



REPORT No.: SZ22100161W20

TEST REPORT

APPLICANT : Shenzhen Tengfei Technology Management Ltd.

PRODUCT NAME : 5G Mobile Phone

MODEL NAME : NX729J

BRAND NAME : REDMAGIC

FCC ID : 2A9QD-NX729J

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

RECEIPT DATE : 2022-11-01

TEST DATE : 2022-11-04 to 2022-12-12

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Change History		
Version	Date	Reason for change
1.0	2022-12-16	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Shenzhen Tengfei Technology Management Ltd.
Applicant Address:	Room 3101, Building D1, Chuangzhi Yuncheng, Liuxian Avenue, Xili Street, Nanshan, Shenzhen, China
Manufacturer:	Shenzhen Tengfei Technology Management Ltd.
Manufacturer Address:	Room 3101, Building D1, Chuangzhi Yuncheng, Liuxian Avenue, Xili Street, Nanshan, Shenzhen, China

1.2. Equipment Under Test (EUT) Description

Product Name:	5G Mobile Phone	
Sample No.:	3#	
Hardware Version:	NX729J_V1AMB	
Software Version:	NX729J_UNCommon_V3.03	
Modulation Type:	QPSK, 16QAM, 64QAM	
Operation Band:	Band 18 / 26	
Frequency Range:	LTE Band 18	Tx: 815MHz–830MHz
		Rx: 860MHz–875MHz
	LTE Band 26	Tx: 814MHz–824MHz
		Rx: 859MHz–869MHz
Channel Bandwidth	LTE Band 18	5MHz
	LTE Band 26	1.4MHz, 3MHz, 5MHz, 10MHz
Antenna Type:	Fixed Internal Antenna	
Antenna Gain:	Top Antenna	
	LTE Band 18	-3.4dBi
	LTE Band 26	-3.4dBi
	Bottom Antenna	
	LTE Band 18	-4.5dBi
	LTE Band 26	-4.5dBi

Accessory Information:	Battery	
	Brand Name:	ATL
	Model No.:	Li3928T89P8h603285
	Serial No.:	N/A
	Capacity:	2860mAh
	Rated Voltage:	7.78V
	Charge Limit:	8.9V
	Manufacturer:	Dongguan Amperex Technology Limited
	AC Adapter	
	Brand Name:	N/A
	Model No.:	STC-A59152050AC-Z
	Serial No.:	N/A
	Rated Output:	5V=3A, 9V=3A, 15V=3A, 20V=3.25A, PPS: 5.0V-11.0V=5.0A, 5.0V-20.0V=3.25A
	Rated Input:	100-240V~50/60Hz, 1.5A
	Manufacturer:	ShenZhen KunXing Technology Co.,Ltd.
	USB Cable	
	Model No.:	N52111200016D

Note 1: SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.

Note 2: 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

LTE Band 18	Maximum E.R.P./E.I.R.P. (W)					
	Top Antenna			Bottom Antenna		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
5	0.055	0.048	0.039	0.043	0.037	0.031
LTE Band 26	Maximum E.R.P./E.I.R.P. (W)					
	Top Antenna			Bottom Antenna		
BW(MHz)	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM
10	0.057	0.047	0.038	0.045	0.036	0.029
5	0.058	0.047	0.037	0.045	0.036	0.029
3	0.058	0.047	0.037	0.045	0.036	0.029
1.4	0.058	0.047	0.038	0.045	0.037	0.029

LTE Band 18	Emission Designator (99%OBW)		
BW(MHz)	QPSK	16QAM	64QAM
5	4M53G7D	4M54W7D	4M54W7D
LTE Band 26	Emission Designator (99%OBW)		
BW(MHz)	QPSK	16QAM	64QAM
1.4	1M11G7D	1M11W7D	1M10W7D
3	2M73G7D	2M72W7D	2M72W7D
5	4M52G7D	4M53W7D	4M52W7D
10	8M98G7D	8M98W7D	8M98W7D



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	Dec. 12, 2022	Li Huaijie	PASS	No deviation
90.209	Occupied Bandwidth	Nov. 07, 2022	Li Huaijie	PASS	No deviation
2.1055, 90.213	Frequency Stability	Nov. 28, 2022	Li Huaijie	PASS	No deviation
2.1051, 90.691	Conducted Spurious Emissions	Nov. 07, 2022	Li Huaijie	PASS	No deviation
2.1051, 90.691	Band Edge	Nov. 04, 2022	Li Huaijie	PASS	No deviation
2.1053, 90.691	Radiated Spurious Emissions	Nov. 24&25, 2022	Su Zhan	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

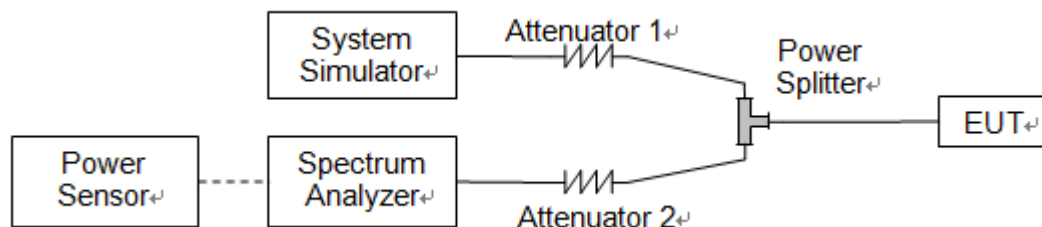
2.47 CFR Part 2, Part 90S Requirements

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).

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 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	22.96	22.91	22.84
5	QPSK	1	12	22.87	22.85	22.77
5	QPSK	1	24	22.92	22.88	22.85
5	QPSK	12	0	22.19	22.12	22.08
5	QPSK	12	7	22.36	22.32	22.29
5	QPSK	12	13	22.36	22.29	22.32
5	QPSK	25	0	22.21	22.13	22.19
5	16QAM	1	0	22.32	22.28	22.30
5	16QAM	1	12	22.31	22.22	22.19
5	16QAM	1	24	22.29	22.26	22.17
5	16QAM	12	0	21.63	21.55	21.61
5	16QAM	12	7	21.57	21.50	21.54
5	16QAM	12	13	21.33	21.25	21.21
5	16QAM	25	0	21.40	21.29	21.31
5	64QAM	1	0	21.10	21.05	21.02
5	64QAM	1	12	21.40	21.33	21.36
5	64QAM	1	24	21.34	21.29	21.30
5	64QAM	12	0	21.23	21.17	21.20
5	64QAM	12	7	21.23	21.13	21.17
5	64QAM	12	13	21.50	21.43	21.43
5	64QAM	25	0	21.50	21.45	21.40



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	/	23.11	/
10	QPSK	1	25	/	23.13	/
10	QPSK	1	49	/	23.14	/
10	QPSK	25	0	/	22.24	/
10	QPSK	25	12	/	22.22	/
10	QPSK	25	25	/	22.30	/
10	QPSK	50	0	/	22.26	/
10	16QAM	1	0	/	22.25	/
10	16QAM	1	25	/	22.06	/
10	16QAM	1	49	/	21.91	/
10	16QAM	25	0	/	21.17	/
10	16QAM	25	12	/	20.99	/
10	16QAM	25	25	/	21.18	/
10	16QAM	50	0	/	21.24	/
10	64QAM	1	0	/	21.11	/
10	64QAM	1	25	/	21.31	/
10	64QAM	1	49	/	21.13	/
10	64QAM	25	0	/	21.23	/
10	64QAM	25	12	/	21.18	/
10	64QAM	25	25	/	21.16	/
10	64QAM	50	0	/	21.14	/



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	23.17	23.09	23.09
5	QPSK	1	12	23.14	23.05	23.09
5	QPSK	1	24	23.10	22.98	22.98
5	QPSK	12	0	22.20	22.15	22.17
5	QPSK	12	7	22.19	22.15	22.10
5	QPSK	12	13	22.26	22.25	22.21
5	QPSK	25	0	22.25	22.16	22.23
5	16QAM	1	0	22.25	22.16	22.21
5	16QAM	1	12	22.08	22.03	22.00
5	16QAM	1	24	21.96	21.87	21.89
5	16QAM	12	0	21.26	21.19	21.17
5	16QAM	12	7	20.97	20.86	20.96
5	16QAM	12	13	21.24	21.15	21.12
5	16QAM	25	0	21.22	21.10	21.14
5	64QAM	1	0	21.09	21.03	20.99
5	64QAM	1	12	21.24	21.12	21.19
5	64QAM	1	24	21.10	21.01	21.06
5	64QAM	12	0	21.22	21.10	21.21
5	64QAM	12	7	21.11	21.05	21.07
5	64QAM	12	13	21.16	21.08	21.14
5	64QAM	25	0	21.13	21.03	21.12



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	23.12	23.01	23.11
3	QPSK	1	8	23.11	23.02	23.00
3	QPSK	1	14	23.15	23.10	23.04
3	QPSK	8	0	22.24	22.15	22.22
3	QPSK	8	4	22.19	22.14	22.09
3	QPSK	8	7	22.26	22.23	22.22
3	QPSK	15	0	22.22	22.20	22.17
3	16QAM	1	0	22.27	22.19	22.20
3	16QAM	1	8	22.13	22.08	22.09
3	16QAM	1	14	21.94	21.88	21.90
3	16QAM	8	0	21.22	21.14	21.11
3	16QAM	8	4	20.97	20.88	20.91
3	16QAM	8	7	21.19	21.09	21.07
3	16QAM	15	0	21.24	21.22	21.12
3	64QAM	1	0	21.13	21.10	21.02
3	64QAM	1	8	21.28	21.26	21.21
3	64QAM	1	14	21.07	21.05	20.95
3	64QAM	8	0	21.26	21.21	21.19
3	64QAM	8	4	21.11	21.10	21.06
3	64QAM	8	7	21.22	21.11	21.15
3	64QAM	15	0	21.19	21.17	21.12



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	23.13	23.08	23.07
1.4	QPSK	1	3	23.13	23.06	23.11
1.4	QPSK	1	5	23.15	23.06	23.08
1.4	QPSK	3	0	23.21	23.15	23.12
1.4	QPSK	3	1	23.08	23.00	22.99
1.4	QPSK	3	3	23.06	23.00	23.03
1.4	QPSK	6	0	22.22	22.12	22.21
1.4	16QAM	1	0	22.29	22.18	22.24
1.4	16QAM	1	3	22.06	22.03	21.96
1.4	16QAM	1	5	21.97	21.89	21.89
1.4	16QAM	3	0	22.25	22.17	22.13
1.4	16QAM	3	1	22.06	21.94	22.02
1.4	16QAM	3	3	22.24	22.15	22.16
1.4	16QAM	6	0	21.28	21.20	21.26
1.4	64QAM	1	0	21.12	21.02	21.09
1.4	64QAM	1	3	21.32	21.27	21.28
1.4	64QAM	1	5	21.15	21.04	21.13
1.4	64QAM	3	0	21.20	21.15	21.15
1.4	64QAM	3	1	21.18	21.07	21.08
1.4	64QAM	3	3	21.17	21.07	21.13
1.4	64QAM	6	0	21.12	21.10	21.00

**Effective Radiated Power and Effective Isotropic Radiated Power:****Bottom Antenna**

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	17.41	0.055	17.36	0.054	17.29	0.054
5	QPSK	1	12	17.32	0.054	17.30	0.054	17.22	0.053
5	QPSK	1	24	17.37	0.055	17.33	0.054	17.30	0.054
5	QPSK	12	0	16.64	0.046	16.57	0.045	16.53	0.045
5	QPSK	12	7	16.81	0.048	16.77	0.048	16.74	0.047
5	QPSK	12	13	16.81	0.048	16.74	0.047	16.77	0.048
5	QPSK	25	0	16.66	0.046	16.58	0.045	16.64	0.046
5	16QAM	1	0	16.77	0.048	16.73	0.047	16.75	0.047
5	16QAM	1	12	16.76	0.047	16.67	0.046	16.64	0.046
5	16QAM	1	24	16.74	0.047	16.71	0.047	16.62	0.046
5	16QAM	12	0	16.08	0.041	16.00	0.040	16.06	0.040
5	16QAM	12	7	16.02	0.040	15.95	0.039	15.99	0.040
5	16QAM	12	13	15.78	0.038	15.70	0.037	15.66	0.037
5	16QAM	25	0	15.85	0.038	15.74	0.037	15.76	0.038
5	64QAM	1	0	15.55	0.036	15.50	0.035	15.47	0.035
5	64QAM	1	12	15.85	0.038	15.78	0.038	15.81	0.038
5	64QAM	1	24	15.79	0.038	15.74	0.037	15.75	0.038
5	64QAM	12	0	15.68	0.037	15.62	0.036	15.65	0.037
5	64QAM	12	7	15.68	0.037	15.58	0.036	15.62	0.036
5	64QAM	12	13	15.95	0.039	15.88	0.039	15.88	0.039
5	64QAM	25	0	15.95	0.039	15.90	0.039	15.85	0.038



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	/	17.56	0.057	/
10	QPSK	1	25	/	17.58	0.057	/
10	QPSK	1	49	/	17.59	0.057	/
10	QPSK	25	0	/	16.69	0.047	/
10	QPSK	25	12	/	16.67	0.046	/
10	QPSK	25	25	/	16.75	0.047	/
10	QPSK	50	0	/	16.71	0.047	/
10	16QAM	1	0	/	16.70	0.047	/
10	16QAM	1	25	/	16.51	0.045	/
10	16QAM	1	49	/	16.36	0.043	/
10	16QAM	25	0	/	15.62	0.036	/
10	16QAM	25	12	/	15.44	0.035	/
10	16QAM	25	25	/	15.63	0.037	/
10	16QAM	50	0	/	15.69	0.037	/
10	64QAM	1	0	/	15.56	0.036	/
10	64QAM	1	25	/	15.76	0.038	/
10	64QAM	1	49	/	15.58	0.036	/
10	64QAM	25	0	/	15.68	0.037	/
10	64QAM	25	12	/	15.63	0.037	/
10	64QAM	25	25	/	15.61	0.036	/
10	64QAM	50	0	/	15.59	0.036	/



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	17.62	0.058	17.54	0.057	17.54	0.057
5	QPSK	1	12	17.59	0.057	17.50	0.056	17.54	0.057
5	QPSK	1	24	17.55	0.057	17.43	0.055	17.43	0.055
5	QPSK	12	0	16.65	0.046	16.60	0.046	16.62	0.046
5	QPSK	12	7	16.64	0.046	16.60	0.046	16.55	0.045
5	QPSK	12	13	16.71	0.047	16.70	0.047	16.66	0.046
5	QPSK	25	0	16.70	0.047	16.61	0.046	16.68	0.047
5	16QAM	1	0	16.70	0.047	16.61	0.046	16.66	0.046
5	16QAM	1	12	16.53	0.045	16.48	0.044	16.45	0.044
5	16QAM	1	24	16.41	0.044	16.32	0.043	16.34	0.043
5	16QAM	12	0	15.71	0.037	15.64	0.037	15.62	0.036
5	16QAM	12	7	15.42	0.035	15.31	0.034	15.41	0.035
5	16QAM	12	13	15.69	0.037	15.60	0.036	15.57	0.036
5	16QAM	25	0	15.67	0.037	15.55	0.036	15.59	0.036
5	64QAM	1	0	15.54	0.036	15.48	0.035	15.44	0.035
5	64QAM	1	12	15.69	0.037	15.57	0.036	15.64	0.037
5	64QAM	1	24	15.55	0.036	15.46	0.035	15.51	0.036
5	64QAM	12	0	15.67	0.037	15.55	0.036	15.66	0.037
5	64QAM	12	7	15.56	0.036	15.50	0.035	15.52	0.036
5	64QAM	12	13	15.61	0.036	15.53	0.036	15.59	0.036
5	64QAM	25	0	15.58	0.036	15.48	0.035	15.57	0.036



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	17.57	0.057	17.46	0.056	17.56	0.057
3	QPSK	1	8	17.56	0.057	17.47	0.056	17.45	0.056
3	QPSK	1	14	17.60	0.058	17.55	0.057	17.49	0.056
3	QPSK	8	0	16.69	0.047	16.60	0.046	16.67	0.046
3	QPSK	8	4	16.64	0.046	16.59	0.046	16.54	0.045
3	QPSK	8	7	16.71	0.047	16.68	0.047	16.67	0.046
3	QPSK	15	0	16.67	0.046	16.65	0.046	16.62	0.046
3	16QAM	1	0	16.72	0.047	16.64	0.046	16.65	0.046
3	16QAM	1	8	16.58	0.045	16.53	0.045	16.54	0.045
3	16QAM	1	14	16.39	0.044	16.33	0.043	16.35	0.043
3	16QAM	8	0	15.67	0.037	15.59	0.036	15.56	0.036
3	16QAM	8	4	15.42	0.035	15.33	0.034	15.36	0.034
3	16QAM	8	7	15.64	0.037	15.54	0.036	15.52	0.036
3	16QAM	15	0	15.69	0.037	15.67	0.037	15.57	0.036
3	64QAM	1	0	15.58	0.036	15.55	0.036	15.47	0.035
3	64QAM	1	8	15.73	0.037	15.71	0.037	15.66	0.037
3	64QAM	1	14	15.52	0.036	15.50	0.035	15.40	0.035
3	64QAM	8	0	15.71	0.037	15.66	0.037	15.64	0.037
3	64QAM	8	4	15.56	0.036	15.55	0.036	15.51	0.036
3	64QAM	8	7	15.67	0.037	15.56	0.036	15.60	0.036
3	64QAM	15	0	15.64	0.037	15.62	0.036	15.57	0.036



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	17.58	0.057	17.53	0.057	17.52	0.056
1.4	QPSK	1	3	17.58	0.057	17.51	0.056	17.56	0.057
1.4	QPSK	1	5	17.60	0.058	17.51	0.056	17.53	0.057
1.4	QPSK	3	0	17.66	0.058	17.60	0.058	17.57	0.057
1.4	QPSK	3	1	17.53	0.057	17.45	0.056	17.44	0.055
1.4	QPSK	3	3	17.51	0.056	17.45	0.056	17.48	0.056
1.4	QPSK	6	0	16.67	0.046	16.57	0.045	16.66	0.046
1.4	16QAM	1	0	16.74	0.047	16.63	0.046	16.69	0.047
1.4	16QAM	1	3	16.51	0.045	16.48	0.044	16.41	0.044
1.4	16QAM	1	5	16.42	0.044	16.34	0.043	16.34	0.043
1.4	16QAM	3	0	16.70	0.047	16.62	0.046	16.58	0.045
1.4	16QAM	3	1	16.51	0.045	16.39	0.044	16.47	0.044
1.4	16QAM	3	3	16.69	0.047	16.60	0.046	16.61	0.046
1.4	16QAM	6	0	15.73	0.037	15.65	0.037	15.71	0.037
1.4	64QAM	1	0	15.57	0.036	15.47	0.035	15.54	0.036
1.4	64QAM	1	3	15.77	0.038	15.72	0.037	15.73	0.037
1.4	64QAM	1	5	15.60	0.036	15.49	0.035	15.58	0.036
1.4	64QAM	3	0	15.65	0.037	15.60	0.036	15.60	0.036
1.4	64QAM	3	1	15.63	0.037	15.52	0.036	15.53	0.036
1.4	64QAM	3	3	15.62	0.036	15.52	0.036	15.58	0.036
1.4	64QAM	6	0	15.57	0.036	15.55	0.036	15.45	0.035

**Bottom Antenna**

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	16.31	0.043	16.26	0.042	16.19	0.042
5	QPSK	1	12	16.22	0.042	16.20	0.042	16.12	0.041
5	QPSK	1	24	16.27	0.042	16.23	0.042	16.20	0.042
5	QPSK	12	0	15.54	0.036	15.47	0.035	15.43	0.035
5	QPSK	12	7	15.71	0.037	15.67	0.037	15.64	0.037
5	QPSK	12	13	15.71	0.037	15.64	0.037	15.67	0.037
5	QPSK	25	0	15.56	0.036	15.48	0.035	15.54	0.036
5	16QAM	1	0	15.67	0.037	15.63	0.037	15.65	0.037
5	16QAM	1	12	15.66	0.037	15.57	0.036	15.54	0.036
5	16QAM	1	24	15.64	0.037	15.61	0.036	15.52	0.036
5	16QAM	12	0	14.98	0.031	14.90	0.031	14.96	0.031
5	16QAM	12	7	14.92	0.031	14.85	0.031	14.89	0.031
5	16QAM	12	13	14.68	0.029	14.60	0.029	14.56	0.029
5	16QAM	25	0	14.75	0.030	14.64	0.029	14.66	0.029
5	64QAM	1	0	14.45	0.028	14.40	0.028	14.37	0.027
5	64QAM	1	12	14.75	0.030	14.68	0.029	14.71	0.030
5	64QAM	1	24	14.69	0.029	14.64	0.029	14.65	0.029
5	64QAM	12	0	14.58	0.029	14.52	0.028	14.55	0.029
5	64QAM	12	7	14.58	0.029	14.48	0.028	14.52	0.028
5	64QAM	12	13	14.85	0.031	14.78	0.030	14.78	0.030
5	64QAM	25	0	14.85	0.031	14.80	0.030	14.75	0.030



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	/	16.46	0.044	/
10	QPSK	1	25	/	16.48	0.044	/
10	QPSK	1	49	/	16.49	0.045	/
10	QPSK	25	0	/	15.59	0.036	/
10	QPSK	25	12	/	15.57	0.036	/
10	QPSK	25	25	/	15.65	0.037	/
10	QPSK	50	0	/	15.61	0.036	/
10	16QAM	1	0	/	15.60	0.036	/
10	16QAM	1	25	/	15.41	0.035	/
10	16QAM	1	49	/	15.26	0.034	/
10	16QAM	25	0	/	14.52	0.028	/
10	16QAM	25	12	/	14.34	0.027	/
10	16QAM	25	25	/	14.53	0.028	/
10	16QAM	50	0	/	14.59	0.029	/
10	64QAM	1	0	/	14.46	0.028	/
10	64QAM	1	25	/	14.66	0.029	/
10	64QAM	1	49	/	14.48	0.028	/
10	64QAM	25	0	/	14.58	0.029	/
10	64QAM	25	12	/	14.53	0.028	/
10	64QAM	25	25	/	14.51	0.028	/
10	64QAM	50	0	/	14.49	0.028	/



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	16.52	0.045	16.44	0.044	16.44	0.044
5	QPSK	1	12	16.49	0.045	16.40	0.044	16.44	0.044
5	QPSK	1	24	16.45	0.044	16.33	0.043	16.33	0.043
5	QPSK	12	0	15.55	0.036	15.50	0.035	15.52	0.036
5	QPSK	12	7	15.54	0.036	15.50	0.035	15.45	0.035
5	QPSK	12	13	15.61	0.036	15.60	0.036	15.56	0.036
5	QPSK	25	0	15.60	0.036	15.51	0.036	15.58	0.036
5	16QAM	1	0	15.60	0.036	15.51	0.036	15.56	0.036
5	16QAM	1	12	15.43	0.035	15.38	0.035	15.35	0.034
5	16QAM	1	24	15.31	0.034	15.22	0.033	15.24	0.033
5	16QAM	12	0	14.61	0.029	14.54	0.028	14.52	0.028
5	16QAM	12	7	14.32	0.027	14.21	0.026	14.31	0.027
5	16QAM	12	13	14.59	0.029	14.50	0.028	14.47	0.028
5	16QAM	25	0	14.57	0.029	14.45	0.028	14.49	0.028
5	64QAM	1	0	14.44	0.028	14.38	0.027	14.34	0.027
5	64QAM	1	12	14.59	0.029	14.47	0.028	14.54	0.028
5	64QAM	1	24	14.45	0.028	14.36	0.027	14.41	0.028
5	64QAM	12	0	14.57	0.029	14.45	0.028	14.56	0.029
5	64QAM	12	7	14.46	0.028	14.40	0.028	14.42	0.028
5	64QAM	12	13	14.51	0.028	14.43	0.028	14.49	0.028
5	64QAM	25	0	14.48	0.028	14.38	0.027	14.47	0.028



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	16.47	0.044	16.36	0.043	16.46	0.044
3	QPSK	1	8	16.46	0.044	16.37	0.043	16.35	0.043
3	QPSK	1	14	16.50	0.045	16.45	0.044	16.39	0.044
3	QPSK	8	0	15.59	0.036	15.50	0.035	15.57	0.036
3	QPSK	8	4	15.54	0.036	15.49	0.035	15.44	0.035
3	QPSK	8	7	15.61	0.036	15.58	0.036	15.57	0.036
3	QPSK	15	0	15.57	0.036	15.55	0.036	15.52	0.036
3	16QAM	1	0	15.62	0.036	15.54	0.036	15.55	0.036
3	16QAM	1	8	15.48	0.035	15.43	0.035	15.44	0.035
3	16QAM	1	14	15.29	0.034	15.23	0.033	15.25	0.033
3	16QAM	8	0	14.57	0.029	14.49	0.028	14.46	0.028
3	16QAM	8	4	14.32	0.027	14.23	0.026	14.26	0.027
3	16QAM	8	7	14.54	0.028	14.44	0.028	14.42	0.028
3	16QAM	15	0	14.59	0.029	14.57	0.029	14.47	0.028
3	64QAM	1	0	14.48	0.028	14.45	0.028	14.37	0.027
3	64QAM	1	8	14.63	0.029	14.61	0.029	14.56	0.029
3	64QAM	1	14	14.42	0.028	14.40	0.028	14.30	0.027
3	64QAM	8	0	14.61	0.029	14.56	0.029	14.54	0.028
3	64QAM	8	4	14.46	0.028	14.45	0.028	14.41	0.028
3	64QAM	8	7	14.57	0.029	14.46	0.028	14.50	0.028
3	64QAM	15	0	14.54	0.028	14.52	0.028	14.47	0.028



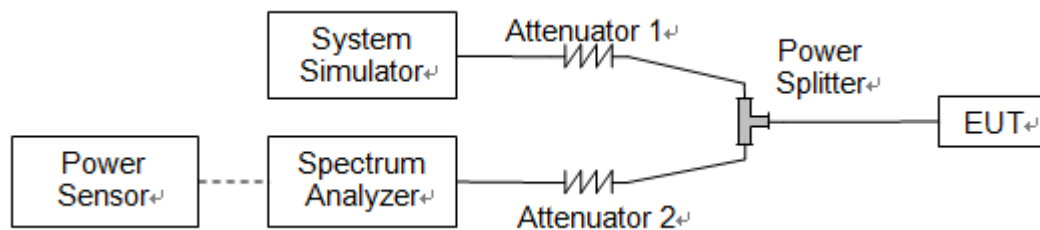
LTE Band 26				Measured E.R.P.					
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.		Middle Ch. / Freq.		High Ch. / Freq.	
Channel				26697		26740		26783	
Frequency (MHz)				814.7		819.0		823.3	
				dBm	W	dBm	W	dBm	W
1.4	QPSK	1	0	16.48	0.044	16.43	0.044	16.42	0.044
1.4	QPSK	1	3	16.48	0.044	16.41	0.044	16.46	0.044
1.4	QPSK	1	5	16.50	0.045	16.41	0.044	16.43	0.044
1.4	QPSK	3	0	16.56	0.045	16.50	0.045	16.47	0.044
1.4	QPSK	3	1	16.43	0.044	16.35	0.043	16.34	0.043
1.4	QPSK	3	3	16.41	0.044	16.35	0.043	16.38	0.043
1.4	QPSK	6	0	15.57	0.036	15.47	0.035	15.56	0.036
1.4	16QAM	1	0	15.64	0.037	15.53	0.036	15.59	0.036
1.4	16QAM	1	3	15.41	0.035	15.38	0.035	15.31	0.034
1.4	16QAM	1	5	15.32	0.034	15.24	0.033	15.24	0.033
1.4	16QAM	3	0	15.60	0.036	15.52	0.036	15.48	0.035
1.4	16QAM	3	1	15.41	0.035	15.29	0.034	15.37	0.034
1.4	16QAM	3	3	15.59	0.036	15.50	0.035	15.51	0.036
1.4	16QAM	6	0	14.63	0.029	14.55	0.029	14.61	0.029
1.4	64QAM	1	0	14.47	0.028	14.37	0.027	14.44	0.028
1.4	64QAM	1	3	14.67	0.029	14.62	0.029	14.63	0.029
1.4	64QAM	1	5	14.50	0.028	14.39	0.027	14.48	0.028
1.4	64QAM	3	0	14.55	0.029	14.50	0.028	14.50	0.028
1.4	64QAM	3	1	14.53	0.028	14.42	0.028	14.43	0.028
1.4	64QAM	3	3	14.52	0.028	14.42	0.028	14.48	0.028
1.4	64QAM	6	0	14.47	0.028	14.45	0.028	14.35	0.027

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

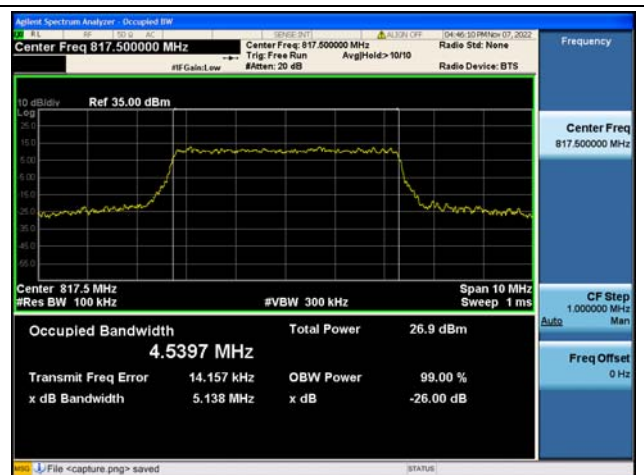


LTE Band 18				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
5	Low	QPSK	4.51	5.16
	Low	16QAM	4.54	5.14
	Low	64QAM	4.53	5.11
	Mid	QPSK	4.53	5.12
	Mid	16QAM	4.52	5.13
	Mid	64QAM	4.51	5.12
	High	QPSK	4.53	5.13
	High	16QAM	4.52	5.21
	High	64QAM	4.54	5.14

LTE Band 26				
BW(MHz)	Channel Level	Modulation	99% BW(MHz)	26dB BW(MHz)
1.4	Low	QPSK	1.11	1.36
	Low	16QAM	1.11	1.37
	Low	64QAM	1.10	1.38
	Mid	QPSK	1.09	1.34
	Mid	16QAM	1.11	1.36
	Mid	64QAM	1.10	1.36
	High	QPSK	1.10	1.36
	High	16QAM	1.11	1.35
	High	64QAM	1.10	1.33
3	Low	QPSK	2.73	3.07
	Low	16QAM	2.71	3.09
	Low	64QAM	2.71	3.07
	Mid	QPSK	2.72	3.10
	Mid	16QAM	2.71	3.09
	Mid	64QAM	2.72	3.07
	High	QPSK	2.71	3.07
	High	16QAM	2.72	3.08
	High	64QAM	2.71	3.08
5	Low	QPSK	4.51	5.14
	Low	16QAM	4.51	5.11
	Low	64QAM	4.52	5.09
	Mid	QPSK	4.52	5.16
	Mid	16QAM	4.52	5.13
	Mid	64QAM	4.52	5.13
	High	QPSK	4.52	5.17
	High	16QAM	4.53	5.16
	High	64QAM	4.52	5.09
10	Mid	QPSK	8.98	9.93
	Mid	16QAM	8.98	10.03
	Mid	64QAM	8.98	10.05



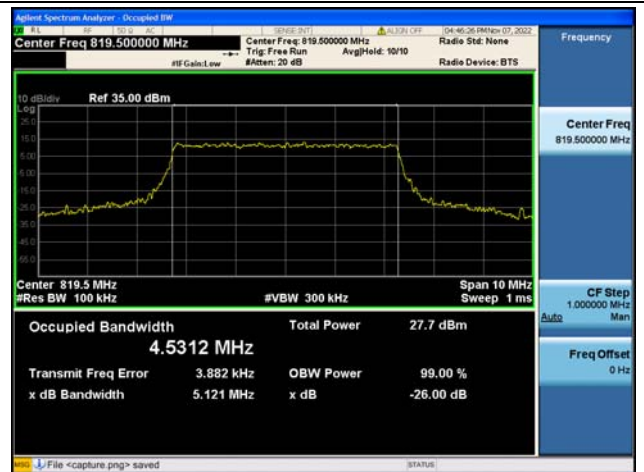
Band18Part90 / 5MHz / QPSK/ Low CH



Band18Part90 / 5MHz / 16QAM/ Low CH



Band18Part90 / 5MHz / 64QAM/ Low CH



Band18Part90 / 5MHz / QPSK/ Mid CH



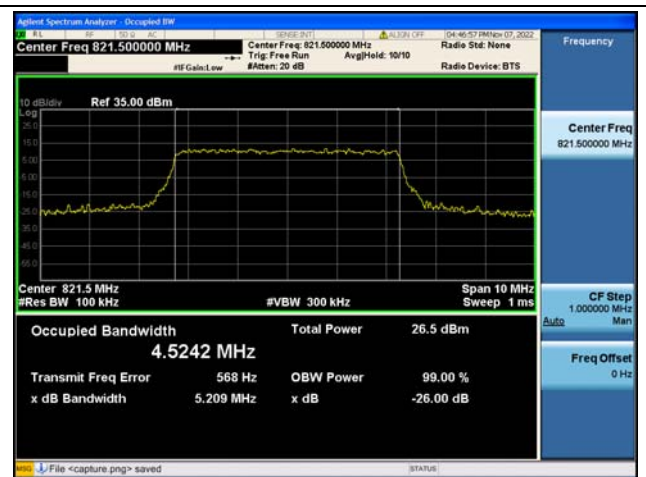
Band18Part90 / 5MHz / 16QAM/ Mid CH



Band18Part90 / 5MHz / 64QAM/ Mid CH



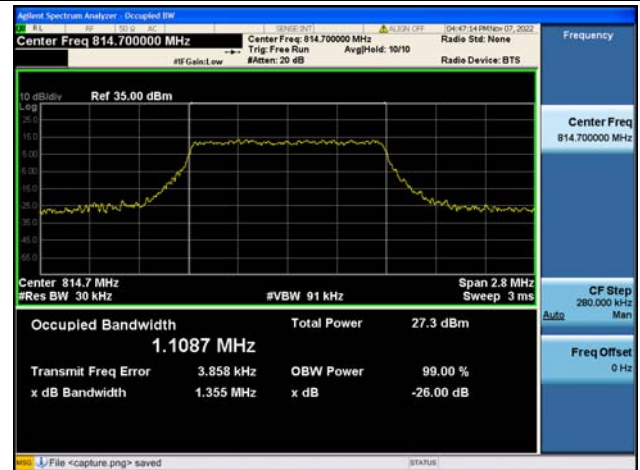
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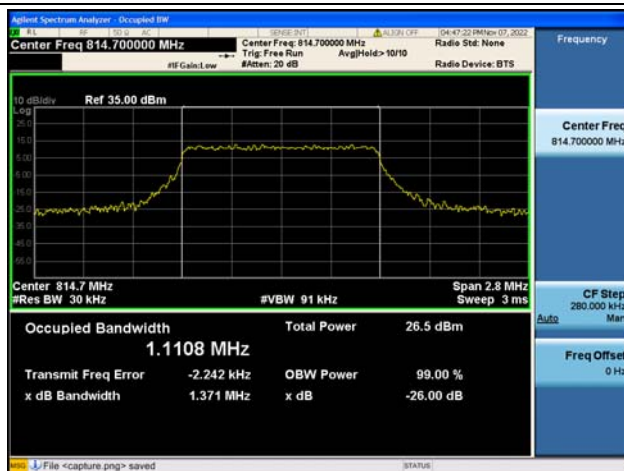
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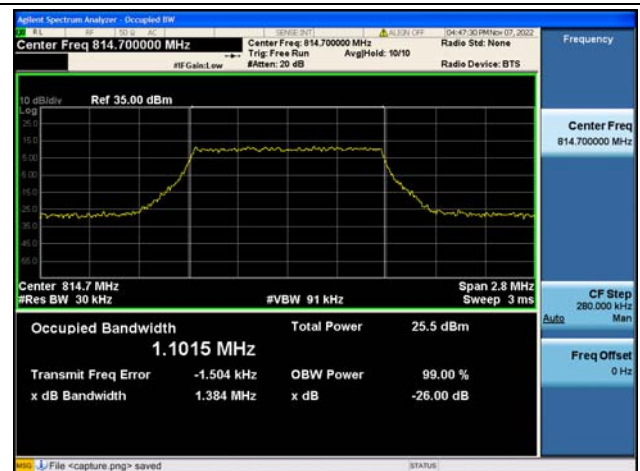
Band18Part90 / 5MHz / 64QAM/ High CH



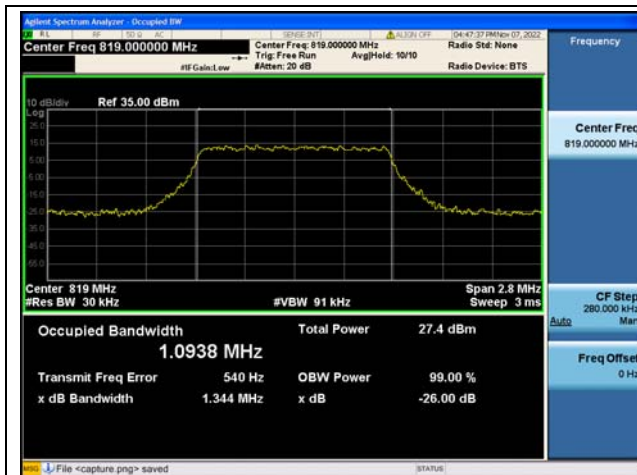
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Band26Part90 / 1.4MHz / 16QAM/ Low CH



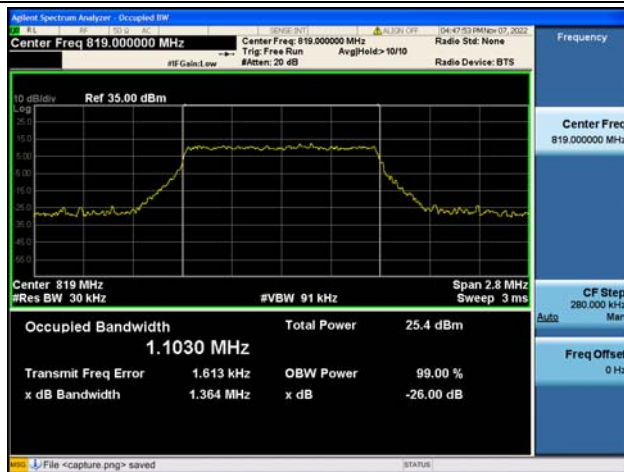
Band26Part90 / 1.4MHz / 64QAM/ Low CH



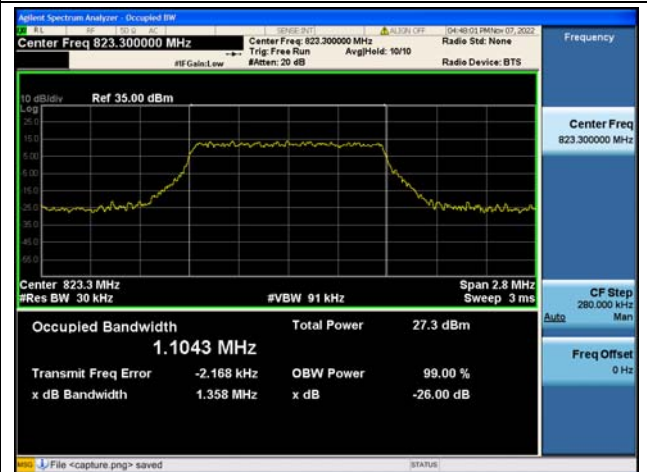
Band26Part90 / 1.4MHz / QPSK/ Mid CH



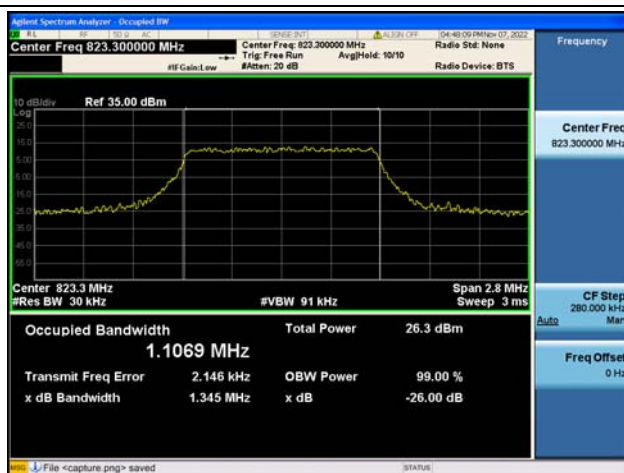
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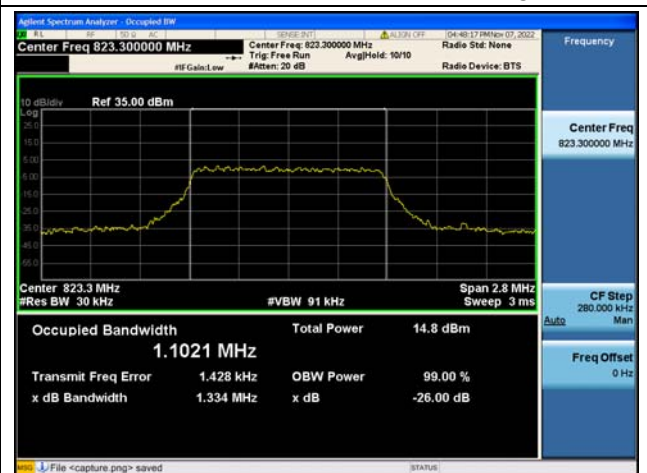
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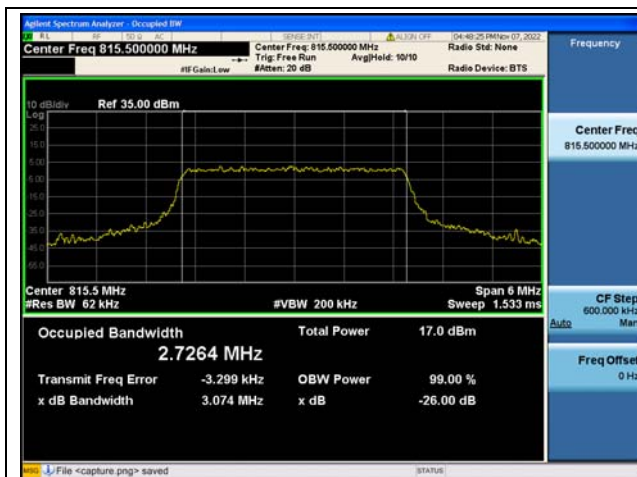
Band26Part90 / 1.4MHz / QPSK/ High CH



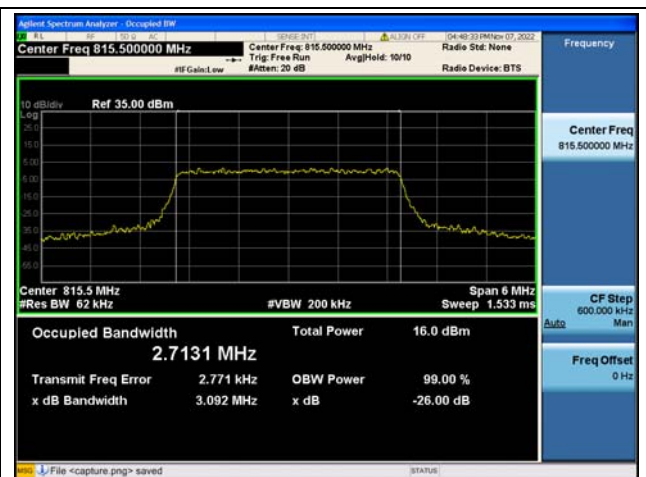
Band26Part90 / 1.4MHz / 16QAM/ High CH



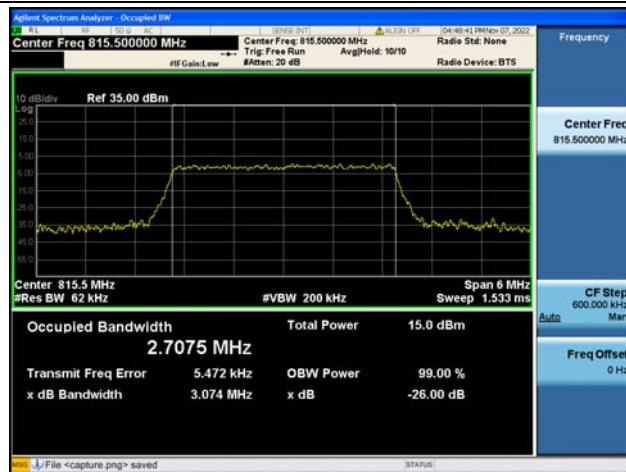
Band26Part90 / 1.4MHz / 64QAM/ High CH



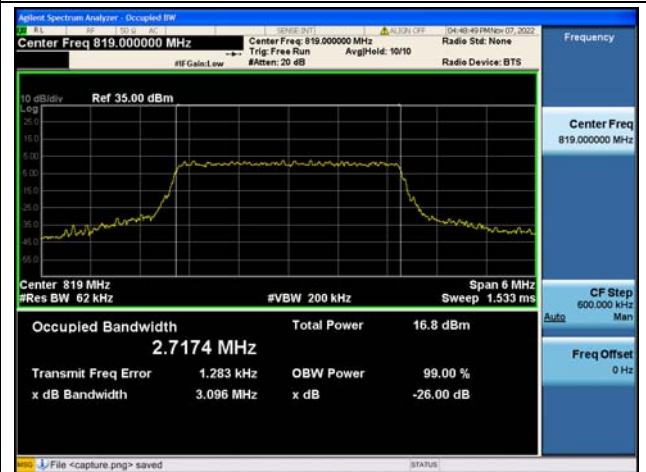
Band26Part90 / 3MHz / QPSK/ Low CH



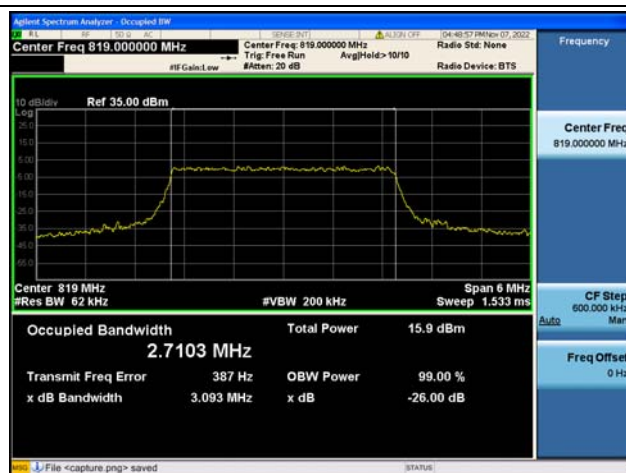
Band26Part90 / 3MHz / 16QAM/ Low CH



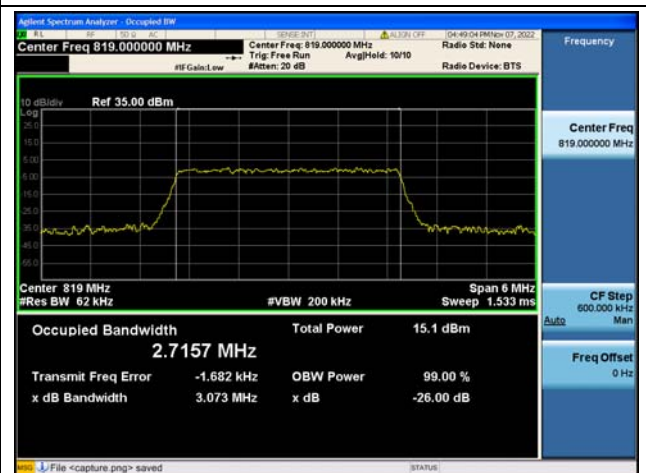
Band26Part90 / 3MHz / 64QAM/ Low CH



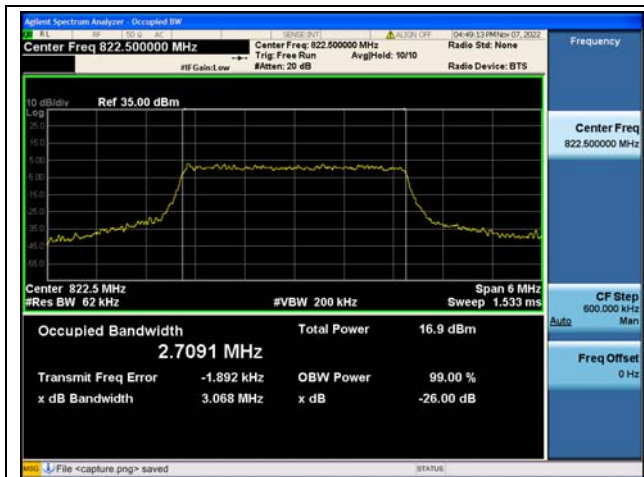
Band26Part90 / 3MHz / QPSK/ Mid CH



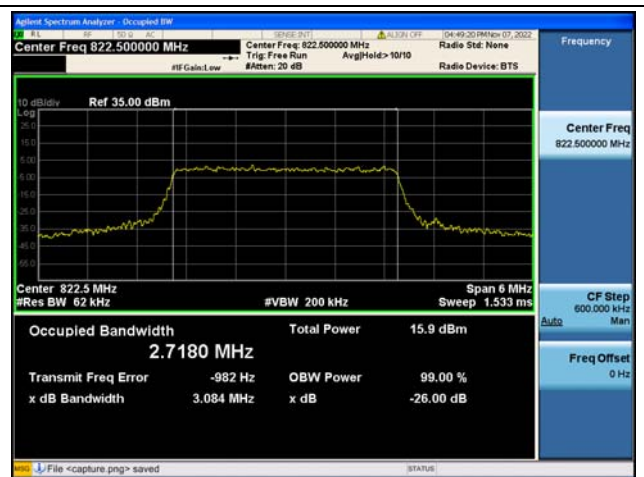
Band26Part90 / 3MHz / 16QAM/ Mid CH



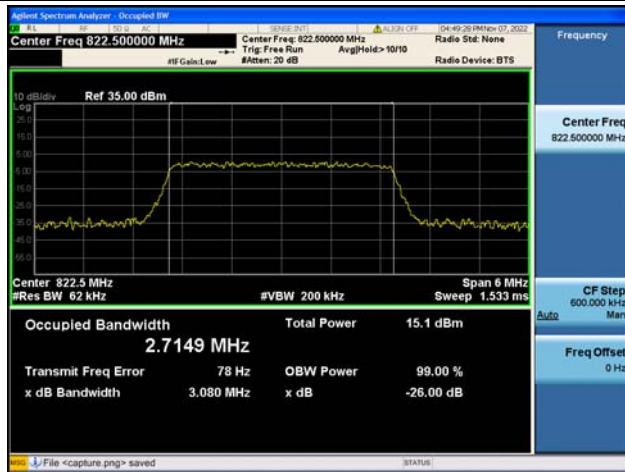
Band26Part90 / 3MHz / 64QAM/ Mid CH



Band26Part90 / 3MHz / QPSK/ High CH



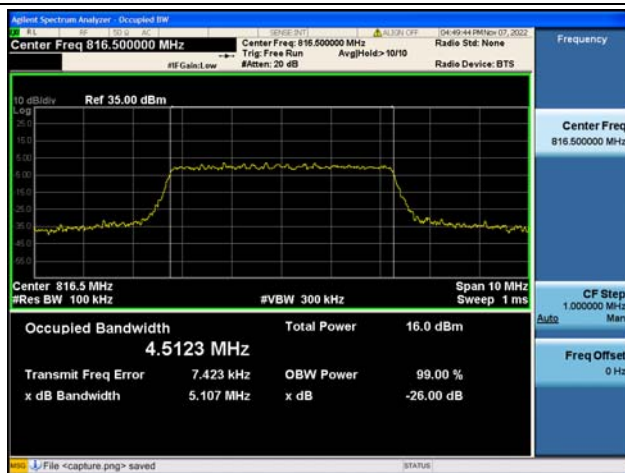
Band26Part90 / 3MHz / 16QAM/ High CH



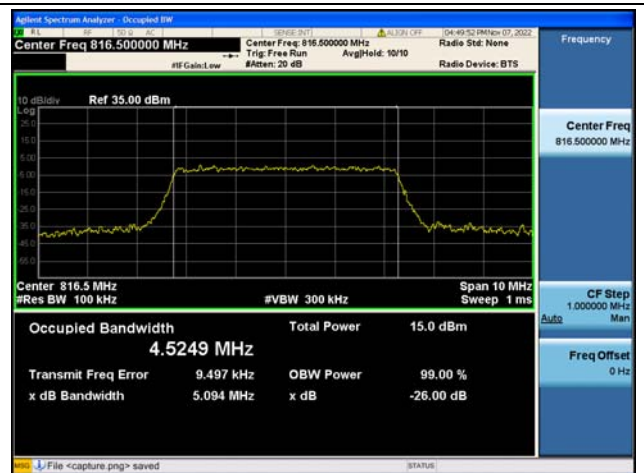
Band26Part90 / 3MHz / 64QAM/ High CH



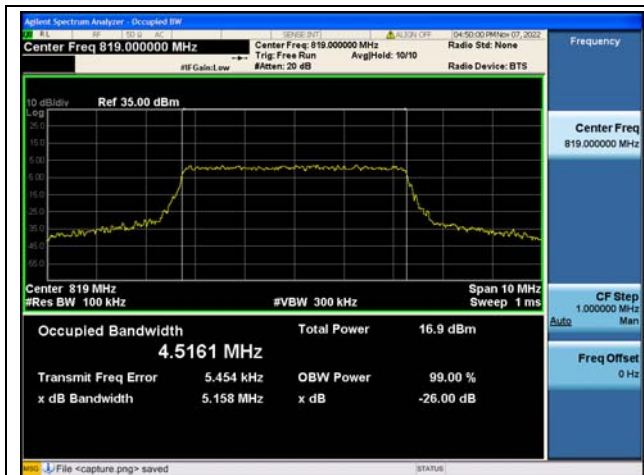
Band26Part90 / 5MHz / QPSK/ Low CH



Band26Part90 / 5MHz / 16QAM/ Low CH



Band26Part90 / 5MHz / 64QAM/ Low CH



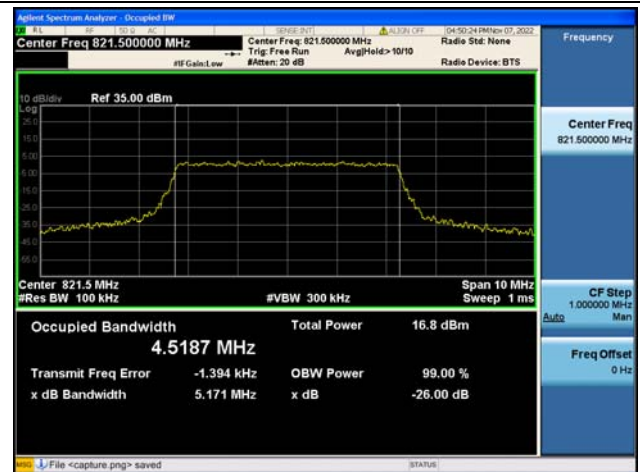
Band26Part90 / 5MHz / QPSK/ Mid CH



Band26Part90 / 5MHz / 16QAM/ Mid CH



Band26Part90 / 5MHz / 64QAM/ Mid CH



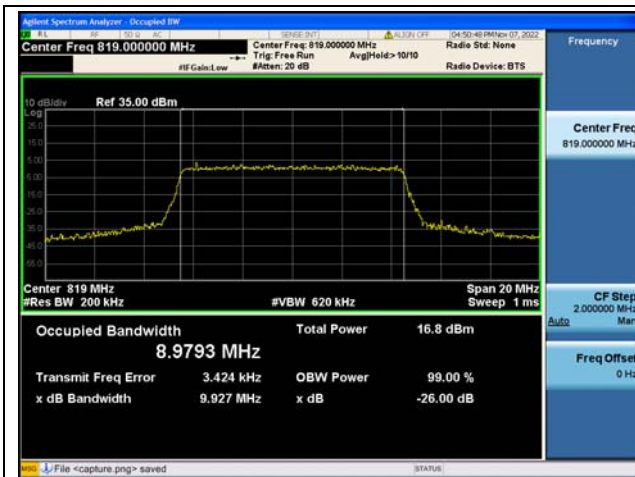
Band26Part90 / 5MHz / QPSK/ High CH



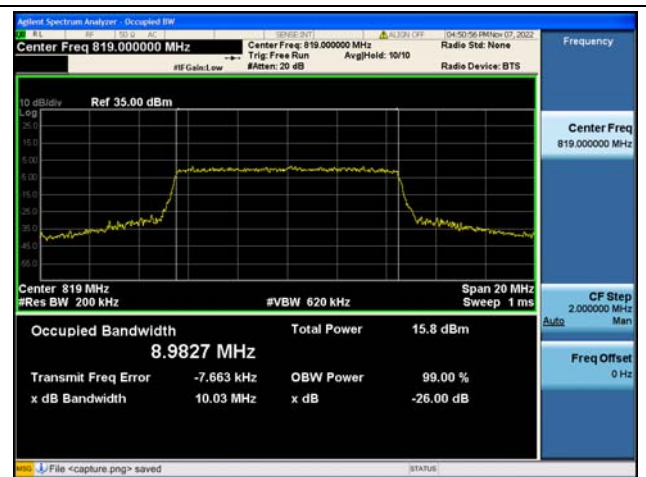
Band26Part90 / 5MHz / 16QAM/ High CH



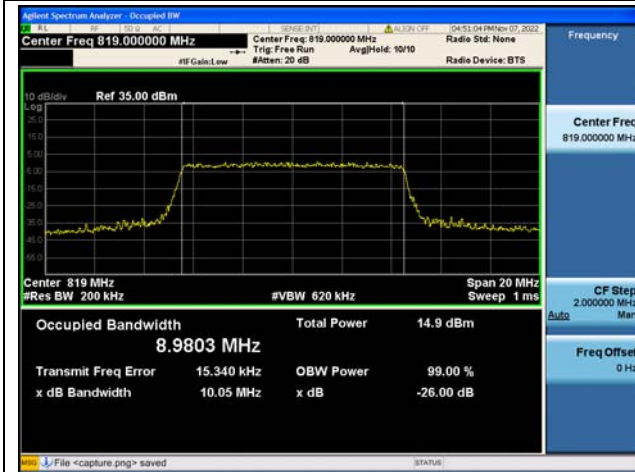
Band26Part90 / 5MHz / 64QAM/ High CH



Band26Part90 / 10MHz / QPSK/ Mid CH



Band26Part90 / 10MHz / 16QAM/ Mid CH



Band26Part90 / 10MHz / 64QAM/ Mid CH

2.3. Frequency Stability

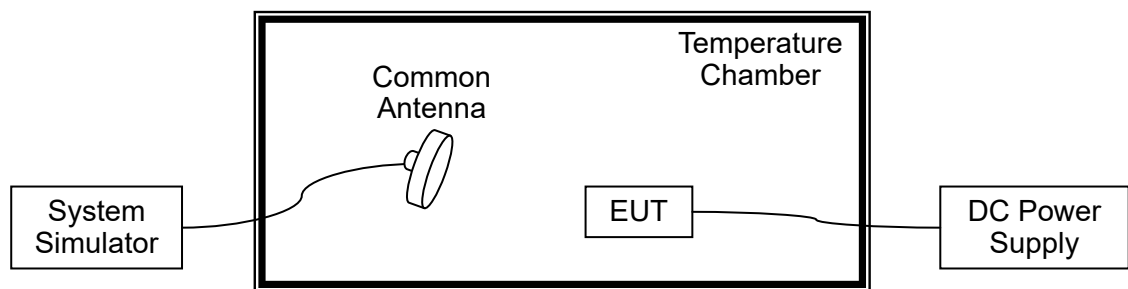
2.3.1. Requirement

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°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°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°C to 40°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 7.78V, 8.90V and 7.00V, which are specified by the applicant; the normal temperature here used is 20°C.

LTE Band 18, QPSK, Channel 23895, Frequency 819.5MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	7.78	+20(Ref)	-35	-0.043	PASS
Normal		0	29	0.035	
Normal		+10	46	0.056	
Normal		+20	32	0.039	
Normal		+30	52	0.063	
Normal		+40	56	0.068	
High	8.90	+20	45	0.055	
BATT.ENDPOINT	7.00	+20	14	0.017	

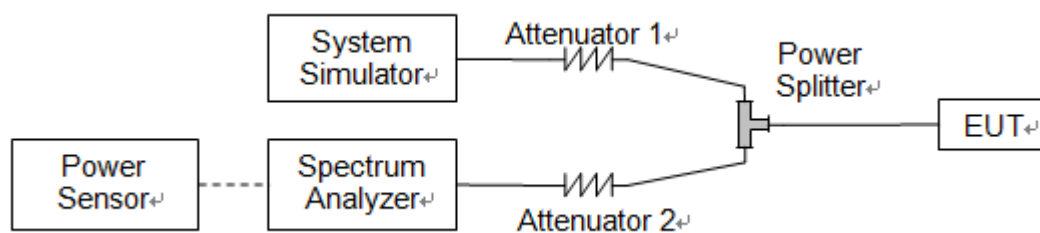
LTE Band 26, QPSK, Channel 26740, Frequency 819MHz					
Limit =±2.5ppm					
Voltage (%)	Power (VDC)	Temp(°C)	Fre. Dev.(Hz)	Deviation (ppm)	Result
Normal	7.78	+20(Ref)	19	0.023	PASS
Normal		0	-47	-0.057	
Normal		+10	21	0.026	
Normal		+20	23	0.028	
Normal		+30	-54	-0.066	
Normal		+40	48	0.059	
High	8.90	+20	31	0.038	
BATT.ENDPOINT	7.00	+20	54	0.066	

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



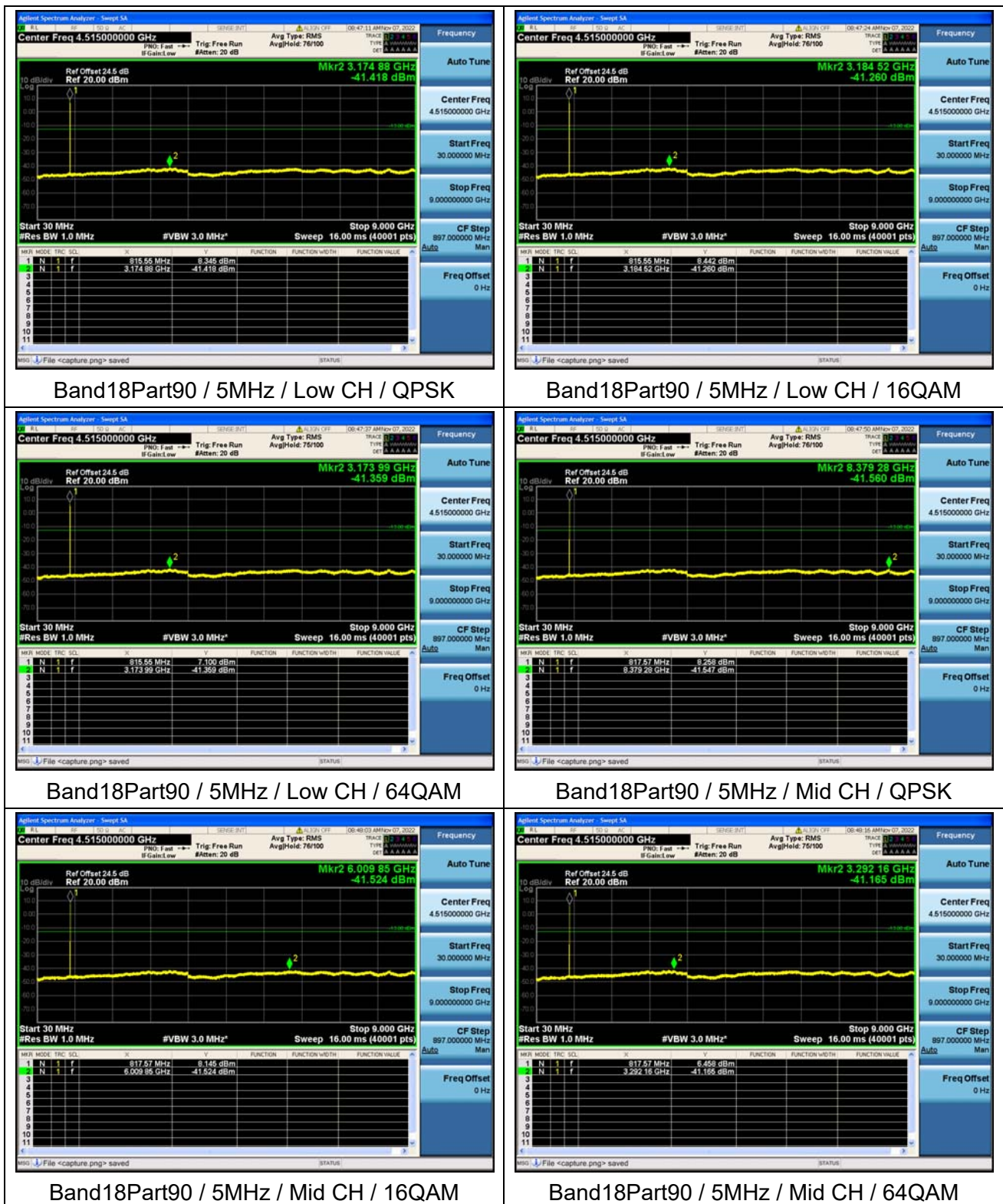
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

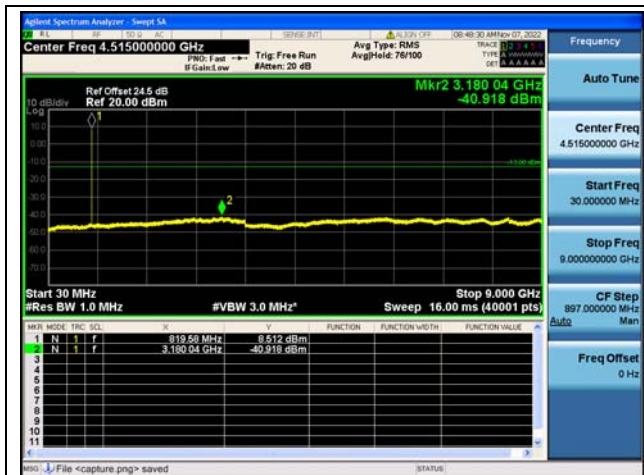
2.4.3. Test procedure

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

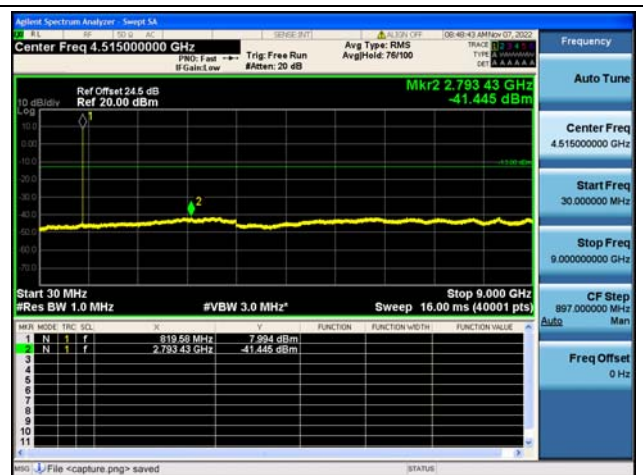


2.4.4. Test Result

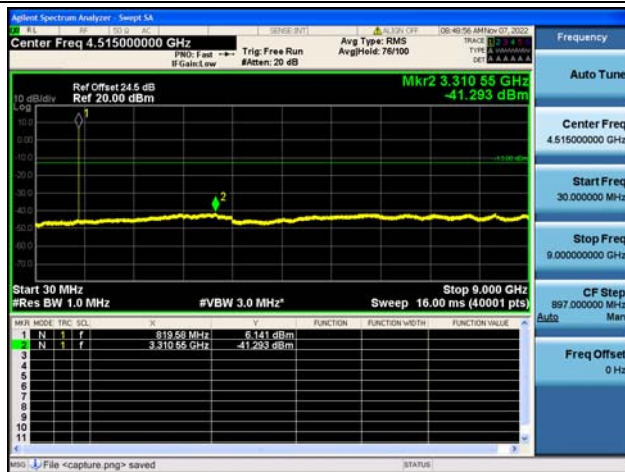




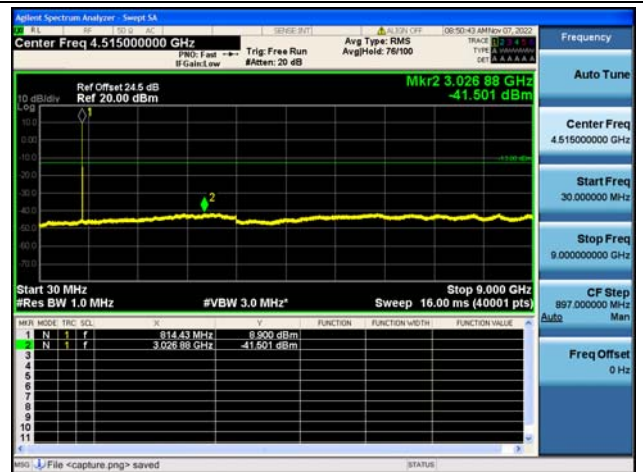
Band18Part90 / 5MHz / High CH / QPSK



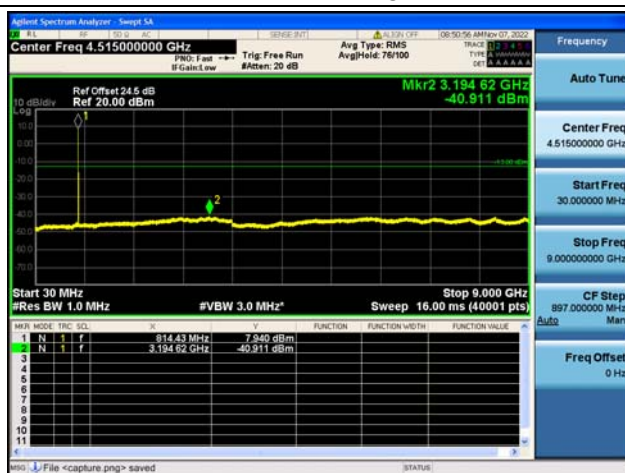
Band18Part90 / 5MHz / High CH / 16QAM



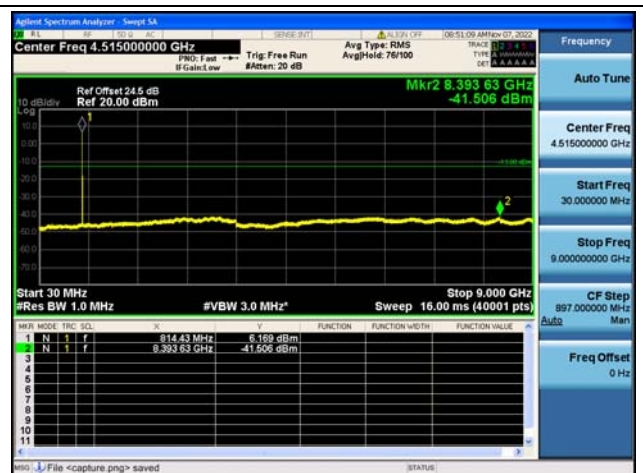
Band18Part90 / 5MHz / High CH / 64QAM



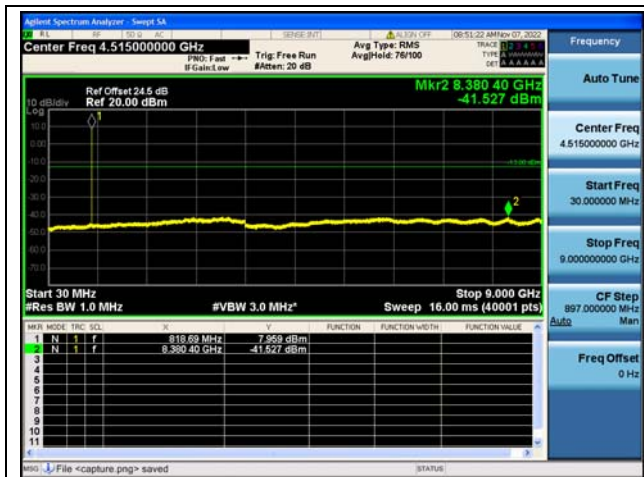
Band26Part90 / 1.4MHz / Low CH / QPSK



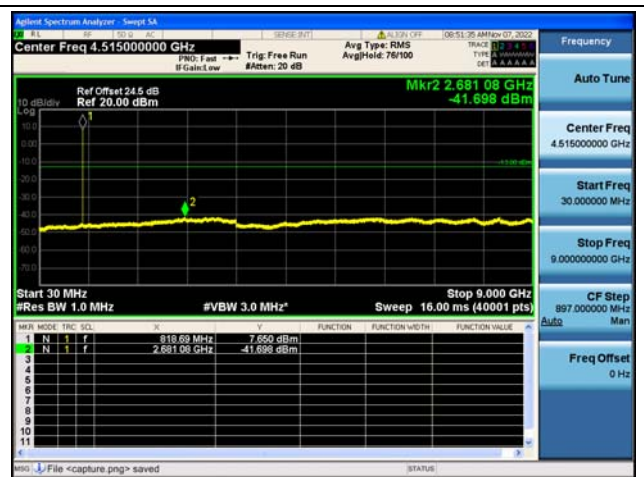
Band26Part90 / 1.4MHz / Low CH / 16QAM



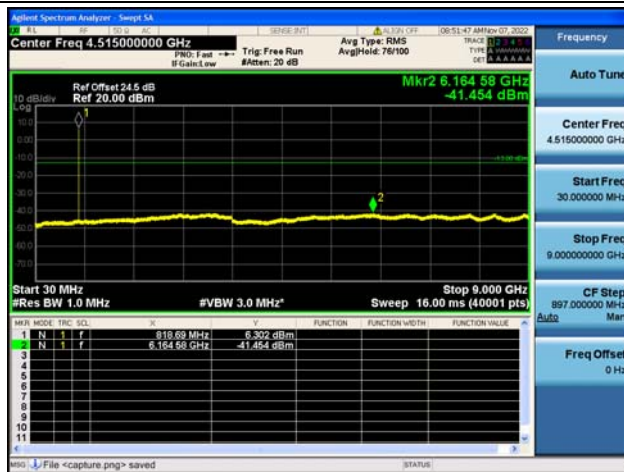
Band26Part90 / 1.4MHz / Low CH / 64QAM



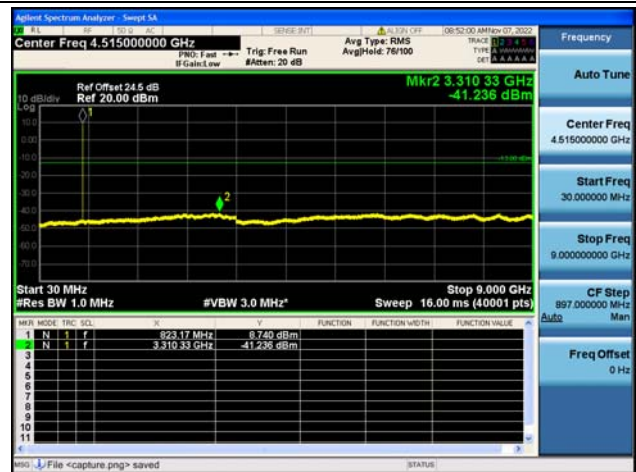
Band26Part90 / 1.4MHz / Mid CH / QPSK



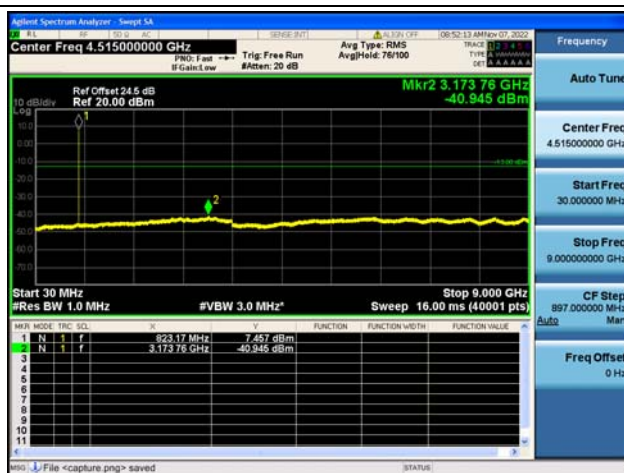
Band26Part90 / 1.4MHz / Mid CH / 16QAM



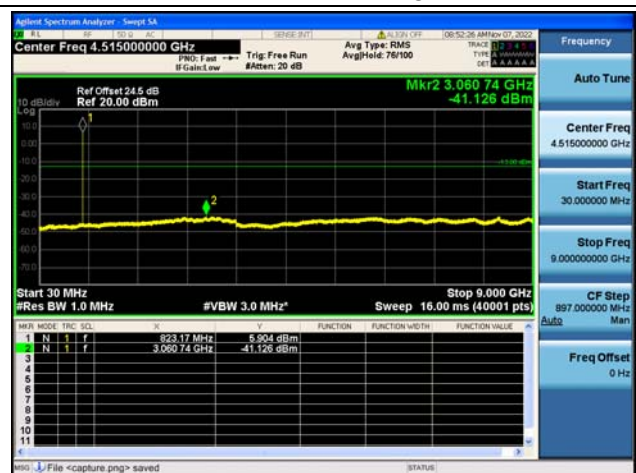
Band26Part90 / 1.4MHz / Mid CH / 64QAM



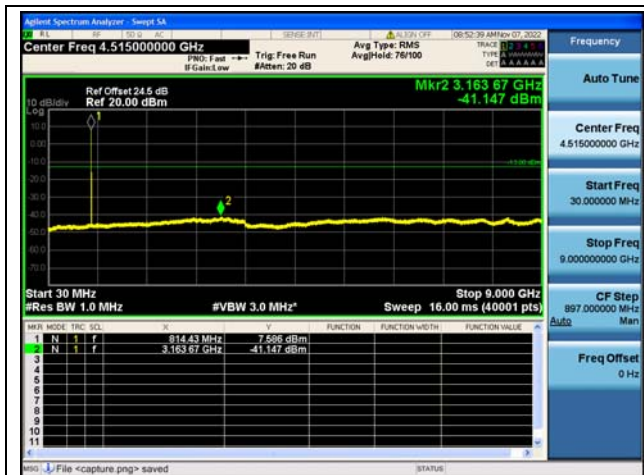
Band26Part90 / 1.4MHz / High CH / QPSK



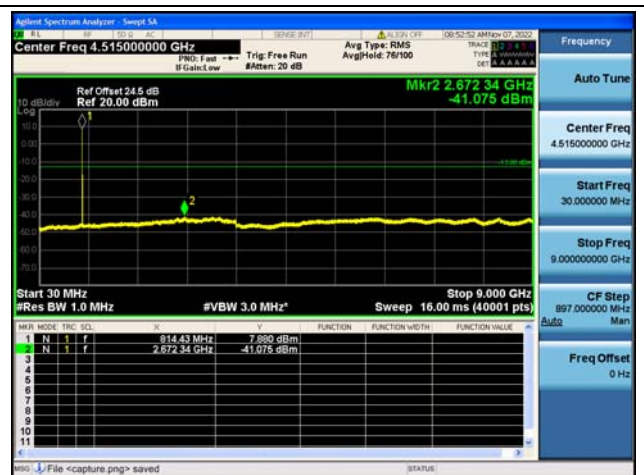
Band26Part90 / 1.4MHz / High CH / 16QAM



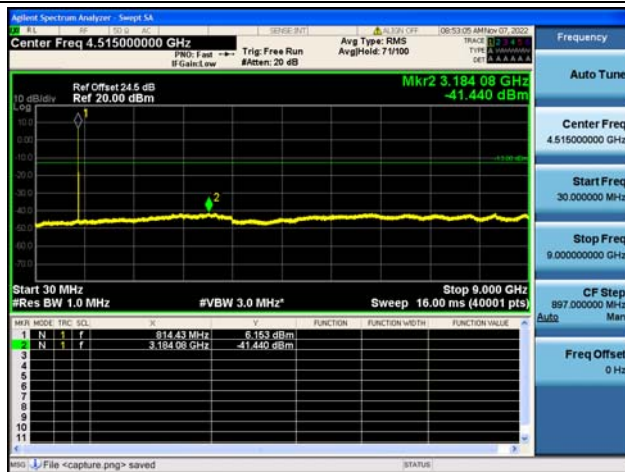
Band26Part90 / 1.4MHz / High CH / 64QAM



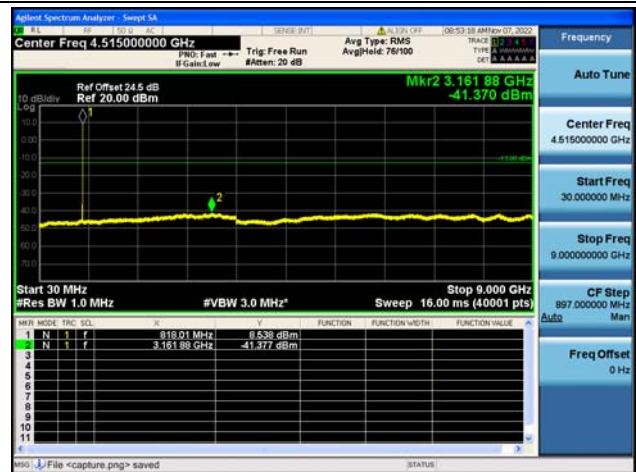
Band26Part90 / 3MHz / Low CH / QPSK



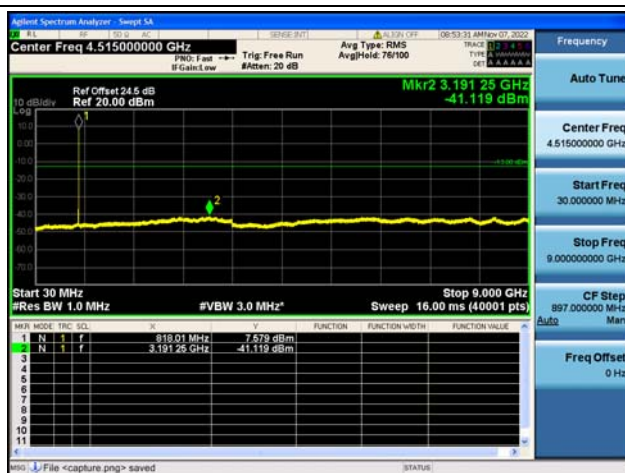
Band26Part90 / 3MHz / Low CH / 16QAM



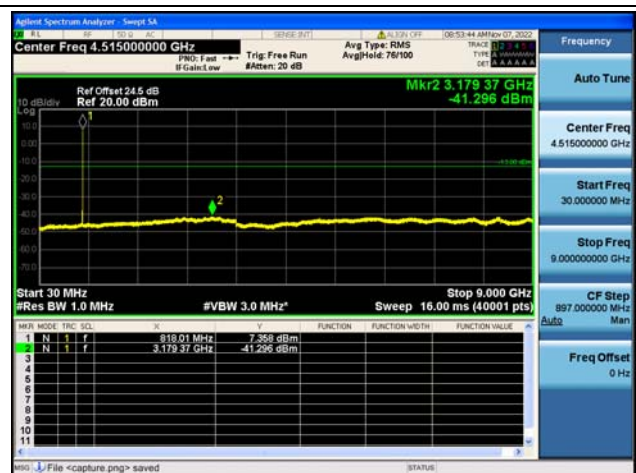
Band26Part90 / 3MHz / Low CH / 64QAM



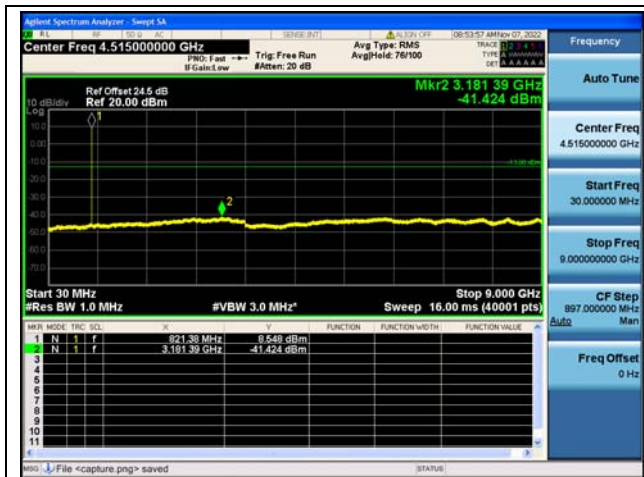
Band26Part90 / 3MHz / Mid CH / QPSK



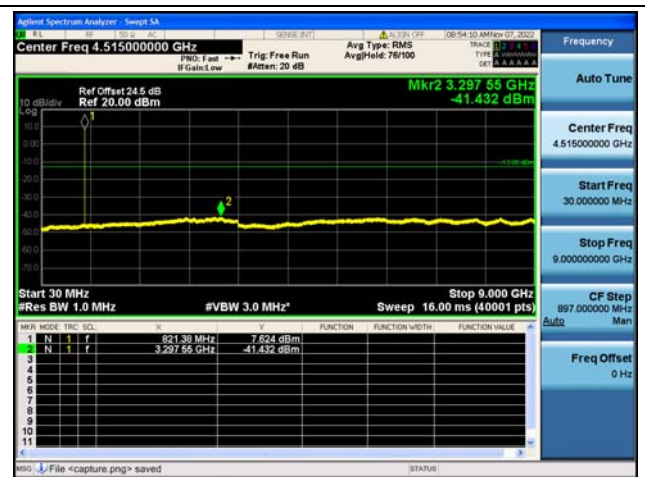
Band26Part90 / 3MHz / Mid CH / 16QAM



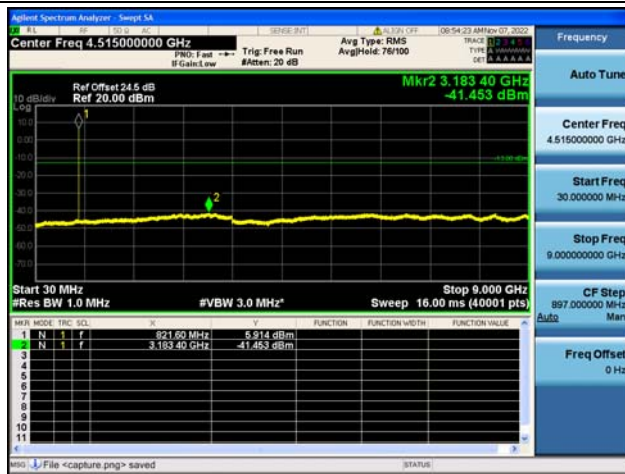
Band26Part90 / 3MHz / Mid CH / 64QAM



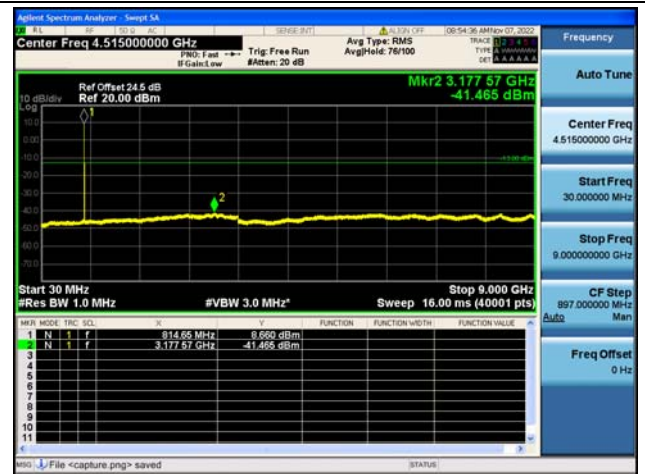
Band26Part90 / 3MHz / High CH / QPSK



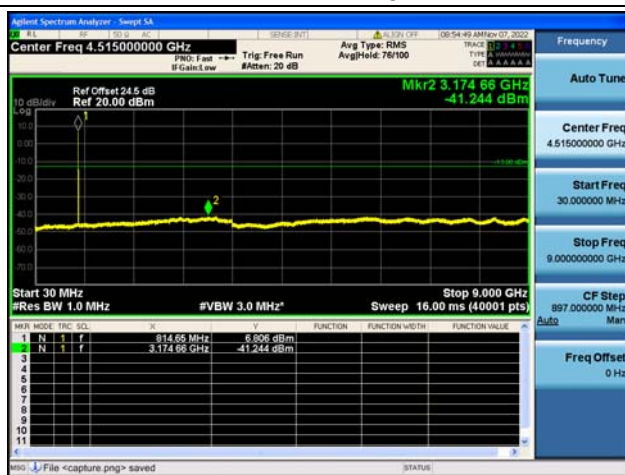
Band26Part90 / 3MHz / High CH / 16QAM



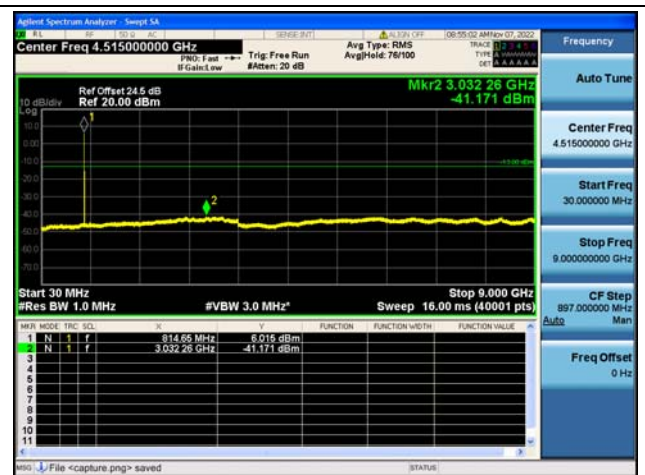
Band26Part90 / 3MHz / High CH / 64QAM



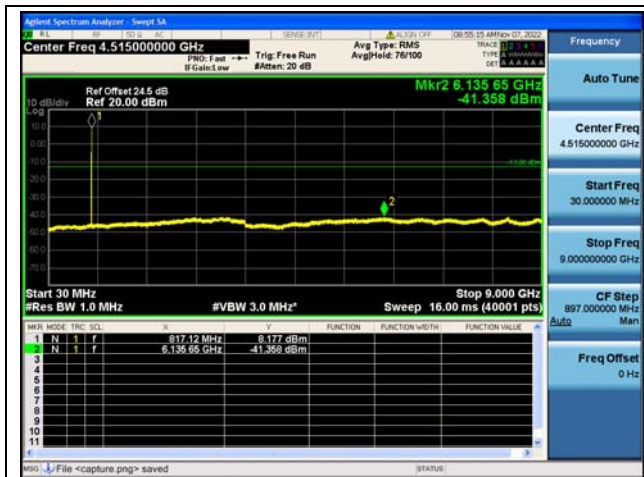
Band26Part90 / 5MHz / Low CH / QPSK



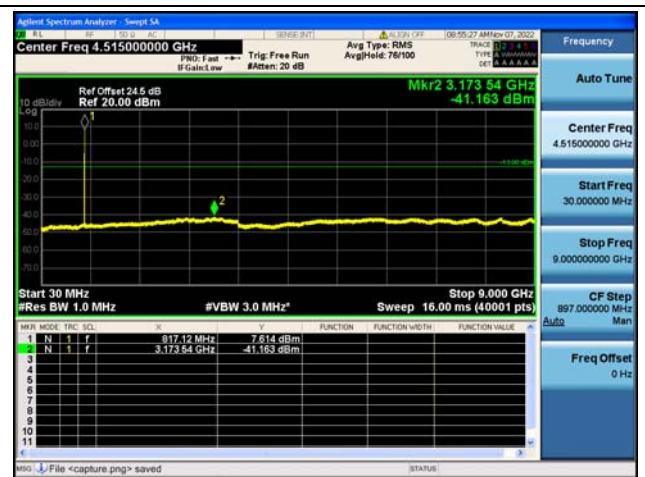
Band26Part90 / 5MHz / Low CH / 16QAM



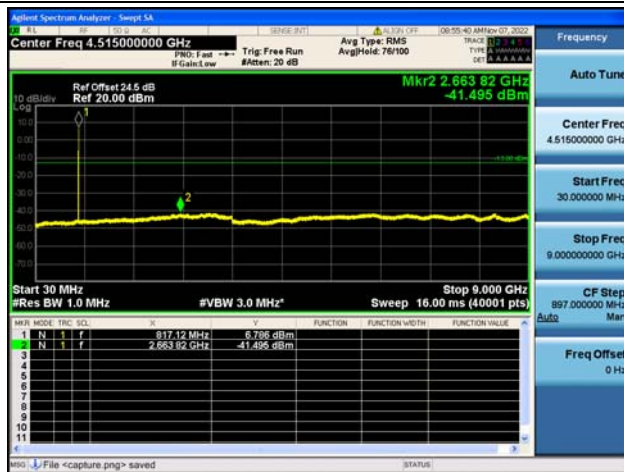
Band26Part90 / 5MHz / Low CH / 64QAM



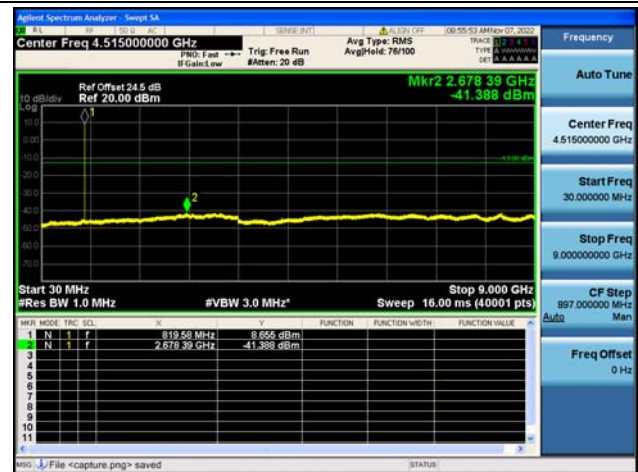
Band26Part90 / 5MHz / Mid CH / QPSK



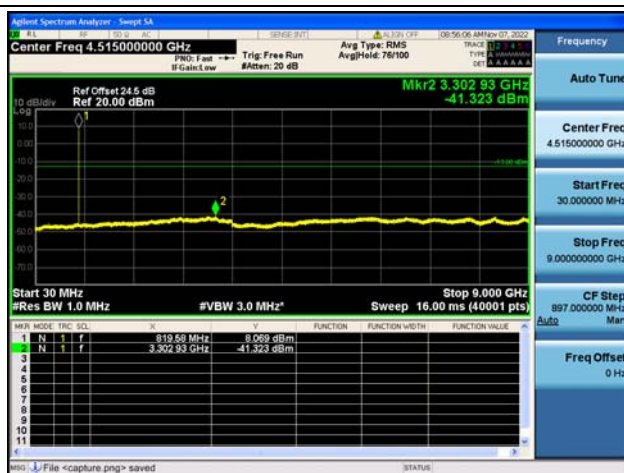
Band26Part90 / 5MHz / Mid CH / 16QAM



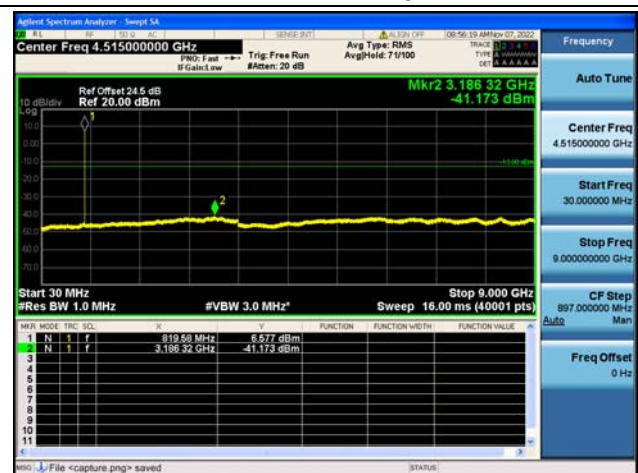
Band26Part90 / 5MHz / Mid CH / 64QAM



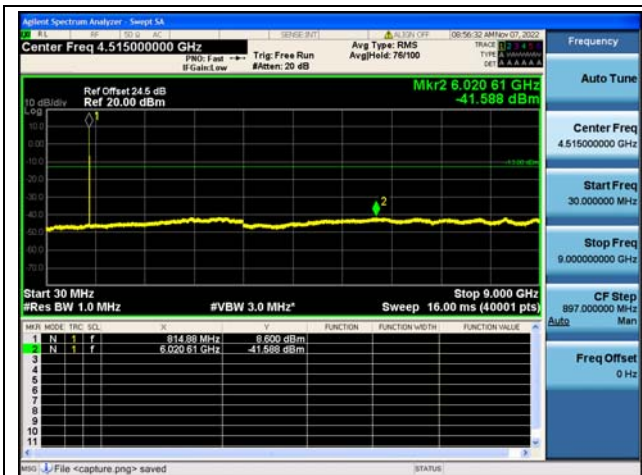
Band26Part90 / 5MHz / High CH / QPSK



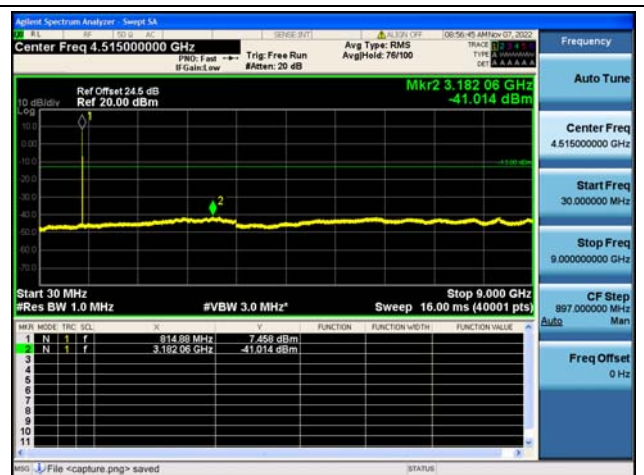
Band26Part90 / 5MHz / High CH / 16QAM



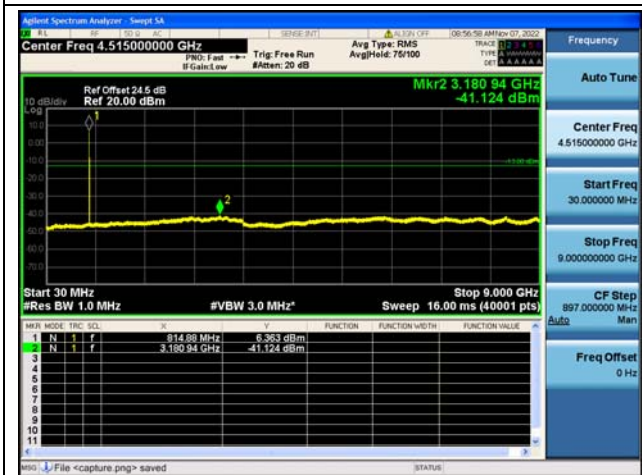
Band26Part90 / 5MHz / High CH / 64QAM



Band26Part90 / 10MHz / Mid CH / QPSK



Band26Part90 / 10MHz / Mid CH / 16QAM



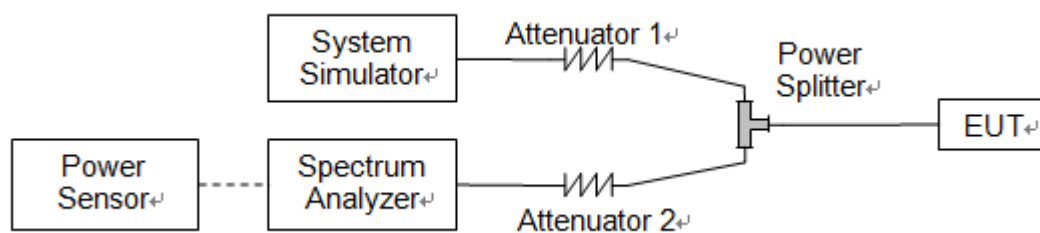
Band26Part90 / 10MHz / Mid CH / 64QAM

2.5. Band Edge

2.5.1. Requirement

According to FCC section 90.961, 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



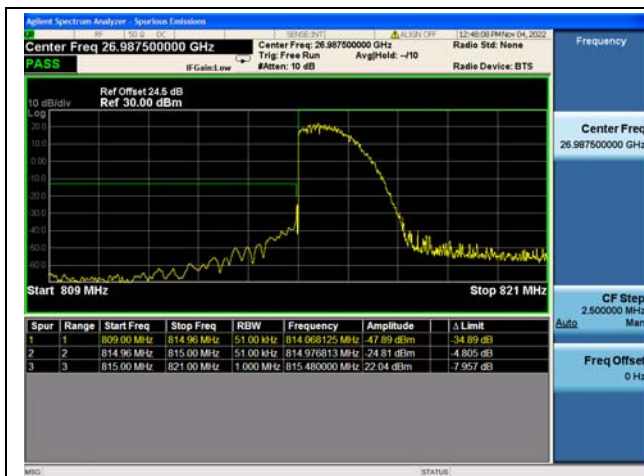
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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



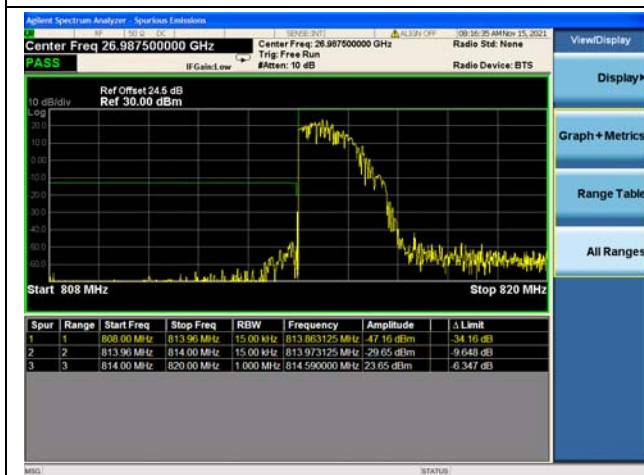
2.5.4. Test Result



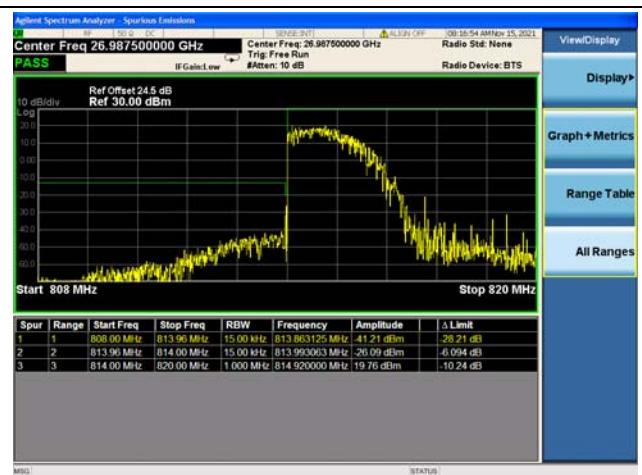
Band18 / 5MHz / Low CH / QPSK / 1 RB



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



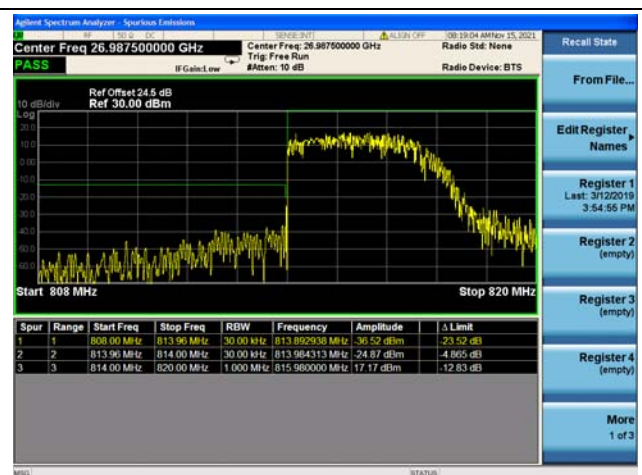
Band26 / 1.4MHz / Low CH / QPSK / 1 RB



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



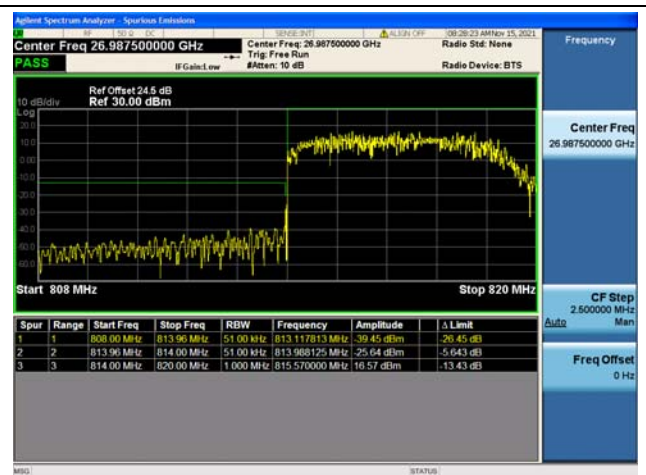
Band26 / 3MHz / Low CH / QPSK / 1 RB



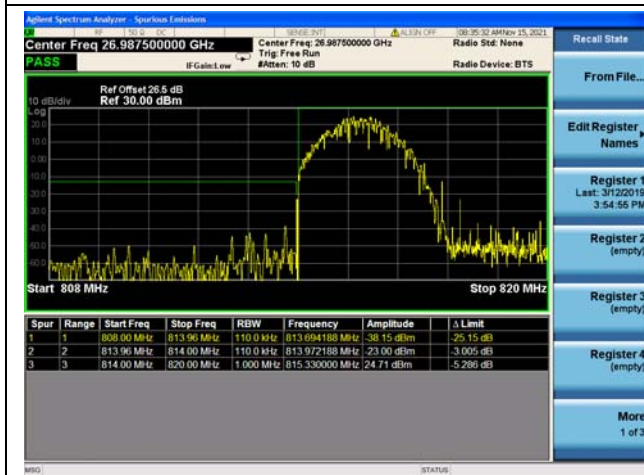
Band26 / 3MHz / Low CH / QPSK / FULL RB



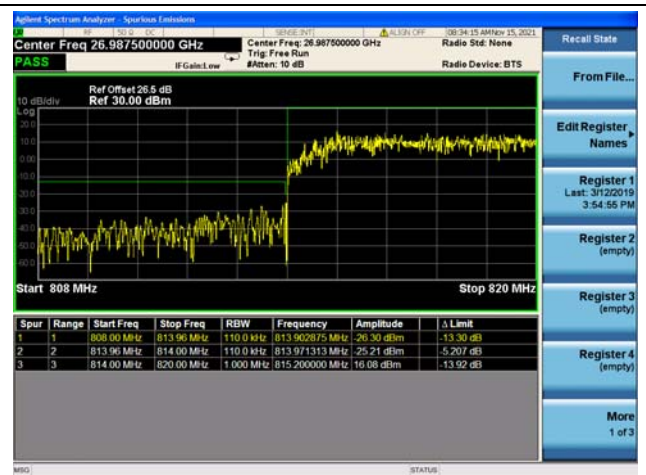
Band26 / 5MHz / Low CH / QPSK / 1 RB



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



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



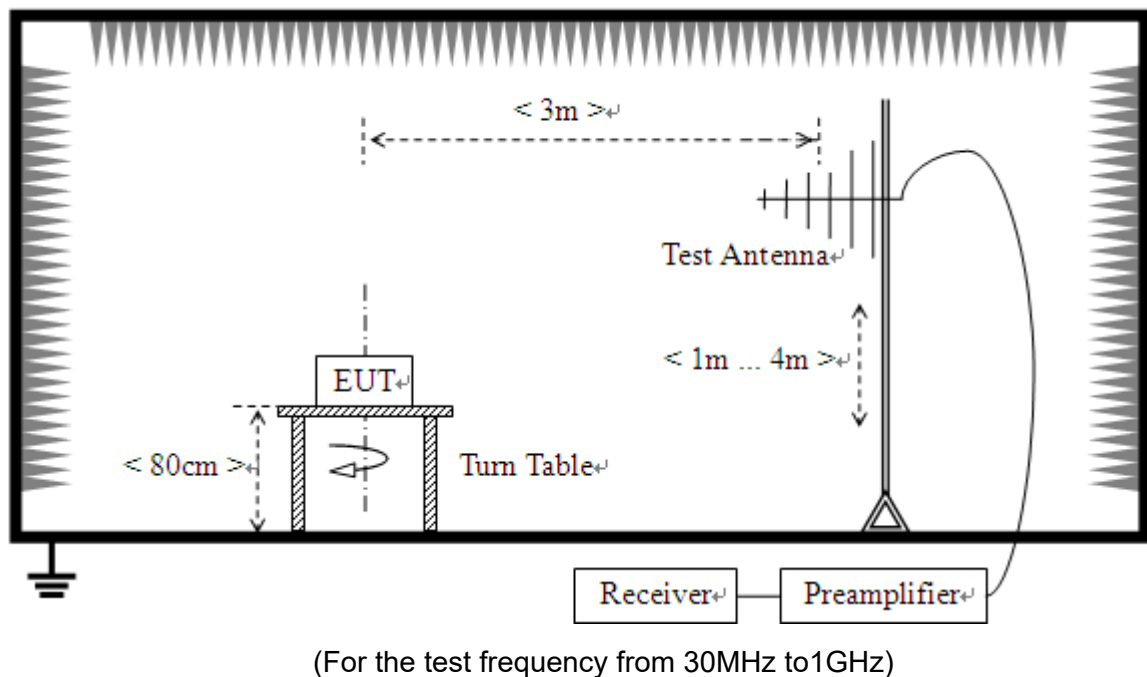
Band26 / 10MHz / Low CH / QPSK / FULL RB

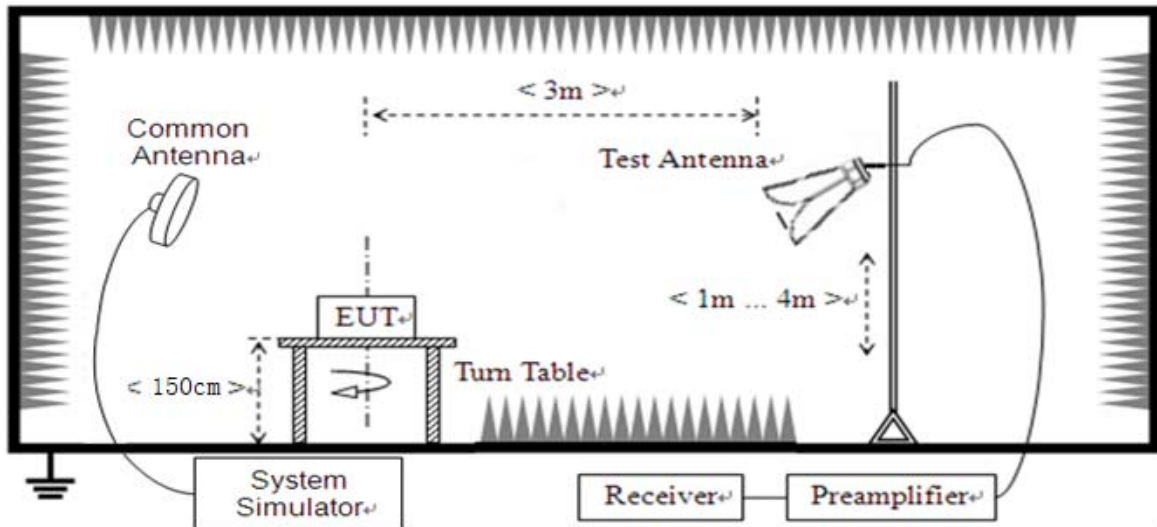
2.6. Radiated Spurious Emissions

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 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 1 GHz the resolution bandwidth is set to 100 kHz 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_{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_{TOT} is total correction factor including cable loss and substitution correction

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

Note 1: The power of the EUT transmitting frequency should be ignored.

Note 2: 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.

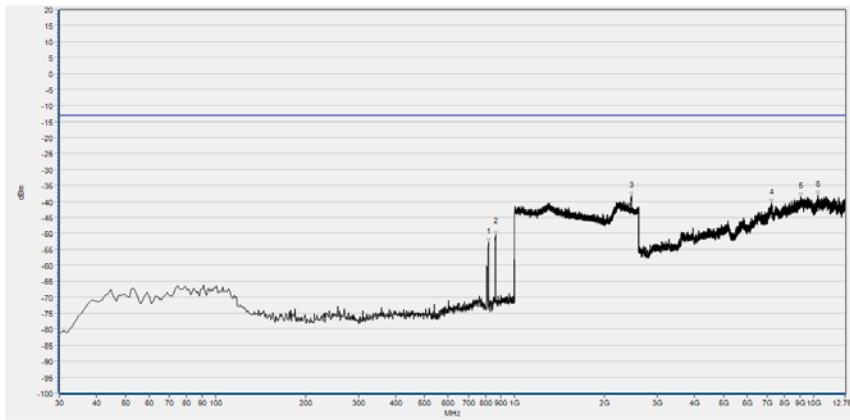
Note 3: All bandwidth and modulation were considered and evaluated respectively by performing full test for each band, only the worst cases (Max Bandwidth and QPSK mode) were recorded in this test report.

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

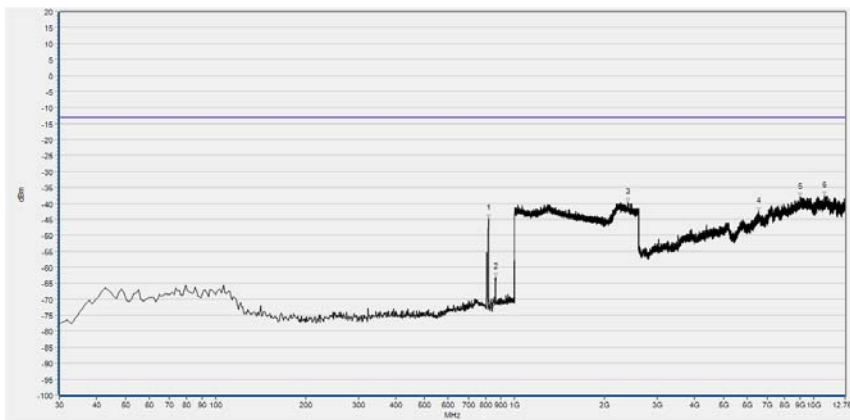
Note5: The amplitude of emissions(18GHz to 10th harmonics) which are attenuated more than 20 dB below the limit are not be reported.

Top Antenna

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

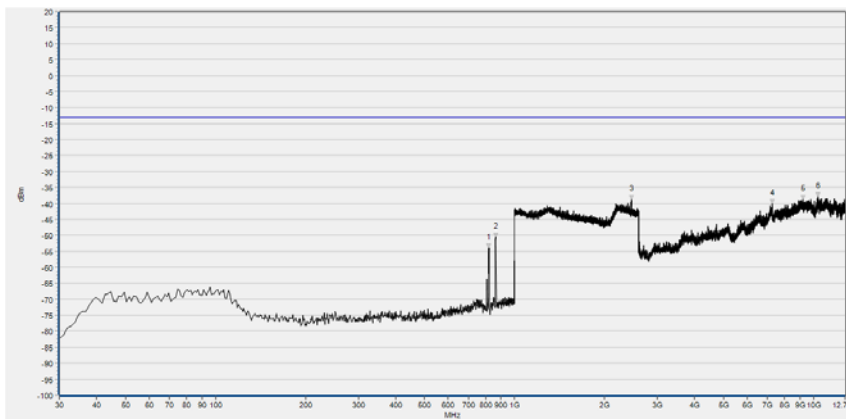


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-52.88	-13.00	Horizontal	N/A
2	863.230	-50.72	-13.00	Horizontal	N/A
3	2455.942	-38.43	-13.00	Horizontal	PASS
4	7244.008	-40.60	-13.00	Horizontal	PASS
5	9084.261	-38.62	-13.00	Horizontal	PASS
6	10344.935	-38.10	-13.00	Horizontal	PASS

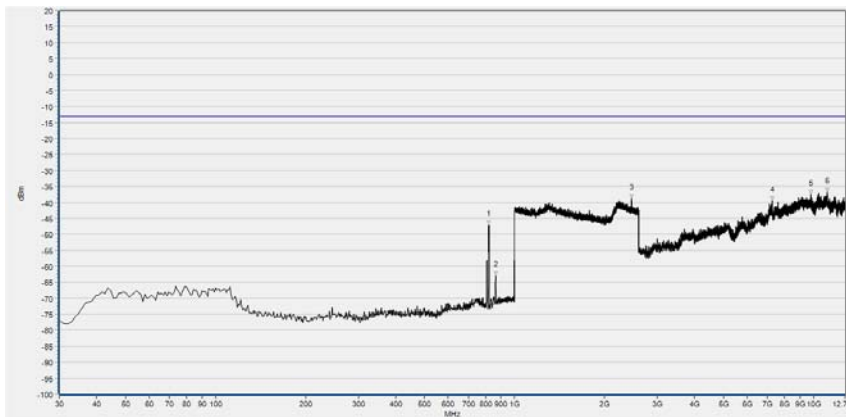


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-44.70	-13.00	Vertical	N/A
2	864.200	-63.14	-13.00	Vertical	N/A
3	2397.039	-39.71	-13.00	Vertical	PASS
4	6551.837	-42.50	-13.00	Vertical	PASS
5	9012.275	-38.08	-13.00	Vertical	PASS
6	10869.140	-37.63	-13.00	Vertical	PASS

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

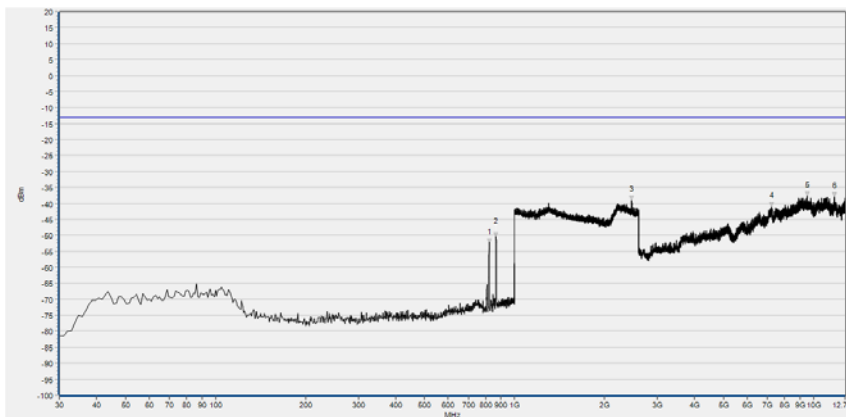


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-55.83	-13.00	Horizontal	N/A
2	864.200	-51.94	-13.00	Horizontal	N/A
3	2203.041	-40.87	-13.00	Horizontal	PASS
4	5156.419	-46.40	-13.00	Horizontal	PASS
5	7229.242	-40.66	-13.00	Horizontal	PASS
6	9006.738	-37.97	-13.00	Horizontal	PASS

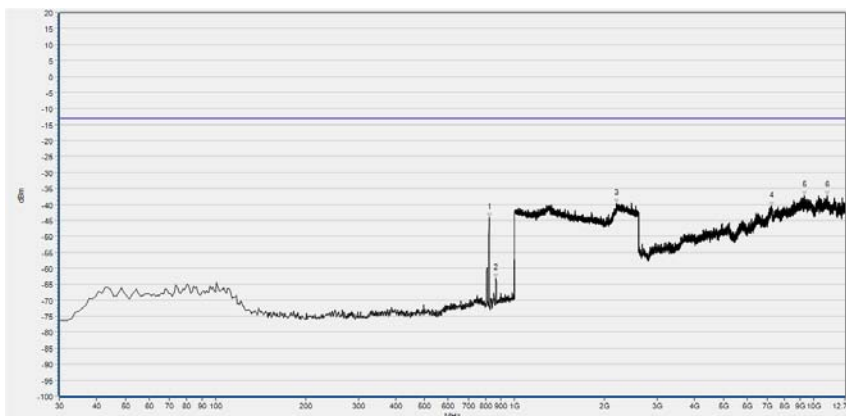


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-47.02	-13.00	Vertical	N/A
2	864.200	-62.99	-13.00	Vertical	N/A
3	2457.223	-38.71	-13.00	Vertical	PASS
4	7260.620	-39.54	-13.00	Vertical	PASS
5	9813.348	-37.41	-13.00	Vertical	PASS
6	11131.242	-36.87	-13.00	Vertical	PASS

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

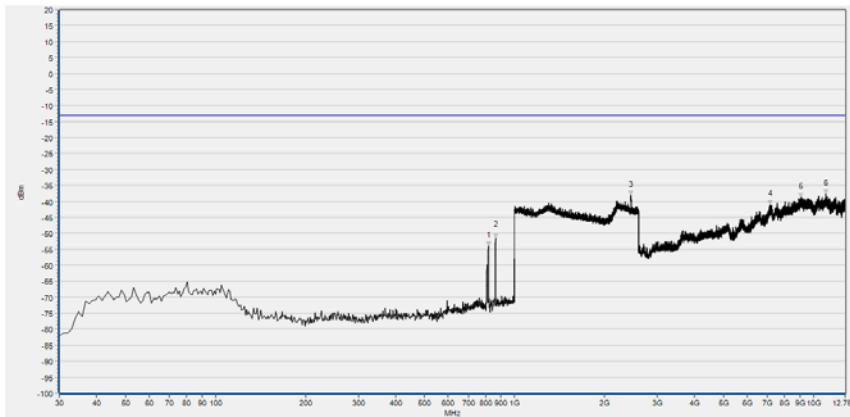


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-52.31	-13.00	Horizontal	N/A
2	866.140	-50.39	-13.00	Horizontal	N/A
3	2463.625	-39.07	-13.00	Horizontal	PASS
4	7214.475	-41.10	-13.00	Horizontal	PASS
5	9508.793	-37.70	-13.00	Horizontal	PASS
6	11758.811	-37.92	-13.00	Horizontal	PASS

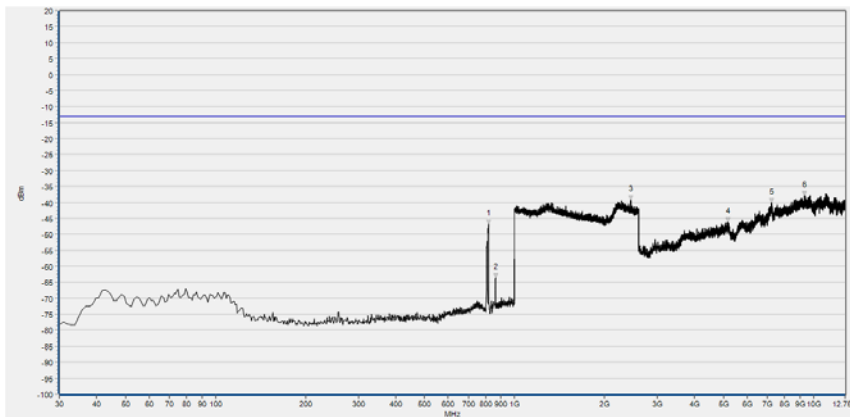


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	823.460	-44.18	-13.00	Vertical	N/A
2	865.170	-63.14	-13.00	Vertical	N/A
3	2195.358	-39.67	-13.00	Vertical	PASS
4	7245.854	-40.63	-13.00	Vertical	PASS
5	9331.597	-37.15	-13.00	Vertical	PASS
6	11081.406	-37.16	-13.00	Vertical	PASS

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

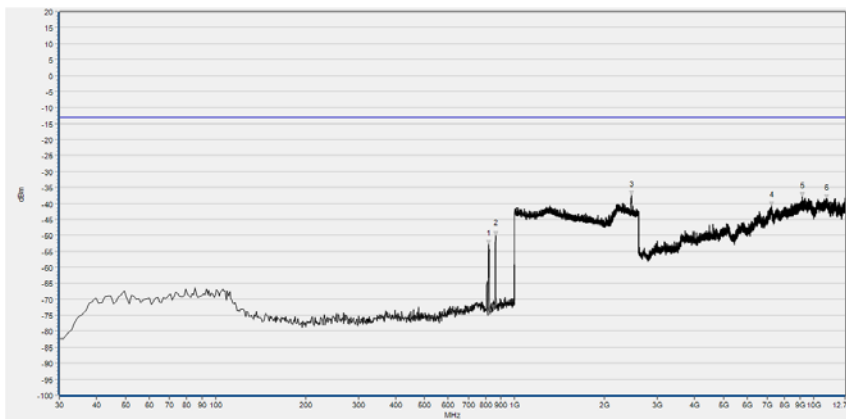


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-53.90	-13.00	Horizontal	N/A
2	863.230	-51.55	-13.00	Horizontal	N/A
3	2449.540	-38.03	-13.00	Horizontal	PASS
4	7160.947	-41.04	-13.00	Horizontal	PASS
5	9075.032	-38.71	-13.00	Horizontal	PASS
6	10994.654	-37.71	-13.00	Horizontal	PASS

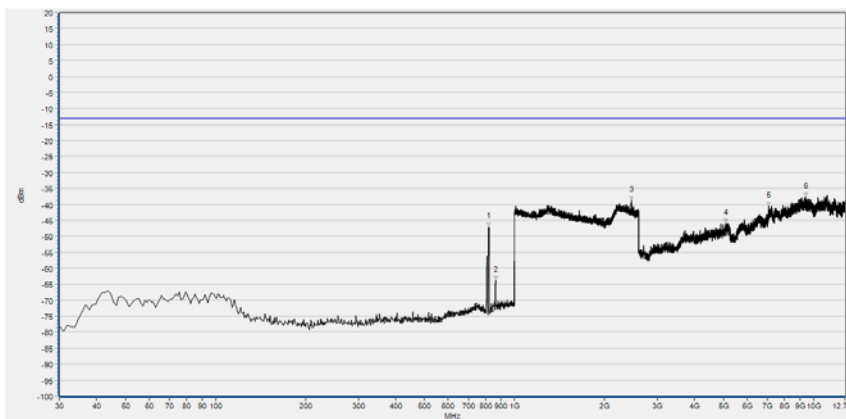


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-46.77	-13.00	Vertical	N/A
2	863.230	-63.52	-13.00	Vertical	N/A
3	2452.101	-39.20	-13.00	Vertical	PASS
4	5167.494	-46.11	-13.00	Vertical	PASS
5	7238.471	-40.15	-13.00	Vertical	PASS
6	9314.985	-37.90	-13.00	Vertical	PASS

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

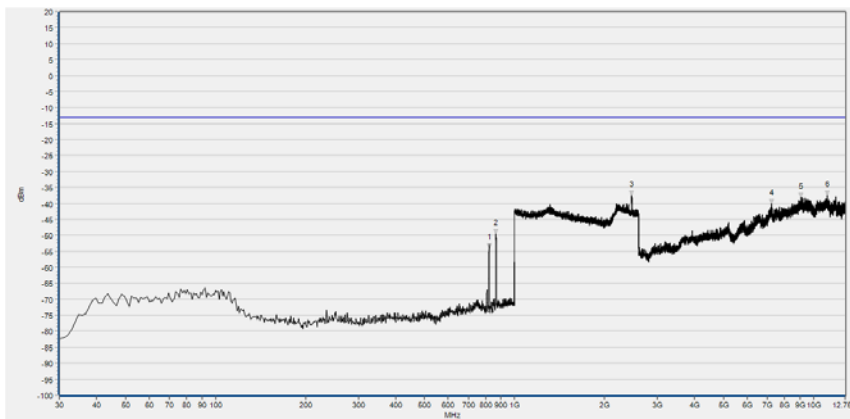


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-52.87	-13.00	Horizontal	N/A
2	865.170	-50.07	-13.00	Horizontal	N/A
3	2456.583	-37.46	-13.00	Horizontal	PASS
4	7236.625	-40.76	-13.00	Horizontal	PASS
5	9143.326	-37.81	-13.00	Horizontal	PASS
6	11022.340	-38.63	-13.00	Horizontal	PASS

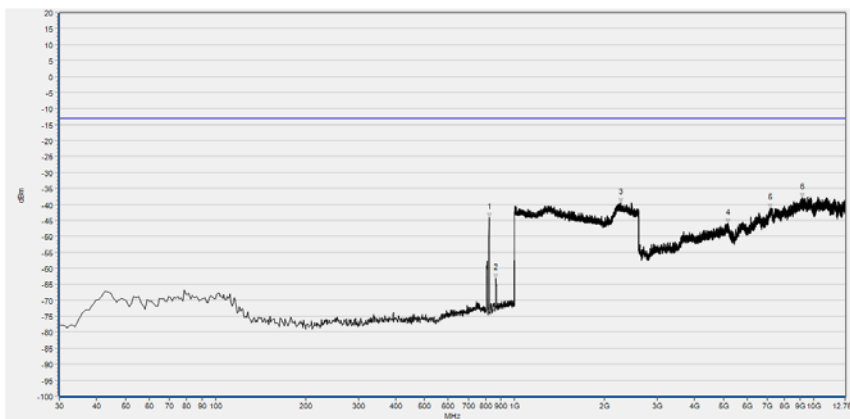


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-46.97	-13.00	Vertical	N/A
2	864.200	-63.89	-13.00	Vertical	N/A
3	2456.583	-38.75	-13.00	Vertical	PASS
4	5084.434	-45.87	-13.00	Vertical	PASS
5	7081.578	-40.66	-13.00	Vertical	PASS
6	9398.045	-37.76	-13.00	Vertical	PASS

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



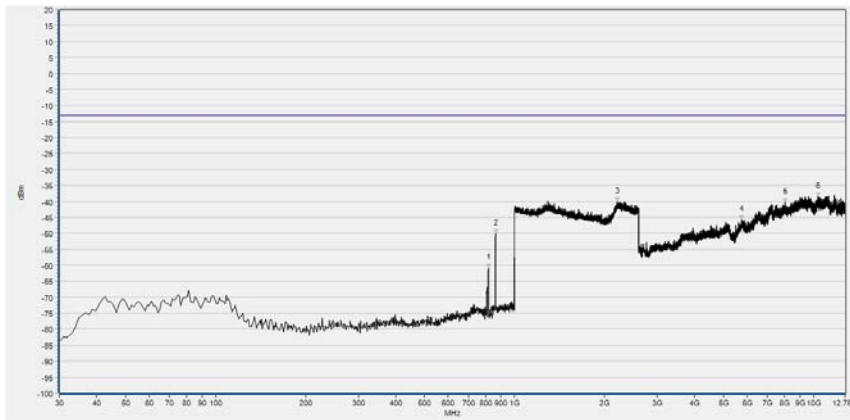
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	821.520	-53.89	-13.00	Horizontal	N/A
2	865.170	-49.44	-13.00	Horizontal	N/A
3	2464.906	-37.42	-13.00	Horizontal	PASS
4	7249.545	-40.08	-13.00	Horizontal	PASS
5	9086.107	-38.21	-13.00	Horizontal	PASS
6	11134.934	-37.43	-13.00	Horizontal	PASS



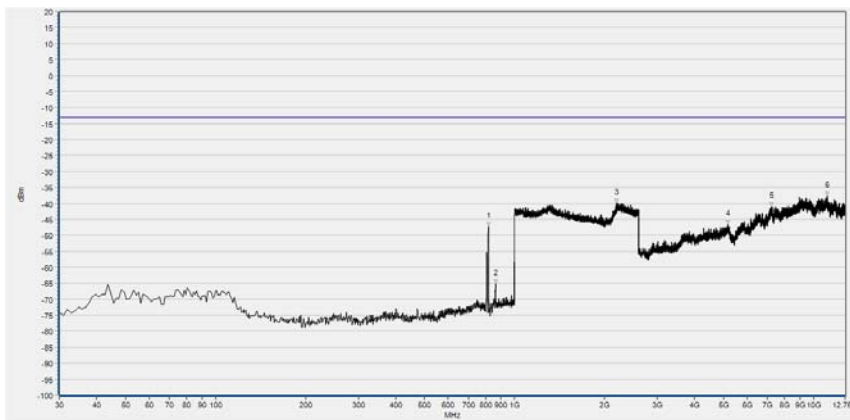
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	821.520	-44.16	-13.00	Vertical	N/A
2	865.170	-63.19	-13.00	Vertical	N/A
3	2265.786	-39.55	-13.00	Vertical	PASS
4	5161.957	-45.96	-13.00	Vertical	PASS
5	7151.718	-41.31	-13.00	Vertical	PASS
6	9180.242	-37.84	-13.00	Vertical	PASS

Bottom Antenna

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

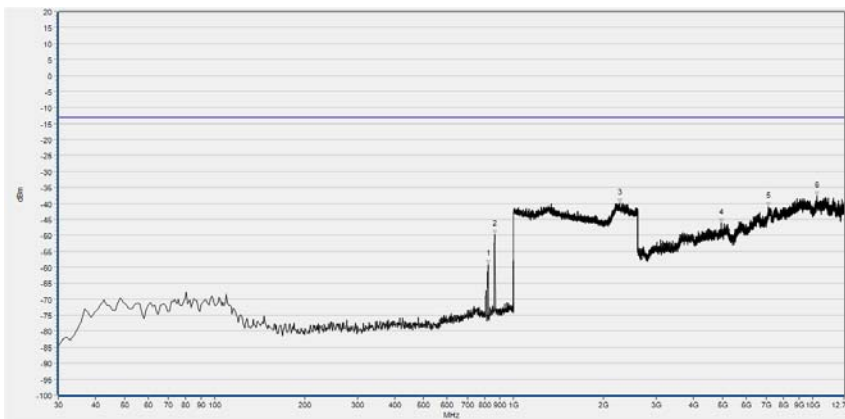


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-60.80	-13.00	Horizontal	N/A
2	864.200	-50.07	-13.00	Horizontal	N/A
3	2199.840	-40.03	-13.00	Horizontal	PASS
4	5739.689	-45.71	-13.00	Horizontal	PASS
5	8028.469	-40.38	-13.00	Horizontal	PASS
6	10330.169	-38.57	-13.00	Horizontal	PASS

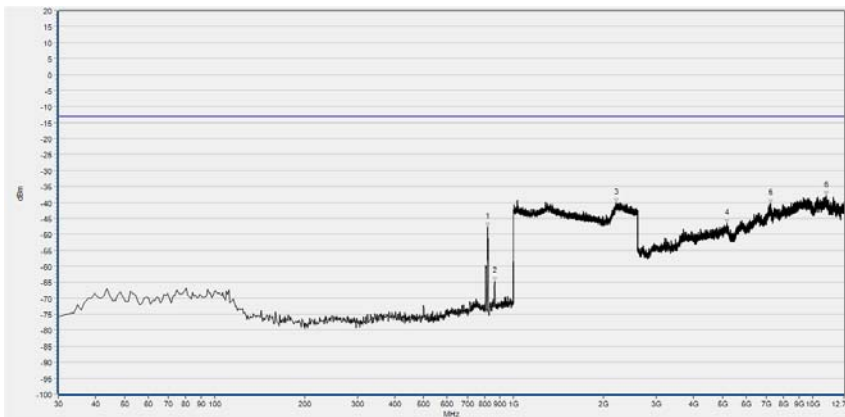


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-47.17	-13.00	Vertical	N/A
2	864.200	-65.22	-13.00	Vertical	N/A
3	2193.437	-39.98	-13.00	Vertical	PASS
4	5171.186	-46.58	-13.00	Vertical	PASS
5	7242.162	-40.97	-13.00	Vertical	PASS
6	11133.088	-37.58	-13.00	Vertical	PASS

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

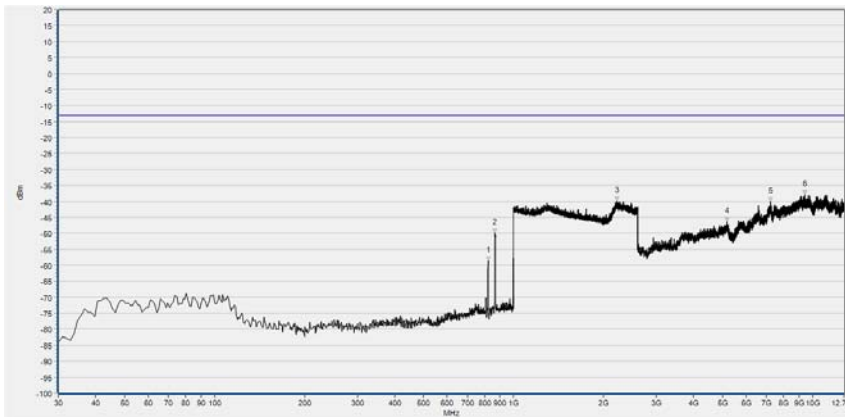


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	821.520	-59.21	-13.00	Horizontal	N/A
2	865.170	-49.82	-13.00	Horizontal	N/A
3	2268.988	-39.94	-13.00	Horizontal	PASS
4	4942.308	-46.22	-13.00	Horizontal	PASS
5	7107.420	-41.00	-13.00	Horizontal	PASS
6	10330.169	-37.73	-13.00	Horizontal	PASS

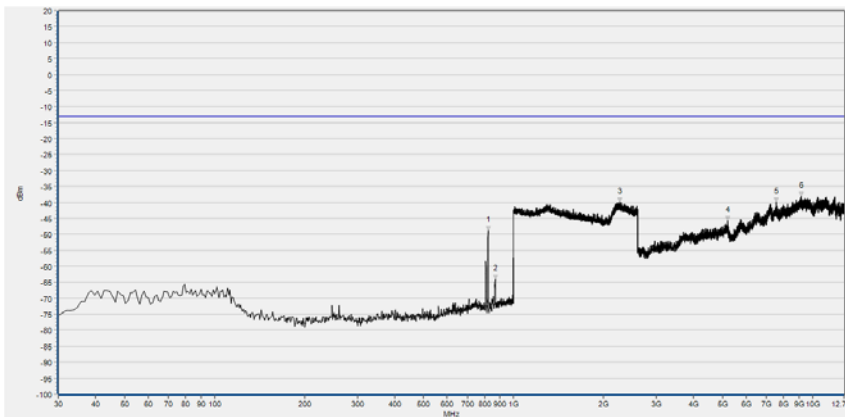


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-47.76	-13.00	Vertical	N/A
2	865.170	-64.61	-13.00	Vertical	N/A
3	2201.120	-40.08	-13.00	Vertical	PASS
4	5161.957	-46.66	-13.00	Vertical	PASS
5	7245.854	-40.33	-13.00	Vertical	PASS
6	11131.242	-37.87	-13.00	Vertical	PASS

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

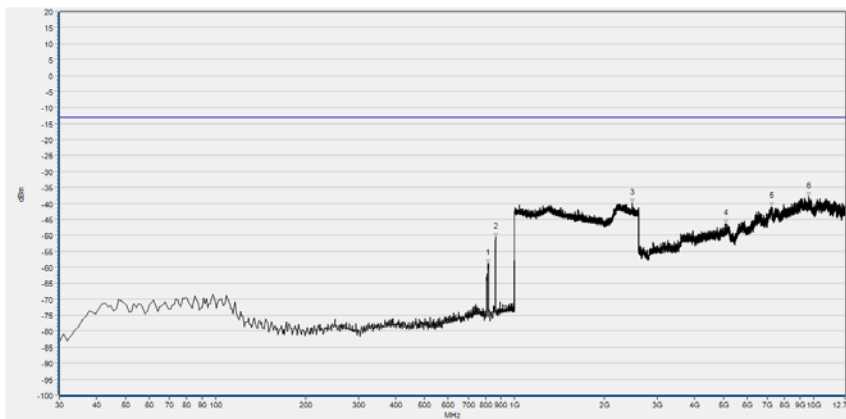


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-58.58	-13.00	Horizontal	N/A
2	864.200	-49.95	-13.00	Horizontal	N/A
3	2217.767	-39.98	-13.00	Horizontal	PASS
4	5171.186	-46.46	-13.00	Horizontal	PASS
5	7242.162	-40.08	-13.00	Horizontal	PASS
6	9414.657	-37.98	-13.00	Horizontal	PASS

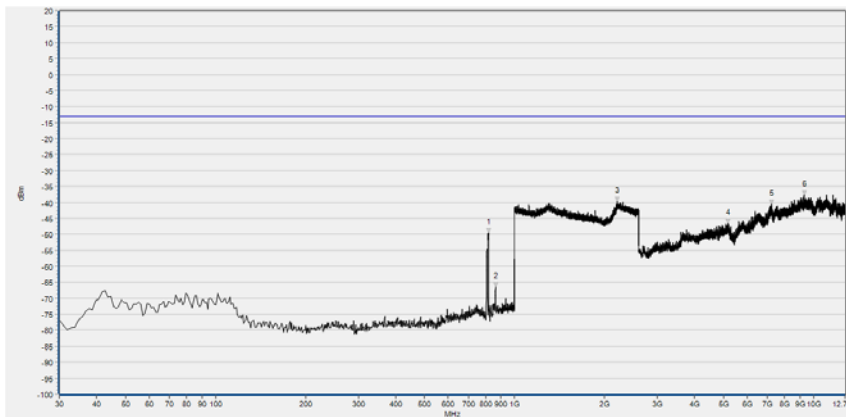


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-48.76	-13.00	Vertical	N/A
2	868.080	-63.98	-13.00	Vertical	N/A
3	2270.908	-39.86	-13.00	Vertical	PASS
4	5198.873	-45.69	-13.00	Vertical	PASS
5	7563.330	-39.97	-13.00	Vertical	PASS
6	9152.555	-37.99	-13.00	Vertical	PASS

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

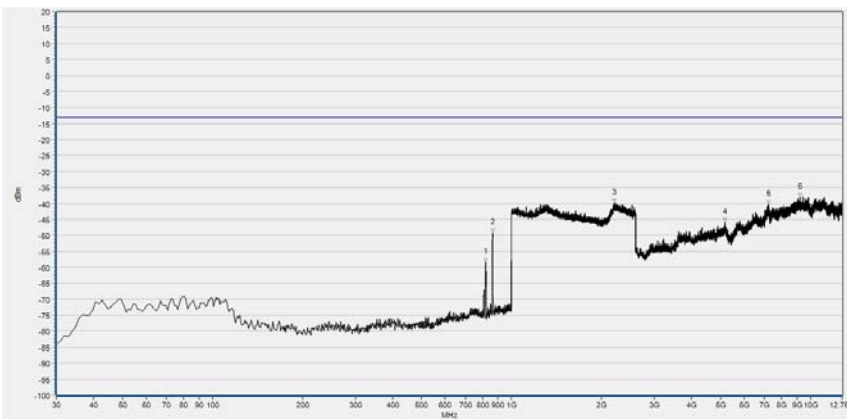


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	814.730	-58.77	-13.00	Horizontal	N/A
2	863.230	-50.68	-13.00	Horizontal	N/A
3	2477.711	-39.92	-13.00	Horizontal	PASS
4	5093.662	-46.30	-13.00	Horizontal	PASS
5	7251.391	-40.98	-13.00	Horizontal	PASS
6	9626.923	-37.89	-13.00	Horizontal	PASS

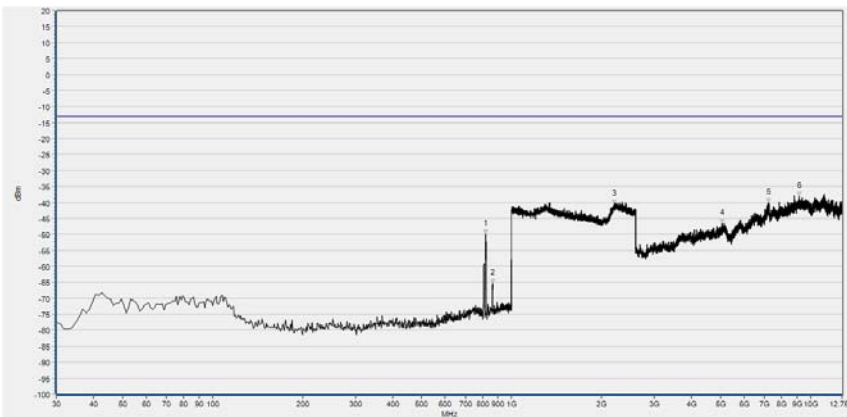


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-49.47	-13.00	Vertical	N/A
2	863.230	-66.57	-13.00	Vertical	N/A
3	2200.480	-39.58	-13.00	Vertical	PASS
4	5178.569	-46.69	-13.00	Vertical	PASS
5	7247.700	-40.50	-13.00	Vertical	PASS
6	9292.835	-37.55	-13.00	Vertical	PASS

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

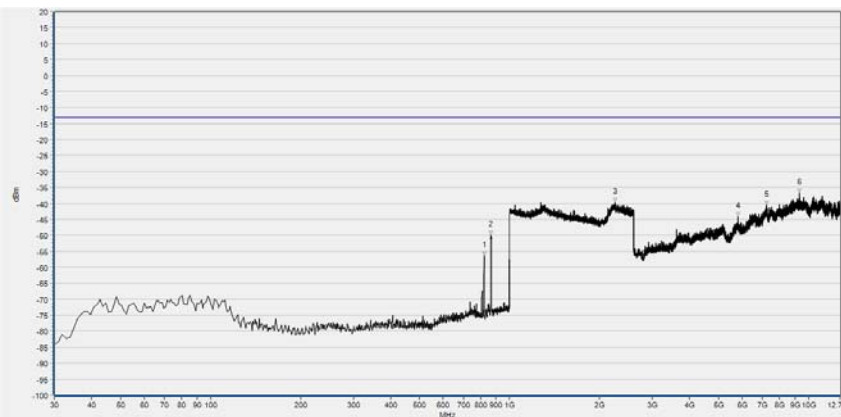


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	816.670	-58.49	-13.00	Horizontal	N/A
2	864.200	-49.36	-13.00	Horizontal	N/A
3	2208.163	-39.78	-13.00	Horizontal	PASS
4	5176.723	-46.02	-13.00	Horizontal	PASS
5	7238.471	-40.38	-13.00	Horizontal	PASS
6	9222.695	-38.01	-13.00	Horizontal	PASS

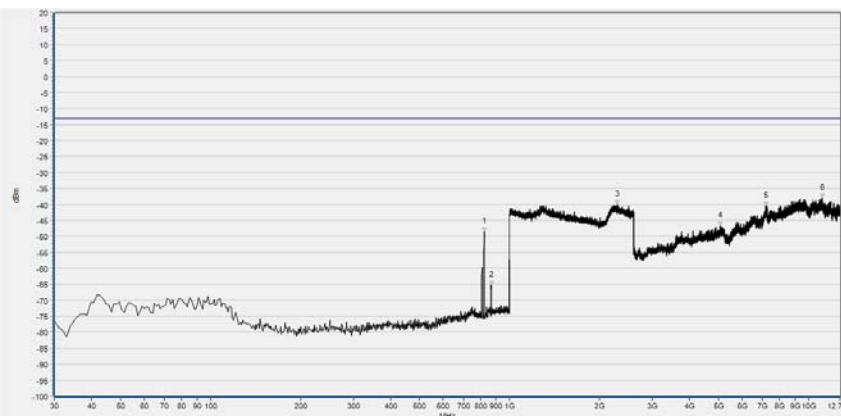


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	817.640	-49.93	-13.00	Vertical	N/A
2	863.230	-65.45	-13.00	Vertical	N/A
3	2210.084	-40.54	-13.00	Vertical	PASS
4	5054.901	-46.49	-13.00	Vertical	PASS
5	7238.471	-40.02	-13.00	Vertical	PASS
6	9156.247	-38.10	-13.00	Vertical	PASS

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



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-56.41	-13.00	Horizontal	N/A
2	867.110	-49.84	-13.00	Horizontal	N/A
3	2254.262	-39.75	-13.00	Horizontal	PASS
4	5791.371	-44.06	-13.00	Horizontal	PASS
5	7247.700	-40.58	-13.00	Horizontal	PASS
6	9337.134	-36.81	-13.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	822.490	-48.69	-13.00	Vertical	N/A
2	868.080	-65.28	-13.00	Vertical	N/A
3	2297.159	-40.07	-13.00	Vertical	PASS
4	5064.130	-46.75	-13.00	Vertical	PASS
5	7175.714	-40.65	-13.00	Vertical	PASS
6	11127.550	-38.12	-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	± 2.22 dB
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	± 2.77 dB
Band Edge	± 2.77 dB
Equivalent Isotropic Radiated Power	± 2.22 dB
Radiated Spurious Emissions	± 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

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

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	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	20171112102	HZ-2019	Dongguan Lixian Instrument Technology Co., Ltd	2022.10.10	2023.10.09

4.2 List of Software Used

Description	Manufacturer	Software Version
Morlab FCC LTE Test System	MORLAB	V3.1
MORLAB EMCR V1.2	MORLAB	V1.0

**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
System Simulator	MY48364176	8960-E5515 C	Agilent	2022.03.01	2023.02.28
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
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L32 03	Tonscend	2022.07.08	2023.07.07
18-26.5GHz pre-Amplifier	46732	S10M100L38 02	Tonscend	2022.07.08	2023.07.07
26-40GHz pre-Amplifier	56774	S40M400L40 02	Tonscend	2022.07.08	2023.07.07
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	2020.01.06	2023.01.05

____ END OF REPORT ____