Certificate #6613.01

FCC TEST REPORT

(PART 27)

Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Mobile Phone
Brand Name:	NOKIA
Model Name:	TA-1541
FCC ID:	2AJOTTA-1541
Date of tests:	Sep. 04, 2023 ~ Sep. 12, 2023

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

☒ **FCC Part 27, Subpart C,F,H,L,M** ☒ **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. 12, 2023	Sun Peibo Date: Sep. 12, 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 5

1 SUMMARY OF TEST RESULTS 6

1.1 MEASREMENT UNCERTAINTY 8
1.2 TEST SITE AND INSTRUMENTS 9

2 GENERAL INFORMATION 11

2.1 GENERAL DESCRIPTION OF EUT 11
2.2 CONFIGURATION OF SYSTEM UNDER TEST 17
2.3 DESCRIPTION OF SUPPORT UNITS 18
2.4 TEST ITEM AND TEST CONFIGURATION 18
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS 27

3 TEST TYPES AND RESULTS 28

3.1 OUTPUT POWER MEASUREMENT 28
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 28
3.1.2 TEST PROCEDURES 28
3.1.3 TEST SETUP 29
3.1.4 TEST RESULTS 30
3.2 FREQUENCY STABILITY MEASUREMENT 72
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 72
3.2.2 TEST PROCEDURE 72
3.2.3 TEST SETUP 72
3.2.4 TEST RESULTS 73
3.3 OCCUPIED BANDWIDTH MEASUREMENT 74
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT 74
3.3.2 TEST SETUP 74
3.3.3 TEST PROCEDURES 74
3.3.4 TEST RESULTS 75
3.4 BAND EDGE MEASUREMENT 76
3.4.1 LIMITS OF BAND EDGE MEASUREMENT 76
3.4.2 TEST SETUP 77
3.4.3 TEST PROCEDURES 78
3.4.4 TEST RESULTS 78
3.5 CONDUCTED SPURIOUS EMISSIONS 79
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 79
3.5.2 TEST PROCEDURE 80
3.5.3 TEST SETUP 80
3.5.4 TEST RESULTS 81
3.6 RADIATED EMISSION MEASUREMENT 82
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT 82
3.6.2 TEST PROCEDURES 82
3.6.3 DEVIATION FROM TEST STANDARD 82
3.6.4 TEST SETUP 83
3.6.5 TEST RESULTS 85
3.7 PEAK TO AVERAGE RATIO 141
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 141
3.7.2 TEST SETUP 141
3.7.3 TEST PROCEDURES 141
3.7.4 TEST RESULTS 142

4 INFORMATION ON THE TESTING LABORATORIES 143

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB . 144

APPENDIX A: 145

WCDMA B4 145
PEAK-TO-AVERAGE RATIO 145
Test Result 145
Test Graphs 146
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 148
Test Result 148
Test Graphs 149
BAND EDGE 154
Test Result 154
Test Graphs 155
CONDUCTED SPURIOUS EMISSION 157
Test Result 157
Test Graphs 158
FREQUENCY STABILITY 166
Test Result 166
LTE BAND7 168
PEAK-TO-AVERAGE RATIO(CCDF) 168
Test Result 168
Test Graphs 169
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 187
Test Result 187
Test Graphs 188
BAND EDGE 259
Test Result 259
Test Graphs 261
CONDUCTED SPURIOUS EMISSION 309
Test Result 309
Test Graphs 311
FREQUENCY STABILITY 383
Test Result 383
LTE BAND12 386
PEAK-TO-AVERAGE RATIO(CCDF) 386
Test Result 386
Test Graphs 387
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 405
Test Result 405
Test Graphs 406
BAND EDGE 478
Test Result 478
Test Graphs 479
CONDUCTED SPURIOUS EMISSION 527
Test Result 527
Test Graphs 530
FREQUENCY STABILITY 602
Test Result 602
LTE BAND13 607
PEAK-TO-AVERAGE RATIO(CCDF) 607
Test Result 607
Test Graphs 608
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 614
Test Result 614
Test Graphs 615
BAND EDGE 639
Test Result 639
Test Graphs 640

CONDUCTED SPURIOUS EMISSION 661
Test Result 661
Test Graphs 661
FREQUENCY STABILITY 686
Test Result 686
LTE BAND66 688
PEAK-TO-AVERAGE RATIO(CCDF) 688
Test Result 688
Test Graphs 689
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 707
Test Result 707
Test Graphs 708
BAND EDGE 816
Test Result 816
Test Graphs 818
CONDUCTED SPURIOUS EMISSION 890
Test Result 890
Test Graphs 892
FREQUENCY STABILITY 1001
Test Result 1001

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P23010004-2RF03	Original release	Feb. 23, 2023
PSU-QSU2309010210RF03	Based on the original product adding 2G PA second supply. The FX5196 add 2nd supply FX5596Y, raw material of Wafer and the printing model have changes. The IC design has not changed and there is no impact on BT and WIFI, other has not changed. This report verify the LTE Band 13 worst case and replace the test result.	Sep. 12, 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**	**RESULT**	**Test lab***
§2.1046	Coduncted Output Power	Compliance	A
§27.50(c)(10) §27.50(b)(10)	Equivalent Radiated Power (Band4) (Band12) (Band17)	Compliance	A
§27.50(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCDMA Band4) (Band4) (Band7) (Band12) (Band13) (Band17) (Band66)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(c)(2)(4) §27.53(g) §27.53(h) §27.53(m)(4)(6)	Band Edge Measurements	Compliance	A
§2.1051 §27.53(g) §27.53(h) §27.53(m)(4)(6) §27.53(c)(2)(4)	Conducted Spurious Emissions	Compliance	A
§2.1053 §27.53(g) §27.53(h) §27.53(m)(4)(6) §27.53(c)(2)(4)	Radiated Spurious Emissions	Compliance	A
§27.50	Peak to average ratio	Compliance	A

NOTE:

1. Based on the original product adding 2G PA second supply. The FX5196 add 2nd supply FX5596Y, raw material of Wafer and the printing model have changes. The IC design has not changed and there is no impact on BT and WIFI, other has not changed. This report verify the LTE Band worst case and replace the test result.

***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 & Radiated Power (30MHz~1GMHz)	±4.98dB
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±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, 24 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.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Mobile Phone	
BRAND NAME*	NOKIA	
MODEL NAME*	TA-1541	
NOMINAL VOLTAGE*	5.0Vdc(adapter) 3.85Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY*	**WCDMA IV**	HSDPA, HSUPA, DC-HSDPA,HSPA+
	LTE	QPSK, 16QAM, 64QAM
FREQUENCY RANGE	**WCDMA IV**	1712.4MHz ~ 1752.6MHz
	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 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: 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 13 Channel Bandwidth: 5MHz	779.5MHz ~ 784.5MHz
	LTE Band 13 Channel Bandwidth: 10MHz	782MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz

	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711 MHz
	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	**WCDMA IV**	168.66mW
	LTE Band 4 Channel Bandwidth: 1.4MHz	167.88mW
	LTE Band 4 Channel Bandwidth: 3MHz	166.72mW
	LTE Band 4 Channel Bandwidth: 5MHz	164.82mW
	LTE Band 4 Channel Bandwidth: 10MHz	164.82mW
	LTE Band 4 Channel Bandwidth: 15MHz	165.96mW
	LTE Band 4 Channel Bandwidth: 20MHz	167.49mW
	LTE Band 7 Channel Bandwidth: 5MHz	168.27mW
	LTE Band 7 Channel Bandwidth: 10MHz	167.11mW
	LTE Band 7 Channel Bandwidth: 15MHz	169.82mW
	LTE Band 7 Channel Bandwidth: 20MHz	170.22mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	107.65mW
	LTE Band 12 Channel Bandwidth: 3MHz	103.51mW
	LTE Band 12 Channel Bandwidth: 5MHz	107.89mW
	LTE Band 12 Channel Bandwidth: 10MHz	108.89mW
	LTE Band 13 Channel Bandwidth: 5MHz	117.22mW
	LTE Band 13 Channel Bandwidth: 10MHz	119.40mW

	LTE Band 17 Channel Bandwidth: 5MHz	103.04mW
	LTE Band 17 Channel Bandwidth: 10MHz	99.77mW
	LTE Band 66 Channel Bandwidth: 1.4MHz	173.38mW
	LTE Band 66 Channel Bandwidth: 3MHz	173.38mW
	LTE Band 66 Channel Bandwidth: 5MHz	173.38mW
	LTE Band 66 Channel Bandwidth: 10MHz	173.78mW
	LTE Band 66 Channel Bandwidth: 15MHz	172.58mW
	LTE Band 66 Channel Bandwidth: 20MHz	174.18mW
EMISSION DESIGNATOR	**LTE Band 7 Channel Bandwidth: 5MHz**	QPSK: 4M53G7D
		16QAM: 4M52W7D
		64QAM: 4M53W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 9M07G7D
		16QAM: 9M09W7D
		64QAM: 9M03W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 14M5G7D
		16QAM: 14M5W7D
		64QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 18M4G7D
		16QAM: 18M6W7D
		64QAM: 18M6W7D
	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M09W7D
		64QAM: 1M10W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M74G7D
		16QAM: 2M73W7D
		64QAM: 2M78W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M52G7D
		16QAM: 4M54W7D
		64QAM: 4M49W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 9M06G7D
		16QAM: 9M06W7D
		64QAM: 9M00W7D
	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK: 9M00G7D
		16QAM: 8M97W7D

		64QAM: 9M03W7D
	LTE Band 66 Channel Bandwidth: 1.4MHz	QPSK: 1M11G7D
		16QAM: 1M11W7D
		64QAM: 1M10W7D
	LTE Band 66 Channel Bandwidth: 3MHz	QPSK: 1M10G7D
		16QAM: 1M11W7D
		64QAM: 2M74W7D
	LTE Band 66 Channel Bandwidth: 5MHz	QPSK: 4M52G7D
		16QAM: 4M54W7D
		64QAM: 4M53W7D
	LTE Band 66 Channel Bandwidth: 10MHz	QPSK: 9M06G7D
		16QAM: 9M03W7D
		64QAM: 9M06W7D
	LTE Band 66 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 66 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 18M0W7D
ANTENNA TYPE*	Fixed Internal Antenna with 1.38dBi gain for WCDMA IV/LTE4 Fixed Internal Antenna with 2.6dBi gain for LTE7 Fixed Internal Antenna with -0.82dBi gain for LTE12 Fixed Internal Antenna with -0.36dBi gain for LTE13 Fixed Internal Antenna with -0.82dBi gain for LTE17 Fixed Internal Antenna with 1.46dBi gain for LTE66	
HW VERSION*	SPR_S63Q0	
SW VERSION*	00WW_0_090	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	USB cable: non-shielded cable, with w/o ferrite core, 1 meter USB cable: non-shielded cable, with w/o ferrite core, 1 meter USB cable: non-shielded cable, with w/o ferrite core, 1 meter Earphone: non-shielded cable, with w/o ferrite core, 1.2 meter	
EXTREME TEMPERATURE*	-20-65 ℃	
EXTREME VOLTAGE*	EUT 3.4V - EUT 4.4V	

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
WCDMA	1TX/1RX
LTE	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.

5. The product of TA-1541(FCC ID: 2AJOTTA-1541) have version and components manufacturer from a second supplier. The first version is 090, the second one is 103, only the version changes, and the RF parameters do not change, components manufacturer with following changes as below:

NO.	Change Description		specificatons	first supplier	specificatons	second supplier
1	PCBA	64GB EMMC	FEMDNN064G-A3A56 BWCTARV11X64G	Longsys	FEMDNN064G-A3A56 BWCTARV11X64G	Biwin
2		2GB LPDDR	FLXC2002G-N2 BWMZEX32H2A-16G-X	Longsys	FLXC2002G-N2 BWMZEX32H2A-16G-X	Biwin
3		3GB LPDDR	FLXC4003G-50 BWMEXX32H2A-24Gb-X	Longsys	FLXC4003G-50 BWMEXX32H2A-24Gb-X	Biwin
4		4GB LPDDR	FLXC2004G-30 BWMZCX32H2A-32G-X	Longsys	FLXC2004G-30 BWMZCX32H2A-32G-X	Biwin
5		PCB	/	KINGSHINE	/	WUZHU
6	LCM	LCD	6.517 HKC，360min,400typ, 2.5D	TCL	6.517 BOE（B8），360min,400typ, 2.5D	Lian Chuang
7	Front camera	Camera	8M FF COM	Lian Heyingxiang	8M FF COM	Shijia
8	Rear camera	Camera	13M-AF COB	Lian Heyingxiang	13M-AF COB	Ruicheng
9	Macro CAM	Camera	2M FF	Shijia	2M FF	Lian Heyingxiang
10	fingerprint	module	Back fingerprint	Hedayuan	Back fingerprint	Sanyingxin
11	Speaker		1712 1W	Dong Sheng	1712 1W	Xin Rongda
12	Vibrator		1027 FPC	Kai Long	1027 FPC	Chao Yin
13	Receiver		0809	Dong Sheng	0809	Xin Rongda
14	FPC		/	Lante	/	Kaihongxing

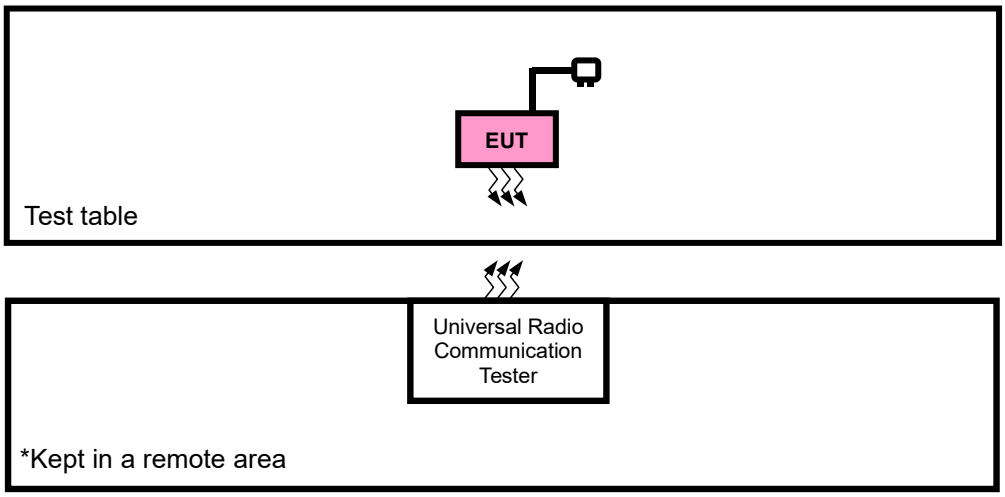
15	Battery	5000MAH	Gaoyuan	5000MAH	Feng Hua
16	Data cable	2A typeC	Yuwei	2A typeC	Juwei

6. List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
LCD Panel 1	HKC	MianYang HKC Optoelectronics Technology Co., Ltd.	QM065HS03-1	6.517
LCD Panel 2	BOE	BOE	BV065WBQ-L1B	6.517
Battery 1	Nokia	Guangdong Fenghua New Energy Co.,Ltd.	WT510	Capacity：3.85 Vdc, 4900mAh
Battery 2	Nokia	GUANGDONG FENGHUA NEW ENERGY CO.,LTD.	WT510	Capacity：3.85 Vdc, 4900mAh
AC Adapter	Nokia	SHENZHEN BAIJUNDA ELECTRONICS.,LTD	AD-010U	I/P: 100-240Vac, 0.35A, O/P: 5.0Vdc, 2.0A
Earphone	Juwei Electronics Co., LTD	Juwei Electronics Co., LTD	JWEP1252-H21H	Signal Line, 1.2meter
USB Cable 1	Juwei Electronics Co., LTD	Juwei Electronics Co., LTD	JWUB1536-H21H	Signal Line, 1.0meter
USB Cable 2	Yu Wei	Dongguan Yuwei Electronic Technology Co., Ltd.	CH2212TC	Signal Line, 1.0meter
USB Cable 3	Sai bao	Saibao (Jiangxi) Industrial Co., Ltd	SHM1-A003A	Signal Line, 1.0meter

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	N/A	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A

2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter +WCDMA/LTE
B	EUT + DC source 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
B	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	CONDCUDETED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
A	RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA

LTE BAND 4 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 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
B	FREQUENCY STABILITY	19957 to 20393	19957, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20300	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM, 64QAM	100 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	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
B	BAND EDGE	19957 to 20393	19957	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20393	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	19965	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20385	3MHz	QPSK, 16QAM, 64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19975 to 20375	19975	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			20375	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20000	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			20350	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset
						50 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、 The Band 4 is included in the range of Band 66 ,the test data please refer to Band 66.

LTE BAND 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	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
B	FREQUENCY STABILITY	20775 to 21425	20775, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21400	10MHz	QPSK	1 RB / 0RB Offset
		20825 to 21375	20825, 21375	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850, 21350	20MHz	QPSK	1 RB / 0 RB Offset
B	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
B	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
B	CONDCUDE TED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	21100	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
B	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
B	FREQUENCY STABILITY	23017 to 23173	23017, 23173	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23165	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23130	10MHz	QPSK	1 RB / 0 RB Offset
B	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
B	PEAK TO AVERAGE RATIO	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
B	BAND EDGE	23017 to 23173	23017	1.4MHz	QPSK	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			23173	1.4MHz	QPSK	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		23025 to 23165	23025	3MHz	QPSK	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			23165	3MHz	QPSK	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		23035 to 23155	23035	5MHz	QPSK	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23155	5MHz	QPSK	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23060 to 23130	23060	10MHz	QPSK	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			23130	10MHz	QPSK	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDETED EMISSION	23017 to 23173	23017, 23095 ,23173	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23017 to 23173	23095	1.4MHz	QPSK	1 RB / 0 RB Offset
		23025 to 23165	23095	3MHz	QPSK	1 RB / 0 RB Offset
		23035 to 23155	23095	5MHz	QPSK	1 RB / 0 RB Offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK	1 RB / 0 RB Offset

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

LTE BAND 13 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	23205 to 23255	23205, 23225	1.4MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23205 to 23255	23205, 23230, 23255	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
B	BAND EDGE	23205 to 23255	23250	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23255	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23230	23230	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			/	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDETED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
		23230	23230	10MHz	QPSK	1 RB / 0 RB Offset

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

LTE BAND 17 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	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
B	FREQUENCY STABILITY	23755 to 23825	23755, 23825	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23800	10MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	23755 to 23825	23755, 23790, 23825	5MHz	QPSK,16QAM,64QAM	25 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK,16QAM,64QAM	50 RB / 0 RB Offset
B	BAND EDGE	23755 to 23825	23755	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23825	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23780 to 23800	23780	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			23800	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
B	CONDCUDETED EMISSION	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	23755 to 23825	23790	5MHz	QPSK	1 RB / 0 RB Offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK	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、The Band 17 is included in the range of Band 12 ,the test data please refer to Band 12.

LTE BAND 66 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	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
B	FREQUENCY STABILITY	131979 to 132665	131979,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132572	20MHz	QPSK	1 RB / 0 RB Offset
B	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
B	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
		131987 to 132657	131987	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			132657	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		131997 to 132647	131997	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			132647	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

B	CONDCUDETED EMISSION	131979 to 132665	131979,132322,132665	1.4MHz	QPSK	1 RB / 0 RB Offset
		131987 to 132657	131987,132322,132657	3MHz	QPSK	1 RB / 0 RB Offset
		131997 to 132647	131997,132322,132647	5MHz	QPSK	1 RB / 0 RB Offset
		132022 to 132622	132022,132322,132622	10MHz	QPSK	1 RB / 0 RB Offset
		132047 to 132597	132047,132322,132597	15MHz	QPSK	1 RB / 0 RB Offset
		132072 to 132572	132072,132322,132572	20MHz	QPSK	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	131997,132322,132647	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, 53%RH	DC 5V By Adapter	Chao Wu
FREQUENCY STABILITY	23deg. C, 53%RH	DC 3.85V By Battery	Chao Wu
OCCUPIED BANDWIDTH	23deg. C, 53%RH	DC5V By Adapter	Chao Wu
BAND EDGE	23deg. C, 53%RH	DC 5V By Adapter	Chao Wu
CONDCUDETED EMISSION	23deg. C, 53%RH	DC5V By Adapter	Chao Wu
RADIATED EMISSION	23deg. C, 53%RH	DC5V By Adapter	Chao Wu/Jace Hu
PEAK TO AVERAGE RATIO	23deg. C, 53%RH	DC5V By Adapter	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

For LTE Band 7/41

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.”

For LTE Band 4/66

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

For LTE Band 12/13/17/71

According to the specific rule Part 27.50(b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

According to the specific rule Part 27.50(c)(10),Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band 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 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);

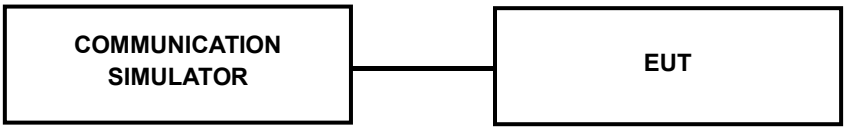
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

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

AVERAGE CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	4357	4407	4458
Frequency	826.4	836.4	846.6
RMC 12.2K	20.88	**20.89**	20.86
HSDPA Subtest-1	20.30	20.31	20.28
HSDPA Subtest-2	20.29	20.30	20.27
HSDPA Subtest-3	19.78	19.79	19.76
HSDPA Subtest-4	19.77	19.78	19.75
DC-HSDPA Subtest-1	20.22	20.25	20.20
DC-HSDPA Subtest-2	20.21	20.24	20.19
DC-HSDPA Subtest-3	19.79	19.73	19.70
DC-HSDPA Subtest-4	19.78	19.72	19.69
HSUPA Subtest-1	20.26	20.27	20.24
HSUPA Subtest-2	19.25	19.26	19.23
HSUPA Subtest-3	19.73	19.75	19.72
HSUPA Subtest-4	19.22	19.24	19.21
HSUPA Subtest-5	20.21	20.23	20.20
HSPA+ Subtest-1	18.97	19.00	18.97

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	20.75	20.82	20.72
		1	2	20.78	20.76	20.72
		1	5	20.77	20.76	20.71
		3	0	20.73	20.79	20.83
		3	1	20.83	20.87	20.78
		3	3	20.78	20.77	20.76
		6	0	19.82	19.82	19.85
	16QAM	1	0	19.72	19.55	19.87
		1	2	19.64	19.59	20.01
		1	5	19.53	19.70	19.82
		3	0	19.75	19.88	19.62
		3	1	19.12	19.54	19.24
		3	3	19.50	19.84	19.66
		6	0	19.11	19.64	19.41
	64QAM	1	0	18.69	19.39	19.33
		1	2	19.24	19.55	19.31
		1	5	19.89	20.07	19.79
		3	0	18.73	19.46	19.30
		3	1	19.10	19.61	19.33
		3	3	19.39	19.89	19.66
		6	0	18.03	18.69	18.39

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	20.77	20.84	20.71
		1	7	20.74	20.77	20.72
		1	14	20.73	20.76	20.71
		8	0	19.72	19.82	19.83
		8	3	19.76	19.87	19.80
		8	7	19.75	19.84	19.80
		15	0	19.79	19.83	19.79
	16QAM	1	0	19.69	19.61	19.90
		1	7	19.61	19.62	19.99
		1	14	19.56	19.70	19.82
		8	0	18.71	19.39	19.12
		8	3	19.17	19.49	19.27
		8	7	19.52	19.82	19.62
		15	0	19.11	19.58	19.44
	64QAM	1	0	18.75	19.42	19.27
		1	7	19.27	19.49	19.30
		1	14	19.90	20.39	20.09
		8	0	17.76	18.50	18.31
		8	3	18.14	18.55	18.38
		8	7	18.36	18.93	18.62
		15	0	18.05	18.66	18.43

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	20.78	20.79	20.72
		1	12	20.79	20.74	20.72
		1	24	20.74	20.75	20.75
		12	0	19.75	19.82	19.80
		12	6	19.76	19.88	19.81
		12	13	19.79	19.80	19.81
		25	0	19.77	19.86	19.82
	16QAM	1	0	19.70	19.57	19.90
		1	12	19.58	19.65	19.98
		1	24	19.56	19.70	19.81
		12	0	18.71	19.37	19.09
		12	6	19.14	19.53	19.23
		12	13	19.47	19.84	19.65
		25	0	19.11	19.59	19.41
	64QAM	1	0	18.69	19.39	19.33
		1	12	19.24	19.55	19.30
		1	24	19.83	20.44	20.09
		12	0	17.77	18.47	18.30
		12	6	18.08	18.62	18.37
		12	13	18.40	18.92	18.59
		25	0	18.01	18.72	18.41

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	20.75	20.82	20.72
		1	24	20.79	20.74	20.73
		1	49	20.71	20.79	20.71
		25	0	19.76	19.81	19.83
		25	12	19.82	19.82	19.81
		25	25	19.77	19.77	19.80
		50	0	19.82	19.86	19.79
	16QAM	1	0	19.70	19.54	19.86
		1	24	19.63	19.61	20.01
		1	49	19.56	19.71	19.78
		25	0	18.73	19.35	19.15
		25	12	19.18	19.47	19.28
		25	25	19.46	19.85	19.62
		50	0	19.15	19.58	19.45
	64QAM	1	0	18.68	19.40	19.30
		1	24	19.29	19.51	19.34
		1	49	19.89	20.38	20.06
		25	0	17.75	18.44	18.36
		25	12	18.15	18.61	18.31
		25	25	18.39	18.89	18.61
		50	0	18.06	18.68	18.42

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	20.82	20.82	20.69
		1	37	20.77	20.79	20.68
		1	74	20.77	20.82	20.72
		36	0	19.73	19.82	19.84
		36	19	19.83	19.87	19.81
		36	39	19.75	19.78	19.80
		75	0	19.82	19.84	19.84
	16QAM	1	0	19.74	19.61	19.86
		1	37	19.62	19.62	20.01
		1	74	19.52	19.76	19.80
		36	0	18.77	19.35	19.16
		36	19	19.12	19.51	19.24
		36	39	19.51	19.83	19.65
		75	0	19.16	19.61	19.38
	64QAM	1	0	18.70	19.41	19.31
		1	37	19.30	19.50	19.31
		1	74	19.85	20.37	20.09
		36	0	17.80	18.50	18.30
		36	19	18.09	18.55	18.33
		36	39	18.42	18.96	18.63
		75	0	18.05	18.66	18.43

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	20.83	**20.86**	20.77
		1	50	20.81	20.82	20.74
		1	99	20.79	20.83	20.76
		50	0	19.79	19.87	19.85
		50	25	19.84	19.89	19.86
		50	50	19.83	19.85	19.82
		100	0	19.83	19.88	19.87
	16QAM	1	0	19.77	19.62	19.92
		1	50	19.66	19.67	20.03
		1	99	19.58	19.78	19.83
		50	0	18.79	19.43	19.17
		50	25	19.20	19.55	19.29
		50	50	19.54	19.89	19.67
		100	0	19.17	19.66	19.46
	64QAM	1	0	18.76	19.44	19.35
		1	50	19.32	19.57	19.36
		1	99	19.91	20.45	20.11
		50	0	17.81	18.52	18.38
		50	25	18.16	18.63	18.39
		50	50	18.44	18.97	18.67
		100	0	18.07	18.74	18.44

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775 Frequency 2502.5 MHz	Mid CH 21100 Frequency 2535 MHz	High CH 21425 Frequency 2567.5 MHz
7/ 5	QPSK	1	0	19.66	19.60	19.46
		1	12	19.49	19.56	19.25
		1	24	19.44	19.24	19.32
		12	0	18.69	18.64	18.49
		12	6	18.52	18.65	18.46
		12	13	18.63	18.48	18.45
		25	0	18.65	18.56	18.37
	16QAM	1	0	18.81	18.57	18.51
		1	12	18.63	18.57	18.57
		1	24	18.81	18.37	18.45
		12	0	18.45	18.73	18.51
		12	6	18.78	18.45	18.45
		12	13	19.01	18.48	18.89
		25	0	18.85	18.57	18.67
	64QAM	1	0	18.75	19.38	19.11
		1	12	18.81	18.53	18.49
		1	24	19.45	18.95	19.42
		12	0	17.48	17.66	17.41
		12	6	17.73	17.44	17.44
		12	13	18.29	17.44	17.73
		25	0	17.85	17.57	17.61

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	19.63	19.63	19.46
		1	24	19.49	19.56	19.26
		1	49	19.41	19.28	19.28
		25	0	18.70	18.63	18.52
		25	12	18.58	18.59	18.46
		25	25	18.61	18.45	18.44
		50	0	18.70	18.56	18.34
	16QAM	1	0	18.81	18.54	18.47
		1	24	18.68	18.53	18.60
		1	49	18.81	18.38	18.42
		25	0	18.47	18.71	18.57
		25	12	18.82	18.39	18.50
		25	25	19.00	18.49	18.86
		50	0	18.89	18.56	18.71
	64QAM	1	0	18.74	19.39	19.08
		1	24	18.86	18.49	18.53
		1	49	19.51	18.89	19.39
		25	0	17.46	17.63	17.47
		25	12	17.80	17.43	17.38
		25	25	18.28	17.41	17.75
		50	0	17.90	17.53	17.62

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	19.70	19.63	19.43
		1	37	19.47	19.61	19.21
		1	74	19.47	19.31	19.29
		36	0	18.67	18.64	18.53
		36	19	18.59	18.64	18.46
		36	39	18.59	18.46	18.44
		75	0	18.70	18.54	18.39
	16QAM	1	0	18.85	18.61	18.47
		1	37	18.67	18.54	18.60
		1	74	18.77	18.43	18.44
		36	0	18.51	18.71	18.58
		36	19	18.76	18.43	18.46
		36	39	19.05	18.47	18.89
		75	0	18.90	18.59	18.64
	64QAM	1	0	18.76	19.40	19.09
		1	37	18.87	18.48	18.50
		1	74	19.47	18.88	19.42
		36	0	17.51	17.69	17.41
		36	19	17.74	17.37	17.40
		36	39	18.31	17.48	17.77
		75	0	17.89	17.51	17.63

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	**19.71**	19.67	19.51
		1	50	19.51	19.64	19.27
		1	99	19.49	19.32	19.33
		50	0	**18.73**	18.69	18.54
		50	25	18.60	18.66	18.51
		50	50	18.67	18.53	18.46
		100	0	18.71	18.58	18.42
	16QAM	1	0	18.88	18.62	18.53
		1	50	18.71	18.59	18.62
		1	99	18.83	18.45	18.47
		50	0	18.53	18.79	18.59
		50	25	18.84	18.47	18.51
		50	50	19.08	18.53	18.91
		100	0	18.91	18.64	18.72
	64QAM	1	0	18.82	19.43	19.13
		1	50	18.89	18.55	18.55
		1	99	19.53	18.96	19.44
		50	0	17.52	17.71	17.49
		50	25	17.81	17.45	17.46
		50	50	18.33	17.49	17.81
		100	0	17.91	17.59	17.64

LTE Band 12

Band/BW	Modulation	RB Size	RB Offset	Low CH 23017 Frequency 699.7 MHz	Mid CH 23095 Frequency 707.5 MHz	High CH 23173 Frequency 715.3 MHz
12/ 1.4	QPSK	1	0	23.04	23.10	23.29
		1	2	22.99	23.05	23.23
		1	5	23.04	22.99	23.26
		3	0	23.00	23.00	23.03
		3	1	23.02	23.03	22.87
		3	3	23.03	23.03	23.11
		6	0	22.04	21.97	22.13
	16QAM	1	0	22.22	22.27	22.30
		1	2	22.00	22.17	22.23
		1	5	22.09	22.20	22.23
		3	0	21.80	21.81	22.00
		3	1	21.90	21.91	22.03
		3	3	21.87	21.86	22.15
		6	0	20.91	20.59	20.65
	64QAM	1	0	20.84	20.73	20.88
		1	2	20.81	20.79	21.32
		1	5	20.55	20.62	21.34
		3	0	20.85	21.23	20.69
		3	1	21.29	20.80	21.17
		3	3	21.32	20.84	20.88
		6	0	20.27	19.78	19.97

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	23.06	23.12	23.28
		1	7	22.95	23.06	23.23
		1	14	23.00	22.99	23.26
		8	0	21.99	22.03	22.03
		8	3	21.95	22.03	21.89
		8	7	22.00	22.10	22.15
		15	0	22.01	21.98	22.07
	16QAM	1	0	22.19	22.33	22.33
		1	7	21.97	22.20	22.21
		1	14	22.12	22.20	22.23
		8	0	20.76	20.82	21.00
		8	3	20.95	20.86	21.06
		8	7	20.89	20.84	21.11
		15	0	20.91	20.53	20.68
	64QAM	1	0	20.90	20.76	20.82
		1	7	20.84	20.73	21.31
		1	14	20.56	20.64	21.34
		8	0	19.88	20.27	19.70
		8	3	20.33	19.74	20.22
		8	7	20.29	19.88	19.84
		15	0	20.29	19.75	20.01

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	23.07	23.07	23.29
		1	12	23.00	23.03	23.23
		1	24	23.01	22.98	23.30
		12	0	22.02	22.03	22.00
		12	6	21.95	22.04	21.90
		12	13	22.04	22.06	22.16
		25	0	21.99	22.01	22.10
	16QAM	1	0	22.20	22.29	22.33
		1	12	21.94	22.23	22.20
		1	24	22.12	22.20	22.22
		12	0	20.76	20.80	20.97
		12	6	20.92	20.90	21.02
		12	13	20.84	20.86	21.14
		25	0	20.91	20.54	20.65
	64QAM	1	0	20.84	20.73	20.88
		1	12	20.81	20.79	21.31
		1	24	20.49	20.69	21.34
		12	0	19.89	20.24	19.69
		12	6	20.27	19.81	20.21
		12	13	20.33	19.87	19.81
		25	0	20.25	19.81	19.99

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	23.12	23.14	**23.34**
		1	24	23.02	23.11	23.25
		1	49	23.06	23.06	23.31
		25	0	22.06	22.08	22.05
		25	12	22.03	22.05	21.95
		25	25	22.08	22.11	22.17
		50	0	22.05	22.03	22.15
	16QAM	1	0	22.27	22.34	22.35
		1	24	22.02	22.25	22.25
		1	49	22.14	22.28	22.24
		25	0	20.84	20.86	21.05
		25	12	20.98	20.92	21.08
		25	25	20.91	20.91	21.16
		50	0	20.97	20.61	20.70
	64QAM	1	0	20.91	20.78	20.90
		1	24	20.89	20.81	21.37
		1	49	20.57	20.70	21.36
		25	0	19.93	20.29	19.77
		25	12	20.35	19.82	20.23
		25	25	20.37	19.92	19.89
		50	0	20.31	19.83	20.02

LTE Band 13

Band/BW	Modulation	RB Size	RB Offset	Low CH 23205	Mid CH 23230	High CH 23255
				Frequency 779.5 MHz	Frequency 782.0 MHz	Frequency 784.5 MHz
13/ 5	QPSK	1	0	23.05	23.20	22.96
		1	12	23.04	23.16	22.93
		1	24	23.06	23.20	22.99
		12	0	21.77	21.91	21.66
		12	6	21.79	21.97	21.75
		12	13	21.75	21.94	21.67
		25	0	21.89	22.00	21.76
	16QAM	1	0	21.87	22.07	21.86
		1	12	22.01	22.18	21.93
		1	24	21.98	22.09	21.87
		12	0	21.03	21.21	20.93
		12	6	21.12	21.30	21.06
		12	13	20.98	21.15	20.89
		25	0	20.87	21.00	20.75
	64QAM	1	0	21.18	21.35	21.12
		1	12	20.93	21.10	20.83
		1	24	21.03	21.21	20.93
		12	0	20.04	20.23	20.01
		12	6	20.21	20.33	20.05
		12	13	20.03	20.21	20.00
		25	0	20.30	20.45	20.17

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 23230	/
				/	Frequency 782.0 MHz	/
13/ 10	QPSK	1	0	/	23.27	/
		1	24	/	23.24	/
		1	49	/	**23.28**	/
		25	0	/	21.96	/
		25	12	/	21.98	/
		25	25	/	21.99	/
		50	0	/	22.02	/
	16QAM	1	0	/	22.12	/
		1	24	/	22.20	/
		1	49	/	22.17	/
		25	0	/	21.27	/
		25	12	/	21.32	/
		25	25	/	21.20	/
		50	0	/	21.07	/
	64QAM	1	0	/	21.40	/
		1	24	/	21.12	/
		1	49	/	21.22	/
		25	0	/	20.28	/
		25	12	/	20.34	/
		25	25	/	20.26	/
		50	0	/	20.47	/

LTE Band 17

Band/BW	Modulation	RB Size	RB Offset	Low CH 23755 Frequency 706.5 MHz	Mid CH 23790 Frequency 710 MHz	High CH 23825 Frequency 713.5 MHz
17/ 5	QPSK	1	0	22.91	23.10	22.87
		1	12	22.92	23.04	22.87
		1	24	22.86	23.01	22.83
		12	0	21.85	21.78	21.80
		12	6	21.82	21.87	21.73
		12	13	21.89	21.92	21.94
		25	0	21.77	21.89	21.82
	16QAM	1	0	22.01	22.09	22.09
		1	12	21.98	22.07	21.90
		1	24	22.00	22.00	22.07
		12	0	20.85	21.08	20.74
		12	6	20.77	21.16	20.89
		12	13	20.91	21.22	20.88
		25	0	20.78	20.88	20.93
	64QAM	1	0	20.97	21.17	20.89
		1	12	21.17	21.43	20.79
		1	24	20.78	21.26	21.23
		12	0	20.27	19.76	19.84
		12	6	19.74	19.95	19.91
		12	13	20.16	19.92	19.87
		25	0	19.92	20.12	20.02

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	22.96	**23.17**	22.92
		1	24	22.94	23.12	22.89
		1	49	22.91	23.09	22.84
		25	0	21.89	21.83	21.85
		25	12	21.90	21.88	21.78
		25	25	21.93	21.97	21.95
		50	0	21.83	21.91	21.87
	16QAM	1	0	22.08	22.14	22.11
		1	24	22.06	22.09	21.95
		1	49	22.02	22.08	22.09
		25	0	20.93	21.14	20.82
		25	12	20.83	21.18	20.95
		25	25	20.98	21.27	20.90
		50	0	20.84	20.95	20.98
	64QAM	1	0	21.04	21.22	20.91
		1	24	21.25	21.45	20.85
		1	49	20.86	21.27	21.25
		25	0	20.31	19.81	19.92
		25	12	19.82	19.96	19.93
		25	25	20.20	19.97	19.95
		50	0	19.98	20.14	20.05

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	20.76	20.81	20.73
		1	2	20.84	20.88	20.93
		1	5	20.77	20.85	20.78
		3	0	20.76	20.75	20.89
		3	1	20.85	20.88	20.86
		3	3	20.77	20.79	20.75
		6	0	19.87	19.90	19.84
	16QAM	1	0	19.72	19.84	20.03
		1	2	19.73	20.08	19.75
		1	5	19.87	20.03	19.68
		3	0	19.93	19.76	20.02
		3	1	19.84	19.92	20.10
		3	3	20.17	20.22	20.31
		6	0	19.29	19.54	19.70
	64QAM	1	0	18.90	19.49	19.61
		1	2	19.41	19.50	19.62
		1	5	19.56	19.75	19.77
		3	0	19.27	19.22	19.33
		3	1	19.23	19.43	19.45
		3	3	19.57	19.17	19.26
		6	0	18.19	18.46	18.51

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	20.78	20.83	20.72
		1	7	20.80	20.89	20.93
		1	14	20.73	20.85	20.78
		8	0	19.75	19.78	19.89
		8	3	19.78	19.88	19.88
		8	7	19.74	19.86	19.79
		15	0	19.84	19.91	19.78
	16QAM	1	0	19.69	19.90	20.06
		1	7	19.70	20.11	19.73
		1	14	19.90	20.03	19.68
		8	0	18.89	19.27	19.52
		8	3	19.39	19.37	19.63
		8	7	19.69	19.70	19.77
		15	0	19.29	19.48	19.73
	64QAM	1	0	18.96	19.52	19.55
		1	7	19.44	19.44	19.61
		1	14	20.07	20.27	20.27
		8	0	17.80	18.26	18.34
		8	3	18.27	18.37	18.50
		8	7	18.54	18.71	18.72
		15	0	18.21	18.43	18.55

Band/BW	Modulation	RB Size	RB Offset	Low CH 131997	Mid CH 132322	High CH 132647
				Frequency 1712.5MHz	Frequency 1745MHz	Frequency 1777.5MHz
66/ 5	QPSK	1	0	20.79	20.78	20.73
		1	12	20.85	20.86	20.93
		1	24	20.74	20.84	20.82
		12	0	19.78	19.78	19.86
		12	6	19.78	19.89	19.89
		12	13	19.78	19.82	19.80
		25	0	19.82	19.94	19.81
	16QAM	1	0	19.70	19.86	20.06
		1	12	19.67	20.14	19.72
		1	24	19.90	20.03	19.67
		12	0	18.89	19.25	19.49
		12	6	19.36	19.41	19.59
		12	13	19.64	19.72	19.80
		25	0	19.29	19.49	19.70
	64QAM	1	0	18.90	19.49	19.61
		1	12	19.41	19.50	19.61
		1	24	20.00	20.32	20.27
		12	0	17.81	18.23	18.33
		12	6	18.21	18.44	18.49
		12	13	18.58	18.70	18.69
		25	0	18.17	18.49	18.53

Band/BW	Modulation	RB Size	RB Offset	Low CH 132022	Mid CH 132322	High CH 132622
				Frequency 1715MHz	Frequency 1745MHz	Frequency 1775MHz
66/ 10	QPSK	1	0	20.76	20.81	20.73
		1	24	20.85	20.86	20.94
		1	49	20.71	20.88	20.78
		25	0	19.79	19.77	19.89
		25	12	19.84	19.83	19.89
		25	25	19.76	19.79	19.79
		50	0	19.87	19.94	19.78
	16QAM	1	0	19.70	19.83	20.02
		1	24	19.72	20.10	19.75
		1	49	19.90	20.04	19.64
		25	0	18.91	19.23	19.55
		25	12	19.40	19.35	19.64
		25	25	19.63	19.73	19.77
		50	0	19.33	19.48	19.74
	64QAM	1	0	18.89	19.50	19.58
		1	24	19.46	19.46	19.65
		1	49	20.06	20.26	20.24
		25	0	17.79	18.20	18.39
		25	12	18.28	18.43	18.43
		25	25	18.57	18.67	18.71
		50	0	18.22	18.45	18.54

Band/BW	Modulation	RB Size	RB Offset	Low CH 132072	Mid CH 132322	High CH 132572
				Frequency 1720MHz	Frequency 1745MHz	Frequency 1770MHz
66/ 15	QPSK	1	0	20.83	20.81	20.70
		1	37	20.83	20.91	20.89
		1	74	20.77	20.91	20.79
		36	0	19.76	19.78	19.90
		36	19	19.85	19.88	19.89
		36	39	19.74	19.80	19.79
		75	0	19.87	19.92	19.83
	16QAM	1	0	19.74	19.90	20.02
		1	37	19.71	20.11	19.75
		1	74	19.86	20.09	19.66
		36	0	18.95	19.23	19.56
		36	19	19.34	19.39	19.60
		36	39	19.68	19.71	19.80
		75	0	19.34	19.51	19.67
	64QAM	1	0	18.91	19.51	19.59
		1	37	19.47	19.45	19.62
		1	74	20.02	20.25	20.27
		36	0	17.84	18.26	18.33
		36	19	18.22	18.37	18.45
		36	39	18.60	18.74	18.73
		75	0	18.21	18.43	18.55

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	20.84	20.85	20.78
		1	50	20.87	20.94	**20.95**
		1	99	20.79	20.92	20.83
		50	0	19.82	19.83	19.91
		50	25	19.86	19.90	19.94
		50	50	19.82	19.87	19.81
		100	0	19.88	19.96	19.86
	16QAM	1	0	19.77	19.91	20.08
		1	50	19.75	20.16	19.77
		1	99	19.92	20.11	19.69
		50	0	18.97	19.31	19.57
		50	25	19.42	19.43	19.65
		50	50	19.71	19.77	19.82
		100	0	19.35	19.56	19.75
	64QAM	1	0	18.97	19.54	19.63
		1	50	19.49	19.52	19.67
		1	99	20.08	20.33	20.29
		50	0	17.85	18.28	18.41
		50	25	18.29	18.45	18.51
		50	50	18.62	18.75	18.77
		100	0	18.23	18.51	18.56

EIRP
WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	20.88	1.38	22.26	168.27	1
1413	1732.6	20.89	1.38	22.27	168.66	1
1513	1752.6	20.86	1.38	22.24	167.49	1

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	20.83	1.38	22.21	166.34	1
20175	1732.5	20.87	1.38	22.25	167.88	1
20393	1754.3	20.83	1.38	22.21	166.34	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	19.75	1.38	21.13	129.72	1
20175	1732.5	19.88	1.38	21.26	133.66	1
20393	1754.3	20.01	1.38	21.39	137.72	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	19.89	1.38	21.27	133.97	1
20175	1732.5	20.07	1.38	21.45	139.64	1
20393	1754.3	19.79	1.38	21.17	130.92	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	20.77	1.38	22.15	164.06	1
20175	1732.5	20.84	1.38	22.22	166.72	1
20385	1753.5	20.72	1.38	22.1	162.18	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	19.69	1.38	21.07	127.94	1
20175	1732.5	19.82	1.38	21.2	131.83	1
20385	1753.5	19.99	1.38	21.37	137.09	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	19.9	1.38	21.28	134.28	1
20175	1732.5	20.39	1.38	21.77	150.31	1
20385	1753.5	20.09	1.38	21.47	140.28	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	20.79	1.38	22.17	164.82	1
20175	1732.5	20.79	1.38	22.17	164.82	1
20375	1752.5	20.75	1.38	22.13	163.31	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	19.7	1.38	21.08	128.23	1
20175	1732.5	19.84	1.38	21.22	132.43	1
20375	1752.5	19.98	1.38	21.36	136.77	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	19.83	1.38	21.21	132.13	1
20175	1732.5	20.44	1.38	21.82	152.05	1
20375	1752.5	20.09	1.38	21.47	140.28	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	20.79	1.38	22.17	164.82	1
20175	1732.5	20.82	1.38	22.2	165.96	1
20350	1750	20.73	1.38	22.11	162.55	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	19.7	1.38	21.08	128.23	1

20175	1732.5	19.85	1.38	21.23	132.74	1
20350	1750	20.01	1.38	21.39	137.72	1

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	19.89	1.38	21.27	133.97	1
20175	1732.5	20.38	1.38	21.76	149.97	1
20350	1750	20.06	1.38	21.44	139.32	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	20.82	1.38	22.2	165.96	1
20175	1732.5	20.82	1.38	22.2	165.96	1
20325	1747.5	20.72	1.38	22.1	162.18	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	19.74	1.38	21.12	129.42	1
20175	1732.5	19.83	1.38	21.21	132.13	1
20325	1747.5	20.01	1.38	21.39	137.72	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	19.85	1.38	21.23	132.74	1
20175	1732.5	20.37	1.38	21.75	149.62	1
20325	1747.5	20.09	1.38	21.47	140.28	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	20.83	1.38	22.21	166.34	1
20175	1732.5	20.86	1.38	22.24	167.49	1
20300	1745	20.77	1.38	22.15	164.06	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	19.77	1.38	21.15	130.32	1
20175	1732.5	19.89	1.38	21.27	133.97	1
20300	1745	20.03	1.38	21.41	138.36	1

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	19.91	1.38	21.29	134.59	1
20175	1732.5	20.45	1.38	21.83	152.41	1
20300	1745	20.11	1.38	21.49	140.93	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	19.66	2.6	22.26	168.27	2
21100	2535.0	19.6	2.6	22.2	165.96	2
21425	2567.5	19.46	2.6	22.06	160.69	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	19.01	2.6	21.61	144.88	2
21100	2535.0	18.73	2.6	21.33	135.83	2
21425	2567.5	18.89	2.6	21.49	140.93	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	19.45	2.6	22.05	160.32	2
21100	2535.0	19.38	2.6	21.98	157.76	2
21425	2567.5	19.42	2.6	22.02	159.22	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	19.63	2.6	22.23	167.11	2
21100	2535.0	19.63	2.6	22.23	167.11	2
21400	2565.0	19.46	2.6	22.06	160.69	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	19	2.6	21.6	144.54	2
21100	2535.0	18.71	2.6	21.31	135.21	2
21400	2565.0	18.86	2.6	21.46	139.96	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505.0	19.51	2.6	22.11	162.55	2
21100	2535.0	19.39	2.6	21.99	158.12	2
21400	2565.0	19.39	2.6	21.99	158.12	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	19.7	2.6	22.3	169.82	2
21100	2535.0	19.63	2.6	22.23	167.11	2
21375	2562.5	19.43	2.6	22.03	159.59	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	19.05	2.6	21.65	146.22	2
21100	2535.0	18.71	2.6	21.31	135.21	2
21375	2562.5	18.89	2.6	21.49	140.93	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	19.47	2.6	22.07	161.06	2
21100	2535.0	19.4	2.6	22	158.49	2
21375	2562.5	19.42	2.6	22.02	159.22	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	19.71	2.6	22.31	170.22	2
21100	2535.0	19.67	2.6	22.27	168.66	2
21350	2560.0	19.51	2.6	22.11	162.55	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	19.08	2.6	21.68	147.23	2
21100	2535.0	18.79	2.6	21.39	137.72	2
21350	2560.0	18.91	2.6	21.51	141.58	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510.0	19.53	2.6	22.13	163.31	2
21100	2535.0	19.43	2.6	22.03	159.59	2
21350	2560.0	19.44	2.6	22.04	159.96	2

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	23.04	-0.82	20.07	101.62	3
23095	707.5	23.1	-0.82	20.13	103.04	3
23173	715.3	23.29	-0.82	20.32	107.65	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	22.22	-0.82	19.25	84.14	3
23095	707.5	22.27	-0.82	19.3	85.11	3
23173	715.3	22.3	-0.82	19.33	85.7	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	21.32	-0.82	18.35	68.39	3
23095	707.5	21.23	-0.82	18.26	66.99	3
23173	715.3	21.34	-0.82	18.37	68.71	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	23.06	-0.82	20.09	102.09	3
23095	707.5	23.12	-0.82	20.15	103.51	3
23165	714.5	23.28	-0.82	20.31	107.4	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	22.19	-0.82	19.22	83.56	3
23095	707.5	22.33	-0.82	19.36	86.3	3
23165	714.5	22.33	-0.82	19.36	86.3	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	20.9	-0.82	17.93	62.09	3
23095	707.5	20.76	-0.82	17.79	60.12	3
23165	714.5	21.34	-0.82	18.37	68.71	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	23.07	-0.82	20.1	102.33	3
23095	707.5	23.07	-0.82	20.1	102.33	3
23155	713.5	23.3	-0.82	20.33	107.89	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	22.2	-0.82	19.23	83.75	3
23095	707.5	22.29	-0.82	19.32	85.51	3
23155	713.5	22.33	-0.82	19.36	86.3	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	20.84	-0.82	17.87	61.24	3
23095	707.5	20.79	-0.82	17.82	60.53	3
23155	713.5	21.34	-0.82	18.37	68.71	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	23.12	-0.82	20.15	103.51	3
23095	707.5	23.14	-0.82	20.17	103.99	3
23130	711	23.34	-0.82	20.37	108.89	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	22.27	-0.82	19.3	85.11	3
23095	707.5	22.34	-0.82	19.37	86.5	3
23130	711	22.35	-0.82	19.38	86.7	3

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23060	704	20.91	-0.82	17.94	62.23	3
23095	707.5	20.81	-0.82	17.84	60.81	3
23130	711	21.37	-0.82	18.4	69.18	3

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

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	23.06	-0.36	20.55	113.5	3
23230	782	23.2	-0.36	20.69	117.22	3
23255	784.5	22.99	-0.36	20.48	111.69	3

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	22.01	-0.36	19.5	89.13	3
23230	782	22.18	-0.36	19.67	92.68	3
23255	784.5	21.93	-0.36	19.42	87.5	3

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23205	779.5	21.18	-0.36	18.67	73.62	3
23230	782	21.35	-0.36	18.84	76.56	3
23255	784.5	21.12	-0.36	18.61	72.61	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	23.28	-0.36	20.77	119.4	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	22.2	-0.36	19.69	93.11	3
-	-	-	-	-	-	-

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
23230	782	21.4	-0.36	18.89	77.45	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	22.92	-0.82	19.95	98.86	3
23790	710	23.1	-0.82	20.13	103.04	3
23825	713.5	22.87	-0.82	19.9	97.72	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	22.01	-0.82	19.04	80.17	3
23790	710	22.09	-0.82	19.12	81.66	3
23825	713.5	22.09	-0.82	19.12	81.66	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	21.17	-0.82	18.2	66.07	3
23790	710	21.43	-0.82	18.46	70.15	3
23825	713.5	21.23	-0.82	18.26	66.99	3

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	22.96	-0.82	19.99	99.77	3
23790	710	23.17	-0.82	20.2	104.71	3
23800	711	22.92	-0.82	19.95	98.86	3

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	22.08	-0.82	19.11	81.47	3
23790	710	22.14	-0.82	19.17	82.6	3
23800	711	22.11	-0.82	19.14	82.04	3

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23780	709	21.25	-0.82	18.28	67.3	3
23790	710	21.45	-0.82	18.48	70.47	3
23800	711	21.25	-0.82	18.28	67.3	3

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	20.85	1.46	22.31	170.22	1
132322	1745	20.88	1.46	22.34	171.4	1
132665	1779.3	20.93	1.46	22.39	173.38	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	20.17	1.46	21.63	145.55	1
132322	1745	20.22	1.46	21.68	147.23	1
132665	1779.3	20.31	1.46	21.77	150.31	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	19.57	1.46	21.03	126.77	1
132322	1745	19.75	1.46	21.21	132.13	1
132665	1779.3	19.77	1.46	21.23	132.74	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	20.8	1.46	22.26	168.27	1
132322	1745	20.89	1.46	22.35	171.79	1
132657	1778.5	20.93	1.46	22.39	173.38	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	19.9	1.46	21.36	136.77	1
132322	1745	20.11	1.46	21.57	143.55	1
132657	1778.5	20.06	1.46	21.52	141.91	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	20.07	1.46	21.53	142.23	1
132322	1745	20.27	1.46	21.73	148.94	1
132657	1778.5	20.27	1.46	21.73	148.94	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	20.85	1.46	22.31	170.22	1
132322	1745	20.86	1.46	22.32	170.61	1
132647	1777.5	20.93	1.46	22.39	173.38	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	19.9	1.46	21.36	136.77	1
132322	1745	20.14	1.46	21.6	144.54	1
132647	1777.5	20.06	1.46	21.52	141.91	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	20	1.46	21.46	139.96	1
132322	1745	20.32	1.46	21.78	150.66	1
132647	1777.5	20.27	1.46	21.73	148.94	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	20.85	1.46	22.31	170.22	1
132322	1745	20.88	1.46	22.34	171.4	1
132622	1775	20.94	1.46	22.4	173.78	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	19.9	1.46	21.36	136.77	1
132322	1745	20.1	1.46	21.56	143.22	1
132622	1775	20.02	1.46	21.48	140.6	1

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132022	1715	20.06	1.46	21.52	141.91	1
132322	1745	20.26	1.46	21.72	148.59	1
132622	1775	20.24	1.46	21.7	147.91	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	20.83	1.46	22.29	169.43	1
132322	1745	20.91	1.46	22.37	172.58	1
132597	1772.5	20.89	1.46	22.35	171.79	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	19.86	1.46	21.32	135.52	1
132322	1745	20.11	1.46	21.57	143.55	1
132622	1772.5	20.02	1.46	21.48	140.6	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	20.02	1.46	21.48	140.6	1
132322	1745	20.25	1.46	21.71	148.25	1
132622	1772.5	20.27	1.46	21.73	148.94	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	20.87	1.46	22.33	171	1
132322	1745	20.94	1.46	22.4	173.78	1
132572	1770	20.95	1.46	22.41	174.18	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	19.92	1.46	21.38	137.4	1
132322	1745	20.16	1.46	21.62	145.21	1
132572	1770	20.08	1.46	21.54	142.56	1

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
132072	1720	20.08	1.46	21.54	142.56	1
132322	1745	20.33	1.46	21.79	151.01	1
132572	1770	20.29	1.46	21.75	149.62	1

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

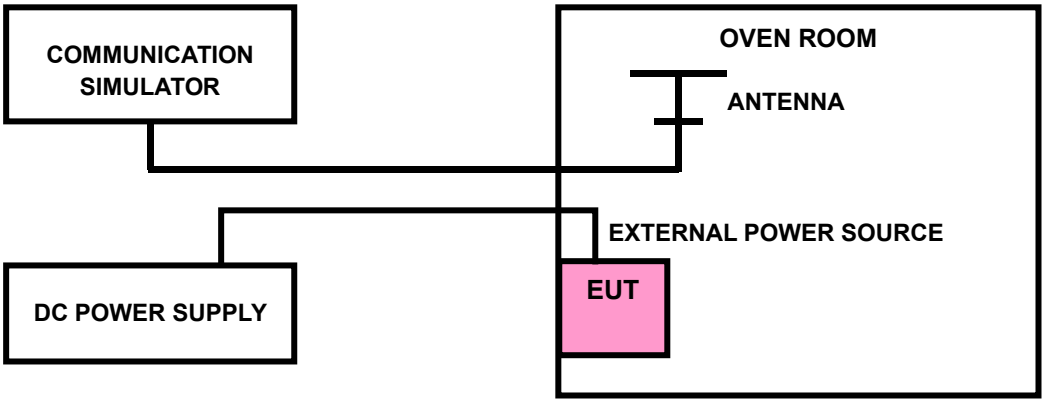
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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

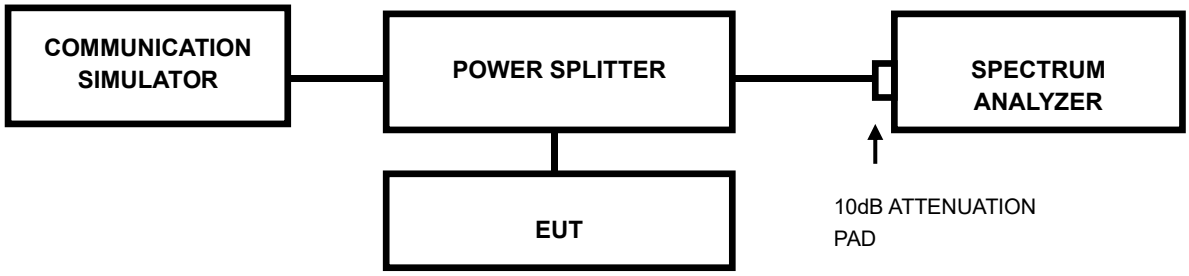
Please Refer to Appendix A Of this test report.

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 Appendix A Of this test report.

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 and 1755-1780 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.

According to FCC 27.53(c),for operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

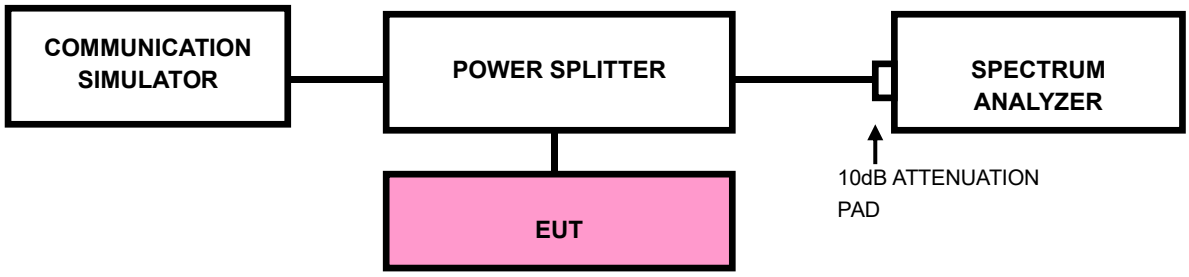
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (1) and (2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (3) and (4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

According to FCC 27.53(f),for operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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) ≧ 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 ≧3 x 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.

3.4.4 TEST RESULTS

Please Refer to Appendix A Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

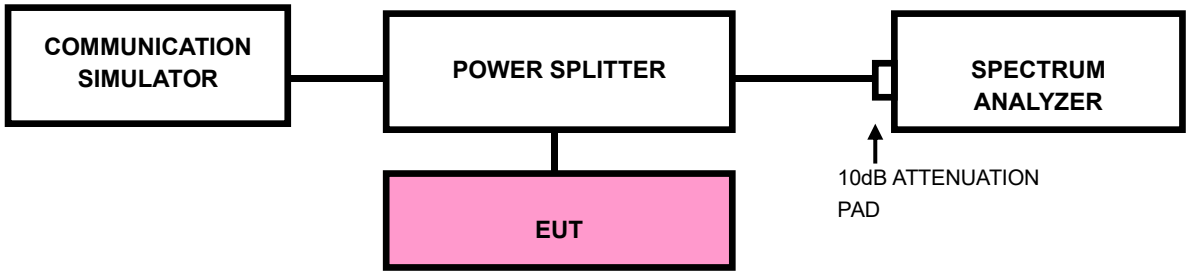
Pls refer to the describtion of chapter 3.4.1.

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 Appendix A Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Pls refer to the describtion of chapter 3.4.1.

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.

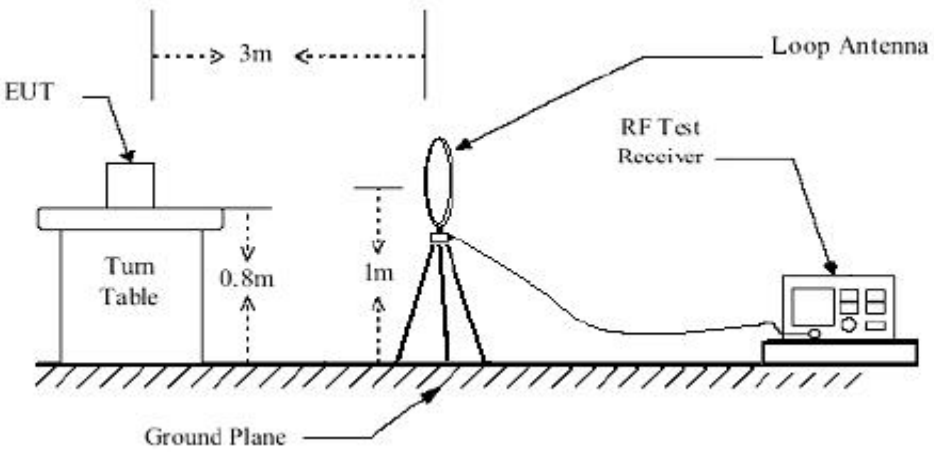
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

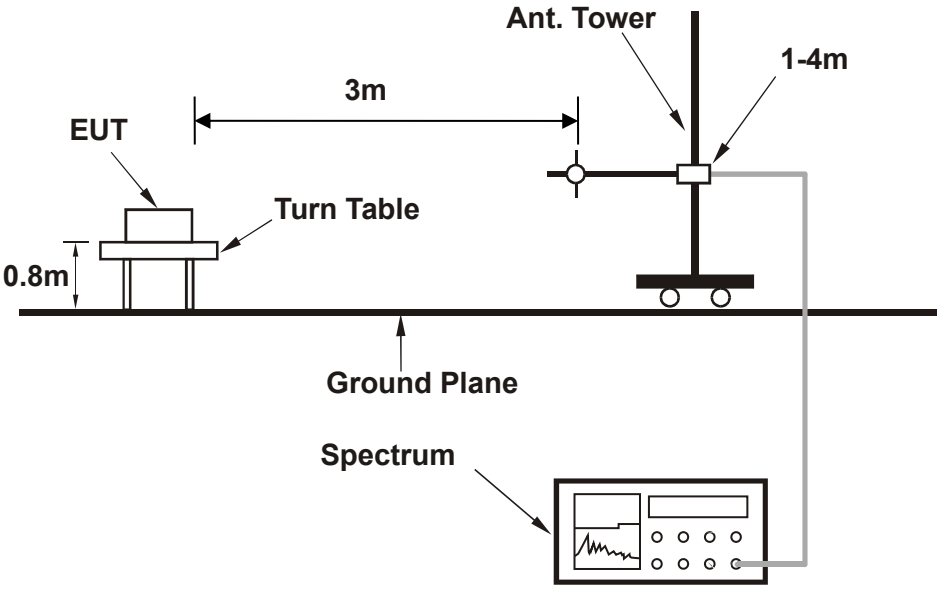
No deviation

3.6.4 TEST SETUP

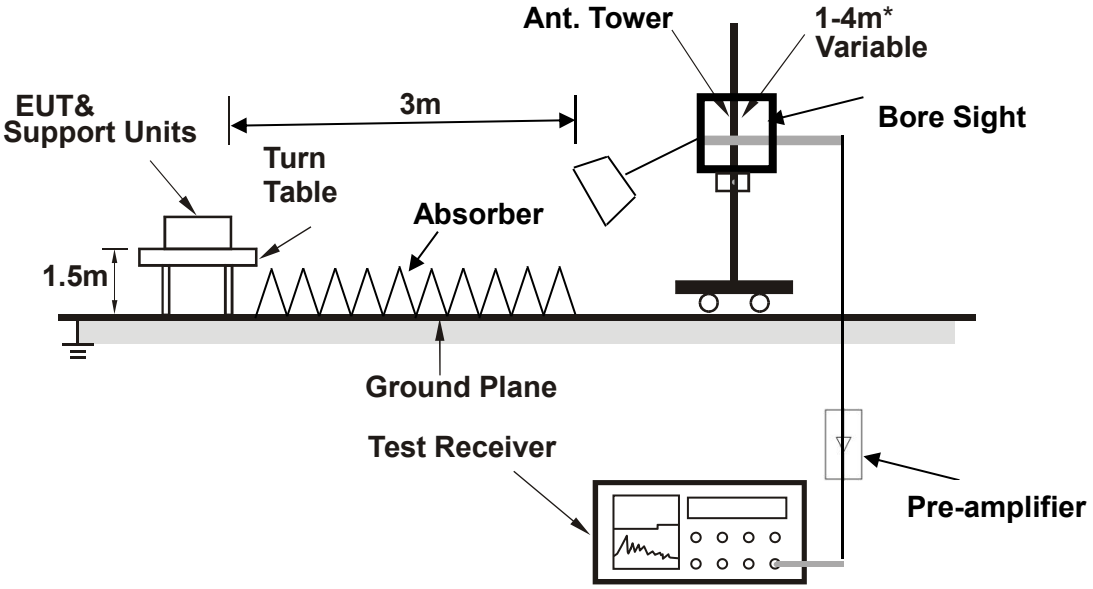
< Frequency Range below 30MHz >



< 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.

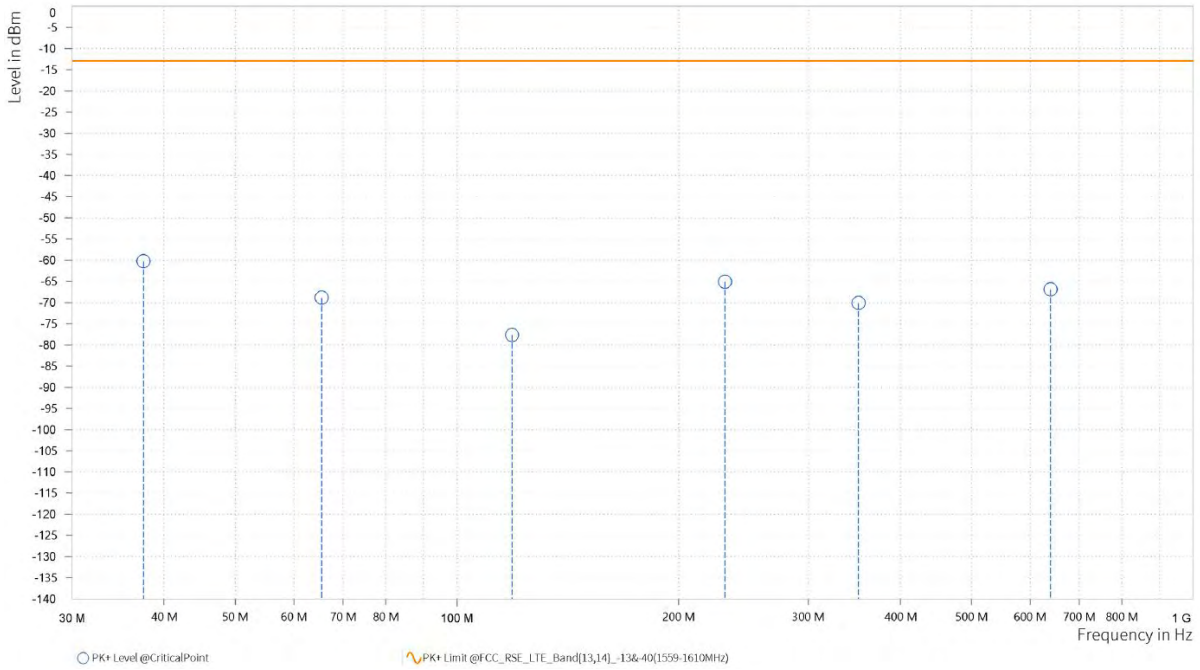
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 13
CHANNEL BANDWIDTH: 5MHz / QPSK

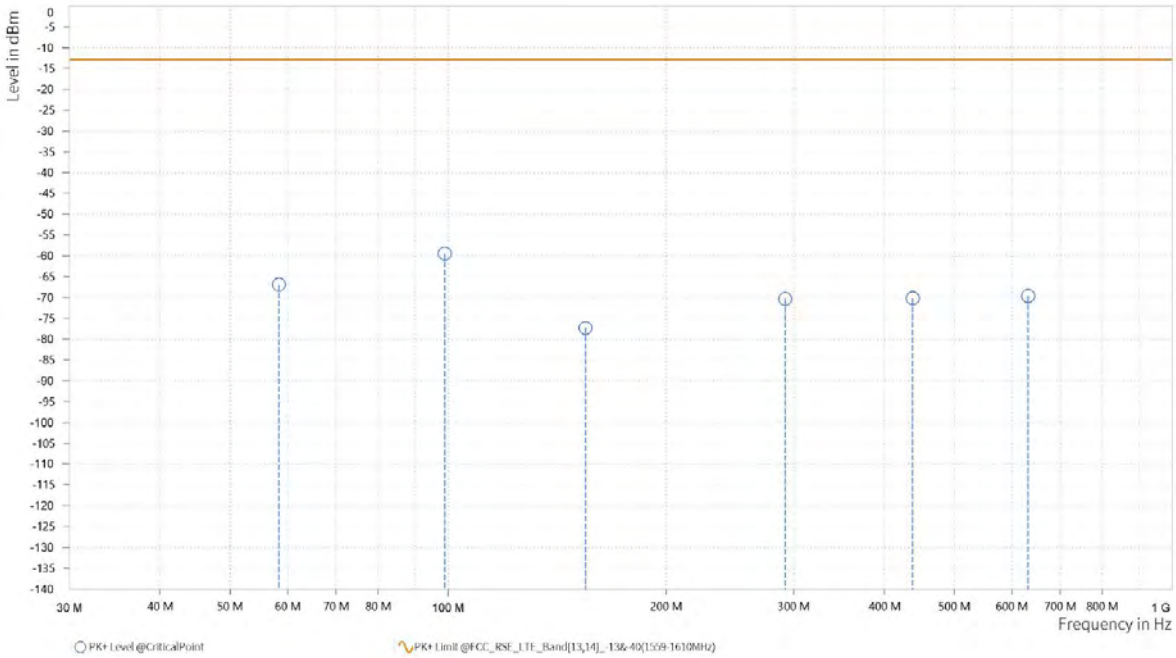
MODE	TX channel 23255	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	37.500	-60.23	-13.00	47.23	6.74	H	353	1
1	65.450	-68.87	-13.00	55.87	0.16	H	356.2	2
1	118.750	-77.66	-13.00	64.66	-5.08	H	359	2
1	231.050	-65.08	-13.00	52.08	7.80	H	114.4	2
1	350.850	-70.11	-13.00	57.11	4.08	H	4.3	1
2	640.071	-66.88	-13.00	53.88	7.40	H	1.4	2



MODE	TX channel 23255	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	58.400	-66.89	-13.00	53.89	3.06	V	359	2
1	98.900	-59.48	-13.00	46.48	11.70	V	342.2	1
1	154.700	-77.34	-13.00	64.34	-4.74	V	0.9	2
1	292.000	-70.31	-13.00	57.31	4.94	V	113.1	2
1	437.800	-70.18	-13.00	57.18	6.47	V	342.2	1
2	631.683	-69.64	-13.00	56.64	5.64	V	61.8	2



ABOVE 1GHz

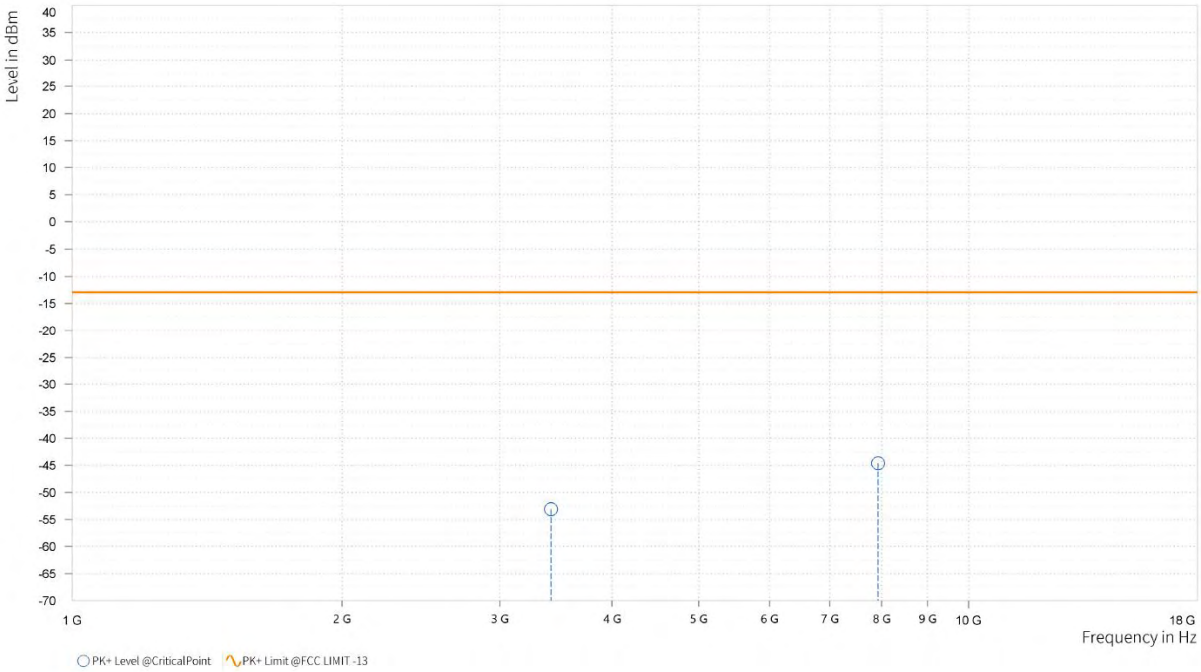
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV:

CH 1312

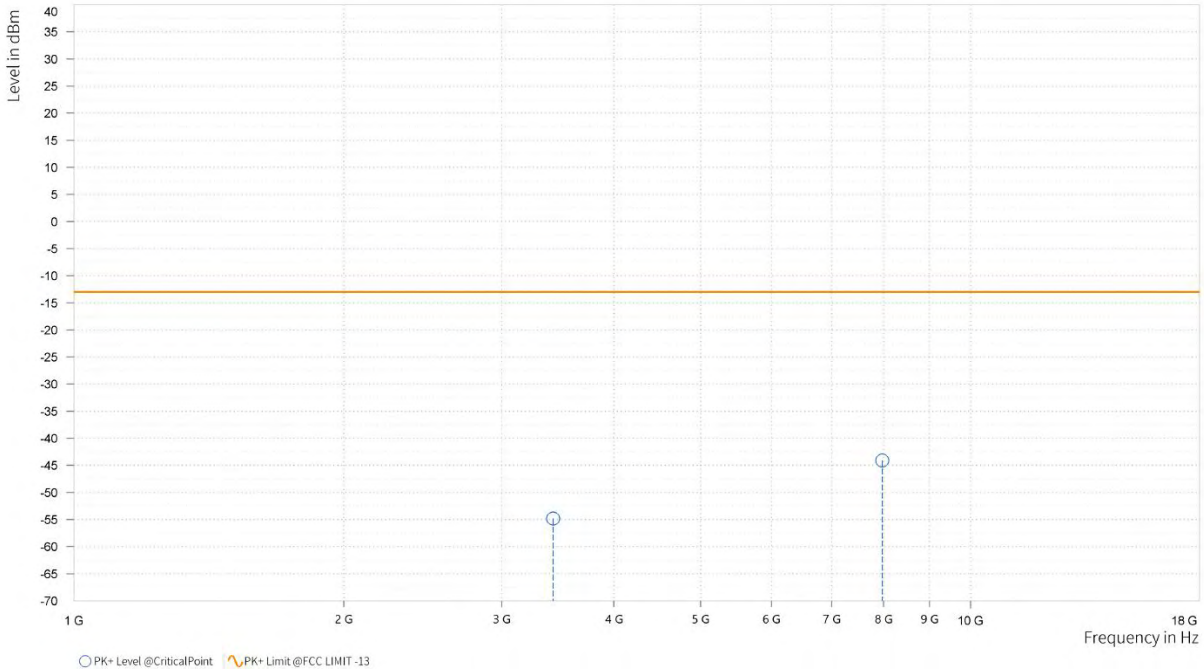
MODE	TX channel 1312	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,422.500	-53.13	-13.00	40.13	21.92	H	163.1	2
5	7,928.500	-44.63	-13.00	31.63	33.00	H	1	1



MODE	TX channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

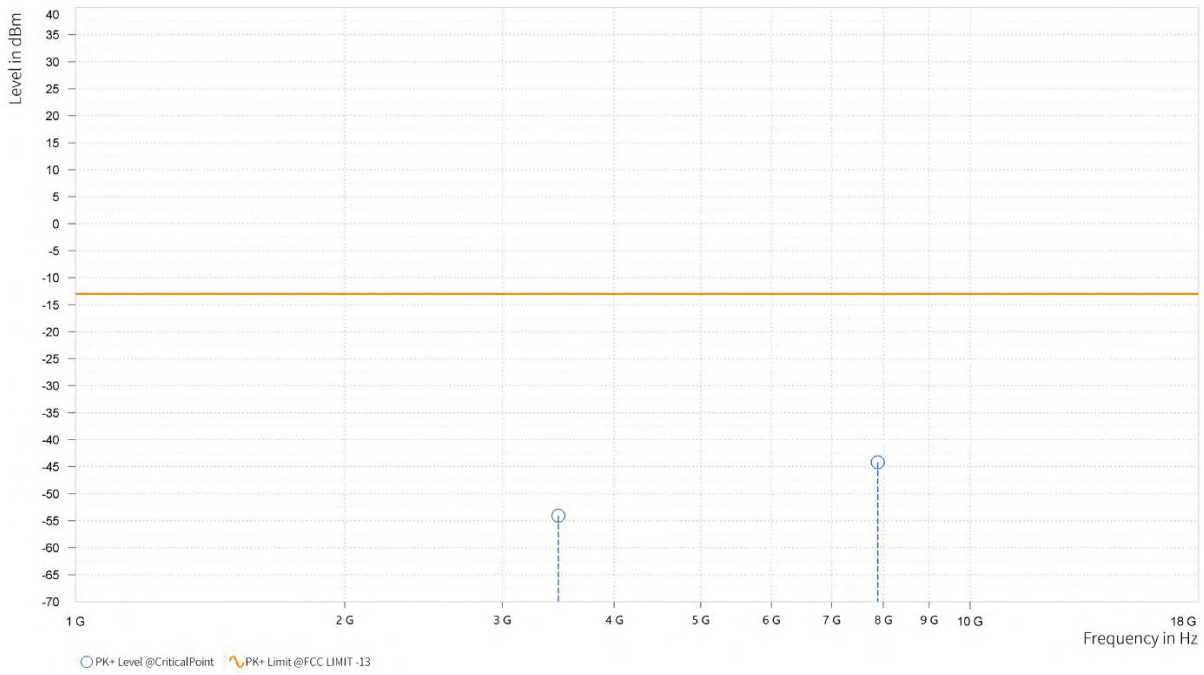
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,425.000	-54.82	-13.00	41.82	22.00	V	211.2	1
5	7,975.000	-44.12	-13.00	31.12	33.28	V	1	2



CH 1413

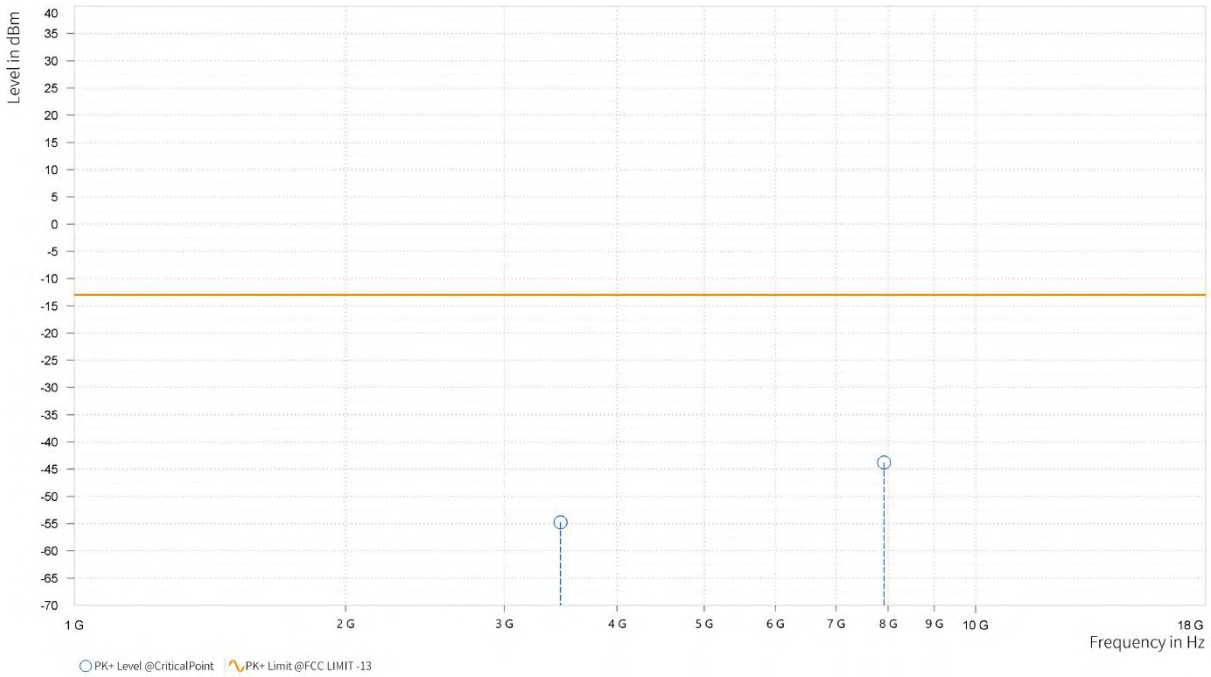
MODE	TX channel 1413	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,465.500	-54.05	-13.00	41.05	21.84	H	195.6	1
5	7,888.500	-44.18	-13.00	31.18	33.01	H	1	1



MODE	TX channel 1413	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

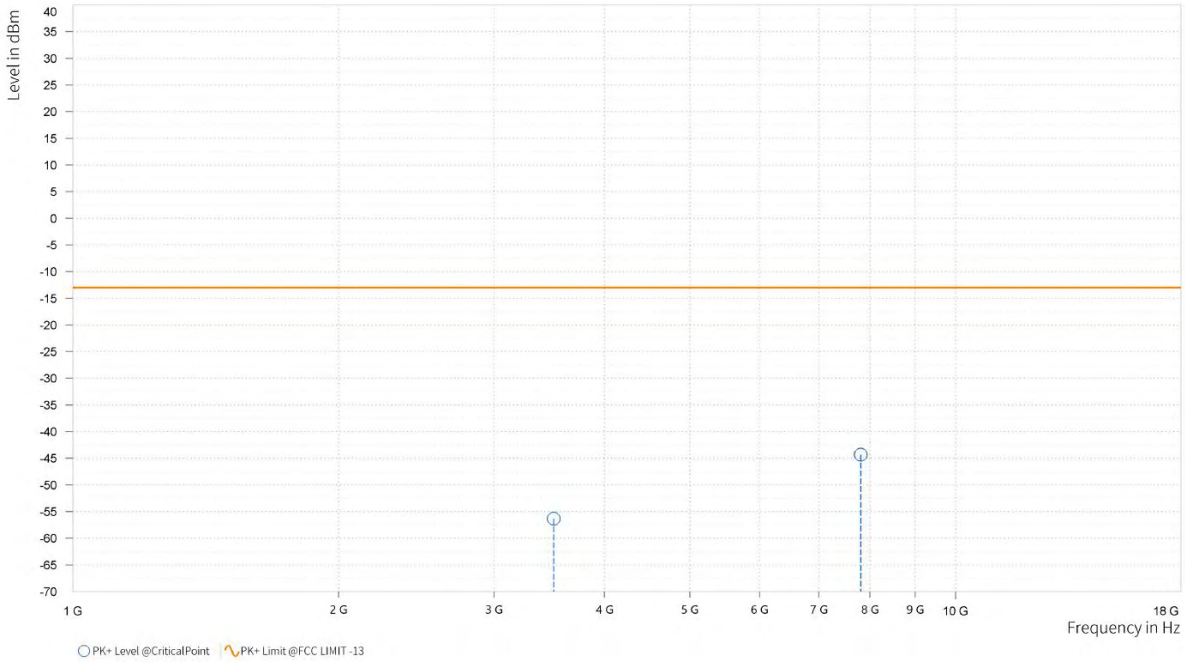
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,464.500	-54.77	-13.00	41.77	21.89	V	1	2
5	7,918.000	-43.77	-13.00	30.77	33.12	V	359	2



CH 1513

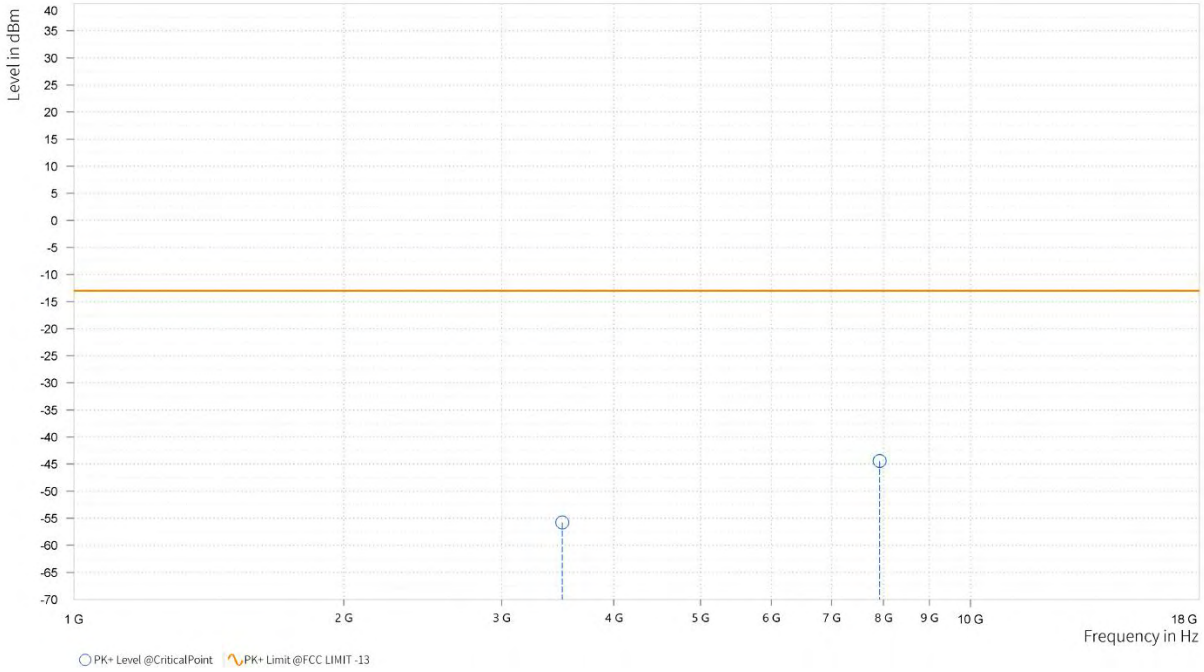
MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,505.500	-56.31	-13.00	43.31	21.80	H	1	1
5	7,813.000	-44.32	-13.00	31.32	32.94	H	281.8	1



MODE	TX channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

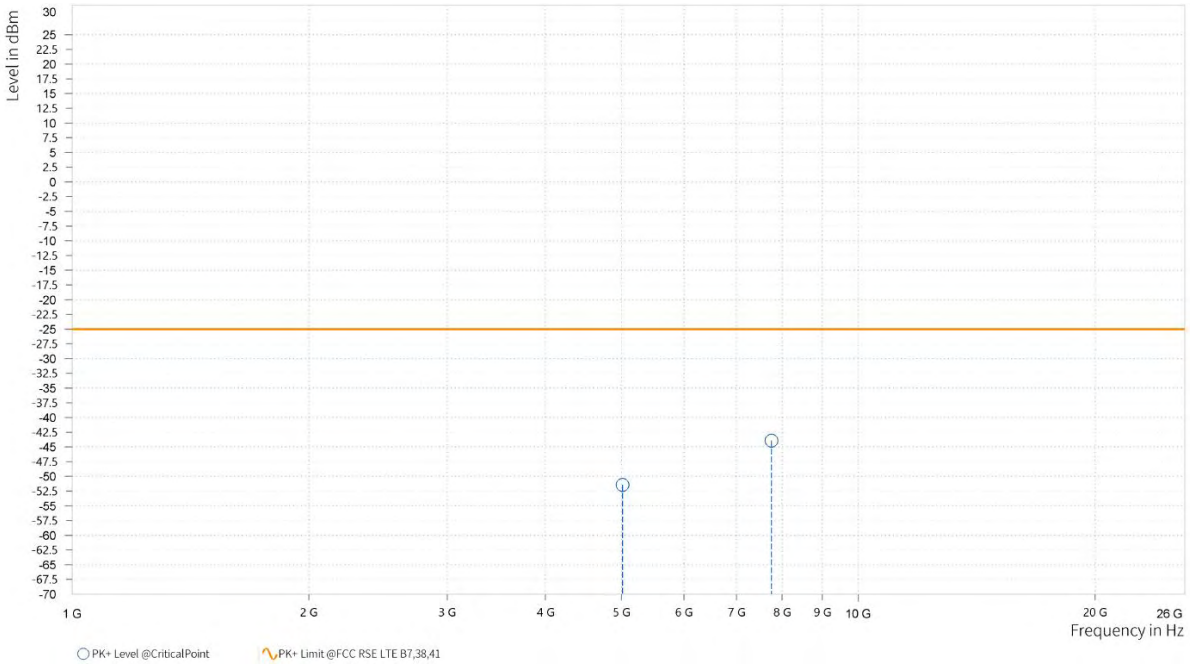
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,505.500	-55.79	-13.00	42.79	21.96	V	1	1
5	7,921.500	-44.43	-13.00	31.43	33.13	V	359	1



LTE Band 7
CHANNEL BANDWIDTH: 5MHz / QPSK
CH20775

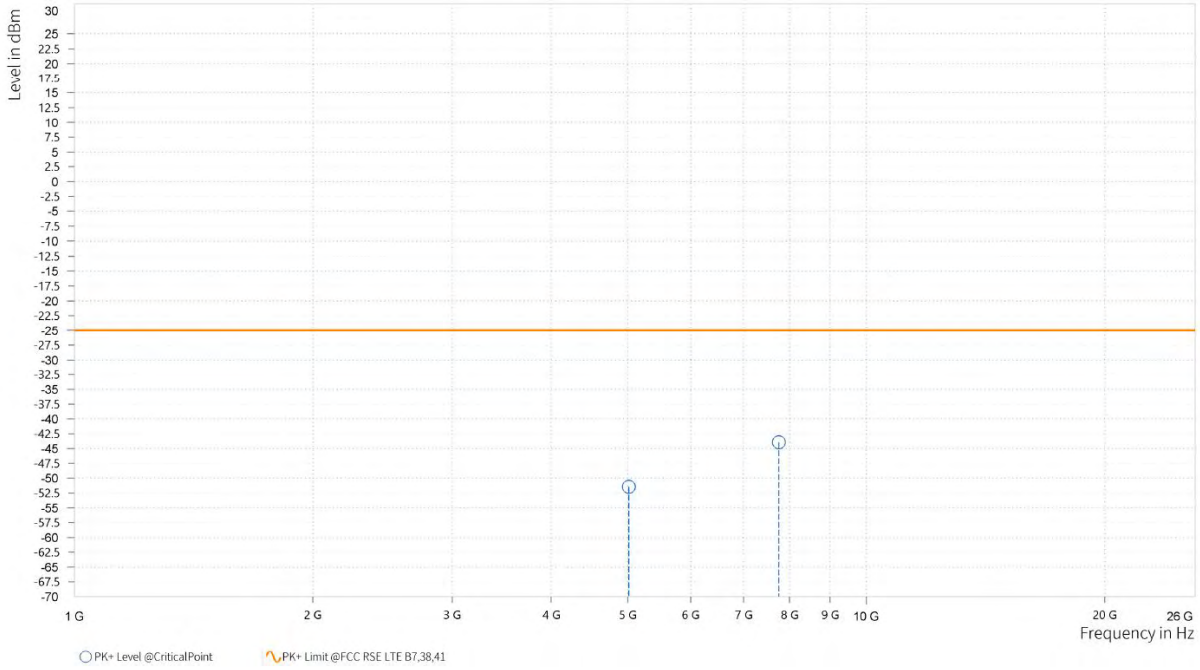
MODE	TX channel 20775	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,016.000	-52.29	-25.00	27.29	25.63	H	1	2
5	7,751.000	-43.97	-25.00	18.97	32.83	H	359	1



MODE	TX channel 20775	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	5,013.000	-51.44	-25.00	26.44	25.46	V	359	2
5	7,753.000	-43.96	-25.00	18.96	33.03	V	272.2	1

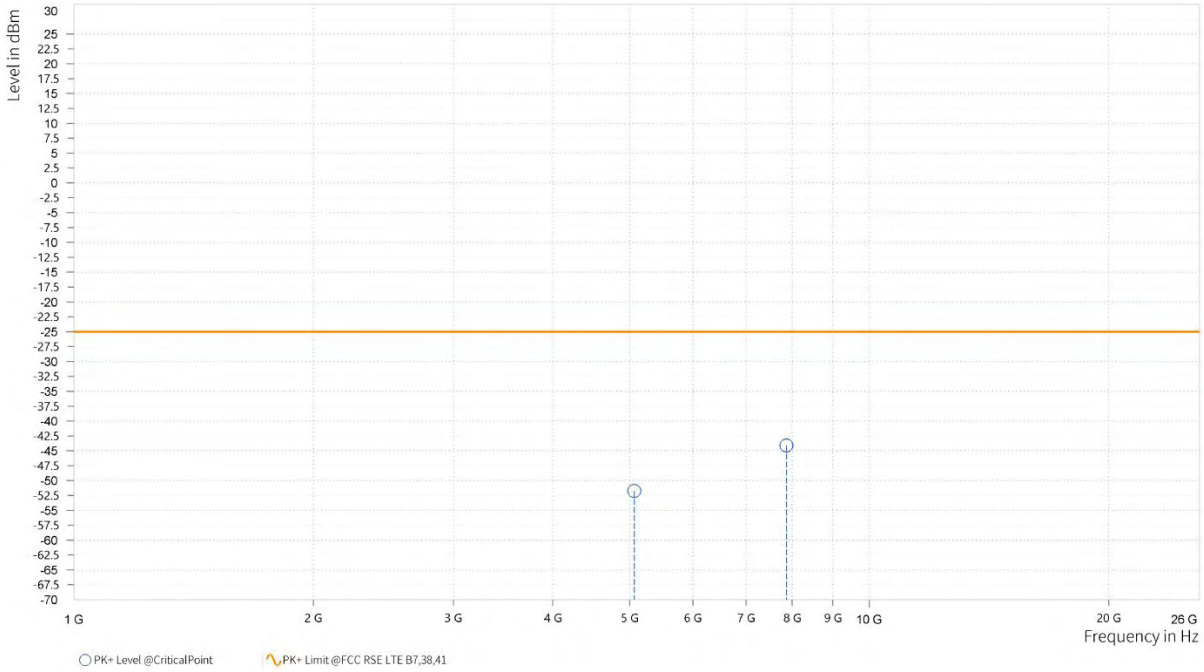


CHANNEL BANDWIDTH: 5MHz / QPSK

CH21100

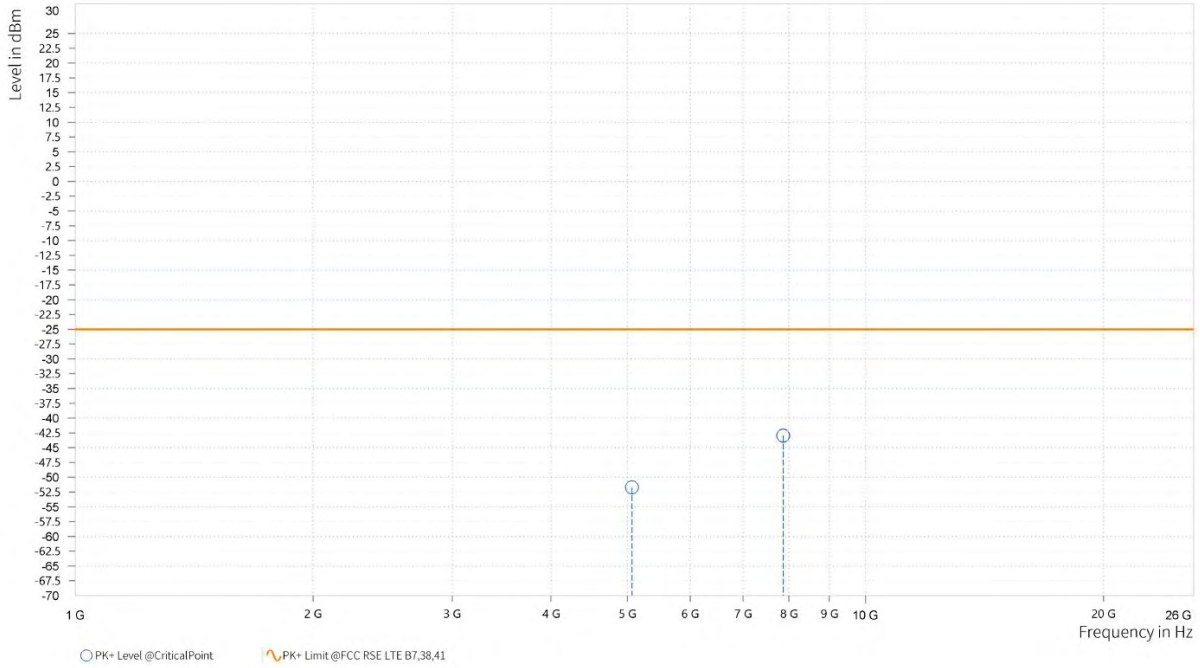
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,065.500	-51.75	-25.00	26.75	25.73	H	160.7	2
5	7,870.000	-44.10	-25.00	19.10	32.99	H	359	1



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	5,065.500	-51.72	-25.00	26.72	25.65	V	359	2
5	7,870.500	-42.97	-25.00	17.97	33.05	V	1	1

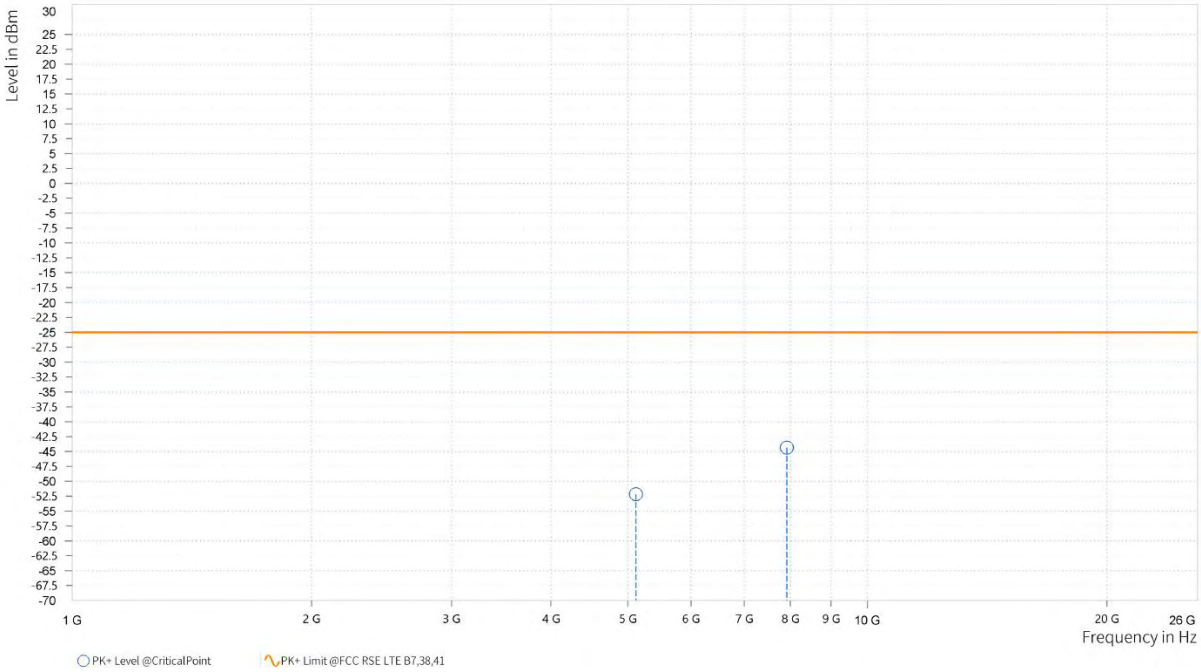


CHANNEL BANDWIDTH: 5MHz / QPSK

CH21425

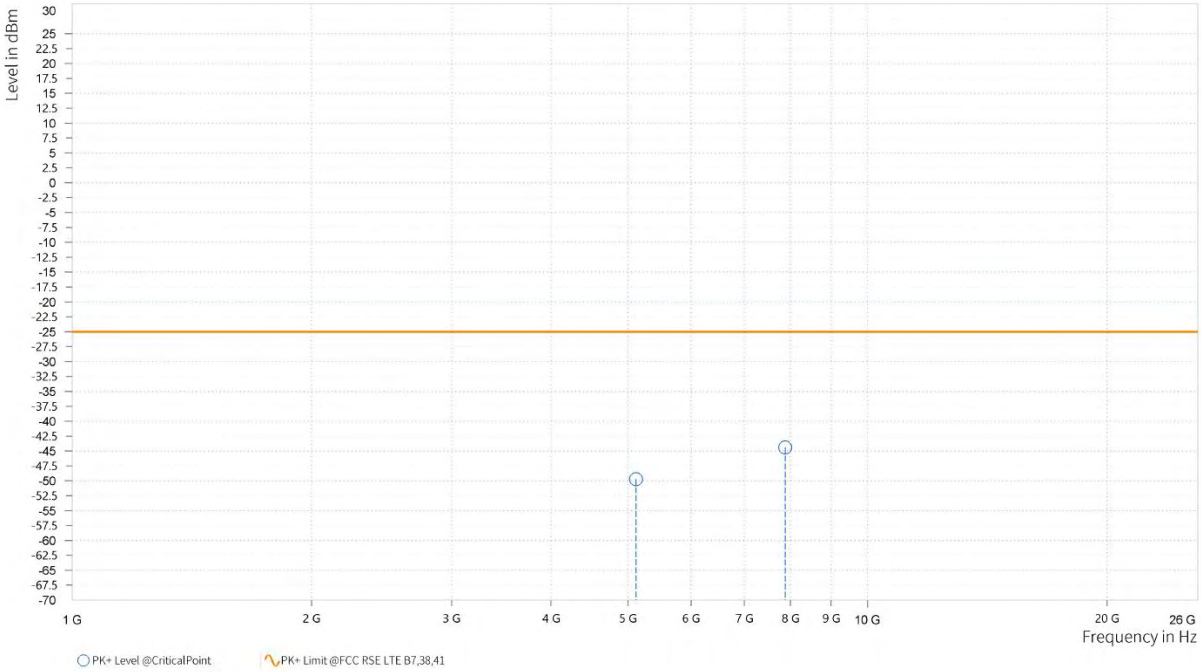
MODE	TX channel 21425	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,116.000	-52.16	-25.00	27.16	26.17	H	1	1
5	7,920.000	-44.34	-25.00	19.34	33.00	H	1	1



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

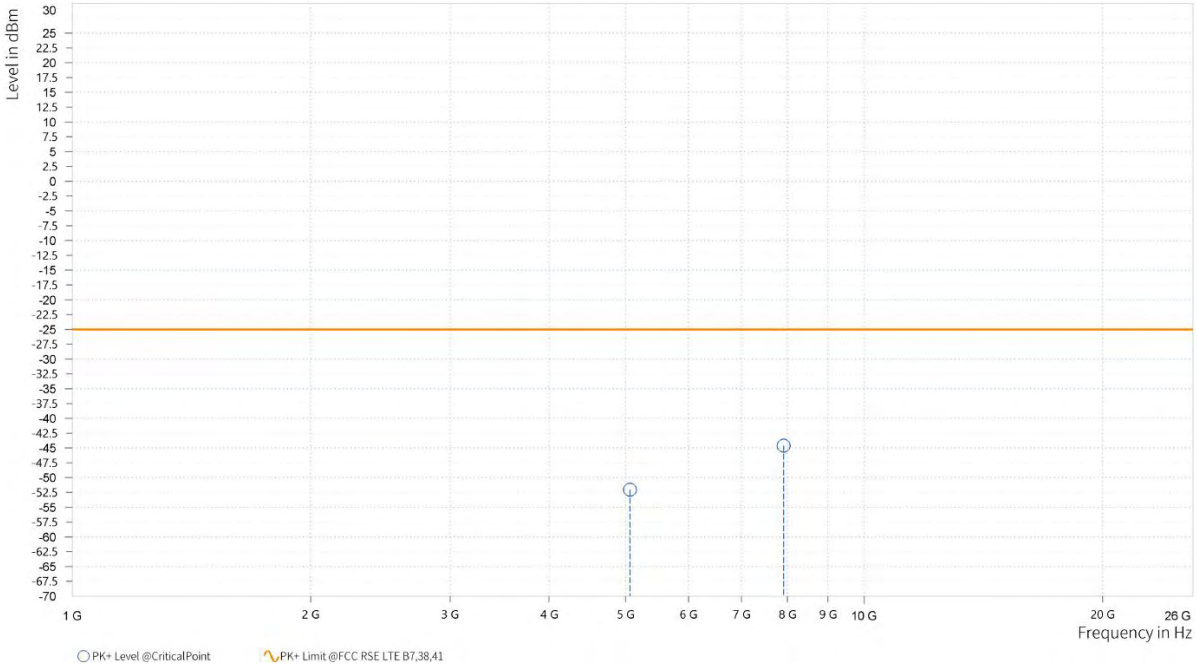
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,115.500	-49.73	-25.00	24.73	26.23	V	359	1
5	7,880.000	-44.42	-25.00	19.42	33.04	V	359	2



CHANNEL BANDWIDTH: 10MHz / QPSK

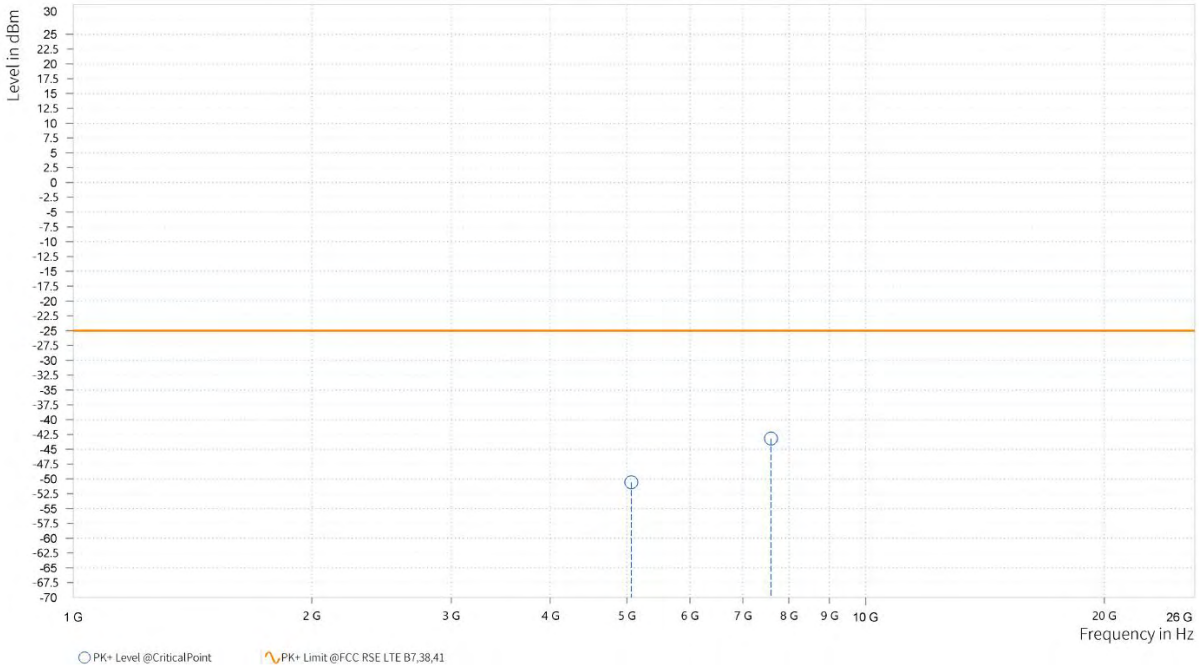
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,061.500	-52.02	-25.00	27.02	25.69	H	187.2	1
5	7,911.500	-44.61	-25.00	19.61	33.01	H	272.1	1



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

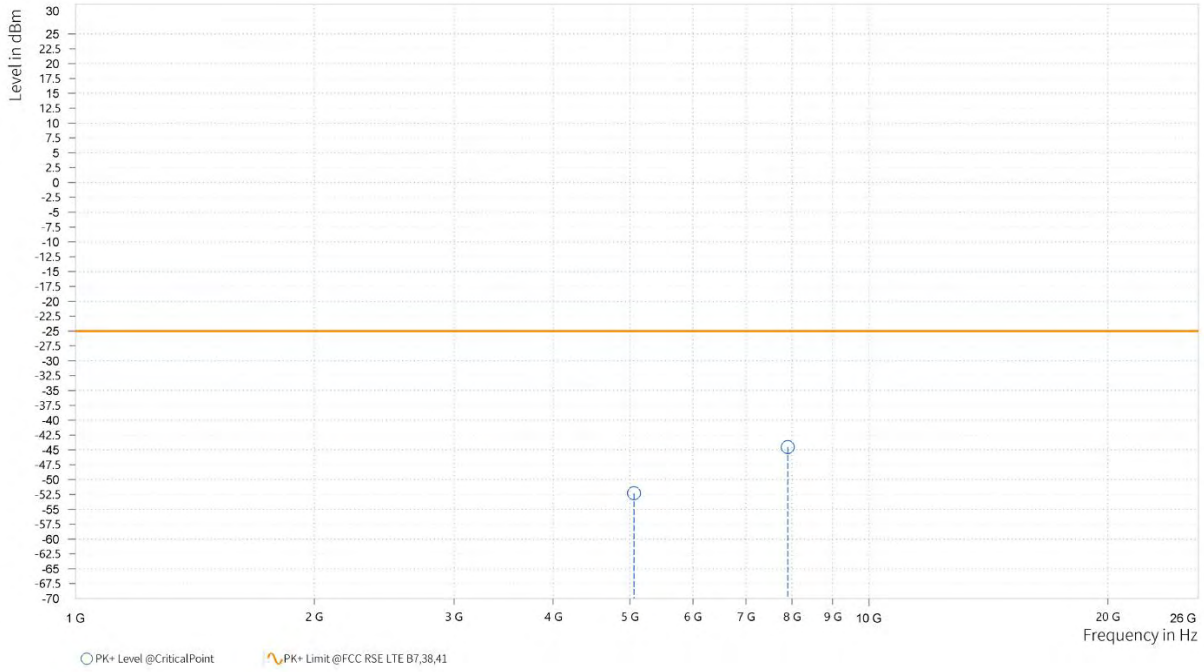
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,061.000	-50.57	-25.00	25.57	25.59	V	359	2
5	7,592.000	-43.19	-25.00	18.19	32.20	V	74.8	2



CHANNEL BANDWIDTH: 15MHz / QPSK

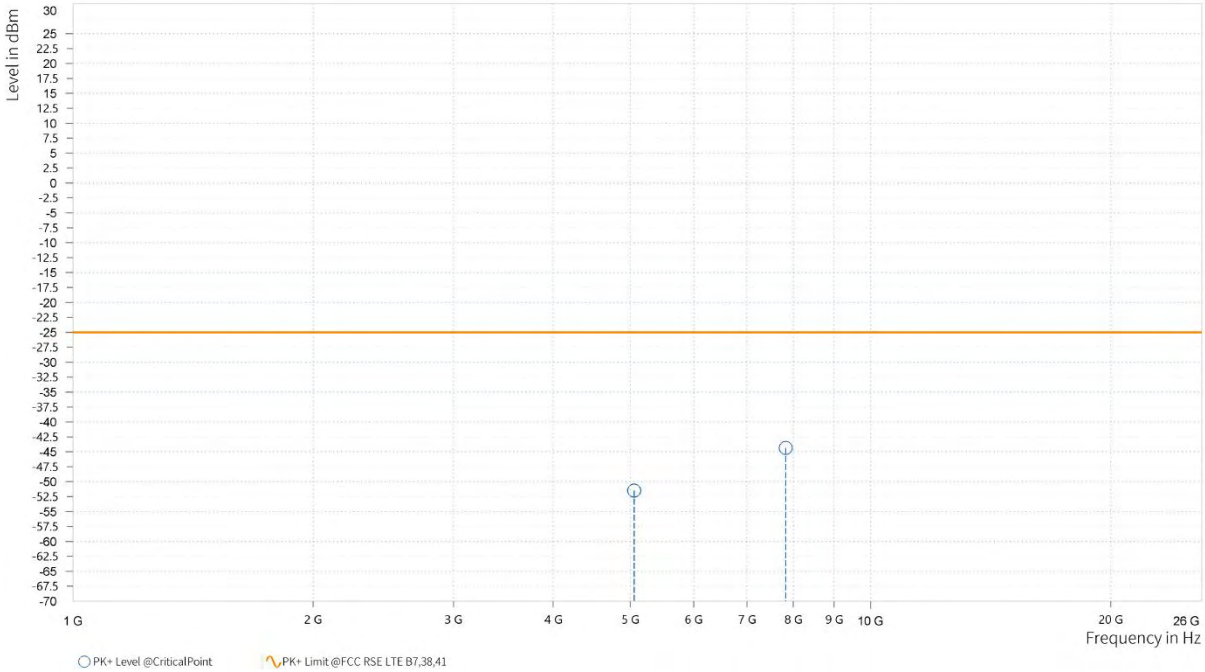
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,056.500	-52.30	-25.00	27.30	25.68	H	359.1	1
5	7,900.500	-44.53	-25.00	19.53	33.01	H	0.9	2



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

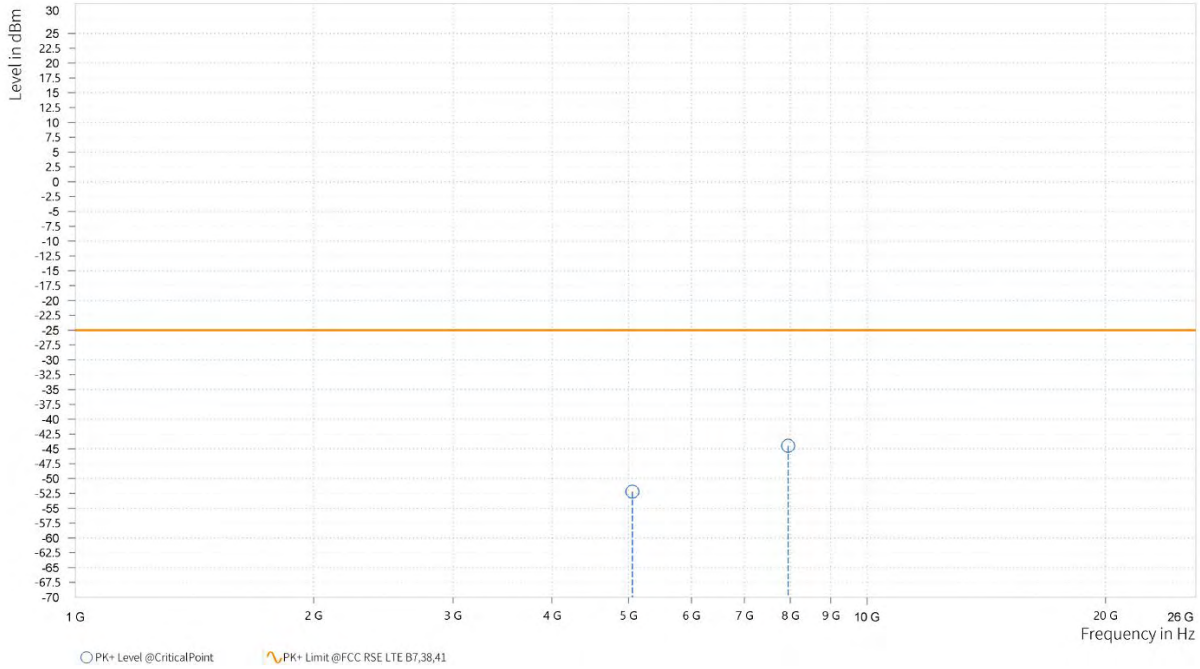
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,055.000	-51.48	-25.00	26.48	25.54	V	225.4	1
5	7,830.500	-44.35	-25.00	19.35	33.07	V	1	1



CHANNEL BANDWIDTH: 20MHz / QPSK

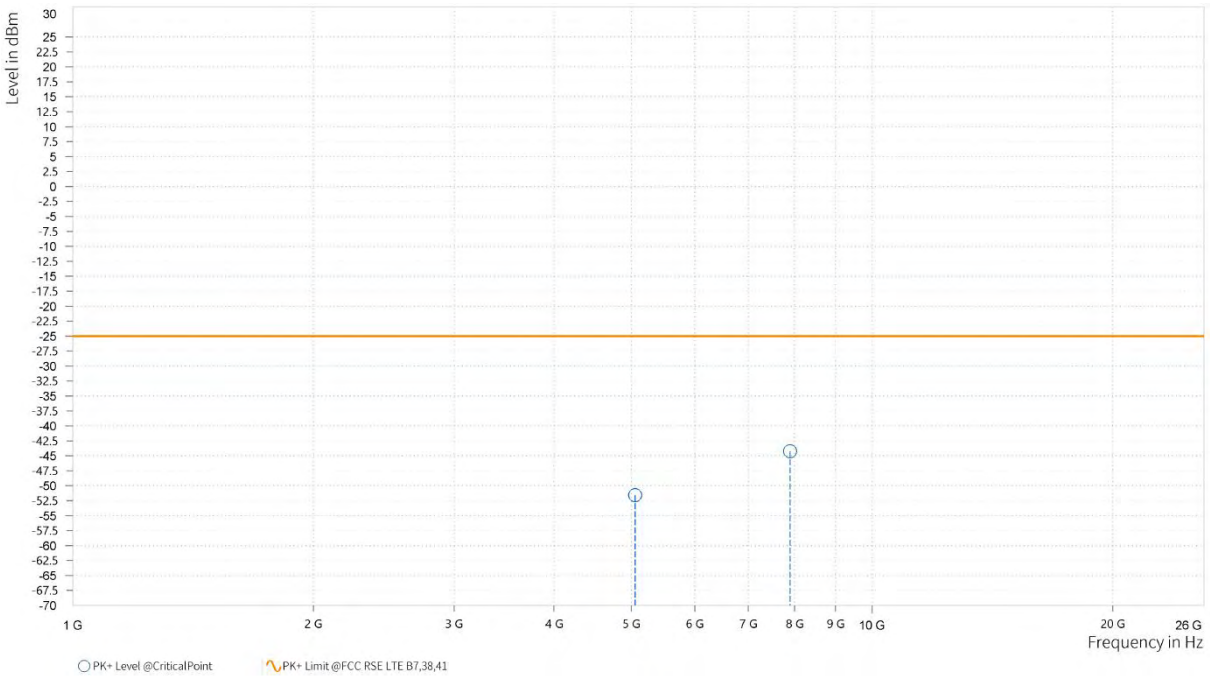
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	5,052.500	-52.22	-25.00	27.22	25.67	H	187.2	1
5	7,948.000	-44.50	-25.00	19.50	32.99	H	73.5	2



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	-51.59	-25.00	26.59	25.52	V	1	2
5	7,894.500	-44.23	-25.00	19.23	33.04	V	273.3	1

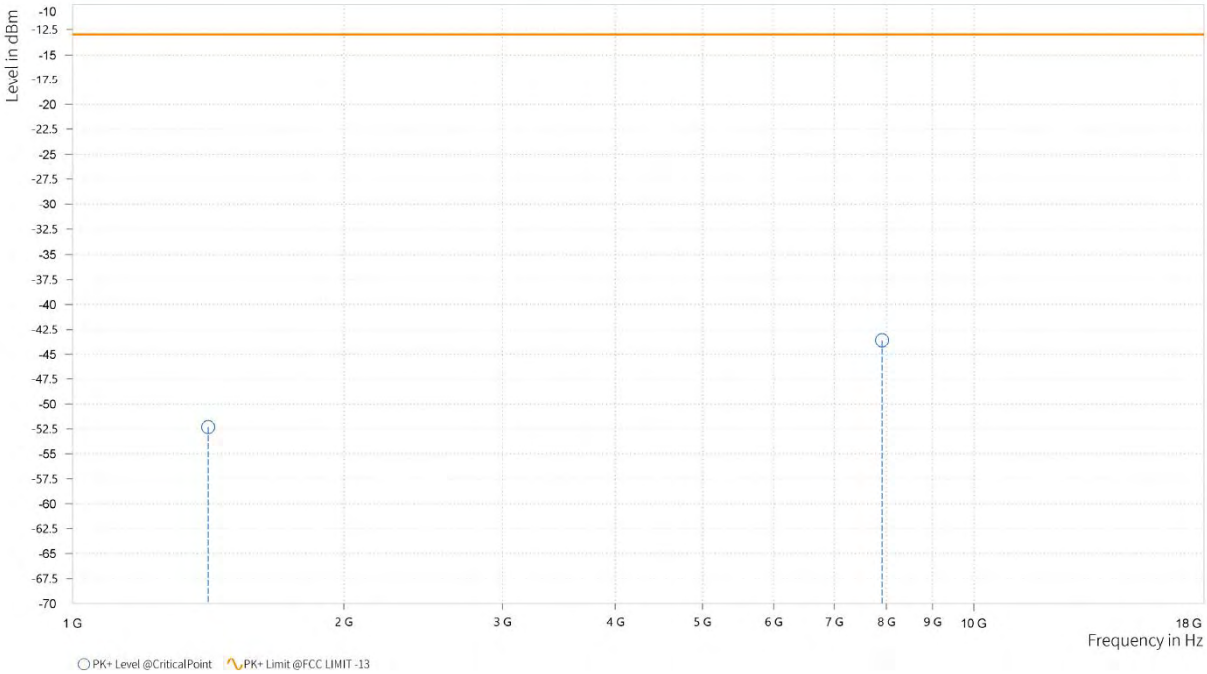


LTE BAND 12

CHANNEL BANDWIDTH: 1.4MHz / QPSK

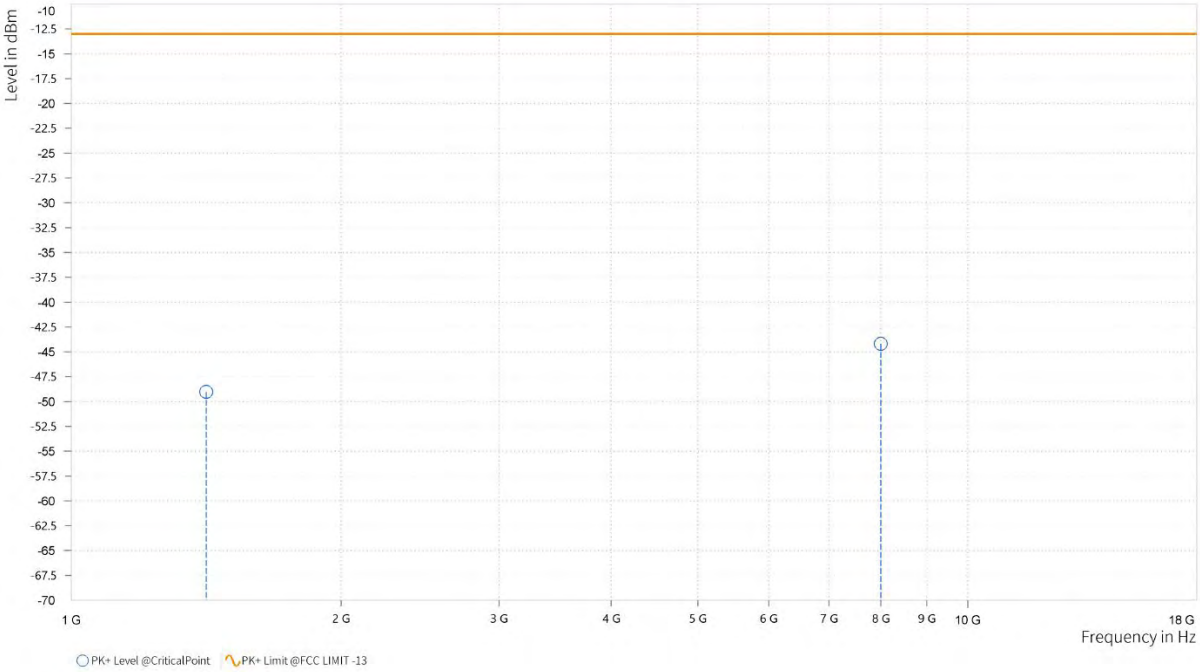
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,414.000	-52.32	-13.00	39.32	13.18	H	359	1
5	7,912.000	-43.60	-13.00	30.60	33.01	H	1	1



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

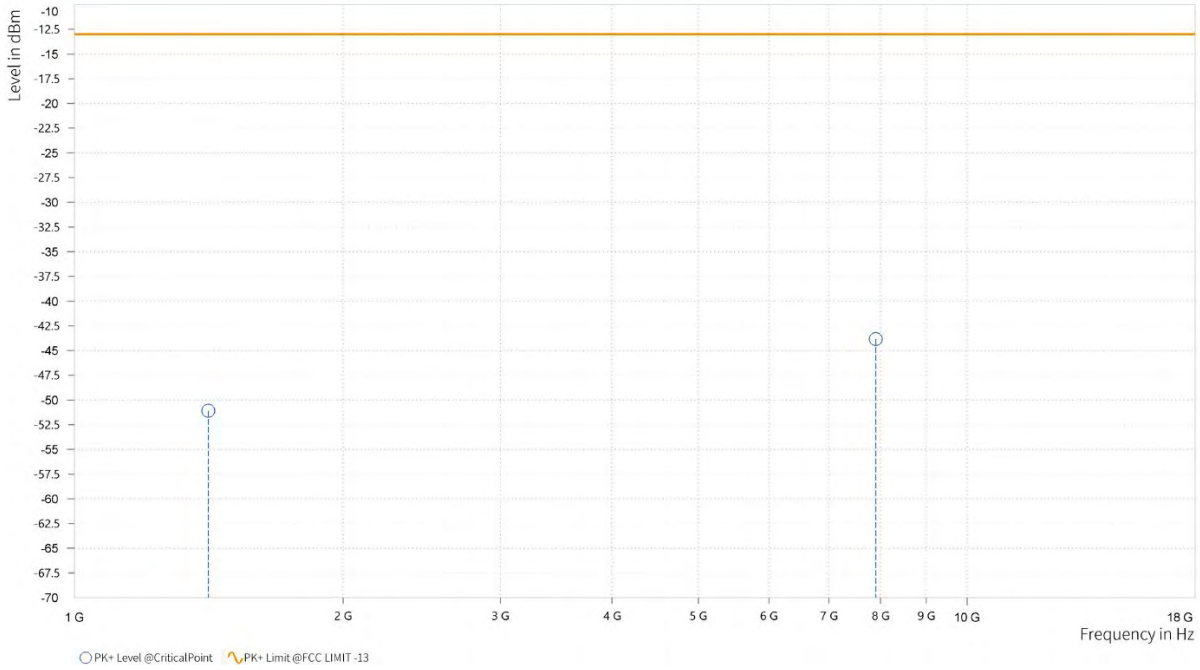
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,414.000	-49.02	-13.00	36.02	13.25	V	62.9	1
5	7,996.500	-44.20	-13.00	31.20	33.35	V	359.1	1



CHANNEL BANDWIDTH: 3MHz / QPSK

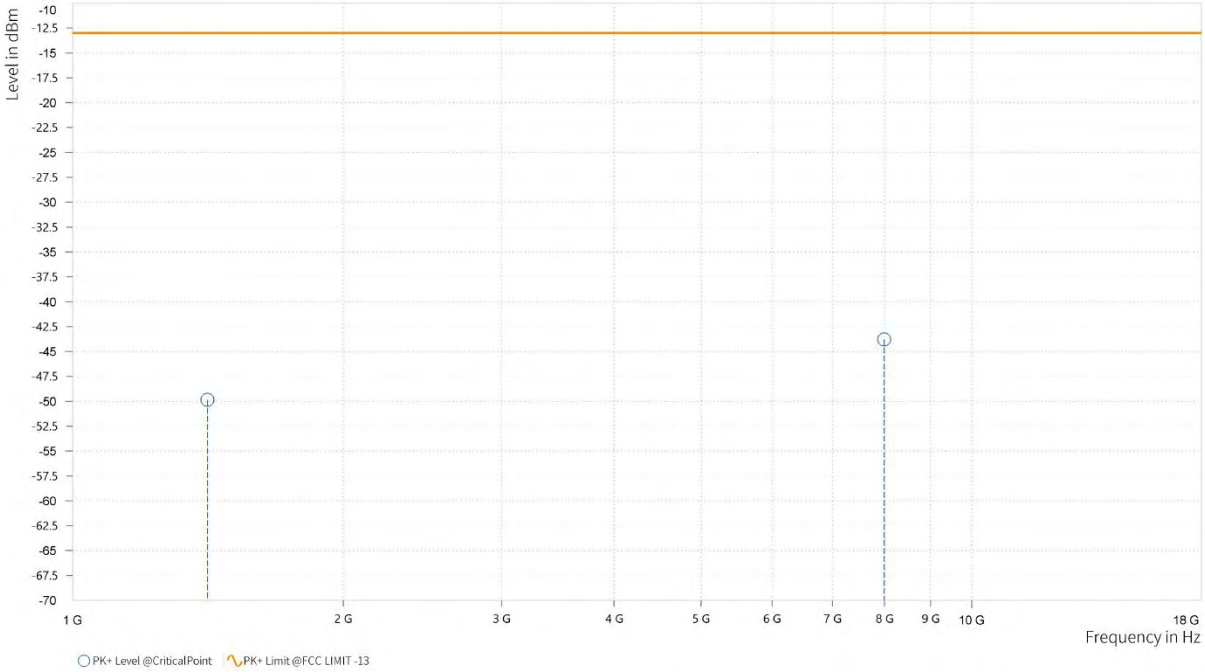
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,412.500	-51.08	-13.00	38.08	13.10	H	359	2
5	7,902.000	-43.84	-13.00	30.84	33.01	H	359	2



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

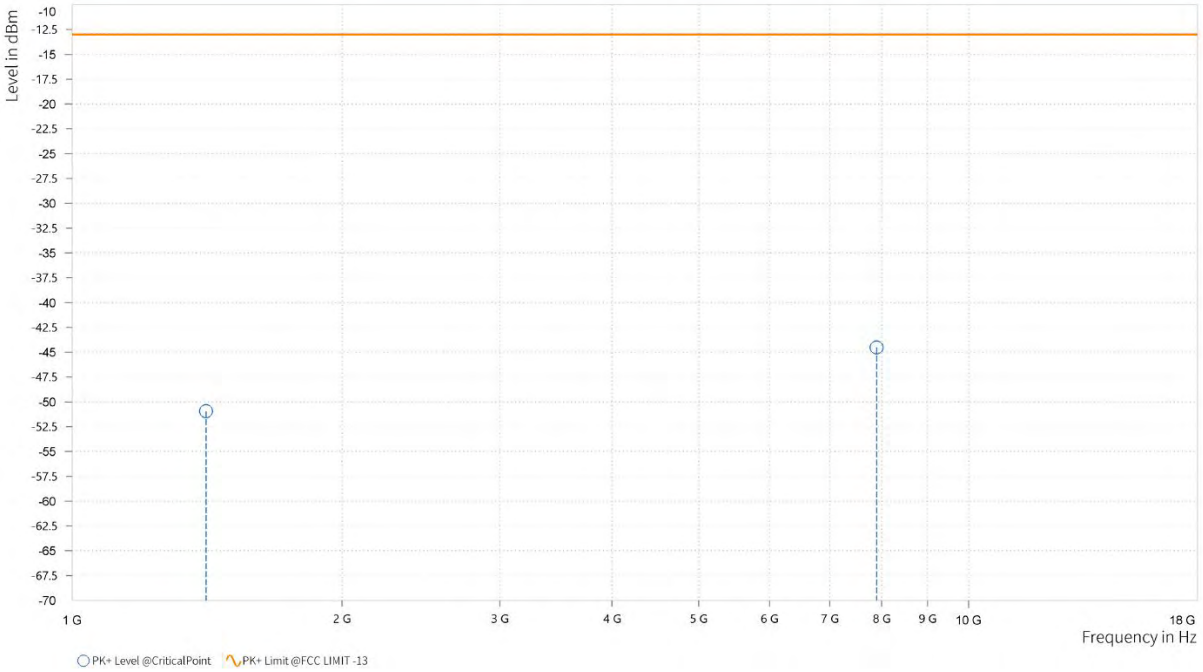
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,412.500	-49.85	-13.00	36.85	13.19	V	62.9	1
5	7,995.000	-43.78	-13.00	30.78	33.34	V	0.9	2



CHANNEL BANDWIDTH: 5MHz / QPSK

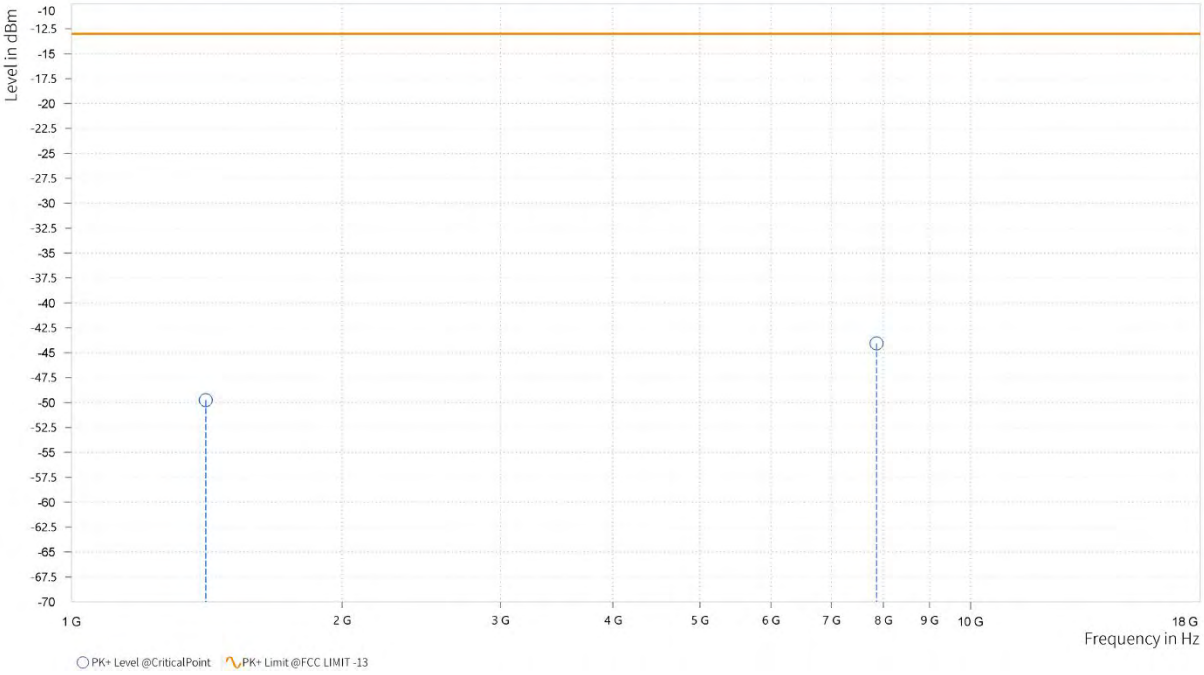
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,410.500	-50.95	-13.00	37.95	13.00	H	359	2
5	7,896.000	-44.51	-13.00	31.51	33.01	H	91.4	2



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	-49.76	-13.00	36.76	13.11	V	298.2	2
5	7,858.500	-44.08	-13.00	31.08	33.05	V	91.4	2

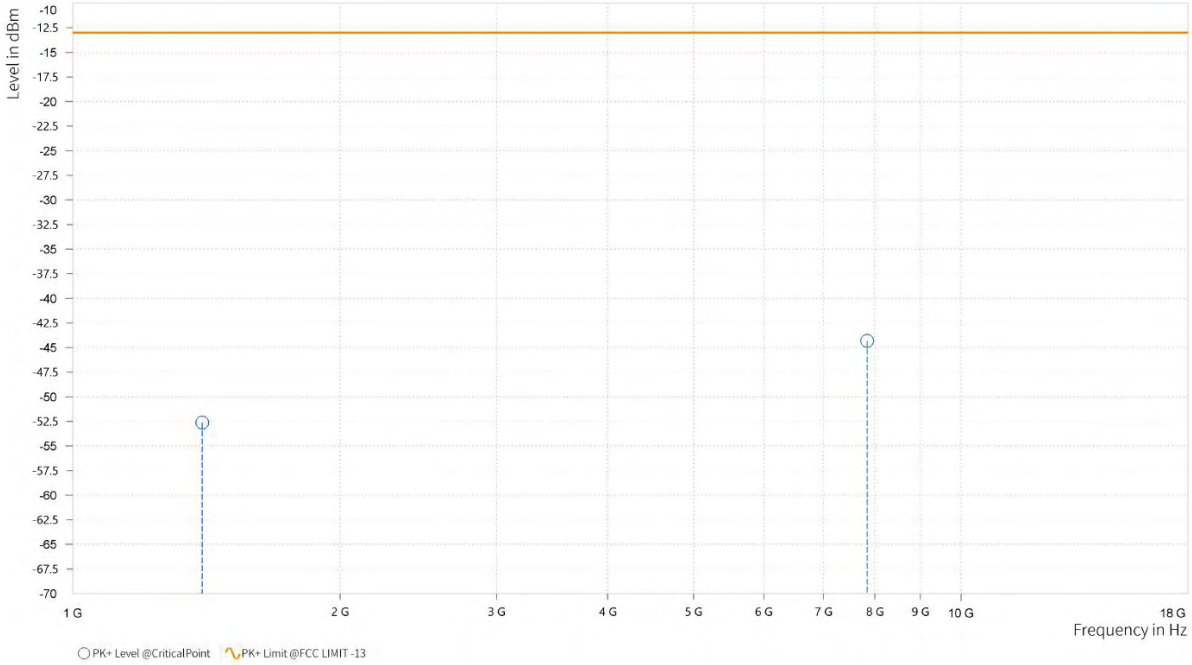


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23060

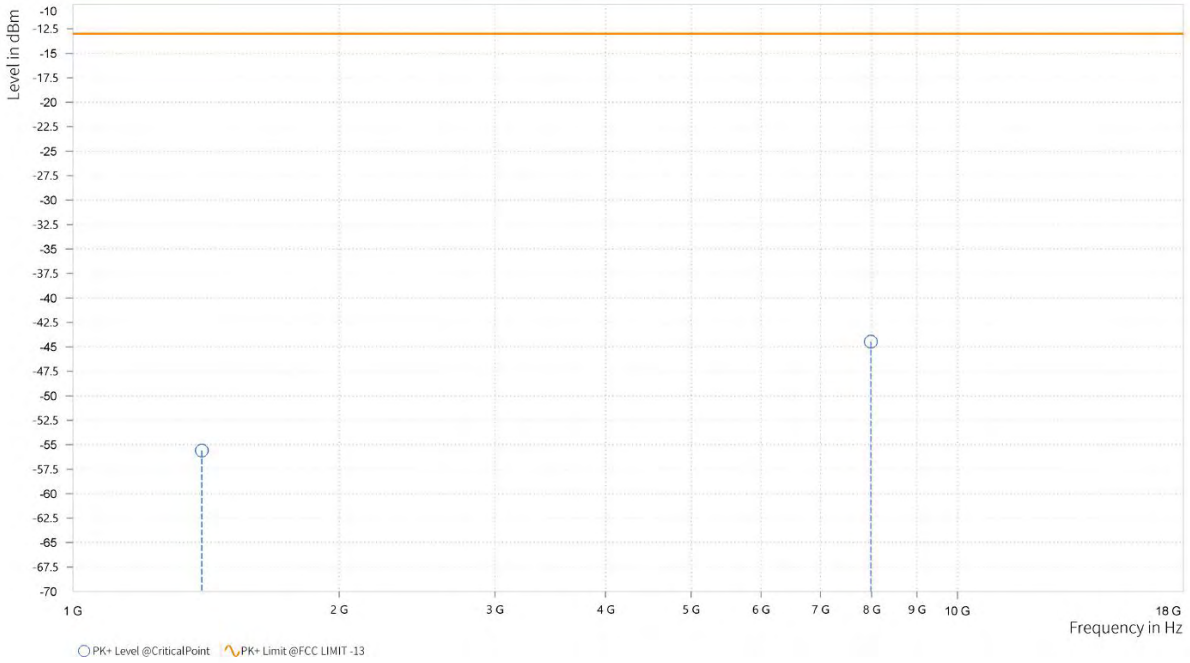
MODE	TX channel 23060	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,399.000	-52.62	-13.00	39.62	12.73	H	1	1
5	7,842.500	-44.33	-13.00	31.33	32.97	H	1	1



MODE	TX channel 23060	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

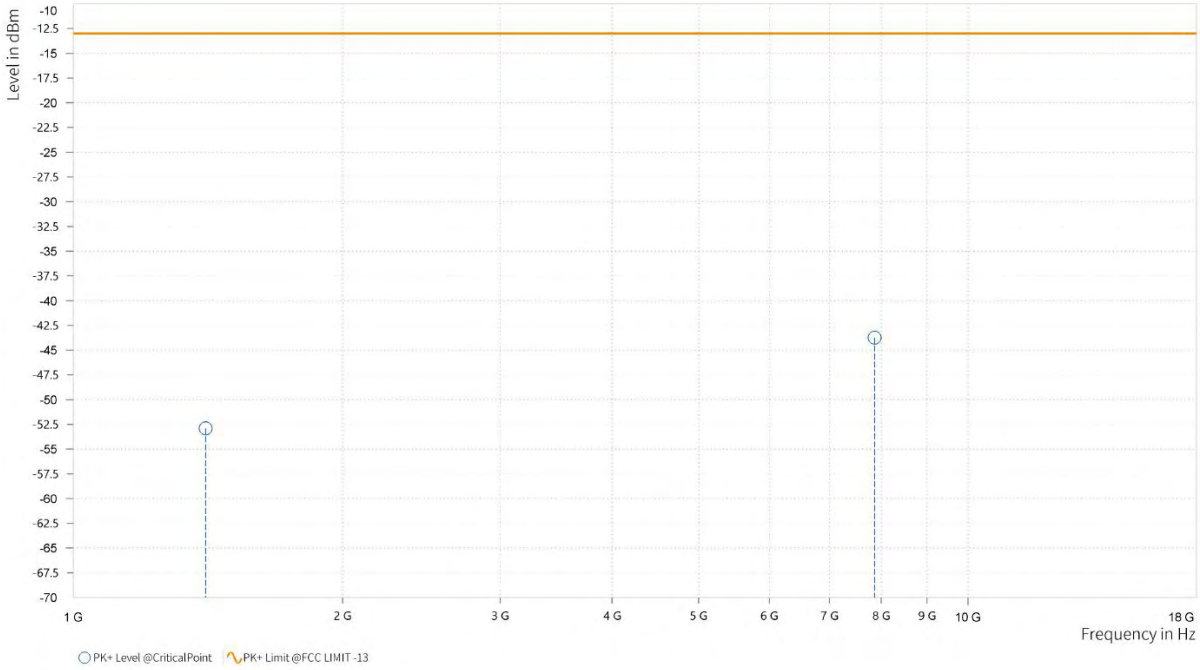
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,399.000	-55.61	-13.00	42.61	12.86	V	0.9	2
5	7,983.000	-44.46	-13.00	31.46	33.31	V	359.1	1



CH23095

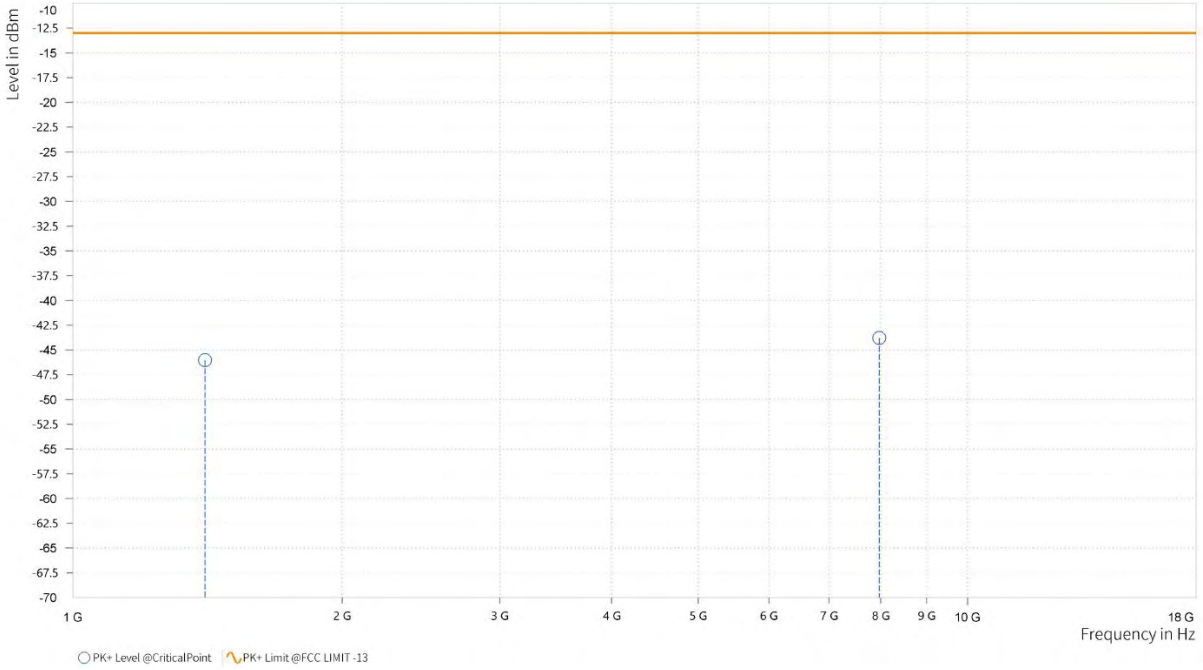
MODE	TX channel 23095	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,406.000	-52.89	-13.00	39.89	12.78	H	297	2
5	7,864.500	-43.73	-13.00	30.73	32.99	H	359	1



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

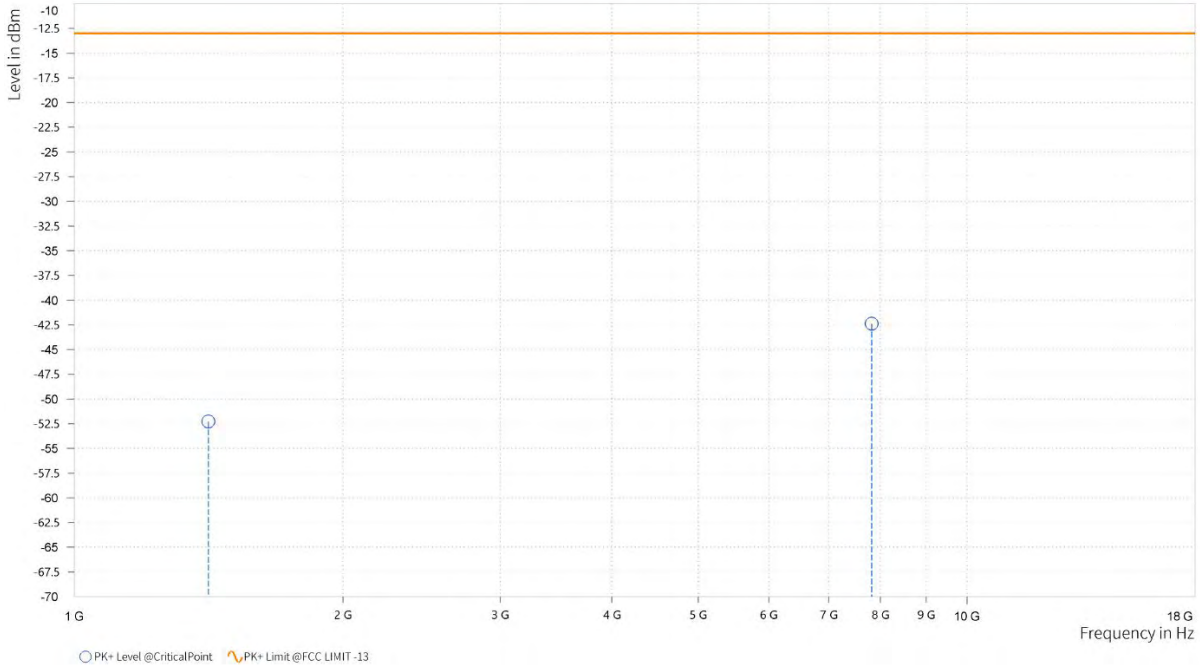
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,405.500	-46.04	-13.00	33.04	12.91	V	297	2
5	7,968.500	-43.79	-13.00	30.79	33.27	V	269.8	1



CH23060

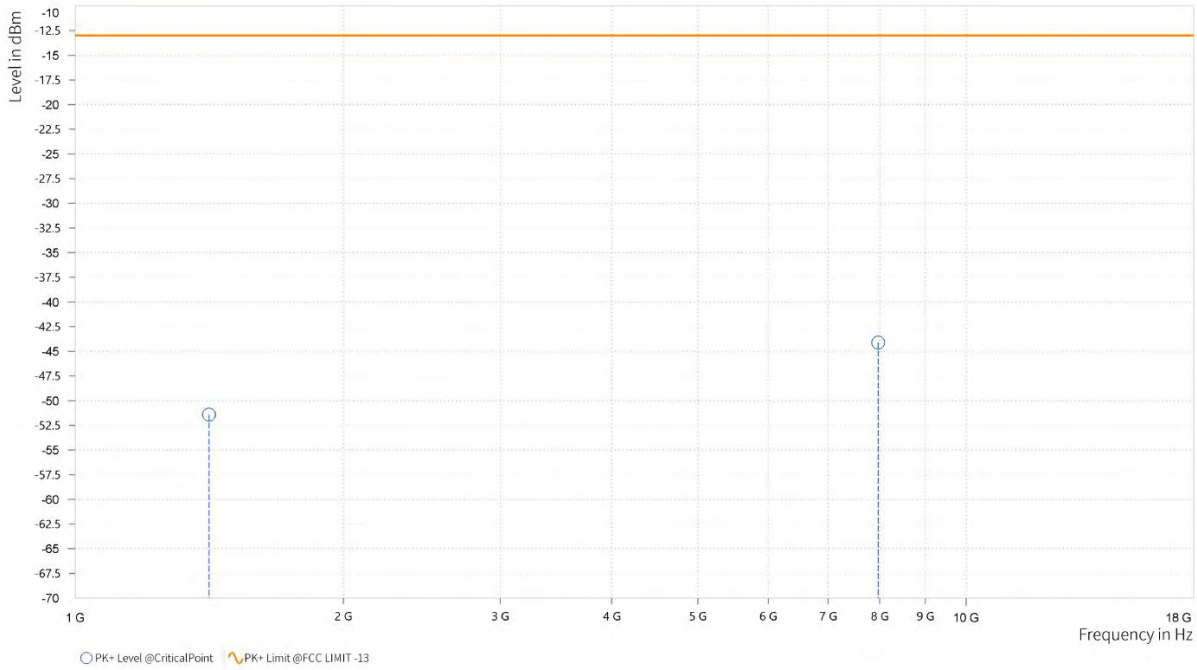
MODE	TX channel 23130	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,413.000	-52.26	-13.00	39.26	13.13	H	359.1	1
5	7,822.500	-42.38	-13.00	29.38	32.95	H	269.7	1



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	1,413.000	-51.42	-13.00	38.42	13.21	V	62.9	1
5	7,965.500	-44.11	-13.00	31.11	33.26	V	90.2	2



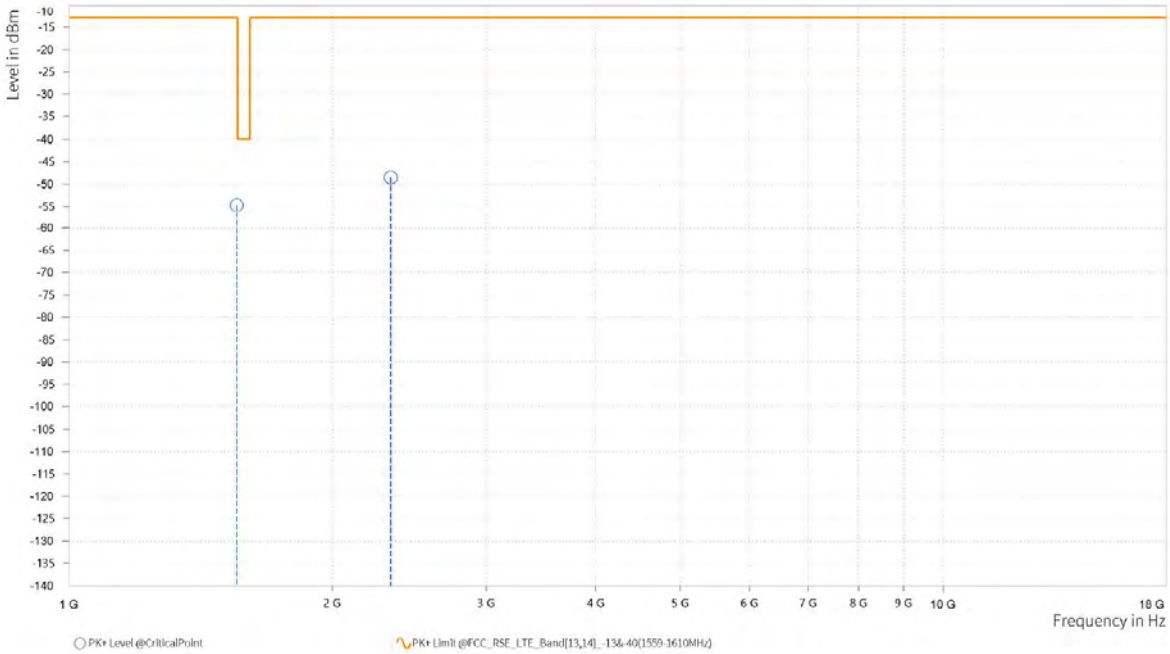
LTE B13

CHANNEL BANDWIDTH: 5MHz / QPSK

CH23205

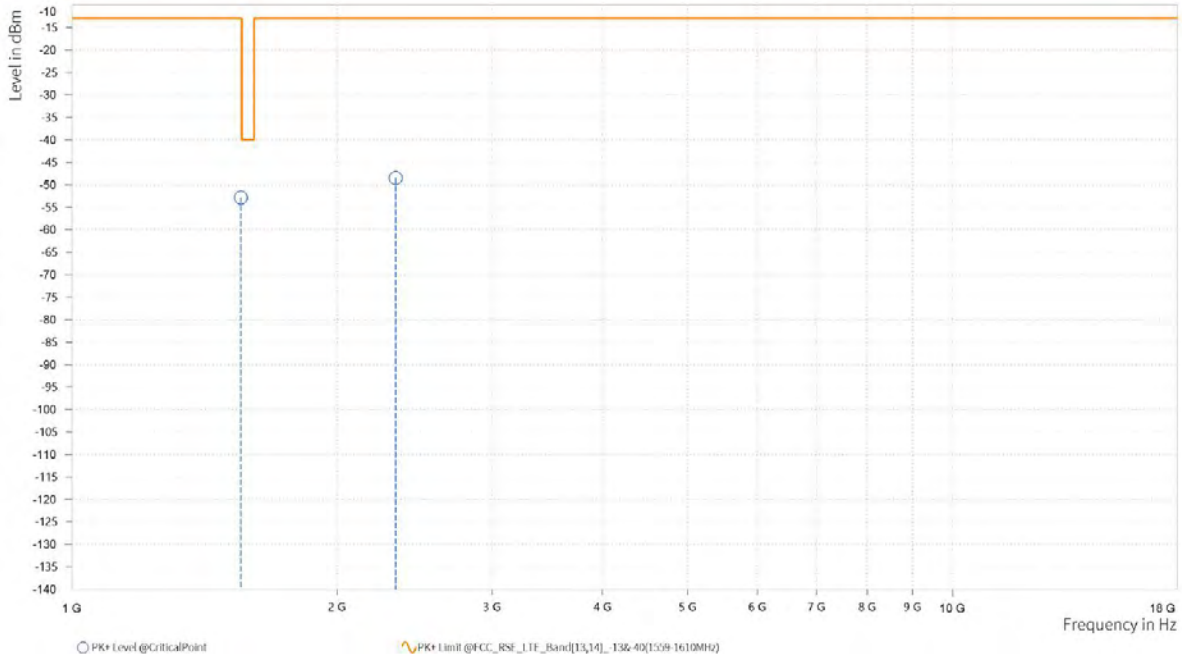
MODE	TX channel 23205	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,554.500	-54.70	-13.00	41.70	13.36	H	271	2
3	2,332.000	-48.54	-13.00	35.54	20.16	H	0.9	2



MODE	TX channel 23205	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

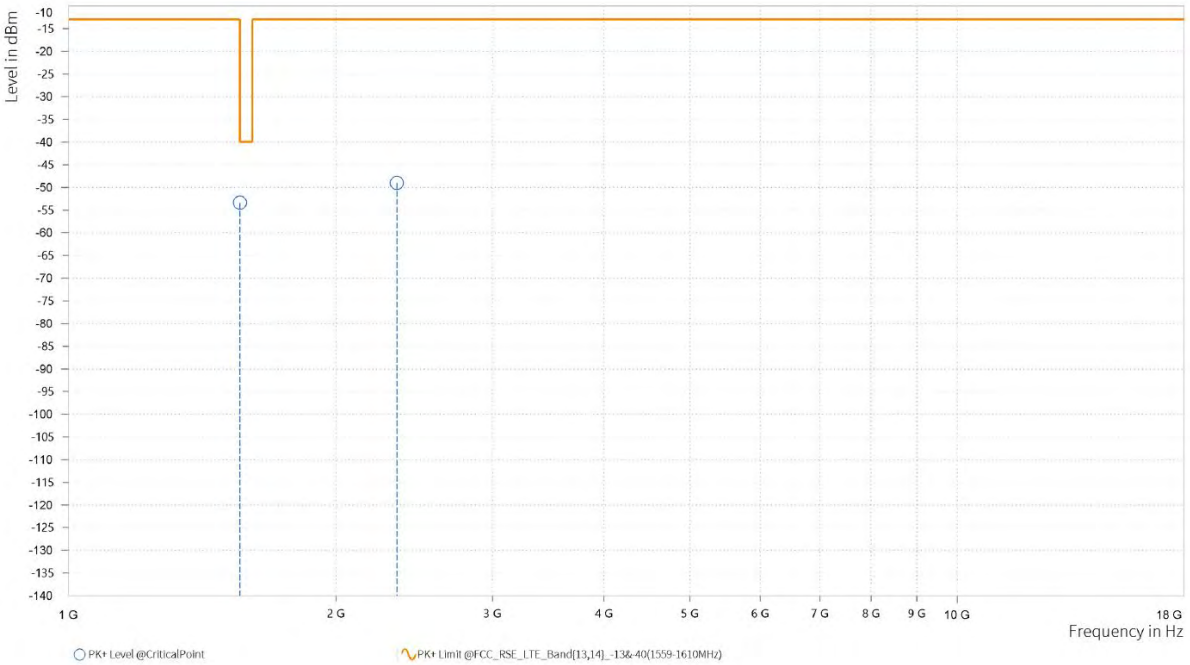
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,554.500	-52.84	-13.00	39.84	14.69	V	89	1
3	2,331.500	-48.47	-13.00	35.47	20.75	V	359	2



CH23230

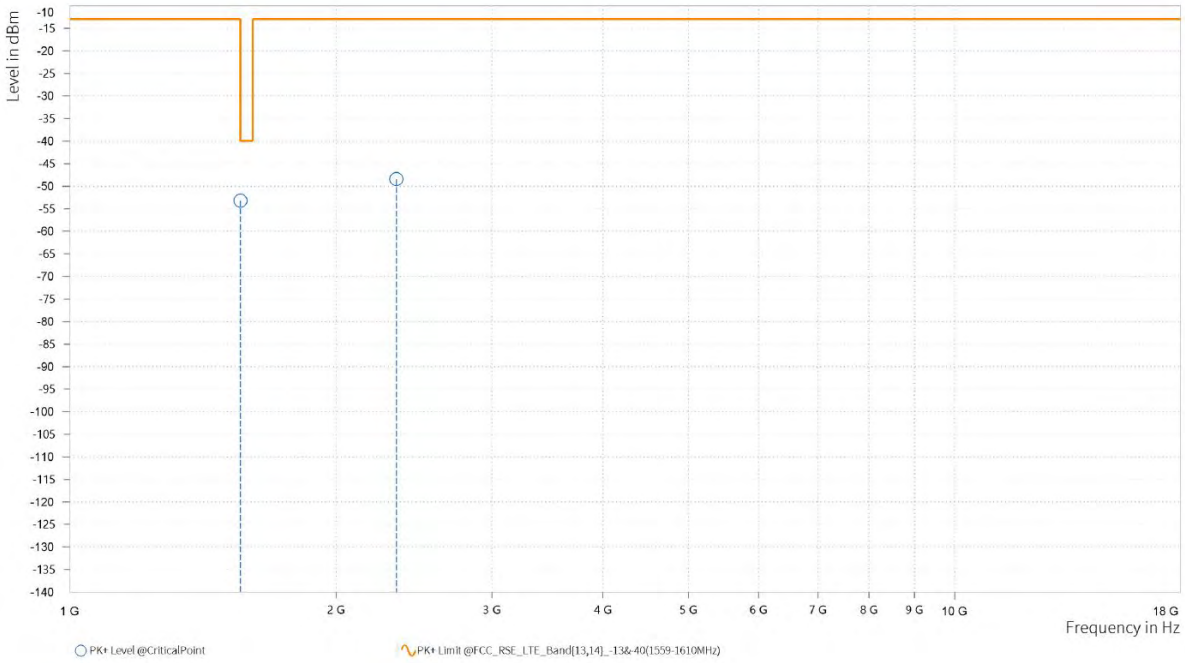
MODE	TX channel 23230	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-53.38	-40.00	13.38	13.33	H	359.1	1
3	2,340.000	-49.03	-13.00	36.03	20.41	H	359.1	1



MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

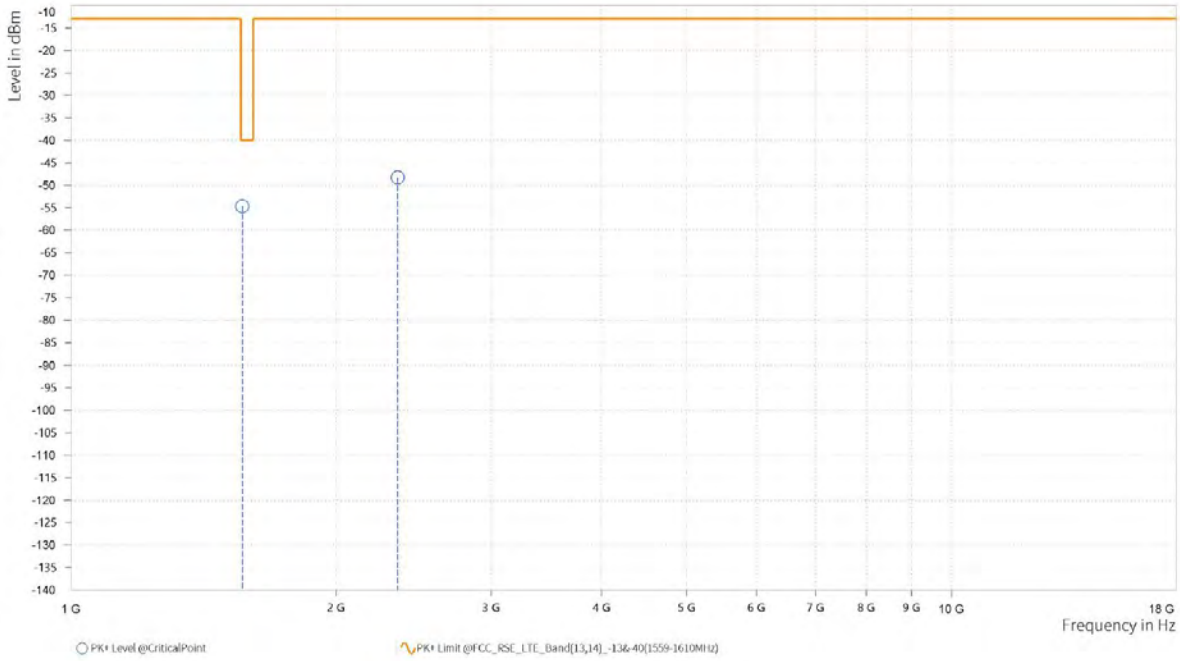
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-53.19	-40.00	13.19	14.72	V	89	1
3	2,339.000	-48.43	-13.00	35.43	20.79	V	359	2



CH23255

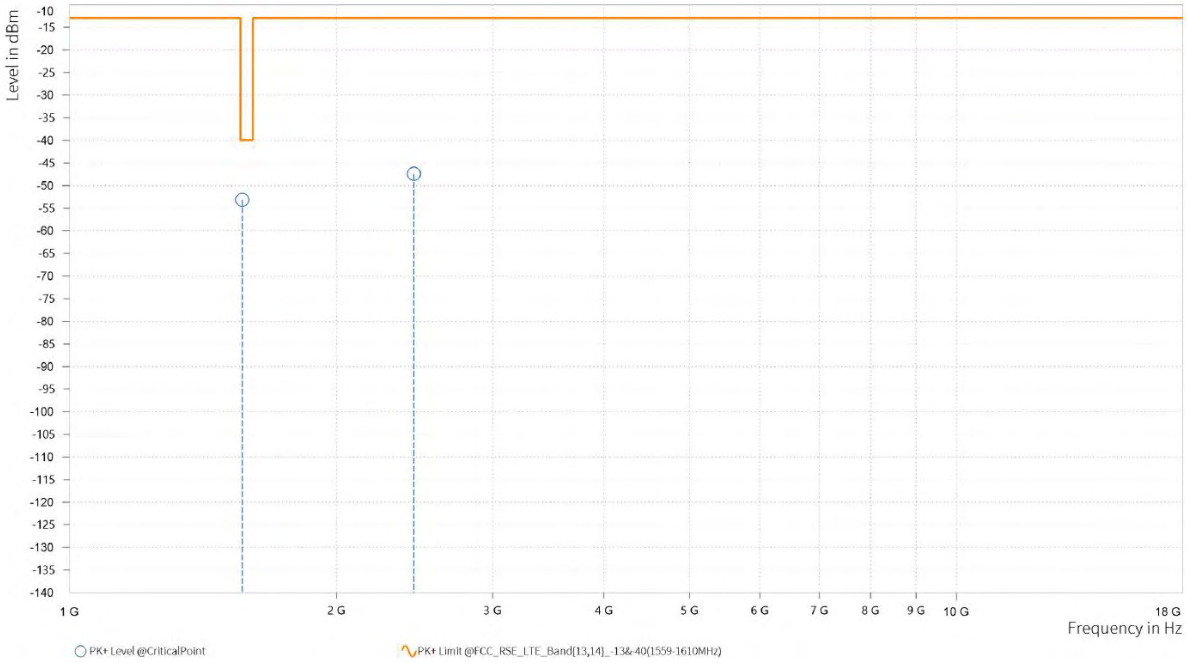
MODE	TX channel 23255	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,564.500	-54.64	-40.00	14.64	13.31	H	271	2
3	2,348.000	-48.30	-13.00	35.30	20.75	H	1	1



MODE	TX channel 23255	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

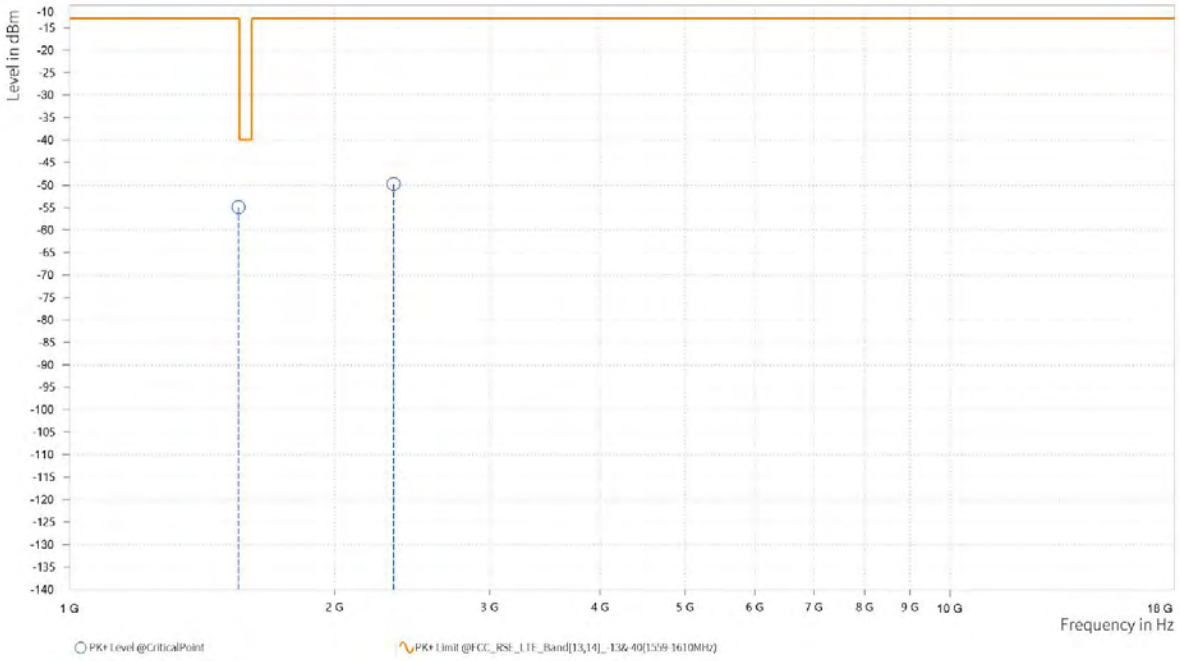
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,565.000	-53.11	-40.00	13.11	14.73	V	1	1
3	2,445.500	-47.43	-13.00	34.43	21.00	V	1	2



CHANNEL BANDWIDTH: 10MHz /QPSK

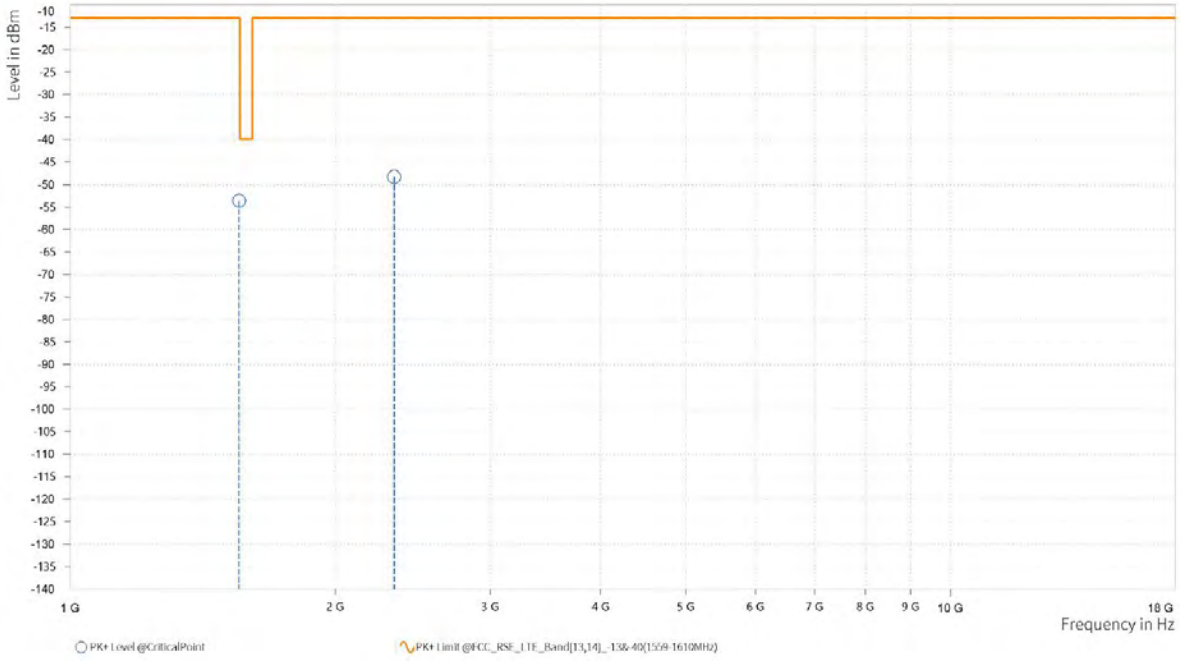
MODE	TX channel 23230	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-54.89	-13.00	41.89	13.36	H	359.1	1
3	2,333.000	-49.74	-13.00	36.74	20.19	H	0.9	2



MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	1,555.000	-53.60	-13.00	40.60	14.70	V	1	1
3	2,333.000	-48.26	-13.00	35.26	20.76	V	191.8	1

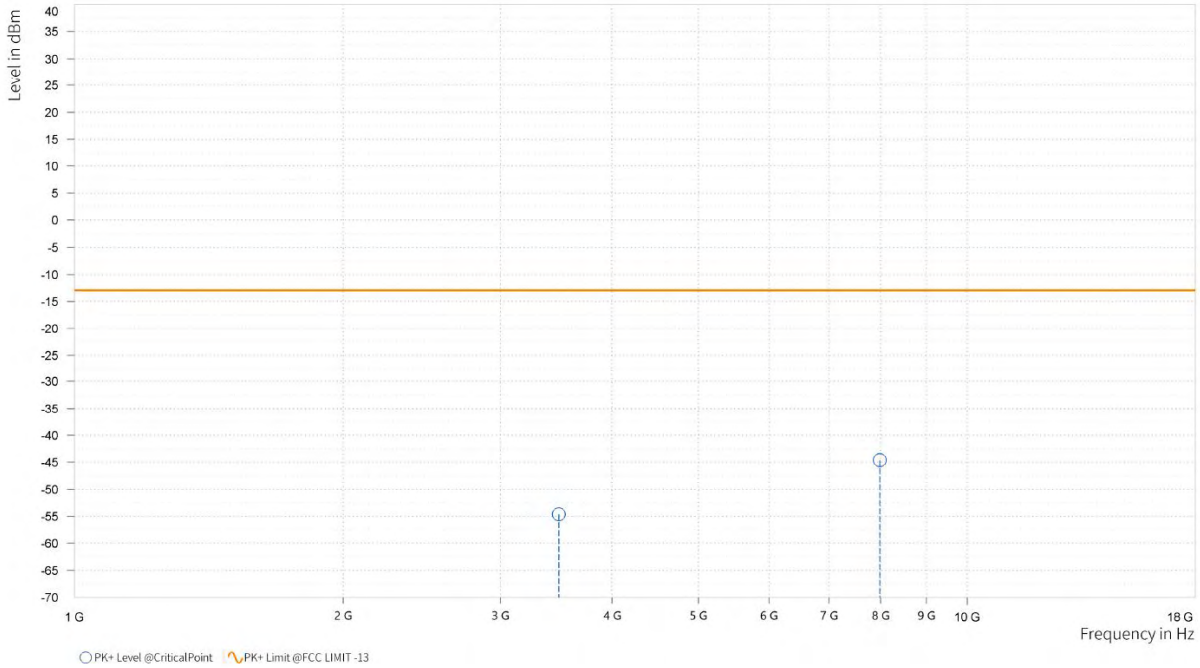


LTE B66

CHANNEL BANDWIDTH: 1.4MHz / QPSK

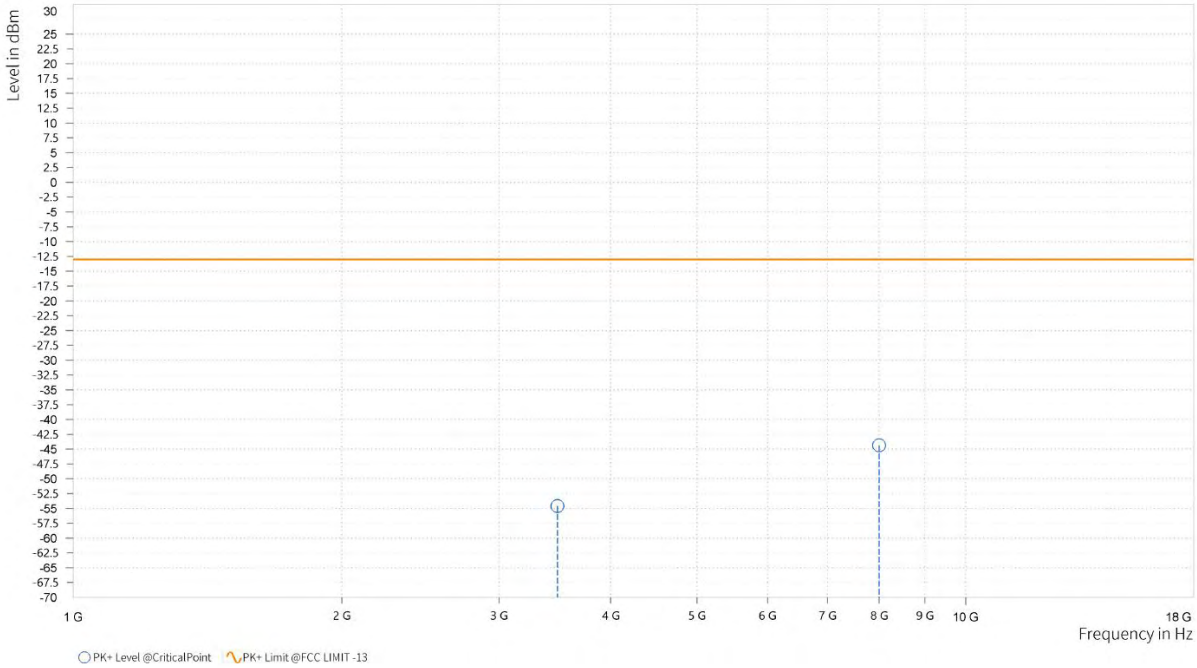
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,489.000	-54.61	-13.00	41.61	21.84	H	304.3	1
5	7,980.500	-44.63	-13.00	31.63	33.03	H	359.1	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	3,488.500	-54.59	-13.00	41.59	21.93	V	359	1
5	7,996.500	-44.34	-13.00	31.34	33.35	V	359	1

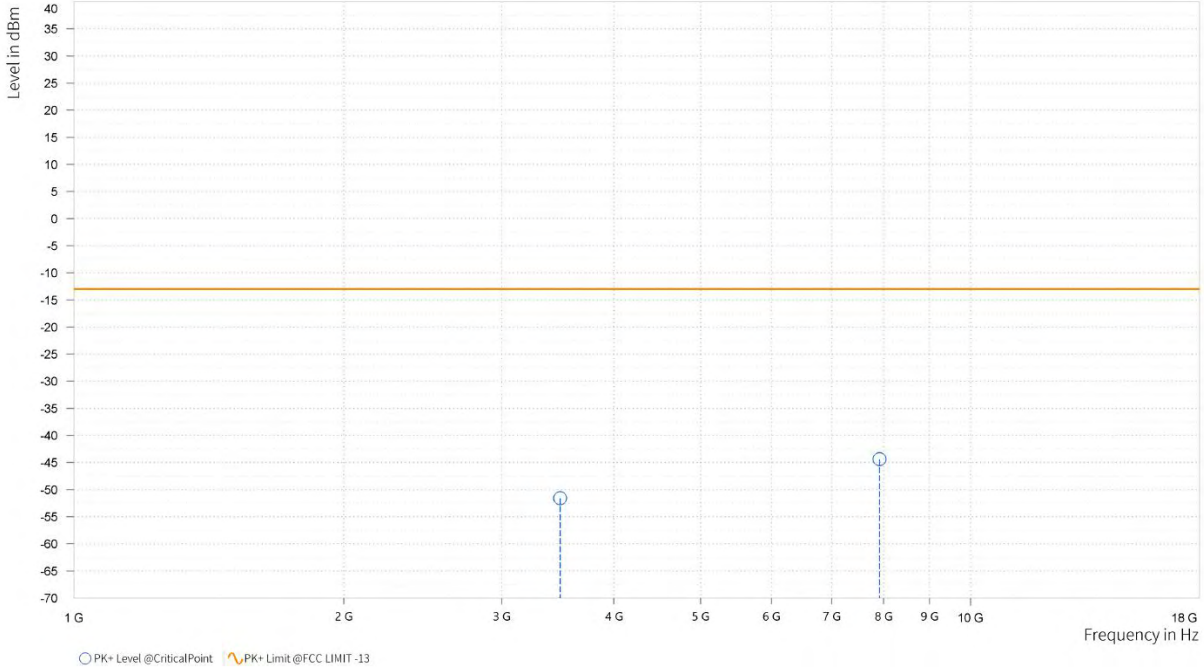


CHANNEL BANDWIDTH: 3MHz / QPSK

CH132322

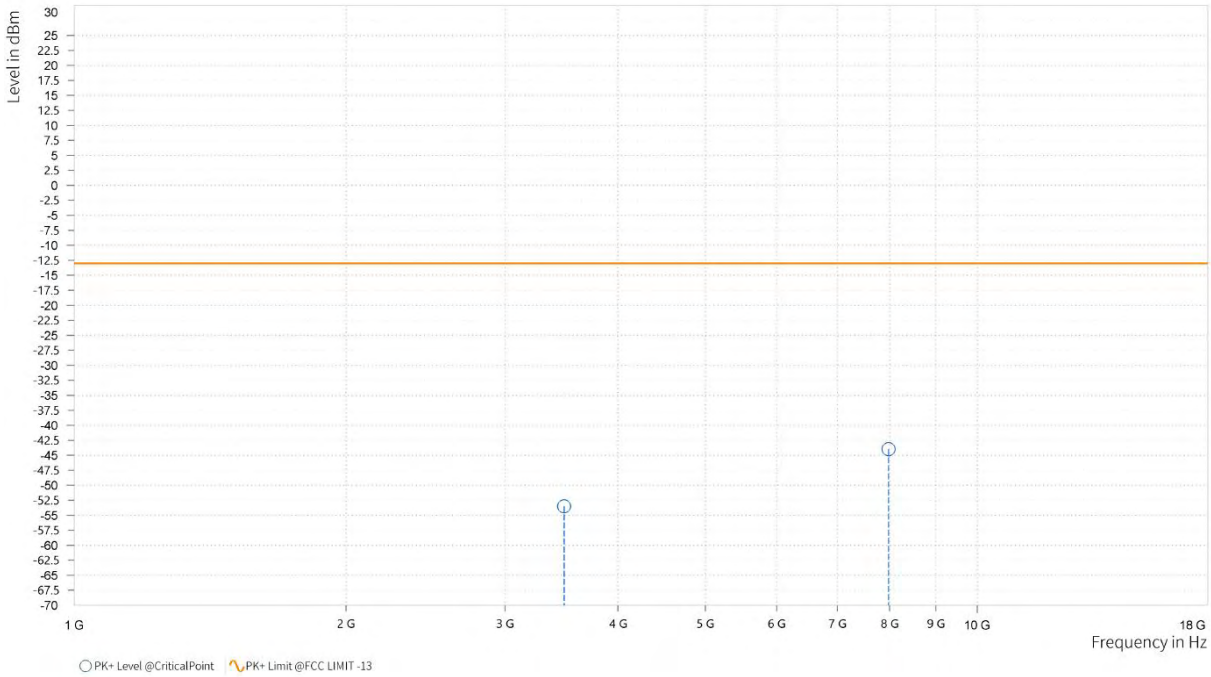
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.000	-51.60	-13.00	38.60	21.84	H	213.5	1
5	7,916.000	-44.39	-13.00	31.39	33.01	H	0.9	2



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

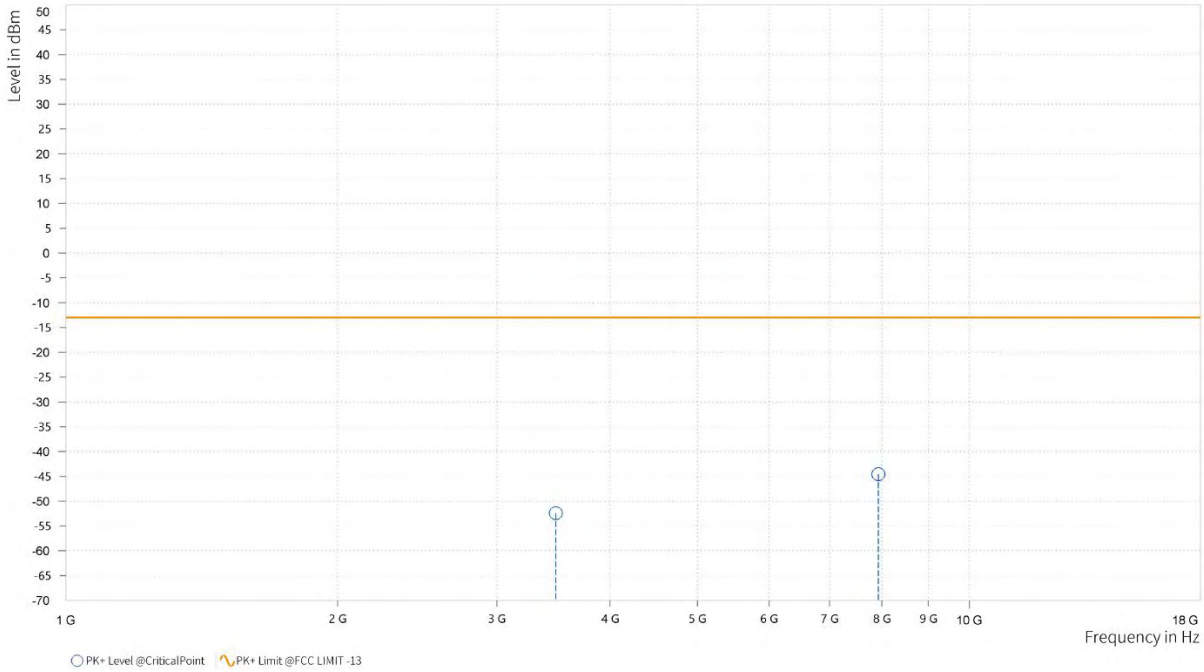
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,487.500	-53.51	-13.00	40.51	21.93	V	1	1
5	7,978.500	-43.98	-13.00	30.98	33.29	V	73.5	2



CHANNEL BANDWIDTH: 5MHz / QPSK

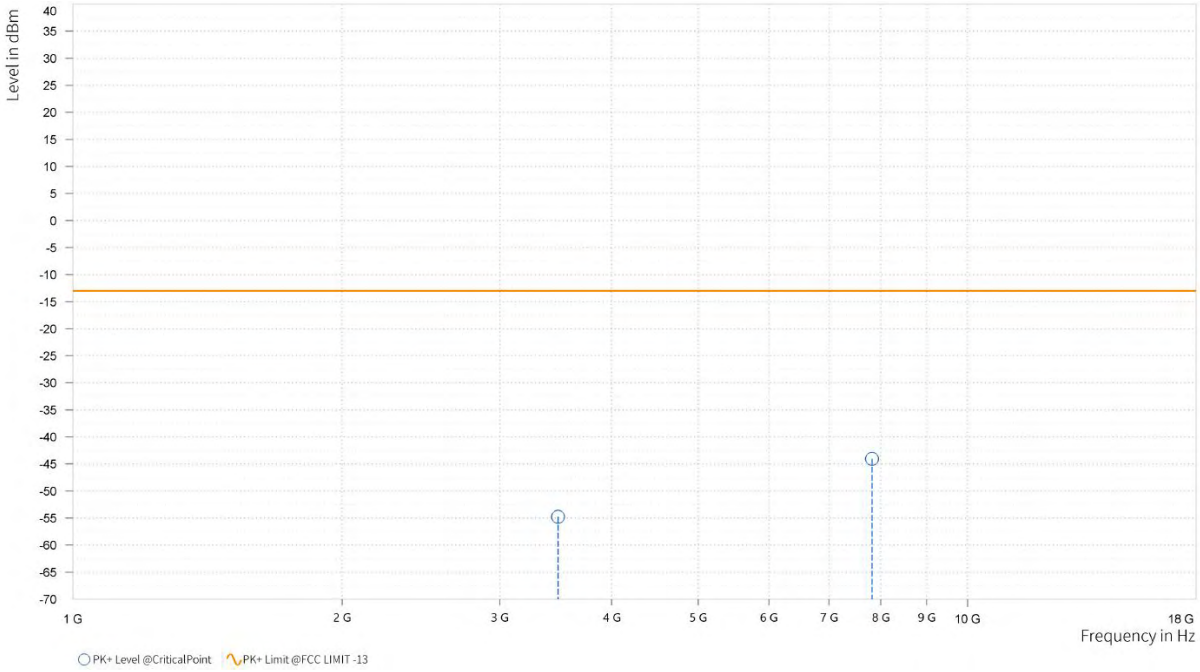
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,485.500	-52.45	-13.00	39.45	21.84	H	214.7	1
5	7,928.000	-44.59	-13.00	31.59	33.00	H	300.7	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	-54.77	-13.00	41.77	21.93	V	359.1	1
5	7,821.500	-44.05	-13.00	31.05	33.07	V	287.6	1

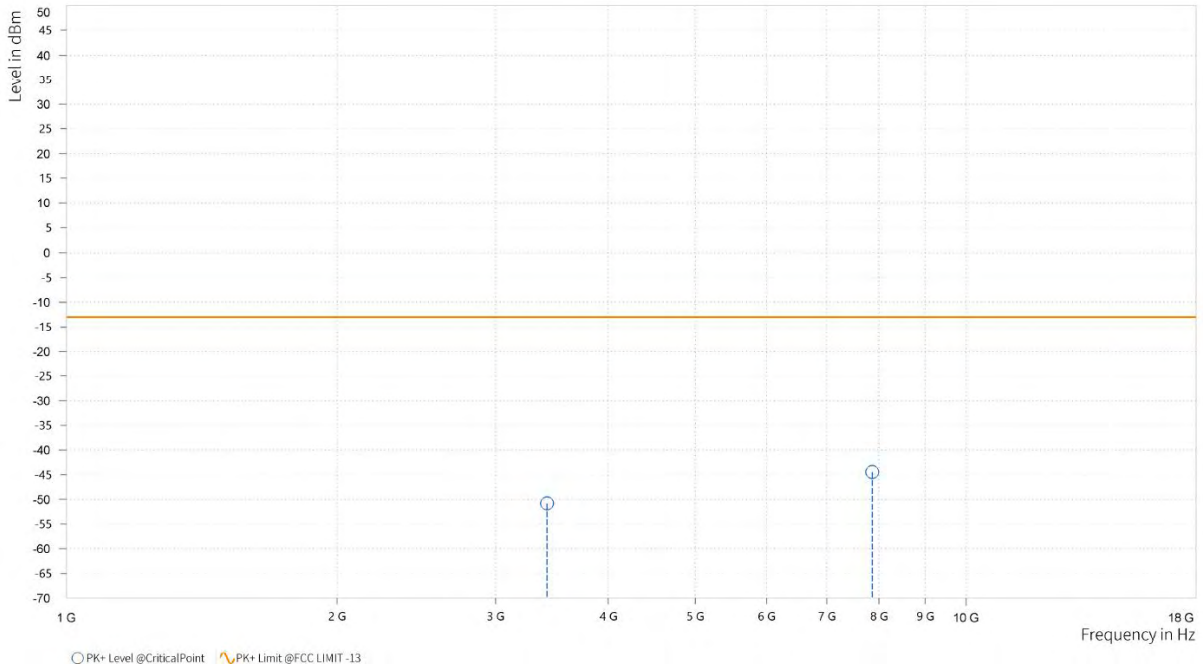


CHANNEL BANDWIDTH: 10MHz / QPSK

CH131997

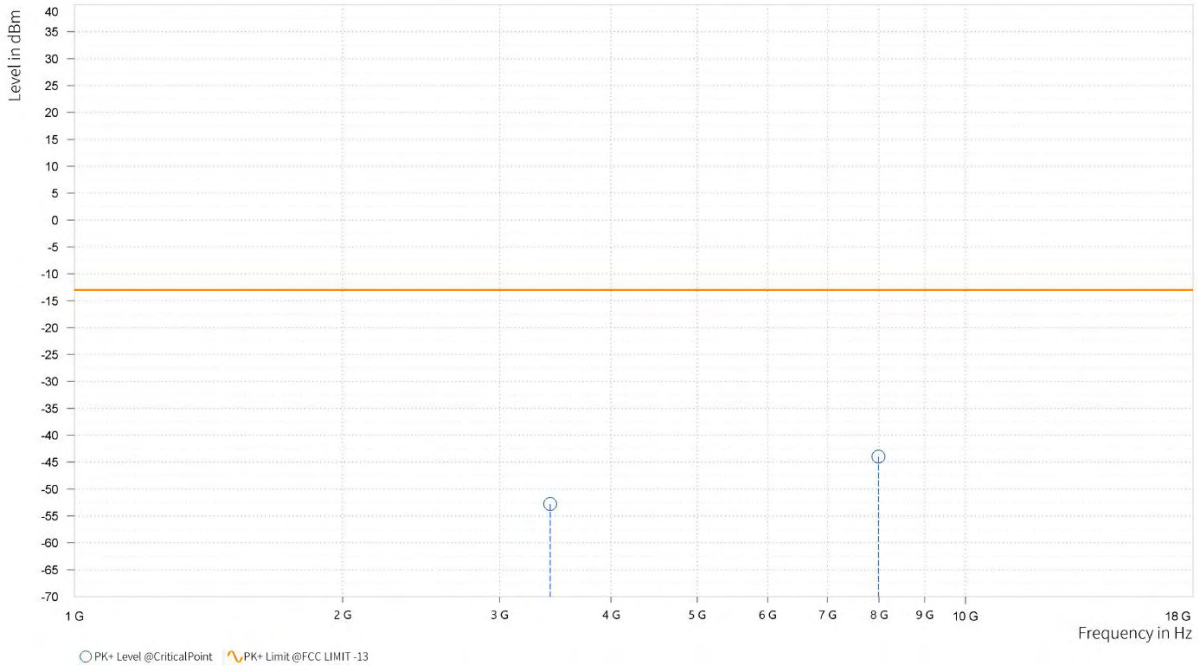
MODE	TX channel 131997	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,421.000	-50.82	-13.00	37.82	21.94	H	214.7	1
5	7,862.500	-44.46	-13.00	31.46	32.99	H	300.7	1



MODE	TX channel 131997	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

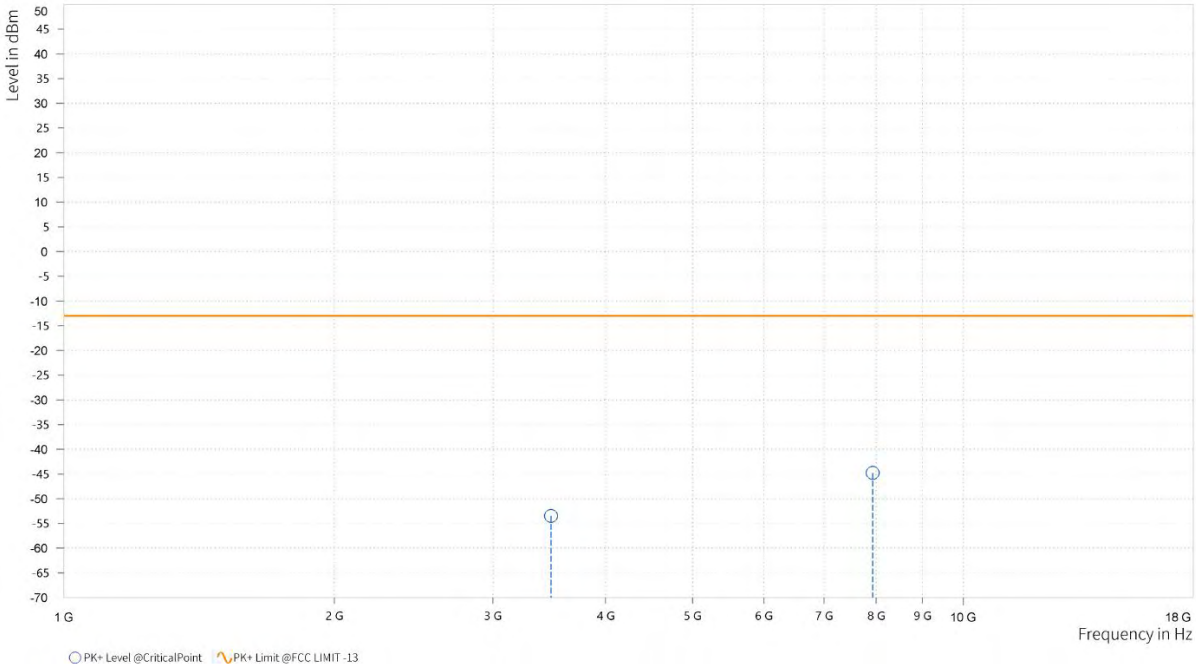
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,420.500	-52.78	-13.00	39.78	22.02	V	359	1
5	7,987.000	-43.94	-13.00	30.94	33.32	V	359	1



CH132322

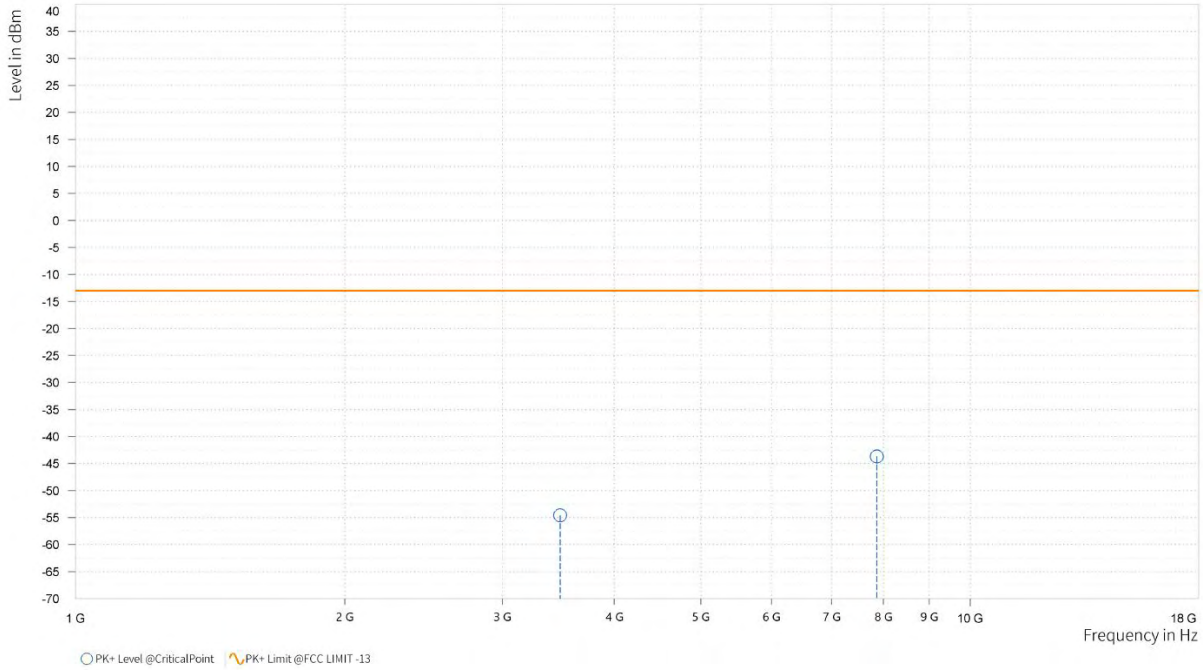
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,480.500	-53.49	-13.00	40.49	21.85	H	102.2	2
5	7,927.500	-44.75	-13.00	31.75	33.00	H	359	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

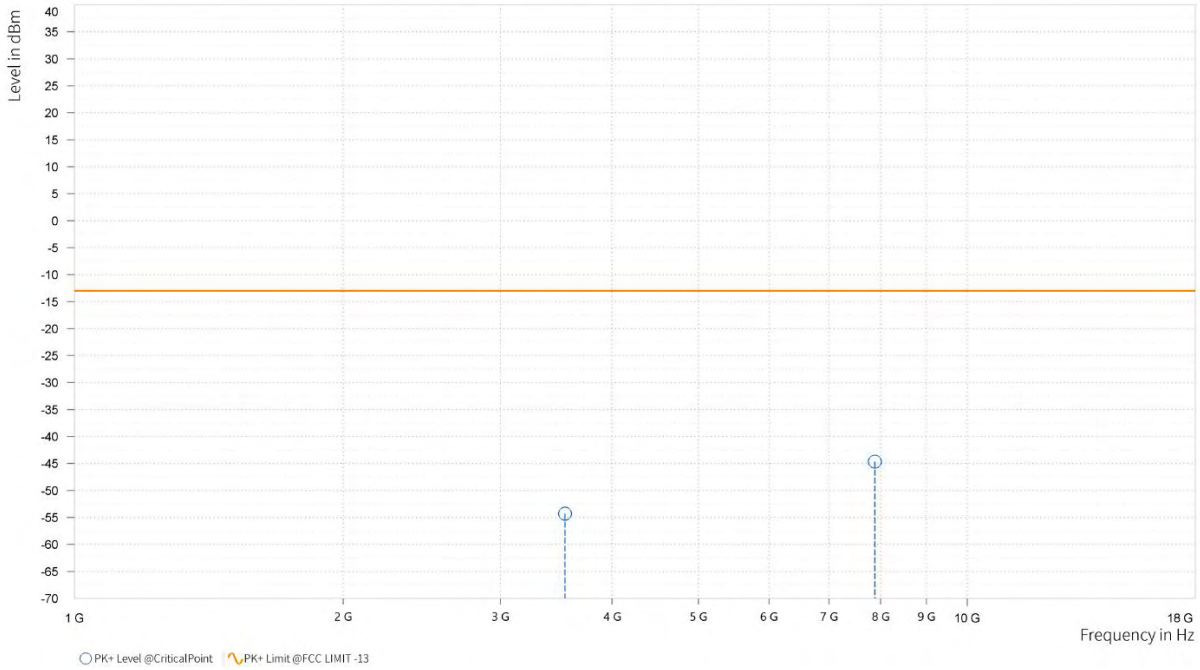
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,481.000	-54.60	-13.00	41.60	21.92	V	201.6	1
5	7,863.500	-43.70	-13.00	30.70	33.05	V	1	1



CH132647

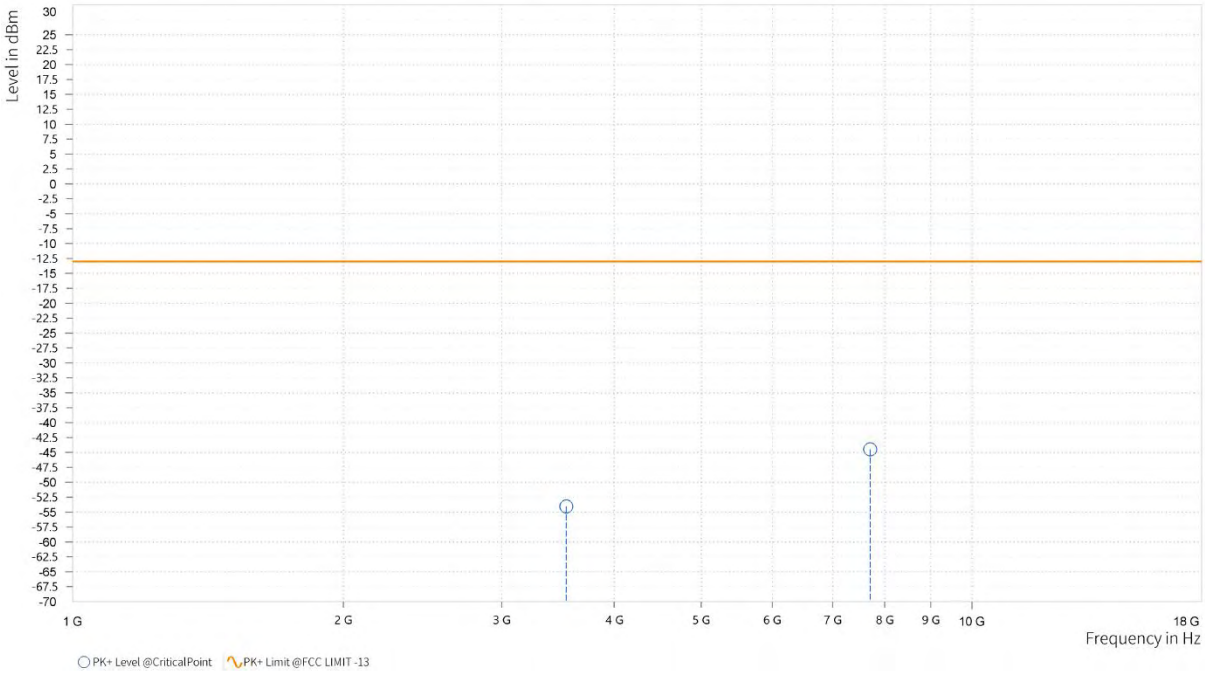
MODE	TX channel 132647	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,544.500	-54.31	-13.00	41.31	21.90	H	0.9	2
5	7,883.000	-44.64	-13.00	31.64	33.01	H	359	2



MODE	TX channel 132647	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

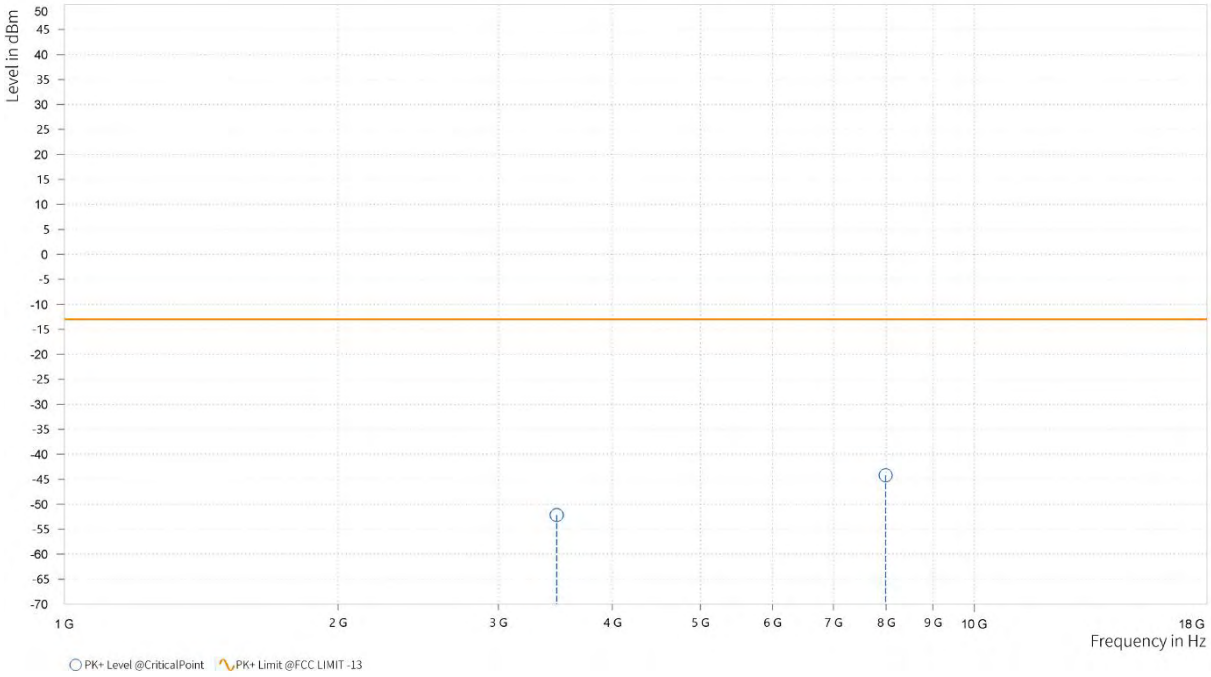
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,539.500	-54.07	-13.00	41.07	22.04	V	0.9	2
5	7,705.500	-44.47	-13.00	31.47	32.91	V	0.9	2



CHANNEL BANDWIDTH: 15MHz / QPSK

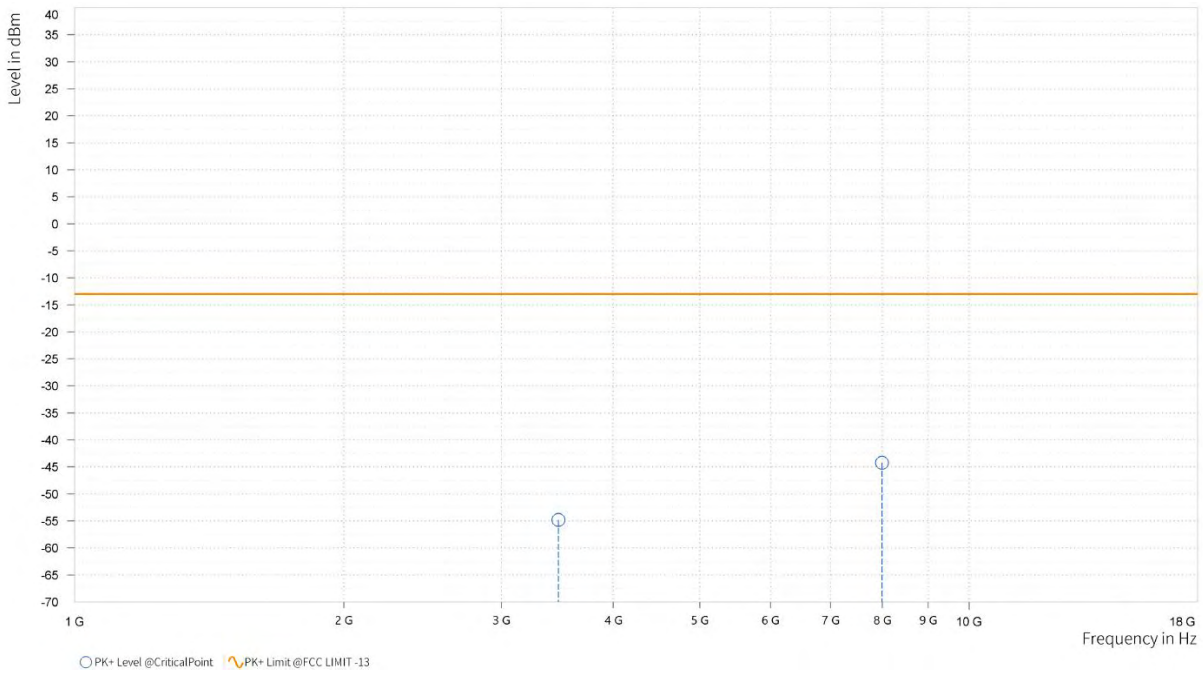
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,476.500	-52.17	-13.00	39.17	21.85	H	215.9	1
5	7,987.500	-44.24	-13.00	31.24	33.08	H	46.1	2



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

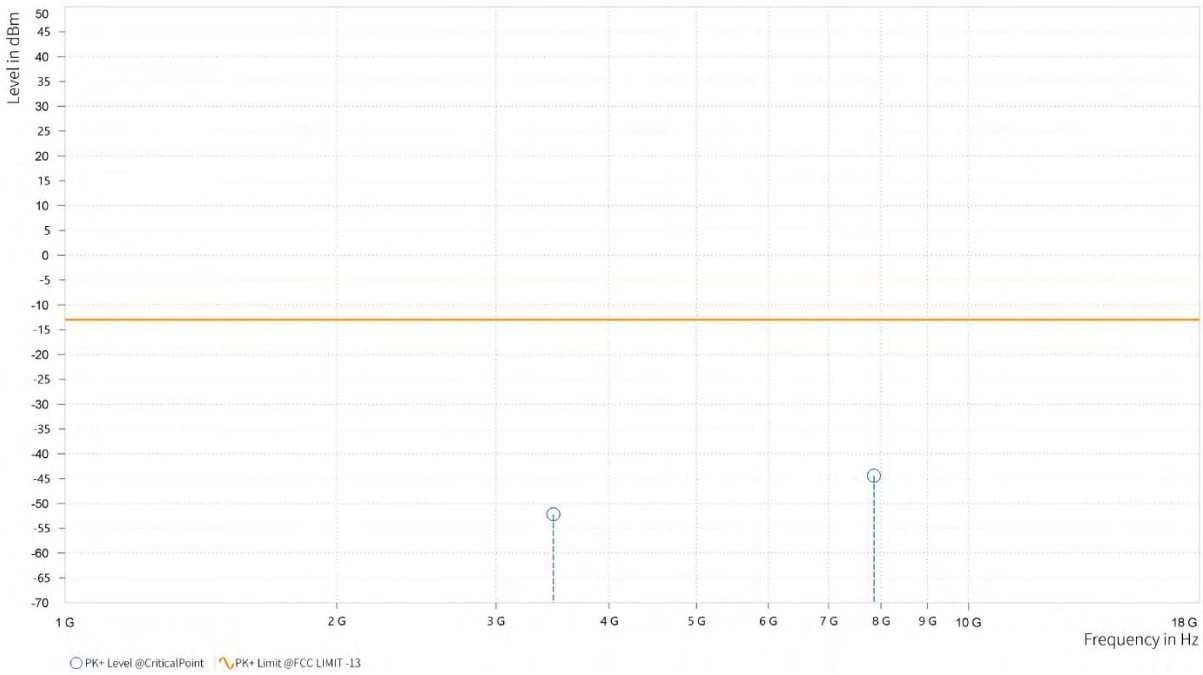
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,474.500	-54.81	-13.00	41.81	21.91	V	201.6	1
5	7,994.500	-44.24	-13.00	31.24	33.34	V	359	2



CHANNEL BANDWIDTH: 20MHz / QPSK

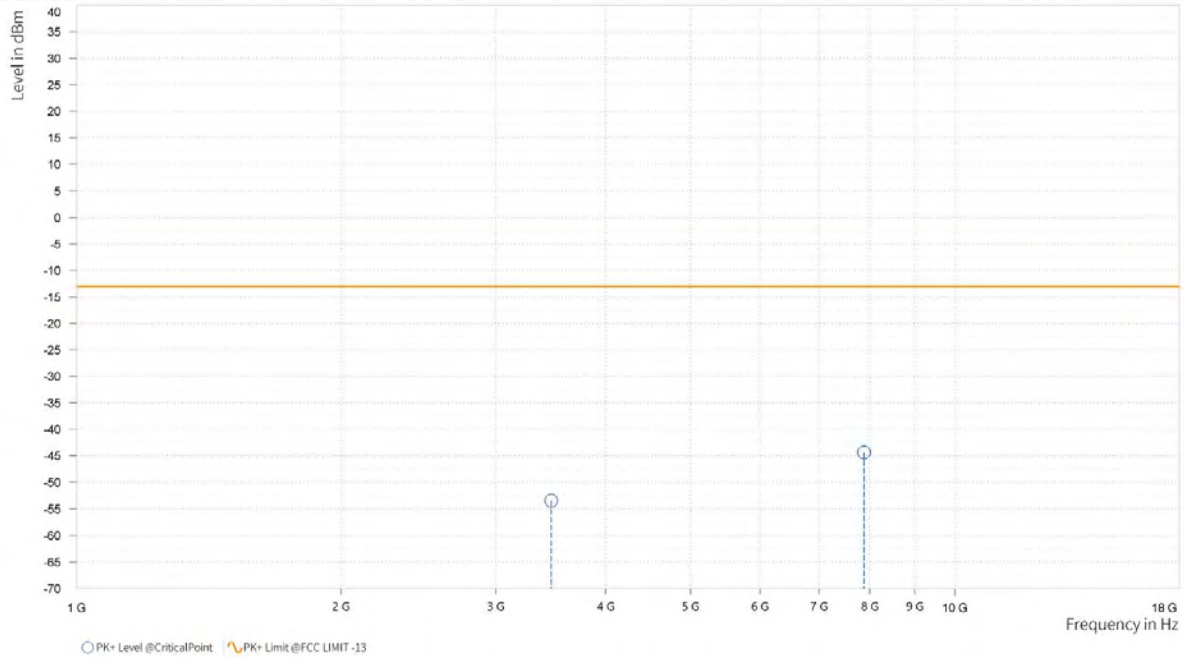
MODE	TX channel 132322	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	**INPUT POWER**	EUT 5.0V
TESTED BY	Gavin Guo		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,471.500	-52.16	-13.00	39.16	21.85	H	214.7	1
5	7,859.500	-44.43	-13.00	31.43	32.99	H	1	1



MODE	TX channel 132322	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 53%RH	INPUT POWER	EUT 5.0V
TESTED BY	Gavin Guo		
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	3,471.000	-53.47	-13.00	40.47	21.91	V	1	1
5	7,879.500	-44.38	-13.00	31.38	33.04	V	72.4	2

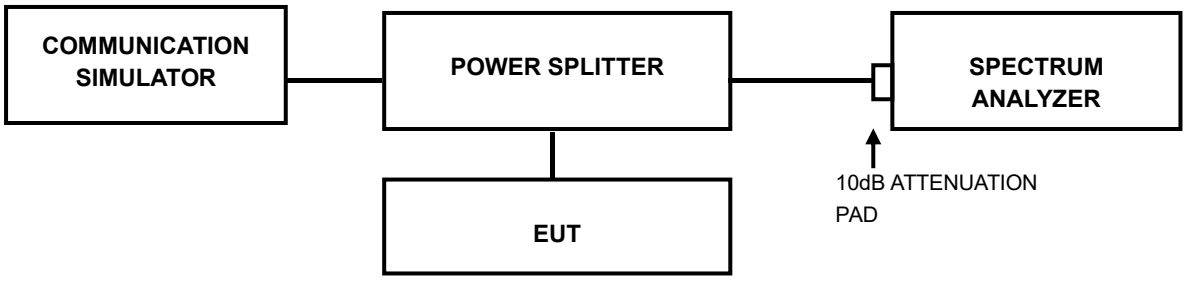


3.7 PEAK TO AVERAGE RATIO

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 Appendix A Of this test report.

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.

APPENDIX A:

WCDMA B4

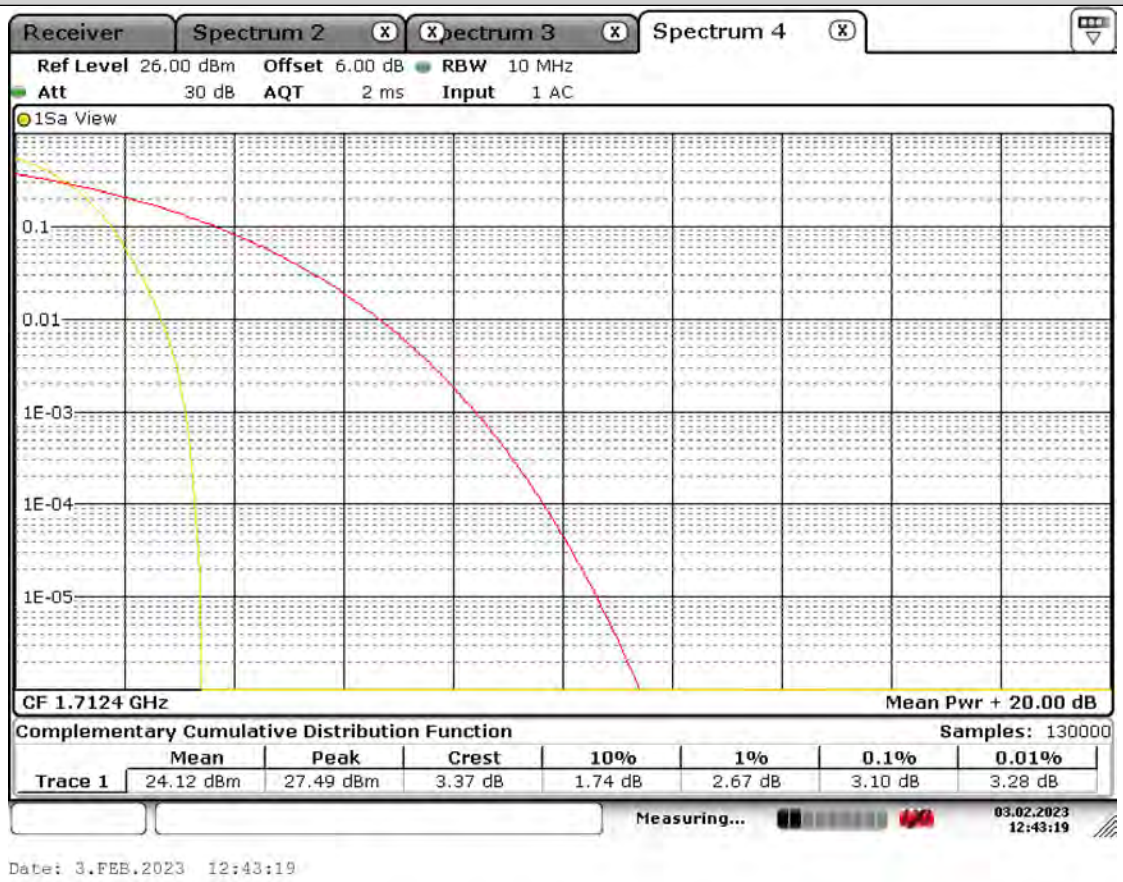
PEAK-TO-AVERAGE RATIO

Test Result

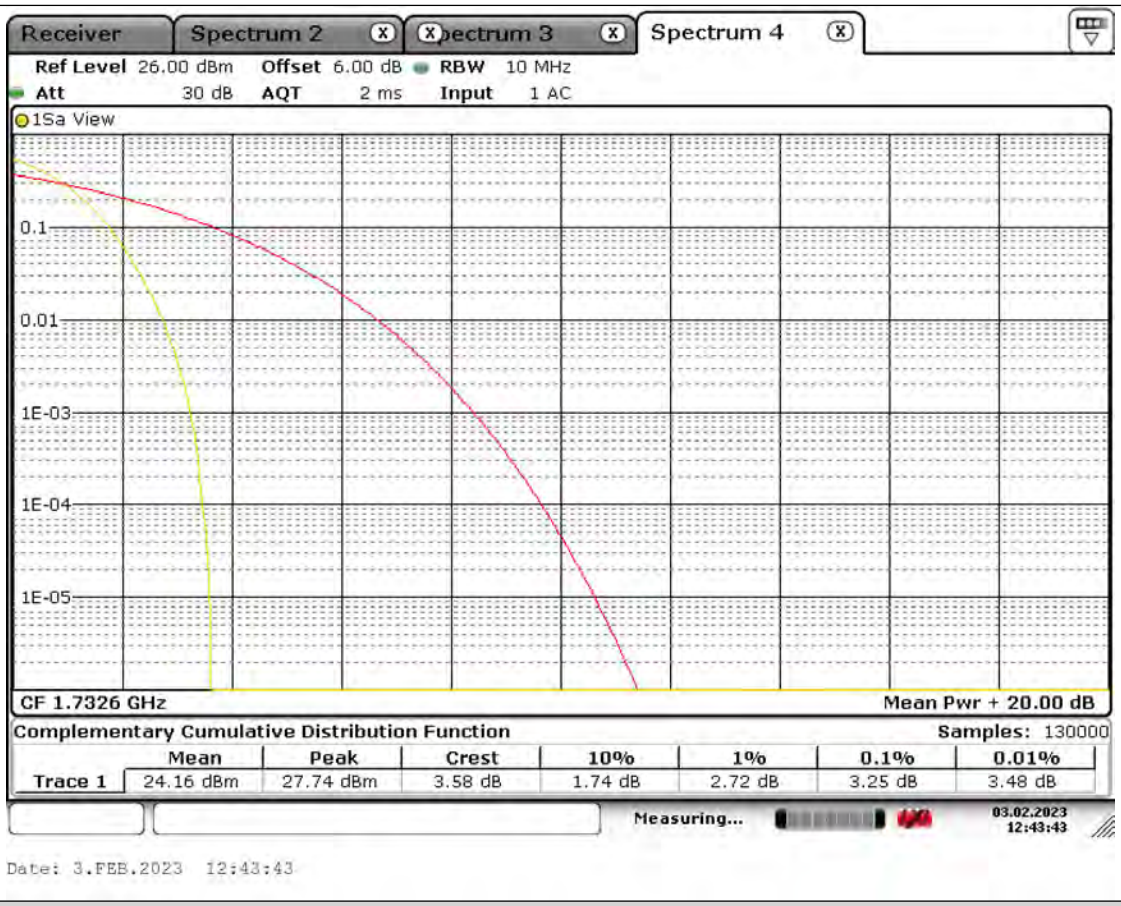
Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band4	1312	3.10	13	PASS
Band4	1413	3.25	13	PASS
Band4	1513	3.13	13	PASS

Test Graphs

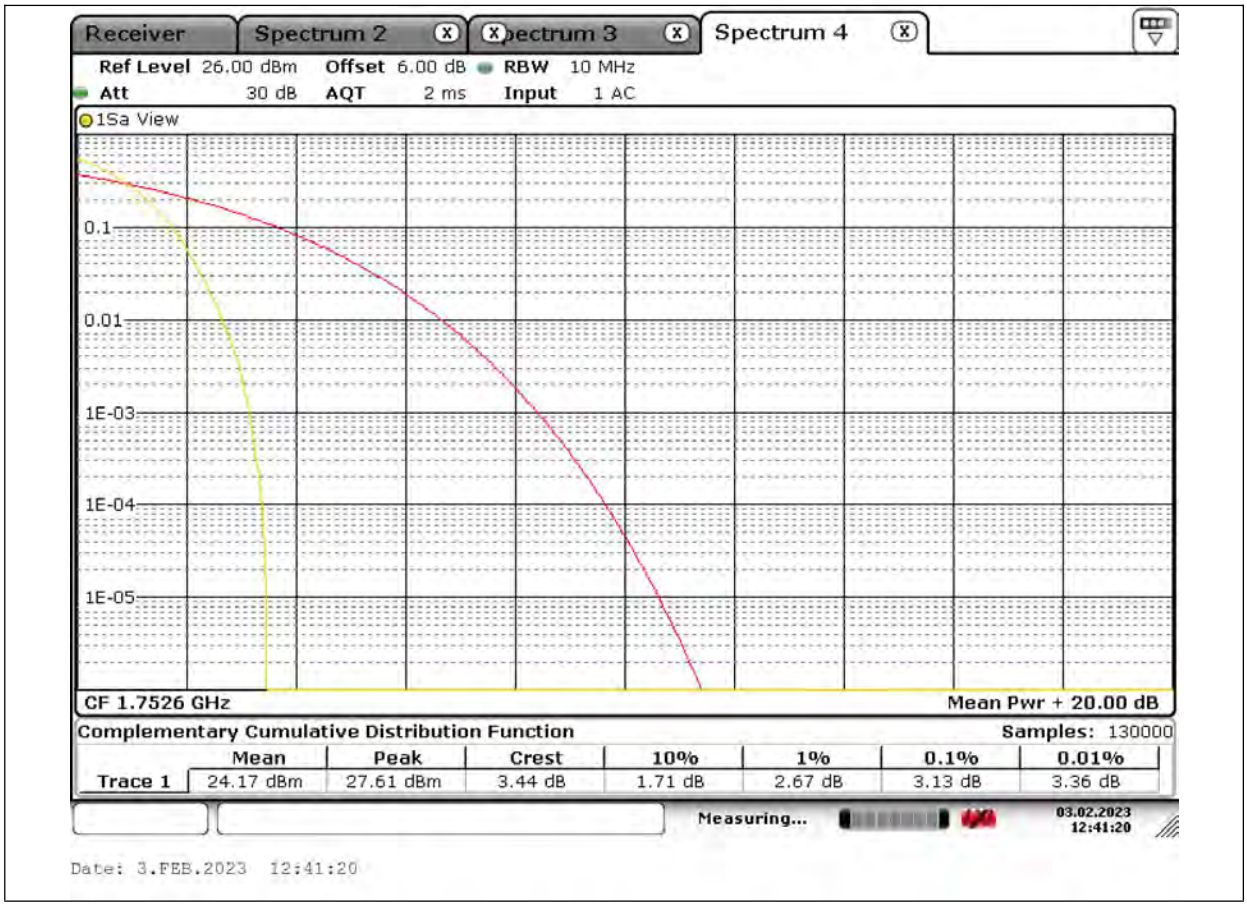
Band4-1312



Band4-1413


Receiver
Spectrum 2
Spectrum 3
Spectrum 4
Ref Level 26.00 dBm Offset 6.00 dB RBW 10 MHz
Att 30 dB AQT 2 ms Input 1 AC
1Sa View
0.1
0.01
1E-03
1E-04
1E-05
CF 1.7326 GHz
Mean Pwr + 20.00 dB
Complementary Cumulative Distribution Function
Samples: 130000
Mean Peak Crest 10% 1% 0.1% 0.01%
Trace 1 24.16 dBm 27.74 dBm 3.58 dB 1.74 dB 2.72 dB 3.25 dB 3.48 dB
Measuring...
03.02.2023
12:43:43
Date: 3.FEB.2023 12:43:43

Band4-1513



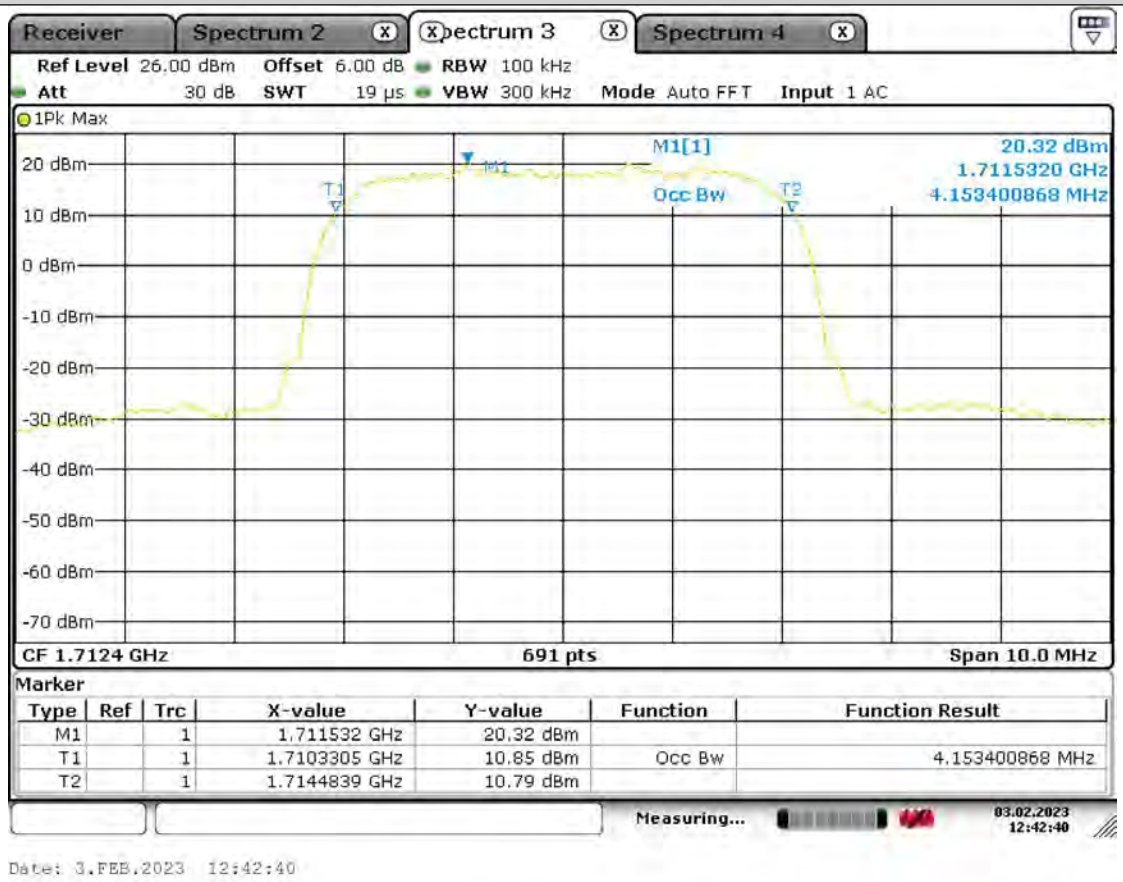
26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

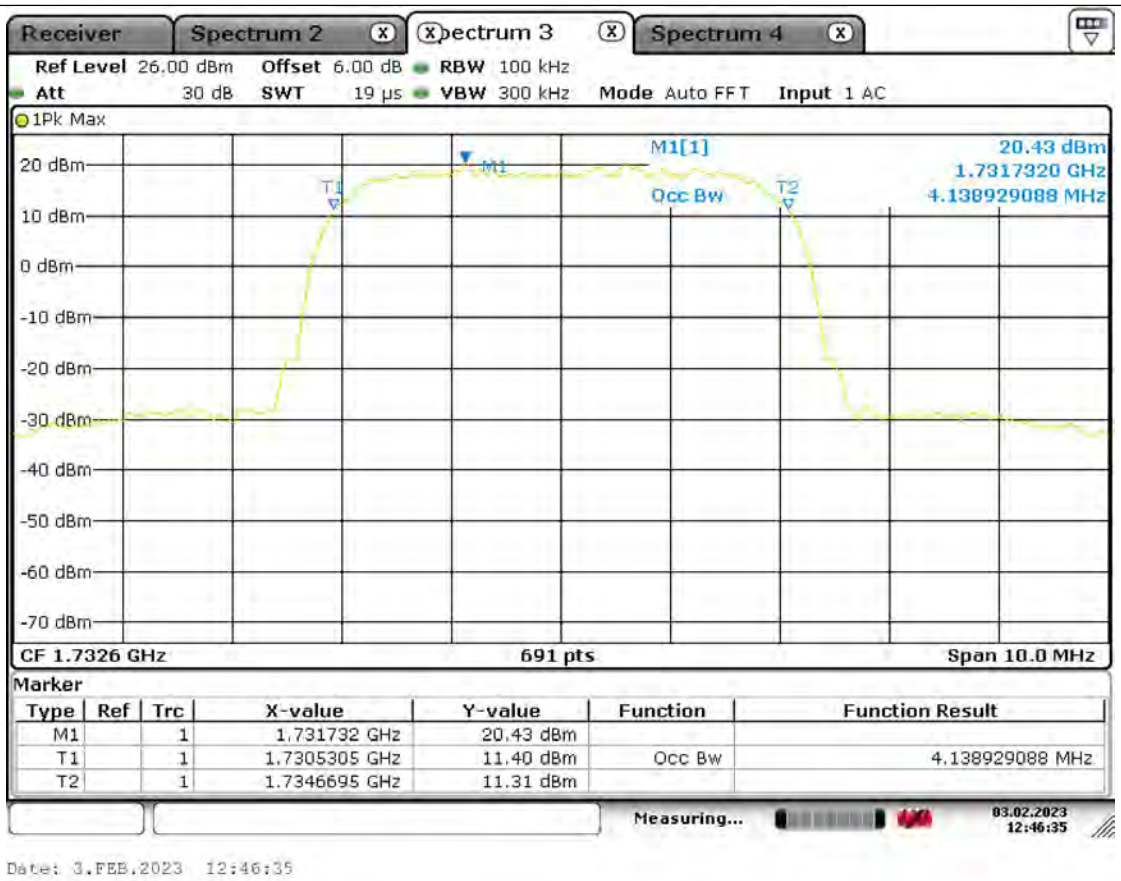
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band4	1312	4.1534	4.66	---	PASS
Band4	1413	4.1389	4.674	---	PASS
Band4	1513	4.1389	4.66	---	PASS

Test Graphs

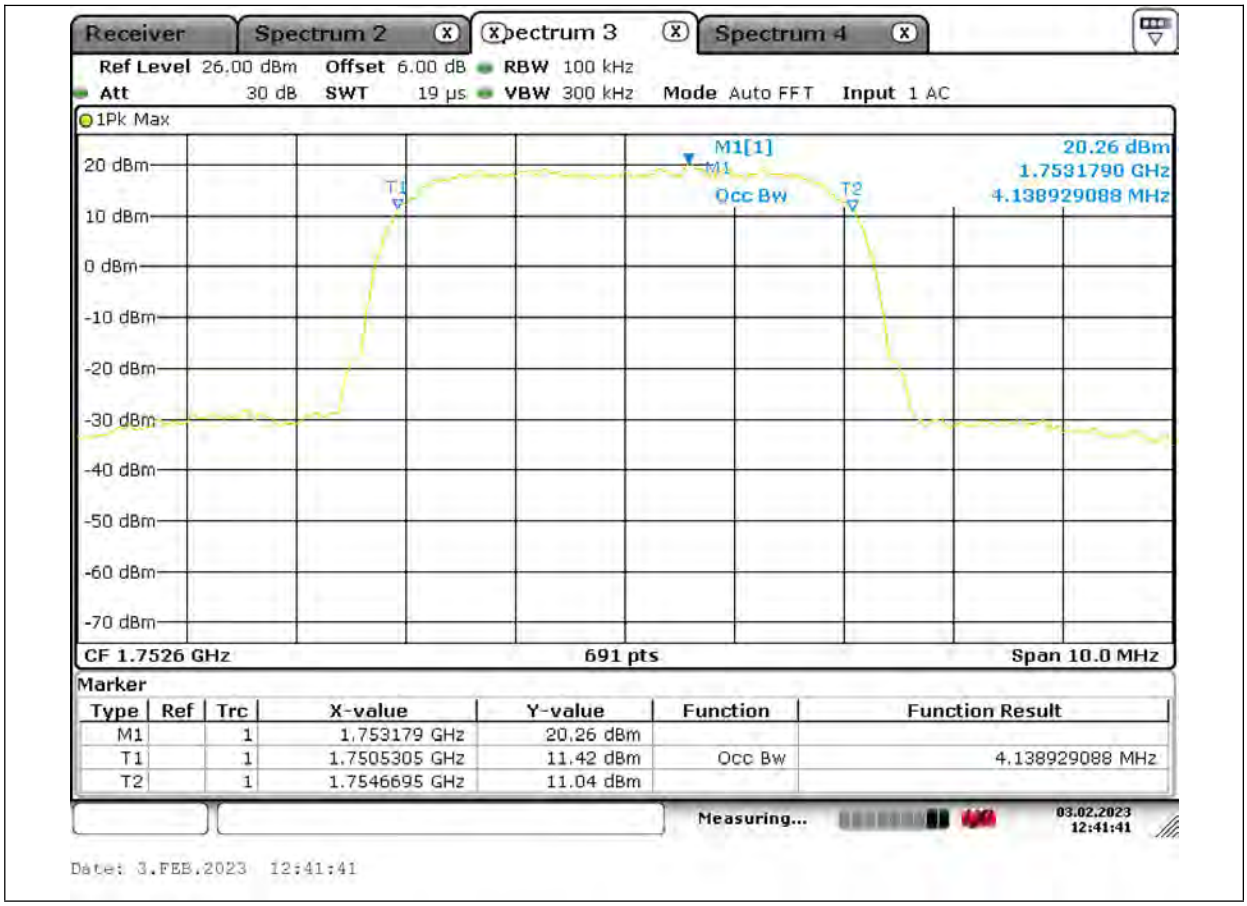
Band4-1312



Band4-1413

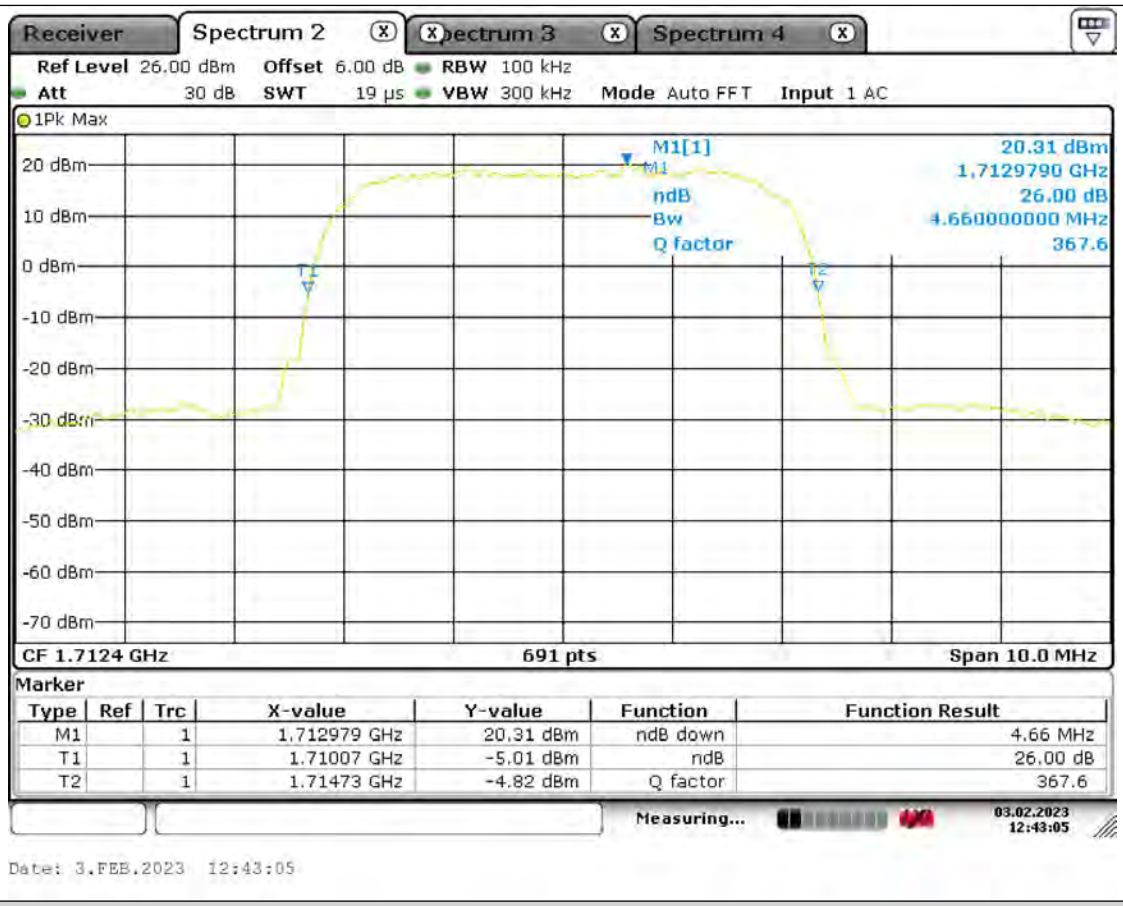

Receiver
Spectrum 2
Spectrum 3
Spectrum 4
Ref Level 26.00 dBm Offset 6.00 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT Input 1 AC
1Pk Max
M1[1]
20.43 dBm
1.7317320 GHz
4.138929088 MHz
M1
T1
T2
Occ Bw
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 1.7326 GHz
691 pts
Span 10.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 1.731732 GHz 20.43 dBm
T1 1 1.7305305 GHz 11.40 dBm Occ Bw 4.138929088 MHz
T2 1 1.7346695 GHz 11.31 dBm
Measuring...
03.02.2023
12:46:35
Date: 3.FEB.2023 12:46:35

Band4-1513

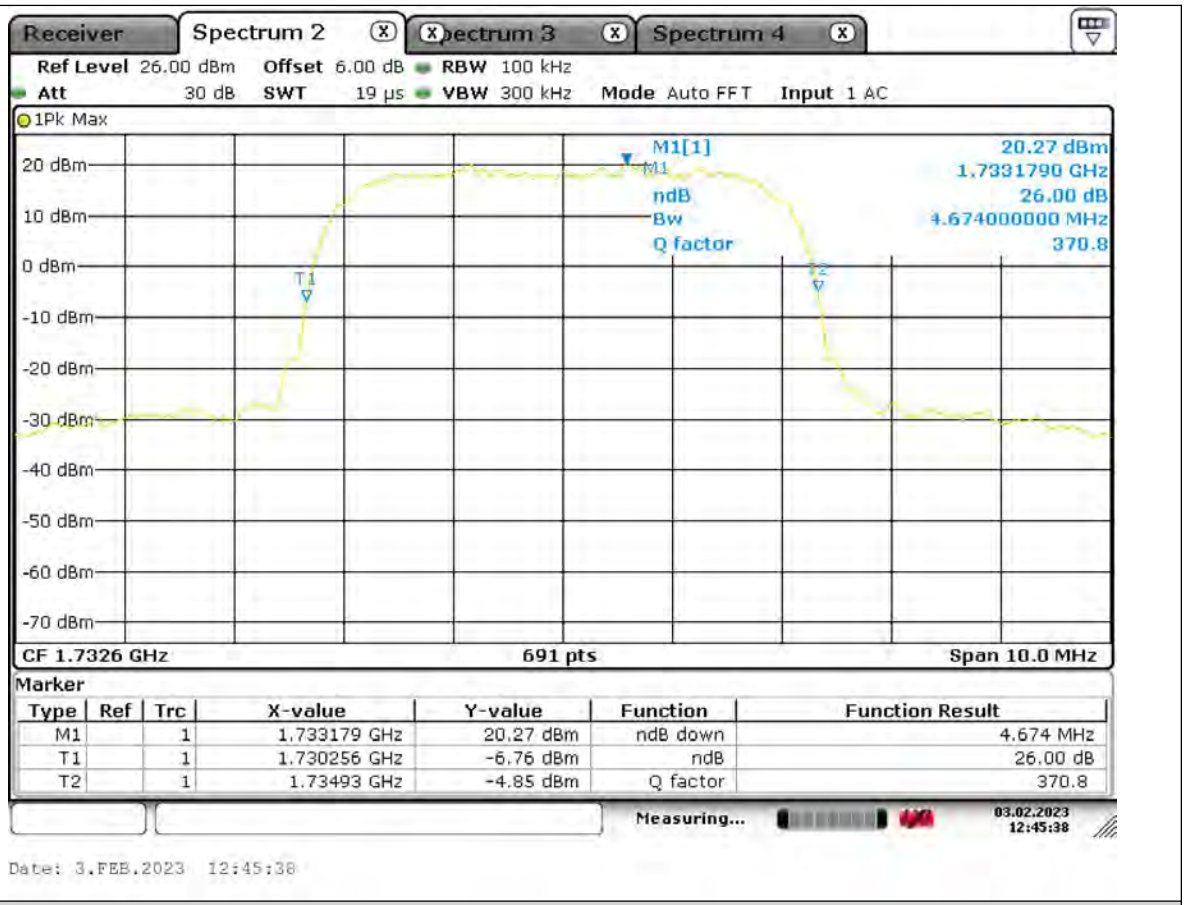


26dB Bandwidth

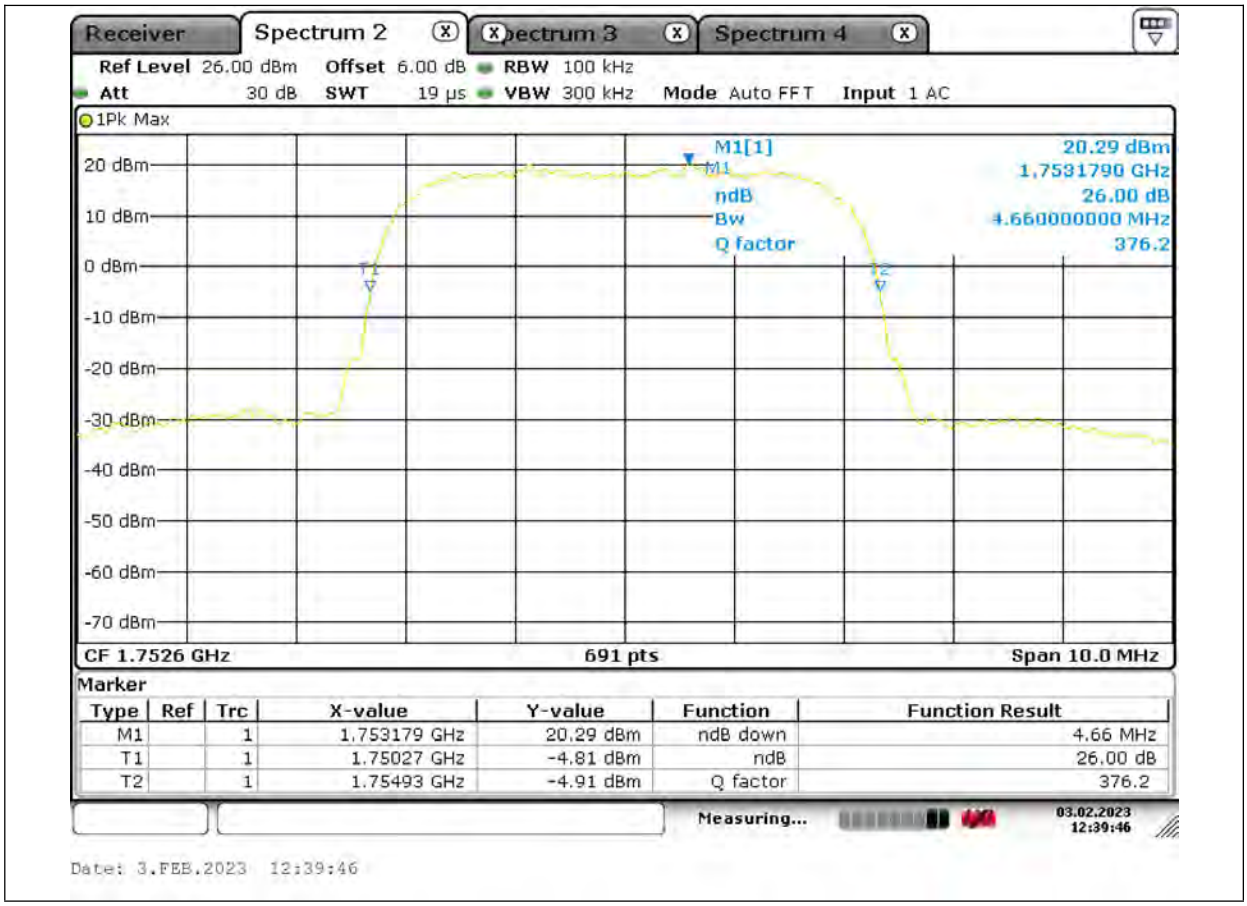
Band4-1312


Receiver
Spectrum 2
Spectrum 3
Spectrum 4
Ref Level 26.00 dBm Offset 6.00 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT Input 1 AC
1Pk Max
M1[1] 20.31 dBm
1.7129790 GHz
ndB 26.00 dB
Bw 4.660000000 MHz
Q factor 367.6
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 1.7124 GHz
691 pts
Span 10.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 1.712979 GHz 20.31 dBm ndB down 4.66 MHz
T1 1 1.71007 GHz -5.01 dBm ndB 26.00 dB
T2 1 1.71473 GHz -4.82 dBm Q factor 367.6
Measuring...
03.02.2023
12:43:05
Date: 3.FEB.2023 12:43:05

Band4-1413


Receiver
Spectrum 2
Spectrum 3
Spectrum 4
Ref Level 26.00 dBm Offset 6.00 dB RBW 100 kHz
Att 30 dB SWT 19 µs VBW 300 kHz Mode Auto FFT Input 1 AC
1Pk Max
M1[1] 20.27 dBm
1.7331790 GHz
ndB 26.00 dB
Bw 4.674000000 MHz
Q factor 370.8
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
T1
T2
CF 1.7326 GHz
691 pts
Span 10.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 1.733179 GHz 20.27 dBm ndB down 4.674 MHz
T1 1 1.730256 GHz -6.76 dBm ndB 26.00 dB
T2 1 1.73493 GHz -4.85 dBm Q factor 370.8
Measuring...
03.02.2023
12:45:38
Date: 3.FEB.2023 12:45:38

Band4-1513



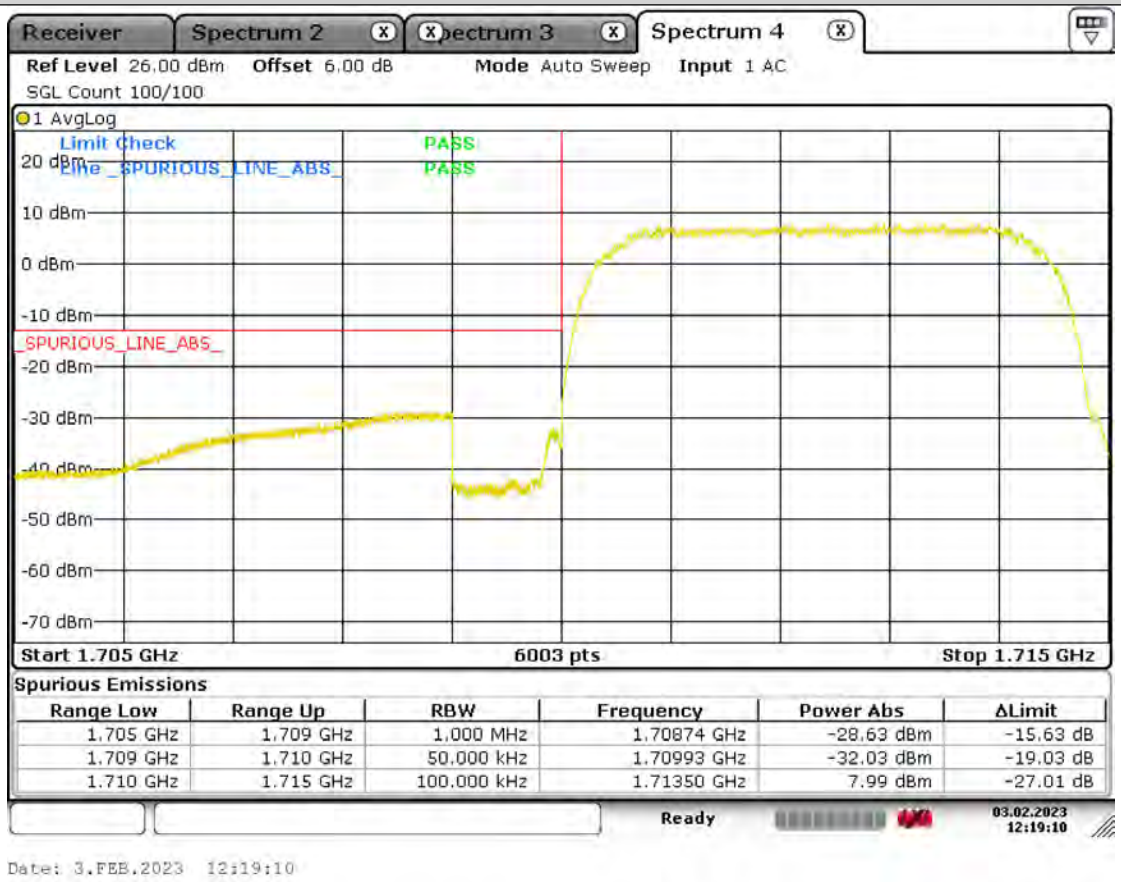
BAND EDGE

Test Result

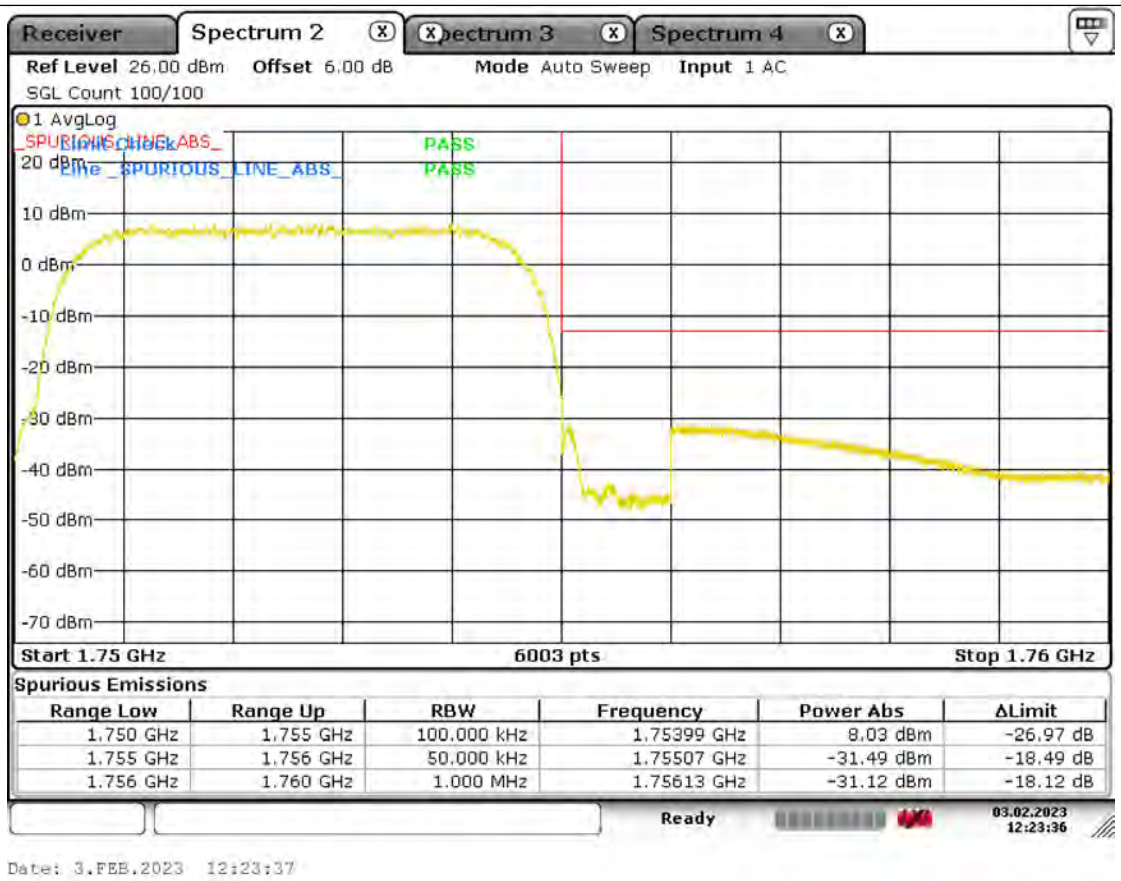
Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band4	1312	1709.93	-32.03	-13	PASS
Band4	1513	1755.07	-31.49	-13	PASS

Test Graphs

Band4-1312



Band4-1513



Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.750 GHz	1.755 GHz	100.000 kHz	1.75399 GHz	8.03 dBm	-26.97 dB
1.755 GHz	1.756 GHz	50.000 kHz	1.75507 GHz	-31.49 dBm	-18.49 dB
1.756 GHz	1.760 GHz	1.000 MHz	1.75613 GHz	-31.12 dBm	-18.12 dB

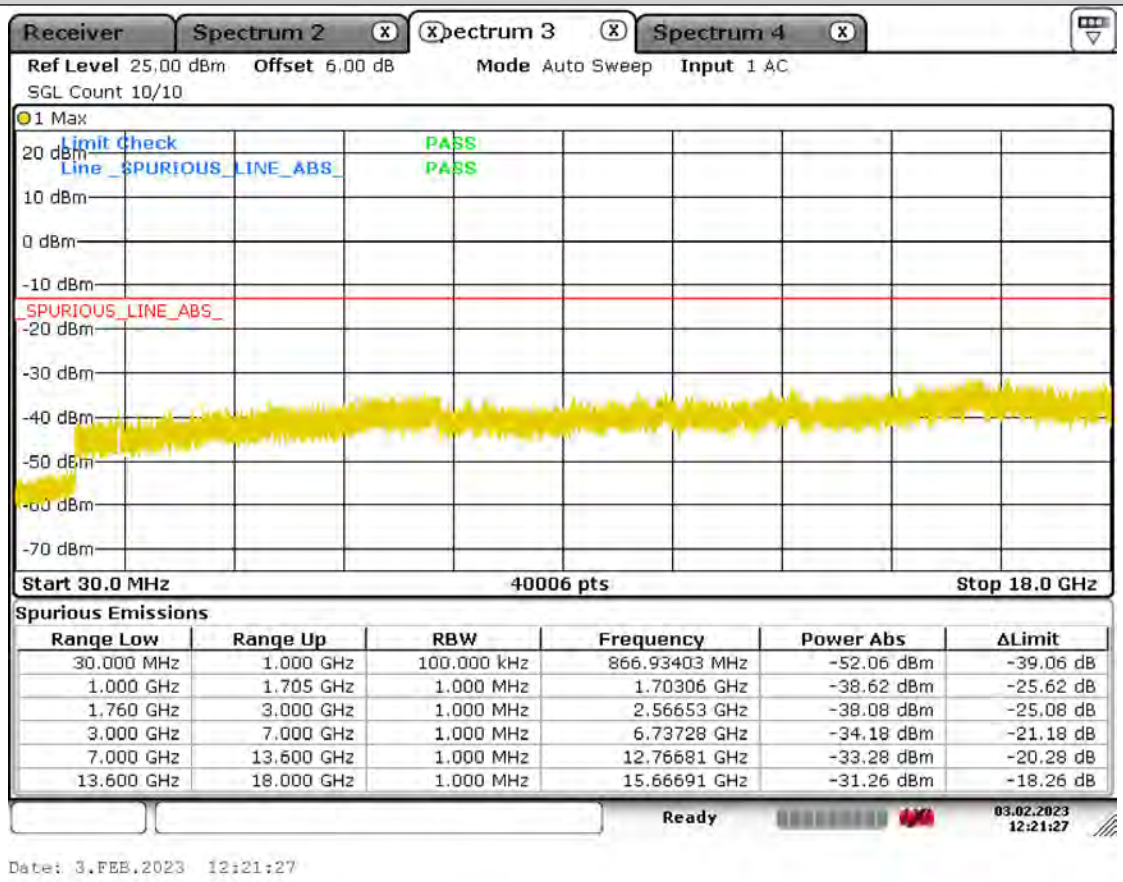
CONDUCTED SPURIOUS EMISSION

Test Result

Band	Channel	Frequency Range (Mhz)	Frequency (MHz)	Result (dBm)	Limit (dBm)	Verdict
Band4	1312	30~1000MHz	866.93403	-52.06	-13	PASS
Band4	1312	1000~3000MHz	2566.53	-38.08	-13	PASS
Band4	1312	3000~18000MHz	15666.91	-31.26	-13	PASS
Band4	1413	30~1000MHz	918.8031	-50.84	-13	PASS
Band4	1413	1000~3000MHz	1704.82	-37.18	-13	PASS
Band4	1413	3000~18000MHz	15847.66	-30.7	-13	PASS
Band4	1513	30~1000MHz	840.75712	-52.35	-13	PASS
Band4	1513	1000~3000MHz	1760.31	-36.43	-13	PASS
Band4	1513	3000~18000MHz	15827.5	-30.34	-13	PASS

Test Graphs

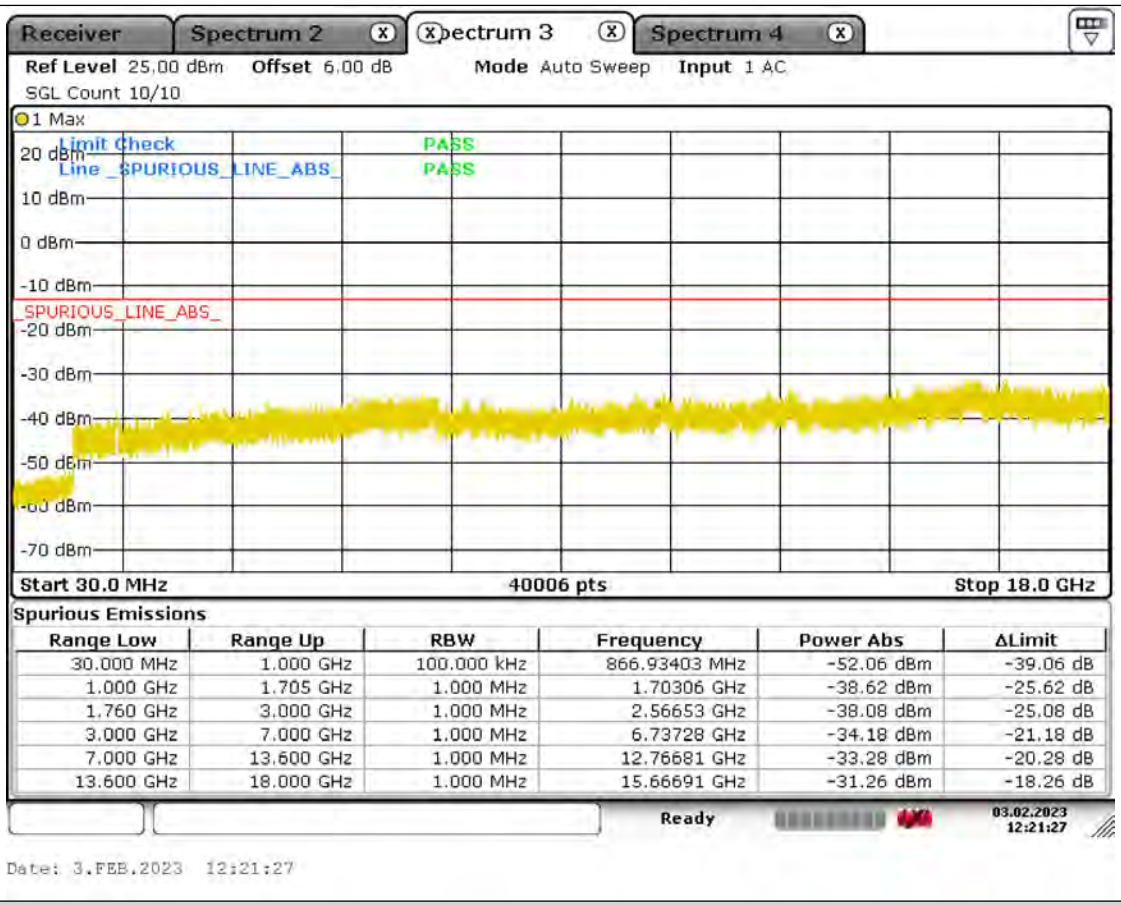
Band4-1312-30~1000MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	866.93403 MHz	-52.06 dBm	-39.06 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.70306 GHz	-38.62 dBm	-25.62 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.56653 GHz	-38.08 dBm	-25.08 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.73728 GHz	-34.18 dBm	-21.18 dB
7.000 GHz	13.600 GHz	1.000 MHz	12.76681 GHz	-33.28 dBm	-20.28 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.66691 GHz	-31.26 dBm	-18.26 dB

Band4-1312-1000~3000MHz



Spurious Emissions

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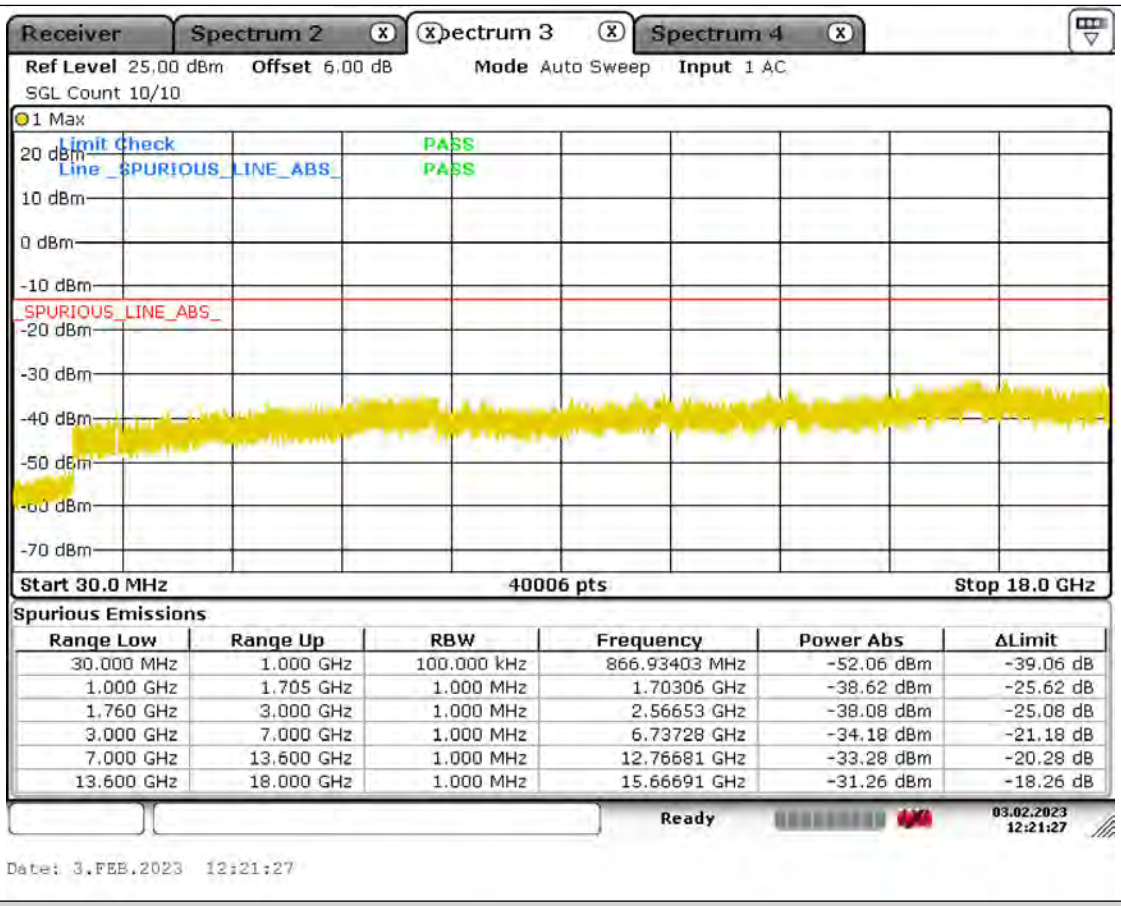
13.600 GHz	18.000 GHz	1.000 MHz	15.66691 GHz	-31.26 dBm	-18.26 dB

Band4-1312-3000~18000MHz



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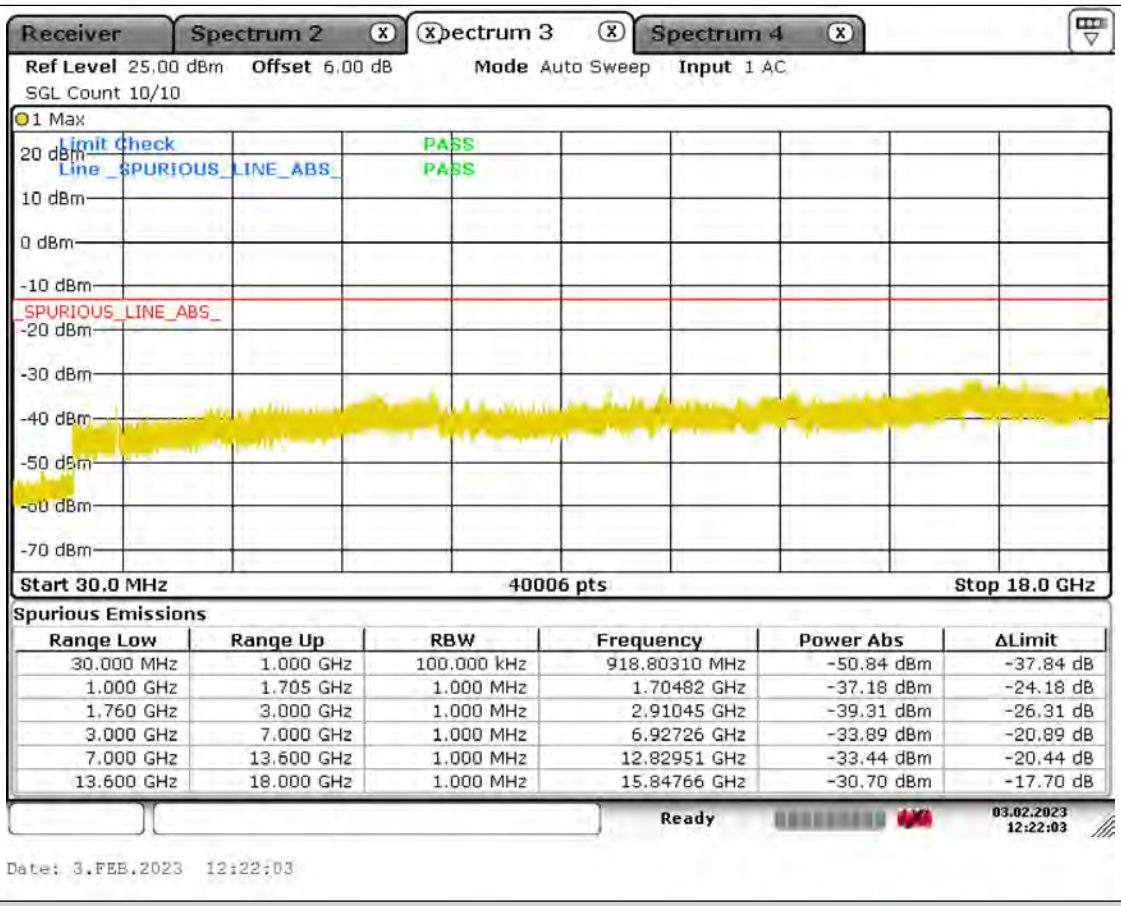
13.600 GHz	18.000 GHz	1.000 MHz	15.66691 GHz	-31.26 dBm	-18.26 dB

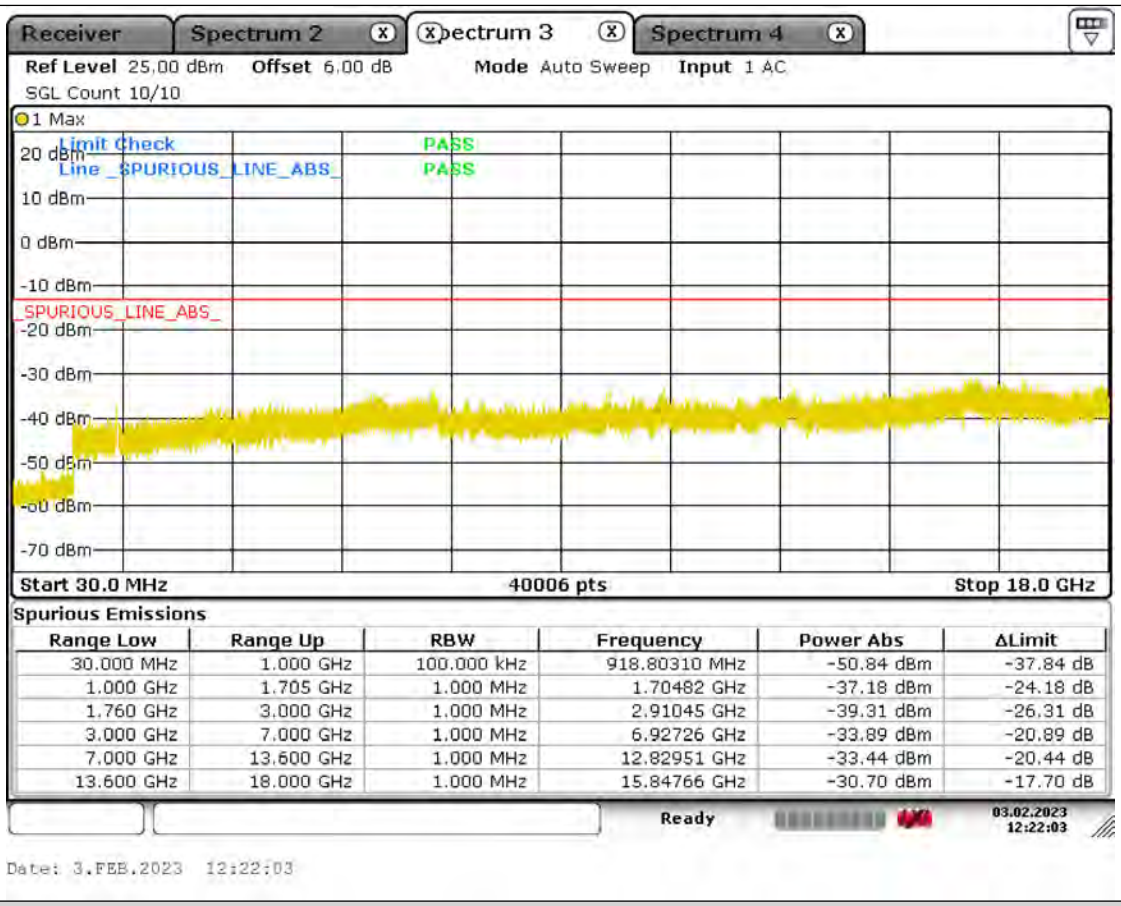
Band4-1413-30~1000MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	918.80310 MHz	-50.84 dBm	-37.84 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.70482 GHz	-37.18 dBm	-24.18 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.91045 GHz	-39.31 dBm	-26.31 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92726 GHz	-33.89 dBm	-20.89 dB
7.000 GHz	13.600 GHz	1.000 MHz	12.82951 GHz	-33.44 dBm	-20.44 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.84766 GHz	-30.70 dBm	-17.70 dB

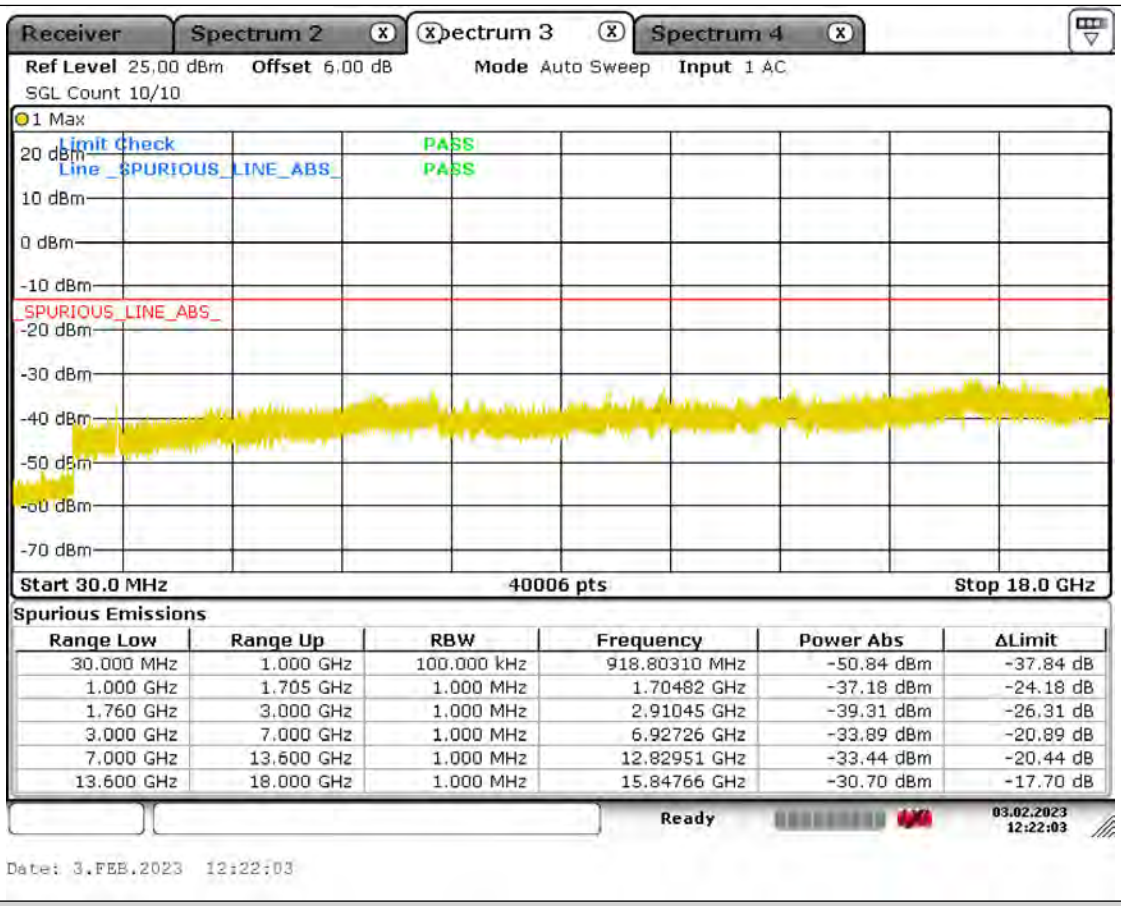
Band4-1413-1000~3000MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	1.000 GHz	100.000 kHz	918.80310 MHz	-50.84 dBm	-37.84 dB
1.000 GHz	1.705 GHz	1.000 MHz	1.70482 GHz	-37.18 dBm	-24.18 dB
1.760 GHz	3.000 GHz	1.000 MHz	2.91045 GHz	-39.31 dBm	-26.31 dB
3.000 GHz	7.000 GHz	1.000 MHz	6.92726 GHz	-33.89 dBm	-20.89 dB
7.000 GHz	13.600 GHz	1.000 MHz	12.82951 GHz	-33.44 dBm	-20.44 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.84766 GHz	-30.70 dBm	-17.70 dB

Band4-1413-3000~18000MHz



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30.000 MHz	1.000 GHz	100.000 kHz	918.80310 MHz	-50.84 dBm	-37.84 dB
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3.000 GHz	7.000 GHz	1.000 MHz	6.92726 GHz	-33.89 dBm	-20.89 dB
7.000 GHz	13.600 GHz	1.000 MHz	12.82951 GHz	-33.44 dBm	-20.44 dB
13.600 GHz	18.000 GHz	1.000 MHz	15.84766 GHz	-30.70 dBm	-17.70 dB

Band4-1513-30~1000MHz