Certificate #6613.01

FCC TEST REPORT

(PART 27)

Applicant:	Cohda Wireless Pty Ltd.
Address:	27 Greenhill Road Wayville SA 5034 Australia

Manufacturer or Supplier:	Cohda Wireless Pty Ltd.
Address:	27 Greenhill Road Wayville SA 5034 Australia
Product:	On board（Transceiver) unit for Automotive.
Brand Name:	Cohda Wireless
Model Name:	MK6 OBU
Series Model	MK6 OBU
FCC ID	2AEGPMK6OBU
Date of tests	Jul. 03, 2023 ~ Sep. 01, 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 Chao Wu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
Chao Wu Date: Sep. 01, 2023	Sun Peibo Date: Sep. 01, 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 **3**

1 SUMMARY OF TEST RESULTS **4**

1.1 MEASREMENT UNCERTAINTY 5
1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION **8**

2.1 GENERAL DESCRIPTION OF EUT 8
2.2 CONFIGURATION OF SYSTEM UNDER TEST 12
2.3 DESCRIPTION OF SUPPORT UNITS 13
2.4 TEST ITEM AND TEST CONFIGURATION 13
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 54
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 54
3.2.2 TEST PROCEDURE 54
3.2.3 TEST SETUP 54
3.2.4 TEST RESULTS 55
3.3 OCCUPIED BANDWIDTH MEASUREMENT 56
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT 56
3.3.2 TEST SETUP 56
3.3.3 TEST PROCEDURES 56
3.3.4 TEST RESULTS 57
3.4 BAND EDGE MEASUREMENT 58
3.4.1 LIMITS OF BAND EDGE MEASUREMENT 58
3.4.2 TEST SETUP 59
3.4.3 TEST PROCEDURES 60
3.4.4 TEST RESULTS 61
3.5 CONDUCTED SPURIOUS EMISSIONS 62
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 62
3.5.2 TEST PROCEDURE 62
3.5.3 TEST SETUP 62
3.5.4 TEST RESULTS 63
3.6 RADIATED EMISSION MEASUREMENT 64
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT 64
3.6.2 TEST PROCEDURES 64
3.6.3 DEVIATION FROM TEST STANDARD 64
3.6.4 TEST SETUP 65
3.6.5 TEST RESULTS 67
3.7 PEAK TO AVERAGE RATIO 97
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 97
3.7.2 TEST SETUP 97
3.7.3 TEST PROCEDURES 97
3.7.4 TEST RESULTS 98

4 INFORMATION ON THE TESTING LABORATORIES **99**

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB **100**

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2307030110RF04	Original release	Sep. 01, 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(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (Band 4) (Band 41) (Band 66)	Compliance	A
§2.1055 §27.54	Frequency Stability	See Note	--
§2.1049	Occupied Bandwidth	See Note	--
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 4) (Band 41) (Band 66)	See Note	--
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 4) (Band 41) (Band 66)	See Note	--
§2.1053 §27.53(h) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 4)) (Band 41) (Band 66)	Compliance	A
§27.50(k)(4)	Peak to average ratio	See Note	--

NOTE: Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

***Test Lab Information Reference**

Lab A:

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 MEASREMENT 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	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB

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.
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	Apr.28,23	Oct.27,23
CABLE	R&S	W12.14	N/A	Apr.28,23	Oct.27,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.28,23	Oct.27,23
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.28,23	Oct.27,23
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,24

NOTE: 1. The calibration interval of the above test instruments is 6 months or 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*	On board（Transceiver) unit for Automotive.	
BRAND NAME*	Cohda Wireless	
MODEL NAME*	MK6 OBU	
SERIES MODEL*	MK6 OBU	
NOMINAL VOLTAGE*	EUT 12Vdc	
MODULATION TECHNOLOGY	**LTE**	QPSK, 16QAM, 64QAM
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	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
	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
	LTE Band 66 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1779.3MHz
	LTE Band 66 Channel Bandwidth: 3MHz	1711.5MHz ~ 1778.5MHz
	LTE Band 66 Channel Bandwidth: 5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band 66 Channel Bandwidth: 10MHz	1715MHz ~ 1775MHz
	LTE Band 66 Channel Bandwidth: 15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720MHz ~ 1770MHz

MAX. EIRP POWER	LTE Band 4 Channel Bandwidth: 1.4MHz	540.75mW
	LTE Band 4 Channel Bandwidth: 3MHz	534.56mW
	LTE Band 4 Channel Bandwidth: 5MHz	539.51mW
	LTE Band 4 Channel Bandwidth: 10MHz	538.27mW
	LTE Band 4 Channel Bandwidth: 15MHz	542.00mW
	LTE Band 4 Channel Bandwidth: 20MHz	543.25mW
	LTE Band 41 Channel Bandwidth: 5MHz	539.51mW
	LTE Band 41 Channel Bandwidth: 10MHz	532.11mW
	LTE Band 41 Channel Bandwidth: 15MHz	549.54mW
	LTE Band 41 Channel Bandwidth: 20MHz	552.08mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	548.28mW
	LTE Band 66 Channel Bandwidth: 3MHz	540.75mW
	LTE Band 66 Channel Bandwidth: 5MHz	540.75mW
	LTE Band 66 Channel Bandwidth: 10MHz	545.76mW
	LTE Band 66 Channel Bandwidth: 15MHz	553.35mW
	LTE Band 66 Channel Bandwidth: 20MHz	555.9mW
EMISSION DESIGNATOR	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M48G7D
		16QAM: 4M47W7D
		64QAM: 4M48W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 8M91G7D
		16QAM: 8M92W7D
		64QAM: 8M92W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M4W7D
	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M8W7D
		64QAM: 17M8W7D

EMISSION DESIGNATOR	**LTE Band 66 Channel Bandwidth: 1.4MHz**	QPSK: 1M09G7D
		16QAM: 1M09W7D
		64QAM: 1M09W7D
	LTE Band 66 Channel Bandwidth: 3MHz	QPSK: 2M69G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 66 Channel Bandwidth: 5MHz	QPSK: 4M47G7D
		16QAM: 4M47W7D
		64QAM: 4M48W7D
	LTE Band 66 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M91W7D
		64QAM: 8M93W7D
	LTE Band 66 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M4W7D
		64QAM: 13M4W7D
	LTE Band 66 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D
ANTENNA TYPE*	ANT1 Monopole Antenna with 4.2dBi gain for LTE 4/LTE 66 ANT2: Monopole Antenna with 4.4dBi gain for LTE 41	
HW VERSION*	Rev 1.0	
SW VERSION*	19.Release.134186	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	N/A	
EXTREME TEMPERATURE*	-20-75 ℃	
EXTREME VOLTAGE*	10.2V – 13.8V	

NOTE:

1. ***Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

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

3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter

and one receiver.

MODULATION MODE	TX FUNCTION
LTE 4/66	1TX/1RX
LTE 41	1TX/1RX

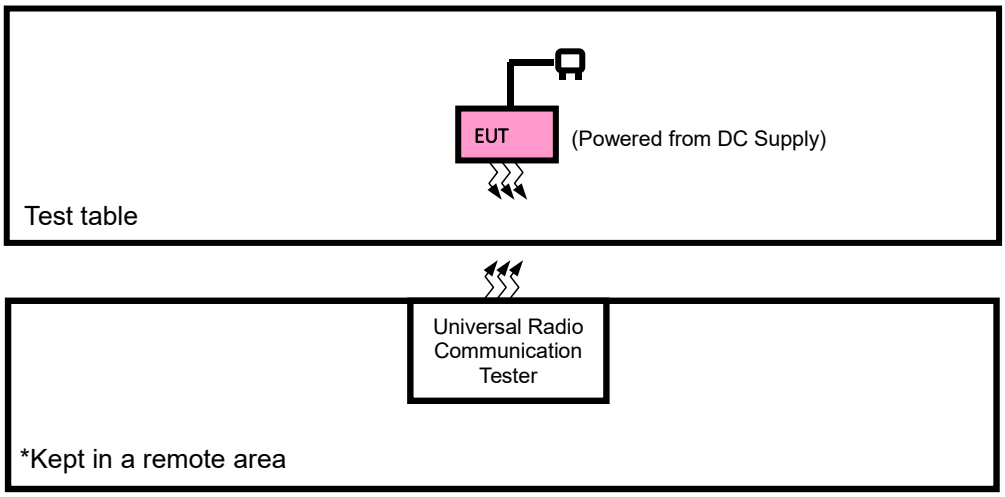
4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	MANUFACTURER	ANTENNA TYPE	MODEL
2x Antenna for LTE/2G/3G/CDMA	Taoglas	Monopole Antenna	TG.66.0723
1x Antenna for WLAN/BT	Taoglas	Monopole Antenna	GW.05.0E23
1x Antenna for WLAN	Taoglas	Monopole Antenna	GW.05.0E23
2x Antenna for C-V2X	MobileMark	DOM Antenna	MGWG-303
2x Antenna for DSRC	MobileMark	DOM Antenna	MGWG-303
1x Antenna for GNSS	MobileMark	DOM Antenna	MGWG-303

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	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A
2	DC Source	HYELEC	HY3010B	551016	N/A
3	Ethernet	N/A	N/A	N/A	N/A
4	CAN Connector	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable, 1.0m;
2	PC USB Line: Unshielded, Detachable, 1.0m;
3	CAN Box: Unshielded, Detachable, 1.8m;
4	Ethernet: Unshielded, Detachable, 0.8m;

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 + DC Supply with LTE link

LTE BAND 4 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	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 4 are covered by LTE Band 66, Because it is a subset of LTE Band 66 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 66

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
A	FREQUENCY STABILITY	39675 to 41565	39675, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39700 to 41540	39700, 41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0RB Offset
		39725 to 41515	39725, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		39750 to 41490	39750, 41490	20MHz	QPSK, 16QAM, 64QAM	1 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	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		39700 to 41540	39700, 40620,41540	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
		39725 to 41515	39725, 40620, 41515	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
		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	39725	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset

		41515				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	CONDCUDETED EMISSION	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
A	RADIATED EMISSION	39675 to 41565	40620	5MHz	QPSK	1 RB / 0 RB Offset
		39700 to 41540	40620	10MHz	QPSK	1 RB / 0RB Offset
		39725 to 41515	39725,40620, 41515	15MHz	QPSK	1 RB / 0 RB Offset
		39750 to 41490	40620	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 66 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM,64QAM	6 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM,64QAM	15 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM,64QAM	100 RB / 0 RB Offset
A	BAND EDGE	131979 to 132322	131979	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			132322	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		131987 to 132657	131987	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			132657	3MHz	QPSK,16QAM, 64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		131997 to 132647	131997	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132647	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		132022 to 132622	132022	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132622	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		132047 to 132597	132047	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			132597	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		132072 to 132572	132072	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			132572	20MHz	QPSK,16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset

A	CONDCUDETED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	131979 to 132665	132322	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	132322	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	132322	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132322, 132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132322	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132322	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 12V By DC Supply	Chao Wu
RADIATED EMISSION	23deg. C, 70%RH	DC 12V By DC Supply	Chao Wu

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

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

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

ERP or EIRP = $P_{Meas} + G_T – L_C$

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);

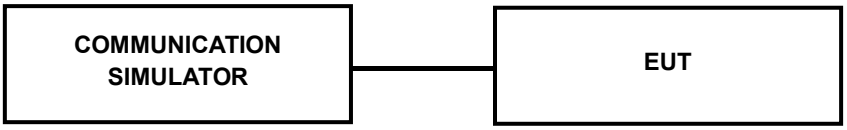
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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

CONDUCTED OUTPUT POWER (dBm)

LTE Band 4

Band/BW	Modulation	RB Size	RB Offset	Low CH 19957	Mid CH 20175	High CH 20393
				Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz
4/ 1.4	QPSK	1	0	22.91	23.00	23.05
		1	2	22.87	22.88	22.95
		1	5	23.05	23.09	23.08
		3	0	23.02	23.00	23.05
		3	1	23.06	23.07	23.12
		3	3	23.13	23.11	23.10
		6	0	22.15	22.17	22.20
	16QAM	1	0	22.18	22.14	22.21
		1	2	22.27	22.18	22.26
		1	5	22.31	22.21	22.38
		3	0	22.11	22.06	22.08
		3	1	22.09	22.18	22.15
		3	3	22.12	22.05	22.10
		6	0	21.07	21.13	21.11
	64QAM	1	0	21.16	21.22	21.25
		1	2	21.26	21.14	21.12
		1	5	21.33	21.22	21.34
		3	0	21.05	20.09	20.03
		3	1	21.13	20.21	20.12
		3	3	21.10	20.15	20.16
		6	0	20.14	20.11	20.14

Band/BW	Modulation	RB Size	RB Offset	Low CH 19965	Mid CH 20175	High CH 20385
				Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz
4/ 3	QPSK	1	0	22.93	23.02	23.04
		1	7	22.83	22.89	22.95
		1	14	23.05	23.08	23.08
		8	0	22.05	22.03	22.05
		8	3	22.01	22.07	22.11
		8	7	22.07	22.18	22.16
		15	0	22.10	22.12	22.08
	16QAM	1	0	22.15	22.20	22.22
		1	7	22.24	22.18	22.24
		1	14	22.30	22.21	22.31
		8	0	21.07	21.09	21.08
		8	3	21.16	21.13	21.16
		8	7	21.11	21.03	21.09
		15	0	21.02	21.07	21.14
	64QAM	1	0	21.22	21.25	21.19
		1	7	21.29	21.08	21.11
		1	14	21.31	21.24	21.34
		8	0	20.08	20.13	20.04
		8	3	20.11	20.15	20.17
		8	7	20.07	20.14	20.12
		15	0	20.16	20.08	20.18

Band/BW	Modulation	RB Size	RB Offset	Low CH 19975	Mid CH 20175	High CH 20375
				Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz
4/ 5	QPSK	1	0	22.94	22.97	23.05
		1	12	22.88	22.86	22.95
		1	24	23.06	23.07	23.12
		12	0	22.04	22.03	22.02
		12	6	22.01	22.08	22.12
		12	13	22.16	22.14	22.17
		25	0	22.08	22.15	22.11
	16QAM	1	0	22.16	22.16	22.24
		1	12	22.24	22.27	22.23
		1	24	22.28	22.21	22.30
		12	0	21.05	21.05	21.05
		12	6	21.11	21.17	21.12
		12	13	21.04	21.05	21.12
		25	0	21.07	21.08	21.11
	64QAM	1	0	21.16	21.22	21.25
		1	12	21.26	21.14	21.11
		1	24	21.27	21.29	21.34
		12	0	20.09	20.10	20.03
		12	6	20.14	20.22	20.16
		12	13	20.11	20.13	20.09
		25	0	20.12	20.14	20.18

Band/BW	Modulation	RB Size	RB Offset	Low CH 20000	Mid CH 20175	High CH 20350
				Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz
4/ 10	QPSK	1	0	22.91	23.00	23.05
		1	24	22.88	22.86	22.96
		1	49	23.03	23.11	23.08
		25	0	22.05	22.02	22.07
		25	12	22.07	22.02	22.12
		25	25	22.09	22.14	22.16
		50	0	22.13	22.15	22.08
	16QAM	1	0	22.16	22.13	22.20
		1	24	22.26	22.21	22.26
		1	49	22.30	22.22	22.27
		25	0	21.09	21.03	21.11
		25	12	21.15	21.11	21.17
		25	25	21.03	21.06	21.09
		50	0	21.11	21.07	21.15
	64QAM	1	0	21.15	21.23	21.22
		1	24	21.31	21.10	21.15
		1	49	21.33	21.23	21.31
		25	0	20.07	20.04	20.09
		25	12	20.18	20.21	20.10
		25	25	20.10	20.13	20.16
		50	0	20.17	20.10	20.17

Band/BW	Modulation	RB Size	RB Offset	Low CH 20025	Mid CH 20175	High CH 20325
				Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz
4/ 15	QPSK	1	0	22.97	23.01	23.02
		1	37	22.86	22.91	22.91
		1	74	23.08	23.14	23.09
		36	0	22.02	22.03	22.08
		36	19	22.08	22.07	22.12
		36	39	22.05	22.13	22.16
		75	0	22.12	22.14	22.10
	16QAM	1	0	22.20	22.20	22.20
		1	37	22.25	22.21	22.26
		1	74	22.28	22.27	22.29
		36	0	21.13	21.03	21.11
		36	19	21.09	21.15	21.16
		36	39	21.08	21.04	21.12
		75	0	21.14	21.10	21.08
	64QAM	1	0	21.17	21.24	21.23
		1	37	21.32	21.09	21.14
		1	74	21.29	21.22	21.34
		36	0	20.14	20.13	20.03
		36	19	20.16	20.15	20.12
		36	39	20.13	20.17	20.17
		75	0	20.16	20.08	20.18

Band/BW	Modulation	RB Size	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300
				Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz
4/ 20	QPSK	1	0	22.99	23.04	23.10
		1	50	22.90	22.94	22.97
		1	99	23.11	**23.15**	23.13
		50	0	22.08	22.08	22.07
		50	25	22.09	22.09	22.17
		50	50	22.15	22.19	22.18
		100	0	22.14	22.17	22.16
	16QAM	1	0	22.23	22.21	22.26
		1	50	22.29	22.26	22.28
		1	99	22.32	22.29	22.32
		50	0	21.15	21.11	21.13
		50	25	21.17	21.19	21.18
		50	50	21.11	21.10	21.14
		100	0	21.13	21.15	21.16
	64QAM	1	0	21.23	21.27	21.27
		1	50	21.34	21.16	21.17
		1	99	21.35	21.30	21.36
		50	0	20.13	20.15	20.11
		50	25	20.19	20.23	20.18
		50	50	20.15	20.18	20.17
		100	0	20.18	20.16	20.19

LTE Band 41

Band/BW	Modulation	RB Size	RB Offset	Low CH (39675) Frequency(2498.5) MHz	Low Mid CH (40148) Frequency(2545.8) MHz	Mid CH (40620) Frequency(2593)MHz	Mid CH (40640) Frequency(2595)MHz	High Mid CH (41093) Frequency(2640.3) MHz	High CH (41565) Frequency(2687.5) MHz
41/5	QPSK	1	0	22.84	22.82	22.92	23.04	22.99	22.56
		1	12	22.72	22.77	22.76	22.83	23.03	22.52
		1	24	22.65	22.77	22.73	22.81	22.59	22.45
		12	0	21.99	22.00	22.00	22.16	22.15	21.79
		12	6	22.05	21.99	21.88	22.17	22.13	21.85
		12	13	21.96	21.98	21.89	22.02	22.06	21.78
		25	0	22.04	21.94	21.89	22.13	22.05	21.71
	16QAM	1	0	22.01	22.04	22.10	22.25	22.05	21.43
		1	12	22.04	21.97	21.83	22.13	22.18	21.88
		1	24	21.77	21.96	21.89	21.95	21.77	21.63
		12	0	21.01	20.92	20.89	21.04	21.10	20.63
		12	6	21.08	20.99	20.94	21.11	21.20	20.89
		12	13	21.01	21.04	20.87	21.12	21.09	20.85
		25	0	21.03	21.02	20.94	21.05	21.07	20.67
	64QAM	1	0	20.63	20.60	20.62	20.79	20.57	20.05
		1	12	20.63	20.56	20.44	20.69	20.82	20.52
		1	24	20.52	20.59	20.34	20.68	20.39	20.33
		12	0	20.04	19.90	19.98	20.05	20.11	19.64
		12	6	20.15	20.08	19.91	20.21	20.26	19.91
		12	13	20.00	19.92	19.93	20.06	19.90	19.79
		25	0	20.11	20.03	19.94	20.17	20.11	19.74

Band/BW	Modulation	RB Size	RB Offset	Low CH (39700)	Low Mid CH (40160)	Mid CH (40620)	Mid CH (40640)	High Mid CH (41080)	High CH (41540)
				Frequency(2501)MHz	Frequency(2547)MHz	Frequency(2593)MHz	Frequency(2595)MHz	Frequency(2639)MHz	Frequency(2685)MHz
41/10	QPSK	1	0	22.90	22.82	22.86	23.10	22.99	22.62
		1	24	22.72	22.79	22.76	22.83	23.05	22.52
		1	49	22.73	22.69	22.67	22.89	22.51	22.53
		25	0	21.97	22.06	22.02	22.14	22.21	21.77
		25	12	21.93	21.99	22.00	22.05	22.13	21.73
		25	25	21.90	21.96	21.85	21.96	22.04	21.72
		50	0	22.04	21.88	21.99	22.13	21.99	21.71
	16QAM	1	0	21.95	21.96	22.10	22.19	21.97	21.37
		1	24	21.96	22.03	21.93	22.05	22.24	21.80
		1	49	21.79	21.90	21.89	21.97	21.71	21.65
		25	0	20.97	21.04	20.93	21.00	21.22	20.59
		25	12	20.96	21.09	21.02	20.99	21.30	20.77
		25	25	21.03	20.98	20.85	21.14	21.03	20.87
		50	0	21.01	21.10	21.02	21.03	21.15	20.65
	64QAM	1	0	20.65	20.54	20.60	20.81	20.51	20.07
		1	24	20.55	20.64	20.54	20.61	20.90	20.44
		1	49	20.40	20.53	20.46	20.56	20.33	20.21
		25	0	19.98	20.02	19.94	19.99	20.23	19.58
		25	12	20.13	19.96	20.05	20.19	20.14	19.89
		25	25	19.94	19.96	19.91	20.00	19.94	19.73
		50	0	20.03	20.05	20.04	20.09	20.13	19.66

Band/BW	Modulation	RB Size	RB Offset	Low CH (39725)	Low Mid CH (40173)	Mid CH (40620)	Mid CH (40640)	High Mid CH (41068)	High CH (41515)
				Frequency (2503.5)MHz	Frequency (2548.3)MHz	Frequency(2593)MHz	Frequency(2595)MHz	Frequency (2637.8)MHz	Frequency (2682.5)MHz
41/15	QPSK	1	0	22.90	22.76	23.00	23.10	22.93	22.62
		1	37	22.82	22.69	22.72	22.93	22.95	22.62
		1	74	22.79	22.71	22.79	22.95	22.53	22.59
		36	0	21.99	22.08	21.96	22.16	22.23	21.79
		36	19	22.03	21.99	22.02	22.15	22.13	21.83
		36	39	21.92	21.96	21.81	21.98	22.04	21.74
		75	0	22.00	21.98	21.99	22.09	22.09	21.67
	16QAM	1	0	22.09	21.96	22.18	22.33	21.97	21.51
		1	37	21.98	22.03	21.91	22.07	22.24	21.82
		1	74	21.89	21.94	21.81	22.07	21.75	21.75
		36	0	20.97	21.06	21.01	21.00	21.24	20.59
		36	19	21.04	21.01	20.90	21.07	21.22	20.85
		36	39	20.99	21.04	20.95	21.10	21.09	20.83
		75	0	21.07	20.96	21.04	21.09	21.01	20.71
	64QAM	1	0	20.67	20.56	20.64	20.83	20.53	20.09
		1	37	20.53	20.58	20.56	20.59	20.84	20.42
		1	74	20.38	20.59	20.38	20.54	20.39	20.19
		36	0	20.10	19.90	20.04	20.11	20.11	19.70
		36	19	20.01	20.00	19.93	20.07	20.18	19.77
		36	39	20.08	20.00	19.97	20.14	19.98	19.87
		75	0	19.99	20.07	20.02	20.05	20.15	19.62

Band/BW	Modulation	RB Size	RB Offset	Low CH (39750)	Low Mid CH (40185)	Mid CH (40620)	Mid CH (40640)	High Mid CH (41055)	High CH (41490)
				Frequency (2506)MHz	Frequency (2549.5)MHz	Frequency (2593)MHz	Frequency(2595)MHz	Frequency (2636.5MHz	Frequency (2680)MHz
41/20	QPSK	1	0	22.98	22.92	23.02	**23.18**	23.09	22.70
		1	50	22.88	22.81	22.80	22.99	23.07	22.68
		1	99	22.81	22.79	22.83	22.97	22.61	22.61
		50	0	22.09	22.10	22.08	22.26	22.25	21.89
		50	25	22.07	22.09	22.04	22.19	22.23	21.87
		50	50	22.06	22.00	21.97	22.12	22.08	21.88
		100	0	22.08	22.04	22.01	22.17	22.15	21.75
	16QAM	1	0	22.11	22.08	22.24	22.35	22.09	21.53
		1	50	22.08	22.07	21.99	22.17	22.28	21.92
		1	99	21.93	22.00	21.93	22.11	21.81	21.79
		50	0	21.13	21.08	21.05	21.16	21.26	20.75
		50	25	21.12	21.11	21.06	21.15	21.32	20.93
		50	50	21.11	21.08	21.01	21.22	21.13	20.95
		100	0	21.17	21.12	21.06	21.19	21.17	20.81
	64QAM	1	0	20.73	20.64	20.76	20.89	20.61	20.15
		1	50	20.67	20.68	20.60	20.73	20.94	20.56
		1	99	20.54	20.63	20.50	20.70	20.43	20.35
		50	0	20.14	20.06	20.06	20.15	20.27	19.74
		50	25	20.17	20.12	20.07	20.23	20.30	19.93
		50	50	20.10	20.08	20.01	20.16	20.06	19.89
		100	0	20.15	20.09	20.06	20.21	20.17	19.78

LTE Band 66

Band/BW	Modulation	RB Size	RB Offset	Low CH 131979 Frequency 1710.7MHz	Mid CH 132322 Frequency 1745MHz	High CH 132665 Frequency 1779.3MHz
66/ 1.4	QPSK	1	0	23.04	23.18	23.09
		1	2	23.04	23.11	22.99
		1	5	23.11	23.18	23.10
		3	0	23.04	23.18	23.11
		3	1	23.21	23.19	23.08
		3	3	23.20	23.19	23.12
		6	0	22.18	22.19	22.21
	16QAM	1	0	22.29	22.31	22.26
		1	2	22.39	22.39	22.17
		1	5	22.27	22.33	22.40
		3	0	22.08	21.99	22.13
		3	1	22.09	22.00	22.32
		3	3	22.15	22.05	22.30
		6	0	21.05	21.05	21.27
	64QAM	1	0	21.08	21.22	21.26
		1	2	21.15	21.34	21.21
		1	5	21.16	21.36	21.31
		3	0	21.05	21.25	21.33
		3	1	21.10	21.23	21.33
		3	3	21.07	21.29	21.33
		6	0	20.18	20.24	20.32

Band/BW	Modulation	RB Size	RB Offset	Low CH 131987 Frequency 1711.5MHz	Mid CH 132322 Frequency 1745MHz	High CH 132657 Frequency 1778.5MHz
66/ 3	QPSK	1	0	23.01	23.13	23.03
		1	7	22.98	23.04	22.97
		1	14	23.02	23.10	23.09
		8	0	21.99	22.16	22.06
		8	3	22.06	22.18	22.05
		8	7	22.13	22.21	22.15
		15	0	22.09	22.18	22.10
	16QAM	1	0	22.19	22.32	22.27
		1	7	22.28	22.40	22.10
		1	14	22.28	22.25	22.38
		8	0	20.96	20.94	21.05
		8	3	21.08	20.93	21.29
		8	7	21.10	20.98	21.24
		15	0	20.99	20.92	21.25
	64QAM	1	0	21.07	21.20	21.18
		1	7	21.10	21.26	21.14
		1	14	21.09	21.37	21.29
		8	0	20.04	20.24	20.26
		8	3	20.06	20.16	20.36
		8	7	20.00	20.28	20.21
		15	0	20.14	20.19	20.33

Band/BW	Modulation	RB Size	RB Offset	Low CH 131997 Frequency 1712.5MHz	Mid CH 132322 Frequency 1745MHz	High CH 132647 Frequency 1777.5MHz
66/ 5	QPSK	1	0	23.02	23.08	23.04
		1	12	23.03	23.01	22.97
		1	24	23.03	23.09	23.13
		12	0	22.02	22.16	22.03
		12	6	22.06	22.19	22.06
		12	13	22.17	22.17	22.16
		25	0	22.07	22.21	22.13
	16QAM	1	0	22.20	22.28	22.27
		1	12	22.25	22.43	22.09
		1	24	22.28	22.25	22.37
		12	0	20.96	20.92	21.02
		12	6	21.05	20.97	21.25
		12	13	21.05	21.00	21.27
		25	0	20.99	20.93	21.22
	64QAM	1	0	21.01	21.17	21.24
		1	12	21.07	21.32	21.14
		1	24	21.02	21.42	21.29
		12	0	20.05	20.21	20.25
		12	6	20.00	20.23	20.35
		12	13	20.04	20.27	20.18
		25	0	20.10	20.25	20.31

Band/BW	Modulation	RB Size	RB Offset	Low CH 132022 Frequency 1715MHz	Mid CH 132322 Frequency 1745MHz	High CH 132622 Frequency 1775MHz
66/ 10	QPSK	1	0	22.96	23.14	23.04
		1	24	23.03	23.01	22.99
		1	49	22.97	23.17	23.05
		25	0	22.04	22.14	22.09
		25	12	22.18	22.07	22.06
		25	25	22.13	22.11	22.14
		50	0	22.17	22.21	22.07
	16QAM	1	0	22.20	22.22	22.19
		1	24	22.35	22.35	22.15
		1	49	22.28	22.27	22.31
		25	0	21.00	20.88	21.14
		25	12	21.13	20.85	21.35
		25	25	21.03	21.02	21.21
		50	0	21.07	20.91	21.30
	64QAM	1	0	20.99	21.19	21.18
		1	24	21.17	21.24	21.22
		1	49	21.14	21.30	21.23
		25	0	20.01	20.15	20.37
		25	12	20.14	20.21	20.23
		25	25	20.02	20.21	20.22
		50	0	20.20	20.17	20.33

Band/BW	Modulation	RB Size	RB Offset	Low CH 132047 Frequency 1717.5 MHz	Mid CH 132322 Frequency 1745MHz	High CH 132597 Frequency 1772.5 MHz
66/ 15	QPSK	1	0	23.10	23.14	22.98
		1	37	22.99	23.11	22.89
		1	74	23.09	23.23	23.07
		36	0	21.98	22.16	22.11
		36	19	22.20	22.17	22.06
		36	39	22.09	22.13	22.14
		75	0	22.17	22.17	22.17
	16QAM	1	0	22.28	22.36	22.19
		1	37	22.33	22.37	22.15
		1	74	22.20	22.37	22.35
		36	0	21.08	20.88	21.16
		36	19	21.01	20.93	21.27
		36	39	21.13	20.98	21.27
		75	0	21.09	20.97	21.16
	64QAM	1	0	21.03	21.21	21.20
		1	37	21.19	21.22	21.16
		1	74	21.06	21.28	21.29
		36	0	20.11	20.27	20.25
		36	19	20.02	20.09	20.27
		36	39	20.08	20.35	20.26
		75	0	20.18	20.13	20.35

Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz
66/ 20	QPSK	1	0	23.12	23.22	23.14
		1	50	23.07	23.17	23.01
		1	99	23.13	**23.25**	23.15
		50	0	22.10	22.26	22.13
		50	25	22.22	22.21	22.16
		50	50	22.25	22.27	22.18
		100	0	22.19	22.25	22.23
	16QAM	1	0	22.34	22.38	22.31
		1	50	22.41	22.47	22.19
		1	99	22.32	22.41	22.41
		50	0	21.12	21.04	21.18
		50	25	21.17	21.01	21.37
		50	50	21.19	21.10	21.31
		100	0	21.11	21.07	21.32
	64QAM	1	0	21.15	21.27	21.28
		1	50	21.23	21.36	21.26
		1	99	21.18	21.44	21.33
		50	0	20.13	20.31	20.41
		50	25	20.16	20.25	20.39
		50	50	20.12	20.37	20.34
		100	0	20.22	20.29	20.37

EIRP
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	23.13	4.2	27.33	540.75	1
20175	1732.5	23.11	4.2	27.31	538.27	1
20393	1754.3	23.12	4.2	27.32	539.51	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	22.31	4.2	26.51	447.71	1
20175	1732.5	22.21	4.2	26.41	437.52	1
20393	1754.3	22.38	4.2	26.58	454.99	1

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19957	1710.7	21.33	4.2	25.53	357.27	1
20175	1732.5	21.22	4.2	25.42	348.34	1
20393	1754.3	21.34	4.2	25.54	358.1	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	23.05	4.2	27.25	530.88	1
20175	1732.5	23.08	4.2	27.28	534.56	1
20385	1753.5	23.08	4.2	27.28	534.56	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	22.3	4.2	26.5	446.68	1
20175	1732.5	22.21	4.2	26.41	437.52	1
20385	1753.5	21.08	4.2	25.28	337.29	1

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19965	1711.5	21.31	4.2	25.51	355.63	1
20175	1732.5	21.25	4.2	25.45	350.75	1
20385	1753.5	21.34	4.2	25.54	358.1	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	23.06	4.2	27.26	532.11	1
20175	1732.5	23.07	4.2	27.27	533.33	1
20375	1752.5	23.12	4.2	27.32	539.51	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	22.28	4.2	26.48	444.63	1
20175	1732.5	22.27	4.2	26.47	443.61	1
20375	1752.5	22.3	4.2	26.5	446.68	1

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
19975	1712.5	21.27	4.2	25.47	352.37	1
20175	1732.5	21.29	4.2	25.49	354	1
20375	1752.5	21.34	4.2	25.54	358.1	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	23.03	4.2	27.23	528.45	1
20175	1732.5	23.11	4.2	27.31	538.27	1
20350	1750	23.08	4.2	27.28	534.56	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	22.3	4.2	26.5	446.68	1
20175	1732.5	22.22	4.2	26.42	438.53	1
20350	1750	22.27	4.2	26.47	443.61	1

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	21.33	4.2	25.53	357.27	1
20175	1732.5	21.23	4.2	25.43	349.14	1
20350	1750	21.31	4.2	25.51	355.63	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	23.08	4.2	27.28	534.56	1
20175	1732.5	23.14	4.2	27.34	542	1
20325	1747.5	23.09	4.2	27.29	535.8	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	22.28	4.2	26.48	444.63	1
20175	1732.5	22.27	4.2	26.47	443.61	1
20325	1747.5	22.29	4.2	26.49	445.66	1

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20025	1717.5	21.32	4.2	25.52	356.45	1
20175	1732.5	21.24	4.2	25.44	349.95	1
20325	1747.5	21.34	4.2	25.54	358.1	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	23.11	4.2	27.31	538.27	1
20175	1732.5	23.15	4.2	27.35	543.25	1
20300	1745	23.13	4.2	27.33	540.75	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.32	4.2	26.52	448.75	1
20175	1732.5	22.29	4.2	26.49	445.66	1
20300	1745	22.32	4.2	26.52	448.75	1

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	21.35	4.2	25.55	358.92	1
20175	1732.5	21.3	4.2	25.5	354.81	1
20300	1745	21.36	4.2	25.56	359.75	1

LTE BAND 41

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40065	2537.5	22.85	4.4	27.25	530.88	2
40640	25.95	22.92	4.4	27.32	539.51	2
41215	2562.5	22.56	4.4	26.96	496.59	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40065	2537.5	22.04	4.4	26.44	440.55	2
40640	25.95	22.1	4.4	26.5	446.68	2
41215	2562.5	21.88	4.4	26.28	424.62	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40065	2537.5	20.68	4.4	25.08	322.11	2
40640	25.95	20.62	4.4	25.02	317.69	2
41215	2562.5	20.52	4.4	24.92	310.46	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40090	2540	22.85	4.4	27.25	530.88	2
40640	2595	22.86	4.4	27.26	532.11	2
41190	2650	22.62	4.4	27.02	503.5	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40090	2540	22.04	4.4	26.44	440.55	2
40640	2595	22.1	4.4	26.5	446.68	2
41190	2650	21.8	4.4	26.2	416.87	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40090	2540	20.66	4.4	25.06	320.63	2
40640	2595	20.6	4.4	25	316.23	2
41190	2650	20.44	4.4	24.84	304.79	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40115	2542.5	22.93	4.4	27.33	540.75	2
40640	2595	23	4.4	27.4	549.54	2
41165	2647.5	22.62	4.4	27.02	503.5	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40115	2542.5	22.12	4.4	26.52	448.75	2
40640	2595	22.18	4.4	26.58	454.99	2
41165	2647.5	21.82	4.4	26.22	418.79	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40115	2542.5	20.7	4.4	25.1	323.59	2
40640	2595	20.64	4.4	25.04	319.15	2
41165	2647.5	20.42	4.4	24.82	303.39	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40140	2545	22.95	4.4	27.35	543.25	2
40640	2595	23.02	4.4	27.42	552.08	2
41140	2645	22.7	4.4	27.1	512.86	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40140	2545	22.18	4.4	26.58	454.99	2
40640	2595	22.24	4.4	26.64	461.32	2
41140	2645	21.92	4.4	26.32	428.55	2

CHANNEL BANDWIDTH: 20 MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40140	2545	20.82	4.4	25.22	332.66	2
40640	2595	20.76	4.4	25.16	328.1	2
41140	2645	20.56	4.4	24.96	313.33	2

LTE BAND 66

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	23.21	4.2	27.41	550.81	1
132322	1745	23.19	4.2	27.39	548.28	1
132665	1779.3	23.12	4.2	27.32	539.51	1

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	22.39	4.2	26.59	456.04	1
132322	1745	22.39	4.2	26.59	456.04	1
132665	1779.3	22.4	4.2	26.6	457.09	1

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131979	1710.7	21.16	4.2	25.36	343.56	1
132322	1745	21.36	4.2	25.56	359.75	1
132665	1779.3	21.33	4.2	25.53	357.27	1

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	23.02	4.2	27.22	527.23	1
132322	1745	23.13	4.2	27.33	540.75	1
132657	1778.5	23.09	4.2	27.29	535.8	1

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	22.28	4.2	26.48	444.63	1
132322	1745	22.4	4.2	26.6	457.09	1
132657	1778.5	22.38	4.2	26.58	454.99	1

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131987	1711.5	21.1	4.2	25.3	338.84	1
132322	1745	21.37	4.2	25.57	360.58	1
132657	1778.5	21.29	4.2	25.49	354	1

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	23.03	4.2	27.23	528.45	1
132322	1745	23.09	4.2	27.29	535.8	1
132647	1777.5	23.13	4.2	27.33	540.75	1

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	22.28	4.2	26.48	444.63	1
132322	1745	22.43	4.2	26.63	460.26	1
132647	1777.5	22.37	4.2	26.57	453.94	1

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
131997	1712.5	21.07	4.2	25.27	336.51	1
132322	1745	21.42	4.2	25.62	364.75	1
132647	1777.5	21.29	4.2	25.49	354	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	23.03	4.2	27.23	528.45	1
132322	1745	23.17	4.2	27.37	545.76	1
132622	1775	23.05	4.2	27.25	530.88	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	22.35	4.2	26.55	451.86	1
132322	1745	22.35	4.2	26.55	451.86	1
132622	1775	22.31	4.2	26.51	447.71	1

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	21.17	4.2	25.37	344.35	1
132322	1745	21.3	4.2	25.5	354.81	1
132622	1775	21.23	4.2	25.43	349.14	1

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	23.1	4.2	27.3	537.03	1
132322	1745	23.23	4.2	27.43	553.35	1
132597	1772.5	23.07	4.2	27.27	533.33	1

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	22.33	4.2	26.53	449.78	1
132322	1745	22.37	4.2	26.57	453.94	1
132597	1772.5	22.35	4.2	26.55	451.86	1

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132047	1717.5	21.19	4.2	25.39	345.94	1
132322	1745	21.28	4.2	25.48	353.18	1
132597	1772.5	21.29	4.2	25.49	354	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	23.13	4.2	27.33	540.75	1
132322	1745	23.25	4.2	27.45	555.9	1
132572	1770	23.15	4.2	27.35	543.25	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	22.41	4.2	26.61	458.14	1
132322	1745	22.47	4.2	26.67	464.52	1
132572	1770	22.41	4.2	26.61	458.14	1

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	21.23	4.2	25.43	349.14	1
132322	1745	21.44	4.2	25.64	366.44	1
132572	1770	21.33	4.2	25.53	357.27	1

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

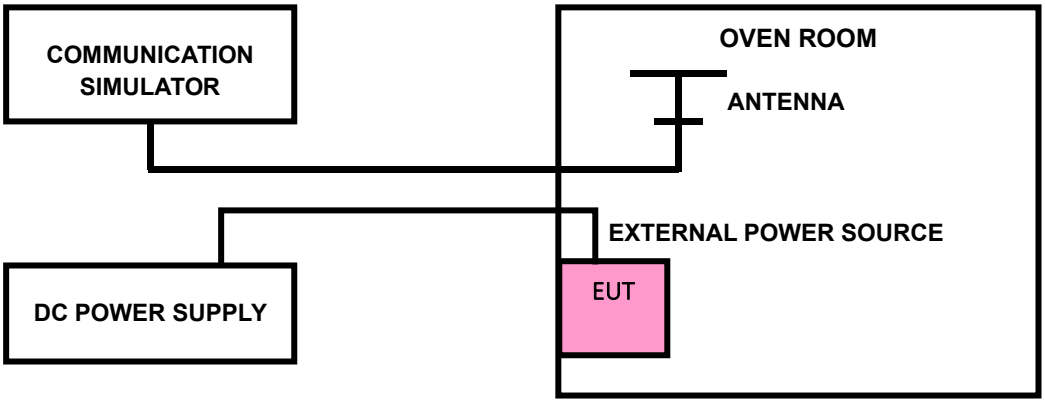
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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 ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

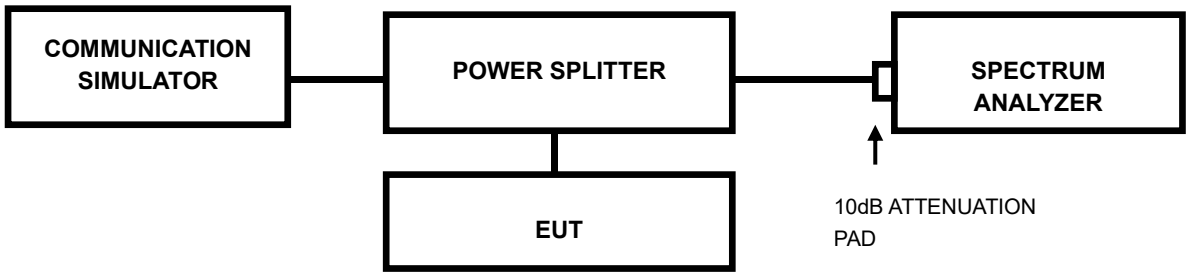
Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

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

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

3.3.4 TEST RESULTS

Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

3.4 BAND EDGE MEASUREMENT

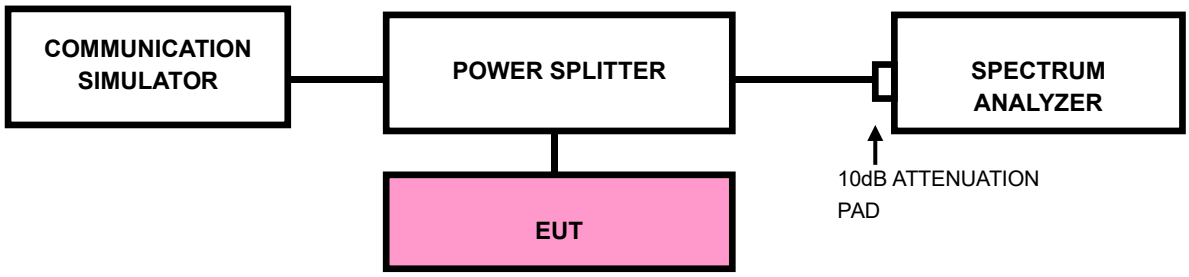
3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC Part 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

According to FCC Part 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.

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

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.

b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).

c) Set the resolution bandwidth (RBW) ≧ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.

d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.

e) Set the video bandwidth (VBW) to ≧3 x RBW.

f) Select the average power (RMS) display detector.

g) Set the number of measurement points to ≧ 1001.

h) Use auto-coupled sweep time.

i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.

j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.

k) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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

For: LTE Band41

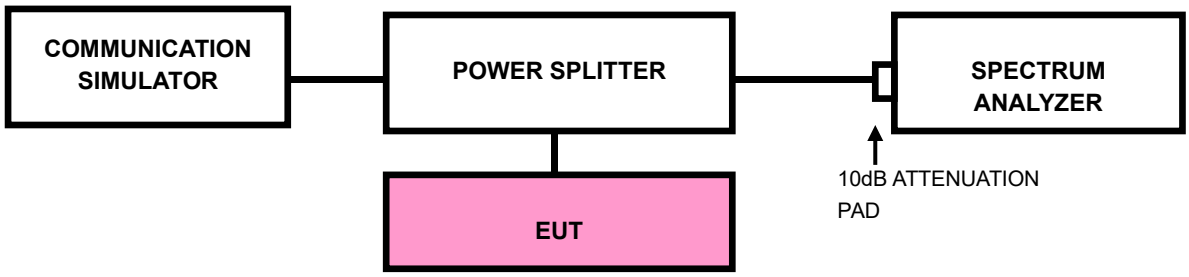
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP



3.5.4 TEST RESULTS

NOTE：The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

For: LTE Band41

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 55 +10 log10(P) dB. The limit of emission is equal to -25dBm.

.

3.6.2 TEST PROCEDURES

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

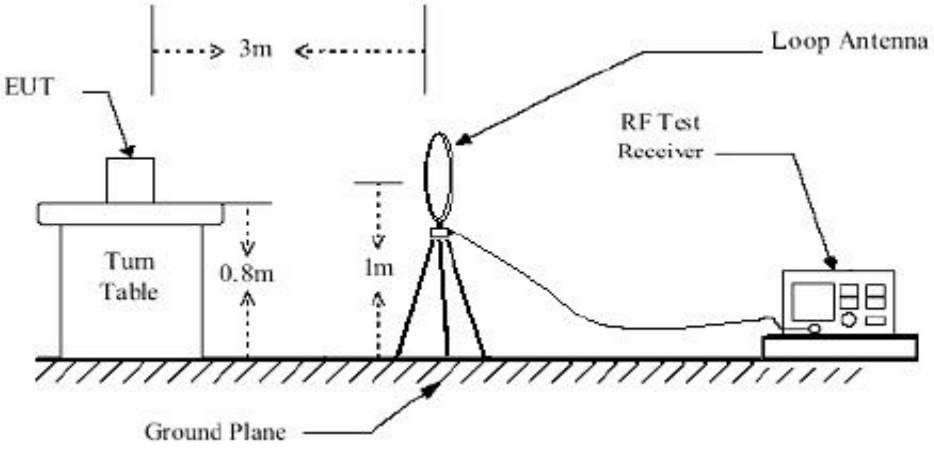
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

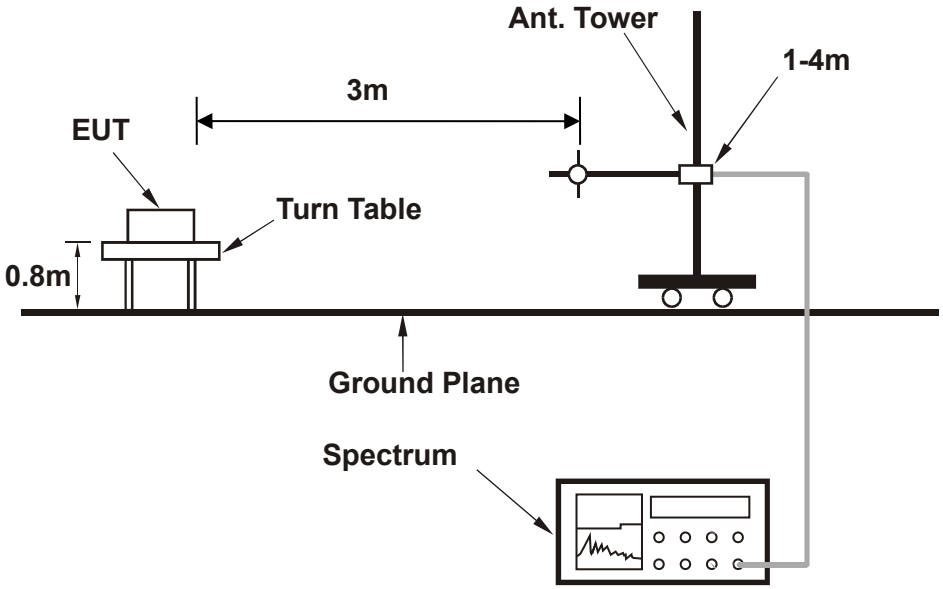
No deviation

3.6.4 TEST SETUP

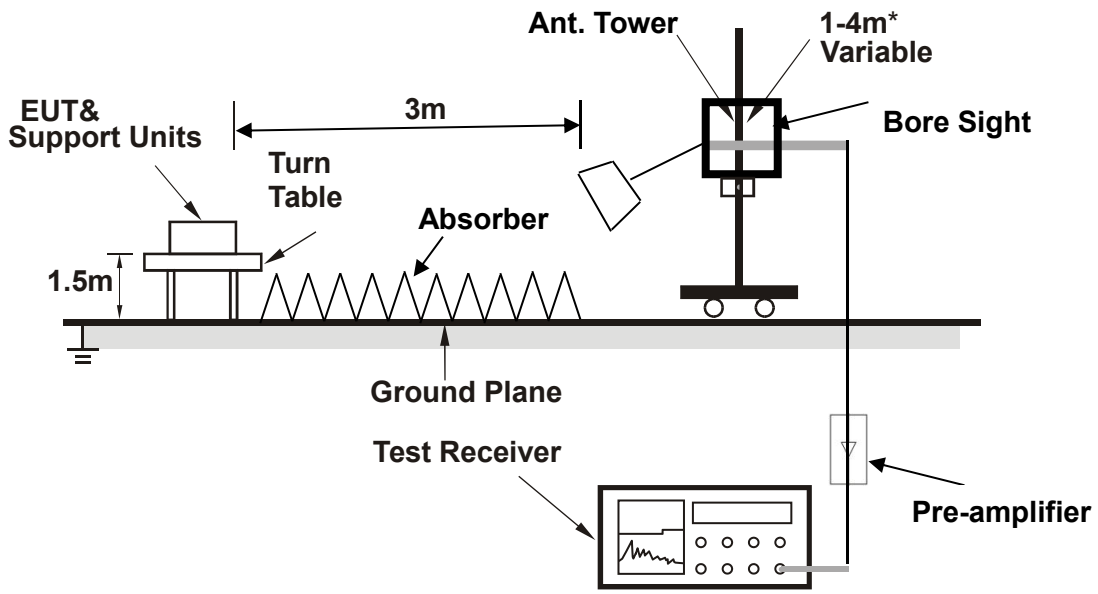
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.6.5 TEST RESULTS

NOTE：The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

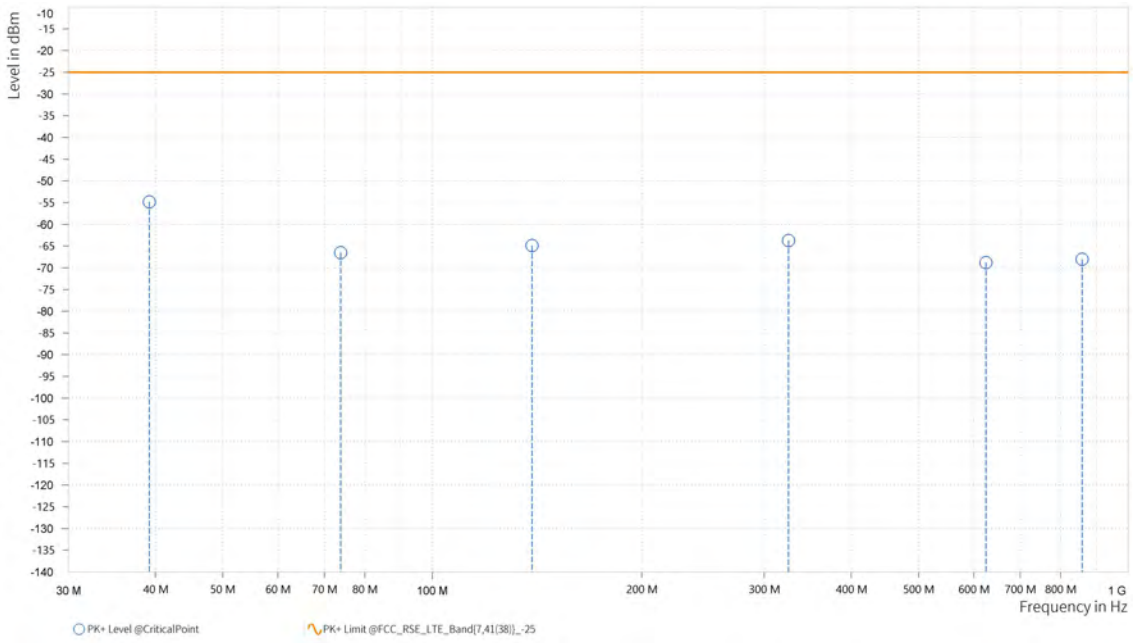
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 41
CHANNEL BANDWIDTH: 15MHz / QPSK

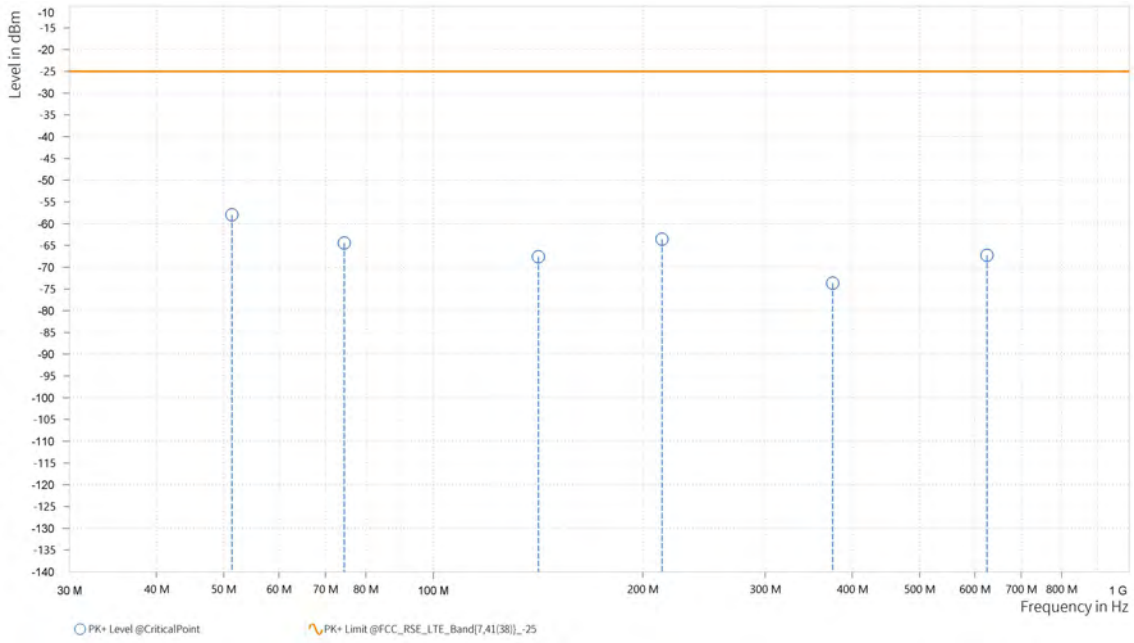
MODE	TX channel 40620	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	39.200	-54.85	-25.00	29.85	-1.59	H	345.1	2
1	73.850	-66.49	-25.00	41.49	-6.01	H	1	1
1	139.100	-64.86	-25.00	39.86	-8.07	H	1	2
1	325.050	-63.71	-25.00	38.71	1.41	H	191.9	1
2	624.946	-68.81	-25.00	43.81	5.70	H	1	2
2	859.200	-68.06	-25.00	43.06	7.77	H	117.8	1



MODE	TX channel 40620	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	51.350	-57.93	-25.00	32.93	1.97	V	194.3	2
1	74.500	-64.44	-25.00	39.44	-6.39	V	346.6	1
1	141.650	-67.61	-25.00	42.61	-5.51	V	194.3	1
1	213.150	-63.56	-25.00	38.56	-3.53	V	5.2	2
1	374.950	-73.69	-25.00	48.69	1.56	V	194.3	2
2	624.992	-67.29	-25.00	42.29	4.56	V	272.1	2



ABOVE 1GHz

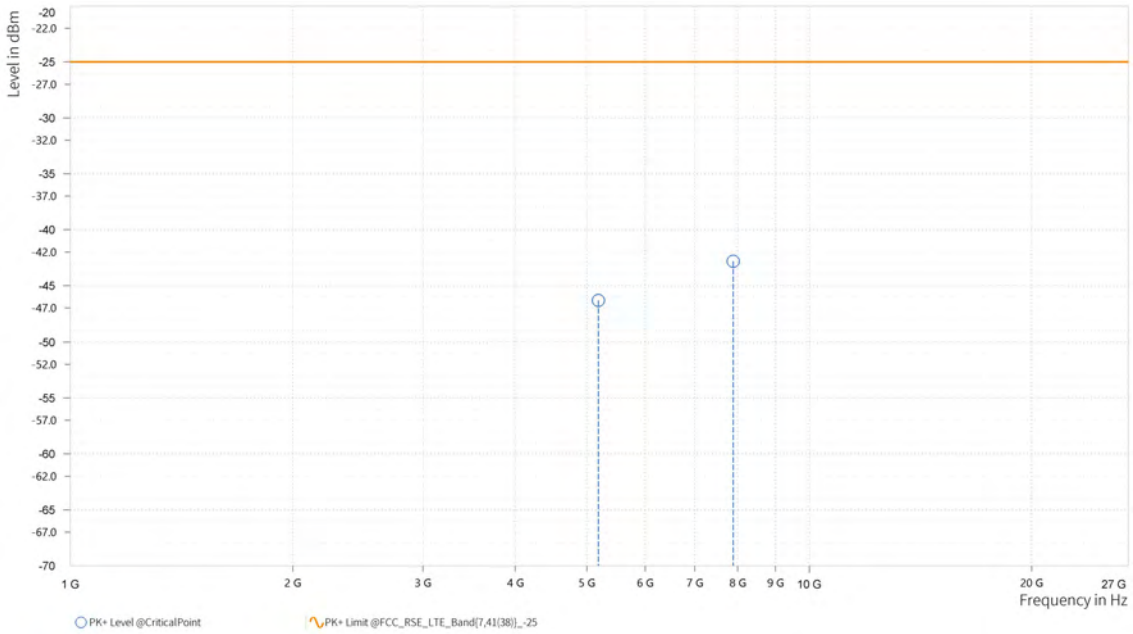
Note: For higher frequency, the emission is too low to be detected.

LTE BAND 41

CHANNEL BANDWIDTH: 5MHz / QPSK

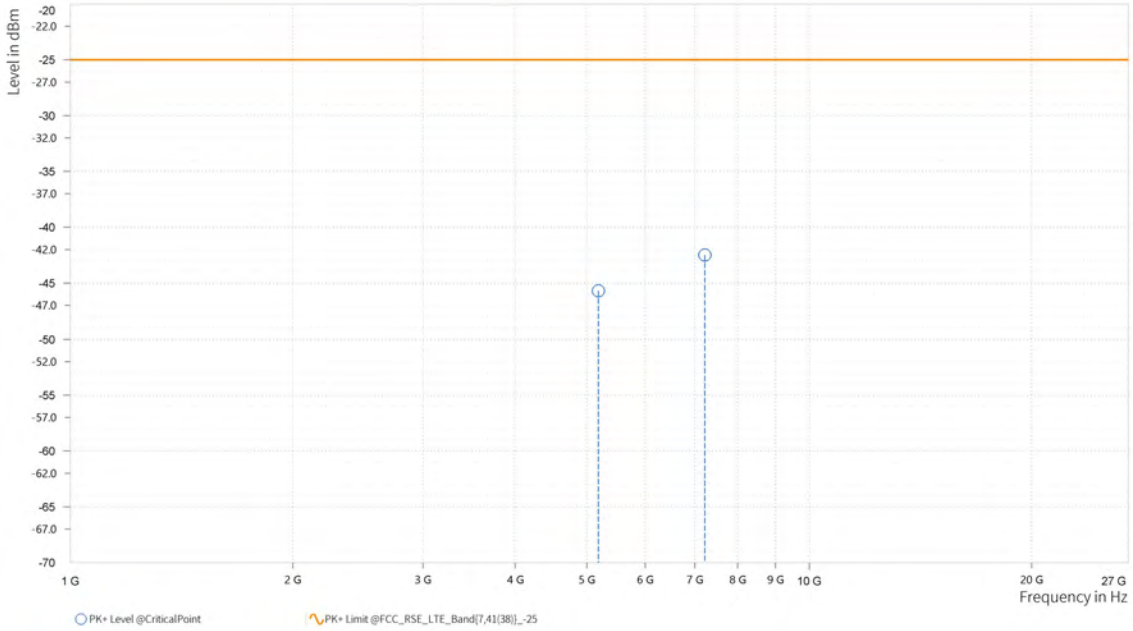
MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,181.500	-46.34	-25.00	21.34	27.12	H	183.6	2
5	7,891.045	-42.83	-25.00	17.83	29.36	H	359.1	2



MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

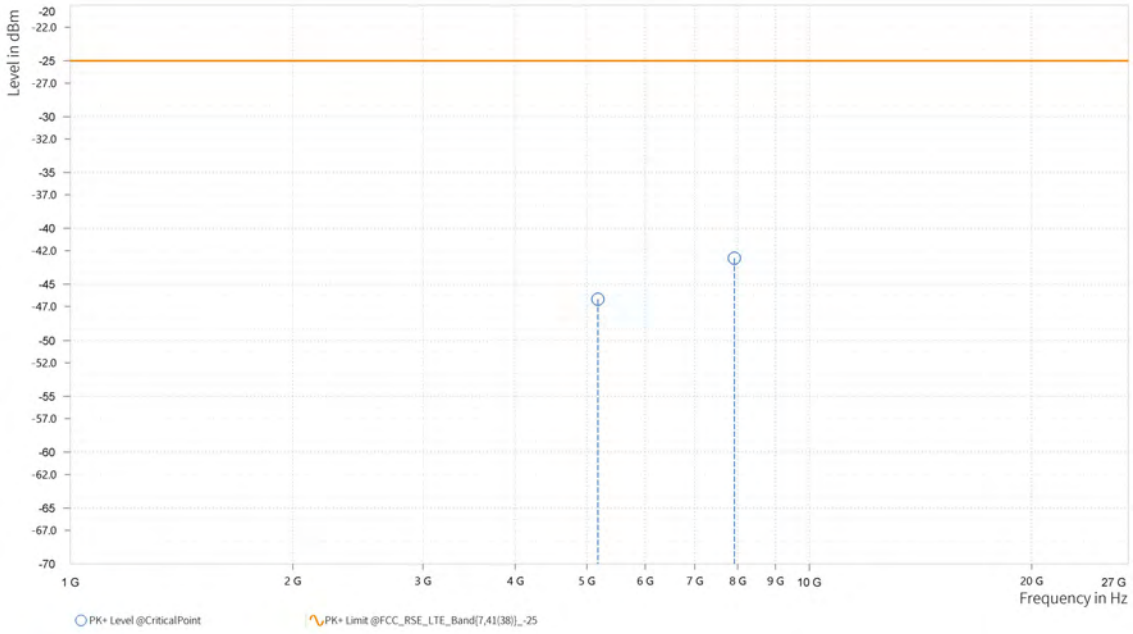
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,181.500	-45.70	-25.00	20.70	27.06	V	184.8	2
5	7,223.667	-42.50	-25.00	17.50	29.18	V	1	1



CHANNEL BANDWIDTH: 10MHz / QPSK

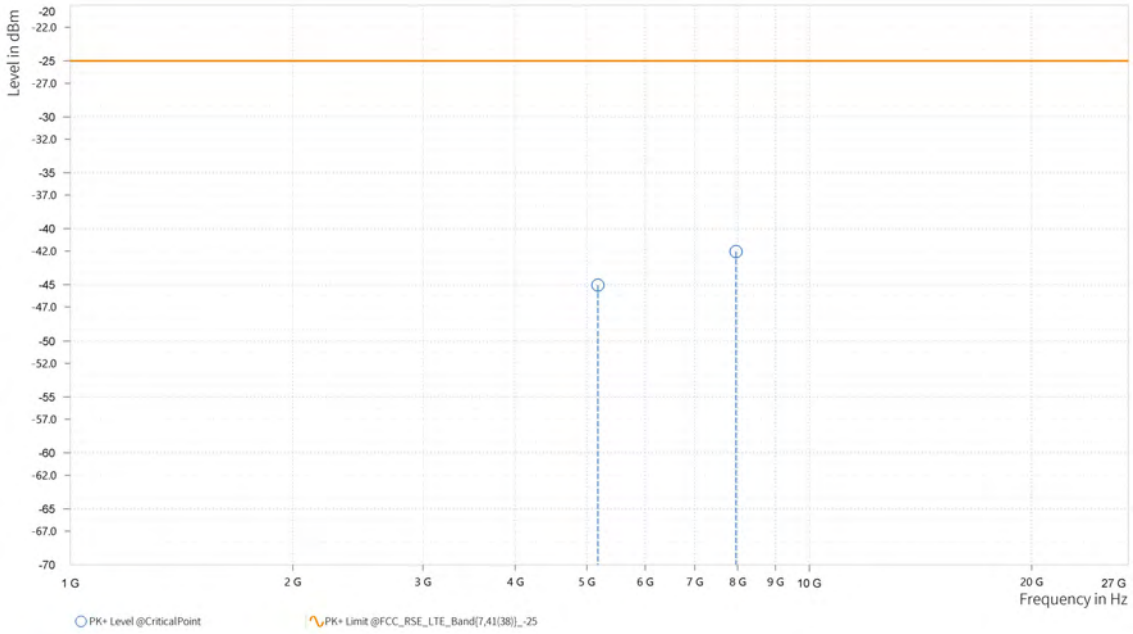
MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,176.500	-46.36	-25.00	21.36	27.07	H	188.3	1
5	7,920.667	-42.69	-25.00	17.69	29.50	H	272	2



MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,176.500	-45.04	-25.00	20.04	27.00	V	183.6	1
5	7,961.364	-42.06	-25.00	17.06	29.57	V	268.5	1

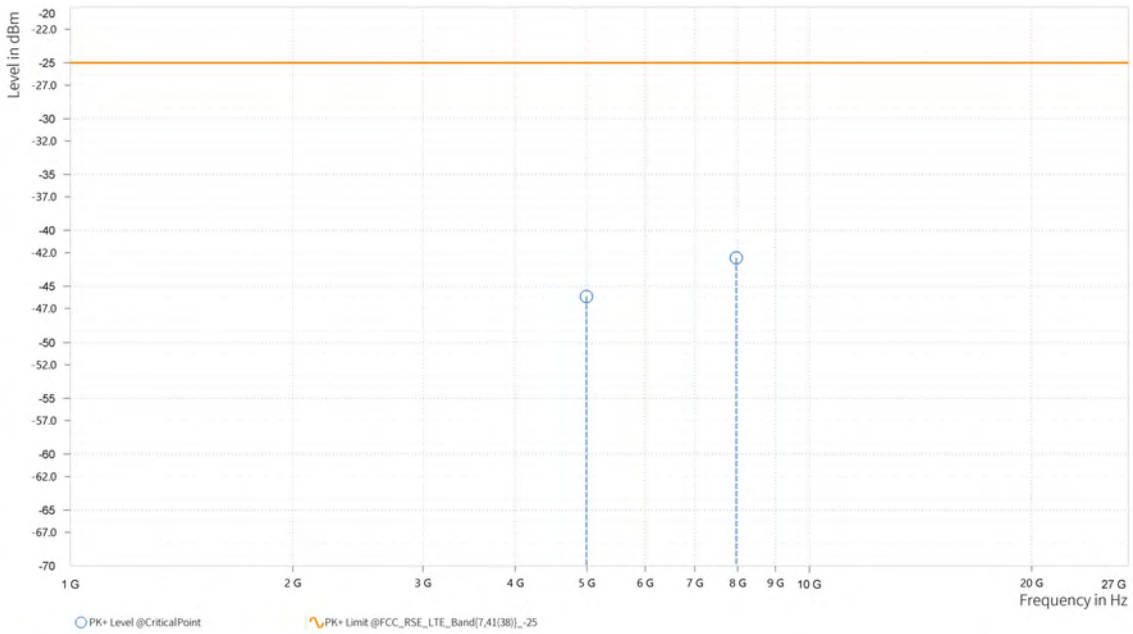


CHANNEL BANDWIDTH: 15MHz / QPSK

CH39725

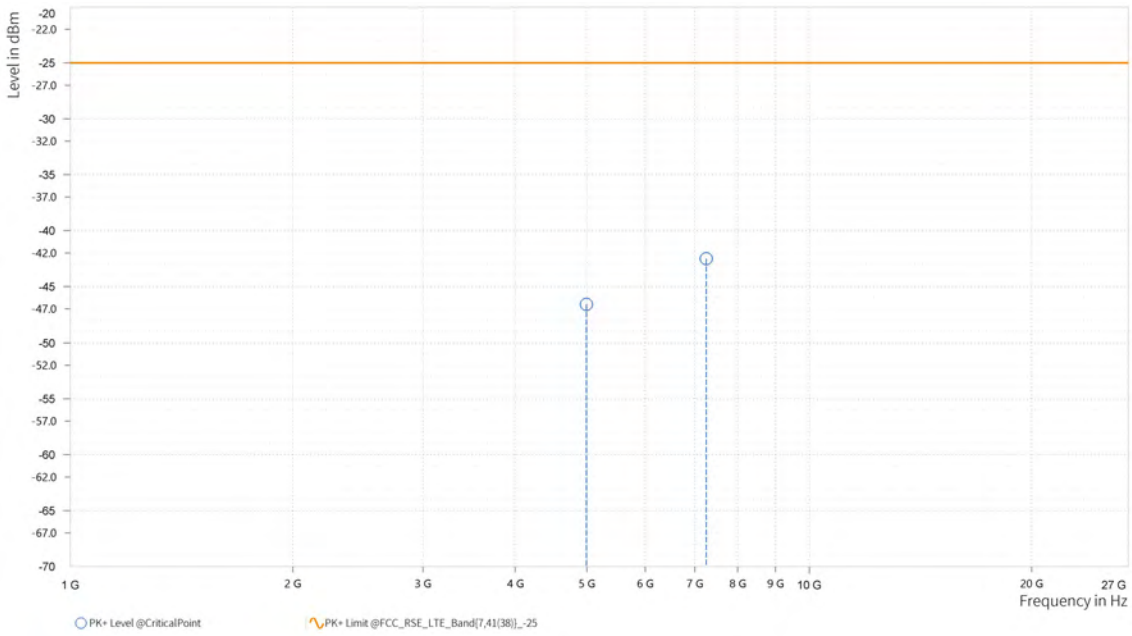
MODE	TX channel 39725	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,994.000	-45.93	-25.00	20.93	25.79	H	1	1
5	7,964.712	-42.46	-25.00	17.46	29.51	H	1	2



MODE	TX channel 39725	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

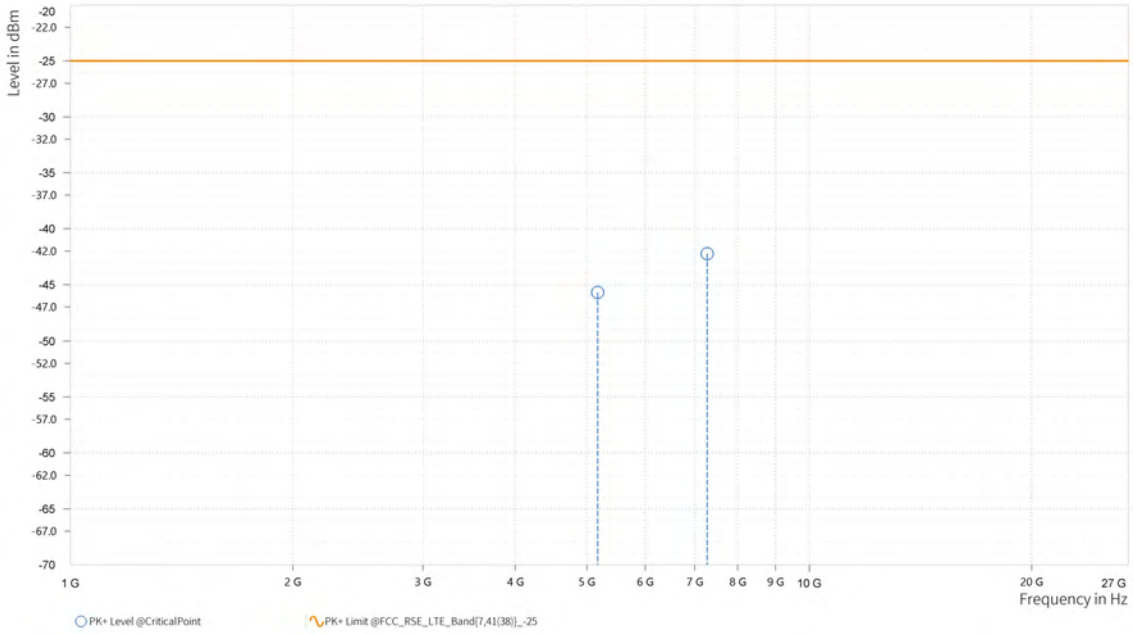
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	4,993.000	-46.60	-25.00	21.60	25.66	V	219.5	2
5	7,255.606	-42.52	-25.00	17.52	29.32	V	1	2



CH40620

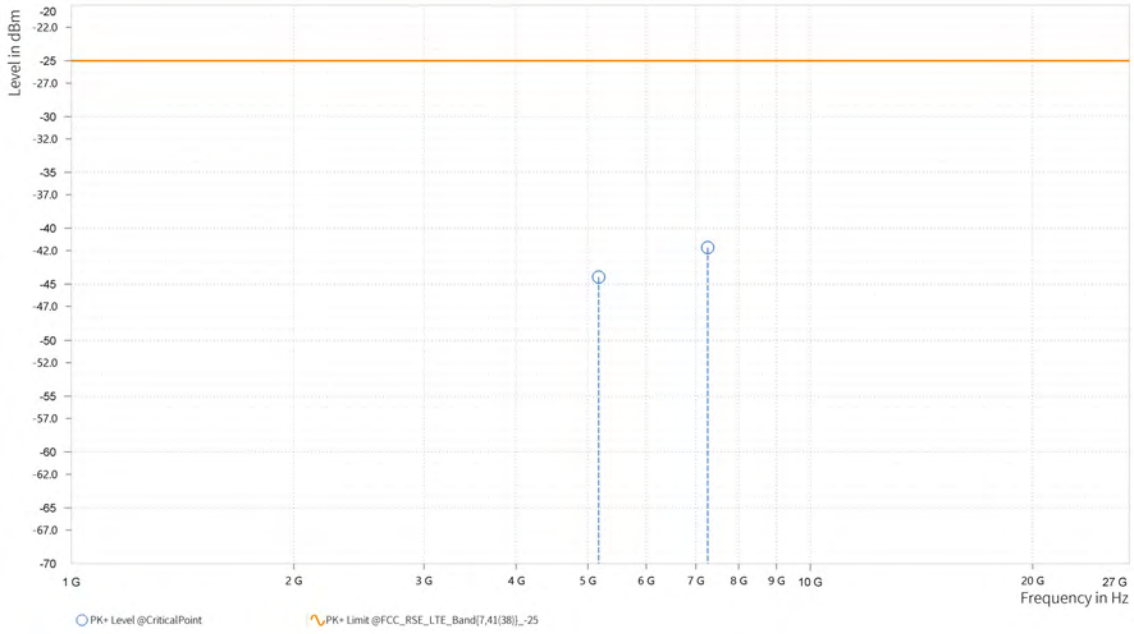
MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,171.500	-45.70	-25.00	20.70	27.03	H	1	2
5	7,275.697	-42.24	-25.00	17.24	29.03	H	359.1	1



MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

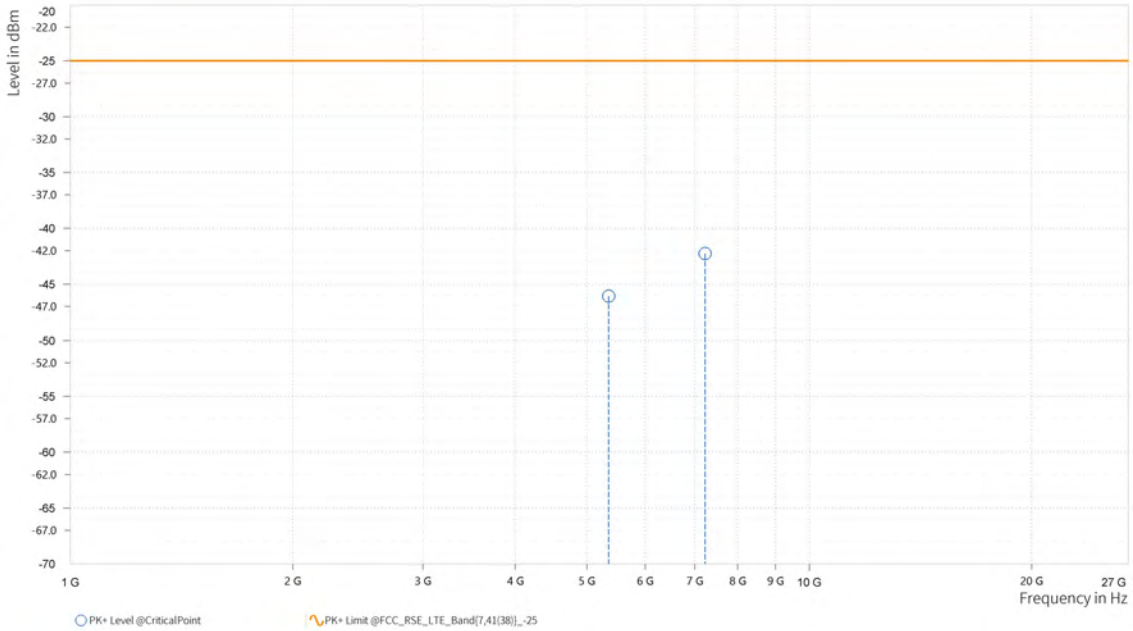
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,171.000	-44.37	-25.00	19.37	26.95	V	359.1	1
5	7,261.530	-41.74	-25.00	16.74	29.28	V	1	1



CH 41515

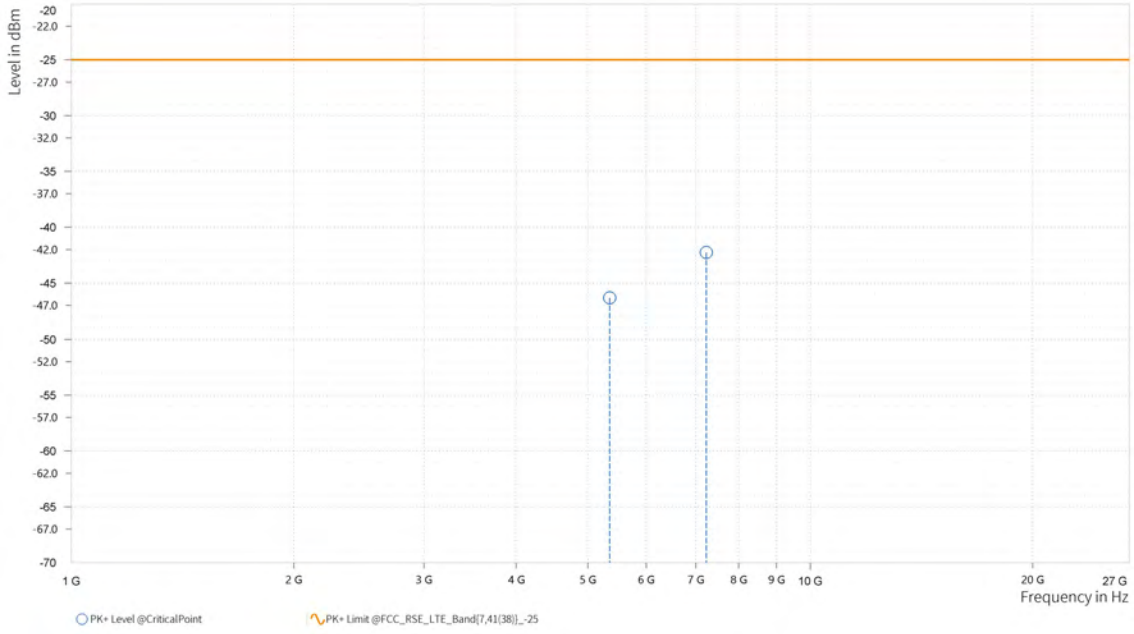
MODE	TX channel 41515	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,351.500	-46.09	-25.00	21.09	26.12	H	359	1
5	7,228.303	-42.26	-25.00	17.26	29.13	H	1	1



MODE	TX channel 41515	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

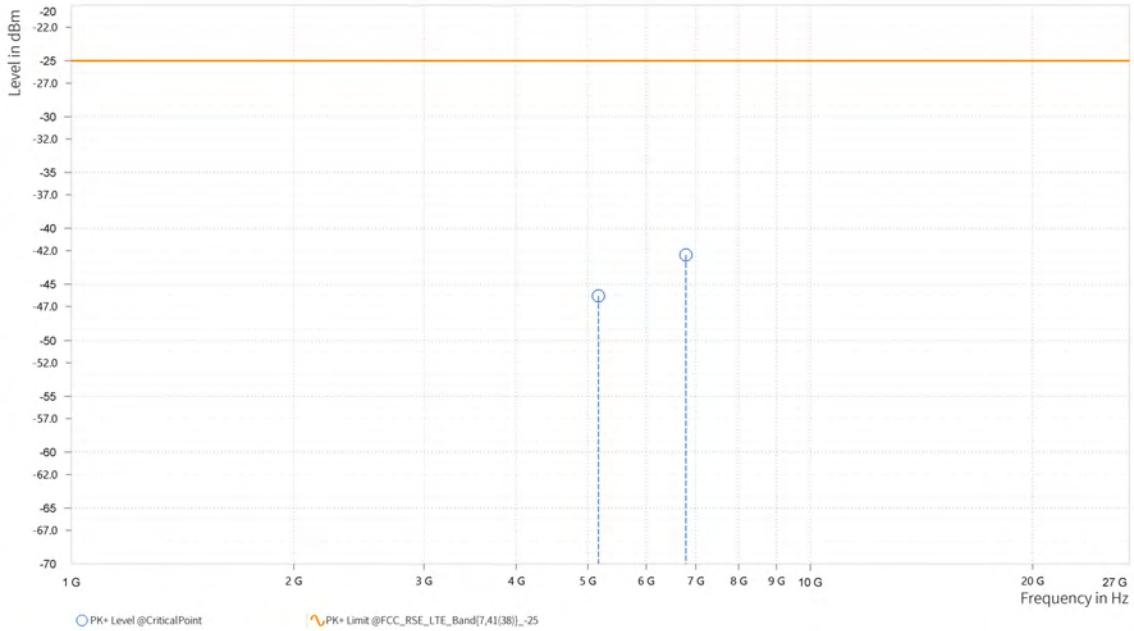
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,351.500	-46.33	-25.00	21.33	25.95	V	359	2
5	7,231.652	-42.26	-25.00	17.26	29.28	V	1	2



CHANNEL BANDWIDTH: 20MHz / QPSK

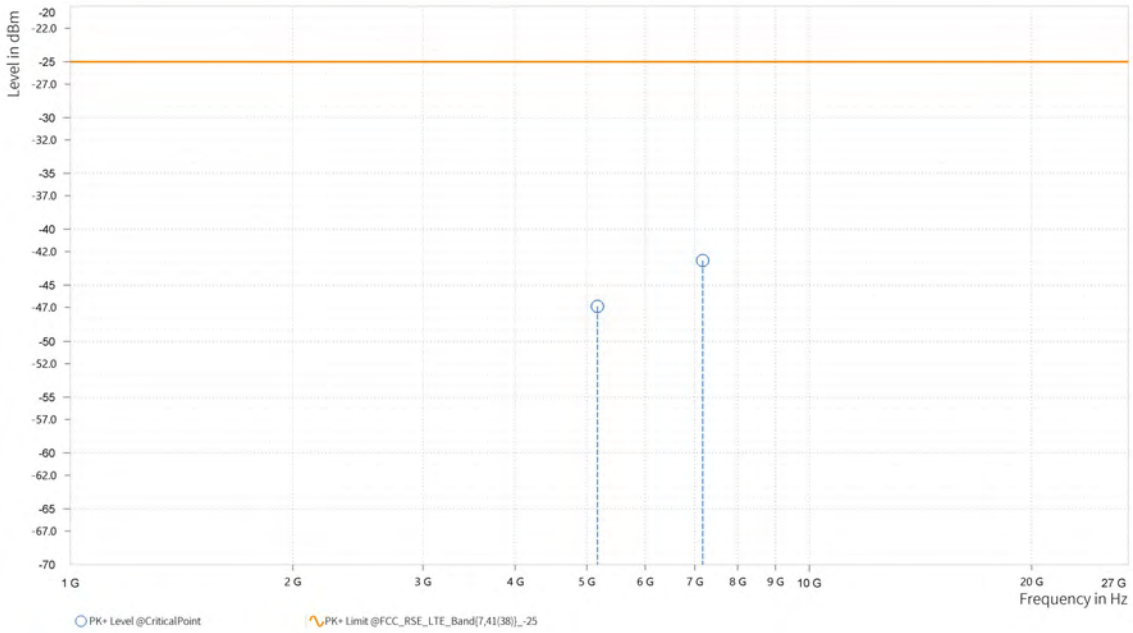
MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,168.500	-46.06	-25.00	21.06	27.00	H	186	2
5	6,788.621	-42.39	-25.00	17.39	28.08	H	270.9	1



MODE	TX channel 40620	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,167.500	-46.93	-25.00	21.93	26.91	V	359	2
5	7,174.727	-42.81	-25.00	17.81	28.52	V	359	2

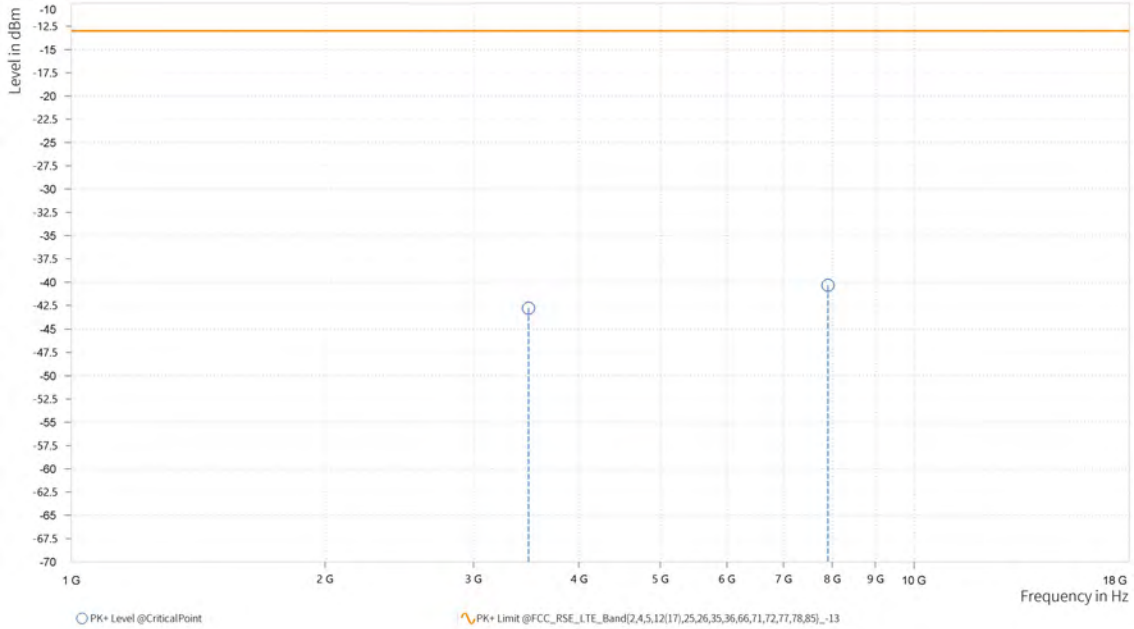


LTE B66

CHANNEL BANDWIDTH: 1.4MHz / QPSK

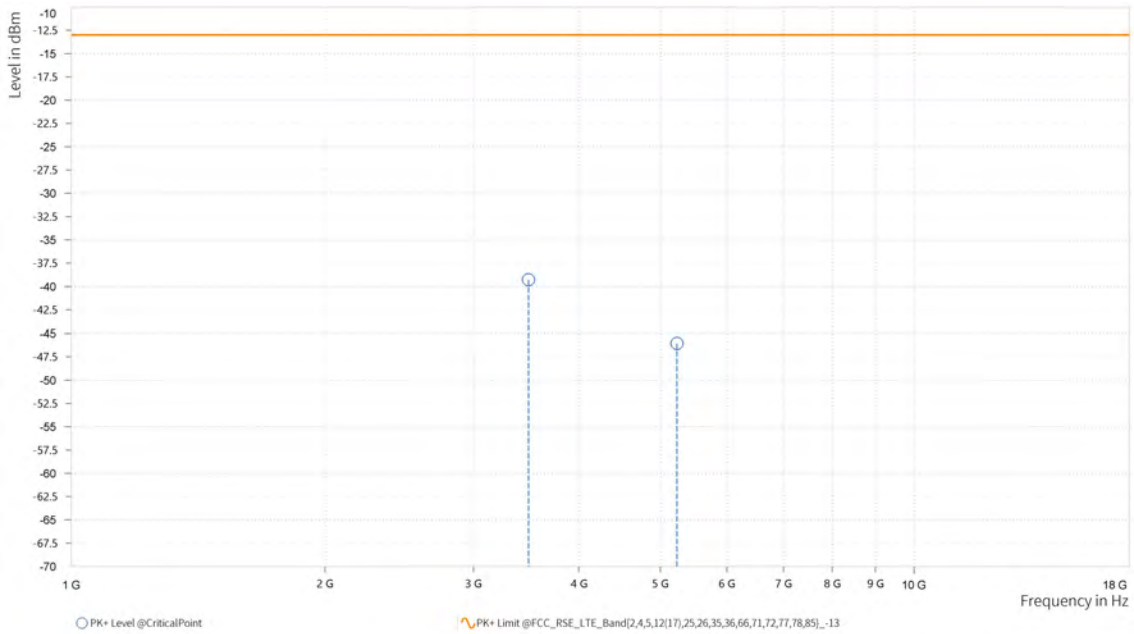
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,488.500	-42.82	-13.00	29.82	25.28	H	194.3	1
5	7,905.470	-40.34	-13.00	27.34	29.43	H	282.8	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

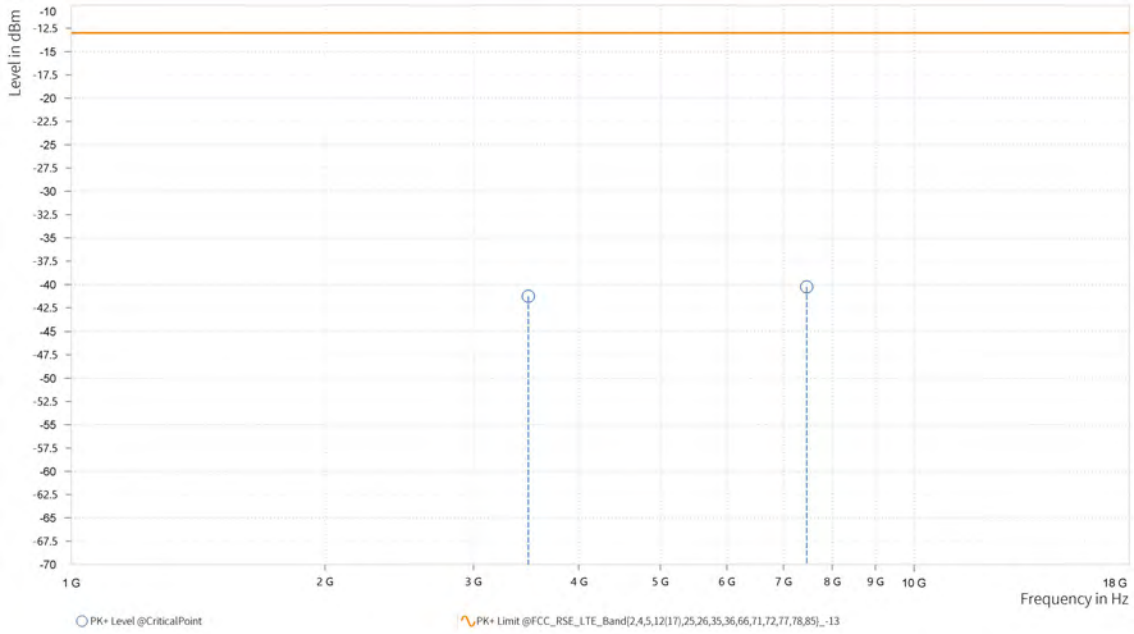
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,489.000	-39.28	-13.00	26.28	25.07	V	194.4	1
4	5,233.000	-46.06	-13.00	33.06	27.31	V	1	2



CHANNEL BANDWIDTH: 3MHz / QPSK

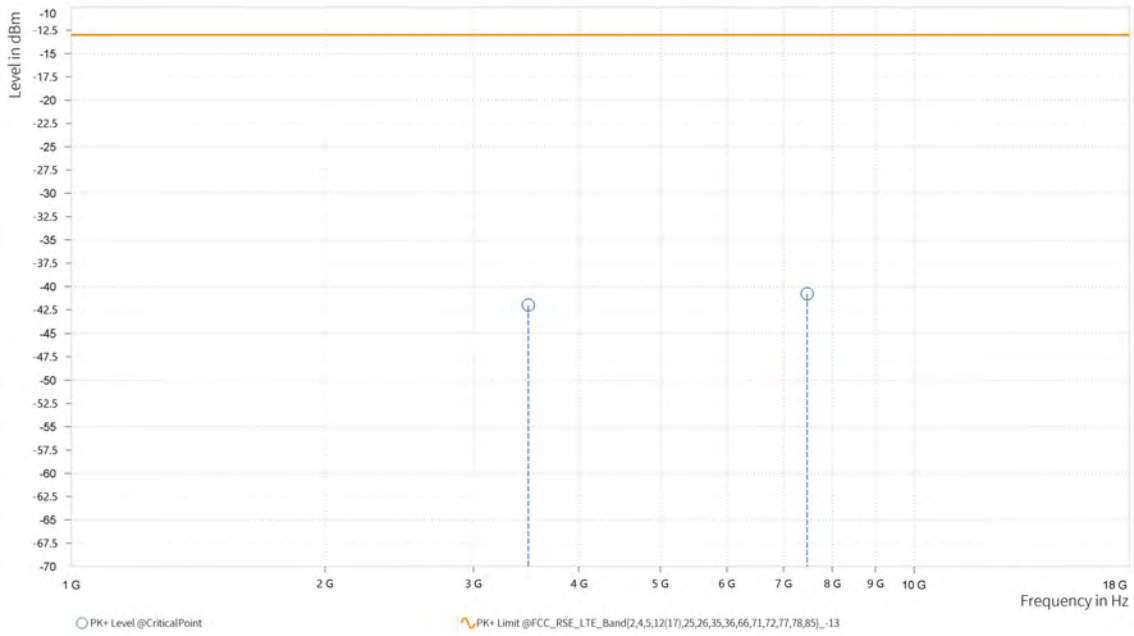
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.000	-41.27	-13.00	28.27	25.23	H	359.1	1
5	7,458.318	-40.26	-13.00	27.26	28.53	H	1	2



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

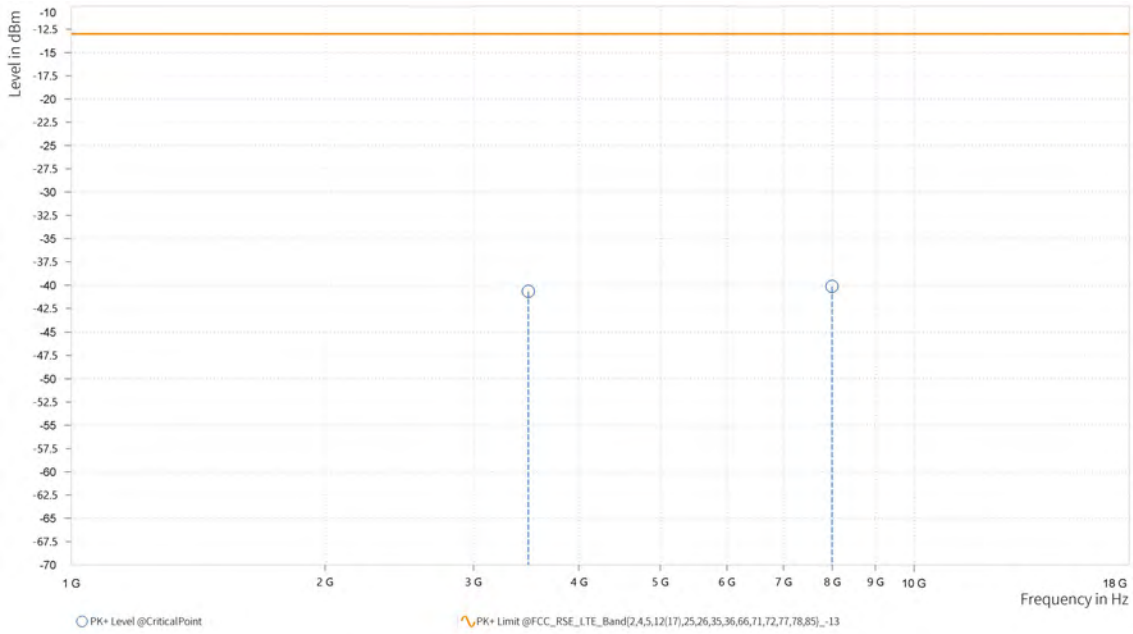
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.000	-42.01	-13.00	29.01	25.00	V	160.9	2
5	7,467.591	-40.80	-13.00	27.80	28.77	V	359.1	1



CHANNEL BANDWIDTH: 5MHz / QPSK

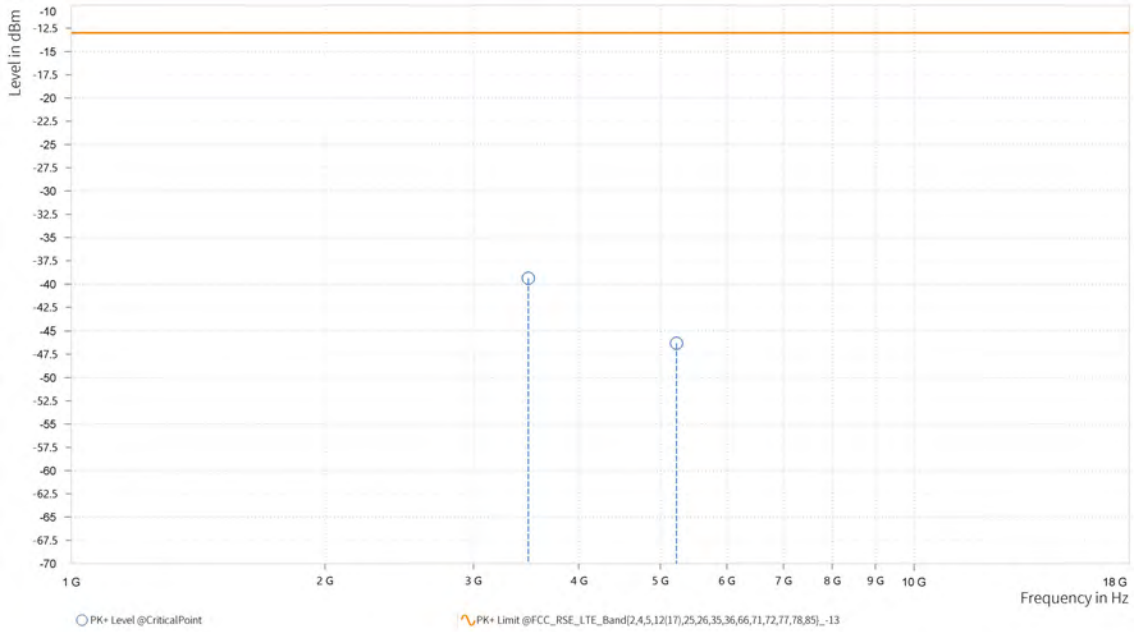
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-40.67	-13.00	27.67	25.19	H	359.1	1
5	7,993.818	-40.14	-13.00	27.14	29.52	H	359.1	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-39.38	-13.00	26.38	24.95	V	196.7	1
4	5,227.500	-46.32	-13.00	33.32	27.34	V	359	2

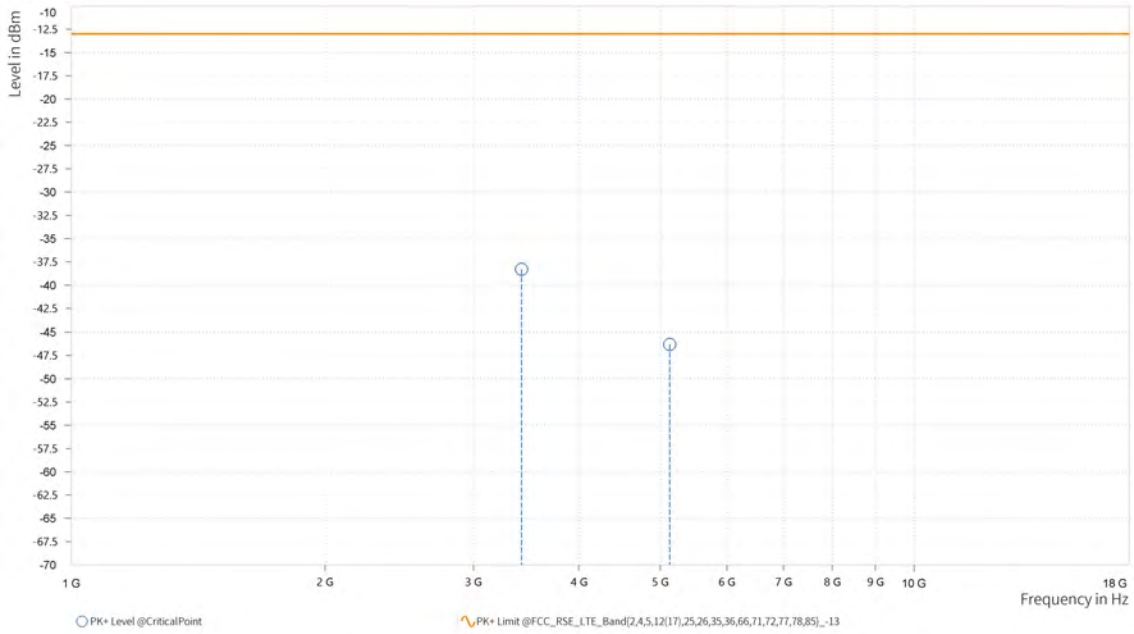


CHANNEL BANDWIDTH: 10MHz / QPSK

CH132022

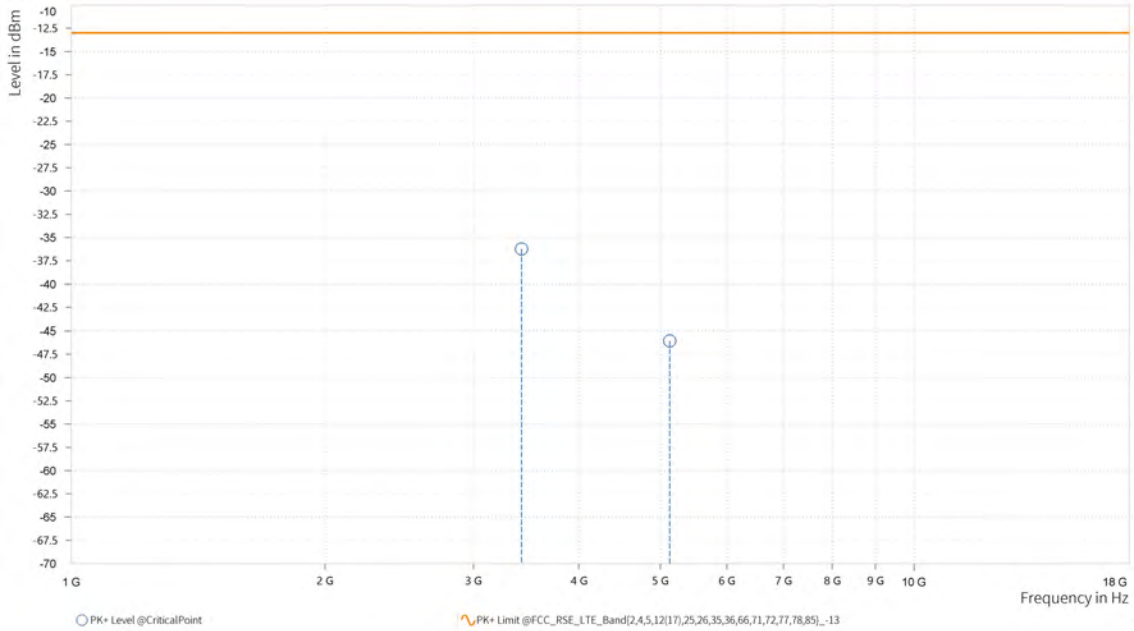
MODE	TX channel 132022	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-38.29	-13.00	25.29	25.19	H	1	1
4	5,131.500	-46.30	-13.00	33.30	26.82	H	355.4	1



MODE	TX channel 132022	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

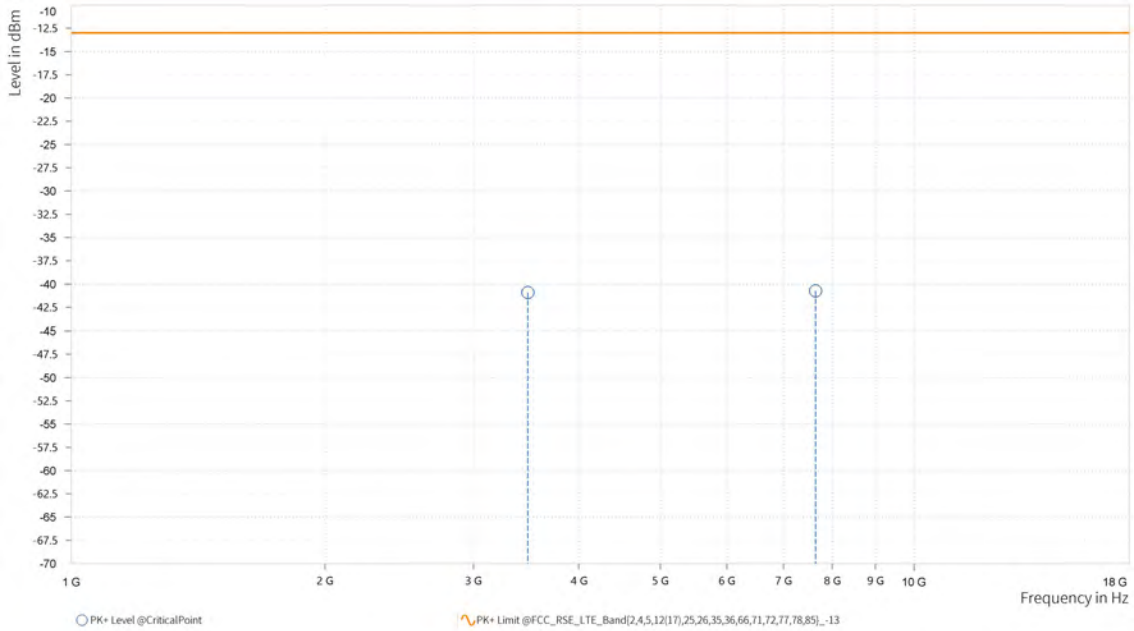
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-36.23	-13.00	23.23	25.00	V	207.5	1
4	5,130.500	-46.05	-13.00	33.05	26.68	V	1	2



CH132322

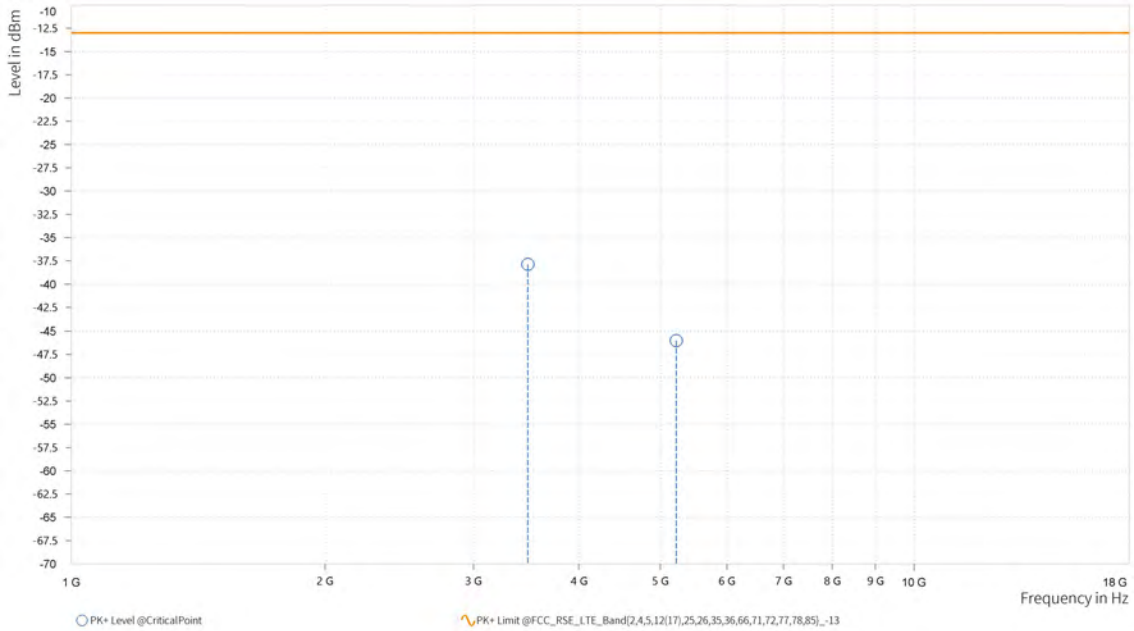
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-40.92	-13.00	27.92	25.05	H	359.1	1
5	7,643.000	-40.74	-13.00	27.74	29.27	H	359	2



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

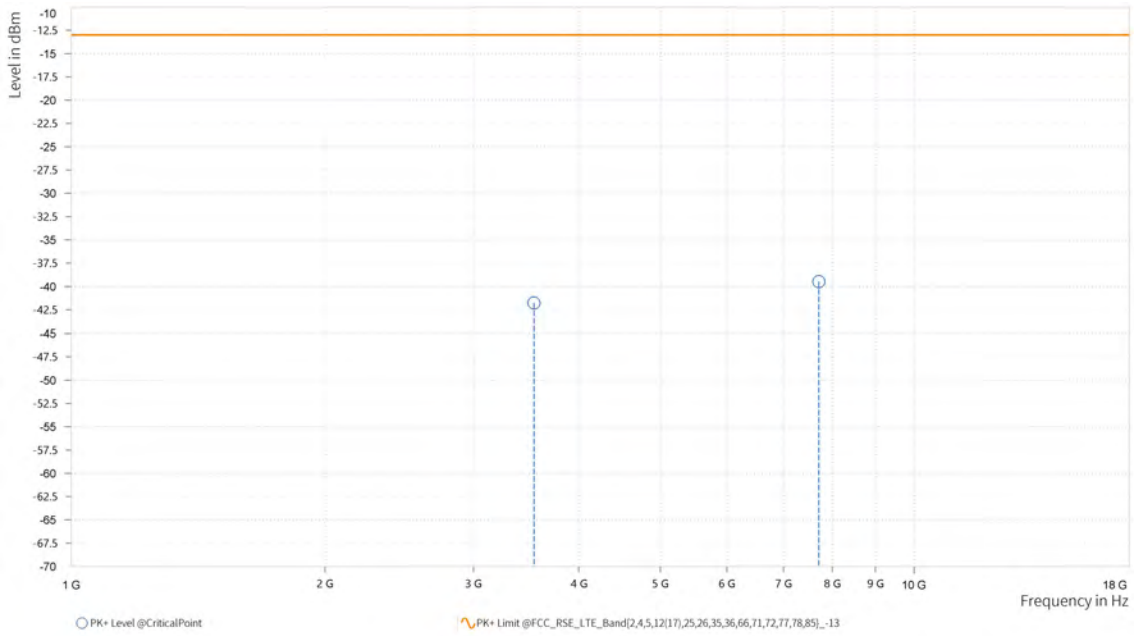
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-37.87	-13.00	24.87	24.80	V	195.5	1
4	5,222.000	-46.00	-13.00	33.00	27.37	V	167.5	2



CH132622

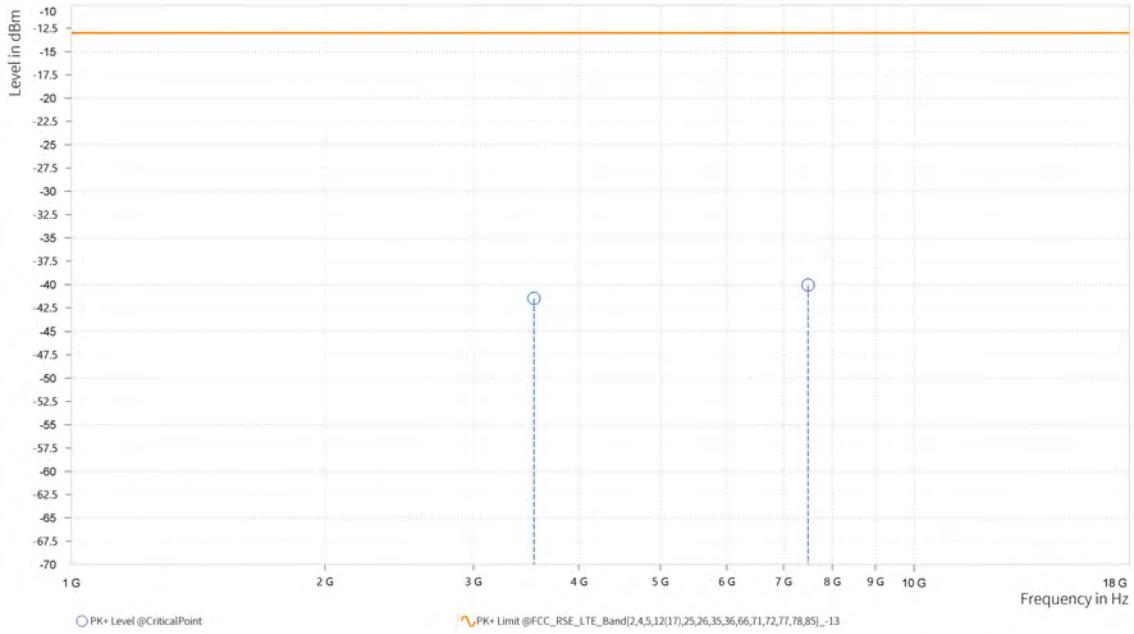
MODE	TX channel 132622	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-41.77	-13.00	28.77	25.85	H	196.7	1
5	7,710.485	-39.49	-13.00	26.49	29.41	H	49.6	2



MODE	TX channel 132622	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

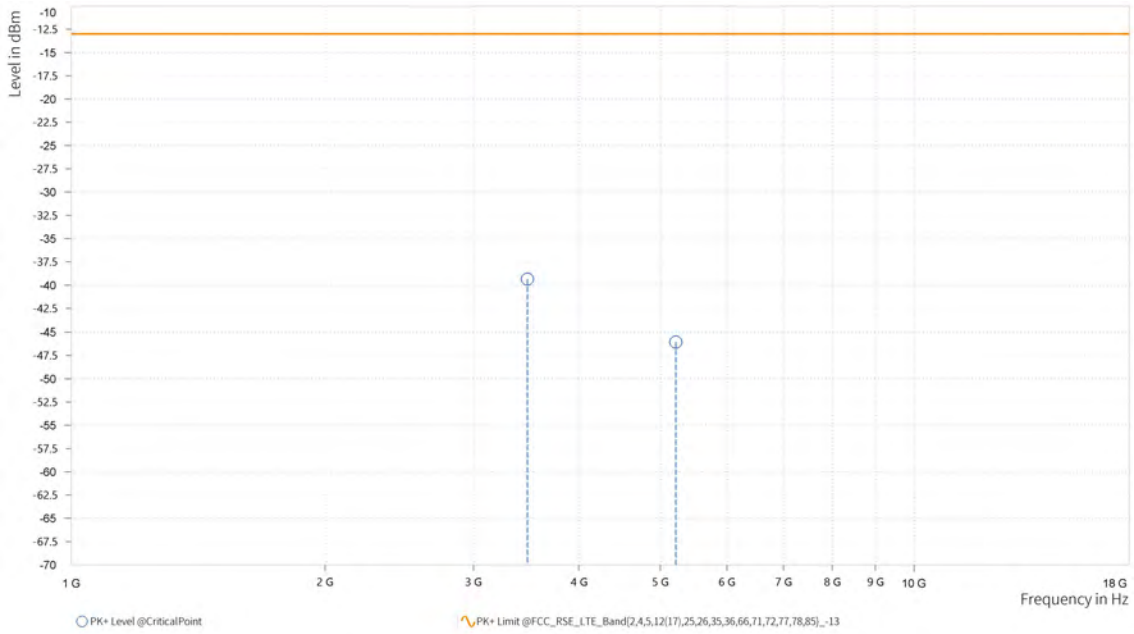
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,541.000	-41.51	-13.00	28.51	25.75	V	359	1
5	7,486.136	-40.07	-13.00	27.07	28.85	V	72.3	2



CHANNEL BANDWIDTH: 15MHz / QPSK

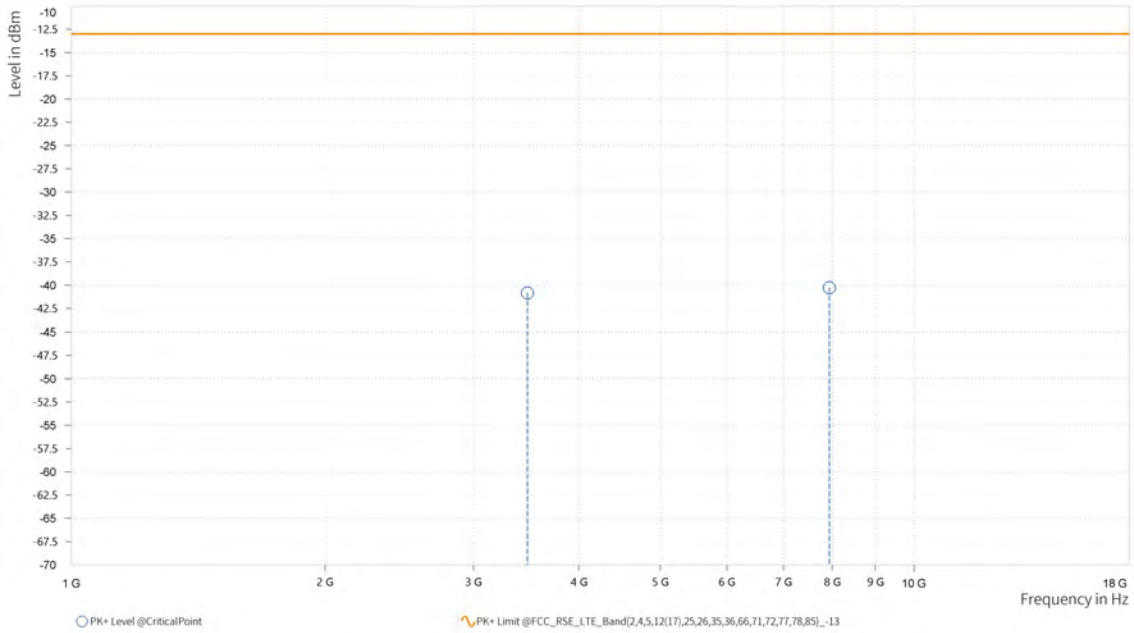
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-39.36	-13.00	26.36	24.91	H	359.1	1
4	5,215.000	-46.05	-13.00	33.05	27.41	H	1	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

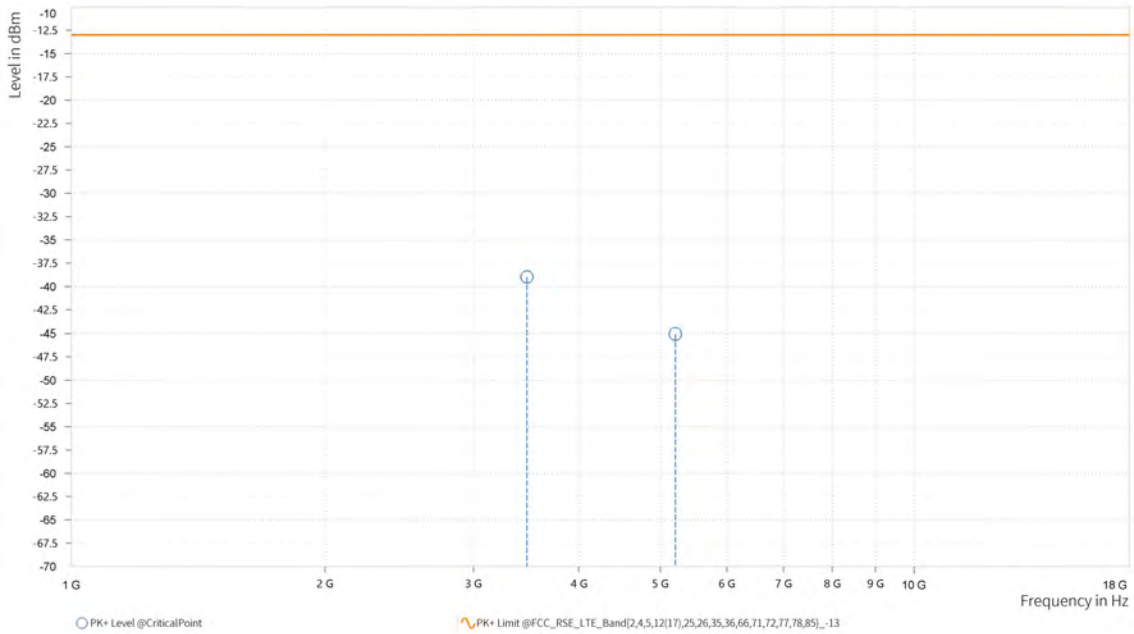
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,477.000	-40.84	-13.00	27.84	24.67	V	160.9	2
5	7,936.894	-40.28	-13.00	27.28	29.58	V	1	1



CHANNEL BANDWIDTH: 20MHz / QPSK

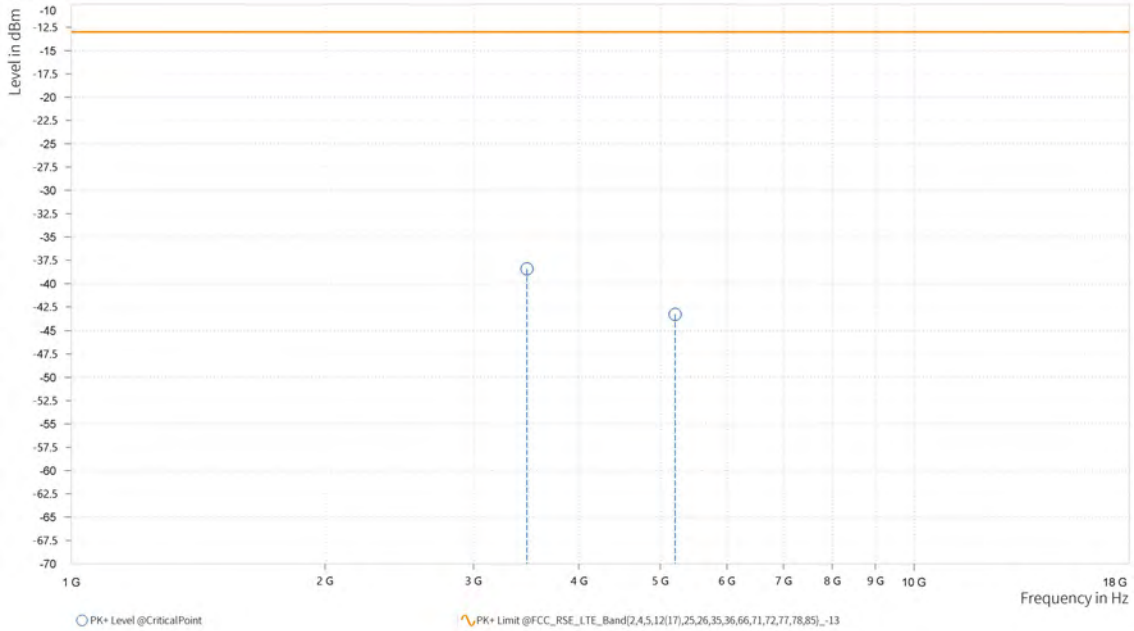
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-38.99	-13.00	25.99	24.78	H	359.1	1
4	5,208.500	-45.07	-13.00	32.07	27.36	H	196.7	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,472.000	-38.42	-13.00	25.42	24.51	V	194.3	1
4	5,208.000	-43.31	-13.00	30.31	27.33	V	1	2

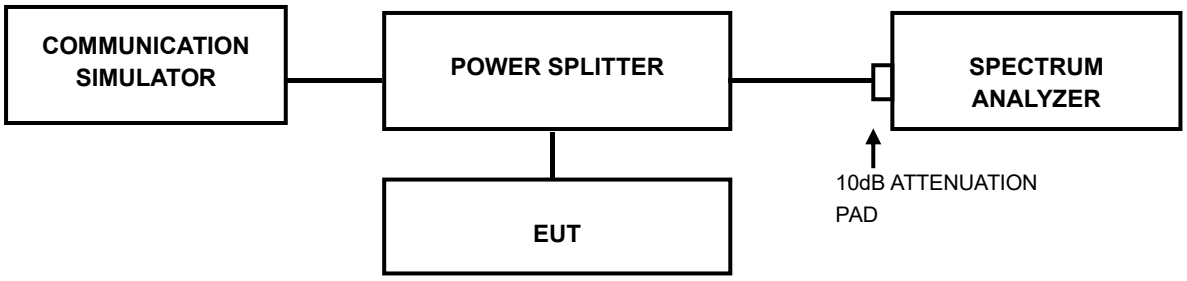


3.7 PEAK TO AVERAGE RATIO

3.7.1 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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 TEST RESULTS

Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 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:

Suzhou EMC/RF Lab:
Tel: +86 (0557) 368 1008

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

--END--