FCC TEST REPORT

(PART 90)

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 90, Subpart R, S** ☒ **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	Sun Peibo
Date: May. 30, 2025	Date: May. 30, 2025

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2504140116RF05	Original release	May. 30, 2025

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90 & Part 2		
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**
§2.1046 §90.635(b)	Conducted Output Power (Band26)	PASS
§90.541(d)	Effective Radiated Power (Band14, n14)	PASS
§2.1055 §90.213 §90.539	Frequency Stability	PASS
§2.1049 §90.209	Occupied Bandwidth	PASS
§2.1051 §90.543(e)(f) §90.691(a)	Emission Masks	PASS
§2.1051 §90.543(e)(f) §90.691(a)	Conducted Spurious Emissions	PASS
§2.1053 §90.691	Radiated Spurious Emissions	PASS

NOTE:

1. Max ERP/EIRP is according to Max conducted power calculate for SA.
2. The sample supports both 5g NR normal mode and redcap mode. Except for Transmit Power, the whole testing is assessed for NR mode only because of the higher conducted power.

***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

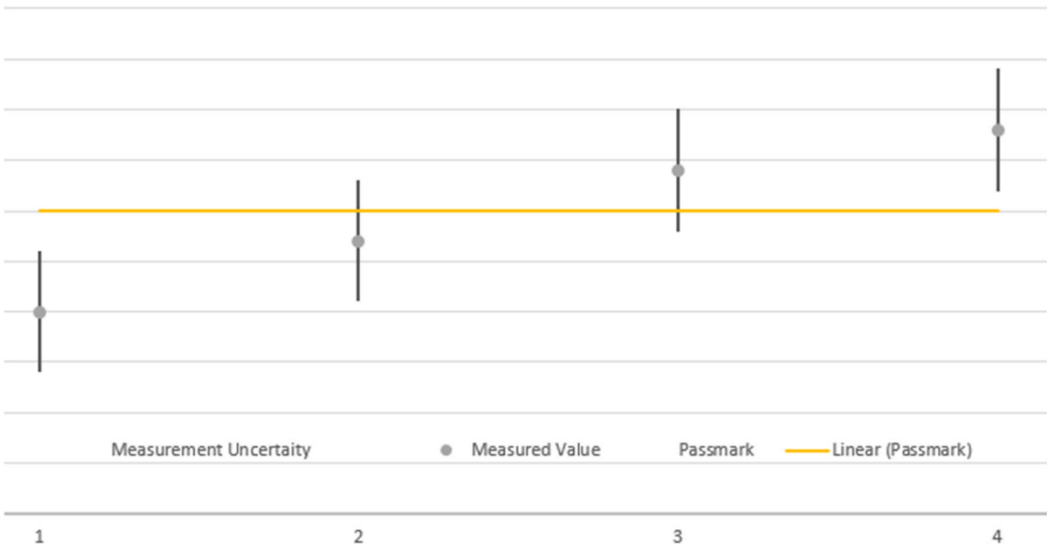
The FCC Site Registration No. is 434559; The Designation No. is CN1325.

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	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz~30MHz	2.66dB
Radiated emissions	9KHz ~ 30MHz	2.68dB
	30MHz ~ 1GHz	3.26dB
	1GHz ~ 18GHz	4.48dB
	18GHz ~ 40GHz	4.12dB

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
Radio Communication Tester	Rohde&Schwarz	CMX500	101446	Mar.21,25	Mar.20,27
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	585660781000 50	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
	5G NR	DFT-s-OFDM(Pi/2BPSK,QPSK,16QAM, 64QAM,256QAM); CP-OFDM(QPSK,16QAM,64QAM,256QAM);
FREQUENCY RANGE	**LTE Band 14 Channel Bandwidth: 5MHz**	790.5MHz ~ 795.5MHz
	LTE Band 14 Channel Bandwidth: 10MHz	793MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
	NR Band n14	790.5MHz ~ 795.5MHz
EMISSION DESIGNATOR	**LTE Band 14 Channel Bandwidth: 5MHz**	QPSK: 4M49G7D
		16QAM: 4M49W7D
		64QAM: 4M49W7D
		256QAM: 4M49W7D
	LTE Band 14 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M99W7D
		64QAM: 8M96W7D
		256QAM: 8M98W7D
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
		256QAM: 1M10W7D
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK:2M70G7D
		16QAM: 2M70W7D
		64QAM: 2M70W7D
		256QAM: 2M70W7D
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 4M49G7D
		16QAM: 4M49W7D

		64QAM: 4M52W7D
		256QAM: 4M50W7D
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 8M95G7D
		16QAM: 8M97W7D
		64QAM: 8M98W7D
		256QAM: 8M97W7D
	NR Band n14 Channel Bandwidth: 5MHz	QPSK: 4M52G7D 16QAM: 4M54W7D 64QAM: 4M52W7D 256QAM: 4M52W7D Pi/2BPSK: 4M53G7D
	NR Band n14 Channel Bandwidth: 10MHz	QPSK: 8M99G7D 16QAM: 8M98W7D 64QAM: 9M02W7D 256QAM:9M01G7D Pi/2BPSK: 9M02G7D
MAX. EIRP POWER	**LTE Band 14 Channel Bandwidth: 5MHz**	98.86mW
	LTE Band 14 Channel Bandwidth: 10MHz	99.77mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	88.51mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	88.72mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	87.50mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	89.13mW
	NR Band n14 Channel Bandwidth: 5MHz	97.72mW
	NR Band n14 Channel Bandwidth: 10MHz	97.27mW
MAX. EIRP POWER Redcap mode	**NR Band n14 Channel Bandwidth: 5MHz**	96.38mW
	NR Band n14 Channel Bandwidth: 10MHz	97.27mW
ANTENNA GAIN*	LTE B14	-1.3dBi
	LTE B26	-1.7dBi
	NR Band n14	-1.3dBi
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℃~55℃	

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.

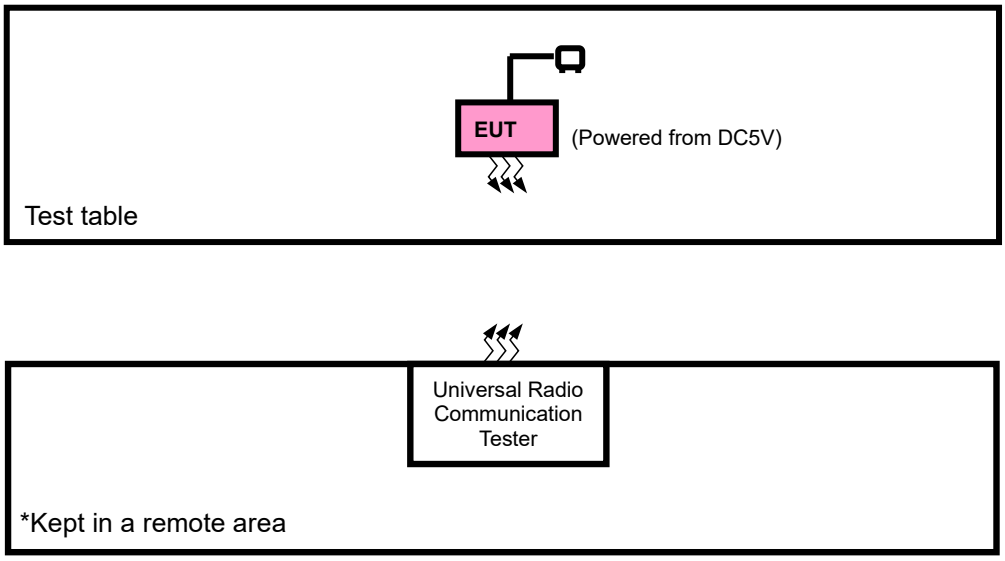
3 The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

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

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

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 DESCRIPTION OF TEST MODES

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 in ERP/EIRP and radiated emission was found when positioned on X-plane for LTE. 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 14 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	23330	23330	10MHz	QPSK	50 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM,64QAM,256QAM	25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM,64QAM,256QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	23305 to 23355	23305	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			23355	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		23300	23330	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
						1 RB / 49 RB Offset
						/
A	CONDUCTED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		23330	23330	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset

A	RADIATED EMISSION	23305 to 23355	23305, 23330, 23355	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330	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 26 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
A	FREQUENCY STABILITY	26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	50 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	6 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM,256QAM	15 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM,64QAM,256QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	50 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM,64QAM,256QAM	25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset
A	BAND EDGE	26697 to 26783	26697	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26705 to 26775	26705	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			26775	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26715 to 26765	26715	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			26765	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 24 RB Offset

						25 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
A	CONDUCTED EMISSION	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK,16QAM,64QAM,256QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26740	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	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.

5G NR n14 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CP-OFDM CHANNEL	AVAILABLE DFT-S-OFDM CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(DFT-S-OFDM) (INCLUDE CP-OFDM)
A	ERP	158100 to 159100	158100 to 159100	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		158600	158600	Low, Middle, High	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	1RB/ 0RB Offset
A	FREQUENCY STABILITY	158600	158600	Middle	10MHz	QPSK	Outer_ Full
A	PEAK TO AVERAGE RATIO	158600	158600	Middle	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	OCCUPIED BANDWIDTH	158100 to 159100	158100 to 159100	Middle	5MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
		158600	158600	Middle	10MHz	Pi/2BPSK,QPSK,16QAM, 64QAM, 256QAM	Outer_ Full
A	BAND EDGE	158100 to 159100	158100 to 159100	Low	5MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
				High	5MHz	QPSK	1RB/ 24RB Offset
							Outer_ Full
		158600	158600	Middle	10MHz	QPSK	1RB/ 0RB Offset
							Outer_ Full
A	CONDUCTED EMISSION	158100 to 159100	158100 to 159100	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		158600	158600	Low, Middle, High	10MHz	QPSK	1RB/ 0RB Offset
A	RADIATED EMISSION	158100 to 159100	158100 to 159100	Low, Middle, High	5MHz	QPSK	1RB/ 0RB Offset
		158600	158600	Middle	10MHz	QPSK	1RB/ 0RB Offset

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

2. The test data presented in the report from worst SA _n14.

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	DC 5V	Hanwen Xu
FREQUENCY STABILITY	24deg. C, 61%RH	DC 4.75V/5V/5.25V	Hanwen Xu
OCCUPIED BANDWIDTH	24deg. C, 61%RH	DC 5V	Hanwen Xu
BAND EDGE	24deg. C, 61%RH	DC 5V	Hanwen Xu
CONDUCTED EMISSION	24deg. C, 61%RH	DC 5V	Hanwen Xu
RADIATED EMISSION	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 90

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

47 CFR 90.542(a)(6)
Control stations and mobile stations transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 30 watts ERP.
47 CFR 90.542(a)(7)
Portable stations (hand-held devices) transmitting in the 758–768 MHz band and the 788–798 MHz band are limited to 3 watts ERP.
Per FCC Part 90.635(a)(b)
The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

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

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

Where:

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

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

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

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

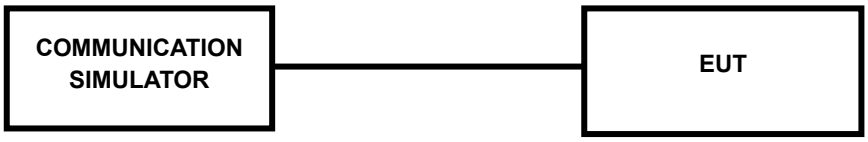
L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB

CONDUCTED POWER MEASUREMENT:

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

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



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

3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

LTE Band 14						
Band/BW	Modulation	RB Size	RB Offset	Low CH 23305 Frequency 790.5 MHz	Mid CH 23330 Frequency 793 MHz	High CH 23355 Frequency 795.5 MHz
14/ 5	QPSK	1	0	23.02	23.06	23.00
		1	12	23.21	23.35	23.20
		1	24	23.29	23.40	23.29
		12	0	22.31	22.12	22.29
		12	6	22.20	22.21	22.31
		12	13	22.29	22.39	22.34
		25	0	22.20	22.27	22.24
	16QAM	1	0	22.10	22.17	22.15
		1	12	21.96	22.12	22.18
		1	24	22.27	22.15	22.29
		12	0	21.18	21.21	21.32
		12	6	21.10	21.12	21.09
		12	13	21.12	21.20	21.27
		25	0	21.30	21.32	21.38
	64QAM	1	0	21.27	21.30	21.27
		1	12	21.13	21.16	21.14
		1	24	21.48	21.34	21.44
		12	0	20.37	20.35	20.16
		12	6	20.02	20.15	20.13
		12	13	20.08	20.06	20.11
		25	0	20.24	20.22	20.32
	256QAM	1	0	18.50	18.47	18.39
		1	12	18.26	18.17	18.21
		1	24	18.51	18.33	18.38
		12	0	18.09	18.28	18.19
		12	6	18.43	18.49	18.31
		12	13	18.31	18.39	18.36
		25	0	18.29	18.41	18.31

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 23330	/
				/	Frequency 793 MHz	/
14/ 10	QPSK	1	0	/	23.17	/
		1	24	/	23.37	/
		1	49	/	**23.44**	/
		25	0	/	22.33	/
		25	12	/	22.39	/
		25	25	/	22.45	/
		50	0	/	22.41	/
	16QAM	1	0	/	22.28	/
		1	24	/	22.17	/
		1	49	/	22.28	/
		25	0	/	21.34	/
		25	12	/	21.25	/
		25	25	/	21.33	/
		50	0	/	21.42	/
	64QAM	1	0	/	21.47	/
		1	24	/	21.30	/
		1	49	/	21.48	/
		25	0	/	20.36	/
		25	12	/	20.20	/
		25	25	/	20.22	/
		50	0	/	20.37	/
	256QAM	1	0	/	18.50	/
		1	24	/	18.30	/
		1	49	/	18.50	/
		25	0	/	18.29	/
		25	12	/	18.50	/
		25	25	/	18.40	/
		50	0	/	18.43	/

LTE Band 26						
Band/BW	Modulation	RB Size	RB offset	Low CH 26697	Mid CH 23330	High CH 26783
				Frequency 814.7 MHz	Frequency 819 MHz	Frequency 823.3 MHz
26/ 1.4	QPSK	1	0	23.18	23.32	23.17
		1	2	23.15	23.29	23.28
		1	5	23.04	23.14	23.10
		3	0	23.10	23.32	22.99
		3	1	23.12	23.32	23.22
		3	3	22.94	23.19	23.13
		6	0	22.26	22.36	22.18
	16QAM	1	0	22.11	22.25	22.18
		1	2	21.98	22.28	22.18
		1	5	22.13	22.34	22.27
		3	0	22.16	22.24	22.22
		3	1	22.14	22.38	22.41
		3	3	22.18	22.42	22.12
		6	0	21.17	21.30	21.23
	64QAM	1	0	20.91	21.14	21.19
		1	2	21.00	21.23	21.12
		1	5	21.16	21.07	21.09
		3	0	21.20	21.36	21.07
		3	1	21.01	21.40	21.33
		3	3	21.22	21.30	21.44
		6	0	20.03	20.32	20.04
	256QAM	1	0	18.27	18.33	18.23
		1	2	18.11	18.28	18.29
		1	5	18.20	18.46	18.19
		3	0	18.44	18.37	18.50
		3	1	18.09	18.23	18.17
		3	3	18.03	18.23	18.24
		6	0	18.13	18.34	18.48

Band/BW	Modulation	RB Size	RB ffset	Low CH 26705	Mid CH 23330	High CH 26775
				Frequency 815.5 MHz	Frequency 819 MHz	Frequency 822.5 MHz
26/ 3	QPSK	1	0	23.30	23.09	23.28
		1	12	23.08	23.11	23.33
		1	24	23.02	23.21	23.17
		12	0	21.95	21.97	22.24
		12	6	22.15	22.14	22.24
		12	13	21.89	21.92	22.20
		25	0	22.20	22.23	22.39
	16QAM	1	0	22.20	22.11	22.28
		1	12	22.12	22.16	22.39
		1	24	22.22	22.32	22.28
		12	0	21.20	21.19	21.27
		12	6	21.16	21.22	21.38
		12	13	21.35	21.26	21.27
		25	0	21.19	21.27	21.30
	64QAM	1	0	21.00	21.09	21.14
		1	12	21.04	21.05	21.29
		1	24	21.17	21.06	21.12
		12	0	20.00	20.10	20.27
		12	6	20.04	20.15	20.28
		12	13	20.29	20.32	20.31
		25	0	20.00	20.13	20.29
	256QAM	1	0	18.21	18.17	18.36
		1	12	18.32	18.17	18.42
		1	24	18.40	18.38	18.31
		12	0	18.35	18.35	18.40
		12	6	18.07	18.01	18.46
		12	13	18.02	18.02	18.29
		25	0	18.21	18.06	18.48

Band/BW	Modulation	RB Size	RB offset	Low CH 26715	Mid CH 23330	High CH 26765
				Frequency 816.5 MHz	Frequency 819 MHz	Frequency 821.5 MHz
26/ 5	QPSK	1	0	23.26	23.27	23.24
		1	12	23.20	23.15	23.23
		1	24	23.22	23.03	23.16
		12	0	21.96	22.09	22.28
		12	6	22.10	22.16	22.35
		12	13	22.01	21.91	22.31
		25	0	22.25	22.28	22.43
	16QAM	1	0	22.02	22.06	22.32
		1	12	22.02	22.16	22.20
		1	24	22.25	22.17	22.37
		12	0	21.13	21.16	21.19
		12	6	21.17	21.05	21.29
		12	13	21.29	21.23	21.45
		25	0	21.16	21.08	21.45
	64QAM	1	0	20.94	20.93	21.30
		1	12	21.03	20.93	21.17
		1	24	21.23	21.23	21.13
		12	0	20.04	20.22	20.35
		12	6	20.12	20.08	20.27
		12	13	20.18	20.23	20.27
		25	0	20.13	20.03	20.26
	256QAM	1	0	18.19	18.37	18.44
		1	12	18.32	18.16	18.39
		1	24	18.41	18.22	18.31
		12	0	18.32	18.40	18.44
		12	6	18.18	18.06	18.41
		12	13	18.06	18.11	18.34
		25	0	18.06	18.10	18.39

Band/BW	Modulation	RB Size	RB offset	/	Mid CH 23330	/
				/	Frequency 819 MHz	/
26/ 10	QPSK	1	0	/	**23.35**	/
		1	24	/	23.22	/
		1	49	/	23.13	/
		25	0	/	22.05	/
		25	12	/	22.08	/
		25	25	/	22.07	/
		50	0	/	22.10	/
	16QAM	1	0	/	22.21	/
		1	24	/	22.06	/
		1	49	/	22.28	/
		25	0	/	21.10	/
		25	12	/	21.25	/
		25	25	/	21.37	/
		50	0	/	21.10	/
	64QAM	1	0	/	20.93	/
		1	24	/	21.09	/
		1	49	/	21.25	/
		25	0	/	20.17	/
		25	12	/	20.07	/
		25	25	/	20.30	/
		50	0	/	20.04	/
	256QAM	1	0	/	18.23	/
		1	24	/	18.16	/
		1	49	/	18.40	/
		25	0	/	18.39	/
		25	12	/	18.11	/
		25	25	/	17.97	/
		50	0	/	18.06	/

n14 (SCS 15kHz)						
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High
		Channel		/	158600	
		Frequence (MHz)		/	793	
10	Pi/2 BPSK	1	1	/	23.32	/
		1	26	/	23.17	/
		1	50	/	23.18	/
		25	0	/	23.27	/
		25	14	/	23.30	/
		25	27	/	23.13	/
		50	0	/	23.29	/
	QPSK	1	1	/	**23.35**	/
		1	26	/	23.28	/
		1	50	/	23.34	/
		25	0	/	23.27	/
		25	14	/	23.33	/
		25	27	/	23.28	/
		50	0	/	23.30	/
	16QAM	1	1	/	23.33	/
	64QAM	1	1	/	21.84	/
	256QAM	1	1	/	19.79	/
BW [MHz]	DFT-s-OFDM	Channel		158100	158600	159100
		Frequence (MHz)		790.5	793	795.5
5	QPSK	1	1	23.29	23.33	23.32

Redcap mode：

n14 (SCS 15kHz)						
BW [MHz]	DFT-s-OFDM	RB Size	RB Offset	Low	Mid	High
		Channel			158600	
		Frequence (MHz)			793	
10	Pi/2 BPSK	1	1	/	23.11	/
		1	26	/	23.00	/
		1	50	/	23.19	/
		25	0	/	23.07	/
		25	14	/	23.11	/
		25	27	/	23.07	/
		50	0	/	23.20	/
	QPSK	1	1	/	23.33	/
		1	26	/	23.13	/
		1	50	/	23.17	/
		25	0	/	23.07	/
		25	14	/	23.30	/
		25	27	/	23.29	/
		50	0	/	23.26	/
	16QAM	1	1	/	23.21	/
	64QAM	1	1	/	21.68	/
	256QAM	1	1	/	19.76	/
BW [MHz]	DFT-s-OFDM	Channel		158100	158600	159100
		Frequence (MHz)		790.5	793	795.5
5	QPSK	1	1	23.18	23.23	23.29

ERP

LTE Band 14							
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
10M-QPSK	23330	793	23.44	-1.3	19.99	99.77	3
10M-16QAM	23330	793	22.28	-1.3	18.83	76.38	3
10M-64QAM	23330	793	21.48	-1.3	18.03	63.53	3
10M-256QAM	23330	793	18.50	-1.3	15.05	31.99	3
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
5M-QPSK	23305	790.5	23.29	-1.3	19.84	96.38	3
	23330	793	23.40	-1.3	19.95	98.86	3
	23355	795.5	23.29	-1.3	19.84	96.38	3
5M-16QAM	23305	790.5	22.27	-1.3	18.82	76.21	3
	23330	793	22.17	-1.3	18.72	74.47	3
	23355	795.5	22.29	-1.3	18.84	76.56	3
5M-64QAM	23305	790.5	21.48	-1.3	18.03	63.53	3
	23330	793	21.34	-1.3	17.89	61.52	3
	23355	795.5	21.44	-1.3	17.99	62.95	3
5M-256QAM	23305	790.5	18.51	-1.3	15.06	32.06	3
	23330	793	18.49	-1.3	15.04	31.92	3
	23355	795.5	18.39	-1.3	14.94	31.19	3

Part90_LTE Band 26							
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
10M-QPSK	26740	819	23.35	-1.7	19.50	89.13	100
10M-16QAM	26740	819	22.28	-1.7	18.43	69.66	100
10M-64QAM	26740	819	21.25	-1.7	17.40	54.95	100
10M-256QAM	26740	819	18.40	-1.7	14.55	28.51	100
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
5M-QPSK	26715	816.5	23.26	-1.7	19.41	87.30	100
	26740	819	23.27	-1.7	19.42	87.50	100
	26765	821.5	23.24	-1.7	19.39	86.90	100
5M-16QAM	26715	816.5	22.25	-1.7	18.40	69.18	100
	26740	819	22.17	-1.7	18.32	67.92	100
	26765	821.5	22.37	-1.7	18.52	71.12	100
5M-64QAM	26715	816.5	21.23	-1.7	17.38	54.70	100
	26740	819	21.23	-1.7	17.38	54.70	100
	26765	821.5	21.30	-1.7	17.45	55.59	100
5M-256QAM	26715	816.5	18.41	-1.7	14.56	28.58	100
	26740	819	18.40	-1.7	14.55	28.51	100
	26765	821.5	18.44	-1.7	14.59	28.77	100

BW [MHz] Modulation	Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dB)	ERP (dBm)	ERP (mW)	Limit (W)
3M-QPSK	26705	815.5	23.30	-1.7	19.45	88.10	100
	26740	819	23.21	-1.7	19.36	86.30	100
	26775	822.5	23.33	-1.7	19.48	88.72	100
3M-16QAM	26705	815.5	22.22	-1.7	18.37	68.71	100
	26740	819	22.32	-1.7	18.47	70.31	100
	26775	822.5	22.39	-1.7	18.54	71.45	100
3M-64QAM	26705	815.5	21.17	-1.7	17.32	53.95	100
	26740	819	21.09	-1.7	17.24	52.97	100
	26775	822.5	21.29	-1.7	17.44	55.46	100
3M-256QAM	26705	815.5	18.40	-1.7	14.55	28.51	100
	26740	819	18.38	-1.7	14.53	28.38	100
	26775	822.5	18.48	-1.7	14.63	29.04	100
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
1.4M-QPSK	26697	814.7	23.18	-1.7	19.33	85.70	100
	26740	819	23.32	-1.7	19.47	88.51	100
	26783	823.3	23.28	-1.7	19.43	87.70	100
1.4M-16QAM	26697	814.7	22.18	-1.7	18.33	68.08	100
	26740	819	22.42	-1.7	18.57	71.94	100
	26783	823.3	22.41	-1.7	18.56	71.78	100
1.4M-64QAM	26697	814.7	21.22	-1.7	17.37	54.58	100
	26740	819	21.40	-1.7	17.55	56.89	100
	26783	823.3	21.44	-1.7	17.59	57.41	100
1.4M-256QAM	26697	814.7	18.44	-1.7	14.59	28.77	100
	26740	819	18.46	-1.7	14.61	28.91	100
	26783	823.3	18.50	-1.7	14.65	29.17	100

n14 (SCS 15kHz)							
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
10M-Pi/2 BPSK	158600	793	23.32	-1.3	19.87	97.05	3
10M-QPSK	158600	793	23.35	-1.3	19.90	97.72	3
10M-16QAM	158600	793	23.33	-1.3	19.88	97.27	3
10M-64QAM	158600	793	21.84	-1.3	18.39	69.02	3
10M-256QAM	158600	793	19.79	-1.3	16.34	43.05	3
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
5M-QPSK	158100	790.5	23.29	-1.3	19.84	96.38	3
	158600	793	23.33	-1.3	19.88	97.27	3
	159100	795.5	23.32	-1.3	19.87	97.05	3

NR Redcap mode：

n14 (SCS 15kHz)							
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
10M-Pi/2 BPSK	158600	793	23.20	-1.3	19.75	94.41	3
10M-QPSK	158600	793	23.33	-1.3	19.88	97.27	3
10M-16QAM	158600	793	23.21	-1.3	19.76	94.62	3
10M-64QAM	158600	793	21.68	-1.3	18.23	66.53	3
10M-256QAM	158600	793	19.76	-1.3	16.31	42.76	3
BW [MHz] Modulation	**Channel**	**Frequency (MHz)**	**Conducted Power (dBm)**	**Gain (dB)**	**ERP (dBm)**	**ERP (mW)**	**Limit (W)**
5M-QPSK	158100	790.5	23.18	-1.3	19.73	93.97	3
	158600	793	23.23	-1.3	19.78	95.06	3
	159100	795.5	23.29	-1.3	19.84	96.38	3

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 of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

3.2.2 TEST PROCEDURE

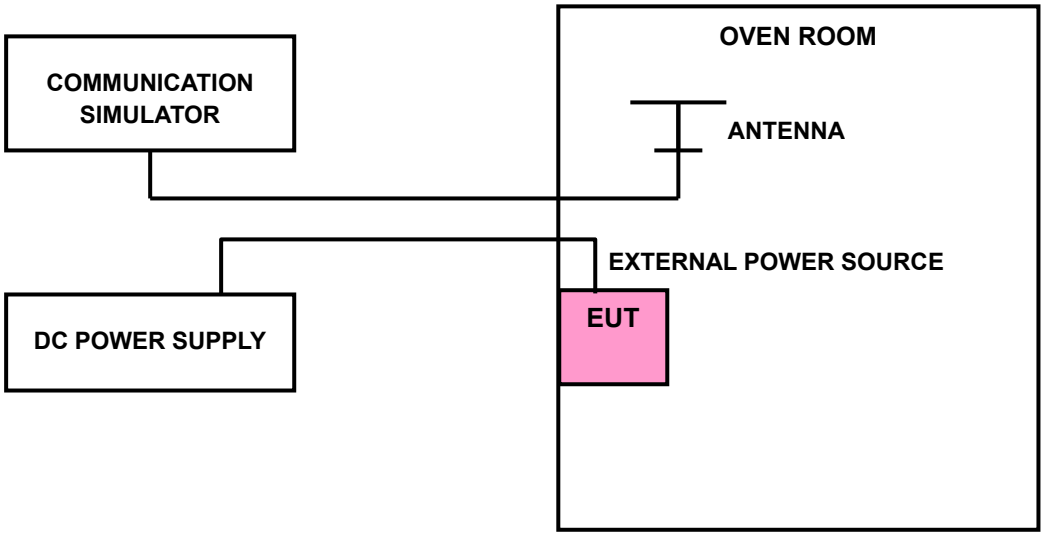
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

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.

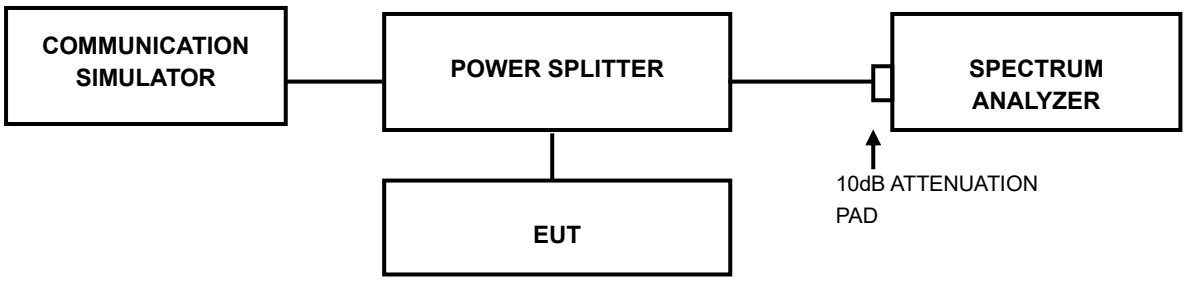
Note: VL = Low voltage(4.75V); VN/NV = Normal voltage(5V); VH = High voltage(5.25V);
NT = Normal temperature (25℃)

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 EMISSION MASK MEASUREMENT

3.4.1 LIMITS OF EMISSION MASK MEASUREMENT

LTE Band14:
According to FCC part 90.543(e) shall be tested the emission mask.
(e) For operations in the 758–768 MHz and the 788–798 MHz bands, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations.

(2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

(3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least 43 + 10 log (P) dB.

(4) Compliance with the provisions of paragraphs (e)(1) and (2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

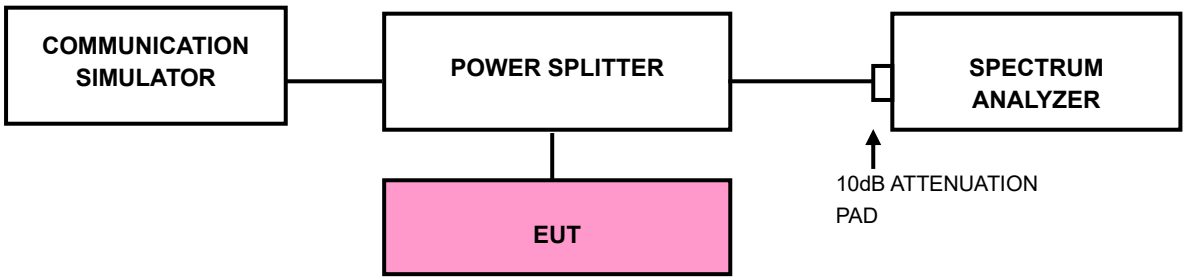
(5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of 30 kHz may be employed.

LTE Band26:

According to FCC part 90.691 shall be tested the emission mask. For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

3.4.2 TEST SETUP



3.4.3 TEST PROCEDURES

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

3.4.4 TEST RESULTS

Please Refer to Appendix of this test report.

3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

(1)The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

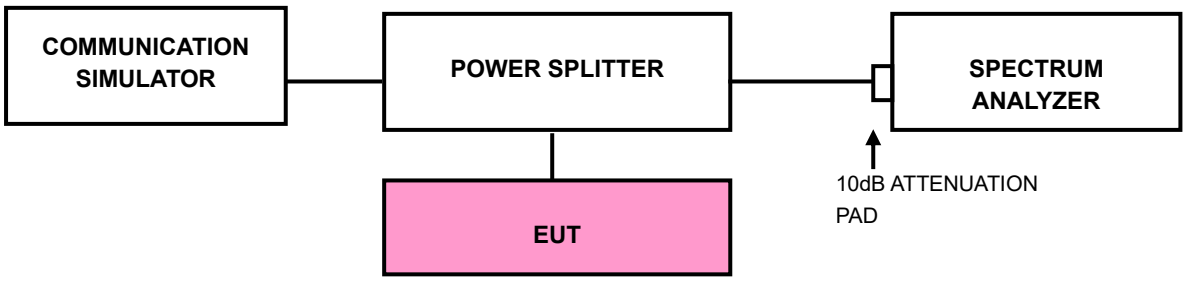
(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

3.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at middle 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

(1)The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 log10(P) dB. The limit of emission equal to –13dBm

(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

3.6.2 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.

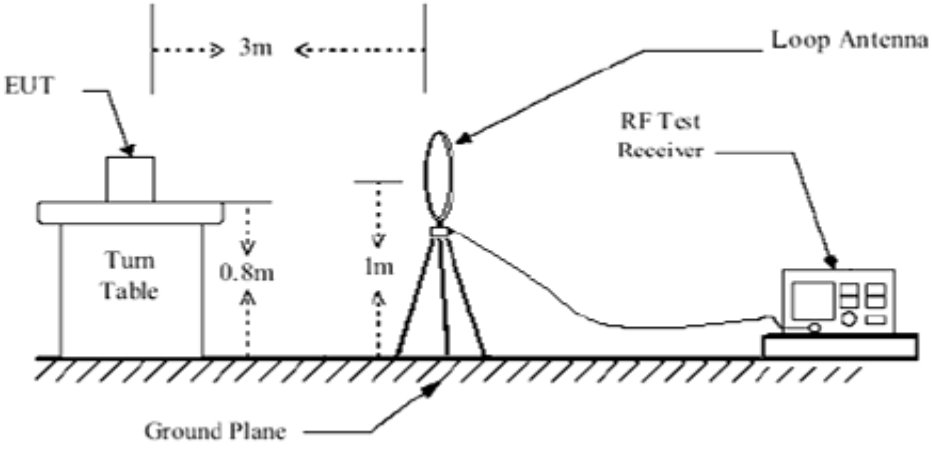
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

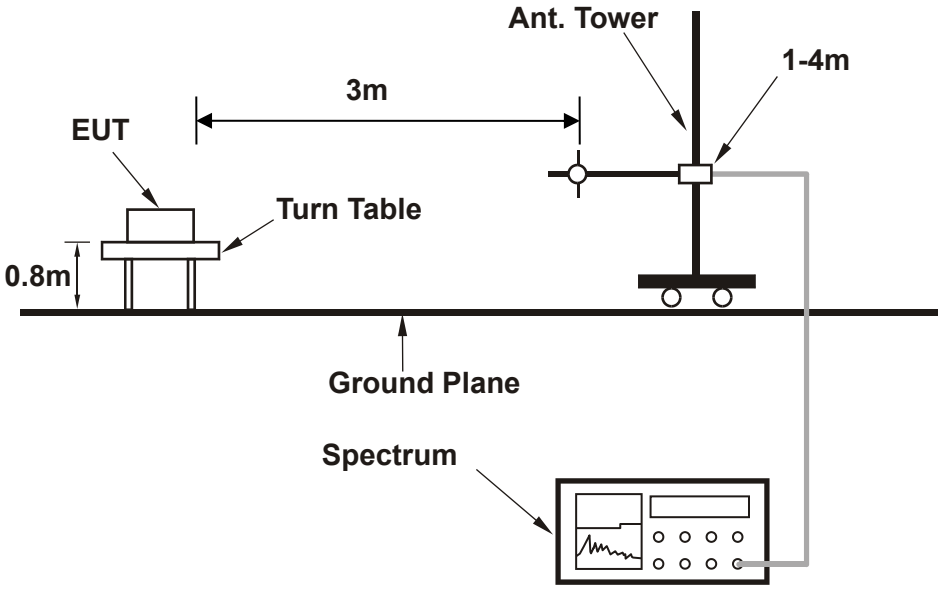
No deviation

3.6.4 TEST SETUP

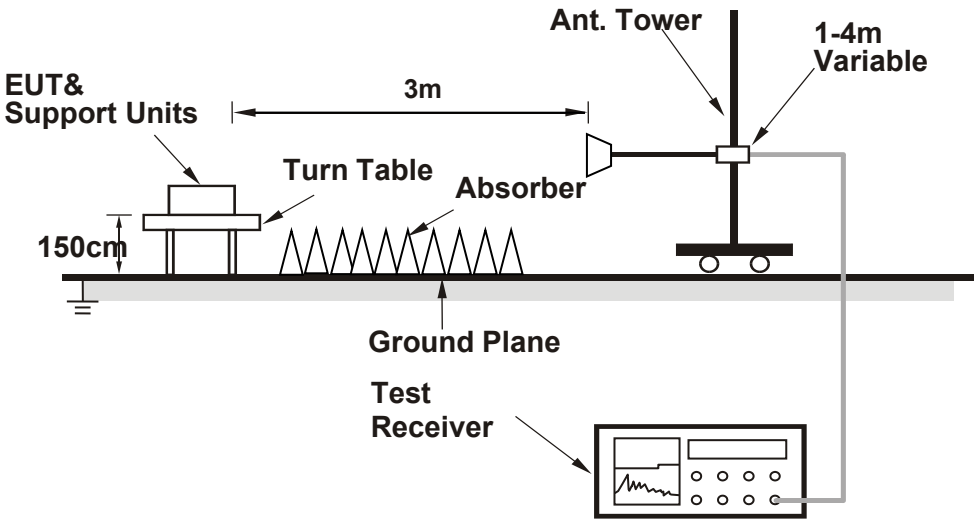
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



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

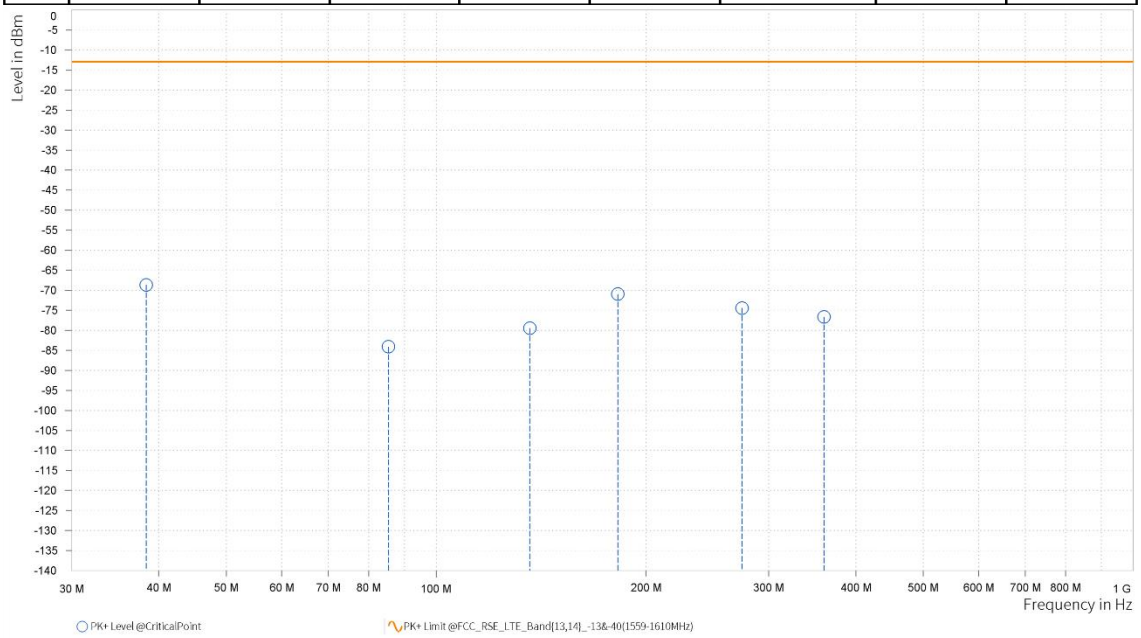
3.6.5 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

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

LTE Band 14 CHANNEL BANDWIDTH: 5MHz / QPSK			
MODE	TX channel 23355	**FREQUENCY RANGE**	30 MHz ~ 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	DC 5V
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

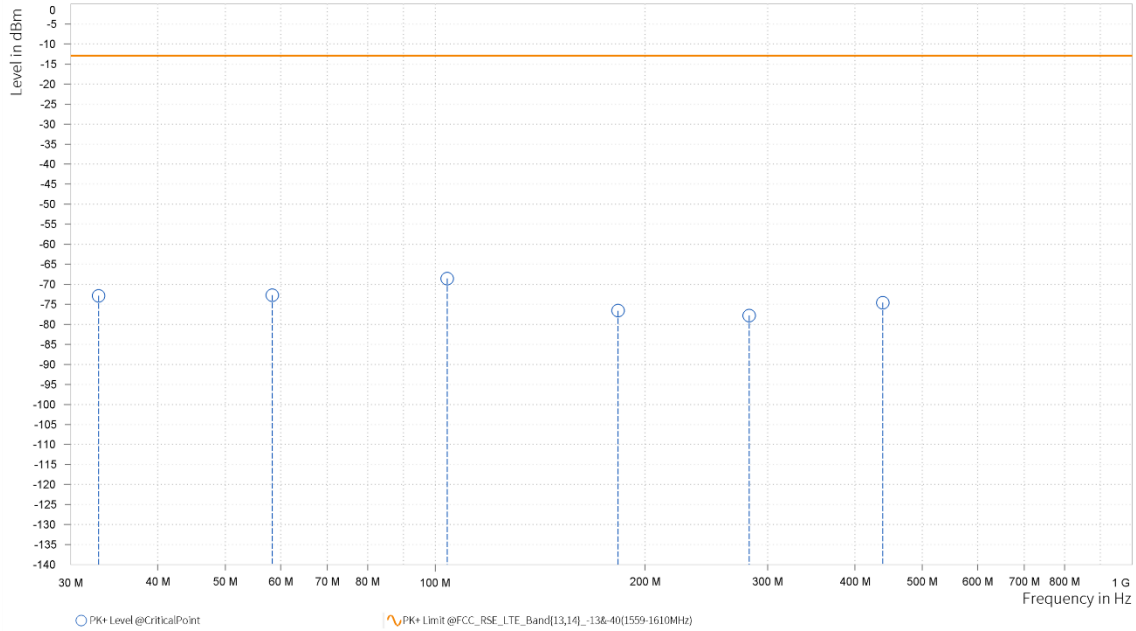
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	38.350	-68.66	-13.00	55.66	-0.21	H	2	2.00
1	85.400	-84.10	-13.00	71.10	-12.39	H	277.7	1.00
1	136.300	-79.43	-13.00	66.43	-13.92	H	199.4	2.00
1	182.250	-70.97	-13.00	57.97	-7.25	H	84.6	2.00
1	274.650	-74.43	-13.00	61.43	-1.12	H	277.7	1.00
1	360.000	-76.65	-13.00	63.65	-1.89	H	160.6	1.00



MODE	TX channel 23355	FREQUENCY RANGE	30 MHz ~ 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	32.900	-72.89	-13.00	59.89	-6.56	V	91.8	2.00
1	58.350	-72.71	-13.00	59.71	-3.35	V	305.2	1.00
1	104.050	-68.59	-13.00	55.59	3.35	V	305.2	1.00
1	183.050	-76.58	-13.00	63.58	-9.12	V	210.2	2.00
1	282.100	-77.78	-13.00	64.78	-1.40	V	91.8	2.00
1	438.900	-74.60	-13.00	61.60	1.29	V	305.2	1.00



ABOVE 1GHz

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

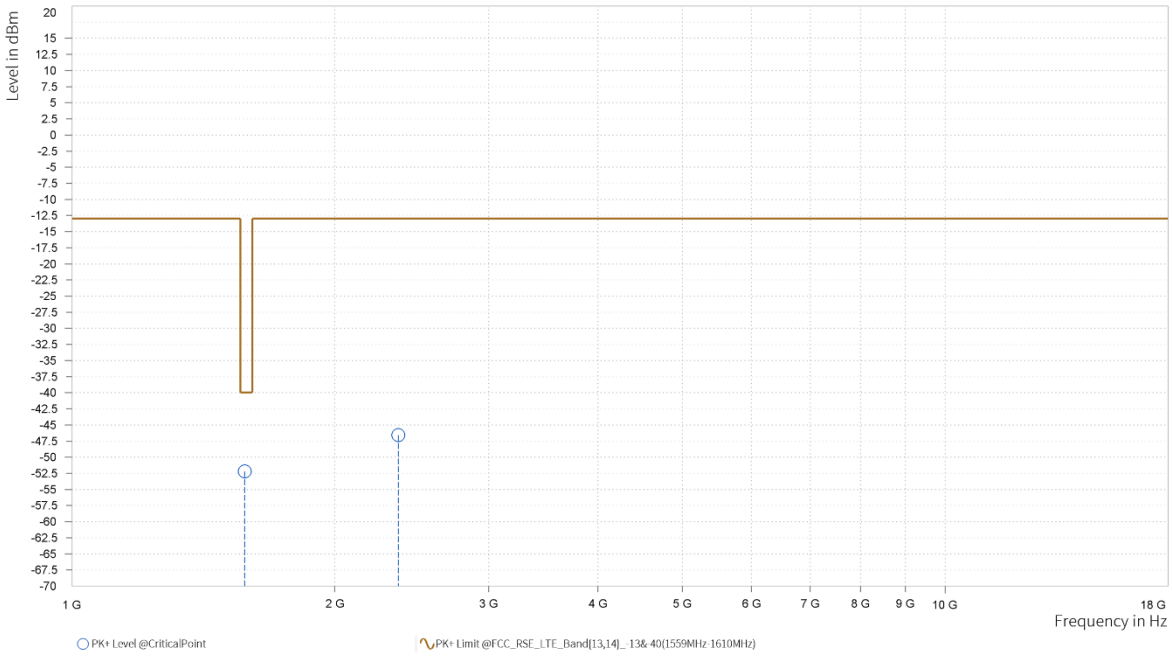
LTE BAND14

CH23305

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23305
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

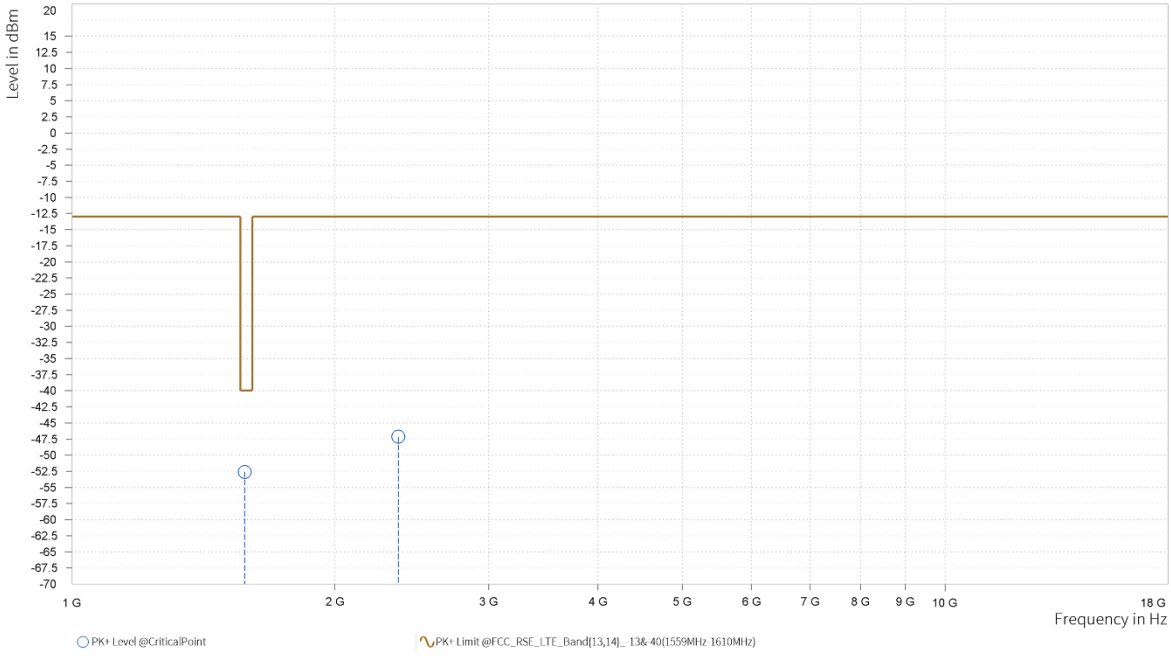
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,576.500	-52.20	-40.00	12.20	17.33	H	1	2.00
3	2,364.750	-46.58	-13.00	33.58	24.74	H	359	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23305
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	1,576.500	-52.58	-40.00	12.58	17.14	V	72.5	1.00
3	2,364.750	-47.14	-13.00	34.14	24.43	V	1	1.00

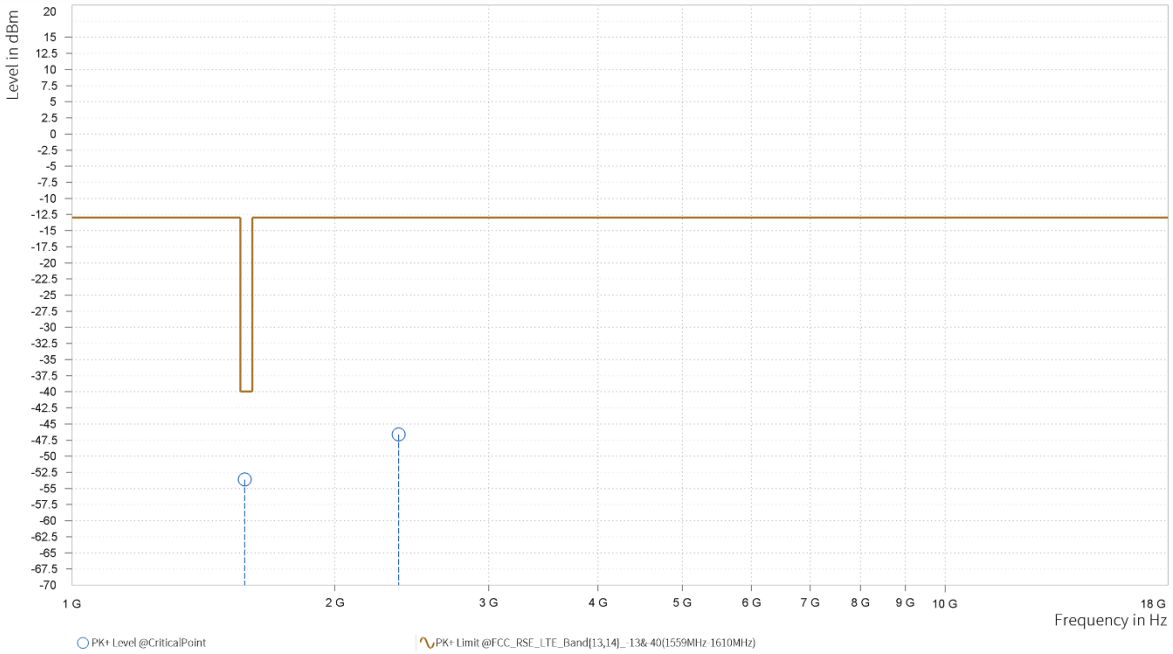


CH23330

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23330
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

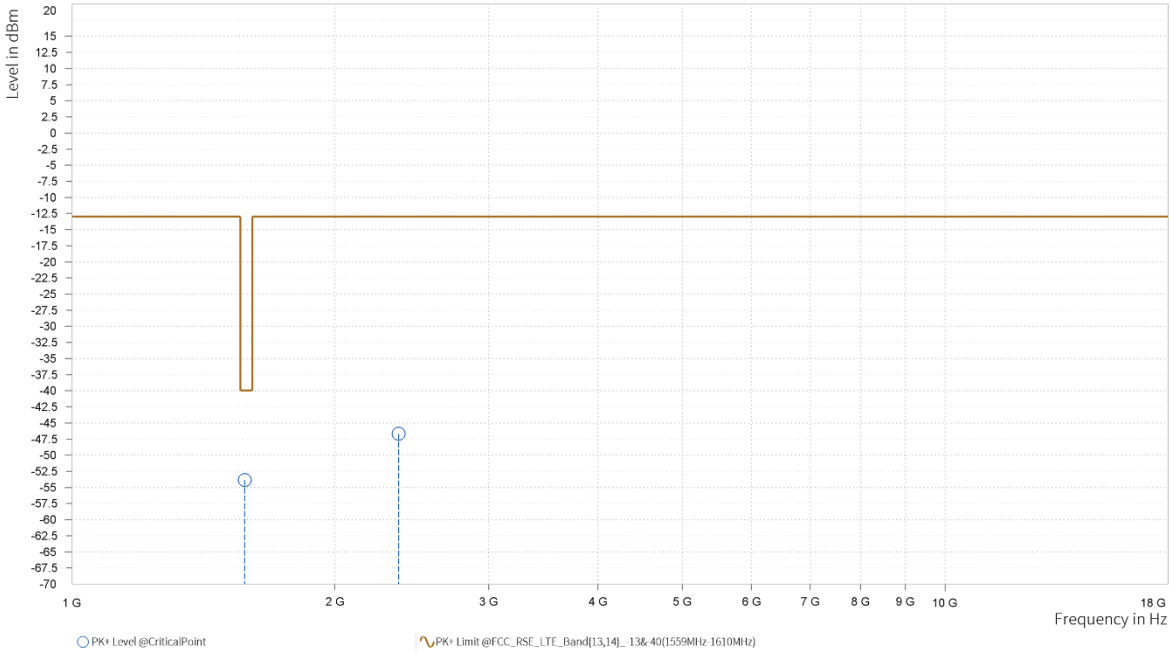
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,577.000	-53.62	-40.00	13.62	17.35	H	70	1.00
3	2,365.500	-46.63	-13.00	33.63	24.74	H	1	1.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23330
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	1,577.000	-53.85	-40.00	13.85	17.16	V	288.7	2.00
3	2,365.500	-46.67	-13.00	33.67	24.42	V	359	2.00

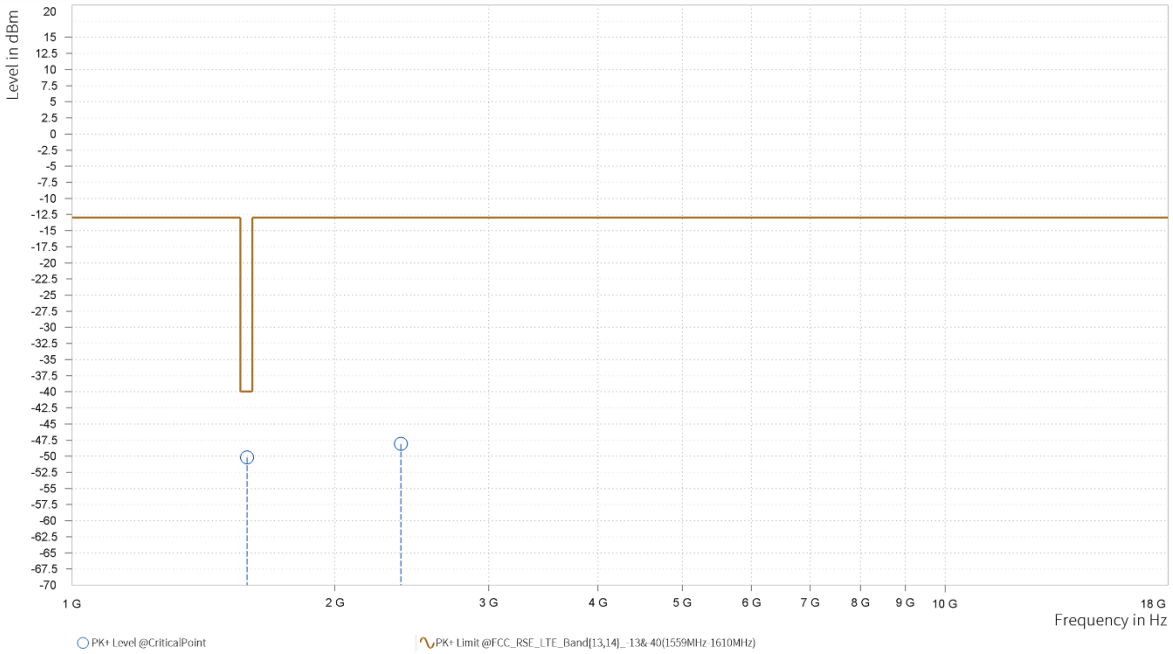


CH23355

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23355
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

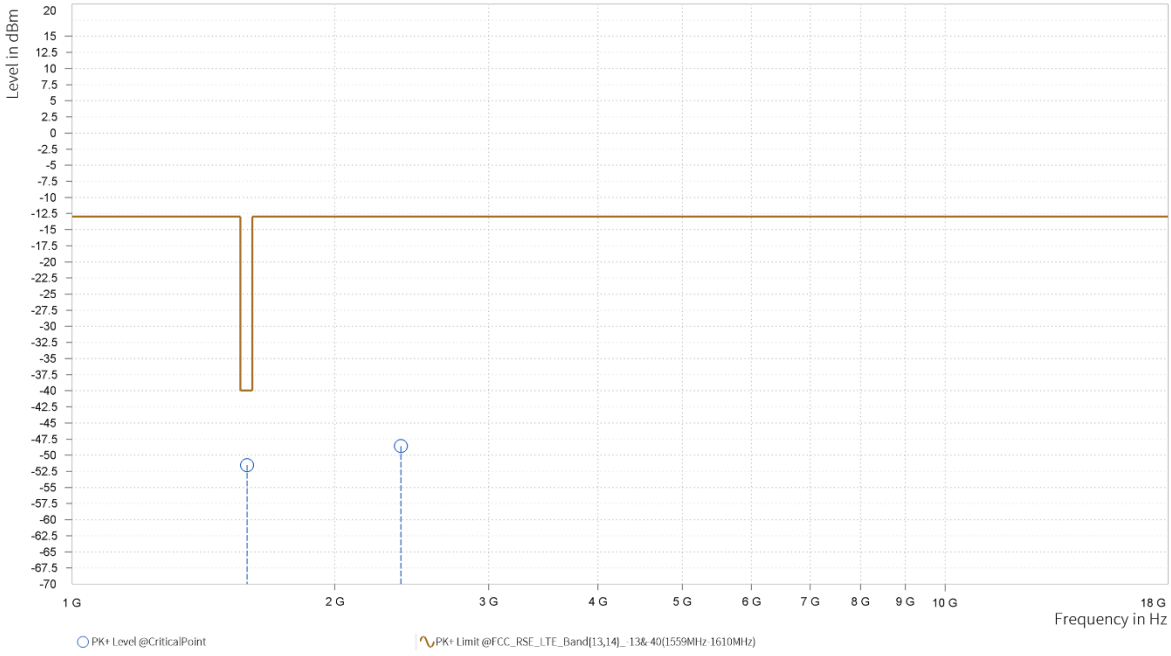
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,586.500	-50.21	-40.00	10.21	17.22	H	286.4	2.00
3	2,379.750	-48.09	-13.00	35.09	24.40	H	359	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 23355
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

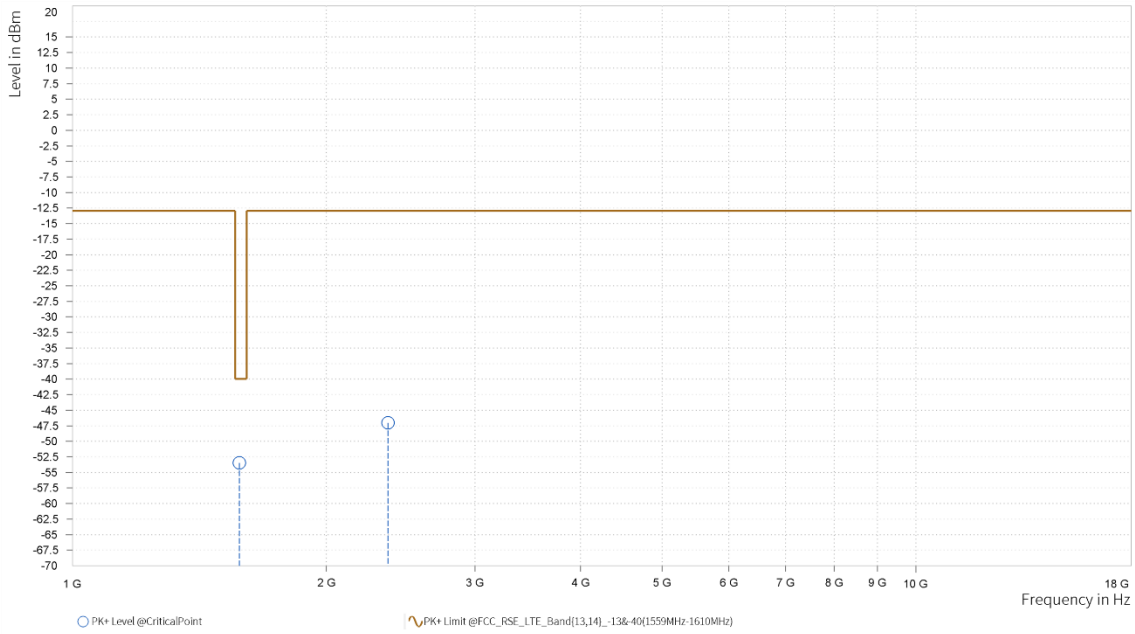
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,586.500	-51.54	-40.00	11.54	17.11	V	1	1.00
3	2,379.750	-48.59	-13.00	35.59	24.14	V	217.1	2.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 23330
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

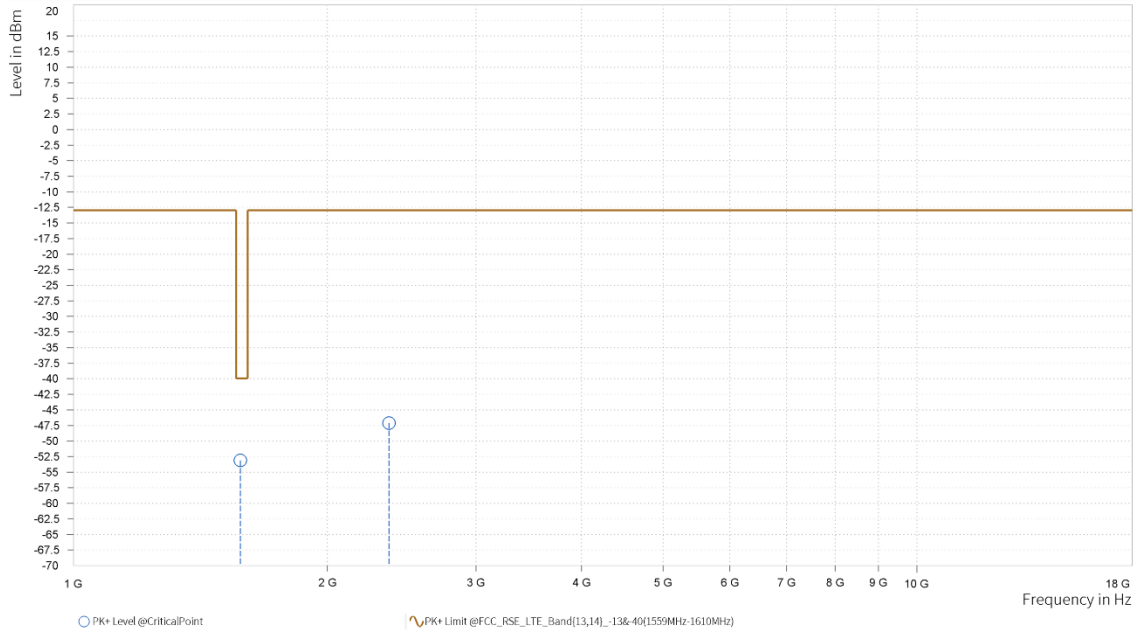
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,577.000	-53.47	-40.00	13.47	17.35	H	68.9	1.00
3	2,365.500	-47.04	-13.00	34.04	24.74	H	1	1.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 23330
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

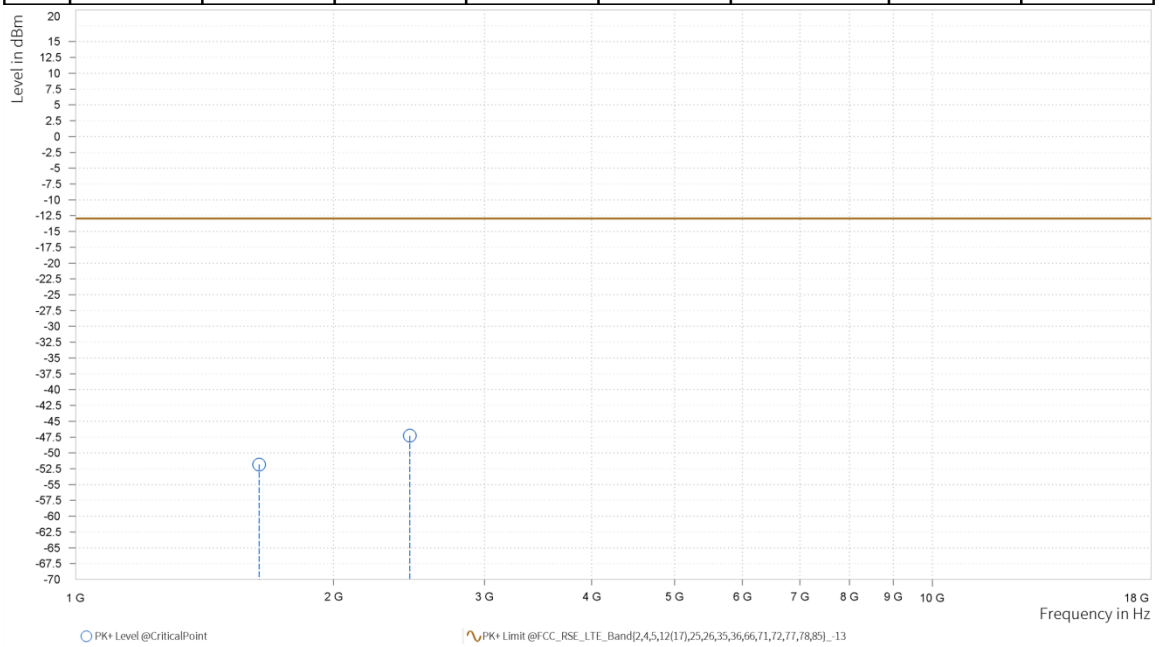
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,577.000	-53.11	-40.00	13.11	17.16	V	1	2.00
3	2,365.500	-47.12	-13.00	34.12	24.42	V	359	2.00



LTE BAND 26			
CHANNEL BANDWIDTH	1.4MHz / QPSK	**MODE**	TX channel 26740
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

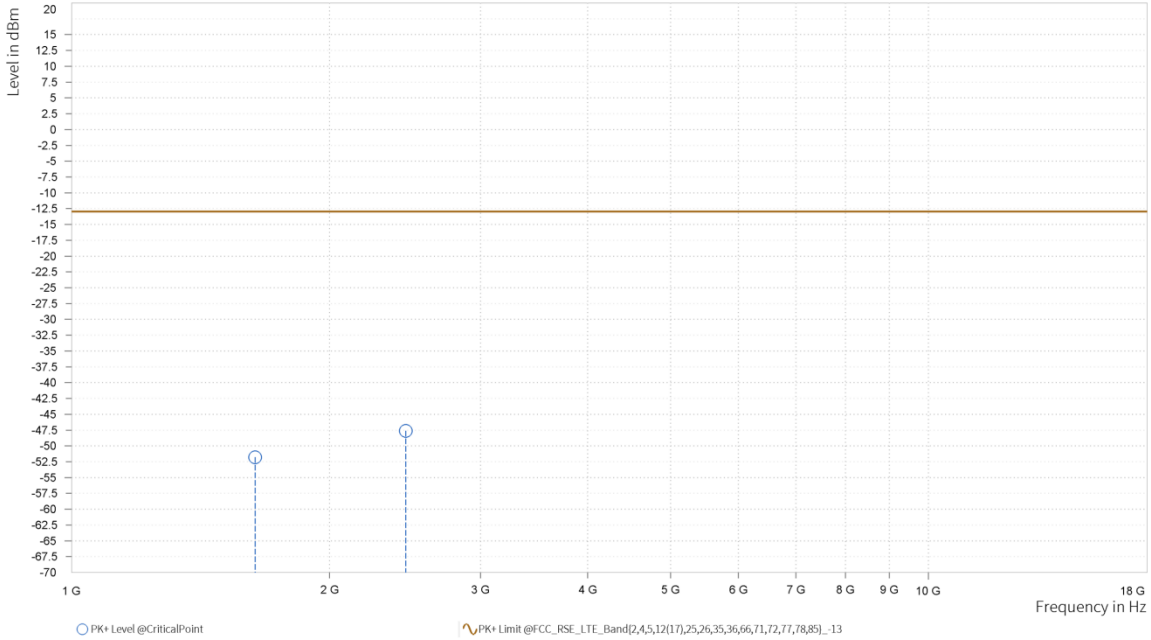
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,636.740	-51.84	-13.00	38.84	18.28	H	359	2.00
3	2,455.110	-47.30	-13.00	34.30	24.69	H	359	1.00



CHANNEL BANDWIDTH	1.4MHz / QPSK	**MODE**	TX channel 26740
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

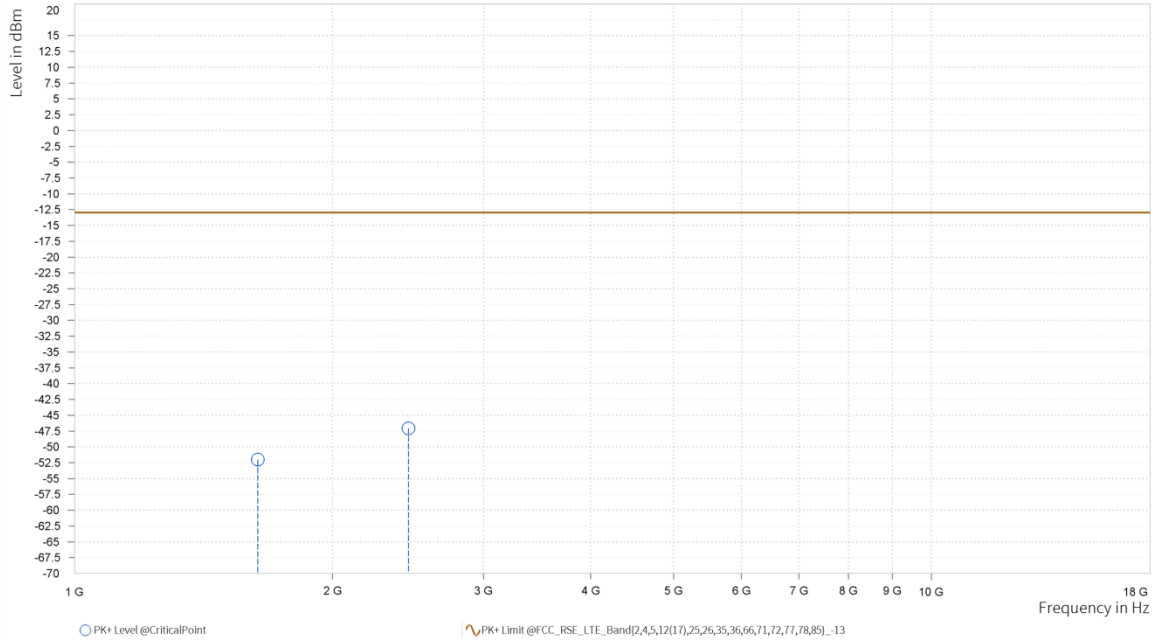
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,636.740	-51.79	-13.00	38.79	17.90	V	359	2.00
3	2,455.110	-47.62	-13.00	34.62	24.47	V	140.6	1.00



CHANNEL BANDWIDTH	3MHz / QPSK	**MODE**	TX channel 26740
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

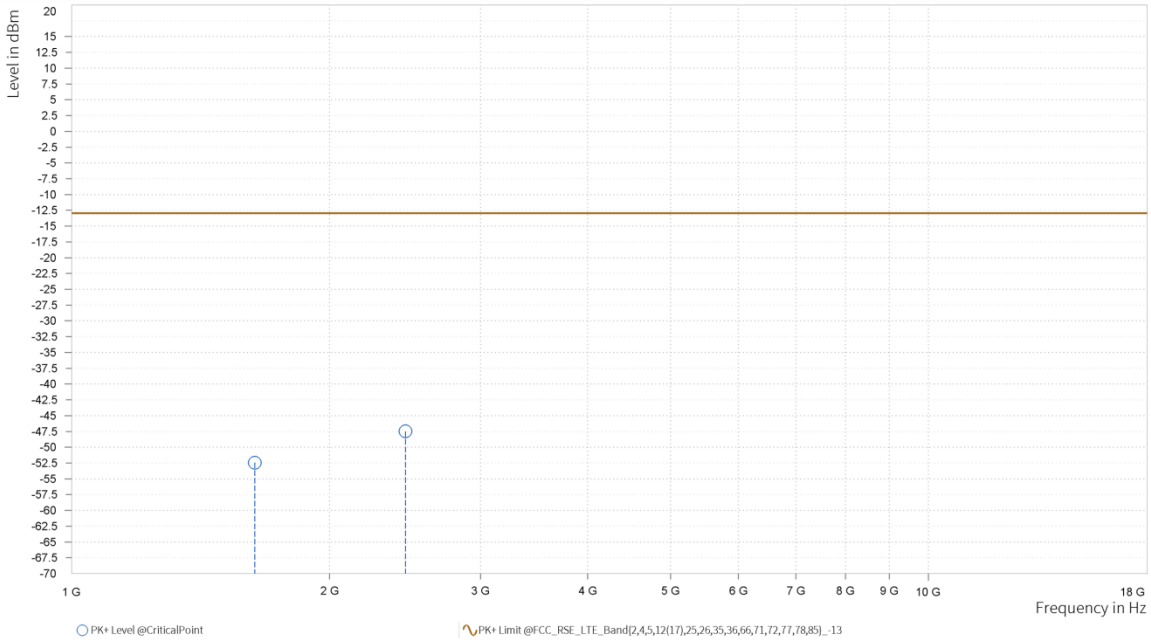
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,635.300	-52.01	-13.00	39.01	18.24	H	359.1	1.00
3	2,452.950	-47.07	-13.00	34.07	24.59	H	359.1	1.00



CHANNEL BANDWIDTH	3MHz / QPSK	**MODE**	TX channel 26740
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	1,635.300	-52.43	-13.00	39.43	17.87	V	359	1.00
3	2,452.950	-47.50	-13.00	34.50	24.38	V	1	2.00

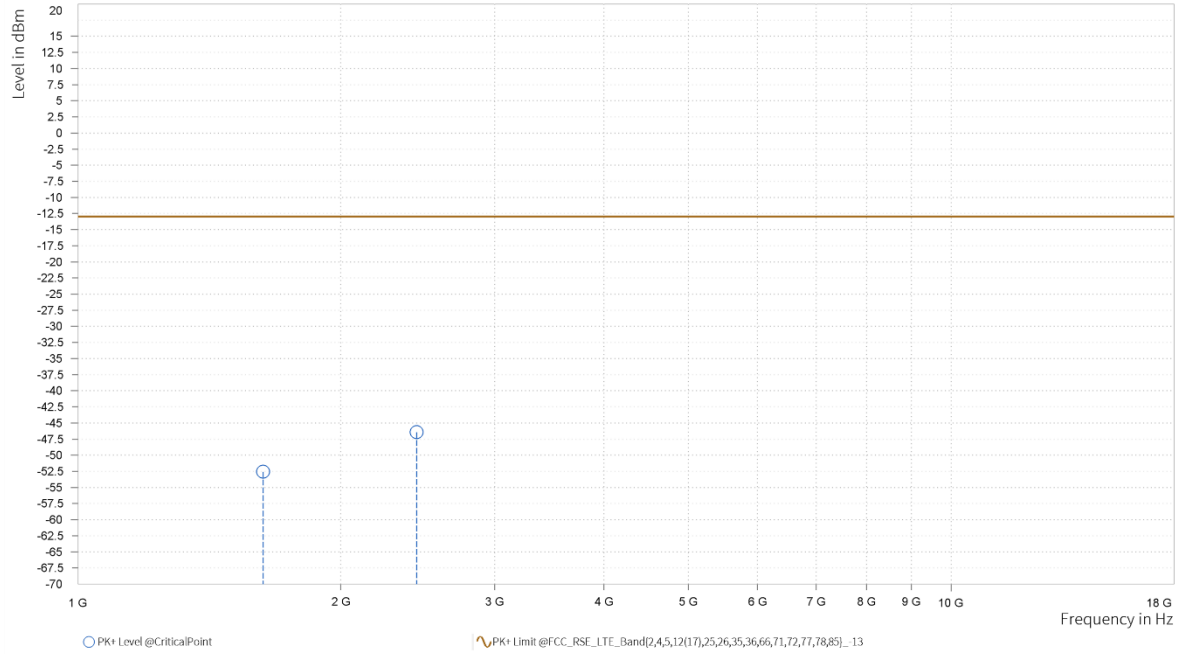


CH26715

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26715
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

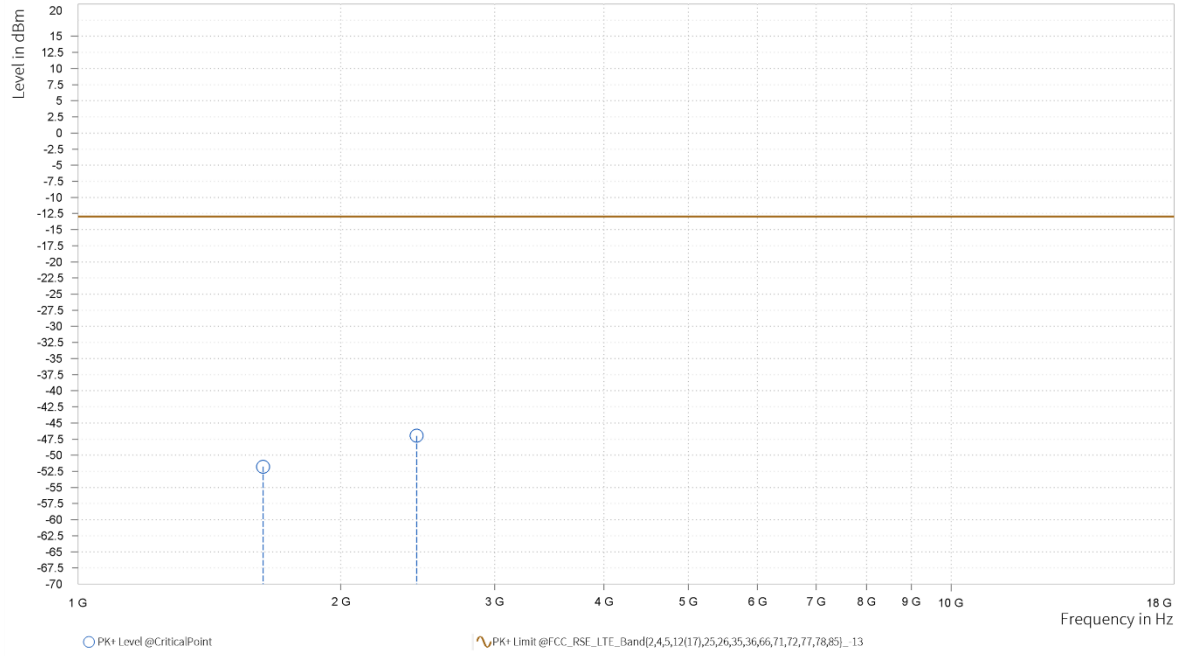
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,628.500	-52.56	-13.00	39.56	17.99	H	359	1.00
3	2,442.750	-46.43	-13.00	33.43	24.53	H	1	1.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26715
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	1,628.500	-51.79	-13.00	38.79	17.70	V	287.6	2.00
3	2,442.750	-46.99	-13.00	33.99	24.36	V	359	1.00

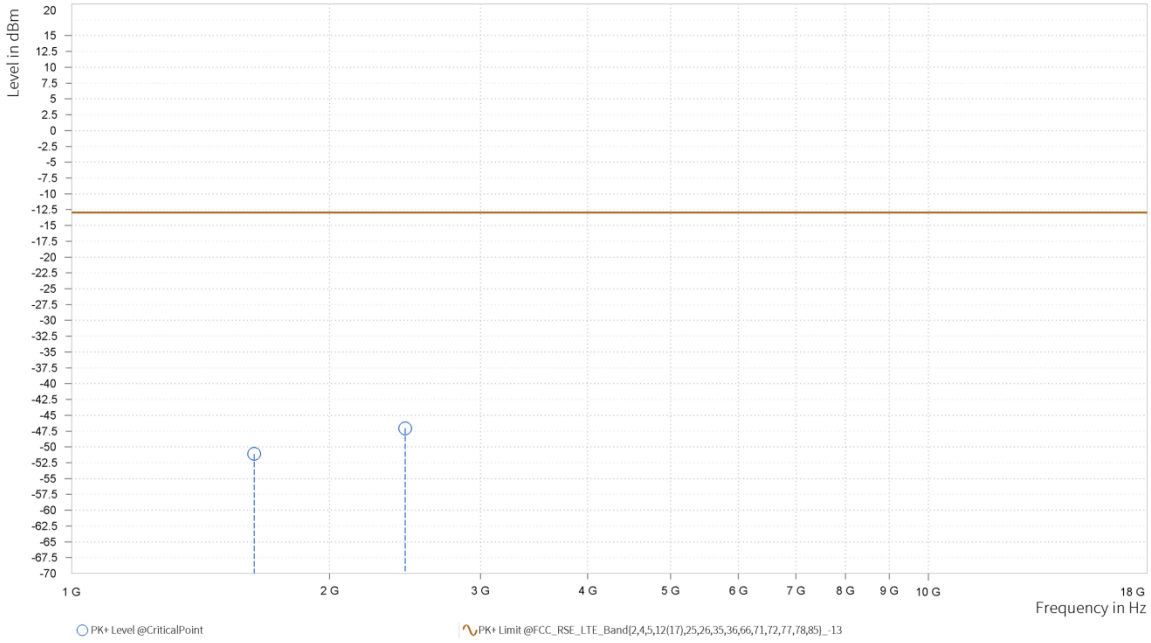


CH26740

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26740
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

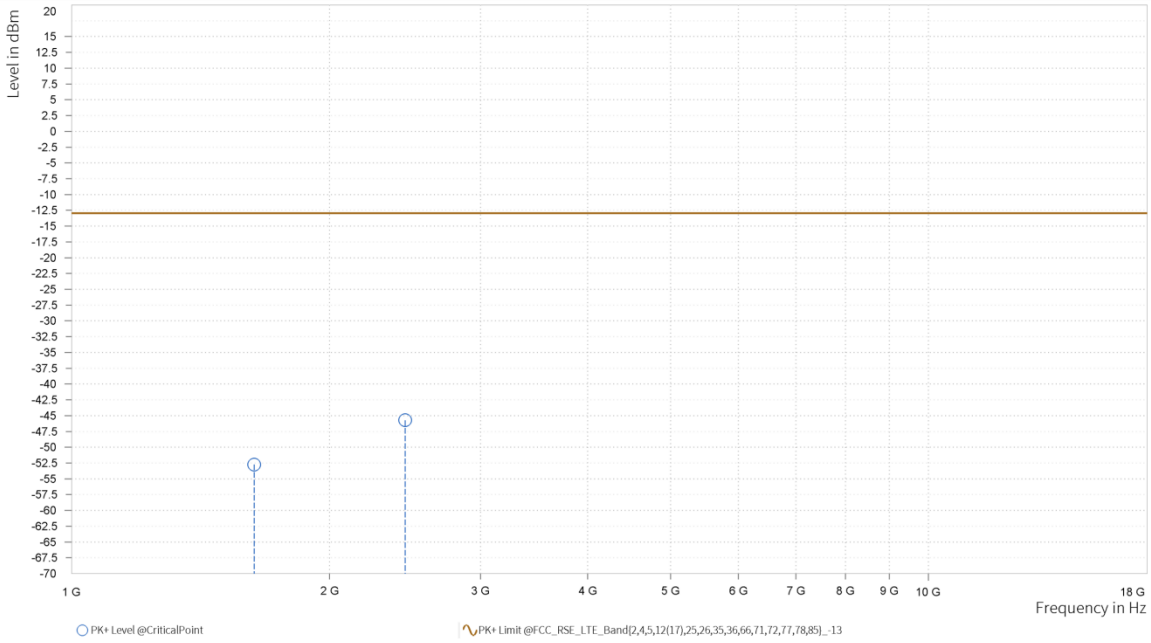
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,633.500	-51.12	-13.00	38.12	18.16	H	1	1.00
3	2,450.250	-47.07	-13.00	34.07	24.45	H	208.7	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26740
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	1,633.500	-52.75	-13.00	39.75	17.81	V	359	2.00
3	2,450.250	-45.72	-13.00	32.72	24.27	V	146.5	1.00

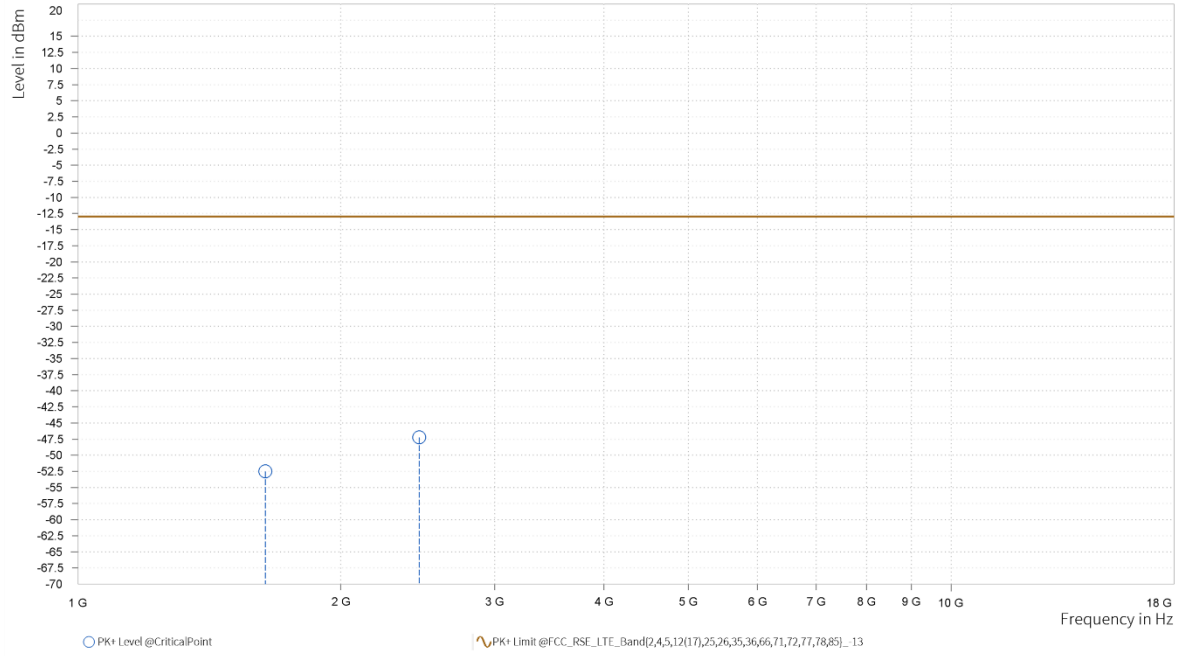


CH26765

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26765
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

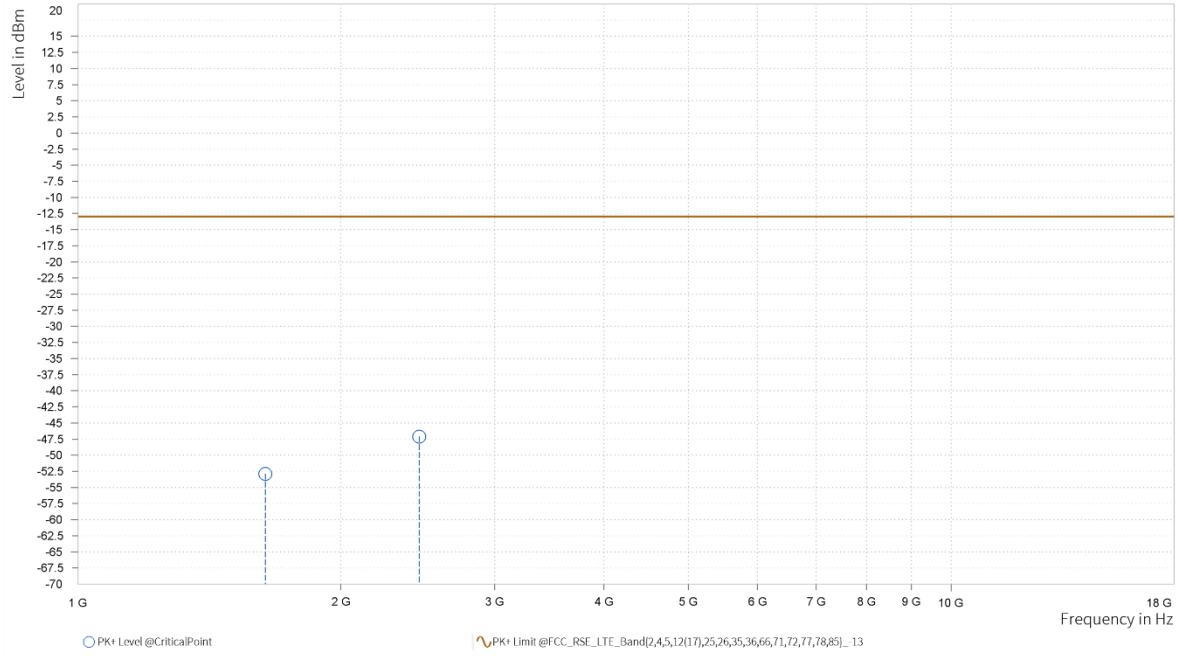
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,638.500	-52.53	-13.00	39.53	18.37	H	284	2.00
3	2,457.750	-47.25	-13.00	34.25	24.82	H	211	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 26715
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

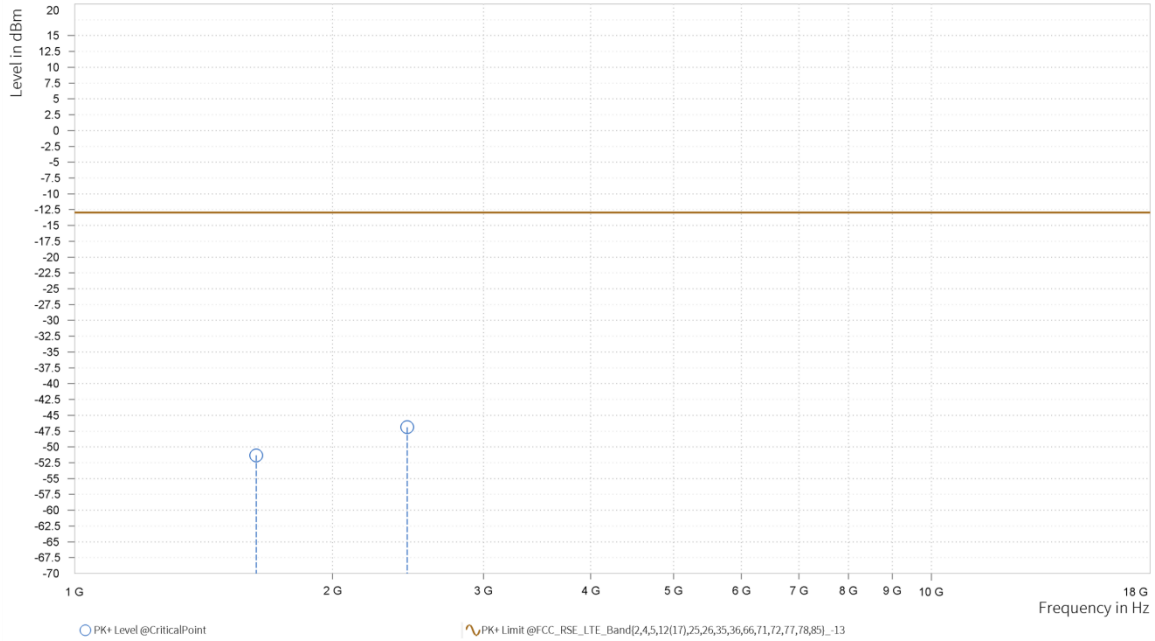
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,638.500	-52.90	-13.00	39.90	17.96	V	287.6	2.00
3	2,457.750	-47.11	-13.00	34.11	24.58	V	145.4	1.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 26740
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

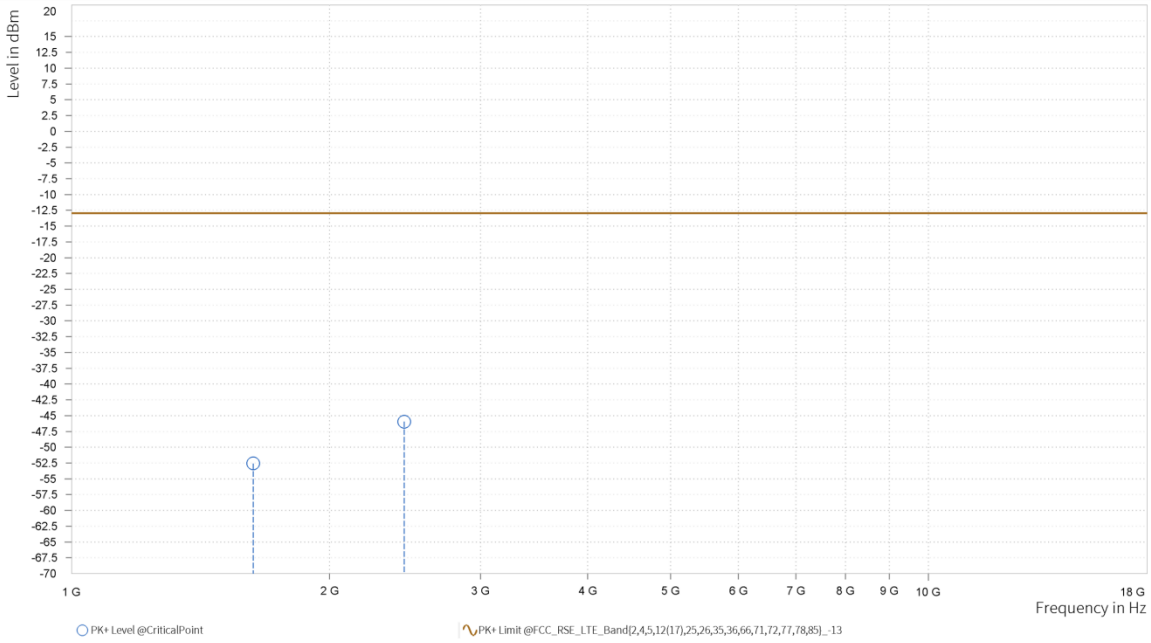
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,629.000	-51.34	-13.00	38.34	17.99	H	1	1.00
3	2,443.500	-46.89	-13.00	33.89	24.52	H	1	1.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 26740
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	1,629.000	-52.57	-13.00	39.57	17.70	V	67.6	1.00
3	2,443.500	-45.95	-13.00	32.95	24.34	V	359	2.00

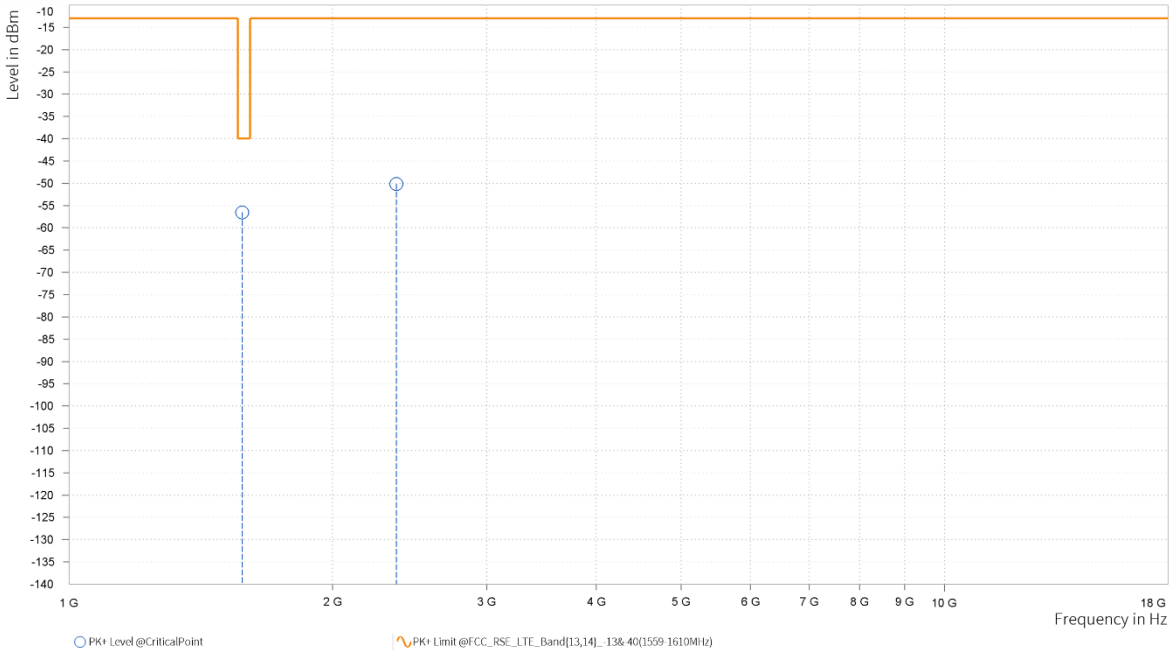


n14

CH 158100

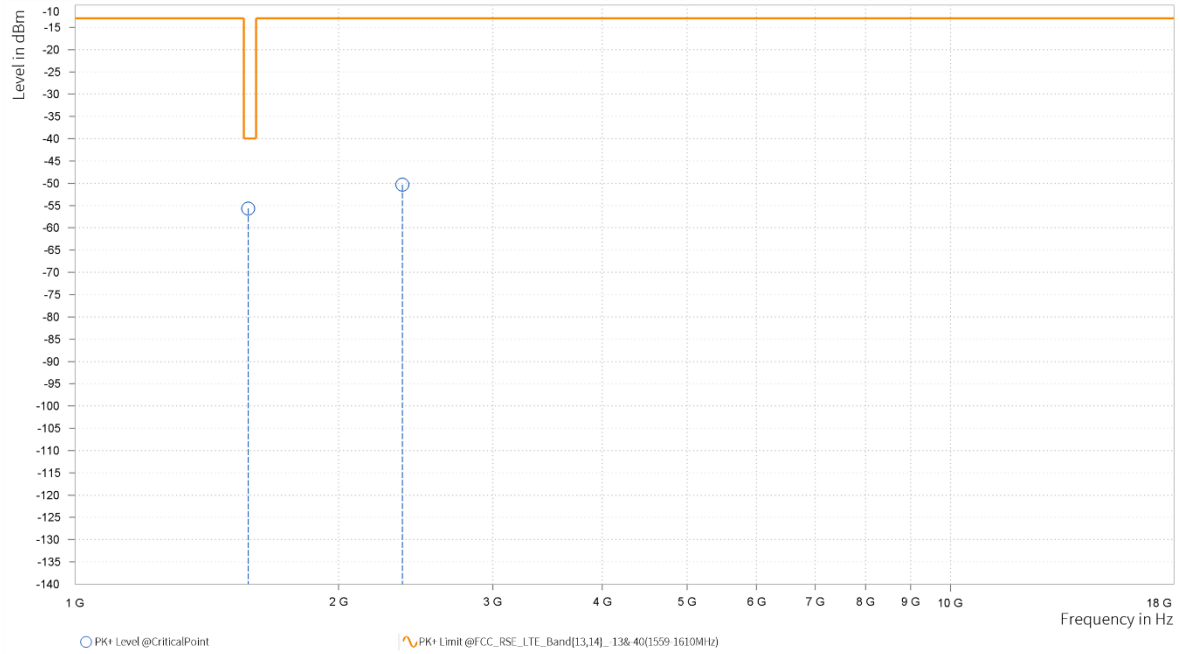
CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 158100
FREQUENCY RANGE	Above 1000MHz	**ENVIRONMENTAL CONDITIONS**	23deg. C, 70%RH
INPUT POWER	DC 5V	**TESTED BY**	Hanwen Xu
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,576.500	-56.55	-40.00	16.55	12.97	H	182.5	1.00
3	2,364.750	-50.13	-13.00	37.13	20.38	H	359	1.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 158100
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	1,576.500	-55.66	-40.00	15.66	14.18	V	1	2.00
3	2,364.750	-50.34	-13.00	37.34	20.04	V	294.3	2.00

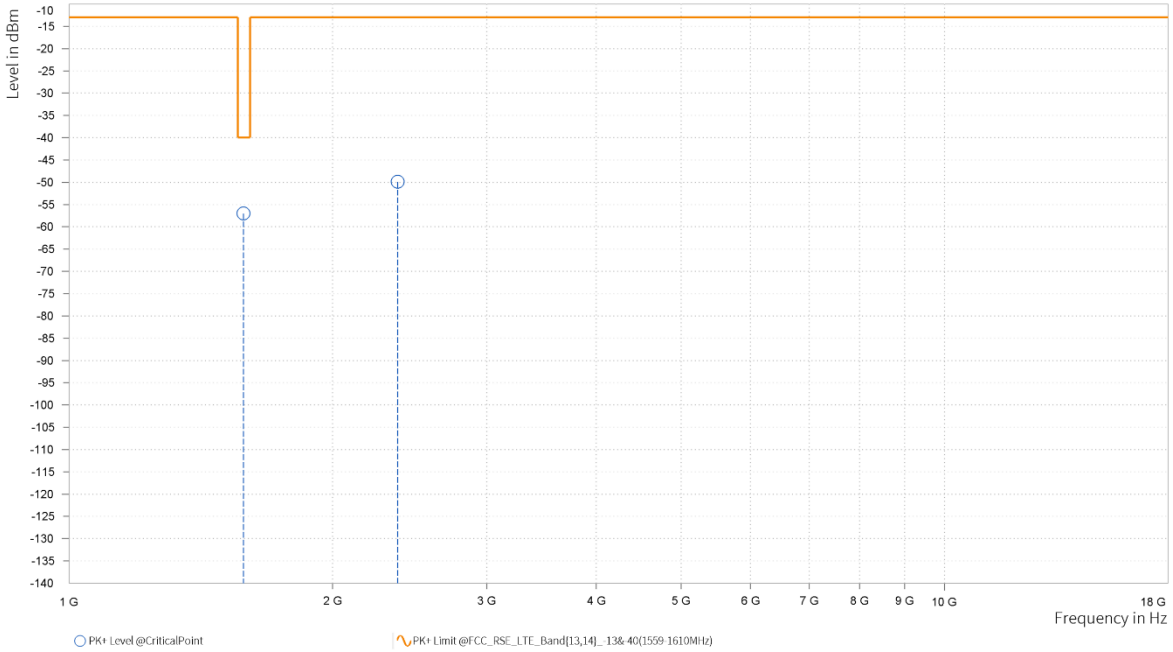


CH158600

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 158600
FREQUENCY RANGE	Above 1000MHz	**ENVIRONMENTAL CONDITIONS**	23deg. C, 70%RH
INPUT POWER	DC 5V	**TESTED BY**	Hanwen Xu

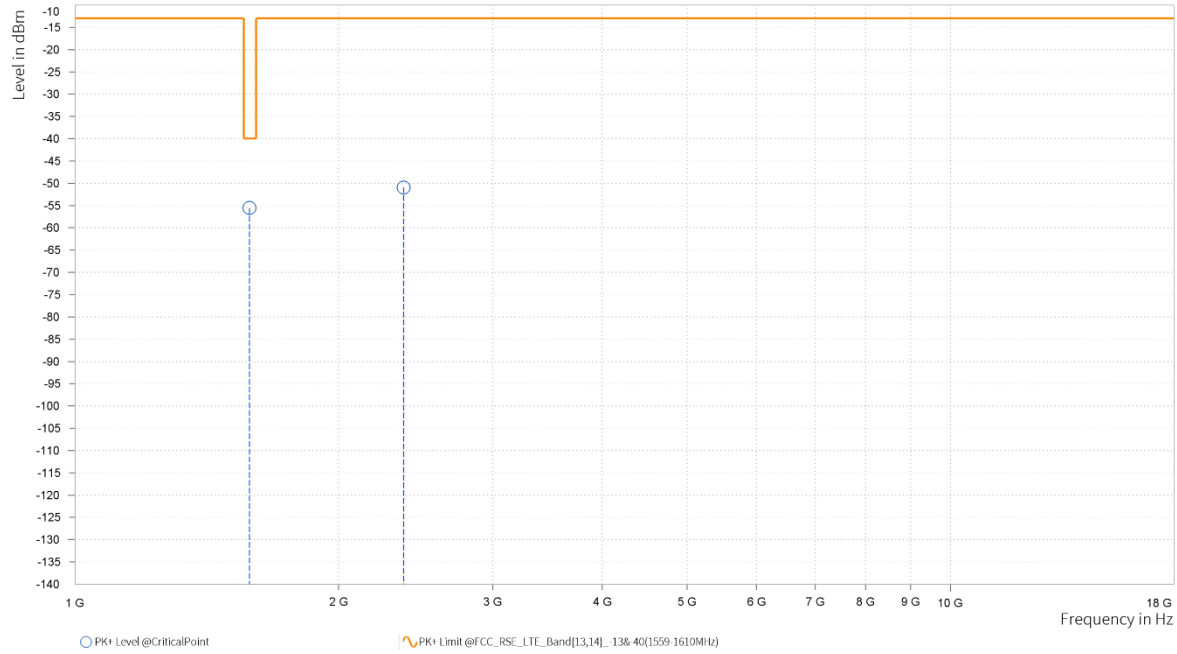
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,581.500	-57.02	-40.00	17.02	13.09	H	34.6	1.00
3	2,372.250	-49.88	-13.00	36.88	20.61	H	107.4	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 158600
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	1,581.500	-55.56	-40.00	15.56	14.23	V	1.8	2.00
3	2,372.250	-50.96	-13.00	37.96	20.05	V	170.5	2.00

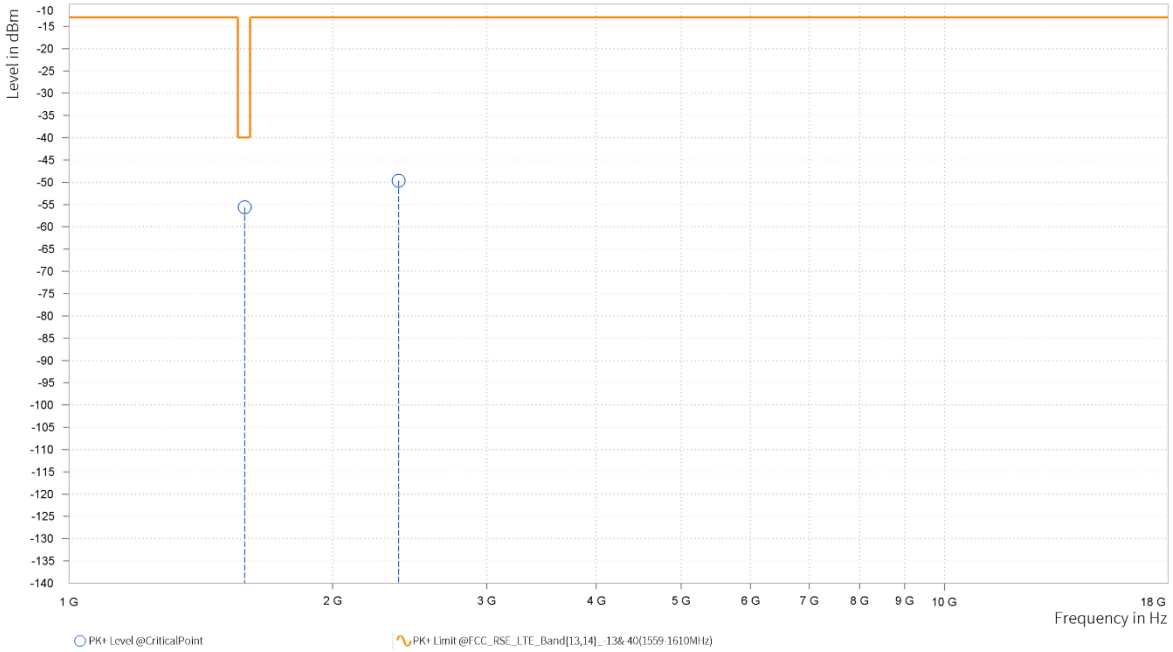


CH159100

CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 159100
FREQUENCY RANGE	Above 1000MHz	**ENVIRONMENTAL CONDITIONS**	23deg. C, 70%RH
INPUT POWER	DC 5V	**TESTED BY**	Hanwen Xu

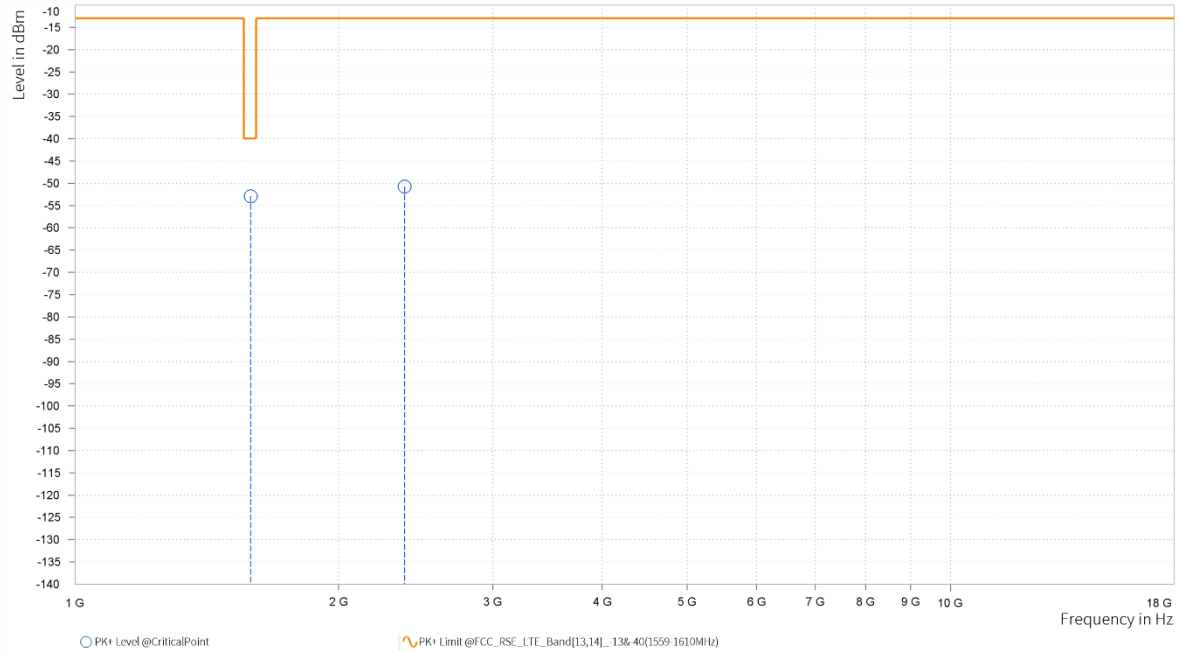
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,586.500	-55.63	-40.00	15.63	13.27	H	112.4	2.00
3	2,379.750	-49.64	-13.00	36.64	20.49	H	295.8	2.00



CHANNEL BANDWIDTH	5MHz / QPSK	**MODE**	TX channel 159100
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			

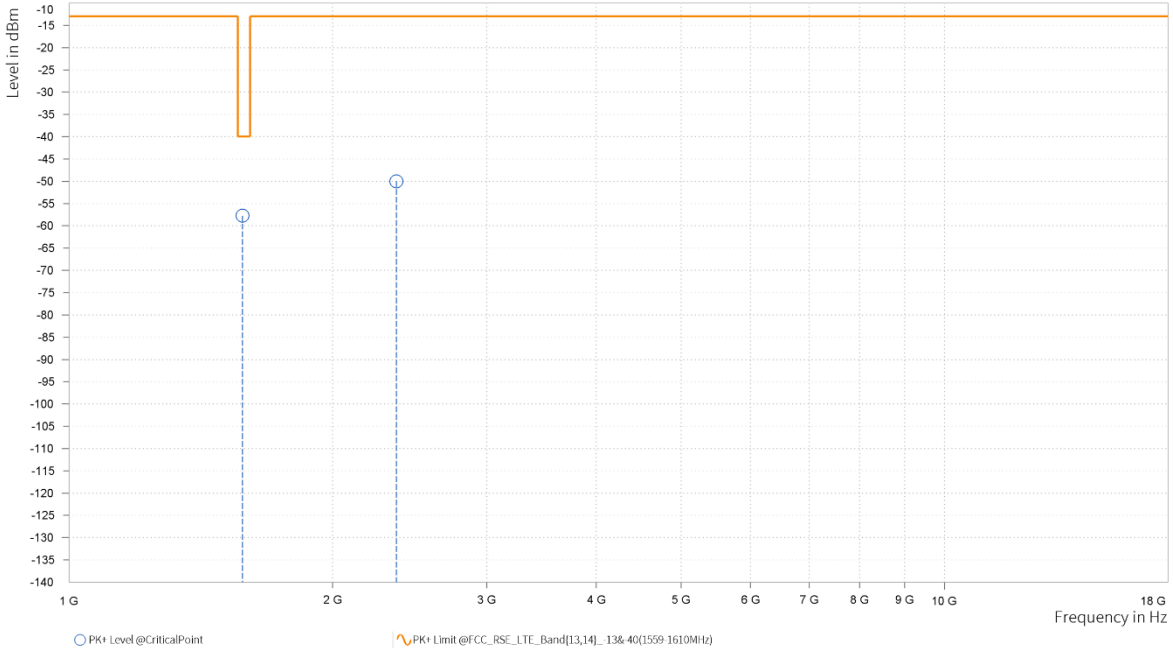
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,586.500	-52.91	-40.00	12.91	14.35	V	359	1.00
3	2,379.750	-50.75	-13.00	37.75	19.94	V	295.7	2.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 158600
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

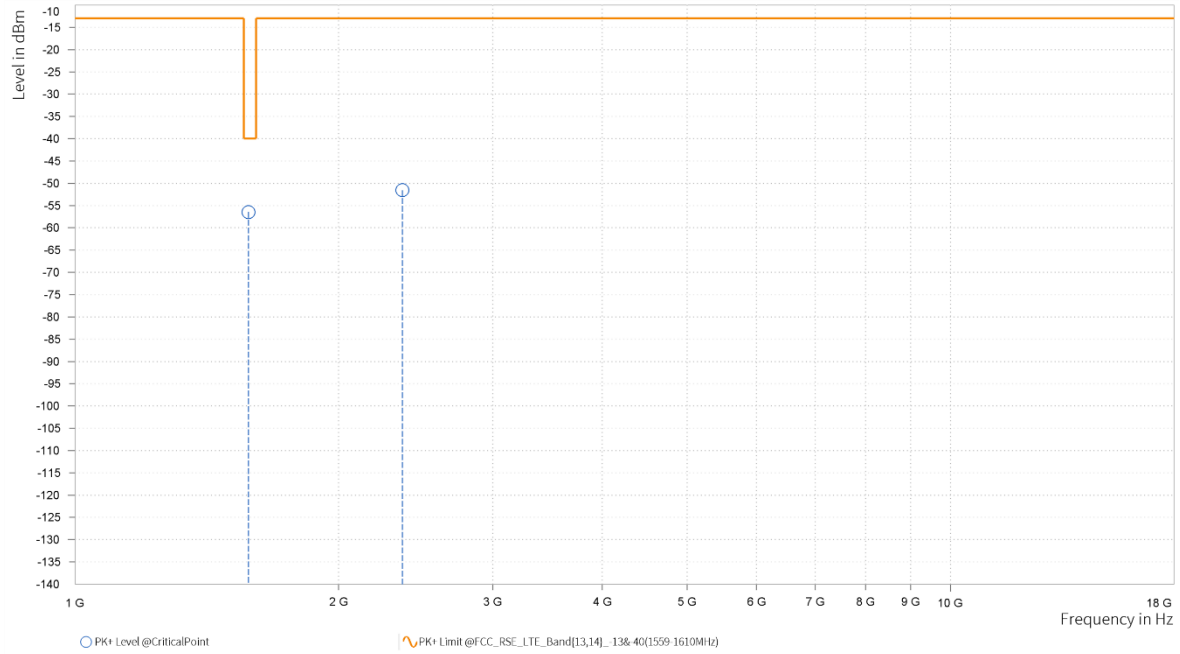
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,577.000	-57.75	-40.00	17.75	12.99	H	249.7	1.00
3	2,365.500	-49.98	-13.00	36.98	20.41	H	359	2.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 158600
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	1,577.000	-56.45	-40.00	16.45	14.18	V	311.8	1.00
3	2,365.500	-51.56	-13.00	38.56	20.04	V	256	1.00

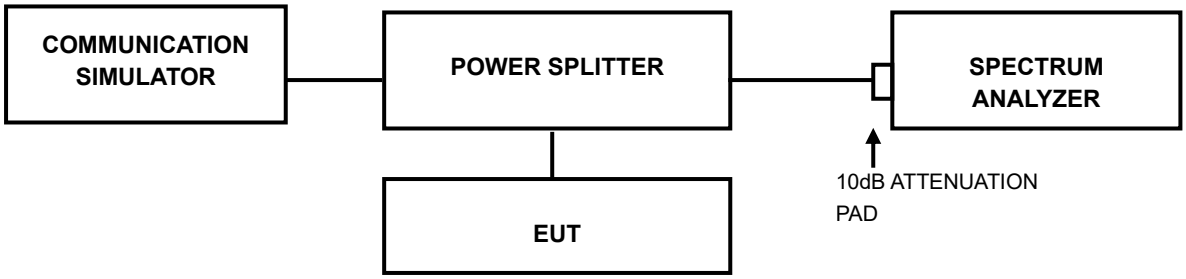


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 TEST RESULTS

Please Refer to Appendix of this test report.

4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

If you have any comments, please feel free to contact us at the following:

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

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

No modifications were made to the EUT by the lab during the test.

6 APPENDIX

LTE BAND14

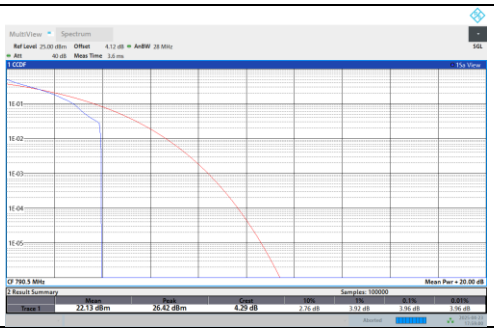
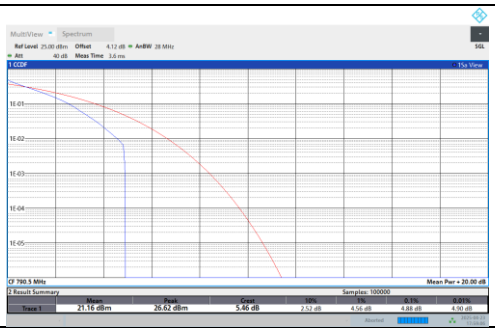
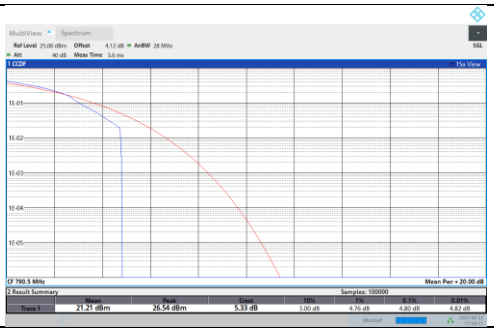
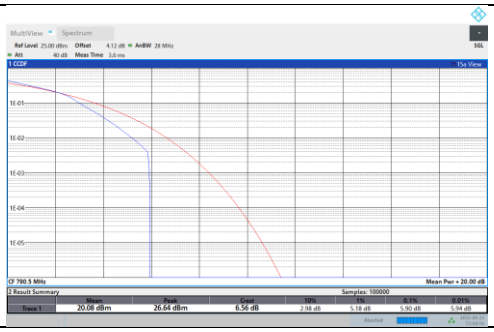
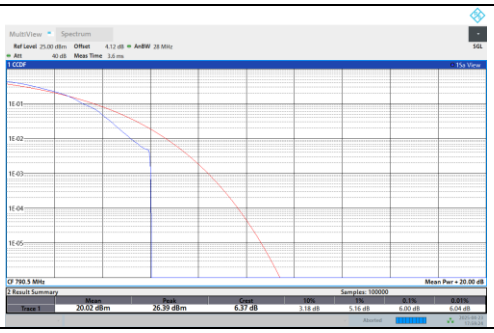
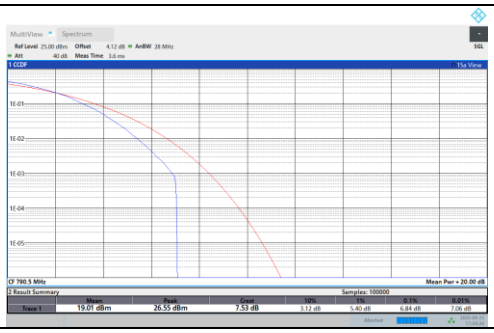
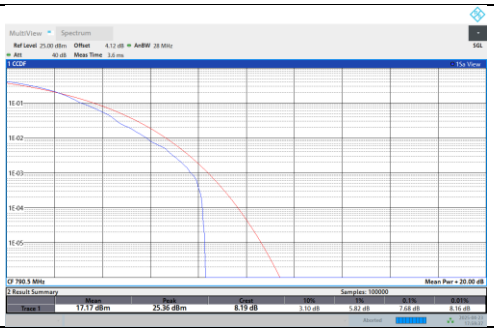
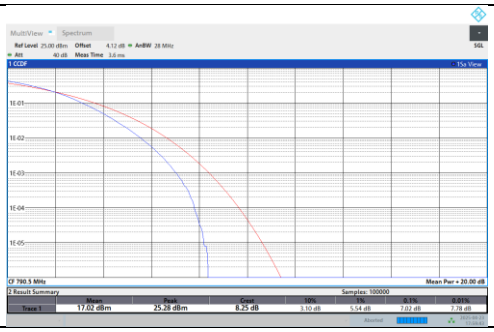
PEAK-TO-AVERAGE RATIO(CCDF)

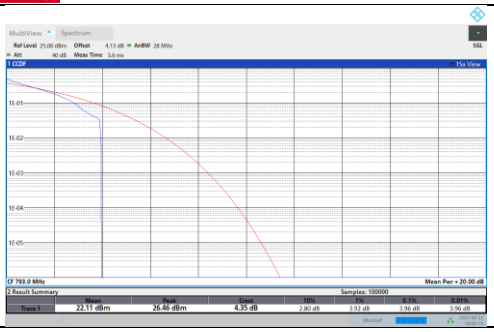
Test Result

Bandwidth	Modulation	Frequency (MHz)	RB Configuration	Result (dB)	Limit (dB)	Verdict
5MHz	QPSK	790.5	1 RB low	3.96	13	PASS
5MHz	QPSK	790.5	100% RB	4.88	13	PASS
5MHz	16QAM	790.5	1 RB low	4.80	13	PASS
5MHz	16QAM	790.5	100% RB	5.90	13	PASS
5MHz	64QAM	790.5	1 RB low	6.00	13	PASS
5MHz	64QAM	790.5	100% RB	6.84	13	PASS
5MHz	256QAM	790.5	1 RB low	7.68	13	PASS
5MHz	256QAM	790.5	100% RB	7.02	13	PASS
5MHz	QPSK	793	1 RB low	3.96	13	PASS
5MHz	QPSK	793	100% RB	4.88	13	PASS
5MHz	16QAM	793	1 RB low	4.90	13	PASS
5MHz	16QAM	793	100% RB	5.82	13	PASS
5MHz	64QAM	793	1 RB low	5.80	13	PASS
5MHz	64QAM	793	100% RB	6.78	13	PASS
5MHz	256QAM	793	1 RB low	7.46	13	PASS
5MHz	256QAM	793	100% RB	6.90	13	PASS
5MHz	QPSK	795.5	1 RB low	4.06	13	PASS
5MHz	QPSK	795.5	100% RB	4.88	13	PASS
5MHz	16QAM	795.5	1 RB low	4.9	13	PASS
5MHz	16QAM	795.5	100% RB	5.8	13	PASS
5MHz	64QAM	795.5	1 RB low	5.54	13	PASS
5MHz	64QAM	795.5	100% RB	6.68	13	PASS
5MHz	256QAM	795.5	1 RB low	6.42	13	PASS
5MHz	256QAM	795.5	100% RB	6.84	13	PASS
10MHz	QPSK	793	1 RB low	4.36	13	PASS
10MHz	QPSK	793	100% RB	5.36	13	PASS
10MHz	16QAM	793	1 RB low	5.00	13	PASS
10MHz	16QAM	793	100% RB	5.72	13	PASS
10MHz	64QAM	793	1 RB low	5.82	13	PASS
10MHz	64QAM	793	100% RB	6.74	13	PASS
10MHz	256QAM	793	1 RB low	7.06	13	PASS
10MHz	256QAM	793	100% RB	6.94	13	PASS
10MHz	QPSK	793	1 RB low	4.32	13	PASS
10MHz	QPSK	793	100% RB	5.34	13	PASS
10MHz	16QAM	793	1 RB low	4.98	13	PASS
10MHz	16QAM	793	100% RB	5.72	13	PASS
10MHz	64QAM	793	1 RB low	5.64	13	PASS
10MHz	64QAM	793	100% RB	6.76	13	PASS
10MHz	256QAM	793	1 RB low	6.96	13	PASS
10MHz	256QAM	793	100% RB	6.92	13	PASS
10MHz	QPSK	793	1 RB low	4.34	13	PASS
10MHz	QPSK	793	100% RB	5.36	13	PASS

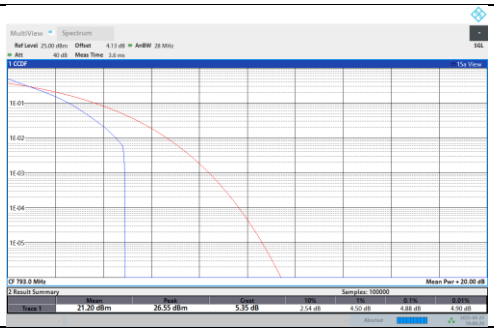
10MHz	16QAM	793	1 RB low	4.70	13	PASS
10MHz	16QAM	793	100% RB	5.82	13	PASS
10MHz	64QAM	793	1 RB low	5.72	13	PASS
10MHz	64QAM	793	100% RB	6.62	13	PASS
10MHz	256QAM	793	1 RB low	6.72	13	PASS
10MHz	256QAM	793	100% RB	6.96	13	PASS

Test Graphs

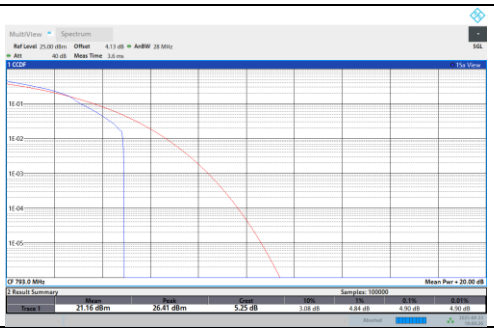
Band 14-5M-LOW-1 RB low	Band 14-5M-LOW-100% RB
	
Band 14-5M-LOW-1 RB low	Band 14-5M-LOW-100% RB
	
Band 14-5M-LOW-1 RB low	Band 14-5M-LOW-100% RB
	
Band 14-5M-LOW-1 RB low	Band 14-5M-LOW-100% RB
	
Band 14-5M-MID-1 RB low	Band 14-5M-MID-100% RB



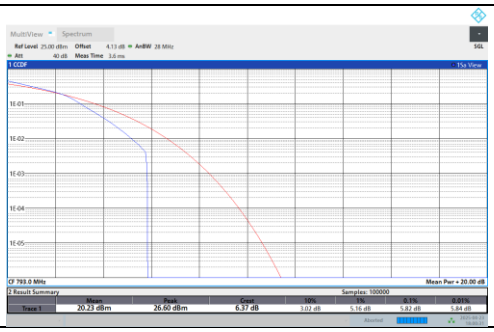
Band 14-5M-MID-1 RB low



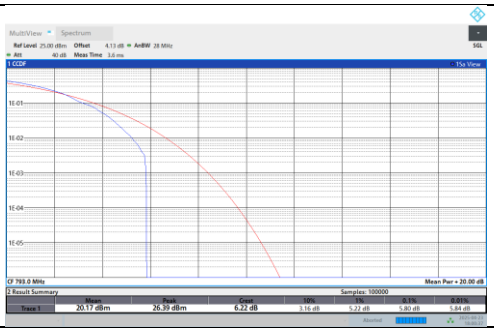
Band 14-5M-MID-100% RB



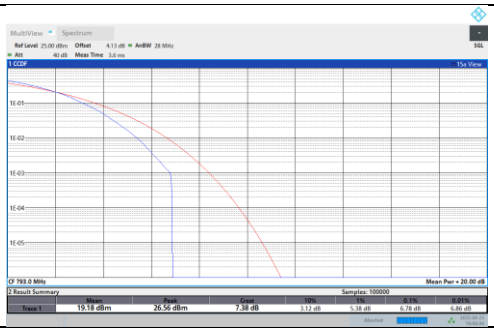
Band 14-5M-MID-1 RB low



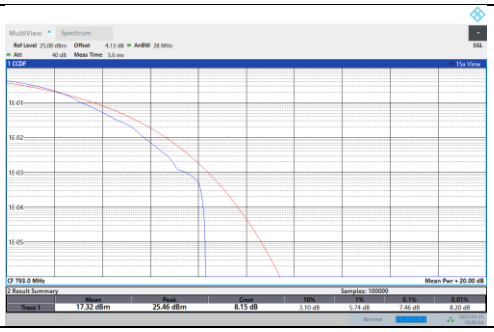
Band 14-5M-MID-100% RB



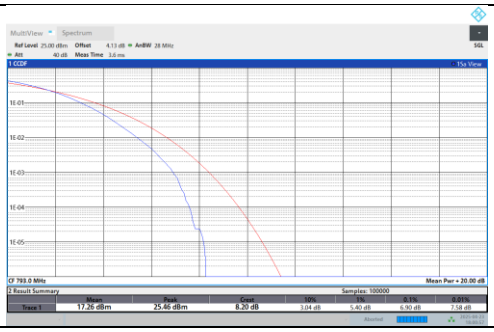
Band 14-5M-MID-1 RB low



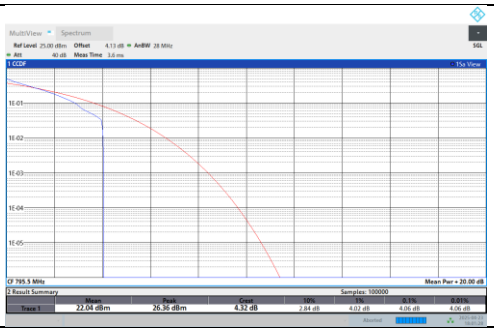
Band 14-5M-MID-100% RB



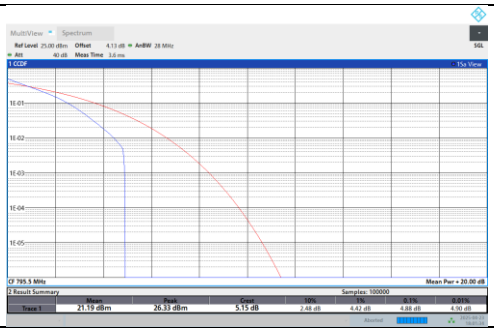
Band 14-5M-HIGH-1 RB low



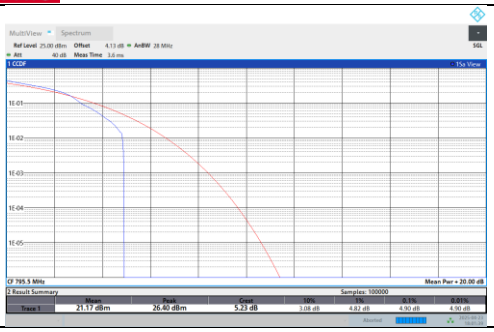
Band 14-5M-HIGH-100% RB



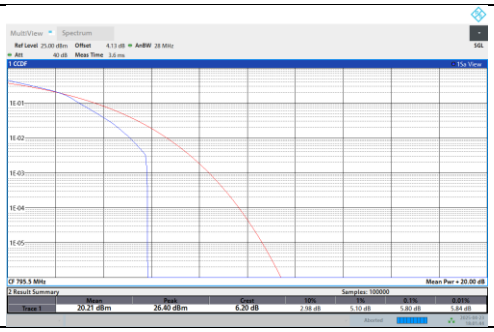
Band 14-5M-HIGH-1 RB low



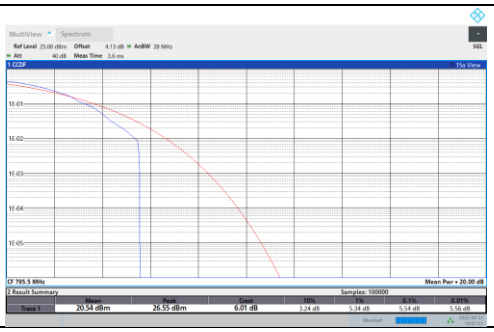
Band 14-5M-HIGH-100% RB



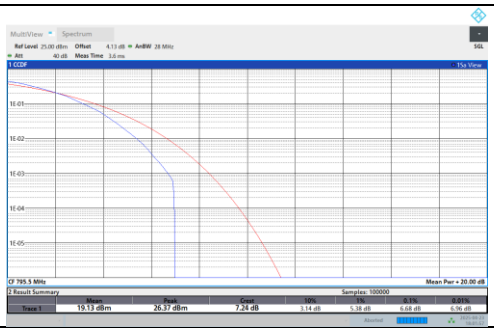
Band 14-5M-HIGH-1 RB low



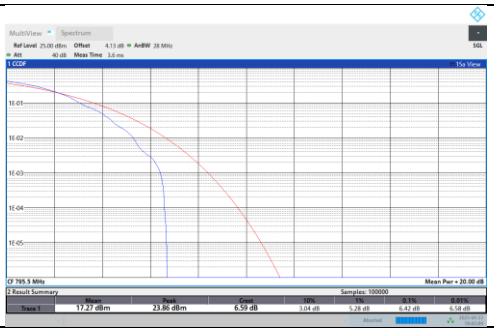
Band 14-5M-HIGH-100% RB



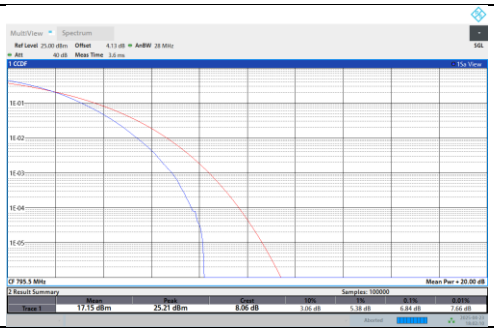
Band 14-5M-HIGH-1 RB low



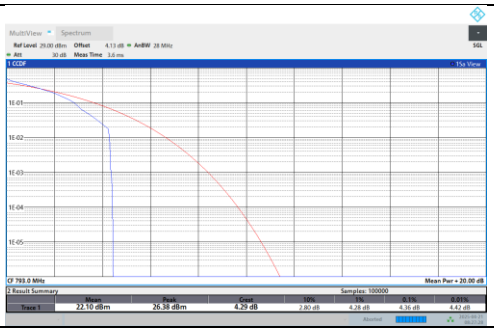
Band 14-5M-HIGH-100% RB



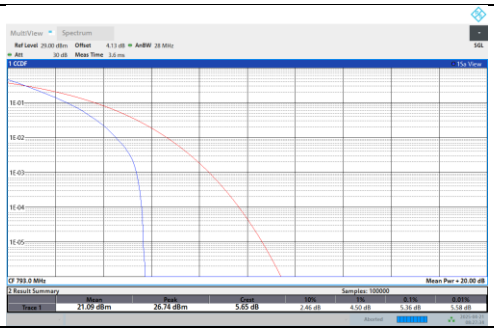
Band 14-10M-LOW-1 RB low



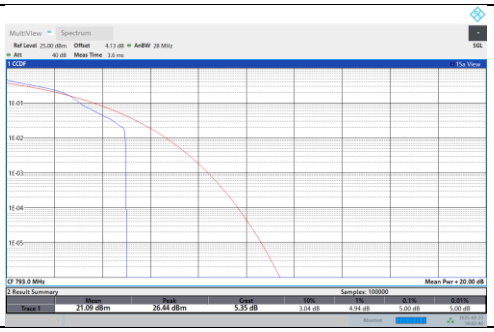
Band 14-10M-LOW-100% RB



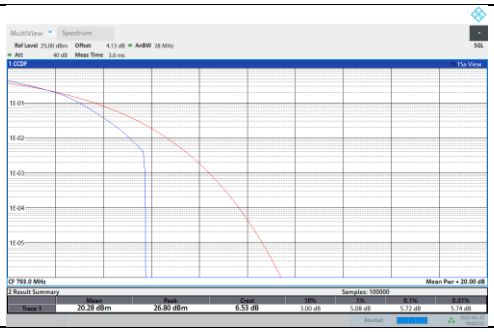
Band 14-10M-LOW-1 RB low



Band 14-10M-LOW-100% RB



Band 14-10M-LOW-1 RB low



Band 14-10M-LOW-100% RB