RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-ZTEBLADEV9
Product	LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone
Brand	ZTE
Model	ZTE BLADE V9/ZTE BLADE V0901 /BLADE V9
Report No.	RXA1712-0422RF03
Issue Date	January 22, 2018

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2017)/ FCC CFR47 Part 27C (2017)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Jiangpeng Lan

Performed by: Jiangpeng Lan

Kai Xu

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	27.50(d)(4) /27.50(c)(10) /27.50(h)(2)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	27.53(h) /27.53(g) /27.53(m)	PASS
5	Peak-to-Average Power Ratio	27.50(d) /KDB971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 27.54	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 27.53(h) /27.53(g) /27.53(m)	PASS
8	Radiates Spurious Emission	2.1053 /27.53(h) /27.53(g) /27.53(m)	PASS
Date of Testing: December 11, 2017 ~ January 2, 2018			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard.			

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test facility

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3 Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
Post code:	201201
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2 General Description of Equipment under Test

Client Information

Applicant	ZTE Corporation
Applicant address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
Manufacturer	ZTE Corporation
Manufacturer address	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

General information

EUT Description			
Model	ZTE BLADE V9/ZTE BLADE V0901/BLADE V9		
IMEI/MEID/SN	867098030002394		
Hardware Version	udxC		
Software Version	TEL_MX_BLADE_V9V1.0.0		
Power Supply	Battery/AC adapter		
Antenna Type	Internal Antenna		
Test Mode(s)	LTE Band 4, LTE Band7, LTE Band 12, LTE Band 66;		
Test Modulation	(LTE)QPSK 16QAM ；		
LTE Category	6		
Maximum E.I.R.P./ E.R.P.	LTE Band 4:	20.92 dBm	
	LTE Band 7:	19.77 dBm	
	LTE Band 12:	13.89 dBm	
	LTE Band 66:	21.68 dBm	
Rated Power Supply Voltage:	3.85V		
Extreme Voltage	Minimum: 3.4V Maximum: 4.4V		
Extreme Temperature	Lowest: -30°C Highest: +55°C		
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 66	1710 ~ 1780	2110 ~ 2200
EUT Accessory			
Adapter 1	Manufacturer: Salcomp (Shenzhen) Co., Ltd. Model: STC-A521A-Z		
Adapter 2	Manufacture: SHENZHEN RUIJING INDUSTRIAL CO LTD Model : STC-A521A-Z		

Battery	Manufacturer: Zhongshan Tianmao Battery Co., Ltd Model: Li3931T44P8h806139
Earphone	Manufacturer: GoerTek Inc Model: HA3-6
USB Extend Cable 1	Manufacturer: LUXSHARE-ICT 100cm Cable, Shielded
USB Extend Cable 2	Manufacturer: kingpower-tech 100cm Cable, Shielded
Note: The information of the EUT is declared by the manufacturer.	

Item	Configure 1	Configure 2
Software	The same	The same
Hardware	The same	The same
Flash	2+16	3+32
Other	The same	The same
Note: Customer declaration, two Configures is the same, except for flash. There are more than one Configure, each one should be applied throughout the compliance test respectively, however, only the worst case (Configure 1) will be recorded in this report.		

3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards

FCC CFR47 Part 2 (2017)

FCC CFR47 Part 27C (2017)

ANSI/TIA-603-D (2010)

KDB 971168 D01 Power Meas License Digital Systems v03

4 Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (X axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in LTE is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:

Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7/12/66:

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Effective Isotropic Radiated power	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Occupied Bandwidth	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Band Edge Compliance	LTE 4	O	O	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 7	-	-	O	O	O	O	O	O	O	-	O	O	-	O
	LTE 12	O	O	O	O	-	-	O	O	O	-	O	O	-	O
	LTE 66	O	O	O	O	O	O	O	O	O	-	O	O	-	O
Peak-to-Average Power Ratio	LTE 4	O	O	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	O	O	O
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	O	O	O
	LTE 66	O	O	O	O	O	O	O	O	-	-	O	O	O	O
Frequency Stability	LTE 4	O	O	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 7	-	-	O	O	O	O	O	O	-	-	O	-	O	-
	LTE 12	O	O	O	O	-	-	O	O	-	-	O	-	O	-

	LTE 66	O	O	O	O	O	O	O	O	-	-	O	-	O	-
Spurious Emissions at Antenna Terminals	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 66	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Radiates Spurious Emission	LTE 4	O	O	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 7	-	-	O	O	O	O	O	-	O	-	-	O	O	O
	LTE 12	O	O	O	O	-	-	O	-	O	-	-	O	O	O
	LTE 66	O	O	O	O	O	O	O	-	O	-	-	O	O	O
Note	1. The mark “O” means that this configuration is chosen for testing. 2. The mark “-” means that this configuration is not testing.														

5 Test Case Results

5.1 RF Power Output

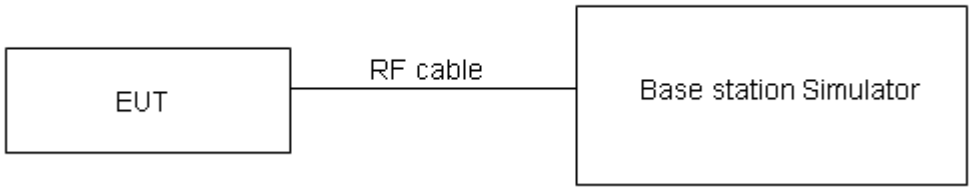
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.

Limits

No specific RF power output requirements in part 2.1046.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=0.4 dB.

Test Results

LTE Band 4				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19957/1710.7	20175/1732.5	20393/1754.3
1.4MHz	QPSK	1	0	22.98	22.89	22.80
		1	2	23.01	22.86	22.92
		1	5	22.89	22.67	22.71
		3	0	22.98	22.95	22.78
		3	2	22.91	22.94	22.83
		3	3	22.85	22.64	22.66
		6	0	21.80	21.88	21.90
	16QAM	1	0	22.13	21.99	21.88
		1	2	22.16	22.05	22.11
		1	5	22.07	21.91	21.91
		3	0	21.91	21.98	21.82
		3	2	21.95	21.96	21.79
		3	3	21.75	21.74	21.78
		6	0	20.93	20.96	20.90
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19965/1711.5	20175/1732.5	20385/1753.5
3MHz	QPSK	1	0	23.00	22.93	22.83
		1	7	23.04	22.91	22.96
		1	14	22.92	22.72	22.75
		8	0	22.08	22.07	21.91
		8	4	22.03	22.04	21.95
		8	7	21.95	21.75	21.76
		15	0	21.83	21.92	21.93
	16QAM	1	0	22.16	22.01	21.91
		1	7	22.19	22.10	22.15
		1	14	22.09	21.95	21.94
		8	0	21.02	21.11	20.94
		8	4	21.06	21.09	20.91
		8	7	20.85	20.86	20.91
		15	0	20.96	21.00	20.93
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				19975/1712.5	20175/1732.5	20375/1752.5
5MHz	QPSK	1	0	22.97	22.91	22.79
		1	13	23.02	22.87	22.93
		1	24	22.89	22.67	22.71
		12	0	22.05	22.02	21.87
		12	6	22.01	22.00	21.90
		12	13	21.93	21.73	21.72
		25	0	21.81	21.91	21.91

	16QAM	1	0	22.13	21.97	21.88
		1	13	22.16	22.08	22.12
		1	24	22.06	21.93	21.90
		12	0	21.00	21.07	20.91
		12	6	21.03	21.04	20.87
		12	13	20.82	20.81	20.87
		25	0	20.94	20.96	20.88
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20000/1715	20175/1732.5	20350/1750
10MHz	QPSK	1	0	22.99	22.92	22.82
		1	25	23.05	22.92	22.97
		1	49	22.91	22.71	22.74
		25	0	22.08	22.07	21.91
		25	13	22.04	22.05	21.94
		25	25	21.95	21.77	21.77
		50	0	21.89	21.93	21.95
	16QAM	1	0	22.15	22.00	21.90
		1	25	22.19	22.12	22.15
		1	49	22.09	21.95	21.93
		25	0	21.03	21.12	20.95
		25	13	21.05	21.08	20.90
		25	25	20.85	20.86	20.91
		50	0	20.97	21.01	20.92
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20025/1717.5	20175/1732.5	20325/1747.5
15MHz	QPSK	1	0	22.98	22.88	22.80
		1	38	23.03	22.91	22.94
		1	74	22.88	22.66	22.70
		36	0	22.06	22.03	21.88
		36	18	22.01	22.00	21.90
		36	39	21.92	21.74	21.73
		75	0	21.87	21.89	21.90
	16QAM	1	0	22.10	21.98	21.88
		1	38	22.17	22.09	22.13
		1	74	22.06	21.91	21.90
		36	0	21.00	21.10	20.92
		36	18	21.02	21.03	20.86
		36	39	20.83	20.82	20.88
		75	0	20.94	20.96	20.88
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20050/1720	20175/1732.5	20300/1745
20MHz	QPSK	1	0	22.95	22.84	22.77
		1	50	23.12	22.87	22.92

		1	99	22.86	22.65	22.67
		50	0	22.03	21.98	21.84
		50	25	21.99	21.96	21.87
		50	50	21.89	21.69	21.69
		100	0	21.84	21.84	21.86
	16QAM	1	0	22.08	21.94	21.83
		1	50	22.13	22.07	22.09
		1	99	22.04	21.88	21.88
		50	0	20.97	21.06	20.89
		50	25	20.99	21.01	20.83
		50	50	20.80	20.77	20.84
		100	0	20.92	20.92	20.85

LTE Band 7				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20775/2502.5	21100/2535	21425/2567.5
5MHz	QPSK	1	0	23.74	23.37	23.40
		1	13	23.79	23.38	23.45
		1	24	23.48	23.23	23.57
		12	0	22.69	22.42	22.60
		12	6	22.73	22.45	22.56
		12	13	22.61	22.44	22.62
		25	0	22.63	22.44	22.59
	16QAM	1	0	22.53	22.36	22.27
		1	13	22.56	22.42	22.50
		1	24	22.62	22.31	22.53
		12	0	21.76	21.36	21.64
		12	6	21.73	21.37	21.65
		12	13	21.68	21.42	21.61
		25	0	21.71	21.43	21.60
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20800/2505	21100/2535	21400/2565
10MHz	QPSK	1	0	23.76	23.38	23.43
		1	25	23.82	23.43	23.49
		1	49	23.50	23.27	23.60
		25	0	22.72	22.47	22.64
		25	13	22.76	22.50	22.60
		25	25	22.63	22.48	22.67
		50	0	22.71	22.46	22.63
	16QAM	1	0	22.55	22.39	22.29
		1	25	22.59	22.46	22.53

		1	49	22.65	22.33	22.56
		25	0	21.79	21.41	21.68
		25	13	21.75	21.41	21.68
		25	25	21.71	21.47	21.65
		50	0	21.74	21.48	21.64
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20825/2507.5	21100/2535	21375/2562.5
15MHz	QPSK	1	0	23.75	23.34	23.41
		1	38	23.80	23.42	23.46
		1	74	23.47	23.22	23.56
		36	0	22.70	22.43	22.61
		36	18	22.73	22.45	22.56
		36	39	22.60	22.45	22.63
		75	0	22.69	22.42	22.58
	16QAM	1	0	22.50	22.37	22.27
		1	38	22.57	22.43	22.51
		1	74	22.62	22.29	22.53
		36	0	21.76	21.39	21.65
		36	18	21.72	21.36	21.64
		36	39	21.69	21.43	21.62
		75	0	21.71	21.43	21.60
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				20850/2510	21100/2535	21350/2560
20MHz	QPSK	1	0	23.72	23.30	23.38
		1	50	23.79	23.38	23.44
		1	99	23.45	23.21	23.53
		50	0	22.67	22.38	22.57
		50	25	22.71	22.41	22.53
		50	50	22.57	22.40	22.59
		100	0	22.66	22.37	22.54
	16QAM	1	0	22.48	22.33	22.22
		1	50	22.53	22.41	22.47
		1	99	22.60	22.26	22.51
		50	0	21.73	21.35	21.62
		50	25	21.69	21.34	21.61
		50	50	21.66	21.38	21.58
		100	0	21.69	21.39	21.57

LTE Band 12				AV Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23017/699.7	23095/707.5	23173/715.3
1.4MHz	QPSK	1	0	23.79	23.71	23.72
		1	2	23.66	23.45	23.49
		1	5	23.78	23.50	23.67
		3	0	23.50	23.51	23.59
		3	2	23.56	23.44	23.62
		3	3	23.59	23.40	23.48
		6	0	22.72	22.58	22.69
	16QAM	1	0	22.55	22.65	22.44
		1	2	22.54	22.52	22.61
		1	5	22.65	22.59	22.69
		3	0	22.39	22.43	22.55
		3	2	22.54	22.44	22.59
		3	3	22.66	22.50	22.51
		6	0	21.60	21.60	21.70
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23025/700.5	23095/707.5	23165/714.5
3MHz	QPSK	1	0	23.81	23.75	23.75
		1	7	23.69	23.50	23.53
		1	14	23.81	23.55	23.71
		8	0	22.60	22.63	22.72
		8	4	22.68	22.54	22.74
		8	7	22.69	22.51	22.58
		15	0	22.75	22.62	22.72
	16QAM	1	0	22.58	22.67	22.47
		1	7	22.57	22.57	22.65
		1	14	22.67	22.63	22.72
		8	0	21.50	21.56	21.67
		8	4	21.65	21.57	21.71
		8	7	21.76	21.62	21.64
		15	0	21.63	21.64	21.73
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23035/701.5	23095/707.5	23155/713.5
5MHz	QPSK	1	0	23.78	23.73	23.71
		1	13	23.67	23.46	23.50
		1	24	23.78	23.50	23.67
		12	0	22.57	22.58	22.68
		12	6	22.66	22.50	22.69
		12	13	22.67	22.49	22.54
		25	0	22.73	22.61	22.70

	16QAM	1	0	22.55	22.63	22.44
		1	13	22.54	22.55	22.62
		1	24	22.64	22.61	22.68
		12	0	21.48	21.52	21.64
		12	6	21.62	21.52	21.67
		12	13	21.73	21.57	21.60
		25	0	21.61	21.60	21.68
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				23060/704	23095/707.5	23130/711
10MHz	QPSK	1	0	23.76	23.66	23.69
		1	25	23.67	23.46	23.49
		1	49	23.75	23.48	23.63
		25	0	22.55	22.54	22.65
		25	13	22.64	22.46	22.66
		25	25	22.63	22.45	22.51
		50	0	22.76	22.54	22.65
	16QAM	1	0	22.50	22.60	22.39
		1	25	22.51	22.54	22.59
		1	49	22.62	22.56	22.66
		25	0	21.45	21.51	21.62
		25	13	21.58	21.49	21.63
		25	25	21.71	21.53	21.57
		50	0	21.59	21.56	21.65

LTE Band 66				**Conducted Power(dBm)**		
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131979	132322	132665
1.4MHz	QPSK	1	0	22.35	22.24	22.14
		1	2	22.44	22.30	22.28
		1	5	22.62	22.40	22.38
		3	0	22.32	22.32	22.20
		3	2	22.28	22.32	22.15
		3	3	22.35	22.32	22.13
		6	0	21.37	21.36	21.12
	16QAM	1	0	21.56	21.77	21.32
		1	2	21.51	21.56	21.33
		1	5	21.48	21.56	21.66
		3	0	21.22	21.19	21.04
		3	2	21.27	21.20	21.00
		3	3	21.28	21.23	21.02
		6	0	20.29	20.28	20.07

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131987	132322	132657
3MHz	QPSK	1	0	22.37	22.28	22.17
		1	7	22.47	22.35	22.32
		1	14	22.65	22.45	22.42
		8	0	21.42	21.44	21.33
		8	4	21.40	21.42	21.27
		8	7	21.45	21.43	21.23
		15	0	21.40	21.40	21.15
	16QAM	1	0	21.59	21.79	21.35
		1	7	21.54	21.61	21.37
		1	14	21.50	21.60	21.69
		8	0	20.33	20.32	20.16
		8	4	20.38	20.33	20.12
		8	7	20.38	20.35	20.15
		15	0	20.32	20.32	20.10
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131997	132322	132647
5MHz	QPSK	1	0	22.34	22.26	22.13
		1	13	22.45	22.31	22.29
		1	24	22.62	22.40	22.38
		12	0	21.39	21.39	21.29
		12	6	21.38	21.38	21.22
		12	13	21.43	21.41	21.19
		25	0	21.38	21.39	21.13
	16QAM	1	0	21.56	21.75	21.32
		1	13	21.51	21.59	21.34
		1	24	21.47	21.58	21.65
		12	0	20.31	20.28	20.13
		12	6	20.35	20.28	20.08
		12	13	20.35	20.30	20.11
		25	0	20.30	20.28	20.05
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132022	132322	132622
10MHz	QPSK	1	0	22.36	22.27	22.16
		1	25	22.48	22.36	22.33
		1	49	22.64	22.44	22.41
		25	0	21.42	21.44	21.33
		25	13	21.41	21.43	21.26
		25	25	21.45	21.45	21.24
		50	0	21.46	21.41	21.17
	16QAM	1	0	21.58	21.78	21.34
		1	25	21.54	21.63	21.37

		1	49	21.50	21.60	21.68
		25	0	20.34	20.33	20.17
		25	13	20.37	20.32	20.11
		25	25	20.38	20.35	20.15
		50	0	20.33	20.33	20.09
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132047	132322	132597
15MHz	QPSK	1	0	22.35	22.23	22.14
		1	38	22.46	22.35	22.30
		1	74	22.61	22.39	22.37
		36	0	21.40	21.40	21.30
		36	18	21.38	21.38	21.22
		36	39	21.42	21.42	21.20
		75	0	21.44	21.37	21.12
	16QAM	1	0	21.53	21.76	21.32
		1	38	21.52	21.60	21.35
		1	74	21.47	21.56	21.65
		36	0	20.31	20.31	20.14
		36	18	20.34	20.27	20.07
		36	39	20.36	20.31	20.12
		75	0	20.30	20.28	20.05
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132072	132322	132572
20MHz	QPSK	1	0	22.32	22.19	22.11
		1	50	22.45	22.31	22.28
		1	99	22.59	22.38	22.34
		50	0	21.37	21.35	21.26
		50	25	21.36	21.34	21.19
		50	50	21.39	21.37	21.16
		100	0	21.41	21.32	21.08
	16QAM	1	0	21.51	21.72	21.27
		1	50	21.48	21.58	21.31
		1	99	21.45	21.53	21.63
		50	0	20.28	20.27	20.11
		50	25	20.31	20.25	20.04
		50	50	20.33	20.26	20.08
		100	0	20.28	20.24	20.02

DL LTE CA Class	PCC						SCC			Power(dBm)		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC UL Channel	PCC DL Channel	SCC Band	SCC Bandwidth (MHz)	SCC DL Channel	Standalone	CA active	Delta
CA_4A-7A	4	5	1	13	19975	1975	7	20	2850	23.02	23.10	0.08
	4	10	1	25	20000	2000	7	20	2850	23.05	23.12	0.07
	4	15	1	38	20025	2025	7	20	2850	23.03	23.09	0.06
	4	20	1	50	20050	2050	7	20	2850	23.12	23.12	0.00
	7	5	1	13	20775	2775	4	20	2050	23.79	23.82	0.03
	7	10	1	25	20800	2800	4	20	2050	23.82	23.90	0.08
	7	15	1	38	20825	2825	4	20	2050	23.80	23.89	0.09
	7	20	1	50	20850	2850	4	20	2050	23.79	23.88	0.09
CA_7A-7A	7	5	1	13	20775	2775	7	20	3350	23.81	23.93	0.12
	7	10	1	25	20800	2800	7	20	3350	23.75	23.83	0.08
	7	15	1	38	20825	2825	7	20	3350	23.79	23.91	0.12
	7	20	1	50	20850	2850	7	20	3350	23.84	23.99	0.15
CA_66A-66A	66	5	1	24	131997	66461	66	20	67236	22.49	22.53	0.04
	66	10	1	49	132022	66486	66	20	67236	22.53	22.59	0.06
	66	15	1	74	132047	66511	66	20	67236	22.50	22.63	0.13
	66	20	1	99	132072	66536	66	20	67236	22.45	22.60	0.15

5.2 Effective Isotropic Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

1. The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI/TIA-603-D-2010.

a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.

b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).

c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.

d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading.LOSS = Generator Output Power (dBm) – Analyzer reading (dBm)

e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation:ERP (dBm) = LVL (dBm) + LOSS (dB)

f) The maximum ERP is the maximum value determined in the preceding step.

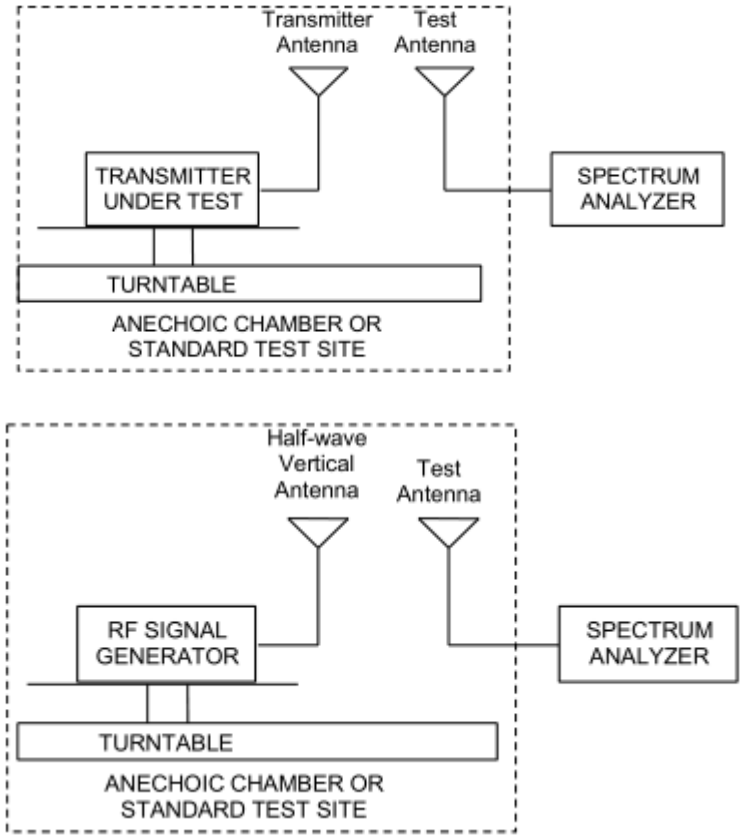
g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g.transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:

ERP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBd)

where:dBd refers to gain relative to an ideal dipole.

EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

Test setup



Note: Area side:2.4mX3.6m

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

Limits

Rule Part 27.50(c) (10) specifies that “Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP”
Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”
Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Part 27.50(c)(10)Limit (ERP)	≤ 3 W (34.77 dBm)
Part 27.50(d)(4)Limit (EIRP)	≤ 1 W (30 dBm)
Part 27.50(h)(2) Limit (EIRP)	≤ 2 W (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 1.19 dB

Test Results

The measurement is performed for both of horizontal and vertical antenna Polarization, and only the data of worst mode is recorded in this report.

LTE Band 4									
Bandwidth	**Channel**	**Frequency (MHz)**	**Polarization**	**Output Power (dBm)**	**Losses (dB)**	**Antenna Gain (dBd)**	**EIRP (dBm)**	**Limit (dBm)**	**Conclusion**
1.4 MHz (QPSK)	Low	1710.70	Horizontal	-36.87	-54.30	1.44	18.86	30	Pass
	Mid	1732.50	Horizontal	-35.42	-54.32	1.57	20.46	30	Pass
	High	1754.30	Horizontal	-36.15	-54.10	1.72	19.66	30	Pass
3 MHz (QPSK)	Low	1711.50	Horizontal	-36.61	-54.35	1.44	19.18	30	Pass
	Mid	1732.50	Horizontal	-35.20	-54.41	1.57	20.78	30	Pass
	High	1753.50	Horizontal	-36.22	-54.48	1.72	19.98	30	Pass
5 MHz (QPSK)	Low	1712.50	Horizontal	-36.46	-54.34	1.44	19.32	30	Pass
	Mid	1732.50	Horizontal	-34.96	-54.32	1.57	20.92	30	Pass
	High	1752.50	Horizontal	-35.72	-54.13	1.72	20.12	30	Pass
10 MHz (QPSK)	Low	1715.00	Horizontal	-37.11	-54.32	1.44	18.65	30	Pass
	Mid	1732.50	Horizontal	-35.73	-54.41	1.57	20.25	30	Pass
	High	1750.00	Horizontal	-36.73	-54.52	1.66	19.45	30	Pass
15 MHz (QPSK)	Low	1717.50	Horizontal	-36.95	-54.35	1.49	18.88	30	Pass
	Mid	1732.50	Horizontal	-35.40	-54.32	1.57	20.48	30	Pass
	High	1747.50	Horizontal	-36.15	-54.17	1.66	19.68	30	Pass
20 MHz (QPSK)	Low	1720.00	Horizontal	-37.40	-54.44	1.49	18.53	30	Pass
	Mid	1732.50	Horizontal	-35.85	-54.41	1.57	20.13	30	Pass
	High	1745.00	Horizontal	-36.89	-54.59	1.63	19.33	30	Pass
1.4 MHz (16QAM)	Low	1710.70	Horizontal	-37.05	-54.30	1.44	18.69	30	Pass
	Mid	1732.50	Horizontal	-35.60	-54.32	1.57	20.29	30	Pass
	High	1754.30	Horizontal	-36.33	-54.10	1.72	19.49	30	Pass
3 MHz (16QAM)	Low	1711.50	Horizontal	-36.79	-54.35	1.44	19.00	30	Pass
	Mid	1732.50	Horizontal	-35.38	-54.41	1.57	20.60	30	Pass
	High	1753.50	Horizontal	-36.40	-54.48	1.72	19.80	30	Pass
5 MHz (16QAM)	Low	1712.50	Horizontal	-36.64	-54.34	1.44	19.14	30	Pass
	Mid	1732.50	Horizontal	-35.14	-54.32	1.57	20.74	30	Pass
	High	1752.50	Horizontal	-35.90	-54.13	1.72	19.94	30	Pass
10 MHz (16QAM)	Low	1715.00	Horizontal	-37.29	-54.32	1.44	18.47	30	Pass
	Mid	1732.50	Horizontal	-35.90	-54.41	1.57	20.07	30	Pass
	High	1750.00	Horizontal	-36.91	-54.52	1.66	19.27	30	Pass
15 MHz (16QAM)	Low	1717.50	Horizontal	-37.13	-54.35	1.49	18.70	30	Pass
	Mid	1732.50	Horizontal	-35.58	-54.32	1.57	20.30	30	Pass
	High	1747.50	Horizontal	-36.33	-54.17	1.66	19.50	30	Pass
20 MHz (16QAM)	Low	1720.00	Horizontal	-37.58	-54.44	1.49	18.35	30	Pass
	Mid	1732.50	Horizontal	-36.03	-54.41	1.57	19.95	30	Pass
	High	1745.00	Horizontal	-37.07	-54.59	1.63	19.15	30	Pass

LTE Band 7									
Band width	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Conclusion
5 MHz (QPSK)	Low	2502.50	Horizontal	-41.81	-59.64	1.81	19.64	33	Pass
	Mid	2535.00	Horizontal	-42.27	-59.72	1.81	19.26	33	Pass
	High	2567.50	Horizontal	-42.50	-59.98	1.83	19.31	33	Pass
10 MHz (QPSK)	Low	2505.00	Horizontal	-42.22	-59.61	1.82	19.21	33	Pass
	Mid	2535.00	Horizontal	-42.39	-59.72	1.81	19.14	33	Pass
	High	2565.00	Horizontal	-42.59	-60.02	1.81	19.24	33	Pass
15 MHz (QPSK)	Low	2507.50	Horizontal	-41.55	-59.29	1.80	19.54	33	Pass
	Mid	2535.00	Horizontal	-42.18	-59.72	1.81	19.35	33	Pass
	High	2562.50	Horizontal	-41.51	-59.46	1.82	19.77	33	Pass
20 MHz (QPSK)	Low	2510.00	Horizontal	-41.91	-59.52	1.77	19.38	33	Pass
	Mid	2535.00	Horizontal	-42.10	-59.72	1.81	19.43	33	Pass
	High	2560.00	Horizontal	-42.62	-60.01	1.82	19.21	33	Pass
5 MHz (16QAM)	Low	2502.50	Horizontal	-41.96	-59.64	1.81	19.49	33	Pass
	Mid	2535.00	Horizontal	-42.42	-59.72	1.81	19.11	33	Pass
	High	2567.50	Horizontal	-42.65	-59.98	1.83	19.16	33	Pass
10 MHz (16QAM)	Low	2505.00	Horizontal	-42.36	-59.61	1.82	19.07	33	Pass
	Mid	2535.00	Horizontal	-42.54	-59.72	1.81	18.99	33	Pass
	High	2565.00	Horizontal	-42.74	-60.02	1.81	19.09	33	Pass
15 MHz (16QAM)	Low	2507.50	Horizontal	-41.69	-59.29	1.80	19.40	33	Pass
	Mid	2535.00	Horizontal	-42.33	-59.72	1.81	19.20	33	Pass
	High	2562.50	Horizontal	-41.66	-59.46	1.82	19.62	33	Pass
20 MHz (16QAM)	Low	2510.00	Horizontal	-42.06	-59.52	1.77	19.23	33	Pass
	Mid	2535.00	Horizontal	-42.25	-59.72	1.81	19.28	33	Pass
	High	2560.00	Horizontal	-42.77	-60.01	1.82	19.06	33	Pass

LTE Band 12									
Bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	Low	699.70	Horizontal	-37.52	-49.12	2.04	13.64	34.77	Pass
	Mid	707.50	Horizontal	-37.87	-49.39	2.03	13.56	34.77	Pass
	High	715.30	Horizontal	-38.18	-49.76	1.99	13.57	34.77	Pass
3 MHz (QPSK)	Low	700.50	Horizontal	-37.21	-48.94	2.04	13.77	34.77	Pass
	Mid	707.50	Horizontal	-37.34	-49.12	2.03	13.81	34.77	Pass
	High	714.50	Horizontal	-37.55	-49.37	2.00	13.82	34.77	Pass
5 MHz (QPSK)	Low	701.50	Horizontal	-37.45	-49.17	2.04	13.77	34.77	Pass
	Mid	707.50	Horizontal	-37.74	-49.39	2.03	13.69	34.77	Pass
	High	713.50	Horizontal	-38.02	-49.72	2.01	13.70	34.77	Pass
10 MHz (QPSK)	Low	704.00	Horizontal	-37.15	-49.00	2.04	13.89	34.77	Pass
	Mid	707.50	Horizontal	-37.34	-49.12	2.03	13.81	34.77	Pass
	High	711.00	Horizontal	-37.52	-49.33	2.02	13.82	34.77	Pass
1.4 MHz (16QAM)	Low	699.70	Horizontal	-37.70	-49.12	2.04	13.46	34.77	Pass
	Mid	707.50	Horizontal	-38.05	-49.39	2.03	13.38	34.77	Pass
	High	715.30	Horizontal	-38.36	-49.76	1.99	13.39	34.77	Pass
3 MHz (16QAM)	Low	700.50	Horizontal	-37.39	-48.94	2.04	13.59	34.77	Pass
	Mid	707.50	Horizontal	-37.52	-49.12	2.03	13.63	34.77	Pass
	High	714.50	Horizontal	-37.73	-49.37	2.00	13.64	34.77	Pass
5 MHz (16QAM)	Low	701.50	Horizontal	-37.63	-49.17	2.04	13.59	34.77	Pass
	Mid	707.50	Horizontal	-37.92	-49.39	2.03	13.51	34.77	Pass
	High	713.50	Horizontal	-38.20	-49.72	2.01	13.52	34.77	Pass
10 MHz (16QAM)	Low	704.00	Horizontal	-37.33	-49.00	2.04	13.71	34.77	Pass
	Mid	707.50	Horizontal	-37.52	-49.12	2.03	13.63	34.77	Pass
	High	711.00	Horizontal	-37.70	-49.33	2.02	13.64	34.77	Pass

LTE Band 66									
Bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	Low	1710.70	Horizontal	-34.37	-54.42	1.30	21.35	30	Pass
	Mid	1745.00	Horizontal	-34.47	-54.44	1.42	21.39	30	Pass
	High	1779.30	Horizontal	-34.33	-54.22	1.57	21.47	30	Pass
3 MHz (QPSK)	Low	1711.50	Horizontal	-34.21	-54.47	1.30	21.56	30	Pass
	Mid	1745.00	Horizontal	-34.35	-54.53	1.42	21.61	30	Pass
	High	1778.50	Horizontal	-34.49	-54.60	1.57	21.68	30	Pass
5 MHz (QPSK)	Low	1712.50	Horizontal	-34.39	-54.46	1.30	21.37	30	Pass
	Mid	1745.00	Horizontal	-34.44	-54.44	1.42	21.42	30	Pass
	High	1777.50	Horizontal	-34.33	-54.25	1.57	21.49	30	Pass
10 MHz (QPSK)	Low	1715.00	Horizontal	-34.52	-54.44	1.30	21.22	30	Pass
	Mid	1745.00	Horizontal	-34.69	-54.53	1.42	21.27	30	Pass
	High	1775.00	Horizontal	-34.81	-54.64	1.52	21.35	30	Pass
15 MHz (QPSK)	Low	1717.50	Horizontal	-34.43	-54.47	1.34	21.38	30	Pass
	Mid	1745.00	Horizontal	-34.64	-54.44	1.42	21.22	30	Pass
	High	1772.50	Horizontal	-34.45	-54.29	1.52	21.36	30	Pass
20 MHz (QPSK)	Low	1720.00	Horizontal	-34.88	-54.56	1.34	21.02	30	Pass
	Mid	1745.00	Horizontal	-34.92	-54.53	1.42	21.04	30	Pass
	High	1770.00	Horizontal	-34.65	-54.71	1.49	21.55	30	Pass
1.4 MHz (16QAM)	Low	1710.70	Horizontal	-34.54	-54.42	1.30	21.18	30	Pass
	Mid	1745.00	Horizontal	-34.64	-54.44	1.42	21.22	30	Pass
	High	1779.30	Horizontal	-34.50	-54.22	1.57	21.30	30	Pass
3 MHz (16QAM)	Low	1711.50	Horizontal	-34.38	-54.47	1.30	21.39	30	Pass
	Mid	1745.00	Horizontal	-34.52	-54.53	1.42	21.44	30	Pass
	High	1778.50	Horizontal	-34.66	-54.60	1.57	21.52	30	Pass
5 MHz (16QAM)	Low	1712.50	Horizontal	-34.56	-54.46	1.30	21.20	30	Pass
	Mid	1745.00	Horizontal	-34.61	-54.44	1.42	21.25	30	Pass
	High	1777.50	Horizontal	-34.50	-54.25	1.57	21.33	30	Pass
10 MHz (16QAM)	Low	1715.00	Horizontal	-34.69	-54.44	1.30	21.05	30	Pass
	Mid	1745.00	Horizontal	-34.85	-54.53	1.42	21.10	30	Pass
	High	1775.00	Horizontal	-34.98	-54.64	1.52	21.18	30	Pass
15 MHz (16QAM)	Low	1717.50	Horizontal	-34.60	-54.47	1.34	21.21	30	Pass
	Mid	1745.00	Horizontal	-34.81	-54.44	1.42	21.05	30	Pass
	High	1772.50	Horizontal	-34.62	-54.29	1.52	21.19	30	Pass
20 MHz (16QAM)	Low	1720.00	Horizontal	-35.05	-54.56	1.34	20.85	30	Pass
	Mid	1745.00	Horizontal	-35.09	-54.53	1.42	20.87	30	Pass
	High	1770.00	Horizontal	-34.82	-54.71	1.49	21.38	30	Pass

Note: 1. EIRP= E.R.P+2.15

5.3 Occupied Bandwidth

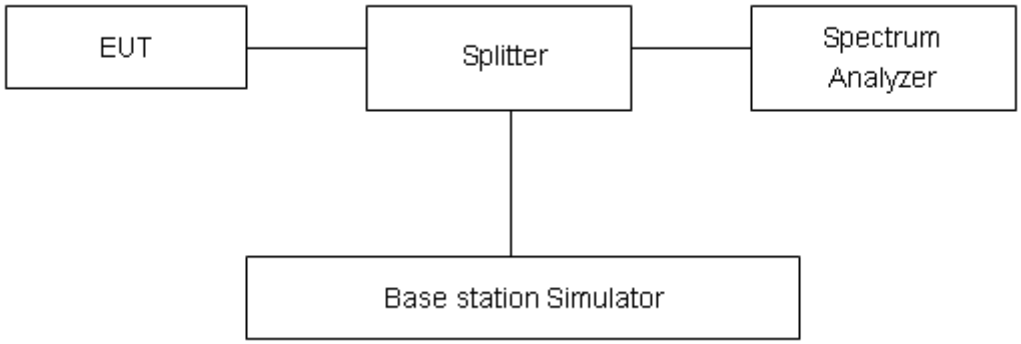
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The occupied bandwidth is measured using spectrum analyzer.
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/12 /66(1.4MHz).
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/12/66 (3MHz).
RBW is set to 100 kHz, VBW is set to 300 kHz for LTE Band 4/7/12/66 (5MHz).
RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/7/12/66(10MHz).
RBW is set to 300 kHz, VBW is set to 1MHz for LTE Band 4/7/66(15MHz/20MHz).
99% power and -26dBc occupied bandwidths are recorded. Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

No specific occupied bandwidth requirements in part 2.1049.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U=624Hz.

Test Result

LTE Band 4						
RB	**Modulation**	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
100%	QPSK	1.4	19957	1710.7	1.127	1.363
			20175	1732.5	1.123	1.370
			20393	1754.3	1.137	1.349
		3	19965	1711.5	2.746	3.068
			20175	1732.5	2.748	3.076
			20385	1753.5	2.741	3.058
		5	19975	1712.5	4.515	5.000
			20175	1732.5	4.528	4.992
			20375	1752.5	4.509	4.996
		10	20000	1715	9.027	10.010
			20175	1732.5	9.058	10.130
			20350	1750	9.054	10.040
		15	20025	1717.5	13.485	14.730
			20175	1732.5	13.516	14.840
			20325	1747.5	13.434	14.730
		20	20050	1720	17.905	19.320
			20175	1732.5	17.886	19.350
			20300	1745	17.891	19.540
	16QAM	1.4	19957	1710.7	1.127	1.341
			20175	1732.5	1.132	1.362
			20393	1754.3	1.120	1.352
		3	19965	1711.5	2.737	3.054
			20175	1732.5	2.736	3.047
			20385	1753.5	2.738	3.063
		5	19975	1712.5	4.529	5.014
			20175	1732.5	4.506	5.012
			20375	1752.5	4.531	5.057
		10	20000	1715	9.030	9.995
			20175	1732.5	9.066	10.000
			20350	1750	9.001	10.040
		15	20025	1717.5	13.495	14.800
			20175	1732.5	13.503	14.770
			20325	1747.5	13.472	14.730
		20	20050	1720	17.925	19.520
			20175	1732.5	17.936	19.400
			20300	1745	17.889	19.230

LTE Band 7						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	5	20775	2502.5	4.504	5.004
			21100	2535	4.511	5.039
			21425	2567.5	4.517	5.005
		10	20800	2505	9.014	10.100
			21100	2535	9.047	10.150
			21400	2565	9.052	10.090
		15	20825	2507.5	13.438	14.720
			21100	2535	13.480	14.620
			21375	2562.5	13.464	14.780
		20	20850	2510	17.840	19.210
			21100	2535	17.928	19.340
			21350	2560	17.948	19.570
	16QAM	5	20775	2502.5	4.521	5.050
			21100	2535	4.528	5.045
			21425	2567.5	4.513	5.018
		10	20800	2505	9.015	10.040
			21100	2535	9.056	10.020
			21400	2565	9.043	10.120
		15	20825	2507.5	13.452	14.620
			21100	2535	13.471	14.720
			21375	2562.5	13.506	14.750
		20	20850	2510	17.909	19.470
			21100	2535	17.923	19.390
			21350	2560	17.928	19.310

LTE Band 12						
RB	Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
100%	QPSK	1.4	23017	699.7	1.121	1.343
			23095	707.5	1.139	1.342
			23173	715.3	1.117	1.351
		3	23025	700.5	2.743	3.046
			23095	707.5	2.743	3.068
			23165	714.5	2.738	3.051
		5	23035	701.5	4.510	4.994
			23095	707.5	4.518	4.967
			23155	713.5	4.497	4.997

		10	23060	704	9.002	9.954
			23095	707.5	9.073	10.030
			23130	711	9.053	10.000
	16QAM	1.4	23017	699.7	1.125	1.332
			23095	707.5	1.120	1.333
			23173	715.3	1.121	1.325
		3	23025	700.5	2.735	3.053
			23095	707.5	2.744	3.066
			23165	714.5	2.731	3.077
		5	23035	701.5	4.507	4.980
			23095	707.5	4.521	5.031
			23155	713.5	4.510	4.982
		10	23060	704	9.001	10.010
			23095	707.5	9.053	10.000
			23130	711	9.037	10.010

LTE Band 66						
RB	**Modulation**	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
100%	QPSK	1.4	131979	1710.7	1.119	1.353
			132322	1745	1.122	1.349
			132665	1779.3	1.129	1.356
		3	131987	1711.5	2.744	3.061
			132322	1745	2.746	3.076
			132657	1778.5	2.748	3.062
		5	131997	1712.5	4.512	5.014
			132322	1745	4.510	5.010
			132647	1777.5	4.502	4.993
		10	132022	1715	9.059	10.090
			132322	1745	8.999	10.060
			132622	1775	9.052	10.050
		15	132047	1717.5	13.492	14.820
			132322	1745	13.431	14.720
			132597	1772.5	13.498	14.850
		20	132072	1720	17.897	19.240
			132322	1745	17.864	19.270
			132572	1770	17.938	19.640
	16QAM	1.4	131979	1710.7	1.124	1.335
			132322	1745	1.129	1.338
			132665	1779.3	1.122	1.325

		3	131987	1711.5	2.738	3.062
			132322	1745	2.746	3.061
			132657	1778.5	2.739	3.054
		5	131997	1712.5	4.495	4.971
			132322	1745	4.528	5.021
			132647	1777.5	4.524	4.995
		10	132022	1715	9.056	9.962
			132322	1745	9.031	9.962
			132622	1775	9.047	10.100
		15	132047	1717.5	13.458	14.760
			132322	1745	13.481	14.730
			132597	1772.5	13.523	14.910
		20	132072	1720	17.983	19.370
			132322	1745	17.888	19.390
			132572	1770	17.953	19.340

LTE Band 4 QPSK 1.4MHz CH-Low

LTE Band 4 QPSK 3MHz CH-Low

LTE Band 4 QPSK 1.4MHz CH-Middle

LTE Band 4 QPSK 3MHz CH-Middle

LTE Band 4 QPSK 1.4MHz CH-High

LTE Band 4 QPSK 3MHz CH-High

LTE Band 4 QPSK 5MHz CH-Low

LTE Band 4 QPSK 10MHz CH-Low

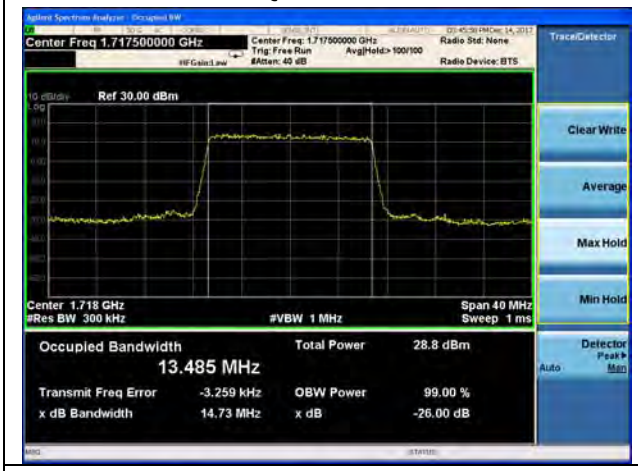
LTE Band 4 QPSK 5MHz CH-Middle

LTE Band 4 QPSK 10MHz CH-Middle

LTE Band 4 QPSK 5MHz CH-High

LTE Band 4 QPSK 10MHz CH-High

LTE Band 4 QPSK 15MHz CH-Low



LTE Band 4 QPSK 20MHz CH-Low

LTE Band 4 QPSK 15MHz CH-Middle

LTE Band 4 QPSK 20MHz CH-Middle

LTE Band 4 QPSK 15MHz CH-High

LTE Band 4 QPSK 20MHz CH-High

LTE Band 4 16QAM 1.4MHz CH-Low

LTE Band 4 16QAM 3MHz CH-Low

LTE Band 4 16QAM 1.4MHz CH-Middle

LTE Band 4 16QAM 3MHz CH-Middle

LTE Band 4 16QAM 1.4MHz CH-High

LTE Band 4 16QAM 3MHz CH-High

LTE Band 4 16QAM 5MHz CH-Low

LTE Band 4 16QAM 10MHz CH-Low

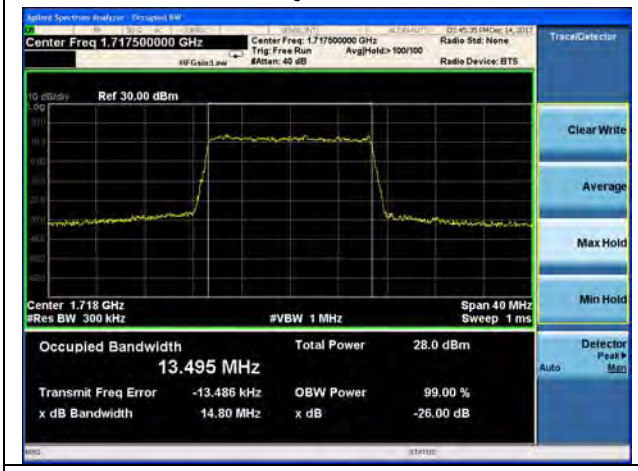
LTE Band 4 16QAM 5MHz CH-Middle

LTE Band 4 16QAM 10MHz CH-Middle

LTE Band 4 16QAM 5MHz CH-High

LTE Band 4 16QAM 10MHz CH-High

LTE Band 4 16QAM 15MHz CH-Low



LTE Band 4 16QAM 20MHz CH-Low

LTE Band 4 16QAM 15MHz CH-Middle

LTE Band 4 16QAM 20MHz CH-Middle

LTE Band 4 16QAM 15MHz CH-High

LTE Band 4 16QAM 20MHz CH-High

LTE Band 7 QPSK 5MHz CH-Low

LTE Band 7 QPSK 10MHz CH-Low

LTE Band 7 QPSK 5MHz CH-Middle

LTE Band 7 QPSK 10MHz CH-Middle

LTE Band 7 QPSK 5MHz CH-High

LTE Band 7 QPSK 10MHz CH-High

LTE Band 7 QPSK 15MHz CH-Low

LTE Band 7 QPSK 20MHz CH-Low

LTE Band 7 QPSK 15MHz CH-Middle

LTE Band 7 QPSK 20MHz CH-Middle

LTE Band 7 QPSK 15MHz CH-High

LTE Band 7 QPSK 20MHz CH-High

LTE Band 7 16QAM 5MHz CH-Low

LTE Band 7 16QAM 10MHz CH-Low

LTE Band 7 16QAM 5MHz CH-Middle

LTE Band 7 16QAM 10MHz CH-Middle

LTE Band 7 16QAM 5MHz CH-High

LTE Band 7 16QAM 10MHz CH-High

LTE Band 7 16QAM 15MHz CH-Low

LTE Band 7 16QAM 20MHz CH-Low

LTE Band 7 16QAM 15MHz CH-Middle

LTE Band 7 16QAM 20MHz CH-Middle

LTE Band 7 16QAM 15MHz CH-High

LTE Band 7 16QAM 20MHz CH-High

LTE Band 12 QPSK 1.4MHz CH-Low

LTE Band 12 QPSK 3MHz CH-Low

LTE Band 12 QPSK 1.4MHz CH-Middle

LTE Band 12 QPSK 3MHz CH-Middle

LTE Band 12 QPSK 1.4MHz CH-High

LTE Band 12 QPSK 3MHz CH-High

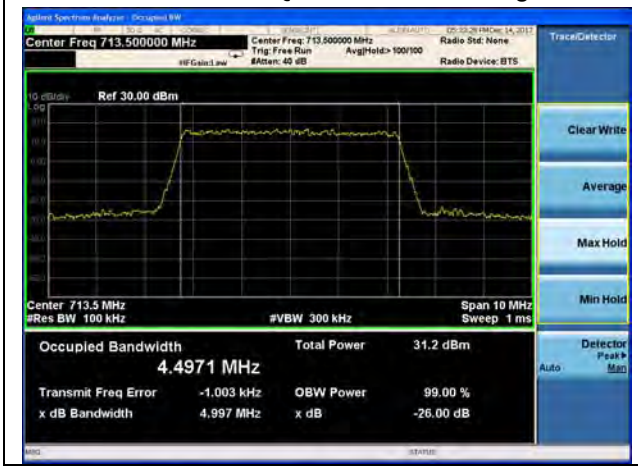
LTE Band 12 QPSK 5MHz CH-Low

LTE Band 12 QPSK 10MHz CH-Low

LTE Band 12 QPSK 5MHz CH-Middle

LTE Band 12 QPSK 10MHz CH-Middle

LTE Band 12 QPSK 5MHz CH-High



LTE Band 12 QPSK 10MHz CH-High

LTE Band 12 16QAM 1.4MHz CH-Low

LTE Band 12 16QAM 3MHz CH-Low

LTE Band 12 16QAM 1.4MHz CH-Middle

LTE Band 12 16QAM 3MHz CH-Middle

LTE Band 12 16QAM 1.4MHz CH-High

LTE Band 12 16QAM 3MHz CH-High

LTE Band 12 16QAM 5MHz CH-Low

LTE Band 12 16QAM 10MHz CH-Low

LTE Band 12 16QAM 5MHz CH-Middle

LTE Band 12 16QAM 10MHz CH-Middle

LTE Band 12 16QAM 5MHz CH-High

LTE Band 12 16QAM 10MHz CH-High

LTE Band 66 QPSK 1.4MHz CH-Low

LTE Band 4 QPSK 3MHz CH-Low

LTE Band 66 QPSK 1.4MHz CH-Middle

LTE Band 66 QPSK 3MHz CH-Middle

LTE Band 66 QPSK 1.4MHz CH-High

LTE Band 66 QPSK 3MHz CH-High

LTE Band 66 QPSK 5MHz CH-Low

LTE Band 66 QPSK 10MHz CH-Low

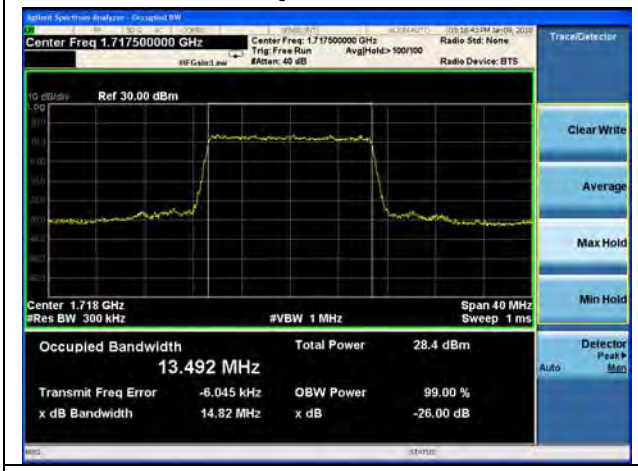
LTE Band 66 QPSK 5MHz CH-Middle

LTE Band 66 QPSK 10MHz CH-Middle

LTE Band 66 QPSK 5MHz CH-High

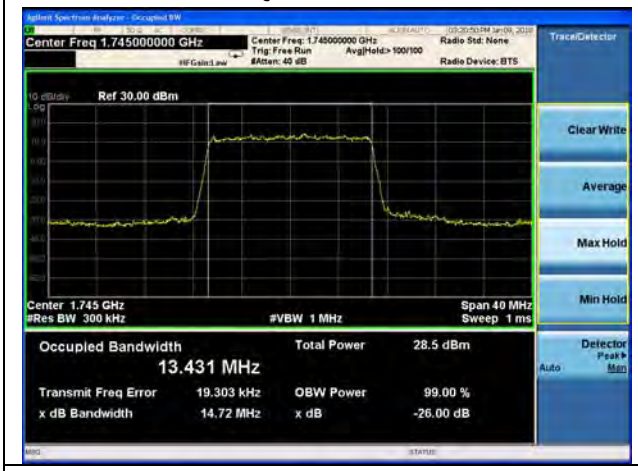
LTE Band 66 QPSK 10MHz CH-High

LTE Band 66 QPSK 15MHz CH-Low



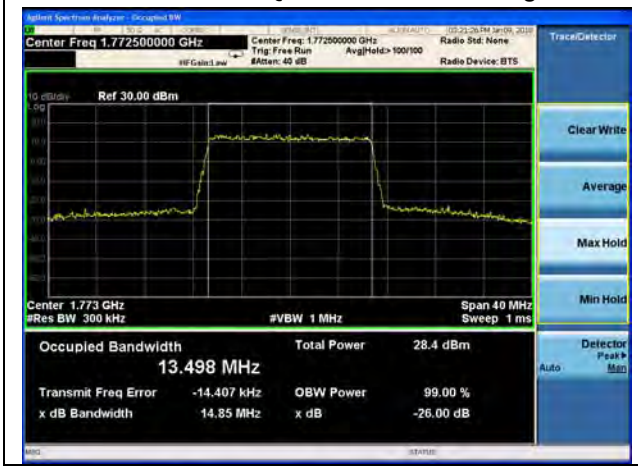
LTE Band 66 QPSK 20MHz CH-Low

LTE Band 66 QPSK 15MHz CH-Middle



LTE Band 66 QPSK 20MHz CH-Middle

LTE Band 66 QPSK 15MHz CH-High



LTE Band 66 QPSK 20MHz CH-High

LTE Band 66 16QAM 1.4MHz CH-Low

LTE Band 66 16QAM 3MHz CH-Low

LTE Band 66 16QAM 1.4MHz CH-Middle

LTE Band 66 16QAM 3MHz CH-Middle

LTE Band 66 16QAM 1.4MHz CH-High

LTE Band 66 16QAM 3MHz CH-High

LTE Band 66 16QAM 5MHz CH-Low

LTE Band 66 16QAM 10MHz CH-Low

LTE Band 66 16QAM 5MHz CH-Middle

LTE Band 66 16QAM 10MHz CH-Middle

LTE Band 66 16QAM 5MHz CH-High

LTE Band 66 16QAM 10MHz CH-High

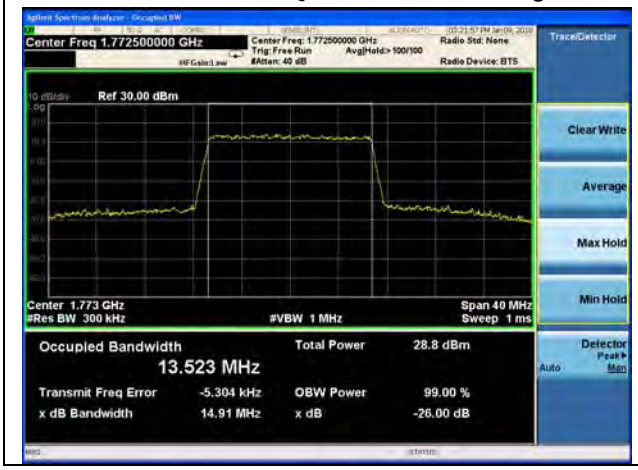
LTE Band 66 16QAM 15MHz CH-Low

LTE Band 66 16QAM 20MHz CH-Low

LTE Band 66 16QAM 15MHz CH-Middle

LTE Band 66 16QAM 20MHz CH-Middle

LTE Band 66 16QAM 15MHz CH-High



LTE Band 66 16QAM 20MHz CH-High

5.4 Band Edge Compliance

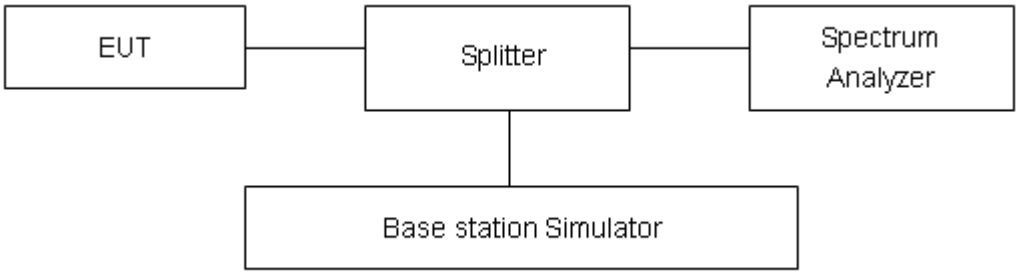
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The band edge of the lowest and highest channels were measured.
The testing follows KDB 971168 v03 Section 6.0
1.The EUT was connected to spectrum anal yzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured.
3. RBW is set to 15 kHz, VBW is set to 51 kHz for LTE Band 4/12/66 (1.4MHz).
RBW is set to 30 kHz, VBW is set to 100 kHz for LTE Band 4/12/66 (3MHz).
RBW is set to 51 kHz, VBW is set to 160 kHz for LTE Band 4/7/12/66 (5MHz).
RBW is set to 100 kHz, VBW is set to 300kHz for LTE Band 4/7/12/66 (10MHz).
RBW is set to 150 kHz, VBW is set to 510 kHz for LTE Band 4/7/66 (15MHz).
RBW is set to 200 kHz, VBW is set to 620 kHz for LTE Band 4/7/66 (20MHz) on spectrum analyzer.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. Checked that all the results comply with the emission limit line.

Test Setup



Limits

Rule Part 27.53(h)/ specifies that " for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) dB"
Part 27.53(g) specifies that " For operations in the 600 MHz band and the 698-746 MHz band, the

power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log10 (P) dB."
Part 27.53(m) (4)/ specifies that "for BRS and EBS stations. For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.
Example:
The limit line is derived from 43 + 10log (P) dB below the transmitter power P(Watts)
= P(W)- [43 + 10log(P)] (dB)
= [30 + 10log (P)] (dBm) - [43 + 10log(P)] (dB) = -13dBm.
Part 27.53 (c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:
(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;
(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;
(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;
(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U=0.684dB.

Test Result

All the test traces in the plots shows the test results clearly.

LTE Band 4 QPSK 1.4MHz CH-Low, 1 RB

LTE Band 4 QPSK 1.4MHz CH-High, 1 RB

LTE Band 4 QPSK 1.4MHz CH-Low, 100%RB

LTE Band 4 QPSK 1.4MHz CH-High, 100%RB

LTE Band 4 QPSK 3MHz CH-Low, 1 RB

LTE Band 4 QPSK 3MHz CH-High, 1 RB

LTE Band 4 QPSK 3MHz CH-Low, 100%RB

LTE Band 4 QPSK 3MHz CH-High, 100%RB

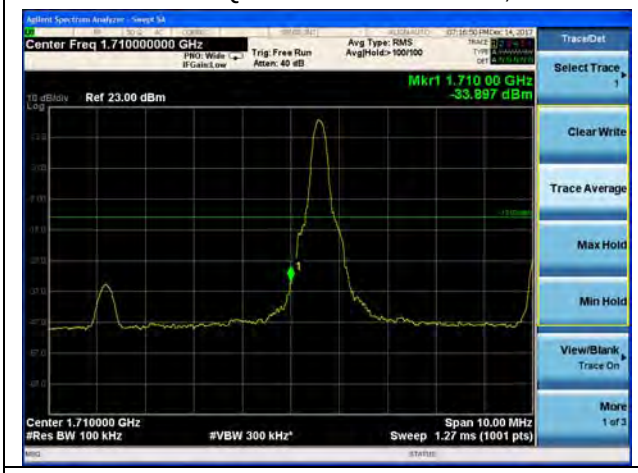
LTE Band 4 QPSK 5MHz CH-Low, 1 RB

LTE Band 4 QPSK 5MHz CH-High, 1 RB

LTE Band 4 QPSK 5MHz CH-Low, 100%RB

LTE Band 4 QPSK 5MHz CH-High, 100%RB

LTE Band 4 QPSK 10MHz CH-Low, 1 RB



LTE Band 4 QPSK 10MHz CH-High, 1 RB

LTE Band 4 QPSK 10MHz CH-Low, 100%RB

LTE Band 4 QPSK 10MHz CH-High, 100%RB

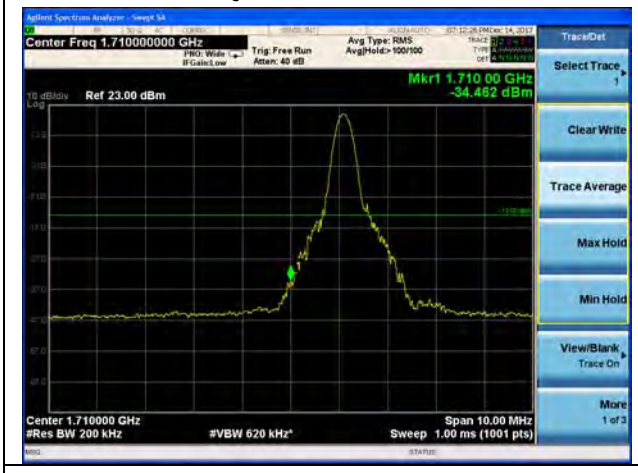
LTE Band 4 QPSK 15MHz CH-Low, 1 RB

LTE Band 4 QPSK 15MHz CH-High, 1 RB

LTE Band 4 QPSK 15MHz CH-Low, 100%RB

LTE Band 4 QPSK 15MHz CH-High, 100%RB

LTE Band 4 QPSK 20MHz CH-Low, 1 RB



LTE Band 4 QPSK 20MHz CH-High, 1 RB

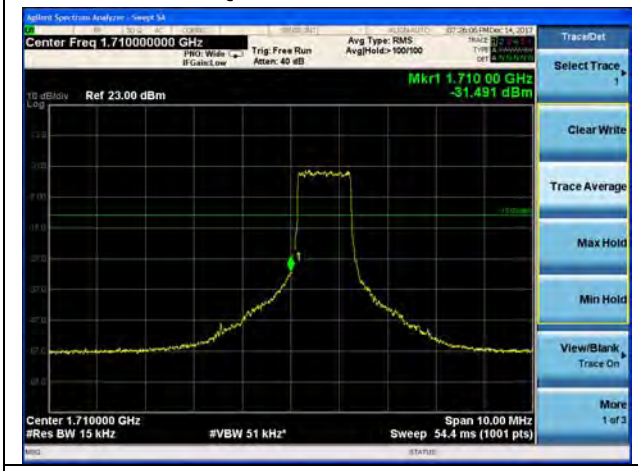
LTE Band 4 QPSK 20MHz CH-Low, 100%RB

LTE Band 4 QPSK 20MHz CH-High, 100%RB

LTE Band 4 16QAM 1.4MHz CH-Low, 1 RB

LTE Band 4 16QAM 1.4MHz CH-High, 1 RB

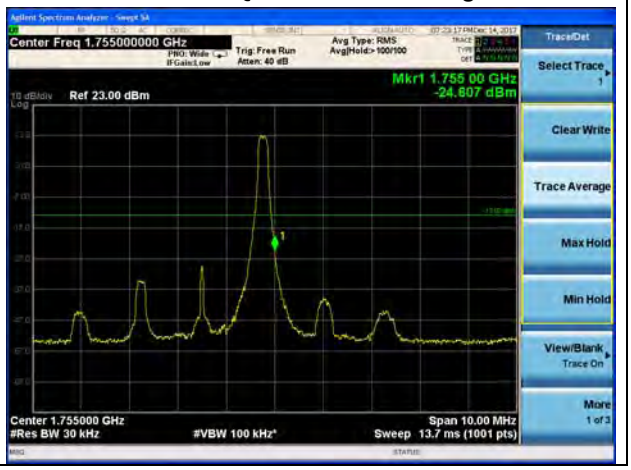
LTE Band 4 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 4 16QAM 1.4MHz CH-High, 100%RB

LTE Band 4 16QAM 3MHz CH-Low, 1 RB

LTE Band 4 16QAM 3MHz CH-High, 1 RB



LTE Band 4 16QAM 3MHz CH-Low, 100%RB

LTE Band 4 16QAM 3MHz CH-High, 100%RB

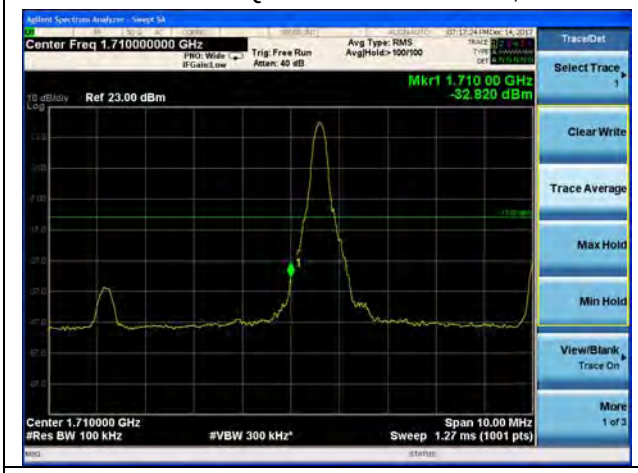
LTE Band 4 16QAM 5MHz CH-Low, 1 RB

LTE Band 4 16QAM 5MHz CH-High, 1 RB

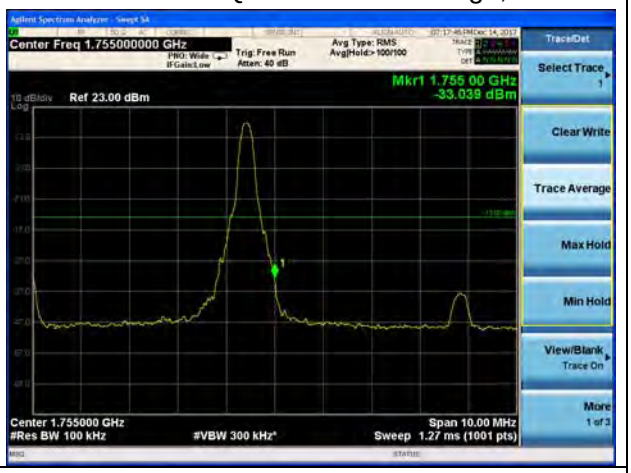
LTE Band 4 16QAM 5MHz CH-Low, 100%RB

LTE Band 4 16QAM 5MHz CH-High, 100%RB

LTE Band 4 16QAM 10MHz CH-Low, 1 RB



LTE Band 4 16QAM 10MHz CH-High, 1 RB



LTE Band 4 16QAM 10MHz CH-Low, 100%RB

LTE Band 4 16QAM 10MHz CH-High, 100%RB

LTE Band 4 16QAM 15MHz CH-Low, 1 RB

LTE Band 4 16QAM 15MHz CH-High, 1 RB

LTE Band 4 16QAM 15MHz CH-Low, 100%RB

LTE Band 4 16QAM 15MHz CH-High, 100%RB

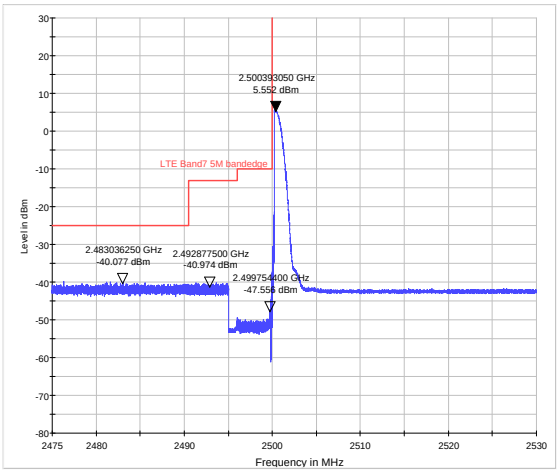
LTE Band 4 16QAM 20MHz CH-Low, 1 RB

LTE Band 4 16QAM 20MHz CH-High, 1 RB

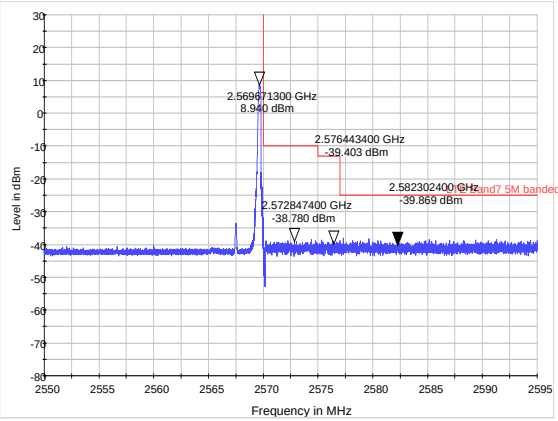
LTE Band 4 16QAM 20MHz CH-Low, 100%RB

LTE Band 4 16QAM 20MHz CH-High, 100%RB

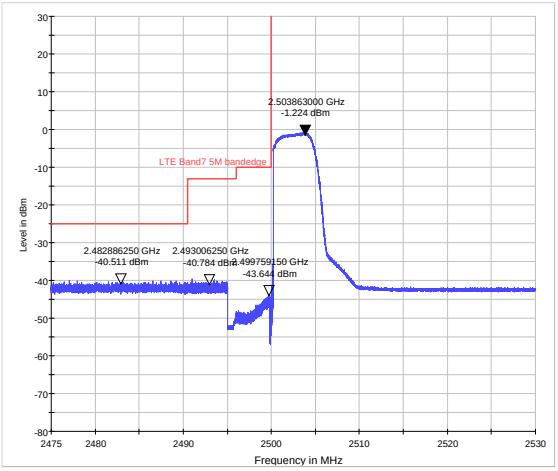
LTE Band 7 QPSK 5MHz CH-Low, 1 RB



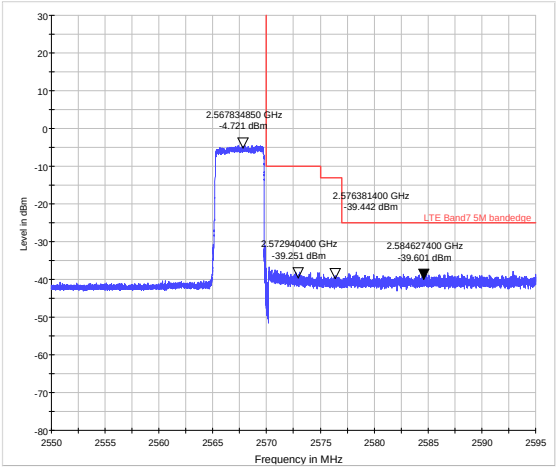
LTE Band 7 QPSK 5MHz CH-High, 1 RB



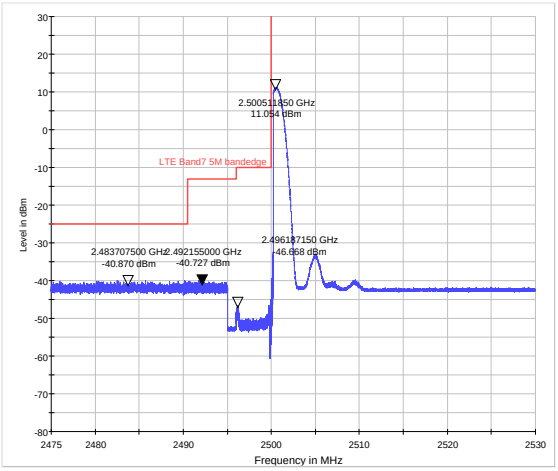
LTE Band 7 QPSK 5MHz CH-Low, 100%RB



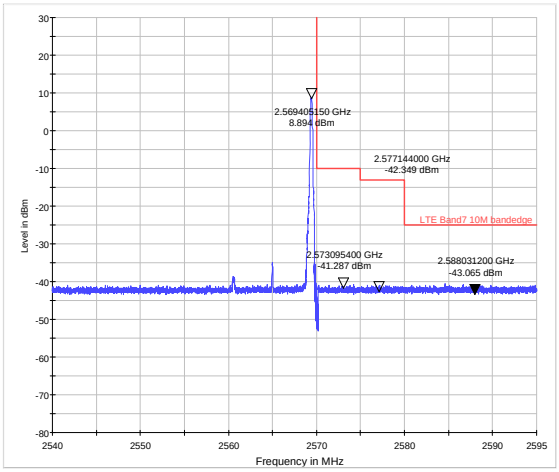
LTE Band 7 QPSK 5MHz CH-High, 100%RB



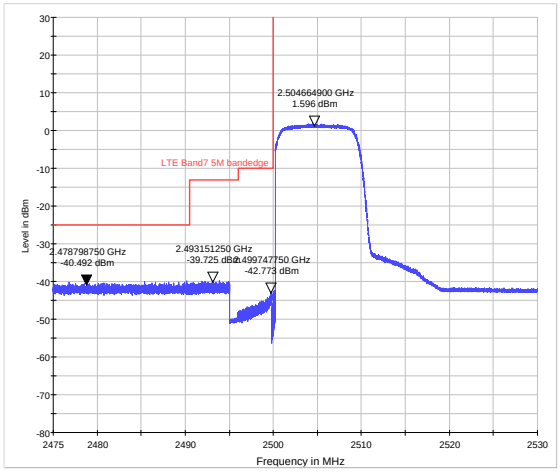
LTE Band 7 QPSK 10MHz CH-Low, 1 RB



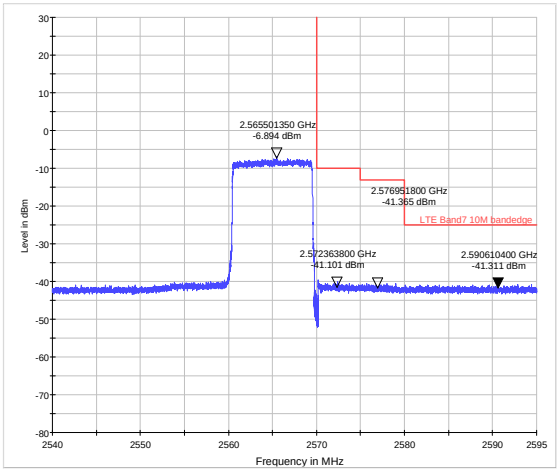
LTE Band 7 QPSK 10MHz CH-High, 1 RB



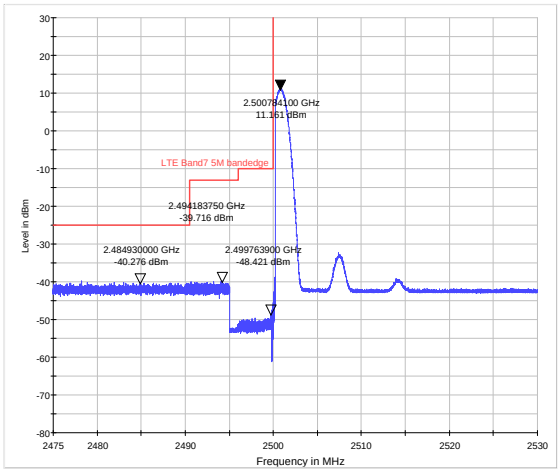
LTE Band 7 QPSK 10MHz CH-Low, 100%RB



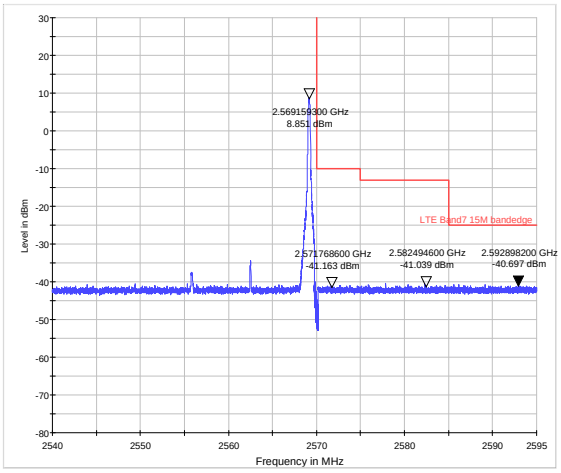
LTE Band 7 QPSK 10MHz CH-High, 100%RB



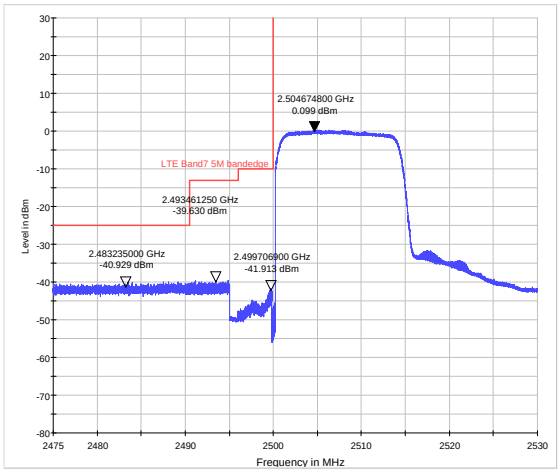
LTE Band 7 QPSK 15MHz CH-Low, 1 RB



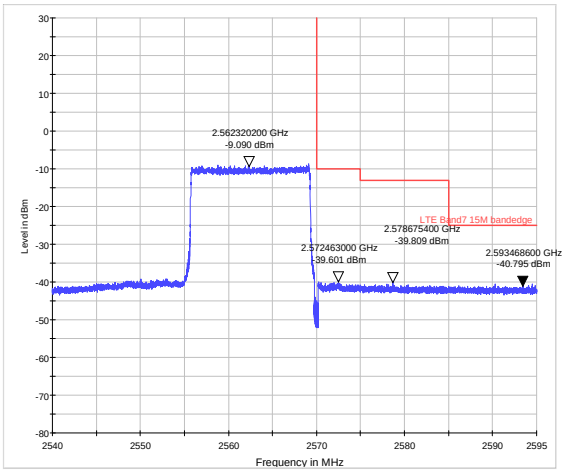
LTE Band 7 QPSK 15MHz CH-High, 1 RB



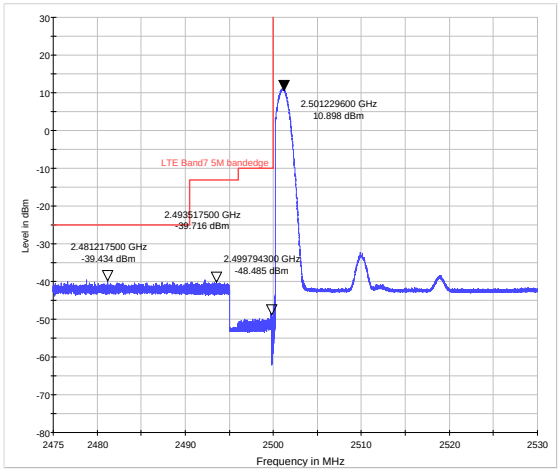
LTE Band 7 QPSK 15MHz CH-Low, 100%RB



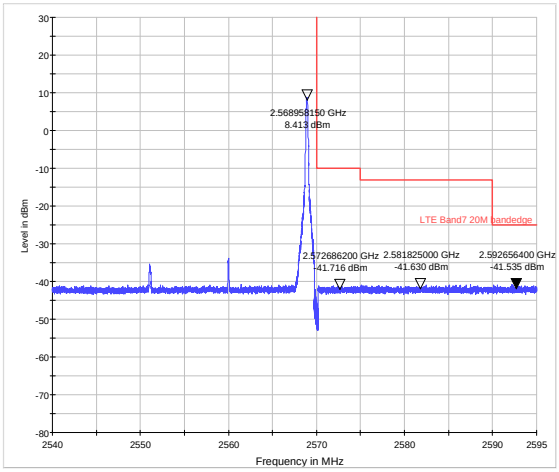
LTE Band 7 QPSK 15MHz CH-High, 100%RB



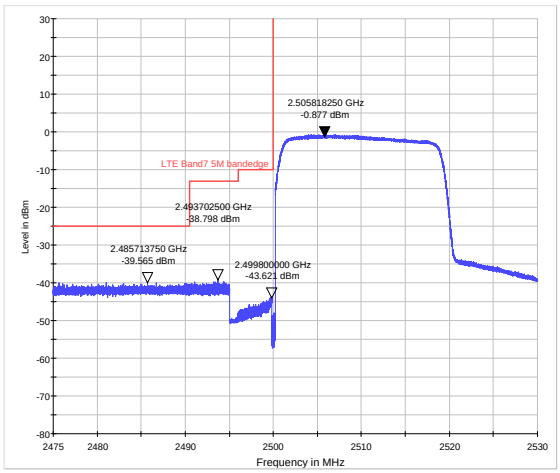
LTE Band 7 QPSK 20MHz CH-Low, 1 RB



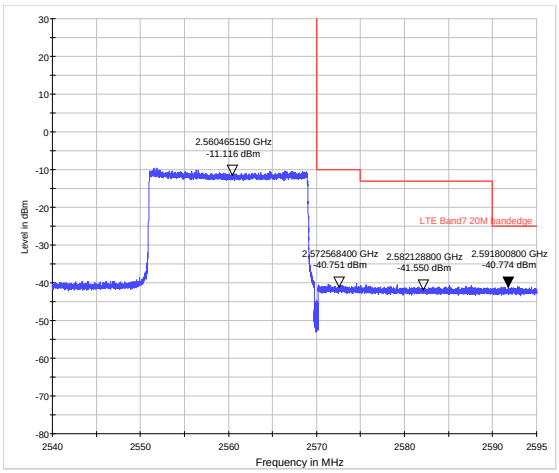
LTE Band 7 QPSK 20MHz CH-High, 1 RB



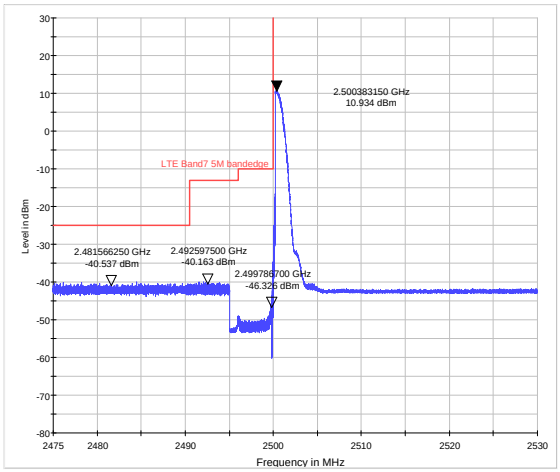
LTE Band 7 QPSK 20MHz CH-Low, 100%RB



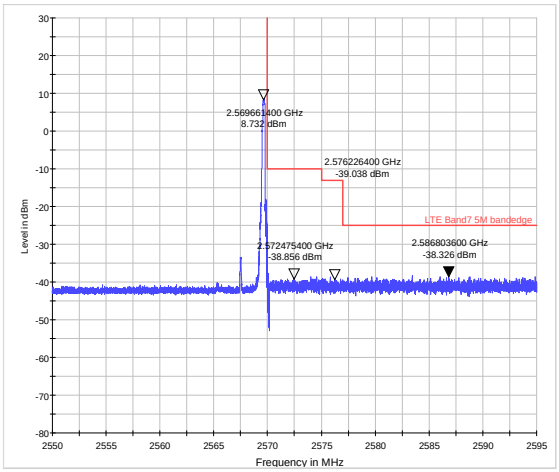
LTE Band 7 QPSK 20MHz CH-High, 100%RB



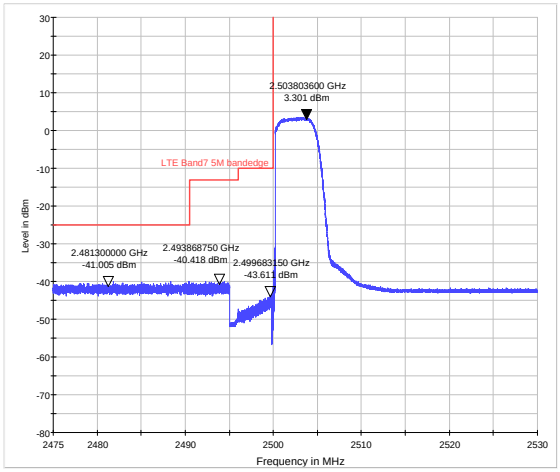
LTE Band 7 16QAM 5MHz CH-Low, 1 RB



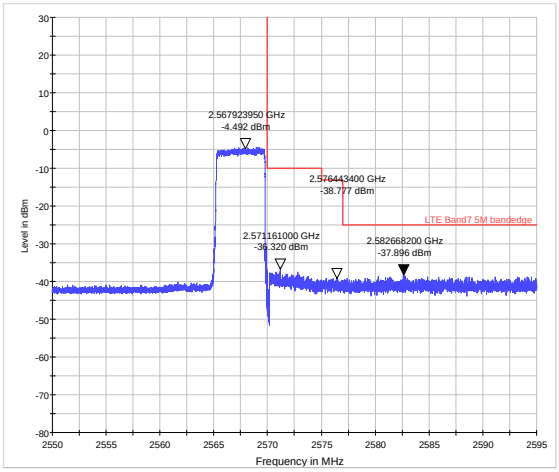
LTE Band 7 16QAM 5MHz CH-High, 1 RB



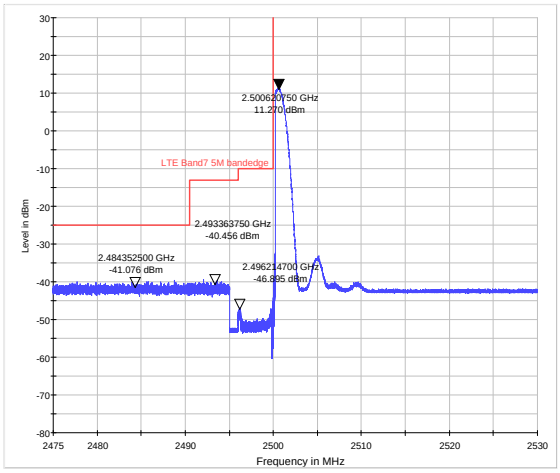
LTE Band 7 16QAM 5MHz CH-Low, 100%RB



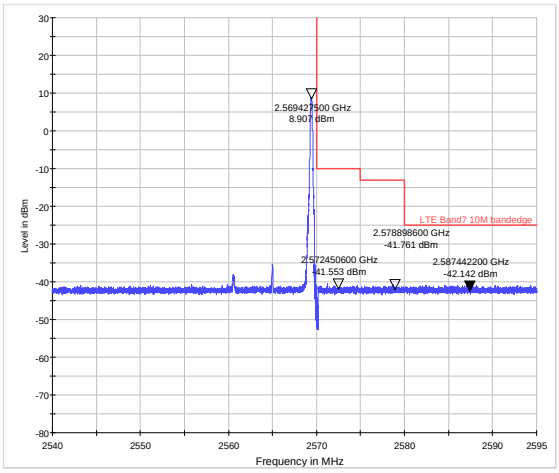
LTE Band 7 16QAM 5MHz CH-High, 100%RB



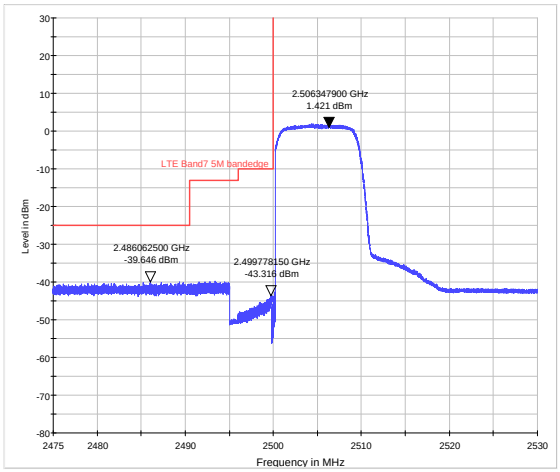
LTE Band 7 16QAM 10MHz CH-Low, 1 RB



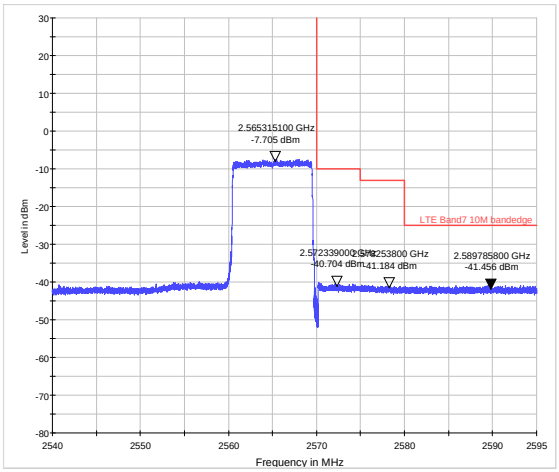
LTE Band 7 16QAM 10MHz CH-High, 1 RB



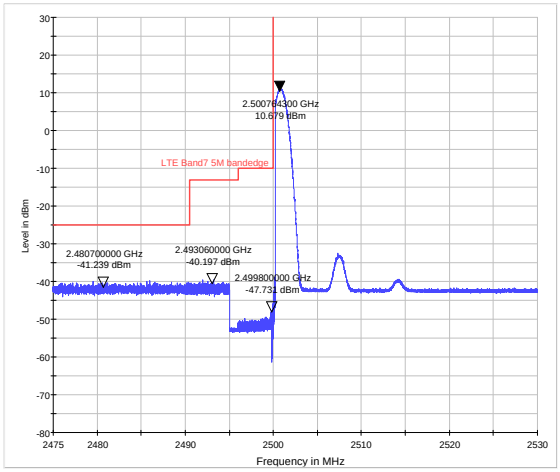
LTE Band 7 16QAM 10MHz CH-Low, 100%RB



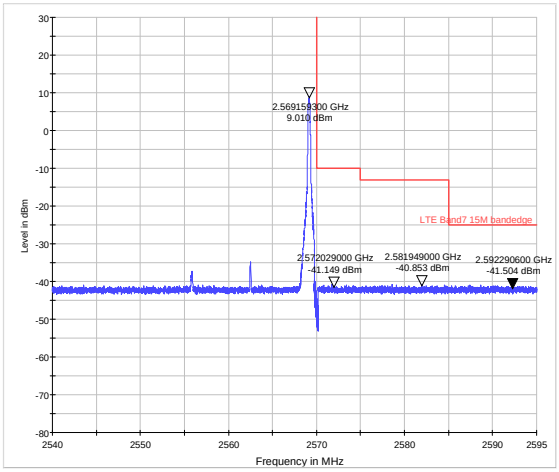
LTE Band 7 16QAM 10MHz CH-High, 100%RB



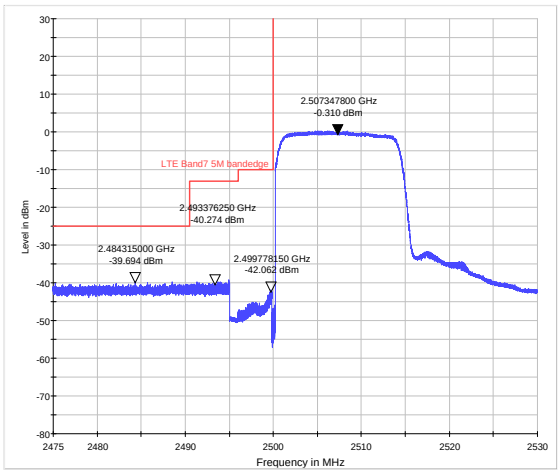
LTE Band 7 16QAM 15MHz CH-Low, 1 RB



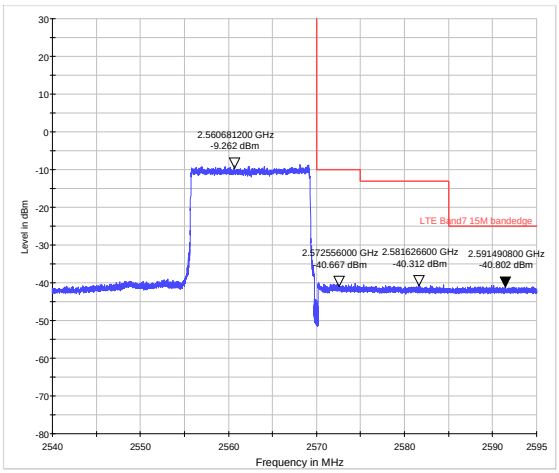
LTE Band 7 16QAM 15MHz CH-High, 1 RB



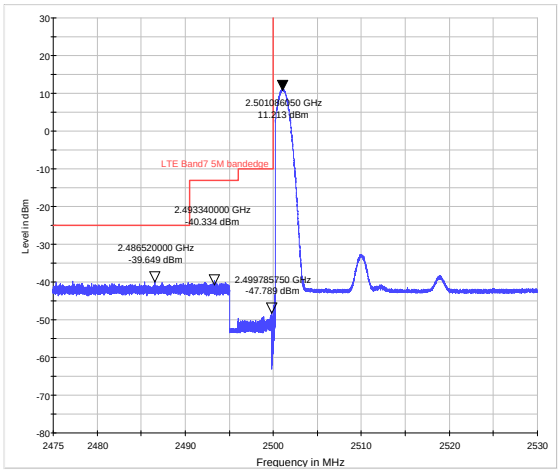
LTE Band 7 16QAM 15MHz CH-Low, 100%RB



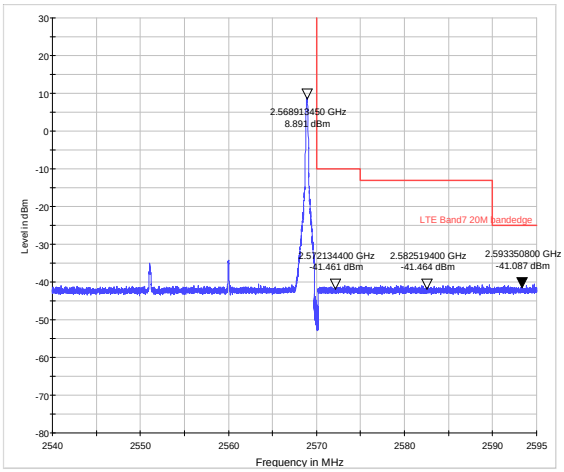
LTE Band 7 16QAM 15MHz CH-High, 100%RB



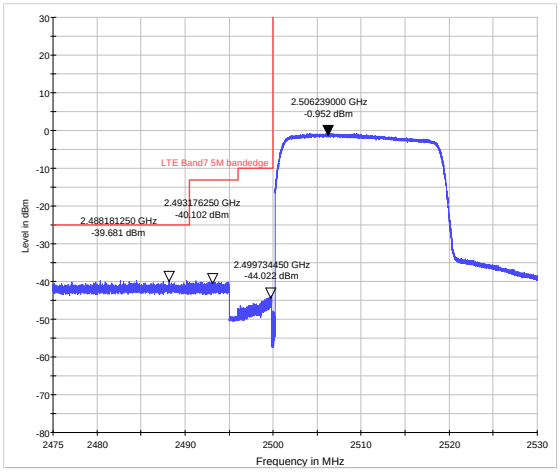
LTE Band 7 16QAM 20MHz CH-Low, 1 RB



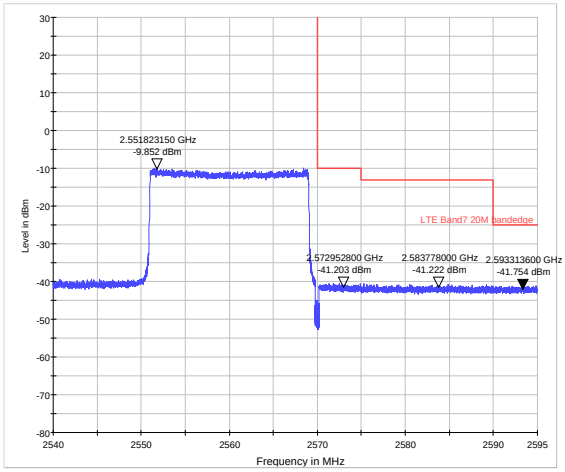
LTE Band 7 16QAM 20MHz CH-High, 1 RB



LTE Band 7 16QAM 20MHz CH-Low, 100%RB



LTE Band 7 16QAM 20MHz CH-High, 100%RB



LTE Band 12 QPSK 1.4MHz CH-Low, 1 RB

LTE Band 12 QPSK 1.4MHz CH-High, 1 RB

LTE Band 12 QPSK 1.4MHz CH-Low, 100%RB

LTE Band 12 QPSK 1.4MHz CH-High, 100%RB

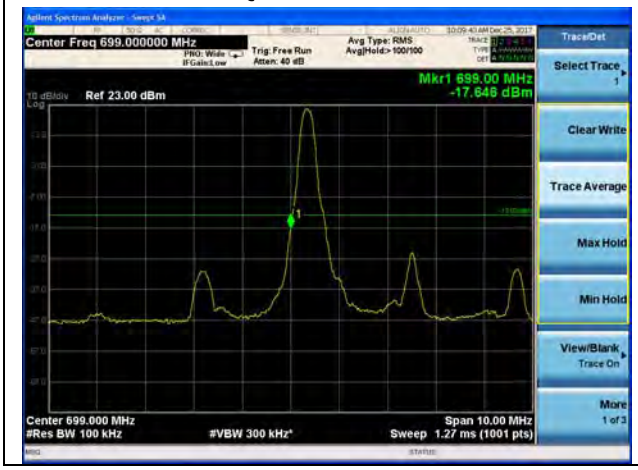
LTE Band 12 QPSK 3MHz CH-Low, 1 RB

LTE Band 12 QPSK 3MHz CH-High, 1 RB

LTE Band 12 QPSK 3MHz CH-Low, 100%RB

LTE Band 12 QPSK 3MHz CH-High, 100%RB

LTE Band 12 QPSK 5MHz CH-Low, 1 RB

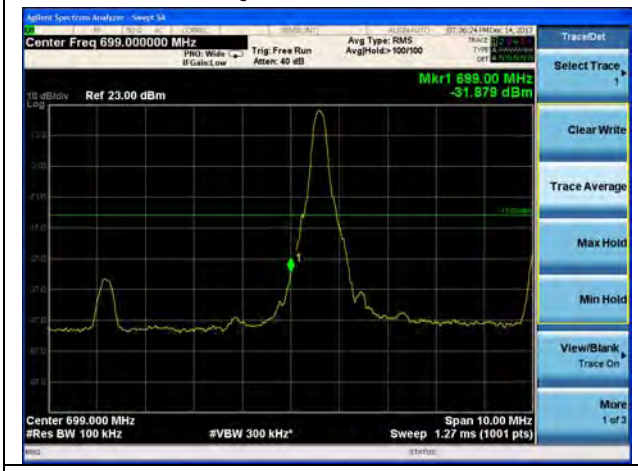


LTE Band 12 QPSK 5MHz CH-High, 1 RB

LTE Band 12 QPSK 5MHz CH-Low, 100%RB

LTE Band 12 QPSK 5MHz CH-High, 100%RB

LTE Band 12 QPSK 10MHz CH-Low, 1 RB



LTE Band 12 QPSK 10MHz CH-High, 1 RB

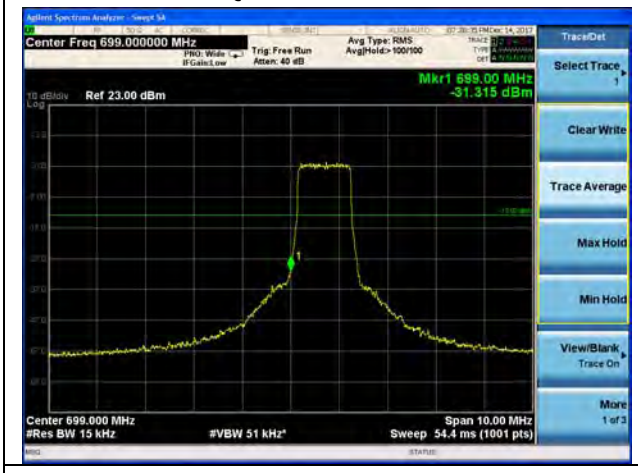
LTE Band 12 QPSK 10MHz CH-Low, 100%RB

LTE Band 12 QPSK 10MHz CH-High, 100%RB

LTE Band 12 16QAM 1.4MHz CH-Low, 1 RB

LTE Band 12 16QAM 1.4MHz CH-High, 1 RB

LTE Band 12 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 12 16QAM 1.4MHz CH-High, 100%RB

LTE Band 12 16QAM 3MHz CH-Low, 1 RB

LTE Band 12 16QAM 3MHz CH-High, 1 RB

LTE Band 12 16QAM 3MHz CH-Low, 100%RB

LTE Band 12 16QAM 3MHz CH-High, 100%RB

LTE Band 12 16QAM 5MHz CH-Low, 1 RB

LTE Band 12 16QAM 5MHz CH-High, 1 RB

LTE Band 12 16QAM 5MHz CH-Low, 100%RB

LTE Band 12 16QAM 5MHz CH-High, 100%RB

LTE Band 12 16QAM 10MHz CH-Low, 1 RB

LTE Band 12 16QAM 10MHz CH-High, 1 RB

LTE Band 12 16QAM 10MHz CH-Low, 100%RB

LTE Band 12 16QAM 10MHz CH-High, 100%RB

LTE Band 66 QPSK 1.4MHz CH-Low, 1 RB

LTE Band 66 QPSK 1.4MHz CH-High, 1 RB

LTE Band 66 QPSK 1.4MHz CH-Low, 100%RB

LTE Band 66 QPSK 1.4MHz CH-High, 100%RB

LTE Band 66 QPSK 3MHz CH-Low, 1 RB

LTE Band 66 QPSK 3MHz CH-High, 1 RB

LTE Band 66 QPSK 3MHz CH-Low, 100%RB

LTE Band 66 QPSK 3MHz CH-High, 100%RB

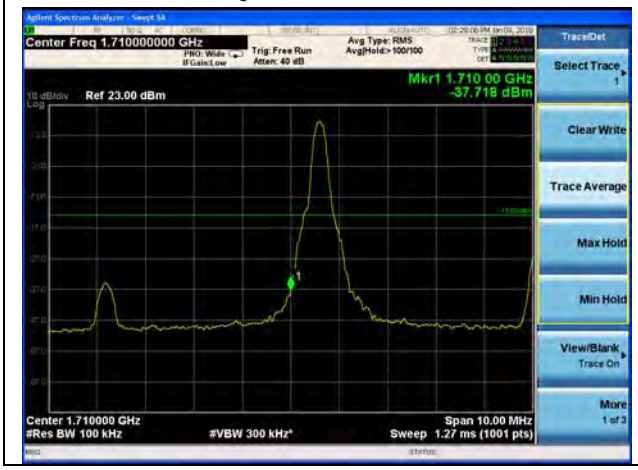
LTE Band 66 QPSK 5MHz CH-Low, 1 RB

LTE Band 66 QPSK 5MHz CH-High, 1 RB

LTE Band 66 QPSK 5MHz CH-Low, 100%RB

LTE Band 66 QPSK 5MHz CH-High, 100%RB

LTE Band 66 QPSK 10MHz CH-Low, 1 RB



LTE Band 66 QPSK 10MHz CH-High, 1 RB

LTE Band 66 QPSK 10MHz CH-Low, 100%RB

LTE Band 66 QPSK 10MHz CH-High, 100%RB

LTE Band 66 QPSK 15MHz CH-Low, 1 RB

LTE Band 66 QPSK 15MHz CH-High, 1 RB

LTE Band 66 QPSK 15MHz CH-Low, 100%RB

LTE Band 66 QPSK 15MHz CH-High, 100%RB

LTE Band 66 QPSK 20MHz CH-Low, 1 RB

LTE Band 66 QPSK 20MHz CH-High, 1 RB

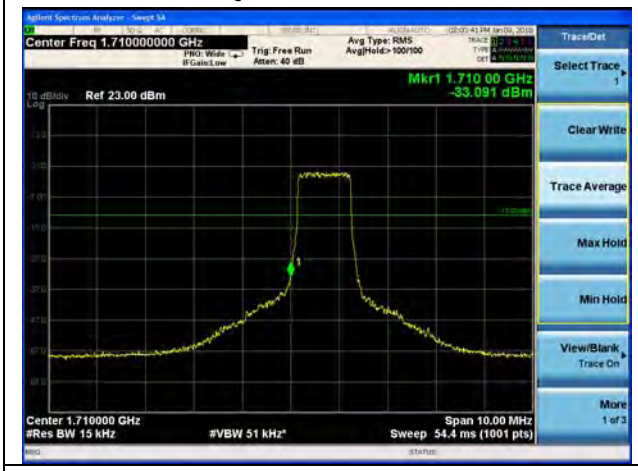
LTE Band 66 QPSK 20MHz CH-Low, 100%RB

LTE Band 66 QPSK 20MHz CH-High, 100%RB

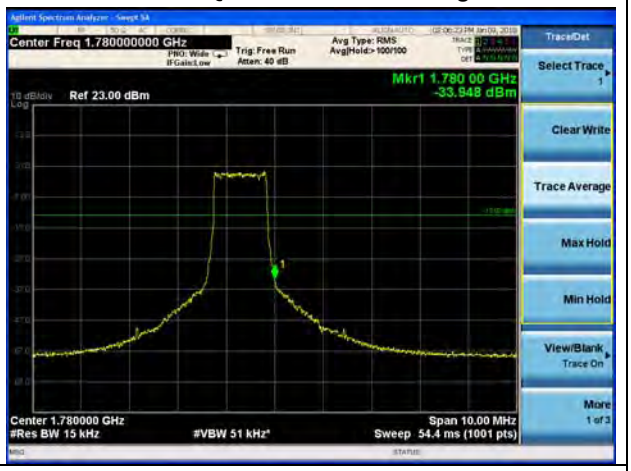
LTE Band 66 16QAM 1.4MHz CH-Low, 1 RB

LTE Band 66 16QAM 1.4MHz CH-High, 1 RB

LTE Band 66 16QAM 1.4MHz CH-Low, 100%RB



LTE Band 66 16QAM 1.4MHz CH-High, 100%RB



LTE Band 66 16QAM 3MHz CH-Low, 1 RB

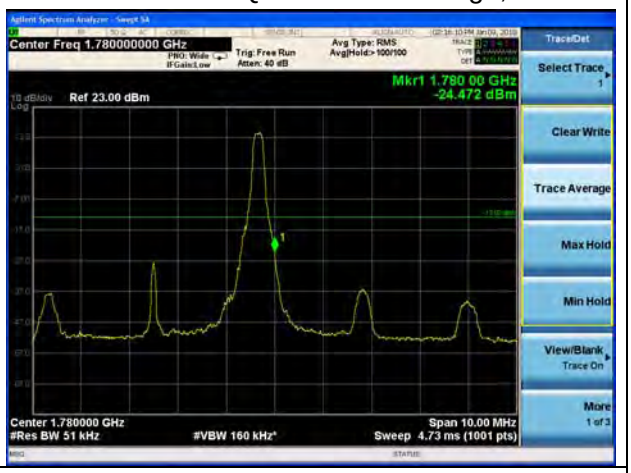
LTE Band 66 16QAM 3MHz CH-High, 1 RB

LTE Band 66 16QAM 3MHz CH-Low, 100%RB

LTE Band 66 16QAM 3MHz CH-High, 100%RB

LTE Band 66 16QAM 5MHz CH-Low, 1 RB

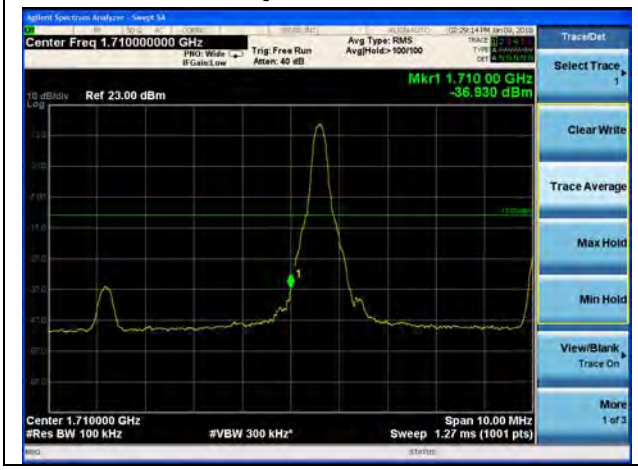
LTE Band 66 16QAM 5MHz CH-High, 1 RB



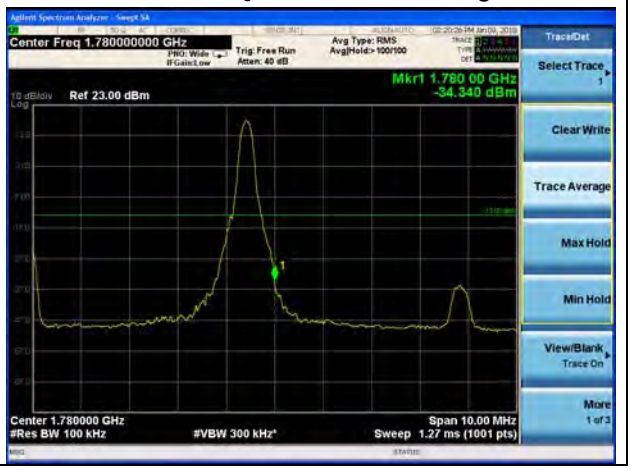
LTE Band 66 16QAM 5MHz CH-Low, 100%RB

LTE Band 66 16QAM 5MHz CH-High, 100%RB

LTE Band 66 16QAM 10MHz CH-Low, 1 RB



LTE Band 66 16QAM 10MHz CH-High, 1 RB



LTE Band 66 16QAM 10MHz CH-Low, 100%RB

LTE Band 66 16QAM 10MHz CH-High, 100%RB

LTE Band 66 16QAM 15MHz CH-Low, 1 RB

LTE Band 66 16QAM 15MHz CH-High, 1 RB

LTE Band 66 16QAM 15MHz CH-Low, 100%RB

LTE Band 66 16QAM 15MHz CH-High, 100%RB

LTE Band 66 16QAM 20MHz CH-Low, 1 RB

LTE Band 66 16QAM 20MHz CH-High, 1 RB

LTE Band 66 16QAM 20MHz CH-Low, 100%RB

LTE Band 66 16QAM 20MHz CH-High, 100%RB

5.5 Peak-to-Average Power Ratio (PAPR)

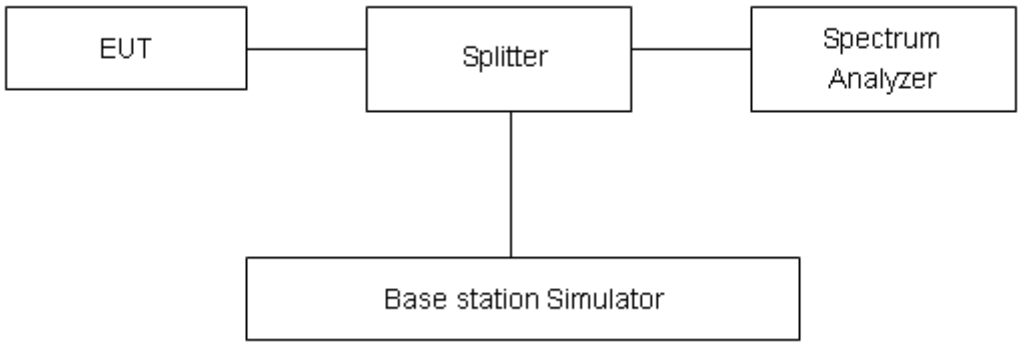
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (*e.g.*, dBm). Determine the PAPR from:
PAPR (dB) = PPk (dBm) - PAvg (dBm).

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for thenormal distribution is with the coverage factor k = 2, U= 0.4 dB.

Test Results

LTE Band 4								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	19957	1710.7	26.71	21.80	4.91	≤13	PASS
		20175	1732.5	27.27	21.88	5.39	≤13	PASS
		20393	1754.3	26.84	21.90	4.94	≤13	PASS
	3	19965	1711.5	26.83	21.83	5.00	≤13	PASS
		20175	1732.5	27.33	21.92	5.41	≤13	PASS
		20385	1753.5	26.96	21.93	5.03	≤13	PASS
	5	19975	1712.5	26.79	21.81	4.98	≤13	PASS
		20175	1732.5	27.29	21.91	5.38	≤13	PASS
		20375	1752.5	26.88	21.91	4.97	≤13	PASS
	10	20000	1715	26.93	21.89	5.04	≤13	PASS
		20175	1732.5	27.22	21.93	5.29	≤13	PASS
		20350	1750	26.96	21.95	5.01	≤13	PASS
	15	20025	1717.5	27.09	21.87	5.22	≤13	PASS
		20175	1732.5	27.37	21.89	5.48	≤13	PASS
		20325	1747.5	27.11	21.90	5.21	≤13	PASS
	20	20050	1720	27.00	21.84	5.16	≤13	PASS
		20175	1732.5	27.12	21.84	5.28	≤13	PASS
		20300	1745	26.98	21.86	5.12	≤13	PASS
16QAM	1.4	19957	1710.7	26.69	20.93	5.76	≤13	PASS
		20175	1732.5	27.22	20.96	6.26	≤13	PASS
		20393	1754.3	26.67	20.90	5.77	≤13	PASS
	3	19965	1711.5	26.83	20.96	5.87	≤13	PASS
		20175	1732.5	27.28	21.00	6.28	≤13	PASS
		20385	1753.5	26.78	20.93	5.85	≤13	PASS
	5	19975	1712.5	26.75	20.94	5.81	≤13	PASS
		20175	1732.5	27.16	20.96	6.20	≤13	PASS
		20375	1752.5	26.67	20.88	5.79	≤13	PASS
	10	20000	1715	26.84	20.97	5.87	≤13	PASS
		20175	1732.5	27.15	21.01	6.14	≤13	PASS
		20350	1750	26.78	20.92	5.86	≤13	PASS
	15	20025	1717.5	26.94	20.94	6.00	≤13	PASS
		20175	1732.5	27.19	20.96	6.23	≤13	PASS
		20325	1747.5	26.86	20.88	5.98	≤13	PASS
	20	20050	1720	26.88	20.92	5.96	≤13	PASS
		20175	1732.5	27.04	20.92	6.12	≤13	PASS
		20300	1745	26.82	20.85	5.97	≤13	PASS

LTE Band 7								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	5	20775	2502.5	27.47	22.63	4.84	≤13	PASS
		21100	2535	27.52	22.44	5.08	≤13	PASS
		21425	2567.5	27.54	22.59	4.95	≤13	PASS
	10	20800	2505	27.56	22.71	4.85	≤13	PASS
		21100	2535	27.50	22.46	5.04	≤13	PASS
		21400	2565	27.57	22.63	4.94	≤13	PASS
	15	20825	2507.5	27.57	22.69	4.88	≤13	PASS
		21100	2535	27.48	22.42	5.06	≤13	PASS
		21375	2562.5	27.56	22.58	4.98	≤13	PASS
	20	20850	2510	27.49	22.66	4.83	≤13	PASS
		21100	2535	27.29	22.37	4.92	≤13	PASS
		21350	2560	27.47	22.54	4.93	≤13	PASS
16QAM	5	20775	2502.5	27.31	21.71	5.60	≤13	PASS
		21100	2535	27.27	21.43	5.84	≤13	PASS
		21425	2567.5	27.32	21.60	5.72	≤13	PASS
	10	20800	2505	27.39	21.74	5.65	≤13	PASS
		21100	2535	27.27	21.48	5.79	≤13	PASS
		21400	2565	27.40	21.64	5.76	≤13	PASS
	15	20825	2507.5	27.33	21.71	5.62	≤13	PASS
		21100	2535	27.21	21.43	5.78	≤13	PASS
		21375	2562.5	27.31	21.60	5.71	≤13	PASS
	20	20850	2510	27.27	21.69	5.58	≤13	PASS
		21100	2535	27.10	21.39	5.71	≤13	PASS
		21350	2560	27.28	21.57	5.71	≤13	PASS

LTE Band 12								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	23017	699.7	27.90	22.72	5.18	≤13	PASS
		23095	707.5	27.47	22.58	4.89	≤13	PASS
		23173	715.3	27.38	22.69	4.69	≤13	PASS
	3	23025	700.5	27.92	22.75	5.17	≤13	PASS
		23095	707.5	27.64	22.62	5.02	≤13	PASS
		23165	714.5	27.64	22.72	4.92	≤13	PASS
	5	23035	701.5	27.72	22.73	4.99	≤13	PASS
		23095	707.5	27.64	22.61	5.03	≤13	PASS
		23155	713.5	27.60	22.70	4.90	≤13	PASS
	10	23060	704	28.04	22.76	5.28	≤13	PASS
		23095	707.5	27.57	22.54	5.03	≤13	PASS
		23130	711	27.58	22.65	4.93	≤13	PASS
16QAM	1.4	23017	699.7	27.65	21.60	6.05	≤13	PASS
		23095	707.5	27.26	21.60	5.66	≤13	PASS
		23173	715.3	27.25	21.70	5.55	≤13	PASS
	3	23025	700.5	27.67	21.63	6.04	≤13	PASS
		23095	707.5	27.47	21.64	5.83	≤13	PASS
		23165	714.5	27.44	21.73	5.71	≤13	PASS
	5	23035	701.5	27.43	21.61	5.82	≤13	PASS
		23095	707.5	27.38	21.60	5.78	≤13	PASS
		23155	713.5	27.41	21.68	5.73	≤13	PASS
	10	23060	704	27.30	21.59	5.71	≤13	PASS
		23095	707.5	27.35	21.56	5.79	≤13	PASS
		23130	711	27.44	21.65	5.79	≤13	PASS

LTE Band 66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
QPSK	1.4	131979	1710.7	26.71	21.37	5.34	≤13	PASS
		132322	1745	26.90	21.36	5.54	≤13	PASS
		132665	1779.3	26.85	21.12	5.73	≤13	PASS
	3	131987	1711.5	26.95	21.40	5.55	≤13	PASS
		132322	1745	27.25	21.40	5.85	≤13	PASS
		132657	1778.5	26.95	21.15	5.80	≤13	PASS
	5	131997	1712.5	26.72	21.38	5.34	≤13	PASS
		132322	1745	27.02	21.39	5.63	≤13	PASS
		132647	1777.5	26.89	21.13	5.76	≤13	PASS
	10	132022	1715	27.05	21.46	5.59	≤13	PASS
		132322	1745	27.14	21.41	5.73	≤13	PASS
		132622	1775	26.96	21.17	5.79	≤13	PASS
	15	132047	1717.5	26.93	21.44	5.49	≤13	PASS
		132322	1745	26.92	21.37	5.55	≤13	PASS
		132597	1772.5	26.80	21.12	5.68	≤13	PASS
	20	132072	1720	27.05	21.41	5.64	≤13	PASS
		132322	1745	26.90	21.32	5.58	≤13	PASS
		132572	1770	26.81	21.08	5.73	≤13	PASS
16QAM	1.4	131979	1710.7	26.50	20.29	6.21	≤13	PASS
		132322	1745	26.67	20.28	6.39	≤13	PASS
		132665	1779.3	26.69	20.07	6.62	≤13	PASS
	3	131987	1711.5	26.77	20.32	6.45	≤13	PASS
		132322	1745	27.07	20.32	6.75	≤13	PASS
		132657	1778.5	26.89	20.10	6.79	≤13	PASS
	5	131997	1712.5	26.51	20.30	6.21	≤13	PASS
		132322	1745	26.83	20.28	6.55	≤13	PASS
		132647	1777.5	26.73	20.05	6.68	≤13	PASS
	10	132022	1715	26.78	20.33	6.45	≤13	PASS
		132322	1745	26.92	20.33	6.59	≤13	PASS
		132622	1775	26.74	20.09	6.65	≤13	PASS
	15	132047	1717.5	26.59	20.30	6.29	≤13	PASS
		132322	1745	26.66	20.28	6.38	≤13	PASS
		132597	1772.5	26.72	20.05	6.67	≤13	PASS
	20	132072	1720	26.79	20.28	6.51	≤13	PASS
		132322	1745	26.73	20.24	6.49	≤13	PASS
		132572	1770	26.57	20.02	6.55	≤13	PASS

5.6 Frequency Stability

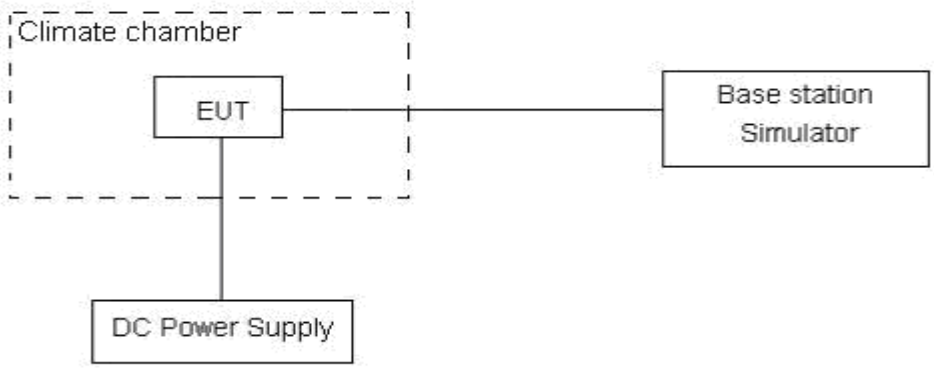
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency Stability (Temperature Variation)
   The temperature inside the climate chamber is varied from -30°C to +55°C in 10°C step size.
   (1)With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.
   (2)Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.
   (3) Repeat the above measurements at 10°C increments from -30°C to +55°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.
2. Frequency Stability (Voltage Variation)
   The frequency stability shall be measured with variation of primary supply voltage as follows:
   (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment.
   (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery-operating end point which shall be specified by the manufacturer.
   This transceiver is specified to operate with an input voltage of between 3.4 V and 4.4 V, with a nominal voltage of 3.85V.

Test setup



Limits

No specific frequency stability requirements in part 27.54

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75％ confidence level for the normal distribution is with the coverage factor k = 3,U=0.01ppm.

Test Result

Bandwidth	Test status	LTE Band 4 Channel 20175 Test Results (ppm)	
		QPSK	16QAM
1.4MHz	-30°C/Normal Voltage	0.00073	0.00268
	-20°C/Normal Voltage	0.00249	0.00190
	-10°C/Normal Voltage	0.00275	0.00217
	0°C/Normal Voltage	0.00047	0.00002
	10°C/Normal Voltage	0.00142	0.00119
	20°C/Normal Voltage	0.00164	0.00158
	30°C/Normal Voltage	0.00076	-0.00067
	40°C/Normal Voltage	-0.00092	0.00140
	50°C/Normal Voltage	0.00215	0.00015
	55°C/Normal Voltage	0.00156	0.00242
	20°C/Min Voltage	0.00102	0.00190
	20°C/Max Voltage	0.00234	0.00306
3MHz	-30°C/Normal Voltage	0.00171	0.00201
	-20°C/Normal Voltage	-0.00024	-0.00065
	-10°C/Normal Voltage	0.00127	0.00010
	0°C/Normal Voltage	0.00136	0.00011
	10°C/Normal Voltage	-0.00006	-0.00091
	20°C/Normal Voltage	0.00133	0.00139
	30°C/Normal Voltage	0.00037	-0.00002
	40°C/Normal Voltage	0.00042	0.00050
	50°C/Normal Voltage	0.00142	0.00059
	55°C/Normal Voltage	0.00088	-0.00086
	20°C/Min Voltage	0.00156	0.00069
	20°C/Max Voltage	-0.00072	0.00133
5MHz	-30°C/Normal Voltage	0.00177	-0.00027
	-20°C/Normal Voltage	-0.00068	-0.00017
	-10°C/Normal Voltage	0.00072	0.00121
	0°C/Normal Voltage	0.00100	0.00158
	10°C/Normal Voltage	0.00232	0.00108
	20°C/Normal Voltage	0.00214	0.00144
	30°C/Normal Voltage	-0.00043	0.00215
	40°C/Normal Voltage	-0.00096	0.00201
	50°C/Normal Voltage	-0.00069	-0.00053
	55°C/Normal Voltage	0.00167	-0.00088
	20°C/Min Voltage	0.00122	0.00196
	20°C/Max Voltage	0.00178	0.00148

10MHz	-30°C/Normal Voltage	-0.00174	0.00136
	-20°C/Normal Voltage	-0.00016	0.00188
	-10°C/Normal Voltage	-0.00067	0.00083
	0°C/Normal Voltage	0.00046	0.00225
	10°C/Normal Voltage	0.00101	-0.00036
	20°C/Normal Voltage	0.00163	0.00083
	30°C/Normal Voltage	-0.00107	0.00199
	40°C/Normal Voltage	-0.00027	-0.00096
	50°C/Normal Voltage	0.00243	0.00267
	55°C/Normal Voltage	0.00017	-0.00009
	20°C/Min Voltage	0.00149	0.00147
	20°C/Max Voltage	-0.00009	-0.00016
15MHz	-30°C/Normal Voltage	0.00063	0.00114
	-20°C/Normal Voltage	0.00044	-0.00047
	-10°C/Normal Voltage	-0.00014	0.00115
	0°C/Normal Voltage	-0.00021	0.00178
	10°C/Normal Voltage	0.00083	0.00140
	20°C/Normal Voltage	0.00037	0.00115
	30°C/Normal Voltage	0.00077	0.00066
	40°C/Normal Voltage	0.00207	-0.00031
	50°C/Normal Voltage	-0.00025	-0.00032
	55°C/Normal Voltage	0.00061	-0.00071
	20°C/Min Voltage	-0.00031	0.00196
	20°C/Max Voltage	0.00027	0.00283
20MHz	-30°C/Normal Voltage	0.00140	0.00273
	-20°C/Normal Voltage	-0.00137	0.00040
	-10°C/Normal Voltage	-0.00059	-0.00058
	0°C/Normal Voltage	0.00111	0.00169
	10°C/Normal Voltage	-0.00184	0.00059
	20°C/Normal Voltage	-0.00053	0.00032
	30°C/Normal Voltage	0.00092	-0.00050
	40°C/Normal Voltage	-0.00002	-0.00231
	50°C/Normal Voltage	0.00230	0.00159
	55°C/Normal Voltage	0.00146	0.00010
	20°C/Min Voltage	0.00071	0.00028
	20°C/Max Voltage	-0.00053	0.00174

Bandwidth	Test status	LTE Band 7 Channel 21100 Test Results (ppm)	
		QPSK	16QAM
5MHz	-30°C/Normal Voltage	-0.00021	-0.00047
	-20°C/Normal Voltage	-0.00148	-0.00299
	-10°C/Normal Voltage	0.00000	0.00097
	0°C/Normal Voltage	-0.00242	-0.00164
	10°C/Normal Voltage	0.00025	-0.00114
	20°C/Normal Voltage	0.00011	0.00043
	30°C/Normal Voltage	-0.00046	-0.00112
	40°C/Normal Voltage	0.00028	-0.00090
	50°C/Normal Voltage	0.00011	-0.00119
	55°C/Normal Voltage	-0.00069	-0.00121
	20°C/Min Voltage	-0.00116	-0.00250
	20°C/Max Voltage	-0.00153	-0.00201
10MHz	-30°C/Normal Voltage	0.00093	0.00026
	-20°C/Normal Voltage	-0.00165	-0.00157
	-10°C/Normal Voltage	-0.00215	0.00008
	0°C/Normal Voltage	-0.00049	-0.00063
	10°C/Normal Voltage	-0.00070	-0.00229
	20°C/Normal Voltage	-0.00017	-0.00178
	30°C/Normal Voltage	-0.00241	-0.00108
	40°C/Normal Voltage	-0.00156	-0.00127
	50°C/Normal Voltage	0.00004	-0.00002
	55°C/Normal Voltage	-0.00290	-0.00141
	20°C/Min Voltage	-0.00021	-0.00025
	20°C/Max Voltage	-0.00030	-0.00059
15MHz	-30°C/Normal Voltage	-0.00133	-0.00099
	-20°C/Normal Voltage	-0.00204	-0.00195
	-10°C/Normal Voltage	-0.00101	0.00017
	0°C/Normal Voltage	-0.00065	-0.00129
	10°C/Normal Voltage	-0.00038	0.00025
	20°C/Normal Voltage	0.00109	0.00009
	30°C/Normal Voltage	-0.00033	-0.00015
	40°C/Normal Voltage	-0.00073	-0.00203
	50°C/Normal Voltage	-0.00097	-0.00064
	55°C/Normal Voltage	-0.00151	-0.00027
	20°C/Min Voltage	-0.00088	-0.00060
	20°C/Max Voltage	-0.00150	-0.00068

20MHz	-30°C/Normal Voltage	-0.00188	-0.00060
	-20°C/Normal Voltage	-0.00047	-0.00233
	-10°C/Normal Voltage	-0.00066	0.00002
	0°C/Normal Voltage	-0.00158	-0.00101
	10°C/Normal Voltage	0.00006	-0.00069
	20°C/Normal Voltage	-0.00033	-0.00217
	30°C/Normal Voltage	-0.00069	-0.00187
	40°C/Normal Voltage	-0.00148	-0.00056
	50°C/Normal Voltage	0.00050	-0.00131
	55°C/Normal Voltage	-0.00034	0.00013
	20°C/Min Voltage	-0.00180	-0.00047
	20°C/Max Voltage	-0.00118	-0.00173

Bandwidth	Test status	LTE Band 12 Channel 23095 Test Results (ppm)	
		QPSK	16QAM
1.4M	-30°C/Normal Voltage	-0.00218	0.00370
	-20°C/Normal Voltage	0.00079	0.00206
	-10°C/Normal Voltage	-0.00342	0.00459
	0°C/Normal Voltage	0.00212	-0.00095
	10°C/Normal Voltage	0.00037	0.00198
	20°C/Normal Voltage	-0.00095	0.00141
	30°C/Normal Voltage	-0.00035	-0.00123
	40°C/Normal Voltage	-0.00141	-0.00212
	50°C/Normal Voltage	-0.00113	-0.00160
	55°C/Normal Voltage	-0.00023	-0.00055
	20°C/Min Voltage	0.00212	-0.00066
	20°C/Max Voltage	-0.00283	0.00052
3M	-30°C/Normal Voltage	0.00310	0.00382
	-20°C/Normal Voltage	-0.00062	-0.00004
	-10°C/Normal Voltage	-0.00254	0.00250
	0°C/Normal Voltage	-0.00028	0.00318
	10°C/Normal Voltage	-0.00324	-0.00088
	20°C/Normal Voltage	-0.00295	-0.00034
	30°C/Normal Voltage	0.00140	-0.00196
	40°C/Normal Voltage	0.00113	-0.00351
	50°C/Normal Voltage	0.00155	-0.00277
	55°C/Normal Voltage	0.00414	0.00161
	20°C/Min Voltage	0.00527	0.00451
	20°C/Max Voltage	0.00072	0.00222

5MHz	-30°C/Normal Voltage	0.00168	0.00225
	-20°C/Normal Voltage	0.00178	-0.00023
	-10°C/Normal Voltage	-0.00314	0.00165
	0°C/Normal Voltage	0.00058	-0.00154
	10°C/Normal Voltage	-0.00348	0.00119
	20°C/Normal Voltage	-0.00061	0.00044
	30°C/Normal Voltage	-0.00082	-0.00151
	40°C/Normal Voltage	0.00180	0.00328
	50°C/Normal Voltage	0.00164	0.00123
	55°C/Normal Voltage	0.00290	-0.00099
	20°C/Min Voltage	0.00119	-0.00024
	20°C/Max Voltage	-0.00187	0.00088
10MHz	-30°C/Normal Voltage	0.00362	-0.00033
	-20°C/Normal Voltage	0.00271	0.00030
	-10°C/Normal Voltage	0.00133	0.00061
	0°C/Normal Voltage	0.00267	-0.00376
	10°C/Normal Voltage	-0.00269	0.00160
	20°C/Normal Voltage	-0.00024	0.00267
	30°C/Normal Voltage	0.00116	-0.00066
	40°C/Normal Voltage	0.00081	0.00766
	50°C/Normal Voltage	-0.00263	0.00116
	55°C/Normal Voltage	-0.00144	-0.00127
	20°C/Min Voltage	-0.00396	-0.00122
	20°C/Max Voltage	0.00349	-0.00109

Bandwidth	Test status	LTE Band 66 Channel 132322 Test Results(ppm)	
		QPSK	16QAM
1.4MHz	-30°C/Normal Voltage	-0.00030	-0.00068
	-20°C/Normal Voltage	-0.00215	-0.00434
	-10°C/Normal Voltage	-0.00001	0.00142
	0°C/Normal Voltage	-0.00352	-0.00238
	10°C/Normal Voltage	-0.00101	-0.00333
	20°C/Normal Voltage	-0.00025	-0.00258
	30°C/Normal Voltage	-0.00351	-0.00158
	40°C/Normal Voltage	-0.00227	-0.00185
	50°C/Normal Voltage	0.00005	-0.00002
	55°C/Normal Voltage	0.00017	-0.00015
	20°C/Min Voltage	0.00148	-0.00148
	20°C/Max Voltage	-0.00012	-0.00030

3MHz	-30°C/Normal Voltage	0.00170	0.00199
	-20°C/Normal Voltage	-0.00023	-0.00064
	-10°C/Normal Voltage	0.00126	0.00010
	0°C/Normal Voltage	0.00135	0.00011
	10°C/Normal Voltage	-0.00006	-0.00090
	20°C/Normal Voltage	0.00132	0.00138
	30°C/Normal Voltage	0.00037	-0.00002
	40°C/Normal Voltage	0.00144	-0.00025
	50°C/Normal Voltage	-0.00091	0.00149
	55°C/Normal Voltage	0.00227	-0.00052
	20°C/Min Voltage	-0.00023	-0.00119
	20°C/Max Voltage	-0.00059	-0.00015
5MHz	-30°C/Normal Voltage	-0.00067	-0.00017
	-20°C/Normal Voltage	0.00071	0.00120
	-10°C/Normal Voltage	0.00099	0.00156
	0°C/Normal Voltage	0.00230	0.00107
	10°C/Normal Voltage	0.00213	0.00143
	20°C/Normal Voltage	0.00093	-0.00093
	30°C/Normal Voltage	0.00116	-0.00064
	40°C/Normal Voltage	0.00038	0.00143
	50°C/Normal Voltage	0.00002	-0.00029
	55°C/Normal Voltage	0.00112	0.00139
	20°C/Min Voltage	0.00065	0.00070
	20°C/Max Voltage	-0.00045	0.00107
10MHz	-30°C/Normal Voltage	-0.00066	0.00082
	-20°C/Normal Voltage	0.00045	0.00223
	-10°C/Normal Voltage	0.00100	-0.00036
	0°C/Normal Voltage	0.00162	0.00083
	10°C/Normal Voltage	-0.00107	0.00198
	20°C/Normal Voltage	-0.00027	-0.00130
	30°C/Normal Voltage	0.00152	0.00017
	40°C/Normal Voltage	-0.00108	0.00071
	50°C/Normal Voltage	-0.00121	0.00134
	55°C/Normal Voltage	0.00048	-0.00071
	20°C/Min Voltage	0.00015	0.00036
	20°C/Max Voltage	-0.00189	-0.00044
15MHz	-30°C/Normal Voltage	-0.00139	0.00186
	-20°C/Normal Voltage	0.00086	-0.00038
	-10°C/Normal Voltage	0.00015	0.00080
	0°C/Normal Voltage	-0.00038	0.00057

	10°C/Normal Voltage	-0.00014	-0.00050
	20°C/Normal Voltage	-0.00057	-0.00086
	30°C/Normal Voltage	-0.00046	-0.00065
	40°C/Normal Voltage	-0.00002	0.00142
	50°C/Normal Voltage	-0.00183	0.00015
	55°C/Normal Voltage	-0.00058	-0.00083
	20°C/Min Voltage	0.00038	-0.00046
	20°C/Max Voltage	0.00166	-0.00127
20MHz	-30°C/Normal Voltage	-0.00100	-0.00097
	-20°C/Normal Voltage	0.00021	0.00015
	-10°C/Normal Voltage	-0.00065	-0.00111
	0°C/Normal Voltage	0.00034	-0.00211
	10°C/Normal Voltage	-0.00191	-0.00201
	20°C/Normal Voltage	-0.00097	-0.00154
	30°C/Normal Voltage	-0.00192	-0.00029
	40°C/Normal Voltage	-0.00263	0.00113
	50°C/Normal Voltage	-0.00017	-0.00103
	55°C/Normal Voltage	0.00088	-0.00109
	20°C/Min Voltage	0.00067	0.00006
	20°C/Max Voltage	0.00038	0.00164

5.7 Spurious Emissions at Antenna Terminals

Ambient condition

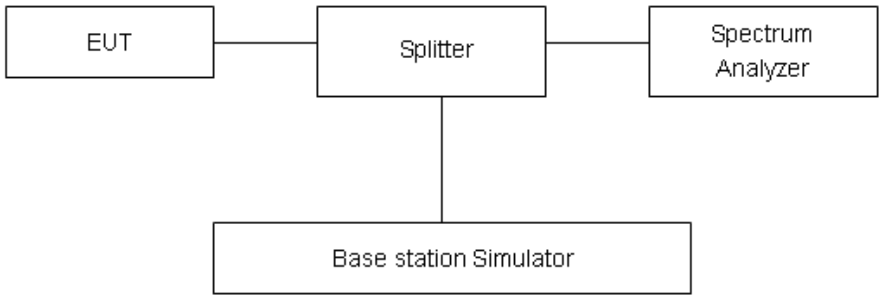
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. Set RBW 1MHz and VBW 3MHz， Sweep is set to ATUO.

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

Test setup



Limits

LTE -4/66 Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB..”

LTE -12 Rule Part 27.53 (g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

Rule Part 27.53(m) 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-18GHz	1.407 dB

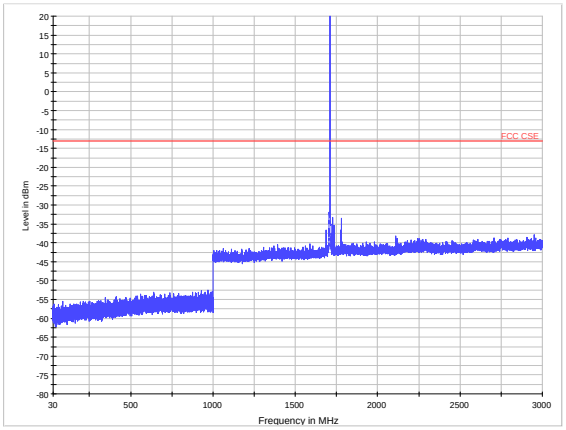
Test Result

Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

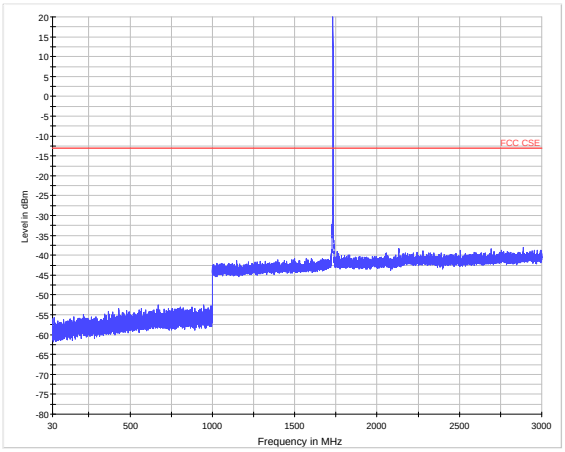
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.

The signal beyond the limit is carrier.

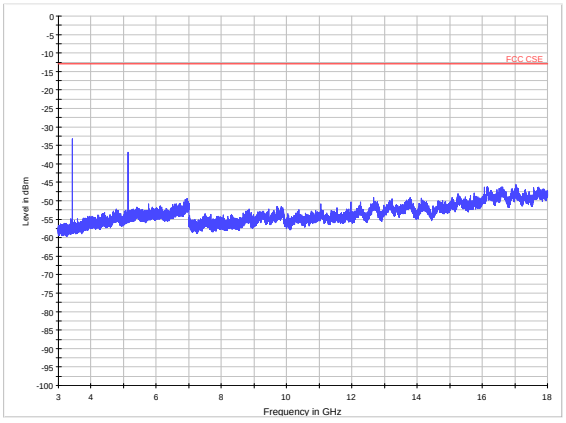
LTE Band 4 1.4MHz CH-Low 30MHz~3GHz



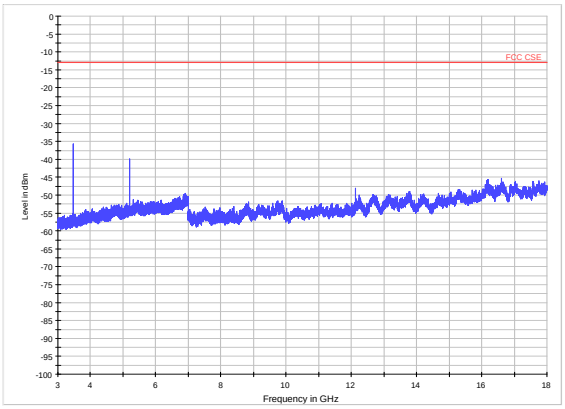
LTE Band 4 1.4MHz CH-Middle30MHz~3GHz



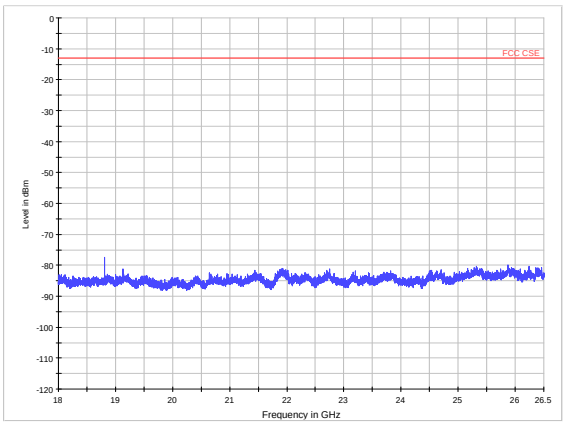
LTE Band 4 1.4MHz CH-Low 3GHz~18GHz



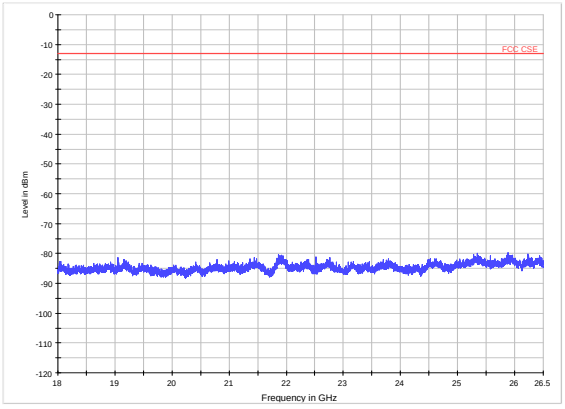
LTE Band 4 1.4MHz CH-Middle 3GHz~18GHz



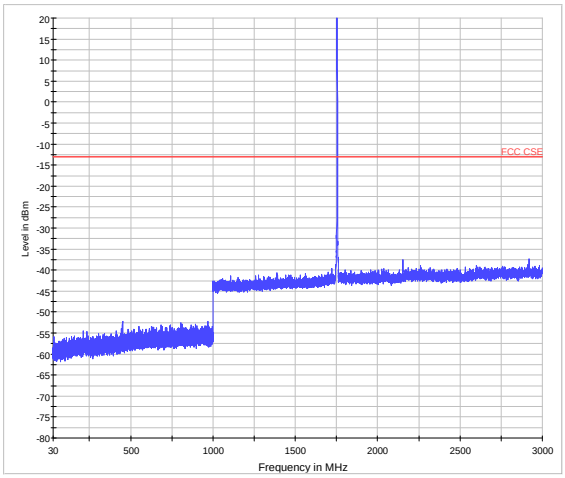
LTE Band 4 1.4MHz CH-Low 18GHz ~26.5GHz



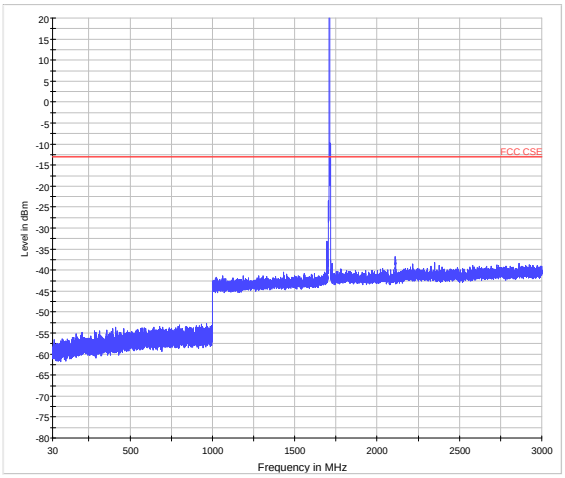
LTE Band 4 1.4MHz CH-Middle 18GHz~26.5GHz



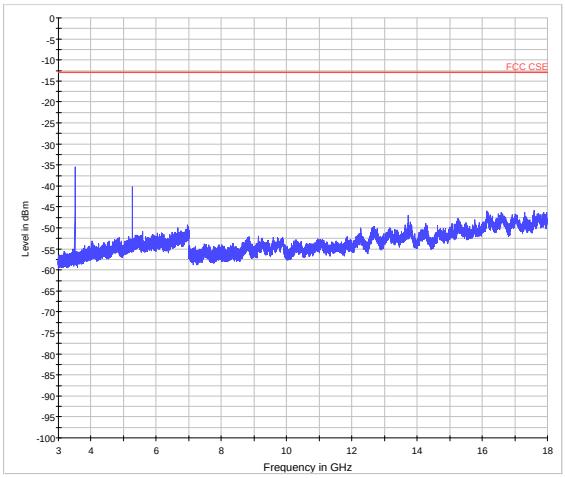
LTE Band 4 1.4MHz CH-High 30MHz~3GHz



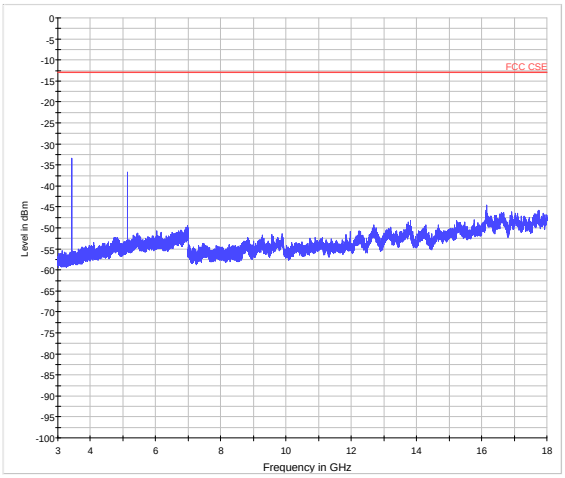
LTE Band 4 3MHz CH-Low 30MHz~3GHz



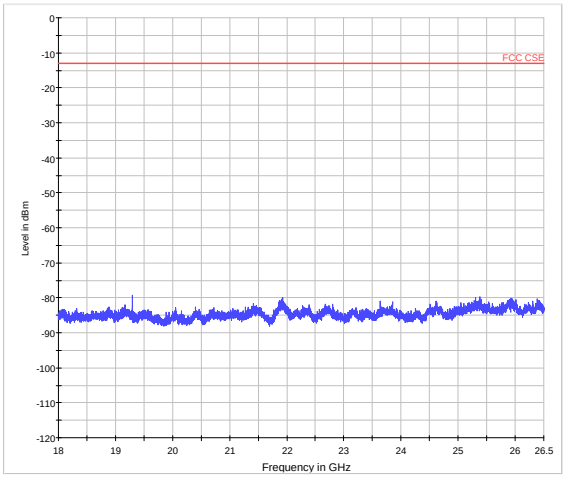
LTE Band 4 1.4MHz CH-High 3GHz~18GHz



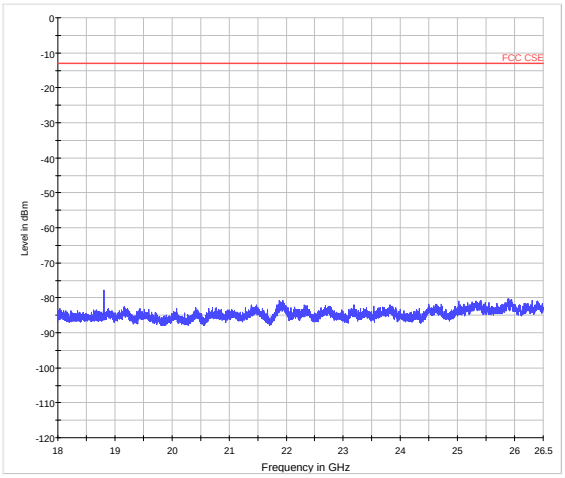
LTE Band 4 3MHz CH-Low 3GHz~18GHz



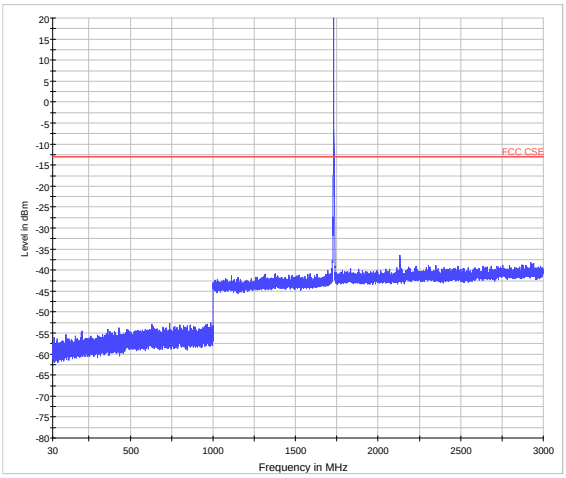
LTE Band 4 1.4MHz CH-High 18GHz ~26.5GHz



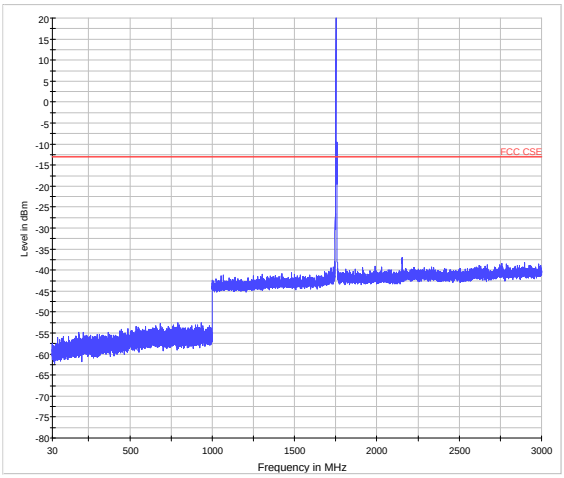
LTE Band 4 3MHz CH-Low 18GHz ~26.5GHz



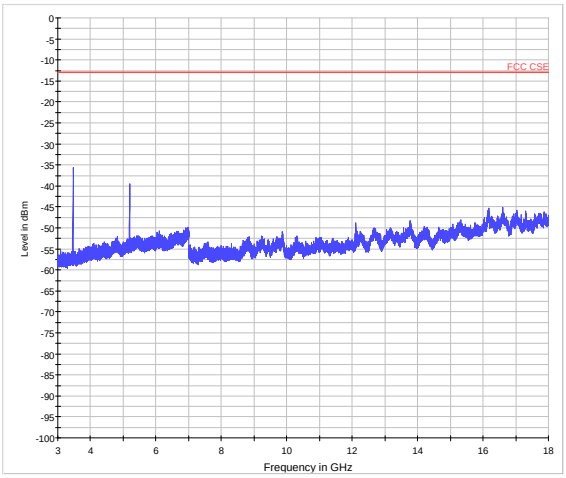
LTE Band 4 3MHz CH-Middle30MHz~3GHz



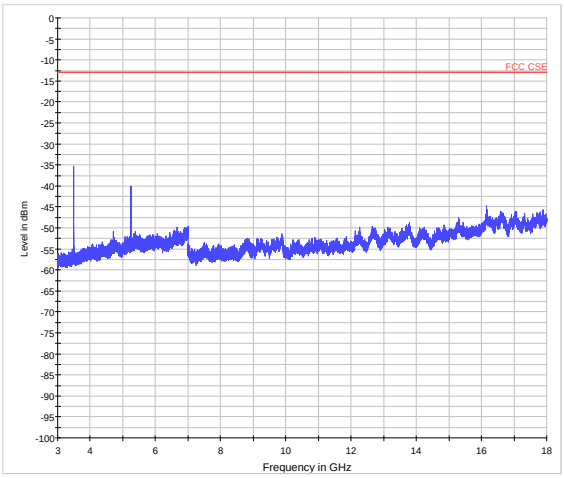
LTE Band 4 3MHz CH-High 30MHz~3GHz



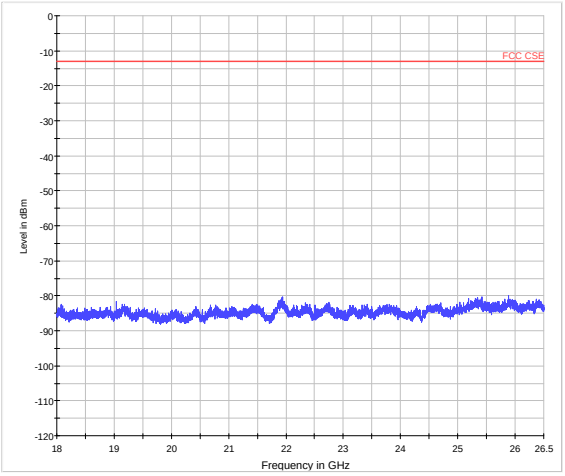
LTE Band 4 3MHz CH-Middle 3GHz~18GHz



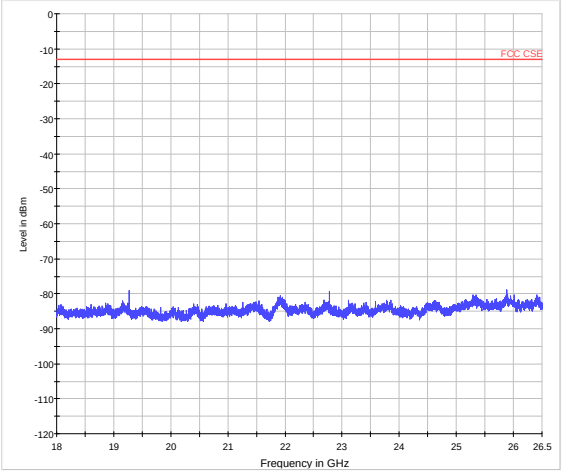
LTE Band 4 3MHz CH-High 3GHz~18GHz



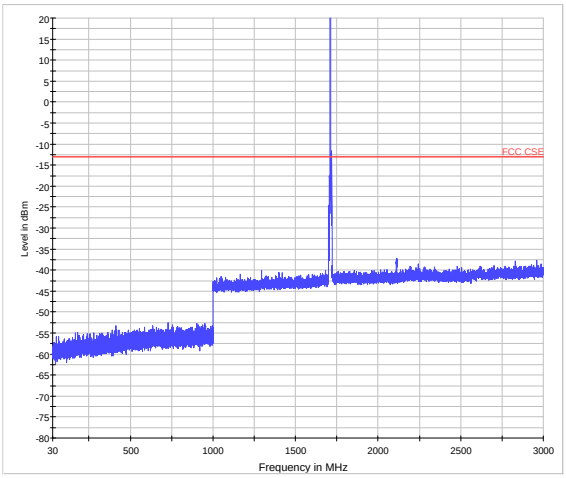
LTE Band 4 3MHz CH-Middle 18GHz~26.5GHz



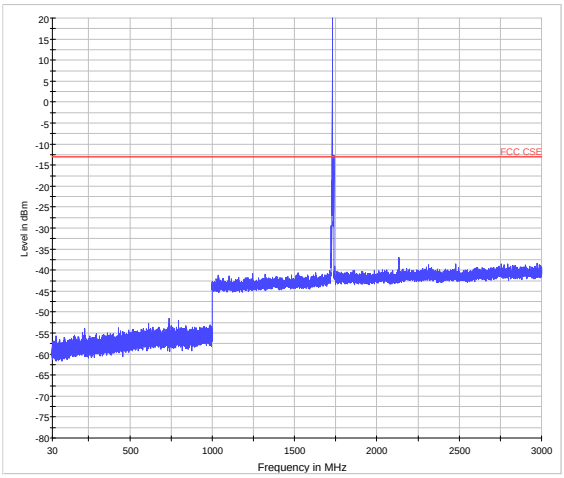
LTE Band 4 3MHz CH-High 18GHz ~26.5GHz



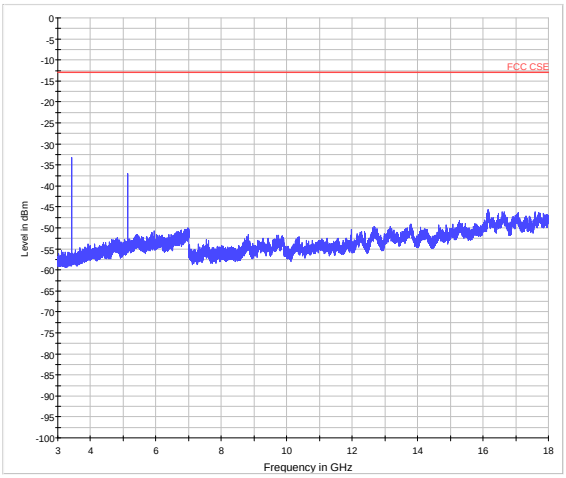
LTE Band 4 5MHz CH-Low 30MHz~3GHz



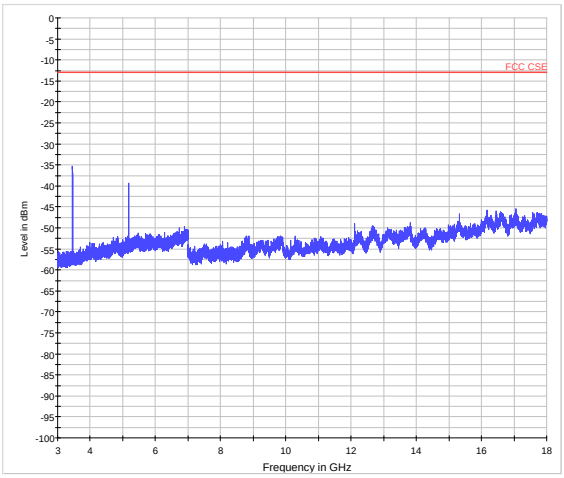
LTE Band 4 5MHz CH-Middle30MHz~3GHz



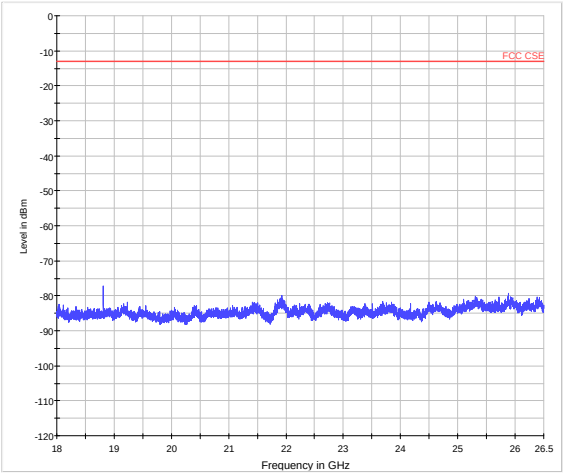
LTE Band 4 5MHz CH-Low 3GHz~18GHz



LTE Band 4 5MHz CH-Middle 3GHz~18GHz



LTE Band 4 5MHz CH-Low 18GHz ~26.5GHz



LTE Band 4 5MHz CH-Middle 18GHz~26.5GHz