

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
 Date: Sep. 01, 2023	 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 MEASUREMENT UNCERTAINTY	6
1.2 TEST SITE AND INSTRUMENTS	7
2 GENERAL INFORMATION	9
2.1 GENERAL DESCRIPTION OF EUT	9
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	20
3 TEST TYPES AND RESULTS	21
3.1 OUTPUT POWER MEASUREMENT	21
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	21
3.1.2 TEST PROCEDURES	21
3.1.3 TEST SETUP	22
3.1.4 TEST RESULTS	23
3.2 FREQUENCY STABILITY MEASUREMENT	52
3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT	52
3.2.2 TEST PROCEDURE	52
3.2.3 TEST SETUP	52
3.2.4 TEST RESULTS	53
3.3 OCCUPIED BANDWIDTH MEASUREMENT	54
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT	54
3.3.2 TEST SETUP	54
3.3.3 TEST PROCEDURES	54
3.3.4 TEST RESULTS	55
3.4 BAND EDGE MEASUREMENT	56
3.4.1 LIMITS OF BAND EDGE MEASUREMENT	56
3.4.2 TEST SETUP	57
3.4.3 TEST PROCEDURES	58
3.4.4 TEST RESULTS	59
3.5 CONDUCTED SPURIOUS EMISSIONS	60
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT	60
3.5.2 TEST PROCEDURE	60
3.5.3 TEST SETUP	60
3.5.4 TEST RESULTS	61
3.6 RADIATED EMISSION MEASUREMENT	62
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT	62
3.6.2 TEST PROCEDURES	62
3.6.3 DEVIATION FROM TEST STANDARD	62
3.6.4 TEST SETUP	63
3.6.5 TEST RESULTS	65
3.7 PEAK TO AVERAGE RATIO	109
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT	109
3.7.2 TEST SETUP	109
3.7.3 TEST PROCEDURES	109
3.7.4 TEST RESULTS	110
4 INFORMATION ON THE TESTING LABORATORIES	111
5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB .	112



Test Report No.: PSU-QSU2307030110RF03

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2307030110RF03	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(c)(10)	Effective Radiated Power (Band 12) (Band 17) (Band 71)	Compliance	A
§27.50(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCMDA Band 4)(Band 7)	Compliance	A
§2.1055 §27.54	Frequency Stability	See Note	--
§2.1049	Occupied Bandwidth	See Note	--
§2.1051 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Conducted Band Edge Measurements (WCMDA Band 4) (Band 7) (Band 12) (Band 17) (Band 71)	See Note	--
§2.1051 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Conducted Spurious Emissions (WCMDA Band 4)(Band 7) (Band 12) (Band 17) (Band 71)	See Note	--
§2.1053 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Radiated Spurious Emissions (WCMDA Band 4)(Band 7) (Band 12) (Band 17) (Band 71)	Compliance	A
NA	Peak to average ratio	See Note	--

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



Test Report No.: PSU-QSU2307030110RF03

***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 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.
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-E MC-01 Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-E MC-02 Chamber	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
WIDEBAND RADIO 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.



Test Report No.: PSU-QSU2307030110RF03

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	WCDMA IV	BPSK, QPSK
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	WCDMA IV	1712.4MHz ~ 1752.6MHz
	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 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711 MHz
	LTE Band 71 Channel Bandwidth: 5MHz	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz

MAX. EIRP POWER	WCDMA IV	474.24mW
	LTE Band 7 Channel Bandwidth: 5MHz	544.50mW
	LTE Band 7 Channel Bandwidth: 10MHz	547.02mW
	LTE Band 7 Channel Bandwidth: 15MHz	544.50mW
	LTE Band 7 Channel Bandwidth: 20MHz	550.81mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	250.61mW
	LTE Band 12 Channel Bandwidth: 3MHz	242.66mW
	LTE Band 12 Channel Bandwidth: 5MHz	242.66mW
	LTE Band 12 Channel Bandwidth: 10MHz	245.47mW
	LTE Band 17 Channel Bandwidth: 5MHz	238.78mW
	LTE Band 17 Channel Bandwidth: 10MHz	243.22mW
	LTE Band 71 Channel Bandwidth: 5MHz	195.88mW
	LTE Band 71 Channel Bandwidth: 10MHz	194.09mW
	LTE Band 71 Channel Bandwidth: 15MHz	199.53mW
	LTE Band 71 Channel Bandwidth: 20MHz	200.45mW
EMISSION DESIGNATOR	WCDMA IV	4M14F9W
	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M47G7D
		16QAM: 4M47W7D
		64QAM: 4M48W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M91W7D
		64QAM: 8M92W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M4W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M08G7D
		16QAM: 1M09W7D
		64QAM: 1M10W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M69G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M47G7D
		16QAM: 4M47W7D
		64QAM: 4M48W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M91W7D
		64QAM: 8M92W7D
	LTE Band 71 Channel Bandwidth: 5MHz	QPSK: 4M47G7D
		16QAM: 4M47W7D
		64QAM: 4M48W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 8M92G7D
		16QAM: 8M93W7D
		64QAM: 8M93W7D
	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M4W7D
		64QAM: 13M4W7D
	LTE Band 71 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D

ANTENNA TYPE*	Monopole Antenna with 4.2dBi gain for WCDMA IV Monopole Antenna with 4.4dBi gain for LTE 7 Monopole Antenna with 2.6dBi gain for LTE12/ LTE17 Monopole Antenna with 1.9dBi gain for LTE71
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 °C
EXTREME VOLTAGE*	10.2V – 13.8V

NOTE:

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

MODULATION MODE	TX FUNCTION
WCDMA	1TX/1RX
LTE	1TX/1RX

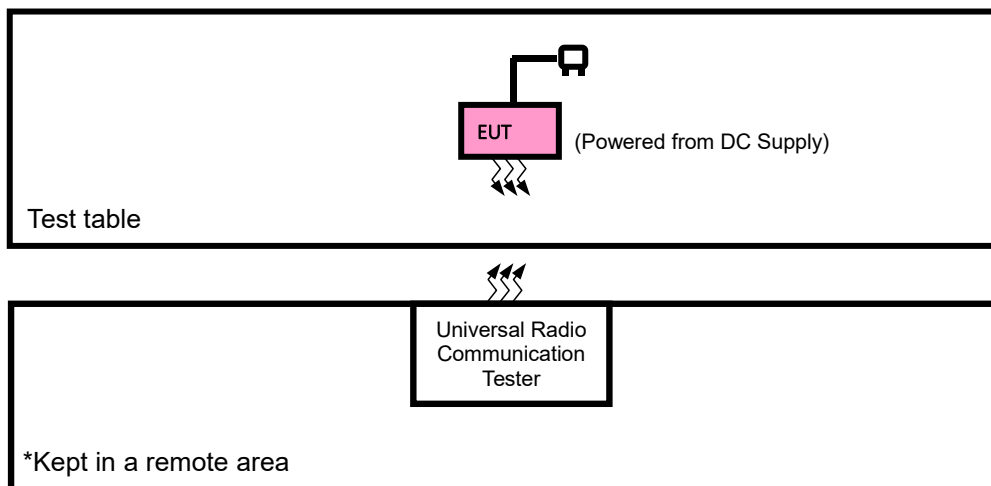
- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

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 WCDMA or LTE link

WCDMA MODE

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

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDT H	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 / 0RB 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
A	FREQUENCY STABILITY	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	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	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
		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 25 RB / 0 RB Offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			21400	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
			21375	15MHz	QPSK, 16QAM, 64QAM	1 RB / 74 RB Offset 75 RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
			21350	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset 100 RB / 0 RB Offset
		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 / 0RB 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
A	CONDCUDE TED EMISSION	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 / 0RB 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
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 12 MODE

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

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

LTE BAND 17 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	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 17 are covered by LTE Band 12, Because it is a subset of LTE Band 12 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 12

LTE BAND 71

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	133147 to 133447	133147, 133247, 133447	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133272 133422	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	133222 to 133372	133222, 133372	20MHz	QPSK	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133247, 133447	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		133172 to 133422	133172, 133272 133422	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK,16QAM,64QAM	75 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK,16QAM,64QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM,64QAM	1 RB / 99 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	133147 to 133447	133147	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			133447	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		133172 to 133422	133172	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
			133422	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset
		133197 to 133397	133197	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
			133397	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB Offset 75 RB / 0 RB Offset
		133222 to 133372	133222	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset



Test Report No.: PSU-QSU2307030110RF03

			133372	20MHz	QPSK, 16QAM, 64QAM	1 RB / 99 RB Offset 100 RB / 0 RB Offset
A	CONDCUDED EMISSION	133147 to 133447	133147, 133247, 133447	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		133172 to 133422	133172, 133272, 133422	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	133147 to 133447	133322	5MHz	QPSK	1 RB / 0 RB Offset
		133172 to 133422	133172, 133272, 133422	10MHz	QPSK	1 RB / 0 RB Offset
		133197 to 133397	133297	15MHz	QPSK	1 RB / 0 RB Offset
		133222 to 133372	133322	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 Report No.: PSU-QSU2307030110RF03

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



Test Report No.: PSU-QSU2307030110RF03

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.

According to the specific rule Part 27.50(c)(10) Fixed, mobile, and Portable stations (hand-held devices) transmitting in the 698-746 MHz bands are limited to 3 watts ERP.

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:

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



Test Report No.: PSU-QSU2307030110RF03

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)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	1537	1638	1738
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	22.56	22.55	22.46
HSDPA Subtest-1	21.97	21.93	21.80
HSDPA Subtest-2	21.93	21.93	21.81
HSDPA Subtest-3	21.44	21.44	21.32
HSDPA Subtest-4	21.39	21.39	21.34
DC-HSDPA Subtest-1	21.89	21.87	21.72
DC-HSDPA Subtest-2	21.85	21.87	21.73
DC-HSDPA Subtest-3	21.45	21.38	21.26
DC-HSDPA Subtest-4	21.40	21.33	21.28
HSUPA Subtest-1	21.93	21.89	21.76
HSUPA Subtest-2	20.89	20.89	20.77
HSUPA Subtest-3	21.39	21.40	21.28
HSUPA Subtest-4	20.84	20.85	20.80
HSUPA Subtest-5	21.88	21.87	21.75

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	22.92	22.79	22.96
		1	12	22.93	22.77	22.95
		1	24	22.80	22.68	22.87
		12	0	21.99	21.96	22.00
		12	6	21.96	21.87	21.92
		12	13	21.93	21.94	21.98
		25	0	21.94	21.83	21.97
	16QAM	1	0	22.33	22.26	22.30
		1	12	22.11	22.16	22.17
		1	24	22.25	22.15	22.14
		12	0	20.93	20.86	20.91
		12	6	21.02	20.92	20.86
		12	13	20.90	20.95	20.94
		25	0	20.96	20.88	20.90
	64QAM	1	0	21.16	21.22	21.26
		1	12	21.13	21.19	21.10
		1	24	21.11	21.14	21.21
		12	0	20.05	19.91	19.98
		12	6	20.04	20.02	19.99
		12	13	19.99	20.01	19.93
		25	0	19.95	19.97	19.94

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	22.89	22.82	22.96
		1	24	22.93	22.77	22.98
		1	49	22.79	22.72	22.83
		25	0	22.00	21.95	22.03
		25	12	21.99	21.81	21.92
		25	25	21.94	21.95	21.91
		50	0	21.99	21.83	21.94
	16QAM	1	0	22.30	22.23	22.26
		1	24	22.16	22.10	22.20
		1	49	22.24	22.12	22.11
		25	0	20.95	20.84	21.00
		25	12	21.03	20.86	20.91
		25	25	20.89	20.95	20.95
		50	0	21.00	20.83	20.94
	64QAM	1	0	21.17	21.25	21.23
		1	24	21.21	21.15	21.14
		1	49	21.19	21.08	21.18
		25	0	20.03	19.88	20.04
		25	12	20.11	20.01	19.93
		25	25	19.99	19.97	19.95
		50	0	20.02	19.93	19.96

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	22.96	22.83	22.93
		1	37	22.91	22.82	22.91
		1	74	22.83	22.75	22.84
		36	0	21.97	21.96	22.04
		36	19	22.00	21.86	21.92
		36	39	21.88	21.92	21.91
		75	0	21.97	21.81	21.99
	16QAM	1	0	22.34	22.30	22.26
		1	37	22.15	22.11	22.20
		1	74	22.20	22.17	22.13
		36	0	20.99	20.84	21.01
		36	19	20.97	20.90	20.87
		36	39	20.96	20.93	20.94
		75	0	21.01	20.86	20.87
	64QAM	1	0	21.17	21.24	21.24
		1	37	21.19	21.14	21.11
		1	74	21.13	21.07	21.21
		36	0	20.08	19.94	19.98
		36	19	20.05	19.97	19.95
		36	39	20.01	20.05	19.99
		75	0	20.02	19.91	19.96

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	22.97	22.86	23.01
		1	50	22.95	22.85	22.97
		1	99	22.85	22.76	22.88
		50	0	22.03	22.01	22.05
		50	25	22.01	21.88	21.97
		50	50	21.97	21.99	21.93
		100	0	22.00	21.85	22.02
	16QAM	1	0	22.37	22.31	22.32
		1	50	22.19	22.16	22.22
		1	99	22.26	22.19	22.16
		50	0	21.01	20.92	21.02
		50	25	21.05	20.94	20.92
		50	50	20.97	20.99	20.96
		100	0	21.02	20.91	20.95
	64QAM	1	0	21.23	21.27	21.28
		1	50	21.21	21.21	21.16
		1	99	21.19	21.15	21.23
		50	0	20.09	19.96	20.06
		50	25	20.12	20.03	20.01
		50	50	20.03	20.06	20.03
		100	0	20.03	19.99	19.97



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

LTE Band 12

Band/BW	Modulation	RB Size	RB Offset	Low CH 23017	Mid CH 23095	High CH 23173
				Frequency 699.7 MHz	Frequency 707.5 MHz	Frequency 715.3 MHz
12/ 1.4	QPSK	1	0	23.23	23.32	23.33
		1	2	23.31	23.35	23.38
		1	5	23.42	23.41	23.36
		3	0	23.35	23.44	23.47
		3	1	23.53	23.54	23.45
		3	3	23.41	23.39	23.39
		6	0	22.47	22.48	22.49
	16QAM	1	0	22.83	22.74	22.72
		1	2	22.82	22.78	22.85
		1	5	22.84	22.81	22.74
		3	0	22.50	22.51	22.48
		3	1	22.57	22.61	22.59
		3	3	22.42	22.53	22.54
		6	0	21.49	21.58	21.43
	64QAM	1	0	21.36	21.43	21.62
		1	2	21.42	21.46	21.53
		1	5	21.52	21.55	21.49
		3	0	21.37	21.44	21.46
		3	1	21.33	21.51	21.52
		3	3	21.43	21.63	21.59
		6	0	20.48	20.57	20.49

Band/BW	Modulation	RB Size	RB Offset	Low CH 23025	Mid CH 23095	High CH 23165
				Frequency 700.5 MHz	Frequency 707.5 MHz	Frequency 714.5 MHz
12/ 3	QPSK	1	0	23.25	23.36	23.32
		1	7	23.27	23.36	23.40
		1	14	23.39	23.38	23.37
		8	0	22.34	22.52	22.47
		8	3	22.46	22.54	22.51
		8	7	22.38	22.48	22.43
		15	0	22.44	22.49	22.46
	16QAM	1	0	22.81	22.78	22.75
		1	7	22.83	22.79	22.80
		1	14	22.87	22.77	22.74
		8	0	21.46	21.52	21.48
		8	3	21.55	21.56	21.62
		8	7	21.44	21.51	21.50
		15	0	21.49	21.54	21.46
	64QAM	1	0	21.42	21.46	21.56
		1	7	21.39	21.38	21.49
		1	14	21.53	21.53	21.51
		8	0	20.40	20.48	20.45
		8	3	20.37	20.45	20.57
		8	7	20.40	20.61	20.55
		15	0	20.50	20.54	20.53

Band/BW	Modulation	RB Size	RB Offset	Low CH 23035	Mid CH 23095	High CH 23155
				Frequency 701.5 MHz	Frequency 707.5 MHz	Frequency 713.5 MHz
12/ 5	QPSK	1	0	23.26	23.29	23.33
		1	12	23.32	23.33	23.38
		1	24	23.39	23.37	23.40
		12	0	22.36	22.47	22.44
		12	6	22.46	22.55	22.48
		12	13	22.42	22.45	22.44
		25	0	22.51	22.52	22.46
	16QAM	1	0	22.81	22.74	22.75
		1	12	22.79	22.82	22.78
		1	24	22.87	22.77	22.73
		12	0	21.46	21.50	21.45
		12	6	21.52	21.60	21.58
		12	13	21.39	21.56	21.53
		25	0	21.49	21.52	21.43
	64QAM	1	0	21.36	21.43	21.62
		1	12	21.35	21.44	21.49
		1	24	21.46	21.58	21.51
		12	0	20.41	20.45	20.44
		12	6	20.31	20.52	20.56
		12	13	20.47	20.60	20.54
		25	0	20.46	20.60	20.51

Band/BW	Modulation	RB Size	RB Offset	Low CH 23060	Mid CH 23095	High CH 23130
				Frequency 704 MHz	Frequency 707.5 MHz	Frequency 711 MHz
12/ 10	QPSK	1	0	23.31	23.36	23.38
		1	24	23.34	23.41	23.40
		1	49	23.44	23.45	23.41
		25	0	22.41	22.52	22.49
		25	12	22.54	22.56	22.53
		25	25	22.46	22.47	22.45
		50	0	22.48	22.54	22.51
	16QAM	1	0	22.88	22.79	22.77
		1	24	22.85	22.82	22.84
		1	49	22.89	22.85	22.75
		25	0	21.54	21.56	21.53
		25	12	21.58	21.62	21.64
		25	25	21.46	21.58	21.55
		50	0	21.55	21.59	21.48
	64QAM	1	0	21.43	21.48	21.64
		1	24	21.44	21.46	21.55
		1	49	21.54	21.59	21.53
		25	0	20.45	20.50	20.52
		25	12	20.39	20.53	20.58
		25	25	20.48	20.65	20.60
		50	0	20.52	20.62	20.54



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

LTE Band 17

Band/BW	Modulation	RB Size	RB Offset	Low CH 23755	Mid CH 23790	High CH 23825
				Frequency 706.5 MHz	Frequency 710 MHz	Frequency 713.5 MHz
17/ 5	QPSK	1	0	23.13	23.22	23.16
		1	12	23.29	23.15	23.27
		1	24	23.31	23.23	23.33
		12	0	22.27	22.28	22.30
		12	6	22.29	22.34	22.29
		12	13	22.45	22.40	22.46
		25	0	22.27	22.32	22.24
	16QAM	1	0	22.61	22.64	22.71
		1	12	22.64	22.60	22.67
		1	24	22.73	22.52	22.56
		12	0	21.29	21.30	21.23
		12	6	21.34	21.33	21.36
		12	13	21.33	21.35	21.28
		25	0	21.30	21.28	21.34
	64QAM	1	0	21.35	21.51	21.62
		1	12	21.40	21.58	21.43
		1	24	21.39	21.52	21.37
		12	0	20.29	20.38	20.25
		12	6	20.23	20.42	20.41
		12	13	20.36	20.35	20.28
		25	0	20.34	20.34	20.34

Band/BW	Modulation	RB Size	RB Offset	Low CH 23780	Mid CH 23790	High CH 23800
				Frequency 709 MHz	Frequency 710 MHz	Frequency 711 MHz
17/ 10	QPSK	1	0	23.23	23.36	23.26
		1	24	23.33	23.31	23.31
		1	49	23.41	23.39	23.35
		25	0	22.35	22.38	22.40
		25	12	22.45	22.36	22.39
		25	25	22.53	22.50	22.48
		50	0	22.39	22.36	22.34
	16QAM	1	0	22.75	22.74	22.75
		1	24	22.80	22.64	22.77
		1	49	22.77	22.68	22.60
		25	0	21.45	21.42	21.39
		25	12	21.41	21.37	21.48
		25	25	21.47	21.45	21.32
		50	0	21.42	21.42	21.44
	64QAM	1	0	21.49	21.61	21.66
		1	24	21.56	21.62	21.55
		1	49	21.55	21.54	21.41
		25	0	20.37	20.48	20.41
		25	12	20.39	20.44	20.45
		25	25	20.44	20.45	20.44
		50	0	20.46	20.38	20.40



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

LTE Band 71

Band/BW	Modulation	RB Size	RB Offset	Low CH 133147	Mid CH 133247	High CH 133447
				Frequency 665.5MHz	Frequency 675.5MHz	Frequency 695.5MHz
71/ 5	QPSK	1	0	23.17	23.05	23.11
		1	12	23.01	22.91	23.11
		1	24	22.90	22.96	23.03
		12	0	22.20	22.16	22.05
		12	6	22.10	22.17	22.20
		12	13	22.25	22.21	22.30
		25	0	22.13	22.16	22.13
	16QAM	1	0	22.27	22.38	22.48
		1	12	22.19	22.39	22.39
		1	24	22.33	22.33	22.47
		12	0	21.25	21.15	21.17
		12	6	21.16	21.19	21.15
		12	13	21.17	21.18	21.30
		25	0	21.07	21.05	21.16
	64QAM	1	0	21.38	21.20	21.47
		1	12	21.19	21.32	21.31
		1	24	21.13	21.26	21.33
		12	0	20.30	20.05	20.19
		12	6	20.10	20.26	20.21
		12	13	20.06	20.19	20.17
		25	0	20.23	20.12	20.23

Band/BW	Modulation	RB Size	RB Offset	Low CH 133172	Mid CH 133272	High CH 133172
				Frequency 668MHz	Frequency 678MHz	Frequency 693MHz
71/ 10	QPSK	1	0	23.11	23.11	23.11
		1	24	23.01	22.91	23.13
		1	49	22.84	23.04	22.95
		25	0	22.22	22.14	22.11
		25	12	22.22	22.05	22.20
		25	25	22.21	22.15	22.28
		50	0	22.23	22.16	22.07
	16QAM	1	0	22.27	22.32	22.40
		1	24	22.29	22.31	22.45
		1	49	22.33	22.35	22.41
		25	0	21.29	21.11	21.29
		25	12	21.24	21.07	21.25
		25	25	21.15	21.20	21.24
		50	0	21.15	21.03	21.24
	64QAM	1	0	21.36	21.22	21.41
		1	24	21.29	21.24	21.39
		1	49	21.25	21.14	21.27
		25	0	20.26	19.99	20.31
		25	12	20.24	20.24	20.09
		25	25	20.04	20.13	20.21
		50	0	20.33	20.04	20.25

Band/BW	Modulation	RB Size	RB Offset	Low CH 133197	Mid CH 133297	High CH 133397
				Frequency 670.5MHz	Frequency 680.5MHz	Frequency 690.5MHz
71/ 15	QPSK	1	0	23.25	23.11	23.05
		1	37	22.97	23.01	23.03
		1	74	22.96	23.10	22.97
		36	0	22.16	22.16	22.13
		36	19	22.24	22.15	22.20
		36	39	22.17	22.17	22.28
		75	0	22.23	22.12	22.17
	16QAM	1	0	22.35	22.46	22.40
		1	37	22.27	22.33	22.45
		1	74	22.25	22.45	22.45
		36	0	21.37	21.11	21.31
		36	19	21.12	21.15	21.17
		36	39	21.25	21.16	21.30
		75	0	21.17	21.09	21.10
	64QAM	1	0	21.40	21.24	21.43
		1	37	21.31	21.22	21.33
		1	74	21.17	21.12	21.33
		36	0	20.36	20.11	20.19
		36	19	20.12	20.12	20.13
		36	39	20.10	20.27	20.25
		75	0	20.31	20.00	20.27

Band/BW	Modulation	RB Size	RB Offset	Low CH 133222	Mid CH 133322	High CH 133372
				Frequency 673MHz	Frequency 683MHz	Frequency 688MHz
71/ 20	QPSK	1	0	23.27	23.19	23.21
		1	50	23.05	23.07	23.15
		1	99	23.00	23.12	23.05
		50	0	22.28	22.26	22.15
		50	25	22.26	22.19	22.30
		50	50	22.33	22.31	22.32
		100	0	22.25	22.20	22.23
	16QAM	1	0	22.41	22.48	22.52
		1	50	22.35	22.43	22.49
		1	99	22.37	22.49	22.51
		50	0	21.41	21.27	21.33
		50	25	21.28	21.23	21.27
		50	50	21.31	21.28	21.34
		100	0	21.19	21.19	21.26
	64QAM	1	0	21.52	21.30	21.51
		1	50	21.35	21.36	21.43
		1	99	21.29	21.28	21.37
		50	0	20.38	20.15	20.35
		50	25	20.26	20.28	20.25
		50	50	20.14	20.29	20.33
		100	0	20.35	20.16	20.29

EIRP

WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	22.56	4.2	26.76	474.24	1
1413	1732.6	22.55	4.2	26.75	473.15	1
1513	1752.6	22.46	4.2	26.66	463.45	1

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	22.93	4.4	27.33	540.75	2
21100	2535	22.79	4.4	27.19	523.6	2
21425	2567.5	22.96	4.4	27.36	544.5	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	22.33	4.4	26.73	470.98	2
21100	2535	22.26	4.4	26.66	463.45	2
21425	2567.5	22.3	4.4	26.7	467.74	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	21.16	4.4	25.56	359.75	2
21100	2535	21.22	4.4	25.62	364.75	2
21425	2567.5	21.26	4.4	25.66	368.13	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.93	4.4	27.33	540.75	2
21100	2535	22.82	4.4	27.22	527.23	2
21400	2565	22.98	4.4	27.38	547.02	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	22.3	4.4	26.7	467.74	2
21100	2535	22.23	4.4	26.63	460.26	2
21400	2565	22.26	4.4	26.66	463.45	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	21.21	4.4	25.61	363.92	2
21100	2535	21.25	4.4	25.65	367.28	2
21400	2565	21.23	4.4	25.63	365.59	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	22.96	4.4	27.36	544.5	2
21100	2535	22.83	4.4	27.23	528.45	2
21375	2562.5	22.93	4.4	27.33	540.75	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	22.34	4.4	26.74	472.06	2
21100	2535	22.3	4.4	26.7	467.74	2
21375	2562.5	22.26	4.4	26.66	463.45	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	21.19	4.4	25.59	362.24	2
21100	2535	21.24	4.4	25.64	366.44	2
21375	2562.5	21.24	4.4	25.64	366.44	2



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.97	4.4	27.37	545.76	2
21100	2535	22.86	4.4	27.26	532.11	2
21350	2560	23.01	4.4	27.41	550.81	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.37	4.4	26.77	475.34	2
21100	2535	22.31	4.4	26.71	468.81	2
21350	2560	22.32	4.4	26.72	469.89	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21.23	4.4	25.63	365.59	2
21100	2535	21.27	4.4	25.67	368.98	2
21350	2560	21.28	4.4	25.68	369.83	2

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

LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	23.53	2.6	23.98	250.03	3
23095	707.5	23.54	2.6	23.99	250.61	3
23173	715.3	23.47	2.6	23.92	246.6	3

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	22.84	2.6	23.29	213.3	3
23095	707.5	22.81	2.6	23.26	211.84	3
23173	715.3	22.85	2.6	23.3	213.8	3

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23017	699.7	21.52	2.6	21.97	157.4	3
23095	707.5	21.63	2.6	22.08	161.44	3
23173	715.3	21.62	2.6	22.07	161.06	3

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	23.39	2.6	23.84	242.1	3
23095	707.5	23.38	2.6	23.83	241.55	3
23165	714.5	23.4	2.6	23.85	242.66	3

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	22.87	2.6	23.32	214.78	3
23095	707.5	22.79	2.6	23.24	210.86	3
23165	714.5	22.8	2.6	23.25	211.35	3

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23025	700.5	21.53	2.6	21.98	157.76	3
23095	707.5	21.53	2.6	21.98	157.76	3
23165	714.5	21.56	2.6	22.01	158.85	3

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	23.39	2.6	23.84	242.1	3
23095	707.5	23.37	2.6	23.82	240.99	3
23155	713.5	23.4	2.6	23.85	242.66	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	22.87	2.6	23.32	214.78	3
23095	707.5	22.82	2.6	23.27	212.32	3
23155	713.5	22.78	2.6	23.23	210.38	3

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23035	701.5	21.46	2.6	21.91	155.24	3
23095	707.5	21.58	2.6	22.03	159.59	3
23155	713.5	21.62	2.6	22.07	161.06	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	23.44	2.6	23.89	244.91	3
23095	707.5	23.45	2.6	23.9	245.47	3
23130	711	23.41	2.6	23.86	243.22	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	22.89	2.6	23.34	215.77	3
23095	707.5	22.85	2.6	23.3	213.8	3
23130	711	22.84	2.6	23.29	213.3	3

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	21.54	2.6	21.99	158.12	3
23095	707.5	21.59	2.6	22.04	159.96	3
23130	711	21.64	2.6	22.09	161.81	3

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

LTE BAND 17

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23755	706.5	23.31	2.6	23.76	237.68	3
23790	710	23.23	2.6	23.68	233.35	3
23825	713.5	23.33	2.6	23.78	238.78	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23755	706.5	22.73	2.6	23.18	207.97	3
23790	710	22.64	2.6	23.09	203.7	3
23825	713.5	22.71	2.6	23.16	207.01	3

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23755	706.5	21.4	2.6	21.85	153.11	3
23790	710	21.58	2.6	22.03	159.59	3
23825	713.5	21.62	2.6	22.07	161.06	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	23.41	2.6	23.86	243.22	3
23790	710	23.39	2.6	23.84	242.1	3
23800	711	23.35	2.6	23.8	239.88	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	22.8	2.6	23.25	211.35	3
23790	710	22.74	2.6	23.19	208.45	3
23800	711	22.77	2.6	23.22	209.89	3

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	21.56	2.6	22.01	158.85	3
23790	710	21.62	2.6	22.07	161.06	3
23800	711	21.66	2.6	22.11	162.55	3

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

LTE BAND 71

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	23.17	1.9	22.92	195.88	3
133247	675.5	23.05	1.9	22.8	190.55	3
133447	695.5	23.11	1.9	22.86	193.2	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	22.33	1.9	22.08	161.44	3
133247	675.5	22.39	1.9	22.14	163.68	3
133447	695.5	22.48	1.9	22.23	167.11	3

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133147	665.5	21.38	1.9	21.13	129.72	3
133247	675.5	21.32	1.9	21.07	127.94	3
133447	695.5	21.47	1.9	21.22	132.43	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	23.11	1.9	22.86	193.2	3
133272	678	23.11	1.9	22.86	193.2	3
133422	693	23.13	1.9	22.88	194.09	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	22.33	1.9	22.08	161.44	3
133272	678	22.35	1.9	22.1	162.18	3
133422	693	22.45	1.9	22.2	165.96	3

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133172	668	21.36	1.9	21.11	129.12	3
133272	678	21.24	1.9	20.99	125.6	3
133422	693	21.41	1.9	21.16	130.62	3

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	23.25	1.9	23	199.53	3
133297	680.5	23.11	1.9	22.86	193.2	3
133397	690.5	23.05	1.9	22.8	190.55	3

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	22.35	1.9	22.1	162.18	3
133297	680.5	22.46	1.9	22.21	166.34	3
133397	690.5	22.45	1.9	22.2	165.96	3

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133197	670.5	21.4	1.9	21.15	130.32	3
133297	680.5	21.24	1.9	20.99	125.6	3
133397	690.5	21.43	1.9	21.18	131.22	3

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	23.27	1.9	23.02	200.45	3
133322	683	23.19	1.9	22.94	196.79	3
133372	688	23.21	1.9	22.96	197.7	3

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	22.41	1.9	22.16	164.44	3
133322	683	22.49	1.9	22.24	167.49	3
133372	688	22.52	1.9	22.27	168.66	3

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _c (dB)	ERP (dBm)	ERP (mW)	Limit (W)
133222	673	21.52	1.9	21.27	133.97	3
133322	683	21.36	1.9	21.11	129.12	3
133372	688	21.51	1.9	21.26	133.66	3

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

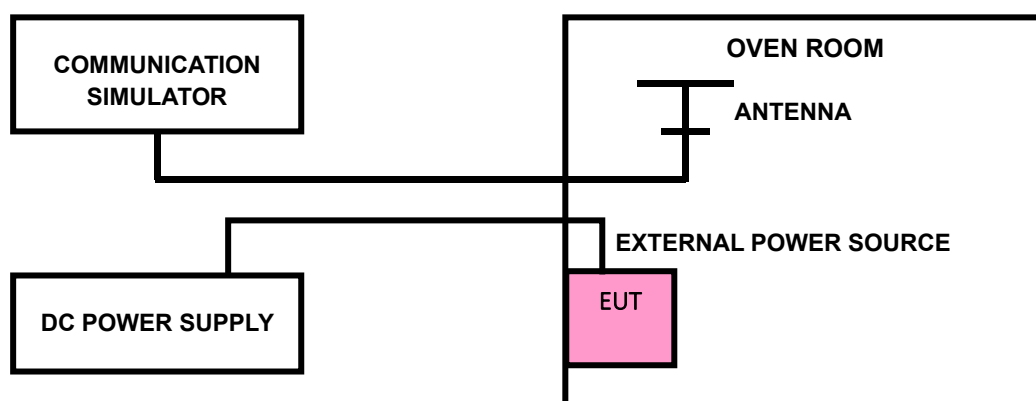
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

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

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

3.2.3 TEST SETUP





Test Report No.: PSU-QSU2307030110RF03

3.2.4 TEST RESULTS

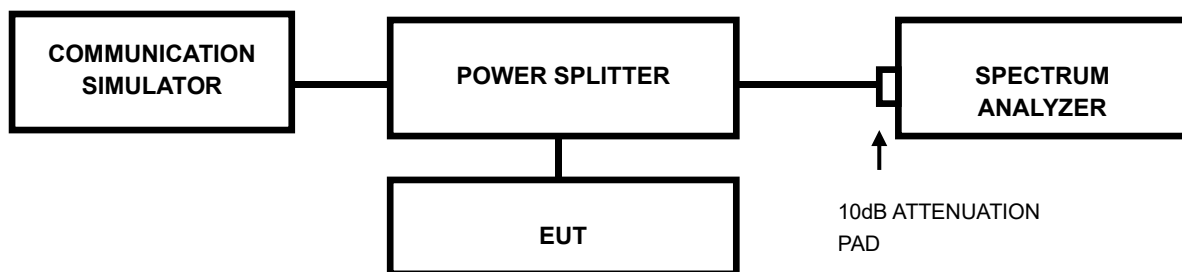
Please Refer to the module report (Report No.: SEWA2205000015RG01, Model Name: AG550Q-NA, FCC ID: XMR2022AG550QNA).

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

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



Test Report No.: PSU-QSU2307030110RF03

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

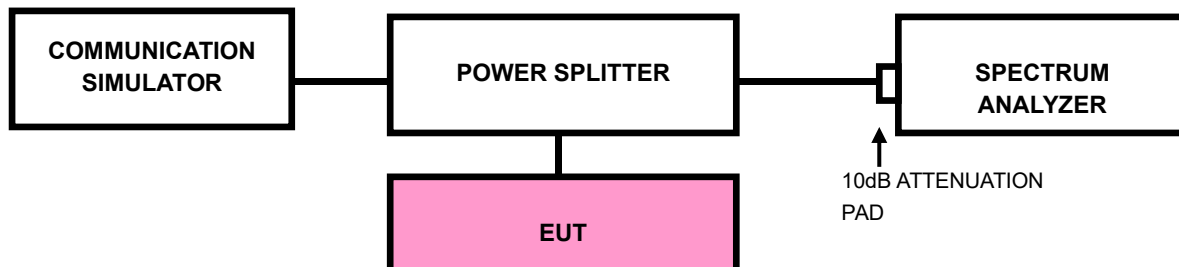
3.4.1 LIMITS OF BAND EDGE MEASUREMENT

According to FCC 27.53(g) specified that For operations in the 600 MHz band and the 698-746 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 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC 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 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.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

- a) All measurements were done at low and high operational frequency range
- b) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- c) Tune the analyzer to the nominal center frequency of the emission bandwidth
(EBW)
- d) .Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- f) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- g) Select the average power (RMS) display detector.
- h) Set the number of measurement points to ≥ 1001 .
- i) Use auto-coupled sweep time.
- j) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- k) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- l) Record the max trace plot into the test report.



Test Report No.: PSU-QSU2307030110RF03

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 .

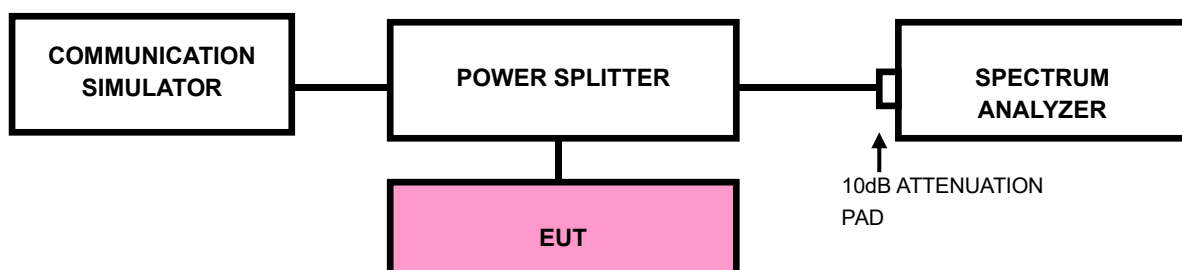
For: LTE Band7

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ 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





Test Report No.: PSU-QSU2307030110RF03

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 Band7

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

3.6.2 TEST PROCEDURES

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

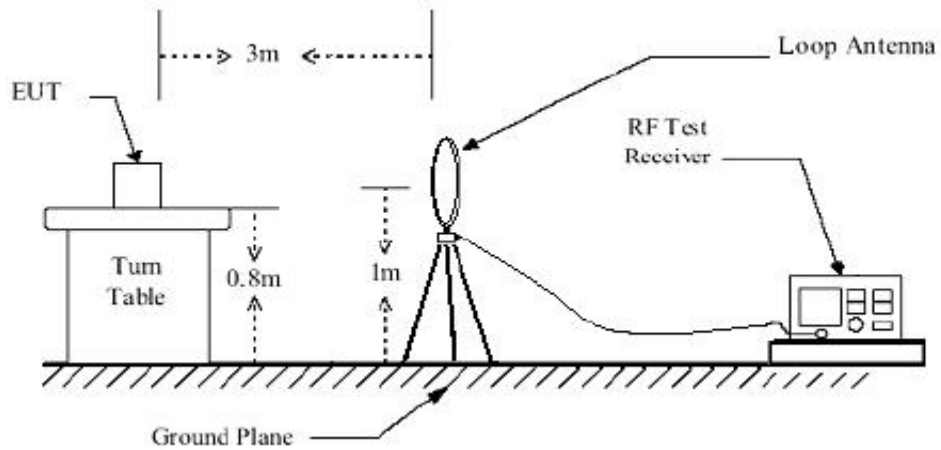
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

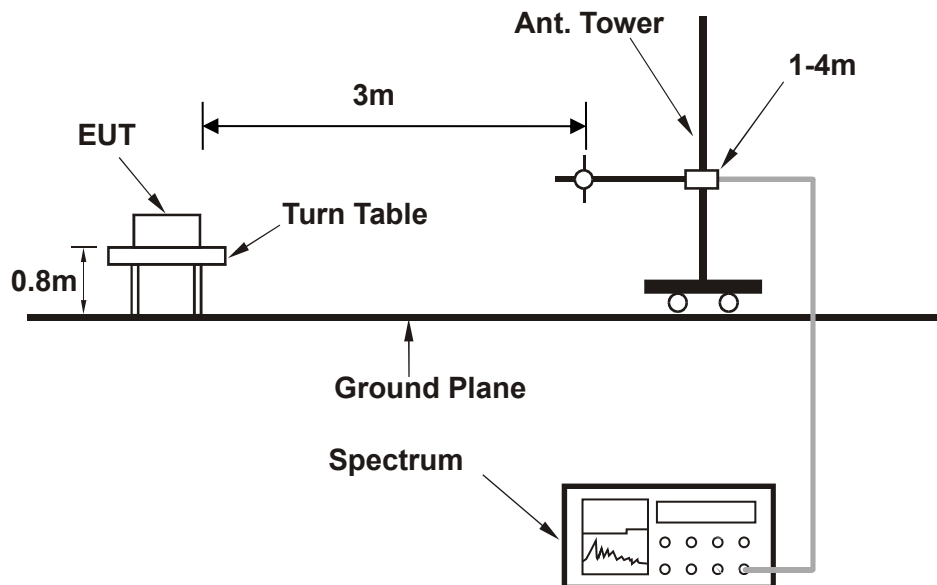
No deviation

3.6.4 TEST SETUP

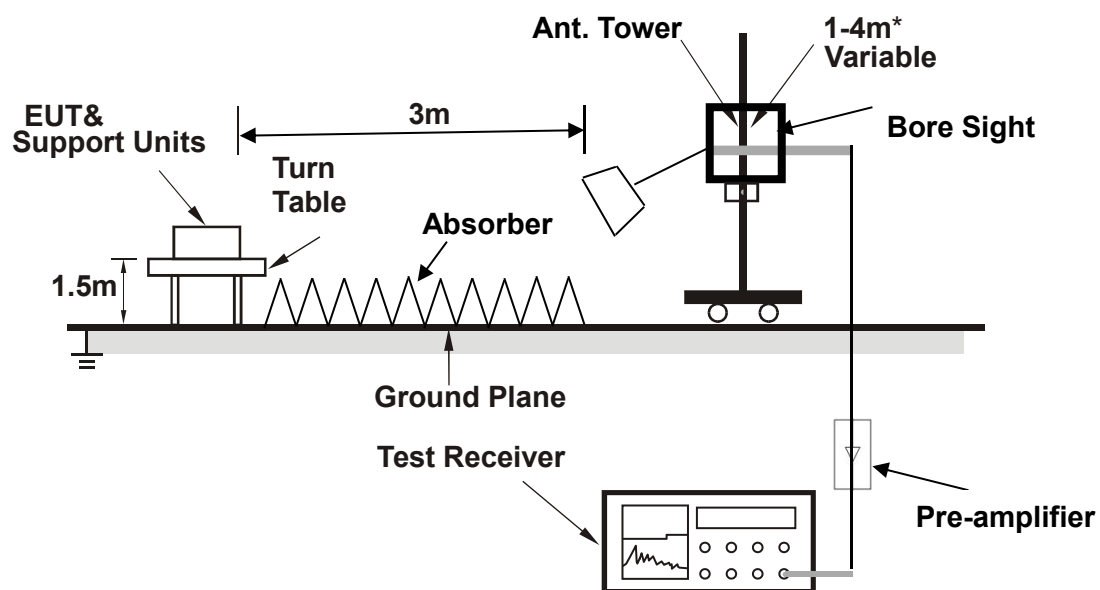
< Frequency Range below 30MHz >



< 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 71

CHANNEL BANDWIDTH: 10MHz / QPSK

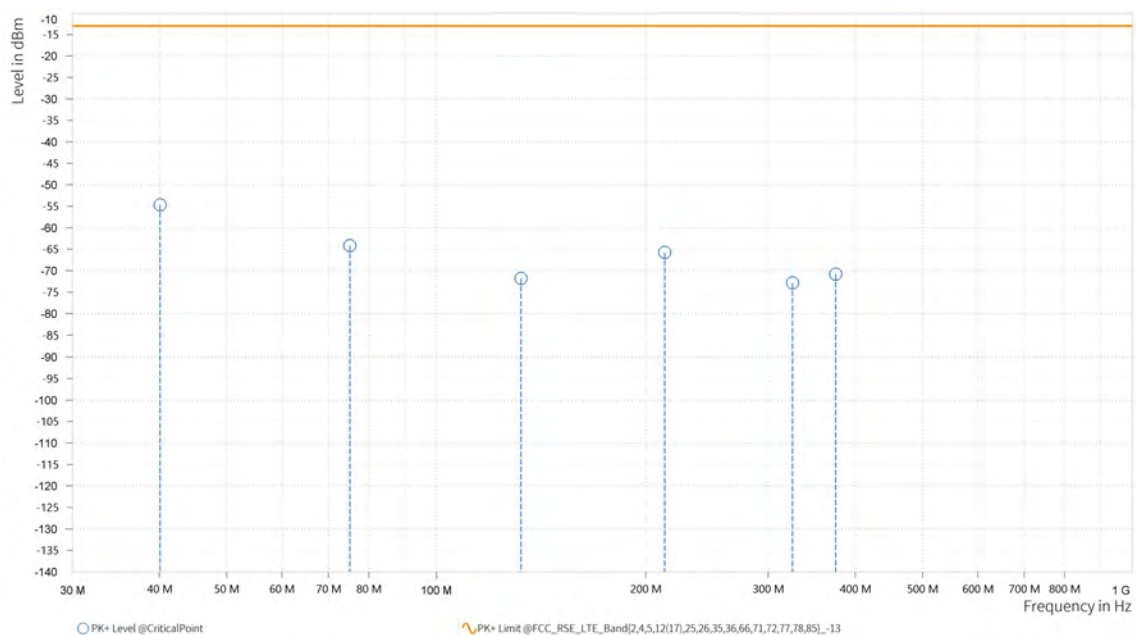
MODE	TX channel 133322	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	40.100	-54.97	-13.00	41.97	-1.98	H	1	1
1	53.800	-59.20	-13.00	46.20	-0.45	H	359	2
1	83.850	-66.64	-13.00	53.64	-6.46	H	359.1	1
1	139.600	-64.17	-13.00	51.17	-8.05	H	5.2	1
1	207.900	-62.48	-13.00	49.48	-5.34	H	189.6	2
1	425.000	-70.72	-13.00	57.72	2.06	H	189.6	2



MODE	TX channel 133322	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	40.100	-54.67	-13.00	41.67	-0.73	V	256.5	2
1	75.150	-64.15	-13.00	51.15	-6.37	V	359	2
1	132.350	-71.81	-13.00	58.81	-5.28	V	359.1	2
1	213.000	-65.77	-13.00	52.77	-3.48	V	5.2	2
1	325.000	-72.84	-13.00	59.84	0.93	V	256.5	2
1	375.000	-70.84	-13.00	57.84	1.56	V	256.5	2





**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

ABOVE 1GHz

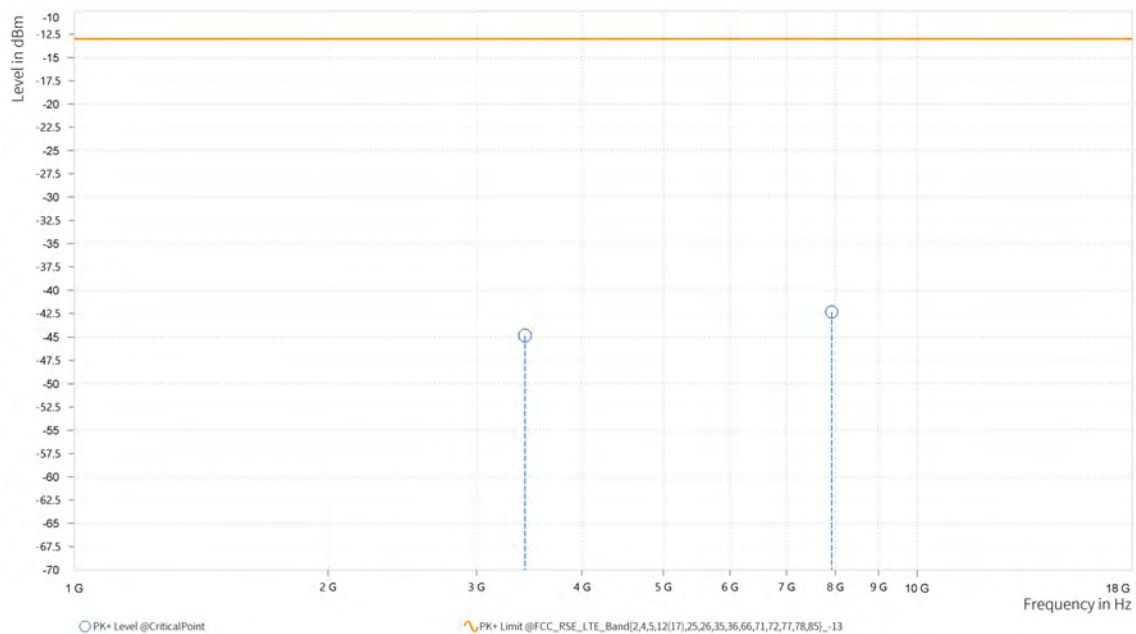
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV:

CH 1312

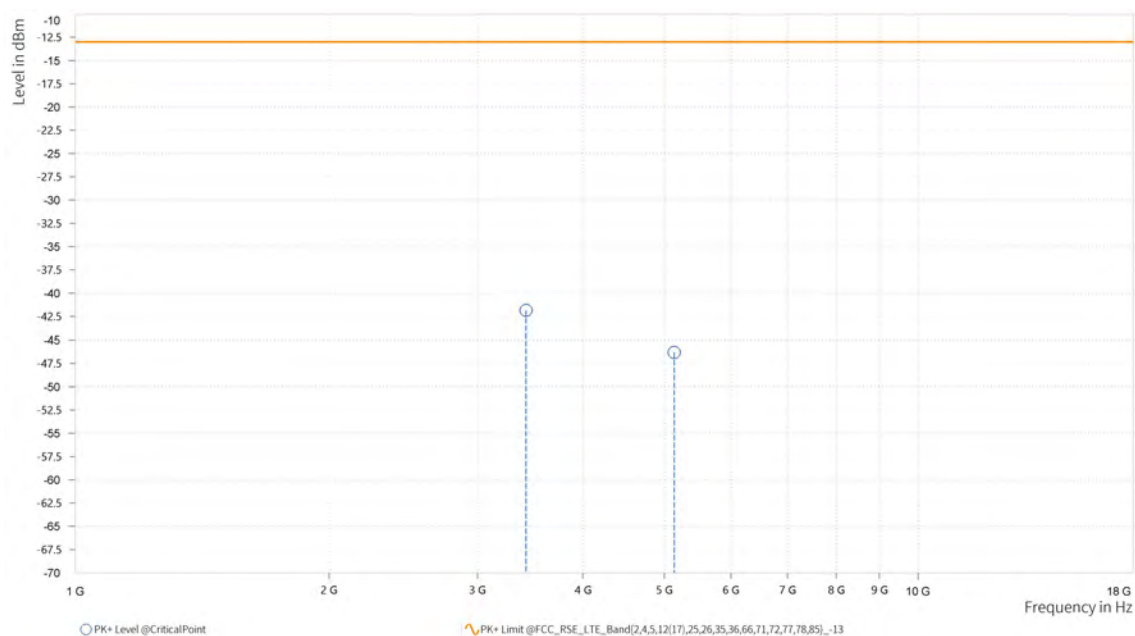
MODE	TX channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,426.000	-44.84	-13.00	31.84	25.18	H	1	2
5	7,919.379	-42.36	-13.00	29.36	29.50	H	1	2



MODE	TX channel 1312	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			

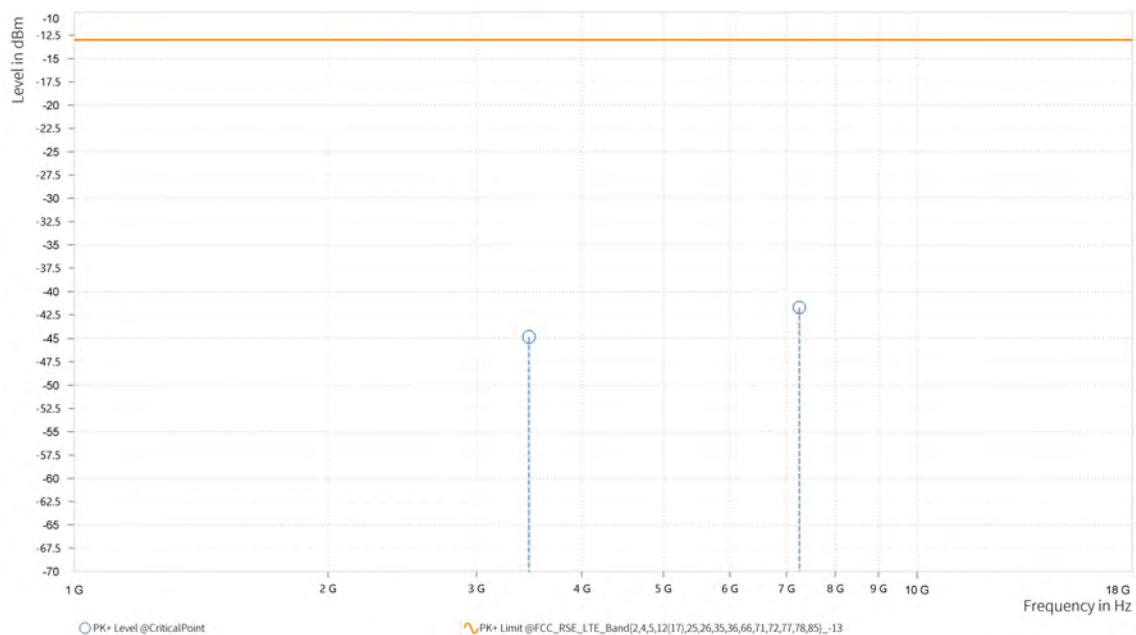
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,427.000	-41.86	-13.00	28.86	24.96	V	187.1	1
4	5,135.500	-46.32	-13.00	33.32	26.71	V	1	1



CH 1413

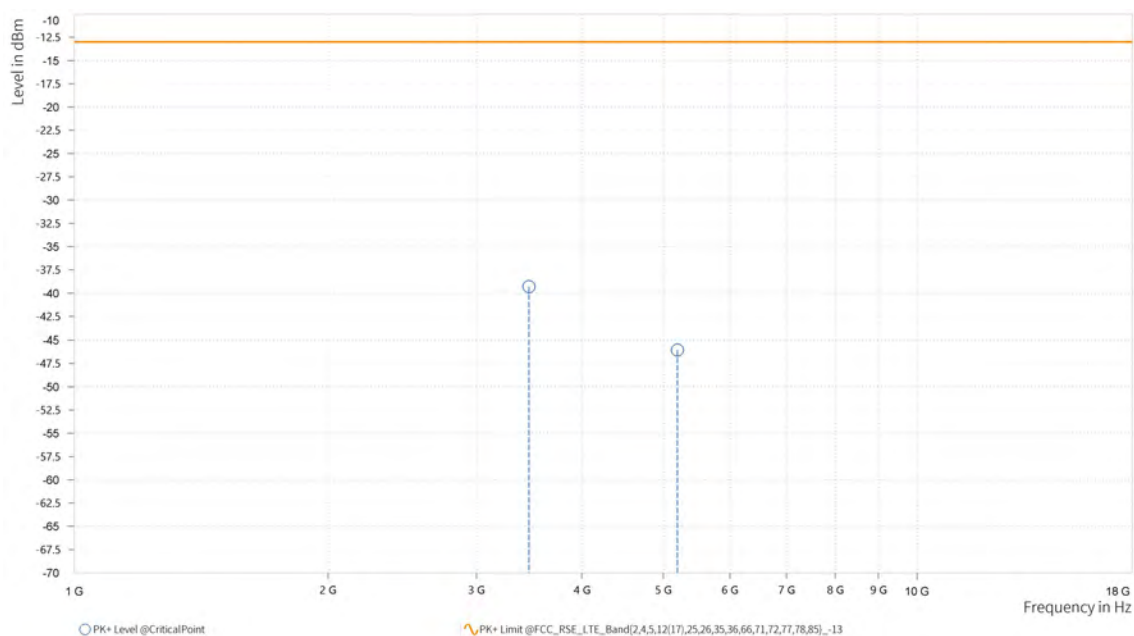
MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,464.000	-44.86	-13.00	31.86	24.75	H	1	1
5	7,252.258	-41.73	-13.00	28.73	29.21	H	269.6	1



MODE	TX channel 1413	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			

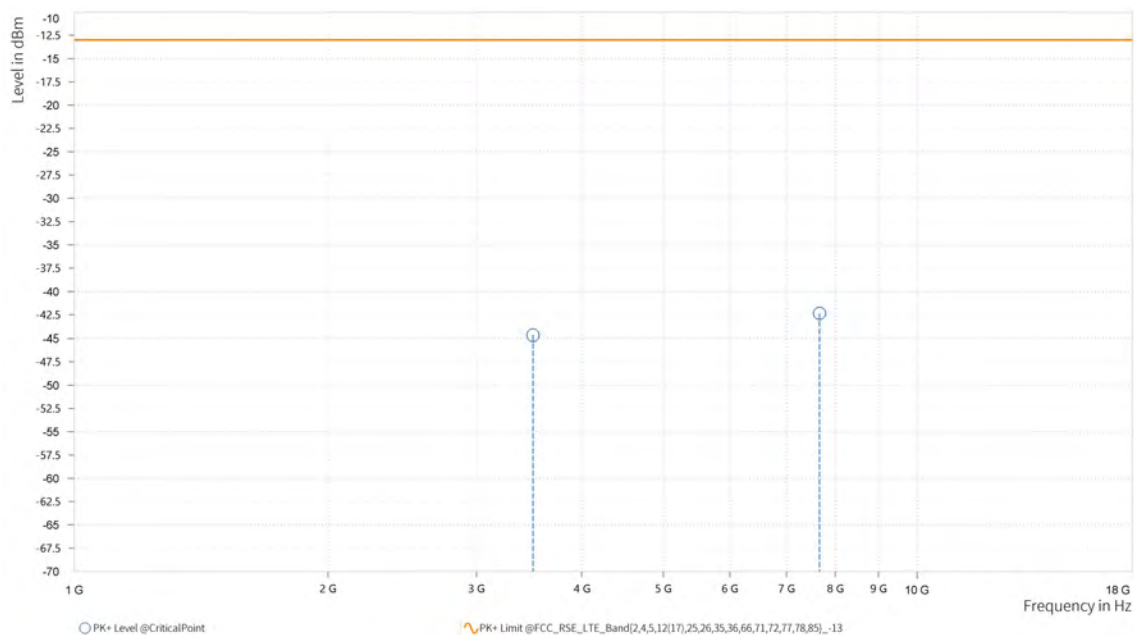
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,463.500	-39.30	-13.00	26.30	24.47	V	185.9	1
4	5,198.000	-46.06	-13.00	33.06	27.23	V	359	2



CH 1513

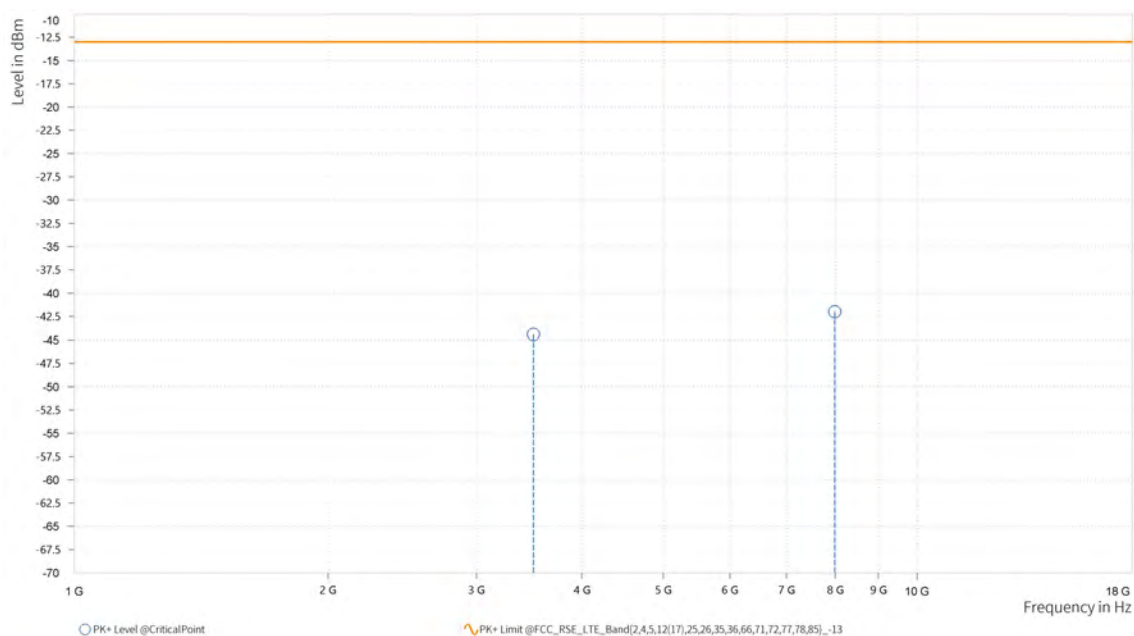
MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,502.500	-44.67	-13.00	31.67	25.70	H	1	1
5	7,663.348	-42.37	-13.00	29.37	29.40	H	83.1	2



MODE	TX channel 1513	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	3,506.000	-44.42	-13.00	31.42	25.55	V	1	1
5	7,985.576	-42.01	-13.00	29.01	29.55	V	359.1	1

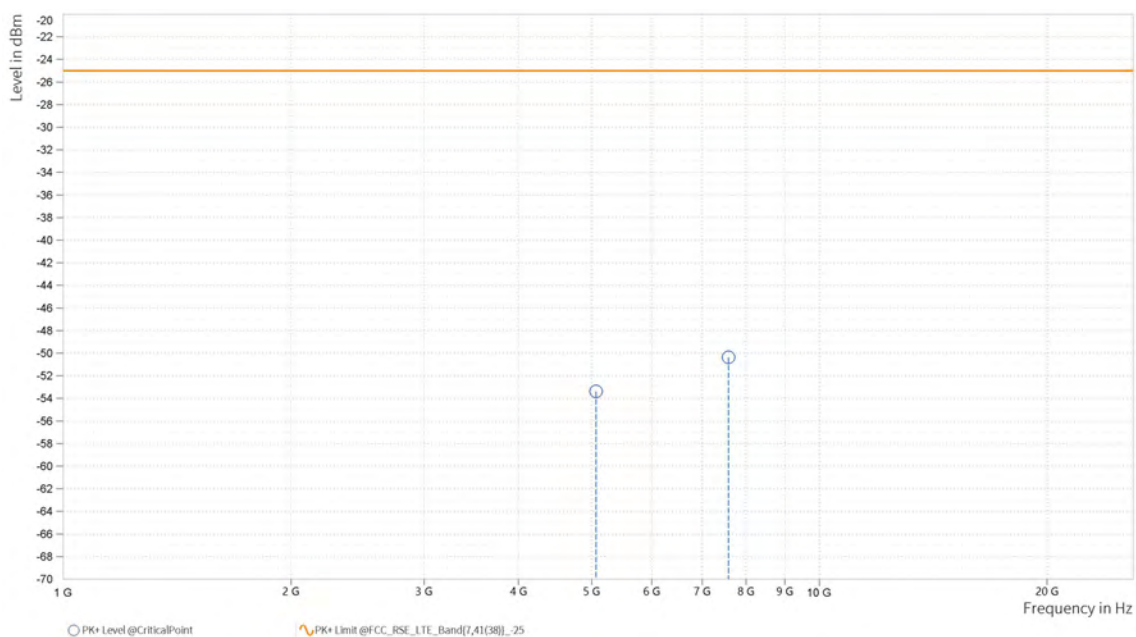


LTE Band 7

CHANNEL BANDWIDTH: 5MHz / QPSK

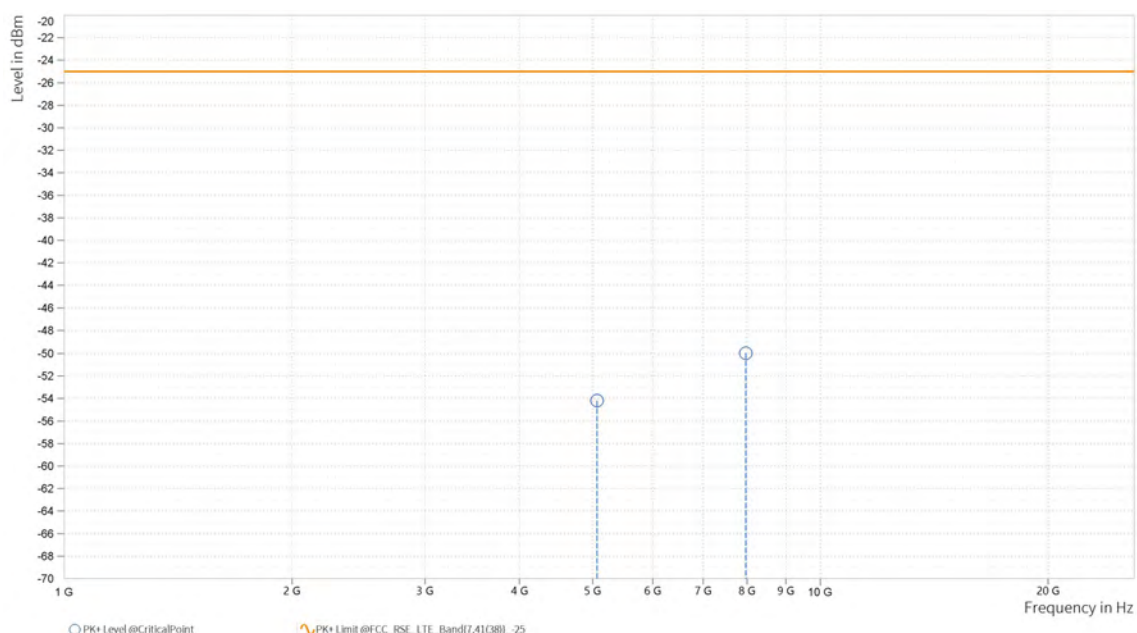
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,065.000	-53.39	-25.00	28.39	17.07	H	1	1
4	7,579.000	-50.36	-25.00	25.36	20.87	H	359.1	2



MODE	TX channel 21100	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			

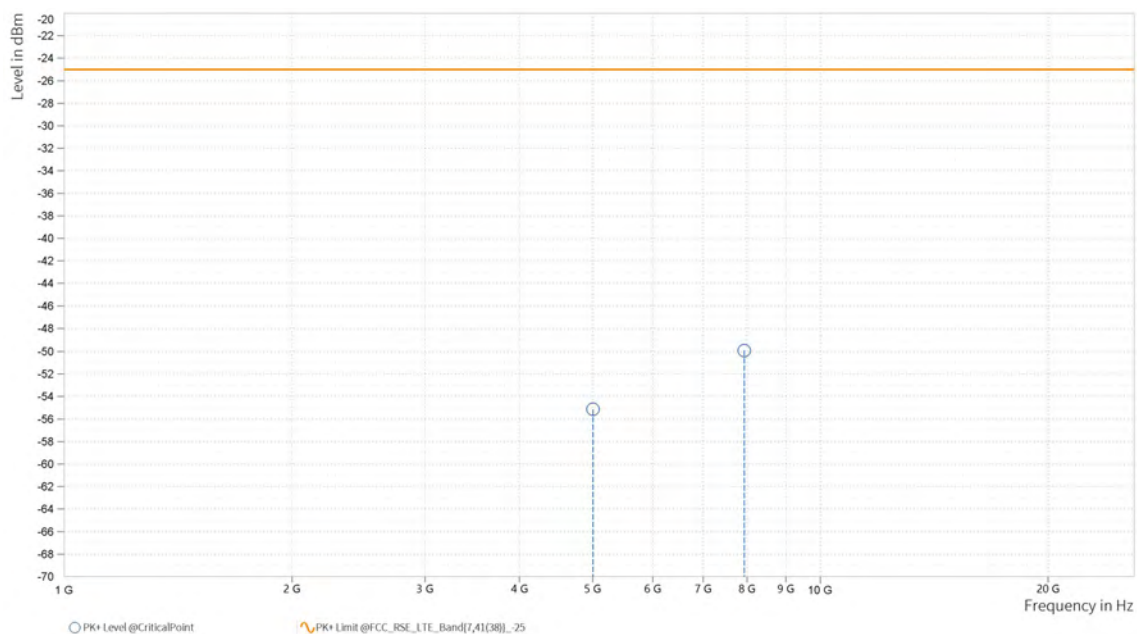
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,065.000	-54.19	-25.00	29.19	17.07	V	359.1	2
4	7,969.000	-49.97	-25.00	24.97	21.93	V	1	2



**CHANNEL BANDWIDTH: 10MHz / QPSK
CH20800**

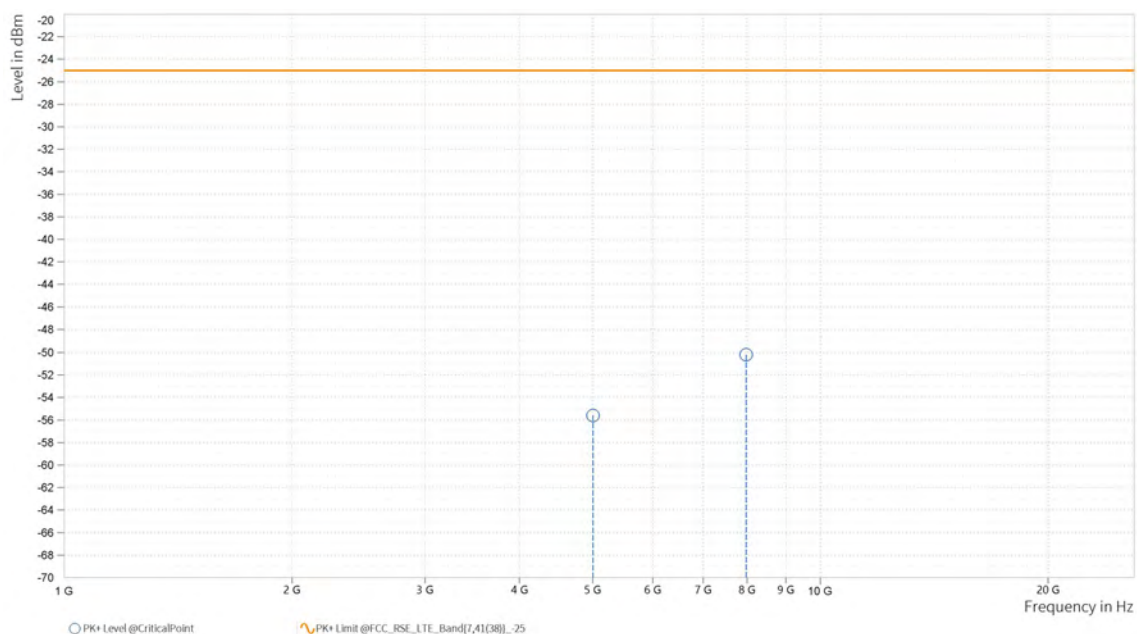
MODE	TX channel 20800	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,001.000	-55.13	-25.00	30.13	17.23	H	335.3	1
4	7,931.000	-49.90	-25.00	24.90	21.87	H	359.1	2



MODE	TX channel 20800	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	5,001.000	-55.59	-25.00	30.59	17.23	V	359.1	2
4	7,979.000	-50.19	-25.00	25.19	21.98	V	335.2	2





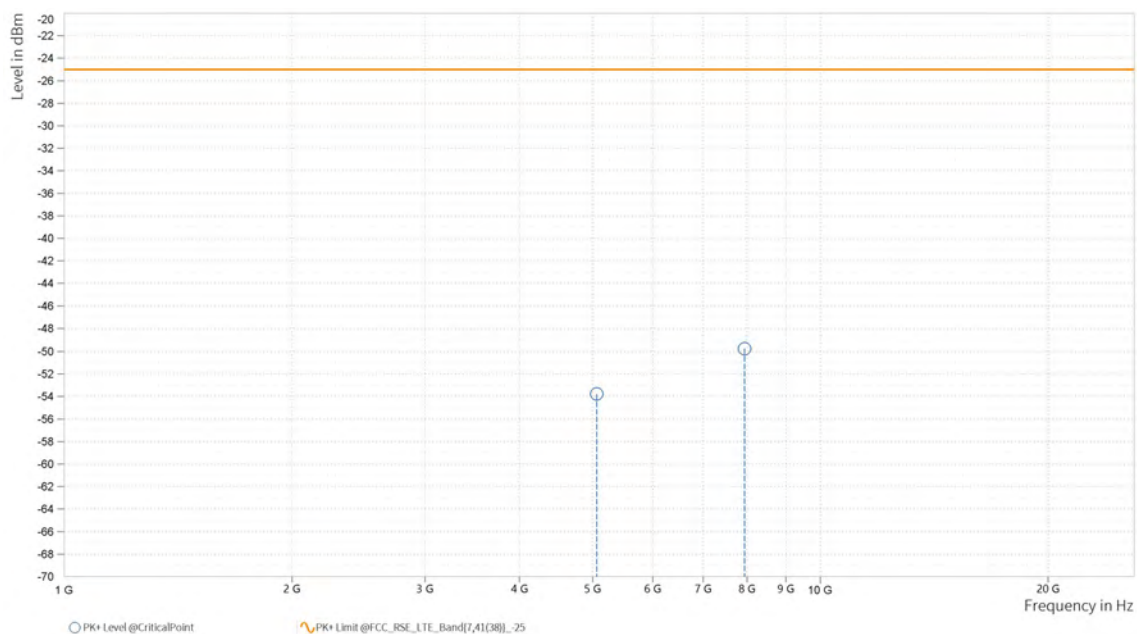
BUREAU
VERITAS

Test Report No.: PSU-QSU2307030110RF03

CH21100

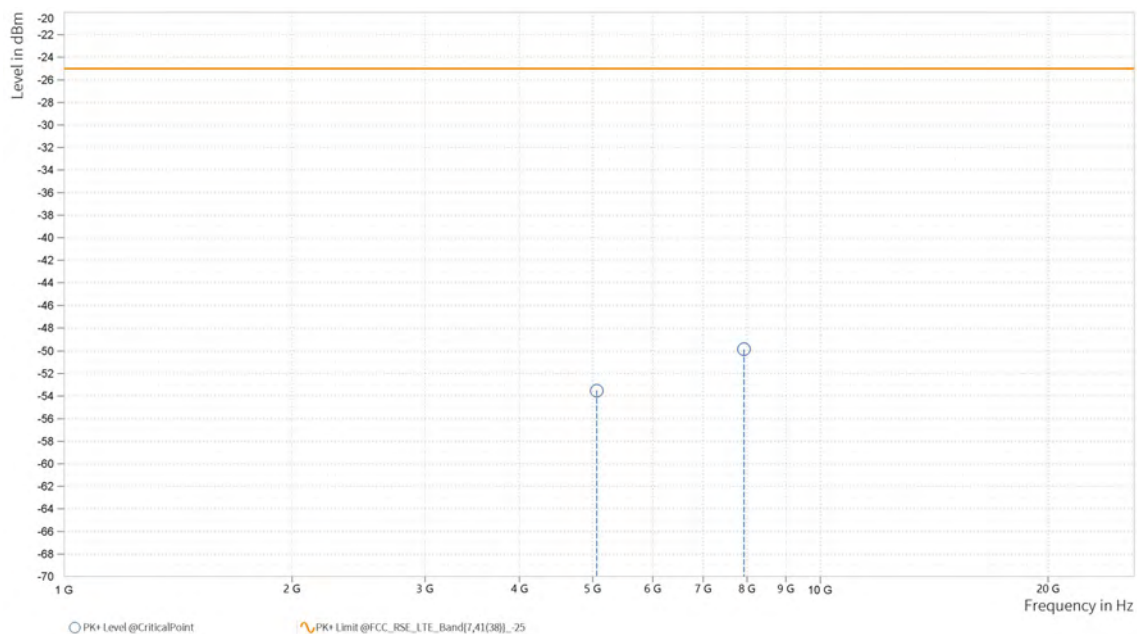
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,061.000	-53.78	-25.00	28.78	17.04	H	359.1	1
4	7,935.500	-49.75	-25.00	24.75	21.91	H	359.1	1



MODE	TX channel 21100	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			

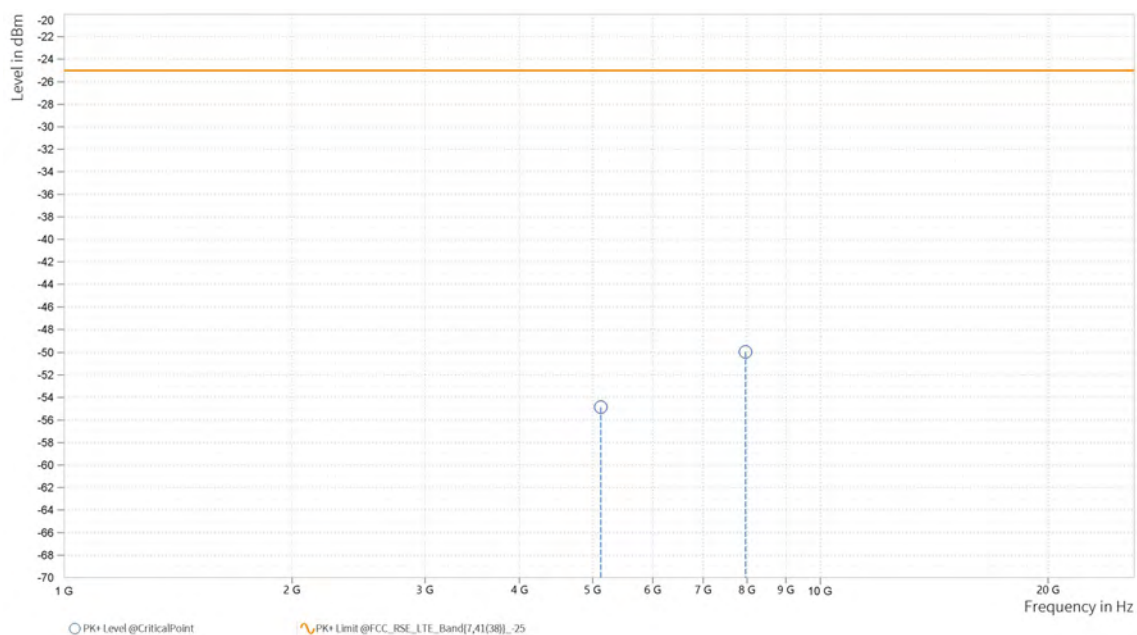
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,061.500	-53.51	-25.00	28.51	17.05	V	1	1
4	7,920.500	-49.84	-25.00	24.84	21.82	V	231.3	1



CH21400

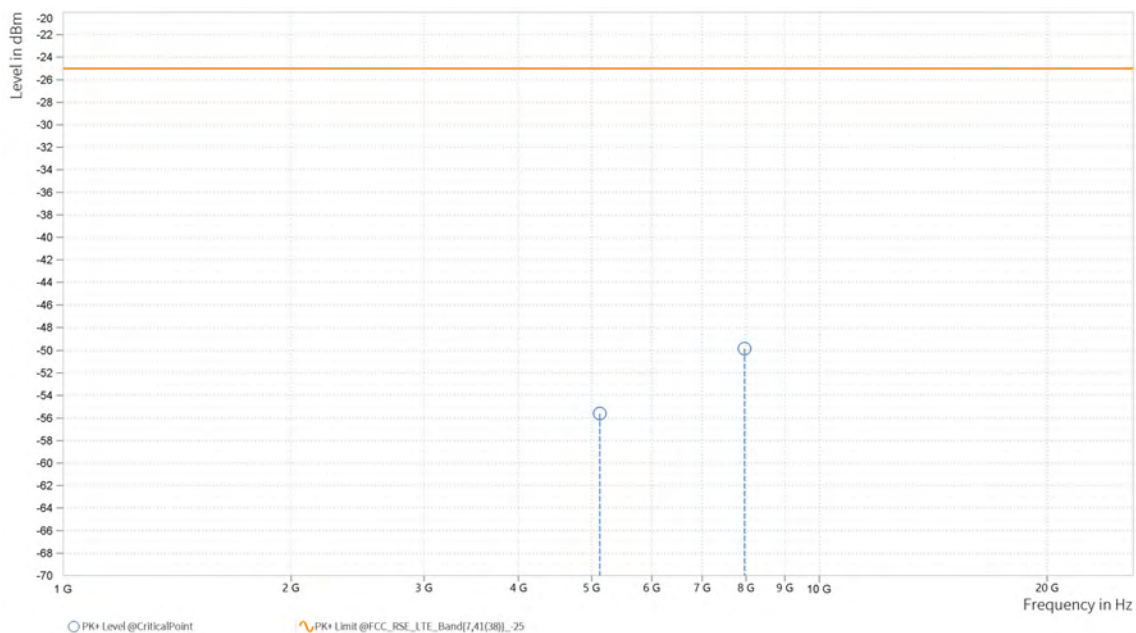
MODE	TX channel 21400	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,121.000	-54.86	-25.00	29.86	17.12	H	1	2
4	7,960.000	-49.94	-25.00	24.94	21.98	H	233.7	2



MODE	TX channel 21400	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			

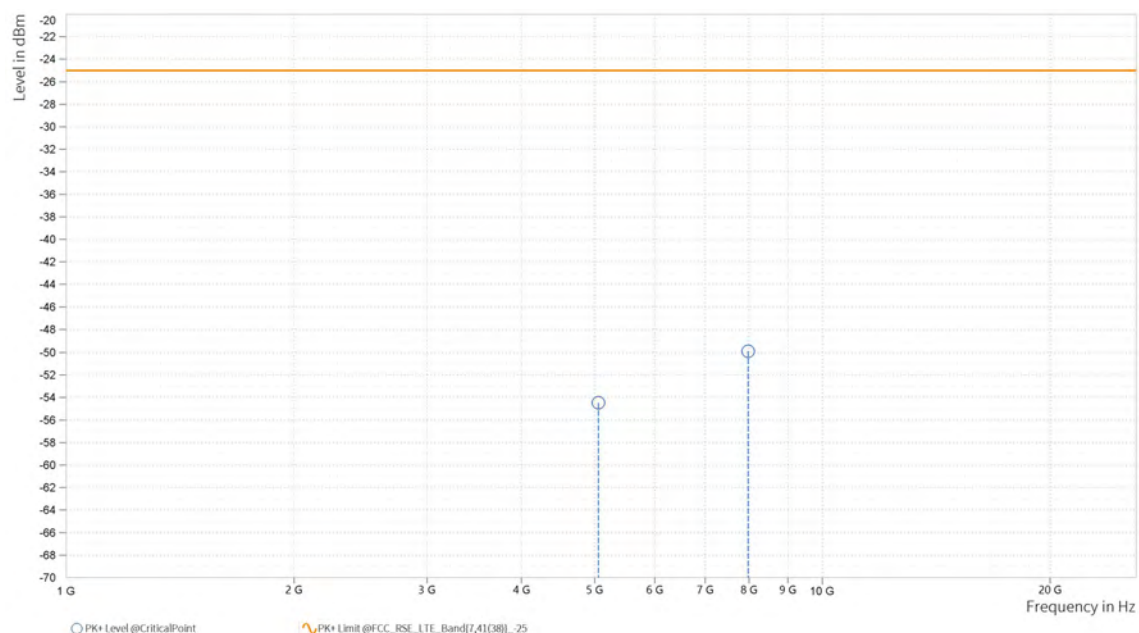
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,121.000	-55.60	-25.00	30.60	17.12	V	1	1
4	7,957.500	-49.83	-25.00	24.83	22.00	V	231.2	2



CHANNEL BANDWIDTH: 15MHz / QPSK

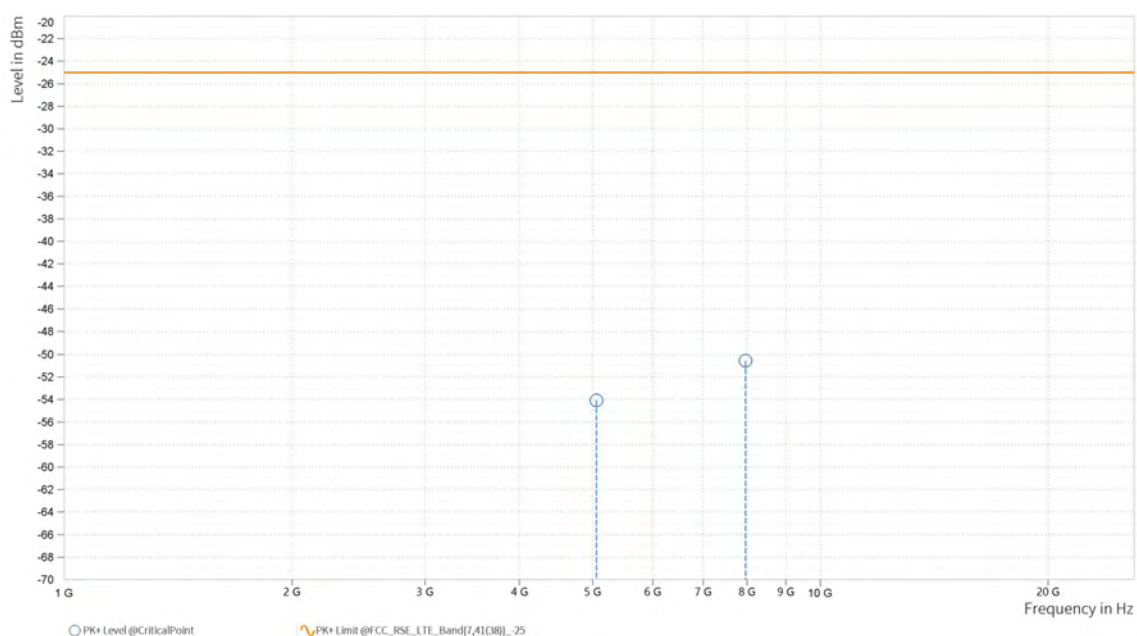
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,055.500	-54.47	-25.00	29.47	17.00	H	359.1	2
4	7,975.000	-49.88	-25.00	24.88	21.94	H	1	2



MODE	TX channel 21100	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			

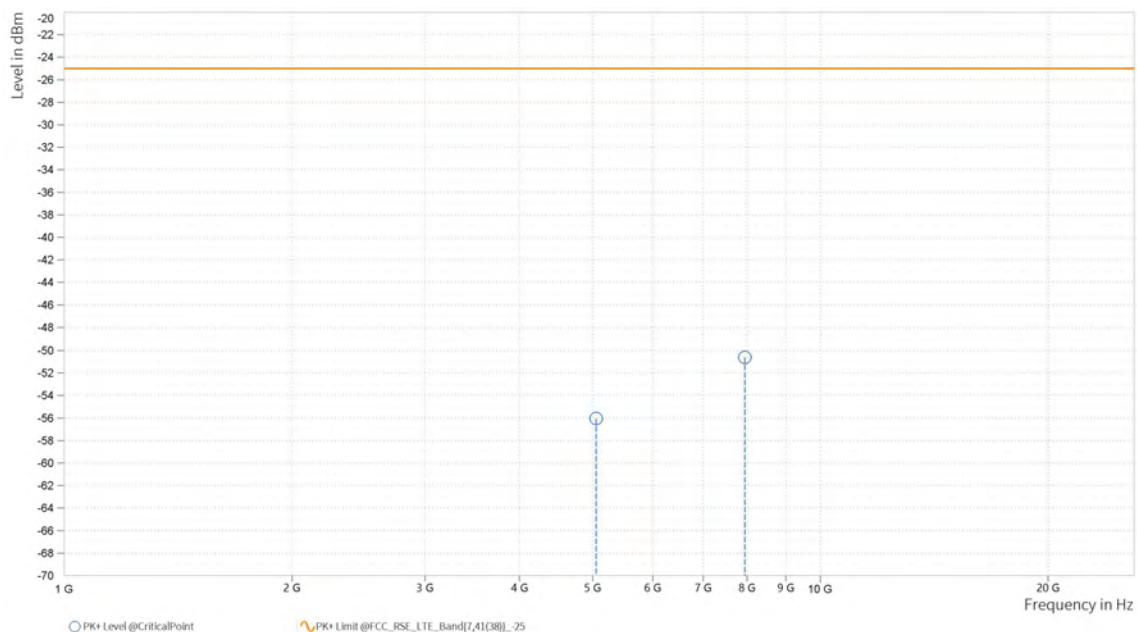
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,055.000	-54.07	-25.00	29.07	17.00	V	232.4	2
4	7,962.000	-50.56	-25.00	25.56	21.97	V	1	2



CHANNEL BANDWIDTH: 20MHz / QPSK
CH:21100

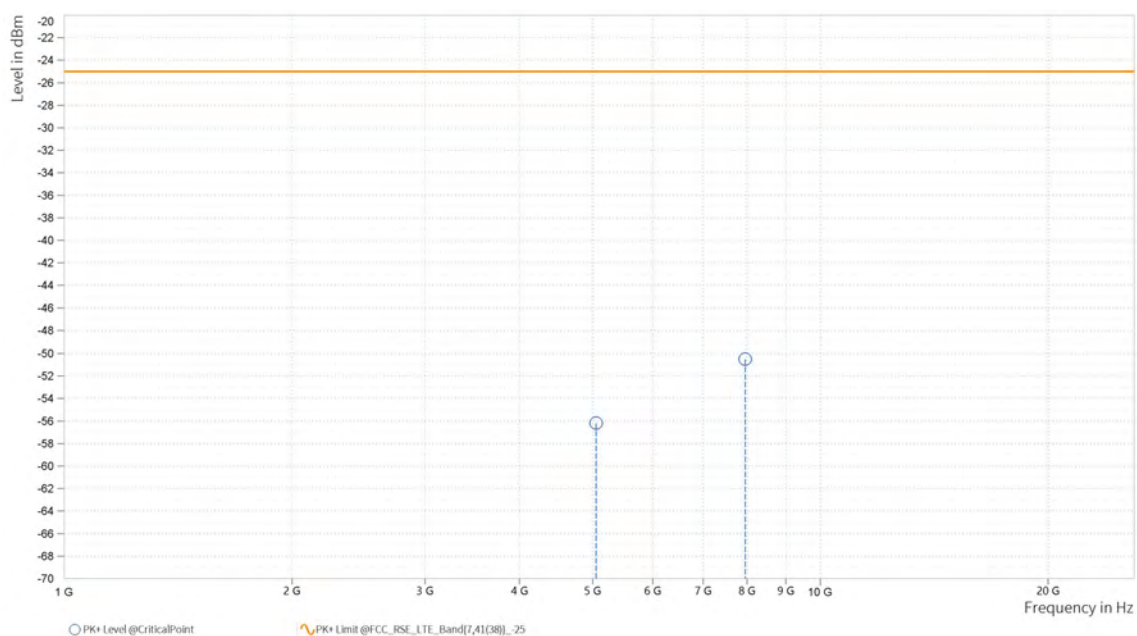
MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,052.000	-56.04	-25.00	31.04	16.98	H	359.1	2
4	7,943.500	-50.60	-25.00	25.60	22.00	H	231.3	2



MODE	TX channel 21100	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	5,052.000	-56.18	-25.00	31.18	16.98	V	359.1	2
4	7,949.500	-50.50	-25.00	25.50	22.06	V	232.5	2

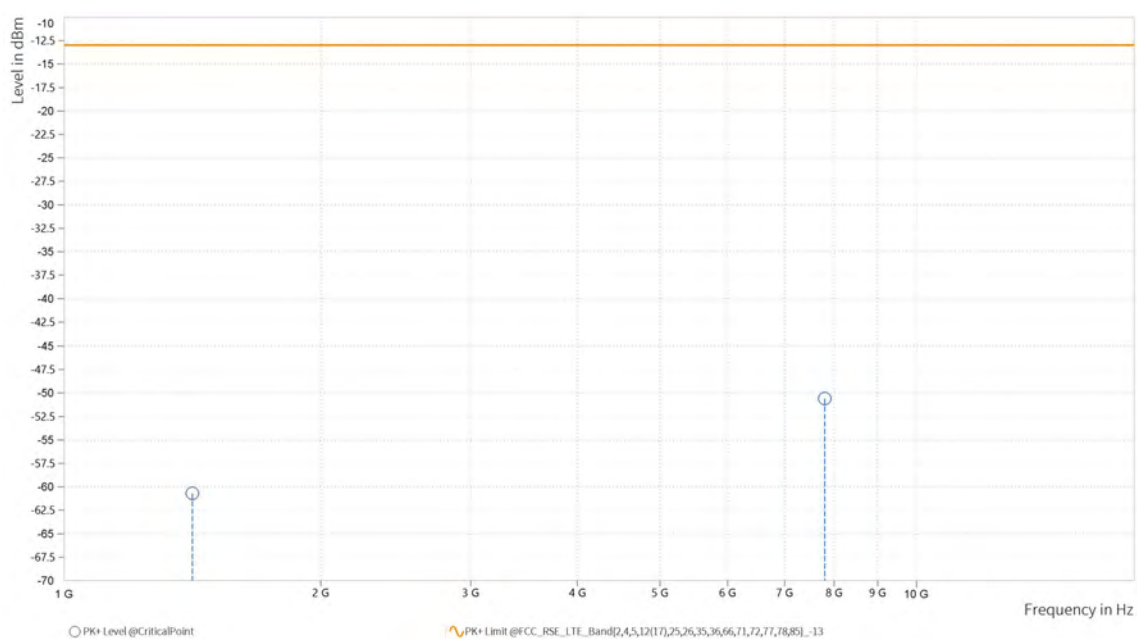


LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz / QPSK

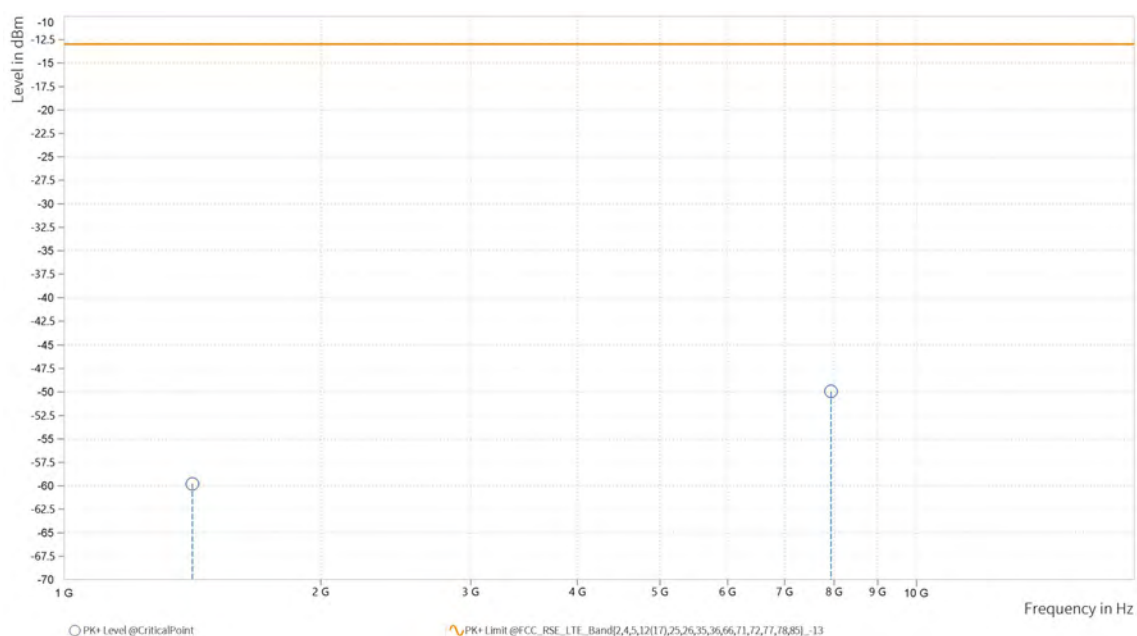
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,414.000	-60.70	-13.00	47.70	4.93	H	1	1
4	7,804.500	-50.60	-13.00	37.60	21.13	H	233.7	2



MODE	TX channel 23095	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]
2	1,414.000	-59.78	-13.00	46.78	4.93	V	87.8	1
4	7,936.500	-49.93	-13.00	36.93	21.92	V	1	2

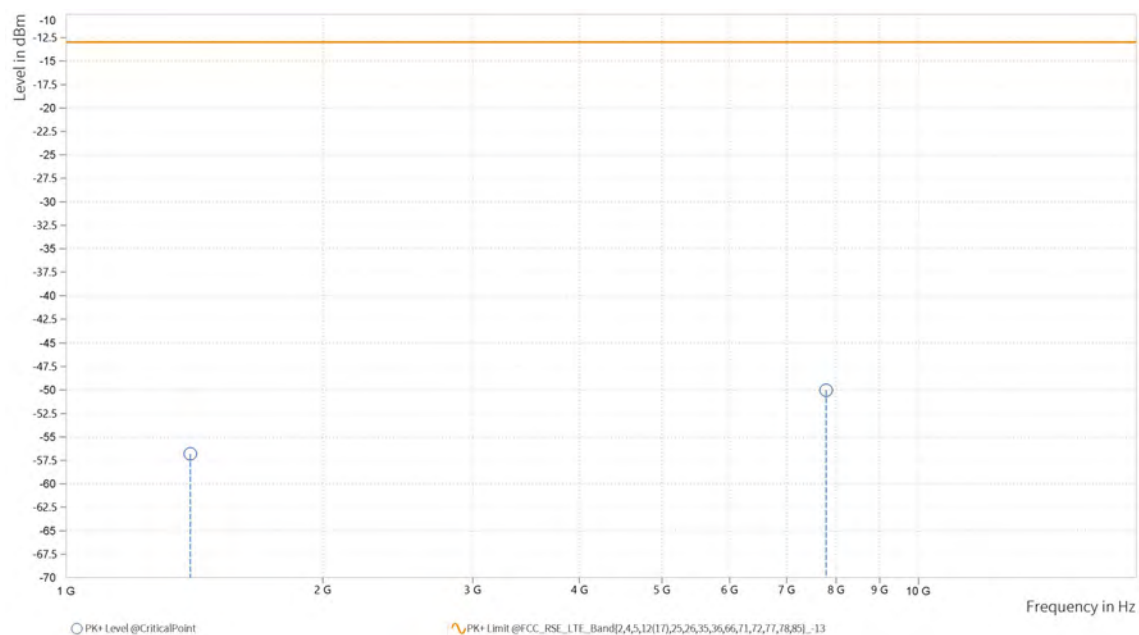


CHANNEL BANDWIDTH: 3MHz / QPSK

CH23025

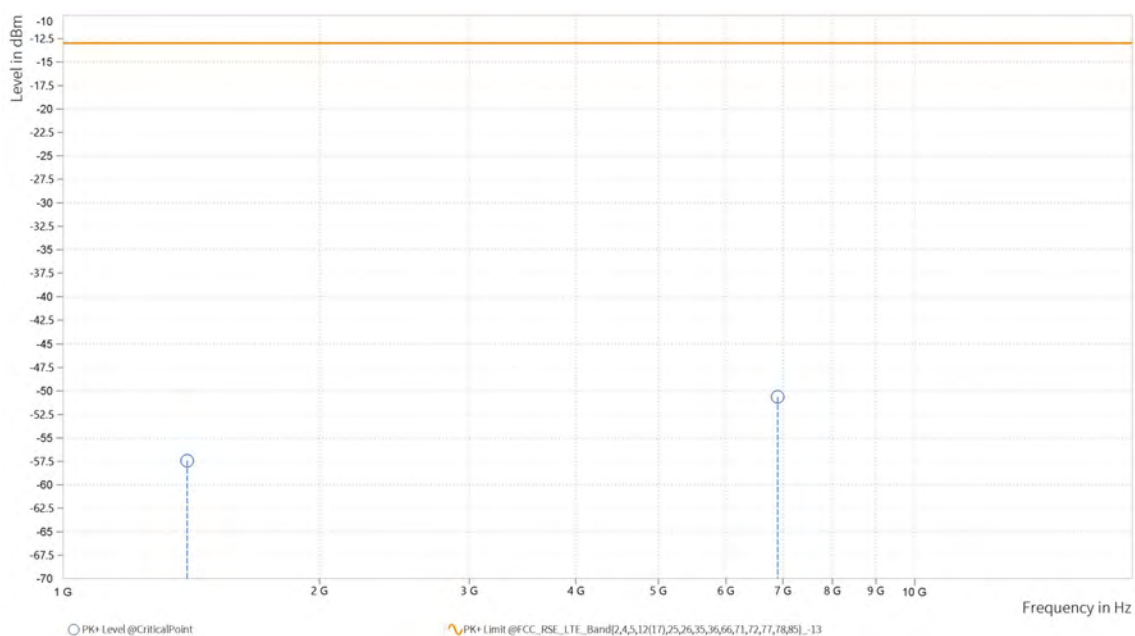
04/200210			
MODE	TX channel 23025	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,398.500	-56.81	-13.00	43.81	4.63	H	359.1	2
4	7,791.500	-50.01	-13.00	37.01	21.04	H	359.1	2



MODE	TX channel 23025	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			

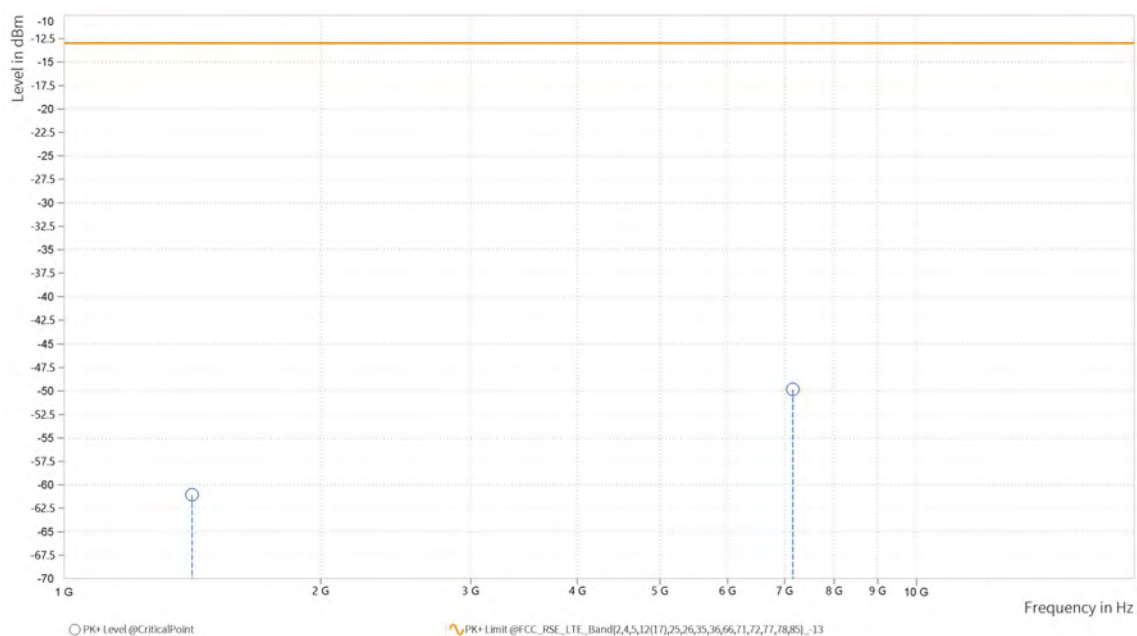
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,398.500	-57.42	-13.00	44.42	4.63	V	86.6	1
4	6,901.500	-50.63	-13.00	37.63	19.81	V	359.1	2



CH23095

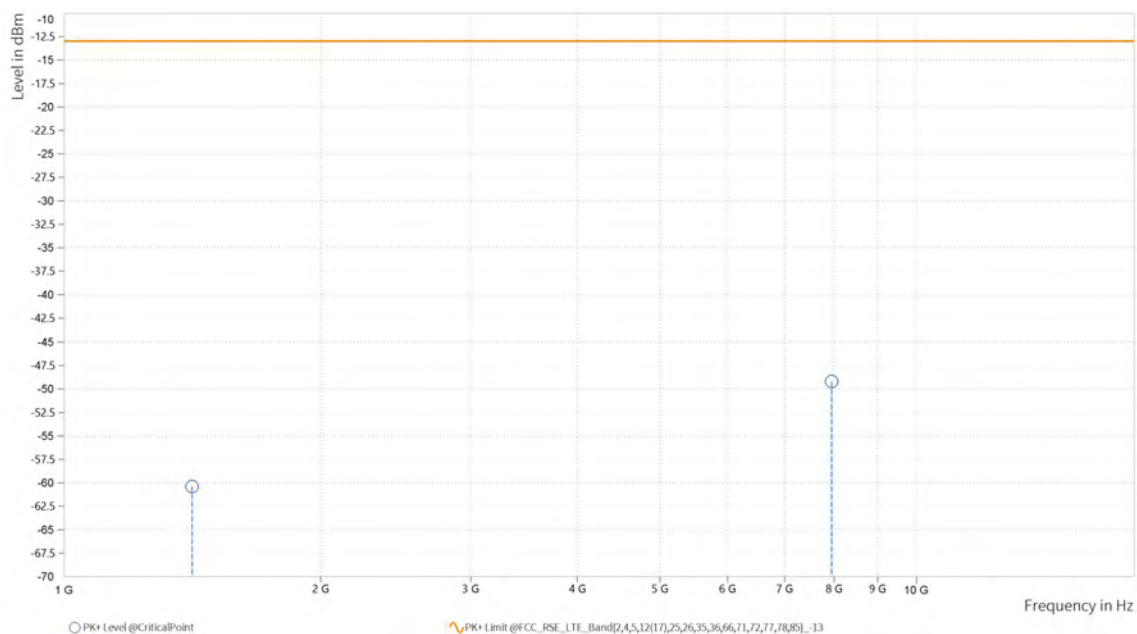
0420000			
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,412.000	-61.06	-13.00	48.06	4.87	H	359.1	2
4	7,157.500	-49.83	-13.00	36.83	20.95	H	271.8	2



MODE	TX channel 23095	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			

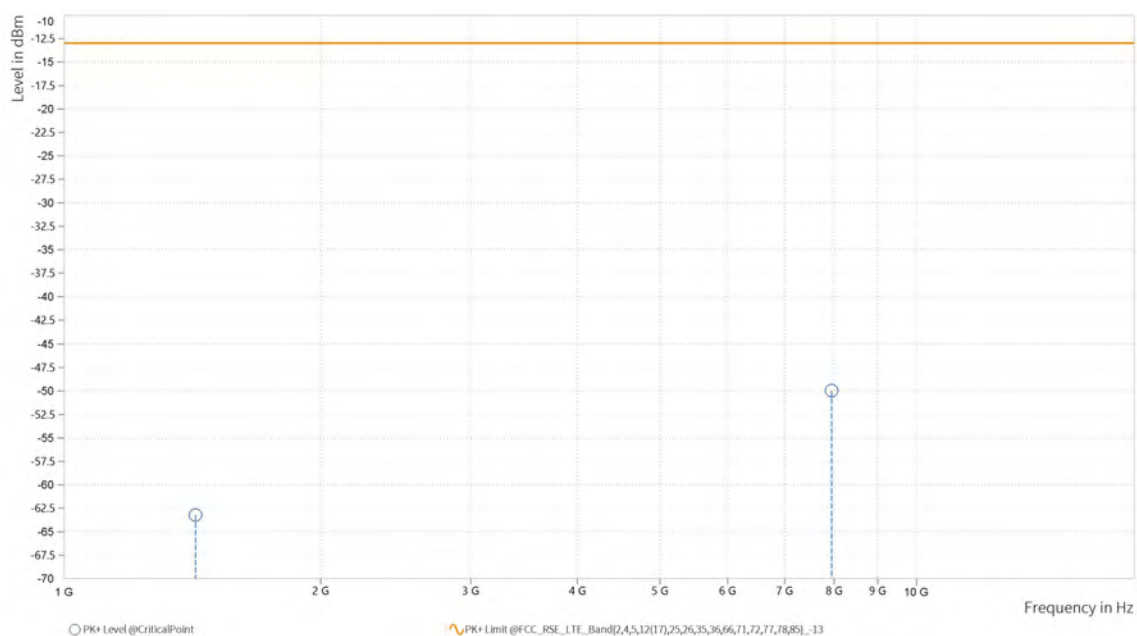
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,412.000	-60.38	-13.00	47.38	4.87	V	85.5	1
4	7,949.500	-49.21	-13.00	36.21	22.06	V	359.1	2



CH23165

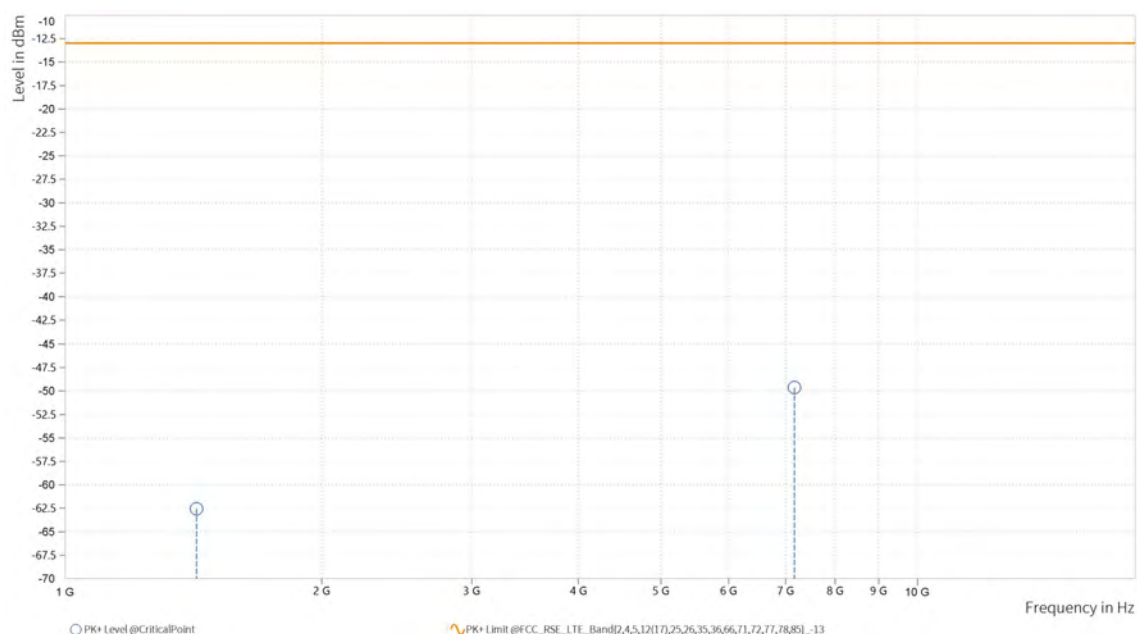
CH2016C			
MODE	TX channel 23165	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,426.000	-63.22	-13.00	50.22	5.06	H	86.7	1
4	7,950.500	-49.96	-13.00	36.96	22.05	H	359.1	2



MODE	TX channel 23165	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			

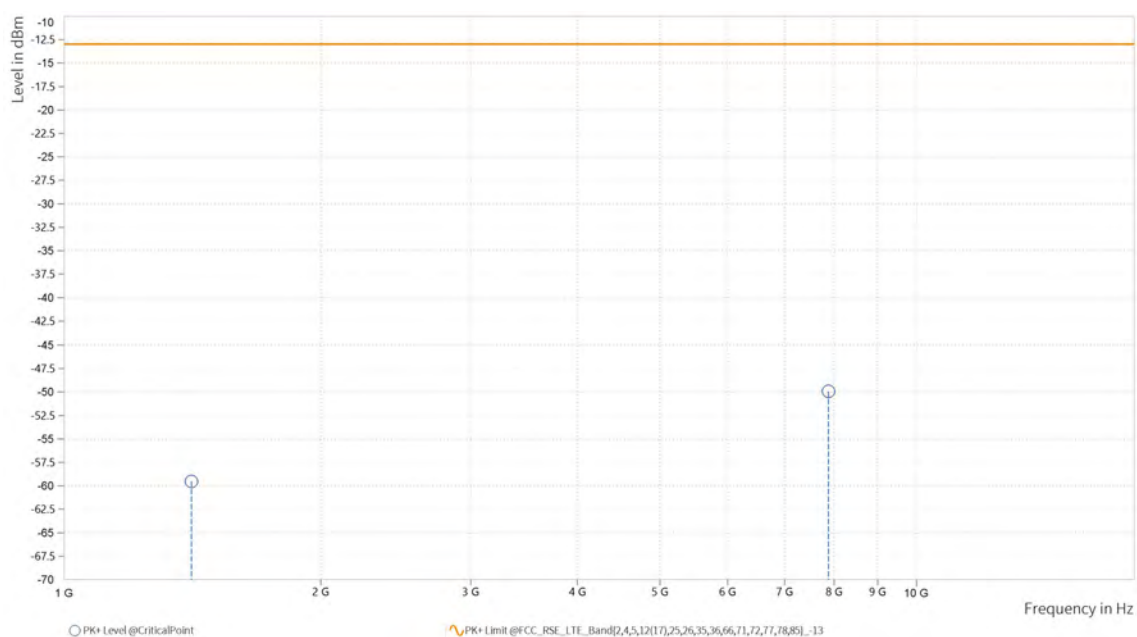
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,425.500	-62.54	-13.00	49.54	5.06	V	92.6	2
4	7,169.000	-49.63	-13.00	36.63	20.93	V	1	2



CHANNEL BANDWIDTH: 5MHz / QPSK

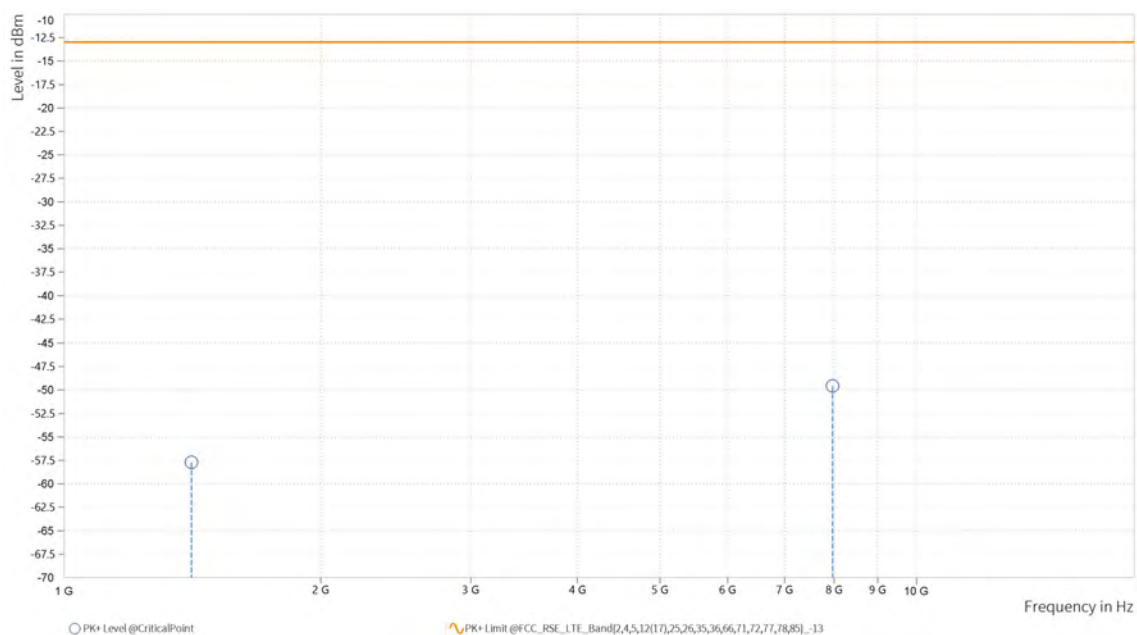
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,410.500	-59.52	-13.00	46.52	4.84	H	1	1
4	7,881.000	-49.92	-13.00	36.92	21.55	H	1	1



MODE	TX channel 23095	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			

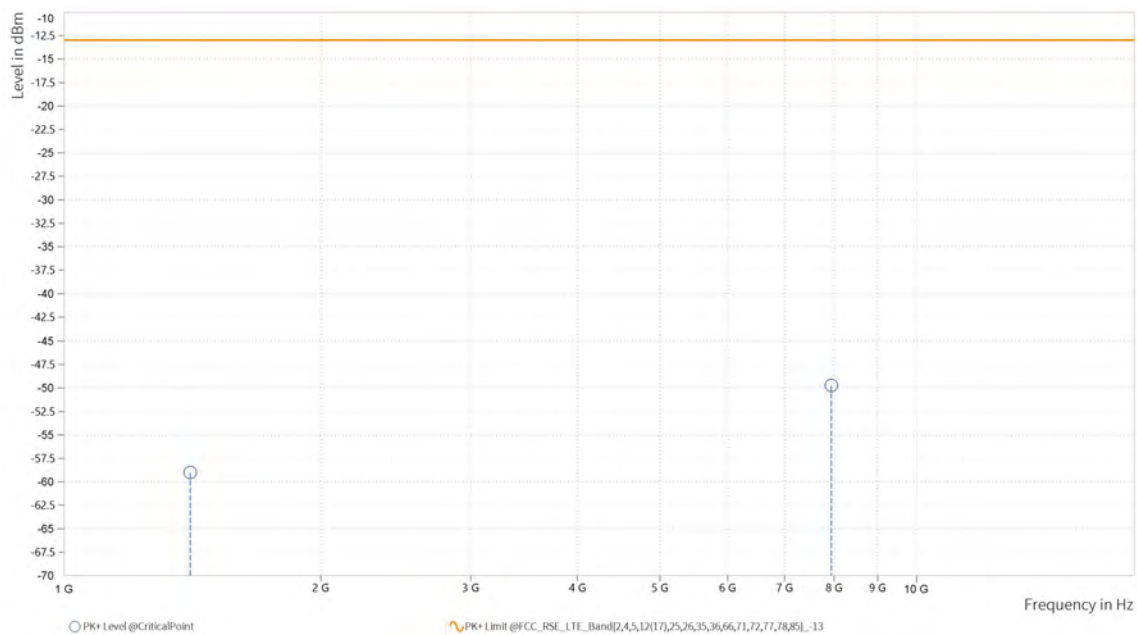
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,410.500	-57.70	-13.00	44.70	4.84	V	86.6	1
4	7,972.000	-49.56	-13.00	36.56	21.92	V	231.2	2



CHANNEL BANDWIDTH: 10MHz / QPSK

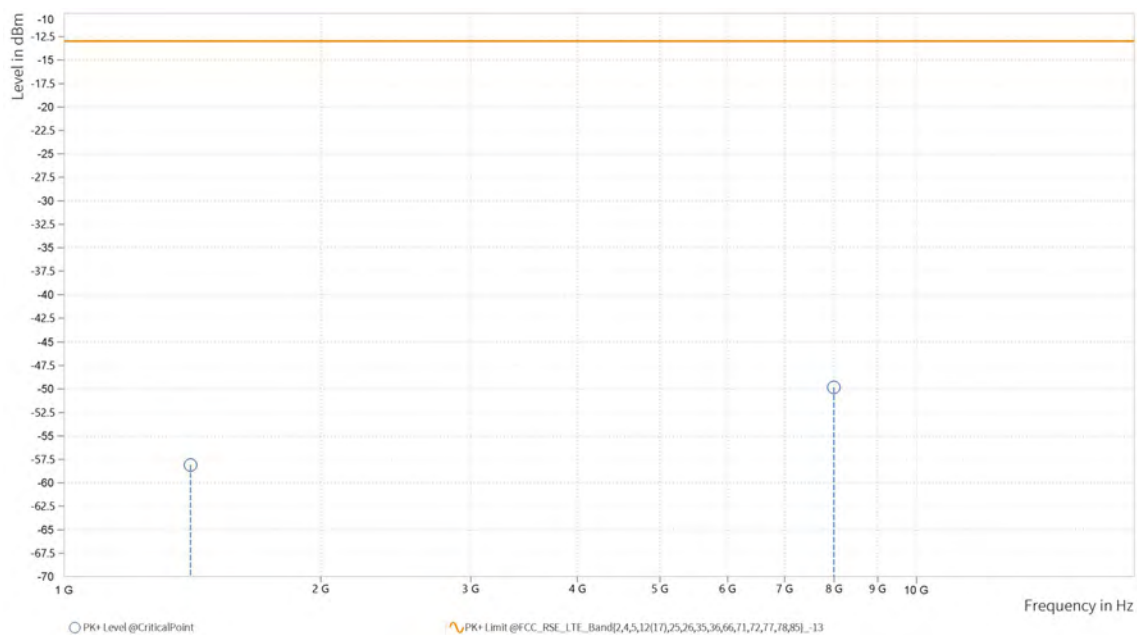
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,405.500	-59.00	-13.00	46.00	4.71	H	358.6	1
4	7,941.000	-49.74	-13.00	36.74	21.97	H	232.5	2



MODE	TX channel 23095	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]
2	1,406.000	-58.09	-13.00	45.09	4.72	V	86.6	2
4	7,996.000	-49.82	-13.00	36.82	21.89	V	1	1

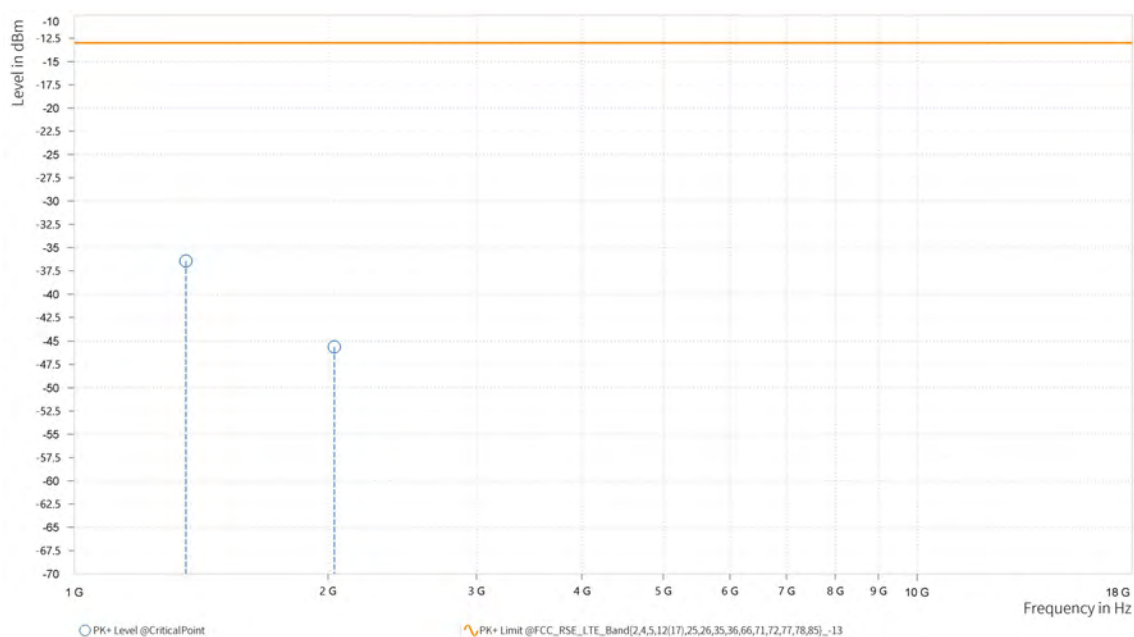


LTE B71

CHANNEL BANDWIDTH: 5MHz / QPSK

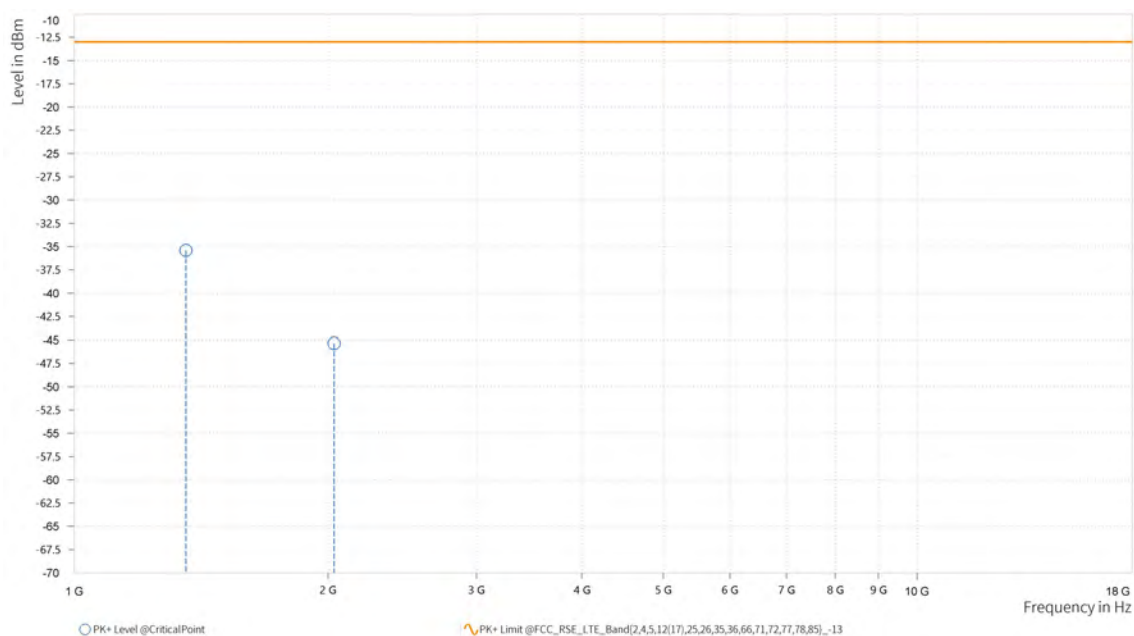
MODE	TX channel 133322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Chao Wu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,356.500	-36.43	-13.00	23.43	24.46	H	359	2
2	2,035.000	-45.59	-13.00	32.59	25.32	H	119	2



MODE	TX channel 133322	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			

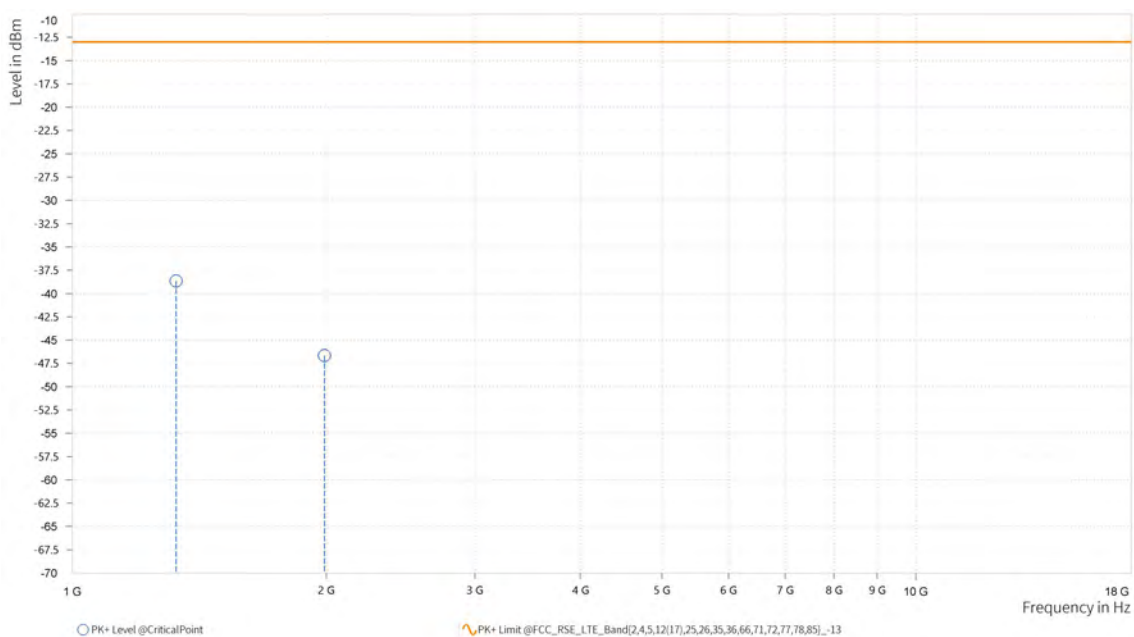
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,356.500	-35.39	-13.00	22.39	24.53	V	359	2
2	2,034.000	-45.36	-13.00	32.36	25.87	V	1	2



CHANNEL BANDWIDTH: 10MHz / QPSK
CH133172

MODE	TX channel 133172	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]
2	1,327.000	-38.64	-13.00	25.64	22.91	H	1	2
2	1,990.000	-46.67	-13.00	33.67	23.62	H	359.1	2





Test Report No.: PSU-QSU2307030110RF03

MODE	TX channel 133172	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]
2	1,327.500	-40.85	-13.00	27.85	23.08	V	359.1	2
2	1,989.500	-46.70	-13.00	33.70	23.58	V	1	2



**BUREAU
VERITAS**

Test Report No.: PSU-QSU2307030110RF03

CH133272

CH000002			
MODE	TX channel 133272	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]
2	1,352.000	-36.74	-13.00	23.74	24.23	H	359.1	2
2	2,029.000	-43.53	-13.00	30.53	25.30	H	1	2



Test Report No.: PSU-QSU2307030110RF03

MODE	TX channel 133272	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]
2	1,352.000	-35.01	-13.00	22.01	24.29	V	359	1
2	2,029.000	-42.96	-13.00	29.96	25.88	V	1	2



Test Report No.: PSU-QSU2307030110RF03

CH133422

CH133422			
MODE	TX channel 133422	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]
2	1,377.000	-39.70	-13.00	26.70	24.19	H	1	1
2	2,066.000	-46.24	-13.00	33.24	23.56	H	1	1



Test Report No.: PSU-QSU2307030110RF03

MODE	TX channel 133422	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]
2	1,377.000	-39.63	-13.00	26.63	24.29	V	1	1
2	2,066.500	-46.82	-13.00	33.82	23.77	V	1	2



Test Report No.: PSU-QSU2307030110RF03

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 133297	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]
2	1,347.500	-38.51	-13.00	25.51	23.99	H	359	2
2	2,021.000	-46.31	-13.00	33.31	24.67	H	1	2



Test Report No.: PSU-QSU2307030110RF03

MODE	TX channel 133297	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]
2	1,347.500	-36.15	-13.00	23.15	24.05	V	1	1
2	2,020.500	-44.38	-13.00	31.38	25.08	V	359.1	1



Test Report No.: PSU-QSU2307030110RF03

CHANNEL BANDWIDTH: 20MHz / QPSK

MODE	TX channel 133322	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]
2	1,348.000	-37.96	-13.00	24.96	24.02	H	359	2
2	2,023.000	-45.51	-13.00	32.51	24.83	H	359	2



Test Report No.: PSU-QSU2307030110RF03

MODE	TX channel 133322	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			

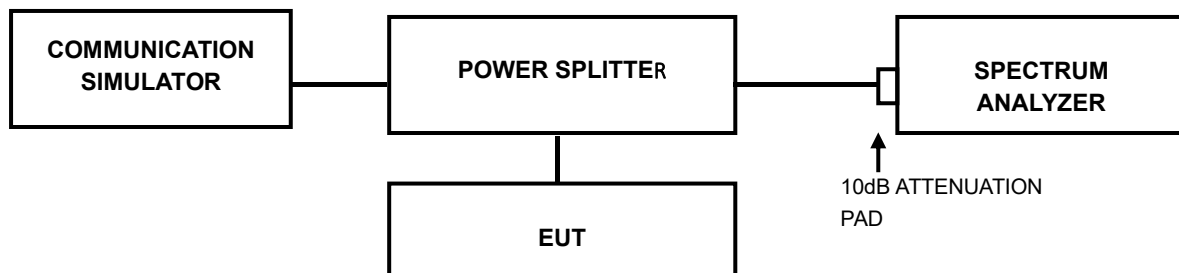
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,348.000	-35.88	-13.00	22.88	24.08	V	1	2
2	2,022.500	-44.12	-13.00	31.12	25.27	V	1	2

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 $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.



Test Report No.: PSU-QSU2307030110RF03

3.7.4 TEST RESULTS

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



Test Report No.: PSU-QSU2307030110RF03

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



Test Report No.: PSU-QSU2307030110RF03

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--