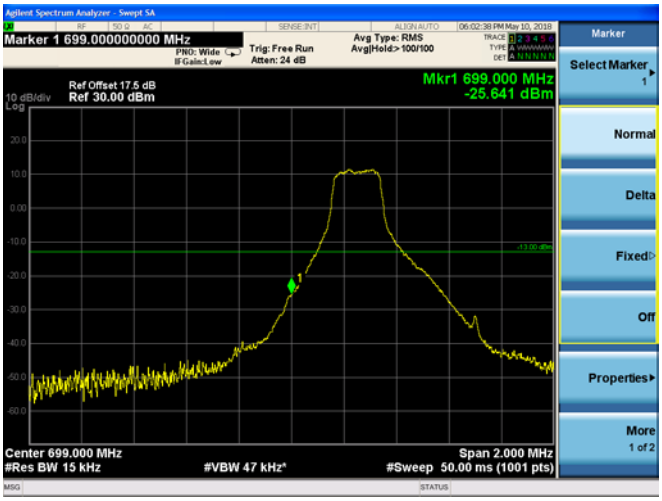
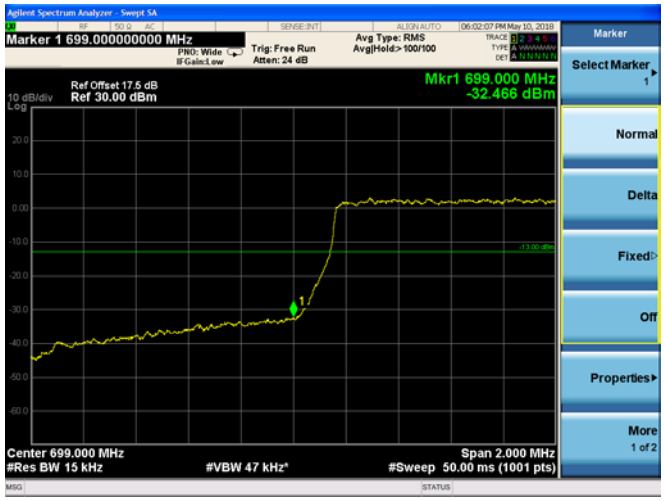
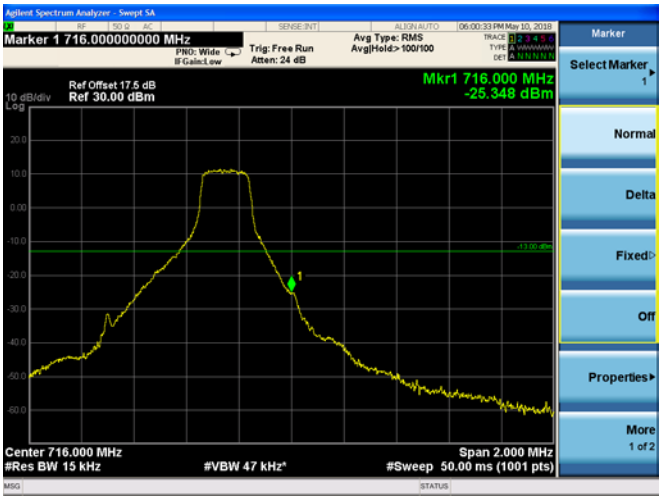
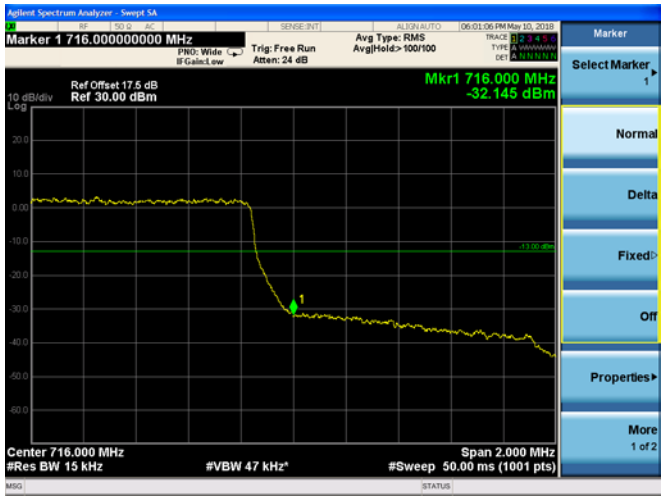
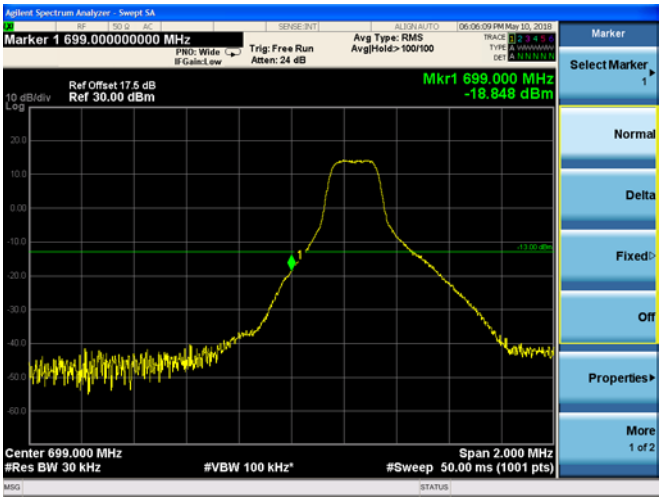
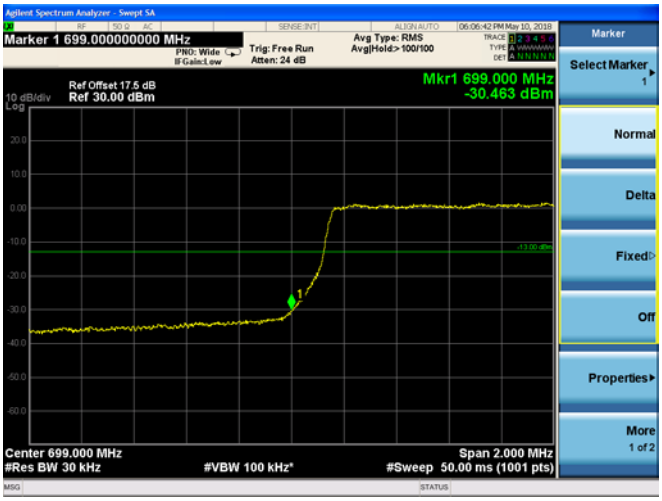
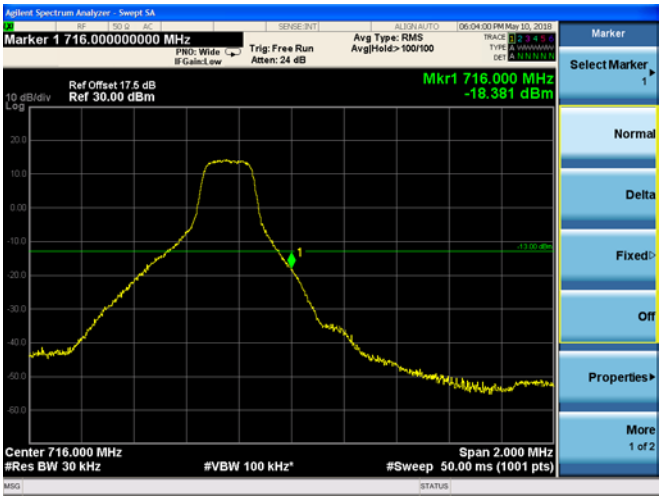
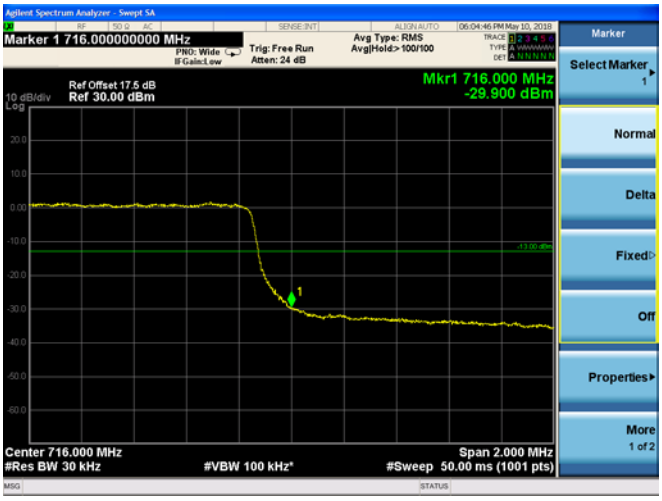
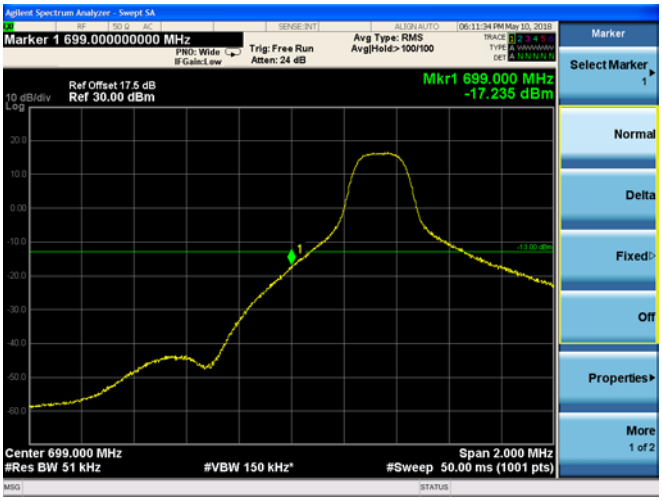
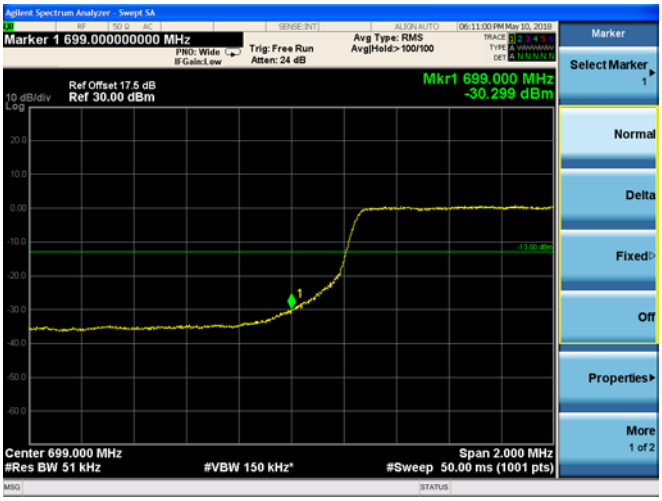
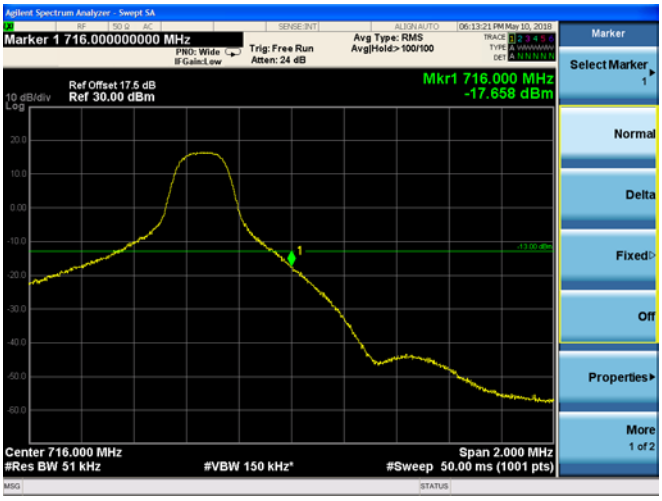
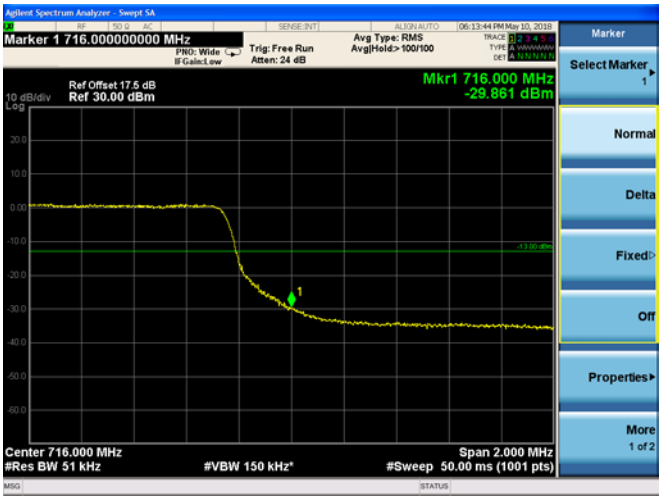
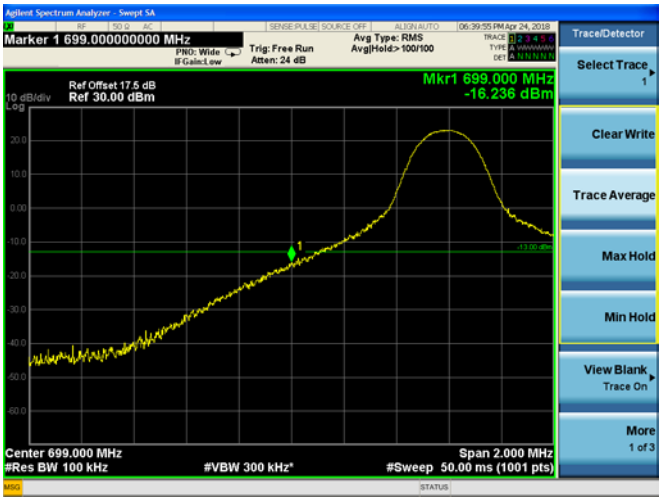
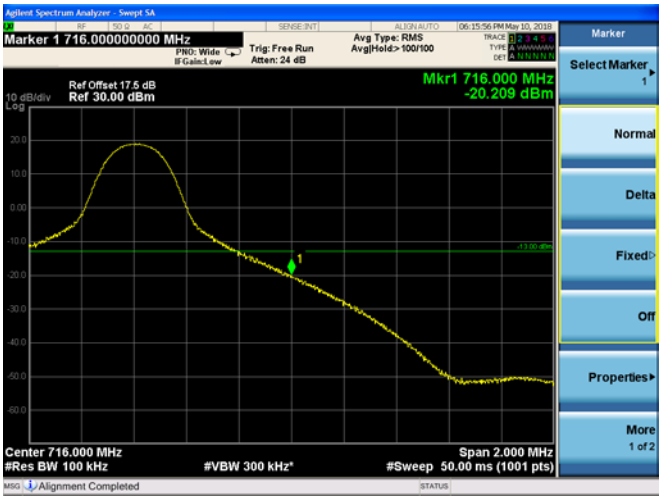
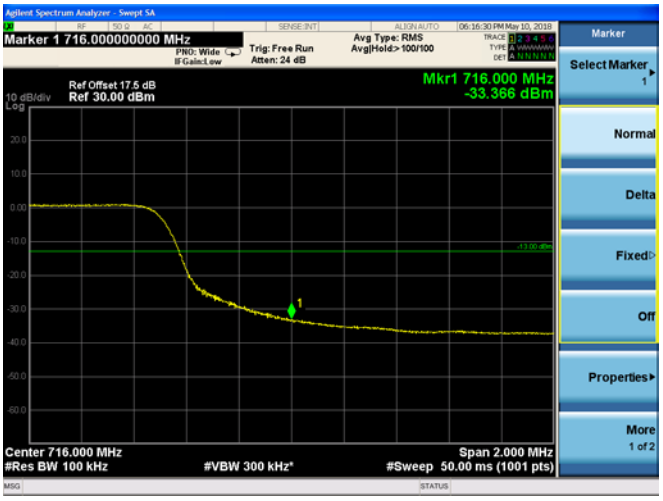
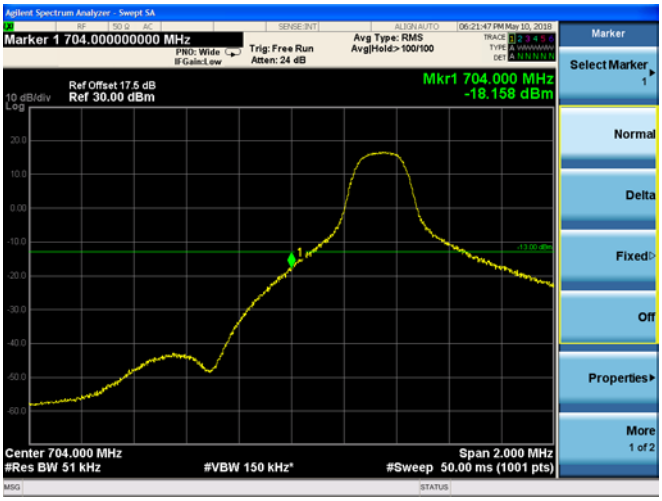
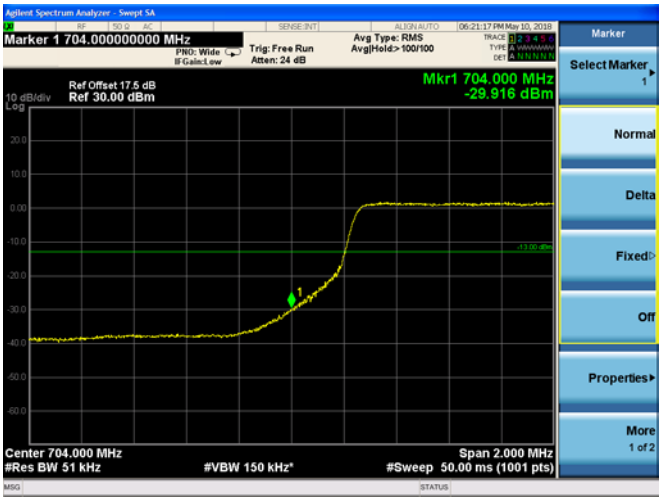
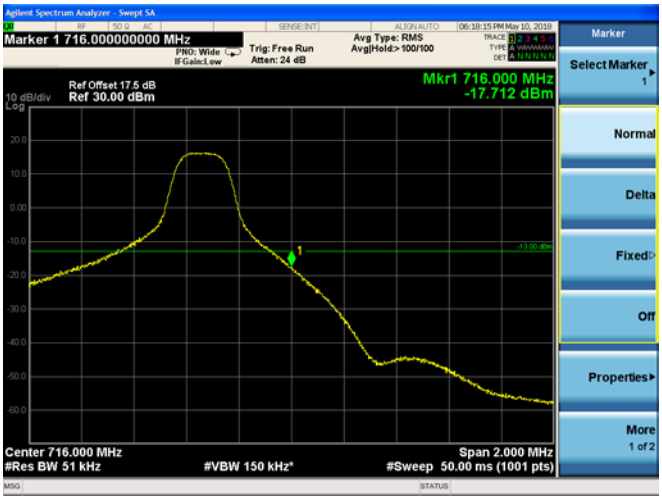
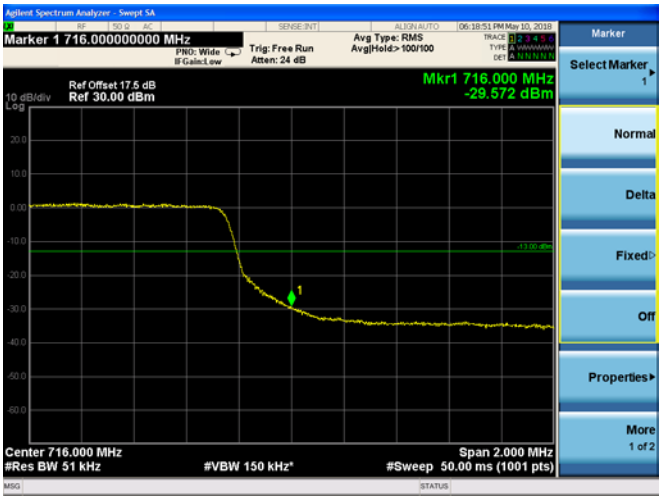
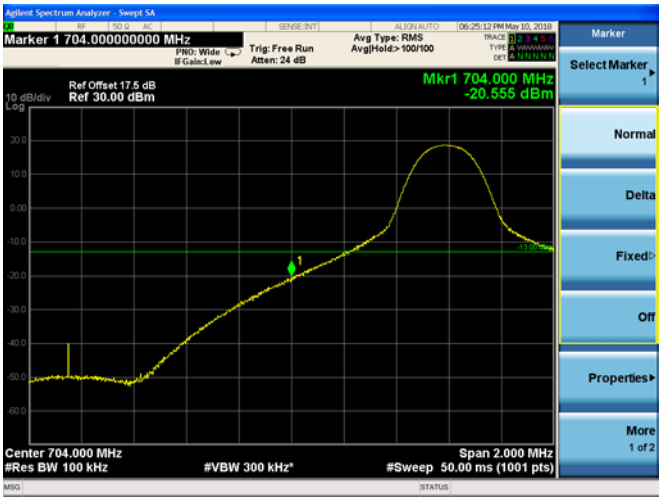
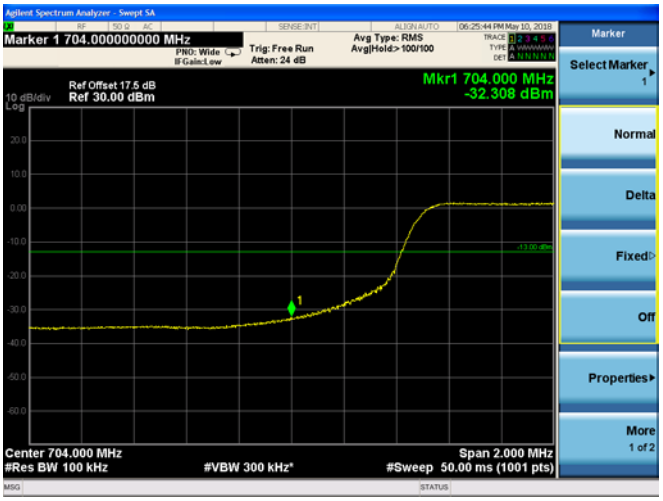
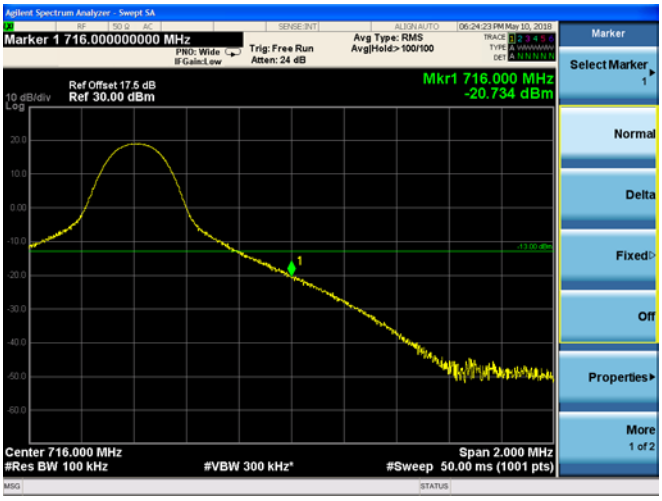
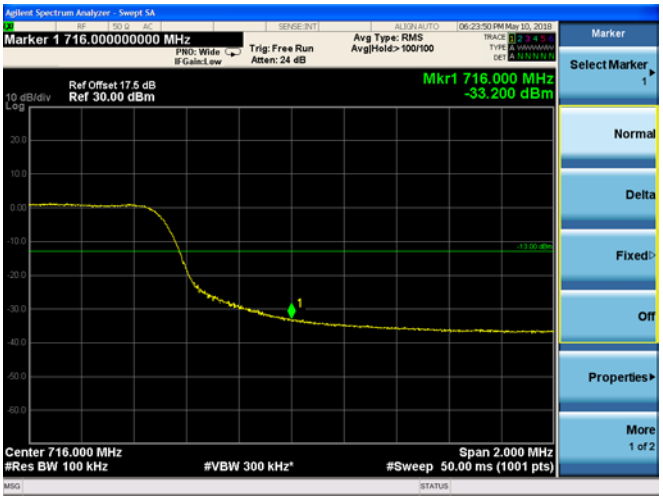
LTE Band 12							
Channel Bandwidth: 1.4MHz							
Channel	23017	RB Size 1	RB Offset 0	Channel	23017	RB Size 6	RB Offset 0
							
Channel Bandwidth: 1.4MHz							
Channel	23173	RB Size 1	RB Offset 5	Channel	23173	RB Size 6	RB Offset 0
							

LTE Band 12							
Channel Bandwidth: 3MHz							
Channel	23025	RB Size 1	RB Offset 0	Channel	23025	RB Size 15	RB Offset 0
							
Channel Bandwidth: 3MHz							
Channel	23165	RB Size 1	RB Offset 14	Channel	23165	RB Size 15	RB Offset 0
							

LTE Band 12							
Channel Bandwidth: 5MHz							
Channel	23035	RB Size 1	RB Offset 0	Channel	23035	RB Size 25	RB Offset 0
								
Channel Bandwidth: 5MHz							
Channel	23155	RB Size 1	RB Offset 24	Channel	23155	RB Size 25	RB Offset 0
								

LTE Band 12							
Channel Bandwidth: 10MHz							
Channel	23060	RB Size 1	RB Offset 0	Channel	23060	RB Size 50	RB Offset 0
							
Channel Bandwidth: 10MHz							
Channel	23130	RB Size 1	RB Offset 49	Channel	23130	RB Size 50	RB Offset 0
							

LTE Band 17							
Channel Bandwidth: 5MHz							
Channel	23755	RB Size 1	RB Offset 0	Channel	23755	RB Size 25	RB Offset 0
							
Channel Bandwidth: 5MHz							
Channel	23825	RB Size 1	RB Offset 24	Channel	23825	RB Size 25	RB Offset 0
							

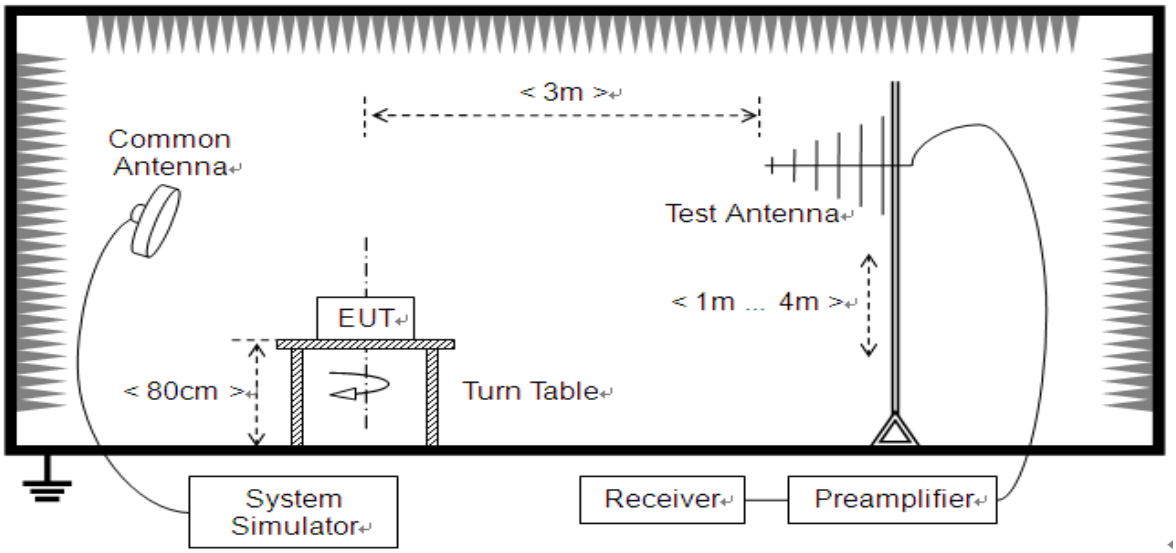
LTE Band 17							
Channel Bandwidth: 10MHz							
Channel	23780	RB Size 1	RB Offset 0	Channel	23780	RB Size 50	RB Offset 0
							
Channel Bandwidth: 10MHz							
Channel	23800	RB Size 1	RB Offset 49	Channel	23800	RB Size 50	RB Offset 0
							

2.7. Transmitter Radiated Power (EIRP/ERP)

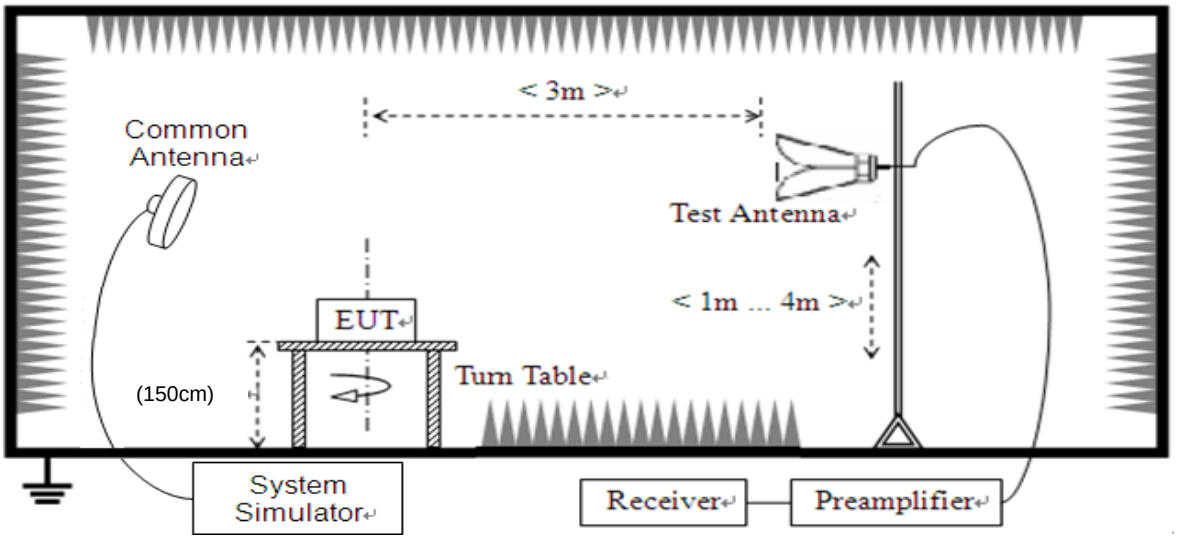
2.7.1. Requirement

According to FCC section 24.232 (c) for LTE Band 2, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.
According to FCC section 27.50 (h) for LTE Band 7, Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.
According to FCC section 27.50 (c) for LTE Band 12/17, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2. Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.

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

2.7.3. Test procedure

KDB 971168 D01v03 Section 51&5.2 and ANSI/TIA-603-E-2016.

2.7.4. Test Result

The EUT was verified under all configurations (RB size and offset) and the worst case radiated power reported for each modulation/channel bandwidth.

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

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

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

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

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

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

Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 2	20MHz	L 18700	1860	QPSK	1	0	21.32
					100	0	20.11
				16-QAM	1	0	21.95
					100	0	21.79
		M 18900	1880	QPSK	1	0	22.15
					100	0	21.18
				16-QAM	1	0	20.58
					100	0	21.38
		H 19100	1900	QPSK	1	0	21.56
					100	0	21.14
				16-QAM	1	0	20.85
					100	0	21.74
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 2	15MHz	L 18675	1857.5	QPSK	1	0	21.49
					75	0	21.47
				16-QAM	1	0	22.01
					75	0	21.74
		M 18900	1880	QPSK	1	0	21.32
					75	0	21.14
				16-QAM	1	0	20.65
					75	0	21.46
		H 19125	1902.5	QPSK	1	0	20.69
					75	0	20.42
				16-QAM	1	0	20.36
					75	0	20.32
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 2	10MHz	L 18650	1855	QPSK	1	0	21.31
					50	0	21.41
				16-QAM	1	0	20.35
					50	0	20.31
		M 18900	1880	QPSK	1	0	21.86
					50	0	20.98
				16-QAM	1	0	21.19
					50	0	21.48
		H 19150	1905	QPSK	1	0	20.89
					50	0	20.70
				16-QAM	1	0	20.51
					50	0	21.13

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	5MHz	L 18625	1852.5	QPSK	1	0	21.37
					25	0	20.64
				16-QAM	1	0	20.74
					25	0	21.44
		M 18900	1880	QPSK	1	0	20.76
					25	0	20.67
				16-QAM	1	0	19.93
					25	0	20.57
		H 19175	1907.5	QPSK	1	0	21.22
					25	0	20.41
				16-QAM	1	0	21.35
					25	0	21.2
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	3MHz	L 18615	1851.5	QPSK	1	0	21.57
					15	0	21.34
				16-QAM	1	0	21.19
					15	0	20.61
		M 18900	1880	QPSK	1	0	20.67
					15	0	20.56
				16-QAM	1	0	21.78
					15	0	21.07
		H 19185	1908.5	QPSK	1	0	20.84
					15	0	21.9
				16-QAM	1	0	20.82
					15	0	21.23
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 2	1.4MHz	L 18607	1850.7	QPSK	1	0	21.56
					6	0	21.47
				16-QAM	1	0	20.57
					6	0	21.00
		18900	1880	QPSK	1	0	21.14
					6	0	20.92
				16-QAM	1	0	21.17
					6	0	20.34
		H 19193	1909.3	QPSK	1	0	21.86
					6	0	21.25
				16-QAM	1	0	21.55
					6	0	21.29

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	20MHz	L 20050	1720.0	QPSK	1	0	21.90
					100	0	20.50
				16-QAM	1	0	20.19
					100	0	19.31
		M 20175	1732.5	QPSK	1	0	21.35
					100	0	19.77
				16-QAM	1	0	22.27
					100	0	19.72
		H 20300	1745.0	QPSK	1	0	20.71
					100	0	19.78
				16-QAM	1	0	20.76
					100	0	19.27
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	15MHz	L 20025	1717.5	QPSK	1	0	19.96
					75	0	20.83
				16-QAM	1	0	21.00
					75	0	19.96
		M 20175	1732.5	QPSK	1	0	20.18
					75	0	20.74
				16-QAM	1	0	20.49
					75	0	20.37
		H 20325	1747.5	QPSK	1	0	20.22
					75	0	20.10
				16-QAM	1	0	21.57
					75	0	19.84
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	10MHz	L 20000	1715.0	QPSK	1	0	21.61
					50	0	21.07
				16-QAM	1	0	20.97
					50	0	20.54
		M 20175	1732.5	QPSK	1	0	21.61
					50	0	20.95
				16-QAM	1	0	21.13
					50	0	20.61
		H 20350	1750.0	QPSK	1	0	21.51
					50	0	20.97
				16-QAM	1	0	20.64
					50	0	20.77

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	5MHz	L 19975	1712.5	QPSK	1	0	21.35
					25	0	20.86
				16-QAM	1	0	20.99
					25	0	20.37
		M 20175	1732.5	QPSK	1	0	21.53
					25	0	21.24
				16-QAM	1	0	20.65
					25	0	20.66
		H 20375	1752.5	QPSK	1	0	21.31
					25	0	20.80
				16-QAM	1	0	21.26
					25	0	20.36
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	3MHz	L 19965	1711.5	QPSK	1	0	21.26
					15	0	20.89
				16-QAM	1	0	20.84
					15	0	20.71
		M 20175	1732.5	QPSK	1	0	21.27
					15	0	20.93
				16-QAM	1	0	21.35
					15	0	20.69
		H 20385	1753.5	QPSK	1	0	21.32
					15	0	20.84
				16-QAM	1	0	20.76
					15	0	20.34
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP
					RB Size	RB Offset	(dBm)
LTE Band 4	1.4MHz	L 19957	1710.7	QPSK	1	0	21.36
					6	0	20.61
				16-QAM	1	0	20.79
					6	0	20.37
		M 20175	1732.5	QPSK	1	0	21.80
					6	0	20.85
				16-QAM	1	0	20.74
					6	0	20.65
		H 20393	1754.3	QPSK	1	0	21.11
					6	0	21.14
				16-QAM	1	0	20.62
					6	0	20.66

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 12	10MHz	L 23060	704	QPSK	1	0	22.70
					50	0	22.19
				16-QAM	1	0	21.80
					50	0	20.88
		M 23095	707.5	QPSK	1	0	22.89
					50	0	21.80
				16-QAM	1	0	21.81
					50	0	20.92
		H 23130	711	QPSK	1	0	23.11
					50	0	21.83
				16-QAM	1	0	22.12
					50	0	20.80
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 12	5MHz	L 23035	701.5	QPSK	1	0	22.79
					25	0	21.44
				16-QAM	1	0	22.10
					25	0	20.67
		M 23095	707.5	QPSK	1	0	22.73
					25	0	20.95
				16-QAM	1	0	22.17
					25	0	20.97
		H 23155	713.5	QPSK	1	0	22.73
					25	0	20.29
				16-QAM	1	0	21.70
					25	0	21.32
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 12	3MHz	L 23025	700.5	QPSK	1	0	23.22
					15	0	22.69
				16-QAM	1	0	21.84
					15	0	21.16
		M 23095	707.5	QPSK	1	0	22.73
					15	0	22.59
				16-QAM	1	0	21.76
					15	0	21.76
		H 23165	714.5	QPSK	1	0	22.09
					15	0	22.46
				16-QAM	1	0	21.09
					15	0	22.02

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 12	1.4MHz	L 23017	699.7	QPSK	1	0	23.04
					6	0	21.35
				16-QAM	1	0	22.31
					6	0	20.98
		M 23095	707.5	QPSK	1	0	22.61
					6	0	22.33
				16-QAM	1	0	21.61
					6	0	21.32
		H 23173	715.3	QPSK	1	0	20.05
					6	0	22.74
				16-QAM	1	0	21.35
					6	0	20.46

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 17	10MHz	L 23780	709	QPSK	1	0	23.73
					50	0	22.33
				16-QAM	1	0	22.65
					50	0	21.76
		M 23790	710	QPSK	1	0	23.46
					50	0	22.41
				16-QAM	1	0	21.39
					50	0	21.34
		H 23800	711	QPSK	1	0	23.25
					50	0	22.39
				16-QAM	1	0	21.54
					50	0	21.14
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 17	5MHz	L 23755	706.5	QPSK	1	0	23.34
					25	0	22.75
				16-QAM	1	0	22.24
					25	0	22.68
		M 23790	710	QPSK	1	0	22.41
					25	0	22.98
				16-QAM	1	0	21.86
					25	0	21.74
		H 23825	713.5	QPSK	1	0	23.85
					25	0	22.79
				16-QAM	1	0	21.15
					25	0	22.56

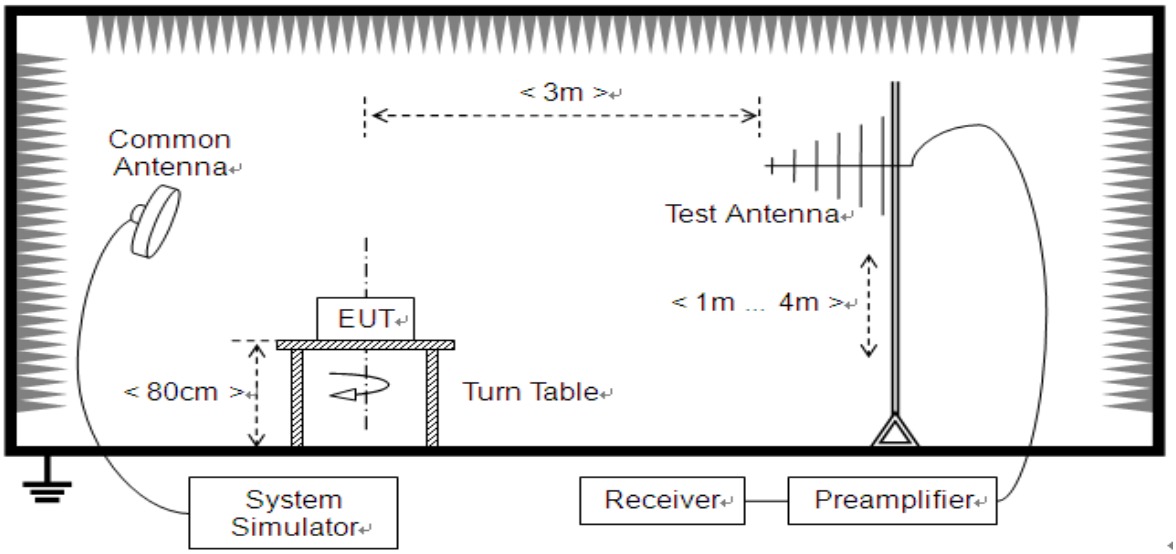
2.8. Radiated Spurious Emissions

2.8.1. Requirement

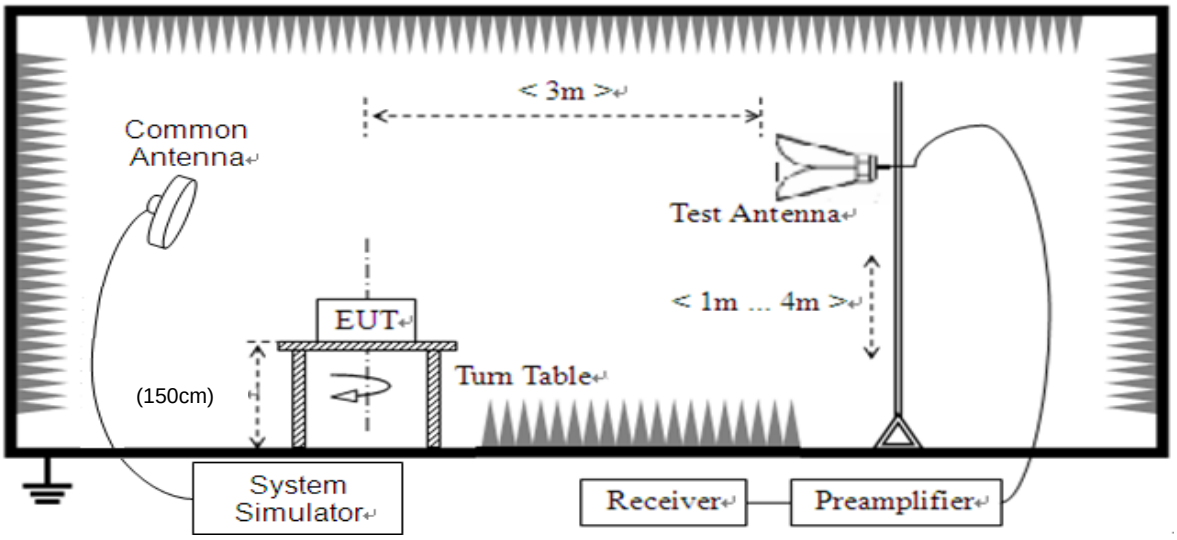
According to FCC section 2.1051, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

Additional requirement for LTE Band 7:
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 55 + 10 log(P) dB. This calculated to be -25dBm.

2.8.2. Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT is located in a 3m Full-Anechoic Chamber, the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.
A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power, and only the test result of the maximum output power was recorded.
In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360°to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. The Filters consists of Notch Filters and High Pass Filter.

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

2.8.3. Test procedure

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

2.8.4. Test Result

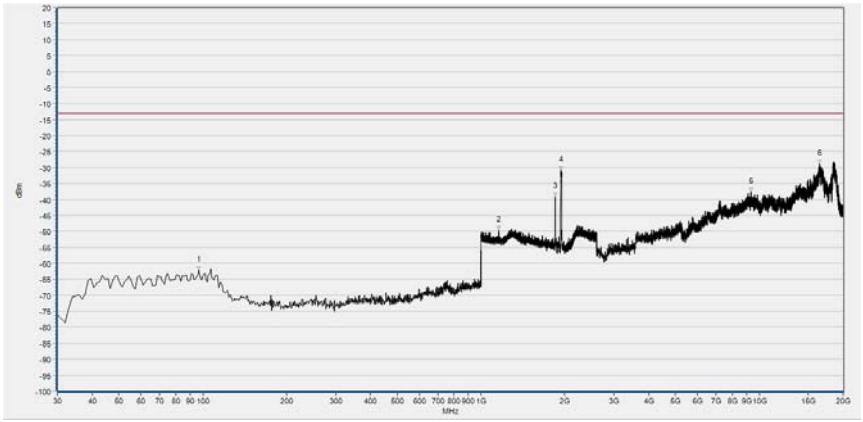
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. Test Antenna height is varied from 1m to 4m above the ground, and the Turn Table is actuated to turn from 0° to 360°, both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified. Only the worst RB size/offset presented.

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

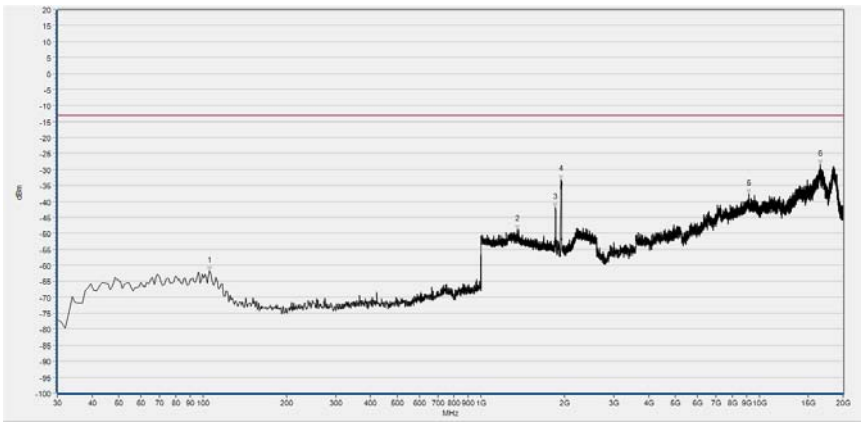
Note2: All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note3: All bandwidth and test channel were considered and evaluated respectively by performing full test for each band, only the worst cases were recorded in this test report.

LTE Band 2 20MHz BW, Low Channel, QPSK

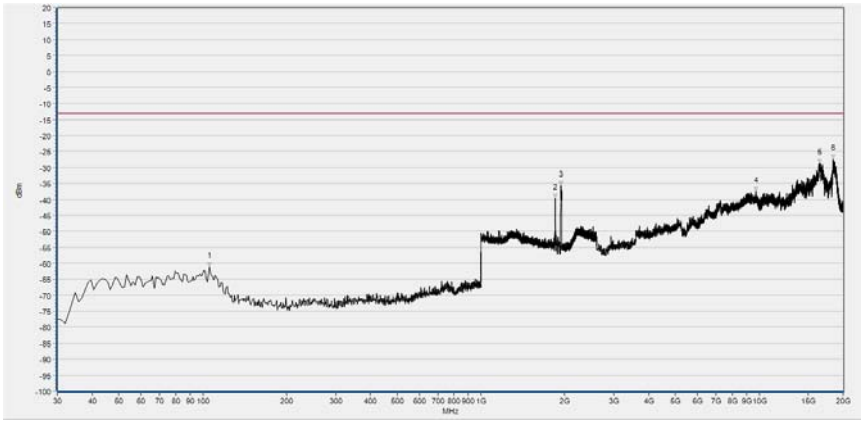


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	96.930	-62.33	-13.00	Horizontal	PASS
2	1158.784	-49.69	-13.00	Horizontal	PASS
3	1850.900	-39.12	-13.00	Horizontal	N/A
4	1936.054	-30.97	-13.00	Horizontal	N/A
5	9314.457	-37.73	-13.00	Horizontal	PASS
6	16424.441	-29.03	-13.00	Horizontal	PASS

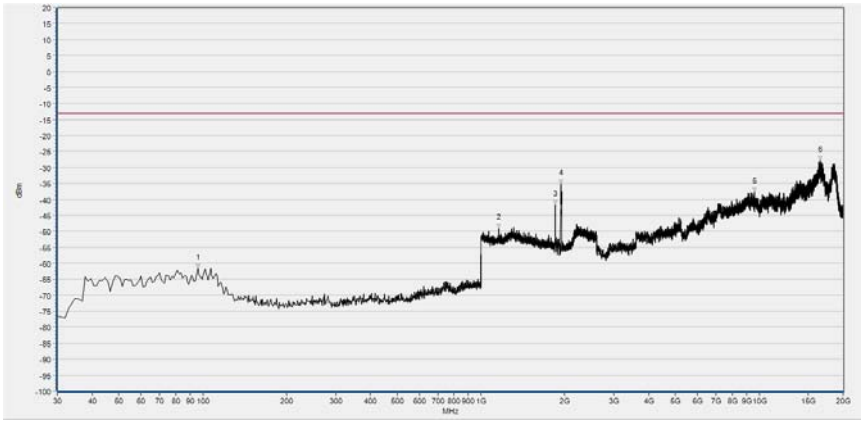


No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	105.660	-61.84	-13.00	Vertical	PASS
2	1346.379	-48.91	-13.00	Vertical	PASS
3	1851.541	-41.81	-13.00	Vertical	N/A
4	1941.176	-33.11	-13.00	Vertical	N/A
5	9146.754	-37.55	-13.00	Vertical	PASS
6	16551.009	-28.46	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, Low Channel, 16QAM



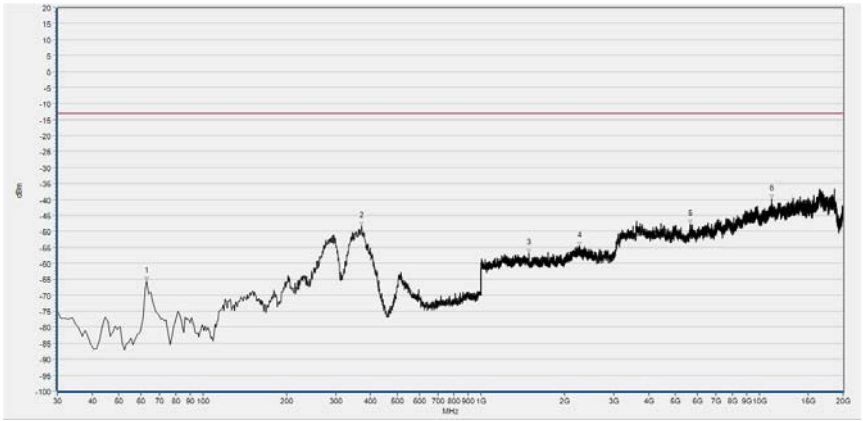
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	105.660	-61.19	-13.00	Horizontal	PASS
2	1850.900	-39.58	-13.00	Horizontal	N/A
3	1939.896	-35.57	-13.00	Horizontal	N/A
4	9722.640	-37.36	-13.00	Horizontal	PASS
5	16487.725	-28.83	-13.00	Horizontal	PASS
6	18446.372	-27.43	-13.00	Horizontal	PASS



Num.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	95.960	-61.57	-13.00	Vertical	PASS
2	1156.222	-49.02	-13.00	Vertical	PASS
3	1850.900	-41.68	-13.00	Vertical	N/A
4	1939.896	-35.27	-13.00	Vertical	N/A
5	9608.729	-37.76	-13.00	Vertical	PASS
6	16532.024	-27.78	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, QPSK

No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	197.810	-62.58	-13.00	Horizontal	PASS
2	372.410	-48.66	-13.00	Horizontal	PASS
3	1213.846	-57.58	-13.00	Horizontal	PASS
4	2379.752	-54.22	-13.00	Horizontal	PASS
5	4495.363	-47.93	-13.00	Horizontal	PASS
6	16446.590	-36.62	-13.00	Horizontal	PASS



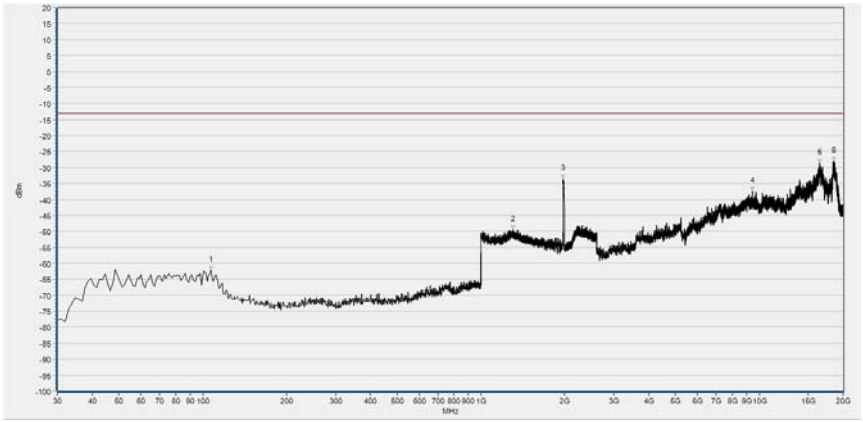
No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	62.980	-65.48	-13.00	Vertical	PASS
2	372.410	-48.34	-13.00	Vertical	PASS
3	1487.875	-56.97	-13.00	Vertical	PASS
4	2252.341	-54.61	-13.00	Vertical	PASS
5	5634.479	-47.78	-13.00	Vertical	PASS
6	11070.595	-39.80	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, Mid Channel, 16QAM

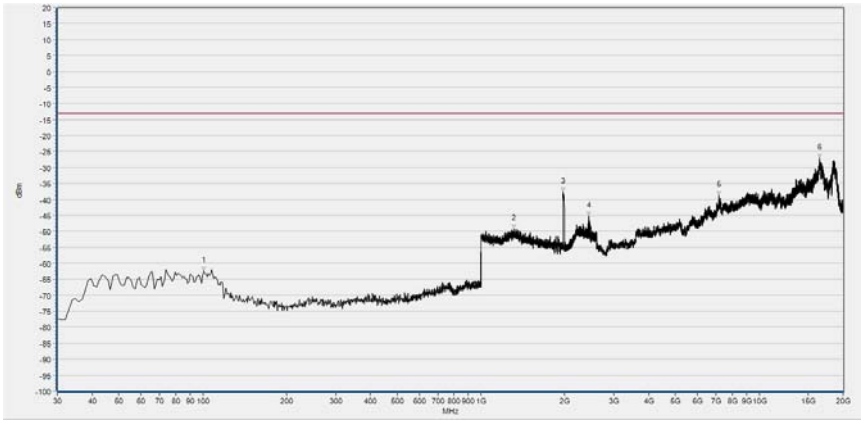
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	194.900	-63.93	-13.00	Horizontal	PASS
2	355.920	-50.69	-13.00	Horizontal	PASS
3	1229.852	-57.22	-13.00	Horizontal	PASS
4	2140.936	-55.06	-13.00	Horizontal	PASS
5	4460.556	-47.80	-13.00	Horizontal	PASS
6	11845.827	-40.32	-13.00	Horizontal	PASS

No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.980	-67.59	-13.00	Vertical	PASS
2	299.660	-47.26	-13.00	Vertical	PASS
3	1217.047	-56.14	-13.00	Vertical	PASS
4	2140.936	-55.15	-13.00	Vertical	PASS
5	4995.308	-48.11	-13.00	Vertical	PASS
6	17180.687	-37.18	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, High Channel, QPSK

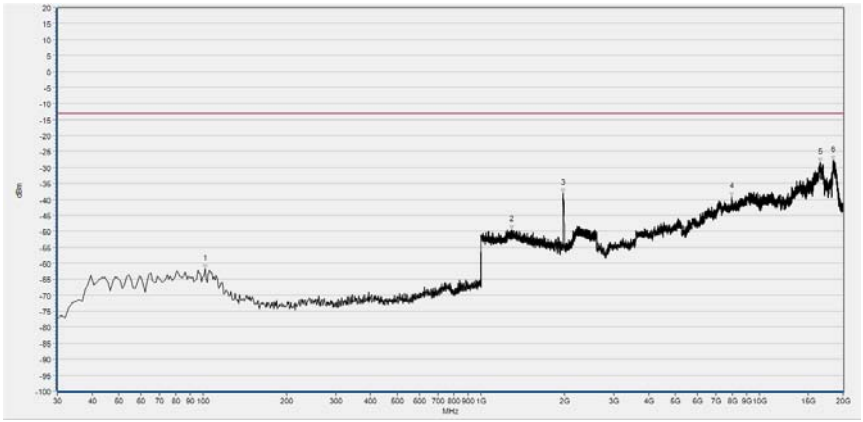


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	106.630	-62.25	-13.00	Horizontal	PASS
2	1300.280	-49.60	-13.00	Horizontal	PASS
3	1973.830	-33.65	-13.00	Horizontal	N/A
4	9450.518	-37.41	-13.00	Horizontal	PASS
5	16414.948	-28.74	-13.00	Horizontal	PASS
6	18560.284	-28.11	-13.00	Horizontal	PASS

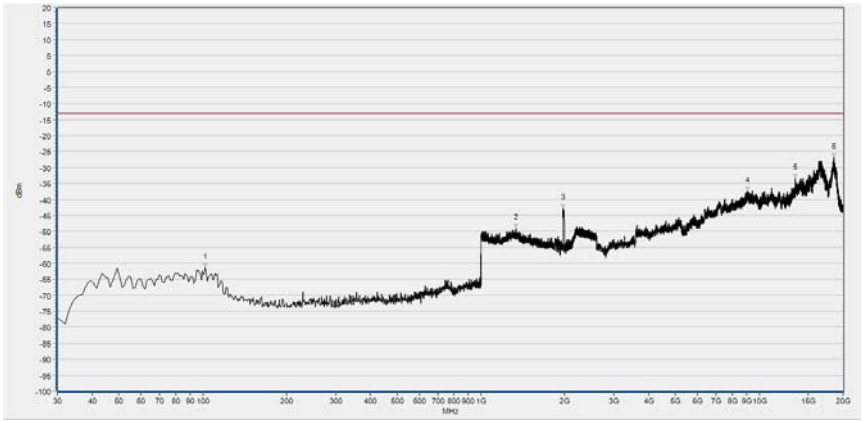


No.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	100.810	-62.35	-13.00	Vertical	PASS
2	1314.366	-49.19	-13.00	Vertical	PASS
3	1971.269	-37.62	-13.00	Vertical	N/A
4	2435.454	-45.18	-13.00	Vertical	PASS
5	7169.122	-38.78	-13.00	Vertical	PASS
6	16449.755	-27.15	-13.00	Vertical	PASS

LTE Band 2 20MHz BW, High Channel, 16QAM

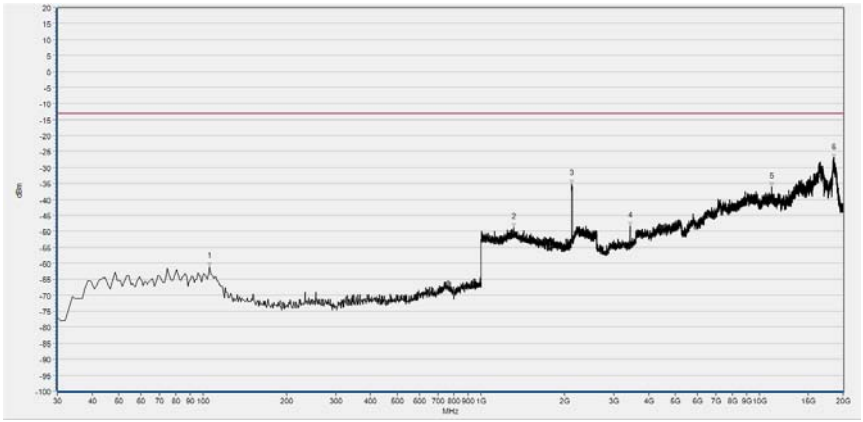


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	101.780	-61.87	-13.00	Horizontal	PASS
2	1290.676	-49.42	-13.00	Horizontal	PASS
3	1971.269	-38.08	-13.00	Horizontal	N/A
4	7931.697	-39.22	-13.00	Horizontal	PASS
5	16551.009	-28.54	-13.00	Horizontal	PASS
6	18459.029	-27.92	-13.00	Horizontal	PASS

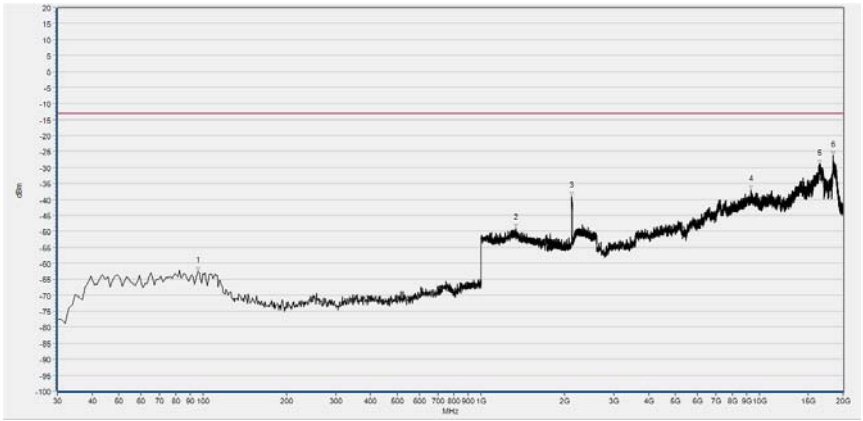


Num.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	101.780	-61.33	-13.00	Vertical	PASS
2	1338.055	-49.09	-13.00	Vertical	PASS
3	1972.549	-42.86	-13.00	Vertical	N/A
4	9080.306	-37.48	-13.00	Vertical	PASS
5	13440.589	-33.38	-13.00	Vertical	PASS
6	18560.284	-26.90	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Low Channel, QPSK

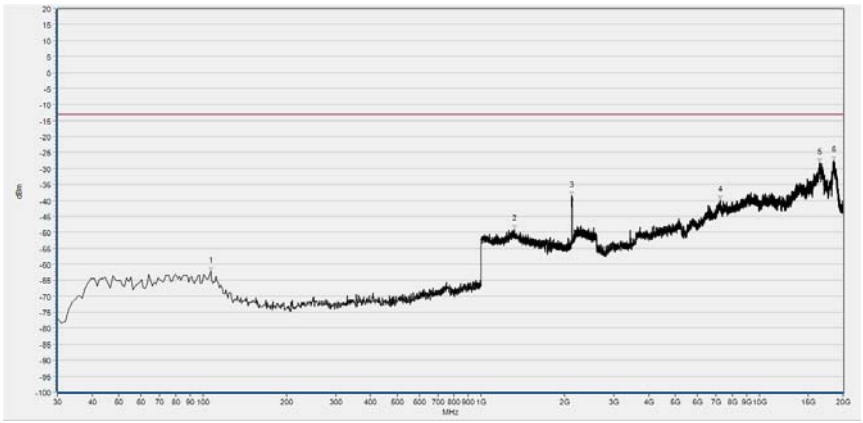


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	105.736	-61.15	-13.00	Horizontal	PASS
2	1308.954	-48.85	-13.00	Horizontal	PASS
3	2114.157	-35.23	-13.00	Horizontal	N/A
4	3426.638	-48.32	-13.00	Horizontal	PASS
5	11069.412	-36.00	-13.00	Horizontal	PASS
6	18549.758	-27.04	-13.00	Horizontal	PASS

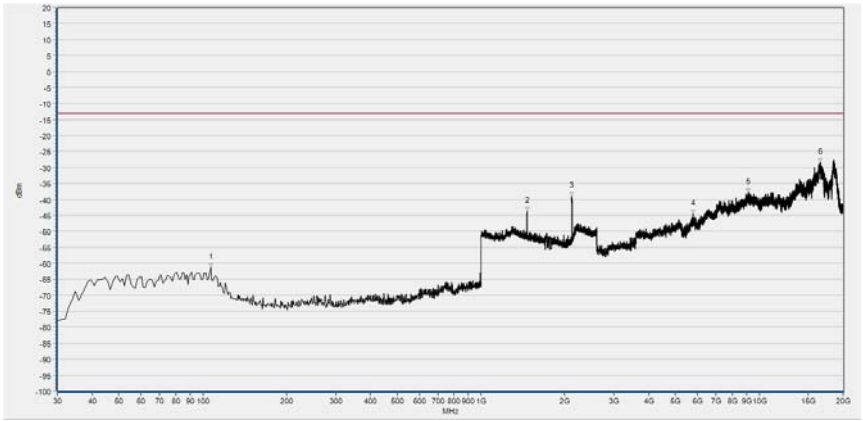


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	96.026	-62.48	-13.00	Vertical	PASS
2	1331.366	-49.12	-13.00	Vertical	PASS
3	2114.157	-39.08	-13.00	Vertical	N/A
4	9317.520	-36.91	-13.00	Vertical	PASS
5	16435.306	-28.92	-13.00	Vertical	PASS
6	18451.142	-26.23	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Low Channel, 16QAM



No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	106.707	-62.27	-13.00	Horizontal	PASS
2	1316.958	-49.07	-13.00	Horizontal	PASS
3	2113.357	-38.46	-13.00	Horizontal	N/A
4	7243.674	-39.84	-13.00	Horizontal	PASS
5	16420.803	-28.19	-13.00	Horizontal	PASS
6	18555.559	-27.56	-13.00	Horizontal	PASS



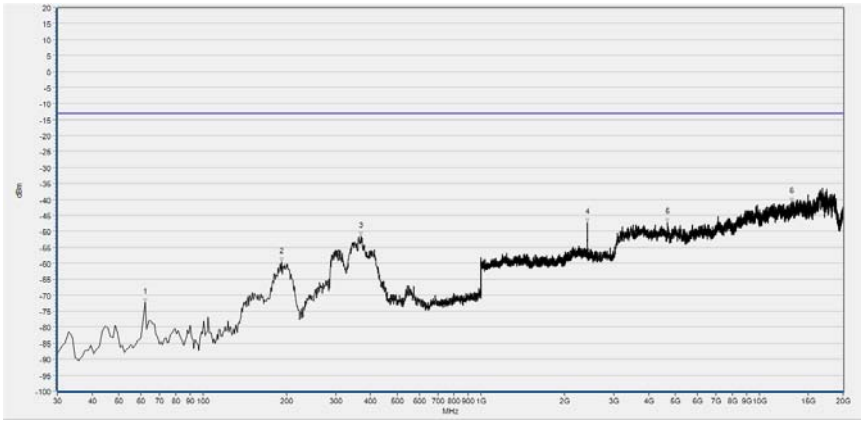
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	106.707	-61.35	-13.00	Vertical	PASS
2	1462.631	-43.65	-13.00	Vertical	PASS
3	2116.558	-39.00	-13.00	Vertical	N/A
4	5793.432	-44.52	-13.00	Vertical	PASS
5	9137.690	-37.94	-13.00	Vertical	PASS
6	16525.221	-28.47	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, Mid Channel, QPSK

No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.010	-72.73	-13.00	Horizontal	PASS
2	194.900	-58.39	-13.00	Horizontal	PASS
3	417.030	-54.91	-13.00	Horizontal	PASS
4	1446.899	-57.21	-13.00	Horizontal	PASS
5	2410.484	-49.01	-13.00	Horizontal	PASS
6	8460.120	-44.65	-13.00	Horizontal	PASS

No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.010	-68.68	-13.00	Vertical	PASS
2	300.630	-46.69	-13.00	Vertical	PASS
3	361.740	-48.98	-13.00	Vertical	PASS
4	1482.113	-57.04	-13.00	Vertical	PASS
5	2410.484	-48.07	-13.00	Vertical	PASS
6	7896.890	-45.08	-13.00	Vertical	PASS

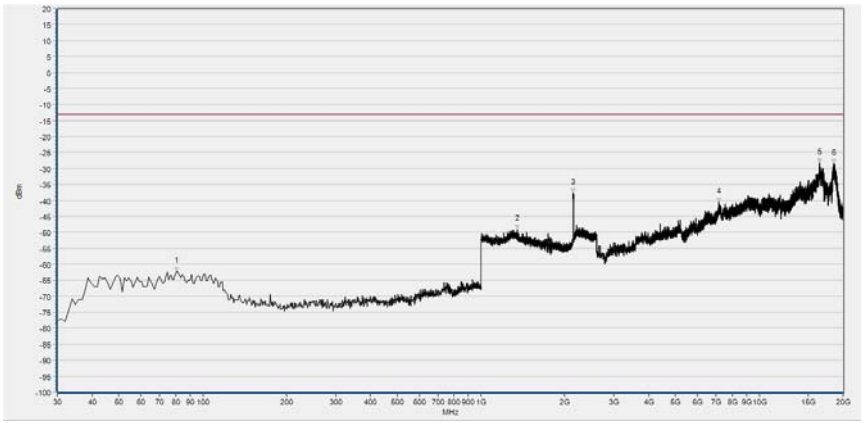
LTE Band 4 20MHz BW, Mid Channel, 16QAM



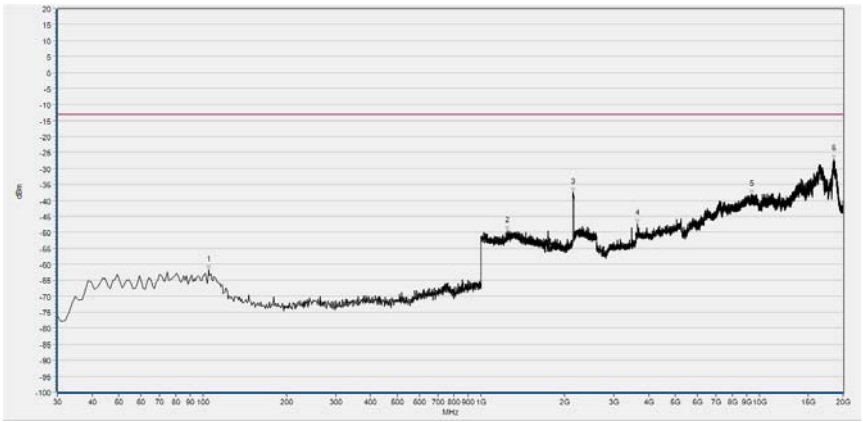
No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.010	-72.36	-13.00	Horizontal	PASS
2	191.990	-59.56	-13.00	Horizontal	PASS
3	370.470	-51.57	-13.00	Horizontal	PASS
4	2411.124	-47.25	-13.00	Horizontal	PASS
5	4685.215	-47.16	-13.00	Horizontal	PASS
6	13029.242	-40.85	-13.00	Horizontal	PASS

No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.010	-62.55	-13.00	Vertical	PASS
2	292.870	-45.23	-13.00	Vertical	PASS
3	1206.162	-57.38	-13.00	Vertical	PASS
4	2409.844	-47.10	-13.00	Vertical	PASS
5	5042.771	-46.20	-13.00	Vertical	PASS
6	11042.117	-40.88	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, High Channel, QPSK

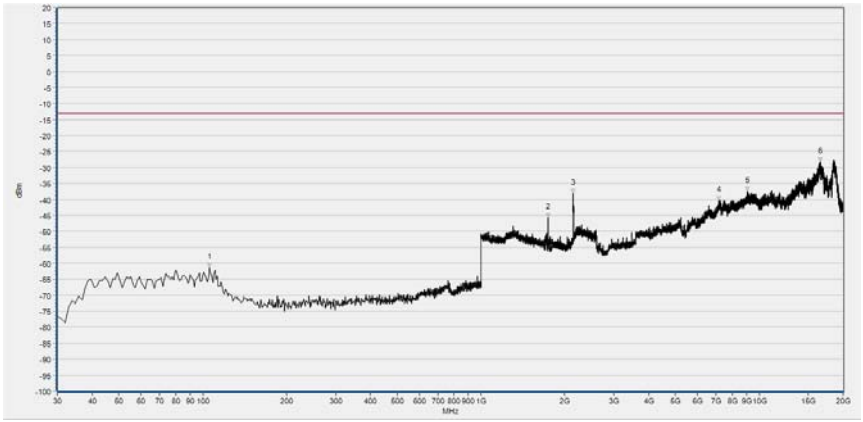


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	80.490	-62.15	-13.00	Horizontal	PASS
2	1348.974	-49.10	-13.00	Horizontal	PASS
3	2144.572	-37.58	-13.00	Horizontal	N/A
4	7168.261	-40.62	-13.00	Horizontal	PASS
5	16467.211	-28.34	-13.00	Horizontal	PASS
6	18558.460	-28.60	-13.00	Horizontal	PASS

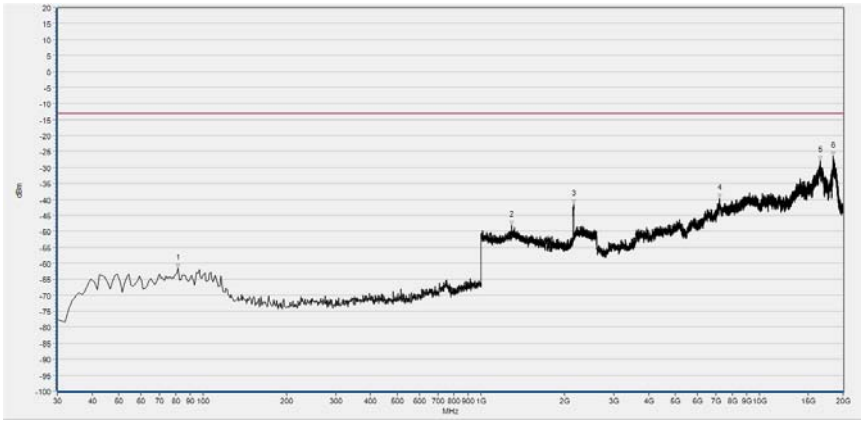


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	104.765	-61.87	-13.00	Vertical	PASS
2	1243.322	-49.58	-13.00	Vertical	PASS
3	2138.969	-37.49	-13.00	Vertical	N/A
4	3652.875	-47.34	-13.00	Vertical	PASS
5	9361.027	-38.13	-13.00	Vertical	PASS
6	18561.360	-27.04	-13.00	Vertical	PASS

LTE Band 4 20MHz BW, High Channel, 16QAM

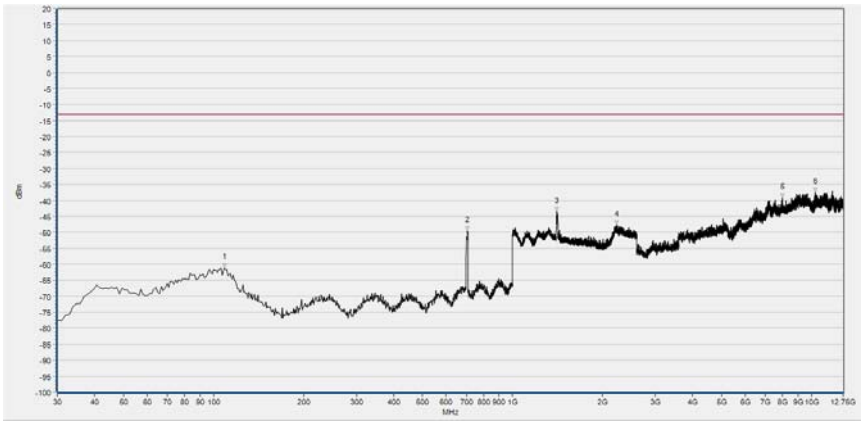


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	105.736	-61.23	-13.00	Horizontal	PASS
2	1737.969	-45.71	-13.00	Horizontal	PASS
3	2138.169	-38.18	-13.00	Horizontal	N/A
4	7150.858	-40.31	-13.00	Horizontal	PASS
5	9044.874	-37.52	-13.00	Horizontal	PASS
6	16560.027	-28.17	-13.00	Horizontal	PASS

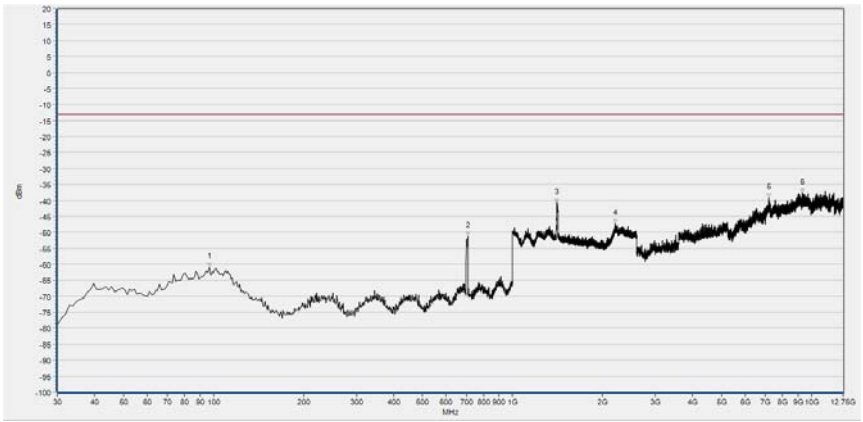


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	81.461	-61.53	-13.00	Vertical	PASS
2	1284.942	-48.25	-13.00	Vertical	PASS
3	2149.375	-41.38	-13.00	Vertical	N/A
4	7197.266	-39.73	-13.00	Vertical	PASS
5	16554.226	-27.77	-13.00	Vertical	PASS
6	18445.341	-26.46	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, Low Channel, QPSK

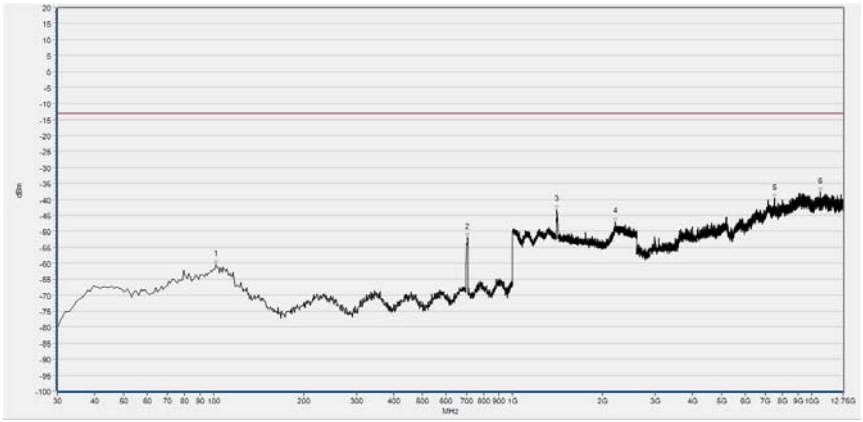


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	108.649	-61.14	-13.00	Horizontal	PASS
2	705.796	-49.40	-13.00	Horizontal	N/A
3	1407.603	-43.44	-13.00	Horizontal	PASS
4	2234.545	-47.71	-13.00	Horizontal	PASS
5	8000.880	-39.31	-13.00	Horizontal	PASS
6	10307.421	-37.50	-13.00	Horizontal	PASS

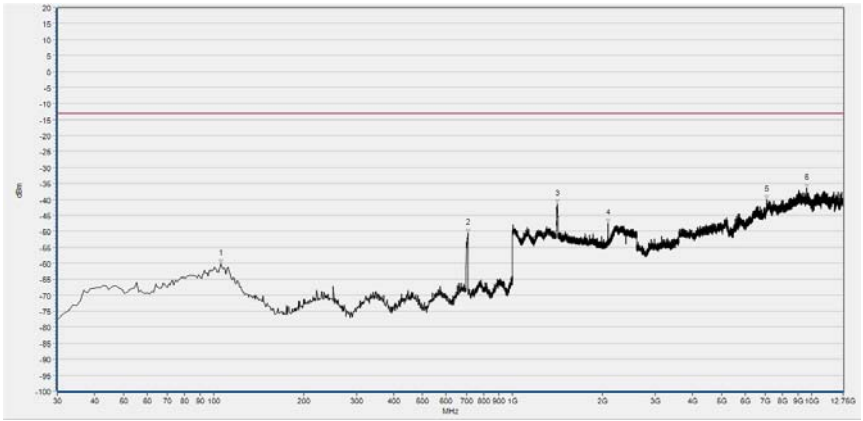


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	96.997	-60.98	-13.00	Vertical	PASS
2	707.738	-51.33	-13.00	Vertical	N/A
3	1407.603	-40.82	-13.00	Vertical	PASS
4	2207.336	-47.19	-13.00	Vertical	PASS
5	7176.535	-39.12	-13.00	Vertical	PASS
6	9308.462	-37.74	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, Low Channel, 16QAM

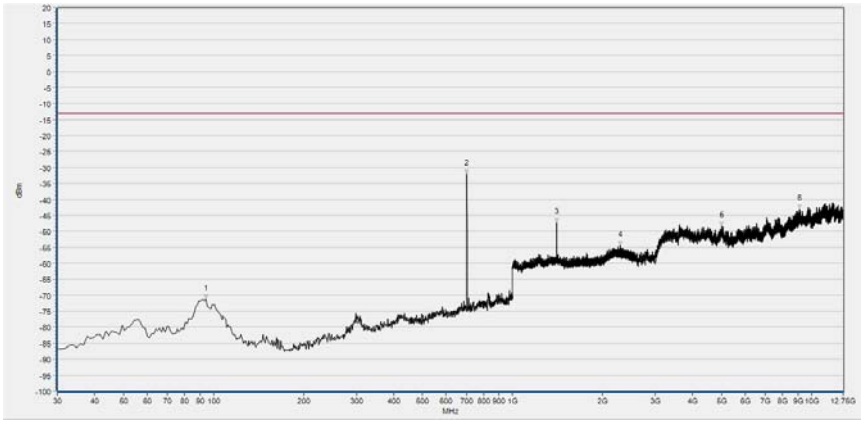


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	101.852	-60.50	-13.00	Horizontal	PASS
2	705.796	-51.91	-13.00	Horizontal	N/A
3	1407.069	-43.26	-13.00	Horizontal	PASS
4	2203.068	-47.14	-13.00	Horizontal	PASS
5	7501.400	-39.77	-13.00	Horizontal	PASS
6	10672.895	-37.62	-13.00	Horizontal	PASS

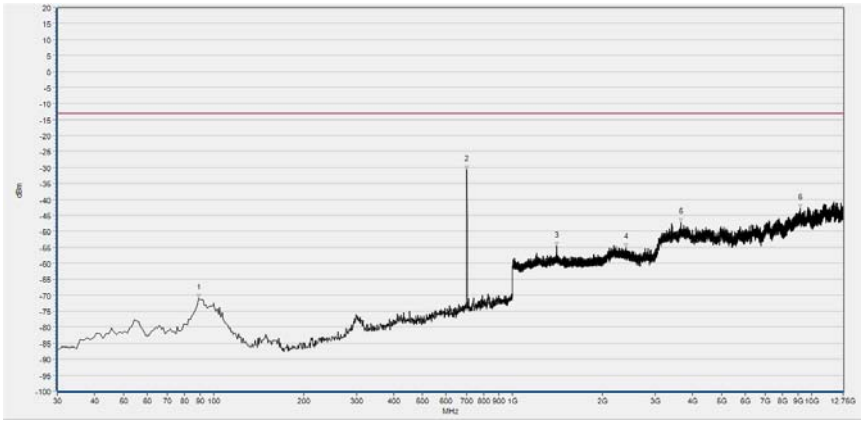


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	105.736	-60.13	-13.00	Vertical	PASS
2	707.738	-50.55	-13.00	Vertical	N/A
3	1410.270	-41.52	-13.00	Vertical	PASS
4	2089.963	-47.44	-13.00	Vertical	PASS
5	7083.137	-40.21	-13.00	Vertical	PASS
6	9610.992	-36.48	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, Mid Channel, QPSK

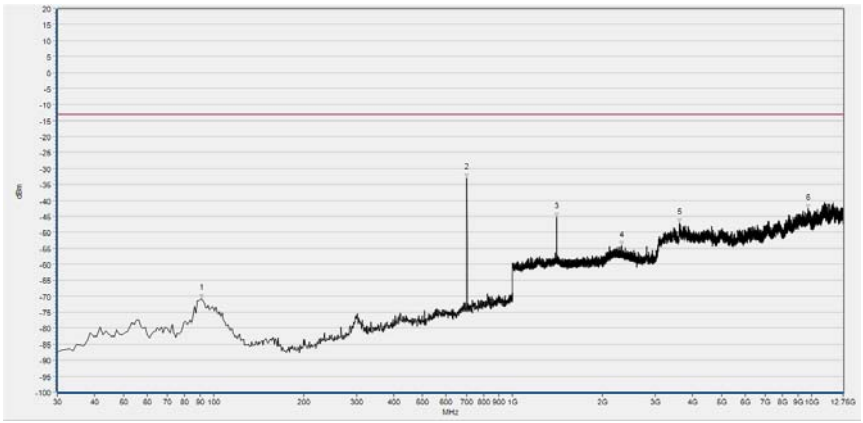


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	94.084	-71.25	-13.00	Horizontal	PASS
2	702.883	-32.00	-13.00	Horizontal	N/A
3	1406.002	-47.27	-13.00	Horizontal	PASS
4	2291.631	-54.41	-13.00	Horizontal	PASS
5	5012.122	-48.33	-13.00	Horizontal	PASS
6	9095.269	-42.99	-13.00	Horizontal	PASS

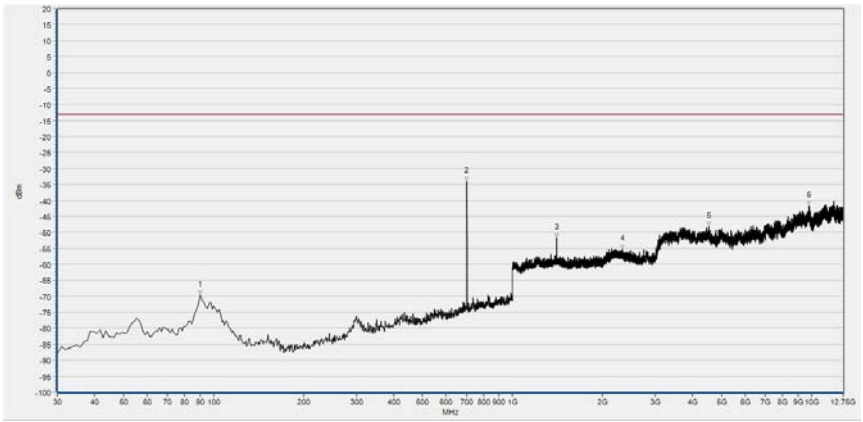


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	89.229	-71.02	-13.00	Vertical	PASS
2	702.883	-30.75	-13.00	Vertical	N/A
3	1406.002	-54.59	-13.00	Vertical	PASS
4	2391.397	-55.02	-13.00	Vertical	PASS
5	3649.720	-47.34	-13.00	Vertical	PASS
6	9148.060	-42.70	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, Mid Channel, 16QAM

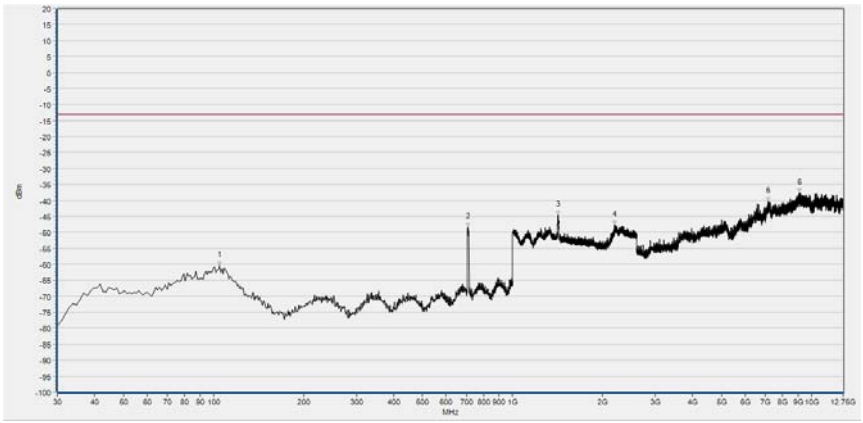


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	91.171	-70.81	-13.00	Horizontal	PASS
2	702.883	-32.88	-13.00	Horizontal	N/A
3	1406.002	-45.27	-13.00	Horizontal	PASS
4	2321.507	-54.11	-13.00	Horizontal	PASS
5	3617.233	-46.95	-13.00	Horizontal	PASS
6	9712.513	-42.58	-13.00	Horizontal	PASS

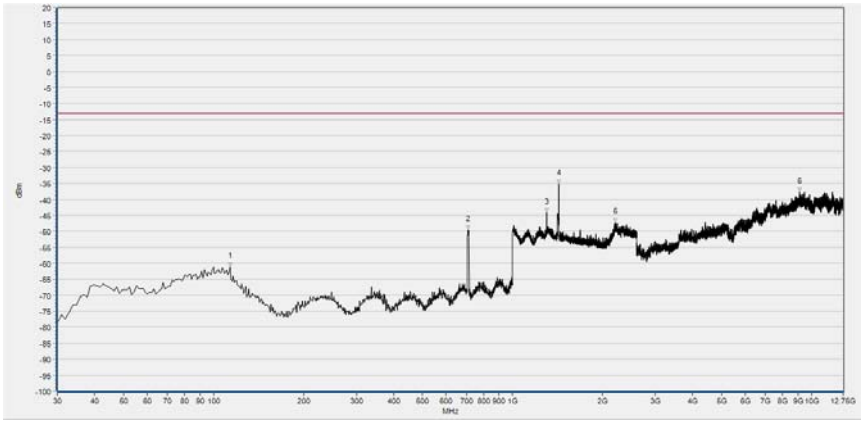


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	90.200	-69.63	-13.00	Vertical	PASS
2	702.883	-34.16	-13.00	Vertical	N/A
3	1406.002	-51.78	-13.00	Vertical	PASS
4	2324.175	-55.42	-13.00	Vertical	PASS
5	4528.886	-48.14	-13.00	Vertical	PASS
6	9779.516	-41.63	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, High Channel, QPSK

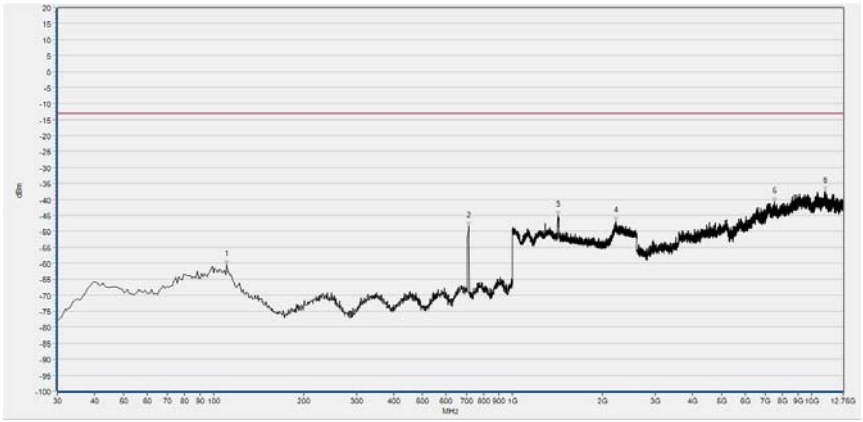


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	104.765	-60.41	-13.00	Horizontal	PASS
2	708.709	-48.43	-13.00	Horizontal	N/A
3	1422.007	-44.66	-13.00	Horizontal	PASS
4	2197.199	-47.75	-13.00	Horizontal	PASS
5	7156.231	-40.34	-13.00	Horizontal	PASS
6	9105.421	-37.67	-13.00	Horizontal	PASS

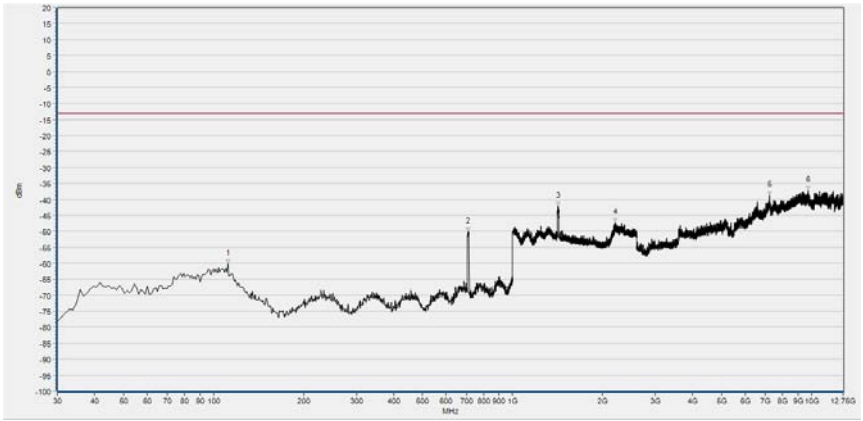


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	113.504	-61.03	-13.00	Vertical	PASS
2	708.709	-49.41	-13.00	Vertical	N/A
3	1301.434	-44.06	-13.00	Vertical	PASS
4	1424.675	-35.24	-13.00	Vertical	PASS
5	2208.936	-47.22	-13.00	Vertical	PASS
6	9131.816	-37.68	-13.00	Vertical	PASS

LTE Band 12 10MHz BW, High Channel, 16QAM

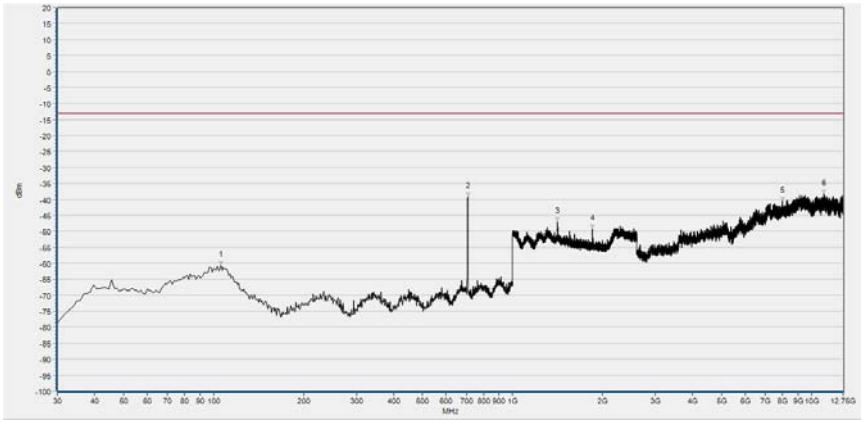


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	110.591	-60.40	-13.00	Horizontal	PASS
2	713.564	-48.35	-13.00	Horizontal	N/A
3	1418.273	-44.95	-13.00	Horizontal	PASS
4	2219.607	-46.84	-13.00	Horizontal	PASS
5	7515.613	-40.81	-13.00	Horizontal	PASS
6	11085.067	-37.52	-13.00	Horizontal	PASS

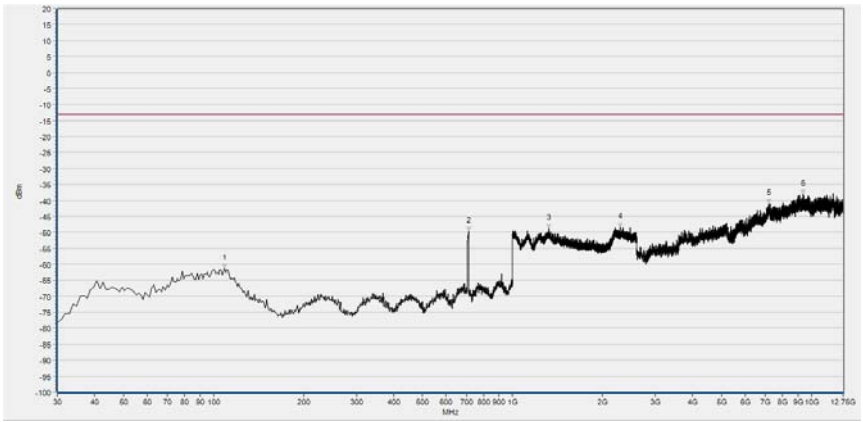


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	111.562	-60.18	-13.00	Vertical	PASS
2	707.738	-50.14	-13.00	Vertical	N/A
3	1419.873	-42.19	-13.00	Vertical	PASS
4	2200.400	-47.29	-13.00	Vertical	PASS
5	7235.417	-38.81	-13.00	Vertical	PASS
6	9730.786	-37.27	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, Low Channel, QPSK

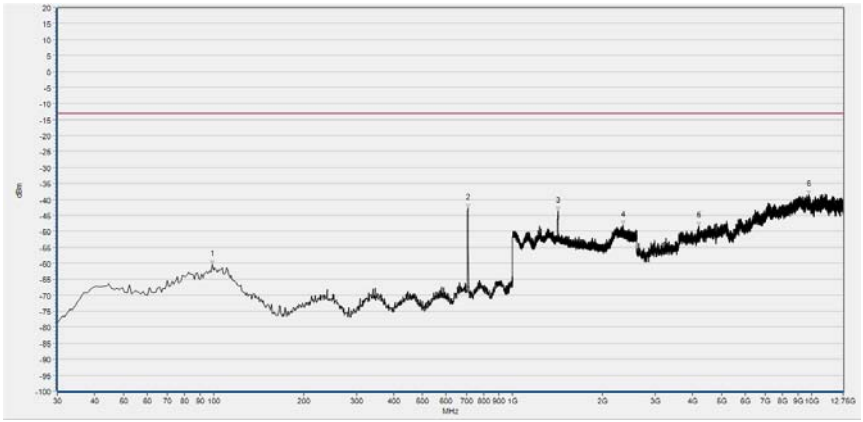


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	105.736	-60.59	-13.00	Horizontal	PASS
2	707.738	-39.19	-13.00	Horizontal	PASS
3	1414.005	-47.07	-13.00	Horizontal	PASS
4	1852.551	-49.31	-13.00	Horizontal	PASS
5	8002.911	-40.52	-13.00	Horizontal	PASS
6	10965.273	-38.38	-13.00	Horizontal	PASS

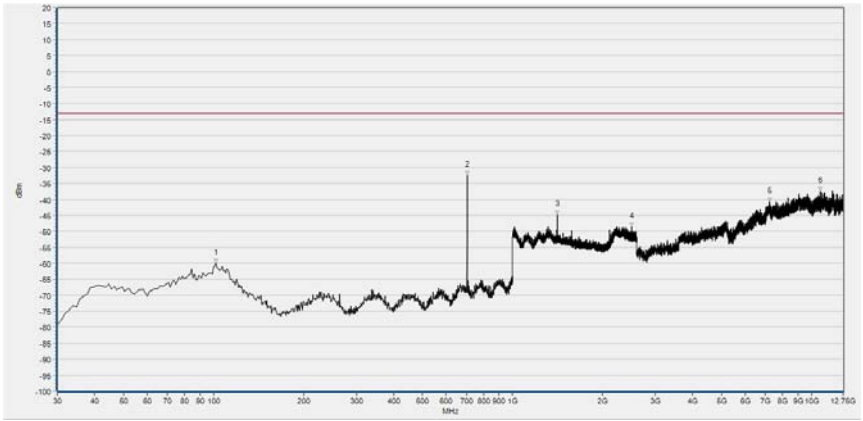


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	108.649	-61.43	-13.00	Vertical	PASS
2	712.593	-49.68	-13.00	Vertical	PASS
3	1321.707	-48.80	-13.00	Vertical	PASS
4	2295.365	-48.42	-13.00	Vertical	PASS
5	7190.748	-41.06	-13.00	Vertical	PASS
6	9369.374	-38.19	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, Low Channel, 16QAM

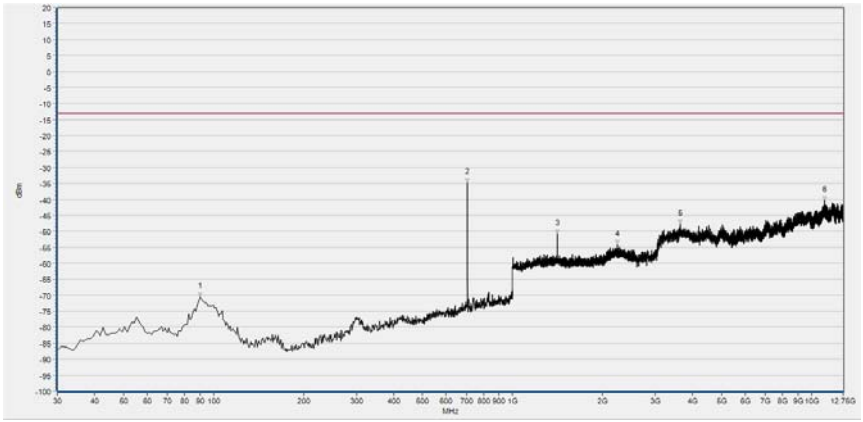


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	98.939	-60.46	-13.00	Horizontal	PASS
2	708.709	-42.80	-13.00	Horizontal	N/A
3	1418.806	-43.71	-13.00	Horizontal	PASS
4	2346.582	-48.16	-13.00	Horizontal	PASS
5	4206.051	-48.37	-13.00	Horizontal	PASS
6	9797.790	-38.54	-13.00	Horizontal	PASS

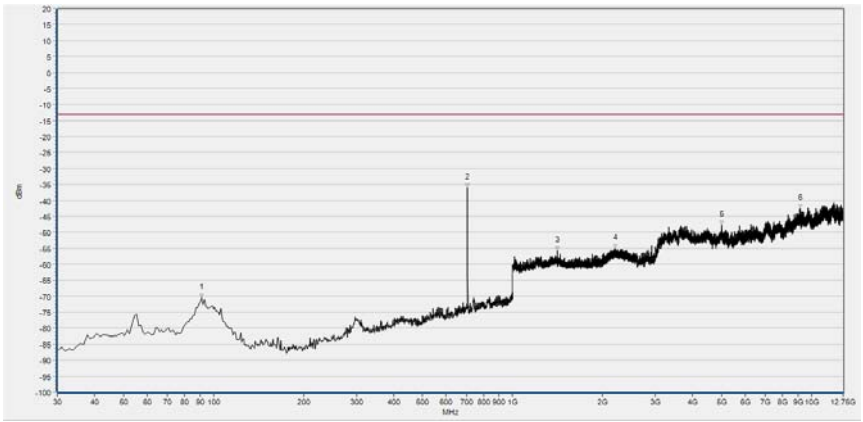


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	101.852	-60.10	-13.00	Vertical	PASS
2	704.825	-32.43	-13.00	Vertical	PASS
3	1409.203	-44.89	-13.00	Vertical	PASS
4	2501.300	-48.69	-13.00	Vertical	PASS
5	7229.326	-40.68	-13.00	Vertical	PASS
6	10666.803	-37.48	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, Mid Channel, QPSK

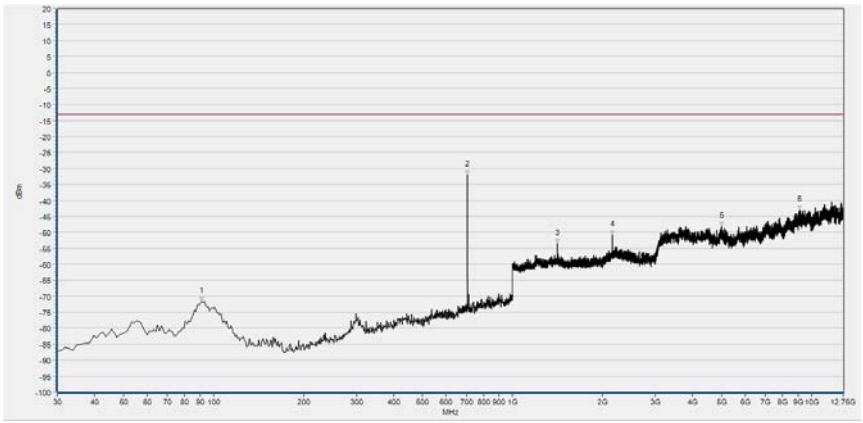


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	90.200	-70.59	-13.00	Horizontal	PASS
2	705.796	-34.73	-13.00	Horizontal	N/A
3	1410.804	-50.76	-13.00	Horizontal	PASS
4	2236.145	-54.08	-13.00	Horizontal	PASS
5	3645.659	-47.70	-13.00	Horizontal	PASS
6	11072.885	-40.40	-13.00	Horizontal	PASS

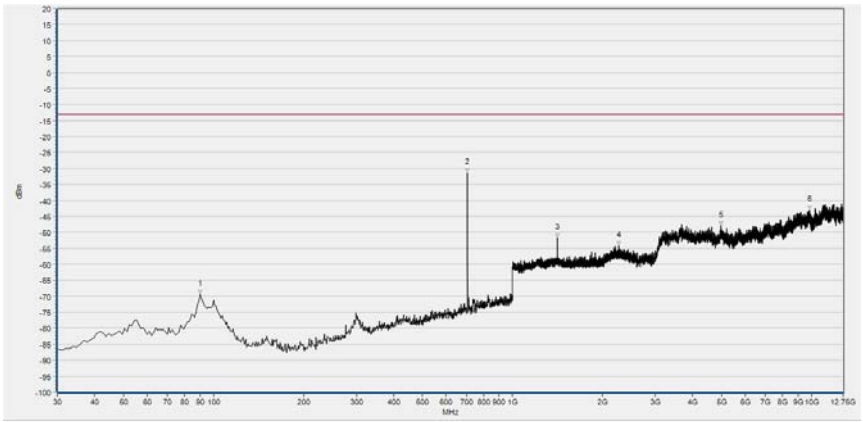


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	91.171	-70.52	-13.00	Vertical	PASS
2	705.796	-36.03	-13.00	Vertical	N/A
3	1410.804	-55.77	-13.00	Vertical	PASS
4	2203.601	-55.16	-13.00	Vertical	PASS
5	5006.031	-47.69	-13.00	Vertical	PASS
6	9152.120	-42.49	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, Mid Channel, 16QAM

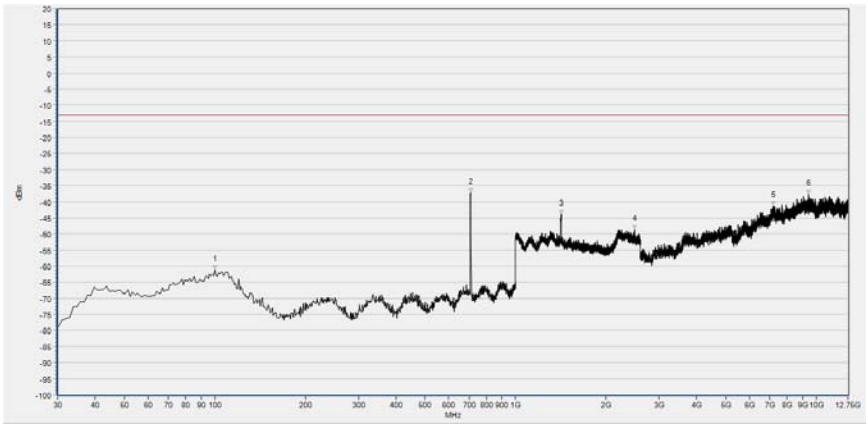


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	91.171	-71.70	-13.00	Horizontal	PASS
2	705.796	-32.06	-13.00	Horizontal	N/A
3	1410.804	-53.47	-13.00	Horizontal	PASS
4	2158.786	-50.75	-13.00	Horizontal	PASS
5	4997.910	-48.12	-13.00	Horizontal	PASS
6	9119.634	-43.03	-13.00	Horizontal	PASS

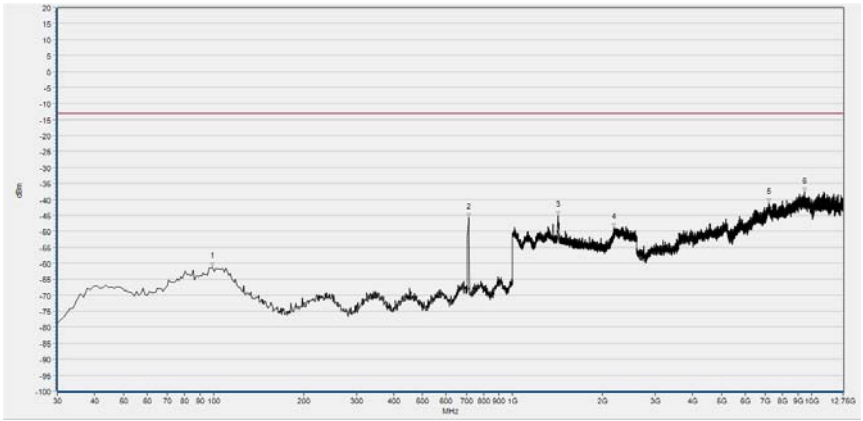


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	90.200	-69.46	-13.00	Vertical	PASS
2	705.796	-31.40	-13.00	Vertical	N/A
3	1410.804	-51.80	-13.00	Vertical	PASS
4	2271.357	-54.20	-13.00	Vertical	PASS
5	4975.575	-48.02	-13.00	Vertical	PASS
6	9854.641	-43.09	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, High Channel, QPSK

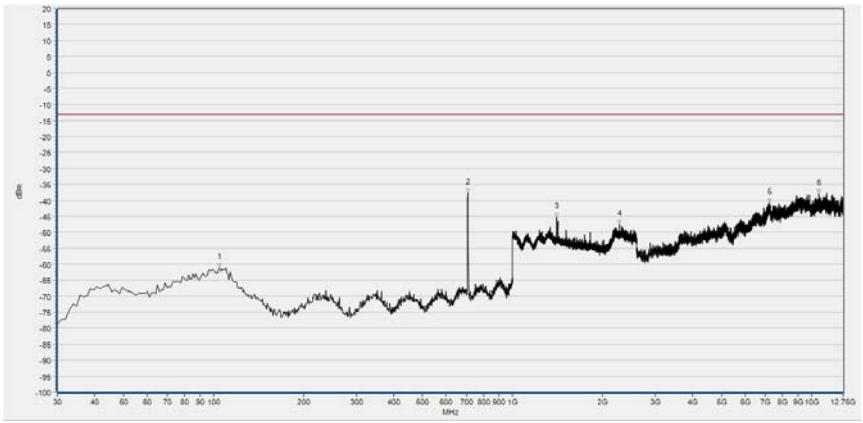


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	99.910	-61.10	-13.00	Horizontal	PASS
2	707.738	-37.15	-13.00	Horizontal	N/A
3	1416.672	-43.84	-13.00	Horizontal	PASS
4	2490.097	-48.68	-13.00	Horizontal	PASS
5	7192.779	-41.19	-13.00	Horizontal	PASS
6	9434.347	-37.68	-13.00	Horizontal	PASS

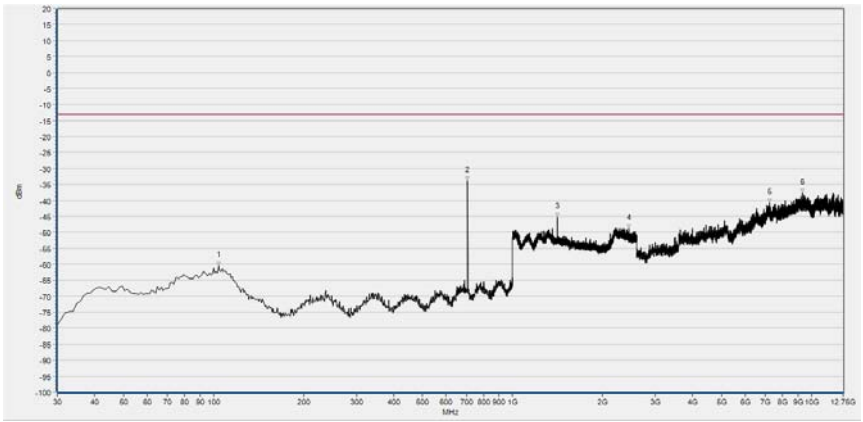


No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	98.939	-61.08	-13.00	Vertical	PASS
2	713.564	-45.74	-13.00	Vertical	N/A
3	1416.672	-44.95	-13.00	Vertical	PASS
4	2178.526	-48.91	-13.00	Vertical	PASS
5	7186.687	-40.90	-13.00	Vertical	PASS
6	9454.651	-37.64	-13.00	Vertical	PASS

LTE Band 17 10MHz BW, High Channel, 16QAM



No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	104.765	-61.20	-13.00	Horizontal	PASS
2	707.738	-37.66	-13.00	Horizontal	N/A
3	1401.734	-45.29	-13.00	Horizontal	PASS
4	2273.491	-47.48	-13.00	Horizontal	PASS
5	7245.569	-40.73	-13.00	Horizontal	PASS
6	10547.009	-37.88	-13.00	Horizontal	PASS



No.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	103.794	-60.41	-13.00	Vertical	PASS
2	706.767	-33.86	-13.00	Vertical	PASS
3	1412.938	-45.15	-13.00	Vertical	PASS
4	2449.016	-48.82	-13.00	Vertical	PASS
5	7223.235	-40.81	-13.00	Vertical	PASS
6	9336.887	-37.72	-13.00	Vertical	PASS

Annex A Test Uncertainty

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

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

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

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

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

2. Identification of the Responsible Testing Location

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

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI/TIA-603-E-2016 and CISPR Publication 22; the FCC designation number is CN1192.

4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
USB Power Sensor	MY54210011	U2021XA	Agilent	2018.04.17	2019.04.16
System Simulator	152038	CMW500	R&S	2018.05.08	2019.05.07
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2018.04.17	2019.04.16

4.2Auxiliary Test Equipment

Equipment Name	Model No.	Brand Name	Manufacturer	Cal.Date	Cal. Due
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.3 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
System Simulator	152038	CMW500	R&S	2018.05.08	2019.05.07
Receiver	MY54130016	N9038A	Agilent	2018.05.08	2019.05.07
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.05.08	2019.05.07
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2017.09.13	2018.09.12
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2017.09.13	2018.09.12
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT