15	21.04	21.08
		50	50	21.14	21.05	21.04
		100	0	21.12	20.96	21.05

LTE Band 38

Band/BW	Modulation	RB Size	RB Offset	Low CH 37775	Mid CH 38000	High CH 38225
				Frequency 2572.5 MHz	Frequency 2595 MHz	Frequency 2617.5MHz
38/ 5	QPSK	1	0	23.91	23.79	23.87
		1	12	23.94	23.91	23.99
		1	24	23.78	23.75	23.72
		12	0	22.79	22.80	22.84
		12	6	22.81	22.81	22.80
		12	13	22.82	22.74	22.77
		25	0	22.80	22.80	22.81
	16QAM	1	0	22.55	22.42	22.52
		1	12	22.69	22.63	22.69
		1	24	22.49	22.53	22.47
		12	0	21.87	21.76	21.82
		12	6	21.81	21.79	21.78
		12	13	21.84	21.76	21.79
		25	0	21.90	21.91	21.92
	64QAM	1	0	21.60	21.54	21.51
		1	12	21.66	21.74	21.78
		1	24	21.58	21.56	21.54
		12	0	20.82	20.80	20.88
		12	6	20.78	20.84	20.83
		12	13	20.81	20.87	20.83
		25	0	20.85	20.79	20.84

Band/BW	Modulation	RB Size	RB Offset	Low CH 37800	Mid CH 38000	High CH 38200
				Frequency 2575 MHz	Frequency 2595 MHz	Frequency 2615 MHz
38/ 10	QPSK	1	0	23.91	23.82	23.88
		1	24	23.94	23.94	23.97
		1	49	23.81	23.71	23.73
		25	0	22.75	22.83	22.80
		25	12	22.84	22.75	22.84
		25	25	22.76	22.73	22.76
		50	0	22.79	22.80	22.83
	16QAM	1	0	22.55	22.45	22.47
		1	24	22.72	22.62	22.71
		1	49	22.53	22.50	22.46
		25	0	21.83	21.79	21.81
		25	12	21.84	21.85	21.76
		25	25	21.78	21.76	21.82
		50	0	21.94	21.92	21.92
	64QAM	1	0	21.54	21.50	21.55
		1	24	21.71	21.77	21.76
		1	49	21.58	21.56	21.54
		25	0	20.88	20.80	20.85
		25	12	20.76	20.84	20.81
		25	25	20.81	20.80	20.89
		50	0	20.84	20.82	20.85

Band/BW	Modulation	RB Size	RB Offset	Low CH 37825	Mid CH 38000	High CH 38175
				Frequency 2577.5 MHz	Frequency 2595 MHz	Frequency 2612.5MHz
38/ 15	QPSK	1	0	23.92	23.87	23.92
		1	37	23.97	23.90	24.00
		1	74	23.78	23.69	23.78
		36	0	22.78	22.77	22.82
		36	19	22.78	22.81	22.85
		36	39	22.78	22.71	22.77
		75	0	22.83	22.76	22.86
	16QAM	1	0	22.52	22.43	22.52
		1	37	22.75	22.61	22.71
		1	74	22.54	22.47	22.51
		36	0	21.84	21.77	21.81
		36	19	21.85	21.78	21.82
		36	39	21.81	21.77	21.78
		75	0	21.94	21.87	21.97
	64QAM	1	0	21.57	21.48	21.57
		1	37	21.72	21.71	21.76
		1	74	21.52	21.55	21.61
		36	0	20.84	20.77	20.87
		36	19	20.79	20.80	20.88
		36	39	20.75	20.86	20.90
		75	0	20.79	20.82	20.90

Band/BW	Modulation	RB Size	RB Offset	Low CH 37850	Mid CH 38000	High CH 38150
				Frequency 2580 MHz	Frequency 2595 MHz	Frequency 2610 MHz
38/ 20	QPSK	1	0	23.98	23.93	23.98
		1	50	24.05	24.02	24.09
		1	99	23.99	23.92	23.96
		50	0	22.86	22.91	22.94
		50	25	22.92	22.89	22.92
		50	50	22.90	22.85	22.90
		100	0	22.91	22.88	22.95
	16QAM	1	0	22.63	22.56	22.60
		1	50	22.83	22.75	22.83
		1	99	22.61	22.61	22.59
		50	0	21.95	21.87	21.95
		50	25	21.92	21.92	21.90
		50	50	21.92	21.87	21.92
		100	0	22.02	21.99	22.06
	64QAM	1	0	21.68	21.61	21.65
		1	50	21.80	21.85	21.88
		1	99	21.66	21.63	21.68
		50	0	20.96	20.91	20.98
		50	25	20.87	20.92	20.95
		50	50	20.89	20.94	20.97
		100	0	20.93	20.90	20.97



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Test Report No.: W7L-P23030004RF06

LTE Band 41

Band/BW	Modulation	RB Size	RB Offset	Low CH (39675)	Mid CH (40620)	High CH (41565)
				Frequency (2498.5)MHz	Frequency (2593)MHz	Frequency (2687.5)MHz
41/ 5	QPSK	1	0	24.00	23.89	24.02
		1	12	24.11	24.05	24.16
		1	24	23.88	23.86	23.91
		12	0	23.01	23.01	23.11
		12	6	22.95	22.90	22.97
		12	13	22.94	22.99	23.06
		25	0	22.97	22.92	23.05
	16QAM	1	0	22.88	22.86	22.99
		1	12	22.99	23.00	23.11
		1	24	22.78	22.77	22.85
		12	0	22.01	21.98	22.16
		12	6	21.88	21.87	22.00
		12	13	21.89	21.91	22.03
		25	0	22.02	21.92	22.10
	64QAM	1	0	21.87	21.90	22.02
		1	12	22.02	21.97	22.07
		1	24	21.72	21.78	21.92
		12	0	20.97	20.82	21.05
		12	6	20.85	20.88	20.99
		12	13	20.90	20.80	20.98
		25	0	20.92	20.92	20.97

Band/BW	Modulation	RB Size	RB Offset	Low CH (39700)	Mid CH (40620)	High CH (41540)
				Frequency (2501)MHz	Frequency (2593)MHz	Frequency (2685)MHz
41/ 10	QPSK	1	0	23.97	23.89	24.00
		1	24	24.11	24.06	24.21
		1	49	23.85	23.82	23.89
		25	0	23.02	23.04	23.15
		25	12	23.01	22.90	23.03
		25	25	22.92	22.98	23.07
		50	0	23.02	22.89	23.05
	16QAM	1	0	22.88	22.82	22.99
		1	24	23.04	23.03	23.10
		1	49	22.78	22.74	22.82
		25	0	22.03	22.04	22.12
		25	12	21.92	21.92	21.99
		25	25	21.88	21.88	21.98
		50	0	22.06	21.96	22.03
	64QAM	1	0	21.86	21.87	22.05
		1	24	22.07	22.01	22.04
		1	49	21.78	21.75	21.87
		25	0	20.95	20.88	21.00
		25	12	20.92	20.82	21.01
		25	25	20.89	20.82	21.00
		50	0	20.97	20.93	20.99

Band/BW	Modulation	RB Size	RB Offset	Low CH (39725)	Mid CH (40620)	High CH (41515)
				Frequency (2503.5)MHz	Frequency (2593)MHz	Frequency (2682.5)MHz
41/ 15	QPSK	1	0	23.96	23.85	23.98
		1	37	24.07	24.01	24.12
		1	74	23.84	23.82	23.87
		36	0	22.97	22.97	23.07
		36	19	22.91	22.86	22.93
		36	39	22.90	22.95	23.02
		75	0	22.93	22.88	23.01
	16QAM	1	0	22.84	22.82	22.95
		1	37	22.95	22.96	23.07
		1	74	22.74	22.73	22.81
		36	0	21.97	21.94	22.12
		36	19	21.84	21.83	21.96
		36	39	21.85	21.87	21.99
		75	0	21.98	21.88	22.06
	64QAM	1	0	21.83	21.86	21.98
		1	37	21.98	21.93	22.03
		1	74	21.68	21.74	21.88
		36	0	20.93	20.78	21.01
		36	19	20.81	20.84	20.95
		36	39	20.86	20.76	20.94
		75	0	20.88	20.88	20.93

Band/BW	Modulation	RB Size	RB Offset	Low CH (39750)	Mid CH (40620)	High CH (41490)
				Frequency (2506)MHz	Frequency (2593)MHz	Frequency (2680)MHz
41/ 20	QPSK	1	0	24.10	23.96	24.07
		1	50	24.25	24.09	24.15
		1	99	23.99	23.97	23.95
		50	0	23.20	23.08	23.07
		50	25	23.07	22.97	23.05
		50	50	23.14	23.02	23.00
		100	0	23.09	22.99	23.05
	16QAM	1	0	23.06	22.90	22.97
		1	50	23.14	23.07	23.09
		1	99	22.92	22.81	22.82
		50	0	22.20	22.08	22.11
		50	25	22.07	21.95	21.96
		50	50	22.07	21.95	21.98
		100	0	22.13	21.99	22.10
	64QAM	1	0	22.09	21.94	21.96
		1	50	22.14	22.05	22.12
		1	99	21.95	21.82	21.82
		50	0	21.09	20.92	21.03
		50	25	21.06	20.92	20.95
		50	50	21.04	20.90	20.96
		100	0	21.07	20.97	21.00

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LTE BAND 7

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	24.01	0.45	24.46	279.25	2
21100	2535.0	24.04	0.45	24.49	281.19	2
21425	2567.5	24.03	0.45	24.48	280.54	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	23.15	0.45	23.6	229.09	2
21100	2535.0	23.2	0.45	23.65	231.74	2
21425	2567.5	23.16	0.45	23.61	229.61	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20775	2502.5	22.2	0.45	22.65	184.08	2
21100	2535	22.19	0.45	22.64	183.65	2
21425	2567.5	22.21	0.45	22.66	184.5	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	24.07	0.45	24.52	283.14	2
21100	2535.0	23.97	0.45	24.42	276.69	2
21400	2565.0	24.07	0.45	24.52	283.14	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	23.2	0.45	23.65	231.74	2
21100	2535.0	23.2	0.45	23.65	231.74	2
21400	2565.0	23.14	0.45	23.59	228.56	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.25	0.45	22.7	186.21	2
21100	2535	22.14	0.45	22.59	181.55	2
21400	2565	22.21	0.45	22.66	184.5	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	24.02	0.45	24.47	279.9	2
21100	2535.0	23.97	0.45	24.42	276.69	2
21375	2562.5	24.02	0.45	24.47	279.9	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	23.13	0.45	23.58	228.03	2
21100	2535.0	23.18	0.45	23.63	230.67	2
21375	2562.5	23.17	0.45	23.62	230.14	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	22.26	0.45	22.71	186.64	2
21100	2535	22.13	0.45	22.58	181.13	2
21375	2562.5	22.18	0.45	22.63	183.23	2



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Test Report No.: W7L-P23030004RF06

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	24.11	0.45	24.56	285.76	2
21100	2535.0	24.07	0.45	24.52	283.14	2
21350	2560.0	24.1	0.45	24.55	285.1	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	23.23	0.45	23.68	233.35	2
21100	2535.0	23.24	0.45	23.69	233.88	2
21350	2560.0	23.24	0.45	23.69	233.88	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.3	0.45	22.75	188.36	2
21100	2535	22.22	0.45	22.67	184.93	2
21350	2560	22.25	0.45	22.7	186.21	2

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

LTE BAND 38

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	24.06	0.96	25.02	317.69	2
38000	2595.0	24.04	0.96	25	316.23	2
38225	2617.5	24.09	0.96	25.05	319.89	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	22.76	0.96	23.72	235.5	2
38000	2595.0	22.76	0.96	23.72	235.5	2
38225	2617.5	22.84	0.96	23.8	239.88	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	21.87	0.96	22.83	191.87	2
38000	2595	21.89	0.96	22.85	192.75	2
38225	2617.5	21.83	0.96	22.79	190.11	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	24.04	0.96	25	316.23	2
38000	2595.0	24.07	0.96	25.03	318.42	2
38200	2615.0	24.09	0.96	25.05	319.89	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	22.78	0.96	23.74	236.59	2
38000	2595.0	22.75	0.96	23.71	234.96	2
38200	2615.0	22.87	0.96	23.83	241.55	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575	21.85	0.96	22.81	190.99	2
38000	2595	21.92	0.96	22.88	194.09	2
38200	2615	21.88	0.96	22.84	192.31	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	24.08	0.96	25.04	319.15	2
38000	2595.0	24.02	0.96	24.98	314.77	2
38175	2612.5	24.09	0.96	25.05	319.89	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	22.82	0.96	23.78	238.78	2
38000	2595.0	22.74	0.96	23.7	234.42	2
38175	2612.5	22.91	0.96	23.87	243.78	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	21.9	0.96	22.86	193.2	2
38000	2595	21.92	0.96	22.88	194.09	2
38175	2612.5	21.83	0.96	22.79	190.11	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	24.12	0.96	25.08	322.11	2
38000	2595.0	24.11	0.96	25.07	321.37	2
38150	2610.0	24.16	0.96	25.12	325.09	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	22.86	0.96	23.82	240.99	2
38000	2595.0	22.84	0.96	23.8	239.88	2
38150	2610.0	22.94	0.96	23.9	245.47	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580	21.93	0.96	22.89	194.54	2
38000	2595	21.96	0.96	22.92	195.88	2
38150	2610	21.93	0.96	22.89	194.54	2



**BUREAU
VERITAS**

Test Report No.: W7L-P23030004RF06

LTE BAND 41

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	24.07	0.96	25.03	318.42	2
40620	2593.0	24.07	0.96	25.03	318.42	2
41565	2687.5	24.12	0.96	25.08	322.11	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	22.76	0.96	23.72	235.5	2
40620	2593.0	22.83	0.96	23.79	239.33	2
41565	2687.5	22.88	0.96	23.84	242.1	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
39675	2498.5	21.77	0.96	22.73	187.5	2
40620	2593.0	21.78	0.96	22.74	187.93	2
41565	2687.5	21.82	0.96	22.78	189.67	2