

FCC TEST REPORT

(PART 27)

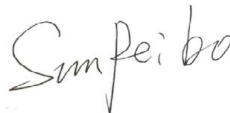
Applicant:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong

Manufacturer or Supplier:	TCL Communication Ltd.
Address:	5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
Product:	TCL LINKPORT IK511
Brand Name:	TCL
Model Name:	IK511US
FCC ID	2ACCJSCD004
Date of tests	Apr. 17, 2025 ~May. 30, 2025

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

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

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
	
Date: May. 30, 2025	Date: May. 30, 2025

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.



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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2504140116RF03	Original release	May. 30, 2025



1. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	TEST LAB*
§2.1046	Conducted Output Power	Compliance	A
§27.50(c)(10) §27.50(b)(10)	Effective Radiated Power (Band 12) (Band 17) (Band 71) (Band 13)	Compliance	A
§27.50(h)(2) § 27.50(a)(3)	Equivalent Isotropically Radiated Power (Band 7) (Band 30)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(c)(2) §27.53(g) §27.53(m)(4) §27.53(a)(4)	Conducted Band Edge Measurements (Band 7) (Band 12) (Band 13) (Band 17) (Band 71) (Band 30)	Compliance	A
§2.1051 §27.53(g) §27.53(c)(2) §27.53(f) §27.53(h) §27.53(m)(4)	Conducted Spurious Emissions (Band 7) (Band 12) (Band 13) (Band 17) (Band 71) (Band 30)	Compliance	A
§2.1053 §27.53(c)(2) §27.53(g) §27.53(m)(4) §27.53(a)(4)	Radiated Spurious Emissions (Band 7) (Band 12) (Band 13) (Band 17) (Band 71) (Band 30)	Compliance	A
§27.50	Peak to average ratio*	Compliance	A

* 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 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China

Accredited Test Lab Cert 6613.01

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

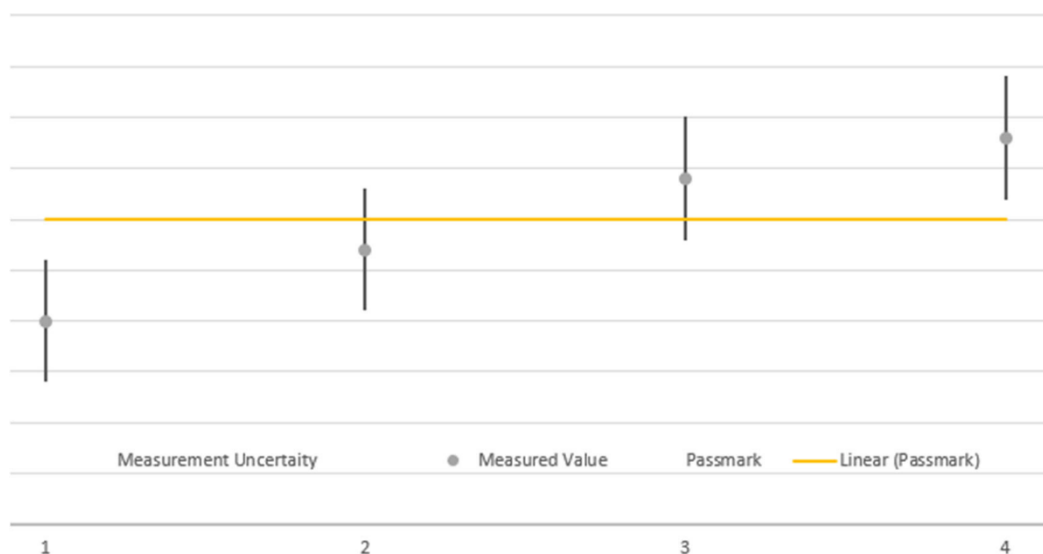


1.1 MEASUREMENT UNCERTAINTY

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

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

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



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.30,23	Aug.29,25
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A	182185	Mar.29,24	Mar.28,26
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	Mar.28,24	Mar.27,26
EMI TEST Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Dec.26,23	Dec.25,25
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,23	Aug.21,25
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Jul.15,24	Jul.14,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,23	Aug.21,25
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,25	Feb.21,27
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,23	Aug.30,25
Hygrothermograph	DELI	20210528	SZ014	Sep.06,23	Sep.05,25
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.27,24	Apr.26,25
CABLE	R&S	W13.02	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	W12.14	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,25	Apr.25,26
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26



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.



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	TCL LINKPORT IK511	
BRAND NAME*	TCL	
MODEL NAME*	IK511US	
NOMINAL VOLTAGE*	DC 5V	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM, 256QAM
FREQUENCY RANGE	LTE Band 7 Channel Bandwidth: 5MHz	2502.5MHz ~ 2567.5MHz
	LTE Band 7 Channel Bandwidth: 10MHz	2505MHz ~ 2565MHz
	LTE Band 7 Channel Bandwidth: 15MHz	2507.5MHz ~ 2562.5MHz
	LTE Band 7 Channel Bandwidth: 20MHz	2510MHz ~ 2560MHz
	LTE Band 12 Channel Bandwidth: 1.4MHz	699.7MHz ~ 715.3MHz
	LTE Band 12 Channel Bandwidth: 3MHz	700.5MHz ~ 714.5MHz
	LTE Band 12 Channel Bandwidth: 5MHz	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704MHz ~ 711MHz
	LTE Band 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 30 Channel Bandwidth: 5MHz	2307.5MHz~ 2312.5MHz
	LTE Band 30 Channel Bandwidth: 10MHz	2310MHz
	LTE Band 71 Channel Bandwidth: 5MHz	665.5MHz ~ 695.5MHz
	LTE Band 71 Channel Bandwidth: 10MHz	668MHz ~ 693MHz
	LTE Band 71 Channel Bandwidth: 15MHz	670.5MHz ~ 690.5MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673MHz ~ 688MHz



MAX. EIRP/ERP POWER	LTE Band 7 Channel Bandwidth: 5MHz	238.78mW
	LTE Band 7 Channel Bandwidth: 10MHz	237.68mW
	LTE Band 7 Channel Bandwidth: 15MHz	239.33mW
	LTE Band 7 Channel Bandwidth: 20MHz	239.88mW
	LTE Band 12 Channel Bandwidth: 1.4MHz	95.94mW
	LTE Band 12 Channel Bandwidth: 3MHz	95.28mW
	LTE Band 12 Channel Bandwidth: 5MHz	94.62mW
	LTE Band 12 Channel Bandwidth: 10MHz	96.83mW
	LTE Band 13 Channel Bandwidth: 5MHz	96.61mW
	LTE Band 13 Channel Bandwidth: 10MHz	97.05mW
	LTE Band 17 Channel Bandwidth: 5MHz	96.83mW
	LTE Band 17 Channel Bandwidth: 10MHz	99.77mW
	LTE Band 30 Channel Bandwidth: 5MHz	210.38mW
	LTE Band 30 Channel Bandwidth: 10MHz	213.80mW
	LTE Band 71 Channel Bandwidth: 5MHz	70.47mW
	LTE Band 71 Channel Bandwidth: 10MHz	69.50mW
	LTE Band 71 Channel Bandwidth: 15MHz	69.02mW
	LTE Band 71 Channel Bandwidth: 20MHz	71.29mW
EMISSION DESIGNATOR	LTE Band 7 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
		256QAM: 4M50W7D



EMISSION DESIGNATOR	LTE Band 7 Channel Bandwidth: 10MHz	QPSK: 8M96G7D
		16QAM: 8M99W7D
		64QAM: 9M00W7D
		256QAM: 8M97W7D
	LTE Band 7 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
		256QAM: 13M5W7D
	LTE Band 7 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D
		256QAM: 17M9W7D
	LTE Band 12 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
		256QAM: 1M09W7D
	LTE Band 12 Channel Bandwidth: 3MHz	QPSK: 2M71G7D
		16QAM: 2M70W7D
		64QAM: 2M70W7D
		256QAM: 2M70W7D
	LTE Band 12 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M49W7D
		64QAM: 4M52W7D
		256QAM: 4M50W7D
	LTE Band 12 Channel Bandwidth: 10MHz	QPSK: 8M95G7D
		16QAM: 8M96W7D
		64QAM: 8M97W7D
		256QAM: 8M98W7D



EMISSION DESIGNATOR	LTE Band 13 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M50W7D
		64QAM: 4M49W7D
		256QAM: 4M48W7D
	LTE Band 13 Channel Bandwidth: 10MHz	QPSK: 8M93G7D
		16QAM: 8M95W7D
		64QAM: 8M95W7D
		256QAM: 8M96W7D
	LTE Band 30 Channel Bandwidth: 5MHz	QPSK: 4M50G7D
		16QAM: 4M50W7D
		64QAM: 4M49W7D
		256QAM: 4M49W7D
	LTE Band 30 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M97W7D
		64QAM: 9M00W7D
		256QAM: 8M98W7D
	LTE Band 71 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M50W7D
		64QAM: 4M50W7D
		256QAM: 4M49W7D
	LTE Band 71 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M97W7D
		64QAM: 8M97W7D
		256QAM: 8M97W7D
	LTE Band 71 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
		256QAM: 13M4W7D



EMISSION DESIGNATOR	CLTE Band 71 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D
		256QAM: 17M9W7D
ANTENNA GAIN*	LTE BAND7	1.1dBi
	LTE BAND12	-0.9dBi
	LTE BAND13	-1.3dBi
	LTE BAND17	-0.9dBi
	LTE BAND30	2.2dBi
	LTE BAND71	-2.5dBi
ANTENNA TYPE*	Fixed Internal Antenna	
HW VERSION*	V3.0	
SW VERSION*	IK511USV1_ZZ_01.00_01	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	USB cable: non-shielded cable, with w/o ferrite core, 0.15 meter	
EXTREME TEMPERATURE*	-20°C~55°C	
EXTREME VOLTAGE*	4.75V~5.25V	

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 receivers.

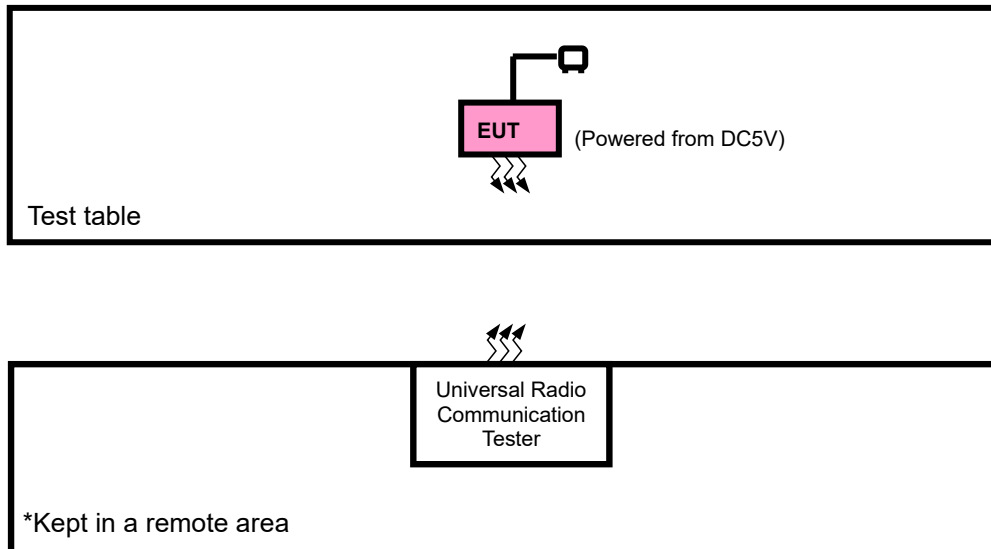
MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

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	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: non-shielded, Detachable 0.15m



2.4 TEST ITEM AND TEST CONFIGURATION

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

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + DC Supply with LTE link

LTE BAND 7 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	20850 to 21350	20850, 21100, 21350	20MHz	QPSK	100 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM, 256QAM	25 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM, 256QAM	75 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM, 256QAM	100 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 75 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 100 RB / 0 RB offset
A	BAND EDGE	20775 to 21425	20775	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			21425	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		20800 to 21400	20800	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 50 RB / 0 RB offset



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			21400	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 49 RB offset
						50 RB / 0 RB offset
		20825 to 21375	20825	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
						75 RB / 0 RB offset
		20850 to 21350	21375	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 74 RB offset
						75 RB / 0 RB offset
			20850	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
						100 RB / 0 RB offset
A	CONDCUDED EMISSION	20850 to 21350	21350	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 99 RB offset
						100 RB / 0 RB offset
		20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0RB offset
		20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		20775 to 21425	21100	5MHz	QPSK	1 RB / 0 RB offset
		20800 to 21400	20800, 21100, 21400	10MHz	QPSK	1 RB / 0 RB offset
A	RADIATED EMISSION	20825 to 21375	211005	15MHz	QPSK	1 RB / 0 RB offset
		20850 to 21350	21100	20MHz	QPSK	1 RB / 0 RB offset

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

LTE BAND 12 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	23060 to 23130	23060, 23095 ,23130	10MHz	QPSK	50 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	6 RB / 0 RB offset
		23025 to 23165	23025, 23095 ,23165	3MHz	QPSK, 16QAM, 64QAM, 256QAM	15 RB / 0 RB offset
		23035 to 23155	23035, 23095 ,23155	5MHz	QPSK, 16QAM, 64QAM, 256QAM	25 RB / 0 RB offset
		23060 to 23130	23060, 23095 ,23130	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB offset
A	PEAK TO AVERAGE	23017 to 23173	23017, 23095 , 23173	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset

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	RATIO	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 15 RB / 0 RB offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
A	BAND EDGE	23017 to 23173	23017	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 6 RB / 0 RB offset
			23173	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 5 RB offset 6 RB / 0 RB offset
		23025 to 23165	23025	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 15 RB / 0 RB offset
			23165	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 14 RB offset 15 RB / 0 RB offset
		23035 to 23155	23035	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			23155	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		23060 to 23130	23060	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
			23130	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 49 RB offset 50 RB / 0 RB offset
A	CONDCUDED EMISSION	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM, 64QAM, 256QAM	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
A	ERP	23205 to 23255	23205, 20175, 23255	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	23230	23230	10MHz	QPSK	50 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	23205 to 23255	23205, 20175, 23255	5MHz	QPSK, 16QAM, 64QAM, 256QAM	25 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	23205 to 23255	23205, 20175, 23255	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
A	BAND EDGE	23205 to 23255	23205	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
			23255	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 24 RB offset 25 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset 1 RB / 49 RB offset 50 RB / 0 RB offset
A	CONDCUETED EMISSION	23205 to 23255	23205, 20175, 23255	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23230	23230	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	23205 to 23255	23205, 20175, 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
A	ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset

Note:

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



2. LTE Band 17 are covered by LTE Band 12, Because it is a subset of LTE Band 12 with the same output power and supported bandwidths, So the conducted test data and RSE test data please refer to LTE Band 12.

LTE BAND 30 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	27685 to 27735	27685, 27710, 27735	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	27710	27710	10MHz	QPSK,	50 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	27685 to 27735	27685, 27710, 27735	5MHz	QPSK, 16QAM, 64QAM, 256QAM	25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	27685 to 27735	27685, 27710, 27735	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 25RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	27685 to 27735	27685	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
			27735	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset 1 RB / 49 RB Offset /
A	CONDUCTED EMISSION	27685 to 27735	27685, 27710, 27735	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
		27710	27710	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	27685 to 27735	27685, 27710, 27735	5MHz	QPSK	1 RB / 0 RB Offset
		27710	27710	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 71 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	FREQUENCY STABILITY	133222 to 133372	133222, 133322, 133372	20MHz	QPSK	100 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM, 64QAM, 256QAM	25 RB / 0 RB offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	75 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	100 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		133172 to 133422	133172, 133297 133422	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 75RB / 0 RB Offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB Offset 100 RB / 0 RB Offset
A	BAND EDGE	133147 to 133447	133147	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
						25 RB / 0 RB offset
		133172 to 133422	133172	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 24 RB offset
						25 RB / 0 RB offset
		133197 to 133397	133172	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
			133422	10MHz	QPSK, 16QAM, 64QAM, 256QAM	50 RB / 0 RB offset
		133197 to 133397	133197	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 49 RB offset
						50 RB / 0 RB offset
		133197 to 133397	133197	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
			133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	75 RB / 0 RB offset
		133222 to 133372	133197	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 74 RB offset
			133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	75 RB / 0 RB offset
		133222 to 133372	133222	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
						100 RB / 0 RB offset
		133222 to 133372	133222	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
			133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	100 RB / 0 RB offset
		133222 to 133372	133222	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 99 RB offset
			133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 99 RB offset



						100 RB / 0 RB offset
A	CONDCUDED EMISSION	133147 to 133447	133147, 133297, 133447	5MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133172 to 133422	133172, 133297, 133422	10MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
		133222 to 133372	133222, 133322, 133372	20MHz	QPSK, 16QAM, 64QAM, 256QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	133147 to 133447	133297	5MHz	QPSK	1 RB / 0 RB offset
		133172 to 133422	133297	10MHz	QPSK	1 RB / 0 RB offset
		133197 to 133397	133197, 133297, 133397	15MHz	QPSK	1 RB / 0 RB offset
		133222 to 133372	133322	20MHz	QPSK	1 RB / 0 RB offset

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

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	DC 5V	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 4.75V/5V/5.25V	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 5V	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 5V	Hanwen Xu
CONDCUDED EMISSION	23deg. C, 70%RH	DC 5V	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 5V	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 5V	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

§27.53(m)(4): LTE Band7

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

§27.53(g): LTEB12/71/17

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.

§27.53(c)(2)(4): LTEB13

According to FCC 27.53(c) specified that For operations in the 746-758 MHz band and 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. 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. In addition, the power of any unwanted emission in an 6.25kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, $P(\text{dBW})$, by at least $65 + 10 \log 10 p(P)$, dB, for mobile and portable equipment.

§27.53(a)(4):LTEB30

According to FCC 27.53(a)(4) specified that For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:



(i) By a factor of not less than: $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log (P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log (P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log (P)$ dB on all frequencies between 2328 and 2337 MHz;

(ii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296 MHz, $67 + 10 \log (P)$ dB on all frequencies between 2288 and 2292 MHz, and $70 + 10 \log (P)$ dB below 2288 MHz;

(iii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365 MHz, and not less than $70 + 10 \log (P)$ dB above 2365 MHz.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

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

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

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

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

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

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

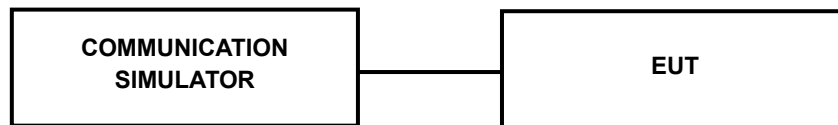
CONDUCTED POWER MEASUREMENT:

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



3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band 7						
Band/BW	Modulation	RB Size	RB offset	Low CH 20775	Mid CH 21100	High CH 21425
				Frequency 2502.5 MHz	Frequency 2535 MHz	Frequency 2567.5 MHz
7/ 5	QPSK	1	0	22.50	22.58	22.68
		1	12	22.58	22.68	22.55
		1	24	22.46	22.48	22.36
		12	0	21.30	21.61	21.56
		12	6	21.55	21.64	21.55
		12	13	21.54	21.52	21.49
		25	0	21.43	21.68	21.52
	16QAM	1	0	21.70	21.71	21.64
		1	12	21.83	21.65	21.55
		1	24	21.59	21.66	21.82
		12	0	20.39	20.49	20.51
		12	6	20.71	20.71	20.64
		12	13	20.43	20.43	20.60
		25	0	20.67	20.53	20.42
	64QAM	1	0	20.54	20.72	20.61
		1	12	20.51	20.69	20.56
		1	24	20.43	20.48	20.59
		12	0	19.52	19.64	19.51
		12	6	19.45	19.34	19.58
		12	13	19.36	19.43	19.57
		25	0	19.36	19.53	19.49
	256QAM	1	0	17.60	17.59	17.44
		1	12	17.38	17.53	17.48
		1	24	17.48	17.57	17.47
		12	0	17.57	17.46	17.58
		12	6	17.57	17.64	17.61
		12	13	17.31	17.44	17.27
		25	0	17.66	17.68	17.58



Band/BW	Modulation	RB Size	RB offset	Low CH 20800	Mid CH 21100	High CH 21400
				Frequency 2505 MHz	Frequency 2535 MHz	Frequency 2565 MHz
7 / 10	QPSK	1	0	22.61	22.66	22.52
		1	24	22.58	22.55	22.54
		1	49	22.46	22.49	22.42
		25	0	21.30	21.53	21.56
		25	12	21.56	21.66	21.57
		25	25	21.52	21.68	21.45
		50	0	21.60	21.66	21.61
	16QAM	1	0	21.73	21.75	21.61
		1	24	21.86	21.74	21.70
		1	49	21.64	21.60	21.65
		25	0	20.34	20.52	20.55
		25	12	20.57	20.73	20.69
		25	25	20.39	20.48	20.50
		50	0	20.61	20.63	20.42
	64QAM	1	0	20.45	20.73	20.50
		1	24	20.67	20.79	20.75
		1	49	20.55	20.52	20.66
		25	0	19.39	19.64	19.62
		25	12	19.47	19.54	19.56
		25	25	19.57	19.48	19.59
		50	0	19.35	19.45	19.45
	256QAM	1	0	17.60	17.60	17.52
		1	24	17.43	17.59	17.58
		1	49	17.61	17.60	17.66
		25	0	17.54	17.52	17.40
		25	12	17.51	17.52	17.46
		25	25	17.33	17.39	17.31
		50	0	17.63	17.59	17.56



Band/BW	Modulation	RB Size	RB offset	Low CH 20825	Mid CH 21100	High CH 21375
				Frequency 2507.5 MHz	Frequency 2535 MHz	Frequency 2562.5 MHz
7/ 15	QPSK	1	0	22.44	22.69	22.47
		1	37	22.46	22.63	22.50
		1	74	22.43	22.47	22.56
		36	0	21.48	21.53	21.59
		36	19	21.51	21.68	21.56
		36	39	21.54	21.67	21.38
		75	0	21.59	21.58	21.63
	16QAM	1	0	21.91	21.68	21.69
		1	37	21.76	21.76	21.76
		1	74	21.59	21.68	21.71
		36	0	20.36	20.60	20.46
		36	19	20.60	20.64	20.63
		36	39	20.56	20.38	20.55
		75	0	20.48	20.44	20.40
	64QAM	1	0	20.57	20.61	20.53
		1	37	20.56	20.65	20.70
		1	74	20.44	20.42	20.62
		36	0	19.39	19.45	19.49
		36	19	19.39	19.44	19.42
		36	39	19.43	19.50	19.66
		75	0	19.44	19.61	19.46
	256QAM	1	0	17.54	17.60	17.57
		1	37	17.57	17.74	17.59
		1	74	17.47	17.72	17.51
		36	0	17.49	17.38	17.48
		36	19	17.70	17.56	17.43
		36	39	17.33	17.32	17.35
		75	0	17.61	17.71	17.64



Band/BW	Modulation	RB Size	RB offset	Low CH 20850	Mid CH 21100	High CH 21350
				Frequency 2510 MHz	Frequency 2535 MHz	Frequency 2560 MHz
7/ 20	QPSK	1	0	22.63	22.70	22.68
		1	50	22.62	22.68	22.67
		1	99	22.58	22.63	22.57
		50	0	21.50	21.63	21.60
		50	25	21.65	21.72	21.69
		50	50	21.58	21.67	21.58
		100	0	21.62	21.68	21.66
	16QAM	1	0	21.90	21.86	21.76
		1	50	21.85	21.84	21.76
		1	99	21.75	21.77	21.84
		50	0	20.48	20.65	20.58
		50	25	20.75	20.75	20.74
		50	50	20.55	20.59	20.68
		100	0	20.67	20.64	20.56
	64QAM	1	0	20.64	20.73	20.66
		1	50	20.71	20.78	20.74
		1	99	20.63	20.62	20.65
		50	0	19.53	19.63	19.70
		50	25	19.48	19.53	19.60
		50	50	19.57	19.61	19.70
		100	0	19.55	19.65	19.66
	256QAM	1	0	17.68	17.63	17.63
		1	50	17.58	17.74	17.69
		1	99	17.68	17.73	17.67
		50	0	17.61	17.59	17.60
		50	25	17.70	17.68	17.63
		50	50	17.52	17.53	17.43
		100	0	17.70	17.73	17.75



LTE Band 12						
Band/BW	Modulation	RB Size	RB offset	Low CH 23017	Mid CH 23095	High CH 23173
				Frequency 699.7 MHz	Frequency 707.5 MHz	Frequency 715.3 MHz
12/ 1.4	QPSK	1	0	22.68	22.87	22.70
		1	2	22.68	22.85	22.76
		1	5	22.61	22.67	22.80
		3	0	22.79	22.82	22.66
		3	1	22.65	22.68	22.67
		3	3	22.68	22.72	22.68
		6	0	21.63	21.67	21.62
	16QAM	1	0	21.85	21.69	21.76
		1	2	21.81	21.70	21.64
		1	5	21.76	21.97	21.98
		3	0	21.65	21.86	21.81
		3	1	21.78	21.71	21.84
		3	3	21.68	21.71	21.57
		6	0	20.51	20.81	20.71
	64QAM	1	0	20.87	20.73	20.73
		1	2	20.81	20.76	20.85
		1	5	20.73	20.68	20.66
		3	0	20.77	20.71	20.87
		3	1	20.78	20.82	20.60
		3	3	20.78	20.78	20.86
		6	0	19.72	19.73	19.70
	256QAM	1	0	17.79	17.95	17.98
		1	2	17.59	17.79	17.65
		1	5	17.79	17.79	17.70
		3	0	17.79	17.93	17.72
		3	1	18.00	17.81	18.02
		3	3	17.95	17.82	17.95
		6	0	17.77	17.71	17.90



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	22.71	22.73	22.76
		1	7	22.60	22.79	22.84
		1	14	22.52	22.76	22.77
		8	0	21.81	21.78	21.67
		8	3	21.85	21.71	21.68
		8	7	21.73	21.86	21.68
		15	0	21.65	21.69	21.79
	16QAM	1	0	21.73	21.78	21.70
		1	7	21.85	21.88	21.73
		1	14	21.85	21.89	21.87
		8	0	20.74	20.85	20.78
		8	3	20.95	20.91	20.91
		8	7	20.56	20.75	20.54
		15	0	20.55	20.69	20.74
	64QAM	1	0	20.75	20.84	20.71
		1	7	20.91	20.92	20.80
		1	14	20.60	20.68	20.67
		8	0	19.75	19.90	19.86
		8	3	19.82	19.84	19.66
		8	7	19.80	19.81	19.90
		15	0	19.65	19.77	19.73
	256QAM	1	0	17.83	17.78	18.03
		1	7	17.60	17.91	17.77
		1	14	17.77	17.71	17.88
		8	0	17.81	17.75	17.62
		8	3	18.09	17.94	18.02
		8	7	17.95	18.04	17.91
		15	0	17.75	17.77	17.80



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	22.81	22.78	22.68
		1	12	22.69	22.66	22.81
		1	24	22.63	22.67	22.77
		12	0	21.81	21.82	21.68
		12	6	21.71	21.71	21.77
		12	13	21.57	21.72	21.78
		25	0	21.68	21.82	21.85
	16QAM	1	0	21.86	21.69	21.76
		1	12	21.89	21.92	21.74
		1	24	21.82	21.92	21.88
		12	0	20.68	20.85	20.88
		12	6	20.95	20.83	21.00
		12	13	20.59	20.72	20.66
		25	0	20.63	20.72	20.87
	64QAM	1	0	20.72	20.69	20.70
		1	12	20.83	20.80	20.88
		1	24	20.60	20.75	20.49
		12	0	19.70	19.87	19.93
		12	6	19.81	19.91	19.70
		12	13	19.63	19.78	19.90
		25	0	19.71	19.65	19.74
	256QAM	1	0	17.68	17.88	17.96
		1	12	17.75	17.84	17.71
		1	24	17.70	17.75	17.81
		12	0	17.79	17.83	17.66
		12	6	17.89	17.98	17.90
		12	13	17.84	17.95	18.09
		25	0	17.83	17.92	17.74



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	22.86	22.91	22.88
		1	24	22.70	22.86	22.87
		1	49	22.72	22.82	22.88
		25	0	21.80	21.87	21.80
		25	12	21.84	21.90	21.87
		25	25	21.76	21.86	21.83
		50	0	21.82	21.88	21.85
	16QAM	1	0	21.93	21.90	21.83
		1	24	21.92	21.91	21.87
		1	49	21.88	22.01	22.05
		25	0	20.73	20.88	20.93
		25	12	20.97	20.92	21.00
		25	25	20.74	20.81	20.67
		50	0	20.72	20.85	20.93
	64QAM	1	0	20.92	20.89	20.83
		1	24	20.92	20.94	20.87
		1	49	20.74	20.78	20.70
		25	0	19.88	19.92	20.00
		25	12	19.93	19.93	19.82
		25	25	19.81	19.97	19.96
		50	0	19.75	19.84	19.88
	256QAM	1	0	17.86	17.98	18.03
		1	24	17.80	17.91	17.77
		1	49	17.88	17.92	17.88
		25	0	17.91	17.95	17.81
		25	12	18.08	18.03	18.08
		25	25	18.02	18.05	18.11
		50	0	17.87	17.93	17.93



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	23.16	23.30	23.27
		1	12	23.19	23.11	23.19
		1	24	23.18	23.30	23.29
		12	0	22.20	22.15	22.10
		12	6	22.29	22.32	22.25
		12	13	22.34	22.29	22.22
		25	0	22.24	22.19	22.18
	16QAM	1	0	22.29	22.45	22.35
		1	12	22.37	22.48	22.44
		1	24	22.32	22.19	22.33
		12	0	21.15	21.00	21.08
		12	6	21.05	21.19	21.11
		12	13	21.00	21.08	20.99
		25	0	21.40	21.34	21.33
	64QAM	1	0	21.33	21.21	21.33
		1	12	21.28	21.24	21.18
		1	24	21.13	21.24	21.33
		12	0	20.33	20.31	20.17
		12	6	20.09	20.26	20.18
		12	13	20.23	20.06	20.21
		25	0	20.34	20.29	20.17
	256QAM	1	0	18.27	18.27	18.35
		1	12	18.22	18.22	18.31
		1	24	18.32	18.18	18.30
		12	0	18.40	18.44	18.31
		12	6	18.24	18.33	18.21
		12	13	18.18	18.08	18.26
		25	0	18.27	18.28	18.21



Band/BW	Modulation	RB Size	RB offset	/	Mid CH 23230	/
				/	Frequency 782.0 MHz	/
13/ 10	QPSK	1	0	/	23.30	/
		1	24	/	23.19	/
		1	49	/	23.32	/
		25	0	/	22.28	/
		25	12	/	22.35	/
		25	25	/	22.36	/
		50	0	/	22.33	/
	16QAM	1	0	/	22.44	/
		1	24	/	22.51	/
		1	49	/	22.38	/
		25	0	/	21.20	/
		25	12	/	21.23	/
		25	25	/	21.19	/
		50	0	/	21.47	/
	64QAM	1	0		21.40	
		1	24		21.29	
		1	49		21.32	
		25	0		20.32	
		25	12		20.26	
		25	25		20.27	
		50	0		20.37	
	256QAM	1	0	/	18.35	/
		1	24	/	18.34	/
		1	49	/	18.34	/
		25	0	/	18.45	/
		25	12	/	18.36	/
		25	25	/	18.25	/
		50	0	/	18.39	/



LTE Band 17						
Band/BW	Modulation	RB Size	RB offset	Low CH 23755	Mid CH 23790	High CH 23825
				Frequency 706.5 MHz	Frequency 710 MHz	Frequency 713.5 MHz
17/ 5	QPSK	1	0	22.65	22.72	22.88
		1	12	22.80	22.91	22.85
		1	24	22.88	22.80	22.85
		12	0	21.94	21.84	21.86
		12	6	21.80	21.88	21.89
		12	13	21.80	21.80	21.86
		25	0	21.86	21.84	21.85
	16QAM	1	0	22.15	21.81	22.06
		1	12	21.99	21.72	21.84
		1	24	21.96	21.78	21.81
		12	0	20.79	20.81	20.85
		12	6	20.89	20.71	20.73
		12	13	20.60	20.67	20.52
		25	0	20.95	20.77	20.98
	64QAM	1	0	20.86	20.84	20.90
		1	12	20.82	20.59	20.63
		1	24	20.91	20.95	20.94
		12	0	20.03	19.82	20.00
		12	6	19.98	19.77	19.85
		12	13	19.94	19.72	19.98
		25	0	19.90	19.85	19.80
	256QAM	1	0	18.11	17.85	17.93
		1	12	17.77	17.81	17.85
		1	24	17.60	17.61	17.74
		12	0	18.01	17.81	17.87
		12	6	17.86	17.66	17.96
		12	13	17.88	17.86	17.91
		25	0	17.71	17.64	17.74



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	22.84	22.76	22.87
		1	24	23.00	22.92	23.04
		1	49	22.90	22.88	22.96
		25	0	21.98	21.85	21.85
		25	12	22.01	21.93	22.05
		25	25	22.00	21.87	22.04
		50	0	21.86	21.83	21.92
	16QAM	1	0	22.18	21.99	22.08
		1	24	21.98	21.85	21.98
		1	49	21.99	21.89	21.98
		25	0	20.88	20.85	20.93
		25	12	20.88	20.74	20.90
		25	25	20.78	20.68	20.70
		50	0	21.05	20.87	21.06
	64QAM	1	0	21.06	20.98	21.02
		1	24	20.92	20.77	20.78
		1	49	20.99	20.98	21.05
		25	0	20.12	19.97	20.02
		25	12	20.07	19.91	19.97
		25	25	20.02	19.87	20.01
		50	0	19.98	19.89	19.96
	256QAM	1	0	18.12	17.96	18.11
		1	24	17.91	17.86	17.99
		1	49	17.80	17.79	17.79
		25	0	18.08	17.87	18.04
		25	12	18.04	17.86	18.01
		25	25	18.01	17.93	17.98
		50	0	17.92	17.76	17.81



LTE Band 30						
Band/BW	Modulation	RB Size	RB offset	Low CH 27685	Mid CH 27710	High CH 27735
				Frequency 2307.5MHz	Frequency 2310MHz	Frequency 2312.5MHz
30/ 5	QPSK	1	0	20.81	21.03	20.89
		1	12	21.01	20.95	20.93
		1	24	20.89	20.89	20.91
		12	0	19.88	20.07	19.95
		12	6	20.03	20.04	20.03
		12	13	19.93	19.93	19.97
		25	0	19.88	20.02	19.85
	16QAM	1	0	20.01	20.15	19.99
		1	12	20.01	19.97	20.11
		1	24	20.02	20.03	19.90
		12	0	18.90	19.08	19.00
		12	6	19.09	18.96	18.91
		12	13	19.19	19.10	19.05
		25	0	18.84	19.00	18.79
	64QAM	1	0	19.19	19.17	19.16
		1	12	18.93	18.96	19.03
		1	24	19.07	19.07	19.05
		12	0	17.97	18.05	18.02
		12	6	18.15	18.04	18.19
		12	13	17.88	17.85	18.02
		25	0	18.05	18.04	17.85
	256QAM	1	0	16.04	16.10	16.14
		1	12	15.89	16.00	15.84
		1	24	16.07	15.98	15.92
		12	0	16.00	16.11	16.02
		12	6	15.97	16.06	15.88
		12	13	15.94	16.05	15.97
		25	0	16.05	16.09	16.05



Band/BW	Modulation	RB Size	RB offset	/	Mid CH 27710	/
				/	Frequency 2310MHz	/
30/ 10	QPSK	1	0	/	21.02	/
		1	24	/	21.10	/
		1	49	/	21.03	/
		25	0	/	20.07	/
		25	12	/	20.08	/
		25	25	/	20.04	/
		50	0	/	20.02	/
		50	0	/	20.02	/
	16QAM	1	0	/	20.19	/
		1	24	/	20.15	/
		1	49	/	20.11	/
		25	0	/	19.10	/
		25	12	/	19.10	/
		25	25	/	19.18	/
		50	0	/	18.99	/
		50	0	/	18.99	/
	64QAM	1	0	/	19.26	/
		1	24	/	19.05	/
		1	49	/	19.20	/
		25	0	/	18.13	/
		25	12	/	18.21	/
		25	25	/	18.06	/
		50	0	/	18.06	/
		50	0	/	18.06	/
	256QAM	1	0	/	16.14	/
		1	24	/	16.05	/
		1	49	/	16.09	/
		25	0	/	16.15	/
		25	12	/	16.05	/
		25	25	/	16.09	/
		50	0	/	16.11	/
		50	0	/	16.11	/



LTE Band 71						
Band/BW	Modulation	RB Size	RB offset	Low CH 133147	Mid CH 133297	High CH 133447
				Frequency 665.5MHz	Frequency 680.5MHz	Frequency 695.5MHz
71/ 5	QPSK	1	0	23.13	22.85	22.98
		1	12	22.98	22.48	22.81
		1	24	22.78	22.52	22.63
		12	0	21.79	21.45	21.65
		12	6	21.81	21.52	21.79
		12	13	21.88	21.48	21.70
		25	0	21.83	21.46	21.76
	16QAM	1	0	22.09	21.49	21.92
		1	12	22.03	21.76	21.73
		1	24	21.73	21.46	21.74
		12	0	20.90	20.41	20.68
		12	6	20.67	20.47	20.56
		12	13	20.73	20.52	20.78
		25	0	20.85	20.64	20.79
	64QAM	1	0	20.98	20.73	20.86
		1	12	20.95	20.55	20.74
		1	24	20.86	20.67	20.76
		12	0	19.80	19.69	19.65
		12	6	19.95	19.74	19.75
		12	13	19.96	19.36	19.78
		25	0	19.71	19.45	19.63
	256QAM	1	0	18.08	17.79	17.99
		1	12	18.18	17.70	17.99
		1	24	17.97	17.64	17.96
		12	0	18.15	17.75	18.04
		12	6	17.90	17.67	17.86
		12	13	18.00	17.81	17.81
		25	0	17.99	17.62	17.97



Band/BW	Modulation	RB Size	RB offset	Low CH 133172	Mid CH 133297	High CH 133172
				Frequency 668MHz	Frequency 680.5MHz	Frequency 693MHz
71/ 10	QPSK	1	0	22.98	22.76	23.07
		1	24	23.00	22.63	22.81
		1	49	22.69	22.48	22.78
		25	0	21.79	21.37	21.79
		25	12	22.00	21.63	21.82
		25	25	21.89	21.62	21.61
		50	0	21.85	21.40	21.65
	16QAM	1	0	21.88	21.51	21.83
		1	24	21.91	21.78	21.79
		1	49	21.71	21.54	21.82
		25	0	20.87	20.41	20.64
		25	12	20.81	20.53	20.55
		25	25	20.78	20.35	20.78
		50	0	20.74	20.64	20.77
	64QAM	1	0	21.03	20.68	20.92
		1	24	20.99	20.58	20.85
		1	49	21.00	20.67	20.78
		25	0	19.82	19.54	19.83
		25	12	19.92	19.66	19.91
		25	25	19.96	19.34	19.67
		50	0	19.76	19.56	19.76
	256QAM	1	0	18.11	17.75	17.85
		1	24	18.07	17.78	17.86
		1	49	17.91	17.69	17.83
		25	0	18.11	17.77	17.94
		25	12	18.03	17.67	17.97
		25	25	17.87	17.74	17.95
		50	0	17.93	17.62	17.95



LTE Band 71						
Band/BW	Modulation	RB Size	RB offset	Low CH 133197	Mid CH 133297	High CH 133397
				Frequency 670.5MHz	Frequency 680.5MHz	Frequency 690.5MHz
71/ 15	QPSK	1	0	22.98	22.71	22.95
		1	37	23.04	22.48	22.77
		1	74	22.82	22.39	22.70
		36	0	21.78	21.37	21.67
		36	19	21.95	21.53	21.75
		36	39	21.76	21.62	21.60
		75	0	21.75	21.49	21.78
	16QAM	1	0	21.91	21.64	21.95
		1	37	22.11	21.70	21.89
		1	74	21.88	21.59	21.65
		36	0	20.92	20.46	20.76
		36	19	20.81	20.43	20.56
		36	39	20.69	20.38	20.74
		75	0	20.74	20.70	20.70
	64QAM	1	0	20.97	20.59	20.94
		1	37	21.11	20.53	20.73
		1	74	20.91	20.65	20.91
		36	0	19.81	19.66	19.80
		36	19	20.03	19.83	19.88
		36	39	19.96	19.52	19.72
		75	0	19.83	19.39	19.68
	256QAM	1	0	18.00	17.76	17.97
		1	37	18.00	17.67	17.96
		1	74	18.05	17.79	17.84
		36	0	18.08	17.66	17.95
		36	19	17.92	17.79	17.79
		36	39	18.01	17.62	17.91
		75	0	18.03	17.70	17.91



Band/BW	Modulation	RB Size	RB offset	Low CH 133222	Mid CH 133322	High CH 133372
				Frequency 673MHz	Frequency 683MHz	Frequency 688MHz
71/ 20	QPSK	1	0	23.18	22.88	23.09
		1	50	23.05	22.69	22.90
		1	99	22.87	22.57	22.82
		50	0	21.79	21.50	21.80
		50	25	21.99	21.63	21.81
		50	50	21.94	21.61	21.78
		100	0	21.95	21.60	21.79
	16QAM	1	0	22.08	21.68	21.94
		1	50	22.11	21.77	21.92
		1	99	21.90	21.58	21.86
		50	0	20.91	20.53	20.82
		50	25	20.87	20.55	20.75
		50	50	20.90	20.52	20.79
		100	0	20.91	20.69	20.88
	64QAM	1	0	21.13	20.79	20.99
		1	50	21.11	20.72	20.91
		1	99	21.05	20.74	20.94
		50	0	19.86	19.75	19.86
		50	25	20.11	19.83	19.95
		50	50	20.02	19.52	19.81
		100	0	19.90	19.56	19.81
	64QAM	1	0	18.14	17.81	18.01
		1	50	18.17	17.87	18.03
		1	99	18.07	17.79	17.96
		50	0	18.18	17.85	18.10
		50	25	18.04	17.80	17.98
		50	50	18.02	17.81	17.97
		100	0	18.14	17.76	18.07



EIRP

LTE Band 7							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
20M-QPSK	20850	2510	22.63	1.1	23.73	236.05	2
	21100	2535	22.70	1.1	23.80	239.88	2
	21350	2560	22.68	1.1	23.78	238.78	2
20M- 16QAM	20850	2510	21.90	1.1	23.00	199.53	2
	21100	2535	21.86	1.1	22.96	197.70	2
	21350	2560	21.84	1.1	22.94	196.79	2
20M- 64QAM	20850	2510	20.71	1.1	21.81	151.71	2
	21100	2535	20.78	1.1	21.88	154.17	2
	21350	2560	20.74	1.1	21.84	152.76	2
20M- 256QAM	20850	2510	17.70	1.1	18.80	75.86	2
	21100	2535	17.74	1.1	18.84	76.56	2
	21350	2560	17.75	1.1	18.85	76.74	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
15M-QPSK	20825	2507.5	22.46	1.1	23.56	226.99	2
	21100	2535	22.69	1.1	23.79	239.33	2
	21375	2562.5	22.56	1.1	23.66	232.27	2
15M- 16QAM	20825	2507.5	21.91	1.1	23.01	199.99	2
	21100	2535	21.76	1.1	22.86	193.20	2
	21375	2562.5	21.76	1.1	22.86	193.20	2
15M- 64QAM	20825	2507.5	20.57	1.1	21.67	146.89	2
	21100	2535	20.65	1.1	21.75	149.62	2
	21375	2562.5	20.70	1.1	21.80	151.36	2
15M- 256QAM	20825	2507.5	17.70	1.1	18.80	75.86	2
	21100	2535	17.74	1.1	18.84	76.56	2
	21375	2562.5	17.64	1.1	18.74	74.82	2



BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	20800	2505	22.61	1.1	23.71	234.96	2
	21100	2535	22.66	1.1	23.76	237.68	2
	21400	2565	22.54	1.1	23.64	231.21	2
10M-16QAM	20800	2505	21.86	1.1	22.96	197.70	2
	21100	2535	21.75	1.1	22.85	192.75	2
	21400	2565	21.70	1.1	22.80	190.55	2
10M-64QAM	20800	2505	20.67	1.1	21.77	150.31	2
	21100	2535	20.79	1.1	21.89	154.53	2
	21400	2565	20.75	1.1	21.85	153.11	2
10M-256QAM	20800	2505	17.63	1.1	18.73	74.64	2
	21100	2535	17.60	1.1	18.70	74.13	2
	21400	2565	17.66	1.1	18.76	75.16	2
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	20775	2502.5	22.58	1.1	23.68	233.35	2
	21100	2535	22.68	1.1	23.78	238.78	2
	21425	2567.5	22.68	1.1	23.78	238.78	2
5M-16QAM	20775	2502.5	21.83	1.1	22.93	196.34	2
	21100	2535	21.71	1.1	22.81	190.99	2
	21425	2567.5	21.82	1.1	22.92	195.88	2
5M-64QAM	20775	2502.5	20.54	1.1	21.64	145.88	2
	21100	2535	20.72	1.1	21.82	152.05	2
	21425	2567.5	20.61	1.1	21.71	148.25	2
5M-256QAM	20775	2502.5	17.66	1.1	18.76	75.16	2
	21100	2535	17.68	1.1	18.78	75.51	2
	21425	2567.5	17.61	1.1	18.71	74.30	2



LTE Band 12							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23060	704	22.86	-0.9	19.81	95.72	3
	23095	707.5	22.91	-0.9	19.86	96.83	3
	23130	711	22.88	-0.9	19.83	96.16	3
10M- 16QAM	23060	704	21.93	-0.9	18.88	77.27	3
	23095	707.5	22.01	-0.9	18.96	78.70	3
	23130	711	22.05	-0.9	19.00	79.43	3
10M- 64QAM	23060	704	20.92	-0.9	17.87	61.24	3
	23095	707.5	20.94	-0.9	17.89	61.52	3
	23130	711	20.87	-0.9	17.82	60.53	3
10M- 256QAM	23060	704	18.08	-0.9	15.03	31.84	3
	23095	707.5	18.05	-0.9	15.00	31.62	3
	23130	711	18.11	-0.9	15.06	32.06	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23035	701.5	22.81	-0.9	19.76	94.62	3
	23095	707.5	22.78	-0.9	19.73	93.97	3
	23155	713.5	22.81	-0.9	19.76	94.62	3
5M-16QAM	23035	701.5	21.89	-0.9	18.84	76.56	3
	23095	707.5	21.92	-0.9	18.87	77.09	3
	23155	713.5	21.88	-0.9	18.83	76.38	3
5M-64QAM	23035	701.5	20.83	-0.9	17.78	59.98	3
	23095	707.5	20.80	-0.9	17.75	59.57	3
	23155	713.5	20.88	-0.9	17.83	60.67	3
5M- 256QAM	23035	701.5	17.89	-0.9	14.84	30.48	3
	23095	707.5	17.98	-0.9	14.93	31.12	3
	23155	713.5	18.09	-0.9	15.04	31.92	3



BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
3M-QPSK	23025	700.5	22.71	-0.9	19.66	92.47	3
	23095	707.5	22.79	-0.9	19.74	94.19	3
	23165	714.5	22.84	-0.9	19.79	95.28	3
3M-16QAM	23025	700.5	21.85	-0.9	18.80	75.86	3
	23095	707.5	21.89	-0.9	18.84	76.56	3
	23165	714.5	21.87	-0.9	18.82	76.21	3
3M-64QAM	23025	700.5	20.91	-0.9	17.86	61.09	3
	23095	707.5	20.92	-0.9	17.87	61.24	3
	23165	714.5	20.80	-0.9	17.75	59.57	3
3M- 256QAM	23025	700.5	18.09	-0.9	15.04	31.92	3
	23095	707.5	18.04	-0.9	14.99	31.55	3
	23165	714.5	18.03	-0.9	14.98	31.48	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
1.4M-QPSK	23017	699.7	22.79	-0.9	19.74	94.19	3
	23095	707.5	22.87	-0.9	19.82	95.94	3
	23173	715.3	22.80	-0.9	19.75	94.41	3
1.4M- 16QAM	23017	699.7	21.85	-0.9	18.80	75.86	3
	23095	707.5	21.97	-0.9	18.92	77.98	3
	23173	715.3	21.98	-0.9	18.93	78.16	3
1.4M- 64QAM	23017	699.7	20.87	-0.9	17.82	60.53	3
	23095	707.5	20.82	-0.9	17.77	59.84	3
	23173	715.3	20.87	-0.9	17.82	60.53	3
1.4M- 256QAM	23017	699.7	18.00	-0.9	14.95	31.26	3
	23095	707.5	17.95	-0.9	14.90	30.90	3
	23173	715.3	18.02	-0.9	14.97	31.41	3



LTE Band 13							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23230	782	23.32	-1.3	19.87	97.05	3
10M- 16QAM	23230	782	22.51	-1.3	19.06	80.54	3
10M- 64QAM	23230	782	21.40	-1.3	17.95	62.37	3
10M- 256QAM	23230	782	18.45	-1.3	15.00	31.62	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23205	779.5	23.19	-1.3	19.74	94.19	3
	23230	782	23.30	-1.3	19.85	96.61	3
	23255	784.5	23.29	-1.3	19.84	96.38	3
5M-16QAM	23205	779.5	22.37	-1.3	18.92	77.98	3
	23230	782	22.48	-1.3	19.03	79.98	3
	23255	784.5	22.44	-1.3	18.99	79.25	3
5M-64QAM	23205	779.5	21.33	-1.3	17.88	61.38	3
	23230	782	21.24	-1.3	17.79	60.12	3
	23255	784.5	21.33	-1.3	17.88	61.38	3
5M- 256QAM	23205	779.5	18.40	-1.3	14.95	31.26	3
	23230	782	18.44	-1.3	14.99	31.55	3
	23255	784.5	18.35	-1.3	14.90	30.90	3



LTE Band 17							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	23780	709	23.00	-0.9	19.95	98.86	3
	23790	710	22.92	-0.9	19.87	97.05	3
	23800	711	23.04	-0.9	19.99	99.77	3
10M- 16QAM	23780	709	22.18	-0.9	19.13	81.85	3
	23790	710	21.99	-0.9	18.94	78.34	3
	23800	711	22.08	-0.9	19.03	79.98	3
10M- 64QAM	23780	709	21.06	-0.9	18.01	63.24	3
	23790	710	20.98	-0.9	17.93	62.09	3
	23800	711	21.05	-0.9	18.00	63.10	3
10M- 256QAM	23780	709	18.12	-0.9	15.07	32.14	3
	23790	710	17.96	-0.9	14.91	30.97	3
	23800	711	18.11	-0.9	15.06	32.06	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	23755	706.5	22.88	-0.9	19.83	96.16	3
	23790	710	22.91	-0.9	19.86	96.83	3
	23825	713.5	22.88	-0.9	19.83	96.16	3
5M-16QAM	23755	706.5	22.15	-0.9	19.10	81.28	3
	23790	710	21.81	-0.9	18.76	75.16	3
	23825	713.5	22.06	-0.9	19.01	79.62	3
5M-64QAM	23755	706.5	20.91	-0.9	17.86	61.09	3
	23790	710	20.95	-0.9	17.90	61.66	3
	23825	713.5	20.94	-0.9	17.89	61.52	3
5M- 256QAM	23755	706.5	18.11	-0.9	15.06	32.06	3
	23790	710	17.86	-0.9	14.81	30.27	3
	23825	713.5	17.96	-0.9	14.91	30.97	3



LTE Band 30							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
10M-QPSK	27710	2310	21.10	2.2	23.30	213.80	0.25
10M- 16QAM	27710	2310	20.19	2.2	22.39	173.38	0.25
10M- 64QAM	27710	2310	19.26	2.2	21.46	139.96	0.25
10M- 256QAM	27710	2310	16.15	2.2	18.35	68.39	0.25
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
5M-QPSK	27685	2307.5	21.01	2.2	23.21	209.41	0.25
	27710	2310	21.03	2.2	23.23	210.38	0.25
	27735	2312.5	20.93	2.2	23.13	205.59	0.25
5M-16QAM	27685	2307.5	20.02	2.2	22.22	166.72	0.25
	27710	2310	20.15	2.2	22.35	171.79	0.25
	27735	2312.5	20.11	2.2	22.31	170.22	0.25
5M-64QAM	27685	2307.5	19.19	2.2	21.39	137.72	0.25
	27710	2310	19.17	2.2	21.37	137.09	0.25
	27735	2312.5	19.16	2.2	21.36	136.77	0.25
5M- 256QAM	27685	2307.5	16.07	2.2	18.27	67.14	0.25
	27710	2310	16.11	2.2	18.31	67.76	0.25
	27735	2312.5	16.14	2.2	18.34	68.23	0.25



LTE Band 71							
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
20M-QPSK	133222	673	23.18	-2.5	18.53	71.29	3
	133322	683	22.88	-2.5	18.23	66.53	3
	133372	688	23.09	-2.5	18.44	69.82	3
20M- 16QAM	133222	673	22.11	-2.5	17.46	55.72	3
	133322	683	21.77	-2.5	17.12	51.52	3
	133372	688	21.94	-2.5	17.29	53.58	3
20M- 64QAM	133222	673	21.13	-2.5	16.48	44.46	3
	133322	683	20.79	-2.5	16.14	41.11	3
	133372	688	20.99	-2.5	16.34	43.05	3
20M- 256QAM	133222	673	18.18	-2.5	13.53	22.54	3
	133322	683	17.87	-2.5	13.22	20.99	3
	133372	688	18.10	-2.5	13.45	22.13	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
15M-QPSK	133197	670.5	23.04	-2.5	18.39	69.02	3
	133297	680.5	22.71	-2.5	18.06	63.97	3
	133397	690.5	22.95	-2.5	18.30	67.61	3
15M- 16QAM	133197	670.5	22.11	-2.5	17.46	55.72	3
	133297	680.5	21.70	-2.5	17.05	50.70	3
	133397	690.5	21.95	-2.5	17.30	53.70	3
15M- 64QAM	133197	670.5	21.11	-2.5	16.46	44.26	3
	133297	680.5	20.65	-2.5	16.00	39.81	3
	133397	690.5	20.94	-2.5	16.29	42.56	3
15M- 256QAM	133197	670.5	18.08	-2.5	13.43	22.03	3
	133297	680.5	17.79	-2.5	13.14	20.61	3
	133397	690.5	17.97	-2.5	13.32	21.48	3



BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
10M-QPSK	133172	668	23.00	-2.5	18.35	68.39	3
	133297	680.5	22.76	-2.5	18.11	64.71	3
	133422	693	23.07	-2.5	18.42	69.50	3
10M- 16QAM	133172	668	21.91	-2.5	17.26	53.21	3
	133297	680.5	21.78	-2.5	17.13	51.64	3
	133422	693	21.83	-2.5	17.18	52.24	3
10M- 64QAM	133172	668	21.03	-2.5	16.38	43.45	3
	133297	680.5	20.68	-2.5	16.03	40.09	3
	133422	693	20.92	-2.5	16.27	42.36	3
10M- 256QAM	133172	668	18.11	-2.5	13.46	22.18	3
	133297	680.5	17.78	-2.5	13.13	20.56	3
	133422	693	17.97	-2.5	13.32	21.48	3
BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
5M-QPSK	133147	665.5	23.13	-2.5	18.48	70.47	3
	133297	680.5	22.85	-2.5	18.20	66.07	3
	133447	695.5	22.98	-2.5	18.33	68.08	3
5M-16QAM	133147	665.5	22.09	-2.5	17.44	55.46	3
	133297	680.5	21.76	-2.5	17.11	51.40	3
	133447	695.5	21.92	-2.5	17.27	53.33	3
5M-64QAM	133147	665.5	20.98	-2.5	16.33	42.95	3
	133297	680.5	20.73	-2.5	16.08	40.55	3
	133447	695.5	20.86	-2.5	16.21	41.78	3
5M- 256QAM	133147	665.5	18.18	-2.5	13.53	22.54	3
	133297	680.5	17.81	-2.5	13.16	20.70	3
	133447	695.5	18.04	-2.5	13.39	21.83	3

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



3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

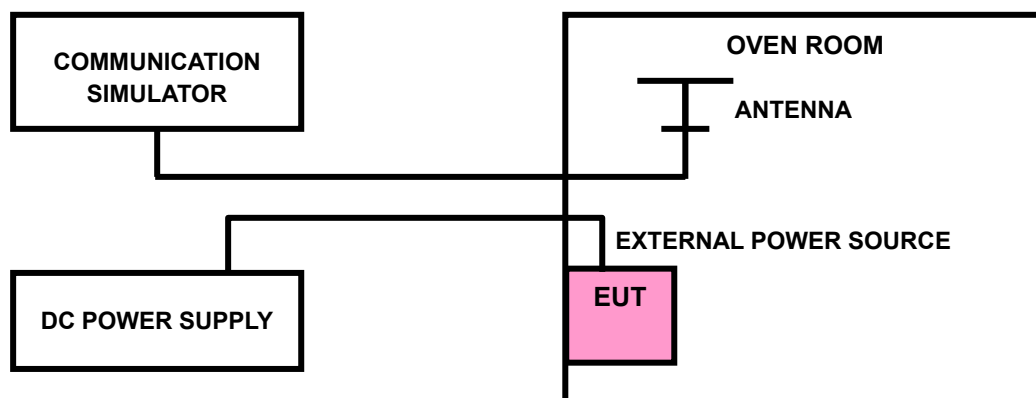
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

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

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

3.3.3 TEST SETUP





3.2.3 TEST RESULTS

Please Refer to Appendix of this test report.

Note: VL = Low voltage(4.75V); VN/NV = Normal voltage(5V); VH = High voltage(5.25V);
NT = Normal temperature (25°C)

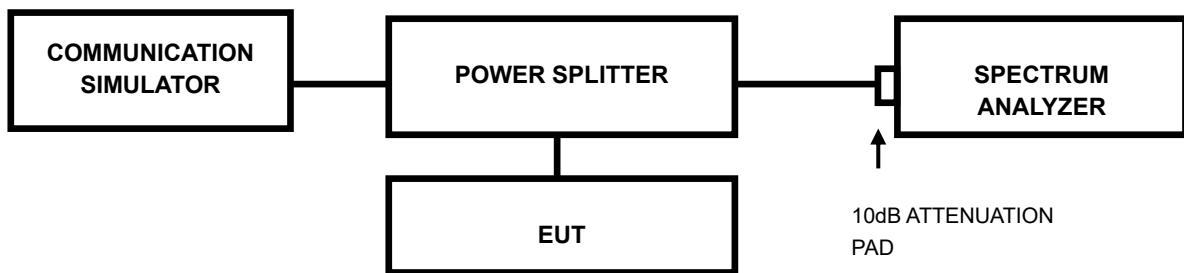


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

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

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(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(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 than $43 + 10 \log (P)$ 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.

47 CFR 27.53(c)(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;

According to FCC 27.53(a)(4) specified that For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log (P)$ dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than $61 + 10 \log (P)$ dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than $67 + 10 \log (P)$ dB on all frequencies between 2328 and 2337 MHz;

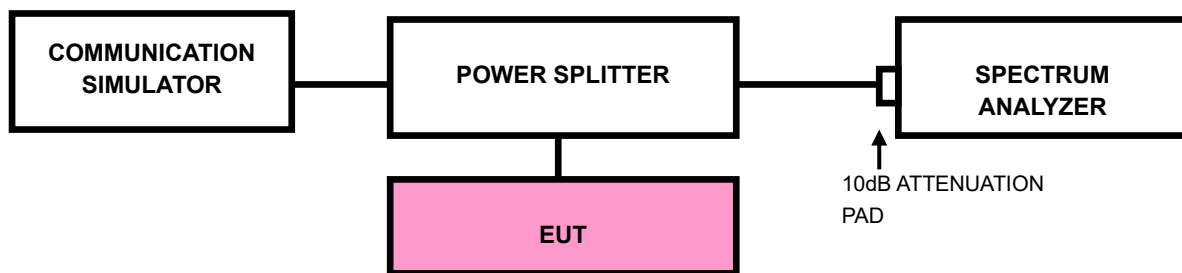
(ii) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305 MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300 MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296 MHz,



67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;

(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

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

3.4.4 TEST RESULTS

Please Refer to Appendix of this test report.



CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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

For: LTE Band7

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

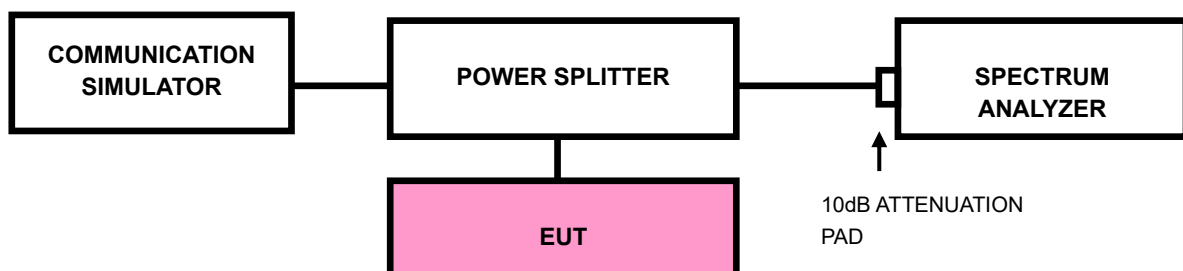
For: LTE Band30

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $70 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -40dBm .

3.5.2 TEST PROCEDURE

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

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

For: LTE Band7

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



3.6.2 TEST PROCEDURES

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

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

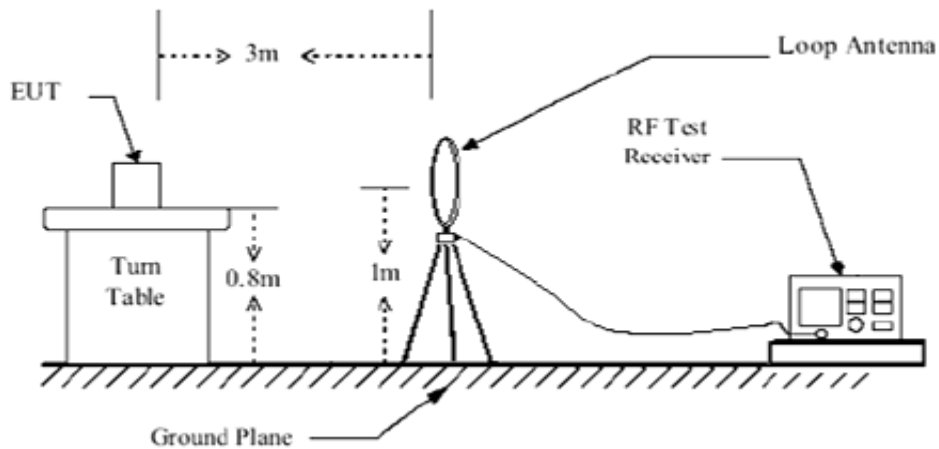
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

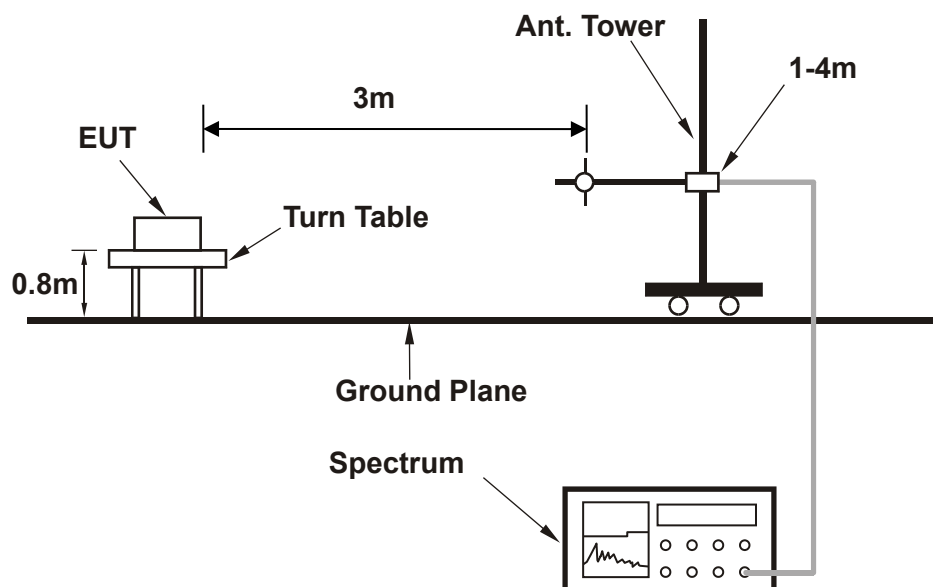


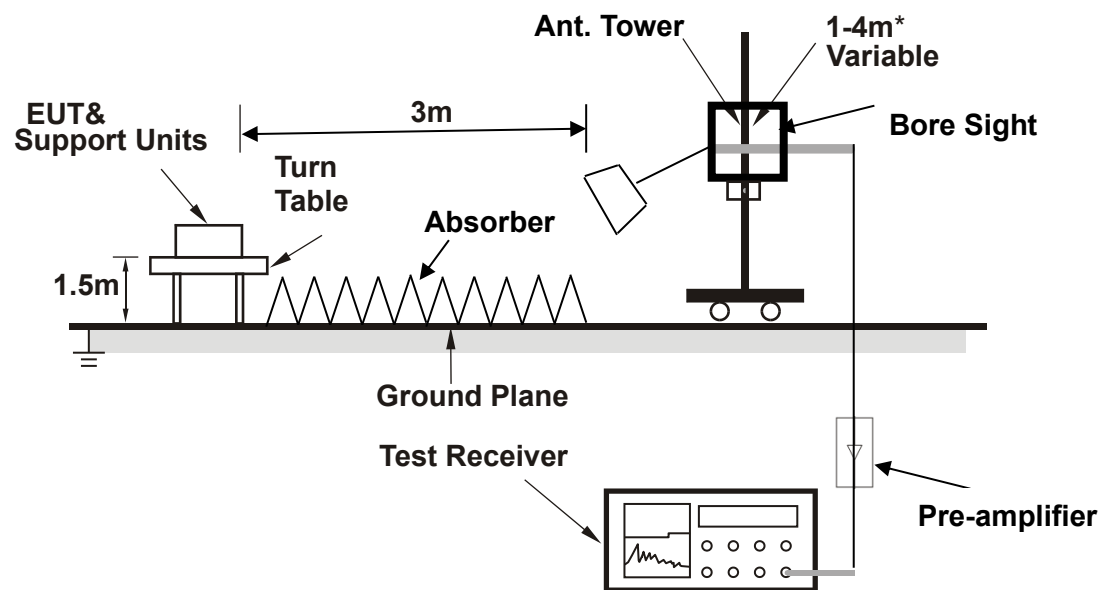
3.6.4 TEST SETUP

< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >





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.

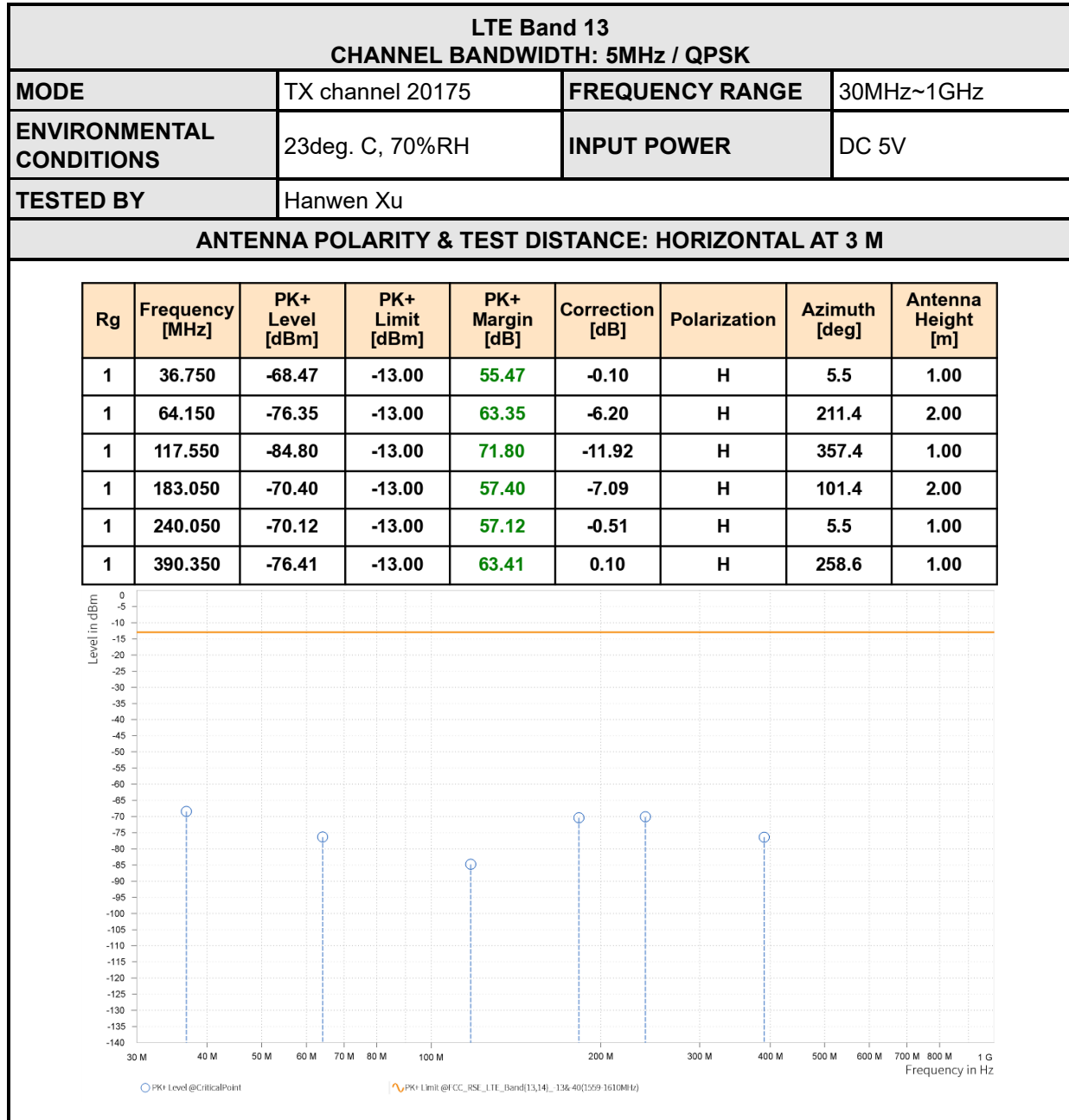
For the actual test configuration, please refer to the attached file (Test Setup Photo).



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

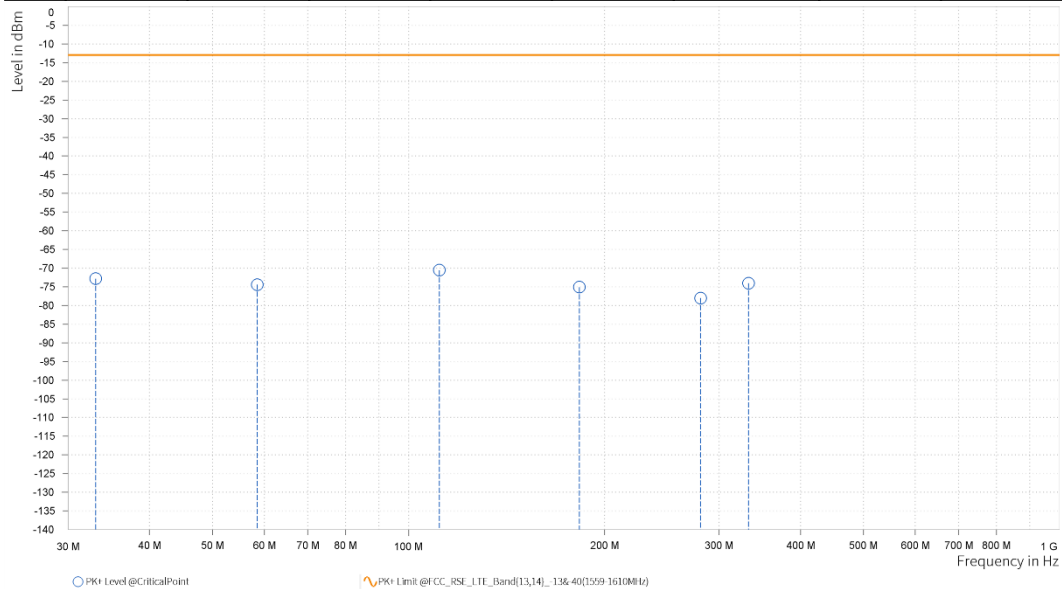




MODE	TX channel 20175	FREQUENCY RANGE	30MHz~1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 5V
TESTED BY	Hanwen Xu		

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	33.050	-72.84	-13.00	59.84	-6.35	V	359	2.00
1	58.550	-74.45	-13.00	61.45	-3.48	V	198.2	2.00
1	111.450	-70.56	-13.00	57.56	1.71	V	281.4	1.00
1	183.050	-75.10	-13.00	62.10	-9.12	V	198.2	2.00
1	280.950	-78.05	-13.00	65.05	-1.45	V	359	2.00
1	332.950	-74.06	-13.00	61.06	-0.60	V	198.2	2.00





ABOVE 1GHz

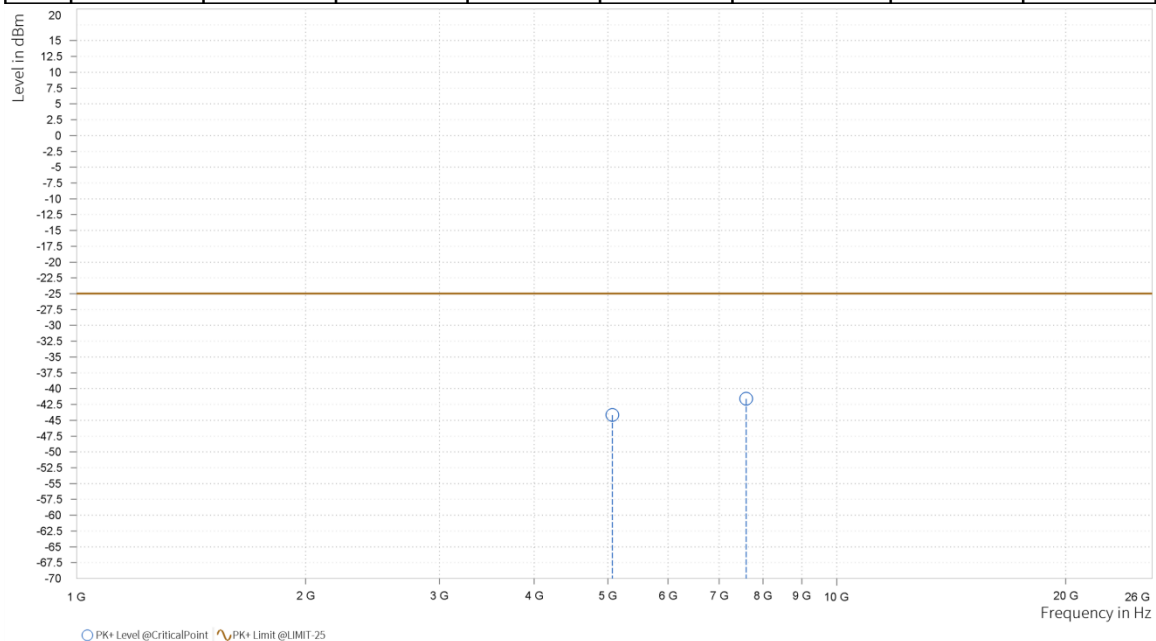
Note: For higher frequency, the emission is too low to be detected.

LTE Band 7

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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]
4	5,065.500	-44.16	-25.00	19.16	31.05	H	294.7	1.00
4	7,598.250	-41.61	-25.00	16.61	35.92	H	359.1	2.00

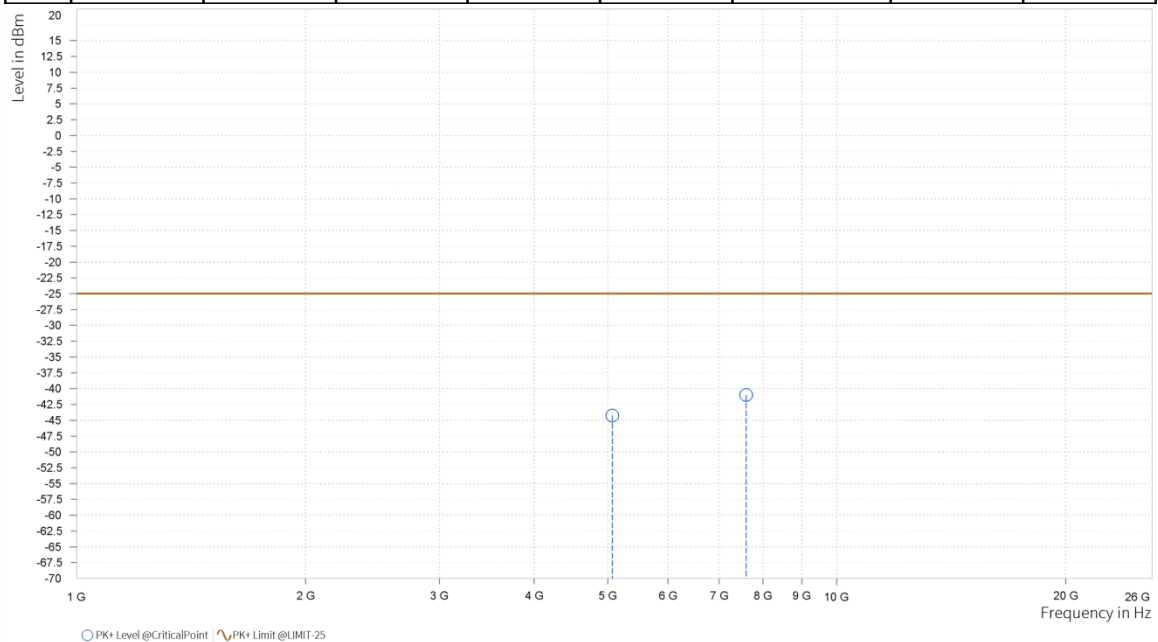




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,065.500	-44.24	-25.00	19.24	30.82	V	238.6	2.00
4	7,598.225	-40.99	-25.00	15.99	35.94	V	1	2.00

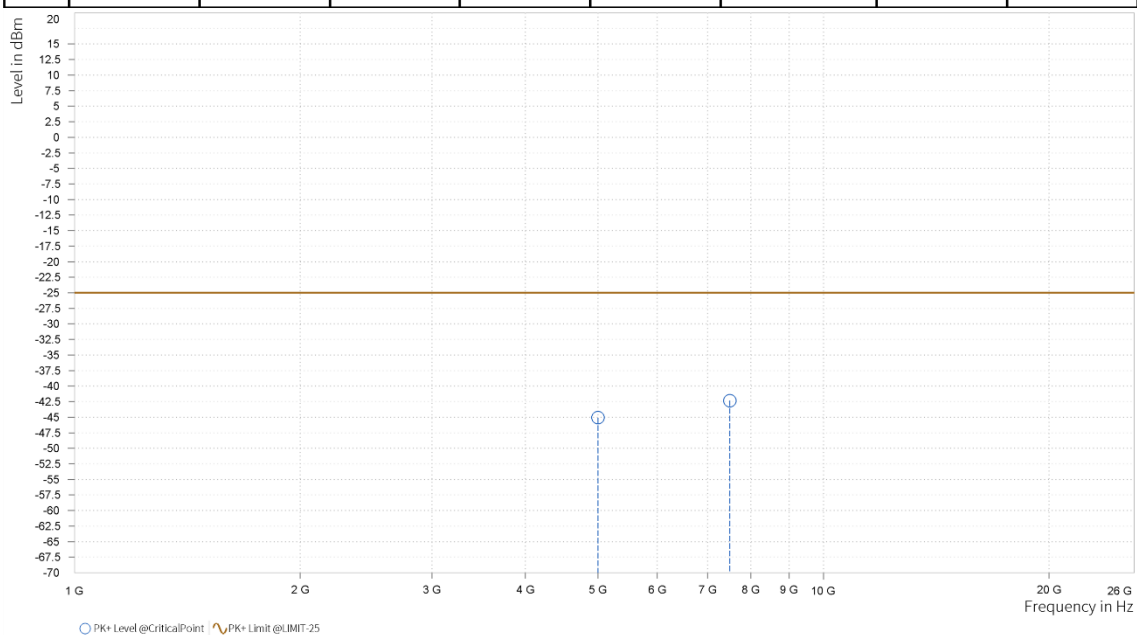




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 20800
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,001.000	-45.06	-25.00	20.06	29.99	H	359.1	2.00
4	7,501.500	-42.33	-25.00	17.33	35.66	H	359.1	2.00

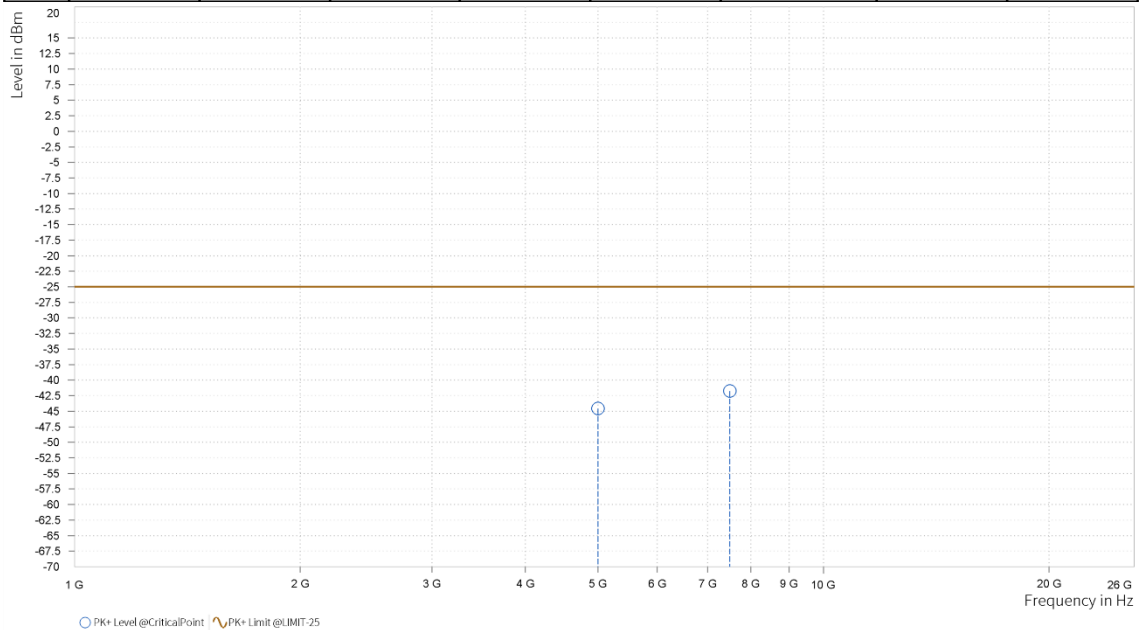




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 20800
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,001.000	-44.56	-25.00	19.56	29.84	V	1	2.00
4	7,501.500	-41.75	-25.00	16.75	35.83	V	359.1	2.00

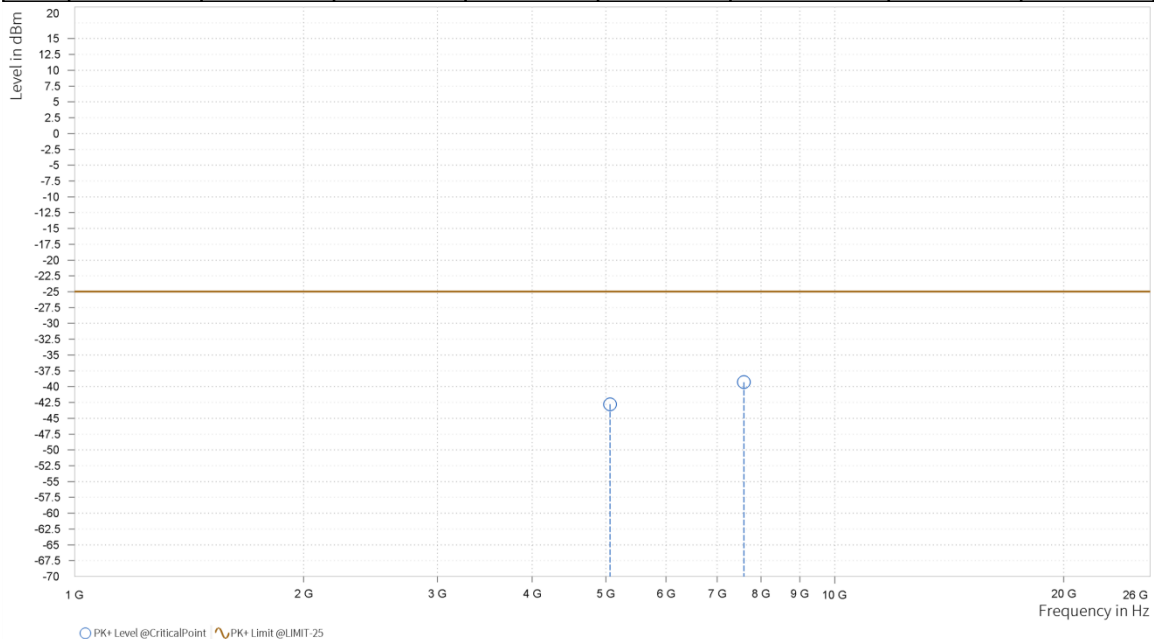




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,061.000	-42.78	-25.00	17.78	31.50	H	359.1	1.00
4	7,591.500	-39.29	-25.00	14.29	36.45	H	359.1	1.00

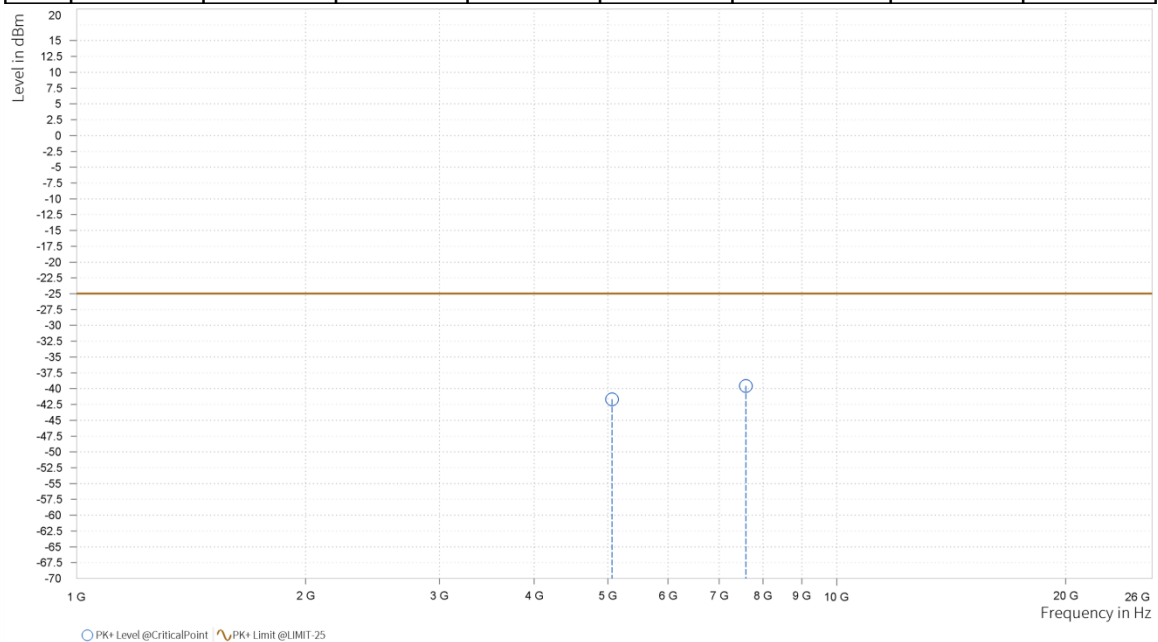




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,061.000	-41.68	-25.00	16.68	31.27	V	359	2.00
4	7,591.500	-39.56	-25.00	14.56	36.48	V	359	2.00

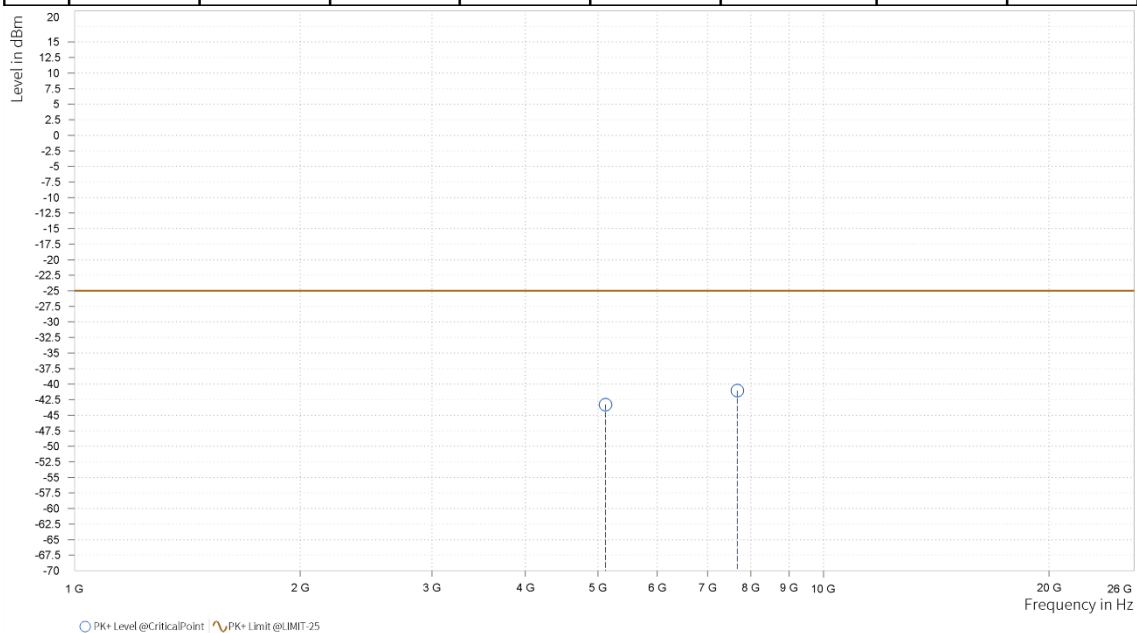




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21400
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,116.000	-43.28	-25.00	18.28	31.36	H	244.5	2.00
4	7,674.000	-41.04	-25.00	16.04	35.98	H	244.5	2.00

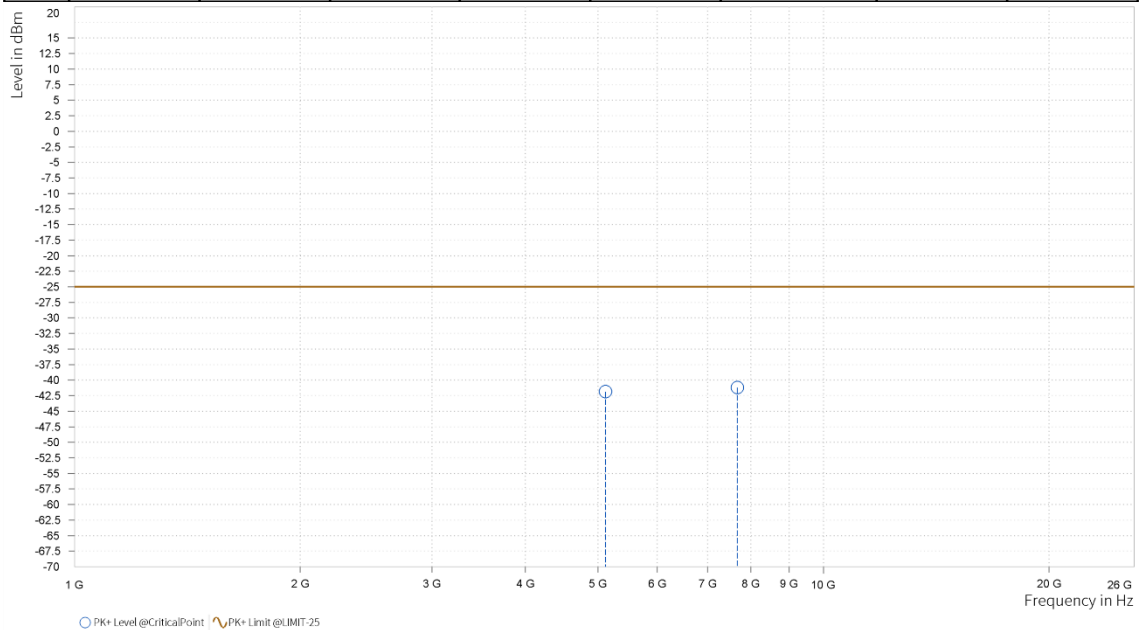




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 21400
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,116.000	-41.86	-25.00	16.86	31.21	V	239.8	2.00
4	7,674.000	-41.21	-25.00	16.21	35.94	V	359	2.00

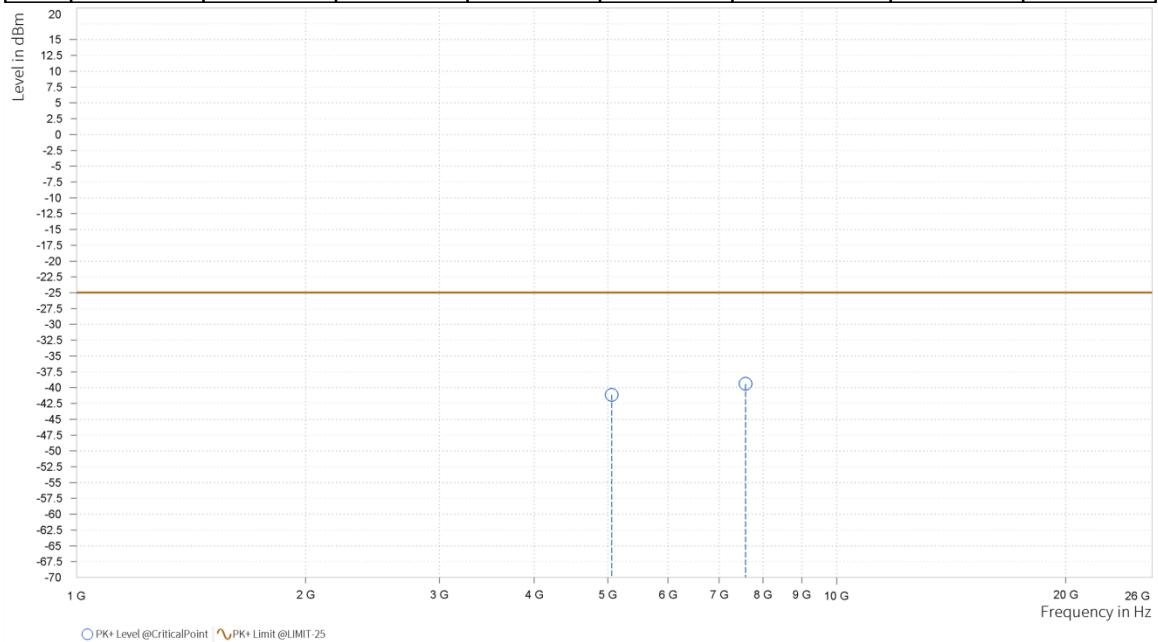




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,056.500	-41.12	-25.00	16.12	31.91	H	1	2.00
4	7,584.750	-39.40	-25.00	14.40	36.76	H	241	2.00





CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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]
4	5,056.500	-43.55	-25.00	18.55	31.69	V	1	2.00
4	7,584.750	-40.16	-25.00	15.16	36.80	V	301.9	2.00

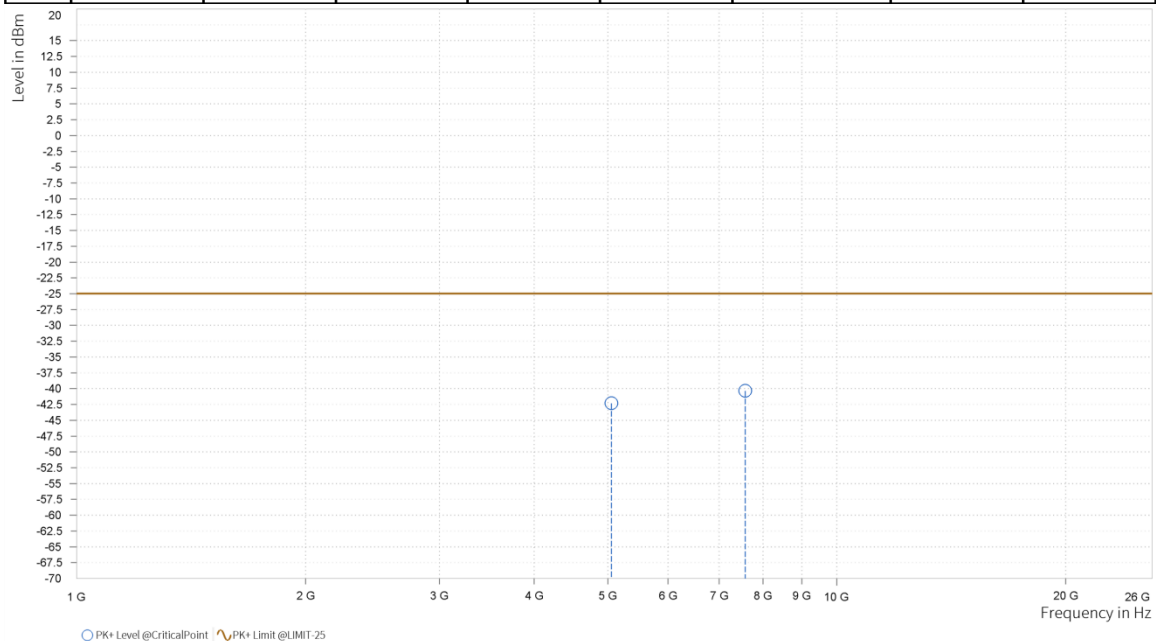




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,052.000	-42.30	-25.00	17.30	32.31	H	1	2.00
4	7,578.000	-40.34	-25.00	15.34	36.69	H	253	2.00

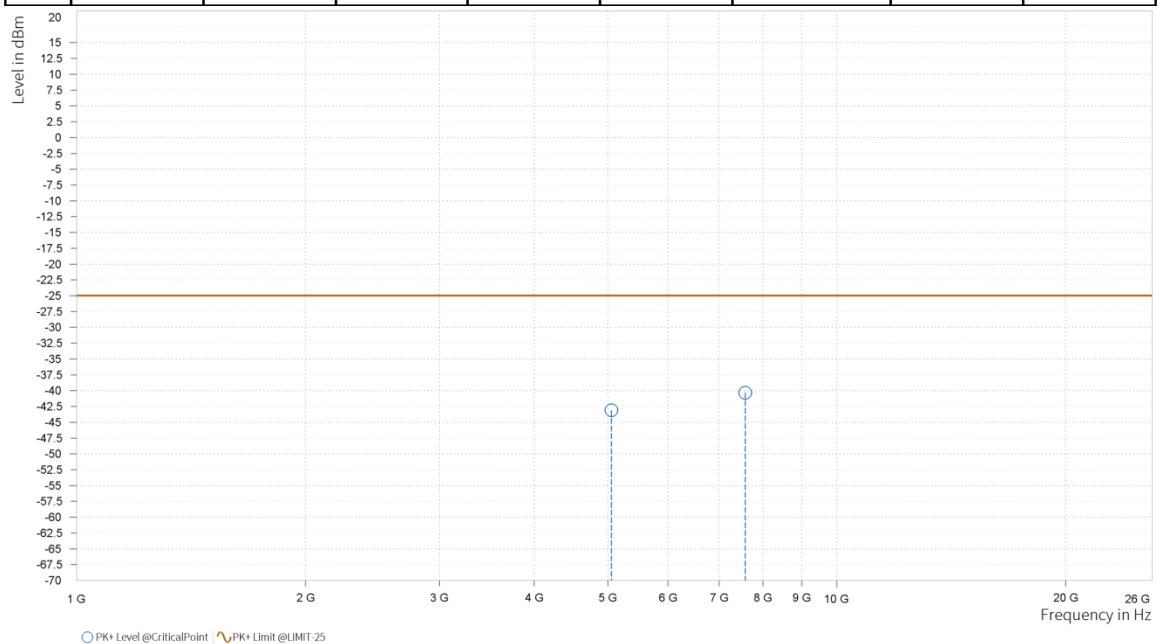


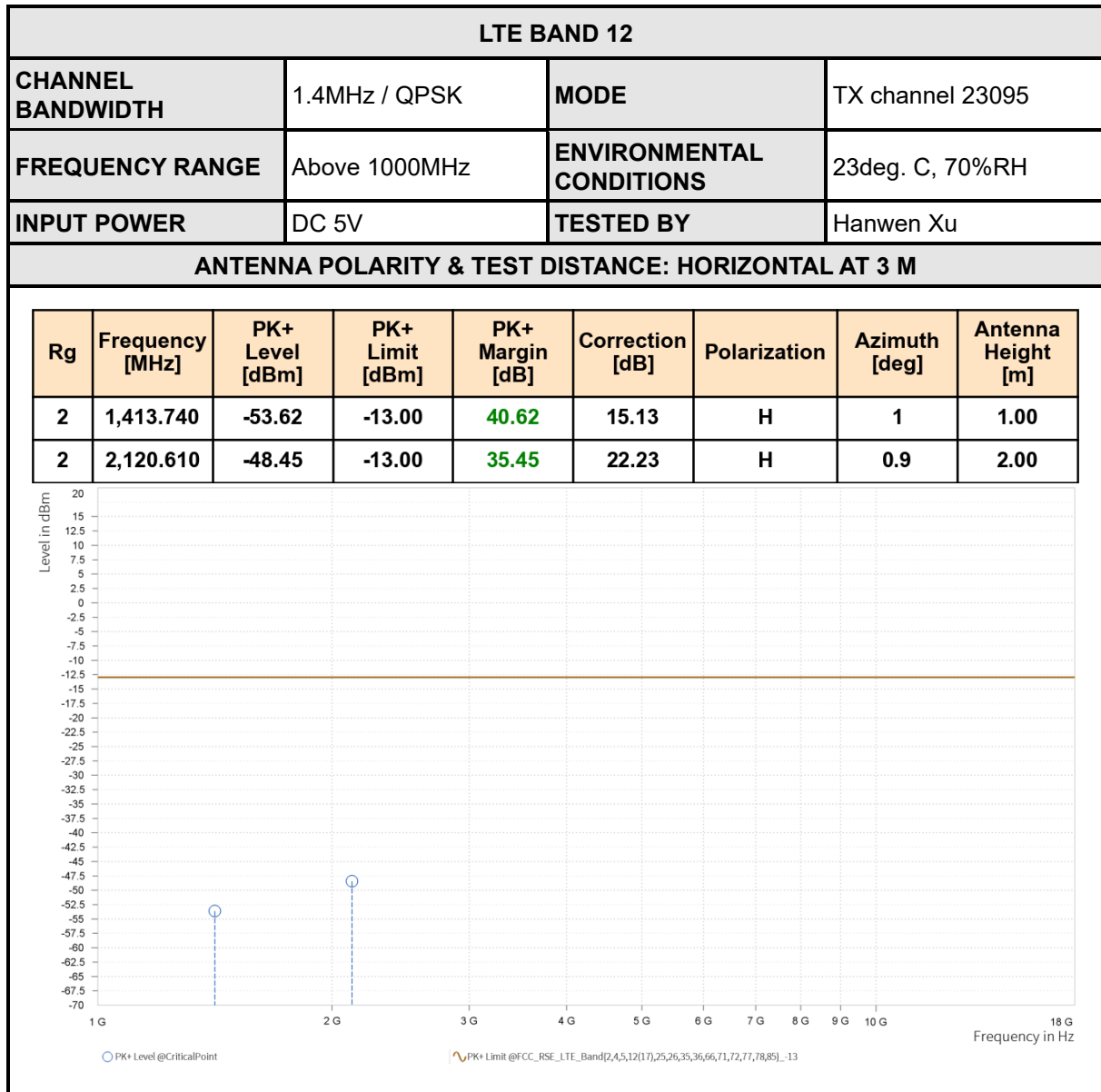


CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 21100
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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]
4	5,052.000	-43.11	-25.00	18.11	32.10	V	244.6	2.00
4	7,578.000	-40.33	-25.00	15.33	36.74	V	244.6	2.00



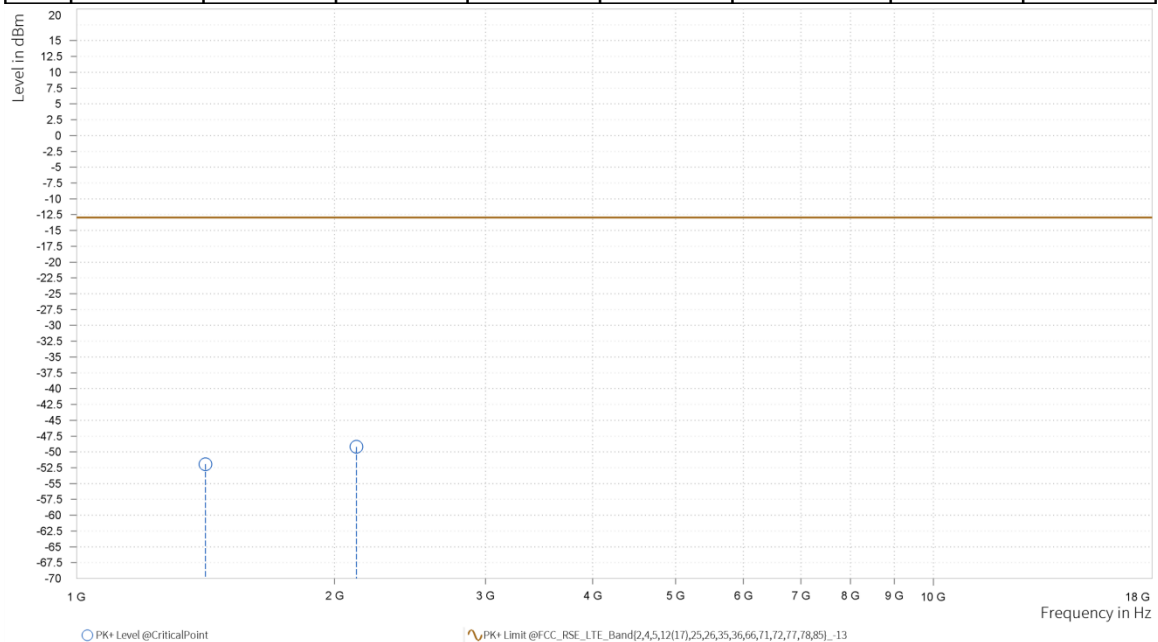




CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,413.740	-51.95	-13.00	38.95	15.03	V	0.9	2.00
2	2,120.610	-49.19	-13.00	36.19	21.87	V	359.1	1.00

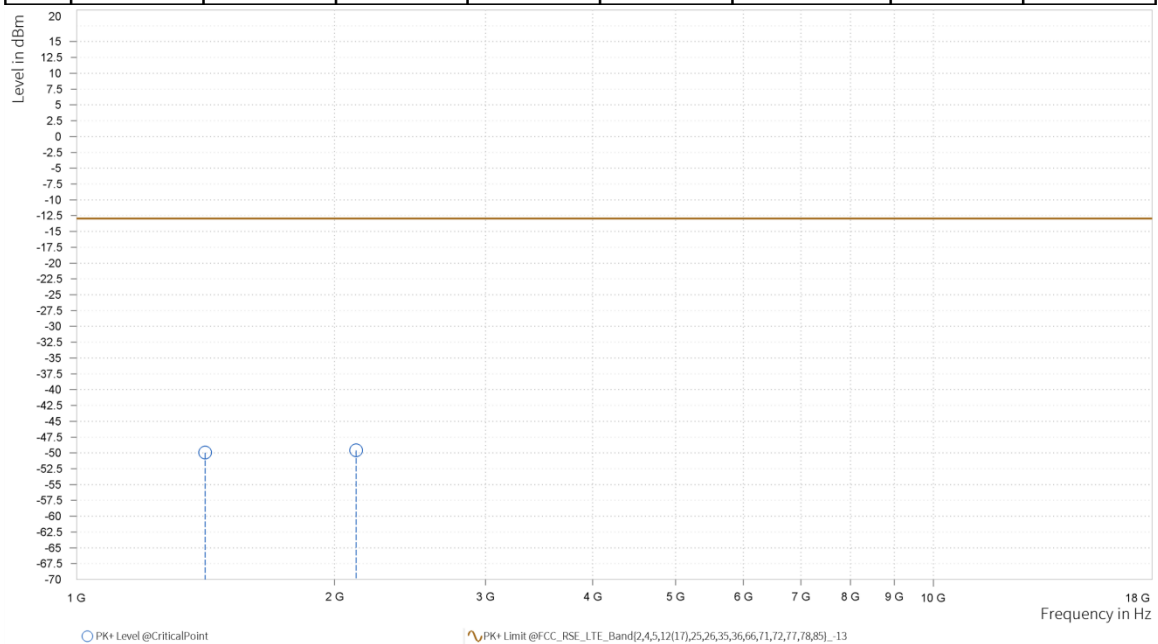




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,412.300	-49.96	-13.00	36.96	15.31	H	0.9	2.00
2	2,118.450	-49.60	-13.00	36.60	22.12	H	78.4	1.00

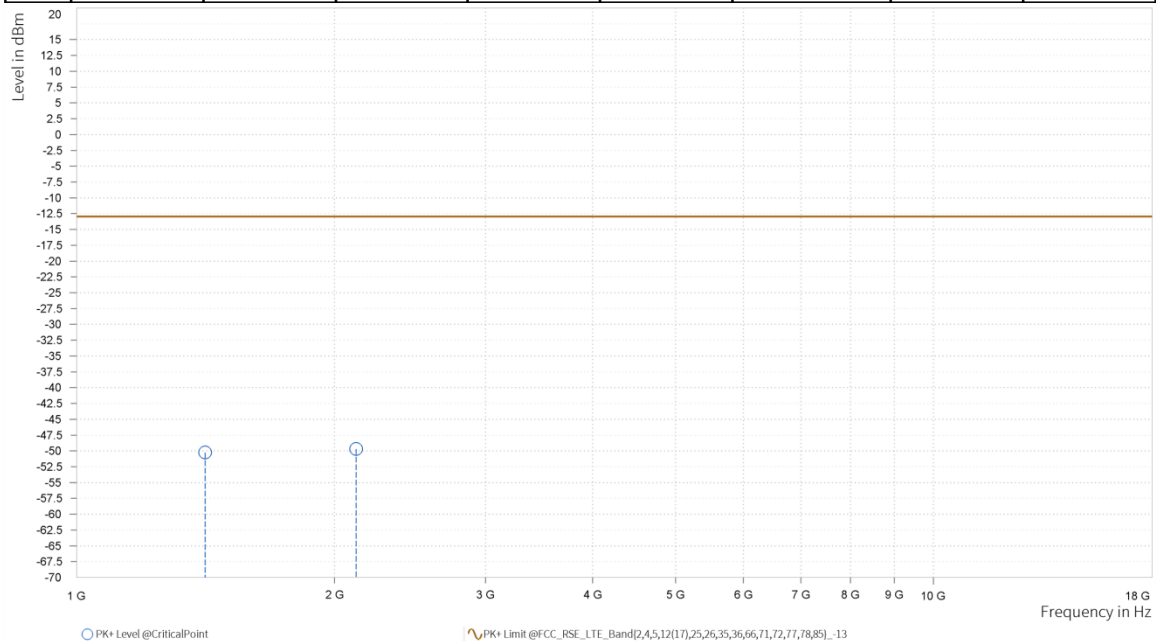




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,412.300	-50.24	-13.00	37.24	15.21	V	1	2.00
2	2,118.450	-49.71	-13.00	36.71	21.78	V	1	2.00

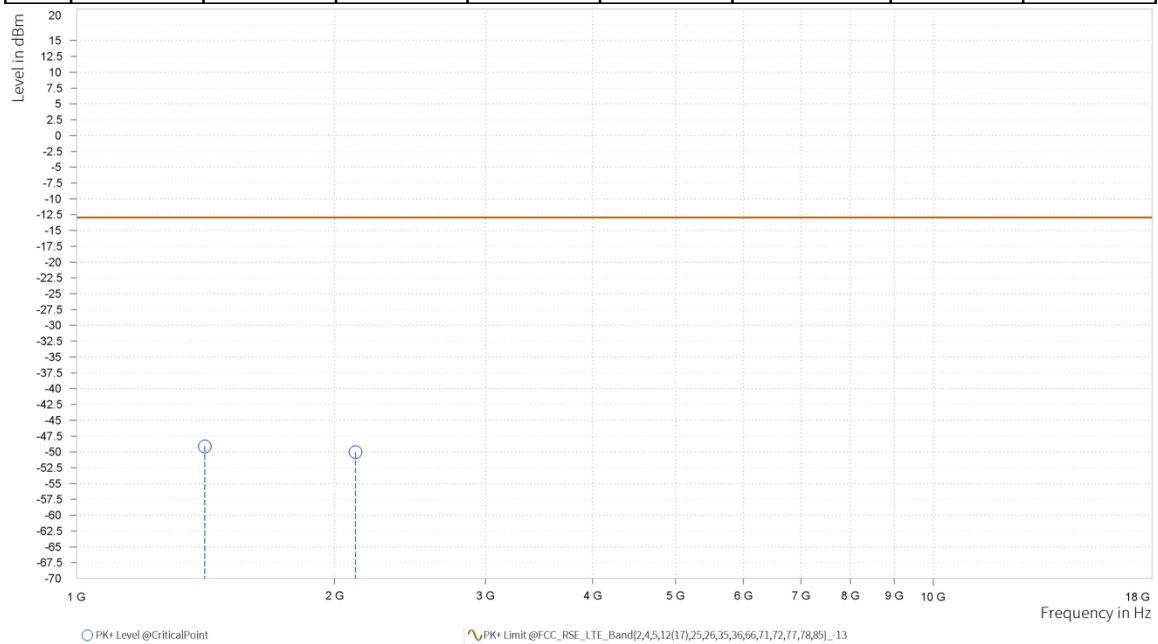




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,410.500	-49.12	-13.00	36.12	15.67	H	0.9	2.00
2	2,115.750	-50.06	-13.00	37.06	21.98	H	284	2.00

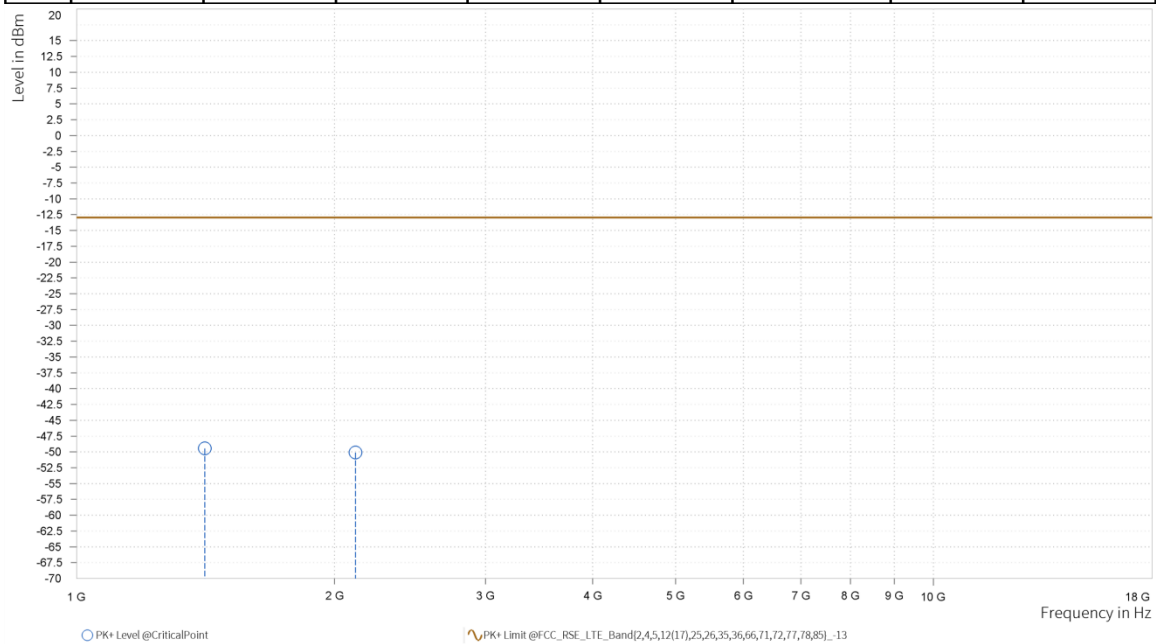




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,410.500	-49.46	-13.00	36.46	15.59	V	0.9	2.00
2	2,115.750	-50.10	-13.00	37.10	21.68	V	359	1.00

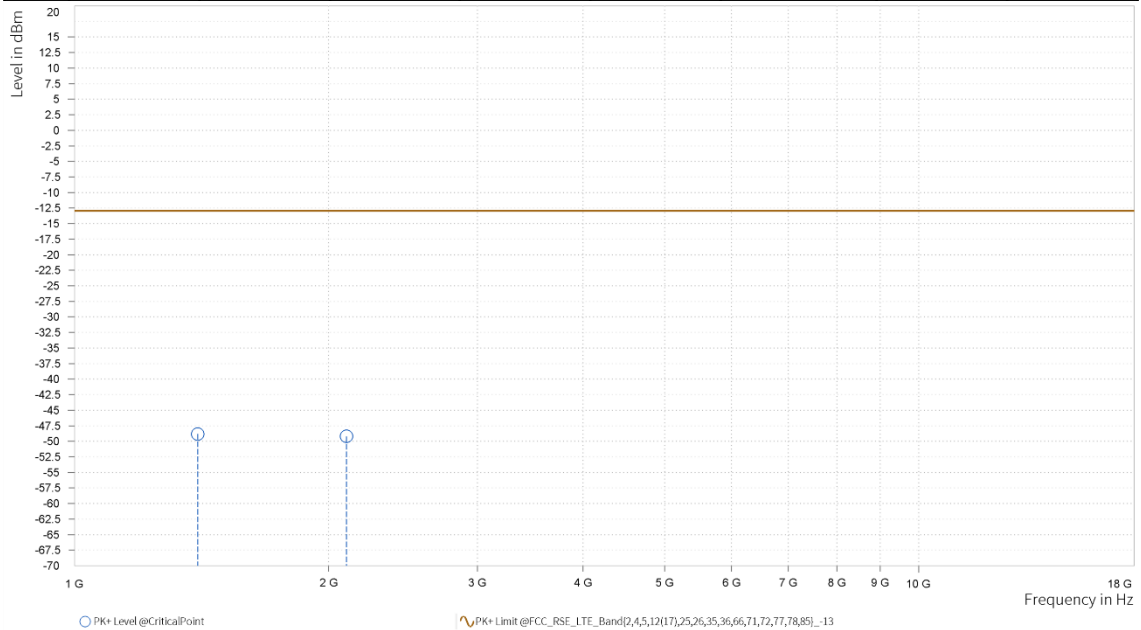




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23060
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,399.000	-48.81	-13.00	35.81	17.10	H	359	2.00
2	2,098.500	-49.21	-13.00	36.21	21.58	H	359.1	1.00

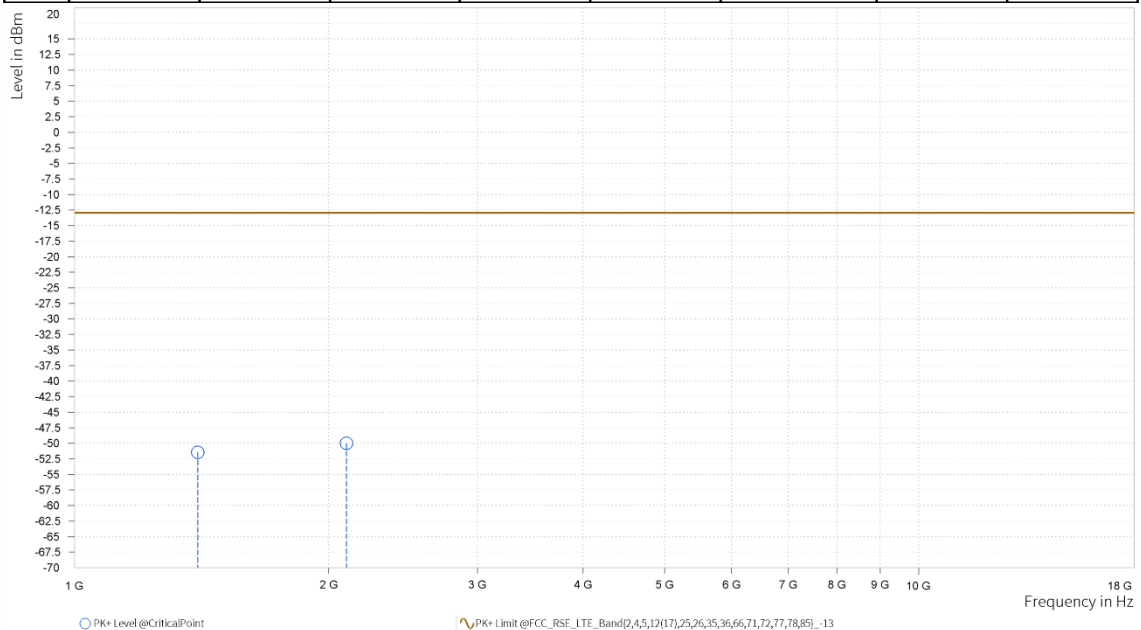




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23060
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,399.000	-51.44	-13.00	38.44	17.10	V	78.4	1.00
2	2,098.500	-50.00	-13.00	37.00	21.48	V	1	2.00

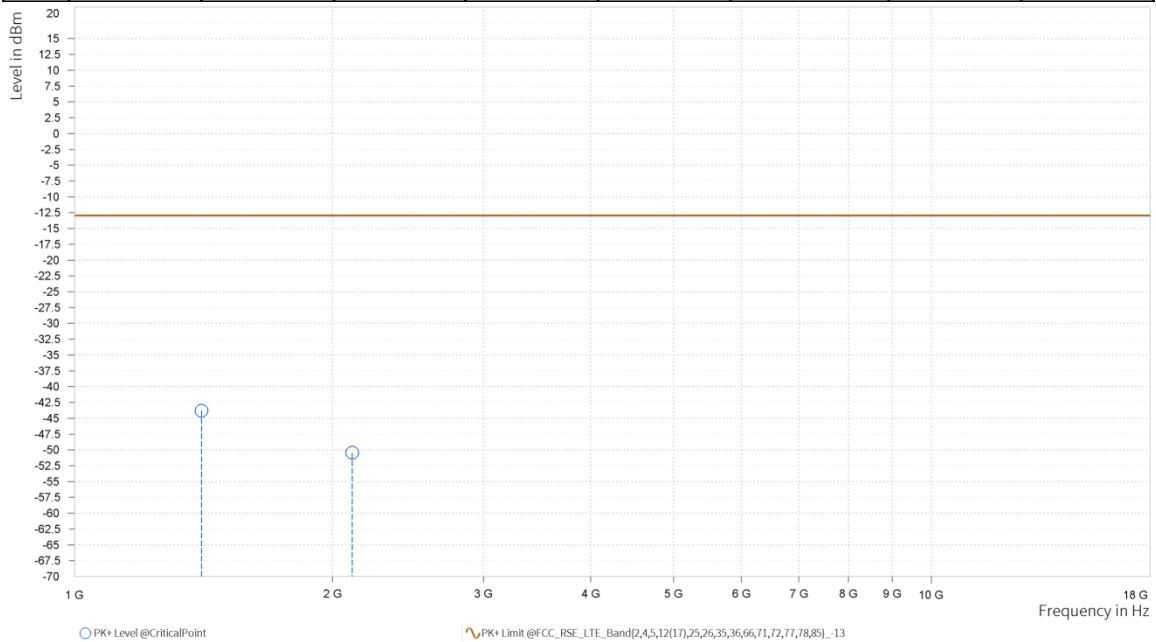




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,406.000	-43.79	-13.00	30.79	16.24	H	1.5	2.00
2	2,109.000	-50.46	-13.00	37.46	21.73	H	290	2.00

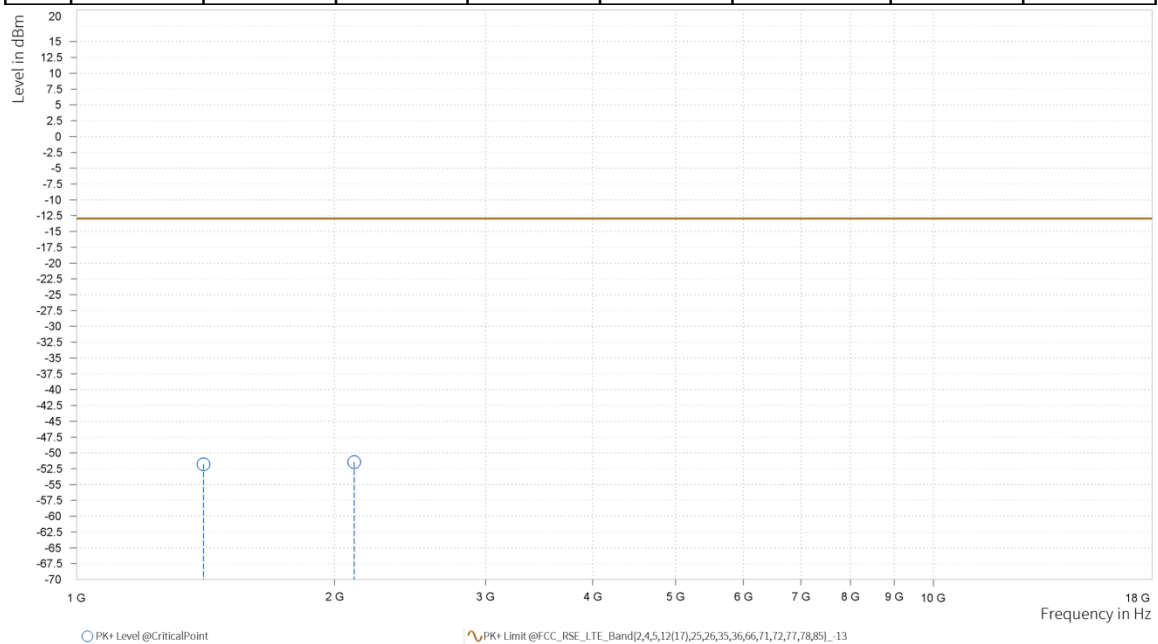




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23095
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,406.000	-51.80	-13.00	38.80	16.19	V	1	1.00
2	2,109.000	-51.44	-13.00	38.44	21.51	V	174.2	2.00

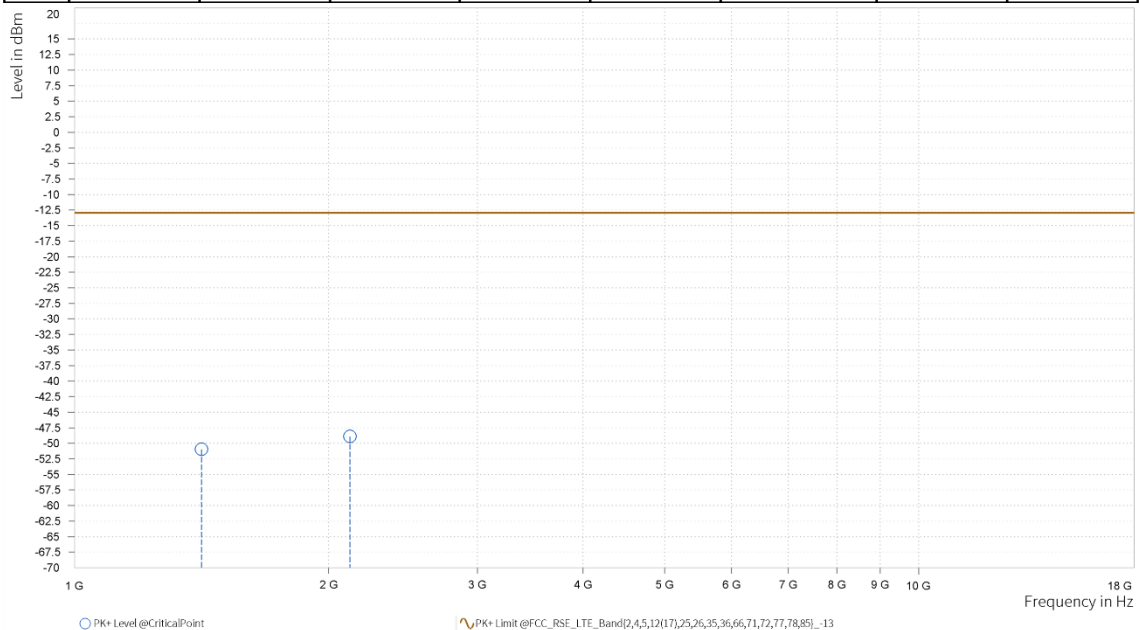




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23130
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,413.000	-50.96	-13.00	37.96	15.22	H	0.9	2.00
2	2,119.500	-48.90	-13.00	35.90	22.16	H	359	2.00

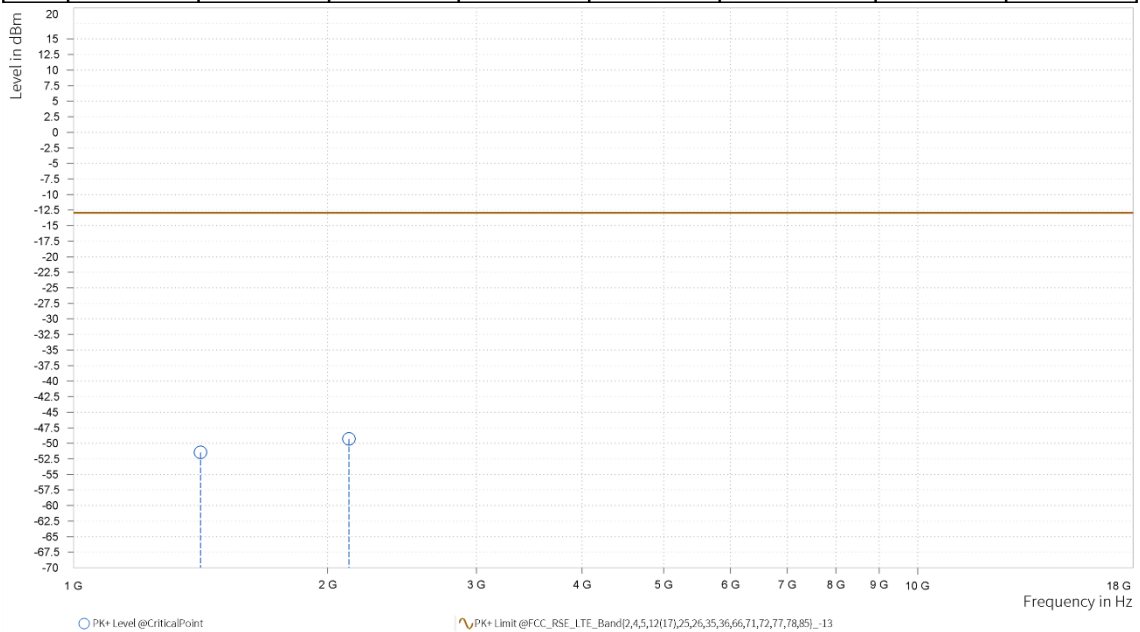




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 23130
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,413.000	-51.45	-13.00	38.45	15.12	V	1	2.00
2	2,119.500	-49.30	-13.00	36.30	21.82	V	279.3	2.00





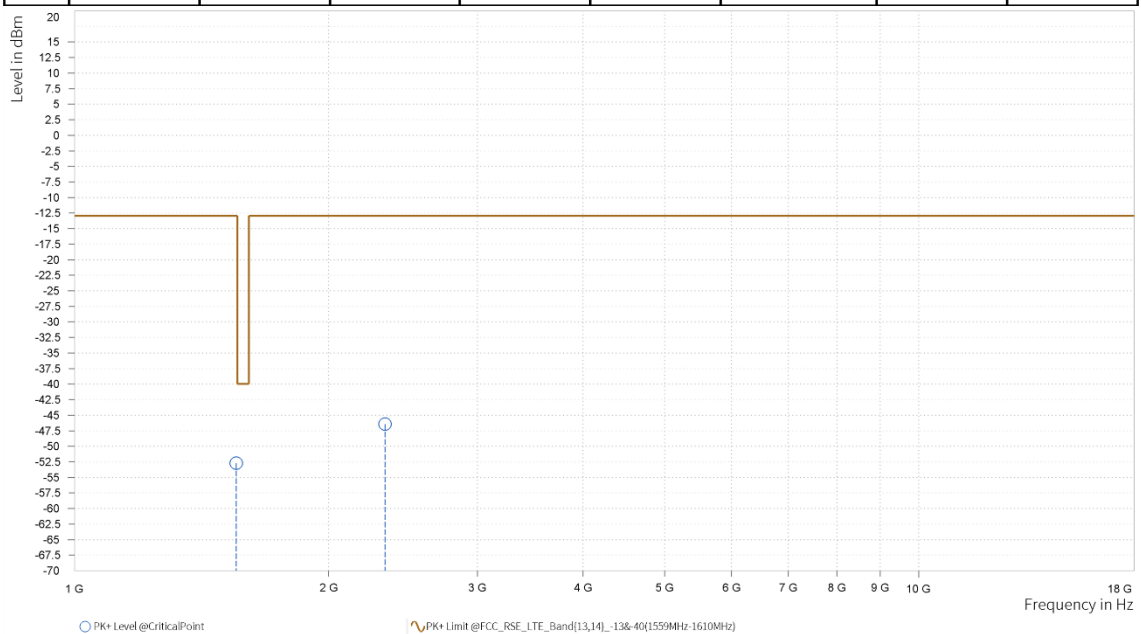
LTE B13

CH23230

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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	1,554.500	-52.72	-13.00	39.72	17.15	H	359	2.00
3	2,331.750	-46.43	-13.00	33.43	24.26	H	141.8	1.00

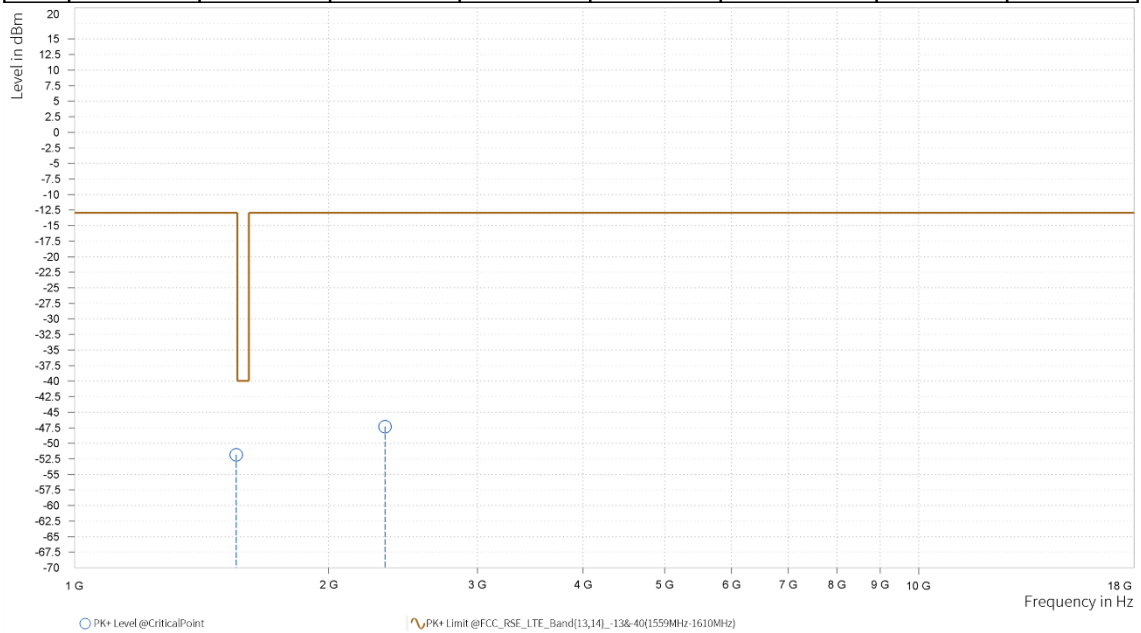




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,554.500	-51.85	-13.00	38.85	16.78	V	1	2.00
3	2,331.750	-47.30	-13.00	34.30	23.77	V	138.2	1.00



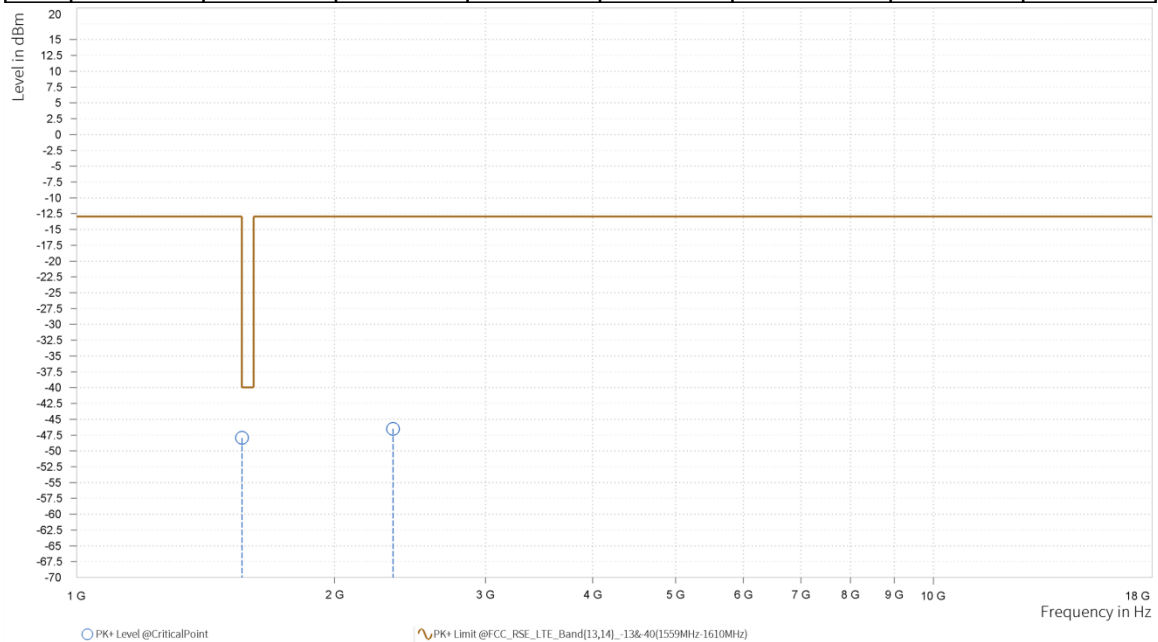


BUREAU VERITAS Test Report No.: PSU-QSU2504140116RF03
CH23230

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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	1,559.500	-47.93	-40.00	7.93	17.19	H	359	2.00
3	2,339.250	-46.50	-13.00	33.50	24.41	H	130.9	1.00

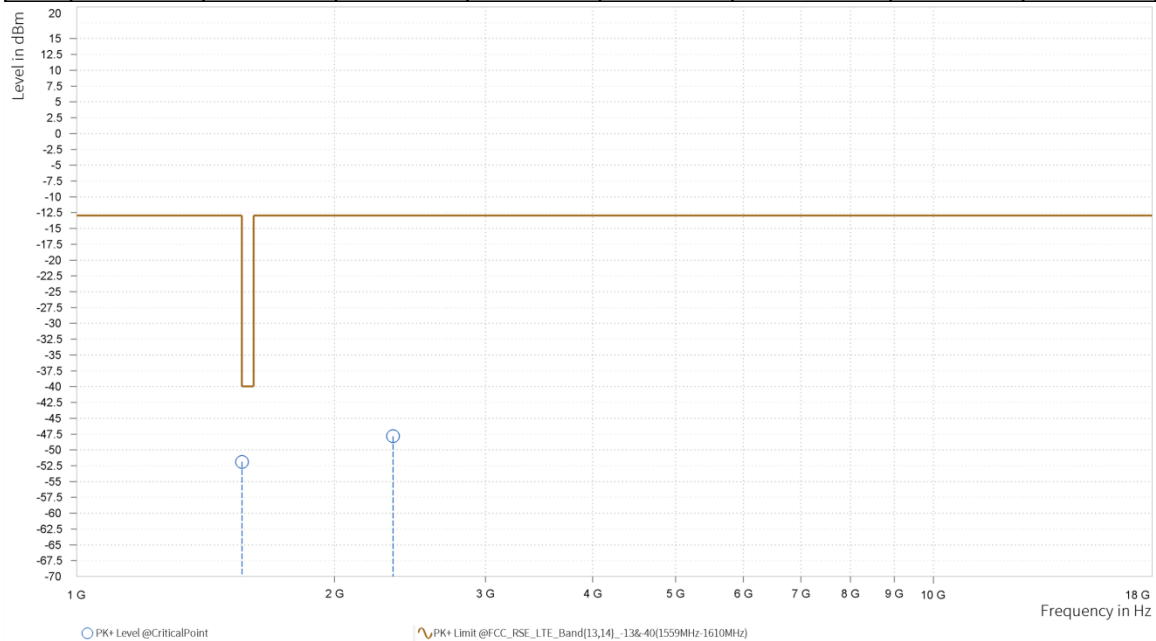




CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	TESTED BY	Hanwen Xu

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	1,559.500	-51.89	-40.00	11.89	16.86	V	1	1.00
3	2,339.250	-47.85	-13.00	34.85	23.96	V	1	1.00



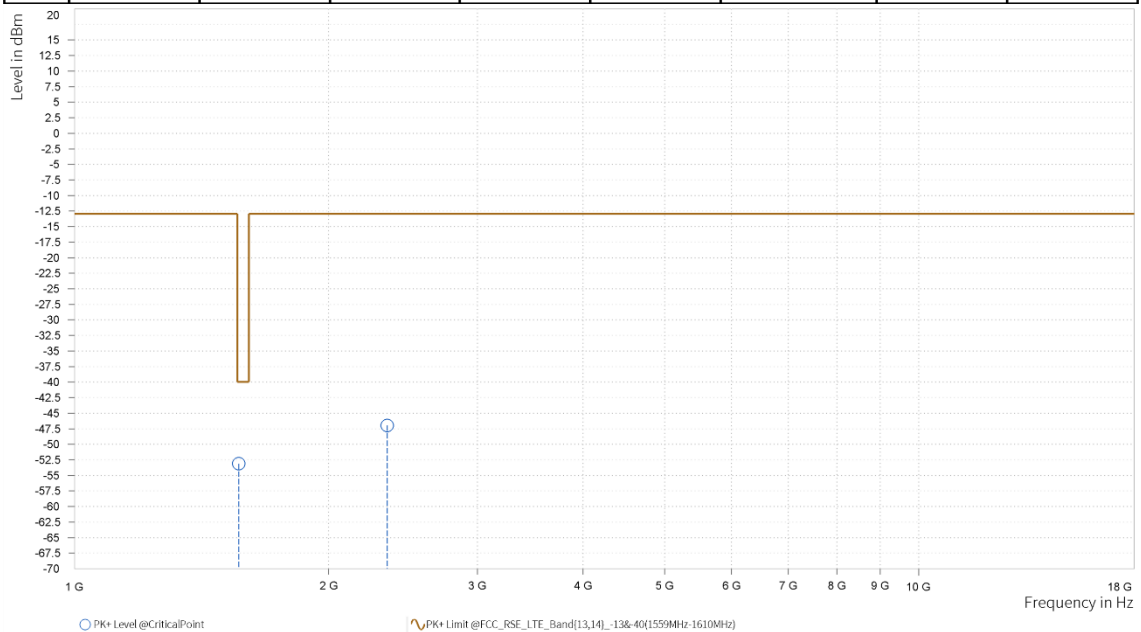


BUREAU VERITAS Test Report No.: PSU-QSU2504140116RF03
CH23230

CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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	1,564.500	-53.11	-40.00	13.11	17.15	H	1.4	2.00
3	2,346.750	-46.97	-13.00	33.97	24.45	H	141.8	1.00





CHANNEL BANDWIDTH	5MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	DC 5V	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	1,564.500	-52.47	-40.00	12.47	16.86	V	358.6	1.00
3	2,346.750	-47.63	-13.00	34.63	24.05	V	138.2	1.00

