



# TEST REPORT

**APPLICANT** : Rhino Mobility LLC

**PRODUCT NAME** : Tablet

**MODEL NAME** : T80

**BRAND NAME** : RHINO

**FCC ID** : 2AUOUT80

**STANDARD(S)** : 47 CFR Part 2  
47 CFR Part 90, Subpart S

**RECEIPT DATE** : 2023-04-11

**TEST DATE** : 2023-04-17 to 2023-06-20

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Change History		
Version	Date	Reason for change
1.0	2023-07-04	First edition



# 1. Technical Information

Note: Provide by applicant.

## 1.1. Applicant and Manufacturer Information

<b>Applicant:</b>	Rhino Mobility LLC
<b>Applicant Address:</b>	8 The Green, Suite A, Dover, Delaware,19901, USA
<b>Manufacturer:</b>	Rhino Mobility LLC
<b>Manufacturer Address:</b>	8 The Green, Suite A, Dover, Delaware,19901, USA

## 1.2. Equipment Under Test (EUT) Description

<b>Product Name:</b>	Tablet	
<b>Sample No.:</b>	8#	
<b>Hardware Version:</b>	T8005_V1.0	
<b>Software Version:</b>	T80(001)_20230610	
<b>Modulation Type:</b>	QPSK, 16QAM, 64QAM	
<b>Operation Band:</b>	Band 14 / 18 / 26	
<b>Frequency Range:</b>	LTE Band 14	Tx: 788MHz–798MHz
		Rx: 758MHz–768MHz
	LTE Band 18	Tx: 815MHz–824MHz
		Rx: 860MHz–869MHz
	LTE Band 26	Tx: 814MHz–824MHz
		Rx: 859MHz–869MHz
<b>Channel Bandwidth</b>	LTE Band 14	5MHz, 10MHz
	LTE Band 18	5MHz
	LTE Band 26	1.4MHz, 3MHz, 5MHz, 10MHz
<b>Antenna Type:</b>	PIFA Antenna	
<b>Antenna Gain:</b>	LTE Band 14	-2.89dBi
	LTE Band 18	0.37dBi
	LTE Band 26	0.37dBi



<b>Accessory Information:</b>	Battery	
	Brand Name:	N/A
	Model No.:	BPT80
	Serial No.:	N/A
	Capacity:	5000mAh
	Rated Voltage:	3.85V
	Charge Limit:	4.4V
	Manufacturer:	Huizhou Highpower Technology Co., Ltd.
	AC Adapter	
	Brand Name:	RHINO
	Model No.:	TPA-10S120150UU01
	Serial No.:	N/A
	Rated Output:	3.6V-6.0V=3A or 6.0V-9.0V=2.0A or 9.0V-12.0V=1.5A
	Rated Input:	100-240V~50/60Hz, 0.6A
	Manufacturer:	Shenzhen Tianyin Electronics Co., Ltd.
	USB Cable 1	
	Model No.:	188.123022001-09
	Manufacturer:	Yibin Ruirun Electronics Co., Ltd.
	USB Cable 2	
	Model No.:	188.123022002-09
	Manufacturer:	Yibin Ruirun Electronics Co., Ltd.
USB Cable 3		
Model No.:	USB TYPE A TO C 2.0 Cable 2.0m	
Manufacturer:	HUIZHOU WASHIN ELECTRONICTS CO.,LTD.	
USB Cable 4		
Model No.:	USB TYPE A TO C 2.0 Cable 1.0m	
Manufacturer:	HUIZHOU WASHIN ELECTRONICTS CO.,LTD.	

**Note 1:** For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



### 1.3. Maximum E.R.P./E.I.R.P. and Emission Designator

<b>LTE Band 14</b>	<b>Maximum E.R.P./E.I.R.P. (W)</b>			<b>Emission Designator (99%OBW)</b>		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
10	0.078	0.060	0.048	9M00G7D	8M97W7D	8M97W7D
5	0.077	0.061	0.049	4M50G7D	4M50W7D	4M51W7D
<b>LTE Band 18</b>	<b>Maximum E.R.P./E.I.R.P. (W)</b>			<b>Emission Designator (99%OBW)</b>		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5	0.160	0.126	0.101	4M51G7D	4M51W7D	4M52W7D
<b>LTE Band 26</b>	<b>Maximum E.R.P./E.I.R.P. (W)</b>			<b>Emission Designator (99%OBW)</b>		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
10	0.156	0.124	0.102	8M99G7D	8M95W7D	8M97W7D
5	0.161	0.128	0.101	4M50G7D	4M52W7D	4M51W7D
3	0.160	0.124	0.099	2M70G7D	2M71W7D	2M71W7D
1.4	0.153	0.124	0.100	1M10G7D	1M10W7D	1M10W7D



## 1.4. Test Standards and Results

The objective of the report is to perform testing according to Part 2 and Part 90 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 90	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

Section	Description	Test Date	Test Engineer	Result	Method Determination /Remark
2.1046, 90.635(b)	Transmitter Conducted Output Power and ERP/EIRP	Jun. 20, 2023	Chen Hao Li Huaijie	PASS	No deviation
90.209	Occupied Bandwidth	Apr. 18&19, 2023	Li Huaijie	PASS	No deviation
2.1055, 90.213	Frequency Stability	Apr. 18, 2023	Li Huaijie	PASS	No deviation
2.1051, 90.691	Conducted Spurious Emissions	Apr. 18&19, 2023	Li Huaijie	PASS	No deviation
2.1051, 90.691	Band Edge	Apr. 17&18, 2023	Li Huaijie	PASS	No deviation
2.1053, 90.691	Radiated Spurious Emissions	Jun. 20, 2023	Li Hanbin	PASS	No deviation

**Note 1:** The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 and ANSI/TIA-603-E-2016.

**Note 2:** The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 24.5dB contains two parts that cable loss 14.5dB and Attenuator 10dB.

**Note 3:** Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.

**Note 4:** When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.



## 1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106

## 2.47 CFR Part 2, Part 90S Requirements

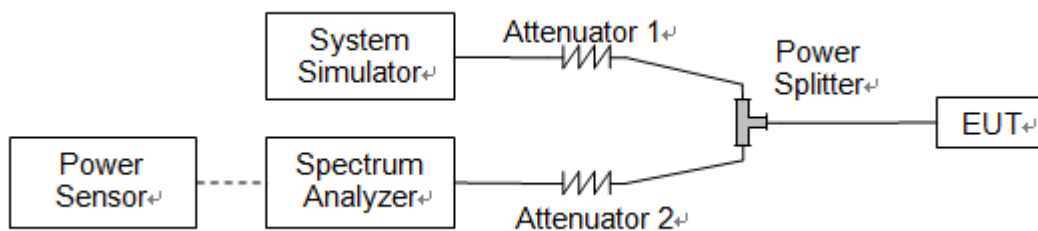
### 2.1. Transmitter Conducted Output Power and E.R.P./E.I.R.P.

#### 2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 90.635(b) for LTE Band 26, the maximum output power of the transmitter for mobile stations is 100 watts.

#### 2.1.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

#### 2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

$EIRP \text{ (dBm)} = \text{Conducted Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$ERP \text{ (dBm)} = EIPR \text{ (dBm)} - 2.15$





2.1.4. Result

Conducted Output Power

LTE Band 14						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	23330	/
Frequency (MHz)				/	793	/
10	QPSK	1	0	/	23.95	/
10	QPSK	1	25	/	23.73	/
10	QPSK	1	49	/	23.66	/
10	QPSK	25	0	/	22.93	/
10	QPSK	25	12	/	22.77	/
10	QPSK	25	25	/	22.83	/
10	QPSK	50	0	/	22.81	/
10	16QAM	1	0	/	22.85	/
10	16QAM	1	25	/	22.79	/
10	16QAM	1	49	/	22.75	/
10	16QAM	25	0	/	21.88	/
10	16QAM	25	12	/	21.85	/
10	16QAM	25	25	/	21.79	/
10	16QAM	50	0	/	21.89	/
10	64QAM	1	0	/	21.89	/
10	64QAM	1	25	/	21.80	/
10	64QAM	1	49	/	21.73	/
10	64QAM	25	0	/	20.92	/
10	64QAM	25	12	/	20.83	/
10	64QAM	25	25	/	20.71	/
10	64QAM	50	0	/	20.76	/



LTE Band 14						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23305	23330	23355
Frequency (MHz)				790.5	793	795.5
5	QPSK	1	0	23.86	23.89	23.85
5	QPSK	1	12	23.79	23.69	23.75
5	QPSK	1	24	23.86	23.72	23.77
5	QPSK	12	0	22.81	22.90	22.85
5	QPSK	12	7	22.69	22.87	22.88
5	QPSK	12	13	22.87	22.68	22.79
5	QPSK	25	0	22.86	22.91	22.78
5	16QAM	1	0	22.87	22.88	22.83
5	16QAM	1	12	22.80	22.76	22.84
5	16QAM	1	24	22.70	22.89	22.83
5	16QAM	12	0	21.77	21.81	21.97
5	16QAM	12	7	21.93	21.72	21.72
5	16QAM	12	13	21.93	21.86	21.72
5	16QAM	25	0	21.83	21.89	21.87
5	64QAM	1	0	21.86	21.90	21.70
5	64QAM	1	12	21.71	21.84	21.77
5	64QAM	1	24	21.84	21.93	21.71
5	64QAM	12	0	20.86	20.93	20.84
5	64QAM	12	7	20.85	20.92	20.91
5	64QAM	12	13	20.83	20.84	20.86
5	64QAM	25	0	20.75	20.88	20.83



LTE Band 18						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23875	23895	23915
Frequency (MHz)				817.5	819.5	821.5
5	QPSK	1	0	23.82	23.80	23.72
5	QPSK	1	12	23.78	23.75	23.74
5	QPSK	1	24	23.68	23.66	23.61
5	QPSK	12	0	22.86	22.74	22.79
5	QPSK	12	7	22.84	22.76	22.77
5	QPSK	12	13	22.75	22.64	22.66
5	QPSK	25	0	22.65	22.56	22.57
5	16QAM	1	0	22.66	22.58	22.55
5	16QAM	1	12	22.80	22.68	22.69
5	16QAM	1	24	22.68	22.67	22.56
5	16QAM	12	0	21.77	21.70	21.65
5	16QAM	12	7	21.75	21.67	21.66
5	16QAM	12	13	21.78	21.69	21.70
5	16QAM	25	0	21.66	21.64	21.58
5	64QAM	1	0	21.76	21.71	21.72
5	64QAM	1	12	21.82	21.78	21.70
5	64QAM	1	24	21.83	21.79	21.82
5	64QAM	12	0	20.90	20.85	20.81
5	64QAM	12	7	20.86	20.75	20.84
5	64QAM	12	13	20.72	20.67	20.69
5	64QAM	25	0	20.80	20.78	20.68



LTE Band 26						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				/	26740	/
Frequency (MHz)				/	819.0	/
10	QPSK	1	0	/	23.63	/
10	QPSK	1	25	/	23.62	/
10	QPSK	1	49	/	23.70	/
10	QPSK	25	0	/	22.86	/
10	QPSK	25	12	/	22.66	/
10	QPSK	25	25	/	22.66	/
10	QPSK	50	0	/	22.59	/
10	16QAM	1	0	/	22.73	/
10	16QAM	1	25	/	22.69	/
10	16QAM	1	49	/	22.66	/
10	16QAM	25	0	/	21.66	/
10	16QAM	25	12	/	21.89	/
10	16QAM	25	25	/	21.75	/
10	16QAM	50	0	/	21.71	/
10	64QAM	1	0	/	21.86	/
10	64QAM	1	25	/	21.69	/
10	64QAM	1	49	/	21.83	/
10	64QAM	25	0	/	20.96	/
10	64QAM	25	12	/	20.66	/
10	64QAM	25	25	/	20.62	/
10	64QAM	50	0	/	20.77	/



LTE Band 26						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				26715	26740	26765
Frequency (MHz)				816.5	819.0	821.5
5	QPSK	1	0	23.72	23.67	23.65
5	QPSK	1	12	23.74	23.71	23.67
5	QPSK	1	24	23.85	23.79	23.77
5	QPSK	12	0	22.92	22.91	22.86
5	QPSK	12	7	22.87	22.85	22.85
5	QPSK	12	13	22.84	22.76	22.83
5	QPSK	25	0	22.61	22.53	22.52
5	16QAM	1	0	22.85	22.76	22.76
5	16QAM	1	12	22.54	22.42	22.50
5	16QAM	1	24	22.81	22.71	22.71
5	16QAM	12	0	21.72	21.68	21.65
5	16QAM	12	7	21.81	21.75	21.71
5	16QAM	12	13	21.84	21.79	21.81
5	16QAM	25	0	21.74	21.66	21.67
5	64QAM	1	0	21.61	21.53	21.60
5	64QAM	1	12	21.65	21.64	21.61
5	64QAM	1	24	21.81	21.79	21.73
5	64QAM	12	0	20.71	20.66	20.69
5	64QAM	12	7	20.73	20.63	20.66
5	64QAM	12	13	20.86	20.84	20.74
5	64QAM	25	0	20.66	20.57	20.56



LTE Band 26						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				26705	26740	26775
Frequency (MHz)				815.5	819.0	822.5
3	QPSK	1	0	23.82	23.77	23.74
3	QPSK	1	8	23.63	23.60	23.55
3	QPSK	1	14	23.56	23.47	23.48
3	QPSK	8	0	22.83	22.71	22.79
3	QPSK	8	4	22.56	22.55	22.50
3	QPSK	8	7	22.86	22.78	22.82
3	QPSK	15	0	22.74	22.65	22.68
3	16QAM	1	0	22.69	22.64	22.57
3	16QAM	1	8	22.71	22.60	22.59
3	16QAM	1	14	22.63	22.61	22.51
3	16QAM	8	0	21.81	21.72	21.70
3	16QAM	8	4	21.75	21.70	21.72
3	16QAM	8	7	21.93	21.91	21.92
3	16QAM	15	0	21.90	21.85	21.88
3	64QAM	1	0	21.68	21.63	21.66
3	64QAM	1	8	21.73	21.71	21.64
3	64QAM	1	14	21.69	21.65	21.65
3	64QAM	8	0	20.78	20.74	20.68
3	64QAM	8	4	20.84	20.78	20.81
3	64QAM	8	7	20.73	20.72	20.64
3	64QAM	15	0	20.87	20.78	20.81



LTE Band 26						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				26697	26740	26783
Frequency (MHz)				814.7	819.0	823.3
1.4	QPSK	1	0	23.58	23.55	23.52
1.4	QPSK	1	3	23.64	23.60	23.52
1.4	QPSK	1	5	23.57	23.55	23.53
1.4	QPSK	3	0	22.71	22.70	22.63
1.4	QPSK	3	1	22.53	22.42	22.49
1.4	QPSK	3	3	22.55	22.45	22.47
1.4	QPSK	6	0	22.82	22.80	22.80
1.4	16QAM	1	0	22.62	22.52	22.57
1.4	16QAM	1	3	22.72	22.67	22.64
1.4	16QAM	1	5	22.67	22.65	22.58
1.4	16QAM	3	0	21.80	21.76	21.78
1.4	16QAM	3	1	21.79	21.74	21.72
1.4	16QAM	3	3	21.73	21.67	21.64
1.4	16QAM	6	0	21.84	21.76	21.75
1.4	64QAM	1	0	21.80	21.77	21.76
1.4	64QAM	1	3	21.70	21.63	21.58
1.4	64QAM	1	5	21.68	21.61	21.59
1.4	64QAM	3	0	20.75	20.63	20.67
1.4	64QAM	3	1	20.64	20.54	20.62
1.4	64QAM	3	3	20.65	20.62	20.63
1.4	64QAM	6	0	20.79	20.70	20.68



**Effective Radiated Power and Effective Isotropic Radiated Power**

LTE Band 14				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				/		23330		/	
Frequency (MHz)				/		793		/	
				/	/	dBm	W	/	/
10	QPSK	1	0	/	/	18.91	0.078	/	/
10	QPSK	1	25	/	/	18.69	0.074	/	/
10	QPSK	1	49	/	/	18.62	0.073	/	/
10	QPSK	25	0	/	/	17.89	0.062	/	/
10	QPSK	25	12	/	/	17.73	0.059	/	/
10	QPSK	25	25	/	/	17.79	0.060	/	/
10	QPSK	50	0	/	/	17.77	0.060	/	/
10	16QAM	1	0	/	/	17.81	0.060	/	/
10	16QAM	1	25	/	/	17.75	0.060	/	/
10	16QAM	1	49	/	/	17.71	0.059	/	/
10	16QAM	25	0	/	/	16.84	0.048	/	/
10	16QAM	25	12	/	/	16.81	0.048	/	/
10	16QAM	25	25	/	/	16.75	0.047	/	/
10	16QAM	50	0	/	/	16.85	0.048	/	/
10	64QAM	1	0	/	/	16.85	0.048	/	/
10	64QAM	1	25	/	/	16.76	0.047	/	/
10	64QAM	1	49	/	/	16.69	0.047	/	/
10	64QAM	25	0	/	/	15.88	0.039	/	/
10	64QAM	25	12	/	/	15.79	0.038	/	/
10	64QAM	25	25	/	/	15.67	0.037	/	/
10	64QAM	50	0	/	/	15.72	0.037	/	/





LTE Band 14				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				23205		23230		23255	
Frequency (MHz)				779.5		782		784.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	18.82	0.076	18.85	0.077	18.81	0.076
5	QPSK	1	12	18.75	0.075	18.65	0.073	18.71	0.074
5	QPSK	1	24	18.82	0.076	18.68	0.074	18.73	0.075
5	QPSK	12	0	17.77	0.060	17.86	0.061	17.81	0.060
5	QPSK	12	7	17.65	0.058	17.83	0.061	17.84	0.061
5	QPSK	12	13	17.83	0.061	17.64	0.058	17.75	0.060
5	QPSK	25	0	17.82	0.061	17.87	0.061	17.74	0.059
5	16QAM	1	0	17.83	0.061	17.84	0.061	17.79	0.060
5	16QAM	1	12	17.76	0.060	17.72	0.059	17.80	0.060
5	16QAM	1	24	17.66	0.058	17.85	0.061	17.79	0.060
5	16QAM	12	0	16.73	0.047	16.77	0.048	16.93	0.049
5	16QAM	12	7	16.89	0.049	16.68	0.047	16.68	0.047
5	16QAM	12	13	16.89	0.049	16.82	0.048	16.68	0.047
5	16QAM	25	0	16.79	0.048	16.85	0.048	16.83	0.048
5	64QAM	1	0	16.82	0.048	16.86	0.049	16.66	0.046
5	64QAM	1	12	16.67	0.046	16.80	0.048	16.73	0.047
5	64QAM	1	24	16.80	0.048	16.89	0.049	16.67	0.046
5	64QAM	12	0	15.82	0.038	15.89	0.039	15.80	0.038
5	64QAM	12	7	15.81	0.038	15.88	0.039	15.87	0.039
5	64QAM	12	13	15.79	0.038	15.80	0.038	15.82	0.038
5	64QAM	25	0	15.71	0.037	15.84	0.038	15.79	0.038



LTE Band 18				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				26715		26740		26765	
Frequency (MHz)				816.5		819.0		821.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	22.04	0.160	22.02	0.159	21.94	0.156
5	QPSK	1	12	22.00	0.158	21.97	0.157	21.96	0.157
5	QPSK	1	24	21.90	0.155	21.88	0.154	21.83	0.152
5	QPSK	12	0	21.08	0.128	20.96	0.125	21.01	0.126
5	QPSK	12	7	21.06	0.128	20.98	0.125	20.99	0.126
5	QPSK	12	13	20.97	0.125	20.86	0.122	20.88	0.122
5	QPSK	25	0	20.87	0.122	20.78	0.120	20.79	0.120
5	16QAM	1	0	20.88	0.122	20.80	0.120	20.77	0.119
5	16QAM	1	12	21.02	0.126	20.90	0.123	20.91	0.123
5	16QAM	1	24	20.90	0.123	20.89	0.123	20.78	0.120
5	16QAM	12	0	19.99	0.100	19.92	0.098	19.87	0.097
5	16QAM	12	7	19.97	0.099	19.89	0.097	19.88	0.097
5	16QAM	12	13	20.00	0.100	19.91	0.098	19.92	0.098
5	16QAM	25	0	19.88	0.097	19.86	0.097	19.80	0.095
5	64QAM	1	0	19.98	0.100	19.93	0.098	19.94	0.099
5	64QAM	1	12	20.04	0.101	20.00	0.100	19.92	0.098
5	64QAM	1	24	20.05	0.101	20.01	0.100	20.04	0.101
5	64QAM	12	0	19.12	0.082	19.07	0.081	19.03	0.080
5	64QAM	12	7	19.08	0.081	18.97	0.079	19.06	0.081
5	64QAM	12	13	18.94	0.078	18.89	0.077	18.91	0.078
5	64QAM	25	0	19.02	0.080	19.00	0.079	18.90	0.078



LTE Band 26				Measured E.R.P.			
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.		High Ch. / Freq.
Channel				/	26740		/
Frequency (MHz)				/	819		/
				/	dBm	W	/
10	QPSK	1	0	/	21.85	0.153	/
10	QPSK	1	25	/	21.84	0.153	/
10	QPSK	1	49	/	21.92	0.156	/
10	QPSK	25	0	/	21.08	0.128	/
10	QPSK	25	12	/	20.88	0.122	/
10	QPSK	25	25	/	20.88	0.122	/
10	QPSK	50	0	/	20.81	0.121	/
10	16QAM	1	0	/	20.95	0.124	/
10	16QAM	1	25	/	20.91	0.123	/
10	16QAM	1	49	/	20.88	0.122	/
10	16QAM	25	0	/	19.88	0.097	/
10	16QAM	25	12	/	20.11	0.103	/
10	16QAM	25	25	/	19.97	0.099	/
10	16QAM	50	0	/	19.93	0.098	/
10	64QAM	1	0	/	20.08	0.102	/
10	64QAM	1	25	/	19.91	0.098	/
10	64QAM	1	49	/	20.05	0.101	/
10	64QAM	25	0	/	19.18	0.083	/
10	64QAM	25	12	/	18.88	0.077	/
10	64QAM	25	25	/	18.84	0.077	/
10	64QAM	50	0	/	18.99	0.079	/



LTE Band 26				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				26715		26740		26765	
Frequency (MHz)				816.5		819.0		821.5	
				dBm	W	dBm	W	dBm	W
5	QPSK	1	0	21.94	0.156	21.89	0.155	21.87	0.154
5	QPSK	1	12	21.96	0.157	21.93	0.156	21.89	0.155
5	QPSK	1	24	22.07	0.161	22.01	0.159	21.99	0.158
5	QPSK	12	0	21.14	0.130	21.13	0.130	21.08	0.128
5	QPSK	12	7	21.09	0.129	21.07	0.128	21.07	0.128
5	QPSK	12	13	21.06	0.128	20.98	0.125	21.05	0.127
5	QPSK	25	0	20.83	0.121	20.75	0.119	20.74	0.119
5	16QAM	1	0	21.07	0.128	20.98	0.125	20.98	0.125
5	16QAM	1	12	20.76	0.119	20.64	0.116	20.72	0.118
5	16QAM	1	24	21.03	0.127	20.93	0.124	20.93	0.124
5	16QAM	12	0	19.94	0.099	19.90	0.098	19.87	0.097
5	16QAM	12	7	20.03	0.101	19.97	0.099	19.93	0.098
5	16QAM	12	13	20.06	0.101	20.01	0.100	20.03	0.101
5	16QAM	25	0	19.96	0.099	19.88	0.097	19.89	0.097
5	64QAM	1	0	19.83	0.096	19.75	0.094	19.82	0.096
5	64QAM	1	12	19.87	0.097	19.86	0.097	19.83	0.096
5	64QAM	1	24	20.03	0.101	20.01	0.100	19.95	0.099
5	64QAM	12	0	18.93	0.078	18.88	0.077	18.91	0.078
5	64QAM	12	7	18.95	0.079	18.85	0.077	18.88	0.077
5	64QAM	12	13	19.08	0.081	19.06	0.081	18.96	0.079
5	64QAM	25	0	18.88	0.077	18.79	0.076	18.78	0.076



LTE Band 26				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				26705		26740		26775	
Frequency (MHz)				815.5		819.0		822.5	
				dBm	W	dBm	W	dBm	W
3	QPSK	1	0	22.04	0.160	21.99	0.158	21.96	0.157
3	QPSK	1	8	21.85	0.153	21.82	0.152	21.77	0.150
3	QPSK	1	14	21.78	0.151	21.69	0.148	21.70	0.148
3	QPSK	8	0	21.05	0.127	20.93	0.124	21.01	0.126
3	QPSK	8	4	20.78	0.120	20.77	0.119	20.72	0.118
3	QPSK	8	7	21.08	0.128	21.00	0.126	21.04	0.127
3	QPSK	15	0	20.96	0.125	20.87	0.122	20.90	0.123
3	16QAM	1	0	20.91	0.123	20.86	0.122	20.79	0.120
3	16QAM	1	8	20.93	0.124	20.82	0.121	20.81	0.121
3	16QAM	1	14	20.85	0.122	20.83	0.121	20.73	0.118
3	16QAM	8	0	20.03	0.101	19.94	0.099	19.92	0.098
3	16QAM	8	4	19.97	0.099	19.92	0.098	19.94	0.099
3	16QAM	8	7	20.15	0.104	20.13	0.103	20.14	0.103
3	16QAM	15	0	20.12	0.103	20.07	0.102	20.10	0.102
3	64QAM	1	0	19.90	0.098	19.85	0.097	19.88	0.097
3	64QAM	1	8	19.95	0.099	19.93	0.098	19.86	0.097
3	64QAM	1	14	19.91	0.098	19.87	0.097	19.87	0.097
3	64QAM	8	0	19.00	0.079	18.96	0.079	18.90	0.078
3	64QAM	8	4	19.06	0.081	19.00	0.079	19.03	0.080
3	64QAM	8	7	18.95	0.079	18.94	0.078	18.86	0.077
3	64QAM	15	0	19.09	0.081	19.00	0.079	19.03	0.080



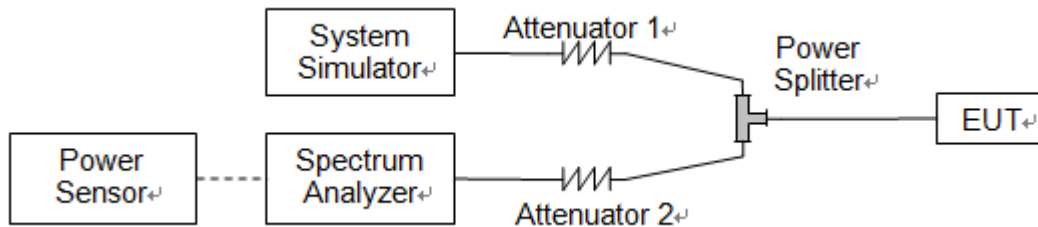
LTE Band 26				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				26697		26740		26783	
Frequency (MHz)				814.7		819.0		823.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	21.80	0.151	21.77	0.150	21.74	0.149
1.4	QPSK	1	3	21.86	0.153	21.82	0.152	21.74	0.149
1.4	QPSK	1	5	21.79	0.151	21.77	0.150	21.75	0.150
1.4	QPSK	3	0	20.93	0.124	20.92	0.124	20.85	0.122
1.4	QPSK	3	1	20.75	0.119	20.64	0.116	20.71	0.118
1.4	QPSK	3	3	20.77	0.119	20.67	0.117	20.69	0.117
1.4	QPSK	6	0	21.04	0.127	21.02	0.126	21.02	0.126
1.4	16QAM	1	0	20.84	0.121	20.74	0.119	20.79	0.120
1.4	16QAM	1	3	20.94	0.124	20.89	0.123	20.86	0.122
1.4	16QAM	1	5	20.89	0.123	20.87	0.122	20.80	0.120
1.4	16QAM	3	0	20.02	0.100	19.98	0.100	20.00	0.100
1.4	16QAM	3	1	20.01	0.100	19.96	0.099	19.94	0.099
1.4	16QAM	3	3	19.95	0.099	19.89	0.097	19.86	0.097
1.4	16QAM	6	0	20.06	0.101	19.98	0.100	19.97	0.099
1.4	64QAM	1	0	20.02	0.100	19.99	0.100	19.98	0.100
1.4	64QAM	1	3	19.92	0.098	19.85	0.097	19.80	0.095
1.4	64QAM	1	5	19.90	0.098	19.83	0.096	19.81	0.096
1.4	64QAM	3	0	18.97	0.079	18.85	0.077	18.89	0.077
1.4	64QAM	3	1	18.86	0.077	18.76	0.075	18.84	0.077
1.4	64QAM	3	3	18.87	0.077	18.84	0.077	18.85	0.077
1.4	64QAM	6	0	19.01	0.080	18.92	0.078	18.90	0.078

## 2.2. Occupied Bandwidth

### 2.2.1. Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

### 2.2.2. Test Description



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.



2.2.4. Test Result

LTE Band 14				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.50	5.04
	Low	16QAM	4.50	5.03
	Low	64QAM	4.51	4.99
	Mid	QPSK	4.50	5.01
	Mid	16QAM	4.49	4.98
	Mid	64QAM	4.51	5.00
	High	QPSK	4.49	5.01
	High	16QAM	4.48	5.01
	High	64QAM	4.49	4.98
10	Mid	QPSK	9.00	9.85
	Mid	16QAM	8.97	9.89
	Mid	64QAM	8.97	9.91

LTE Band 18				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.51	5.01
	Low	16QAM	4.51	5.02
	Low	64QAM	4.52	5.03
	Mid	QPSK	4.50	5.00
	Mid	16QAM	4.49	4.98
	Mid	64QAM	4.50	5.01
	High	QPSK	4.50	5.03
	High	16QAM	4.50	5.00
	High	64QAM	4.51	5.01





LTE Band 26				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.10	1.29
	Low	16QAM	1.10	1.30
	Low	64QAM	1.10	1.28
	Mid	QPSK	1.10	1.28
	Mid	16QAM	1.10	1.30
	Mid	64QAM	1.10	1.28
	High	QPSK	1.10	1.29
	High	16QAM	1.10	1.29
	High	64QAM	1.10	1.30
3	Low	QPSK	2.70	2.99
	Low	16QAM	2.71	3.00
	Low	64QAM	2.70	2.97
	Mid	QPSK	2.70	2.98
	Mid	16QAM	2.71	3.00
	Mid	64QAM	2.71	2.97
	High	QPSK	2.69	2.98
	High	16QAM	2.70	2.98
	High	64QAM	2.71	2.98
5	Low	QPSK	4.50	5.03
	Low	16QAM	4.52	5.02
	Low	64QAM	4.51	5.00
	Mid	QPSK	4.49	5.02
	Mid	16QAM	4.50	5.03
	Mid	64QAM	4.50	4.96
	High	QPSK	4.50	5.04
	High	16QAM	4.50	4.99
	High	64QAM	4.50	4.97
10	Mid	QPSK	8.99	9.83
	Mid	16QAM	8.95	9.79
	Mid	64QAM	8.97	9.82



Band14 / 5MHz / QPSK/ Low CH



Band14 / 5MHz / 16QAM/ Low CH



Band14 / 5MHz / 64QAM/ Low CH



Band14 / 5MHz / QPSK/ Mid CH



Band14 / 5MHz / 16QAM/ Mid CH



Band14 / 5MHz / 64QAM/ Mid CH



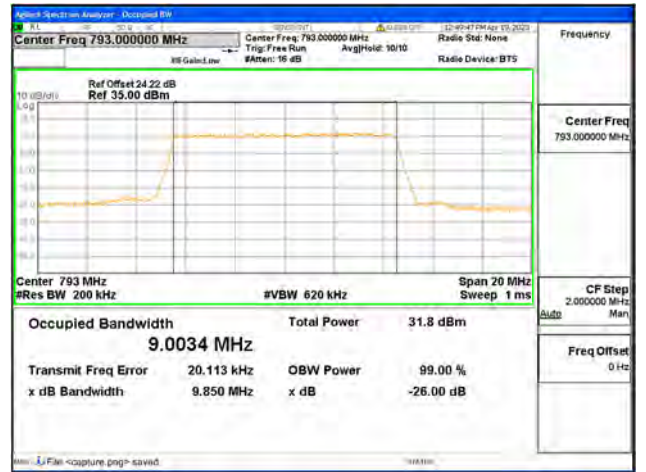
Band14 / 5MHz / QPSK/ High CH



Band14 / 5MHz / 16QAM/ High CH



Band14 / 5MHz / 64QAM/ High CH



Band14 / 10MHz / QPSK/ Mid CH



Band14 / 10MHz / 16QAM/ Mid CH



Band14 / 10MHz / 64QAM/ Mid CH



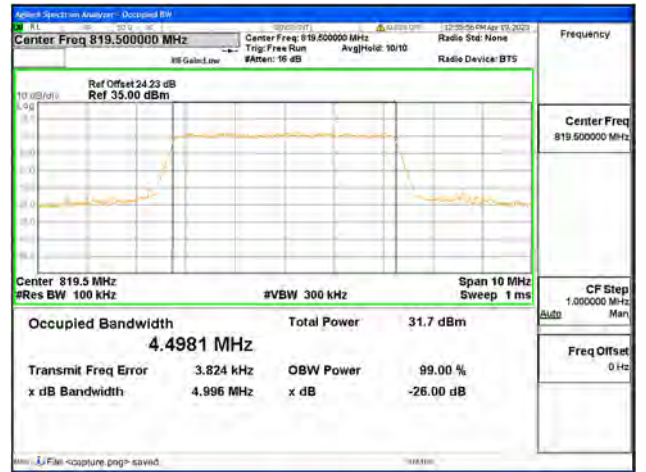
Band18 part90 / 5MHz / QPSK/ Low CH



Band18 part90 / 5MHz / 16QAM/ Low CH



Band18 part90 / 5MHz / 64QAM/ Low CH



Band18 part90 / 5MHz / QPSK/ Mid CH



Band18 part90 / 5MHz / 16QAM/ Mid CH



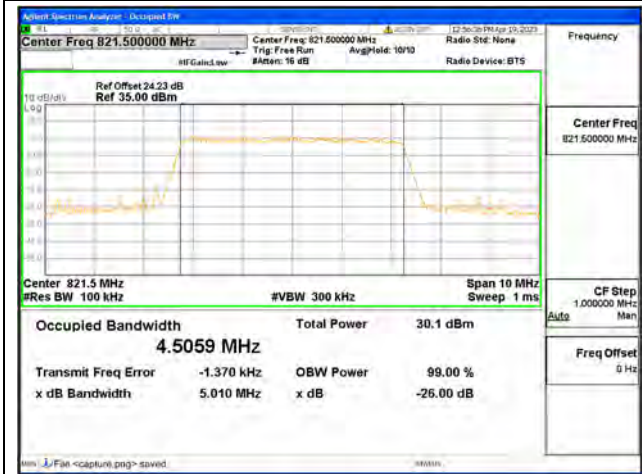
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Band18 part90 / 5MHz / QPSK/ High CH



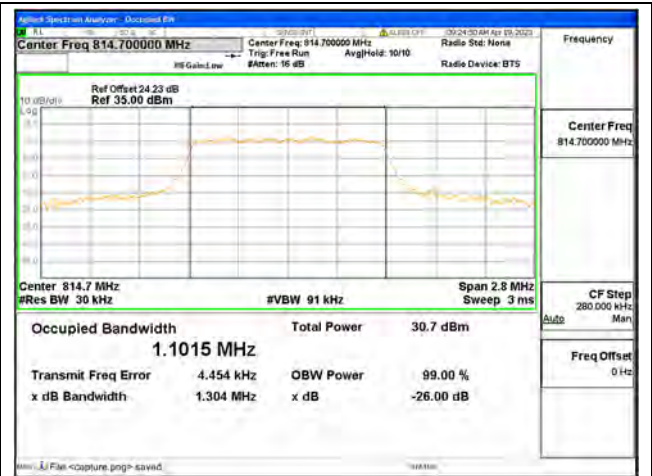
Band18 part90 / 5MHz / 16QAM/ High CH



Band18 part90 / 5MHz / 64QAM/ High CH



Band26 Part90 / 1.4MHz / QPSK/ Low CH



Band26 Part90 / 1.4MHz / 16QAM/ Low CH



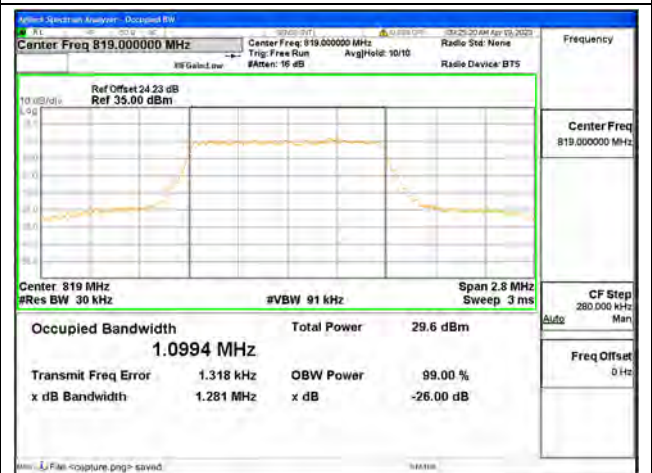
Band26 Part90 / 1.4MHz / 64QAM/ Low CH



Band26 Part90 / 1.4MHz / QPSK/ Mid CH



Band26 Part90 / 1.4MHz / 16QAM/ Mid CH



Band26 Part90 / 1.4MHz / 64QAM/ Mid CH



Band26 Part90 / 1.4MHz / QPSK/ High CH



Band26 Part90 / 1.4MHz / 16QAM/ High CH



Band26 Part90 / 1.4MHz / 64QAM/ High CH



Band26 Part90 / 3MHz / QPSK/ Low CH



Band26 Part90 / 3MHz / 16QAM/ Low CH



Band26 Part90 / 3MHz / 64QAM/ Low CH



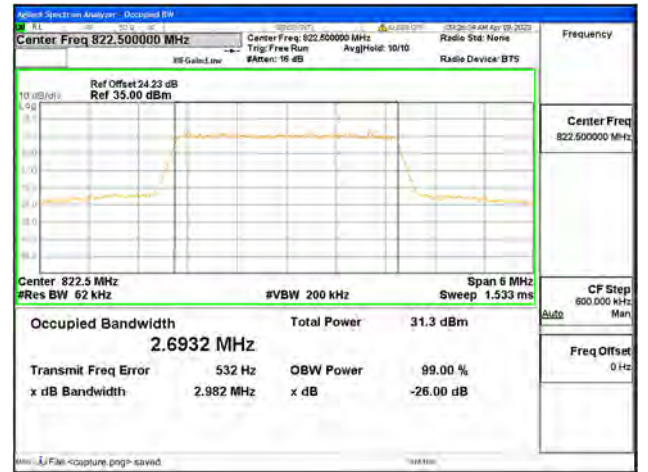
Band26 Part90 / 3MHz / QPSK/ Mid CH



Band26 Part90 / 3MHz / 16QAM/ Mid CH



Band26 Part90 / 3MHz / 64QAM/ Mid CH



Band26 Part90 / 3MHz / QPSK/ High CH



Band26 Part90 / 3MHz / 16QAM/ High CH



Band26 Part90 / 3MHz / 64QAM/ High CH





Band26 Part90 / 5MHz / QPSK/ Low CH



Band26 Part90 / 5MHz / 16QAM/ Low CH



Band26 Part90 / 5MHz / 64QAM/ Low CH



Band26 Part90 / 5MHz / QPSK/ Mid CH



Band26 Part90 / 5MHz / 16QAM/ Mid CH



Band26 Part90 / 5MHz / 64QAM/ Mid CH



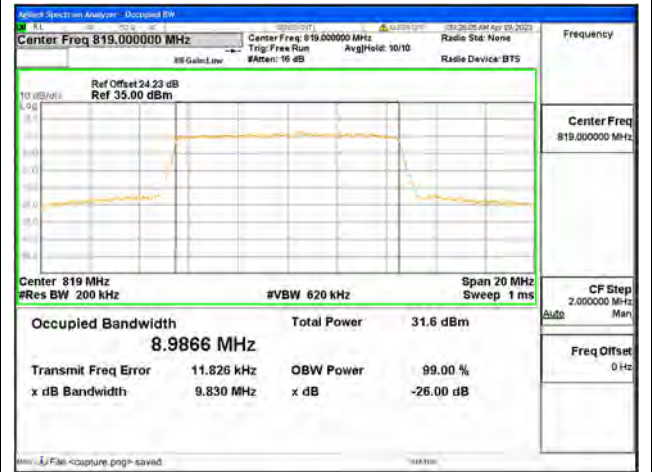
Band26 Part90 / 5MHz / QPSK/ High CH



Band26 Part90 / 5MHz / 16QAM/ High CH



Band26 Part90 / 5MHz / 64QAM/ High CH



Band26 Part90 / 10MHz / QPSK/ Mid CH



Band26 Part90 / 10MHz / 16QAM/ Mid CH



Band26 Part90 / 10MHz / 64QAM/ Mid CH

## 2.3. Frequency Stability

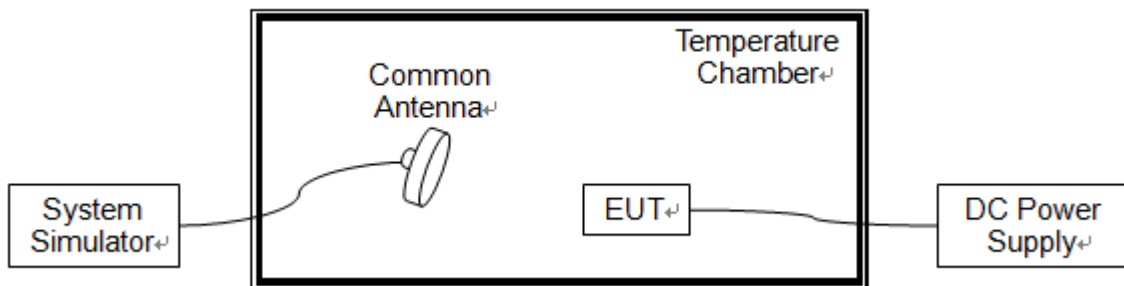
### 2.3.1. Requirement

According to FCC section 2.1055 & 90.213, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from  $-30^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$  at intervals of not more than  $10^{\circ}\text{C}$ .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

**Note:** The operating temperature of EUT is from  $0^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ , which are specified by the applicant.

### 2.3.2. Test Description



The EUT which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power. A call is established between the EUT and the SS via a Common Antenna.

### 2.3.3. Test procedure

KDB 971168 D01v03 Section 9.0 and ANSI/TIA-603-E-2016.



**2.3.4. Test Result**

The nominal, highest and lowest extreme voltages are separately 3.85V, 4.40V and 3.60V, which are specified by the applicant; the normal temperature here used is 20°C.

LTE Band 14, 64QAM, Channel 23330, Frequency 793.0MHz					
Limit=±2.5ppm					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	-21	-0.026	PASS
Normal		0	11	0.014	
Normal		+10	16	0.020	
Normal		+20	20	0.025	
Normal		+30	23	<b>0.029</b>	
Normal		+40	12	0.015	
High	4.40	+20	13	0.016	
BATT.ENDPOINT	3.60	+20	-4	-0.005	

LTE Band 18, 64QAM, Channel 23895, Frequency 819.5MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VDC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	14	0.017	PASS
Normal		0	-7	-0.009	
Normal		+10	19	0.023	
Normal		+20	-9	-0.011	
Normal		+30	19	0.023	
Normal		+40	13	0.016	
High	4.40	+20	20	<b>0.024</b>	
BATT.ENDPOINT	3.60	+20	19	0.023	



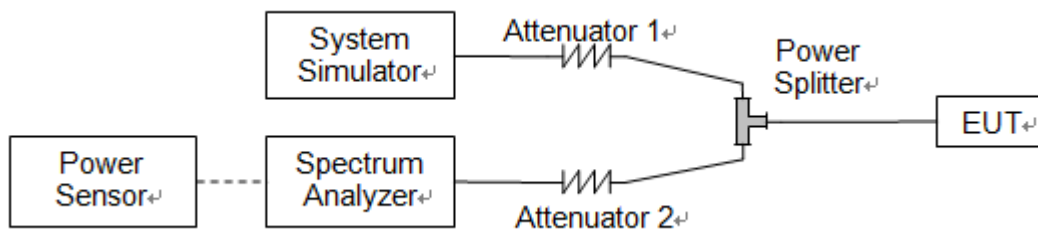
LTE Band 26, QPSK, Channel 26740, Frequency 819MHz Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	3.85	+20(Ref)	15	0.018	PASS
Normal		0	-21	-0.026	
Normal		+10	5	0.006	
Normal		+20	15	0.018	
Normal		+30	19	<b>0.023</b>	
Normal		+40	14	0.017	
High	4.40	+20	-3	-0.004	
BATT.ENDPOINT	3.60	+20	17	0.021	

## 2.4. Conducted Spurious Emissions

### 2.4.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

### 2.4.2. Test Description



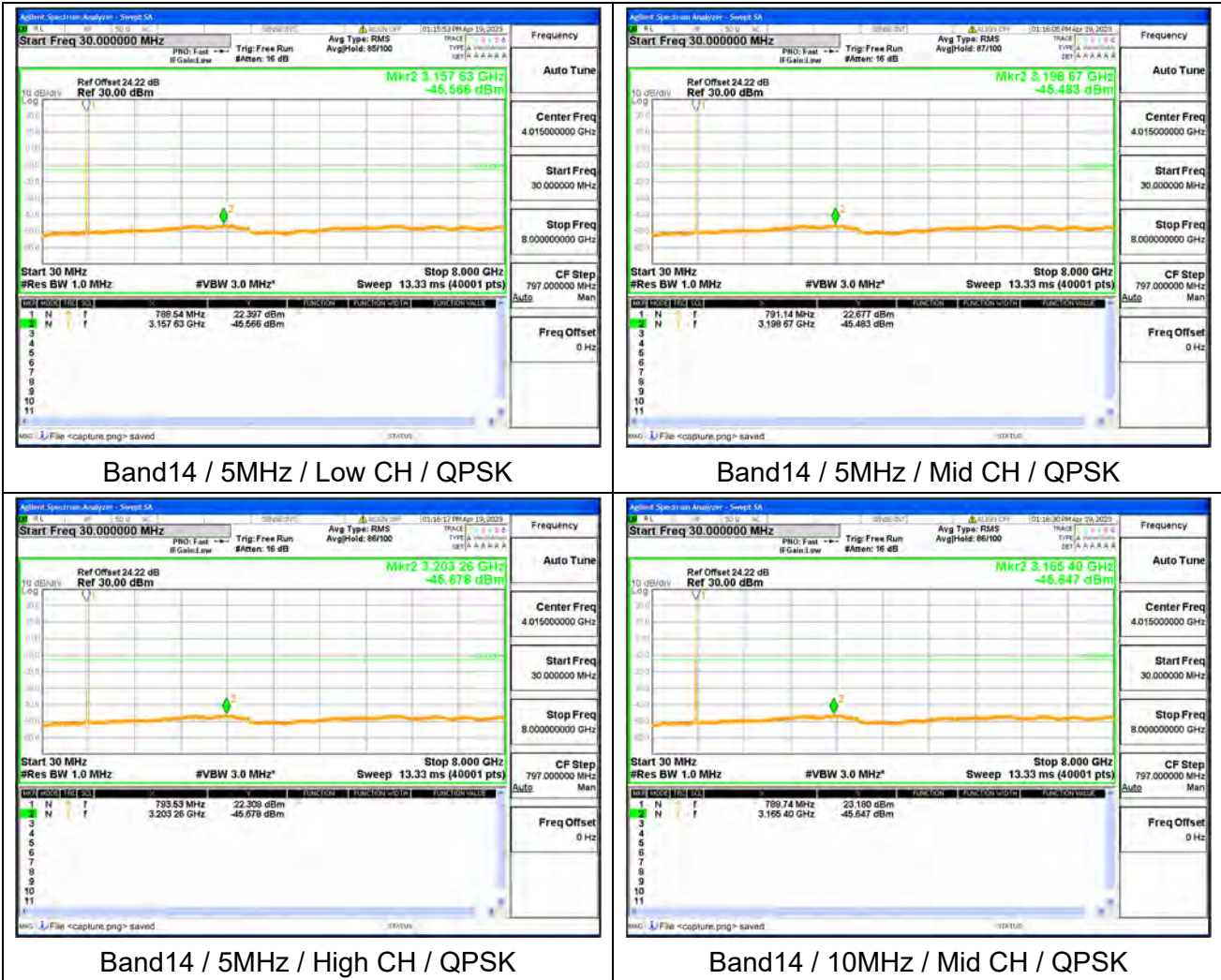
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.4.3. Test procedure

KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.



2.4.4. Test Result

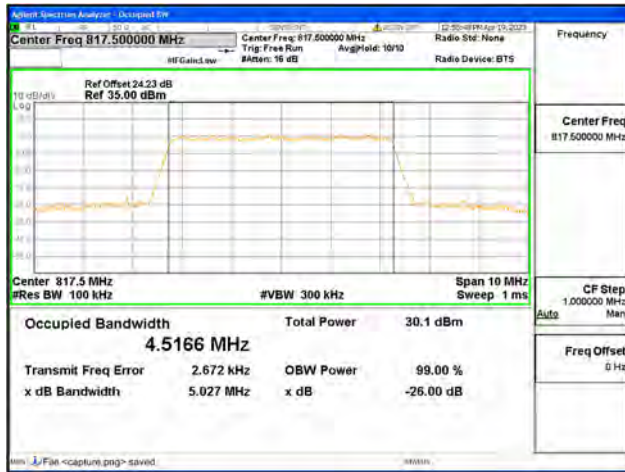




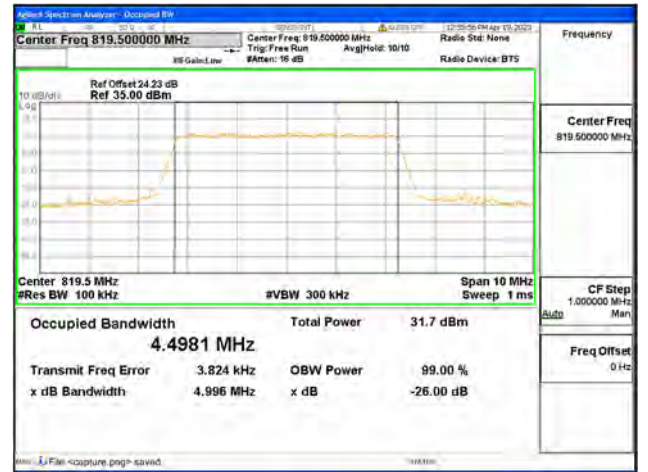
Band18 part90 / 5MHz / QPSK/ Low CH



Band18 part90 / 5MHz / 16QAM/ Low CH



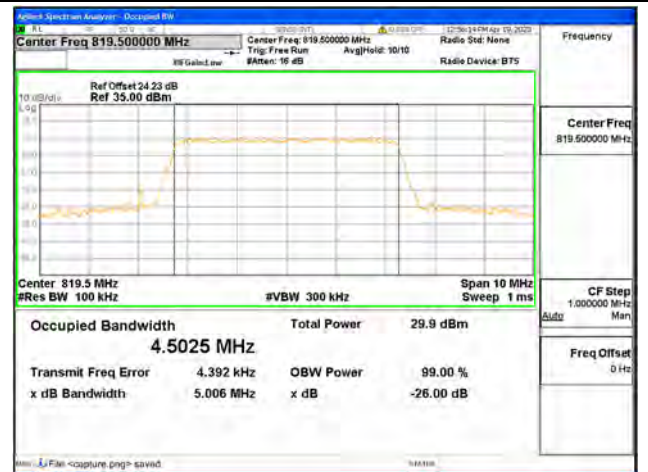
Band18 part90 / 5MHz / 64QAM/ Low CH



Band18 part90 / 5MHz / QPSK/ Mid CH



Band18 part90 / 5MHz / 16QAM/ Mid CH

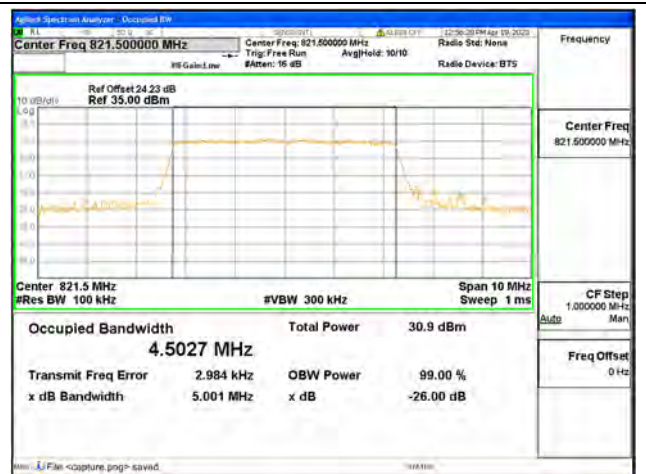


Band18 part90 / 5MHz / 64QAM/ Mid CH





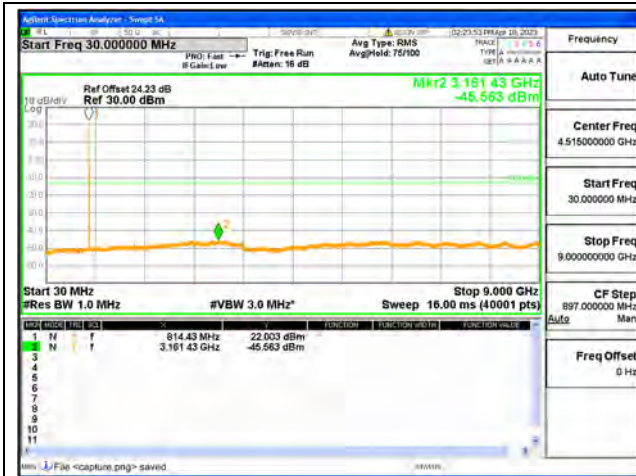
Band18 part90 / 5MHz / QPSK/ High CH



Band18 part90 / 5MHz / 16QAM/ High CH



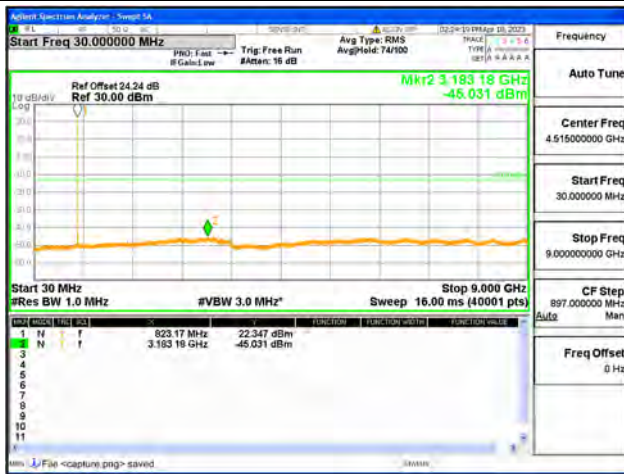
Band18 part90 / 5MHz / 64QAM/ High CH



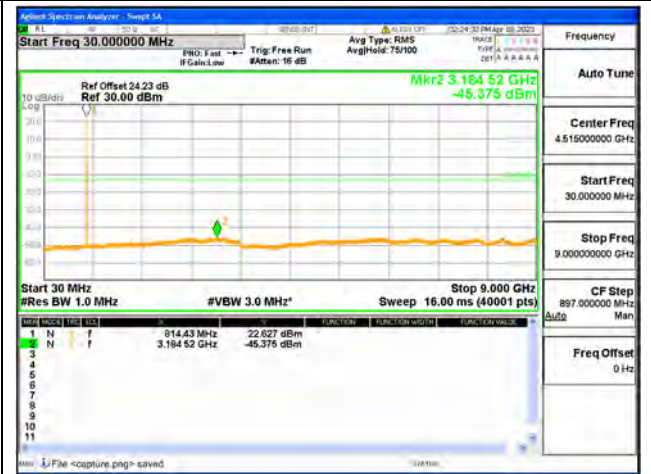
Band26 Part90 / 1.4MHz / Low CH / QPSK



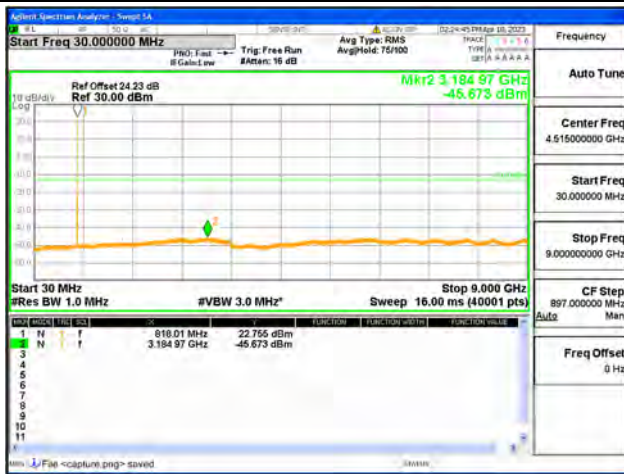
Band26 Part90 / 1.4MHz / Mid CH / QPSK



Band26 Part90 / 1.4MHz / High CH / QPSK



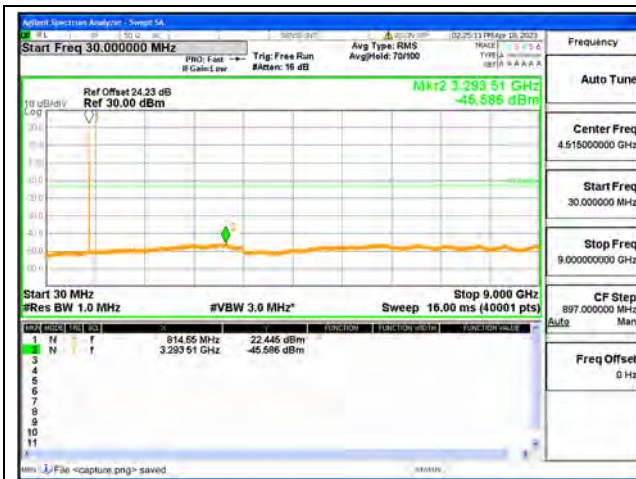
Band26 Part90 / 3MHz / Low CH / QPSK



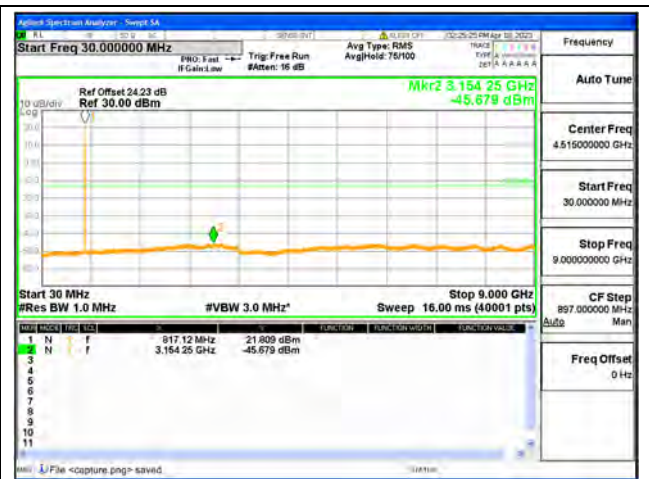
Band26 Part90 / 3MHz / Mid CH / QPSK



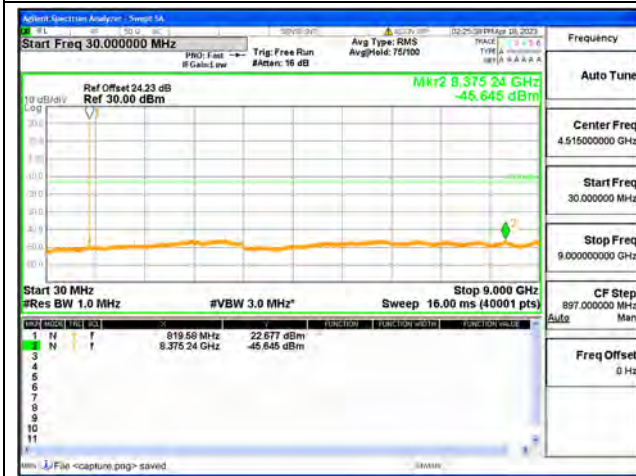
Band26 Part90 / 3MHz / High CH / QPSK



Band26 Part90 / 5MHz / Low CH / QPSK



Band26 Part90 / 5MHz / Mid CH / QPSK



Band26 Part90 / 5MHz / High CH / QPSK



Band26 Part90 / 10MHz / Mid CH / QPSK

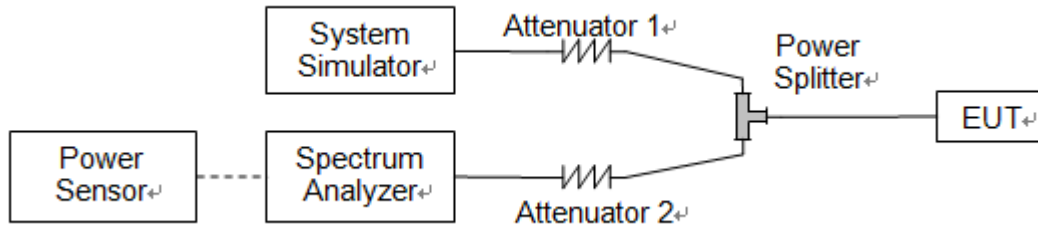
## 2.5. Band Edge

### 2.5.1. Requirement

Band26

According to FCC section 90.961(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

### 2.5.2. Test Description



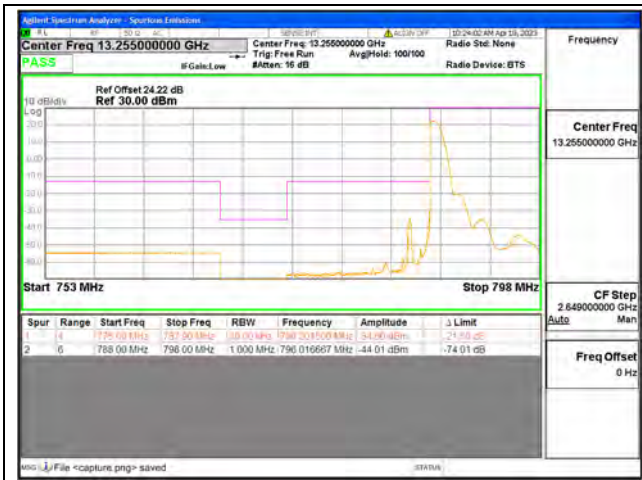
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

### 2.5.3. Test procedure

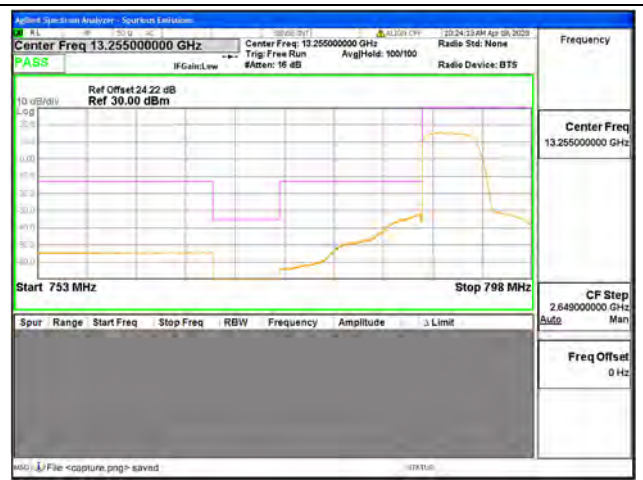
KDB 971168 D01v03 Section 6.0 and ANSI/TIA-603-E-2016.



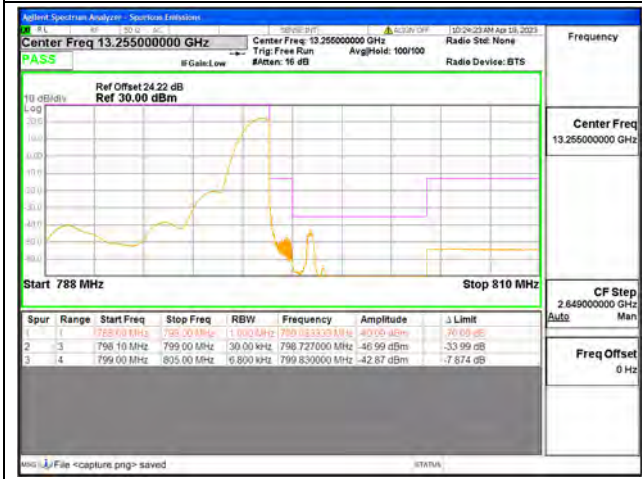
2.5.4. Test Result



Band14 / 5MHz / Low CH / QPSK / 1 RB



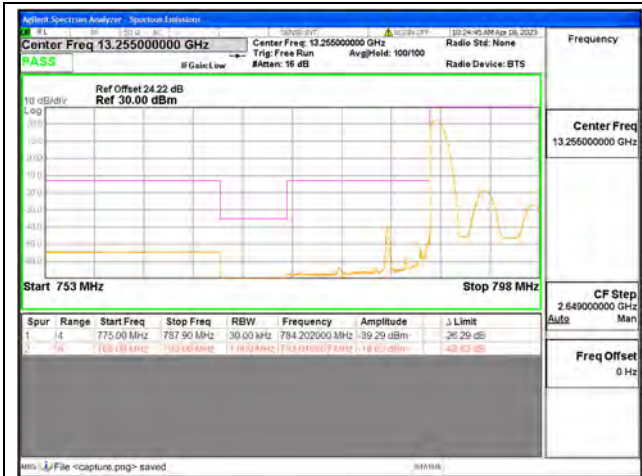
Band14 / 5MHz / Low CH / QPSK / FULL RB



Band14 / 5MHz / High CH / QPSK / 1 RB



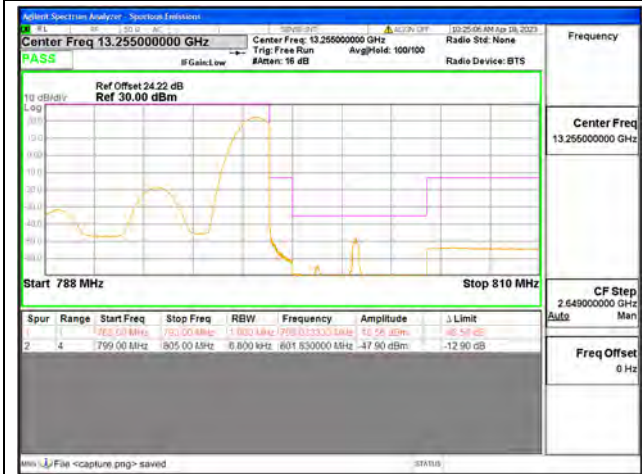
Band14 / 5MHz / High CH / QPSK / FULL RB



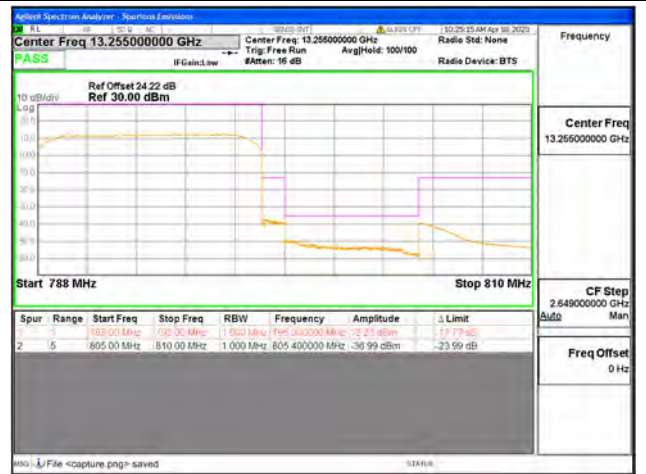
Band14 / 10MHz / Low CH / QPSK / 1 RB



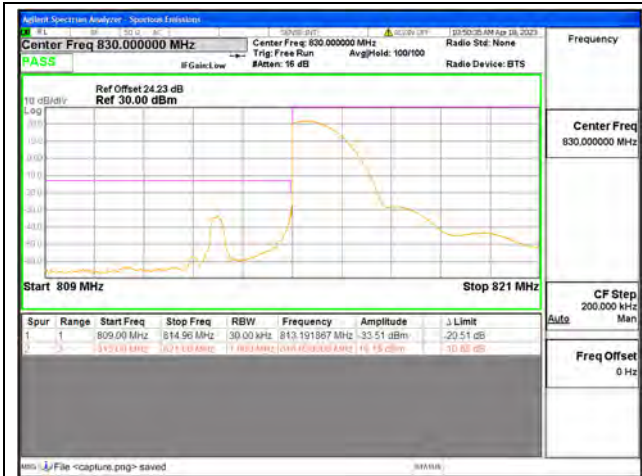
Band14 / 10MHz / Low CH / QPSK / FULL RB



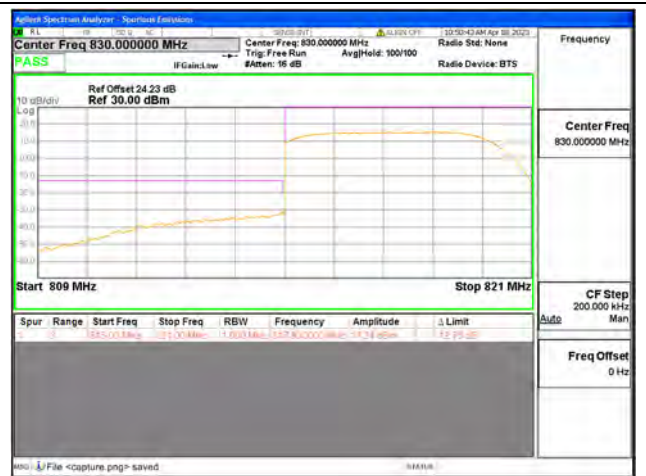
Band14 / 10MHz / High CH / QPSK / 1 RB



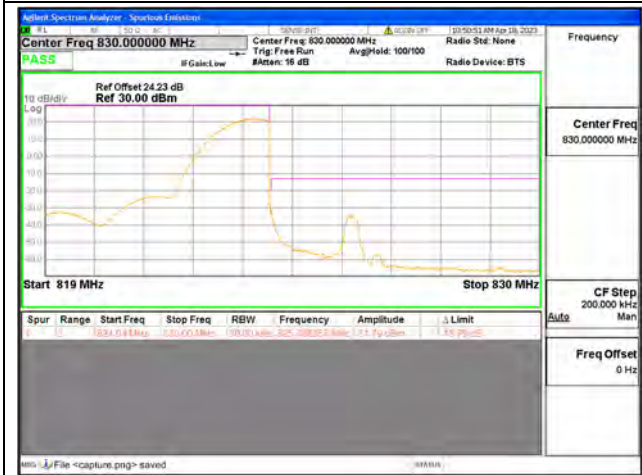
Band14 / 10MHz / High CH / QPSK / FULL RB



Band18 part90 / 5MHz / Low CH / QPSK / 1 RB



Band18 part90 / 5MHz / Low CH / QPSK / FULL RB



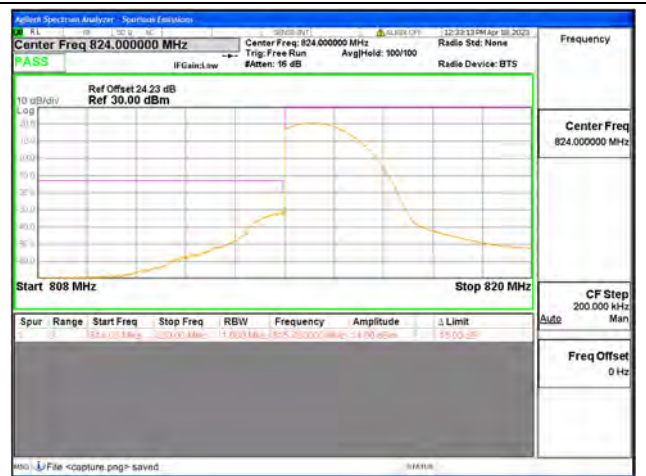
Band18 part90 / 5MHz / High CH / QPSK / 1 RB



Band18 part90 / 5MHz / High CH / QPSK / FULL RB



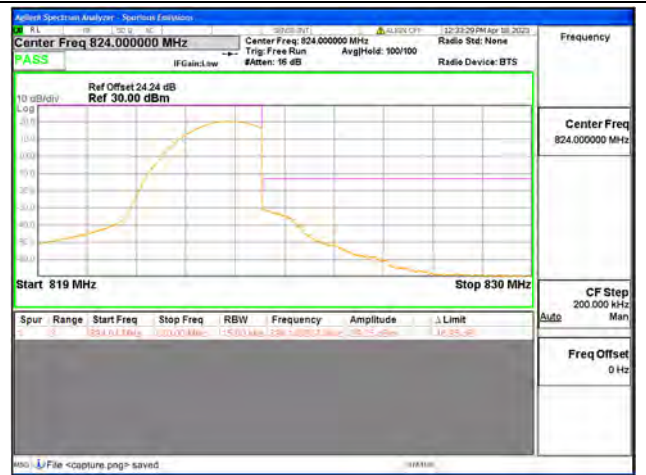
Band26 Part90 / 1.4MHz / Low CH / QPSK / 1 RB



Band26 Part90 / 1.4MHz / Low CH / QPSK / FULL RB



Band26 Part90 / 1.4MHz / High CH / QPSK / 1 RB

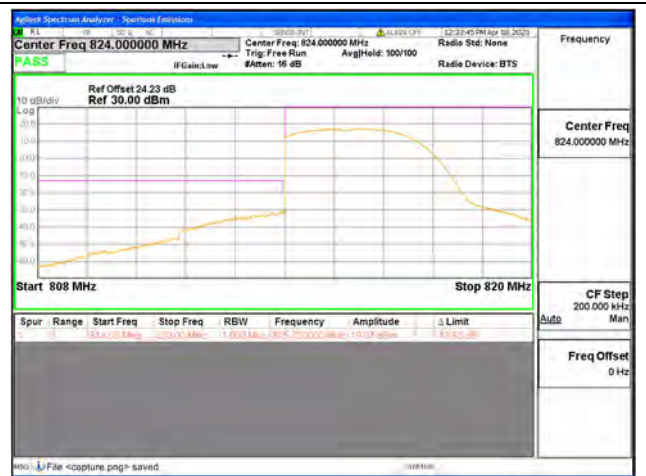


Band26 Part90 / 1.4MHz / High CH / QPSK / FULL RB

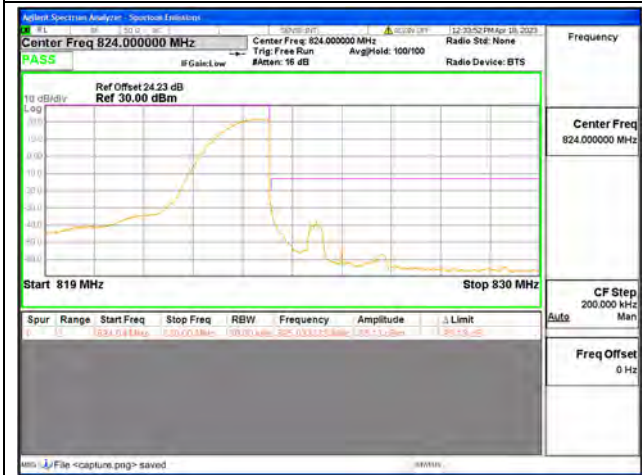




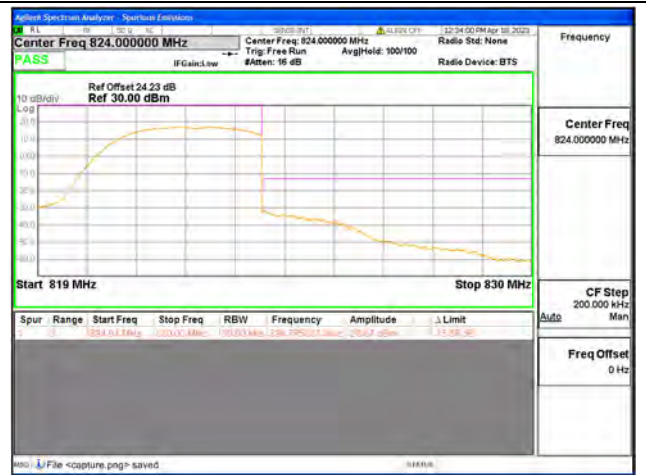
Band26 Part90 / 3MHz / Low CH / QPSK / 1 RB



Band26 Part90 / 3MHz / Low CH / QPSK / FULL RB



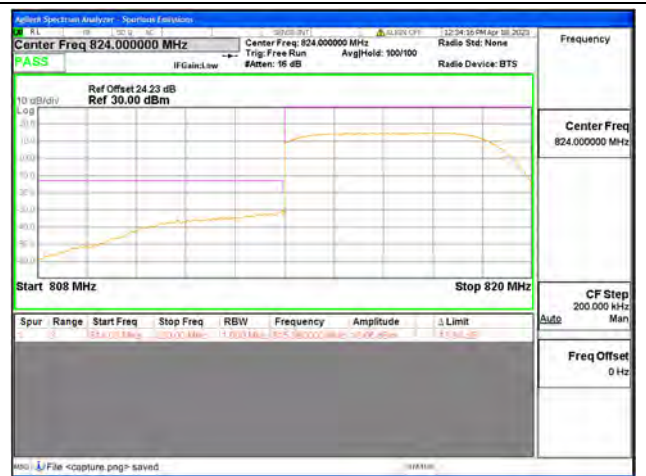
Band26 Part90 / 3MHz / High CH / QPSK / 1 RB



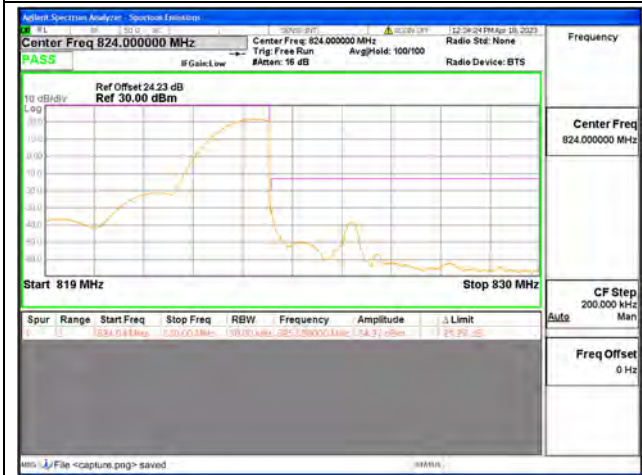
Band26 Part90 / 3MHz / High CH / QPSK / FULL RB



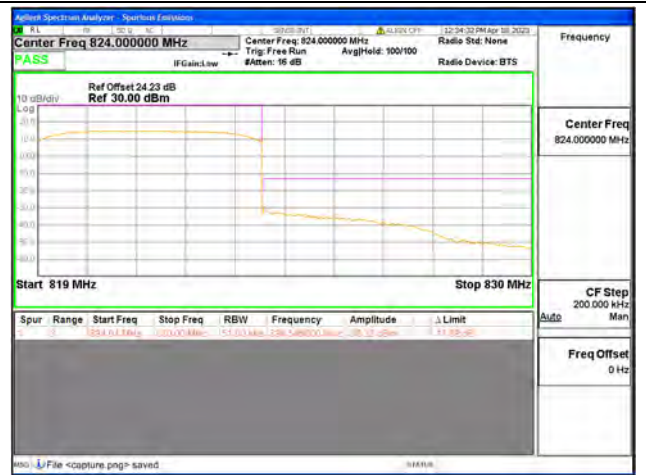
Band26 Part90 / 5MHz / Low CH / QPSK / 1 RB



Band26 Part90 / 5MHz / Low CH / QPSK / FULL RB



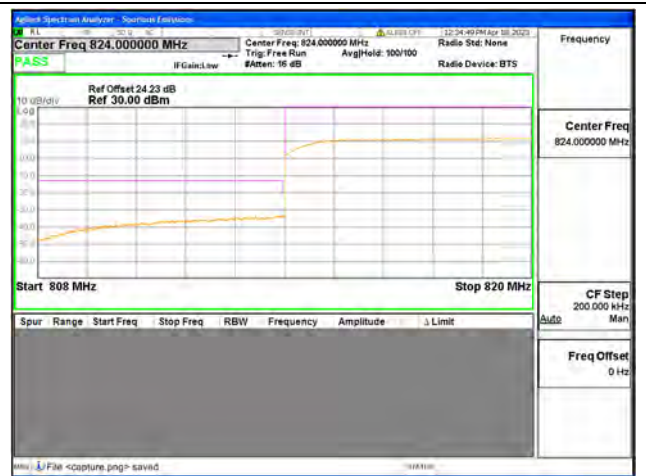
Band26 Part90 / 5MHz / High CH / QPSK / 1 RB



Band26 Part90 / 5MHz / High CH / QPSK / FULL RB



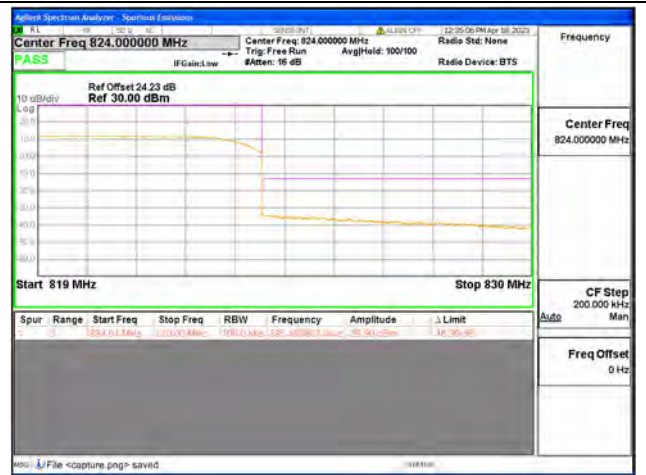
Band26 Part90 / 10MHz / Low CH / QPSK / 1 RB



Band26 Part90 / 10MHz / Low CH / QPSK / FULL RB



Band26 Part90 / 10MHz / High CH / QPSK / 1 RB



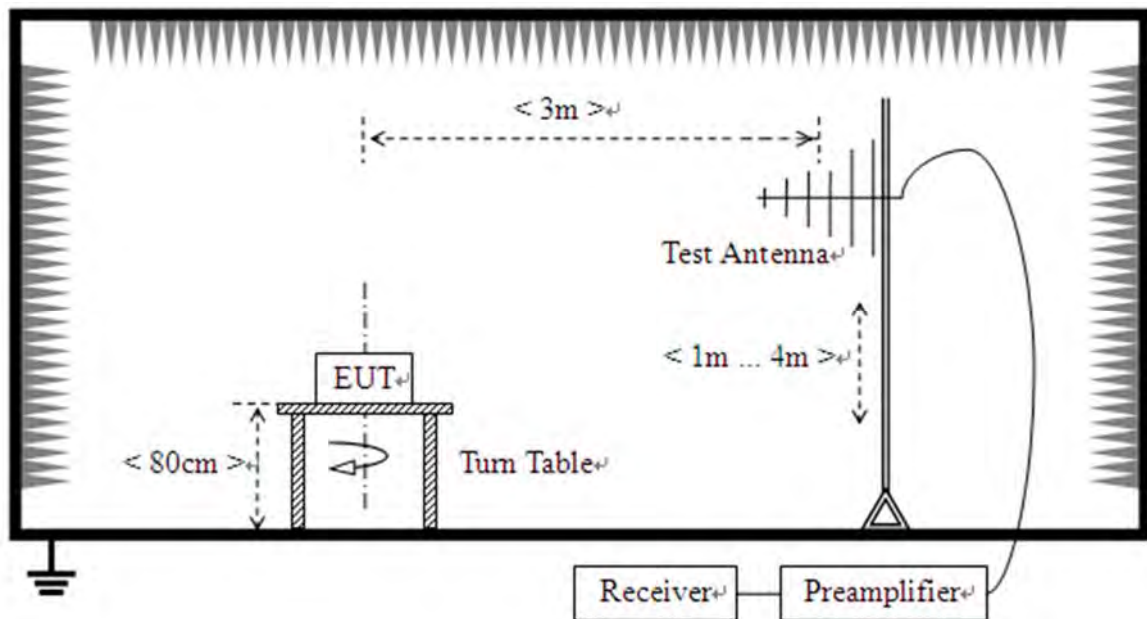
Band26 Part90 / 10MHz / High CH / QPSK / FULL RB

## 2.6. Radiated Spurious Emissions

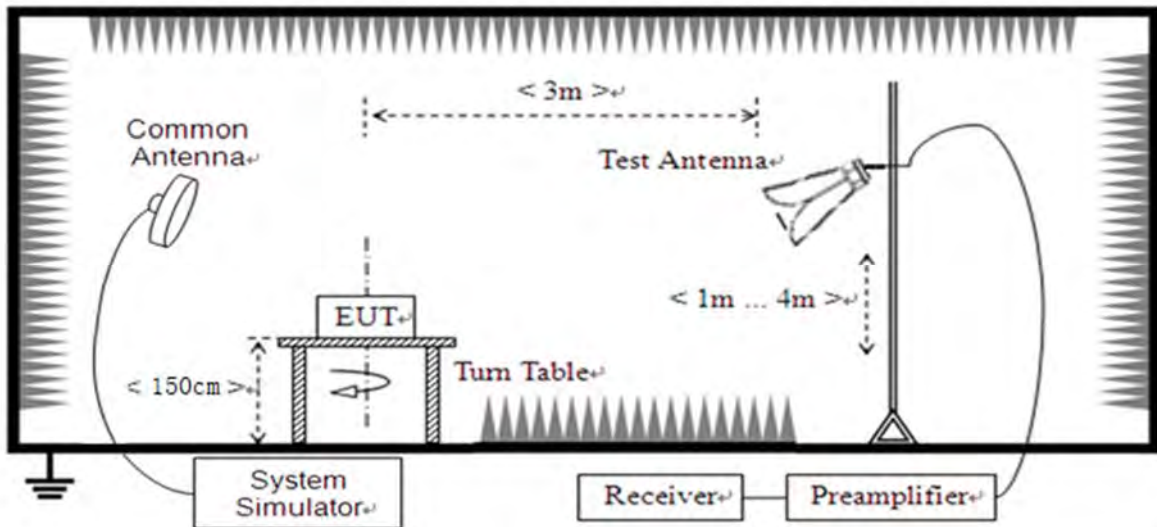
### 2.6.1. Requirement

According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43+10*\log(P)$ dB. This calculated to be -13dBm.

### 2.6.2. Test Description



(For the test frequency from 30MHz to 1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading. A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360° to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

**Note:** when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

### 2.6.3. Test procedure

KDB 971168 D01v03 Section 5.8 and ANSI/TIA-603-E-2016.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements.



#### 2.6.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST\_TX}} - P_{\text{SUBST\_RX}} - L_{\text{SUBST\_CABLES}} + G_{\text{SUBST\_TX\_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where  $A_{\text{SUBST}}$  is the final substitution correction including receive antenna gain.

$P_{\text{SUBST\_TX}}$  is signal generator level,

$P_{\text{SUBST\_RX}}$  is receiver level,

$L_{\text{SUBST\_CABLES}}$  is cable losses including TX cable,

$G_{\text{SUBST\_TX\_ANT}}$  is substitution antenna gain.

$A_{\text{TOT}}$  is total correction factor including cable loss and substitution correction

During the test, the data of  $A_{\text{TOT}}$  was added in the test spectrum analyze, so spectrum analyze reading is the final values which contain the data of  $A_{\text{TOT}}$ .

**Note1:** The power of the EUT transmitting frequency should be ignored.

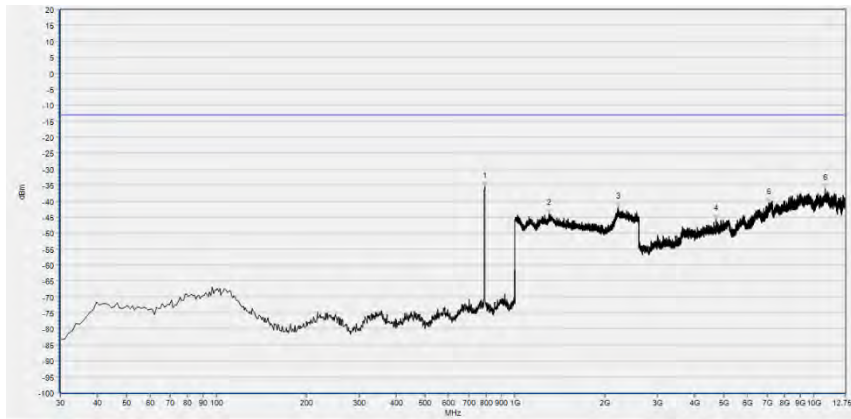
**Note2:** All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

**Note3:** All bandwidth and modulation were considered and evaluated respectively by performing full test for each band, only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.

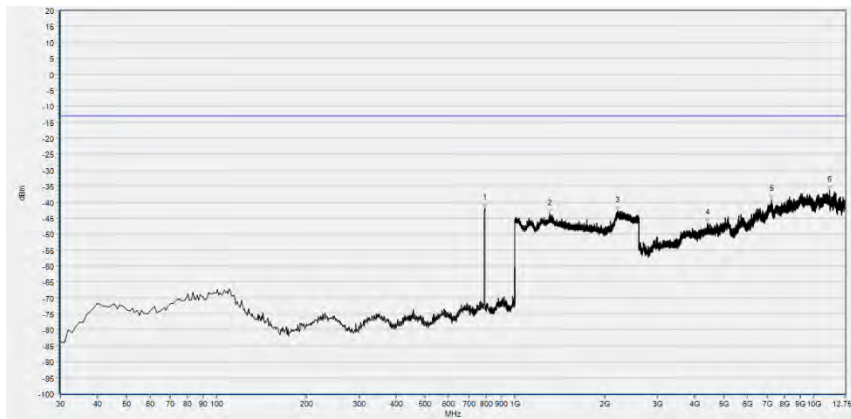
**Note 4:** N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

**Note 5:** The amplitude of emissions (18GHz to 10th harmonics) which are attenuated more than 20 dB below the limit are not be reported.

LTE Band 14, 5MHz BW, Low Channel, QPSK

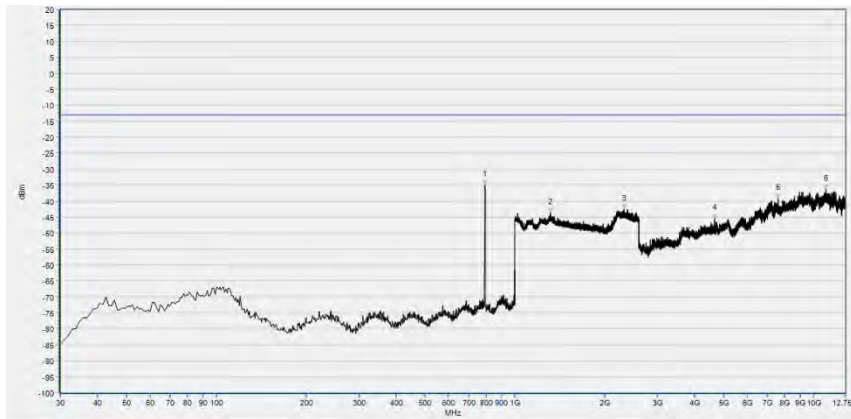


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	791.450	-35.32	-13.00	Horizontal	N/A
2	1298.359	-43.91	-13.00	Horizontal	PASS
3	2210.724	-41.84	-13.00	Horizontal	PASS
4	4706.047	-45.75	-13.00	Horizontal	PASS
5	7079.733	-40.47	-13.00	Horizontal	PASS
6	10957.738	-36.10	-13.00	Horizontal	PASS

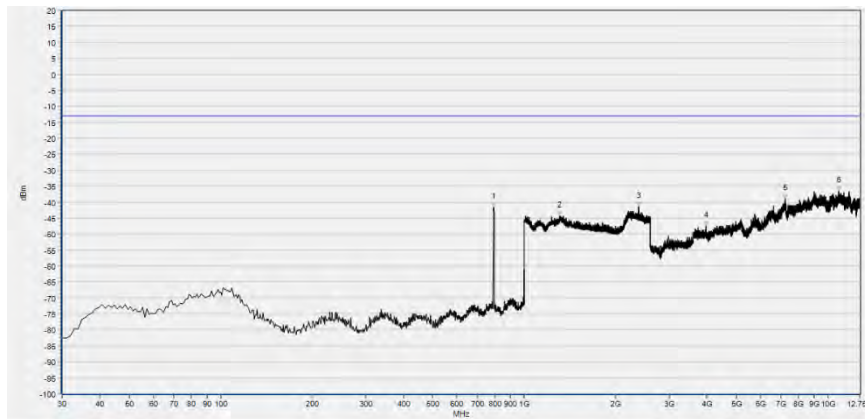


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	792.420	-41.98	-13.00	Vertical	N/A
2	1307.963	-43.70	-13.00	Vertical	PASS
3	2206.242	-42.79	-13.00	Vertical	PASS
4	4397.800	-46.60	-13.00	Vertical	PASS
5	7244.008	-39.12	-13.00	Vertical	PASS
6	11301.055	-36.29	-13.00	Vertical	PASS

LTE Band 14, 5MHz BW, Mid Channel, QPSK



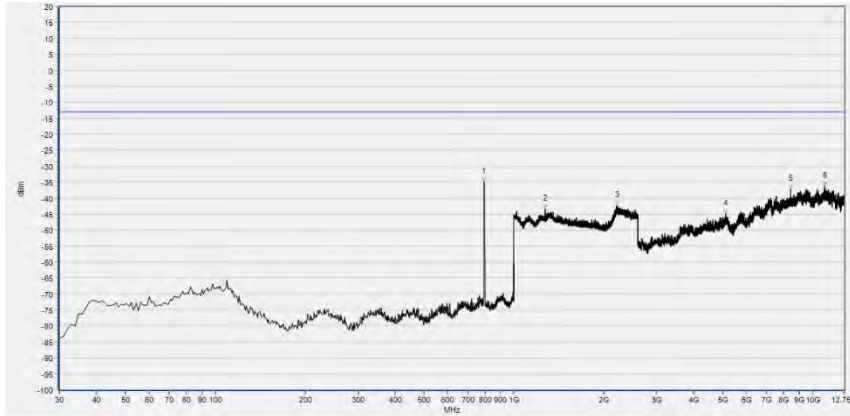
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	792.420	-35.05	-13.00	Horizontal	N/A
2	1317.567	-43.63	-13.00	Horizontal	PASS
3	2315.086	-42.58	-13.00	Horizontal	PASS
4	4652.519	-45.50	-13.00	Horizontal	PASS
5	7596.554	-39.20	-13.00	Horizontal	PASS
6	10972.504	-36.31	-13.00	Horizontal	PASS



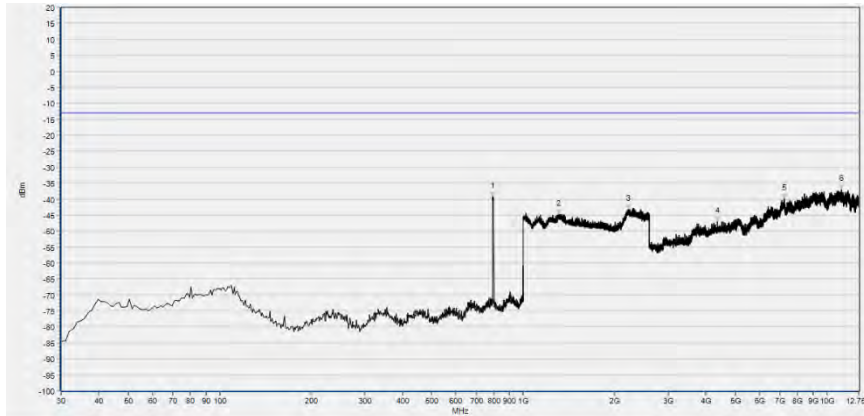
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	792.420	-41.77	-13.00	Vertical	N/A
2	1305.402	-44.46	-13.00	Vertical	PASS
3	2381.673	-41.42	-13.00	Vertical	PASS
4	3964.039	-47.45	-13.00	Vertical	PASS
5	7227.396	-38.96	-13.00	Vertical	PASS
6	10848.836	-36.44	-13.00	Vertical	PASS



LTE Band 14, 5MHz BW, High Channel, QPSK



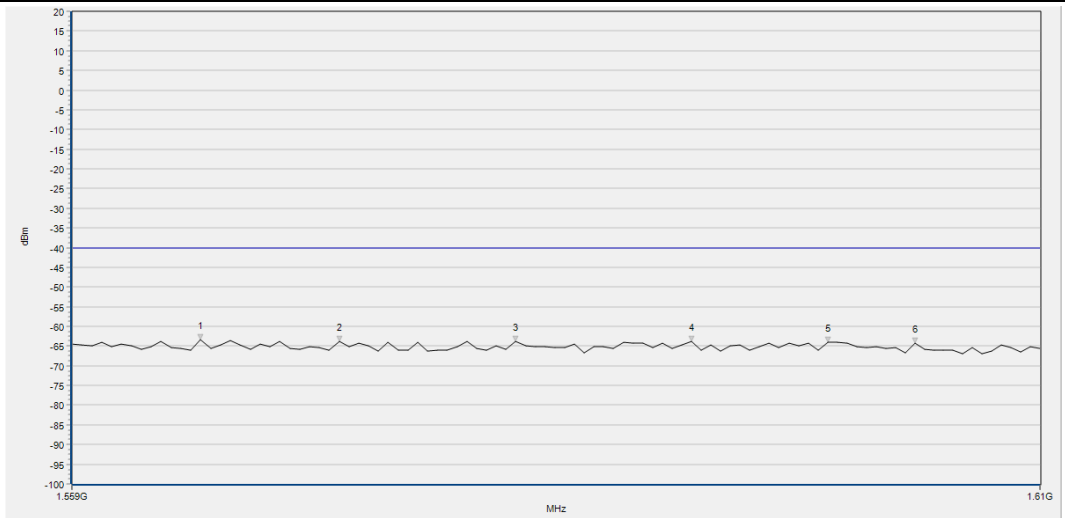
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	794.360	-35.03	-13.00	Horizontal	N/A
2	1274.030	-43.48	-13.00	Horizontal	PASS
3	2213.285	-42.28	-13.00	Horizontal	PASS
4	5126.887	-45.05	-13.00	Horizontal	PASS
5	8430.851	-37.30	-13.00	Horizontal	PASS
6	10979.887	-36.42	-13.00	Horizontal	PASS



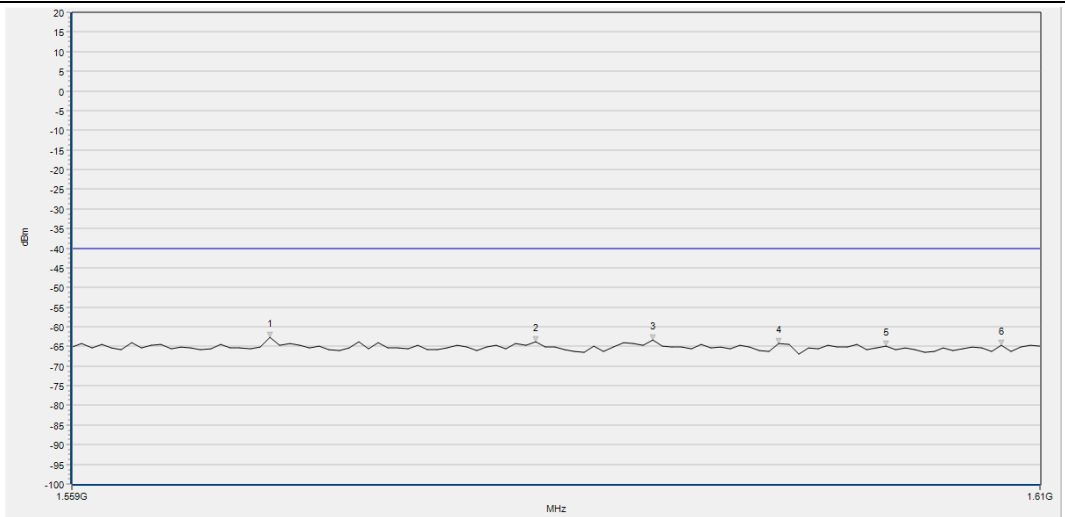
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	793.390	-39.24	-13.00	Vertical	N/A
2	1307.963	-44.79	-13.00	Vertical	PASS
3	2220.328	-43.23	-13.00	Vertical	PASS
4	4349.809	-47.12	-13.00	Vertical	PASS
5	7238.471	-39.96	-13.00	Vertical	PASS
6	11197.690	-36.92	-13.00	Vertical	PASS



LTE Band 14, 1559MHz-1610MHz, 5MHz BW, Mid Channel, QPSK

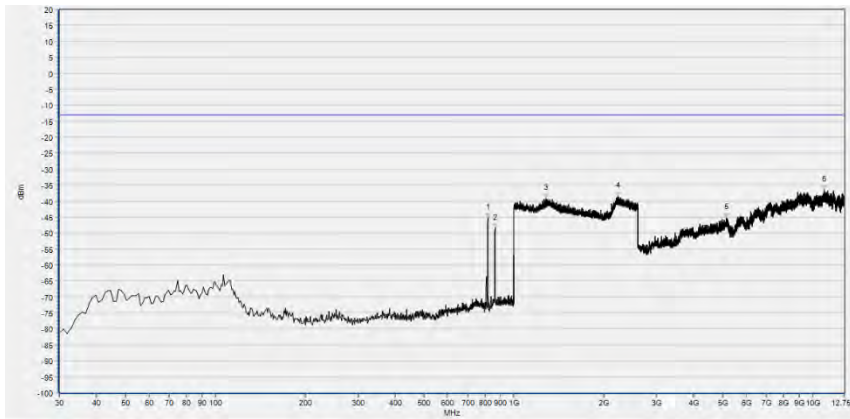


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	1565.697	-63.37	-40.00	Horizontal	PASS
2	1572.909	-63.86	-40.00	Horizontal	PASS
3	1582.182	-63.85	-40.00	Horizontal	PASS
4	1591.455	-63.85	-40.00	Horizontal	PASS
5	1598.667	-63.99	-40.00	Horizontal	PASS
6	1603.303	-64.17	-40.00	Horizontal	PASS

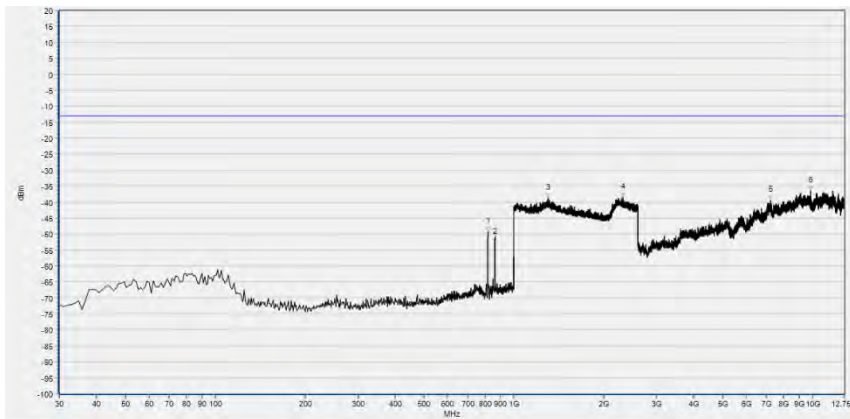


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	1569.303	-62.72	-40.00	Vertical	PASS
2	1583.212	-63.73	-40.00	Vertical	PASS
3	1589.394	-63.32	-40.00	Vertical	PASS
4	1596.091	-64.30	-40.00	Vertical	PASS
5	1601.758	-64.85	-40.00	Vertical	PASS
6	1607.939	-64.80	-40.00	Vertical	PASS

LTE Band 18, 5MHz BW, Low Channel, QPSK

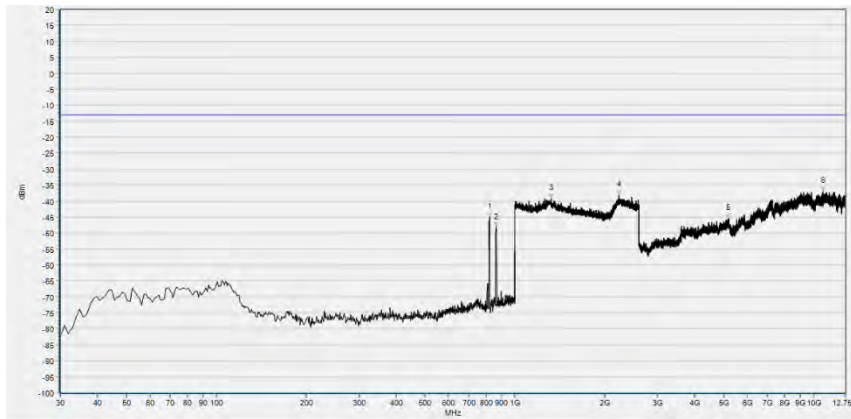


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-45.14	-13.00	Horizontal	N/A
2	863.230	-48.36	-13.00	Horizontal	N/A
3	1281.713	-39.26	-13.00	Horizontal	PASS
4	2228.651	-38.64	-13.00	Horizontal	PASS
5	5152.728	-45.35	-13.00	Horizontal	PASS
6	10902.364	-36.61	-13.00	Horizontal	PASS

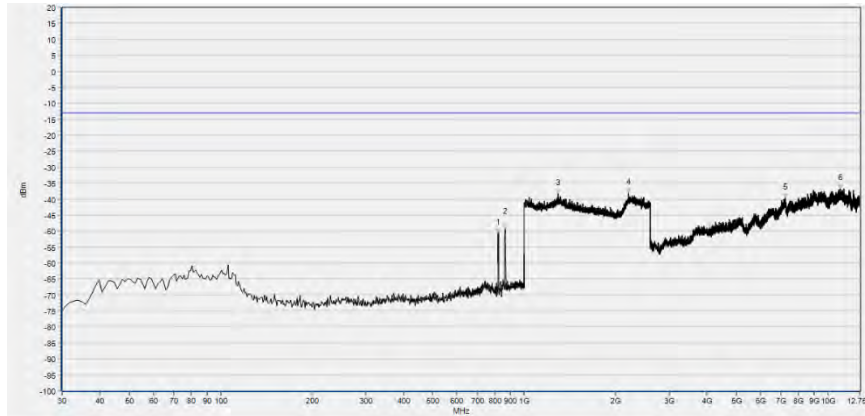


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-49.19	-13.00	Vertical	N/A
2	864.200	-50.73	-13.00	Vertical	N/A
3	1302.841	-38.73	-13.00	Vertical	PASS
4	2313.806	-38.57	-13.00	Vertical	PASS
5	7232.933	-39.49	-13.00	Vertical	PASS
6	9826.268	-36.54	-13.00	Vertical	PASS

LTE Band 18, 5MHz BW, Mid Channel, QPSK

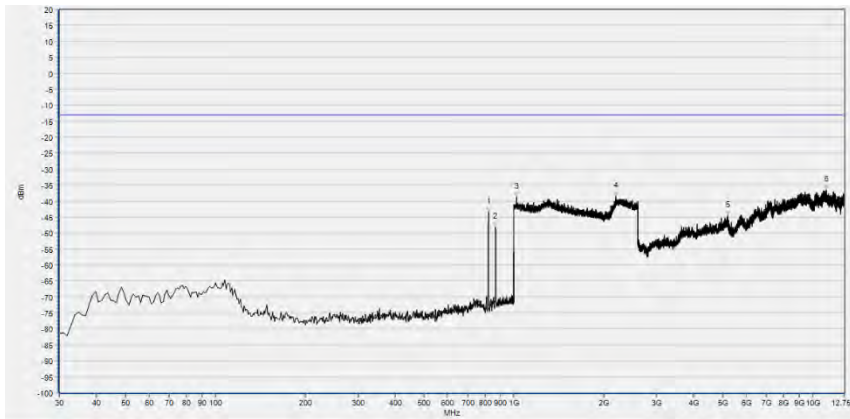


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	821.520	-45.00	-13.00	Horizontal	N/A
2	863.230	-47.89	-13.00	Horizontal	N/A
3	1321.409	-39.26	-13.00	Horizontal	PASS
4	2228.651	-38.21	-13.00	Horizontal	PASS
5	5169.340	-45.56	-13.00	Horizontal	PASS
6	10769.467	-36.88	-13.00	Horizontal	PASS

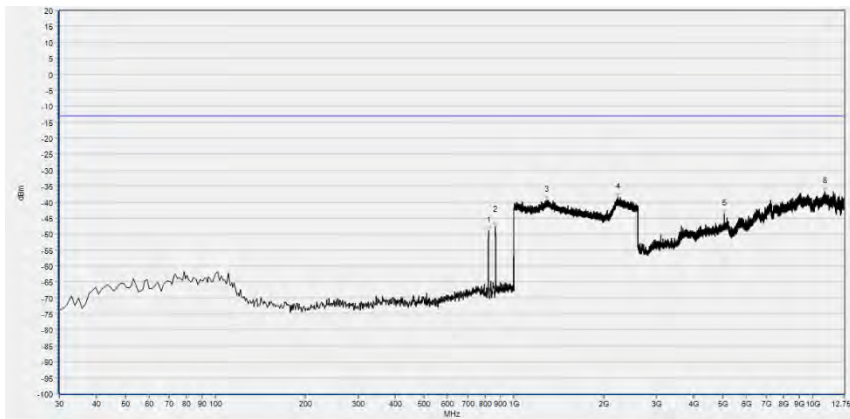


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-50.64	-13.00	Vertical	N/A
2	866.140	-49.28	-13.00	Vertical	N/A
3	1293.878	-38.22	-13.00	Vertical	PASS
4	2199.200	-38.14	-13.00	Vertical	PASS
5	7244.008	-39.70	-13.00	Vertical	PASS
6	11003.883	-36.65	-13.00	Vertical	PASS

LTE Band 18, 5MHz BW, High Channel, QPSK

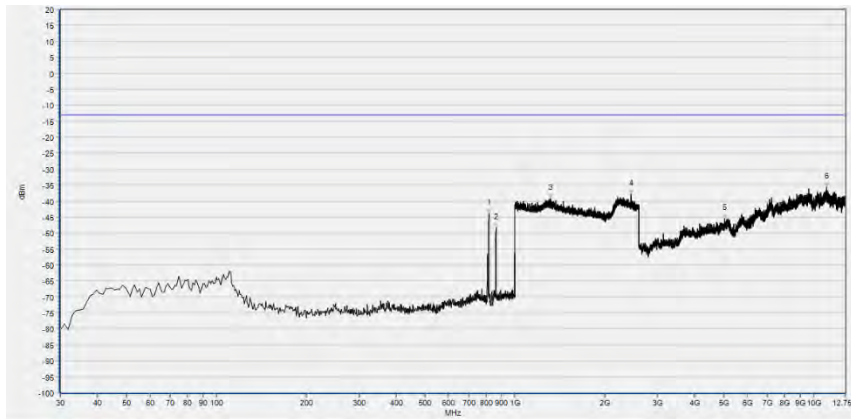


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	821.520	-43.52	-13.00	Horizontal	N/A
2	867.110	-48.08	-13.00	Horizontal	N/A
3	1019.208	-38.84	-13.00	Horizontal	PASS
4	2193.437	-38.58	-13.00	Horizontal	PASS
5	5200.718	-44.62	-13.00	Horizontal	PASS
6	11129.396	-36.59	-13.00	Horizontal	PASS

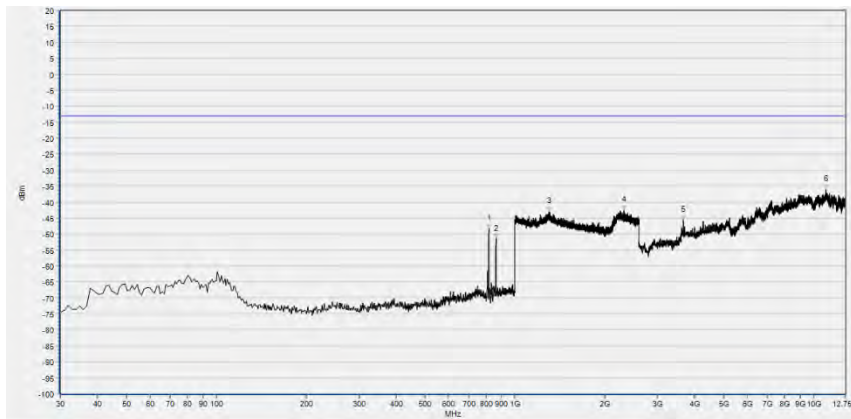


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-48.99	-13.00	Vertical	N/A
2	865.170	-47.76	-13.00	Vertical	N/A
3	1284.274	-39.45	-13.00	Vertical	PASS
4	2233.774	-38.64	-13.00	Vertical	PASS
5	5064.130	-43.77	-13.00	Vertical	PASS
6	10974.350	-36.80	-13.00	Vertical	PASS

LTE Band 26, 5MHz BW, Low Channel, QPSK

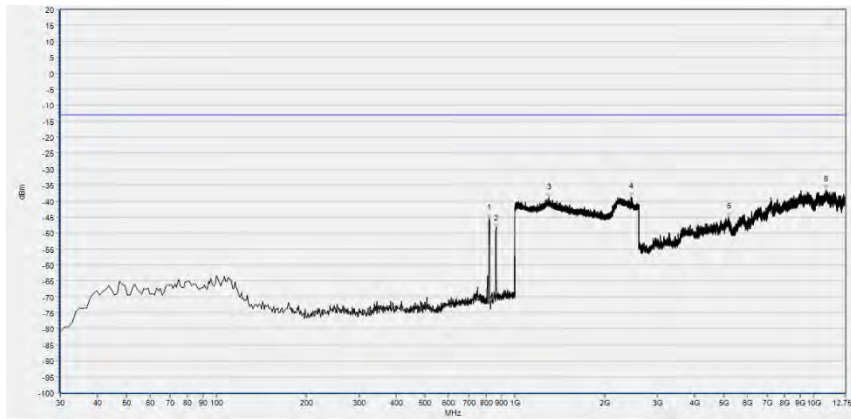


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-43.87	-13.00	Horizontal	N/A
2	863.230	-48.48	-13.00	Horizontal	N/A
3	1314.366	-39.28	-13.00	Horizontal	PASS
4	2453.381	-37.88	-13.00	Horizontal	PASS
5	5030.906	-45.37	-13.00	Horizontal	PASS
6	11053.719	-35.59	-13.00	Horizontal	PASS

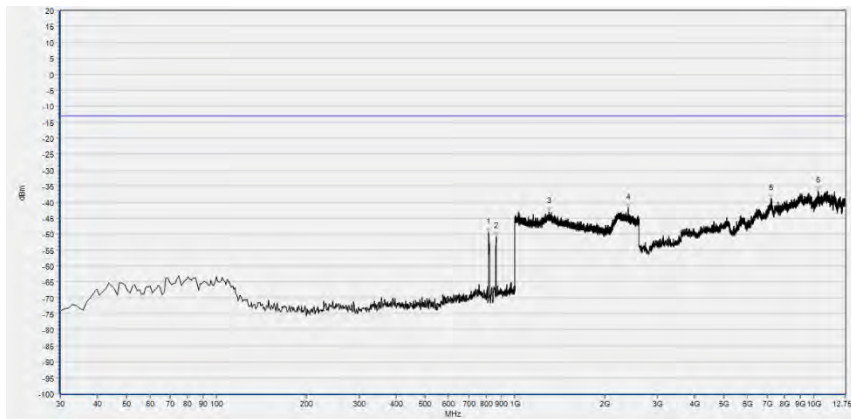


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.457	-48.36	-13.00	Vertical	N/A
2	864.064	-51.38	-13.00	Vertical	N/A
3	1303.034	-42.99	-13.00	Vertical	PASS
4	2312.971	-42.47	-13.00	Vertical	PASS
5	3666.105	-45.80	-13.00	Vertical	PASS
6	10983.311	-36.14	-13.00	Vertical	PASS

LTE Band 26, 5MHz BW, Mid Channel, QPSK

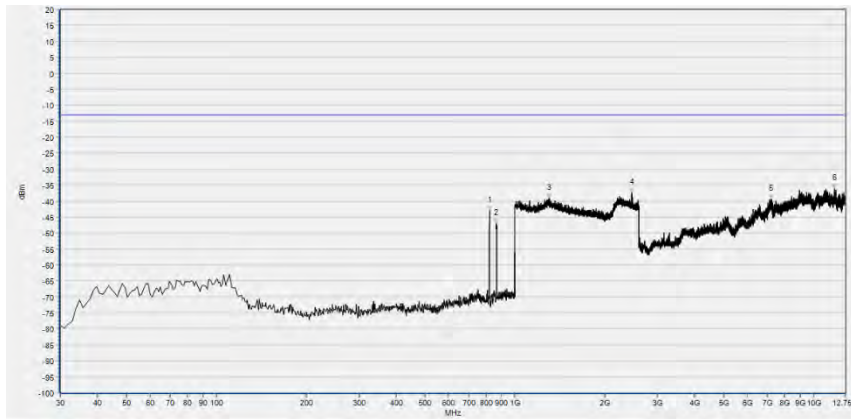


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-45.50	-13.00	Horizontal	N/A
2	865.170	-48.34	-13.00	Horizontal	N/A
3	1302.841	-39.02	-13.00	Horizontal	PASS
4	2448.259	-38.88	-13.00	Horizontal	PASS
5	5197.027	-44.96	-13.00	Horizontal	PASS
6	10976.196	-36.45	-13.00	Horizontal	PASS

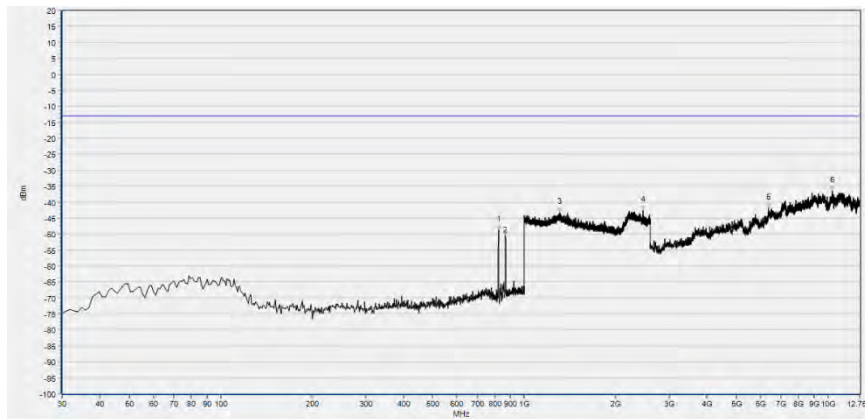


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.486	-49.41	-13.00	Vertical	N/A
2	866.006	-50.89	-13.00	Vertical	N/A
3	1303.034	-43.08	-13.00	Vertical	PASS
4	2391.931	-41.90	-13.00	Vertical	PASS
5	7179.176	-38.99	-13.00	Vertical	PASS
6	10370.724	-36.59	-13.00	Vertical	PASS

LTE Band 26, 5MHz BW, High Channel, QPSK



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-42.93	-13.00	Horizontal	N/A
2	866.140	-47.01	-13.00	Horizontal	N/A
3	1302.841	-39.29	-13.00	Horizontal	PASS
4	2461.064	-37.39	-13.00	Horizontal	PASS
5	7184.943	-39.34	-13.00	Horizontal	PASS
6	11725.586	-36.19	-13.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.312	-48.72	-13.00	Vertical	N/A
2	866.977	-50.30	-13.00	Vertical	N/A
3	1304.101	-43.14	-13.00	Vertical	PASS
4	2465.022	-42.59	-13.00	Vertical	PASS
5	6370.290	-41.85	-13.00	Vertical	PASS
6	10347.032	-36.45	-13.00	Vertical	PASS



## Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test items	Uncertainty
Output Power	$\pm 2.22$ dB
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77$ dB
Band Edge	$\pm 2.77$ dB
Equivalent Isotropic Radiated Power	$\pm 2.22$ dB
Radiated Spurious Emissions	$\pm 6$ dB

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



## Annex B Testing Laboratory Information

### 1. Identification of the Responsible Testing Laboratory

<b>Laboratory Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd.
<b>Laboratory Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
<b>Telephone:</b>	+86 755 36698555
<b>Facsimile:</b>	+86 755 36698525

### 2. Identification of the Responsible Testing Location

<b>Name:</b>	Shenzhen Morlab Communications Technology Co., Ltd.
<b>Address:</b>	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

### 3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



#### 4. Test Equipments Utilized

##### 4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY51511149	N9020A	Agilent	2022.07.04	2023.07.03
Communication Test Station	6200995016	MT8820C	Anritsu	2022.10.11	2023.10.10
Temperature Chamber	S022177101 00089002	KMT-36LF 1A0	KOMEG	2022.11.18	2023.11.17

##### 4.2 List of Software Used

Description	Manufacturer	Software Version
Morlab FCC LTE Test System	MORLAB	V6.45
MORLAB EMCR	MORLAB	V1.2

**4.3 Radiated Test Equipments**

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2022.10.11	2023.10.10
Receiver	MY54130016	N9038A	Agilent	2022.07.07	2023.07.06
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2022.05.25	2025.05.24
Test Antenna - Horn	9120D-963	BBHA 9120D	Schwarzbeck	2022.05.23	2025.05.24
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2022.07.08	2023.07.07
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-K K-0.5	Qualwave	2022.07.08	2023.07.07
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-K KF-2	Qualwave	2022.07.08	2023.07.07
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	2022.07.08	2023.07.07
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	2022.07.08	2023.07.07
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2022.07.23	2023.07.22
Notch Filter	N/A	WRCGV -LTE B18	Wainwright	2022.07.08	2023.07.07
Notch Filter	N/A	WRCGV -LTE B26	Wainwright	2022.07.08	2023.07.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09

END OF REPORT