Certificate #6613.01

FCC TEST REPORT

(PART 27)

Applicant:	SAIC MOTOR Overseas Intelligent Mobility Technology Co., Ltd
Address:	7th Floor, 36 Yutian South Road, Anting Town, Jiading District, Shanghai

Manufacturer or Supplier:	SAIC MOTOR Overseas Intelligent Mobility Technology Co., Ltd
Address:	7th Floor, 36 Yutian South Road, Anting Town, Jiading District, Shanghai
Product:	TBOX
Brand Name:	SOIMT
Model Name:	FLC-WNP26C
FCC ID	2BFZV-FLC-WNP26C
Date of tests	Apr. 07, 2024 ~ May. 11, 2024

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

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

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

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
Xu Hanwen Date: May. 11, 2024	Sun Peibo Date: May. 11, 2024

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**

1.2 TEST SITE AND INSTRUMENTS 9

2 GENERAL INFORMATION **12**

2.1 GENERAL DESCRIPTION OF EUT 12
2.2 CONFIGURATION OF SYSTEM UNDER TEST 16
2.3 DESCRIPTION OF SUPPORT UNITS 17
2.4 TEST ITEM AND TEST CONFIGURATION 17
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS 22

3 TEST TYPES AND RESULTS **23**

3.1 OUTPUT POWER MEASUREMENT 23
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 23
3.1.2 TEST PROCEDURES 23
3.1.3 TEST SETUP 24
3.1.4 TEST RESULTS 25
3.2 FREQUENCY STABILITY MEASUREMENT 44
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 44
3.2.2 TEST PROCEDURE 44
3.2.3 TEST SETUP 44
3.2.4 TEST RESULTS 45
3.3 OCCUPIED BANDWIDTH MEASUREMENT 46
3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT 46
3.3.2 TEST SETUP 46
3.3.3 TEST PROCEDURES 46
3.3.4 TEST RESULTS 47
3.4 BAND EDGE MEASUREMENT 48
3.4.1 LIMITS OF BAND EDGE MEASUREMENT 48
3.4.2 TEST SETUP 48
3.4.3 TEST PROCEDURES 49
3.4.4 TEST RESULTS 50
3.5 CONDUCTED SPURIOUS EMISSIONS 51
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 51
3.5.2 TEST PROCEDURE 51
3.5.3 TEST SETUP 51
3.5.4 TEST RESULTS 53
3.6 RADIATED EMISSION MEASUREMENT 54
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT 54
3.6.2 TEST PROCEDURES 54
3.6.3 DEVIATION FROM TEST STANDARD 55
3.6.4 TEST SETUP 56
3.6.5 TEST RESULTS 58
3.7 PEAK TO AVERAGE RATIO 106
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 106
3.7.2 TEST SETUP 106
3.7.3 TEST PROCEDURES 106
3.7.4 TEST RESULTS 107

4 INFORMATION ON THE TESTING LABORATORIES **108**

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB. **109**

6 APPENDIX **110**

WCDMA BAND4 110
PEAK-TO-AVERAGE RATIO 110
TEST RESULT 110
TEST GRAPHS 111
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 112
TEST RESULT 112
TEST GRAPHS 113
BAND EDGE 114
TEST RESULT 114
TEST GRAPHS 115
CONDUCTED SPURIOUS EMISSION 116
TEST RESULT 116
TEST GRAPHS 117
FREQUENCY STABILITY 118
TEST RESULT 118
LTE BAND4 119
PEAK-TO-AVERAGE RATIO(CCDF) 119
TEST RESULT 119
TEST GRAPHS 120
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 126
TEST RESULT 126
TEST GRAPHS 127
BAND EDGE 145
TEST RESULT 145
TEST GRAPHS 147
CONDUCTED SPURIOUS EMISSION 171
TEST RESULT 171
TEST GRAPHS 173
FREQUENCY STABILITY 197
TEST RESULT 197
LTE BAND7 198
PEAK-TO-AVERAGE RATIO(CCDF) 198
TEST RESULT 198
TEST GRAPHS 199
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 205
TEST RESULT 205
TEST GRAPHS 206
BAND EDGE 218
TEST RESULT 218
TEST GRAPHS 219
CONDUCTED SPURIOUS EMISSION 235
TEST RESULT 235
TEST GRAPHS 236
FREQUENCY STABILITY 248
TEST RESULT 248
LTE BAND41(INDCLUDING LTE BAND38) 249
PEAK-TO-AVERAGE RATIO(CCDF) 249
TEST RESULT 249
TEST GRAPHS 250
26DB BANDWIDTH AND OCCUPIED BANDWIDTH 256
TEST RESULT 256
TEST GRAPHS 257
BAND EDGE 269
TEST RESULT 269
TEST GRAPHS 270
CONDUCTED SPURIOUS EMISSION 286

TEST RESULT 286
TEST GRAPHS 287
FREQUENCY STABILITY 299
TEST RESULT 299

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2403110115RF03	Original release	May. 11, 2024

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**TEST LAB***
§2.1046	Conducted Output Power	Compliance	A
§27.50(d)(4) §27.50(h)(2)	Equivalent Isotropically Radiated Power (WCMDA Band 4)(Band 4) (Band 7) (Band 38) (Band 41)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	B
§2.1049	Occupied Bandwidth	Compliance	B
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Band Edge Measurements (WCMDA Band 4) (Band 4) (Band 7) (Band 38) (Band 41)	Compliance	B
§2.1051 §27.53(h) §27.53(m)(4)(6)	Conducted Spurious Emissions (WCMDA Band 4) (Band 4) (Band 7) (Band 38) (Band 41)	Compliance	B
§2.1053 §27.53(h) §27.53(m)(4)(6)	Radiated Spurious Emissions (WCMDA Band 4) (Band 4) (Band 7) (Band 38) (Band 41)	Compliance	A
§27.50	Peak to average ratio*	Compliance	B

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

***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.

Lab B:
BV 7Layers Communications Technology (Shenzhen) Co. Ltd
Lab Address:
Room B37, Warehouse A5, No.3 Chiwan 4th Road, Zhaoshang Street, Nanshan District Shenzhen, Guangdong, People's Republic of China
Accredited Test Lab Cert 3939.01

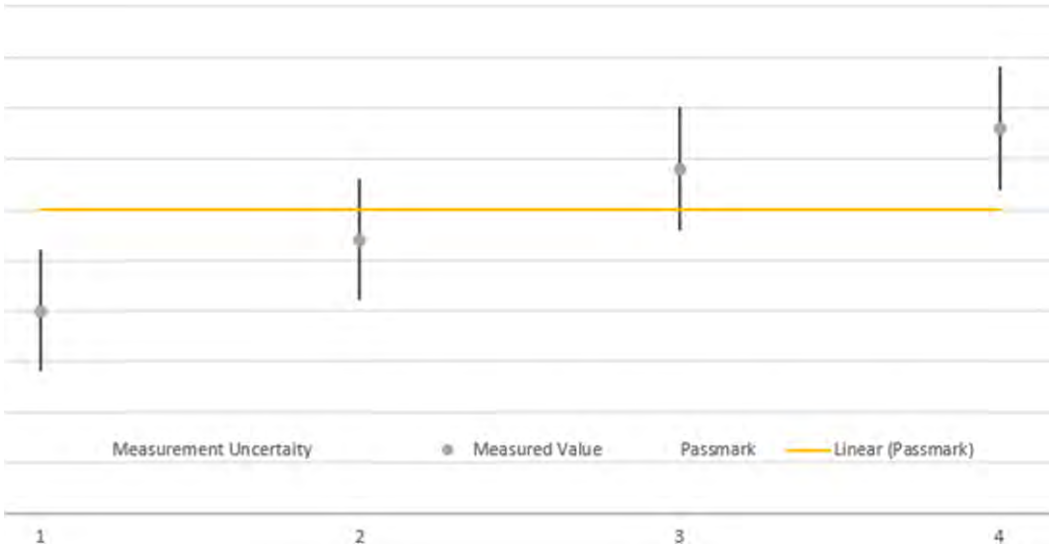
The FCC Site Registration No. is 525120; The Designation No. is CN1171.

1.1 MEASREMENT UNCERTAINTY

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

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

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



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

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.15,24	Feb.14,26
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
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.24,24	Feb.23,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,22	Aug.21,24
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,22	Aug.21,24
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
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	Apr.27,24
CABLE	R&S	W13.02	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	W12.14	N/A	Apr.28,23	Apr.27,24
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.28,23	Apr.27,24
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.28,23	Apr.27,24

CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
Temperature Chamber	votsch	VT4002	58566078100050	May.31,22	May.30,24

NOTE: 1. The calibration interval of the above test instruments is 12/ 24 / 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

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

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 27,24	Mar. 26,25
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.10,23	May.09,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.09,24	May.08,25
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.02,23	Sep.01,24
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Feb. 17,24	Feb. 16,25
Horn Antenna	ETS-LINDGREN	3117	00168692	Feb. 17,24	Feb. 16,25
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Sep.03, 23	Sep.02, 24
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 13,24	Feb. 12,25
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 05,24	May. 04,25
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.10,23	May.09,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.09,24	May.08,25
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb.16,24	Feb.15,25
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	Nov. 14,23	Nov. 13,26
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	50HF-010-SMA	May. 06,23	May. 05,24
10dB Attenuator	JFW/USA	50HF-010-SMA	50HF-010-SMA	May. 05,24	May. 04,25
Power Meter	Anritsu	ML2495A	1506002	Feb. 13,24	Feb. 12,25
Power Sensor	Anritsu	MA2411B	1339352	Feb. 13,24	Feb. 12,25
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,23	May. 05,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 05,24	May. 04,25
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 13,24	Feb. 12,25
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.10,23	May.09,24
Base station R&S CMW500	Rohde&Schwarz	CMW500	153085	May.09,24	May.08,25
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 12,22	Aug. 11,23
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 11,23	Aug. 10,24

NOTE: 1. The calibration interval of the above test instruments is 12/ 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	TBOX	
BRAND NAME*	SOIMT	
MODEL NAME*	FLC-WNP26C	
NOMINAL VOLTAGE*	EUT12.0Vdc	
MODULATION TECHNOLOGY	**WCDMA IV**	BPSK, QPSK
	LTE	QPSK, 16QAM
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 38 Channel Bandwidth: 5MHz	2572.5MHz ~ 2617.5MHz
	LTE Band 38 Channel Bandwidth: 10MHz	2575MHz ~ 2615MHz
	LTE Band 38 Channel Bandwidth: 15MHz	2577.5MHz ~ 2612.5MHz
	LTE Band 38 Channel Bandwidth: 20MHz	2580MHz ~ 2610MHz
	LTE Band 41 Channel Bandwidth: 5MHz	2557.5MHz ~ 2652.5MHz
	LTE Band 41 Channel Bandwidth: 10MHz	2560MHz ~ 2650MHz

FREQUENCY RANGE	LTE Band 41 Channel Bandwidth: 15MHz	2562.5MHz ~ 2647.5MHz
	LTE Band 41 Channel Bandwidth: 20MHz	2565MHz ~ 2645MHz
MAX. ERP/EIRP POWER	WCDMA IV	304.09mW
	LTE Band 4 Channel Bandwidth: 1.4MHz	302.69mW
	LTE Band 4 Channel Bandwidth: 3MHz	299.92mW
	LTE Band 4 Channel Bandwidth: 5MHz	239.33mW
	LTE Band 4 Channel Bandwidth: 10MHz	302.69mW
	LTE Band 4 Channel Bandwidth: 15MHz	294.44mW
	LTE Band 4 Channel Bandwidth: 20MHz	303.39mW
	LTE Band 7 Channel Bandwidth: 5MHz	255.27mW
	LTE Band 7 Channel Bandwidth: 10MHz	252.35mW
	LTE Band 7 Channel Bandwidth: 15MHz	254.1mW
	LTE Band 7 Channel Bandwidth: 20MHz	257.63mW
	LTE Band 38 Channel Bandwidth: 5MHz	193.64mW
	LTE Band 38 Channel Bandwidth: 10MHz	196.34mW
	LTE Band 38 Channel Bandwidth: 15MHz	194.54mW
	LTE Band 38 Channel Bandwidth: 20MHz	200.45mW
	LTE Band 41 Channel Bandwidth: 5MHz	238.78mW
	LTE Band 41 Channel Bandwidth: 10MHz	239.88mW
	LTE Band 41 Channel Bandwidth: 15MHz	240.99mW
	LTE Band 41 Channel Bandwidth: 20MHz	241.55mW

EMISSION DESIGNATOR	WCDMA IV	4M12F9W
	LTE Band 4 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
	LTE Band 4 Channel Bandwidth: 3MHz	QPSK:2M70G7D
		16QAM: 2M71W7D
	LTE Band 4 Channel Bandwidth: 5MHz	QPSK: 4M51G7D
		16QAM: 4M51W7D
	LTE Band 4 Channel Bandwidth: 10MHz	QPSK:8M98G7D
		16QAM: 8M97W7D
	LTE Band 4 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	LTE Band 4 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M51G7D
		16QAM: 4M51W7D
	LTE Band 7 Channel Bandwidth: 10MHz	QPSK:8M99G7D
		16QAM: 8M99W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 18M0W7D
	LTE Band 41 Channel Bandwidth: 5MHz	QPSK: 4M52G7D
		16QAM: 4M52W7D
	LTE Band 41 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M99W7D
	LTE Band 41 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
	LTE Band 41 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D

ANTENNA TYPE*	Fixed External Antenna with 2.1dBi gain for WCDMA IV Fixed External Antenna with 2.1dBi gain for LTE4 Fixed External Antenna with 2.1dBi gain for LTE 7 Fixed External Antenna with 1.2dBi gain for LTE 38 Fixed External Antenna with 2.1dBi gain for LTE 41
HW VERSION*	11806064/01
SW VERSION*	SW1：11759397/01 SW2：11759401/01
I/O PORTS*	Refer to user's manual
CABLE SUPPLIED*	N/A
EXTREME TEMPERATURE*	-40℃-85 ℃
EXTREME VOLTAGE*	9.0V – 16.0V

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.

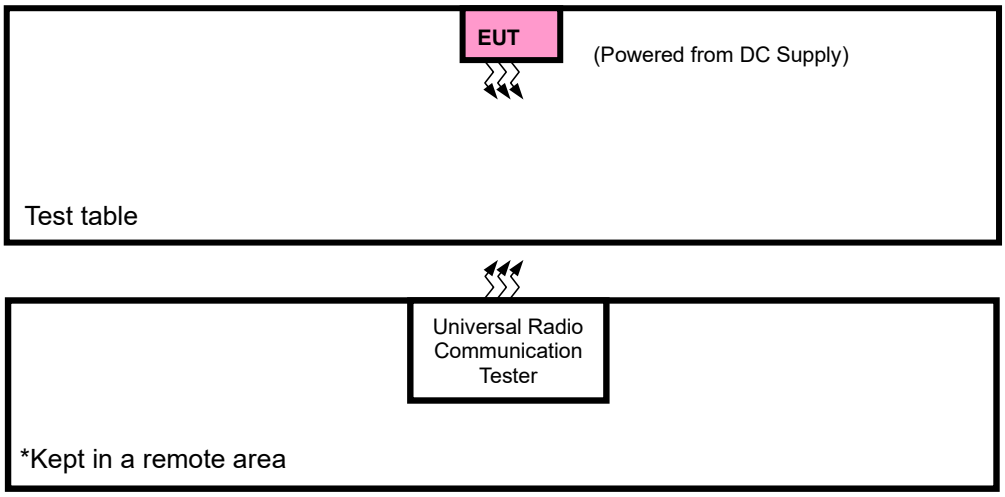
2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and two receivers.

MODULATION MODE	TX FUNCTION
WCDMA	1TX/2RX
LTE	1TX/2RX

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

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

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

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	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 + DC Supply with WCDMA or LTE link**

WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
A	FREQUENCY STABILITY	1312 to 1513	1312, 1413, 1513	WCDMA
A	OCCUPIED BANDWIDTH	1312 to 1513	1312, 1413, 1513	WCDMA
A	BAND EDGE	1312 to 1513	1312, 1513	WCDMA
A	PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1413, 1513	WCDMA
A	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
A	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	19957 to 20393	19957	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			20393	1.4MHz	QPSK, 16QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		19965 to 20385	19965	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			20385	3MHz	QPSK, 16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		19975 to 20375	20775	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			21425	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20000 to 20350	20800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			21400	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20025 to 20325	20825	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			21375	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20050 to 20300	20850	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			21350	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDCUDETED EMISSION	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset

		19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20175	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 7 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			21425	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			21400	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			21375	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20850 to 21350	20850	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			21350	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDCUDETED EMISSION	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB Offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0 RB Offset
		20825 to 21375	21100	15MHz	QPSK	1 RB / 0 RB Offset
		20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB Offset

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

LTE BAND 38 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		37850 to38150	37850, 38000, 38150	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset

Note:

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

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

LTE BAND 41 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	40265 to 41215	40265, 40740,41215	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		40290 to 41190	40290 ,40740, 41190	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		40315 to 41165	40315 ,40740, 41165	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		40340 to 41140	40340 ,40740,41140	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	40290 to 41190	40290 ,40740, 41190	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	40265 to 41215	40265, 40740,41215	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
		40290 to 41190	40290 ,40740, 41190	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
		40315 to 41165	40315 ,40740, 41165	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
		40340 to 41140	40340 ,40740,41140	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	40340 to 41140	40340 ,40740,41140	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset

A	BAND EDGE	40265 to 41215	40265	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			41215	5MHz	QPSK, 16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		40290 to 41190	39700	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			41190	10MHz	QPSK, 16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		40315 to 41165	40315	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			41165	15MHz	QPSK, 16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		40340 to 41140	40340	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			41140	20MHz	QPSK, 16QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDCUDETED EMISSION	40265 to 41215	40265, 40740,41215	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		40290 to 41190	40290 ,40740, 41190	10MHz	QPSK, 16QAM	1 RB / 0RB Offset
		40315 to 41165	40315 ,40740, 41165	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		40340 to 41140	40340 ,40740,41140	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	40265 to 41215	40740	5MHz	QPSK	1 RB / 0 RB Offset
		40290 to 41190	40290 ,40740, 41190	10MHz	QPSK	1 RB / 0RB Offset
		40315 to 41165	40740	15MHz	QPSK	1 RB / 0 RB Offset
		40340 to 41140	40740	20MHz	QPSK	1 RB / 0 RB Offset

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

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 9.0V/ 12.0V/ 16.0V By DC Supply	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu
CONDCUDETED EMISSION	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 12.0V By DC Supply	Hanwen Xu

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

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

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

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

47 CFR 27.50(d)(4)

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. Fixed stations operating in the 1710–1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

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

Where:

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

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

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

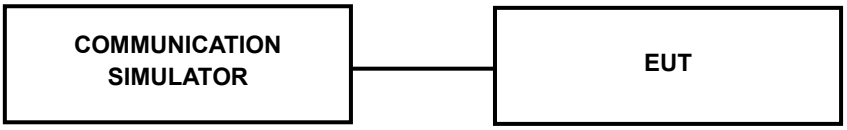
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	1537	1638	1738
Frequency	1712.4	1732.6	1752.6
RMC 12.2K	24.80	**24.83**	24.75
HSDPA Subtest-1	23.91	24.05	23.89
HSDPA Subtest-2	23.90	23.99	23.88
HSDPA Subtest-3	23.53	23.55	23.39
HSDPA Subtest-4	23.45	23.50	23.39
DC-HSDPA Subtest-1	23.89	23.98	23.79
DC-HSDPA Subtest-2	23.92	23.98	23.81
DC-HSDPA Subtest-3	23.51	23.39	23.33
DC-HSDPA Subtest-4	23.46	23.43	23.36
HSUPA Subtest-1	23.97	24.01	23.92
HSUPA Subtest-2	22.90	22.88	22.88
HSUPA Subtest-3	23.36	23.47	23.37
HSUPA Subtest-4	22.95	22.91	22.80
HSUPA Subtest-5	23.87	23.98	23.79

LTE Band 4

Band/BW	Modulation	RB Size	RB Offset	Low CH 19957	Mid CH 20175	High CH 20393
				Frequency 1710.7 MHz	Frequency 1732.5 MHz	Frequency 1754.3 MHz
4/ 1.4	QPSK	1	0	22.16	22.38	22.71
		1	2	22.09	22.40	22.64
		1	5	22.35	22.37	22.48
		3	0	21.86	22.08	22.33
		3	1	22.09	22.15	22.24
		3	3	22.13	22.13	22.19
		6	0	21.30	21.38	21.53
	16QAM	1	0	21.36	21.69	21.45
		1	2	21.26	21.25	21.76
		1	5	21.39	21.36	21.31
		3	0	20.81	20.91	21.22
		3	1	21.10	21.21	21.19
		3	3	20.99	21.07	21.13
		6	0	20.27	20.31	20.50

Band/BW	Modulation	RB Size	RB Offset	Low CH 19965	Mid CH 20175	High CH 20385
				Frequency 1711.5 MHz	Frequency 1732.5 MHz	Frequency 1753.5 MHz
4/ 3	QPSK	1	0	22.27	22.43	22.57
		1	7	22.13	22.52	22.67
		1	14	22.33	22.38	22.45
		8	0	21.14	21.27	21.45
		8	3	21.32	21.41	21.46
		8	7	21.36	21.35	21.39
		15	0	21.29	21.40	21.50
	16QAM	1	0	21.42	21.67	21.49
		1	7	21.29	21.16	21.70
		1	14	21.41	21.41	21.25
		8	0	20.02	20.12	20.34
		8	3	20.20	20.42	20.39
		8	7	20.24	20.31	20.34
		15	0	20.32	20.39	20.47

Band/BW	Modulation	RB Size	RB Offset	Low CH 19975	Mid CH 20175	High CH 20375
				Frequency 1712.5 MHz	Frequency 1732.5 MHz	Frequency 1752.5 MHz
4/ 5	QPSK	1	0	22.23	22.42	22.61
		1	12	22.11	22.40	22.59
		1	24	22.38	22.39	22.41
		12	0	21.15	21.27	21.41
		12	6	21.32	21.43	21.46
		12	13	21.29	21.33	21.38
		25	0	21.29	21.40	21.61
	16QAM	1	0	21.38	21.58	21.49
		1	12	21.29	21.29	21.69
		1	24	21.29	21.35	21.37
		12	0	20.14	20.12	20.32
		12	6	20.17	20.42	20.41
		12	13	20.14	20.24	20.44
		25	0	20.30	20.34	20.50

Band/BW	Modulation	RB Size	RB Offset	Low CH 20000	Mid CH 20175	High CH 20350
				Frequency 1715 MHz	Frequency 1732.5 MHz	Frequency 1750 MHz
4/ 10	QPSK	1	0	22.14	22.38	22.71
		1	24	22.05	22.42	22.56
		1	49	22.27	22.31	22.51
		25	0	21.09	21.26	21.47
		25	12	21.28	21.35	21.52
		25	25	21.33	21.26	21.52
		50	0	21.36	21.31	21.51
	16QAM	1	0	21.33	21.61	21.49
		1	24	21.35	21.19	21.80
		1	49	21.37	21.31	21.35
		25	0	20.00	20.23	20.38
		25	12	20.21	20.44	20.43
		25	25	20.24	20.26	20.40
		50	0	20.33	20.38	20.43

Band/BW	Modulation	RB Size	RB Offset	Low CH 20025	Mid CH 20175	High CH 20325
				Frequency 1717.5 MHz	Frequency 1732.5 MHz	Frequency 1747.5 MHz
4/ 15	QPSK	1	0	22.20	22.38	22.59
		1	37	22.08	22.41	22.55
		1	74	22.38	22.29	22.42
		36	0	21.13	21.23	21.41
		36	19	21.22	21.40	21.44
		36	39	21.32	21.30	21.44
		75	0	21.27	21.45	21.47
	16QAM	1	0	21.40	21.70	21.47
		1	37	21.30	21.17	21.69
		1	74	21.28	21.31	21.35
		36	0	20.07	20.17	20.35
		36	19	20.29	20.37	20.42
		36	39	20.24	20.29	20.37
		75	0	20.23	20.42	20.54

Band/BW	Modulation	RB Size	RB Offset	Low CH 20050	Mid CH 20175	High CH 20300
				Frequency 1720 MHz	Frequency 1732.5 MHz	Frequency 1745 MHz
4/ 20	QPSK	1	0	22.38	22.63	**22.72**
		1	50	22.18	22.54	22.68
		1	99	22.30	22.41	22.54
		50	0	21.19	21.35	21.55
		50	25	21.33	21.44	21.56
		50	50	21.38	21.39	21.53
		100	0	21.38	21.46	21.62
	16QAM	1	0	21.47	21.71	21.55
		1	50	21.40	21.30	21.84
		1	99	21.42	21.42	21.38
		50	0	20.15	20.26	20.46
		50	25	20.31	20.46	20.52
		50	50	20.25	20.34	20.45
		100	0	20.37	20.44	20.58

LTE Band 7

Band/BW	Modulation	RB Size	RB Offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	21.88	21.88	21.72
		1	12	21.97	21.95	21.91
		1	24	21.49	21.75	21.43
		12	0	20.81	20.80	20.76
		12	6	20.84	20.72	20.57
		12	13	20.69	20.78	20.56
		25	0	20.73	20.66	20.59
	16QAM	1	0	21.03	20.80	20.52
		1	12	20.90	20.83	20.53
		1	24	20.42	20.65	20.22
		12	0	19.75	19.68	19.60
		12	6	19.65	19.67	19.62
		12	13	19.52	19.69	19.60
		25	0	19.62	19.68	19.52

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	21.85	21.82	21.60
		1	24	21.92	21.83	21.79
		1	49	21.54	21.61	21.40
		25	0	20.85	20.75	20.68
		25	12	20.81	20.66	20.67
		25	25	20.75	20.66	20.48
		50	0	20.71	20.73	20.50
	16QAM	1	0	20.95	20.84	20.41
		1	24	20.80	20.84	20.45
		1	49	20.47	20.70	20.12
		25	0	19.76	19.62	19.62
		25	12	19.71	19.61	19.70
		25	25	19.45	19.59	19.62
		50	0	19.61	19.61	19.63

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	21.87	21.89	21.64
		1	37	21.95	21.91	21.81
		1	74	21.47	21.70	21.32
		36	0	20.78	20.71	20.69
		36	19	20.90	20.63	20.69
		36	39	20.74	20.72	20.52
		75	0	20.70	20.68	20.56
	16QAM	1	0	21.00	20.79	20.43
		1	37	20.81	20.81	20.53
		1	74	20.51	20.67	20.16
		36	0	19.74	19.71	19.65
		36	19	19.71	19.67	19.61
		36	39	19.57	19.66	19.59
		75	0	19.59	19.61	19.57

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	21.98	21.94	21.75
		1	50	**22.01**	21.96	21.93
		1	99	21.59	21.76	21.46
		50	0	20.91	20.82	20.77
		50	25	20.94	20.77	20.72
		50	50	20.77	20.80	20.62
		100	0	20.75	20.71	20.60
	16QAM	1	0	21.05	20.85	20.53
		1	50	20.95	20.93	20.59
		1	99	20.52	20.77	20.26
		50	0	19.81	19.75	19.75
		50	25	19.75	19.71	19.71
		50	50	19.60	19.72	19.65
		100	0	19.74	19.73	19.64

LTE Band 38

Band/BW	Modulation	RB Size	RB Offset	Low CH (37775)	Low Mid CH (38000)	Mid CH (38225)
				Frequency (2572.5)MHz	Frequency (2595)MHz	Frequency (2617.5)MHz
38/ 5	QPSK	1	0	21.67	21.46	21.42
		1	12	21.66	21.64	21.59
		1	24	21.33	21.48	21.34
		12	0	20.65	20.52	20.44
		12	6	20.63	20.64	20.50
		12	13	20.62	20.60	20.40
		25	0	20.54	20.64	20.37
	16QAM	1	0	20.75	20.49	20.31
		1	12	20.84	20.59	20.36
		1	24	20.64	20.39	20.10
		12	0	19.57	19.54	19.48
		12	6	19.74	19.43	19.38
		12	13	19.43	19.45	19.41
		25	0	19.43	19.44	19.41

Band/BW	Modulation	RB Size	RB Offset	Low CH (37800)	Low Mid CH (38000)	Mid CH (38200)
				Frequency (2575)MHz	Frequency (2595)MHz	Frequency (2615)MHz
38/ 10	QPSK	1	0	21.73	21.54	21.32
		1	24	21.63	21.67	21.47
		1	49	21.42	21.50	21.29
		25	0	20.67	20.47	20.40
		25	12	20.51	20.62	20.52
		25	25	20.55	20.68	20.44
		50	0	20.49	20.62	20.45
	16QAM	1	0	20.82	20.48	20.20
		1	24	20.90	20.54	20.27
		1	49	20.58	20.35	20.14
		25	0	19.58	19.46	19.48
		25	12	19.73	19.46	19.42
		25	25	19.48	19.41	19.35
		50	0	19.43	19.39	19.35

Band/BW	Modulation	RB Size	RB Offset	Low CH (37825)	Low Mid CH (38000)	Mid CH (38175)
				Frequency (2577.5)MHz	Frequency (2595)MHz	Frequency (2612.5)MHz
38/ 15	QPSK	1	0	21.69	21.57	21.32
		1	37	21.66	21.61	21.55
		1	74	21.42	21.51	21.33
		36	0	20.73	20.48	20.39
		36	19	20.57	20.65	20.42
		36	39	20.52	20.64	20.42
		75	0	20.53	20.57	20.37
	16QAM	1	0	20.70	20.61	20.22
		1	37	20.88	20.65	20.29
		1	74	20.60	20.34	20.15
		36	0	19.63	19.47	19.46
		36	19	19.73	19.45	19.47
		36	39	19.39	19.36	19.45
		75	0	19.51	19.39	19.37

Band/BW	Modulation	RB Size	RB Offset	Low CH (37850)	Low Mid CH (38000)	Mid CH (38150)
				Frequency (2580)MHz	Frequency (2595)MHz	Frequency (2610)MHz
38/ 20	QPSK	1	0	**21.82**	21.74	21.65
		1	50	21.75	21.68	21.61
		1	99	21.48	21.57	21.37
		50	0	20.78	20.60	20.49
		50	25	20.66	20.68	20.57
		50	50	20.65	20.72	20.45
		100	0	20.68	20.65	20.51
	16QAM	1	0	20.83	20.62	20.32
		1	50	20.95	20.67	20.41
		1	99	20.65	20.48	20.25
		50	0	19.66	19.57	19.51
		50	25	19.77	19.53	19.50
		50	50	19.54	19.49	19.48
		100	0	19.55	19.51	19.47

LTE Band 41

Band/BW	Modulation	RB Size	RB Offset	Low CH (40265)	Mid CH (40740)	High CH (41215)
				Frequency (2557.5)MHz	Frequency (2605)MHz	Frequency (2652.5)MHz
41/ 5	QPSK	1	0	21.51	21.54	21.47
		1	12	21.43	21.68	21.59
		1	24	21.67	21.52	21.37
		12	0	20.45	20.48	20.41
		12	6	20.75	20.51	20.45
		12	13	20.37	20.52	20.46
		25	0	20.37	20.66	20.52
	16QAM	1	0	20.65	20.55	20.44
		1	12	20.62	20.69	20.73
		1	24	20.60	20.50	20.47
		12	0	19.62	19.42	19.44
		12	6	19.38	19.56	19.48
		12	13	19.45	19.53	19.46
		25	0	19.49	19.66	19.57

Band/BW	Modulation	RB Size	RB Offset	Low CH (40290)	Mid CH (40740)	High CH (41190)
				Frequency (2560)MHz	Frequency (2605)MHz	Frequency (2650)MHz
41/ 10	QPSK	1	0	21.43	21.50	21.37
		1	24	21.57	21.70	21.53
		1	49	21.60	21.47	21.41
		25	0	20.39	20.61	20.48
		25	12	20.82	20.50	20.42
		25	25	20.31	20.54	20.52
		50	0	20.45	20.55	20.54
	16QAM	1	0	20.63	20.52	20.49
		1	24	20.67	20.80	20.69
		1	49	20.70	20.49	20.42
		25	0	19.56	19.45	19.43
		25	12	19.42	19.55	19.44
		25	25	19.40	19.47	19.44
		50	0	19.55	19.72	19.64

Band/BW	Modulation	RB Size	RB Offset	Low CH (40315)	Mid CH (40740)	High CH (41165)
				Frequency (2562.5)MHz	Frequency (2605)MHz	Frequency (2647.5)MHz
41/ 15	QPSK	1	0	21.44	21.49	21.44
		1	37	21.55	21.72	21.54
		1	74	21.61	21.57	21.34
		36	0	20.43	20.47	20.41
		36	19	20.77	20.46	20.40
		36	39	20.36	20.60	20.54
		75	0	20.48	20.55	20.58
	16QAM	1	0	20.63	20.60	20.41
		1	37	20.64	20.70	20.74
		1	74	20.59	20.53	20.41
		36	0	19.50	19.48	19.43
		36	19	19.45	19.56	19.38
		36	39	19.40	19.56	19.41
		75	0	19.53	19.66	19.64

Band/BW	Modulation	RB Size	RB Offset	Low CH (40340)	Mid CH (40740)	High CH (41140)
				Frequency (2565)MHz	Frequency (2605)MHz	Frequency (2645)MHz
41/ 20	QPSK	1	0	21.56	21.64	21.49
		1	50	21.68	**21.73**	21.62
		1	99	21.61	21.58	21.44
		50	0	20.52	20.62	20.49
		50	25	20.85	20.58	20.52
		50	50	20.45	20.66	20.60
		100	0	20.49	20.70	20.64
	16QAM	1	0	20.68	20.65	20.53
		1	50	20.75	20.82	20.81
		1	99	20.72	20.56	20.51
		50	0	19.63	19.54	19.48
		50	25	19.52	19.59	19.52
		50	50	19.53	19.61	19.55
		100	0	19.56	19.73	19.66

ERP /EIRP

WCDMA IV

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
1312	1712.4	22.63	2.1	24.73	297.17	1
1413	1732.6	22.73	2.1	24.83	304.09	1
1513	1752.6	22.45	2.1	24.55	285.1	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	22.35	2.1	24.45	278.61	1
20175	1732.5	22.4	2.1	24.5	281.84	1
20393	1754.3	22.71	2.1	24.81	302.69	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	21.39	2.1	23.49	223.36	1
20175	1732.5	21.69	2.1	23.79	239.33	1
20393	1754.3	21.76	2.1	23.86	243.22	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	22.33	2.1	24.43	277.33	1
20175	1732.5	22.52	2.1	24.62	289.73	1
20385	1753.5	22.67	2.1	24.77	299.92	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	21.42	2.1	23.52	224.91	1
20175	1732.5	21.67	2.1	23.77	238.23	1
20385	1753.5	20.34	2.1	22.44	175.39	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	22.38	2.1	24.48	280.54	1
20175	1732.5	22.42	2.1	24.52	283.14	1
20375	1752.5	22.61	2.1	24.71	295.8	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	21.38	2.1	23.48	222.84	1
20175	1732.5	21.58	2.1	23.68	233.35	1
20375	1752.5	21.69	2.1	23.79	239.33	1

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	22.27	2.1	24.37	273.53	1
20175	1732.5	22.42	2.1	24.52	283.14	1
20350	1750	22.71	2.1	24.81	302.69	1

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20000	1715	21.37	2.1	23.47	222.33	1
20175	1732.5	21.61	2.1	23.71	234.96	1
20350	1750	21.8	2.1	23.9	245.47	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	22.38	2.1	24.48	280.54	1
20175	1732.5	22.41	2.1	24.51	282.49	1
20325	1747.5	22.59	2.1	24.69	294.44	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	21.4	2.1	23.5	223.87	1
20175	1732.5	21.7	2.1	23.8	239.88	1
20325	1747.5	21.69	2.1	23.79	239.33	1

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	22.38	2.1	24.48	280.54	1
20175	1732.5	22.63	2.1	24.73	297.17	1
20300	1745	22.72	2.1	24.82	303.39	1

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20050	1720	21.47	2.1	23.57	227.51	1
20175	1732.5	21.71	2.1	23.81	240.44	1
20300	1745	21.84	2.1	23.94	247.74	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	21.97	2.1	24.07	255.27	2
21100	2535	21.95	2.1	24.05	254.1	2
21425	2567.5	21.91	2.1	24.01	251.77	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	21.03	2.1	23.13	205.59	2
21100	2535	20.83	2.1	22.93	196.34	2
21425	2567.5	20.53	2.1	22.63	183.23	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	21.92	2.1	24.02	252.35	2
21100	2535	21.83	2.1	23.93	247.17	2
21400	2565	21.79	2.1	23.89	244.91	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20800	2505	20.95	2.1	23.05	201.84	2
21100	2535	20.84	2.1	22.94	196.79	2
21400	2565	20.45	2.1	22.55	179.89	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	21.95	2.1	24.05	254.1	2
21100	2535	21.91	2.1	24.01	251.77	2
21375	2562.5	21.81	2.1	23.91	246.04	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20825	2507.5	23.1	1.6	24.7	295.12	2
21100	2535	23.39	1.6	24.99	315.5	2
21375	2562.5	23.22	1.6	24.82	303.39	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	22.01	2.1	24.11	257.63	2
21100	2535	21.96	2.1	24.06	254.68	2
21350	2560	21.93	2.1	24.03	252.93	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20850	2510	21.05	2.1	23.15	206.54	2
21100	2535	20.93	2.1	23.03	200.91	2
21350	2560	20.59	2.1	22.69	185.78	2

LTE BAND 38

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	21.67	1.2	22.87	193.64	2
38000	2595.0	21.64	1.2	22.84	192.31	2
38225	2617.5	21.59	1.2	22.79	190.11	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37775	2572.5	20.84	1.2	22.04	159.96	2
38000	2595.0	20.59	1.2	21.79	151.01	2
38225	2617.5	20.36	1.2	21.56	143.22	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	21.73	1.2	22.93	196.34	2
38000	2595.0	21.67	1.2	22.87	193.64	2
38200	2615.0	21.47	1.2	22.67	184.93	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37800	2575.0	20.9	1.2	22.1	162.18	2
38000	2595.0	20.54	1.2	21.74	149.28	2
38200	2615.0	20.27	1.2	21.47	140.28	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	21.69	1.2	22.89	194.54	2
38000	2595.0	21.61	1.2	22.81	190.99	2
38175	2612.5	21.55	1.2	22.75	188.36	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37825	2577.5	20.88	1.2	22.08	161.44	2
38000	2595.0	20.65	1.2	21.85	153.11	2
38175	2612.5	20.29	1.2	21.49	140.93	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	21.82	1.2	23.02	200.45	2
38000	2595.0	21.74	1.2	22.94	196.79	2
38150	2610.0	21.65	1.2	22.85	192.75	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
37850	2580.0	20.95	1.2	22.15	164.06	2
38000	2595.0	20.67	1.2	21.87	153.82	2
38150	2610.0	20.41	1.2	21.61	144.88	2

LTE BAND 41

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40265	2557.5	21.67	2.1	23.77	238.23	2
40740	2605	21.68	2.1	23.78	238.78	2
41215	2652.5	21.59	2.1	23.69	233.88	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40265	2557.5	20.65	2.1	22.75	188.36	2
40740	2605	20.69	2.1	22.79	190.11	2
41215	2652.5	20.73	2.1	22.83	191.87	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40290	2560	21.6	2.1	23.7	234.42	2
40740	2605	21.7	2.1	23.8	239.88	2
41190	2650	21.53	2.1	23.63	230.67	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40290	2560	20.7	2.1	22.8	190.55	2
40740	2605	20.8	2.1	22.9	194.98	2
41190	2650	20.69	2.1	22.79	190.11	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40315	2562.5	21.61	2.1	23.71	234.96	2
40740	2605	21.72	2.1	23.82	240.99	2
41165	2647.5	21.54	2.1	23.64	231.21	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40315	2562.5	20.64	2.1	22.74	187.93	2
40740	2605	20.7	2.1	22.8	190.55	2
41165	2647.5	20.74	2.1	22.84	192.31	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40340	2565	21.68	2.1	23.78	238.78	2
40740	2605	21.73	2.1	23.83	241.55	2
41140	2645	21.62	2.1	23.72	235.5	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
40340	2565	20.75	2.1	22.85	192.75	2
40740	2605	20.82	2.1	22.92	195.88	2
41140	2645	20.81	2.1	22.91	195.43	2

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

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

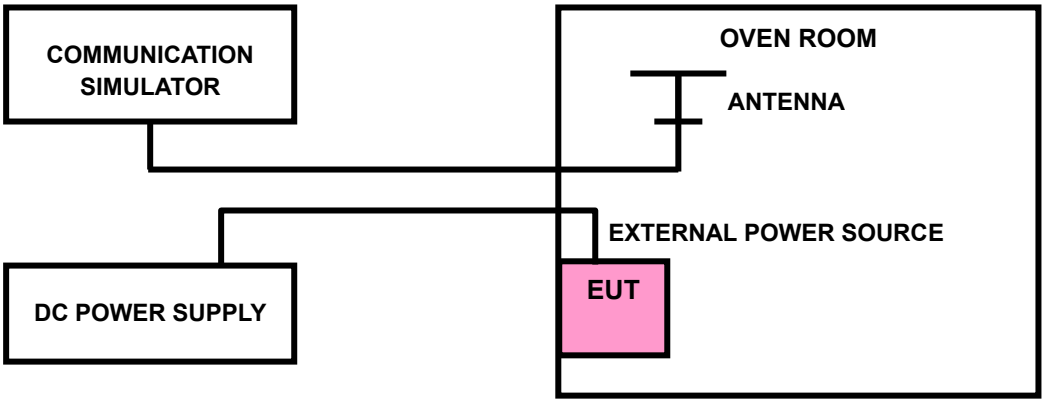
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

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

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

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

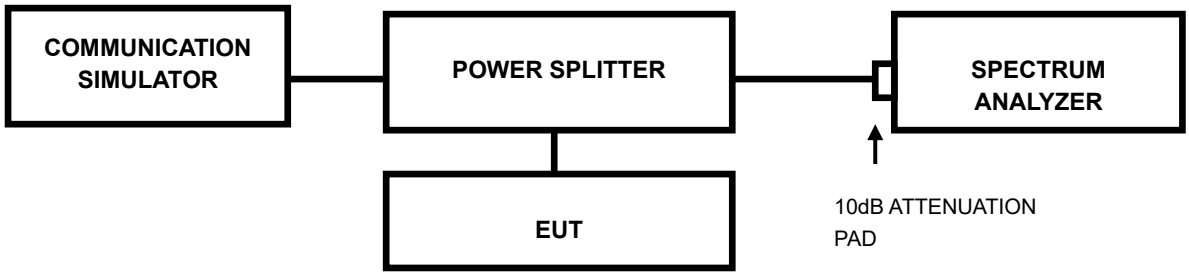
Note: VL = Low voltage(9.0V); VN/NV = Normal voltage(12.0V); VH = High voltage(16.0V);
NT = Normal temperature (25℃)

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 Of this test report.

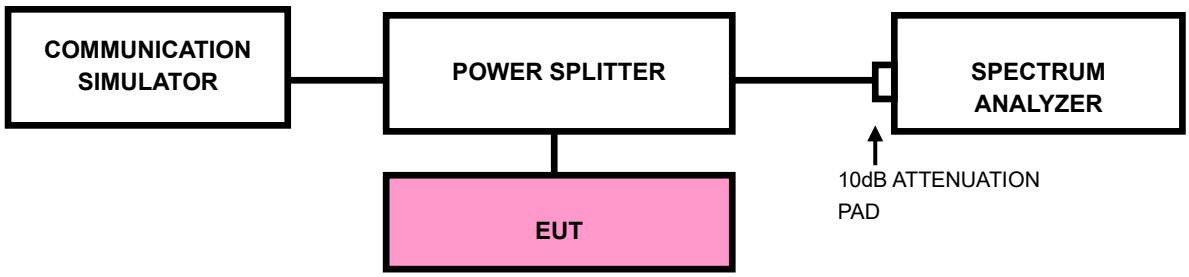
3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

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

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

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

a) All measurements were done at low and high operational frequency range

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

c) Tune the analyzer to the nominal center frequency of the emission bandwidth

(EBW)

d) .Set the resolution bandwidth (RBW) ≧ 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 Of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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

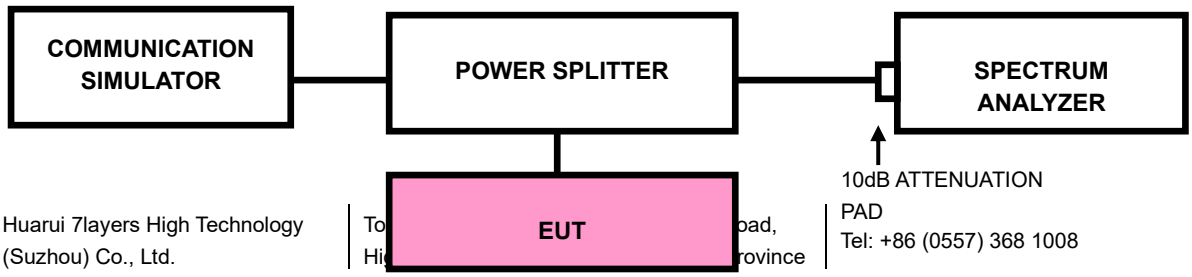
According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the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

3.5.2 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 Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

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

3.6.2 TEST PROCEDURES

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

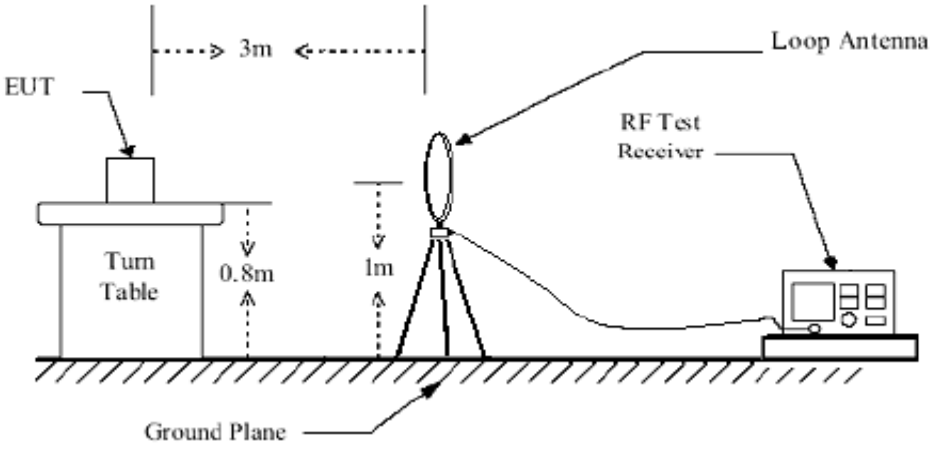
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

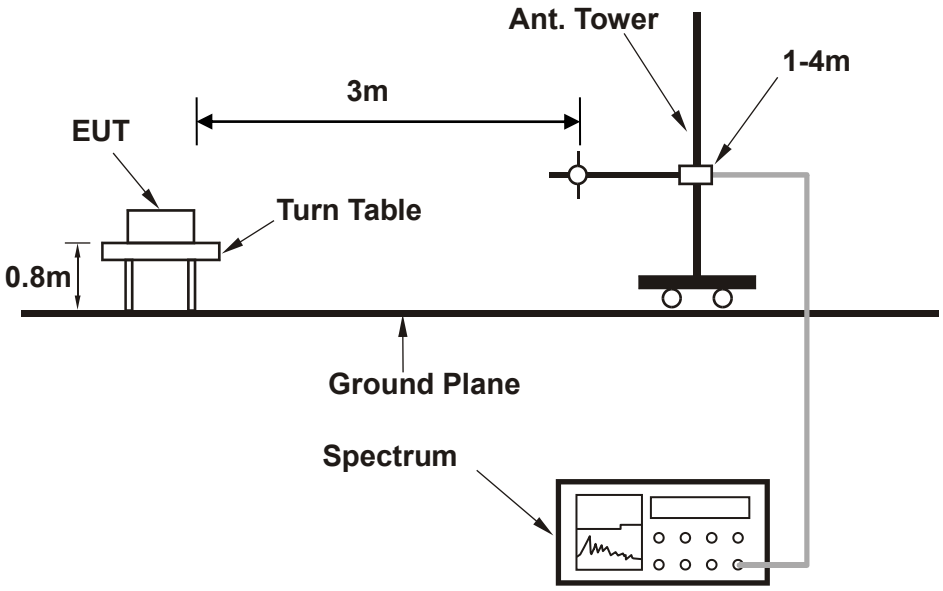
No deviation

3.6.4 TEST SETUP

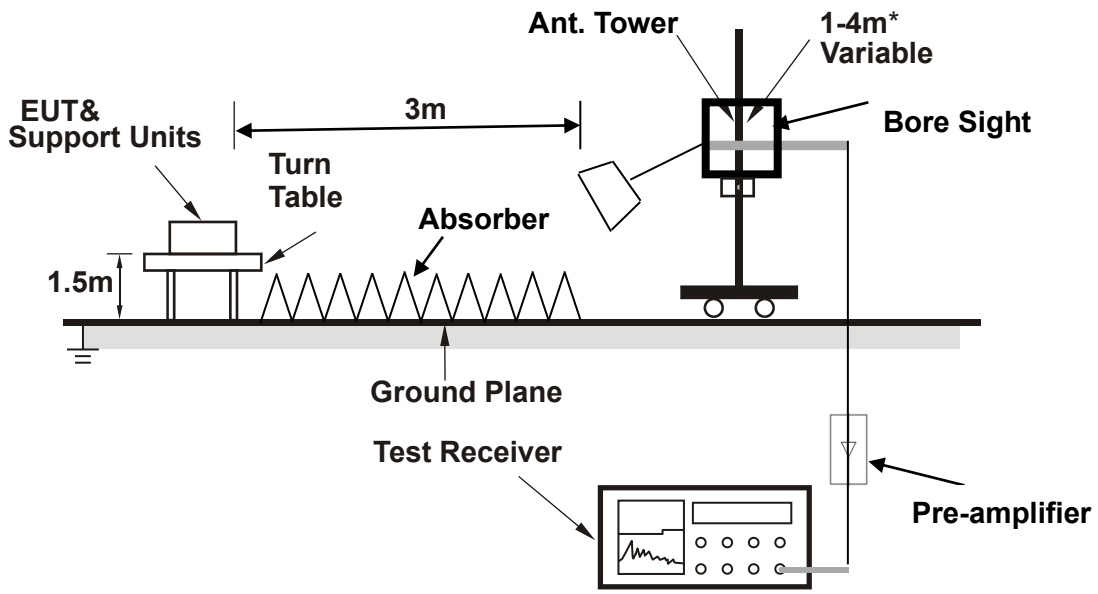
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



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

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

3.6.5 TEST RESULTS

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

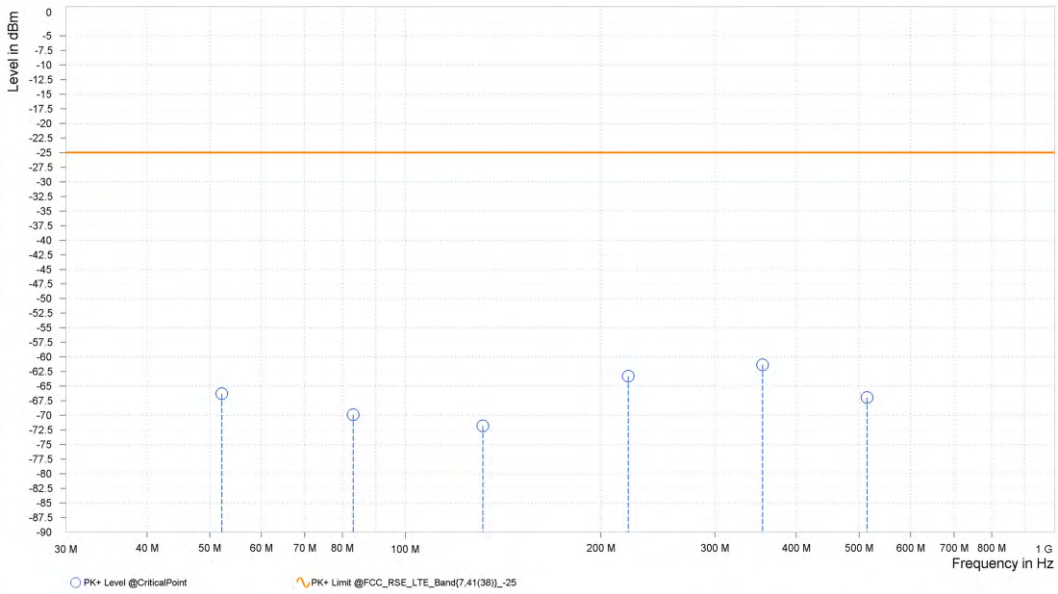
BELOW 1GHz WORST-CASE DATA

30 MHz – 1GHz data:

LTE Band 41
CHANNEL BANDWIDTH: 10MHz / QPSK

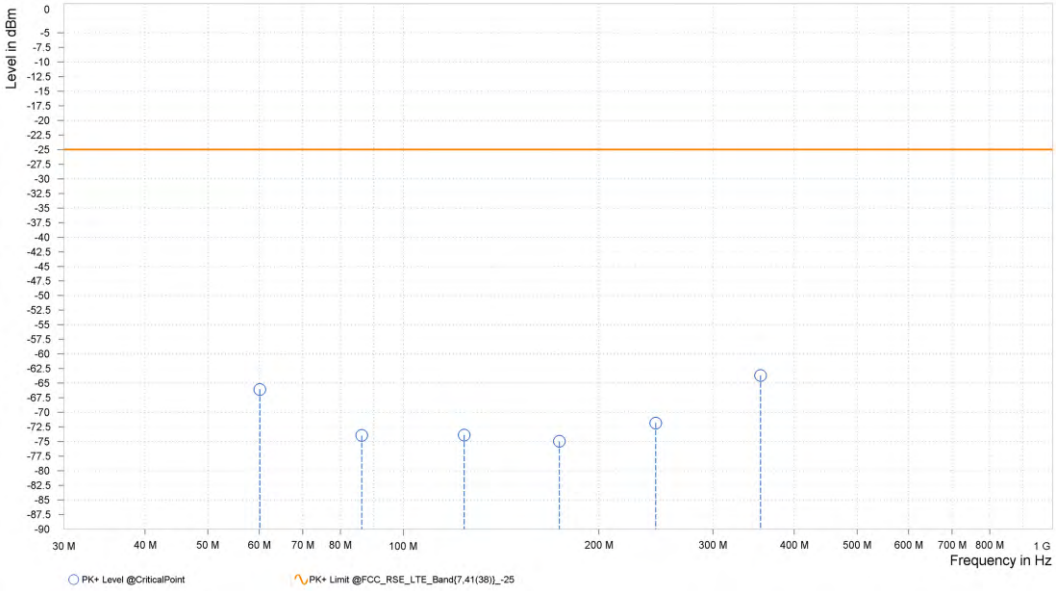
MODE	TX channel 40740	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	52.150	-66.29	-25.00	41.29	4.85	H	4.5	1.00
1	83.150	-69.87	-25.00	44.87	-3.50	H	0.9	2.00
1	131.650	-71.81	-25.00	46.81	-3.44	H	355.5	2.00
1	220.400	-63.30	-25.00	38.30	1.35	H	359.1	1.00
1	355.000	-61.32	-25.00	36.32	6.63	H	230.2	2.00
2	514.121	-66.94	-25.00	41.94	7.90	H	82	2.00



MODE	TX channel 40740	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
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	60.100	-66.08	-25.00	41.08	4.44	V	1	1.00
1	86.250	-73.94	-25.00	48.94	-1.17	V	131	2.00
1	124.100	-73.89	-25.00	48.89	0.63	V	33	2.00
1	173.850	-74.96	-25.00	49.96	-0.79	V	253	1.00
1	244.850	-71.83	-25.00	46.83	3.30	V	131	2.00
1	355.050	-63.68	-25.00	38.68	5.41	V	253	1.00



ABOVE 1GHz

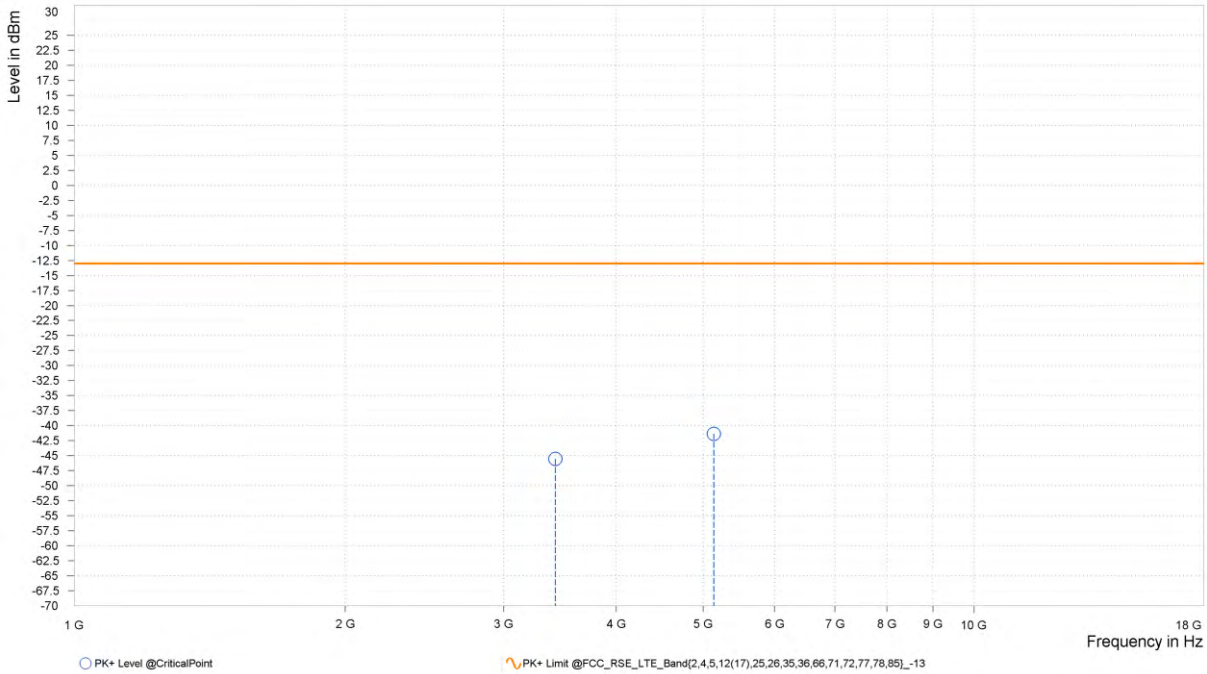
Note: For higher frequency, the emission is too low to be detected.

WCDMA Band IV:

CH 1312

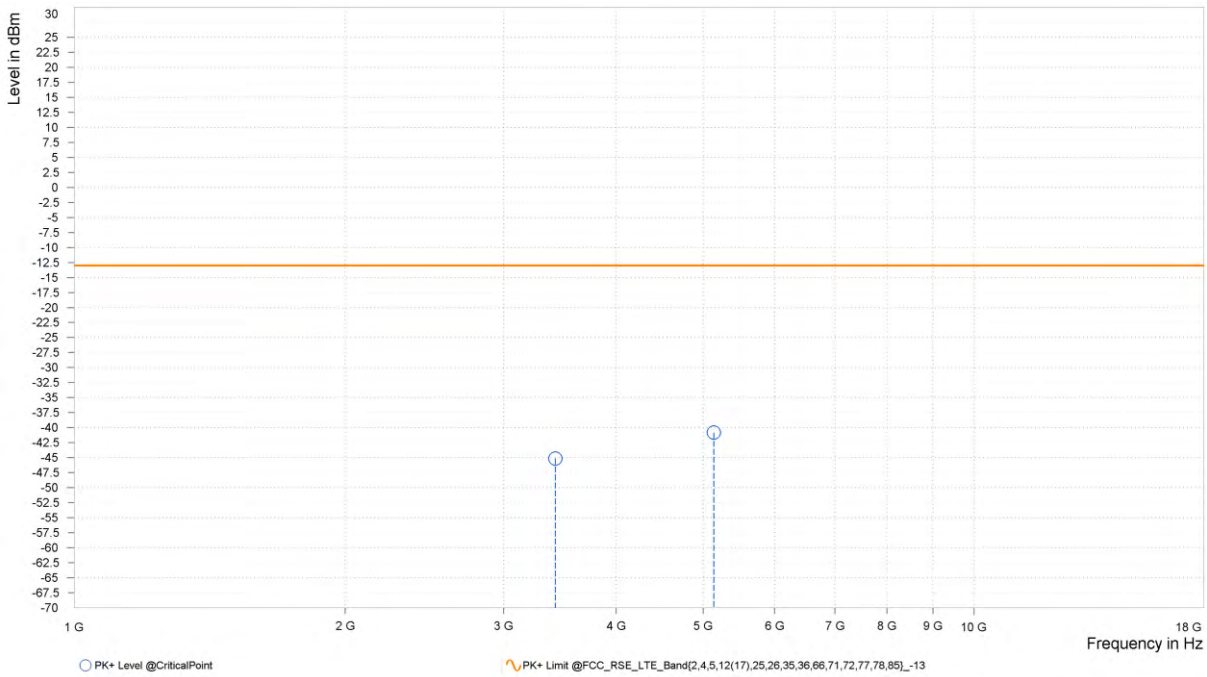
MODE	TX channel 1312	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,424.800	-45.56	-13.00	32.56	16.04	H	0.9	2.00
2	5,137.200	-41.37	-13.00	28.37	17.62	H	82	2.00



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

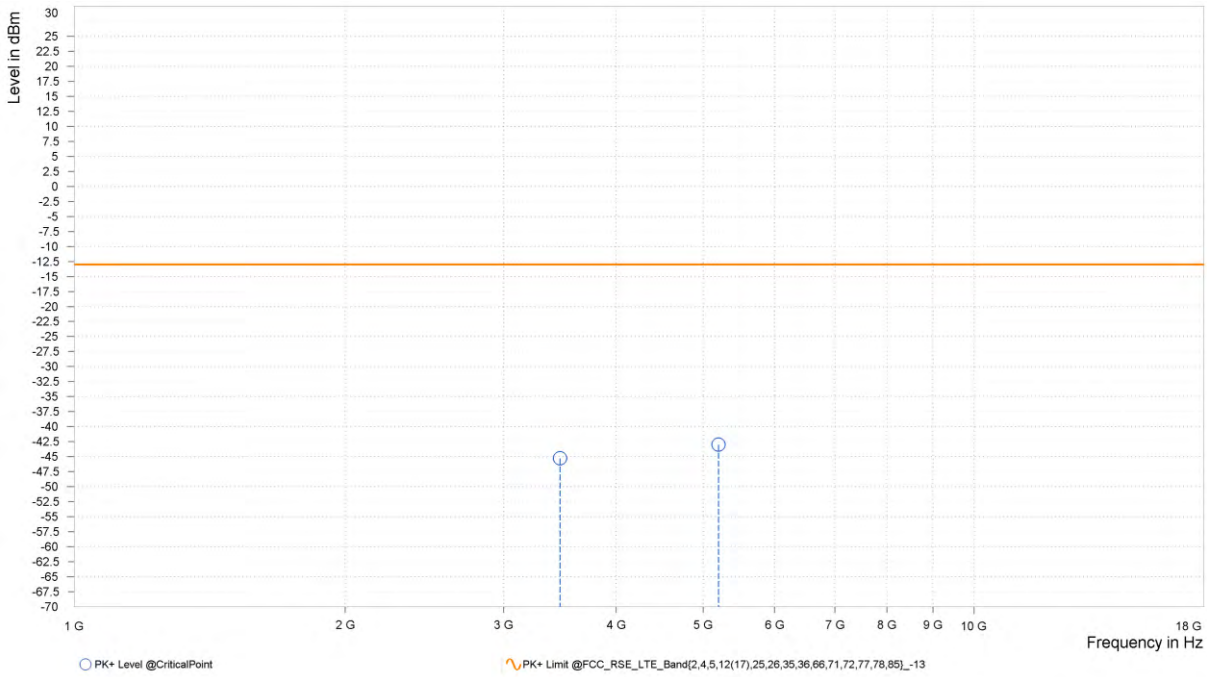
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,424.800	-45.13	-13.00	32.13	15.83	V	359.1	1.00
2	5,137.200	-40.84	-13.00	27.84	17.50	V	276.8	1.00



CH 1413

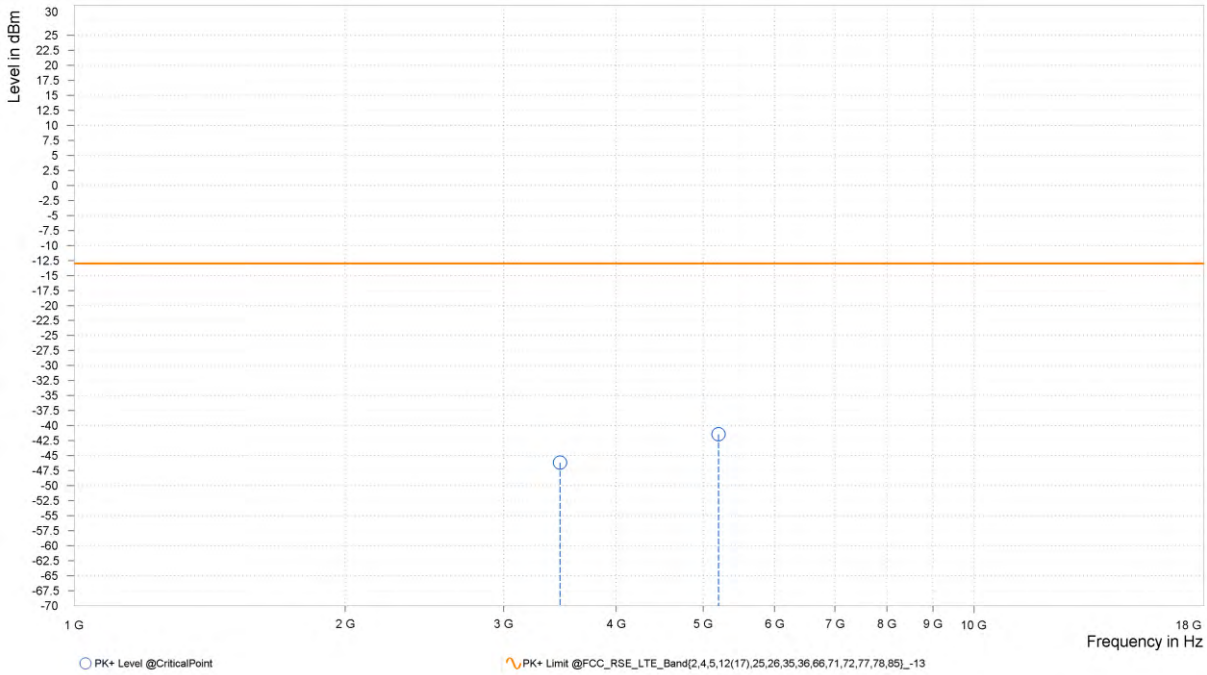
MODE	TX channel 1413	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,465.200	-45.27	-13.00	32.27	16.06	H	359	2.00
2	5,197.800	-43.00	-13.00	30.00	18.28	H	0.9	2.00



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

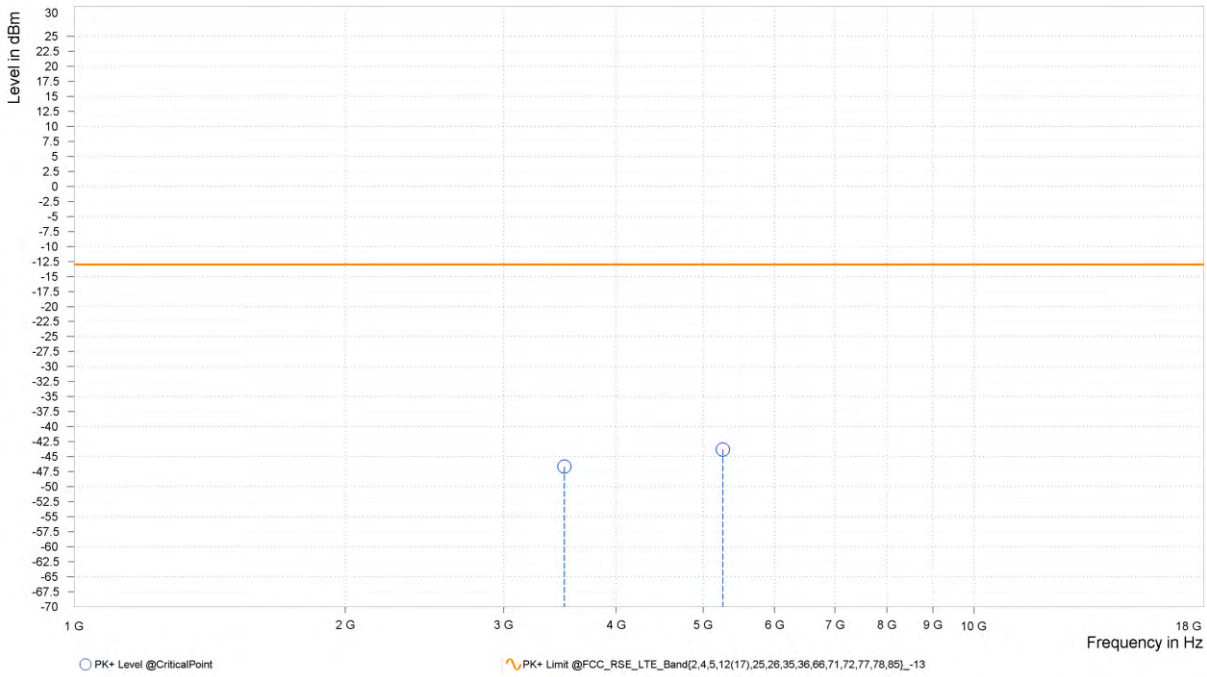
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,465.200	-46.17	-13.00	33.17	15.78	V	1	1.00
2	5,197.800	-41.45	-13.00	28.45	18.24	V	359	2.00



CH 1513

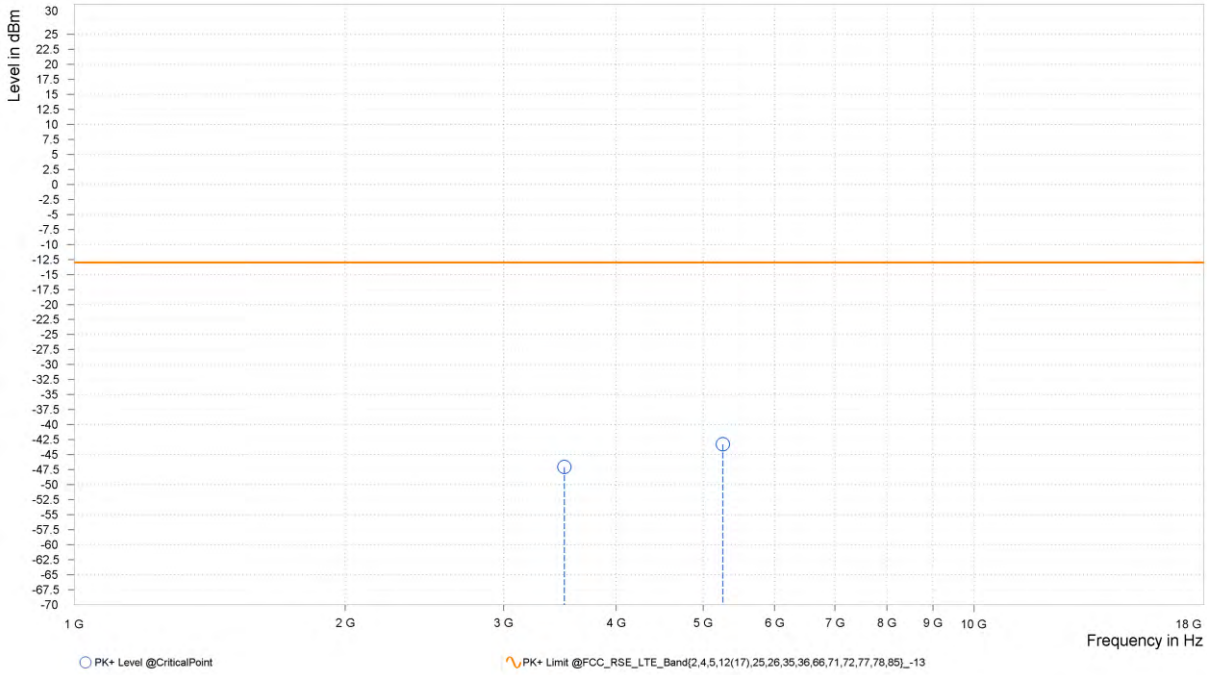
MODE	TX channel 1513	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,505.200	-46.68	-13.00	33.68	15.37	H	1	2.00
2	5,257.800	-43.82	-13.00	30.82	17.71	H	1	2.00



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

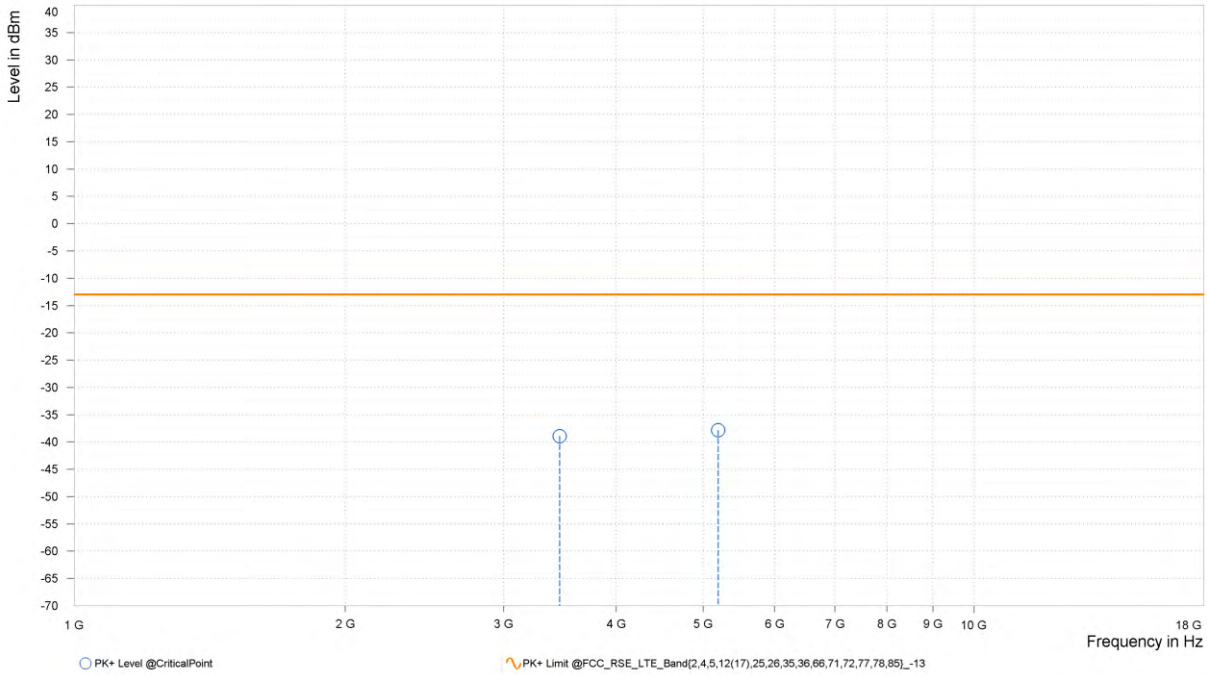
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,505.200	-47.05	-13.00	34.05	15.19	V	275.7	1.00
2	5,257.800	-43.27	-13.00	30.27	17.65	V	359	2.00



LTE Band 4
CHANNEL BANDWIDTH: 1.4MHz / QPSK

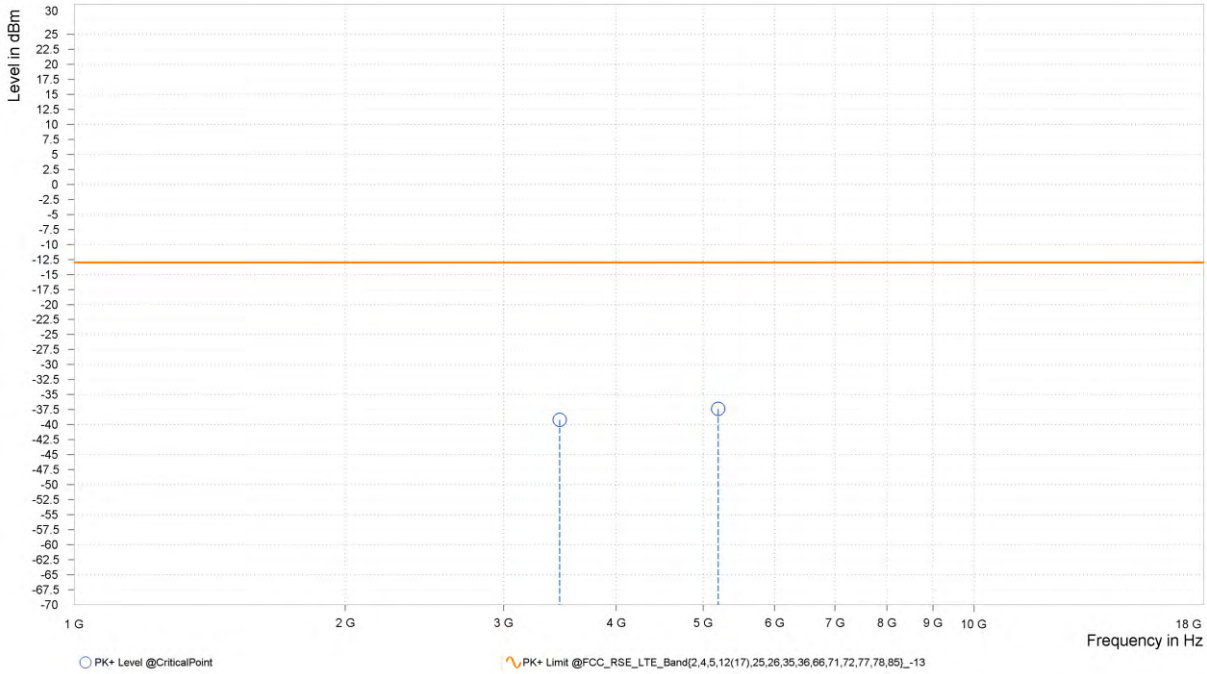
MODE	TX channel 20175	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,464.000	-38.93	-13.00	25.93	16.08	H	264.9	2.00
2	5,195.610	-37.83	-13.00	24.83	18.29	H	359	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

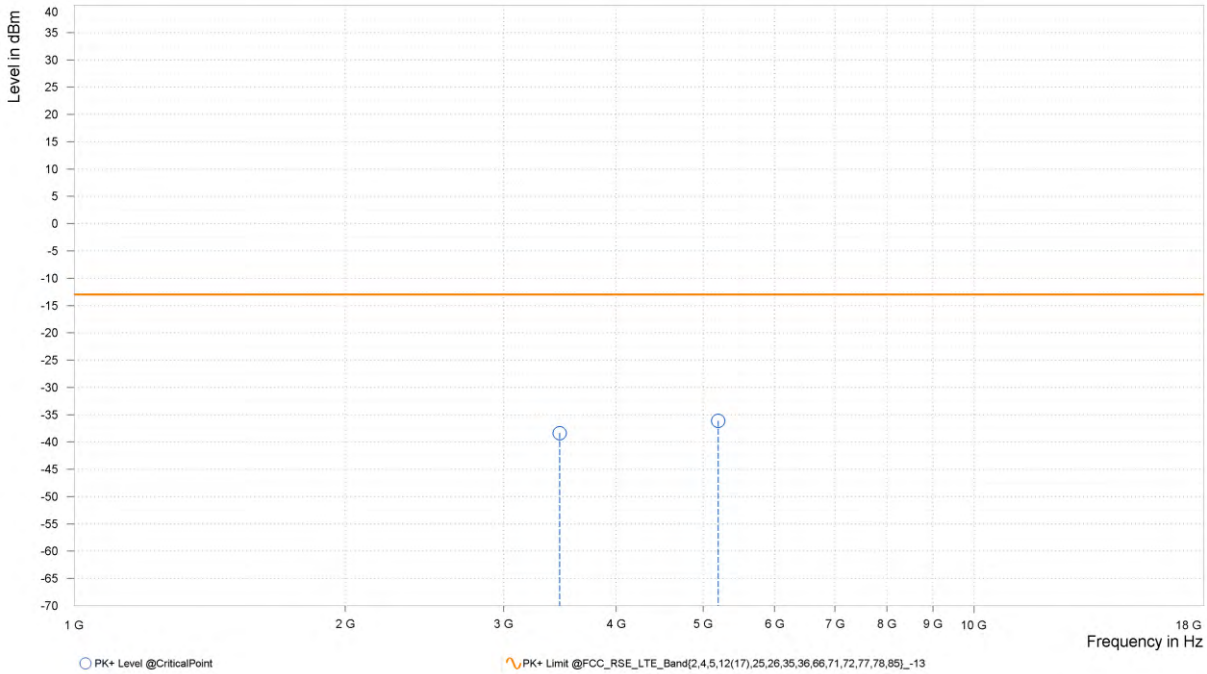
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,464.000	-39.20	-13.00	26.20	15.79	V	359	2.00
2	5,195.610	-37.39	-13.00	24.39	18.25	V	267.3	2.00



CHANNEL BANDWIDTH: 3MHz / QPSK

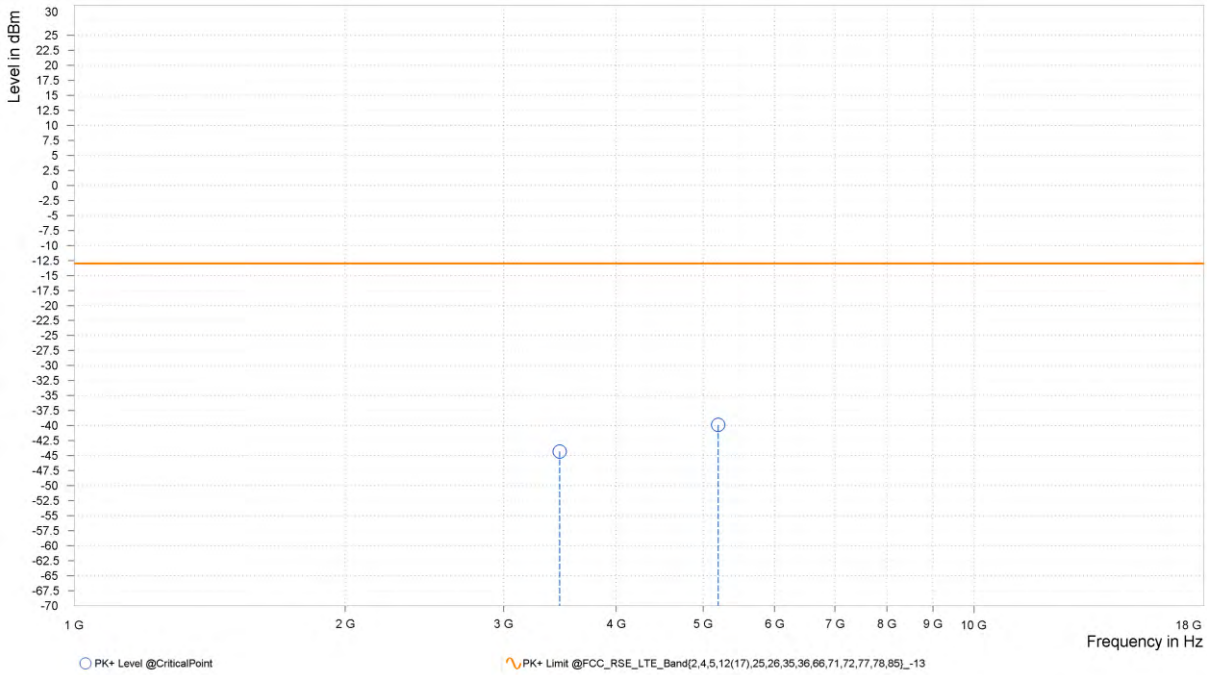
MODE	TX channel 20175	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,462.300	-38.38	-13.00	25.38	16.11	H	263.6	2.00
2	5,193.450	-36.11	-13.00	23.11	18.26	H	0.9	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

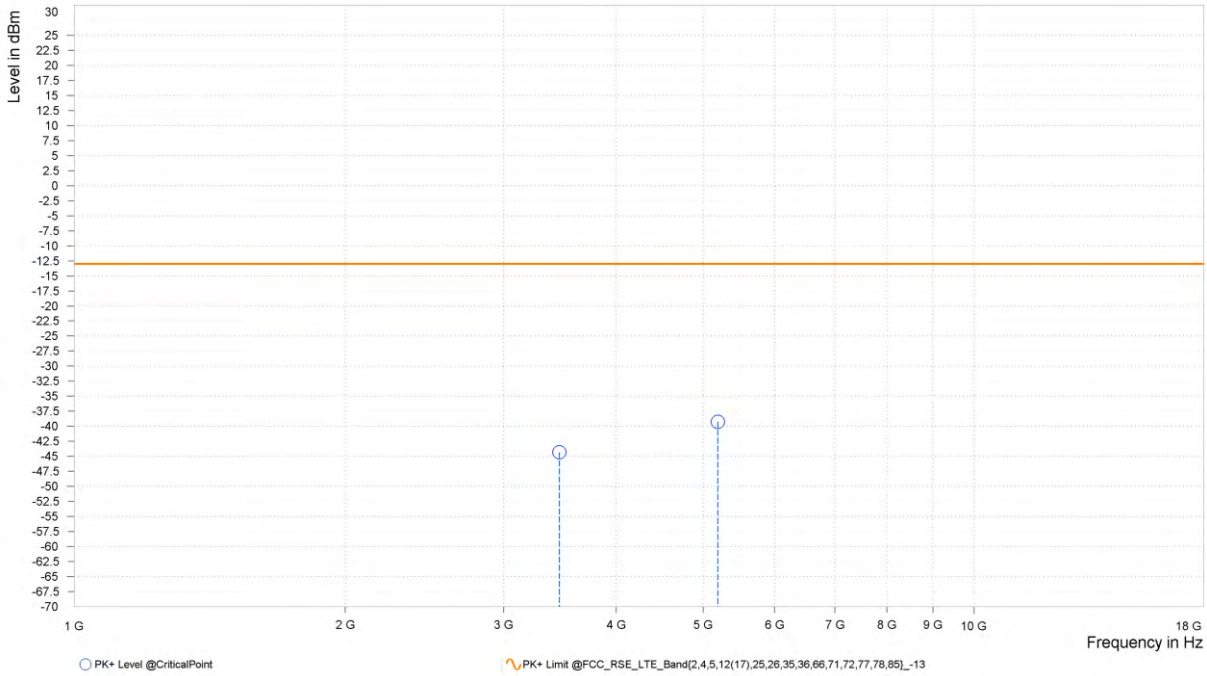
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,462.300	-44.31	-13.00	31.31	15.82	V	359	2.00
2	5,193.450	-39.89	-13.00	26.89	18.22	V	0.9	2.00



CHANNEL BANDWIDTH: 5MHz / QPSK

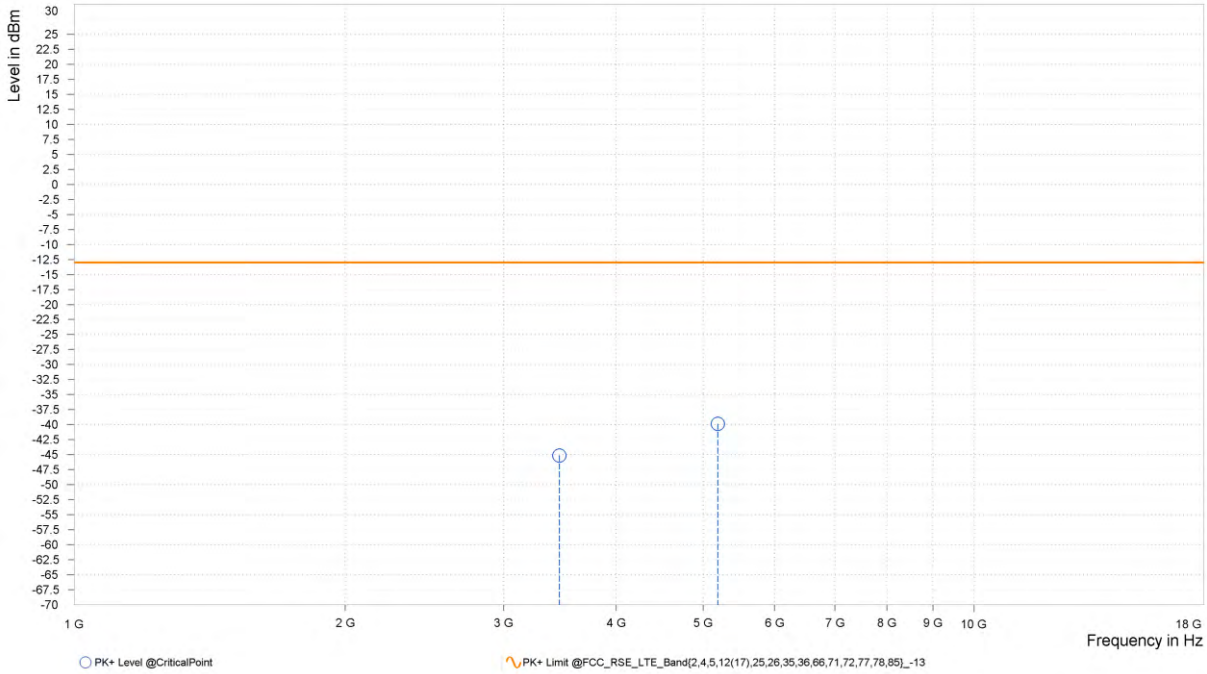
MODE	TX channel 20175	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,460.500	-44.33	-13.00	31.33	16.14	H	359	1.00
2	5,191.000	-39.24	-13.00	26.24	18.24	H	0.9	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
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	3,460.500	-45.13	-13.00	32.13	15.85	V	1	2.00
2	5,190.750	-39.85	-13.00	26.85	18.18	V	359	2.00

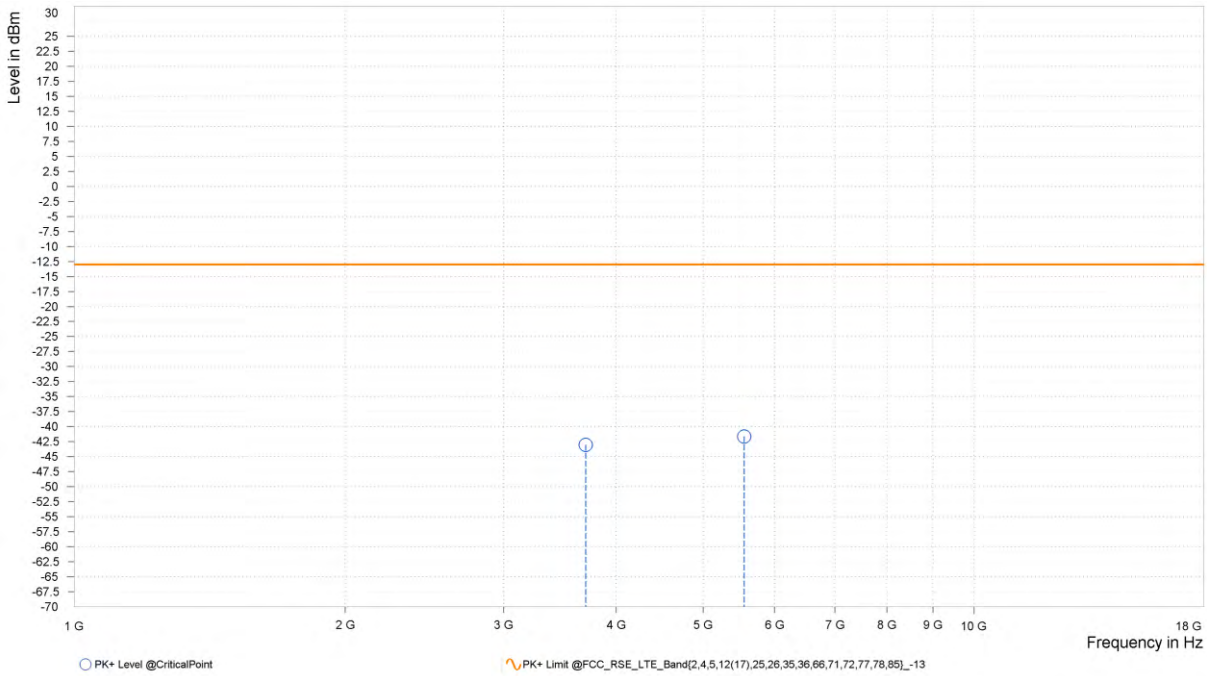


CHANNEL BANDWIDTH: 10MHz / QPSK

CH20000

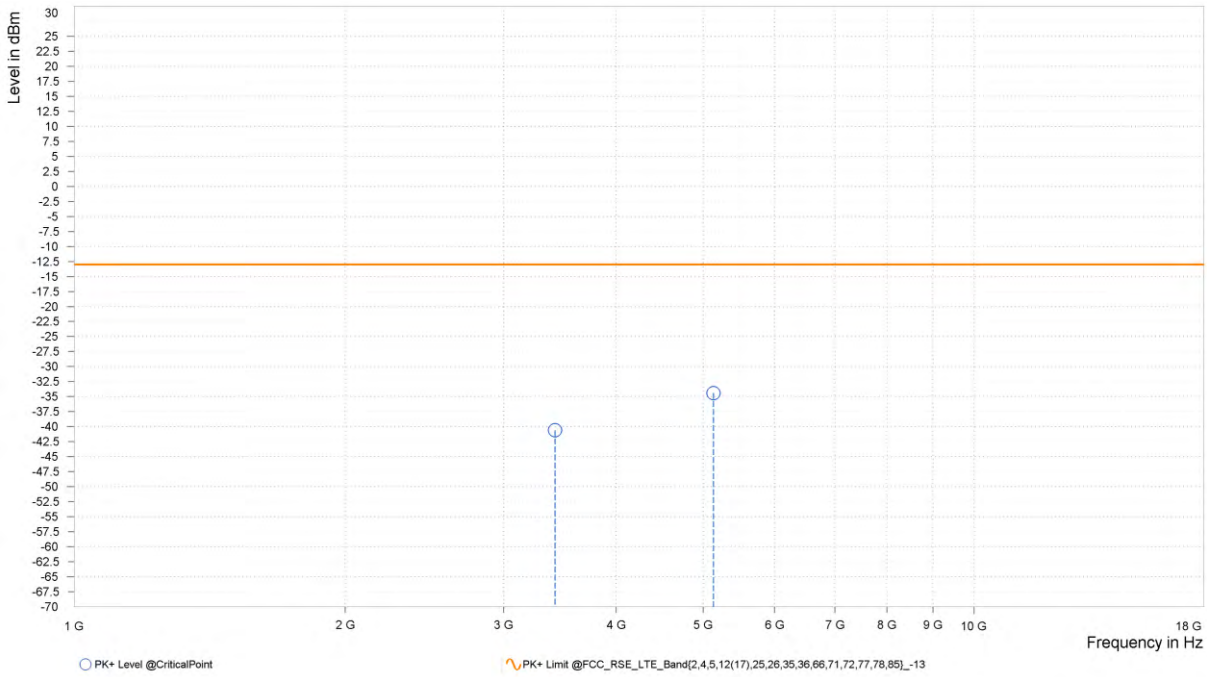
MODE	TX channel 20000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,701.000	-43.04	-13.00	30.04	14.88	H	0.9	2.00
2	5,551.500	-41.63	-13.00	28.63	18.31	H	74.8	2.00



MODE	TX channel 20000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

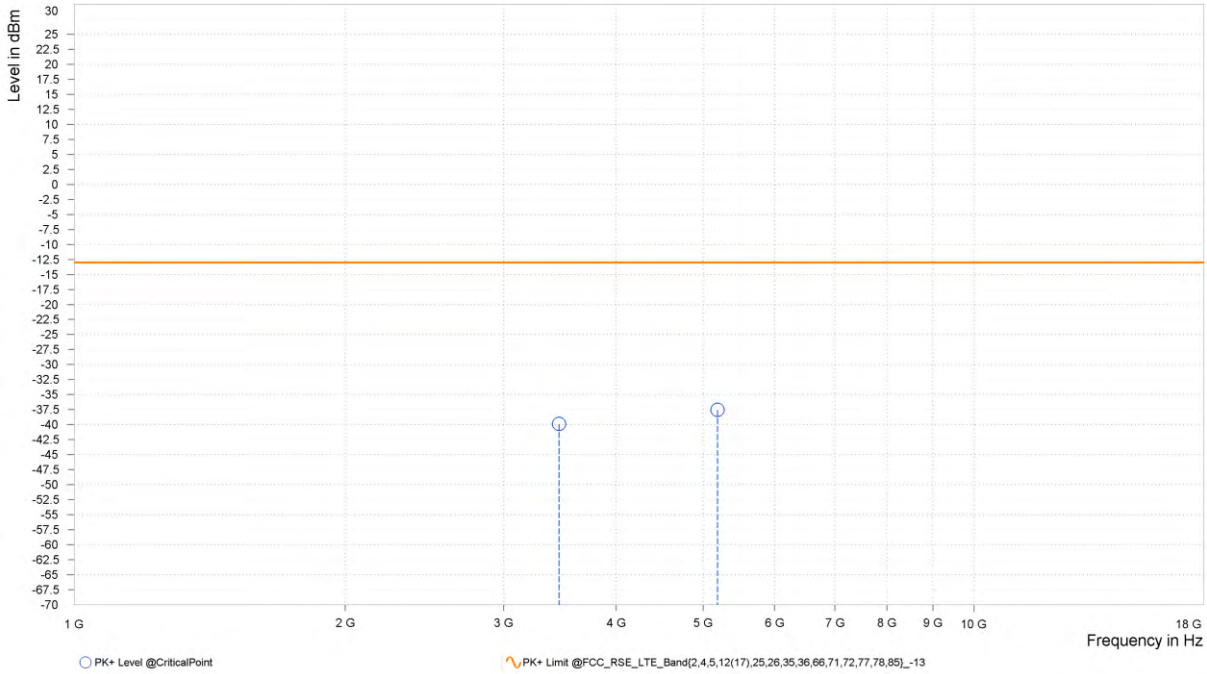
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,421.000	-40.61	-13.00	27.61	15.76	V	1	2.00
2	5,131.500	-34.41	-13.00	21.41	17.42	V	359	2.00



CH20175

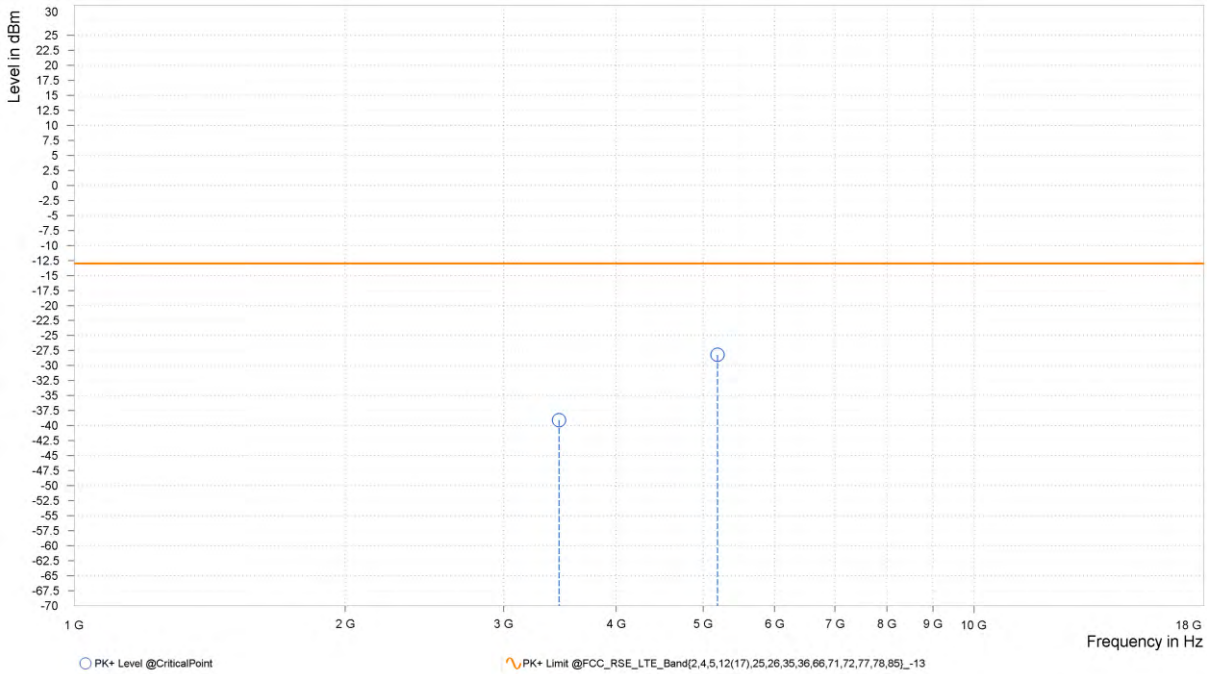
MODE	TX channel 20175	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,456.000	-39.89	-13.00	26.89	16.22	H	54.5	2.00
2	5,184.000	-37.56	-13.00	24.56	18.16	H	54.5	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

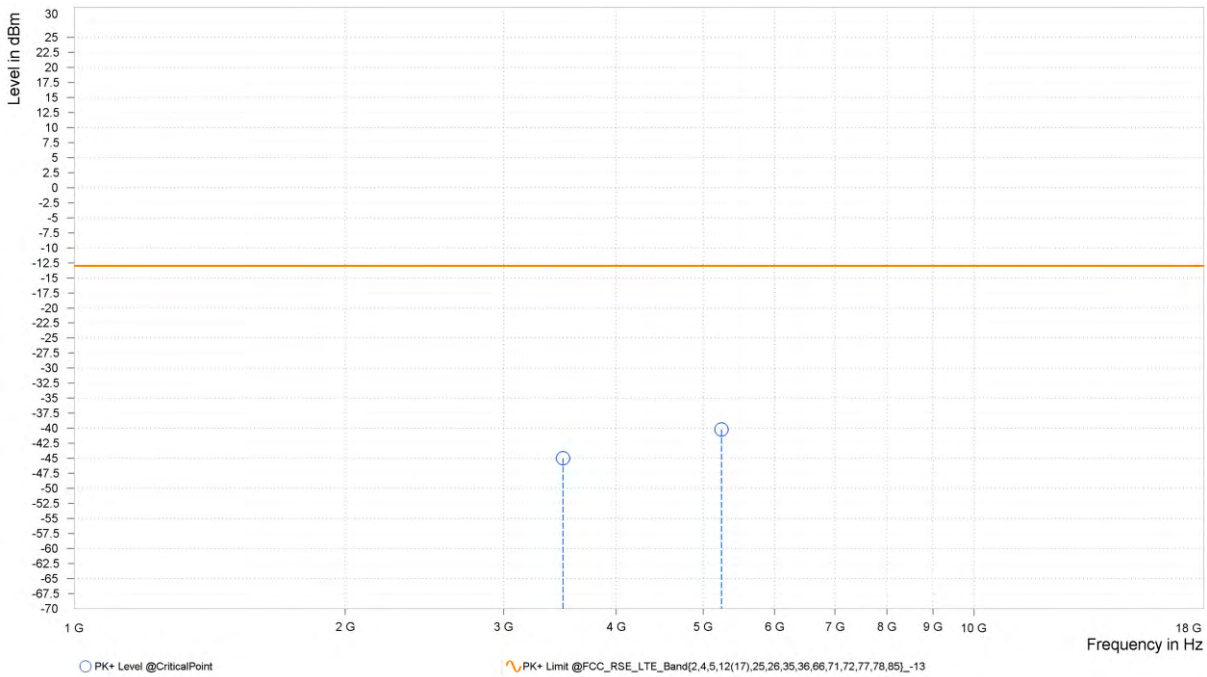
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,456.000	-39.08	-13.00	26.08	15.91	V	287.6	1.00
2	5,184.000	-28.21	-13.00	15.21	18.10	V	71.3	2.00



CH20350

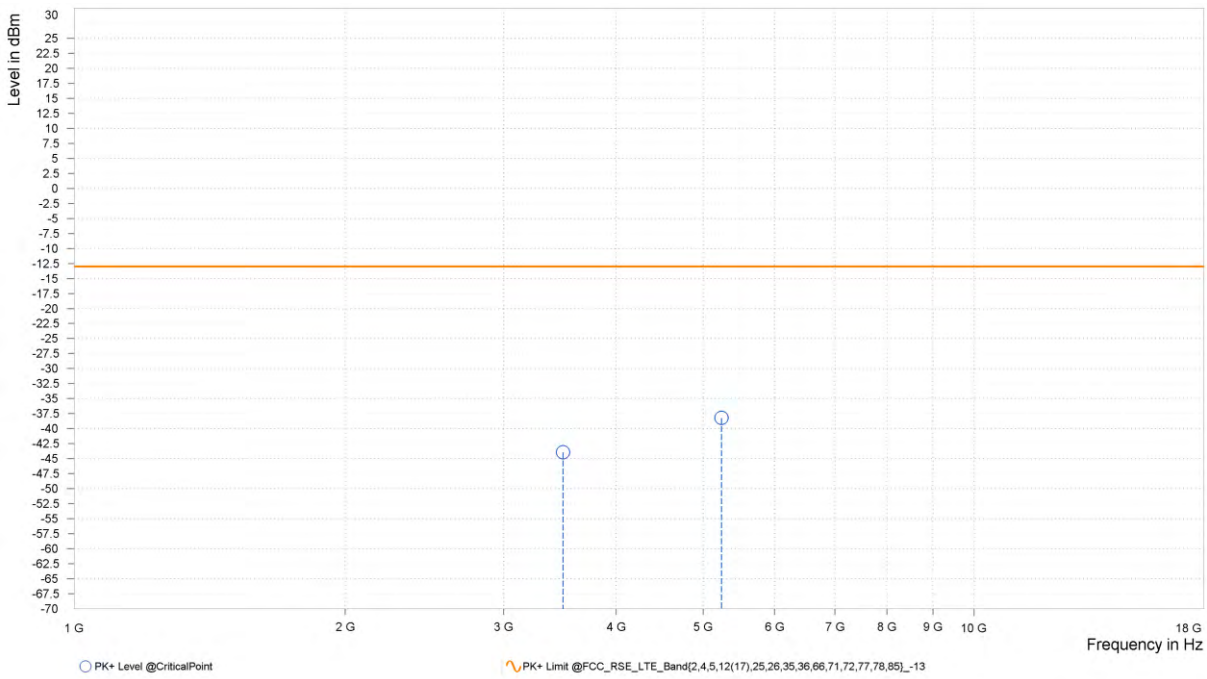
MODE	TX channel 20350	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,491.000	-45.00	-13.00	32.00	15.62	H	359	2.00
2	5,237.000	-40.22	-13.00	27.22	17.94	H	64	2.00



MODE	TX channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

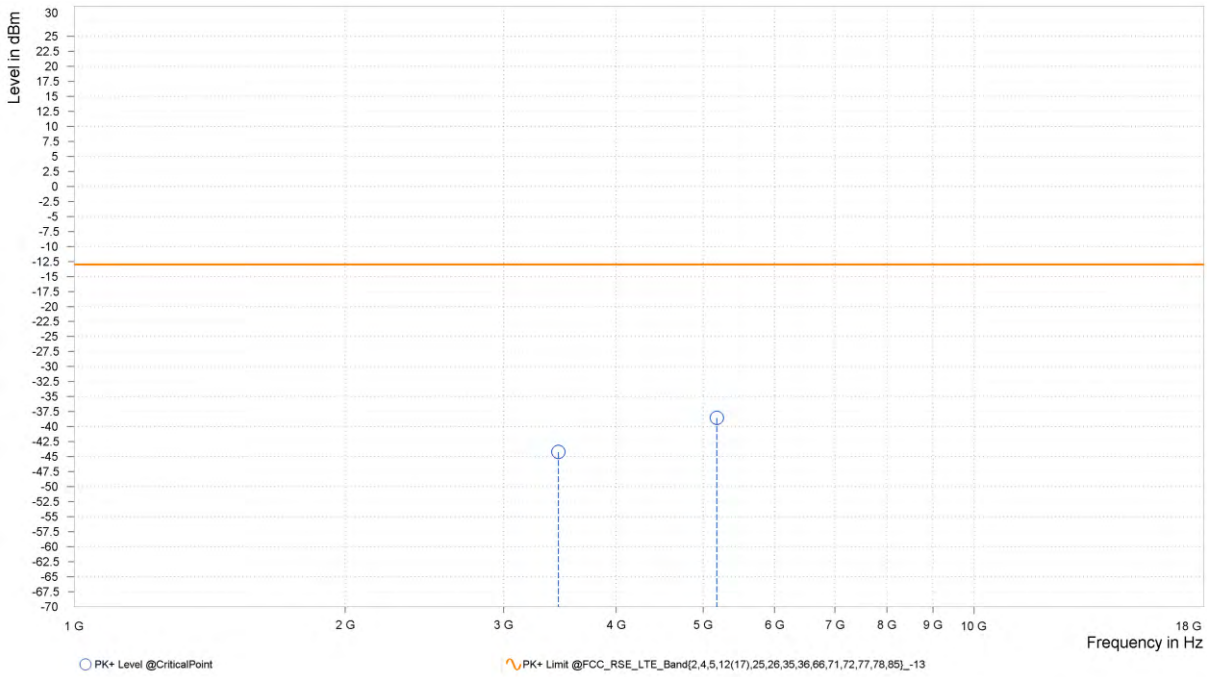
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,491.000	-43.95	-13.00	30.95	15.39	V	359.1	1.00
2	5,236.500	-38.23	-13.00	25.23	17.91	V	1	2.00



CHANNEL BANDWIDTH: 15MHz / QPSK

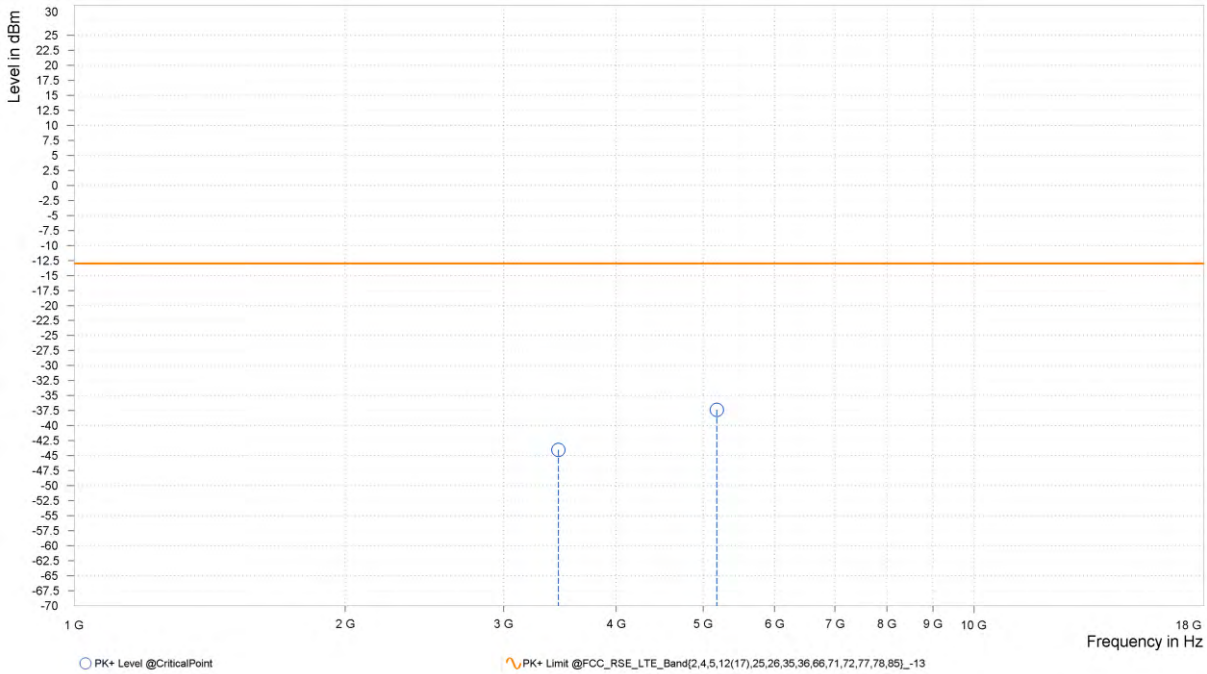
MODE	TX channel 20175	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,451.500	-44.22	-13.00	31.22	16.30	H	359	1.00
2	5,177.250	-38.57	-13.00	25.57	18.08	H	0.9	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

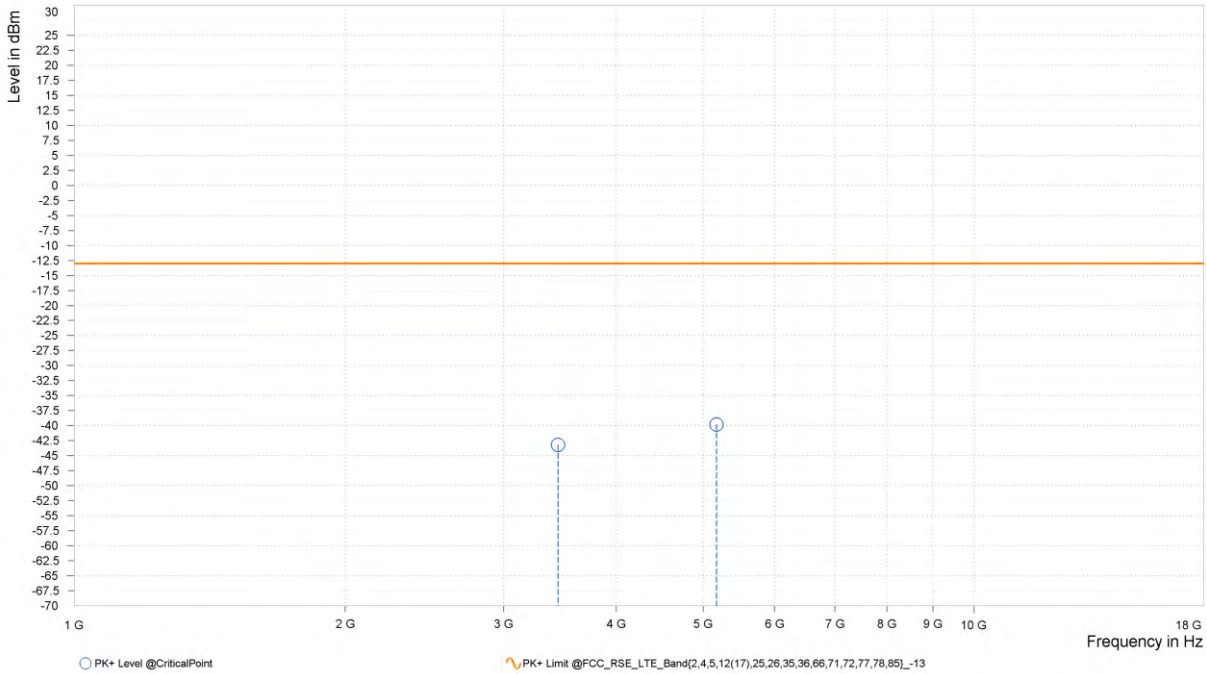
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,451.500	-44.03	-13.00	31.03	15.98	V	0.9	2.00
2	5,177.250	-37.35	-13.00	24.35	18.01	V	96.4	1.00



CHANNEL BANDWIDTH: 20MHz / QPSK

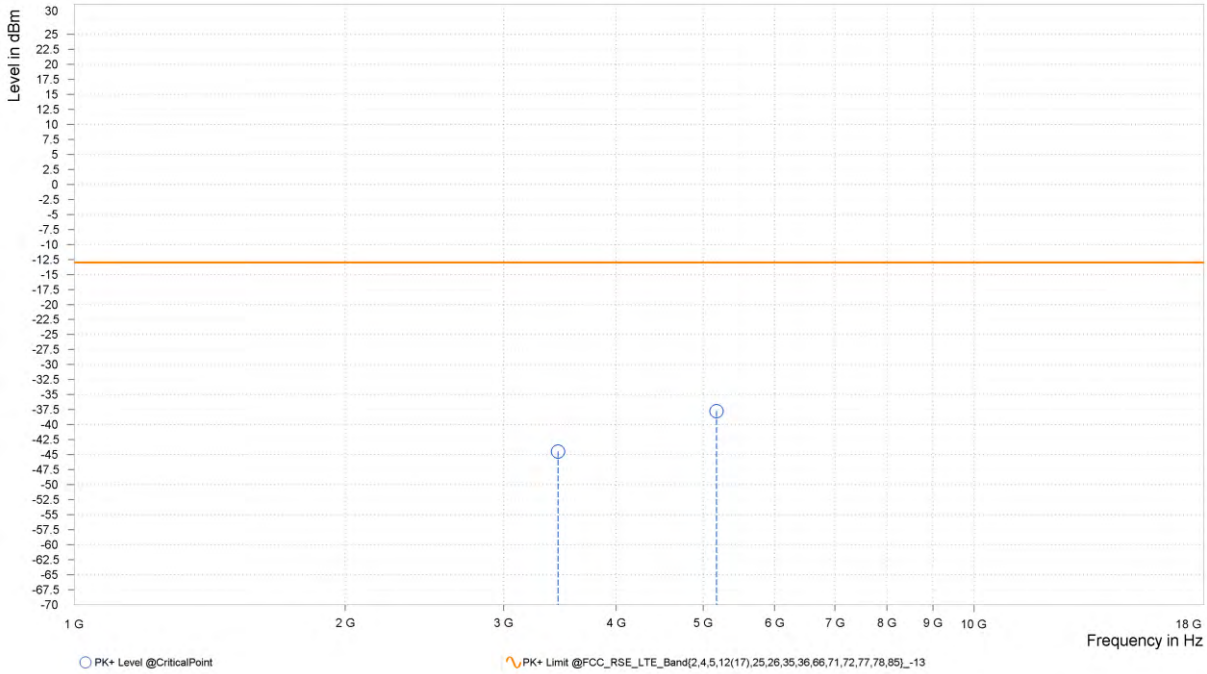
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,447.000	-43.20	-13.00	30.20	16.33	H	359	2.00
2	5,170.500	-39.81	-13.00	26.81	18.00	H	0.9	2.00



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

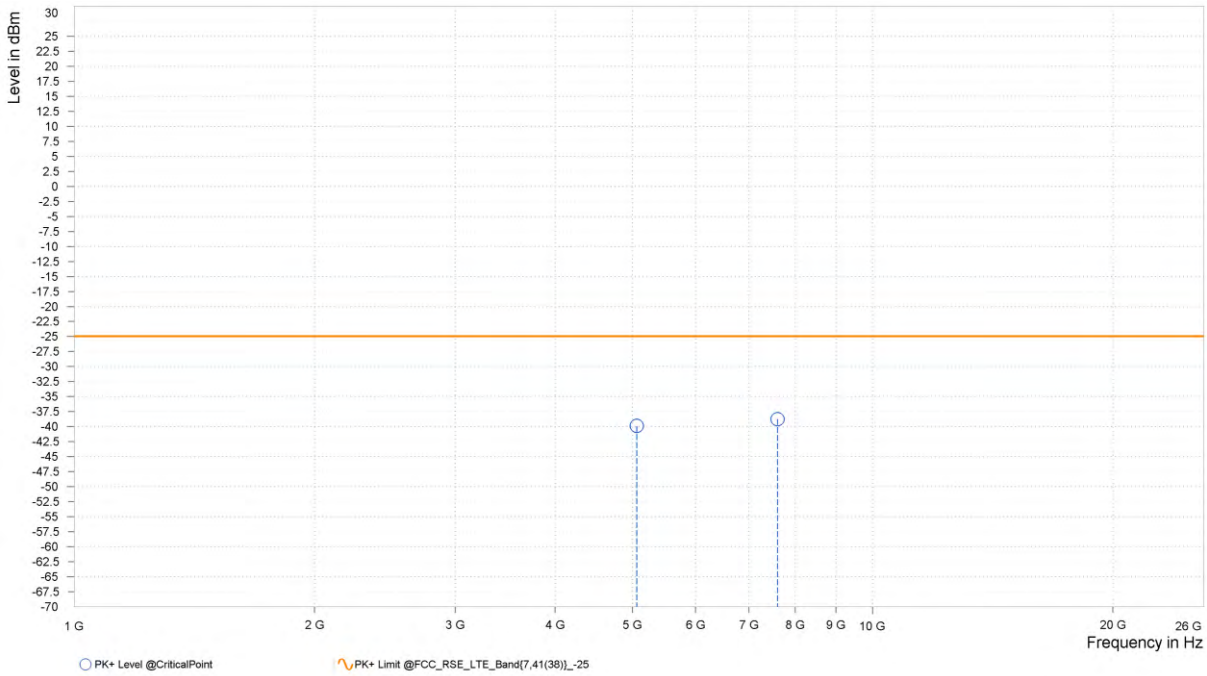
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	3,447.000	-44.48	-13.00	31.48	16.03	V	64	2.00
2	5,170.500	-37.76	-13.00	24.76	17.93	V	0.9	2.00



LTE Band 7
CHANNEL BANDWIDTH: 5MHz / QPSK

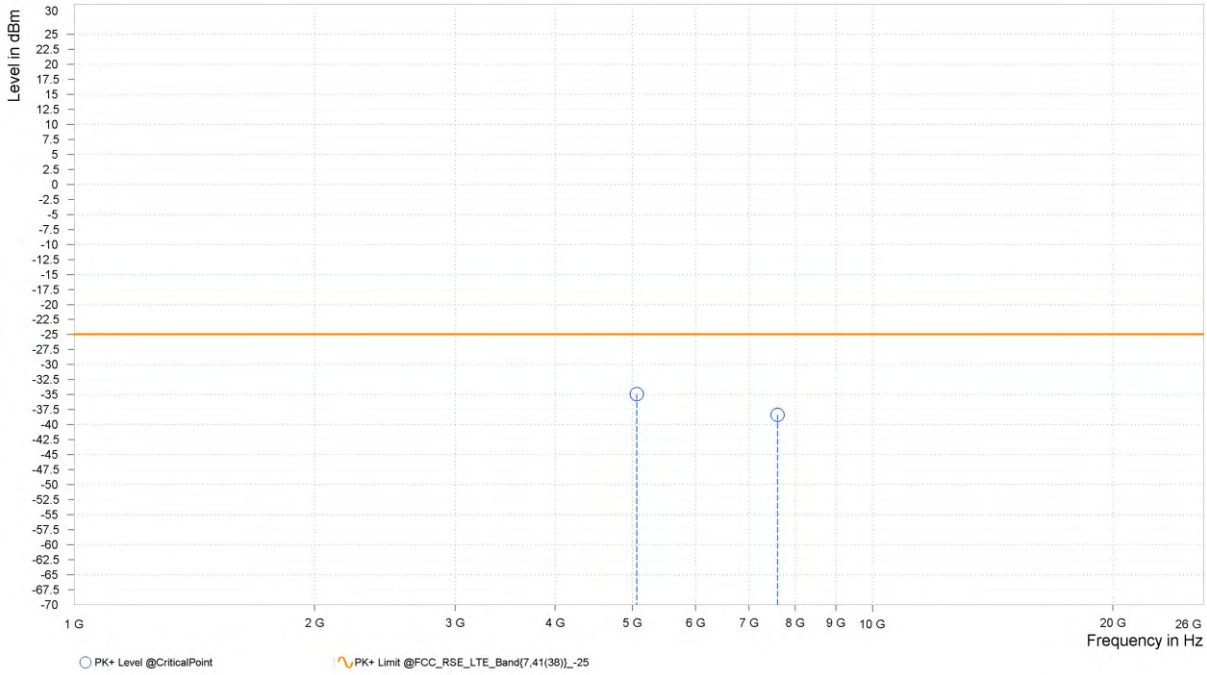
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,065.500	-39.88	-25.00	14.88	16.96	H	61.7	2.00
2	7,598.250	-38.75	-25.00	13.75	22.16	H	359.1	1.00



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
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	5,066.000	-34.92	-25.00	9.92	16.73	V	359	2.00
2	7,598.250	-38.36	-25.00	13.36	22.18	V	359	2.00

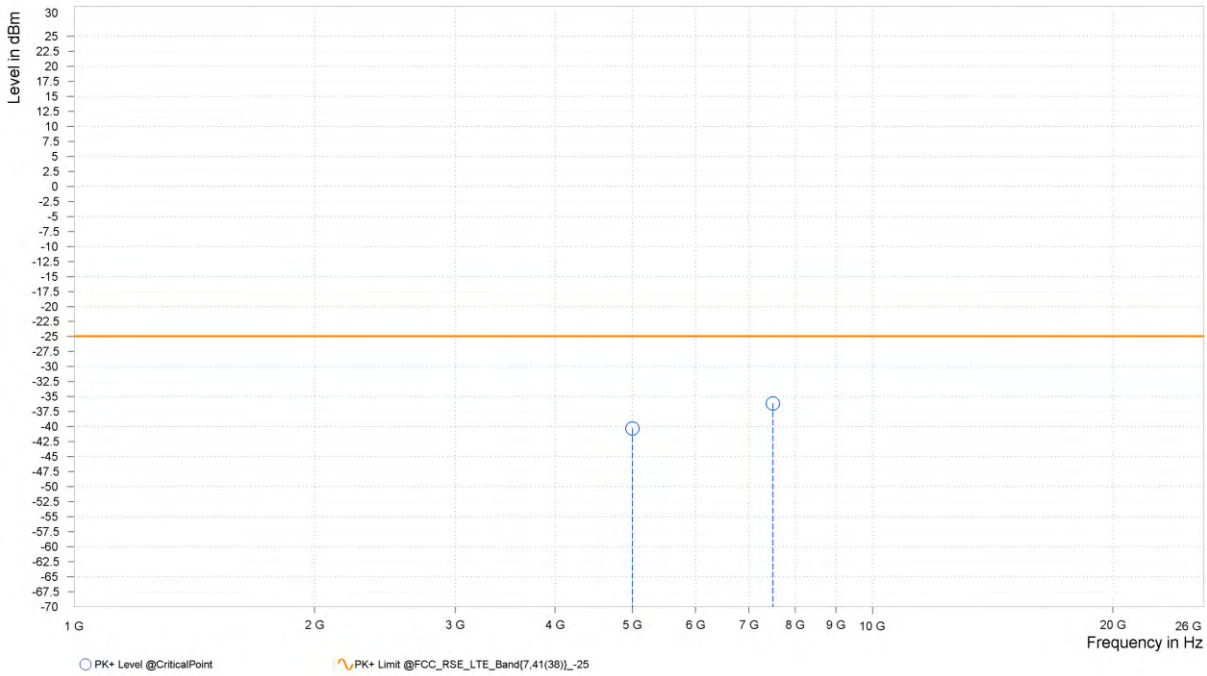


CHANNEL BANDWIDTH: 10MHz / QPSK

CH20800

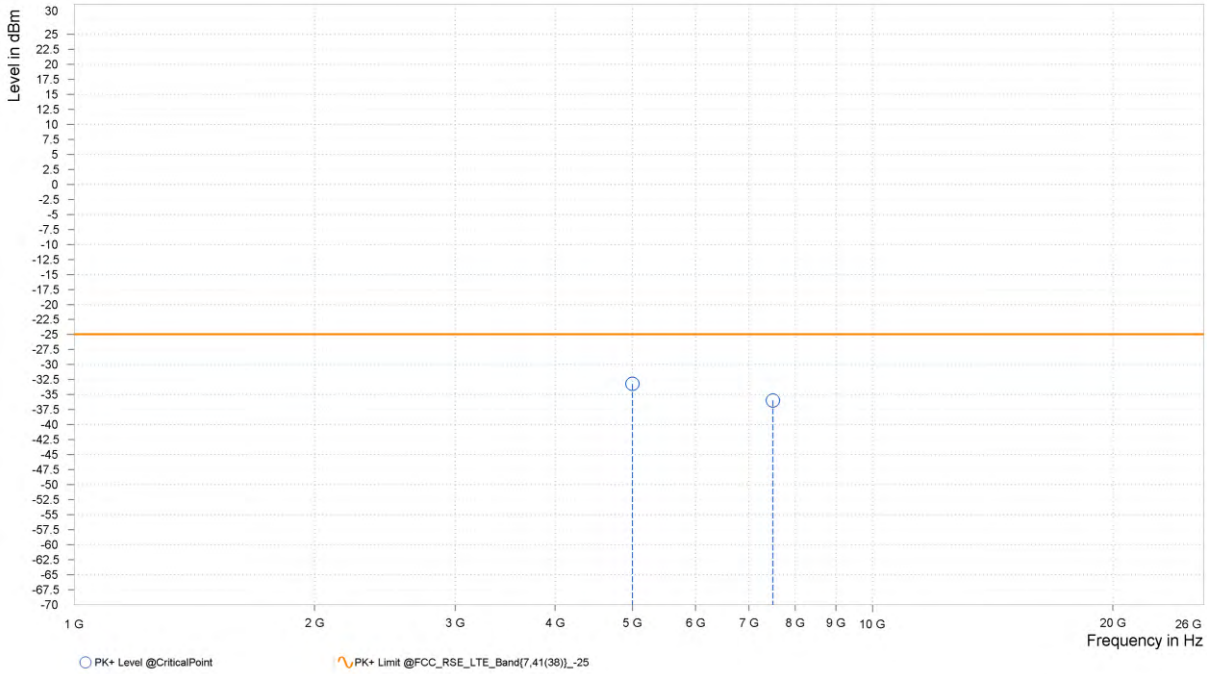
MODE	TX channel 20800	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,000.500	-40.31	-25.00	15.31	16.78	H	43.8	2.00
2	7,501.500	-36.14	-25.00	11.14	22.06	H	359.1	1.00



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

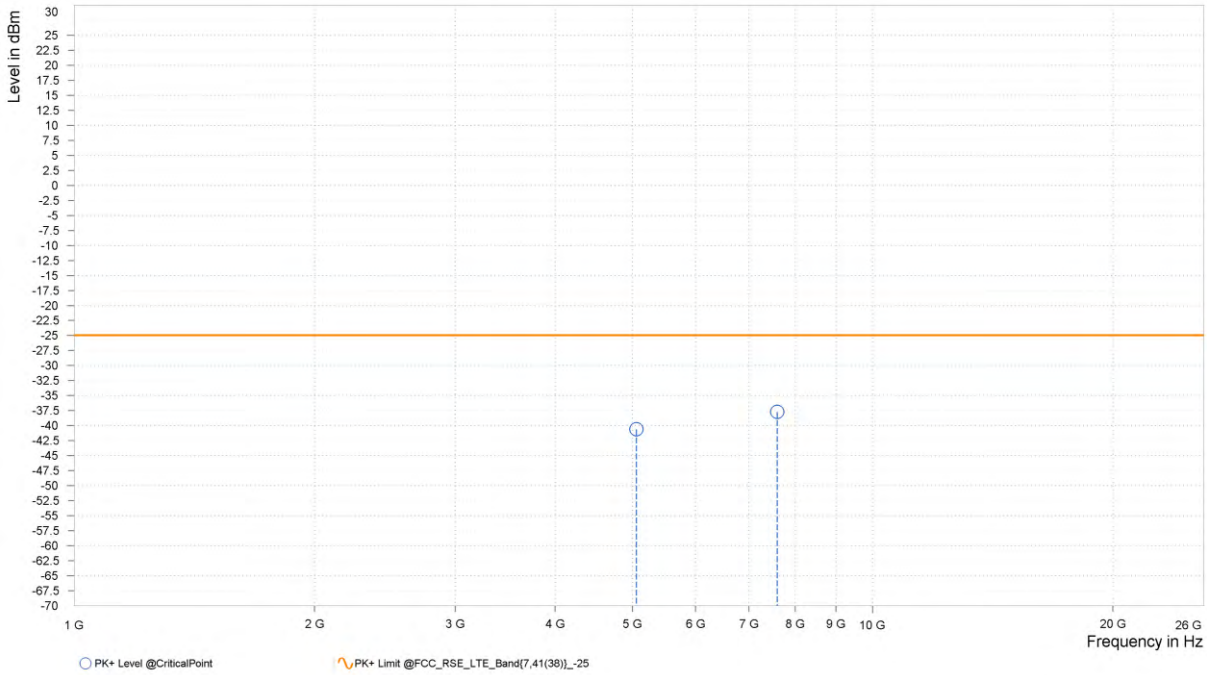
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,001.500	-33.23	-25.00	8.23	16.63	V	359	2.00
2	7,501.500	-35.98	-25.00	10.98	22.23	V	268.5	1.00



CH21100

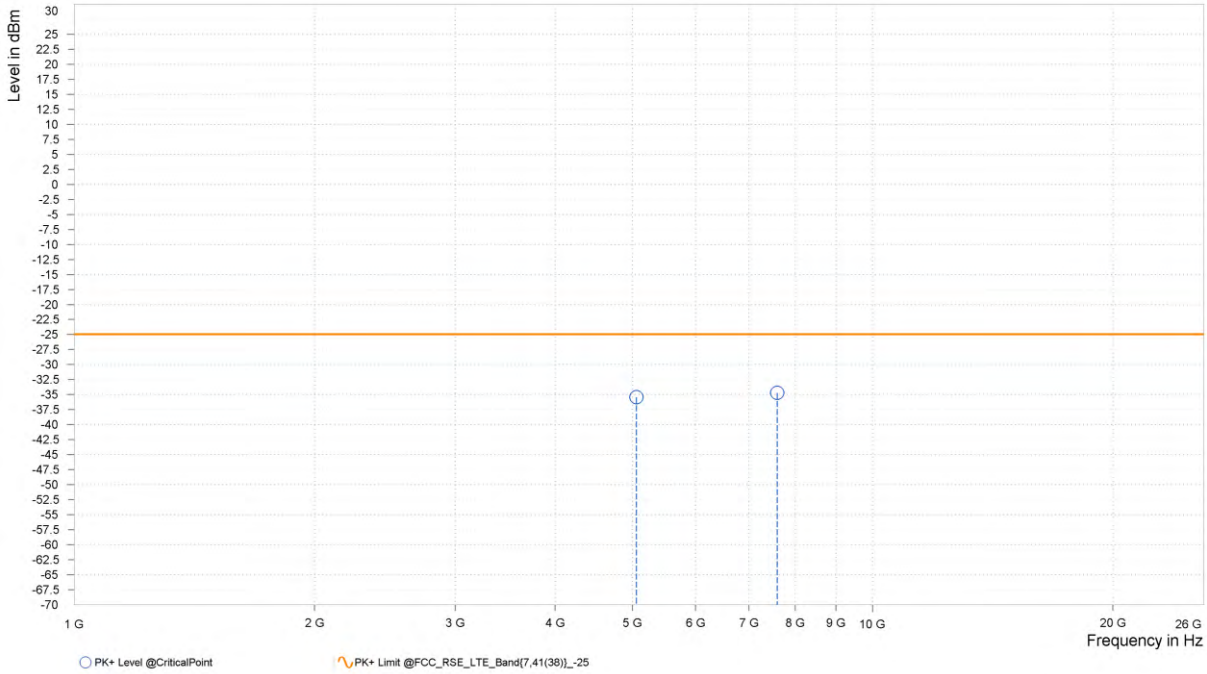
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,061.000	-40.62	-25.00	15.62	16.94	H	359	1.00
2	7,592.500	-37.73	-25.00	12.73	22.14	H	359	1.00



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

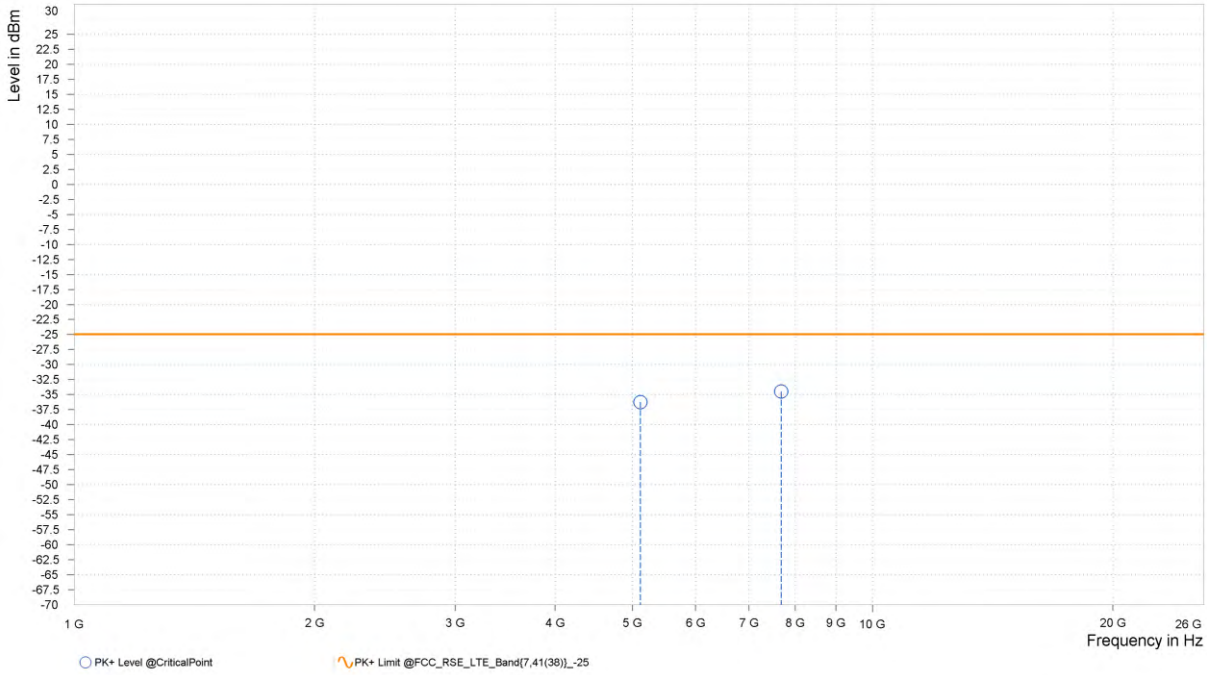
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,061.000	-35.45	-25.00	10.45	16.71	V	359	2.00
2	7,591.500	-34.73	-25.00	9.73	22.17	V	304.4	1.00



CH21400

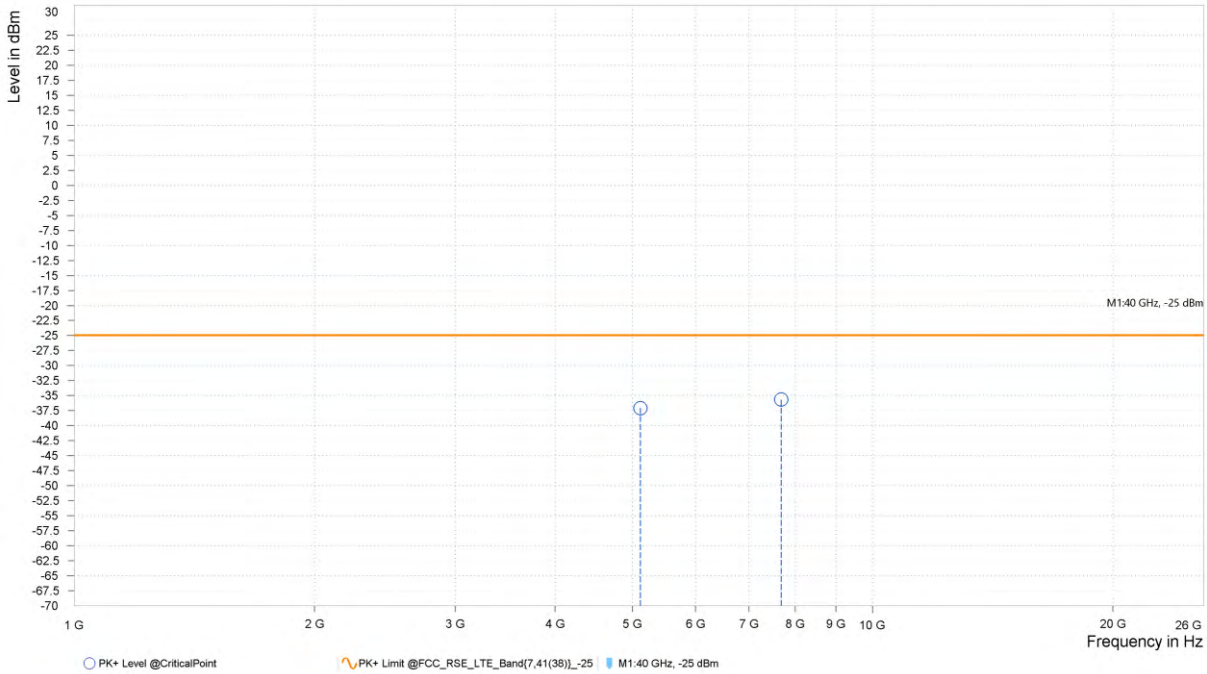
MODE	TX channel 21400	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,121.000	-36.25	-25.00	11.25	17.44	H	88.1	2.00
2	7,682.000	-34.49	-25.00	9.49	22.38	H	88.1	2.00



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

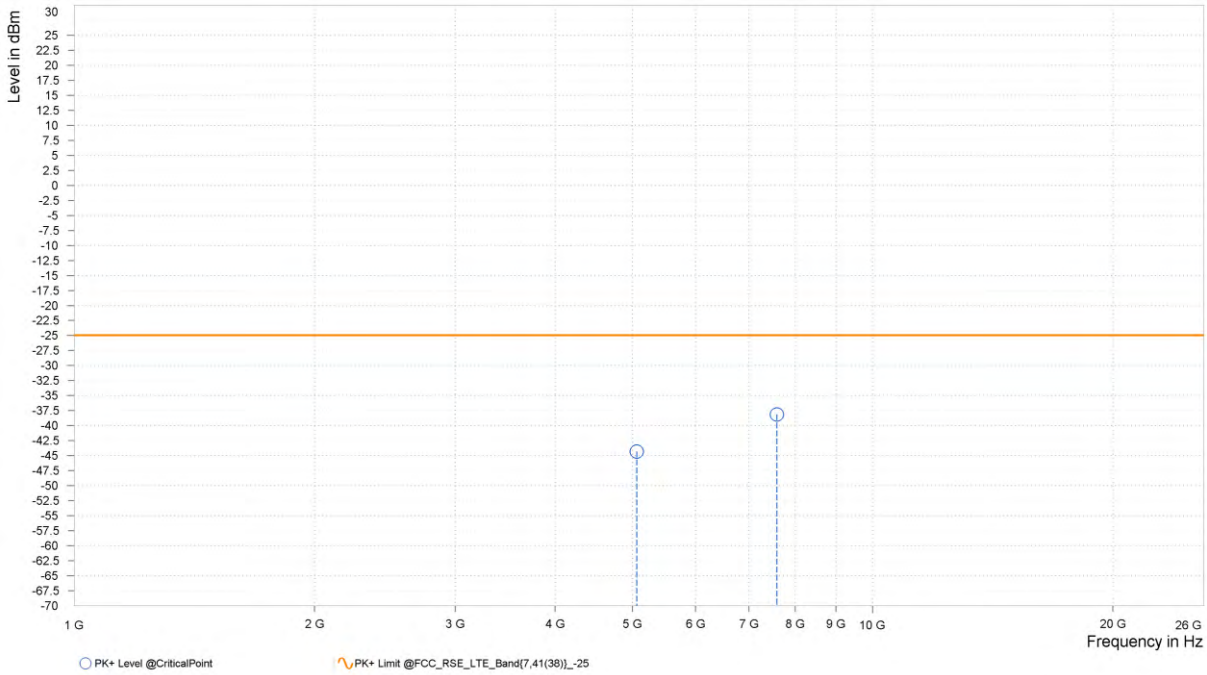
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,121.000	-37.08	-25.00	12.08	17.29	V	0.9	2.00
2	7,681.500	-35.66	-25.00	10.66	22.34	V	275.6	1.00



CHANNEL BANDWIDTH: 15MHz / QPSK

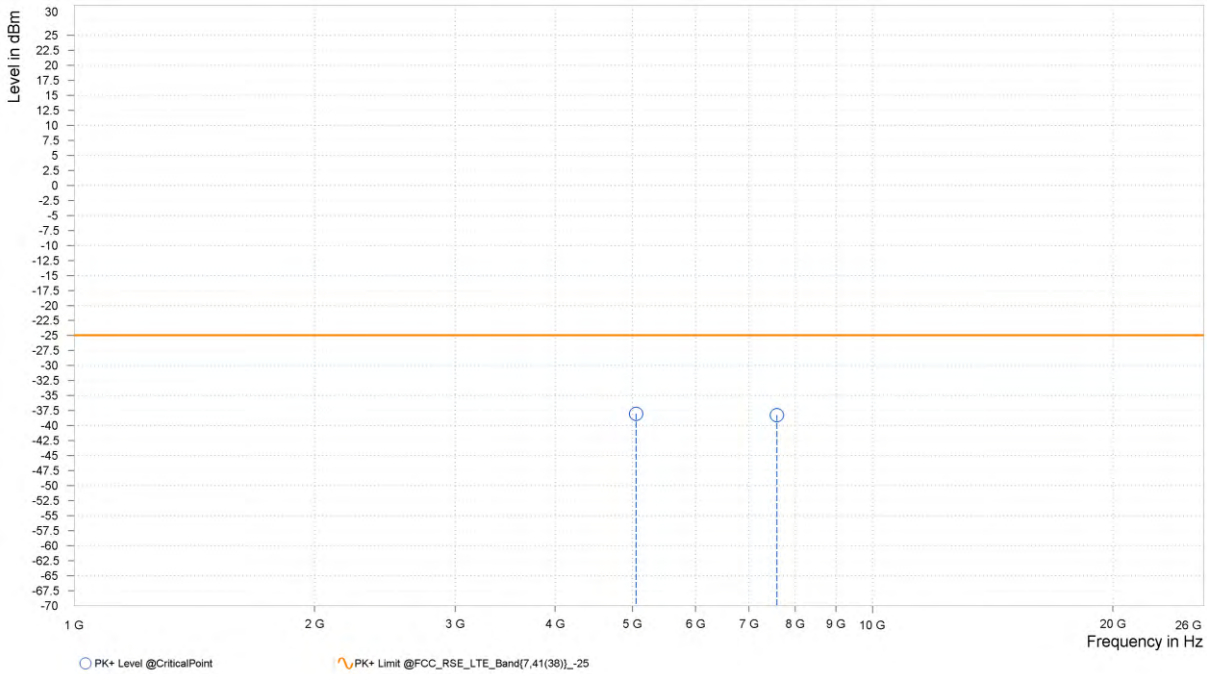
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,065.500	-44.30	-25.00	19.30	16.96	H	1	1.00
2	7,584.750	-38.13	-25.00	13.13	22.12	H	1	1.00



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

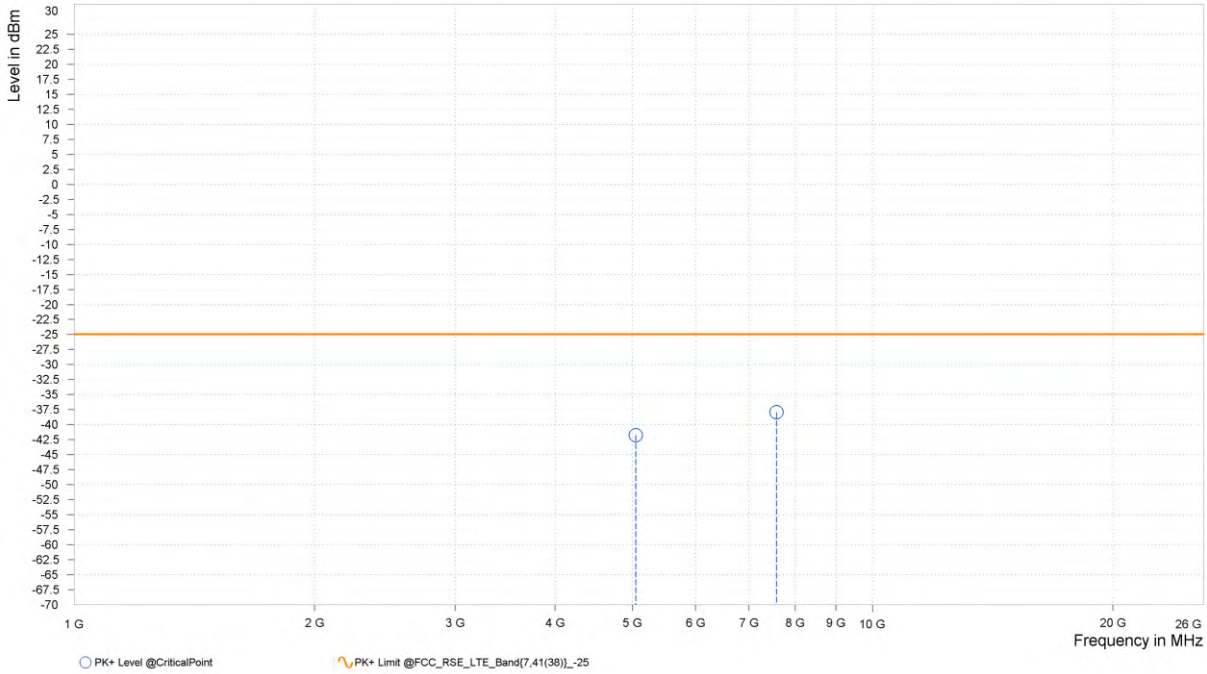
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,056.500	-38.04	-25.00	13.04	16.70	V	359	2.00
2	7,584.750	-38.23	-25.00	13.23	22.16	V	122.6	1.00



CHANNEL BANDWIDTH: 20MHz / QPSK

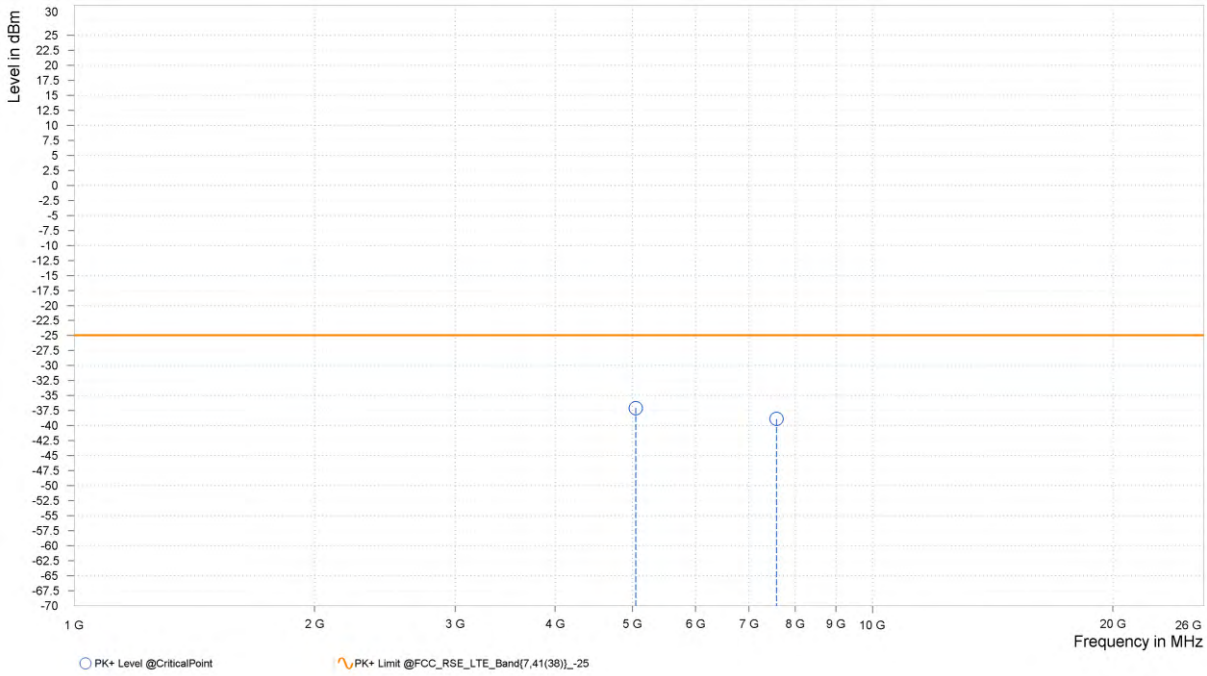
MODE	TX channel 21100	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,052.000	-41.74	-25.00	16.74	16.92	H	359	2.00
2	7,578.000	-37.95	-25.00	12.95	22.09	H	1	1.00



MODE	TX channel 21100	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
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	5,052.000	-37.07	-25.00	12.07	16.70	V	0.9	2.00
2	7,578.000	-38.88	-25.00	13.88	22.15	V	0.9	2.00

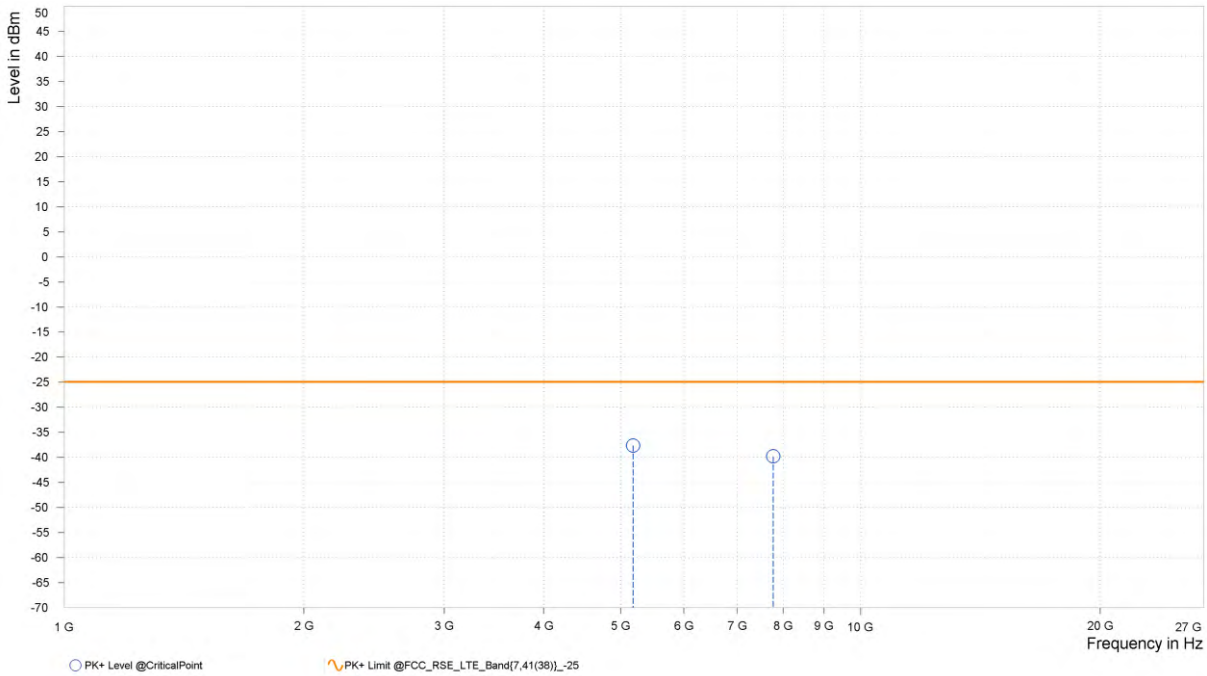


LTE BAND 41

CHANNEL BANDWIDTH: 5MHz / QPSK

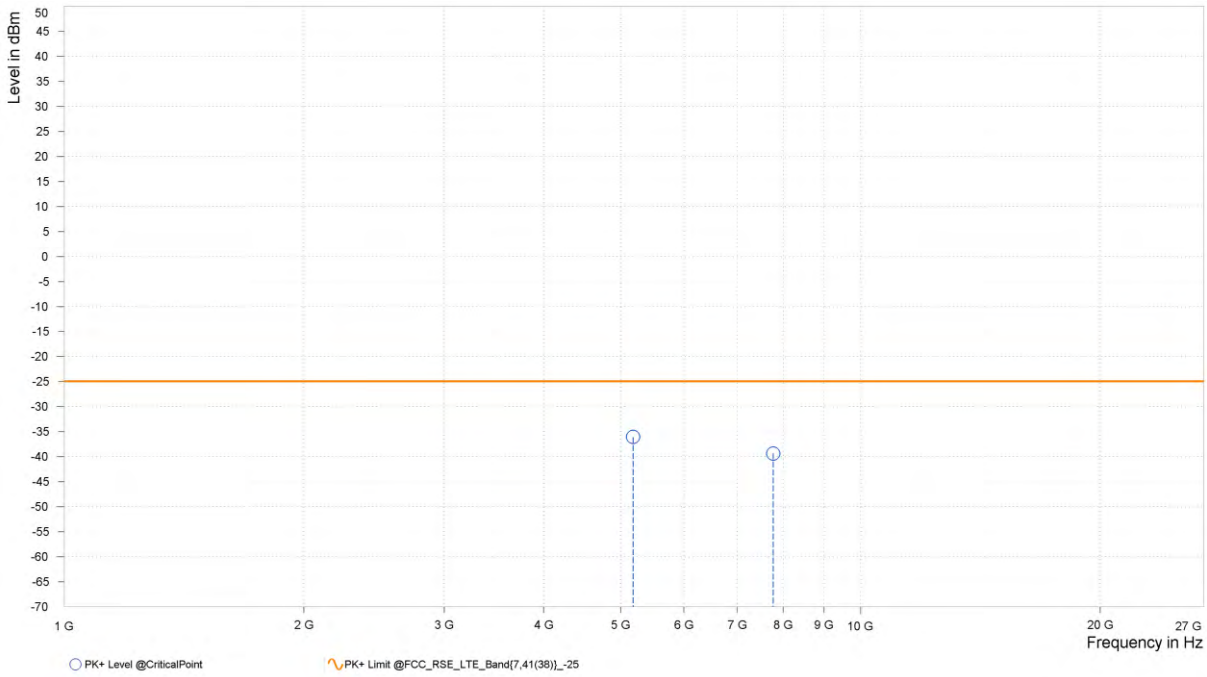
MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,181.500	-37.63	-25.00	12.63	18.13	H	272.1	1.00
2	7,772.250	-39.79	-25.00	14.79	22.19	H	1	1.00



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

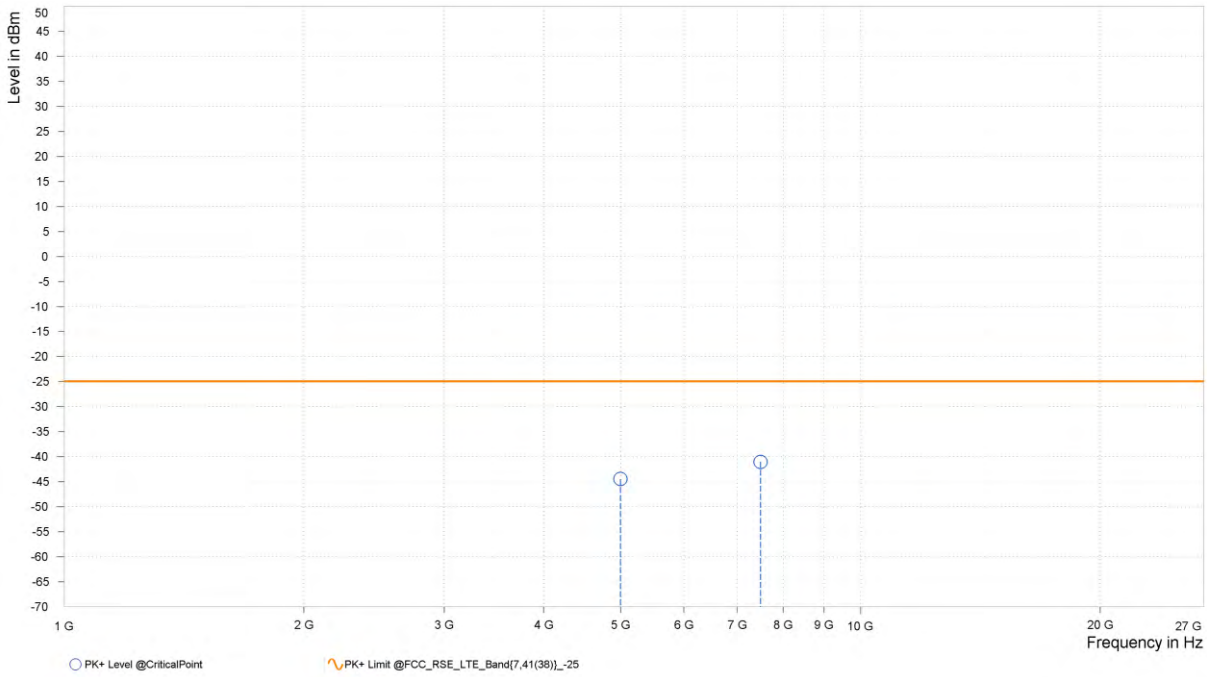
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	5,181.500	-36.07	-25.00	11.07	18.07	V	85.7	2.00
2	7,772.250	-39.37	-25.00	14.37	22.23	V	1	1.00



CHANNEL BANDWIDTH: 10MHz / QPSK
CH40290

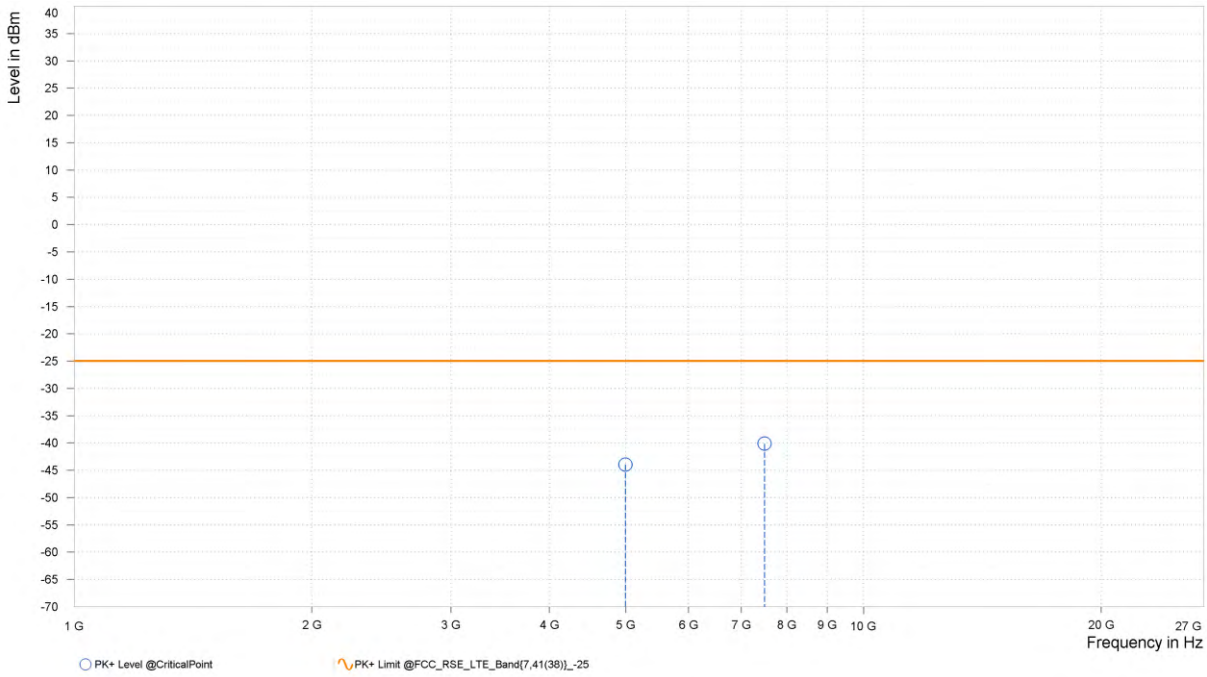
MODE	TX channel 40290	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	4,993.000	-44.47	-25.00	19.47	16.76	H	359	2.00
2	7,489.500	-41.03	-25.00	16.03	22.09	H	359	2.00

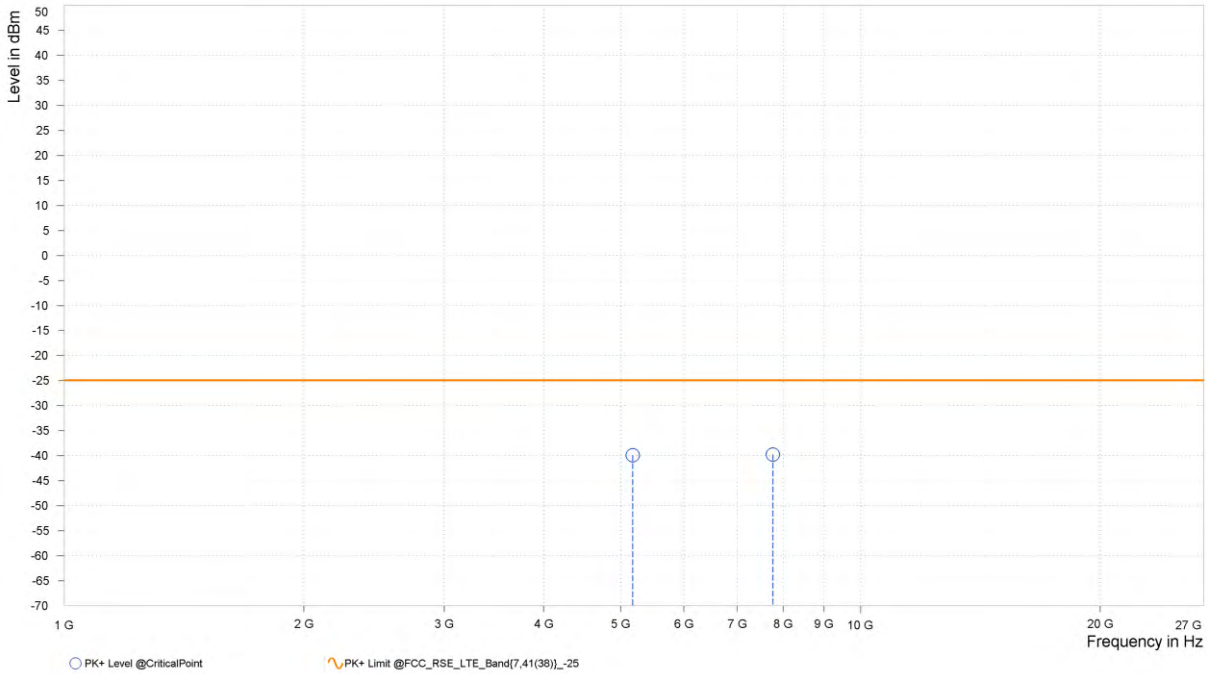


MODE	TX channel 40290	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 12V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	4,993.000	-43.95	-25.00	18.95	16.63	V	1	1.00
2	7,489.500	-40.13	-25.00	15.13	22.28	V	359	2.00



CH40620

MODE	TX channel 40620	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 12V
TESTED BY	Hanwen Xu		
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	5,177.000	-39.91	-25.00	14.91	18.08	H	281.7	1.00
2	7,765.500	-39.77	-25.00	14.77	22.21	H	281.7	1.00