



# FCC TEST REPORT (PART 90)

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

Manufacturer or Supplier	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Product	Mobile Phone
Brand Name	REDMI
Model Name	2510DRA23L
FCC ID	2AFZZRA23L
Date of tests	Aug. 11, 2025 ~ Aug. 30, 2025

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

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> FCC Part 90, Subpart R, S | <input checked="" type="checkbox"/> ANSI/TIA/EIA-603-E |
| <input checked="" type="checkbox"/> ANSI/TIA/EIA-603- D       | <input checked="" type="checkbox"/> ANSI C63.26-2015   |
| <input checked="" type="checkbox"/> 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: Aug. 30, 2025	Date: Aug. 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-QBJ2508070215RF05	Original release	Aug. 30, 2025



# 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Ref Std.Clause	Test Items	Result (Pass/Fail)	Remark
§2.1046	Conducted Output Power	Reporting only	-
-	Peak-to-Average Ratio	Reporting only	-
§2.1049	Occupied Bandwidth	Reporting only	-
§2.1053 §90.543(e)(2)	Conducted Band Edge Measurement	PASS	-
§2.1051 §90.210(n)	Emission Masks	PASS	-
§2.1053 §90.543(e)(3)	Conducted Spurious Emissions	PASS	-
§2.1055 §90.539(e)	Frequency Stability Temperature & Voltage	PASS	-
§2.1053 §90.543(e)(3) §90.543(f)	Radiated Spurious Emissions	PASS	Under limit 21.29dB at 1584.000MHz

### \*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.**

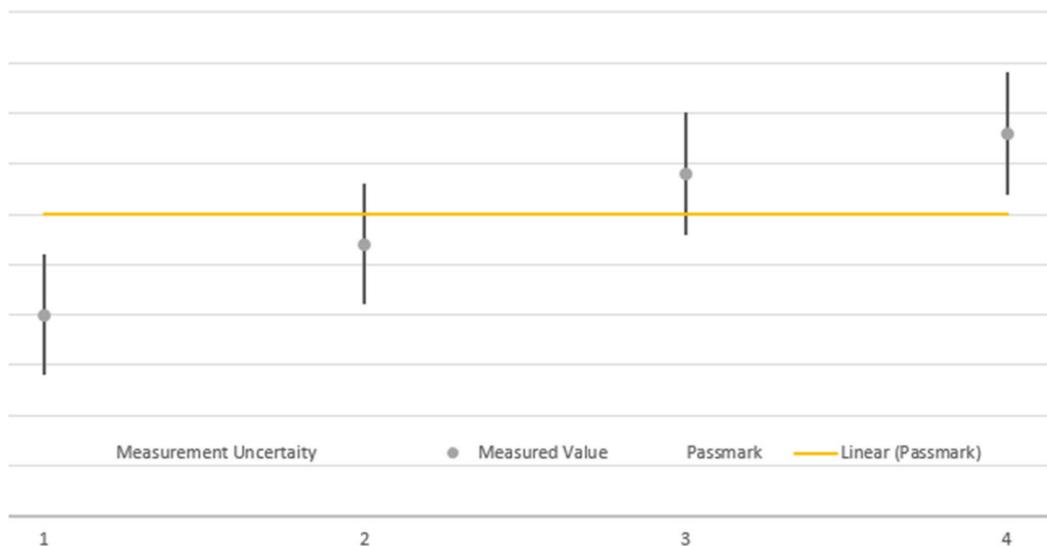


### 1.1 MEASUREMENT UNCERTAINTY

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	SCU18F1	100815	Aug.29,25	Aug.28,27
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	Aug.20,25	Aug.19,28
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	Jul.04,25	Jul.03,27
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.20,25	Aug.19,27
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	Mar.22,25	Mar.21,27
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	Mar.18,25	Mar.17,27
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.26,25	Apr.25,26
CABLE	R&S	W12.14	N/A	Apr.26,25	Apr.25,26
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.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

<b>PRODUCT</b>	Mobile Phone	
<b>BRAND NAME</b>	REDMI	
<b>MODEL NAME</b>	2510DRA23L	
<b>NOMINAL VOLTAGE</b>	5/3.6-11V dc (adapter or host equipment) 3.92Vdc (Li-ion, battery)	
<b>MODULATION TECHNOLOGY</b>	<b>LTE</b>	QPSK, 16QAM, 64QAM
<b>FREQUENCY RANGE</b>	<b>LTE Band 26 (Channel Bandwidth: 1.4MHz)</b>	814.7MHz ~ 823.3MHz
	<b>LTE Band 26 (Channel Bandwidth: 3MHz)</b>	815.5MHz ~ 822.5MHz
	<b>LTE Band 26 (Channel Bandwidth: 5MHz)</b>	816.5MHz ~ 821.5MHz
	<b>LTE Band 26 (Channel Bandwidth: 10MHz)</b>	819MHz
<b>EMISSION DESIGNATOR</b>	<b>LTE Band 26 (Channel Bandwidth: 1.4MHz)</b>	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
	<b>LTE Band 26 (Channel Bandwidth: 3MHz)</b>	QPSK: 2M69G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	<b>LTE Band 26 (Channel Bandwidth: 5MHz)</b>	QPSK: 4M51G7D
		16QAM: 4M52W7D
		64QAM: 4M51W7D
	<b>LTE Band 26 (Channel Bandwidth: 10MHz)</b>	QPSK: 8M98G7D
		16QAM: 8M95W7D
		64QAM: 8M98W7D
<b>MAX. EIRP POWER</b>	<b>LTE Band 26 (Channel Bandwidth: 1.4MHz)</b>	ANT0: 52.48mW
		ANT1: 36.31mW
	<b>LTE Band 26 (Channel Bandwidth: 3MHz)</b>	ANT0: 52.48mW
		ANT1: 36.73mW
	<b>LTE Band 26 (Channel Bandwidth: 5MHz)</b>	ANT0: 53.09mW
		ANT1: 36.39mW
	<b>LTE Band 26 (Channel Bandwidth: 10MHz)</b>	ANT0: 53.33mW
		ANT1: 36.90mW
<b>ANTENNA GAIN</b>	ANT0:-5.5dBi	
	ANT1: -6.9dBi	
<b>ANTENNA TYPE</b>	PIFA Antenna	
<b>HW VERSION</b>	99007_1_12	
<b>SW VERSION</b>	Xiaomi HyperOS 2.2	
<b>I/O PORTS</b>	Refer to user's manual	



<b>DATA CABLE</b>	USB cable1: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable2: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable3: non-shielded cable, with w/o ferrite core, 1.0 meter USB cable4: non-shielded cable, with w/o ferrite core, 1.0 meter
<b>EXTREME TEMPERATURE</b>	0~40°C
<b>EXTREME VOLTAGE</b>	3.6~4.5V

**NOTE:**

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

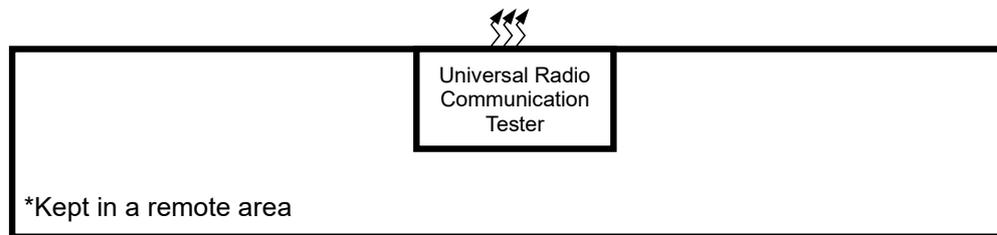
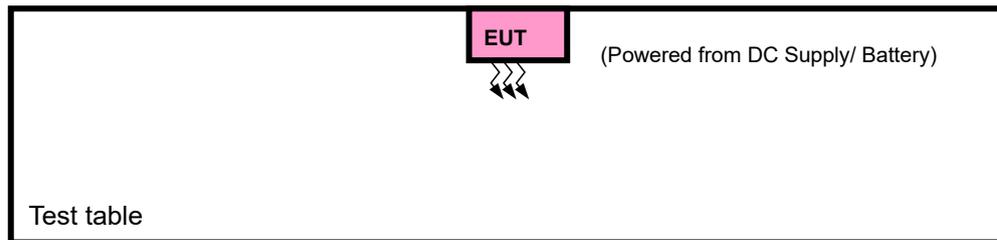
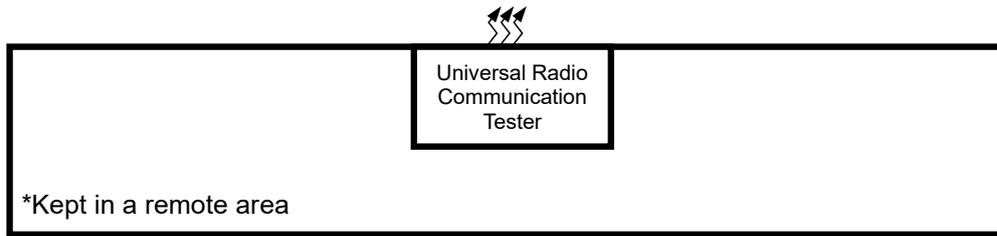
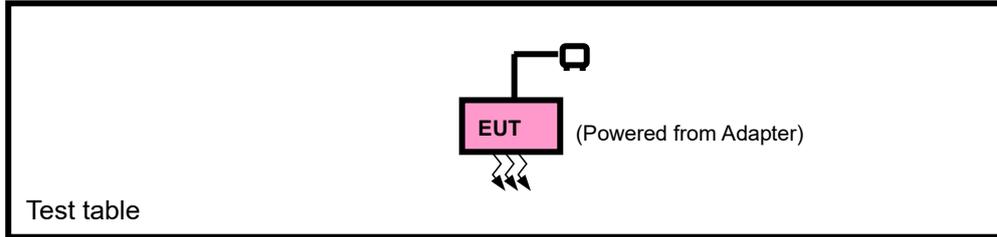
<b>MODULATION MODE</b>	<b>TX FUNCTION</b>
<b>LTE</b>	<b>2TX/2RX</b>

3. 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	DC source	LONG WEI	PS-6403D	010934269	N/A
2	Adapter	N/A	N/A	N/A	N/A
3	USB Cable	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.8m
2	USB Cable: Unshielded, Detachable 1m



## 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 + Adapter + USB Cable with LTE link
B	EUT + DC Supply with LTE link

### 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	1 RB / 0 RB Offset		
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset		
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset		
		26740	26740	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset		
B	FREQUENCY STABILITY	26715 to 26765	26715, 26765	5MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset		
A	OCCUPIED BANDWIDTH	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM, 64QAM	6 RB / 0 RB Offset		
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM, 64QAM	15 RB / 0 RB Offset		
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM, 64QAM	25 RB / 0 RB Offset		
		26740	26740	10MHz	QPSK, 16QAM, 64QAM	50 RB / 0 RB Offset		
A	PEAK TO AVERAGE RATIO	26740	26740	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset		
A	BAND EDGE	26697 to 26783	26697	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 6 RB / 0 RB Offset		
			26783	1.4MHz	QPSK, 16QAM, 64QAM	1 RB / 5 RB Offset 6 RB / 0 RB Offset		
		26705 to 26775	26705	3MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 15 RB / 0 RB Offset		
			26775	3MHz	QPSK, 16QAM, 64QAM	1 RB / 14 RB Offset 15 RB / 0 RB Offset		
		26715 to 26765	26715	5MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 25 RB / 0 RB Offset		
			26765	5MHz	QPSK, 16QAM, 64QAM	1 RB / 24 RB Offset 25 RB / 0 RB Offset		
		26740	26740	10MHz	QPSK, 16QAM, 64QAM	1 RB / 0 RB Offset 50 RB / 0 RB Offset		
			26740	10MHz	QPSK, 16QAM, 64QAM	1 RB / 49 RB Offset 50 RB / 0 RB Offset		
		A	CONDUCTED	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK	1 RB / 0 RB Offset



	EMISSION	26705 to 26775	26705, 26740, 26775	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
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.

<b>TEST CONDITION</b>			
<b>TEST ITEM</b>	<b>ENVIRONMENTAL CONDITIONS</b>	<b>INPUT POWER</b>	<b>TESTED BY</b>
EIRP(ERP)	24deg. C, 60%RH	DC 3.92Vdc By Battery	Hanwen Xu
FREQUENCY STABILITY	24deg. C, 61%RH	DC 3.92Vdc By DC Source	Hanwen Xu
OCCUPIED BANDWIDTH	24deg. C, 61%RH	DC 3.92Vdc By Battery	Hanwen Xu
BAND EDGE	24deg. C, 61%RH	DC 3.92Vdc By Battery	Hanwen Xu
CONDUCTED EMISSION	24deg. C, 61%RH	DC3.92Vdc By Battery	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60Hz	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

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 determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

Where:

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

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

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

$G_{\text{T}}$  = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

$L_{\text{C}}$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB

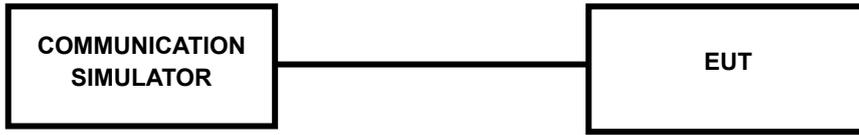
###### **CONDUCTED POWER MEASUREMENT:**

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



### 3.1.3 TEST SETUP

#### CONDUCTED POWER MEASUREMENT:



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



**3.1.4 TEST RESULTS**

**AVERAGE CONDUCTED OUTPUT POWER (dBm)**

LTE Band 26 ANTO						
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	24.79	24.75	24.66
		1	2	24.79	24.85	24.79
		1	5	24.64	24.64	24.60
		3	0	24.61	24.66	24.58
		3	1	24.73	24.68	24.66
		3	3	24.57	24.62	24.57
	16QAM	1	0	23.78	23.79	23.75
		1	2	23.90	23.81	23.72
		1	5	23.78	23.75	23.71
		3	0	23.72	23.60	23.50
		3	1	23.76	23.57	23.57
		3	3	23.58	23.57	23.55
	64QAM	6	0	22.73	22.72	22.76
		1	0	22.74	22.87	22.80
		1	2	22.85	22.80	22.79
		1	5	22.76	22.74	22.76
		3	0	22.70	22.68	22.54
		3	1	22.70	22.64	22.65
26/ 3	QPSK	3	3	22.71	22.63	22.54
		6	0	21.85	21.82	21.74
		1	0	24.85	24.80	24.69
		1	12	24.83	24.81	24.76
		1	24	24.62	24.77	24.73
		12	0	23.77	23.85	23.72
	16QAM	12	6	23.82	23.94	23.84
		12	13	23.80	23.89	23.79
		25	0	23.77	23.85	23.81
		1	0	23.91	23.74	23.78
		1	12	23.86	23.78	23.80
		1	24	23.84	23.70	23.82
	64QAM	12	0	22.81	22.76	22.77
		12	6	22.84	22.82	22.70
		12	13	22.77	22.73	22.67
		25	0	22.86	22.74	22.76
		1	0	22.81	22.79	22.75
		1	12	22.92	22.74	22.81
64QAM	1	24	22.81	22.80	22.73	
	12	0	21.81	21.86	21.77	
	12	6	21.91	21.82	21.76	
	12	13	21.83	21.76	21.77	
	25	0	21.85	21.84	21.73	



LTE Band 26 ANTO						
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	24.88	24.86	24.81
		1	12	24.80	24.90	24.86
		1	24	24.67	24.78	24.75
		12	0	23.83	23.92	23.86
		12	6	23.91	23.96	23.91
		12	13	23.72	23.90	23.85
		25	0	23.75	23.93	23.88
	16QAM	1	0	23.90	23.87	23.86
		1	12	23.85	23.90	23.83
		1	24	23.87	23.81	23.84
		12	0	22.89	22.80	22.83
		12	6	22.92	22.88	22.79
		12	13	22.78	22.82	22.78
		25	0	22.76	22.83	22.82
	64QAM	1	0	22.80	22.89	22.85
		1	12	22.96	22.87	22.90
		1	24	22.84	22.81	22.83
		12	0	21.90	21.90	21.85
		12	6	21.84	21.94	21.88
		12	13	21.84	21.89	21.83
		25	0	21.75	21.86	21.84
Band/BW	Modulation	RB Size	RB offset	/	Mid CH 23330	/
				/	Frequency 819 MHz	/
26/ 10	QPSK	1	0	/	24.82	/
		1	24	/	23.86	/
		1	49	/	23.98	/
		25	0	/	23.95	/
		25	12	/	23.93	/
		25	25	/	23.90	/
		50	0	/	23.91	/
	16QAM	1	0	/	23.85	/
		1	24	/	22.83	/
		1	49	/	22.94	/
		25	0	/	22.86	/
		25	12	/	22.85	/
		25	25	/	22.93	/
		50	0	/	22.94	/
	64QAM	1	0	/	22.89	/
		1	24	/	21.82	/
		1	49	/	21.95	/
		25	0	/	21.85	/
		25	12	/	21.81	/
		25	25	/	24.82	/
		50	0	/	23.86	/



LTE Band 26 ANT1						
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	24.65	24.43	24.41
		1	2	24.62	24.47	24.51
		1	5	24.47	24.48	24.42
		3	0	24.47	24.34	24.28
		3	1	24.46	24.32	24.36
		3	3	24.42	24.24	24.28
		6	0	23.54	23.37	23.49
	16QAM	1	0	23.83	23.62	23.66
		1	2	23.86	23.81	23.71
		1	5	23.68	23.50	23.68
		3	0	23.46	23.31	23.35
		3	1	23.56	23.38	23.36
		3	3	23.51	23.22	23.29
		6	0	22.65	22.46	22.51
	64QAM	1	0	22.85	22.53	22.69
		1	2	22.82	22.49	22.65
		1	5	22.74	22.57	22.61
		3	0	22.46	22.42	22.34
		3	1	22.51	22.29	22.39
		3	3	22.45	22.33	22.33
		6	0	21.68	21.54	21.60
Band/BW	Modulation	RB Size	RB offset	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	24.70	24.43	24.38
		1	12	24.58	24.49	24.44
		1	24	24.46	24.43	24.36
		12	0	23.66	23.44	23.49
		12	6	23.61	23.60	23.47
		12	13	23.65	23.48	23.49
		25	0	23.52	23.40	23.51
	16QAM	1	0	23.81	23.67	23.66
		1	12	23.86	23.79	23.78
		1	24	23.69	23.61	23.66
		12	0	22.66	22.38	22.46
		12	6	22.65	22.49	22.54
		12	13	22.59	22.40	22.42
		25	0	22.53	22.46	22.42
	64QAM	1	0	22.83	22.46	22.68
		1	12	22.72	22.45	22.62
		1	24	22.62	22.45	22.51
		12	0	21.66	21.58	21.53
		12	6	21.77	21.57	21.55
		12	13	21.71	21.52	21.41
		25	0	21.58	21.49	21.51
LTE Band 26 ANT1						



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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	24.60	24.52	24.50
		1	12	24.66	24.55	24.57
		1	24	24.57	24.49	24.46
		12	0	23.66	23.53	23.58
		12	6	23.59	23.61	23.62
		12	13	23.64	23.54	23.55
		25	0	23.62	23.52	23.56
	16QAM	1	0	23.93	23.75	23.74
		1	12	23.88	23.82	23.86
		1	24	23.64	23.63	23.71
		12	0	22.67	22.50	22.60
		12	6	22.63	22.58	22.57
		12	13	22.67	22.51	22.55
		25	0	22.61	22.52	22.54
	64QAM	1	0	22.91	22.61	22.71
		1	12	22.82	22.60	22.73
		1	24	22.63	22.58	22.63
		12	0	21.59	21.62	21.57
		12	6	21.77	21.59	21.63
		12	13	21.61	21.58	21.54
		25	0	21.61	21.60	21.61
Band/BW	Modulation	RB Size	RB offset	/	Mid CH 23330	/
				/	Frequency 819 MHz	/
26/ 10	QPSK			/	24.70	/
				/	<b>24.72</b>	/
				/	24.62	/
				/	23.62	/
				/	23.75	/
				/	23.67	/
				/	23.66	/
	16QAM			/	23.82	/
				/	23.98	/
				/	23.80	/
				/	22.67	/
				/	22.77	/
				/	22.68	/
				/	22.66	/
	64QAM			/	22.84	/
				/	22.87	/
				/	22.74	/
				/	21.67	/
				/	21.77	/
				/	21.68	/
				/	21.67	/



**ERP**

**LTE BAND 26 ANT0**

<b>1.4MHz QPSK</b>						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	24.79	-5.5	17.14	51.76	100
23330	819	24.85	-5.5	17.20	52.48	100
26783	823.3	24.79	-5.5	17.14	51.76	100

**1.4MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	23.90	-5.5	16.25	42.17	100
23330	819	23.81	-5.5	16.16	41.30	100
26783	823.3	23.75	-5.5	16.10	40.74	100

**1.4MHz 64QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	22.85	-5.5	15.20	33.11	100
23330	819	22.87	-5.5	15.22	33.27	100
26783	823.3	22.80	-5.5	15.15	32.73	100

**3MHz QPSK**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	24.85	-5.5	17.20	52.48	100
23330	819	24.81	-5.5	17.16	52.00	100
26775	822.5	24.76	-5.5	17.11	51.40	100

**3MHz 16QAM**

Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	23.91	-5.5	16.26	42.27	100
23330	819	23.78	-5.5	16.13	41.02	100
26775	822.5	23.82	-5.5	16.17	41.40	100



3MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	22.92	-5.5	15.27	33.65	100
23330	819	22.80	-5.5	15.15	32.73	100
26775	822.5	22.81	-5.5	15.16	32.81	100

5MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	24.88	-5.5	17.23	52.84	100
23330	819	24.90	-5.5	17.25	53.09	100
26765	821.5	24.86	-5.5	17.21	52.60	100

5MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	23.90	-5.5	16.25	42.17	100
23330	819	23.90	-5.5	16.25	42.17	100
26765	821.5	23.86	-5.5	16.21	41.78	100

5MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	22.96	-5.5	15.31	33.96	100
23330	819	22.89	-5.5	15.24	33.42	100
26765	821.5	22.90	-5.5	15.25	33.50	100

10MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	24.92	-5.5	17.27	53.33	100

10MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	23.91	-5.5	16.26	42.27	100



10MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	22.94	-5.5	15.29	33.81	100

LTE BAND 26 ANT1						
1.4MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	24.65	-6.9	15.60	36.31	100
23330	819	24.48	-6.9	15.43	34.91	100
26783	823.3	24.51	-6.9	15.46	35.16	100

1.4MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	23.86	-6.9	14.81	30.27	100
23330	819	23.81	-6.9	14.76	29.92	100
26783	823.3	23.71	-6.9	14.66	29.24	100

1.4MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	22.85	-6.9	13.80	23.99	100
23330	819	22.57	-6.9	13.52	22.49	100
26783	823.3	22.69	-6.9	13.64	23.12	100

3MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	24.70	-6.9	15.65	36.73	100
23330	819	24.49	-6.9	15.44	34.99	100
26775	822.5	24.44	-6.9	15.39	34.59	100



3MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	23.86	-6.9	14.81	30.27	100
23330	819	23.79	-6.9	14.74	29.79	100
26775	822.5	23.78	-6.9	14.73	29.72	100

3MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	22.83	-6.9	13.78	23.88	100
23330	819	22.46	-6.9	13.41	21.93	100
26775	822.5	22.68	-6.9	13.63	23.07	100

5MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	24.66	-6.9	15.61	36.39	100
23330	819	24.55	-6.9	15.50	35.48	100
26765	821.5	24.57	-6.9	15.52	35.65	100

5MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	23.93	-6.9	14.88	30.76	100
23330	819	23.82	-6.9	14.77	29.99	100
26765	821.5	23.86	-6.9	14.81	30.27	100

5MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	22.91	-6.9	13.86	24.32	100
23330	819	22.61	-6.9	13.56	22.70	100
26765	821.5	22.73	-6.9	13.68	23.33	100



10MHz QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	24.72	-6.9	15.67	36.90	100

10MHz 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	23.98	-6.9	14.93	31.12	100

10MHz 64QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	G <sub>T</sub> -L <sub>C</sub> (dB)	ERP (dBm)	ERP (mW)	Limit (W)
23330	819	22.87	-6.9	13.82	24.10	100

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



### 3.2 FREQUENCY STABILITY MEASUREMENT

#### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

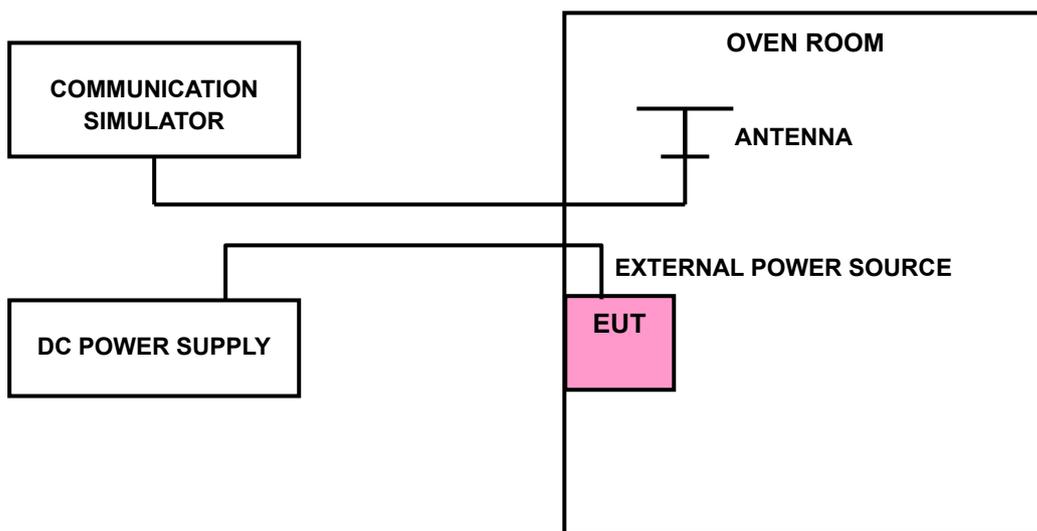
The frequency stability of mobile, portable and control transmitters operating in the wideband segment must be 1.25 parts per million or better when AFC is locked to a base station, and 5 parts per million or better when AFC is not locked

#### 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  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

#### 3.2.3 TEST SETUP





### 3.2.4 TEST RESULTS

Please Refer to Appendix of this test report.

Note: VL = Low voltage(3.6V); VN/NV = Normal voltage(3.92V); VH = High voltage(4.5V);  
NT = Normal temperature (25°C)

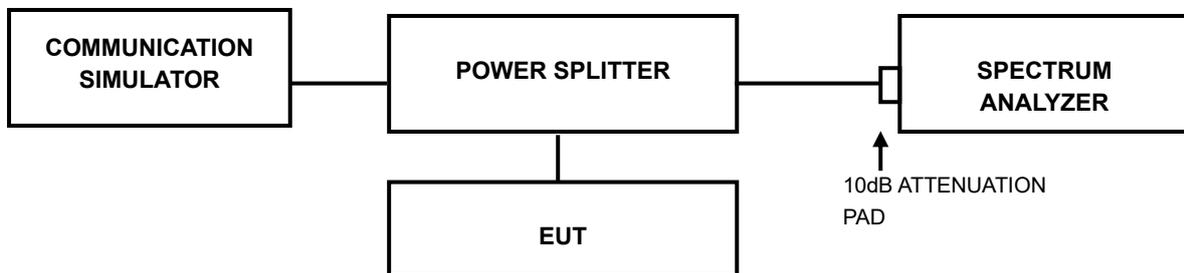


### 3.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 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.



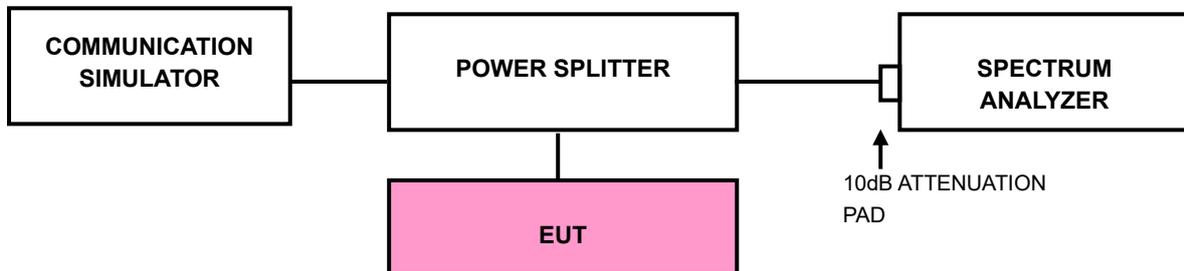
### 3.4 EMISSION MASK MEASUREMENT

#### 3.4.1 LIMITS OF EMISSION MASK MEASUREMENT

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  $116 \text{ Log}_{10}(f/6.1)$  decibels or  $50 + 10 \text{ Log}_{10}(P)$  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  $43 + 10 \text{ Log}_{10}(P)$  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)  $\geq 1\%$  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  $\geq 3 \times$  RBW.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to  $\geq 1001$ .
- 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

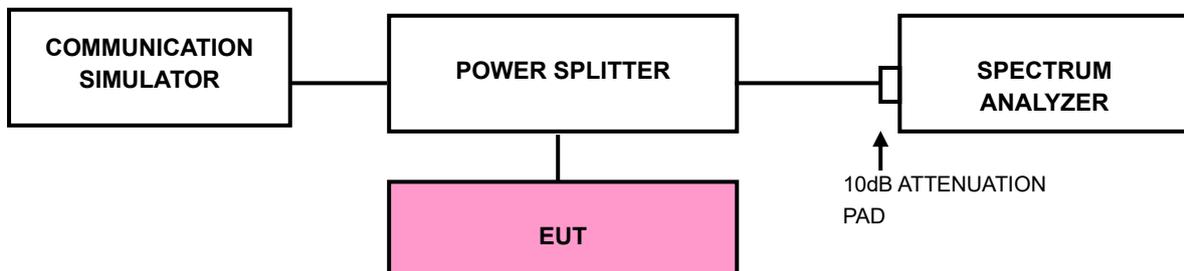
#### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

#### 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 10<sup>th</sup> 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  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13$  dBm

(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.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ .
- 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.

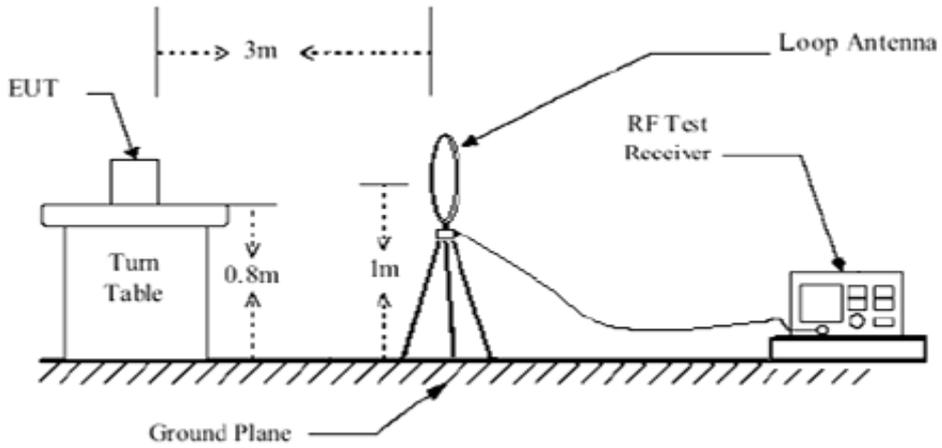
#### 3.6.3 DEVIATION FROM TEST STANDARD

No deviation

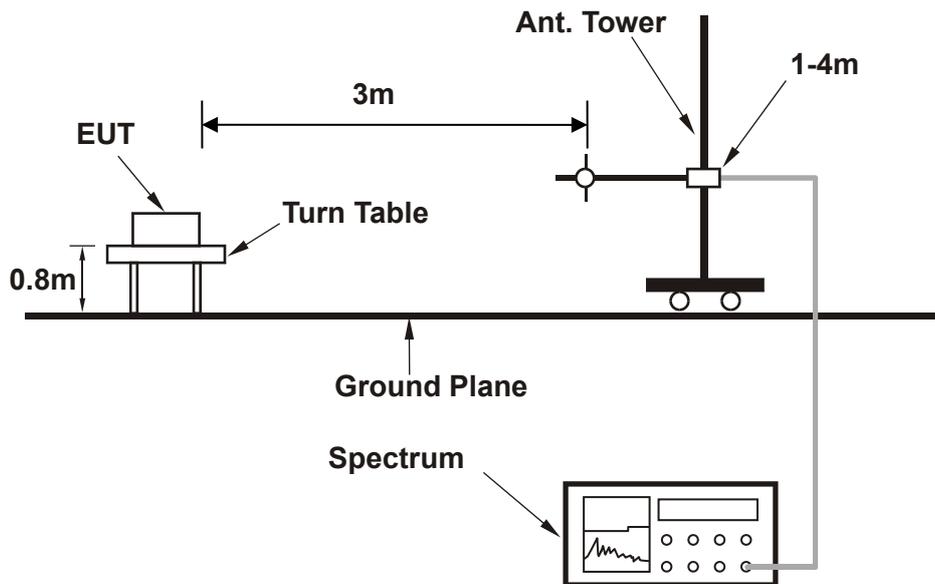


### 3.6.4 TEST SETUP

<Below 30MHz>

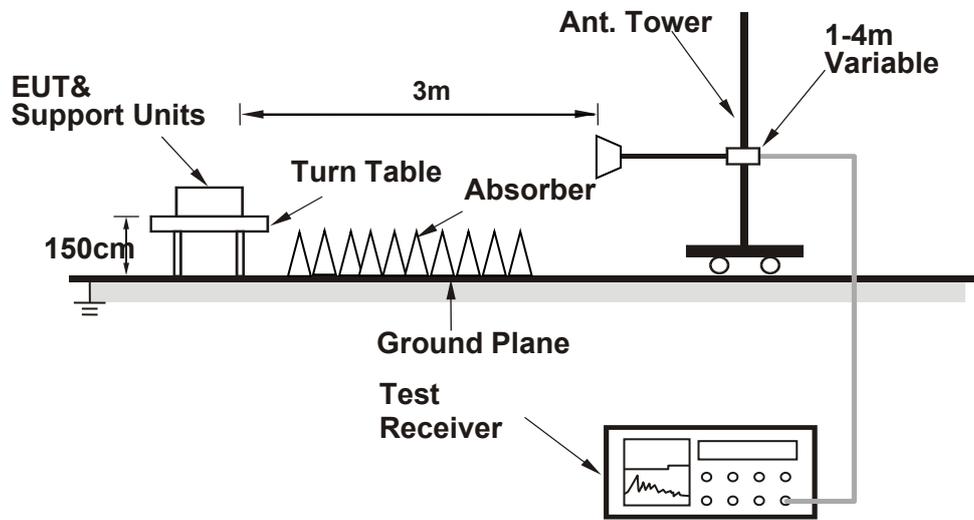


< Frequency Range 30MHz~1GHz >





< Frequency Range above 1GHz >



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



### 3.6.5 TEST RESULTS

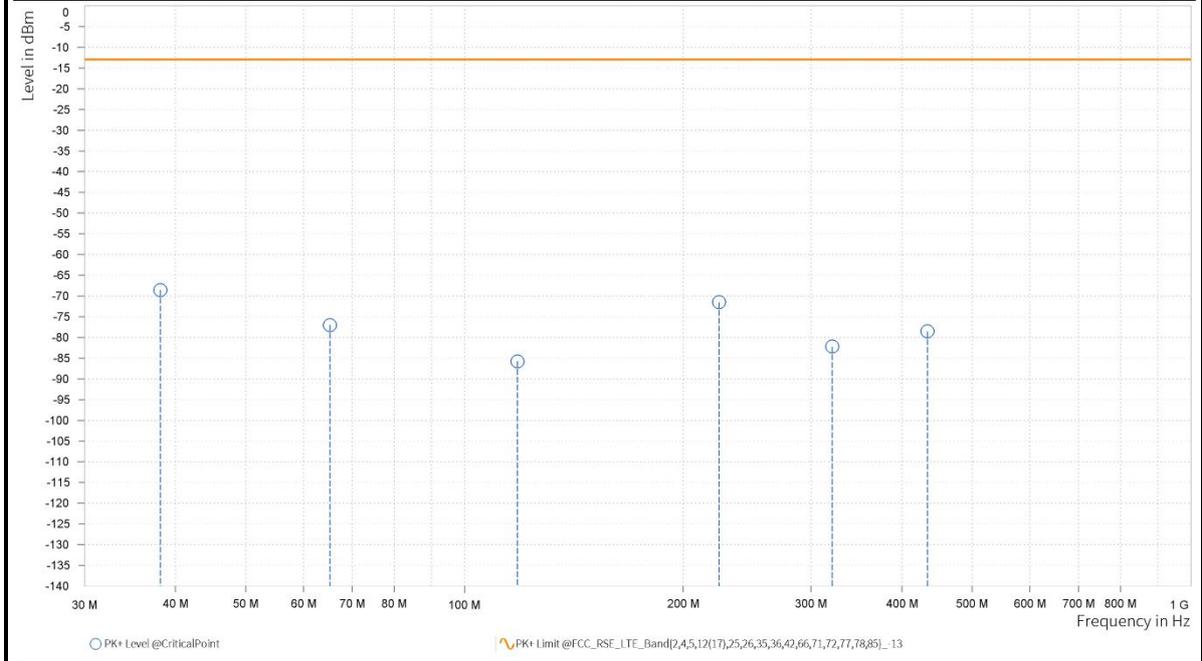
**BELOW 1GHz WORST-CASE DATA**

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 26 CHANNEL BANDWIDTH: 5MHz / QPSK			
MODE	TX channel 26775	FREQUENCY RANGE	30 MHz ~ 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V 60HZ
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	38.150	-68.58	-13.00	55.58	0.12	H	88.2	2.00
1	65.300	-77.01	-13.00	64.01	-6.15	H	2	2.00
1	118.300	-85.76	-13.00	72.76	-11.42	H	355.1	2.00
1	224.000	-71.50	-13.00	58.50	-1.31	H	270.6	1.00
1	320.600	-82.20	-13.00	69.20	-3.94	H	358.1	1.00
1	433.950	-78.54	-13.00	65.54	2.19	H	355.1	2.00

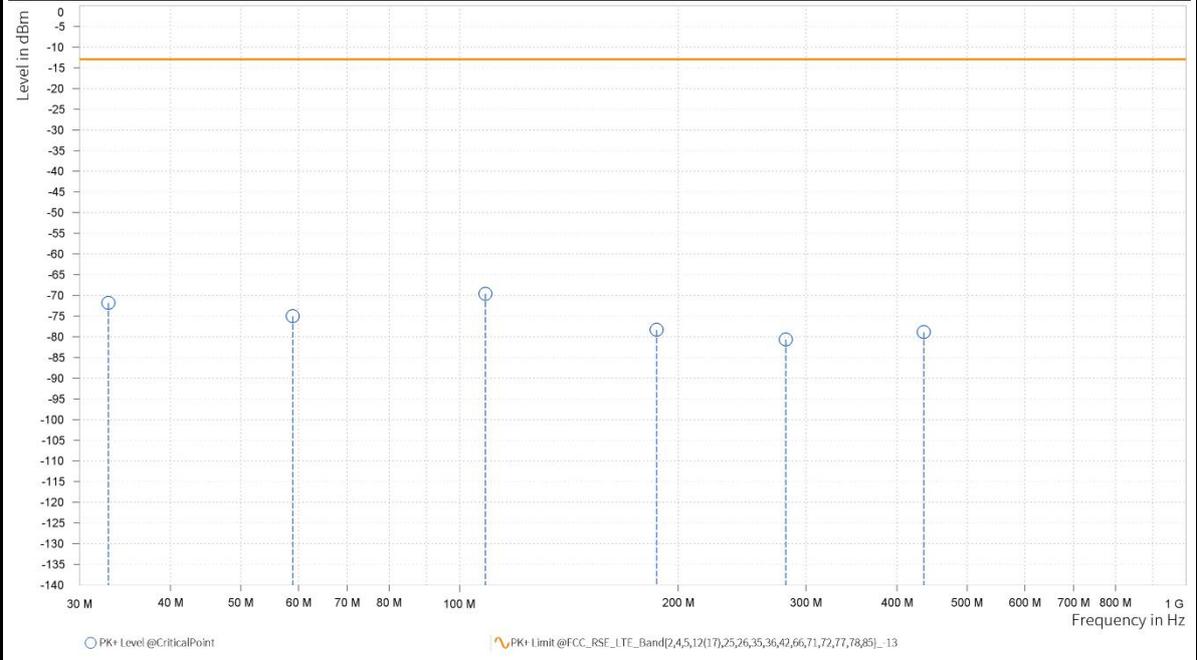




<b>MODE</b>	TX channel 26775	<b>FREQUENCY RANGE</b>	30 MHz ~ 1GHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V 60HZ
<b>TESTED BY</b>	Hanwen Xu		

**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	32.850	-71.83	-13.00	58.83	-6.55	V	149.8	1.00
1	58.950	-75.01	-13.00	62.01	-3.86	V	355.2	2.00
1	108.600	-69.59	-13.00	56.59	1.58	V	1.8	2.00
1	186.850	-78.29	-13.00	65.29	-8.73	V	0.9	2.00
1	281.300	-80.64	-13.00	67.64	-1.30	V	89.4	2.00
1	435.750	-78.87	-13.00	65.87	1.31	V	1	1.00





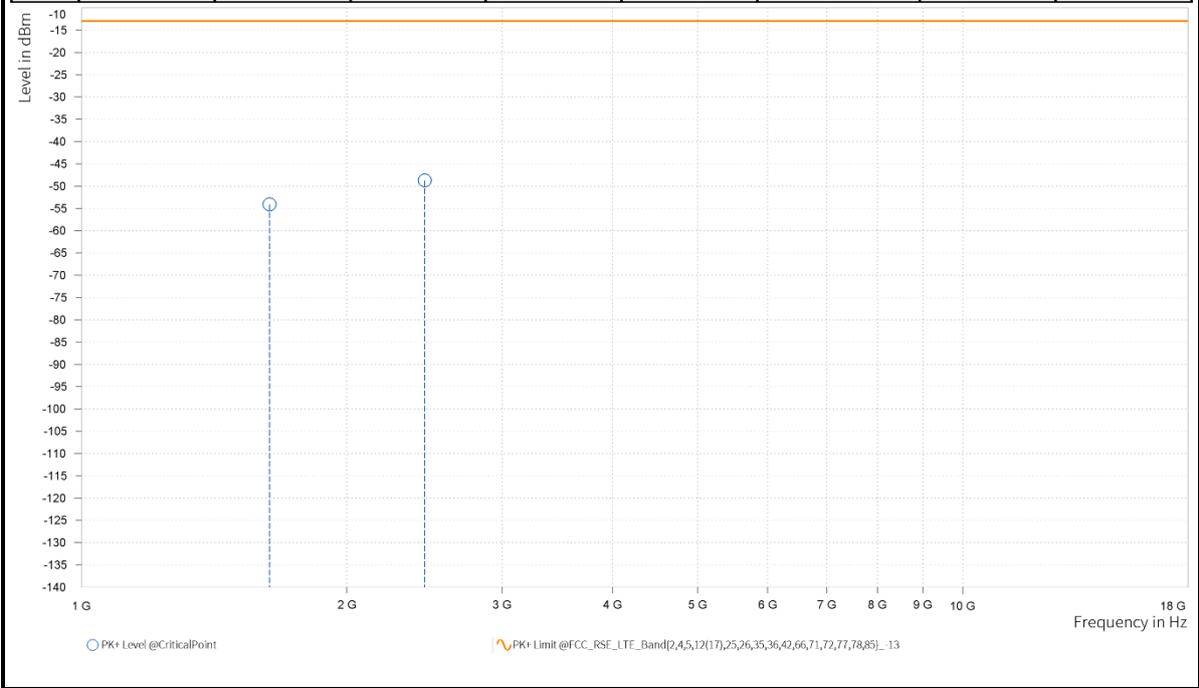
**ABOVE 1GHz**

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

LTE BAND 26 ANT0			
<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23330
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	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	-54.09	-13.00	41.09	14.38	H	325.4	2.00
3	2,450.250	-48.72	-13.00	35.72	20.39	H	0.9	2.00

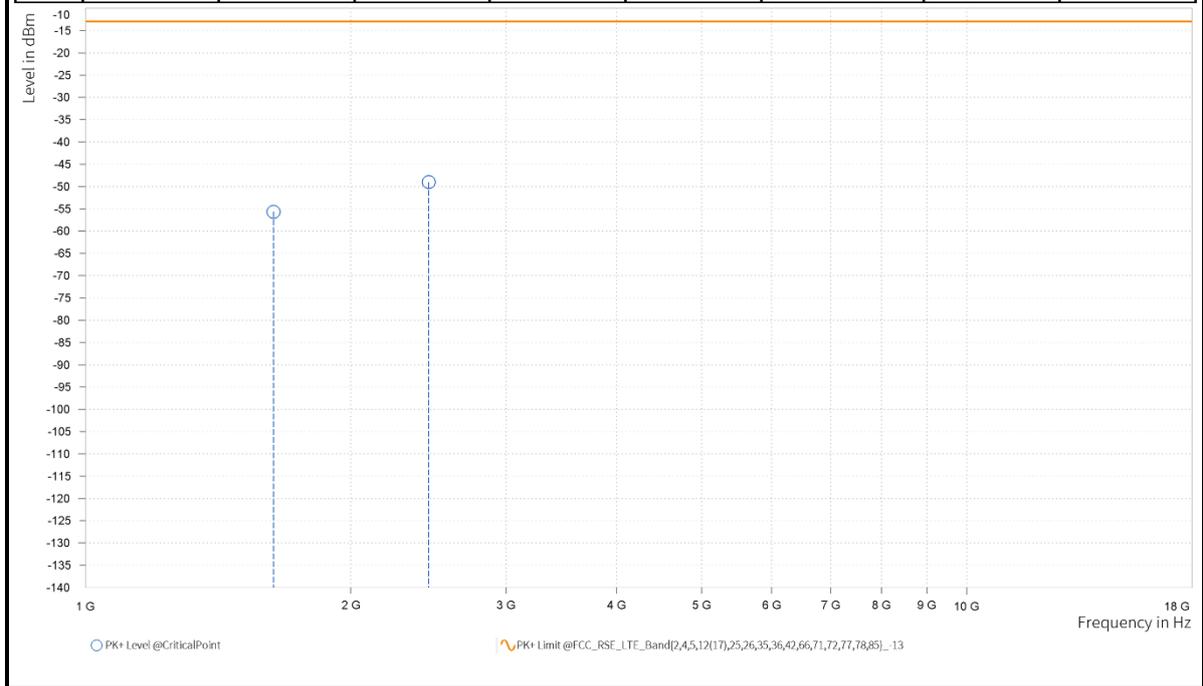




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23330
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.67	-13.00	42.67	14.49	V	258.2	1.00
3	2,450.250	-49.01	-13.00	36.01	20.31	V	359.1	1.00

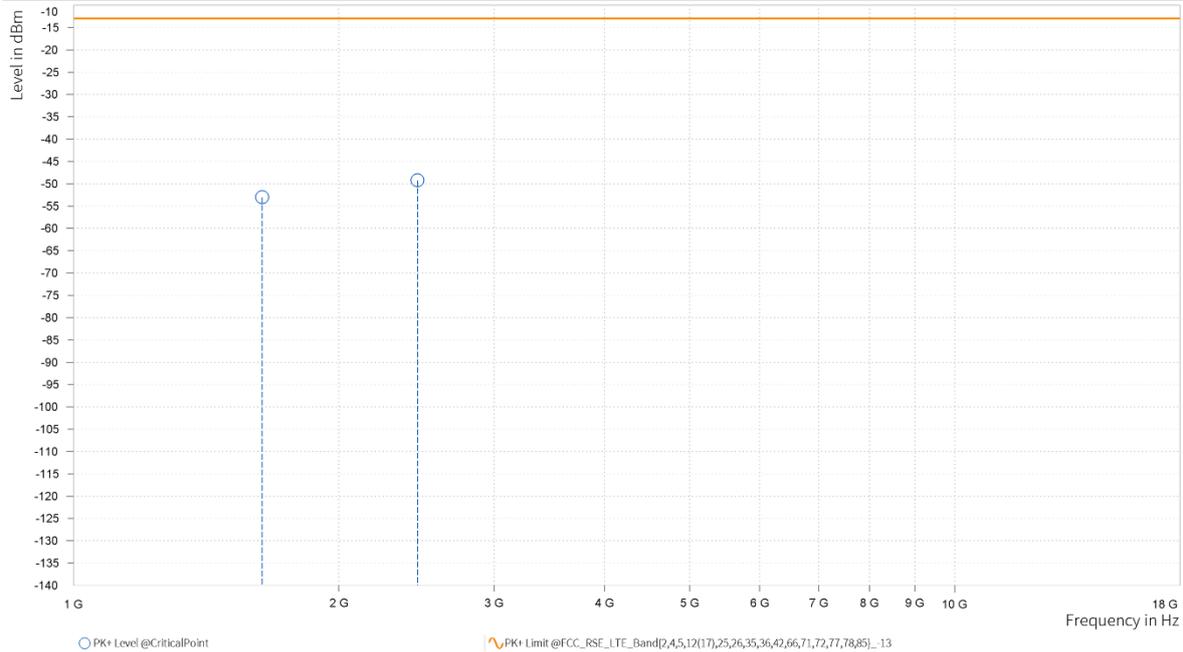




LTE BAND 26 ANT1			
CHANNEL BANDWIDTH	1.4MHz / QPSK	MODE	TX channel 26740
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V 60HZ	TESTED BY	Hanwen Xu

**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	-53.01	-13.00	40.01	14.43	H	359	2.00
3	2,455.110	-49.23	-13.00	36.23	20.33	H	0.9	2.00

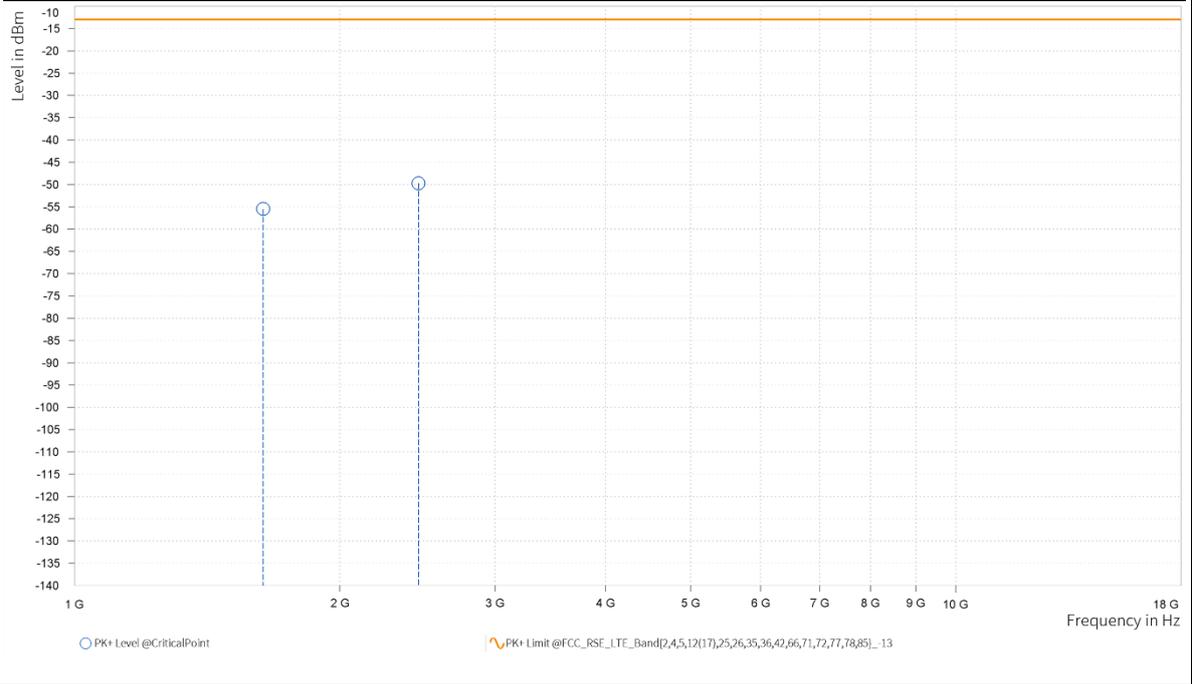




<b>CHANNEL BANDWIDTH</b>	1.4MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.49	-13.00	42.49	14.48	V	26.1	2.00
3	2,455.110	-49.71	-13.00	36.71	20.34	V	340.2	1.00

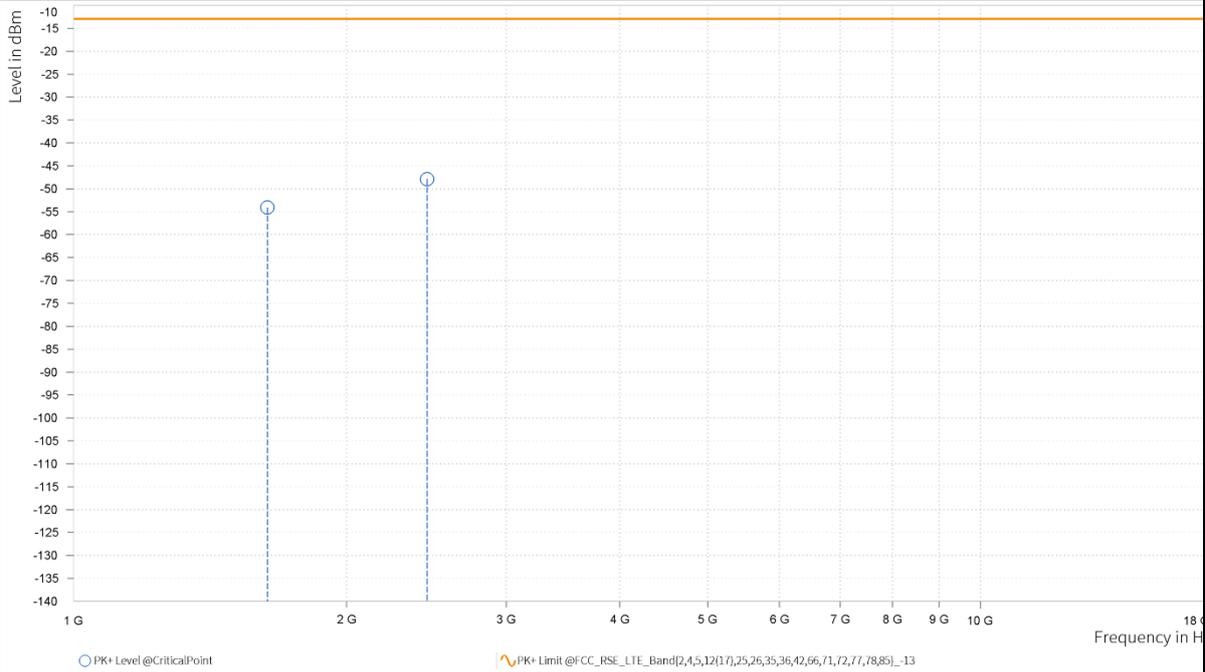




<b>CHANNEL BANDWIDTH</b>	3MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-54.09	-13.00	41.09	14.42	H	325.4	2.00
3	2,452.950	-47.89	-13.00	34.89	20.35	H	359	2.00

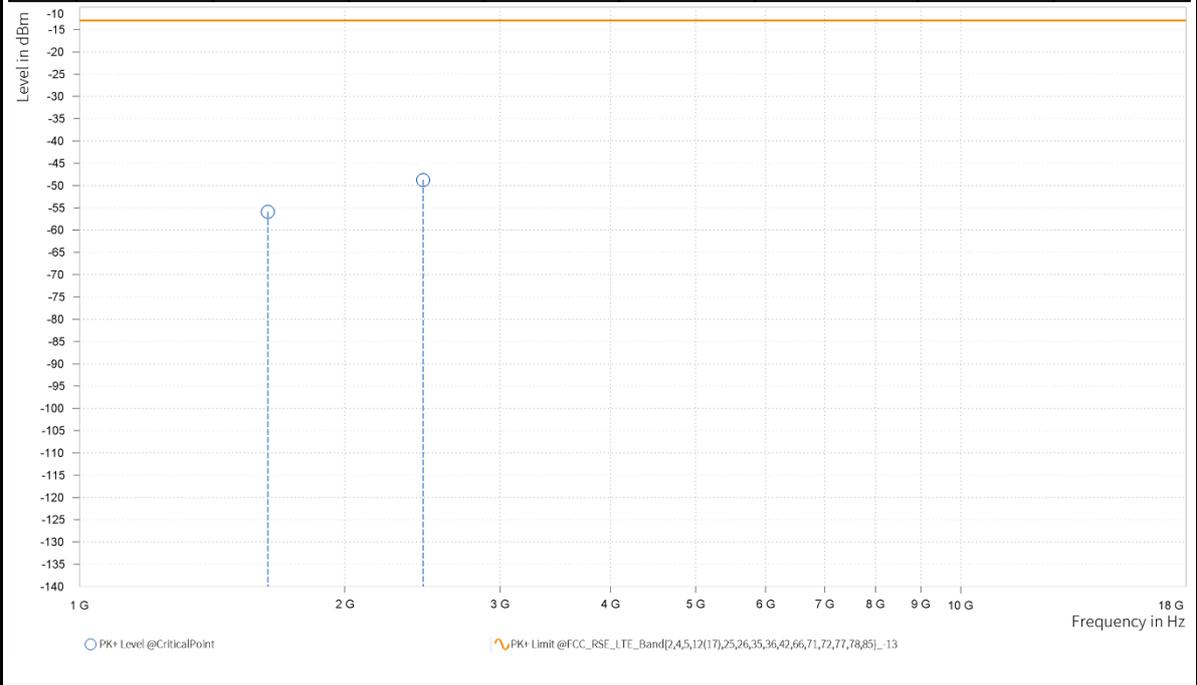




<b>CHANNEL BANDWIDTH</b>	3MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.88	-13.00	42.88	14.49	V	263.1	1.00
3	2,452.950	-48.76	-13.00	35.76	20.33	V	341	1.00

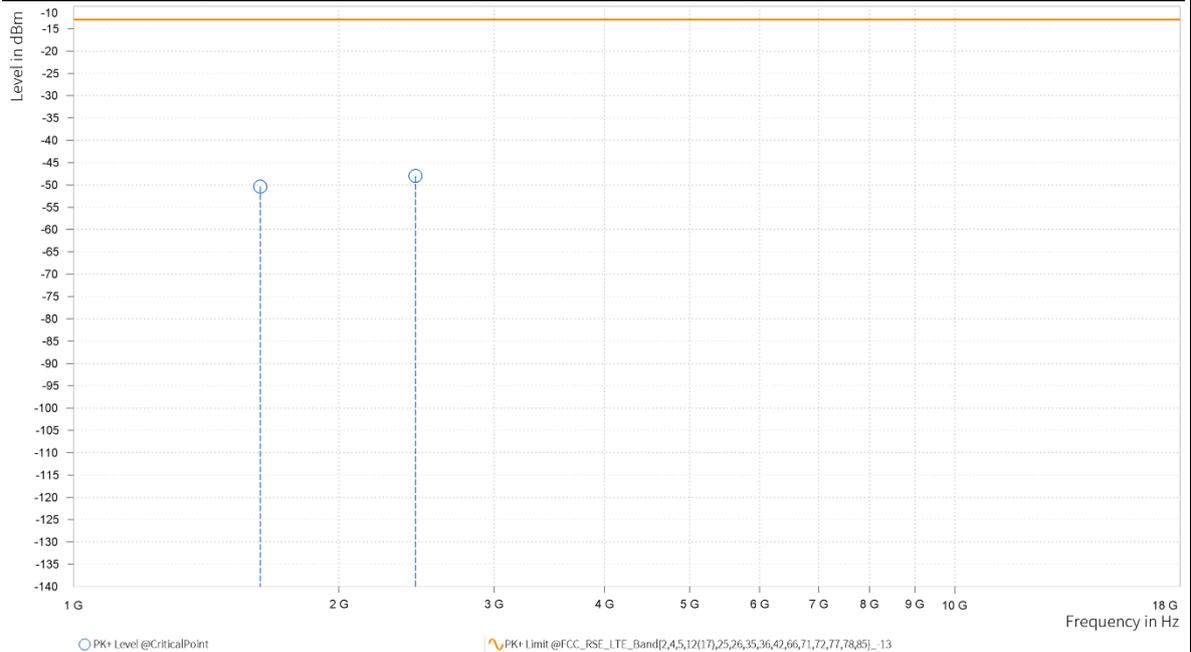




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26715
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-50.35	-13.00	37.35	14.26	H	325.4	2.00
3	2,442.750	-48.00	-13.00	35.00	20.47	H	159.2	2.00

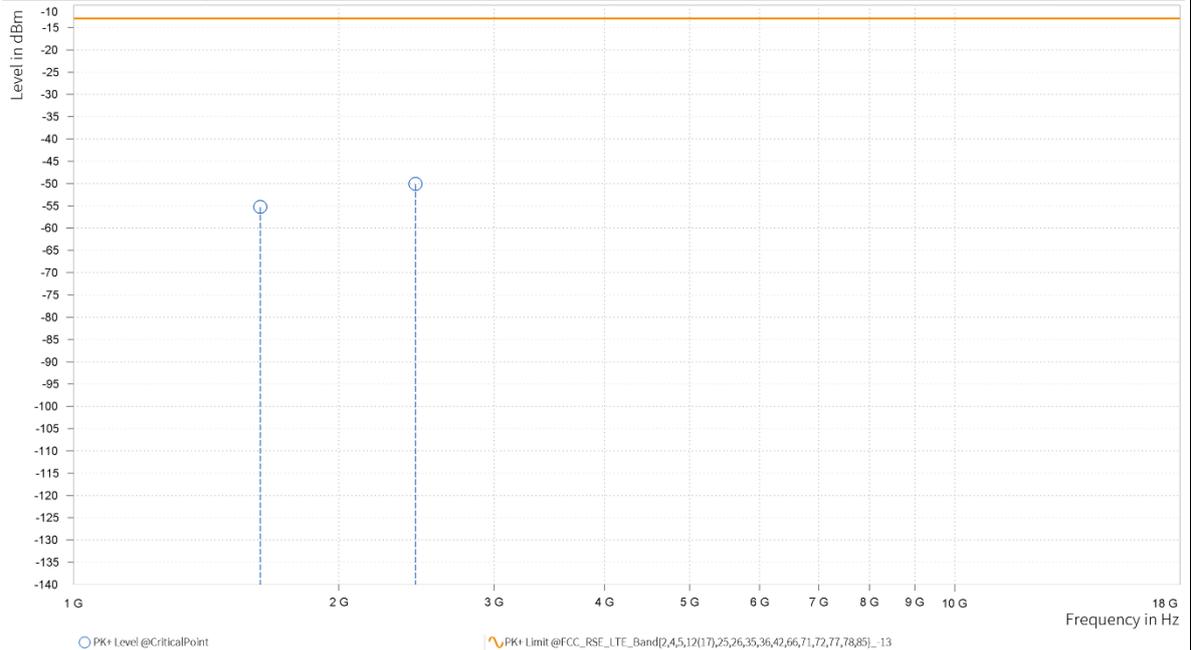




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26715
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.25	-13.00	42.25	14.47	V	19.7	2.00
3	2,442.750	-50.09	-13.00	37.09	20.26	V	200.9	1.00

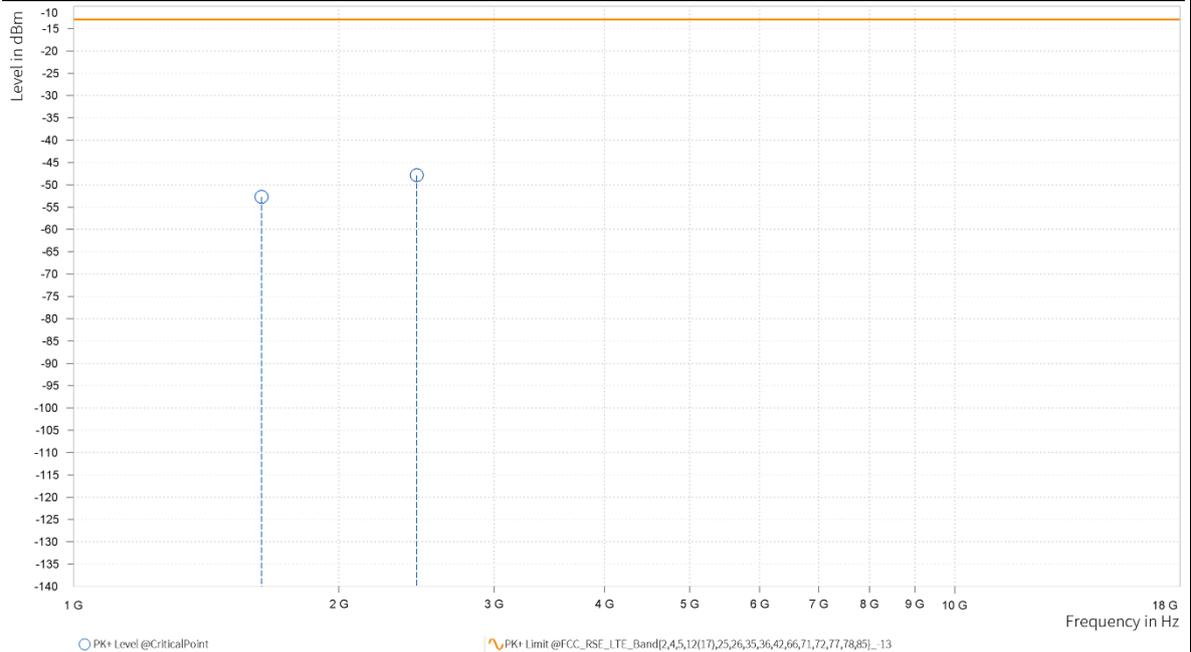




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-52.71	-13.00	39.71	14.38	H	167	2.00
3	2,450.250	-47.84	-13.00	34.84	20.39	H	359	2.00

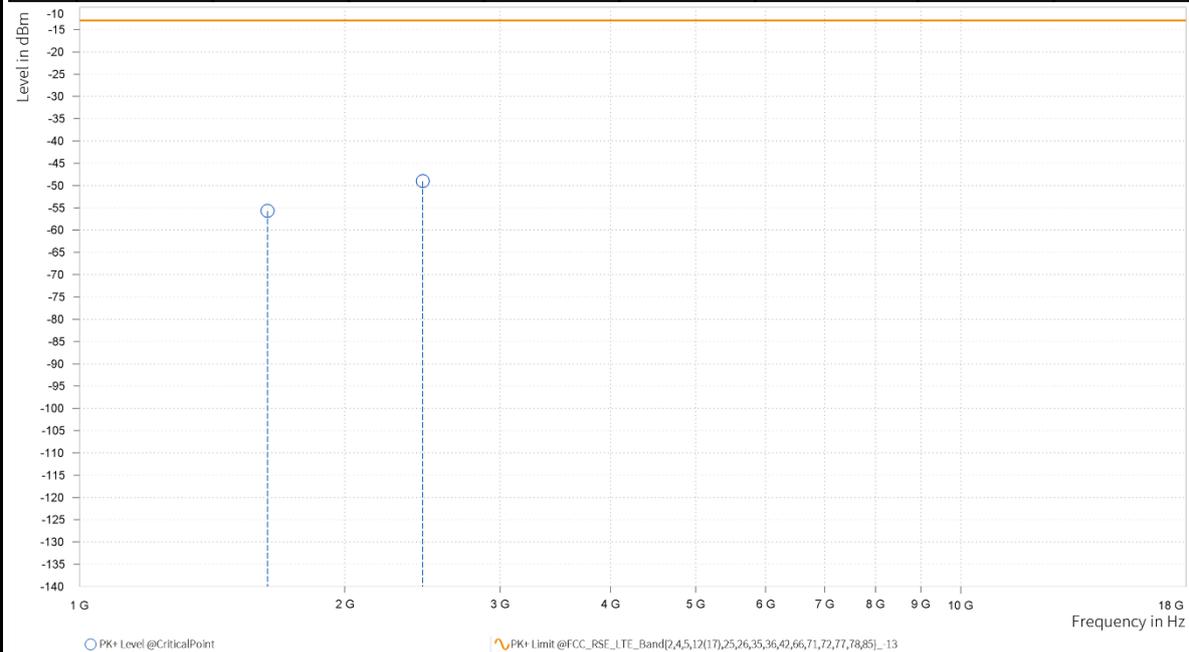




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.70	-13.00	42.70	14.49	V	60.7	1.00
3	2,450.250	-49.00	-13.00	36.00	20.31	V	316.2	1.00

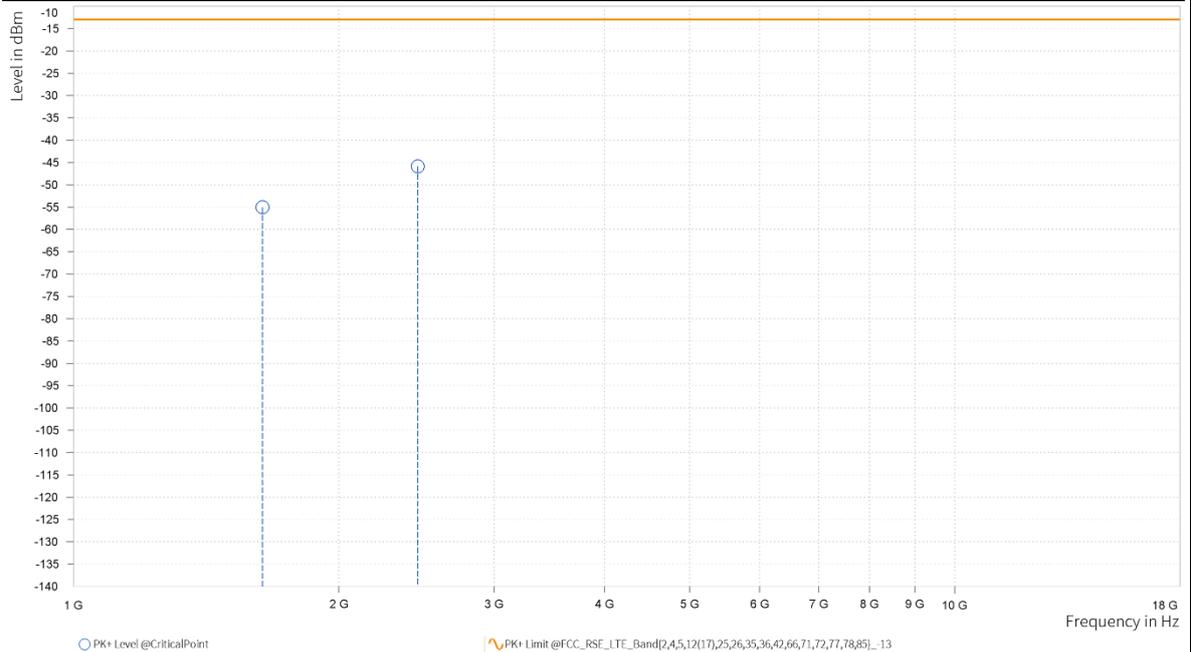




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26775
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-55.06	-13.00	42.06	14.47	H	359.1	1.00
3	2,458.000	-45.86	-13.00	32.86	20.30	H	202.3	1.00

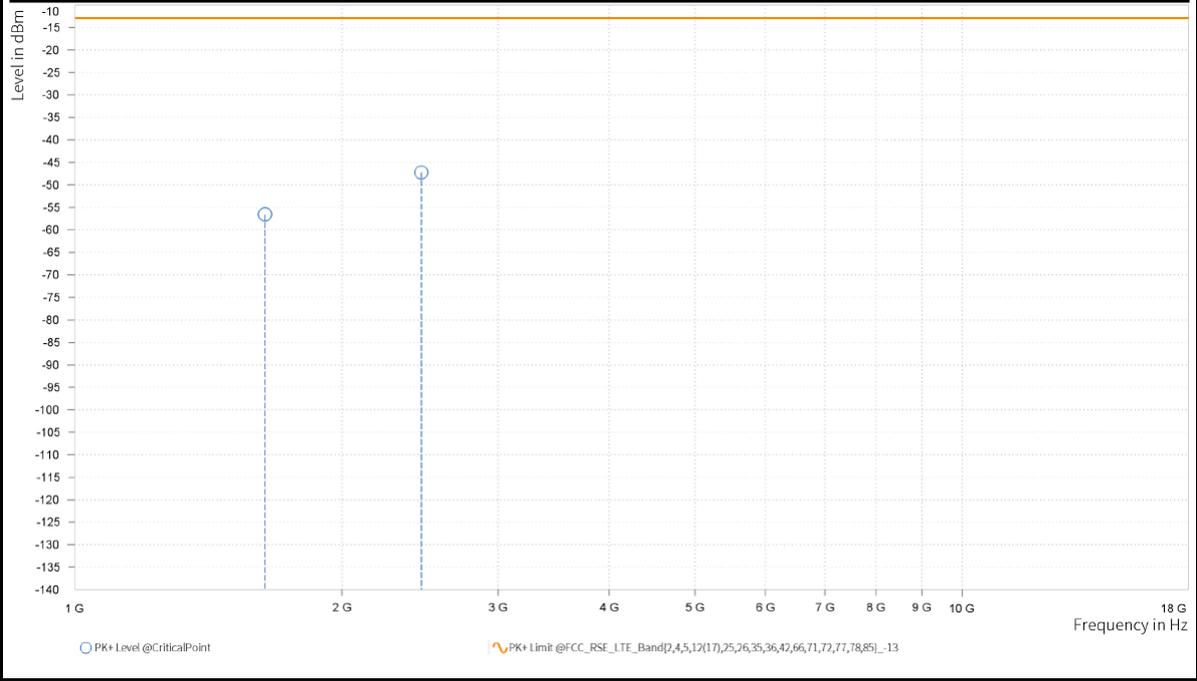




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 26775
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-56.57	-13.00	43.57	14.48	V	0.8	2.00
3	2,457.750	-47.23	-13.00	34.23	20.36	V	0.8	2.00

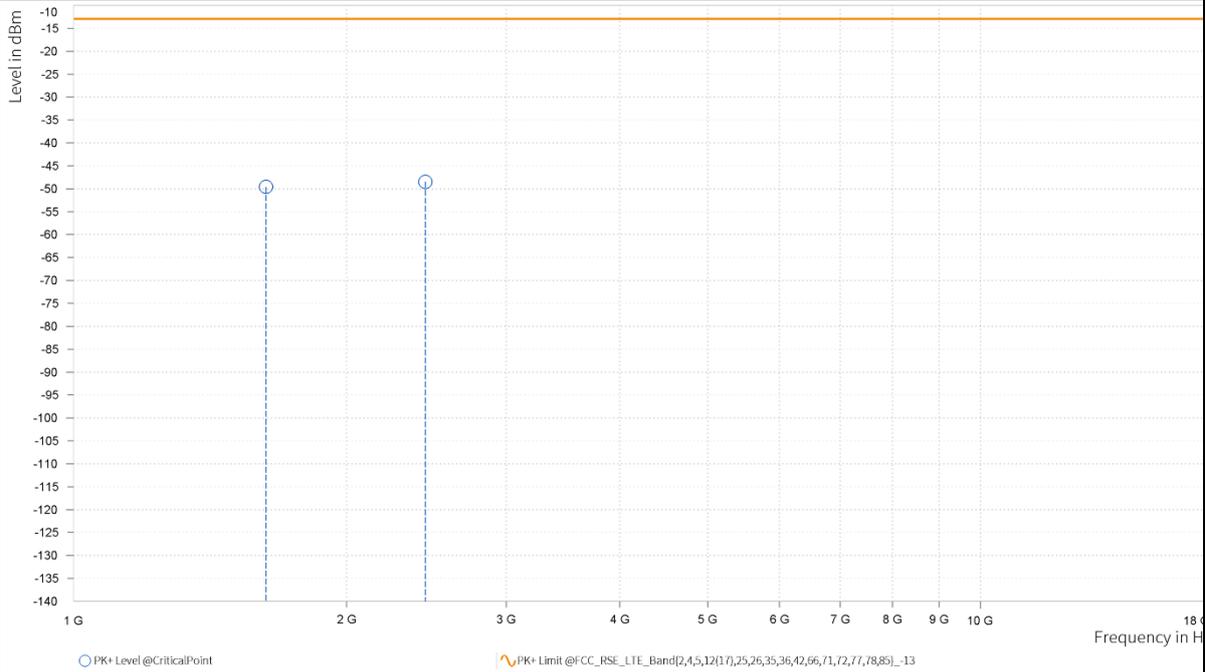




<b>CHANNEL BANDWIDTH</b>	10MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-49.59	-13.00	36.59	14.28	H	324.7	2.00
3	2,443.500	-48.47	-13.00	35.47	20.46	H	64.9	1.00

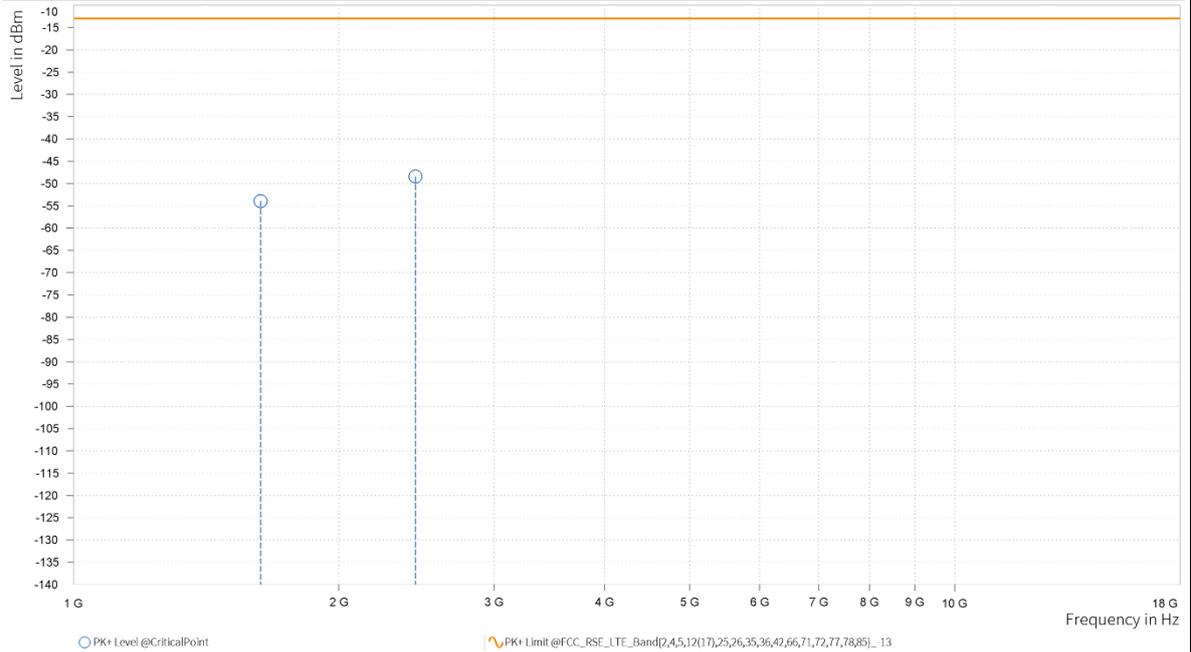




<b>CHANNEL BANDWIDTH</b>	10MHz / QPSK	<b>MODE</b>	TX channel 26740
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	AC 120V 60HZ	<b>TESTED BY</b>	Hanwen Xu

**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	-53.91	-13.00	40.91	14.48	V	96.2	2.00
3	2,443.500	-48.45	-13.00	35.45	20.27	V	348.7	1.00



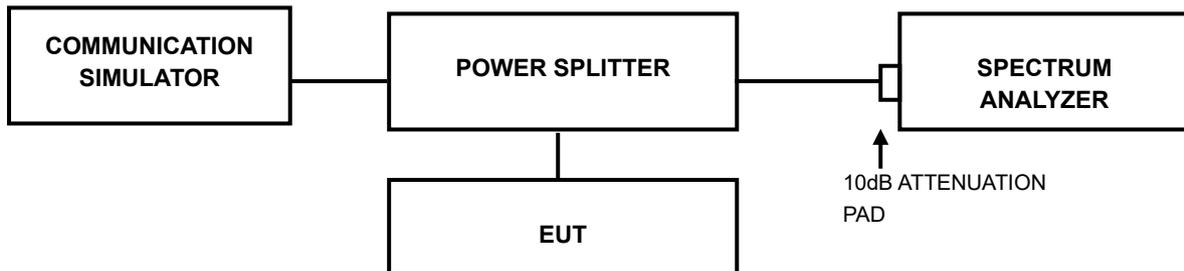


### 3.7 PEAK TO AVERAGE RATIO

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

#### 3.7.4 TEST RESULTS

Please Refer to Appendix of this test report.



**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF05

## **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



**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF05

## **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 B26

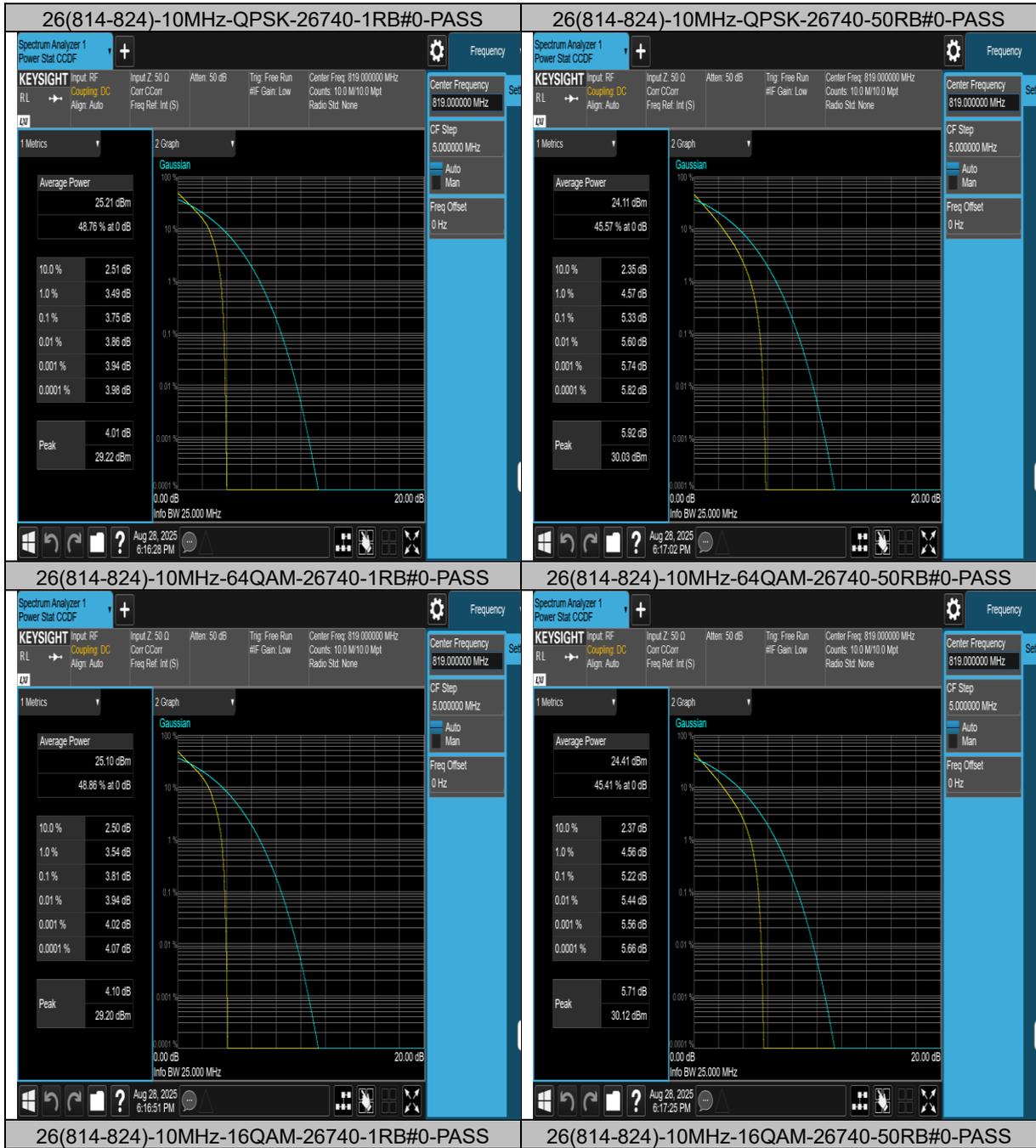
#### APPENDIX : PEAK-TO-AVERAGE RATIO(CCDF)

##### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
26(814-824)	10MHz	QPSK	26740	1RB#0	3.75	13	PASS
26(814-824)	10MHz	QPSK	26740	50RB#0	5.33	13	PASS
26(814-824)	10MHz	64QAM	26740	1RB#0	3.81	13	PASS
26(814-824)	10MHz	64QAM	26740	50RB#0	5.22	13	PASS
26(814-824)	10MHz	16QAM	26740	1RB#0	4.75	13	PASS
26(814-824)	10MHz	16QAM	26740	50RB#0	6.01	13	PASS

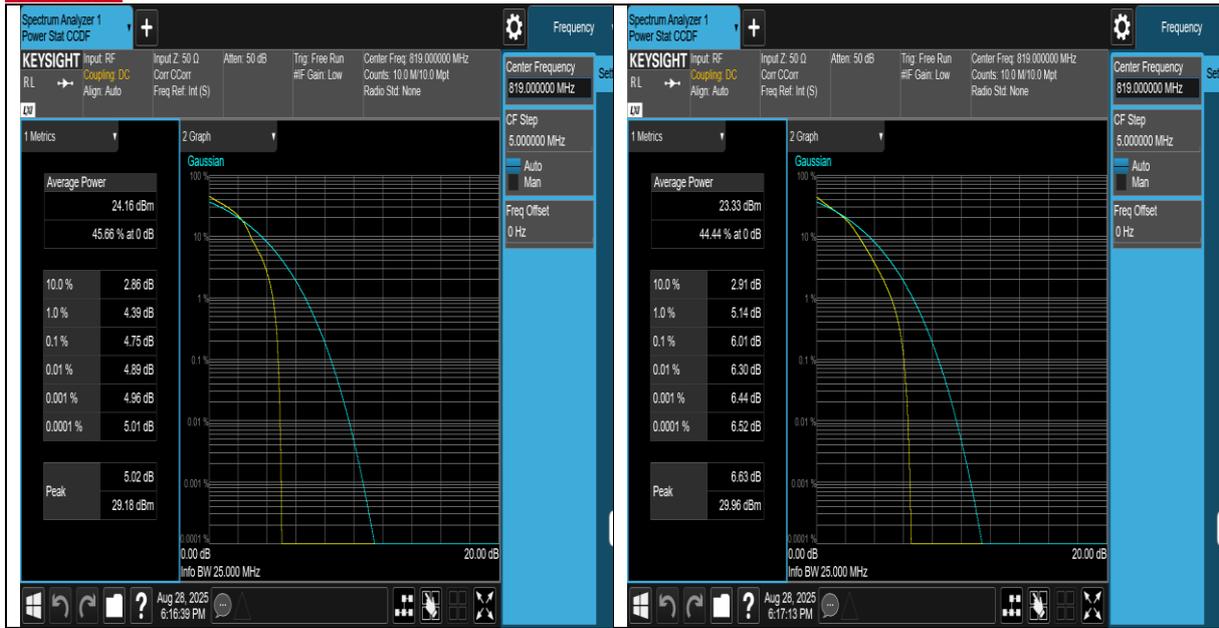


### Test Graphs





**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF05



Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

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District, Suzhou City, Anhui Province, China

Tel: +86 (0557) 368 1008



APPENDIX : 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
26(814-824)	1.4MHz	QPSK	26697	6RB#0	1.0949	1.269	PASS
26(814-824)	1.4MHz	QPSK	26740	6RB#0	1.0930	1.278	PASS
26(814-824)	1.4MHz	QPSK	26783	6RB#0	1.0966	1.271	PASS
26(814-824)	1.4MHz	64QAM	26697	6RB#0	1.0922	1.272	PASS
26(814-824)	1.4MHz	64QAM	26740	6RB#0	1.0955	1.268	PASS
26(814-824)	1.4MHz	64QAM	26783	6RB#0	1.0948	1.284	PASS
26(814-824)	1.4MHz	16QAM	26697	6RB#0	1.1000	1.290	PASS
26(814-824)	1.4MHz	16QAM	26740	6RB#0	1.0979	1.278	PASS
26(814-824)	1.4MHz	16QAM	26783	6RB#0	1.1031	1.291	PASS
26(814-824)	3MHz	QPSK	26705	15RB#0	2.6911	2.953	PASS
26(814-824)	3MHz	QPSK	26740	15RB#0	2.6833	2.950	PASS
26(814-824)	3MHz	QPSK	26775	15RB#0	2.6886	2.962	PASS
26(814-824)	3MHz	64QAM	26705	15RB#0	2.6928	2.955	PASS
26(814-824)	3MHz	64QAM	26740	15RB#0	2.6893	2.949	PASS
26(814-824)	3MHz	64QAM	26775	15RB#0	2.6942	2.966	PASS
26(814-824)	3MHz	16QAM	26705	15RB#0	2.6842	2.967	PASS
26(814-824)	3MHz	16QAM	26740	15RB#0	2.6838	2.942	PASS
26(814-824)	3MHz	16QAM	26775	15RB#0	2.6908	2.965	PASS
26(814-824)	5MHz	QPSK	26715	25RB#0	4.5018	4.915	PASS
26(814-824)	5MHz	QPSK	26740	25RB#0	4.4903	4.898	PASS
26(814-824)	5MHz	QPSK	26765	25RB#0	4.5074	4.914	PASS
26(814-824)	5MHz	64QAM	26715	25RB#0	4.5040	4.913	PASS
26(814-824)	5MHz	64QAM	26740	25RB#0	4.4880	5.144	PASS
26(814-824)	5MHz	64QAM	26765	25RB#0	4.5057	4.904	PASS

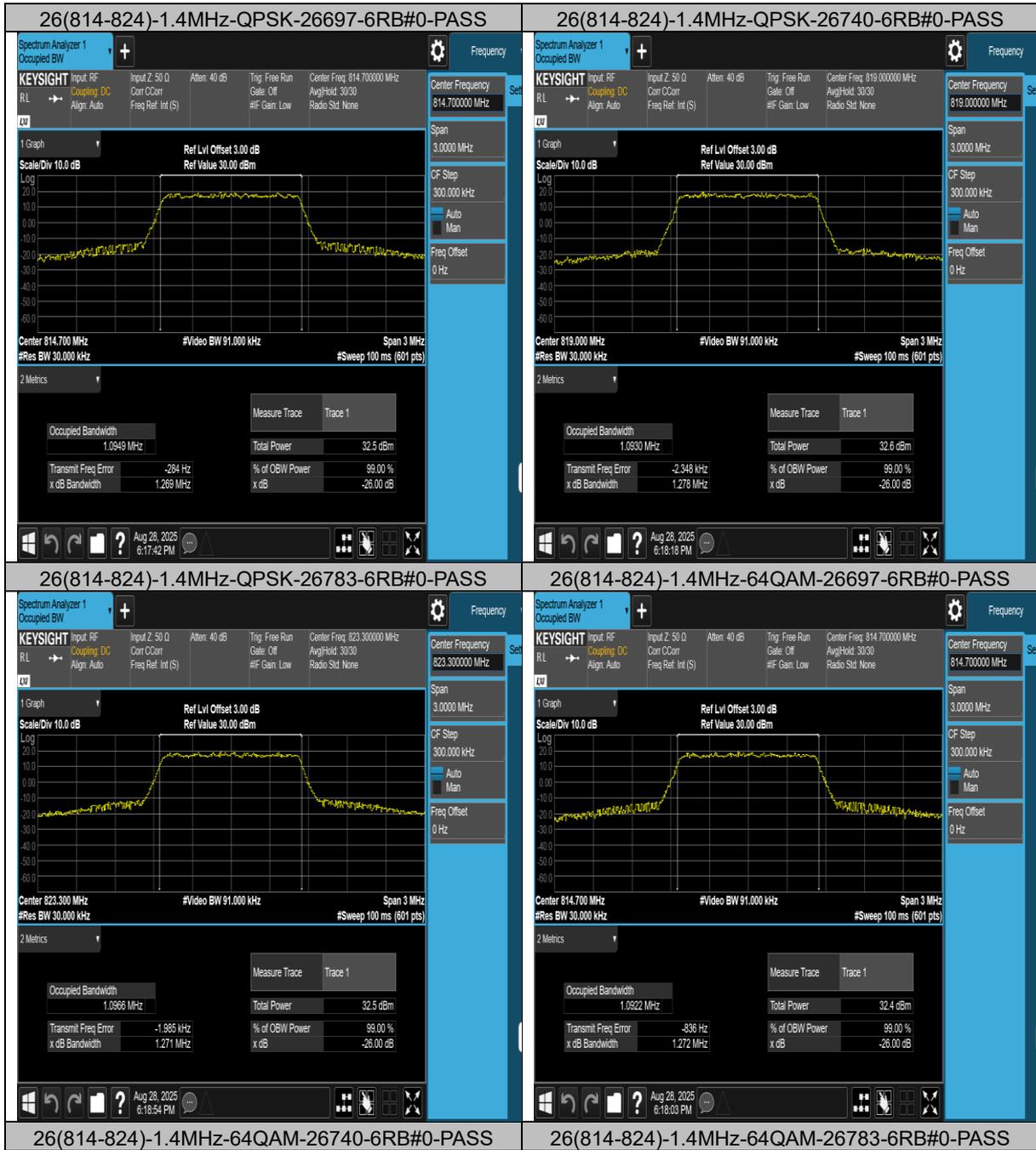


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26(814-824)	5MHz	16QAM	26715	25RB#0	4.4963	4.904	PASS
26(814-824)	5MHz	16QAM	26740	25RB#0	4.4986	4.921	PASS
26(814-824)	5MHz	16QAM	26765	25RB#0	4.5153	4.930	PASS
26(814-824)	10MHz	QPSK	26740	50RB#0	8.9774	9.774	PASS
26(814-824)	10MHz	64QAM	26740	50RB#0	8.9791	9.761	PASS
26(814-824)	10MHz	16QAM	26740	50RB#0	8.9542	9.737	PASS

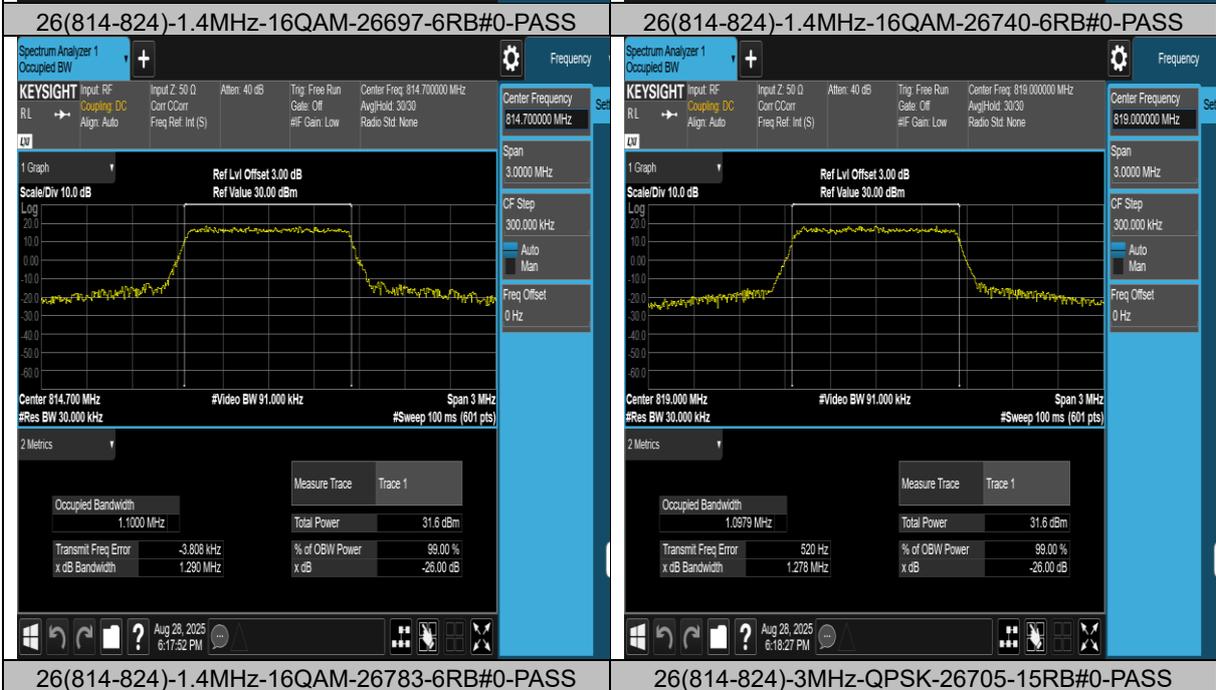


### Test Graphs



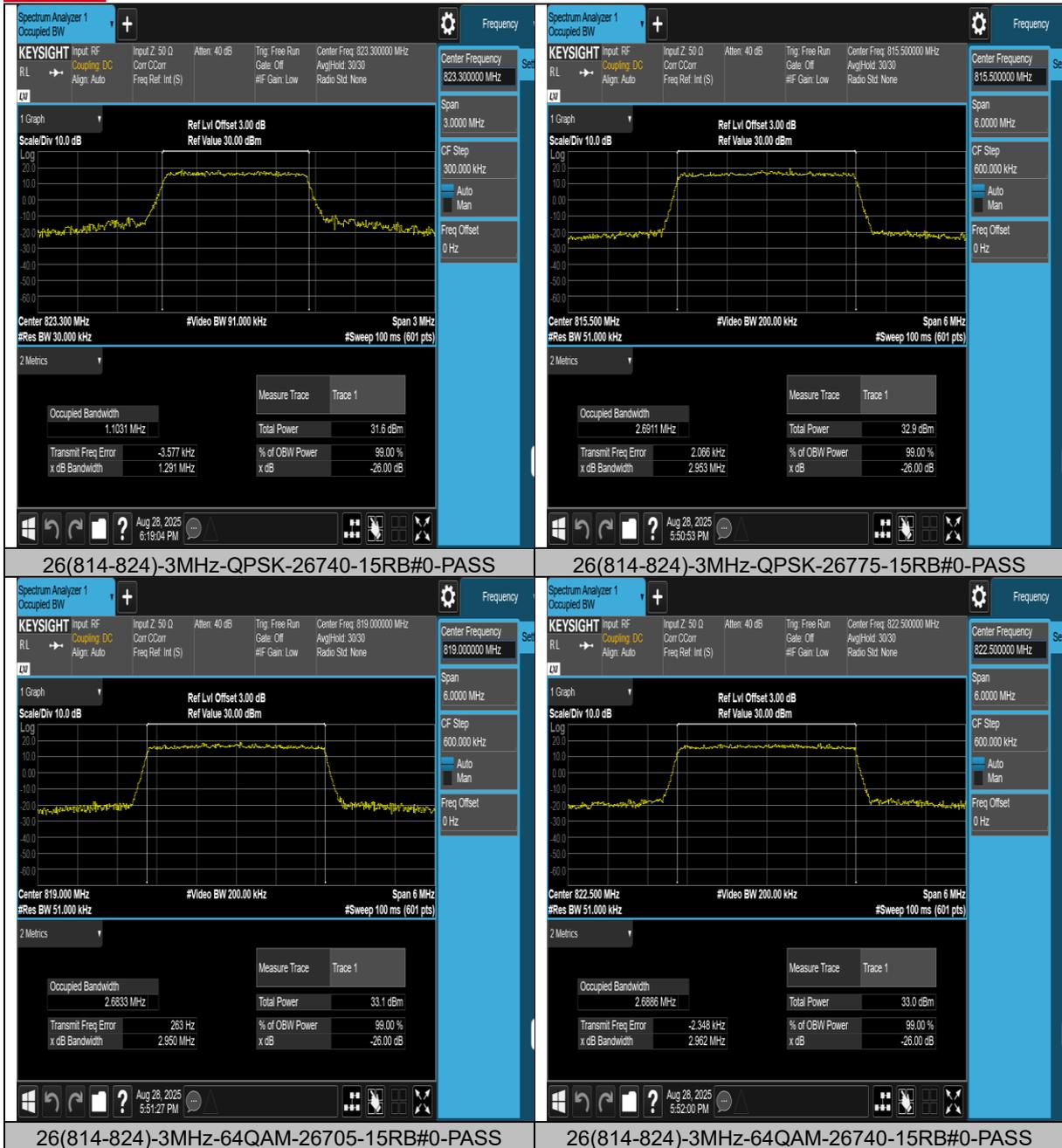


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF05



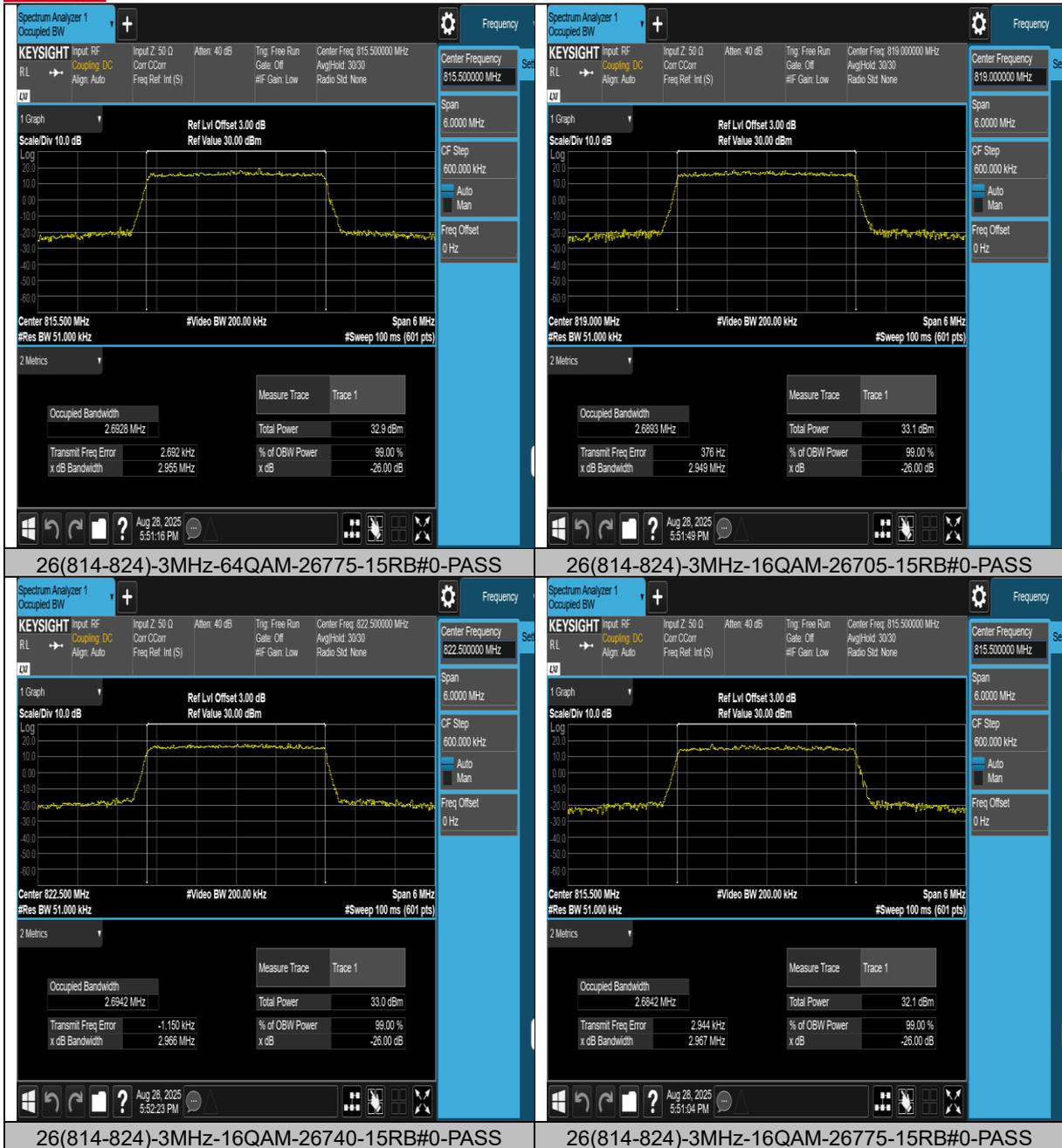


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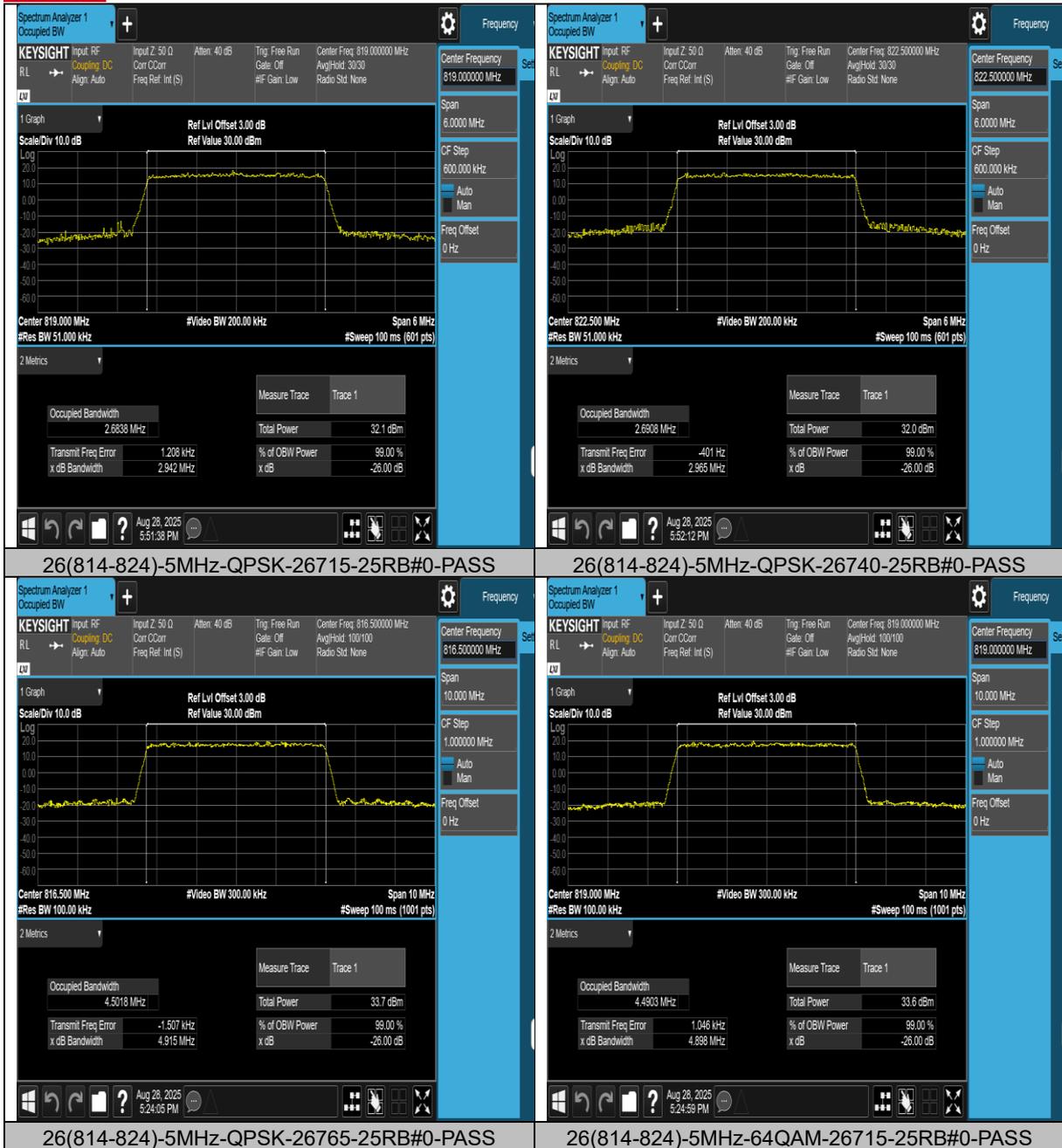
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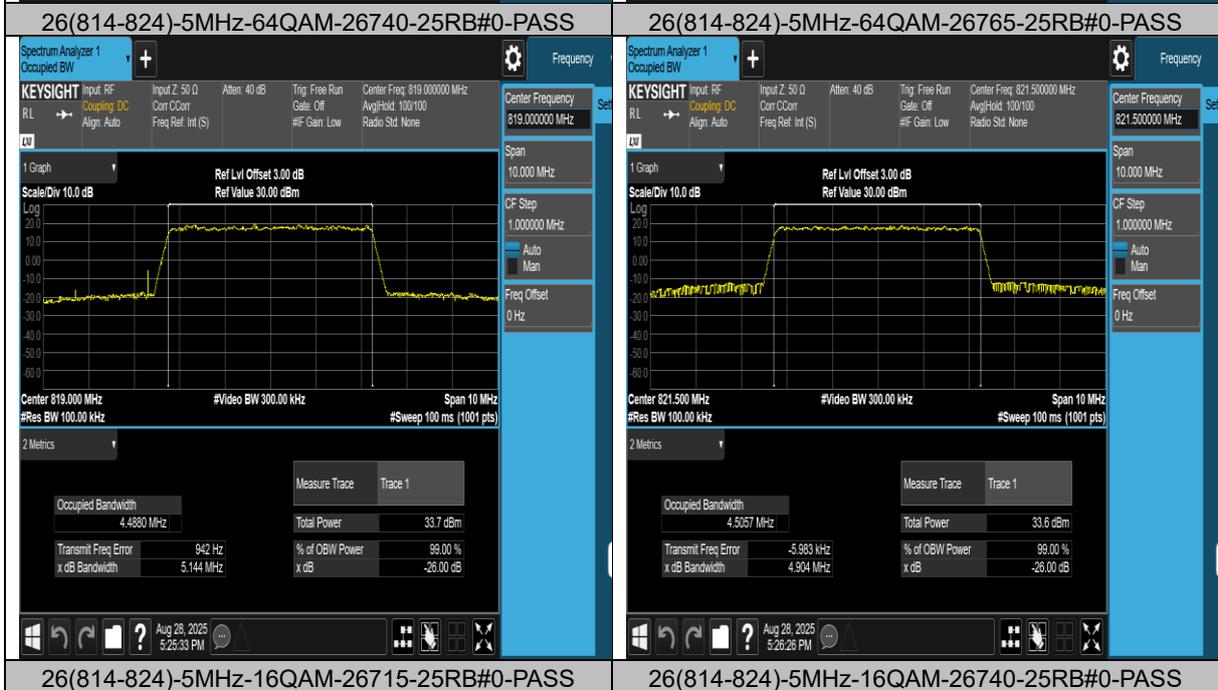
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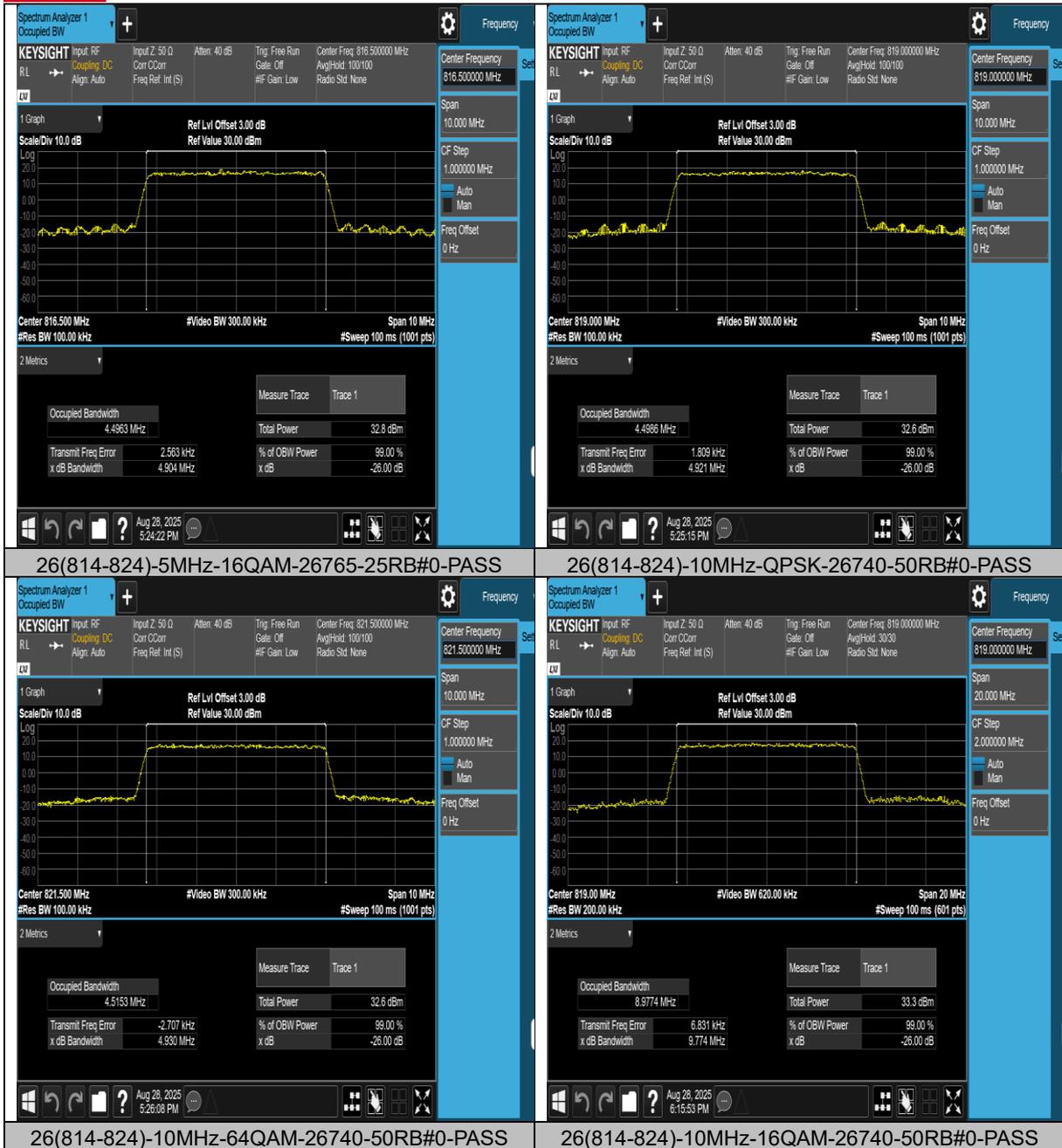


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