RF TEST REPORT

Applicant	ZTE Corporation
FCC ID	SRQ-MF985U
Product	LTE UFI
Model	MF985U
Report No.	RXA1712-0441RF02
Issue Date	January 29, 2018

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2017)**/ **FCC CFR 47 Part 24E (2017)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Jiangpeng Lan	*Approved by: Kai Xu*

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

TABLE OF CONTENT

1. Test Laboratory 4
1.1. Notes of the test report 4
1.2. Test facility 4
1.3. Testing Location 5
2. General Description of Equipment under Test 6
3. Applied Standards 8
4. Test Configuration 9
5. Test Case Results 10
5.1. RF Power Output 10
5.2. Effective Isotropic Radiated Power 19
5.3. Occupied Bandwidth 24
5.4. Band Edge Compliance 40
5.5. Peak-to-Average Power Ratio (PAPR) 57
5.6. Frequency Stability 60
5.7. Spurious Emissions at Antenna Terminals 66
5.8. Radiates Spurious Emission 85
6. Main Test Instruments 105

Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF power output	2.1046	PASS
2	Effective Isotropic Radiated power	24.232(c)	PASS
3	Occupied Bandwidth	2.1049	PASS
4	Band Edge Compliance	2.1051 /24.238(a)	PASS
5	Peak-to-Average Power Ratio	24.232/KDB 971168 D01(5.7)	PASS
6	Frequency Stability	2.1055 / 24.235	PASS
7	Spurious Emissions at Antenna Terminals	2.1051 / 24.238(a)	PASS
8	Radiates Spurious Emission	2.1053 / 24.238(a)	PASS
Date of Testing: December 26, 2017 ~ January 18, 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
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

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	MF985U		
IMEI	99000897000163		
Hardware Version	MF985UHW1.0		
Software Version	USCC_US_MF985UV1.0.0B02		
Power Supply	Battery/AC adapter		
Antenna Type	Internal Antenna		
Test Mode(s)	LTE Band 2/25;		
Test Modulation	QPSK,16QAM		
LTE Category	9		
Maximum E.I.R.P	LTE Band 2:	20.14dBm	
	LTE Band 25:	20.36dBm	
Rated Power Supply Voltage	3.85V		
Extreme Voltage	Minimum: 3.4V Maximum: 4.4V		
Extreme Temperature	Lowest: -20°C Highest: +55°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 25	1850 ~ 1915	1930 ~ 1995
EUT Accessory			
Adapter 1	Manufacturer: SHENZHEN RUIJING INDUSTRIAL CO LTD Model: STC-A515A-Z		
Adapter 2	Manufacturer: Jiangsu Chenyang Electron Co., Ltd. Model: STC-A515A-Z		
Adapter 3	Manufacturer: Shenzhen Dokocom Energy Technology Co., Ltd. Model: STC-A515A-Z		

Battery	Manufacturer: ARBIN COSLIGHT POWER CO LTD Model: Li3930T44P4h794659
USB Cable 1	Manufacturer: LUXSHARE-ICT 100cm Cable, Shielded
USB Cable 2	Manufacturer: kingpower-tech 100cm Cable, Shielded
Note: The information of the EUT is declared by the manufacturer. 2. There is more than one USB cable/one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (USB cable 1/ Adapter 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:

FCC CFR47 Part 2 (2017)

FCC CFR 47 Part 24E (2017)

ANSI/TIA-603-E (2016)

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.

Test modes are chosen to be reported as the worst case configuration below for LTE Band 2/25:

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

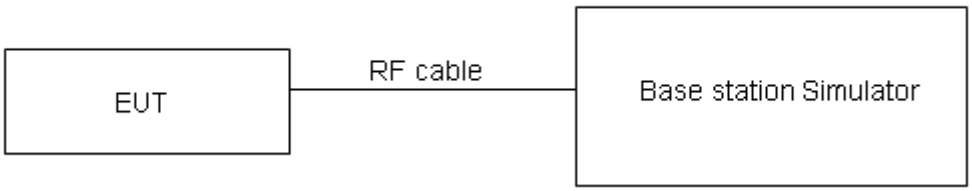
Ambient condition

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 2				Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18607/1850.7	18900/1880	19193/1909.3
1.4MHz	QPSK	1	0	22.68	22.75	22.94
		1	2	22.74	22.79	22.92
		1	5	22.47	22.67	23.07
		3	0	22.70	22.71	23.05
		3	2	22.77	22.74	23.06
		3	3	22.67	22.68	23.01
		6	0	21.74	21.79	22.01
	16QAM	1	0	21.81	21.82	22.13
		1	2	21.89	21.86	22.39
		1	5	21.89	21.97	22.14
		3	0	21.75	21.79	22.13
		3	2	21.84	21.77	22.15
		3	3	21.73	21.81	22.04
		6	0	20.84	20.91	21.16
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18615/1851.5	18900/1880	19185/1908.5
3MHz	QPSK	1	0	22.87	22.90	22.96
		1	7	22.65	22.72	22.86
		1	14	22.92	23.02	23.01
		8	0	21.74	21.73	21.94
		8	4	21.67	21.75	21.87
		8	7	21.76	21.75	21.97
		15	0	21.84	21.78	21.98
	16QAM	1	0	21.87	21.93	21.91
		1	7	21.89	21.93	22.02
		1	14	21.82	21.87	22.04
		8	0	20.73	20.69	20.90
		8	4	20.81	20.78	21.01
		8	7	20.80	20.70	20.93
		15	0	20.72	20.73	20.98
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18625/1852.5	18900/1880	19175/1907.5
5MHz	QPSK	1	0	22.84	22.88	22.92
		1	13	22.63	22.68	22.83
		1	24	22.89	22.97	22.97

		12	0	21.71	21.68	21.90
		12	6	21.65	21.71	21.82
		12	13	21.74	21.73	21.93
		25	0	21.82	21.77	21.96
	16QAM	1	0	21.84	21.89	21.88
		1	13	21.86	21.91	21.99
		1	24	21.79	21.85	22.00
		12	0	20.71	20.65	20.87
		12	6	20.78	20.73	20.97
		12	13	20.77	20.65	20.89
		25	0	20.70	20.69	20.93
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18650/1855	18900/1880	19150/1905
10MHz	QPSK	1	0	22.86	22.89	22.95
		1	25	22.66	22.73	22.87
		1	49	22.91	23.01	23.00
		25	0	21.74	21.73	21.94
		25	13	21.68	21.76	21.86
		25	25	21.76	21.77	21.98
		50	0	21.90	21.79	22.00
	16QAM	1	0	21.86	21.92	21.90
		1	25	21.89	21.95	22.02
		1	49	21.82	21.87	22.03
		25	0	20.74	20.70	20.91
		25	13	20.80	20.77	21.00
		25	25	20.80	20.70	20.93
		50	0	20.73	20.74	20.97
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18675/1857.5	18900/1880	19125/1902.5
15MHz	QPSK	1	0	22.85	22.85	22.93
		1	38	22.64	22.72	22.84
		1	74	22.88	22.96	22.96
		36	0	21.72	21.69	21.91
		36	18	21.65	21.71	21.82
		36	39	21.73	21.74	21.94
		75	0	21.88	21.75	21.95
	16QAM	1	0	21.81	21.90	21.88
		1	38	21.87	21.92	22.00
		1	74	21.79	21.83	22.00
		36	0	20.71	20.68	20.88

		36	18	20.77	20.72	20.96
		36	39	20.78	20.66	20.90
		75	0	20.70	20.69	20.93
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				18700/1860	18900/1880	19100/1900
20MHz	QPSK	1	0	22.82	22.81	22.90
		1	50	22.63	22.68	22.82
		1	99	22.86	22.95	22.93
		50	0	21.69	21.64	21.87
		50	25	21.63	21.67	21.79
		50	50	21.70	21.69	21.90
		100	0	21.85	21.70	21.91
	16QAM	1	0	21.79	21.86	21.83
		1	50	21.83	21.90	21.96
		1	99	21.77	21.80	21.98
		50	0	20.68	20.64	20.85
		50	25	20.74	20.70	20.93
		50	50	20.75	20.61	20.86
		100	0	20.68	20.65	20.90

LTE Band 25				Average Conducted Power(dBm)		
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26047/1850.7	26365/1882.5	26683/1914.3
1.4MHz	QPSK	1	0	22.64	22.53	22.34
		1	2	22.58	22.72	22.65
		1	5	22.45	22.59	22.51
		3	0	22.75	22.57	22.73
		3	2	22.69	22.62	22.64
		3	3	22.70	22.70	22.69
		6	0	21.79	21.75	21.80
	16QAM	1	0	21.92	21.83	21.83
		1	2	22.11	21.86	21.91
		1	5	21.91	21.91	21.69
		3	0	21.80	21.68	21.76
		3	2	21.92	21.81	21.84
		3	3	21.86	21.73	21.72
		6	0	21.02	20.66	20.85
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26055/1851.5	26365/1882.5	26675/1913.5
3MHz	QPSK	1	0	22.27	22.26	22.08
		1	7	21.44	21.43	22.05
		1	14	22.01	21.63	22.22
		8	0	21.06	20.97	21.27
		8	4	20.53	20.60	21.16
		8	7	20.78	20.55	20.89
		15	0	20.82	20.80	21.06
	16QAM	1	0	21.76	21.76	21.72
		1	7	20.84	20.82	20.77
		1	14	21.06	20.90	20.98
		8	0	19.97	19.86	19.90
		8	4	19.42	19.46	19.49
		8	7	19.67	19.53	19.64
		15	0	19.72	19.65	19.86
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26065/1852.5	26365/1882.5	26665/1912.5
5MHz	QPSK	1	0	22.24	22.24	22.04
		1	13	21.42	21.39	22.02
		1	24	21.98	21.58	22.18
		12	0	21.03	20.92	21.23

		12	6	20.51	20.56	21.11
		12	13	20.76	20.53	20.85
		25	0	20.80	20.79	21.04
	16QAM	1	0	21.73	21.72	21.69
		1	13	20.81	20.80	20.74
		1	24	21.03	20.88	20.94
		12	0	19.95	19.82	19.87
		12	6	19.39	19.41	19.45
		12	13	19.64	19.48	19.60
		25	0	19.70	19.61	19.81
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26090/1855	26365/1882.5	26640/1910
10MHz	QPSK	1	0	22.26	22.25	22.07
		1	25	21.45	21.44	22.06
		1	49	22.00	21.62	22.21
		25	0	21.06	20.97	21.27
		25	13	20.54	20.61	21.15
		25	25	20.78	20.57	20.90
		50	0	20.88	20.81	21.08
	16QAM	1	0	21.75	21.75	21.71
		1	25	20.84	20.84	20.77
		1	49	21.06	20.90	20.97
		25	0	19.98	19.87	19.91
		25	13	19.41	19.45	19.48
		25	25	19.67	19.53	19.64
		50	0	19.73	19.66	19.85
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26115/1857.5	26365/1882.5	26615/1907.5
15MHz	QPSK	1	0	22.25	22.21	22.05
		1	25	21.43	21.43	22.03
		1	49	21.97	21.57	22.17
		25	0	21.04	20.93	21.24
		25	13	20.51	20.56	21.11
		25	25	20.75	20.54	20.86
		50	0	20.86	20.77	21.03
	16QAM	1	0	21.70	21.73	21.69
		1	25	20.82	20.81	20.75
		1	49	21.03	20.86	20.94
		25	0	19.95	19.85	19.88
		25	13	19.38	19.40	19.44

		25	25	19.65	19.49	19.61
		50	0	19.70	19.61	19.81
Bandwidth	Modulation	RB size	RB offset	Channel/Frequency (MHz)		
				26140/1860	26365/1882.5	26590/1905
20MHz	QPSK	1	0	22.22	22.17	22.02
		1	50	21.42	21.39	22.01
		1	99	21.95	21.56	22.14
		50	0	21.01	20.88	21.20
		50	25	20.49	20.52	21.08
		50	50	20.72	20.49	20.82
		100	0	20.83	20.72	20.99
	16QAM	1	0	21.68	21.69	21.64
		1	50	20.78	20.79	20.71
		1	99	21.01	20.83	20.92
		50	0	19.92	19.81	19.85
		50	25	19.35	19.38	19.41
		50	50	19.62	19.44	19.57
		100	0	19.68	19.57	19.78

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_2A-2A	2	5	1	24	18625	625	2	20	1100	22.42	22.37	-0.05
	2	10	1	49	18650	650	2	20	1100	22.33	22.41	0.08
	2	15	1	74	18675	675	2	20	1100	22.41	22.50	0.09
	2	20	1	99	18700	700	2	20	1100	22.43	22.40	-0.03
CA_2A-4A	2	5	1	24	18900	900	4	20	2300	22.97	23.10	0.13
	2	10	1	49	18900	900	4	20	2300	23.01	23.12	0.11
	2	15	1	74	18900	900	4	20	2300	22.96	23.09	0.13
	2	20	1	99	18900	900	4	20	2300	22.95	23.09	0.14
	4	5	1	13	20375	2375	2	20	900	22.42	22.56	0.14
	4	10	1	25	20350	2350	2	20	900	22.46	22.58	0.12
	4	15	1	38	20325	2325	2	20	900	22.43	22.59	0.16
	4	20	1	50	20300	2300	2	20	900	22.41	22.63	0.22
CA_2A-5A	2	5	1	24	18900	900	5	10	2600	22.97	23.12	0.15
	2	10	1	49	18900	900	5	10	2600	23.01	23.18	0.17
	2	15	1	74	18900	900	5	10	2600	22.96	23.09	0.13
	2	20	1	99	18900	900	5	10	2600	22.95	23.11	0.16
	5	5	1	24	20625	2625	2	20	900	23.49	23.56	0.07
	5	10	1	49	20600	2600	2	20	900	23.45	23.63	0.18
CA_2A-12A	2	5	1	24	18900	900	12	10	5130	22.97	22.98	0.01
	2	10	1	49	18900	900	12	10	5130	23.01	23.09	0.08
	2	15	1	74	18900	900	12	10	5130	22.96	23.11	0.15
	2	20	1	99	18900	900	12	10	5130	22.95	23.10	0.15
	12	3	1	14	23165	5165	2	20	900	23.63	23.70	0.07
	12	5	1	24	23155	5155	2	20	900	23.59	23.65	0.06
	12	10	1	49	23130	5130	2	20	900	23.55	23.54	-0.01

DL LTE CA Class	PCC						SCC1			SCC2			Power(dBm)		
	PCC Band	PCC Bandwidth (MHz)	PCC UL RB size	PCC UL RB offset	PCC UL Channel	PCC DL Channel	SCC1 Band	SCC1 Bandwidth (MHz)	SCC1 DL Channel	SCC2 Band	SCC2 Bandwidth (MHz)	SCC2 DL Channel	Standalone	CA active	Delta
CA_2A-2A-12A	2	5	1	24	18900	900	2	20	900	12	10	5130	22.43	22.34	-0.09
	2	10	1	49	18900	900	2	20	900	12	10	5130	22.35	22.40	0.05
	2	15	1	74	18900	900	2	20	900	12	10	5130	22.44	22.48	0.04
	2	20	1	99	18900	900	2	20	900	12	10	5130	22.44	22.37	-0.07
	12	10	1	24	23130	5130	2	20	900	2	20	900	23.61	23.64	0.03
	12	10	1	49	23130	5130	2	20	900	2	20	900	23.58	23.52	-0.06
CA_2A-4A-5A	2	5	1	24	18900	900	4	20	2300	5	10	2600	22.43	22.34	-0.09
	2	10	1	49	18900	900	4	20	2300	5	10	2600	22.35	22.40	0.05
	2	15	1	74	18900	900	4	20	2300	5	10	2600	22.44	22.48	0.04
	2	20	1	99	18900	900	4	20	2300	5	10	2600	22.44	22.37	-0.07
	4	5	1	13	20375	2375	2	20	900	5	10	2600	22.44	22.55	0.11
	4	10	1	25	20350	2350	2	20	900	5	10	2600	22.49	22.56	0.07
	4	15	1	38	20325	2325	2	20	900	5	10	2600	22.44	22.56	0.12
	4	20	1	50	20300	2300	2	20	900	5	10	2600	22.43	22.62	0.19
	5	5	1	24	20625	2625	2	20	900	4	20	2300	23.52	23.54	0.02
	5	10	1	49	20600	2600	2	20	900	4	20	2300	23.47	23.60	0.13
CA_2A-2A-5A	2	5	1	24	18900	900	2	20	900	5	10	2600	22.45	22.36	-0.09
	2	10	1	49	18900	900	2	20	900	5	10	2600	22.34	22.39	0.05
	2	15	1	74	18900	900	2	20	900	5	10	2600	22.43	22.47	0.04
	2	20	1	99	18900	900	2	20	900	5	10	2600	22.46	22.38	-0.08
	5	5	1	24	20625	2625	2	20	900	2	20	900	23.50	23.53	0.03
	5	10	1	49	20600	2600	2	20	900	2	20	900	23.47	23.62	0.15

5.2. Effective Isotropic Radiated Power

Ambient condition

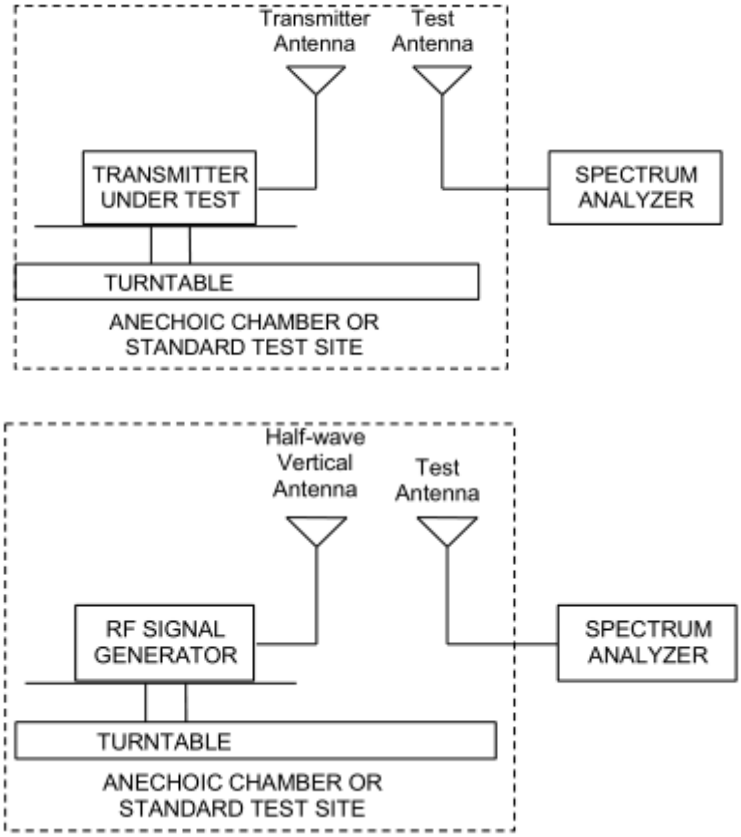
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI/TIA-603-E (2016).

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



Limits

Rule Part 24.232(c) Mobile and portable stations are limited to 2 watts EIRP.
Rule Part 24.232(e) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

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 2									
bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	Low	1850.7	Horizontal	-37.33	-54.89	1.90	19.45	33	Pass
	Mid	1880	Horizontal	-39.06	-56.66	1.92	19.52	33	Pass
	High	1909.3	Horizontal	-40.65	-58.09	1.91	19.35	33	Pass
3 MHz (QPSK)	Low	1851.5	Horizontal	-37.41	-54.93	1.91	19.43	33	Pass
	Mid	1880	Horizontal	-39.57	-56.66	1.94	19.04	33	Pass
	High	1908.5	Horizontal	-40.68	-58.08	1.91	19.31	33	Pass
5 MHz (QPSK)	Low	1852.5	Horizontal	-37.85	-55.14	1.92	19.21	33	Pass
	Mid	1880	Horizontal	-38.23	-56.41	1.94	20.12	33	Pass
	High	1907.5	Horizontal	-39.86	-57.97	1.90	20.01	33	Pass
10 MHz (QPSK)	Low	1855	Horizontal	-37.55	-55.09	1.91	19.44	33	Pass
	Mid	1880	Horizontal	-39.18	-56.66	1.94	19.42	33	Pass
	High	1905	Horizontal	-40.34	-58.01	1.92	19.60	33	Pass
15 MHz (QPSK)	Low	1857.5	Horizontal	-37.03	-55.24	1.93	20.14	33	Pass
	Mid	1880	Horizontal	-38.46	-56.41	1.94	19.89	33	Pass
	High	1902.5	Horizontal	-39.73	-57.69	1.92	19.88	33	Pass
20 MHz (QPSK)	Low	1860	Horizontal	-37.51	-55.35	1.93	19.77	33	Pass
	Mid	1880	Horizontal	-38.92	-56.66	1.94	19.68	33	Pass
	High	1900	Horizontal	-40.32	-57.86	1.92	19.47	33	Pass
1.4 MHz (16QAM)	Low	1850.7	Horizontal	-37.47	-54.89	1.90	19.32	33	Pass
	Mid	1880	Horizontal	-39.19	-56.66	1.92	19.39	33	Pass
	High	1909.3	Horizontal	-40.79	-58.09	1.91	19.21	33	Pass
3 MHz (16QAM)	Low	1851.5	Horizontal	-37.54	-54.93	1.91	19.29	33	Pass
	Mid	1880	Horizontal	-39.70	-56.66	1.94	18.90	33	Pass
	High	1908.5	Horizontal	-40.81	-58.08	1.91	19.18	33	Pass
5 MHz (16QAM)	Low	1852.5	Horizontal	-37.98	-55.14	1.92	19.08	33	Pass
	Mid	1880	Horizontal	-38.36	-56.41	1.94	19.99	33	Pass
	High	1907.5	Horizontal	-39.99	-57.97	1.90	19.88	33	Pass
10 MHz (16QAM)	Low	1855	Horizontal	-37.69	-55.09	1.91	19.31	33	Pass
	Mid	1880	Horizontal	-39.32	-56.66	1.94	19.29	33	Pass
	High	1905	Horizontal	-40.47	-58.01	1.92	19.46	33	Pass
15 MHz (16QAM)	Low	1857.5	Horizontal	-37.17	-55.24	1.93	20.00	33	Pass
	Mid	1880	Horizontal	-38.59	-56.41	1.94	19.76	33	Pass
	High	1902.5	Horizontal	-39.87	-57.69	1.92	19.74	33	Pass
20 MHz (16QAM)	Low	1860	Horizontal	-37.65	-55.35	1.93	19.63	33	Pass
	Mid	1880	Horizontal	-39.06	-56.66	1.94	19.54	33	Pass
	High	1900	Horizontal	-40.45	-57.86	1.92	19.33	33	Pass

LTE Band 25									
bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Conclusion
1.4 MHz (QPSK)	Low	1850.7	Horizontal	-37.51	-55.01	1.78	19.28	33	Pass
	Mid	1882.5	Horizontal	-39.33	-56.79	1.80	19.26	33	Pass
	High	1914.3	Horizontal	-40.66	-58.21	1.79	19.35	33	Pass
3 MHz (QPSK)	Low	1851.5	Horizontal	-37.59	-55.05	1.79	19.25	33	Pass
	Mid	1882.5	Horizontal	-39.26	-56.79	1.82	19.35	33	Pass
	High	1913.5	Horizontal	-40.52	-58.21	1.79	19.48	33	Pass
5 MHz (QPSK)	Low	1852.5	Horizontal	-37.85	-55.27	1.80	19.21	33	Pass
	Mid	1882.5	Horizontal	-39.23	-56.54	1.82	19.13	33	Pass
	High	1912.5	Horizontal	-40.40	-58.10	1.78	19.48	33	Pass
10 MHz (QPSK)	Low	1855	Horizontal	-37.68	-55.21	1.79	19.32	33	Pass
	Mid	1882.5	Horizontal	-38.75	-56.79	1.82	19.86	33	Pass
	High	1910	Horizontal	-40.46	-58.14	1.80	19.48	33	Pass
15 MHz (QPSK)	Low	1857.5	Horizontal	-37.85	-55.37	1.81	19.32	33	Pass
	Mid	1882.5	Horizontal	-39.11	-56.54	1.82	19.25	33	Pass
	High	1907.5	Horizontal	-39.83	-57.82	1.80	19.79	33	Pass
20 MHz (QPSK)	Low	1860	Horizontal	-37.16	-55.48	1.81	20.13	33	Pass
	Mid	1882.5	Horizontal	-38.25	-56.79	1.82	20.36	33	Pass
	High	1905	Horizontal	-39.64	-57.99	1.80	20.15	33	Pass
1.4 MHz (16QAM)	Low	1850.7	Horizontal	-37.64	-55.01	1.78	19.16	33	Pass
	Mid	1882.5	Horizontal	-39.45	-56.79	1.80	19.14	33	Pass
	High	1914.3	Horizontal	-40.78	-58.21	1.79	19.22	33	Pass
3 MHz (16QAM)	Low	1851.5	Horizontal	-37.72	-55.05	1.79	19.13	33	Pass
	Mid	1882.5	Horizontal	-39.39	-56.79	1.82	19.22	33	Pass
	High	1913.5	Horizontal	-40.64	-58.21	1.79	19.36	33	Pass
5 MHz (16QAM)	Low	1852.5	Horizontal	-37.98	-55.27	1.80	19.09	33	Pass
	Mid	1882.5	Horizontal	-39.35	-56.54	1.82	19.00	33	Pass
	High	1912.5	Horizontal	-40.52	-58.10	1.78	19.36	33	Pass
10 MHz (16QAM)	Low	1855	Horizontal	-37.80	-55.21	1.79	19.20	33	Pass
	Mid	1882.5	Horizontal	-38.87	-56.79	1.82	19.74	33	Pass
	High	1910	Horizontal	-40.59	-58.14	1.80	19.36	33	Pass
15 MHz (16QAM)	Low	1857.5	Horizontal	-37.98	-55.37	1.81	19.20	33	Pass
	Mid	1882.5	Horizontal	-39.23	-56.54	1.82	19.13	33	Pass
	High	1907.5	Horizontal	-39.95	-57.82	1.80	19.67	33	Pass
20 MHz (16QAM)	Low	1860	Horizontal	-37.29	-55.48	1.81	20.00	33	Pass
	Mid	1882.5	Horizontal	-38.37	-56.79	1.82	20.24	33	Pass

LTE Band 25									
bandwidth	Channel	Frequency (MHz)	Polarization	Output Power (dBm)	Losses (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Conclusion
	High	1905	Horizontal	-39.77	-57.99	1.80	20.03	33	Pass

5.3. Occupied Bandwidth

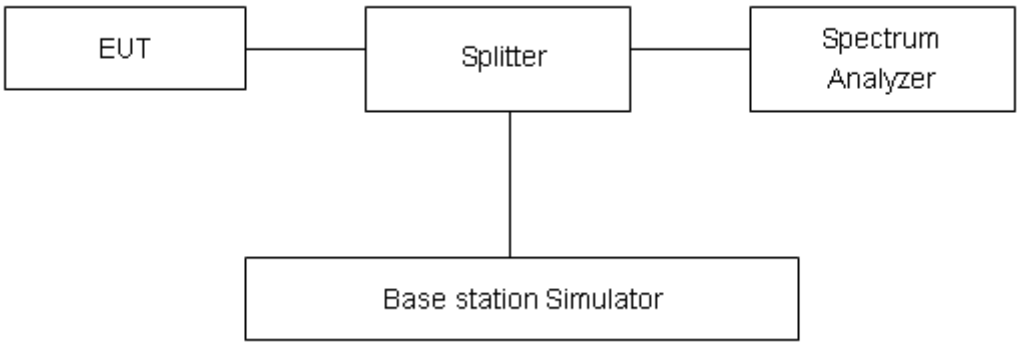
Ambient condition

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 51kHz, VBW is set to 160kHz for LTE Band 2/25(1.4MHz),
RBW is set to 100kHz,VBW is set to 300kHz for LTE Band 2/25 (3MHz/5MHz),
RBW is set to 300kHz,VBW is set to 1MHz for LTE Band 2/25(10MHz/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 2					
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	99% Power Bandwidth(MHz)	-26dBc Bandwidth(MHz)
QPSK	1.4	18607	1850.7	1.1158	1.286
		18900	1880.0	1.1081	1.279
		19193	1909.3	1.1119	1.278
	3	18615	1851.5	2.7386	3.072
		18900	1880	2.7502	3.079
		19185	1908.5	2.7484	3.076
	5	18625	1852.5	4.514	4.993
		18900	1880	4.5086	4.995
		19175	1907.5	4.517	4.948
	10	18650	1855	9.0613	9.978
		18900	1880	9.043	9.976
		19150	1905	9.0491	9.979
	15	18675	1857.5	13.544	14.77
		18900	1880	13.466	14.74
		19125	1902.5	13.473	14.64
	20	18700	1860	17.911	19.25
		18900	1880	17.977	19.40
		19100	1900	17.877	19.10
16QAM	1.4	18607	1850.7	1.1076	1.277
		18900	1880.0	1.1125	1.271
		19193	1909.3	1.1105	1.287
	3	18615	1851.5	2.7546	3.101
		18900	1880	2.7371	3.073
		19185	1908.5	2.7415	3.104
	5	18625	1852.5	4.5044	4.914
		18900	1880	4.5171	4.960
		19175	1907.5	4.5157	4.980
	10	18650	1855	9.0604	10.01
		18900	1880	9.0375	9.940
		19150	1905	9.0328	9.965

	15	18675	1857.5	13.522	14.70
		18900	1880	13.494	14.68
		19125	1902.5	13.496	14.60
	20	18700	1860	17.948	19.39
		18900	1880	17.951	19.21
		19100	1900	17.89	19.19

LTE Band 25					
Modulation	**Bandwidth (MHz)**	**Channel**	**Frequency (MHz)**	**99% Power Bandwidth(MHz)**	**-26dBc Bandwidth(MHz)**
QPSK	1.4	26047	1850.7	1.1131	1.283
		26365	1882.5	1.108	1.278
		26683	1914.3	1.1319	1.290
	3	26055	1851.5	2.7426	3.099
		26365	1882.5	2.7474	3.075
		26675	1913.5	2.7416	3.070
	5	26065	1852.5	4.5274	4.978
		26365	1882.5	4.5173	4.946
		26665	1912.5	4.5077	4.951
	10	26090	1855	9.0563	10.03
		26365	1882.5	9.0251	9.959
		26640	1910	9.0649	9.972
	15	26115	1857.5	13.483	14.62
		26365	1882.5	13.475	14.73
		26615	1907.5	13.51	14.83
	20	26140	1860	17.923	19.34
		26365	1882.5	17.925	19.33
		26590	1905	17.923	19.32
16QAM	1.4	26047	1850.7	1.1117	1.280
		26365	1882.5	1.1133	1.274
		26683	1914.3	1.1112	1.281
	3	26055	1851.5	2.7537	3.044
		26365	1882.5	2.7353	3.075

		26675	1913.5	2.7385	3.093
	5	26065	1852.5	4.5136	5.020
		26365	1882.5	4.5212	5.000
		26665	1912.5	4.5169	5.001
	10	26090	1855	9.0684	9.967
		26365	1882.5	9.0377	10.01
		26640	1910	9.0414	10.00
	15	26115	1857.5	13.495	14.68
		26365	1882.5	13.516	14.67
		26615	1907.5	13.52	14.73
	20	26140	1860	17.973	19.33
		26365	1882.5	17.931	19.28
		26590	1905	17.964	19.30

LTE Band 2 1.4MHz QPSK CH-Low

LTE Band 2 3MHz QPSK CH-Low

LTE Band 2 1.4MHz QPSK CH-Middle

LTE Band 2 3MHz QPSK CH-Middle

LTE Band 2 1.4MHz QPSK CH-High

LTE Band 2 3MHz QPSK CH-High

LTE Band 2 5MHz QPSK CH-Low

LTE Band 2 10MHz QPSK CH-Low

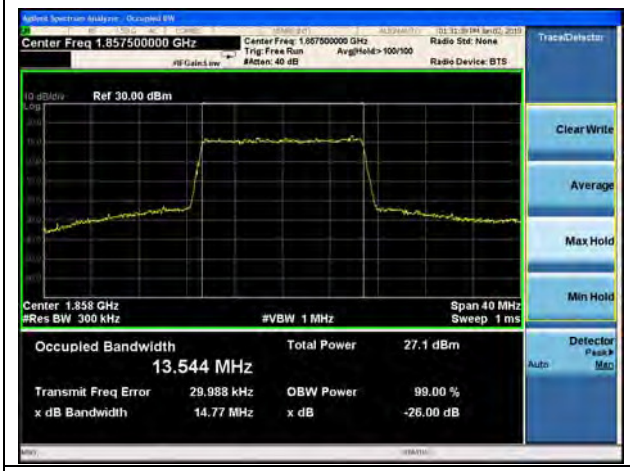
LTE Band 2 5MHz QPSK CH-Middle

LTE Band 2 10MHz QPSK CH-Middle

LTE Band 2 5MHz QPSK CH-High

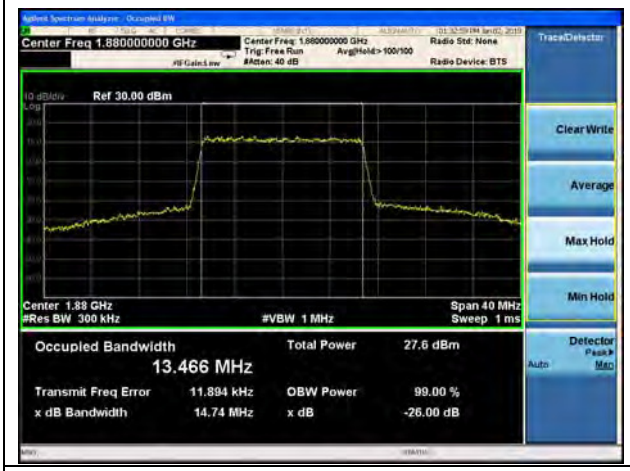
LTE Band 2 10MHz QPSK CH-High

LTE Band 2 15MHz QPSK CH-Low



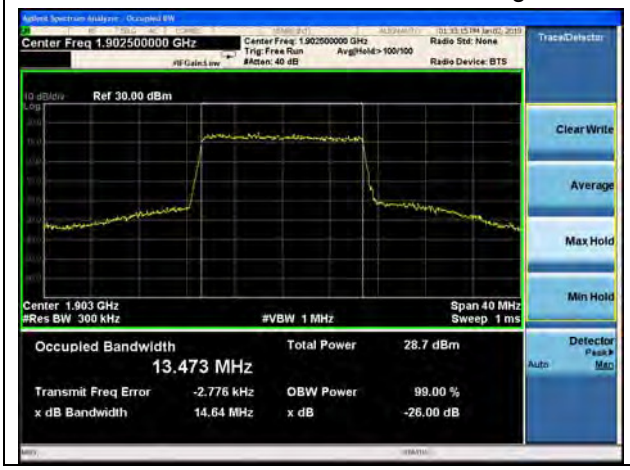
LTE Band 2 20MHz QPSK CH-Low

LTE Band 2 15MHz QPSK CH-Middle



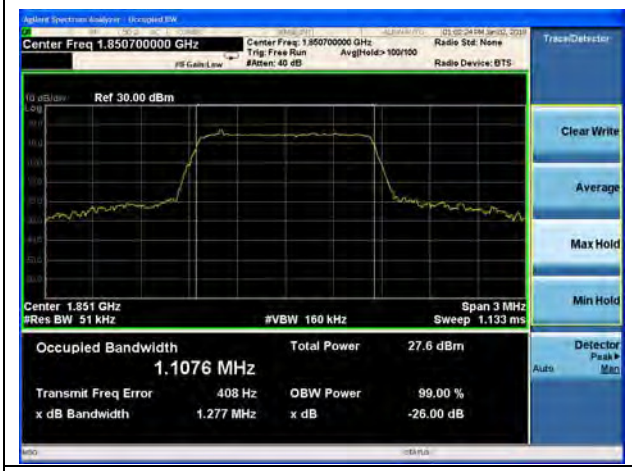
LTE Band 2 20MHz QPSK CH-Middle

LTE Band 2 15MHz QPSK CH-High



LTE Band 2 20MHz QPSK CH-High

LTE Band 2 1.4MHz 16QAM CH-Low



LTE Band 2 3MHz 16QAM CH-Low

LTE Band 2 1.4MHz 16QAM CH-Middle

LTE Band 2 3MHz 16QAM CH-Middle

LTE Band 2 1.4MHz 16QAM CH-High

LTE Band 2 3MHz 16QAM CH-High

LTE Band 2 5MHz 16QAM CH-Low

LTE Band 2 10MHz 16QAM CH-Low

LTE Band 2 5MHz 16QAM CH-Middle

LTE Band 2 10MHz 16QAM CH-Middle

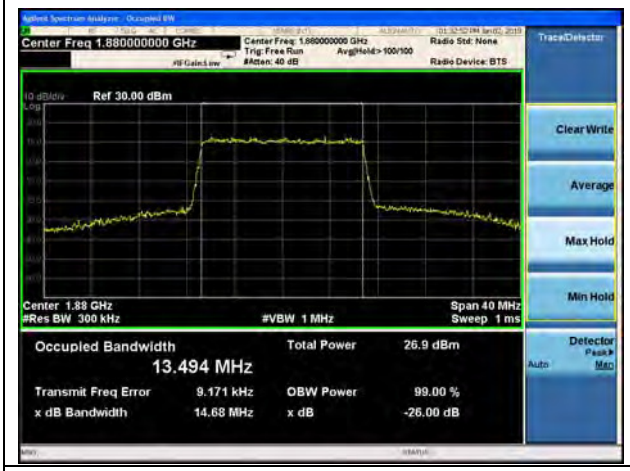
LTE Band 2 5MHz 16QAM CH-High

LTE Band 2 10MHz 16QAM CH-High

LTE Band 2 15MHz 16QAM CH-Low

LTE Band 2 20MHz 16QAM CH-Low

LTE Band 2 15MHz 16QAM CH-Middle

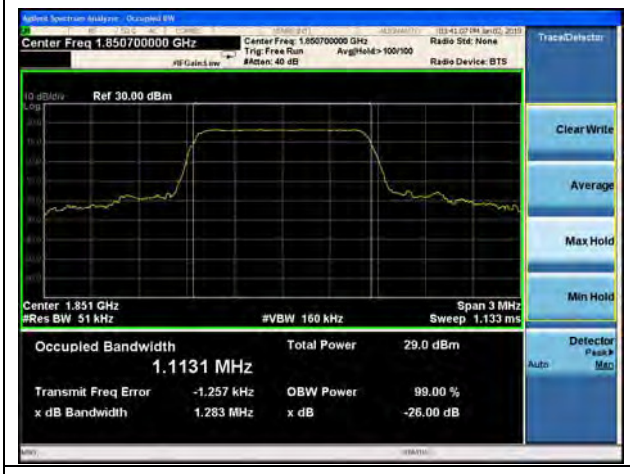


LTE Band 2 20MHz 16QAM CH-Middle

LTE Band 2 15MHz 16QAM CH-High

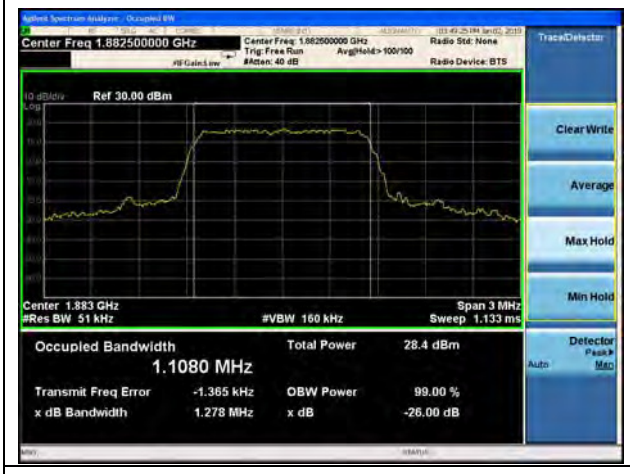
LTE Band 2 20MHz 16QAM CH-High

LTE Band 25 1.4MHz QPSK CH-Low



LTE Band 25 3MHz QPSK CH-Low

LTE Band 25 1.4MHz QPSK CH-Middle

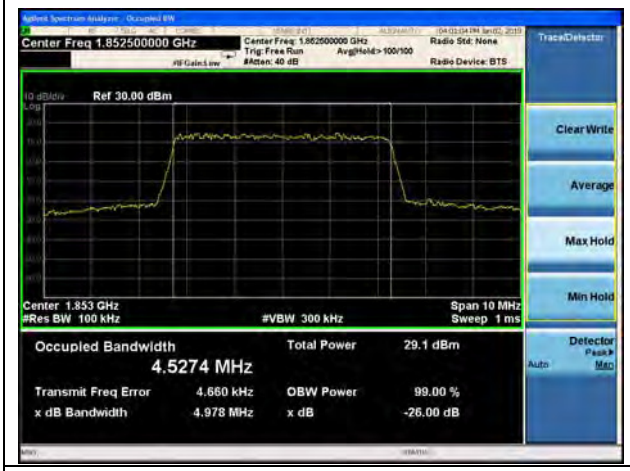


LTE Band 25 3MHz QPSK CH-Middle

LTE Band 25 1.4MHz QPSK CH-High

LTE Band 25 3MHz QPSK CH-High

LTE Band 25 5MHz QPSK CH-Low

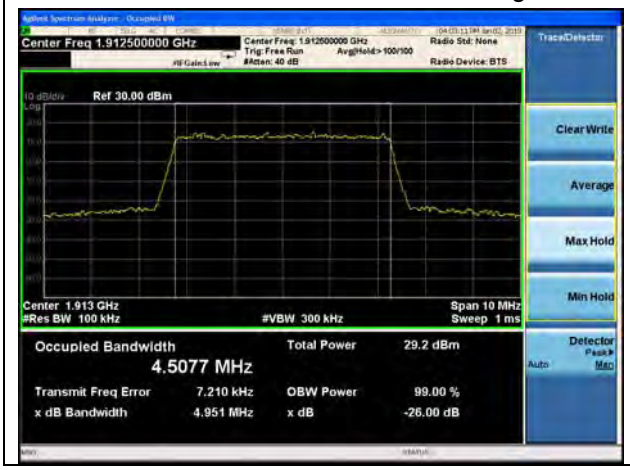


LTE Band 25 10MHz QPSK CH-Low

LTE Band 25 5MHz QPSK CH-Middle

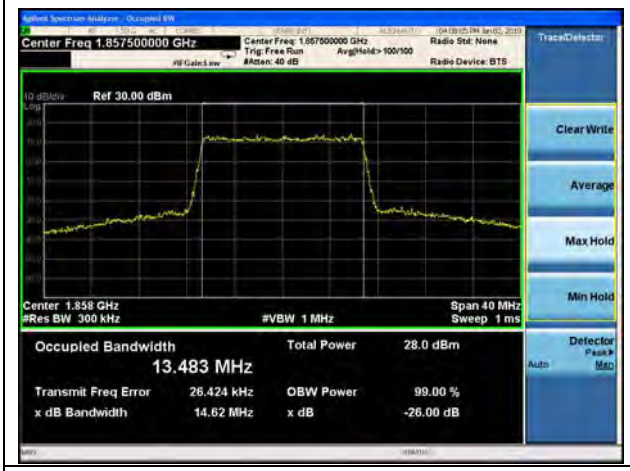
LTE Band 25 10MHz QPSK CH-Middle

LTE Band 25 5MHz QPSK CH-High



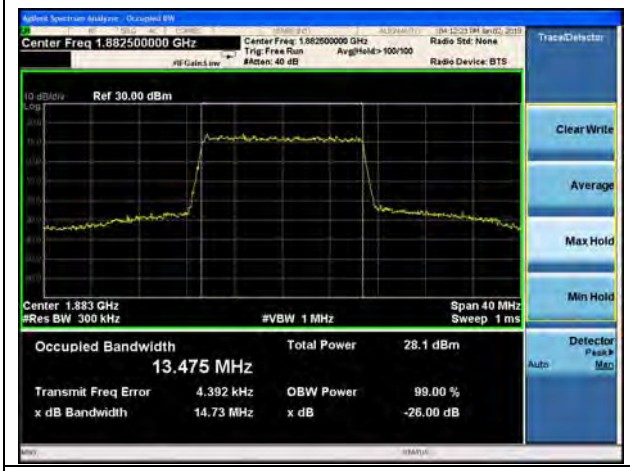
LTE Band 25 10MHz QPSK CH-High

LTE Band 25 15MHz QPSK CH-Low



LTE Band 25 20MHz QPSK CH-Low

LTE Band 25 15MHz QPSK CH-Middle



LTE Band 25 20MHz QPSK CH-Middle

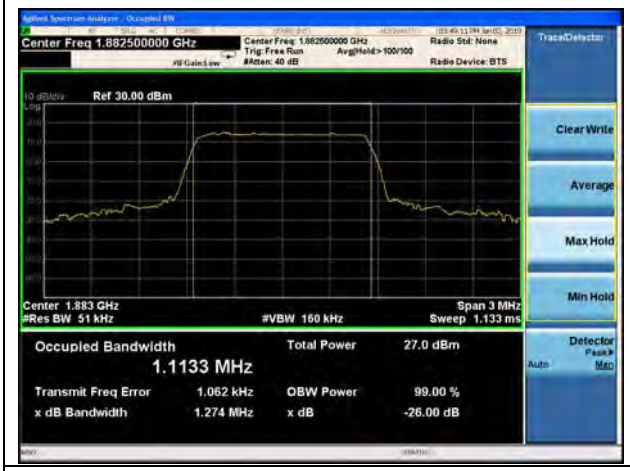
LTE Band 25 15MHz QPSK CH-High

LTE Band 25 20MHz QPSK CH-High

LTE Band 25 1.4MHz 16QAM CH-Low

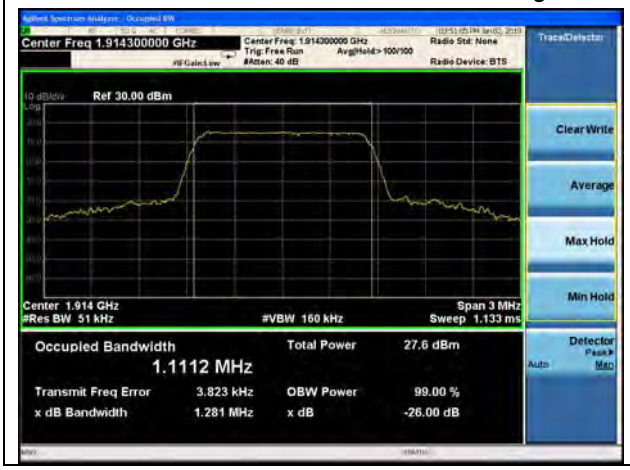
LTE Band 25 3MHz 16QAM CH-Low

LTE Band 25 1.4MHz 16QAM CH-Middle



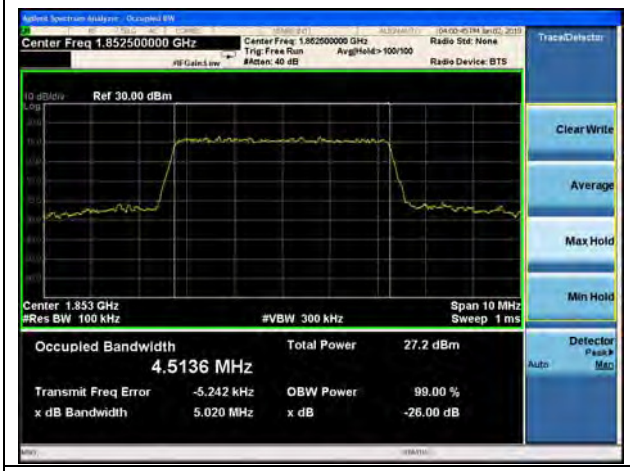
LTE Band 25 3MHz 16QAM CH-Middle

LTE Band 25 1.4MHz 16QAM CH-High



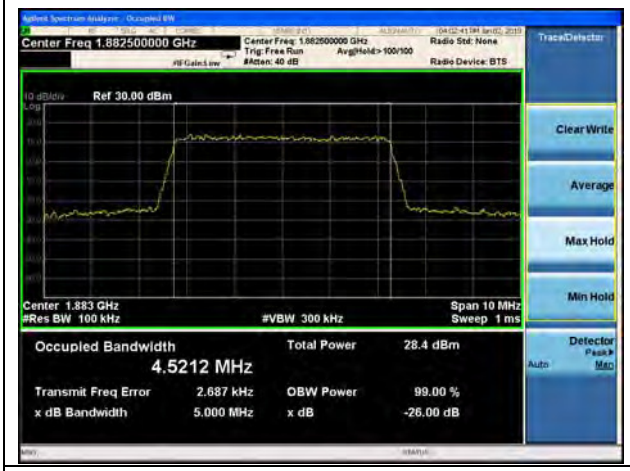
LTE Band 25 3MHz 16QAM CH-High

LTE Band 25 5MHz 16QAM CH-Low



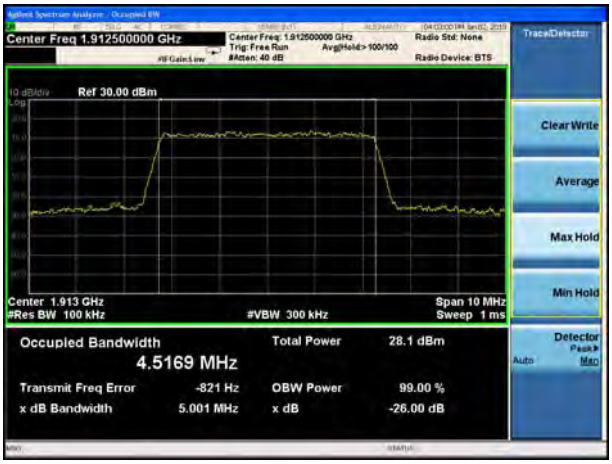
LTE Band 25 10MHz 16QAM CH-Low

LTE Band 25 5MHz 16QAM CH-Middle



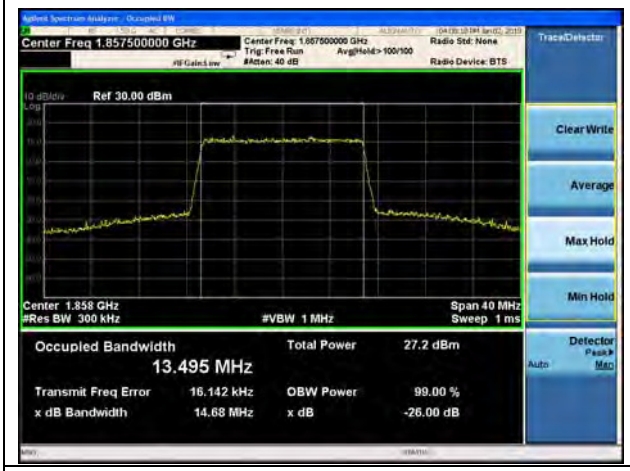
LTE Band 25 10MHz 16QAM CH-Middle

LTE Band 25 5MHz 16QAM CH-High

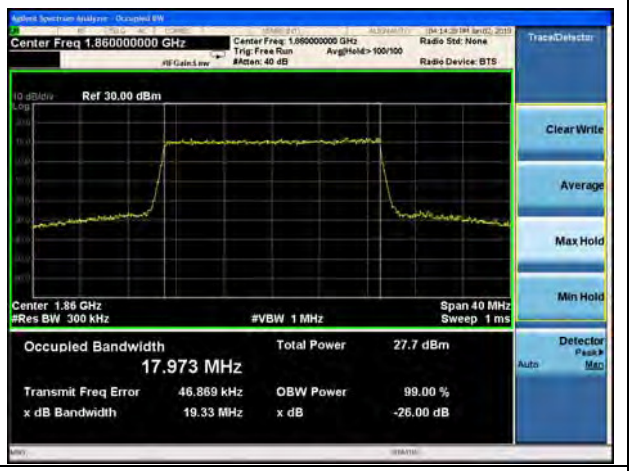


LTE Band 25 10MHz 16QAM CH-High

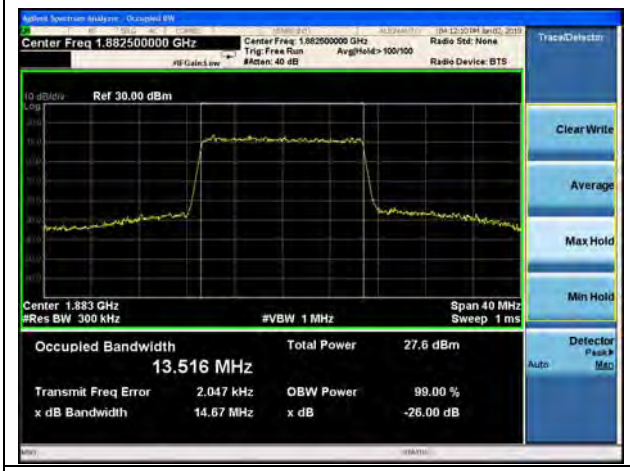
LTE Band 25 15MHz 16QAM CH-Low



LTE Band 25 20MHz 16QAM CH-Low



LTE Band 25 15MHz 16QAM CH-Middle



LTE Band 25 20MHz 16QAM CH-Middle

LTE Band 25 15MHz 16QAM CH-High

LTE Band 25 20MHz 16QAM CH-High

5.4. Band Edge Compliance

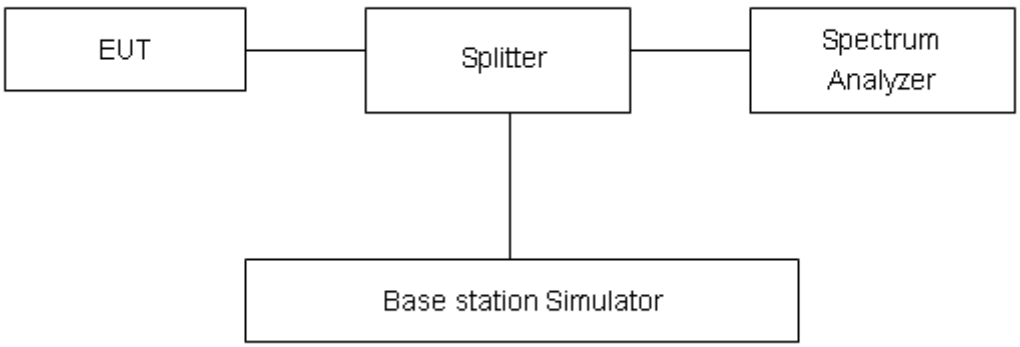
Ambient condition

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 Average detector is used and
RBW is set to 15kHz, VBW is set to 51kHz for LTE Band 2/25(1.4MHz),
RBW is set to 30kHz,VBW is set to 100kHz for LTE Band 2/25 (3MHz),
RBW is set to 51kHz,VBW is set to 160kHz for LTE Band 2/25 (5MHz),
RBW is set to 100kHz,VBW is set to 300kHz for LTE Band 2/25(10MHz),
RBW is set to 150kHz,VBW is set to 510kHz for LTE Band 2/25(15MHz),
RBW is set to 200kHz,VBW is set to 620kHz for LTE Band 2/25(20MHz).
Spectrum analyzer plots are included on the following pages.

Test Setup



Limits

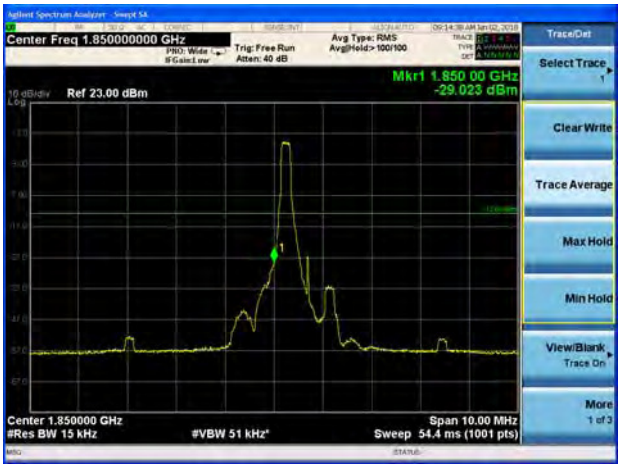
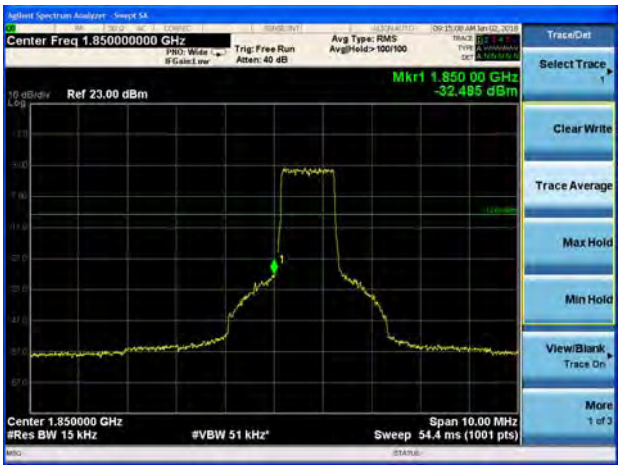
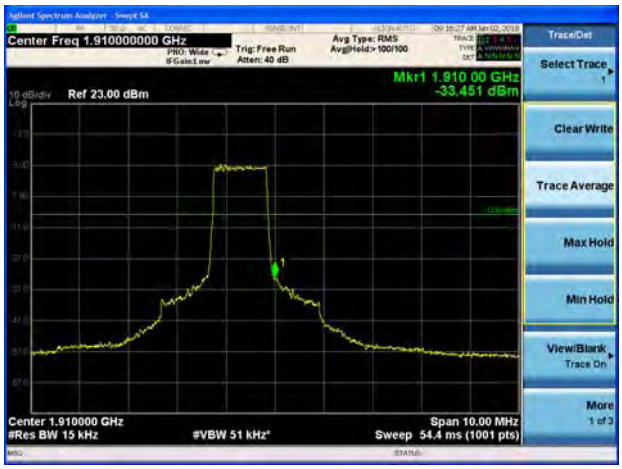
Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

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:

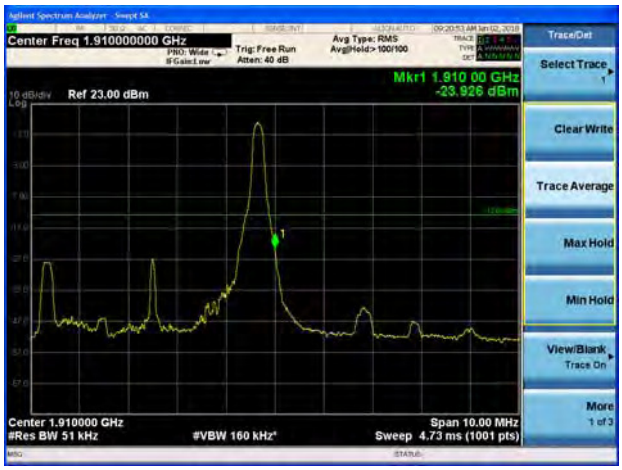
LTE Band 2 1.4MHz QPSK 1RB CH-Low	LTE Band 2 1.4MHz QPSK 1RB CH-High
	
LTE Band 2 1.4MHz QPSK 100%RB CH-Low	LTE Band 2 1.4MHz QPSK 100%RB CH-High
	
LTE Band 2 3MHz QPSK 1RB CH-Low	LTE Band 2 3MHz QPSK 1RB CH-High
	

LTE Band 2 3MHz QPSK 100%RB CH-Low

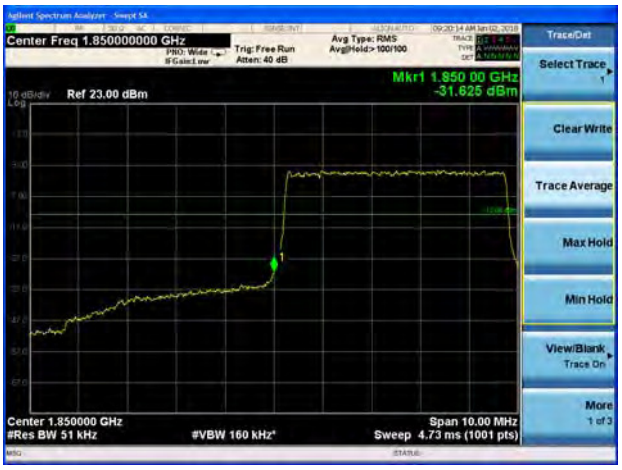
LTE Band 2 3MHz QPSK 100%RB CH-High

LTE Band 2 5MHz QPSK 1RB CH-Low

LTE Band 2 5MHz QPSK 1RB CH-High

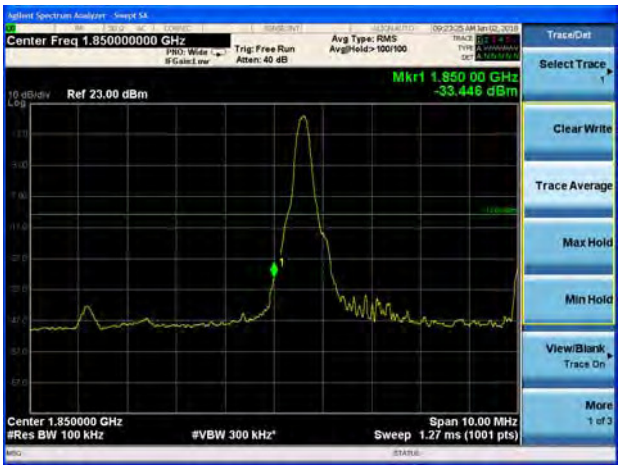


LTE Band 2 5MHz QPSK 100%RB CH-Low



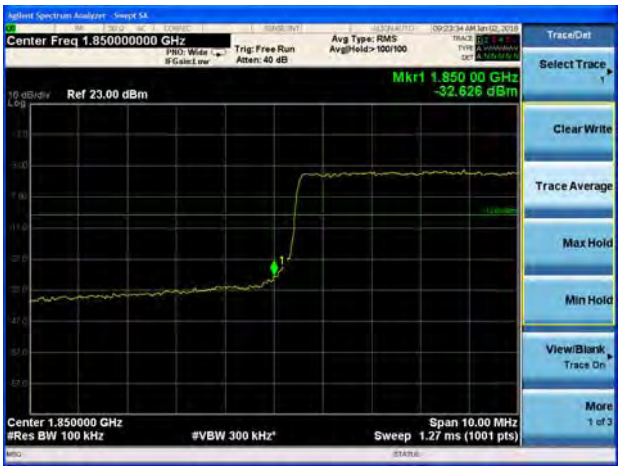
LTE Band 2 5MHz QPSK 100%RB CH-High

LTE Band 2 10MHz QPSK 1RB CH-Low



LTE Band 2 10MHz QPSK 1RB CH-High

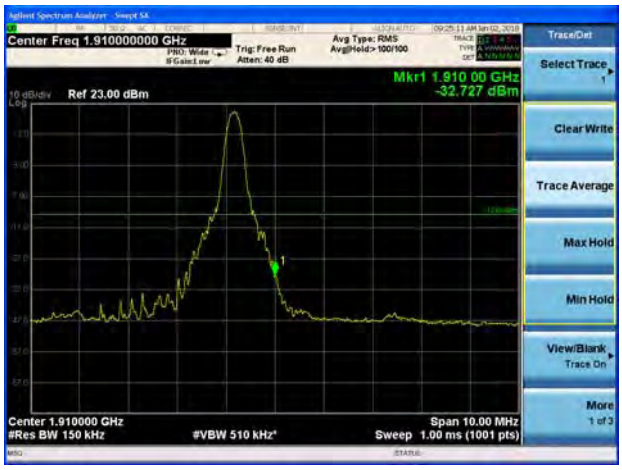
LTE Band 2 10MHz QPSK 100%RB CH-Low



LTE Band 2 10MHz QPSK 100%RB CH-High

LTE Band 2 15MHz QPSK 1RB CH-Low

LTE Band 2 15MHz QPSK 1RB CH-High



LTE Band 2 15MHz QPSK 100%RB CH-Low

LTE Band 2 15MHz QPSK 100%RB CH-High

LTE Band 2 20MHz QPSK 1RB CH-Low

LTE Band 2 20MHz QPSK 1RB CH-High

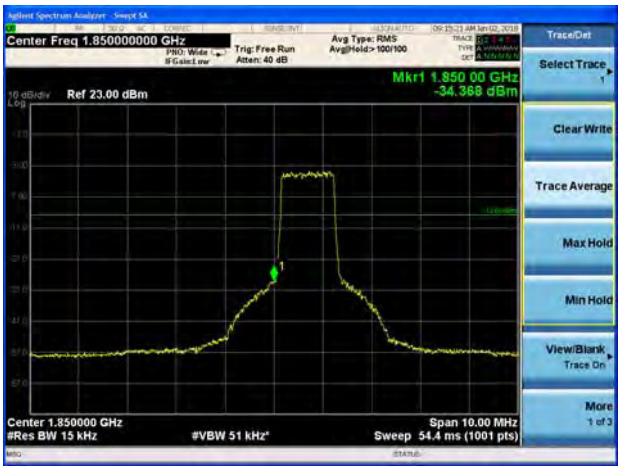
LTE Band 2 20MHz QPSK 100%RB CH-Low

LTE Band 2 20MHz QPSK 100%RB CH-High

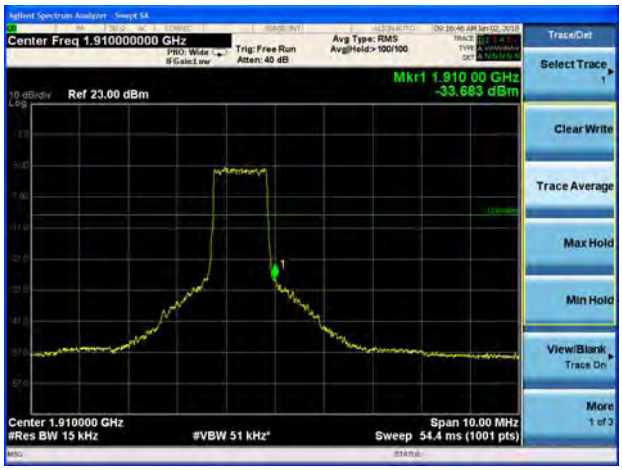
LTE Band 2 1.4MHz 16QAM 1RB CH-Low

LTE Band 2 1.4MHz 16QAM 1RB CH-High

LTE Band 2 1.4MHz 16QAM 100%RB CH-Low

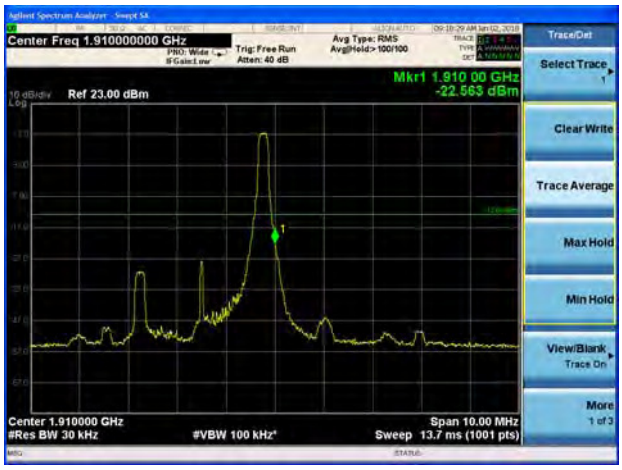


LTE Band 2 1.4MHz 16QAM 100%RB CH-High



LTE Band 2 3MHz 16QAM 1RB CH-Low

LTE Band 2 3MHz 16QAM 1RB CH-High



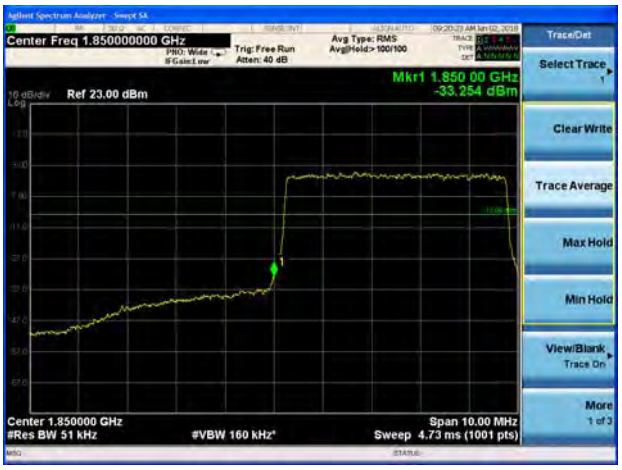
LTE Band 2 3MHz 16QAM 100%RB CH-Low

LTE Band 2 3MHz 16QAM 100%RB CH-High

LTE Band 2 5MHz 16QAM 1RB CH-Low

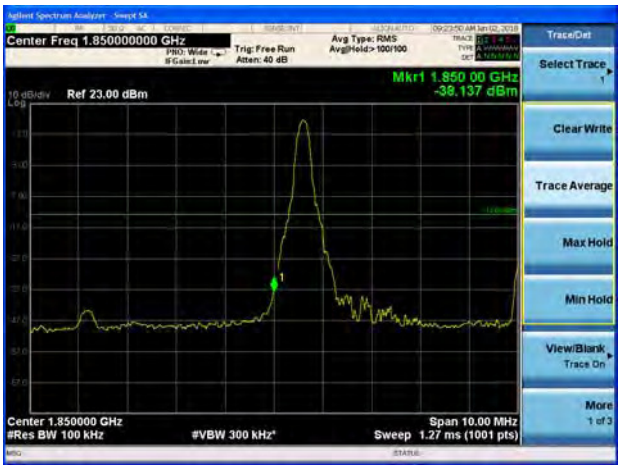
LTE Band 2 5MHz 16QAM 1RB CH-High

LTE Band 2 5MHz 16QAM 100%RB CH-Low

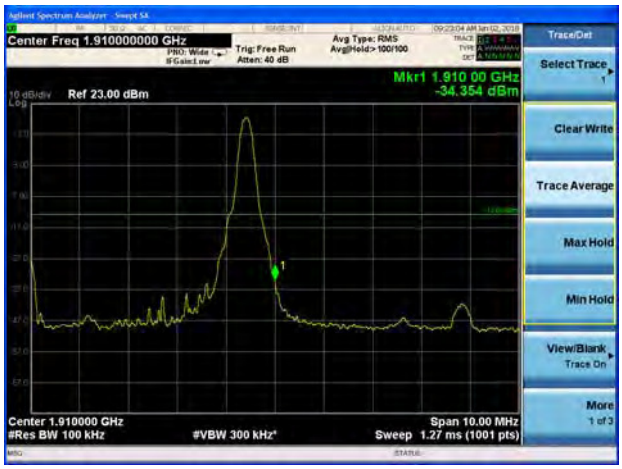


LTE Band 2 5MHz 16QAM 100%RB CH-High

LTE Band 2 10MHz 16QAM 1RB CH-Low



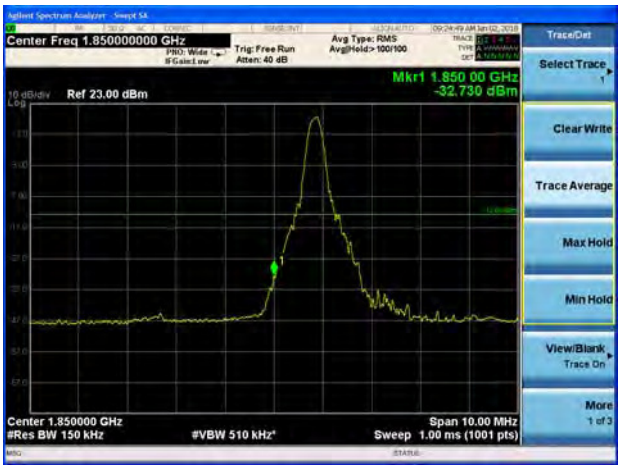
LTE Band 2 10MHz 16QAM 1RB CH-High



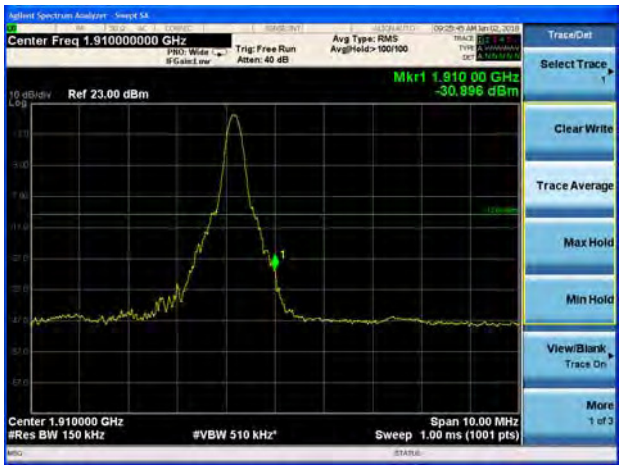
LTE Band 2 10MHz 16QAM 100%RB CH-Low

LTE Band 2 10MHz 16QAM 100%RB CH-High

LTE Band 2 15MHz 16QAM 1RB CH-Low



LTE Band 2 15MHz 16QAM 1RB CH-High



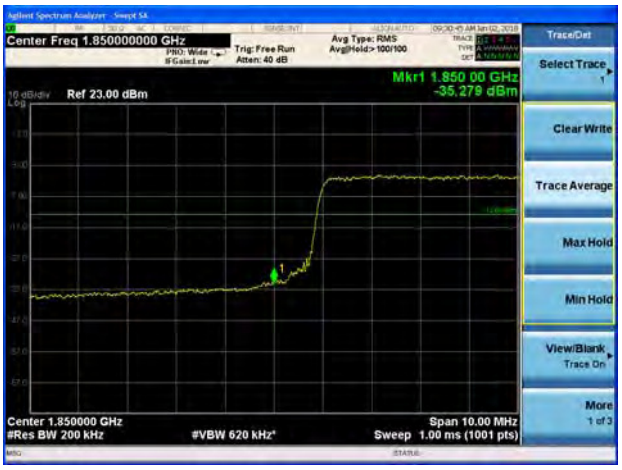
LTE Band 2 15MHz 16QAM 100%RB CH-Low

LTE Band 2 15MHz 16QAM 100%RB CH-High

LTE Band 2 20MHz 16QAM 1RB CH-Low

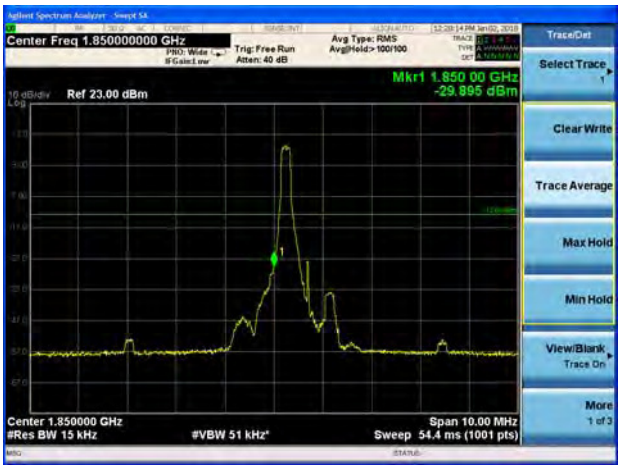
LTE Band 2 20MHz 16QAM 1RB CH-High

LTE Band 2 20MHz 16QAM 100%RB CH-Low



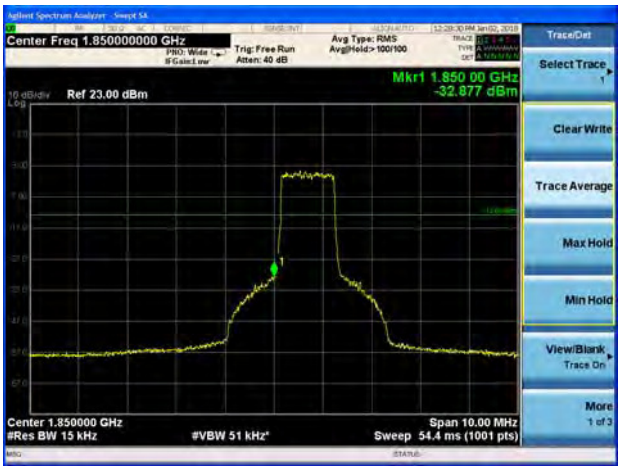
LTE Band 2 20MHz 16QAM 100%RB CH-High

LTE Band 25 1.4MHz QPSK 1RB CH-Low

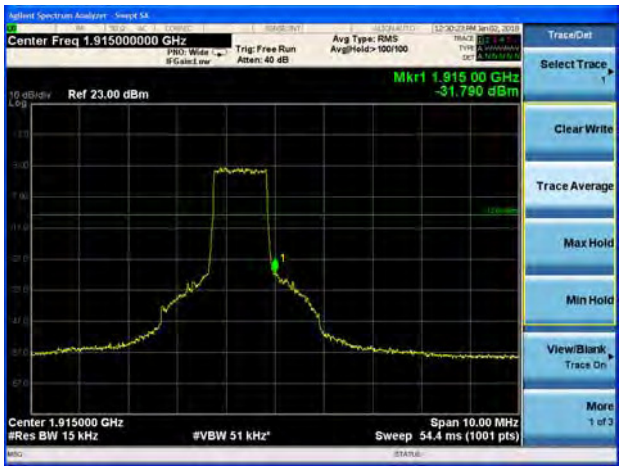


LTE Band 25 1.4MHz QPSK 1RB CH-High

LTE Band 25 1.4MHz QPSK 100%RB CH-Low

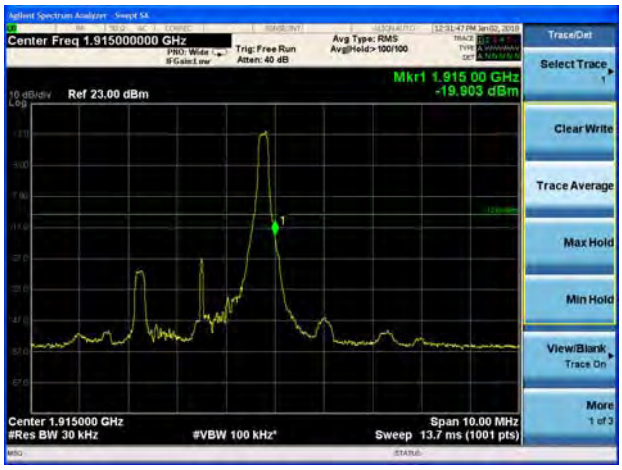


LTE Band 25 1.4MHz QPSK 100%RB CH-High

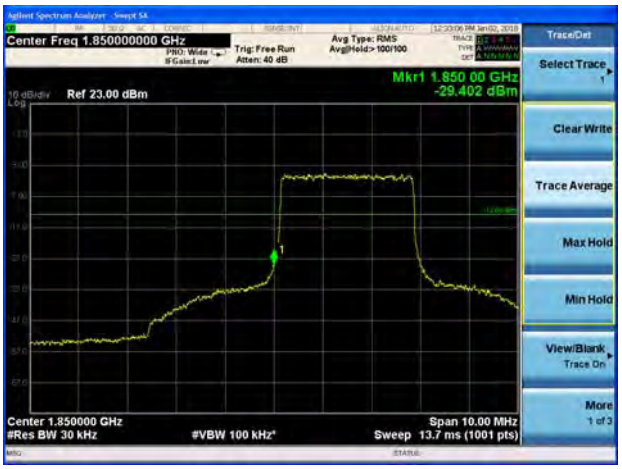


LTE Band 25 3MHz QPSK 1RB CH-Low

LTE Band 25 3MHz QPSK 1RB CH-High



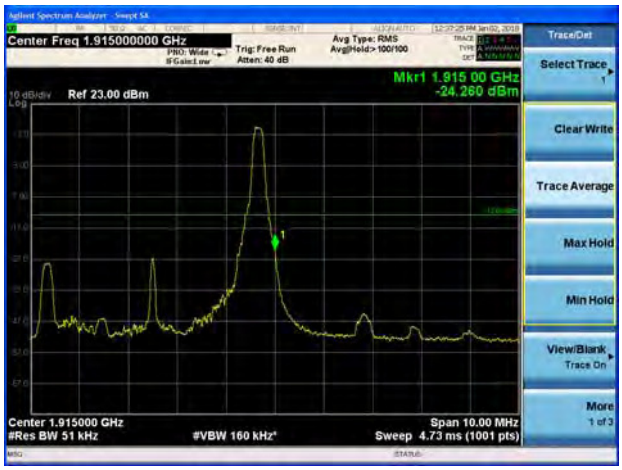
LTE Band 25 3MHz QPSK 100%RB CH-Low



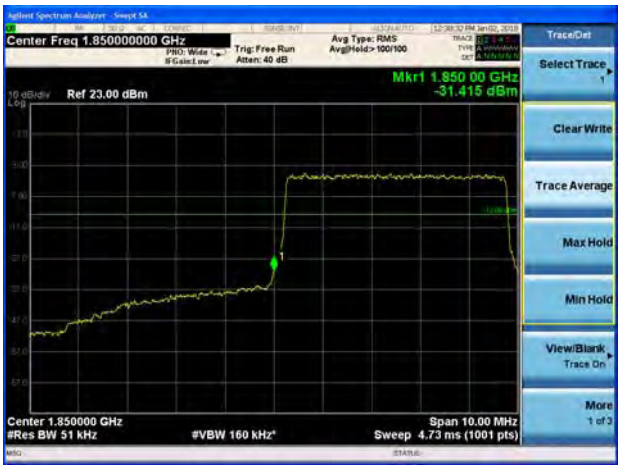
LTE Band 25 3MHz QPSK 100%RB CH-High

LTE Band 25 5MHz QPSK 1RB CH-Low

LTE Band 25 5MHz QPSK 1RB CH-High

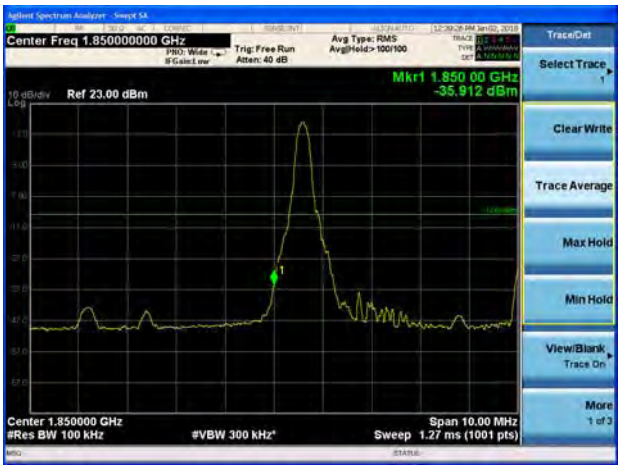


LTE Band 25 5MHz QPSK 100%RB CH-Low

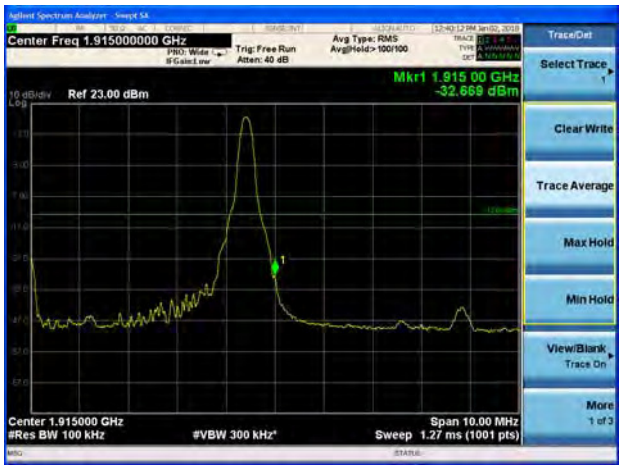


LTE Band 25 5MHz QPSK 100%RB CH-High

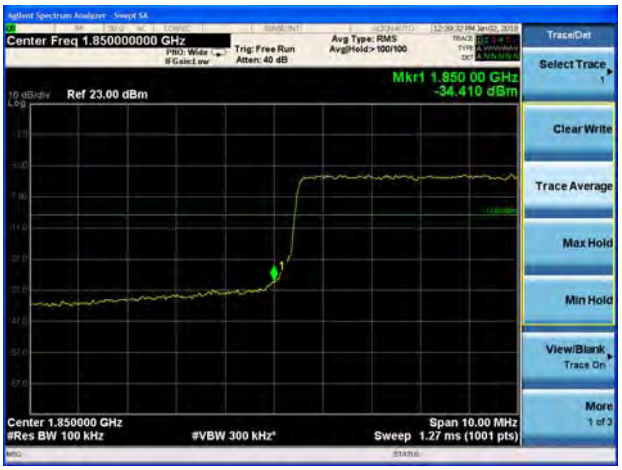
LTE Band 25 10MHz QPSK 1RB CH-Low



LTE Band 25 10MHz QPSK 1RB CH-High

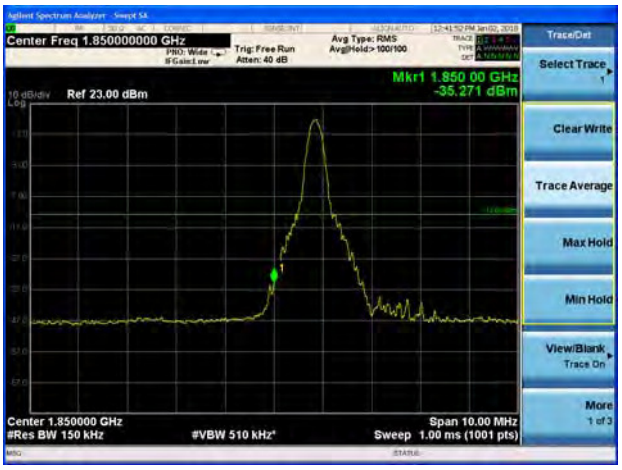


LTE Band 25 10MHz QPSK 100%RB CH-Low



LTE Band 25 10MHz QPSK 100%RB CH-High

LTE Band 25 15MHz QPSK 1RB CH-Low



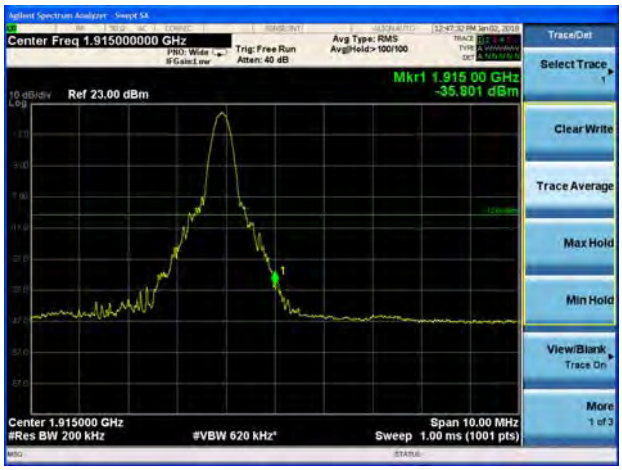
LTE Band 25 15MHz QPSK 1RB CH-High

LTE Band 25 15MHz QPSK 100%RB CH-Low

LTE Band 25 15MHz QPSK 100%RB CH-High

LTE Band 25 20MHz QPSK 1RB CH-Low

LTE Band 25 20MHz QPSK 1RB CH-High



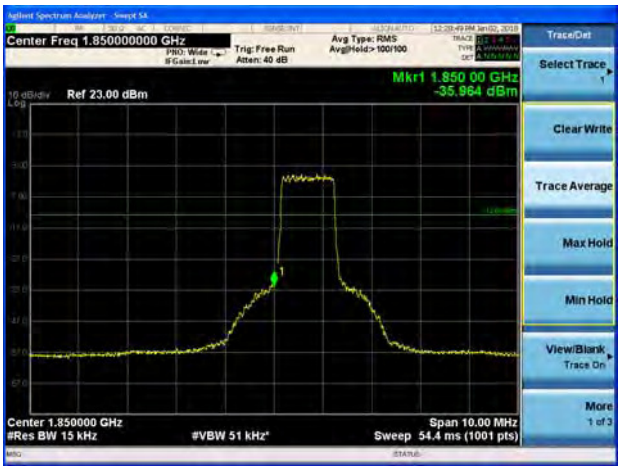
LTE Band 25 20MHz QPSK 100%RB CH-Low

LTE Band 25 20MHz QPSK 100%RB CH-High

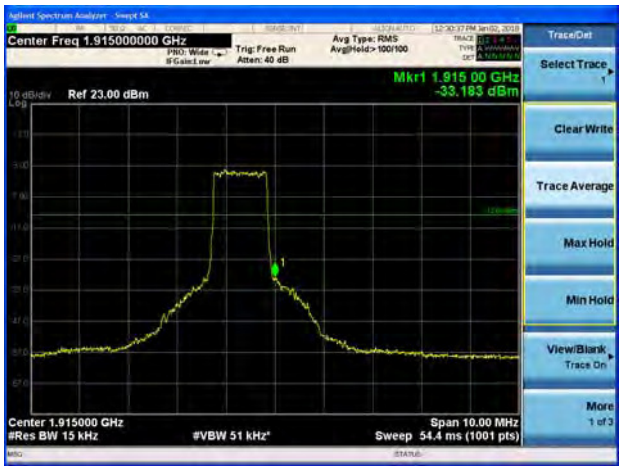
LTE Band 25 1.4MHz 16QAM 1RB CH-Low

LTE Band 25 1.4MHz 16QAM 1RB CH-High

LTE Band 25 1.4MHz 16QAM 100%RB CH-Low

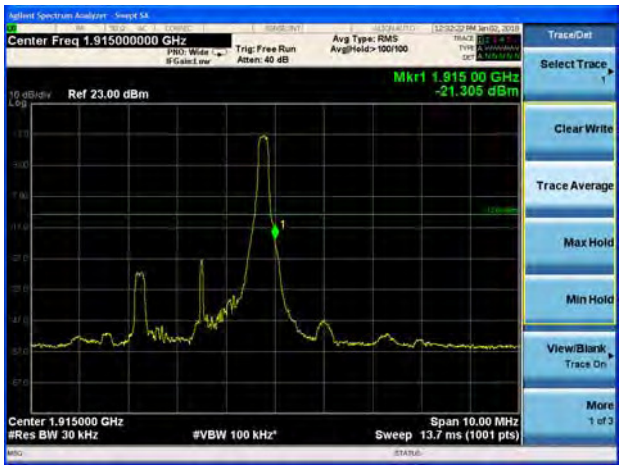


LTE Band 25 1.4MHz 16QAM 100%RB CH-High



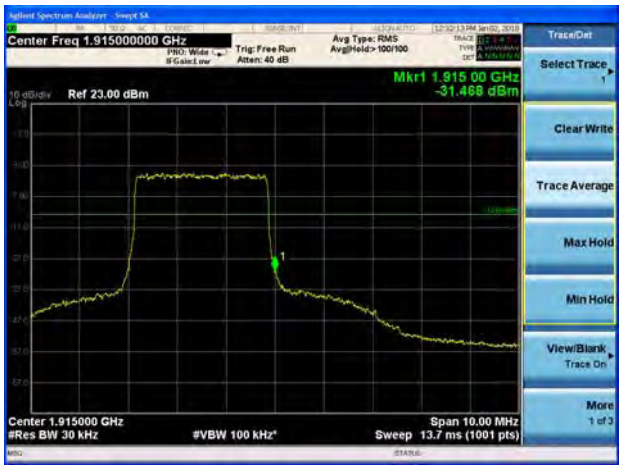
LTE Band 25 3MHz 16QAM 1RB CH-Low

LTE Band 25 3MHz 16QAM 1RB CH-High



LTE Band 25 3MHz 16QAM 100%RB CH-Low

LTE Band 25 3MHz 16QAM 100%RB CH-High



LTE Band 25 5MHz 16QAM 1RB CH-Low

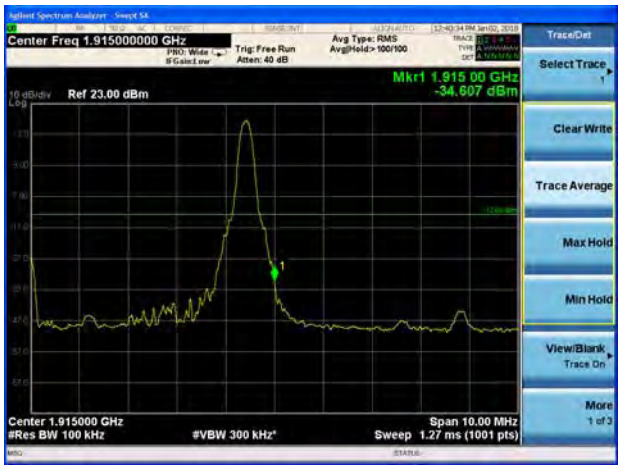
LTE Band 25 5MHz 16QAM 1RB CH-High

LTE Band 25 5MHz 16QAM 100%RB CH-Low

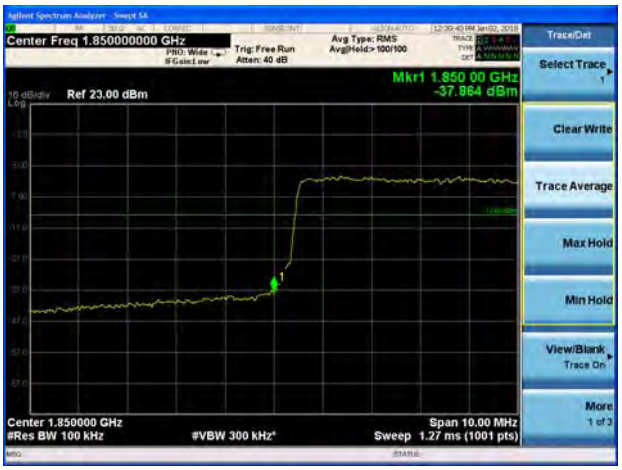
LTE Band 25 5MHz 16QAM 100%RB CH-High

LTE Band 25 10MHz 16QAM 1RB CH-Low

LTE Band 25 10MHz 16QAM 1RB CH-High

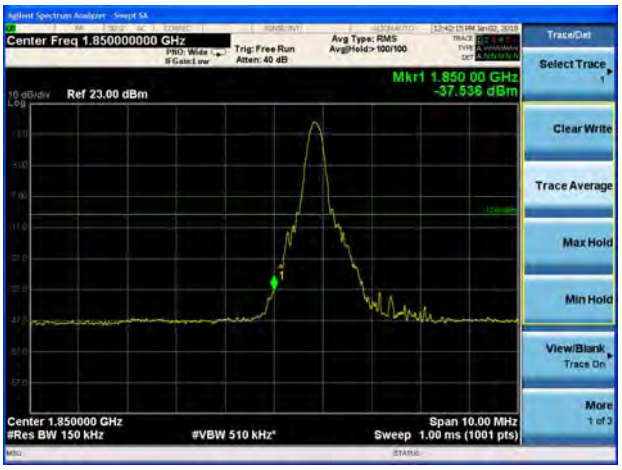


LTE Band 25 10MHz 16QAM 100%RB CH-Low

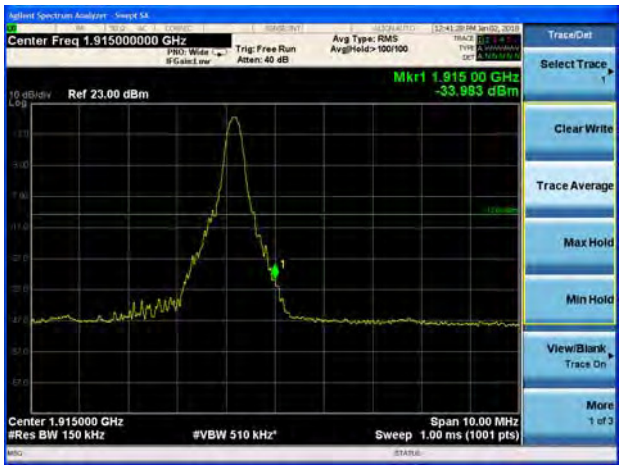


LTE Band 25 10MHz 16QAM 100%RB CH-High

LTE Band 25 15MHz 16QAM 1RB CH-Low



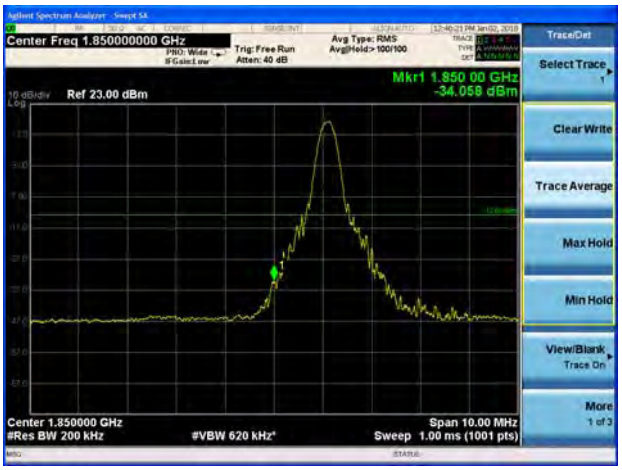
LTE Band 25 15MHz 16QAM 1RB CH-High



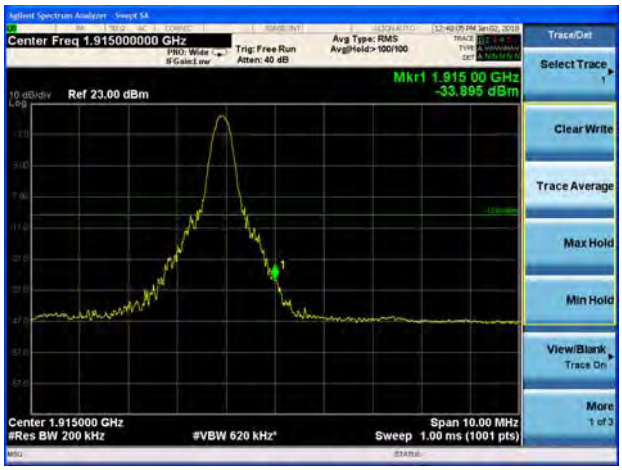
LTE Band 25 15MHz 16QAM 100%RB CH-Low

LTE Band 25 15MHz 16QAM 100%RB CH-High

LTE Band 25 20MHz 16QAM 1RB CH-Low



LTE Band 25 20MHz 16QAM 1RB CH-High



LTE Band 25 20MHz 16QAM 100%RB CH-Low

LTE Band 25 20MHz 16QAM 100%RB CH-High

5.5. Peak-to-Average Power Ratio (PAPR)

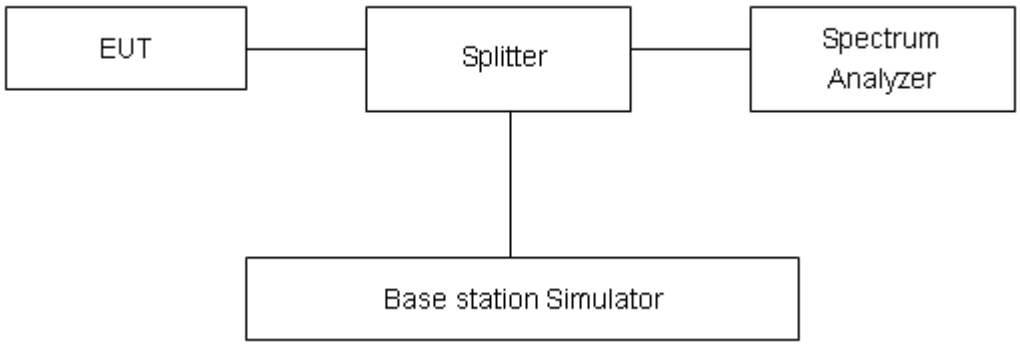
Ambient condition

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

In measuring transmissions in this band using an average power technique, the peakto-average ratio (PAR) of the transmission may not exceed 13 dB in 24.232(d).

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 2		Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit(dB)	Conclusion
Modulation	Bandwidth							
QPSK	1.4MHz	18607	1850.7	26.50	21.74	4.76	≤13	PASS
		18900	1880.0	26.75	21.79	4.96	≤13	PASS
		19193	1909.3	27.18	22.01	5.17	≤13	PASS
	3MHz	18615	1851.5	26.63	21.84	4.79	≤13	PASS
		18900	1880	26.65	21.78	4.87	≤13	PASS
		19185	1908.5	27.07	21.98	5.09	≤13	PASS
	5MHz	18625	1852.5	26.69	21.82	4.87	≤13	PASS
		18900	1880	26.71	21.77	4.94	≤13	PASS
		19175	1907.5	27.10	21.96	5.14	≤13	PASS
	10MHz	18650	1855	26.86	21.90	4.96	≤13	PASS
		18900	1880	26.71	21.79	4.92	≤13	PASS
		19150	1905	26.97	22.00	4.97	≤13	PASS
	15MHz	18675	1857.5	27.06	21.88	5.18	≤13	PASS
		18900	1880	26.78	21.75	5.03	≤13	PASS
		19125	1902.5	27.05	21.95	5.10	≤13	PASS
	20MHz	18700	1860	26.90	21.85	5.05	≤13	PASS
		18900	1880	26.67	21.70	4.97	≤13	PASS
		19100	1900	26.81	21.91	4.90	≤13	PASS
16QAM	1.4MHz	18607	1850.7	26.43	20.84	5.59	≤13	PASS
		18900	1880.0	26.70	20.91	5.79	≤13	PASS
		19193	1909.3	27.05	21.16	5.89	≤13	PASS
	3MHz	18615	1851.5	26.27	20.72	5.55	≤13	PASS
		18900	1880	26.42	20.73	5.69	≤13	PASS
		19185	1908.5	26.86	20.98	5.88	≤13	PASS
	5MHz	18625	1852.5	26.29	20.70	5.59	≤13	PASS
		18900	1880	26.35	20.69	5.66	≤13	PASS
		19175	1907.5	26.75	20.93	5.82	≤13	PASS
	10MHz	18650	1855	26.45	20.73	5.72	≤13	PASS
		18900	1880	26.40	20.74	5.66	≤13	PASS
		19150	1905	26.68	20.97	5.71	≤13	PASS
	15MHz	18675	1857.5	26.51	20.70	5.81	≤13	PASS
		18900	1880	26.35	20.69	5.66	≤13	PASS
		19125	1902.5	26.62	20.93	5.69	≤13	PASS
	20MHz	18700	1860	26.46	20.68	5.78	≤13	PASS
		18900	1880	26.31	20.65	5.66	≤13	PASS
		19100	1900	26.57	20.90	5.67	≤13	PASS

LTE Band 25		Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit(dB)	Conclusion
Modulation	Bandwidth							
1.4MHz	QPSK	26047	1850.7	26.56	21.79	4.77	13	PASS
		26365	1882.5	26.71	21.75	4.96	13	PASS
		26683	1914.3	26.73	21.80	4.93	13	PASS
	16QAM	26047	1850.7	25.58	20.82	4.76	13	PASS
		26365	1882.5	26.48	20.80	5.68	13	PASS
		26683	1914.3	25.98	21.06	4.92	13	PASS
3MHz	QPSK	26055	1851.5	25.56	20.80	4.76	13	PASS
		26365	1882.5	25.74	20.79	4.95	13	PASS
		26675	1913.5	26.05	21.04	5.01	13	PASS
	16QAM	26055	1851.5	25.79	20.88	4.91	13	PASS
		26365	1882.5	25.72	20.81	4.91	13	PASS
		26675	1913.5	26.08	21.08	5.00	13	PASS
5MHz	QPSK	26065	1852.5	26.03	20.86	5.17	13	PASS
		26365	1882.5	25.95	20.77	5.18	13	PASS
		26665	1912.5	26.22	21.03	5.19	13	PASS
	16QAM	26065	1852.5	25.85	20.83	5.02	13	PASS
		26365	1882.5	25.76	20.72	5.04	13	PASS
		26665	1912.5	26.04	20.99	5.05	13	PASS
10MHz	QPSK	26090	1855	26.51	21.02	5.49	13	PASS
		26365	1882.5	26.42	20.66	5.76	13	PASS
		26640	1910	26.49	20.85	5.64	13	PASS
	16QAM	26090	1855	25.26	19.72	5.54	13	PASS
		26365	1882.5	24.53	19.65	4.88	13	PASS
		26640	1910	25.58	19.86	5.72	13	PASS
15MHz	QPSK	26115	1857.5	25.15	19.70	5.45	13	PASS
		26365	1882.5	25.28	19.61	5.67	13	PASS
		26615	1907.5	25.53	19.81	5.72	13	PASS
	16QAM	26115	1857.5	25.36	19.73	5.63	13	PASS
		26365	1882.5	25.32	19.66	5.66	13	PASS
		26615	1907.5	25.63	19.85	5.78	13	PASS
20MHz	QPSK	26140	1860	25.50	19.70	5.80	13	PASS
		26365	1882.5	25.41	19.61	5.80	13	PASS
		26590	1905	25.63	19.81	5.82	13	PASS
	16QAM	26140	1860	25.45	19.68	5.77	13	PASS
		26365	1882.5	25.33	19.57	5.76	13	PASS
		26590	1905	25.56	19.78	5.78	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)
2. 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 0°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.

3. Frequency Stability (Voltage Variation)

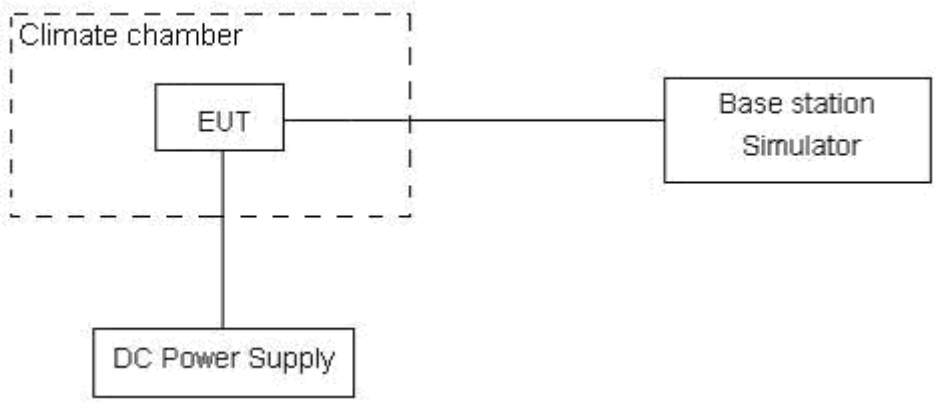
The frequency stability shall be measured with variation of primary supply voltage as follows:

(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 24.235

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 2 Middle Channel Test Results (ppm)	
		QPSK	16QAM
1.4MHz	-30°C/Normal Voltage	0.00212	0.00228
	-20°C/Normal Voltage	-0.00044	-0.00025
	-10°C/Normal Voltage	0.00168	0.00166
	0°C/Normal Voltage	-0.00072	0.00219
	10°C/Normal Voltage	-0.00057	0.00173
	20°C/Normal Voltage	0.00235	0.00186
	30°C/Normal Voltage	-0.00031	-0.00141
	40°C/Normal Voltage	-0.00089	-0.00116
	50°C/Normal Voltage	-0.00101	0.00335
	55°C/Normal Voltage	-0.00182	0.00380
	20°C/Minimum Voltage	0.00039	0.00144
	20°C/Maximum Voltage	-0.00133	-0.00223
3MHz	-30°C/Normal Voltage	0.00125	0.00204
	-20°C/Normal Voltage	0.00064	-0.00052
	-10°C/Normal Voltage	-0.00083	0.00160
	0°C/Normal Voltage	-0.00016	-0.00080
	10°C/Normal Voltage	-0.00119	-0.00065
	20°C/Normal Voltage	-0.00102	0.00227
	30°C/Normal Voltage	0.00043	-0.00039
	40°C/Normal Voltage	0.00083	-0.00097
	50°C/Normal Voltage	-0.00120	-0.00129
	55°C/Normal Voltage	-0.00107	-0.00211
	20°C/Minimum Voltage	0.00251	0.00011
	20°C/Maximum Voltage	0.00183	-0.00162
5MHz	-30°C/Normal Voltage	0.00152	0.00165
	-20°C/Normal Voltage	0.00125	0.00104
	-10°C/Normal Voltage	0.00105	-0.00043
	0°C/Normal Voltage	-0.00020	0.00024
	10°C/Normal Voltage	0.00102	-0.00078
	20°C/Normal Voltage	0.00176	-0.00062
	30°C/Normal Voltage	0.00014	0.00084
	40°C/Normal Voltage	0.00074	0.00123
	50°C/Normal Voltage	0.00154	-0.00080
	55°C/Normal Voltage	-0.00224	-0.00067
	20°C/Minimum Voltage	0.00056	0.00291
	20°C/Maximum Voltage	-0.00166	0.00223

10MHz	-30°C/Normal Voltage	0.00320	0.00193
	-20°C/Normal Voltage	0.00072	0.00165
	-10°C/Normal Voltage	0.00308	0.00145
	0°C/Normal Voltage	0.00058	0.00105
	10°C/Normal Voltage	0.00112	0.00227
	20°C/Normal Voltage	-0.00122	0.00301
	30°C/Normal Voltage	-0.00082	0.00140
	40°C/Normal Voltage	0.00040	0.00200
	50°C/Normal Voltage	0.00014	0.00279
	55°C/Normal Voltage	-0.00343	-0.00098
	20°C/Minimum Voltage	0.00201	0.00182
	20°C/Maximum Voltage	-0.00113	-0.00041
15MHz	-30°C/Normal Voltage	-0.00036	0.00446
	-20°C/Normal Voltage	0.00154	0.00197
	-10°C/Normal Voltage	0.00064	0.00434
	0°C/Normal Voltage	-0.00452	0.00184
	10°C/Normal Voltage	-0.00065	0.00237
	20°C/Normal Voltage	0.00138	0.00003
	30°C/Normal Voltage	0.00166	0.00044
	40°C/Normal Voltage	0.00086	0.00166
	50°C/Normal Voltage	0.00128	0.00161
	55°C/Normal Voltage	0.00205	-0.00197
	20°C/Minimum Voltage	-0.00147	0.00347
	20°C/Maximum Voltage	0.00166	0.00033
20MHz	-30°C/Normal Voltage	0.00069	0.00111
	-20°C/Normal Voltage	0.00036	0.00300
	-10°C/Normal Voltage	0.00306	0.00210
	0°C/Normal Voltage	0.00109	-0.00306
	10°C/Normal Voltage	0.00141	0.00081
	20°C/Normal Voltage	-0.00269	0.00284
	30°C/Normal Voltage	-0.00073	0.00313
	40°C/Normal Voltage	-0.00003	0.00232
	50°C/Normal Voltage	0.00280	0.00274
	55°C/Normal Voltage	0.00191	0.00351
	20°C/Minimum Voltage	-0.00081	-0.00001
	20°C/Maximum Voltage	0.00165	-0.00017

Bandwith	Test status	LTE Band 25 Middle Channel Test Results (ppm)	
		QPSK	16QAM
1.4MHz	-30°C/Normal Voltage	0.00242	0.00148
	-20°C/Normal Voltage	0.00166	0.00171
	-10°C/Normal Voltage	0.00232	0.00259
	0°C/Normal Voltage	0.00082	-0.00005
	10°C/Normal Voltage	-0.00009	-0.00070
	20°C/Normal Voltage	0.00180	-0.00097
	30°C/Normal Voltage	0.00066	0.00193
	40°C/Normal Voltage	-0.00060	0.00215
	50°C/Normal Voltage	-0.00167	0.00167
	55°C/Normal Voltage	0.00112	0.00104
	20°C/Minimum Voltage	0.00201	0.00065
	20°C/Maximum Voltage	0.00138	0.00061
3MHz	-30°C/Normal Voltage	0.00208	0.00090
	-20°C/Normal Voltage	0.00242	0.00058
	-10°C/Normal Voltage	0.00380	0.00139
	0°C/Normal Voltage	0.00219	0.00060
	10°C/Normal Voltage	0.00014	0.00171
	20°C/Normal Voltage	0.00288	0.00134
	30°C/Normal Voltage	0.00189	-0.00018
	40°C/Normal Voltage	0.00325	-0.00078
	50°C/Normal Voltage	-0.00149	-0.00220
	55°C/Normal Voltage	0.00076	-0.00016
	20°C/Minimum Voltage	0.00067	0.00242
	20°C/Maximum Voltage	0.00027	-0.00005
5MHz	-30°C/Normal Voltage	0.00089	-0.00002
	-20°C/Normal Voltage	0.00099	0.00063
	-10°C/Normal Voltage	0.00118	0.00173
	0°C/Normal Voltage	0.00050	0.00071
	10°C/Normal Voltage	-0.00120	0.00061
	20°C/Normal Voltage	0.00167	0.00073
	30°C/Normal Voltage	-0.00002	0.00218
	40°C/Normal Voltage	0.00067	0.00135
	50°C/Normal Voltage	0.00076	0.00214
	55°C/Normal Voltage	0.00167	-0.00030
	20°C/Minimum Voltage	-0.00243	0.00013
	20°C/Maximum Voltage	0.00313	0.00085
10MHz	-30°C/Normal Voltage	0.00172	0.00352

	-20°C/Normal Voltage	0.00157	-0.00026
	-10°C/Normal Voltage	0.00141	0.00198
	0°C/Normal Voltage	0.00238	0.00214
	10°C/Normal Voltage	0.00167	0.00225
	20°C/Normal Voltage	-0.00005	0.00181
	30°C/Normal Voltage	0.00106	-0.00279
	40°C/Normal Voltage	0.00136	0.00056
	50°C/Normal Voltage	0.00124	0.00344
	55°C/Normal Voltage	0.00083	-0.00001
	20°C/Minimum Voltage	0.00116	0.00224
	20°C/Maximum Voltage	-0.00067	-0.00053
15MHz	-30°C/Normal Voltage	-0.00045	-0.00100
	-20°C/Normal Voltage	0.00081	0.00089
	-10°C/Normal Voltage	0.00066	-0.00001
	0°C/Normal Voltage	0.00022	0.00015
	10°C/Normal Voltage	0.00084	-0.00064
	20°C/Normal Voltage	0.00077	0.00139
	30°C/Normal Voltage	0.00140	0.00168
	40°C/Normal Voltage	0.00122	0.00087
	50°C/Normal Voltage	0.00122	0.00129
	55°C/Normal Voltage	0.00109	0.00206
	20°C/Minimum Voltage	0.00186	-0.00146
	20°C/Maximum Voltage	0.00222	0.00168
20MHz	-30°C/Normal Voltage	0.00152	0.00071
	-20°C/Normal Voltage	0.00083	0.00037
	-10°C/Normal Voltage	0.00103	0.00308
	0°C/Normal Voltage	0.00265	0.00110
	10°C/Normal Voltage	0.00082	0.00143
	20°C/Normal Voltage	-0.00032	-0.00267
	30°C/Normal Voltage	0.00067	-0.00071
	40°C/Normal Voltage	0.00062	-0.00002
	50°C/Normal Voltage	0.00030	0.00281
	55°C/Normal Voltage	0.00015	0.00126
	20°C/Minimum Voltage	-0.00082	-0.00145
	20°C/Maximum Voltage	0.00036	0.00101

5.7. Spurious Emissions at Antenna Terminals

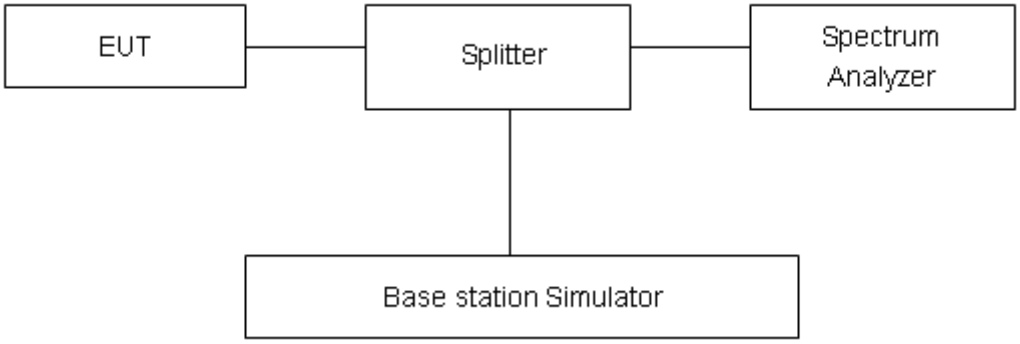
Ambient condition

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 9kHz to the 10th harmonic of the carrier. The peak detector is used.set RBW 1MHz and VBW is 3MHz, Sweep is set to ATUO.

Test setup



Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 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

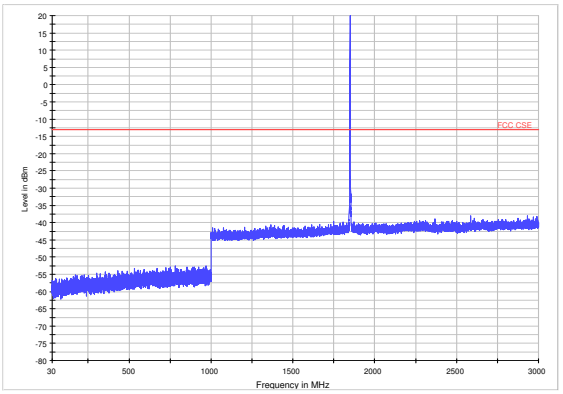
Test Result

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

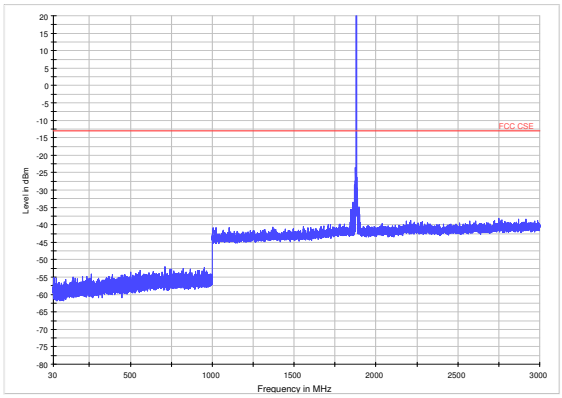
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.

The signal beyond the limit is carrier.

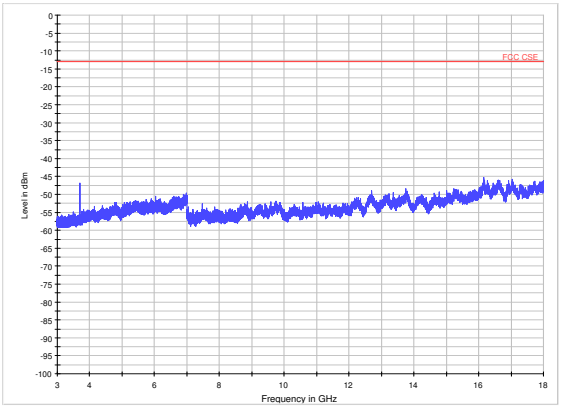
LTE Band 2 1.4MHz CH-Low 30MHz~3GHz



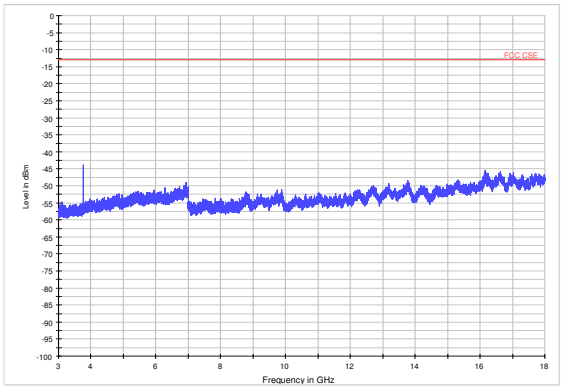
LTE Band 2 1.4MHz CH-Middle 30MHz~3GHz



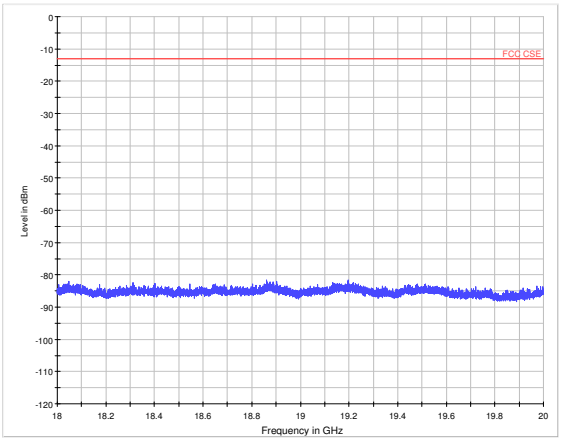
LTE Band 2 1.4MHz CH-Low 3GHz~18GHz



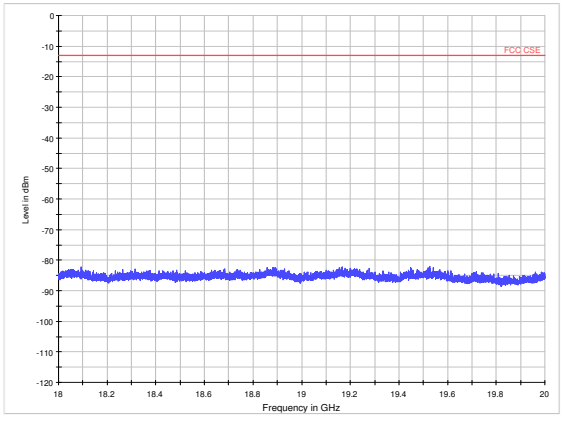
LTE Band 2 1.4MHz CH-Middle 3GHz~18GHz



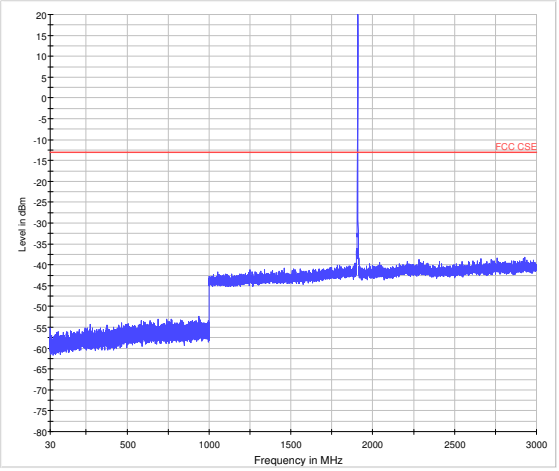
LTE Band 2 1.4MHz CH-Low 18GHz~20GHz



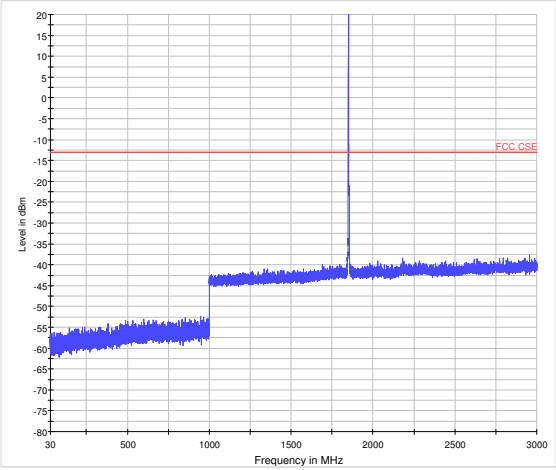
LTE Band 2 1.4MHz CH-Middle 18GHz~20GHz



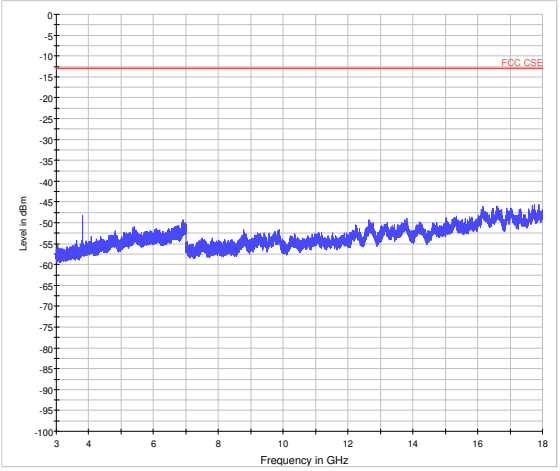
LTE Band 2 1.4MHz CH-High 30MHz~3GHz



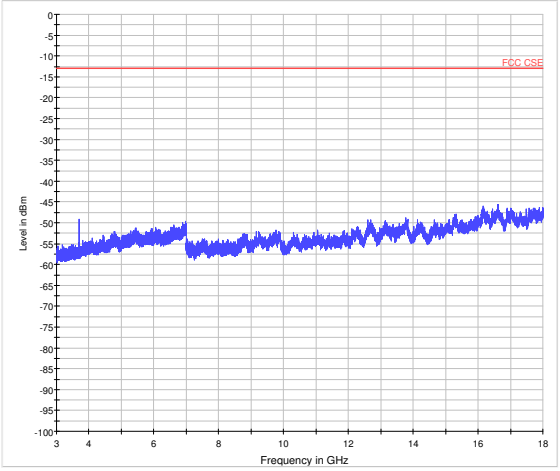
LTE Band 2 3MHz CH-Low 30MHz~3GHz



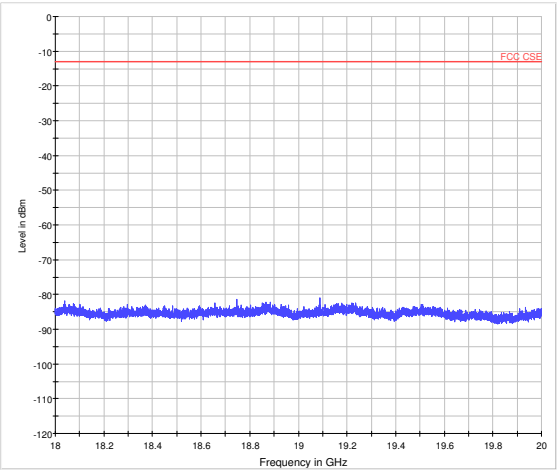
LTE Band 2 1.4MHz CH-High 3GHz~18GHz



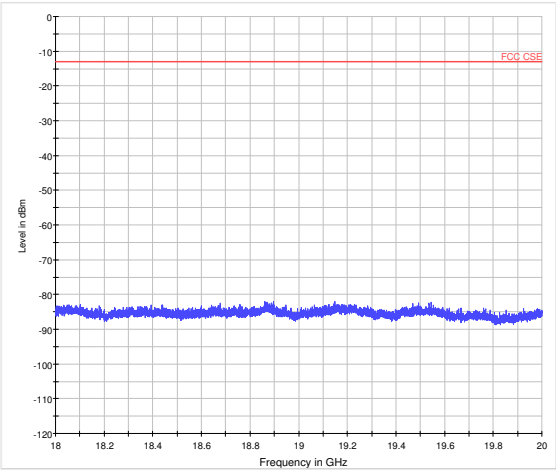
LTE Band 2 3MHz CH-Low 3GHz~18GHz



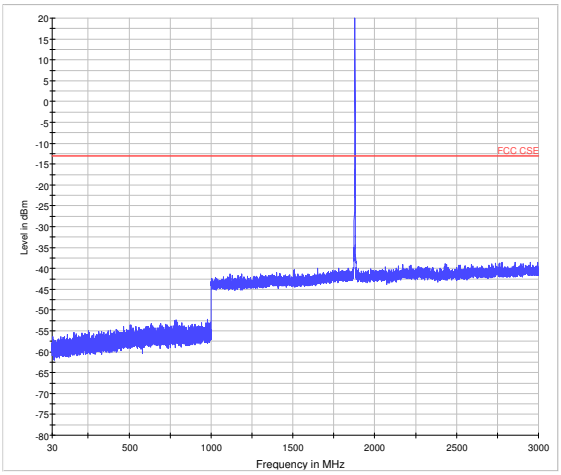
LTE Band 2 1.4MHz CH-High 18GHz~20GHz



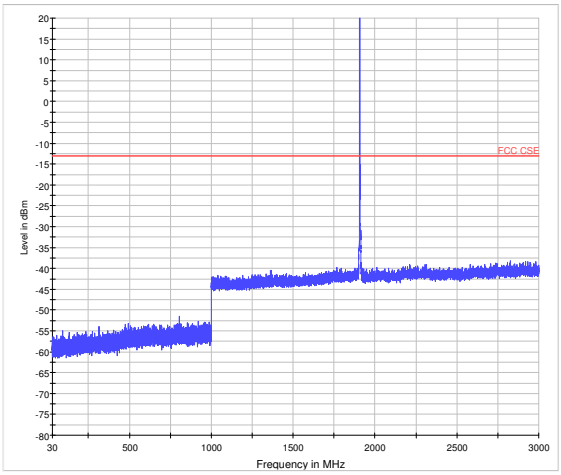
LTE Band 2 3MHz CH-Low 18GHz~20GHz



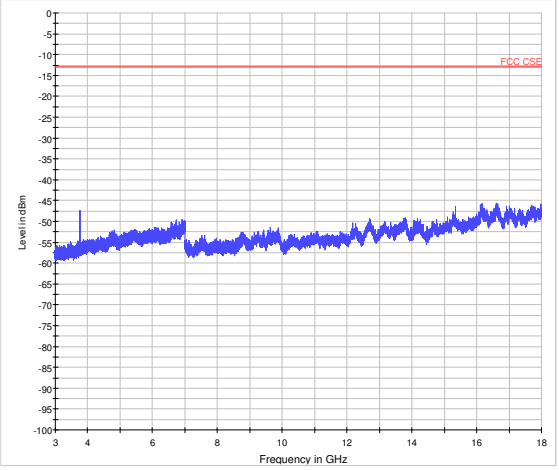
LTE Band 2 3MHz CH-Middle 30MHz~3GHz



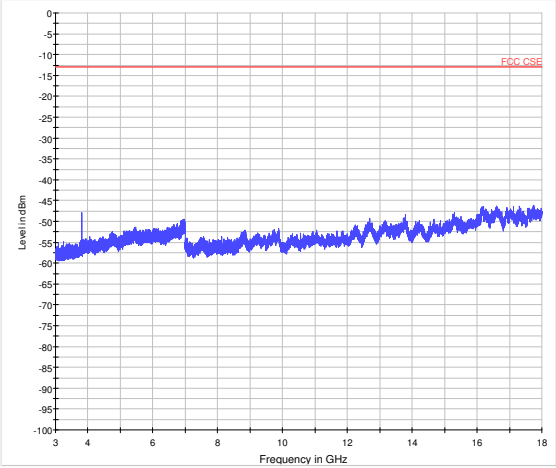
LTE Band 2 3MHz CH-High 30MHz~3GHz



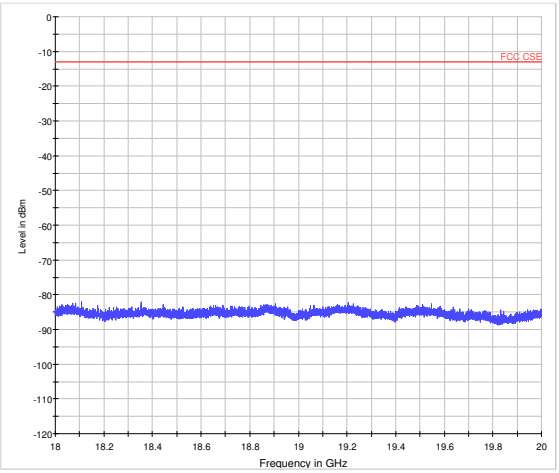
LTE Band 2 3MHz CH-Middle 3GHz~18GHz



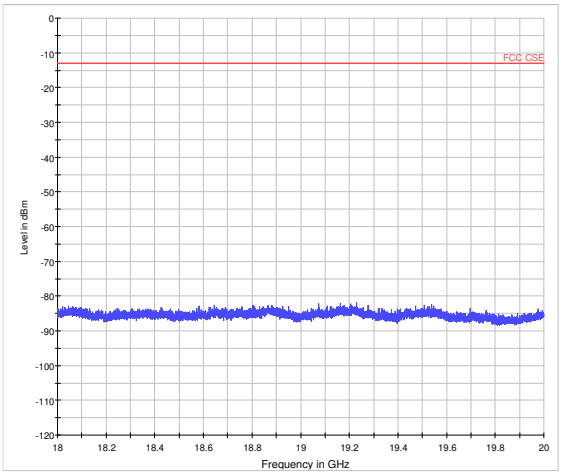
LTE Band 2 3MHz CH-High 3GHz~18GHz



LTE Band 2 3MHz CH-Middle 18GHz~20GHz

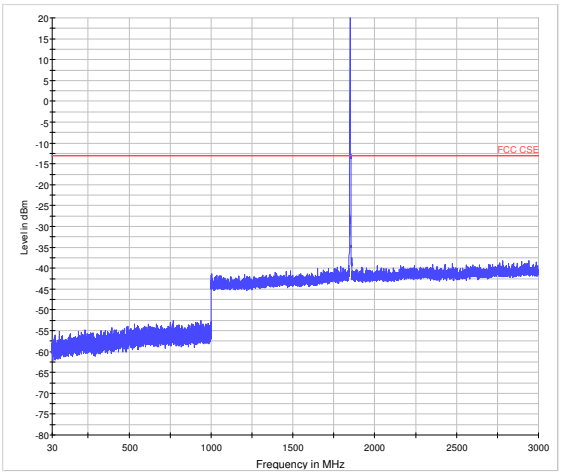


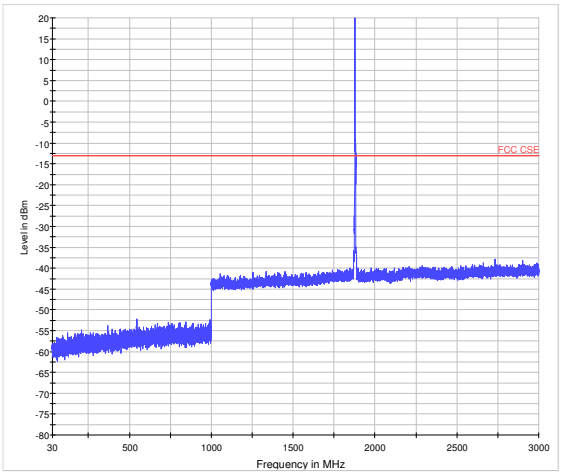
LTE Band 2 3MHz CH-High 18GHz~20GHz



LTE Band 2 5MHz CH-Low 30MHz~3GHz

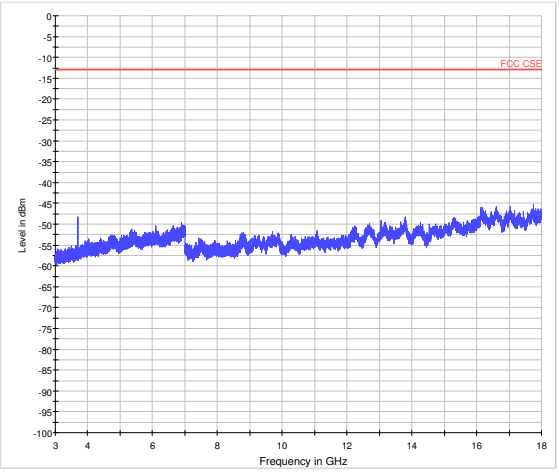
LTE Band 2 5MHz CH-Middle 30MHz~3GHz

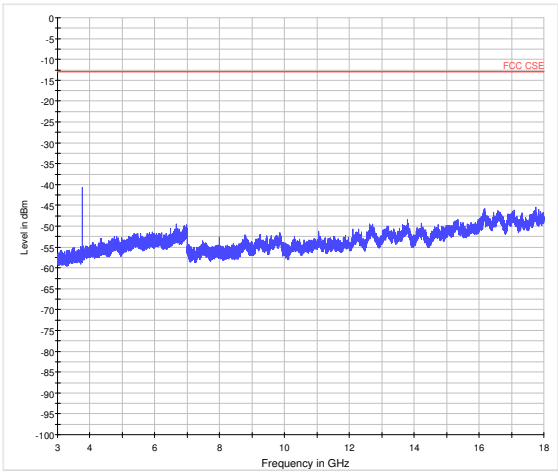




LTE Band 2 5MHz CH-Low 3GHz~18GHz

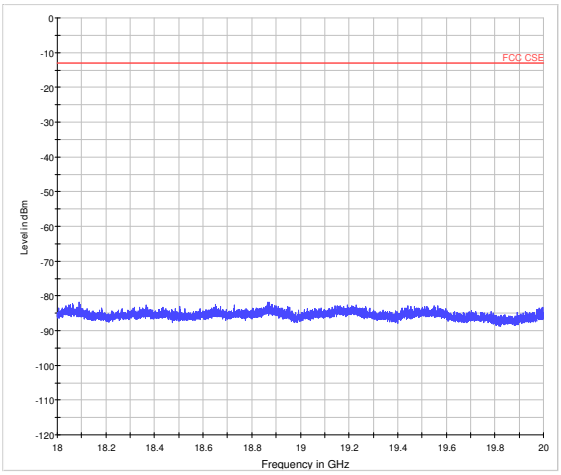
LTE Band 2 5MHz CH-Middle 3GHz~18GHz

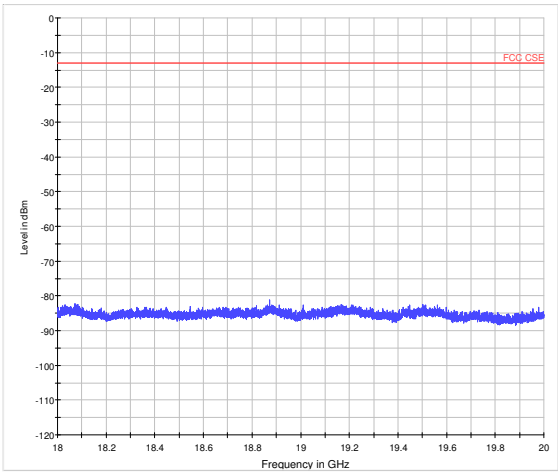




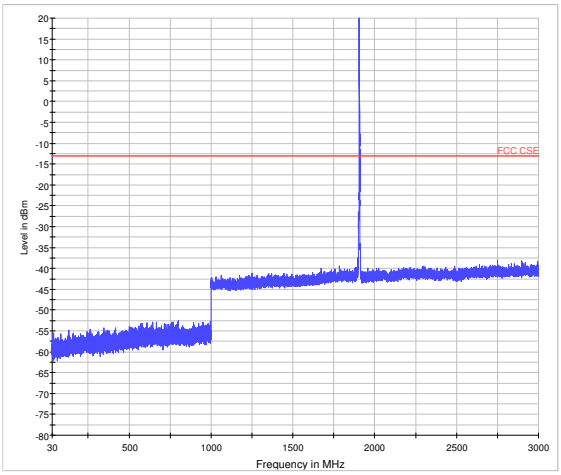
LTE Band 2 5MHz CH-Low 18GHz~20GHz

LTE Band 2 5MHz CH-Middle 18GHz~20GHz

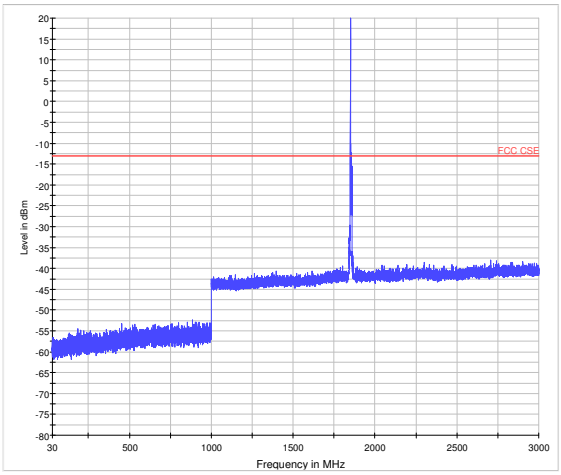




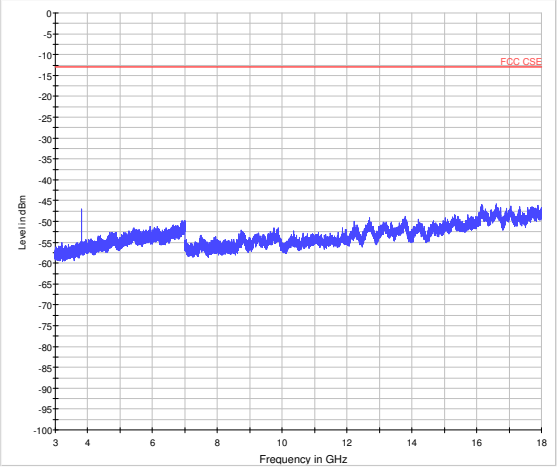
LTE Band 2 5MHz CH-High 30MHz~3GHz



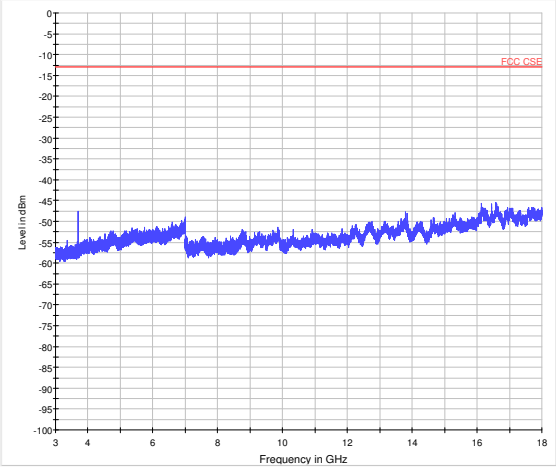
LTE Band 2 10MHz CH-Low 30MHz~3GHz



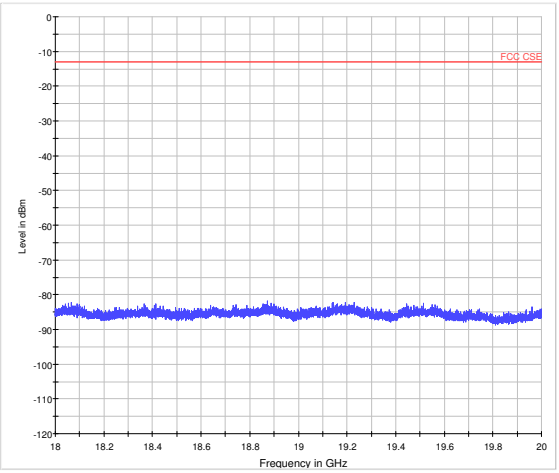
LTE Band 2 5MHz CH-High 3GHz~18GHz



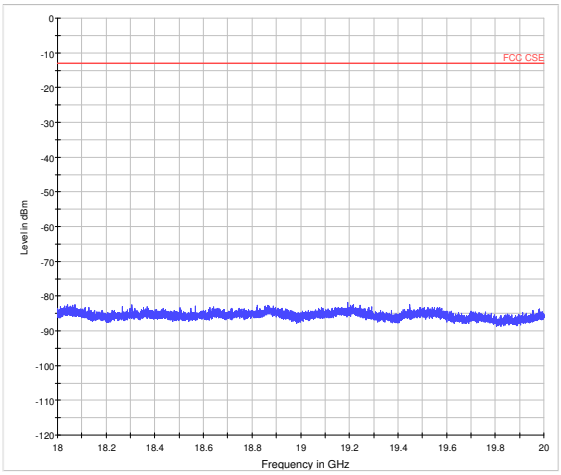
LTE Band 2 10MHz CH-Low 3GHz~18GHz



LTE Band 2 5MHz CH-High 18GHz~20GHz

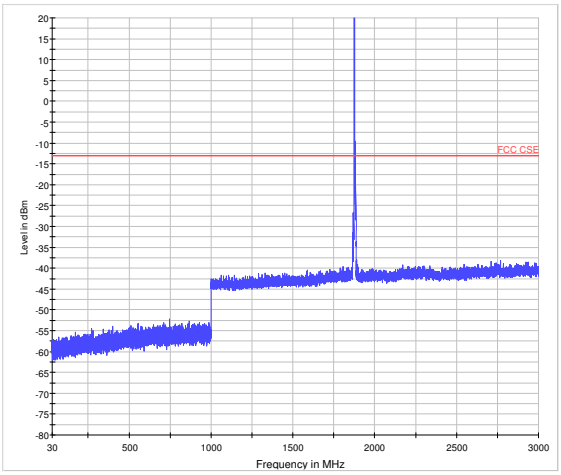


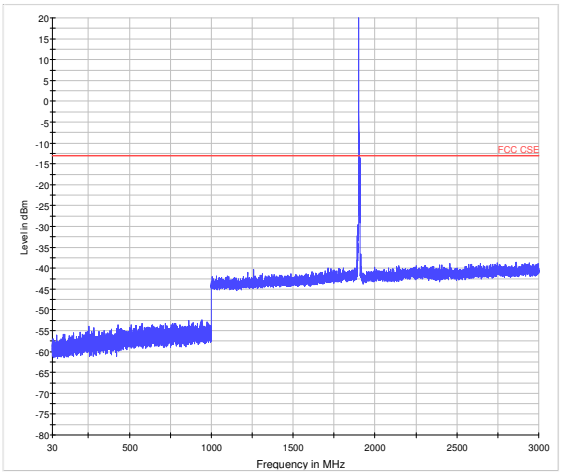
LTE Band 2 10MHz CH-Low 18GHz~20GHz



LTE Band 2 10MHz CH-Middle 30MHz~3GHz

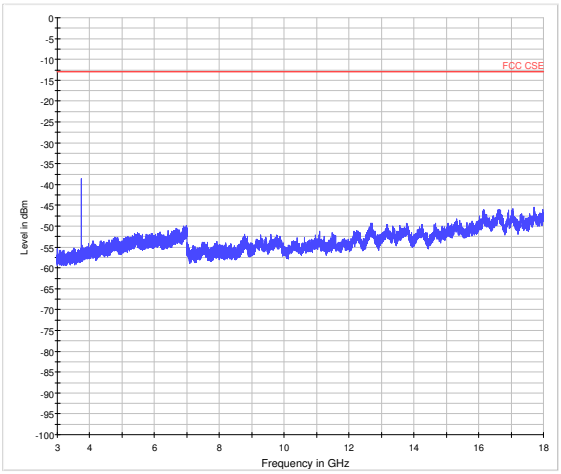
LTE Band 2 10MHz CH-High 30MHz~3GHz

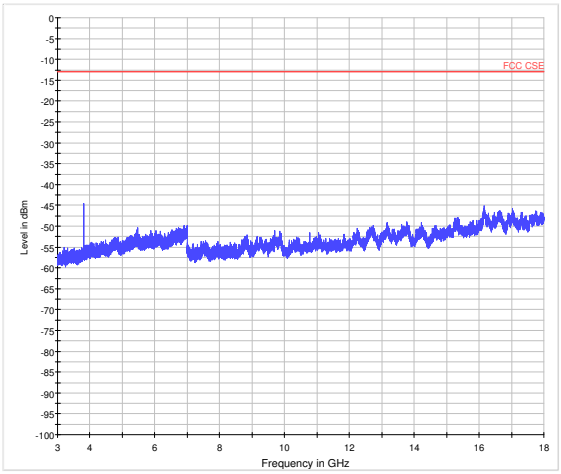




LTE Band 2 10MHz CH-Middle 3GHz~18GHz

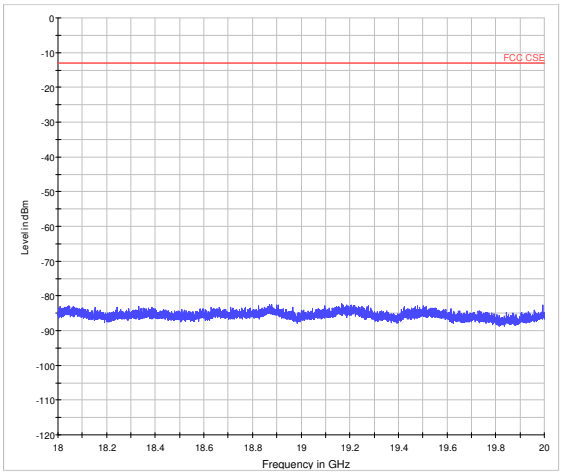
LTE Band 2 10MHz CH-High 3GHz~18GHz

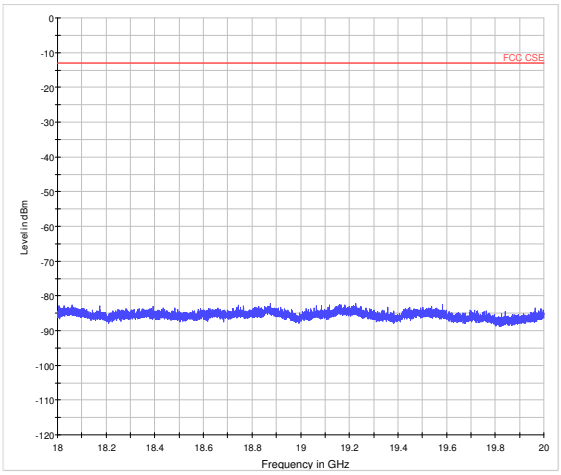




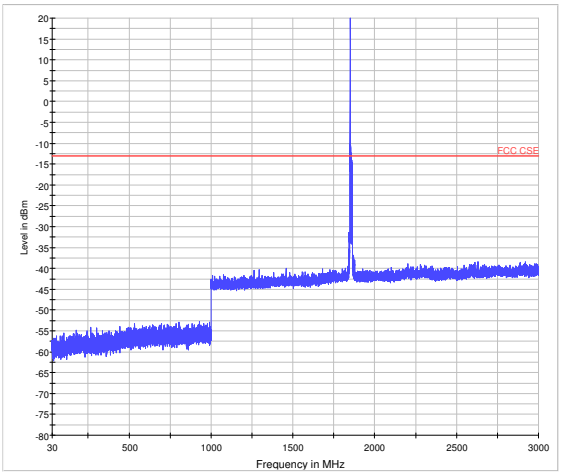
LTE Band 2 10MHz CH-Middle 18GHz~20GHz

LTE Band 2 10MHz CH-High 18GHz~20GHz

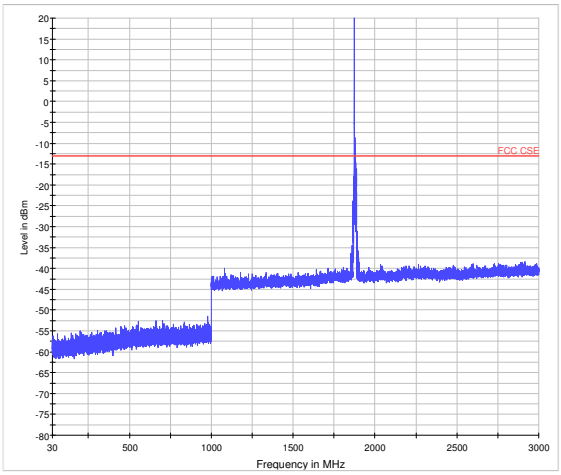




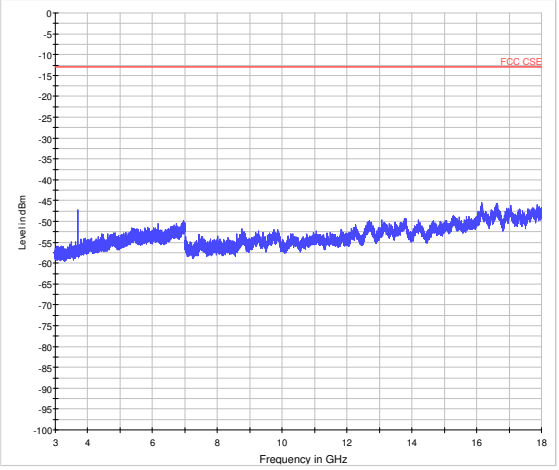
LTE Band 2 15MHz CH-Low 30MHz~3GHz



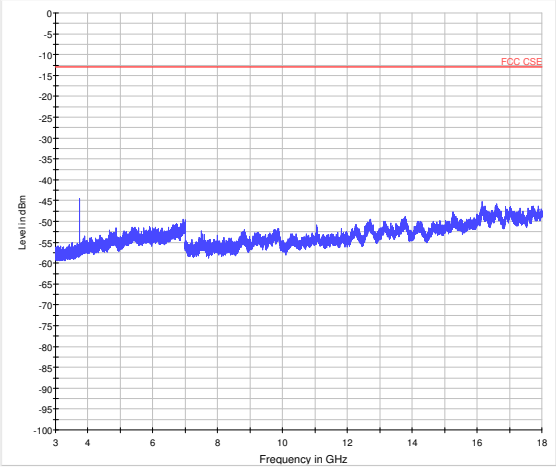
LTE Band 2 15MHz CH-Middle 30MHz~3GHz



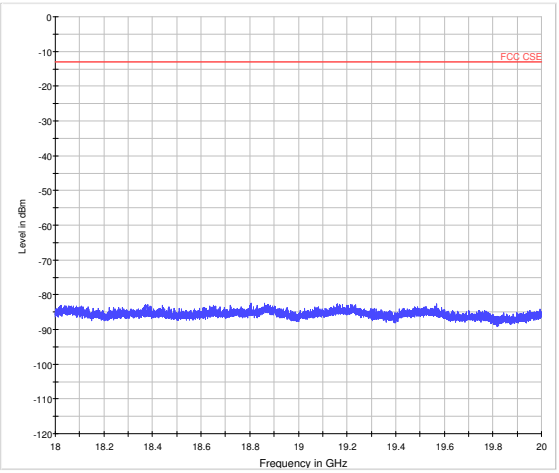
LTE Band 2 15MHz CH-Low 3GHz~18GHz



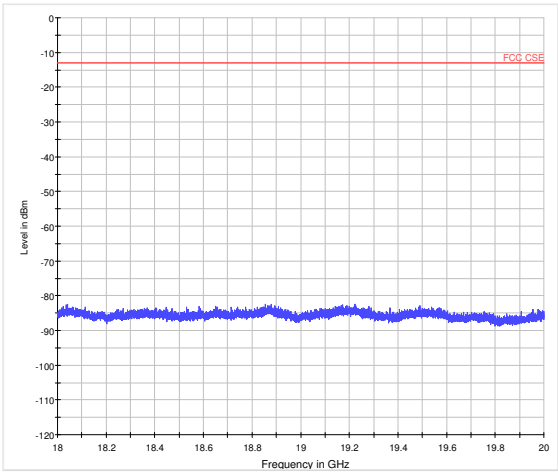
LTE Band 2 15MHz CH-Middle 3GHz~18GHz



LTE Band 2 15MHz CH-Low 18GHz~20GHz

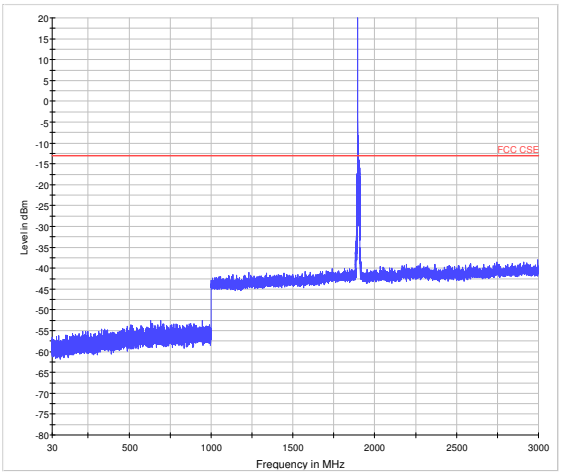


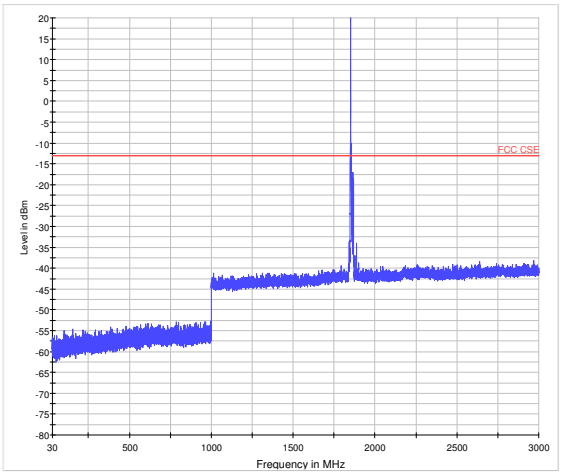
LTE Band 2 15MHz CH-Middle 18GHz~20GHz



LTE Band 2 15MHz CH-High 30MHz~3GHz

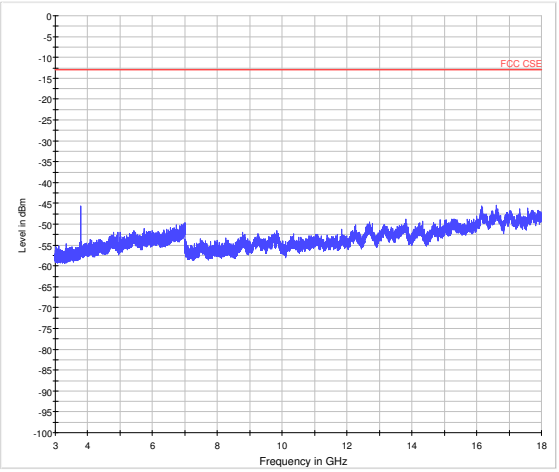
LTE Band 2 20MHz CH-Low 30MHz~3GHz

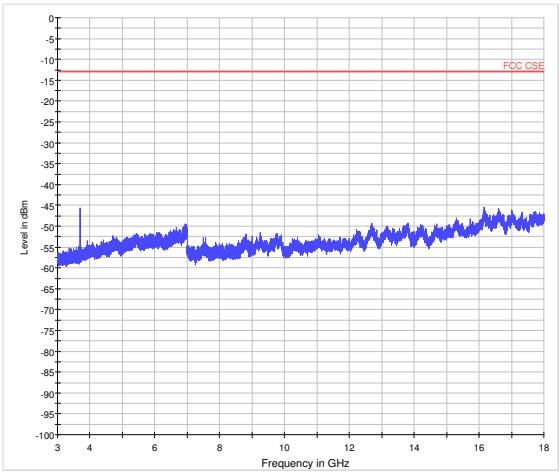




LTE Band 2 15MHz CH-High 3GHz~18GHz

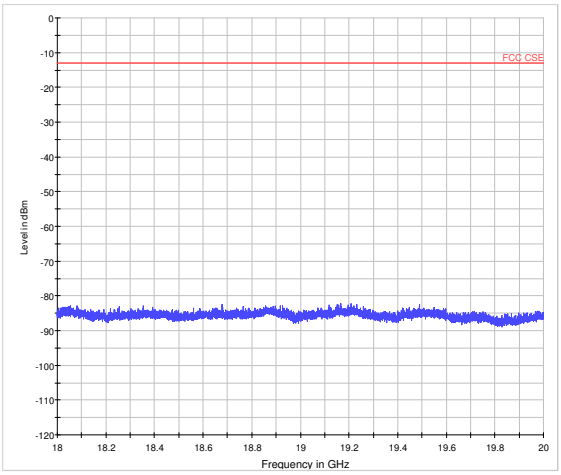
LTE Band 2 20MHz CH-Low 3GHz~18GHz

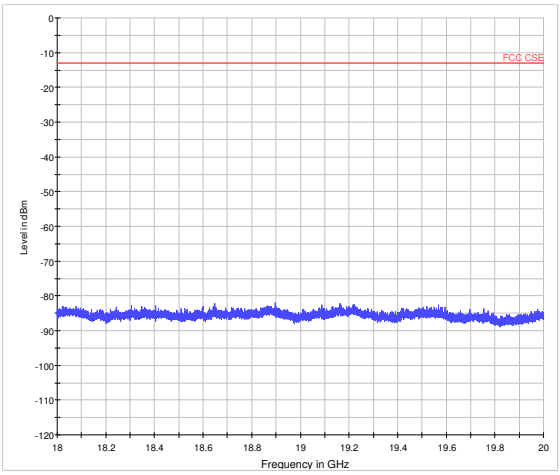




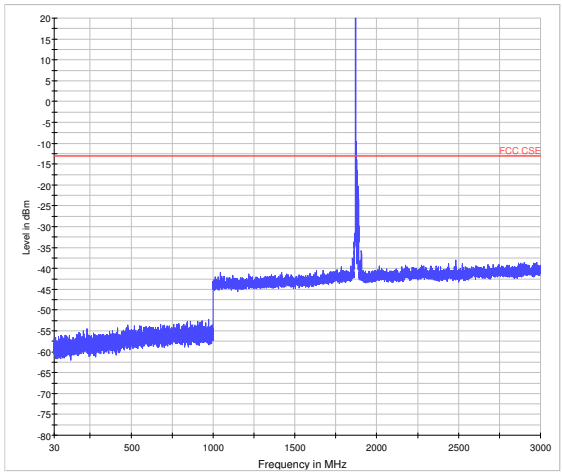
LTE Band 2 15MHz CH-High 18GHz~20GHz

LTE Band 2 20MHz CH-Low 18GHz~20GHz

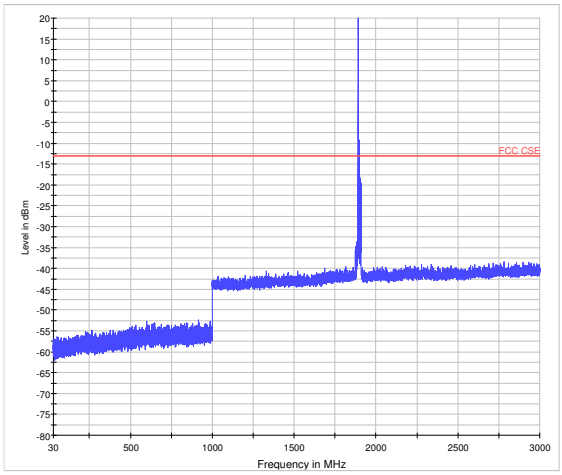




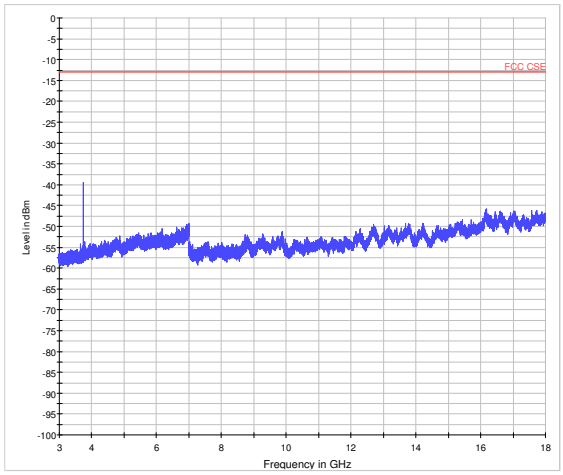
LTE Band 2 20MHz CH-Middle 30MHz~3GHz



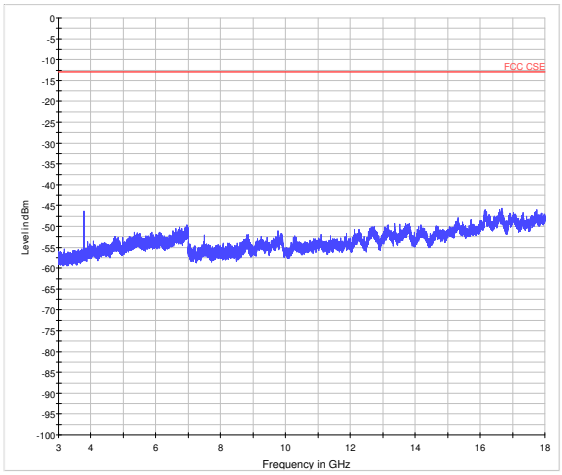
LTE Band 2 20MHz CH-High 30MHz~3GHz



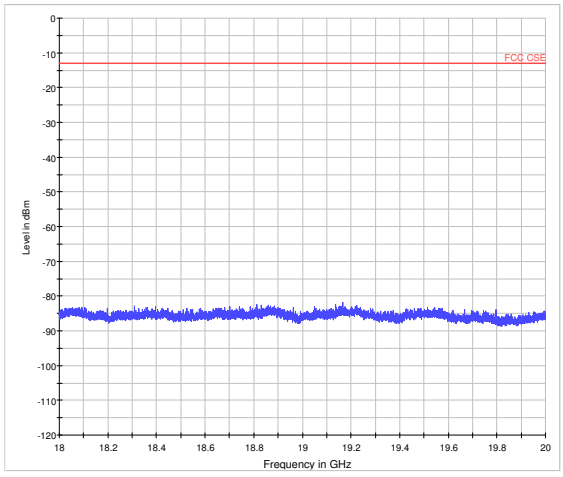
LTE Band 2 20MHz CH-Middle 3GHz~18GHz



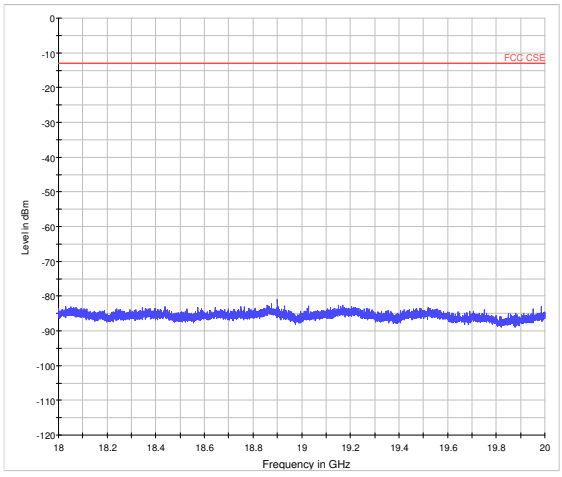
LTE Band 2 20MHz CH-High 3GHz~18GHz



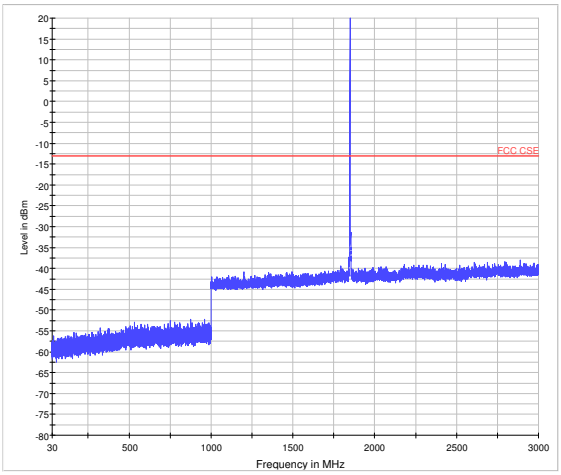
LTE Band 2 20MHz CH-Middle 18GHz~20GHz



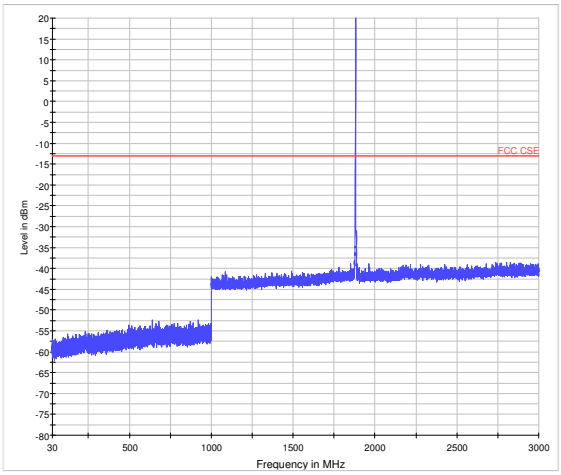
LTE Band 2 20MHz CH-High 18GHz~20GHz



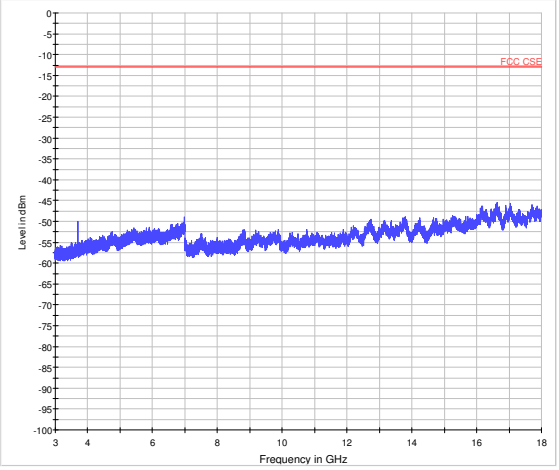
LTE Band 25 1.4MHz CH-Low 30MHz~3GHz



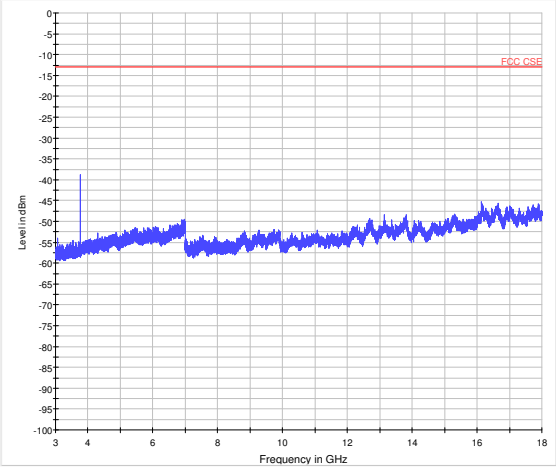
LTE Band 25 1.4MHz CH-Middle 30MHz~3GHz



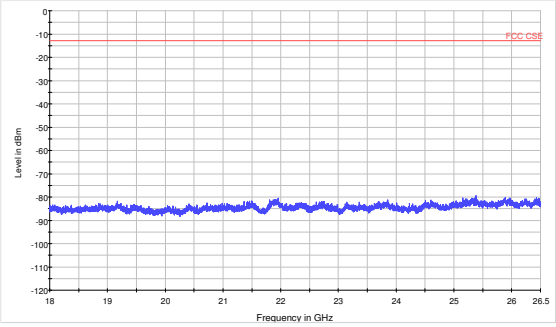
LTE Band 25 1.4MHz CH-Low 3GHz~18GHz



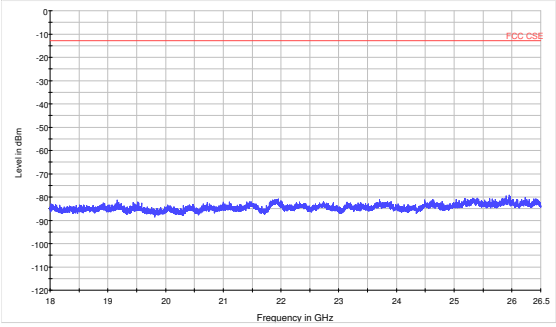
LTE Band 25 1.4MHz CH-Middle 3GHz~18GHz



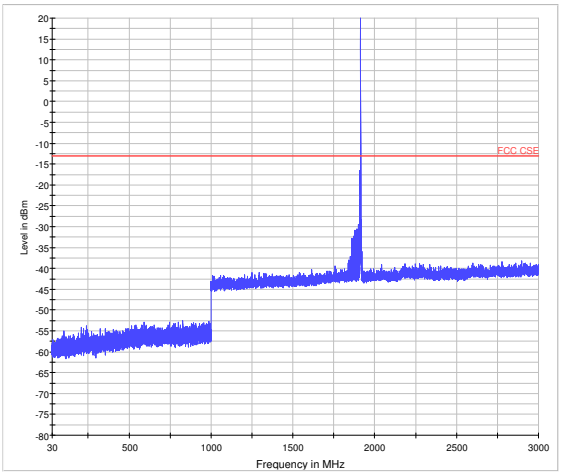
LTE Band 25 1.4MHz CH-Low 18GHz~20GHz



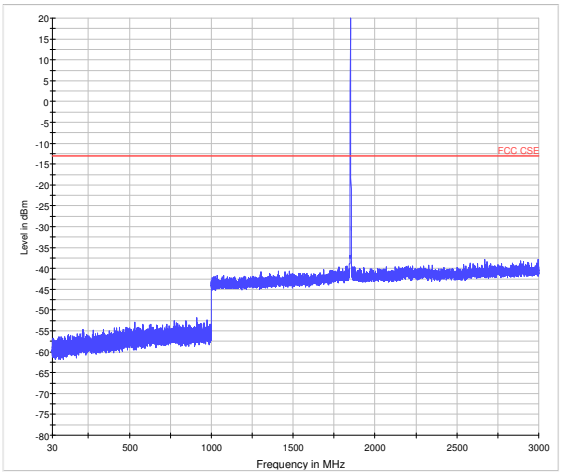
LTE Band 25 1.4MHz CH-Middle 18GHz~20GHz



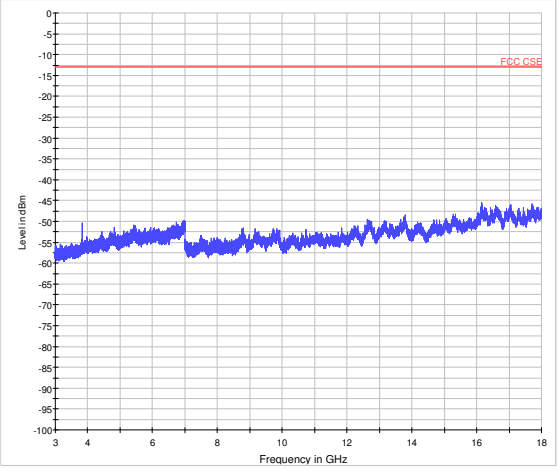
LTE Band 25 1.4MHz CH-High 30MHz~3GHz



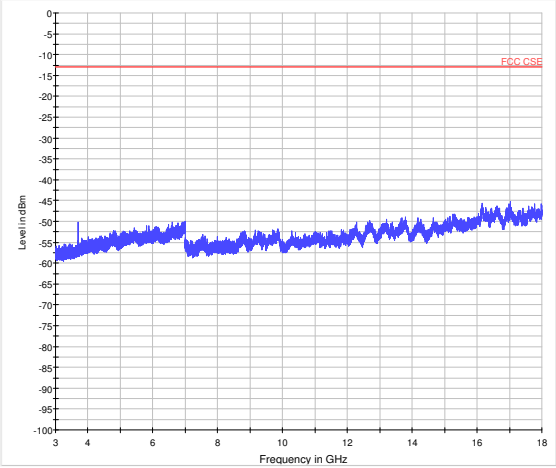
LTE Band 25 3MHz CH-Low 30MHz~3GHz



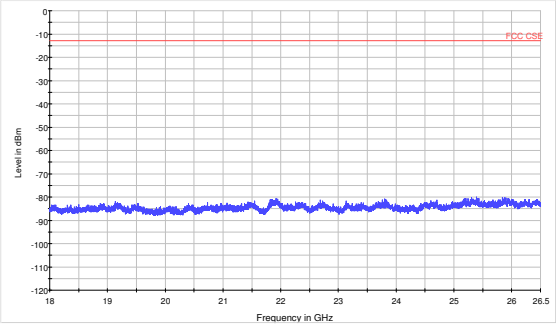
LTE Band 25 1.4MHz CH-High 3GHz~18GHz



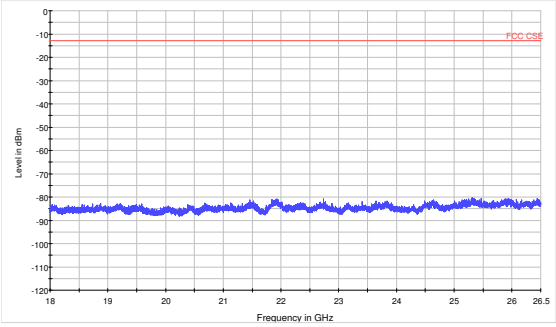
LTE Band 25 3MHz CH-Low 3GHz~18GHz



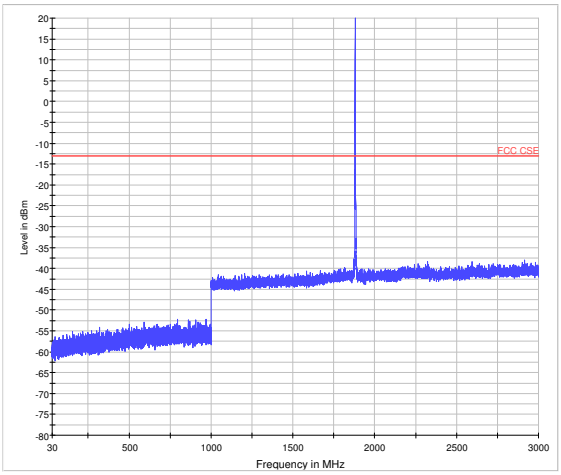
LTE Band 25 1.4MHz CH-High 18GHz~20GHz



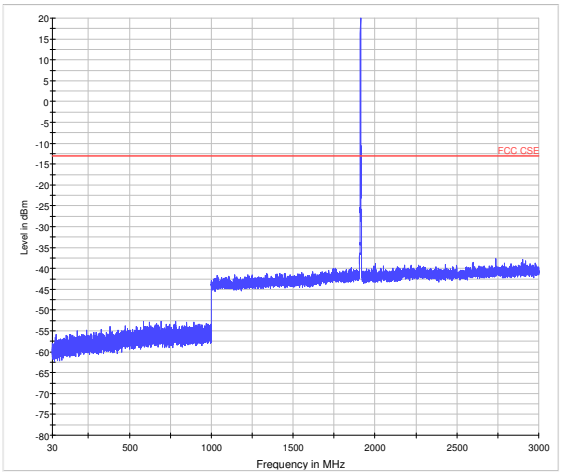
LTE Band 25 3MHz CH-Low 18GHz~20GHz



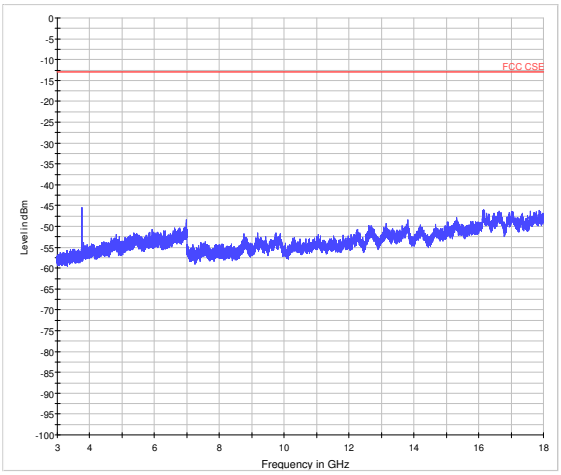
LTE Band 25 3MHz CH-Middle 30MHz~3GHz



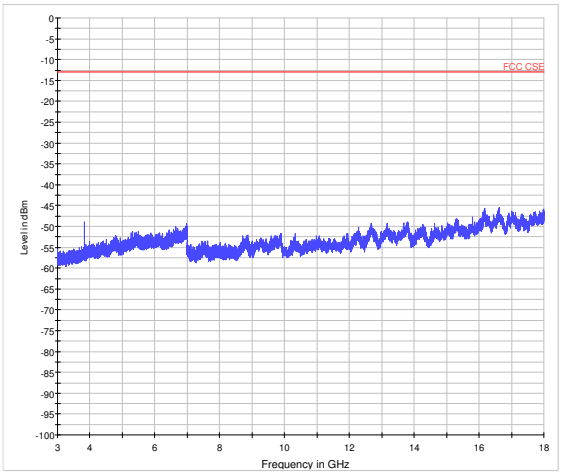
LTE Band 25 3MHz CH-High 30MHz~3GHz



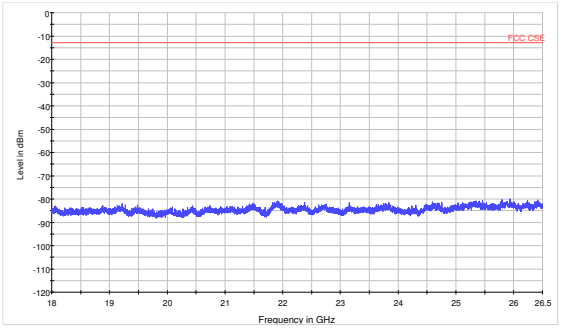
LTE Band 25 3MHz CH-Middle 3GHz~18GHz



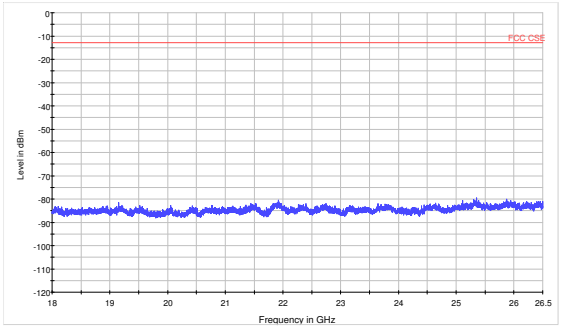
LTE Band 25 3MHz CH-High 3GHz~18GHz



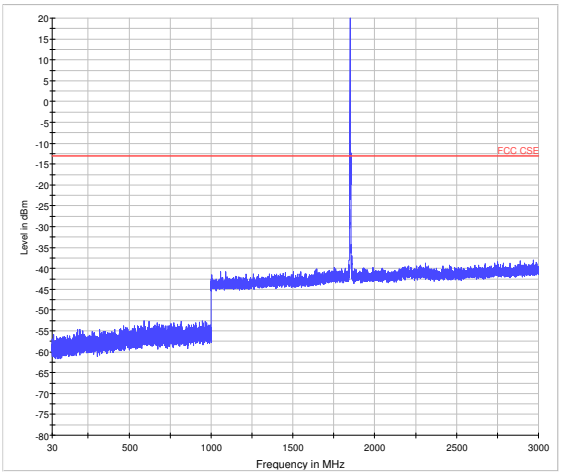
LTE Band 25 3MHz CH-Middle 18GHz~20GHz



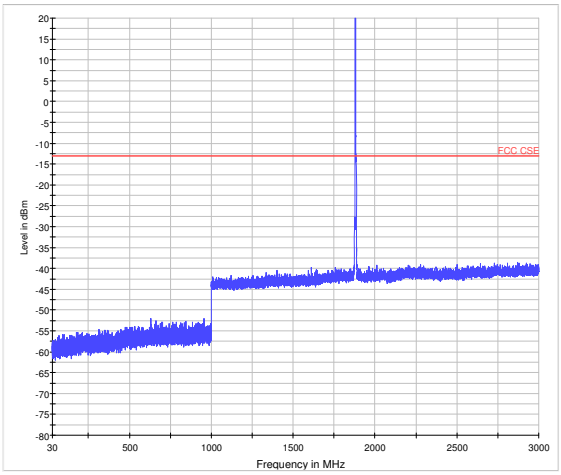
LTE Band 25 3MHz CH-High 18GHz~20GHz



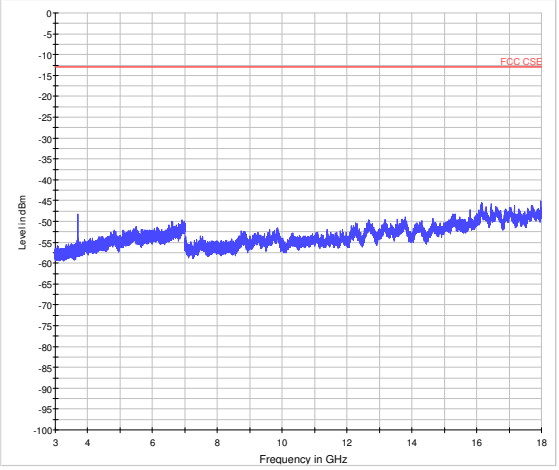
LTE Band 25 5MHz CH-Low 30MHz~3GHz



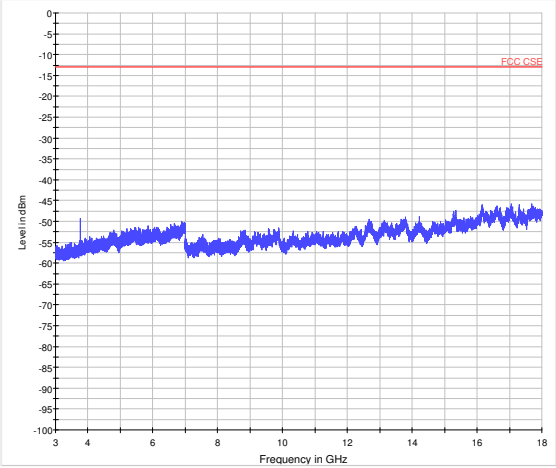
LTE Band 25 5MHz CH-Middle 30MHz~3GHz



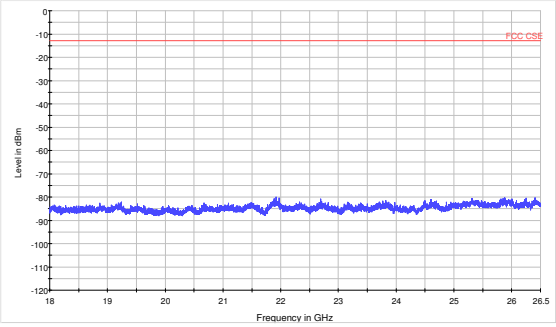
LTE Band 25 5MHz CH-Low 3GHz~18GHz



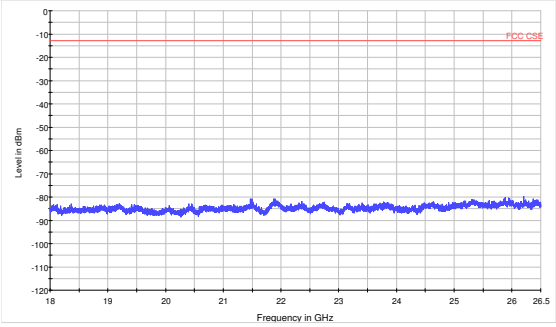
LTE Band 25 5MHz CH-Middle 3GHz~18GHz



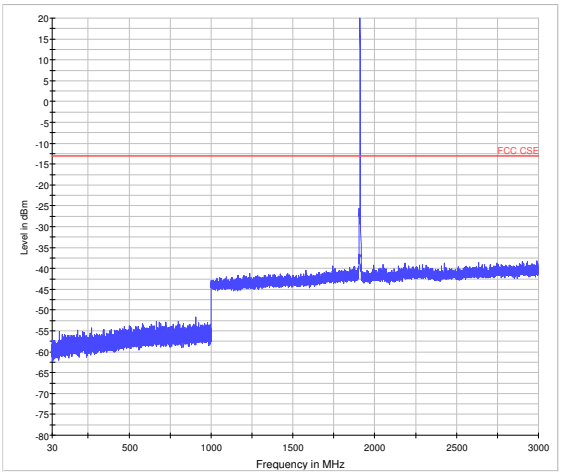
LTE Band 25 5MHz CH-Low 18GHz~20GHz



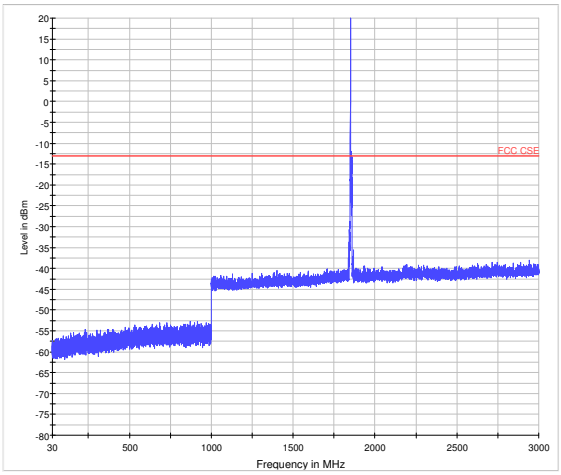
LTE Band 25 5MHz CH-Middle 18GHz~20GHz



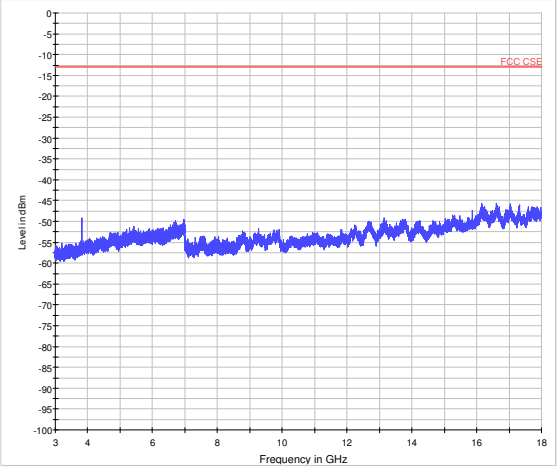
LTE Band 25 5MHz CH-High 30MHz~3GHz



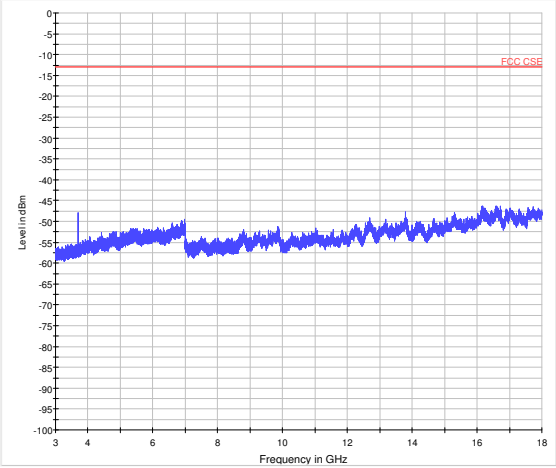
LTE Band 25 10MHz CH-Low 30MHz~3GHz



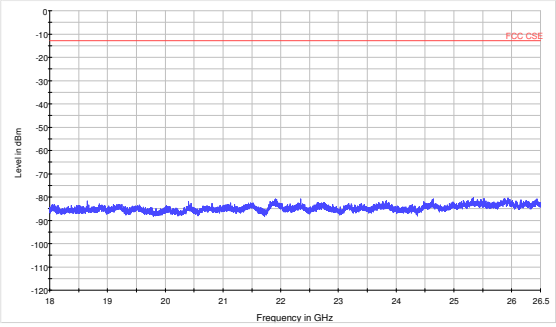
LTE Band 25 5MHz CH-High 3GHz~18GHz



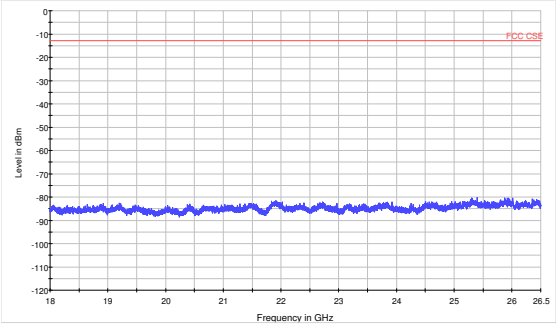
LTE Band 25 10MHz CH-Low 3GHz~18GHz



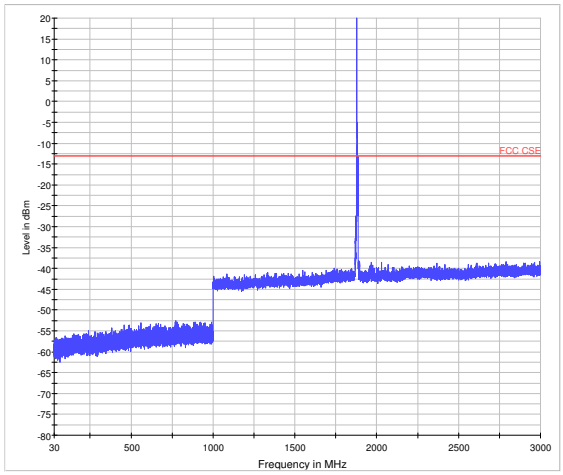
LTE Band 25 5MHz CH-High 18GHz~20GHz



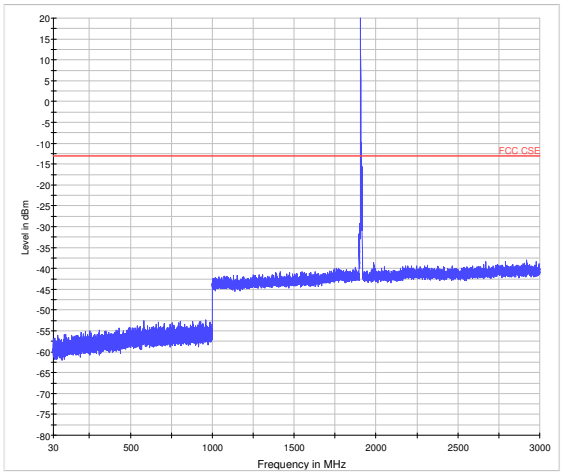
LTE Band 25 10MHz CH-Low 18GHz~20GHz



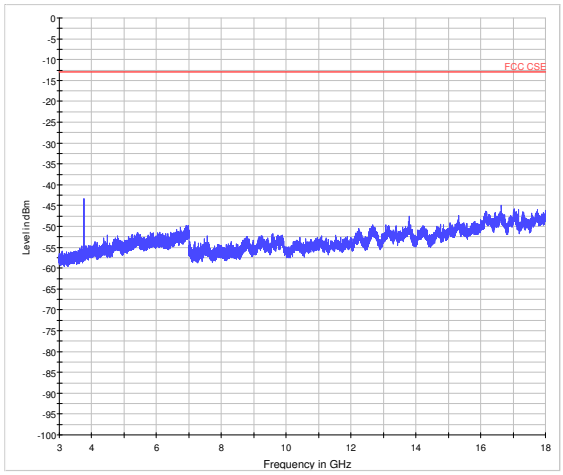
LTE Band 25 10MHz CH-Middle 30MHz~3GHz



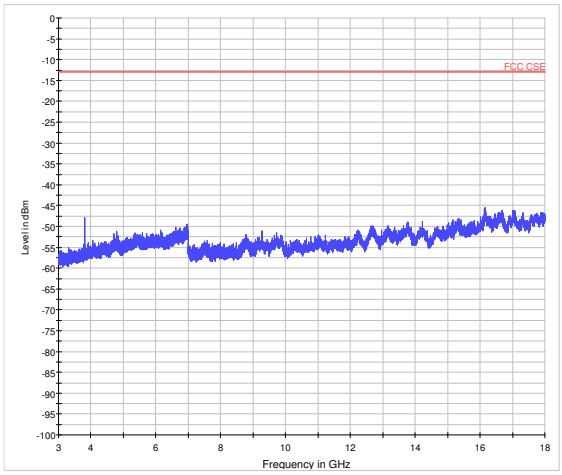
LTE Band 25 10MHz CH-High 30MHz~3GHz



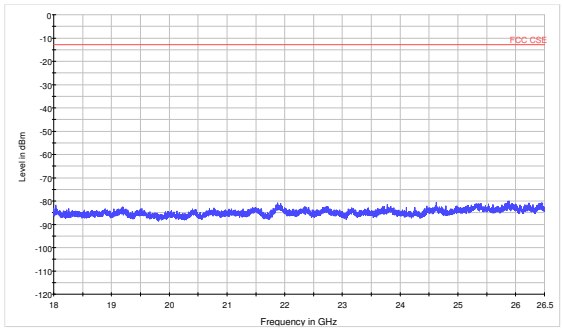
LTE Band 25 10MHz CH-Middle 3GHz~18GHz



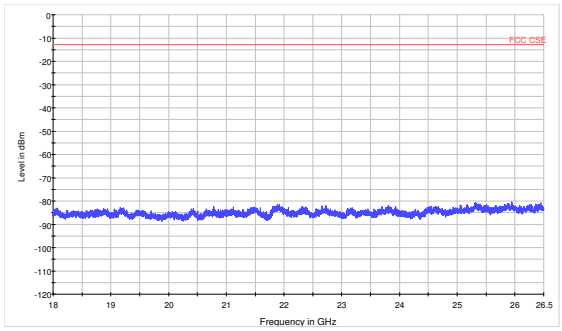
LTE Band 25 10MHz CH-High 3GHz~18GHz



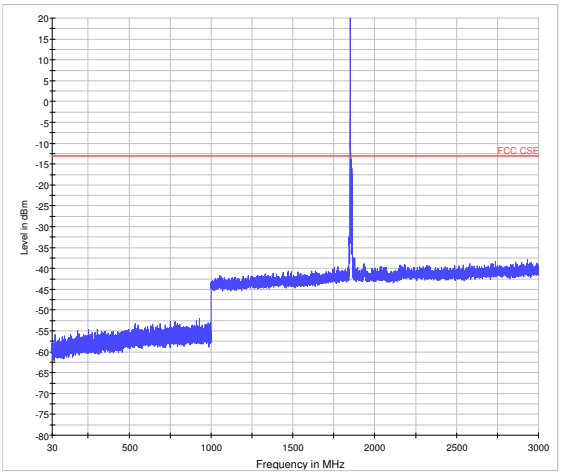
LTE Band 25 10MHz CH-Middle 18GHz~20GHz



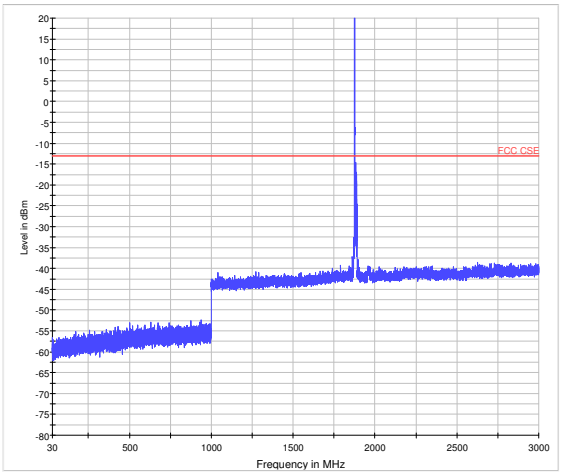
LTE Band 25 10MHz CH-High 18GHz~20GHz



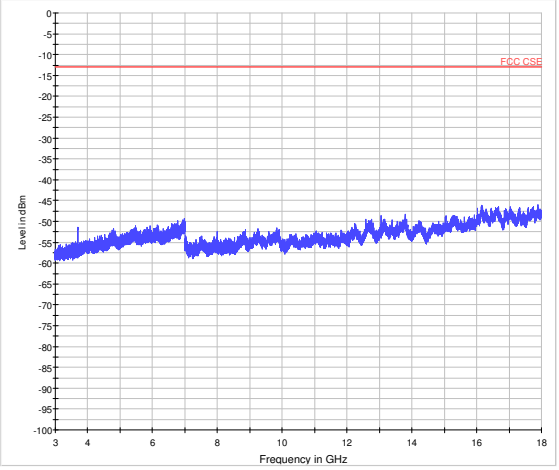
LTE Band 25 15MHz CH-Low 30MHz~3GHz



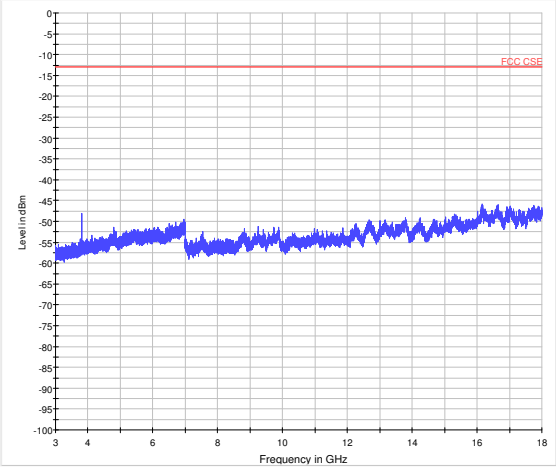
LTE Band 25 15MHz CH-Middle 30MHz~3GHz



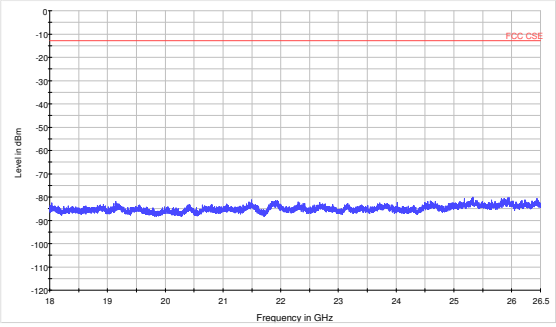
LTE Band 25 15MHz CH-Low 3GHz~18GHz



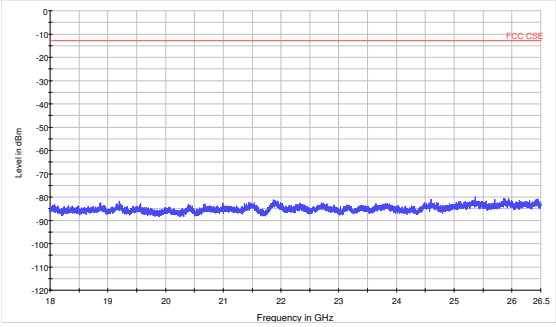
LTE Band 25 15MHz CH-Middle 3GHz~18GHz



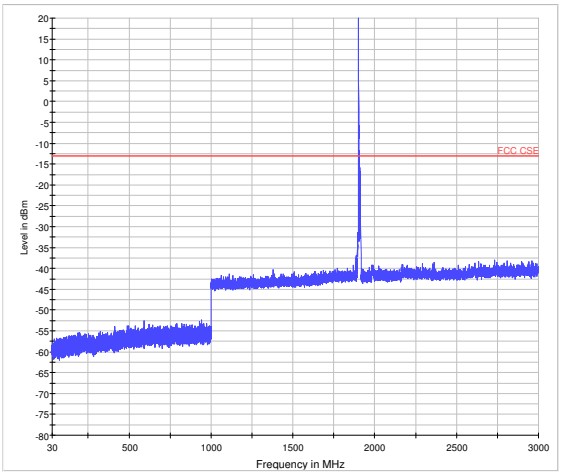
LTE Band 25 15MHz CH-Low 18GHz~20GHz



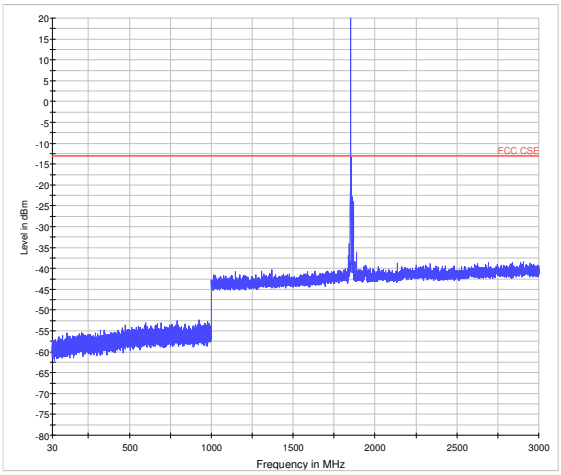
LTE Band 25 15MHz CH-Middle 18GHz~20GHz



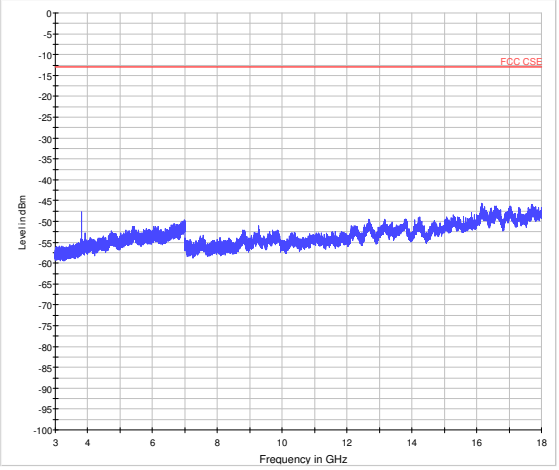
LTE Band 25 15MHz CH-High 30MHz~3GHz



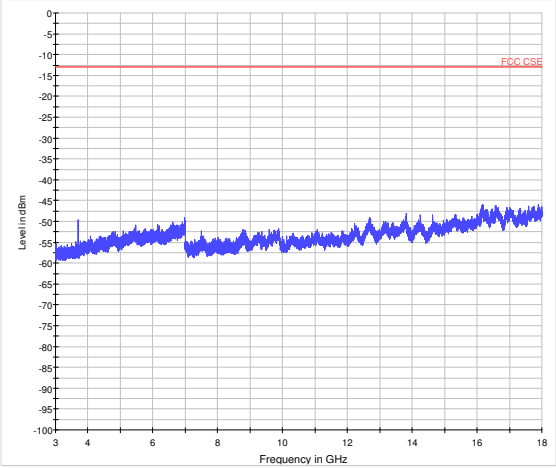
LTE Band 25 20MHz CH-Low 30MHz~3GHz



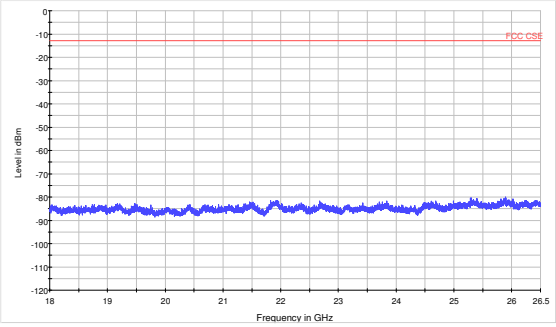
LTE Band 25 15MHz CH-High 3GHz~18GHz



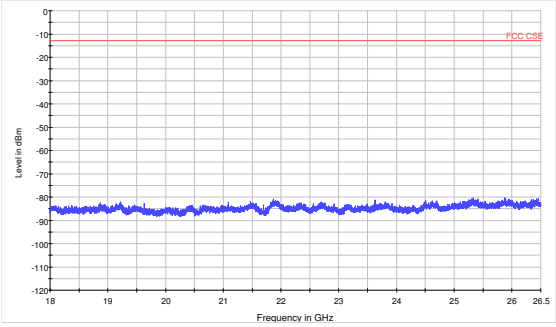
LTE Band 25 20MHz CH-Low 3GHz~18GHz



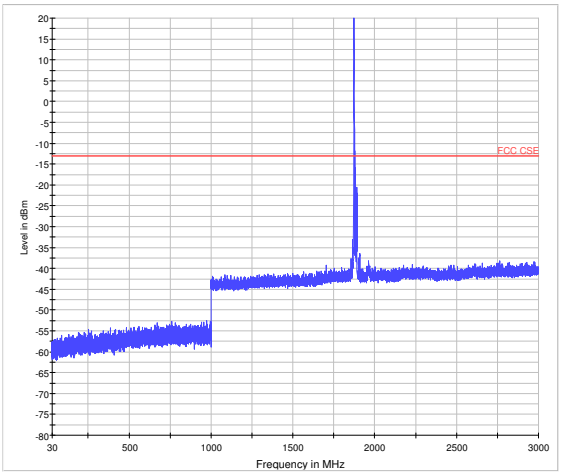
LTE Band 25 15MHz CH-High 18GHz~20GHz



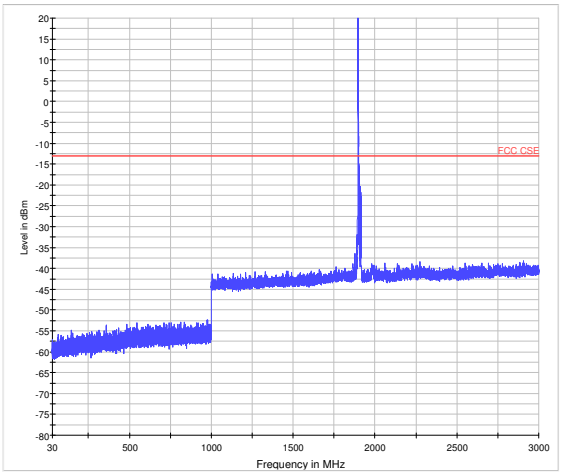
LTE Band 25 20MHz CH-Low 18GHz~20GHz



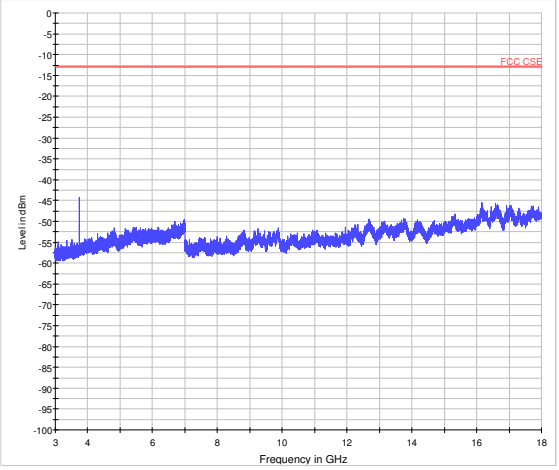
LTE Band 25 20MHz CH-Middle 30MHz~3GHz



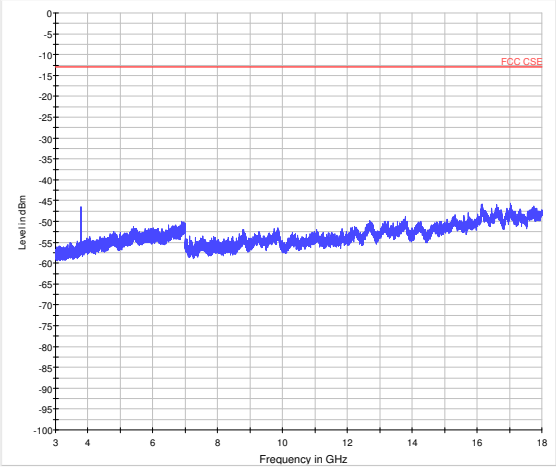
LTE Band 25 20MHz CH-High 30MHz~3GHz



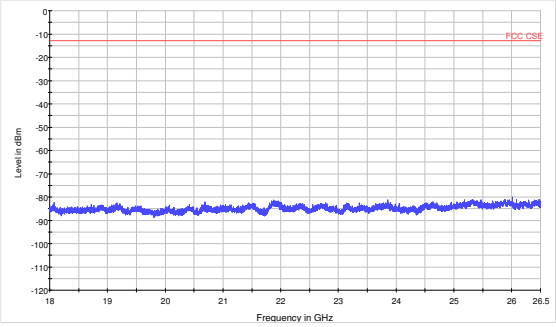
LTE Band 25 20MHz CH-Middle 3GHz~18GHz



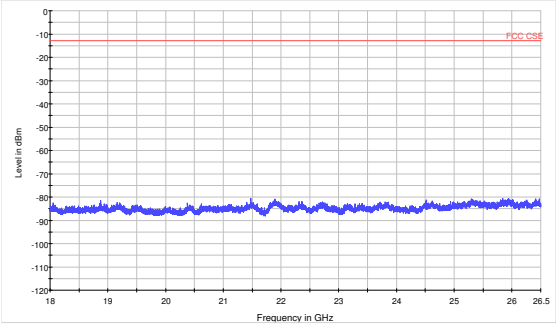
LTE Band 25 20MHz CH-High 3GHz~18GHz



LTE Band 25 20MHz CH-Middle 18GHz~20GHz



LTE Band 25 20MHz CH-High 18GHz~20GHz



5.8. Radiates Spurious Emission

Ambient condition

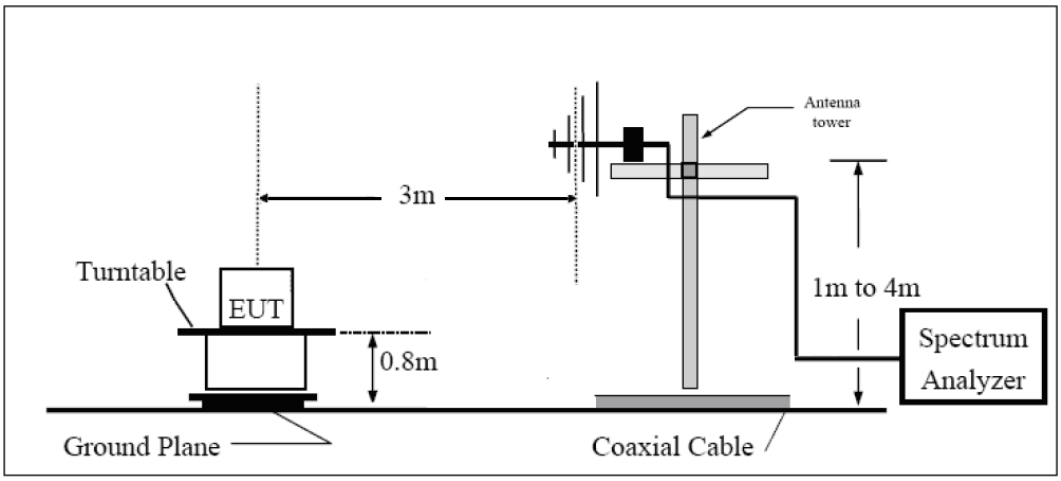
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

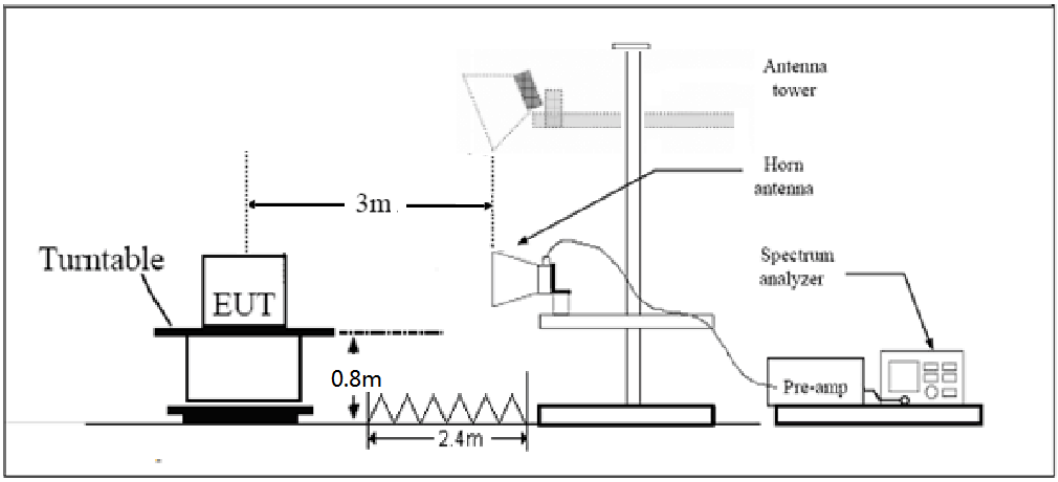
1. The testing follows FCC KDB 971168 v03 Section 5.8 and ANSI/TIA-603-E (2016).
2. The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

Test setup

30MHz~~~ 1GHz



Above 1GHz



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 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor k = 1.96, U= 3.55 dB.

Test Result

LTE Band 2 1.4MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3700.5	-56.05	5.1	11.05	Horizontal	-50.1	-13.0	37.1	315
3	5550.8	-54.03	5.42	12.65	Horizontal	-46.8	-13.0	33.8	270
4	7402.8	-49.75	6.7	13.85	Horizontal	-42.6	-13.0	29.6	135
5	9253.5	-49.04	7.01	14.75	Horizontal	-41.3	-13.0	28.3	225
6	11104.2	-45.97	7.48	15.95	Horizontal	-37.5	-13.0	24.5	180
7	12954.9	-47.54	7.51	16.55	Horizontal	-38.5	-13.0	25.5	45
8	14805.6	-44.71	8.24	15.35	Horizontal	-37.6	-13.0	24.6	315
9	16656.3	-42.44	8.41	14.95	Horizontal	-35.9	-13.0	22.9	270
10	18507.0	-42.21	8.54	15.45	Horizontal	-35.3	-13.0	22.3	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3759.0	-55.25	5.10	11.05	Horizontal	-49.3	-13.0	36.3	90
3	5638.9	-53.43	5.42	12.65	Horizontal	-46.2	-13.0	33.2	225
4	7520.0	-49.35	6.70	13.85	Horizontal	-42.2	-13.0	29.2	180
5	9400.0	-48.24	7.01	14.75	Horizontal	-40.5	-13.0	27.5	225
6	11280.0	-45.77	7.48	15.95	Horizontal	-37.3	-13.0	24.3	180
7	13160.0	-47.34	7.51	16.55	Horizontal	-38.3	-13.0	25.3	45
8	15040.0	-44.21	8.24	15.35	Horizontal	-37.1	-13.0	24.1	270
9	16920.0	-42.04	8.41	14.95	Horizontal	-35.5	-13.0	22.5	90
10	18800.0	-42.01	8.54	15.45	Horizontal	-35.1	-13.0	22.1	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 1.4MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3817.5	-54.85	5.10	11.05	Horizontal	-48.9	-13.0	35.9	315
3	5726.6	-48.93	5.42	12.65	Horizontal	-41.7	-13.0	28.7	270
4	7637.2	-48.35	6.70	13.85	Horizontal	-41.2	-13.0	28.2	135
5	9546.5	-47.94	7.01	14.75	Horizontal	-40.2	-13.0	27.2	225
6	11455.8	-45.47	7.48	15.95	Horizontal	-37.0	-13.0	24.0	180
7	13365.1	-46.64	7.51	16.55	Horizontal	-37.6	-13.0	24.6	45
8	15274.4	-43.71	8.24	15.35	Horizontal	-36.6	-13.0	23.6	315
9	17183.7	-41.84	8.41	14.95	Horizontal	-35.3	-13.0	22.3	270
10	19093.0	-41.81	8.54	15.45	Horizontal	-34.9	-13.0	21.9	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 3MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3700.1	-56.85	5.10	11.05	Horizontal	-50.9	-13.0	37.9	90
3	5550.8	-54.03	5.42	12.65	Horizontal	-46.8	-13.0	59.8	225
4	7406.0	-49.45	6.70	13.85	Horizontal	-42.3	-13.0	29.3	315
5	9257.5	-51.44	7.01	14.75	Horizontal	-43.7	-13.0	30.7	270
6	11109.0	-45.97	7.48	15.95	Horizontal	-37.5	-13.0	24.5	135
7	12960.5	-47.84	7.51	16.55	Horizontal	-38.8	-13.0	25.8	225
8	14812.0	-44.21	8.24	15.35	Horizontal	-37.1	-13.0	24.1	180
9	16663.5	-44.14	8.41	14.95	Horizontal	-37.6	-13.0	24.6	45
10	18515.0	-42.51	8.54	15.45	Horizontal	-35.6	-13.0	22.6	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 3MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-56.65	5.10	11.05	Horizontal	-50.7	-13.0	37.7	270
3	5640.0	-53.83	5.42	12.65	Horizontal	-46.6	-13.0	33.6	135
4	7520.0	-48.85	6.70	13.85	Horizontal	-41.7	-13.0	28.7	90
5	9400.0	-50.54	7.01	14.75	Horizontal	-42.8	-13.0	29.8	225
6	11280.0	-45.37	7.48	15.95	Horizontal	-36.9	-13.0	23.9	180
7	13160.0	-47.14	7.51	16.55	Horizontal	-38.1	-13.0	25.1	225
8	15040.0	-43.91	8.24	15.35	Horizontal	-36.8	-13.0	23.8	180
9	16920.0	-43.74	8.41	14.95	Horizontal	-37.2	-13.0	24.2	45
10	18800.0	-42.71	8.54	15.45	Horizontal	-35.8	-13.0	22.8	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 3MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3817.0	-56.25	5.10	11.05	Horizontal	-50.3	-13.0	37.3	45
3	5725.5	-53.63	5.42	12.65	Horizontal	-46.4	-13.0	33.4	315
4	7634.0	-48.05	6.70	13.85	Horizontal	-40.9	-13.0	27.9	90
5	9542.5	-49.44	7.01	14.75	Horizontal	-41.7	-13.0	28.7	180
6	11451.0	-44.97	7.48	15.95	Horizontal	-36.5	-13.0	23.5	225
7	13359.5	-46.84	7.51	16.55	Horizontal	-37.8	-13.0	24.8	90
8	15268.0	-43.51	8.24	15.35	Horizontal	-36.4	-13.0	23.4	270
9	17176.5	-43.44	8.41	14.95	Horizontal	-36.9	-13.0	23.9	135
10	19085.0	-42.11	8.54	15.45	Horizontal	-35.2	-13.0	22.2	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 5MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3705.0	-56.35	5.10	11.05	Horizontal	-50.4	-13.0	37.4	180
3	5557.5	-54.83	5.42	12.65	Horizontal	-47.6	-13.0	34.6	270
4	7410.0	-50.45	6.70	13.85	Horizontal	-43.3	-13.0	30.3	45
5	9262.5	-49.44	7.01	14.75	Horizontal	-41.7	-13.0	28.7	225
6	11115.0	-46.87	7.48	15.95	Horizontal	-38.4	-13.0	25.4	315
7	12967.5	-46.94	7.51	16.55	Horizontal	-37.9	-13.0	24.9	90
8	14820.0	-43.61	8.24	15.35	Horizontal	-36.5	-13.0	23.5	45
9	16672.5	-42.54	8.41	14.95	Horizontal	-36.0	-13.0	35.0	315
10	18525.0	-42.71	8.54	15.45	Horizontal	-35.8	-13.0	22.8	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-56.15	5.10	11.05	Horizontal	-50.2	-13.0	37.2	45
3	5640.0	-54.23	5.42	12.65	Horizontal	-47.0	-13.0	34.0	315
4	7520.0	-49.25	6.70	13.85	Horizontal	-42.1	-13.0	29.1	90
5	9400.0	-47.94	7.01	14.75	Horizontal	-40.2	-13.0	27.2	180
6	11280.0	-46.07	7.48	15.95	Horizontal	-37.6	-13.0	24.6	270
7	13160.0	-46.34	7.51	16.55	Horizontal	-37.3	-13.0	24.3	315
8	15040.0	-43.11	8.24	15.35	Horizontal	-36.0	-13.0	23.0	225
9	16920.0	-42.74	8.41	14.95	Horizontal	-36.2	-13.0	23.2	45
10	18800.0	-42.31	8.54	15.45	Horizontal	-35.4	-13.0	22.4	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 5MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3815.0	-55.65	5.10	11.05	Horizontal	-49.7	-13.0	36.7	90
3	5722.5	-53.83	5.42	12.65	Horizontal	-46.6	-13.0	33.6	315
4	7630.0	-49.05	6.70	13.85	Horizontal	-41.9	-13.0	28.9	270
5	9537.5	-47.44	7.01	14.75	Horizontal	-39.7	-13.0	26.7	45
6	11445.0	-45.67	7.48	15.95	Horizontal	-37.2	-13.0	24.2	180
7	13352.5	-45.94	7.51	16.55	Horizontal	-36.9	-13.0	23.9	90
8	15260.0	-42.91	8.24	15.35	Horizontal	-35.8	-13.0	22.8	225
9	17167.5	-42.54	8.41	14.95	Horizontal	-36.0	-13.0	23.0	270
10	19075.0	-42.01	8.54	15.45	Horizontal	-35.1	-13.0	22.1	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 10MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3710.0	-57.85	5.10	11.05	Horizontal	-51.9	-13.0	38.9	270
3	5565.0	-55.53	5.42	12.65	Horizontal	-48.3	-13.0	35.3	180
4	7420.0	-50.65	6.70	13.85	Horizontal	-43.5	-13.0	30.5	45
5	9275.0	-48.94	7.01	14.75	Horizontal	-41.2	-13.0	28.2	225
6	11130.0	-47.17	7.48	15.95	Horizontal	-38.7	-13.0	25.7	180
7	12985.0	-47.94	7.51	16.55	Horizontal	-38.9	-13.0	25.9	315
8	14840.0	-44.31	8.24	15.35	Horizontal	-37.2	-13.0	24.2	45
9	16695.0	-43.14	8.41	14.95	Horizontal	-36.6	-13.0	23.6	225
10	18550.0	-42.61	8.54	15.45	Horizontal	-35.7	-13.0	22.7	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-57.45	5.10	11.05	Horizontal	-51.5	-13.0	38.5	225
3	5640.0	-54.33	5.42	12.65	Horizontal	-47.1	-13.0	34.1	180
4	7520.0	-49.55	6.70	13.85	Horizontal	-42.4	-13.0	29.4	90
5	9400.0	-48.64	7.01	14.75	Horizontal	-40.9	-13.0	27.9	270
6	11280.0	-46.37	7.48	15.95	Horizontal	-37.9	-13.0	24.9	45
7	13160.0	-47.44	7.51	16.55	Horizontal	-38.4	-13.0	25.4	225
8	15040.0	-43.91	8.24	15.35	Horizontal	-36.8	-13.0	23.8	315
9	16920.0	-42.94	8.41	14.95	Horizontal	-36.4	-13.0	23.4	180
10	18800.0	-42.21	8.54	15.45	Horizontal	-35.3	-13.0	22.3	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 10MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3810.0	-57.15	5.10	11.05	Horizontal	-51.2	-13.0	38.2	315
3	5715.0	-54.13	5.42	12.65	Horizontal	-46.9	-13.0	33.9	90
4	7620.0	-49.35	6.70	13.85	Horizontal	-42.2	-13.0	29.2	270
5	9525.0	-47.84	7.01	14.75	Horizontal	-40.1	-13.0	27.1	45
6	11430.0	-45.97	7.48	15.95	Horizontal	-37.5	-13.0	24.5	225
7	13335.0	-47.14	7.51	16.55	Horizontal	-38.1	-13.0	25.1	180
8	15240.0	-43.51	8.24	15.35	Horizontal	-36.4	-13.0	23.4	270
9	17145.0	-42.74	8.41	14.95	Horizontal	-36.2	-13.0	23.2	315
10	19050.0	-41.81	8.54	15.45	Horizontal	-34.9	-13.0	21.9	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 15MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3715.0	-57.25	5.10	11.05	Horizontal	-51.3	-13.0	38.3	225
3	5572.5	-54.73	5.42	12.65	Horizontal	-47.5	-13.0	34.5	180
4	7430.0	-48.25	6.70	13.85	Horizontal	-41.1	-13.0	28.1	270
5	9287.5	-48.04	7.01	14.75	Horizontal	-40.3	-13.0	27.3	45
6	11145.0	-46.67	7.48	15.95	Horizontal	-38.2	-13.0	25.2	135
7	13002.5	-47.14	7.51	16.55	Horizontal	-38.1	-13.0	25.1	90
8	14860.0	-44.51	8.24	15.35	Horizontal	-37.4	-13.0	24.4	135
9	16717.5	-43.34	8.41	14.95	Horizontal	-36.8	-13.0	23.8	225
10	18575.0	-42.51	8.54	15.45	Horizontal	-35.6	-13.0	22.6	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 15MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-57.05	5.10	11.05	Horizontal	-51.1	-13.0	38.1	180
3	5640.0	-54.33	5.42	12.65	Horizontal	-47.1	-13.0	34.1	315
4	7520.0	-47.65	6.70	13.85	Horizontal	-40.5	-13.0	27.5	90
5	9400.0	-47.14	7.01	14.75	Horizontal	-39.4	-13.0	26.4	225
6	11280.0	-46.17	7.48	15.95	Horizontal	-37.7	-13.0	24.7	270
7	13160.0	-46.94	7.51	16.55	Horizontal	-37.9	-13.0	24.9	45
8	15040.0	-44.11	8.24	15.35	Horizontal	-37.0	-13.0	24.0	180
9	16920.0	-43.14	8.41	14.95	Horizontal	-36.6	-13.0	23.6	90
10	18800.0	-42.31	8.54	15.45	Horizontal	-35.4	-13.0	22.4	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 15MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3805.0	-55.65	5.10	11.05	Horizontal	-49.7	-13.0	36.7	225
3	5707.5	-54.03	5.42	12.65	Horizontal	-46.8	-13.0	33.8	45
4	7610.0	-47.45	6.70	13.85	Horizontal	-40.3	-13.0	27.3	270
5	9512.5	-47.04	7.01	14.75	Horizontal	-39.3	-13.0	26.3	315
6	11415.0	-45.37	7.48	15.95	Horizontal	-36.9	-13.0	23.9	90
7	13317.5	-45.54	7.51	16.55	Horizontal	-36.5	-13.0	23.5	225
8	15220.0	-42.91	8.24	15.35	Horizontal	-35.8	-13.0	22.8	45
9	17122.5	-42.04	8.41	14.95	Horizontal	-35.5	-13.0	22.5	180
10	19025.0	-41.61	8.54	15.45	Horizontal	-34.7	-13.0	21.7	90
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 20MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3720.0	-56.35	5.10	11.05	Horizontal	-50.4	-13.0	37.4	315
3	5580.0	-53.83	5.42	12.65	Horizontal	-46.6	-13.0	33.6	270
4	7440.0	-48.95	6.70	13.85	Horizontal	-41.8	-13.0	28.8	45
5	9300.0	-48.04	7.01	14.75	Horizontal	-40.3	-13.0	27.3	225
6	11160.0	-46.37	7.48	15.95	Horizontal	-37.9	-13.0	24.9	180
7	13020.0	-48.44	7.51	16.55	Horizontal	-39.4	-13.0	26.4	270
8	14880.0	-42.41	8.24	15.35	Horizontal	-35.3	-13.0	22.3	90
9	16740.0	-43.34	8.41	14.95	Horizontal	-36.8	-13.0	23.8	90
10	18600.0	-42.71	8.54	15.45	Horizontal	-35.8	-13.0	22.8	225
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.0	-55.65	5.10	11.05	Horizontal	-49.7	-13.0	36.7	45
3	5640.0	-54.53	5.42	12.65	Horizontal	-47.3	-13.0	34.3	225
4	7520.0	-49.45	6.70	13.85	Horizontal	-42.3	-13.0	29.3	270
5	9400.0	-47.84	7.01	14.75	Horizontal	-40.1	-13.0	27.1	90
6	11280.0	-45.67	7.48	15.95	Horizontal	-37.2	-13.0	24.2	225
7	13160.0	-48.44	7.51	16.55	Horizontal	-39.4	-13.0	26.4	315
8	15040.0	-44.91	8.24	15.35	Horizontal	-37.8	-13.0	24.8	180
9	16920.0	-43.34	8.41	14.95	Horizontal	-36.8	-13.0	23.8	45
10	18800.0	-43.41	8.54	15.45	Horizontal	-36.5	-13.0	23.5	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 20MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3800.0	-56.85	5.10	11.05	Horizontal	-50.9	-13.0	37.9	315
3	5700.0	-54.73	5.42	12.65	Horizontal	-47.5	-13.0	34.5	225
4	7600.0	-50.05	6.70	13.85	Horizontal	-42.9	-13.0	29.9	45
5	9500.0	-51.14	7.01	14.75	Horizontal	-43.4	-13.0	30.4	180
6	11400.0	-47.37	7.48	15.95	Horizontal	-38.9	-13.0	25.9	270
7	13300.0	-48.34	7.51	16.55	Horizontal	-39.3	-13.0	26.3	315
8	15200.0	-45.61	8.24	15.35	Horizontal	-38.5	-13.0	25.5	90
9	17100.0	-44.34	8.41	14.95	Horizontal	-37.8	-13.0	24.8	180
10	19000.0	-44.31	8.54	15.45	Horizontal	-37.4	-13.0	24.4	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 25 1.4MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3701	-56.05	5.1	11.05	vertical	-50.1	-13.0	37.1	315
3	5552	-54.03	5.42	12.65	vertical	-46.8	-13.0	33.8	270
4	7403	-48.85	6.7	13.85	vertical	-41.7	-13.0	28.7	135
5	9254	-47.84	7.01	14.75	vertical	-40.1	-13.0	27.1	225
6	11104	-47.67	7.48	15.95	vertical	-39.2	-13.0	26.2	315
7	12955	-47.34	7.51	16.55	vertical	-38.3	-13.0	25.3	45
8	14806	-42.41	8.24	15.35	vertical	-35.3	-13.0	22.3	180
9	16656	-43.74	8.41	14.95	vertical	-37.2	-13.0	24.2	45
10	18507	-43.71	8.54	15.45	vertical	-36.8	-13.0	23.8	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-56.15	5.10	11.05	vertical	-50.2	-13.0	37.2	135
3	5647.50	-55.73	5.42	12.65	vertical	-48.5	-13.0	35.5	270
4	7530.00	-49.65	6.70	13.85	vertical	-42.5	-13.0	29.5	315
5	9412.50	-48.04	7.01	14.75	vertical	-40.3	-13.0	27.3	90
6	11295.00	-46.67	7.48	15.95	vertical	-38.2	-13.0	25.2	180
7	13177.50	-46.94	7.51	16.55	vertical	-37.9	-13.0	24.9	45
8	15060.00	-45.11	8.24	15.35	vertical	-38.0	-13.0	25.0	135
9	16942.50	-43.44	8.41	14.95	vertical	-36.9	-13.0	23.9	270
10	18825.00	-44.41	8.54	15.45	vertical	-37.5	-13.0	24.5	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 1.4MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3828.60	-56.05	5.10	11.05	vertical	-50.1	-13.0	37.1	90
3	5742.90	-55.63	5.42	12.65	vertical	-48.4	-13.0	35.4	180
4	7657.20	-50.35	6.70	13.85	vertical	-43.2	-13.0	30.2	45
5	9571.50	-50.44	7.01	14.75	vertical	-42.7	-13.0	29.7	225
6	11485.80	-46.67	7.48	15.95	vertical	-38.2	-13.0	25.2	180
7	13400.10	-46.54	7.51	16.55	vertical	-37.5	-13.0	24.5	45
8	15314.40	-46.01	8.24	15.35	vertical	-38.9	-13.0	25.9	315
9	17228.70	-44.24	8.41	14.95	vertical	-37.7	-13.0	24.7	315
10	19143.00	-45.41	8.54	15.45	vertical	-38.5	-13.0	25.5	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 3MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3703.00	-56.85	5.10	11.05	vertical	-50.9	-13.0	37.9	180
3	5554.50	-54.93	5.42	12.65	vertical	-47.7	-13.0	34.7	45
4	7406.00	-50.05	6.70	13.85	vertical	-42.9	-13.0	29.9	45
5	9257.50	-48.14	7.01	14.75	vertical	-40.4	-13.0	27.4	135
6	11109.00	-47.27	7.48	15.95	vertical	-38.8	-13.0	25.8	270
7	12960.50	-48.34	7.51	16.55	vertical	-39.3	-13.0	26.3	315
8	14812.00	-42.91	8.24	15.35	vertical	-35.8	-13.0	22.8	315
9	16663.50	-44.04	8.41	14.95	vertical	-37.5	-13.0	24.5	45
10	18515.00	-45.41	8.54	15.45	vertical	-38.5	-13.0	25.5	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 3MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-55.85	5.10	11.05	vertical	-49.9	-13.0	36.9	45
3	5647.50	-54.33	5.42	12.65	vertical	-47.1	-13.0	34.1	45
4	7530.00	-49.75	6.70	13.85	vertical	-42.6	-13.0	29.6	135
5	9412.50	-48.34	7.01	14.75	vertical	-40.6	-13.0	27.6	270
6	11295.00	-47.27	7.48	15.95	vertical	-38.8	-13.0	25.8	315
7	13177.50	-48.04	7.51	16.55	vertical	-39.0	-13.0	26.0	90
8	15060.00	-45.41	8.24	15.35	vertical	-38.3	-13.0	25.3	315
9	16942.50	-42.84	8.41	14.95	vertical	-36.3	-13.0	23.3	45
10	18825.00	-44.41	8.54	15.45	vertical	-37.5	-13.0	24.5	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 3MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3827.00	-56.45	5.10	11.05	vertical	-50.5	-13.0	37.5	45
3	5740.50	-55.63	5.42	12.65	vertical	-48.4	-13.0	35.4	45
4	7654.00	-50.85	6.70	13.85	vertical	-43.7	-13.0	30.7	135
5	9567.50	-50.44	7.01	14.75	vertical	-42.7	-13.0	29.7	270
6	11481.00	-46.87	7.48	15.95	vertical	-38.4	-13.0	25.4	315
7	13394.50	-46.64	7.51	16.55	vertical	-37.6	-13.0	24.6	90
8	15308.00	-46.91	8.24	15.35	vertical	-39.8	-13.0	26.8	315
9	17221.50	-44.34	8.41	14.95	vertical	-37.8	-13.0	24.8	45
10	19135.00	-44.61	8.54	15.45	vertical	-37.7	-13.0	24.7	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 5MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3705.00	-56.55	5.10	11.05	vertical	-50.6	-13.0	37.6	45
3	5557.50	-54.33	5.42	12.65	vertical	-47.1	-13.0	34.1	45
4	7410.00	-50.05	6.70	13.85	vertical	-42.9	-13.0	29.9	135
5	9262.50	-47.04	7.01	14.75	vertical	-39.3	-13.0	26.3	270
6	11115.00	-47.77	7.48	15.95	vertical	-39.3	-13.0	26.3	315
7	12967.50	-47.64	7.51	16.55	vertical	-38.6	-13.0	25.6	90
8	14820.00	-43.21	8.24	15.35	vertical	-36.1	-13.0	23.1	180
9	16672.50	-43.54	8.41	14.95	vertical	-37.0	-13.0	24.0	45
10	18525.00	-43.51	8.54	15.45	vertical	-36.6	-13.0	23.6	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-55.65	5.10	11.05	vertical	-49.7	-13.0	36.7	270
3	5647.50	-53.73	5.42	12.65	vertical	-46.5	-13.0	33.5	315
4	7530.00	-49.35	6.70	13.85	vertical	-42.2	-13.0	29.2	90
5	9412.50	-48.54	7.01	14.75	vertical	-40.8	-13.0	27.8	180
6	11295.00	-46.27	7.48	15.95	vertical	-37.8	-13.0	24.8	315
7	13177.50	-48.14	7.51	16.55	vertical	-39.1	-13.0	26.1	45
8	15060.00	-44.71	8.24	15.35	vertical	-37.6	-13.0	24.6	180
9	16942.50	-43.74	8.41	14.95	vertical	-37.2	-13.0	24.2	45
10	18825.00	-44.01	8.54	15.45	vertical	-37.1	-13.0	24.1	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 5MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3825.00	-57.05	5.10	11.05	vertical	-51.1	-13.0	38.1	135
3	5737.50	-54.83	5.42	12.65	vertical	-47.6	-13.0	34.6	270
4	7650.00	-50.45	6.70	13.85	vertical	-43.3	-13.0	30.3	315
5	9562.50	-49.64	7.01	14.75	vertical	-41.9	-13.0	28.9	315
6	11475.00	-46.67	7.48	15.95	vertical	-38.2	-13.0	25.2	45
7	13387.50	-47.74	7.51	16.55	vertical	-38.7	-13.0	25.7	180
8	15300.00	-46.11	8.24	15.35	vertical	-39.0	-13.0	26.0	45
9	17212.50	-44.14	8.41	14.95	vertical	-37.6	-13.0	24.6	45
10	19125.00	-45.41	8.54	15.45	vertical	-38.5	-13.0	25.5	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 10MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3710.00	-56.25	5.10	11.05	vertical	-50.3	-13.0	37.3	270
3	5565.00	-55.13	5.42	12.65	vertical	-47.9	-13.0	34.9	315
4	7420.00	-49.55	6.70	13.85	vertical	-42.4	-13.0	29.4	90
5	9275.00	-48.14	7.01	14.75	vertical	-40.4	-13.0	27.4	180
6	11130.00	-47.27	7.48	15.95	vertical	-38.8	-13.0	25.8	45
7	12985.00	-47.64	7.51	16.55	vertical	-38.6	-13.0	25.6	315
8	14840.00	-41.91	8.24	15.35	vertical	-34.8	-13.0	21.8	90
9	16695.00	-43.44	8.41	14.95	vertical	-36.9	-13.0	23.9	180
10	18550.00	-43.61	8.54	15.45	vertical	-36.7	-13.0	23.7	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

.

LTE Band 25 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-57.15	5.10	11.05	vertical	-51.2	-13.0	38.2	225
3	5647.50	-54.83	5.42	12.65	vertical	-47.6	-13.0	34.6	180
4	7530.00	-49.75	6.70	13.85	vertical	-42.6	-13.0	29.6	315
5	9412.50	-48.64	7.01	14.75	vertical	-40.9	-13.0	27.9	45
6	11295.00	-47.37	7.48	15.95	vertical	-38.9	-13.0	25.9	180
7	13177.50	-49.34	7.51	16.55	vertical	-40.3	-13.0	27.3	45
8	15060.00	-45.61	8.24	15.35	vertical	-38.5	-13.0	25.5	45
9	16942.50	-44.54	8.41	14.95	vertical	-38.0	-13.0	25.0	135
10	18825.00	-45.41	8.54	15.45	vertical	-38.5	-13.0	25.5	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 10MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3820.00	-55.55	5.10	11.05	vertical	-49.6	-13.0	36.6	315
3	5730.00	-54.23	5.42	12.65	vertical	-47.0	-13.0	34.0	90
4	7640.00	-49.15	6.70	13.85	vertical	-42.0	-13.0	29.0	180
5	9550.00	-49.44	7.01	14.75	vertical	-41.7	-13.0	28.7	45
6	11460.00	-44.57	7.48	15.95	vertical	-36.1	-13.0	23.1	225
7	13370.00	-45.64	7.51	16.55	vertical	-36.6	-13.0	23.6	180
8	15280.00	-45.31	8.24	15.35	vertical	-38.2	-13.0	25.2	270
9	17190.00	-44.04	8.41	14.95	vertical	-37.5	-13.0	24.5	315
10	19100.00	-44.81	8.54	15.45	vertical	-37.9	-13.0	24.9	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 15MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3715.00	-57.85	5.10	11.05	vertical	-51.9	-13.0	38.9	45
3	5572.50	-55.73	5.42	12.65	vertical	-48.5	-13.0	35.5	180
4	7430.00	-50.85	6.70	13.85	vertical	-43.7	-13.0	30.7	45
5	9287.50	-49.04	7.01	14.75	vertical	-41.3	-13.0	28.3	45
6	11145.00	-48.57	7.48	15.95	vertical	-40.1	-13.0	27.1	135
7	13002.50	-47.94	7.51	16.55	vertical	-38.9	-13.0	25.9	270
8	14860.00	-43.11	8.24	15.35	vertical	-36.0	-13.0	23.0	315
9	16717.50	-43.84	8.41	14.95	vertical	-37.3	-13.0	24.3	90
10	18575.00	-44.01	8.54	15.45	vertical	-37.1	-13.0	24.1	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 15MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-56.75	5.10	11.05	vertical	-50.8	-13.0	37.8	45
3	5647.50	-54.13	5.42	12.65	vertical	-46.9	-13.0	33.9	45
4	7530.00	-50.05	6.70	13.85	vertical	-42.9	-13.0	29.9	45
5	9412.50	-48.94	7.01	14.75	vertical	-41.2	-13.0	28.2	135
6	11295.00	-46.37	7.48	15.95	vertical	-37.9	-13.0	24.9	270
7	13177.50	-49.44	7.51	16.55	vertical	-40.4	-13.0	27.4	315
8	15060.00	-46.71	8.24	15.35	vertical	-39.6	-13.0	26.6	90
9	16942.50	-43.14	8.41	14.95	vertical	-36.6	-13.0	23.6	180
10	18825.00	-44.41	8.54	15.45	vertical	-37.5	-13.0	24.5	45
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 15MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3815.00	-57.95	5.10	11.05	vertical	-52.0	-13.0	39.0	225
3	5722.50	-55.63	5.42	12.65	vertical	-48.4	-13.0	35.4	45
4	7630.00	-50.95	6.70	13.85	vertical	-43.8	-13.0	30.8	270
5	9537.50	-51.54	7.01	14.75	vertical	-43.8	-13.0	30.8	315
6	11445.00	-47.27	7.48	15.95	vertical	-38.8	-13.0	25.8	90
7	13352.50	-48.94	7.51	16.55	vertical	-39.9	-13.0	26.9	225
8	15260.00	-47.81	8.24	15.35	vertical	-40.7	-13.0	27.7	45
9	17167.50	-44.04	8.41	14.95	vertical	-37.5	-13.0	24.5	180
10	19075.00	-43.61	8.54	15.45	vertical	-36.7	-13.0	23.7	315
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 20MHz CH-Low

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3720.00	-56.75	5.10	11.05	vertical	-50.8	-13.0	37.8	45
3	5580.00	-55.73	5.42	12.65	vertical	-48.5	-13.0	35.5	180
4	7440.00	-49.15	6.70	13.85	vertical	-42.0	-13.0	29.0	45
5	9300.00	-48.44	7.01	14.75	vertical	-40.7	-13.0	27.7	45
6	11160.00	-46.77	7.48	15.95	vertical	-38.3	-13.0	25.3	135
7	13020.00	-48.24	7.51	16.55	vertical	-39.2	-13.0	26.2	270
8	14880.00	-42.51	8.24	15.35	vertical	-35.4	-13.0	22.4	315
9	16740.00	-44.44	8.41	14.95	vertical	-37.9	-13.0	24.9	90
10	18600.00	-44.51	8.54	15.45	vertical	-37.6	-13.0	24.6	180
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3765.00	-55.85	5.10	11.05	vertical	-49.9	-13.0	36.9	45
3	5647.50	-54.83	5.42	12.65	vertical	-47.6	-13.0	34.6	225
4	7530.00	-49.55	6.70	13.85	vertical	-42.4	-13.0	29.4	315
5	9412.50	-47.94	7.01	14.75	vertical	-40.2	-13.0	27.2	45
6	11295.00	-47.37	7.48	15.95	vertical	-38.9	-13.0	25.9	180
7	13177.50	-48.44	7.51	16.55	vertical	-39.4	-13.0	26.4	45
8	15060.00	-45.01	8.24	15.35	vertical	-37.9	-13.0	24.9	45
9	16942.50	-43.64	8.41	14.95	vertical	-37.1	-13.0	24.1	135
10	18825.00	-44.41	8.54	15.45	vertical	-37.5	-13.0	24.5	270
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

LTE Band 25 20MHz CH-High

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3810.00	-55.85	5.10	11.05	vertical	-49.9	-13.0	36.9	315
3	5715.00	-55.63	5.42	12.65	vertical	-48.4	-13.0	35.4	90
4	7620.00	-50.45	6.70	13.85	vertical	-43.3	-13.0	30.3	180
5	9525.00	-50.54	7.01	14.75	vertical	-42.8	-13.0	29.8	45
6	11430.00	-46.77	7.48	15.95	vertical	-38.3	-13.0	25.3	270
7	13335.00	-47.94	7.51	16.55	vertical	-38.9	-13.0	25.9	315
8	15240.00	-44.01	8.24	15.35	vertical	-36.9	-13.0	23.9	90
9	17145.00	-44.24	8.41	14.95	vertical	-37.7	-13.0	24.7	180
10	19050.00	-43.91	8.54	15.45	vertical	-37.0	-13.0	24.0	135
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2.The worst emission was found in the antenna is vertical position.									

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMU200	118133	2017-05-14	2018-05-13
Base Station Simulator	R&S	CMW500	113645	2017-05-14	2018-05-13
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	2017-05-14	2018-05-13
Spectrum Analyzer	Agilent	N9010A	MY47191109	2017-05-20	2018-05-19
Signal Analyzer	R&S	FSV30	100815	2017-12-17	2018-12-16
EMI Test Receiver	R&S	ESCI	100948	2017-05-20	2018-05-19
Signal generator	R&S	SMB 100A	102594	2017-05-14	2018-05-13
Signal generator	R&S	SMR27	100365	2017-05-14	2018-05-13
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2020-11-17
Horn Antenna	R&S	HF907	100126	2014-12-06	2019-12-05
Climatic Chamber	Re Ce	PT-30B	20101891	2015-07-18	2018-07-17
Horn Antenna	ETS-Lindgren	3160-09	00102644	2015-01-30	2018-01-29
RF Cable	Agilent	SMA 15cm	0001	2017-08-04	2018-02-03
Preampflier	R&S	SCU18	102327	2017-06-18	2018-06-17
Software	R&S	EMC32	V 8.52.0	NA	NA

*******END OF REPORT *******