



Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
	Schwarz		124534/wk		
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	UG -596A/U	A0902607	2014.02.26	2015.02.25

2.7.3 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:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

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

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

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

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

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

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

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



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 4	20MHz	L 20050	1720	QPSK	1	0	24.61
					1	49	24.13
					1	99	24.72
					50	0	22.89
					50	25	23.78
					50	49	24.32
					100	0	24.09
				16-QAM	1	0	23.87
					1	49	23.78
					1	99	24.68
					50	0	24.52
					50	25	24.14
					50	49	24.12
					100	0	23.46
		M 20175	1732.5	QPSK	1	0	24.81
					1	49	24.92
					1	99	24.94
					50	0	24.04
					50	25	23.12
					50	49	24.76
					100	0	23.49
				16-QAM	1	0	23.34
					1	49	24.42
					1	99	24.69
					50	0	24.41
					50	25	24.17
					50	49	24.56
					100	0	24.41
		H 20300	1745	QPSK	1	0	23.53
					1	49	23.34
					1	99	24.08
					50	0	24.61
					50	25	24.12
					50	49	23.34
					100	0	24.41
				16-QAM	1	0	23.98
					1	49	24.12



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
	15MHz	L 20025	1717.5		1	99	23.83
					50	0	23.32
					50	25	23.12
					50	49	23.44
					100	0	24.67
				QPSK	1	0	24.84
					1	37	24.12
					1	74	24.35
					36	0	24.14
					36	18	24.26
					36	35	23.34
					75	0	23.62
				16-QAM	1	0	23.26
					1	37	23.23
					1	74	23.67
					36	0	23.54
					36	18	24.98
					36	35	24.12
					75	0	24.51
		M 20175	1732.5	QPSK	1	0	24.78
					1	37	24.21
					1	74	24.64
					36	0	24.89
					36	18	23.76
					36	35	24.23
					75	0	23.62
				16-QAM	1	0	23.94
					1	37	24.78
					1	74	24.31
					36	0	23.98
					36	18	23.65
					36	35	23.34
					75	0	24.35
		H 20325	1747.5	QPSK	1	0	24.41
					1	37	24.76
					1	74	24.81
					36	0	24.34



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					36	18	24.13
					36	35	23.87
					75	0	23.38
				16-QAM	1	0	24.84
					1	37	23.43
					1	74	24.19
					36	0	23.46
					36	18	24.32
					36	35	23.34
					75	0	23.82
	10MHz	L 20000	1715	QPSK	1	0	24.03
					1	24	24.08
					1	49	24.51
					25	0	24.03
					25	12	23.12
					25	24	23.65
					50	0	24.85
				16-QAM	1	0	24.64
					1	24	24.01
					1	49	24.38
					25	0	24.34
					25	12	24.54
					25	24	24.87
					50	0	23.83
		M 20175	1732.5	QPSK	1	0	24.06
					1	24	24.05
					1	49	23.66
					25	0	23.54
					25	12	24.34
					25	24	23.64
					50	0	24.32
				16-QAM	1	0	24.05
					1	24	24.03
					1	49	24.44
					25	0	23.43
					25	12	23.64
					25	24	24.75



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					50	0	23.03
		H 20350	1750	QPSK	1	0	23.84
					1	24	23.67
					1	49	23.96
					25	0	23.34
					25	12	23.78
					25	24	24.54
					50	0	23.05
				16-QAM	1	0	24.88
					1	24	23.65
					1	49	23.21
					25	0	23.34
					25	12	24.85
					25	24	23.43
					50	0	23.69
	5MHz	L 19975	1712.5	QPSK	1	0	24.63
					1	12	24.53
					1	24	24.54
					12	0	24.87
					12	6	23.64
					12	11	24.42
					25	0	23.51
				16-QAM	1	0	23.33
					1	12	24.64
					1	24	24.04
					12	0	23.74
					12	6	23.53
					12	11	23.24
					25	0	23.33
		M 20175	1732.5	QPSK	1	0	24.65
					1	12	24.23
					1	24	24.44
					12	0	24.43
					12	6	24.68
					12	11	24.43
					25	0	23.25
				16-QAM	1	0	23.38



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					1	12	23.18
					1	24	23.94
					12	0	23.89
					12	6	24.43
					12	11	23.43
					25	0	23.88
		H 20375	1752.5	QPSK	1	0	23.09
					1	12	23.37
					1	24	23.27
					12	0	23.87
					12	6	23.67
					12	11	24.23
					25	0	23.07
				16-QAM	1	0	24.46
					1	12	24.74
					1	24	24.83
					12	0	24.34
					12	6	23.36
					12	11	23.57
					25	0	23.46
	3MHz	L 19965	1711.5	QPSK	1	0	24.69
					1	7	24.34
					1	14	24.84
					8	0	24.65
					8	4	24.85
					8	7	24.45
					15	0	23.35
				16-QAM	1	0	24.39
					1	7	23.65
					1	14	23.95
					8	0	24.54
					8	4	23.45
					8	7	23.56
					15	0	24.63
		M 20175	1732.5	QPSK	1	0	24.81
					1	7	24.05
					1	14	23.34



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					8	0	23.54
					8	4	23.76
					8	7	23.54
					15	0	24.88
				16-QAM	1	0	24.06
					1	7	24.43
					1	14	23.21
					8	0	23.23
					8	4	23.76
					8	7	23.65
					15	0	23.35
		H 20385	1753.5	QPSK	1	0	24.66
					1	7	24.78
					1	14	24.64
					8	0	23.43
					8	4	23.56
					8	7	23.74
					15	0	23.09
				16-QAM	1	0	24.81
					1	7	24.65
					1	14	24.45
					8	0	23.89
					8	4	23.21
					8	7	23.78
					15	0	24.66
	1.4MHz	L 19957	1710.7	QPSK	1	0	24.26
					1	2	24.58
					1	5	24.51
					3	0	23.92
					3	1	23.62
					3	2	24.34
					6	0	23.39
				16-QAM	1	0	23.22
					1	2	23.34
					1	5	23.13
					3	0	23.74
					3	1	23.83



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					3	2	23.76
					6	0	23.55
		M 20175	1732.5	QPSK	1	0	23.88
					1	2	24.98
					1	5	24.11
					3	0	23.34
					3	1	24.45
					3	2	24.85
					6	0	23.16
					1	0	23.98
				16-QAM	1	2	24.09
					1	5	23.55
					3	0	23.77
					3	2	23.34
					3	5	23.48
					6	0	23.51
		H 20393	1754.5	QPSK	1	0	23.85
					1	2	23.48
					1	5	24.77
					3	0	24.38
					3	1	24.74
					3	2	24.98
					6	0	23.53
				16-QAM	1	0	24.32
					1	2	24.68
					1	5	23.93
					3	0	24.38
					3	1	24.73
					3	2	24.98
					6	0	24.85

Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
LTE Band 17	10MHz	L 23780	709	QPSK	1	0	23.41
					1	24	24.65
					1	49	23.16



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
					25	0	23.56
					25	12	23.65
					25	24	23.64
					50	0	23.46
				16-QAM	1	0	23.32
					1	24	23.78
					1	49	23.64
					25	0	23.76
					25	12	23.34
					25	24	23.54
					50	0	23.16
		M 23790	710	QPSK	1	0	24.84
					1	24	23.38
					1	49	23.95
					25	0	24.59
					25	12	23.64
					25	24	23.57
					50	0	23.33
				16-QAM	1	0	23.16
					1	24	23.95
					1	49	23.53
					25	0	23.56
					25	12	23.48
					25	24	23.55
					50	0	23.33
		H 23800	711	QPSK	1	0	23.84
					1	24	23.29
					1	49	24.16
					25	0	23.84
					25	12	23.57
					25	24	23.67
					50	0	23.35
				16-QAM	1	0	23.14
					1	24	23.47
					1	49	23.71
					25	0	24.54
					25	12	23.45



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
	5MHz	L 23755	706.5	QPSK	25	24	23.64
					50	0	23.14
					1	0	24.35
					1	12	23.58
					1	24	23.84
					12	0	23.12
					12	6	23.68
					12	11	23.54
				16-QAM	25	0	23.16
					1	0	23.35
					1	12	23.65
					1	24	23.53
					12	0	23.65
					12	6	23.56
					12	11	23.76
					25	0	23.44
		M 23790	710	QPSK	1	0	24.62
					1	12	24.76
					1	24	24.93
					12	0	23.79
					12	6	23.65
					12	11	23.65
					25	0	23.62
				16-QAM	1	0	23.18
					1	12	23.56
					1	24	23.66
					12	0	23.87
					12	6	23.65
					12	11	23.84
					25	0	23.33
		H 23825	713.5	QPSK	1	0	24.52
					1	12	23.93
					1	24	23.63
					12	0	23.01
					12	6	23.65
					12	11	23.55
					25	0	23.24



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Band	Band Width	Channel	Frequency (MHz)	Modulation	RB Configuration		ERP (dBm)
					RB Size	RB Offset	
				16-QAM	1	0	23.88
					1	12	23.74
					1	24	23.16
					12	0	23.09
					12	6	23.54
					12	11	23.84
					25	0	22.66

2.8 Radiated Spurious Emissions

2.8.1 Requirement

According to FCC section 2.1053 and section 27.53(g), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10*\log(P)$ dB. This calculated to be -13dBm.

2.8.2 Test Description

See section 2.7.2 of this report.

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 Result

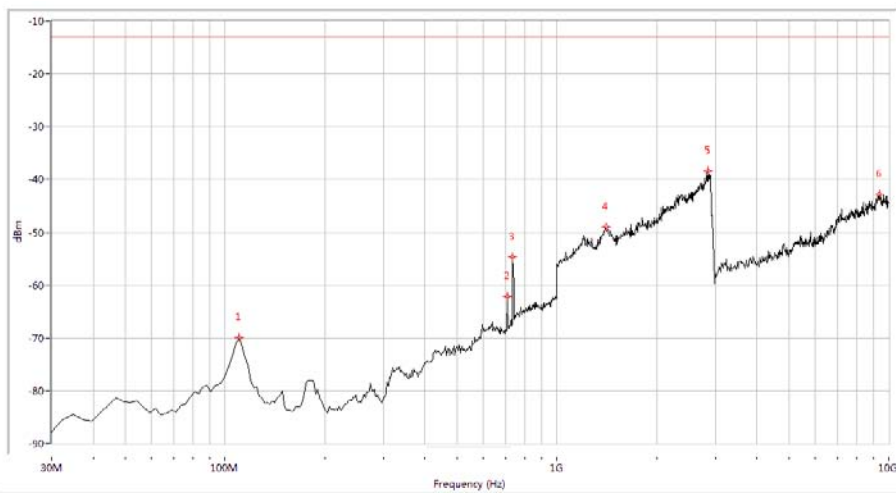
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. Mid channels on all channel bandwidth verified.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

Test Plots for the Whole Measurement Frequency Range:

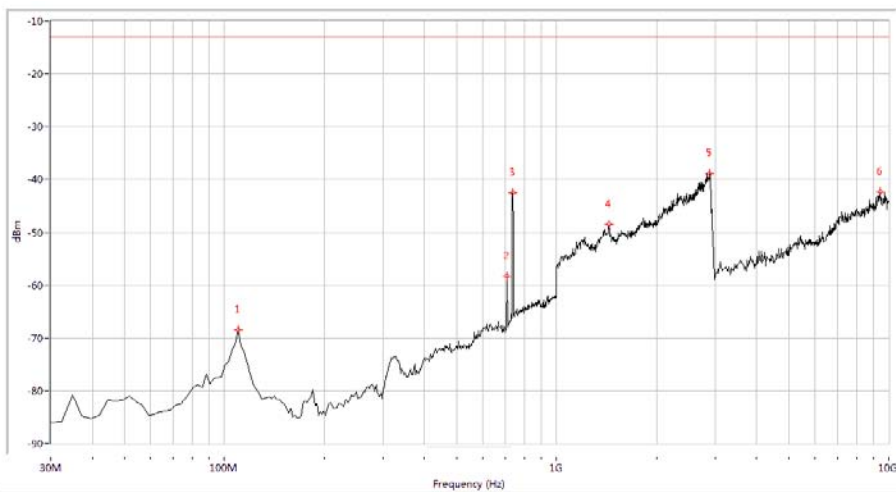
Note1: the power of the EUT transmitting frequency should be ignored.

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.

LTE Band 17 5MHz BW, Mid Channel, QPSK

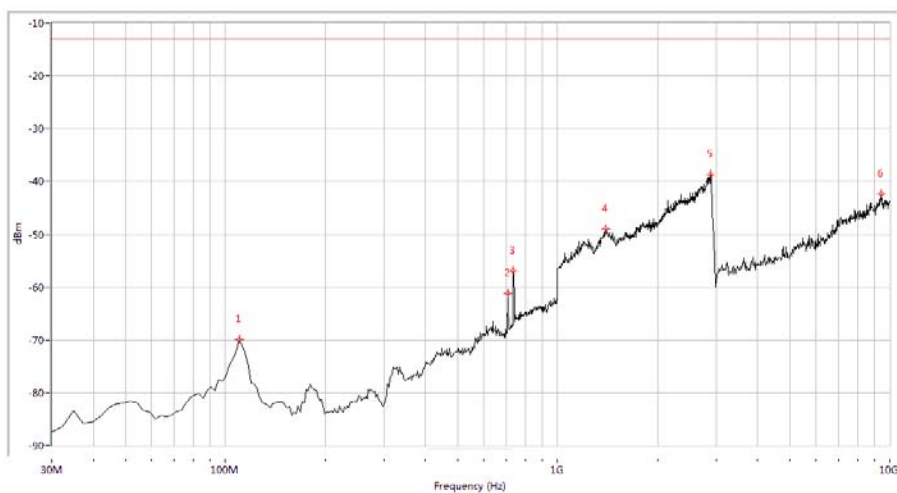


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.95	-13.0	57.0	32.3	Horizontal	<u>PASS</u>
707.307	-62.19	-13.0	49.2	290.8	Horizontal	<u>PASS</u>
736.334	-54.70	-13.0	41.7	191.1	Horizontal	<u>PASS</u>
1403.990	-48.92	-13.0	35.9	234.4	Horizontal	<u>PASS</u>
2850.374	-38.42	-13.0	25.4	262.7	Horizontal	<u>PASS</u>
9389.027	-42.80	-13.0	29.8	263.2	Horizontal	<u>PASS</u>

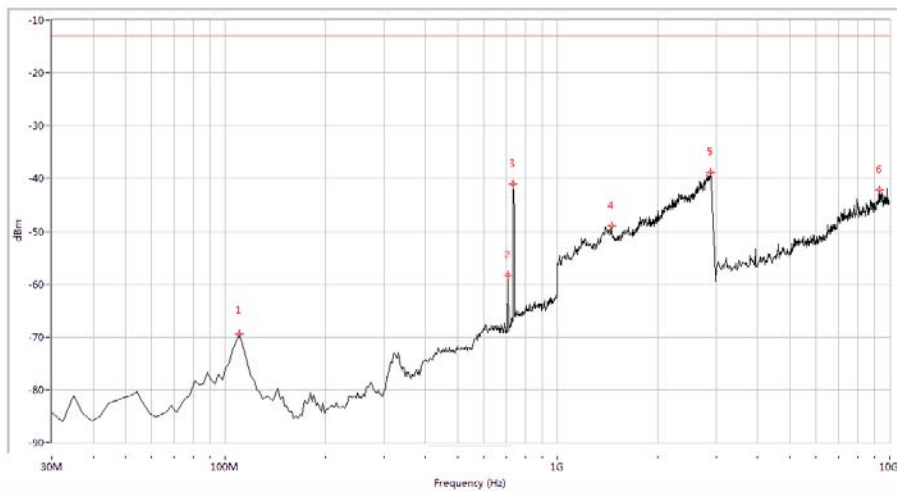


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.44	-13.0	55.4	158.5	Vertical	<u>PASS</u>
707.307	-58.25	-13.0	45.2	15.3	Vertical	<u>PASS</u>
738.753	-42.44	-13.0	29.4	31.0	Vertical	<u>PASS</u>
1438.903	-48.56	-13.0	35.6	49.3	Vertical	<u>PASS</u>
2885.287	-38.84	-13.0	25.8	116.3	Vertical	<u>PASS</u>
9441.397	-42.36	-13.0	29.4	359.5	Vertical	<u>PASS</u>

LTE Band 17 5MHz BW, Mid Channel, 16QAM

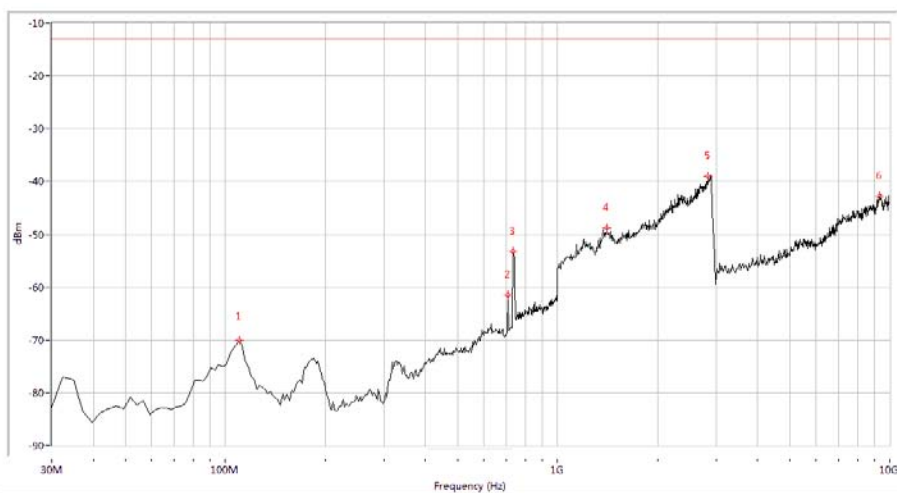


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.88	-13.0	56.9	287.9	Horizontal	<u>PASS</u>
707.307	-61.09	-13.0	48.1	272.7	Horizontal	<u>PASS</u>
736.334	-56.92	-13.0	43.9	53.3	Horizontal	<u>PASS</u>
1399.002	-48.91	-13.0	35.9	168.0	Horizontal	<u>PASS</u>
2895.262	-38.64	-13.0	25.6	46.8	Horizontal	<u>PASS</u>
9423.940	-42.28	-13.0	29.3	1.6	Horizontal	<u>PASS</u>

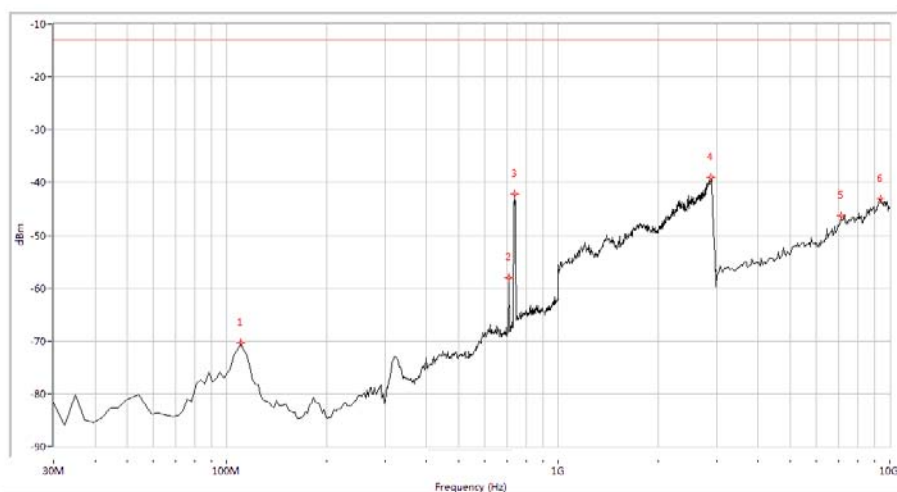


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.37	-13.0	56.4	133.0	Vertical	<u>PASS</u>
707.307	-58.37	-13.0	45.4	285.1	Vertical	<u>PASS</u>
736.334	-41.07	-13.0	28.1	86.9	Vertical	<u>PASS</u>
1453.865	-49.00	-13.0	36.0	225.2	Vertical	<u>PASS</u>
2885.287	-38.81	-13.0	25.8	52.5	Vertical	<u>PASS</u>
9301.746	-42.20	-13.0	29.2	320.9	Vertical	<u>PASS</u>

LTE Band 17 10MHz BW, Mid Channel, QPSK

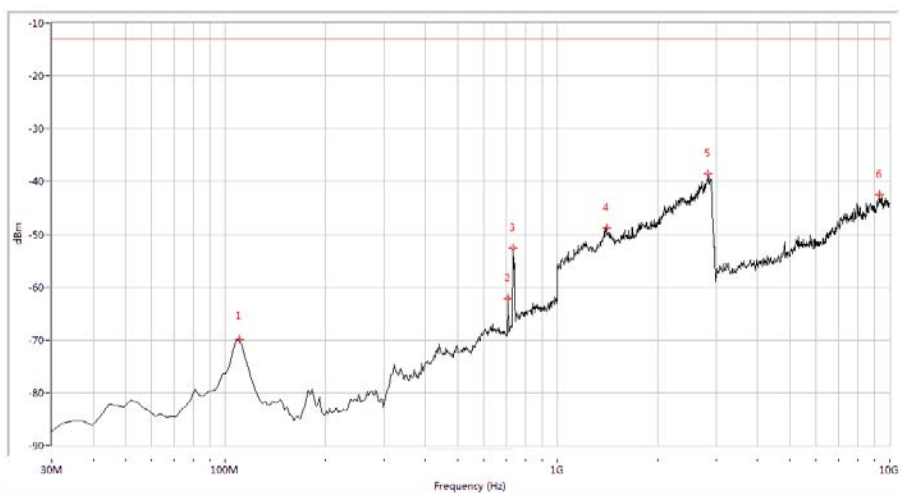


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.07	-13.0	57.1	34.1	Horizontal	<u>PASS</u>
707.307	-61.49	-13.0	48.5	62.0	Horizontal	<u>PASS</u>
733.915	-53.21	-13.0	40.2	269.9	Horizontal	<u>PASS</u>
1408.978	-48.89	-13.0	35.9	354.3	Horizontal	<u>PASS</u>
2840.399	-39.03	-13.0	26.0	73.4	Horizontal	<u>PASS</u>
9319.202	-42.80	-13.0	29.8	61.2	Horizontal	<u>PASS</u>

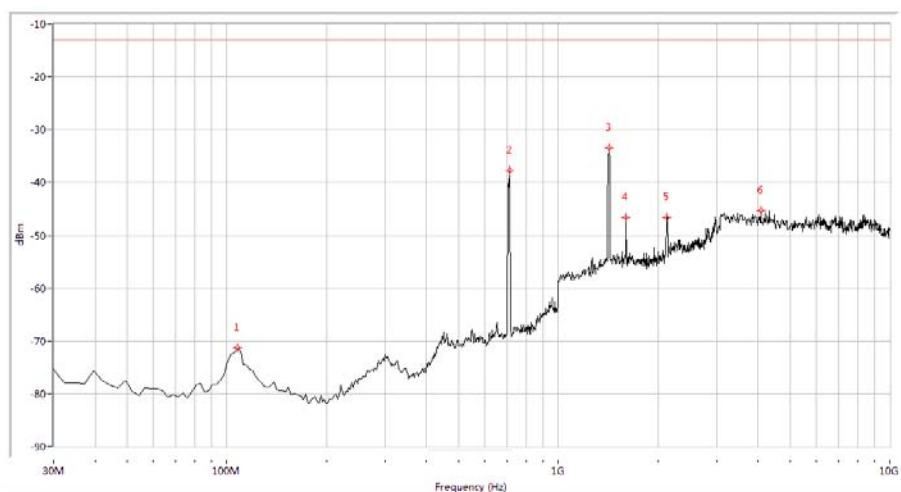


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.42	-13.0	57.4	336.2	Vertical	<u>PASS</u>
709.726	-57.96	-13.0	45.0	155.5	Vertical	<u>PASS</u>
738.753	-42.15	-13.0	29.1	288.6	Vertical	<u>PASS</u>
2895.262	-39.06	-13.0	26.1	155.3	Vertical	<u>PASS</u>
7154.613	-46.28	-13.0	33.3	96.8	Vertical	<u>PASS</u>
9359.102	-43.04	-13.0	30.0	147.4	Vertical	<u>PASS</u>

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

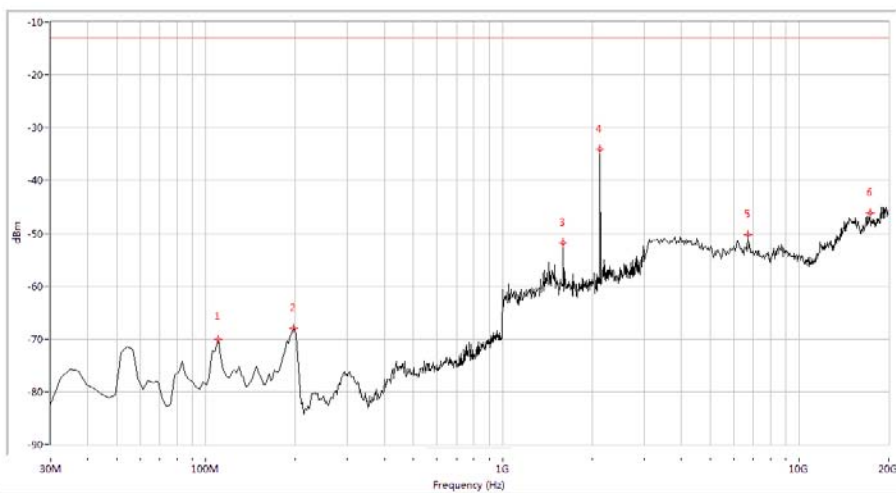


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.87	-13.0	56.9	312.4	Horizontal	<u>PASS</u>
709.726	-62.19	-13.0	49.2	120.9	Horizontal	<u>PASS</u>
733.915	-52.61	-13.0	39.6	360.0	Horizontal	<u>PASS</u>
1403.990	-48.79	-13.0	35.8	277.4	Horizontal	<u>PASS</u>
2840.399	-38.45	-13.0	25.5	77.3	Horizontal	<u>PASS</u>
9336.658	-42.50	-13.0	29.5	276.0	Horizontal	<u>PASS</u>

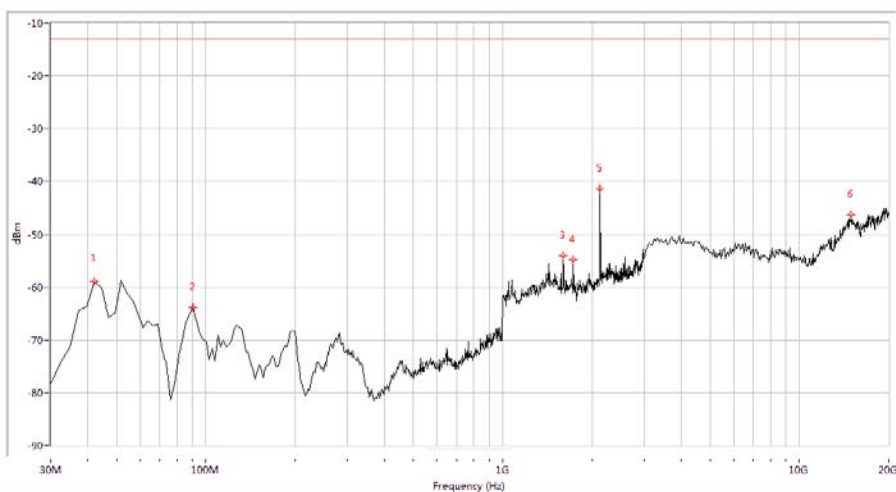


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-71.25	-13.0	58.2	57.2	Vertical	<u>PASS</u>
712.145	-37.67	-13.0	24.7	31.5	Vertical	<u>PASS</u>
1418.953	-33.47	-13.0	20.5	355.0	Vertical	<u>PASS</u>
1598.504	-46.54	-13.0	33.5	61.8	Vertical	<u>PASS</u>
2127.182	-46.53	-13.0	33.5	-0.0	Vertical	<u>PASS</u>
4082.294	-45.27	-13.0	32.3	272.8	Vertical	<u>PASS</u>

LTE Band 4 1.4MHz BW, Mid Channel, QPSK

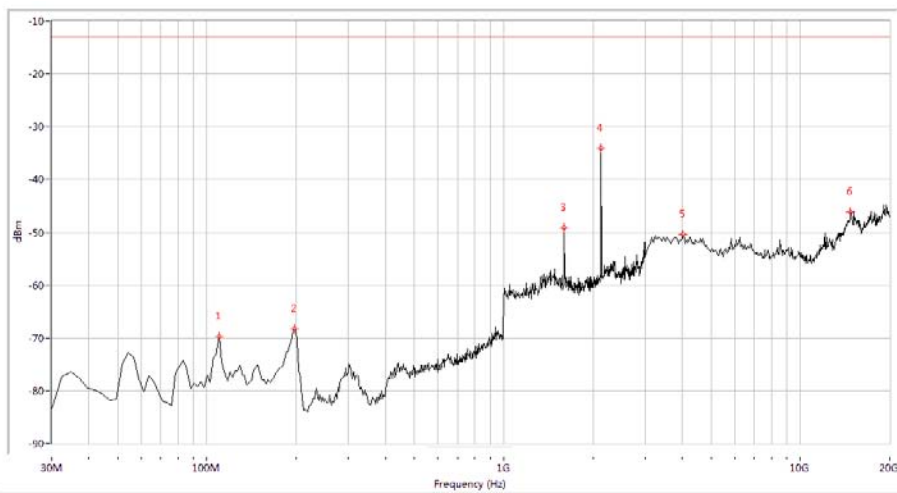


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.98	-13.0	57.0	63.8	Horizontal	<u>PASS</u>
196.908	-68.00	-13.0	55.0	46.7	Horizontal	<u>PASS</u>
1598.504	-51.80	-13.0	38.8	360.0	Horizontal	<u>PASS</u>
2132.170	-34.09	-13.0	21.1	232.9	Horizontal	<u>PASS</u>
6730.673	-50.21	-13.0	37.2	93.5	Horizontal	<u>PASS</u>
17286.783	-46.05	-13.0	33.0	-0.0	Horizontal	<u>PASS</u>

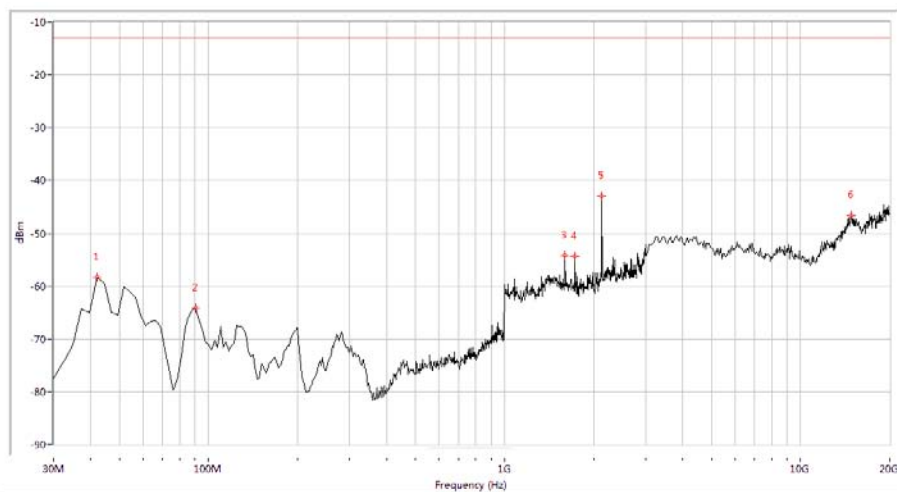


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.91	-13.0	45.9	132.2	Vertical	<u>PASS</u>
90.474	-63.79	-13.0	50.8	267.6	Vertical	<u>PASS</u>
1598.504	-54.01	-13.0	41.0	51.8	Vertical	<u>PASS</u>
1733.167	-54.86	-13.0	41.9	306.2	Vertical	<u>PASS</u>
2132.170	-41.30	-13.0	28.3	98.4	Vertical	<u>PASS</u>
14955.112	-46.23	-13.0	33.2	275.9	Vertical	<u>PASS</u>

LTE Band 4 1.4MHz BW, Mid Channel, 16QAM

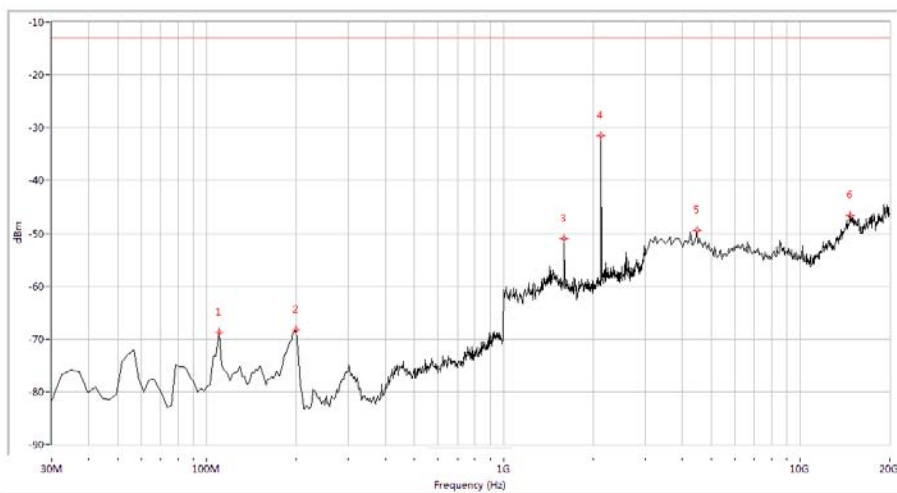


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.80	-13.0	56.8	31.3	Horizontal	<u>PASS</u>
196.908	-68.27	-13.0	55.3	3.4	Horizontal	<u>PASS</u>
1598.504	-49.05	-13.0	36.1	360.0	Horizontal	<u>PASS</u>
2132.170	-34.16	-13.0	21.2	266.6	Horizontal	<u>PASS</u>
4017.456	-50.46	-13.0	37.5	360.0	Horizontal	<u>PASS</u>
14785.536	-46.19	-13.0	33.2	39.1	Horizontal	<u>PASS</u>

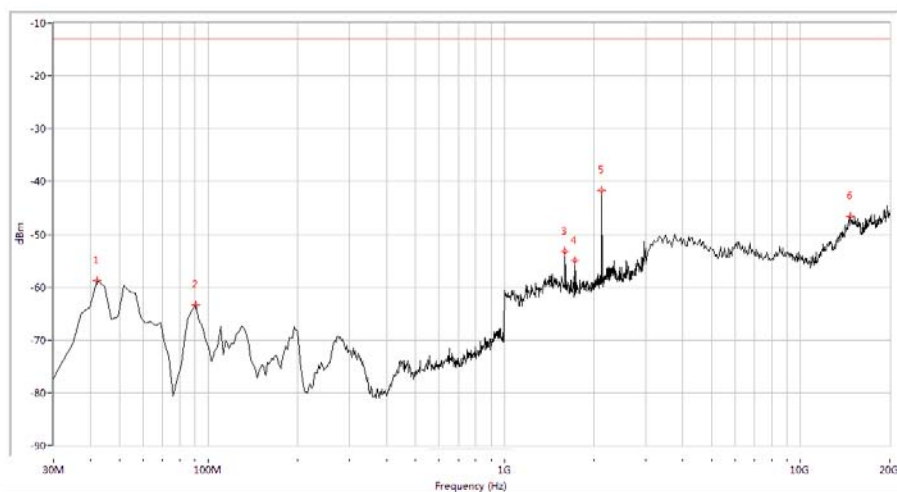


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.33	-13.0	45.3	196.1	Vertical	<u>PASS</u>
90.474	-64.15	-13.0	51.1	18.3	Vertical	<u>PASS</u>
1598.504	-54.22	-13.0	41.2	108.5	Vertical	<u>PASS</u>
1733.167	-54.40	-13.0	41.4	112.2	Vertical	<u>PASS</u>
2132.170	-43.01	-13.0	30.0	360.0	Vertical	<u>PASS</u>
14827.930	-46.55	-13.0	33.5	360.0	Vertical	<u>PASS</u>

LTE Band 4 3MHz BW, Mid Channel, QPSK

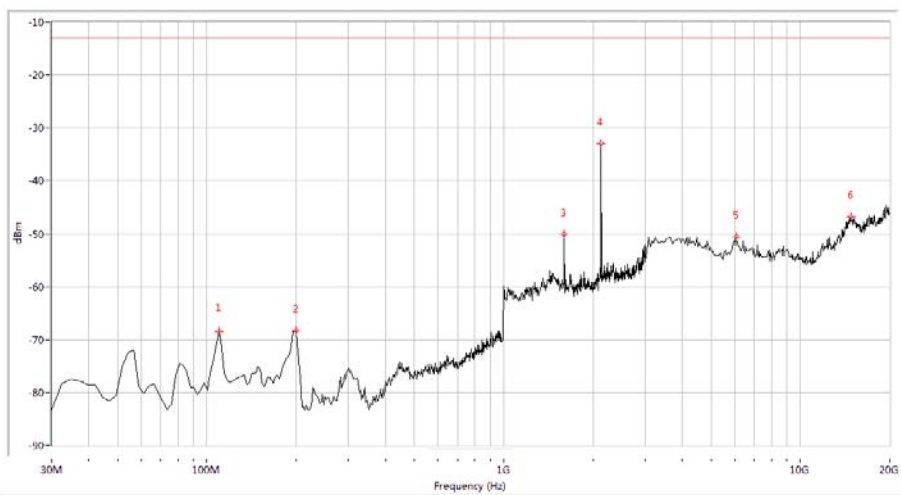


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.81	-13.0	55.8	86.4	Horizontal	<u>PASS</u>
199.327	-68.32	-13.0	55.3	129.5	Horizontal	<u>PASS</u>
1598.504	-51.05	-13.0	38.0	181.8	Horizontal	<u>PASS</u>
2127.182	-31.55	-13.0	18.6	0.1	Horizontal	<u>PASS</u>
4483.791	-49.41	-13.0	36.4	128.4	Horizontal	<u>PASS</u>
14700.748	-46.63	-13.0	33.6	-0.0	Horizontal	<u>PASS</u>

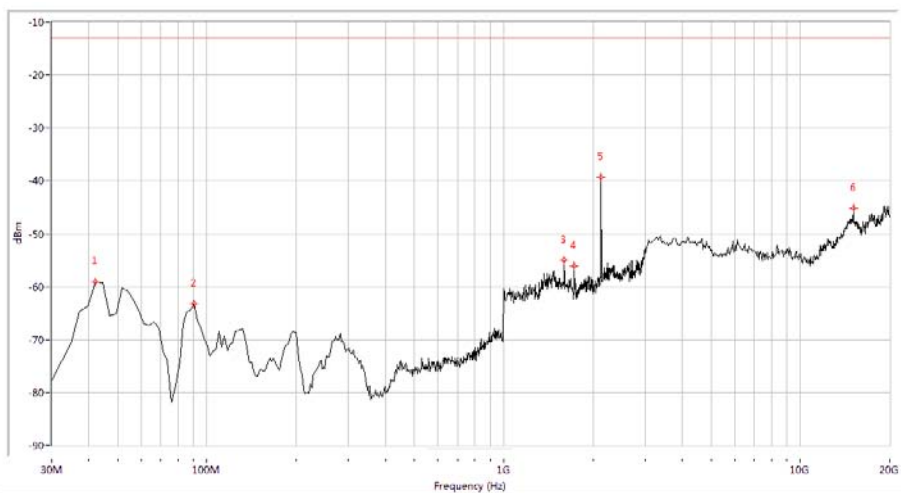


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.76	-13.0	45.8	186.7	Vertical	<u>PASS</u>
90.474	-63.31	-13.0	50.3	80.7	Vertical	<u>PASS</u>
1598.504	-53.25	-13.0	40.3	259.2	Vertical	<u>PASS</u>
1733.167	-55.01	-13.0	42.0	266.2	Vertical	<u>PASS</u>
2132.170	-41.67	-13.0	28.7	-0.0	Vertical	<u>PASS</u>
14785.536	-46.58	-13.0	33.6	268.6	Vertical	<u>PASS</u>

LTE Band 4 3MHz BW, Mid Channel, 16QAM

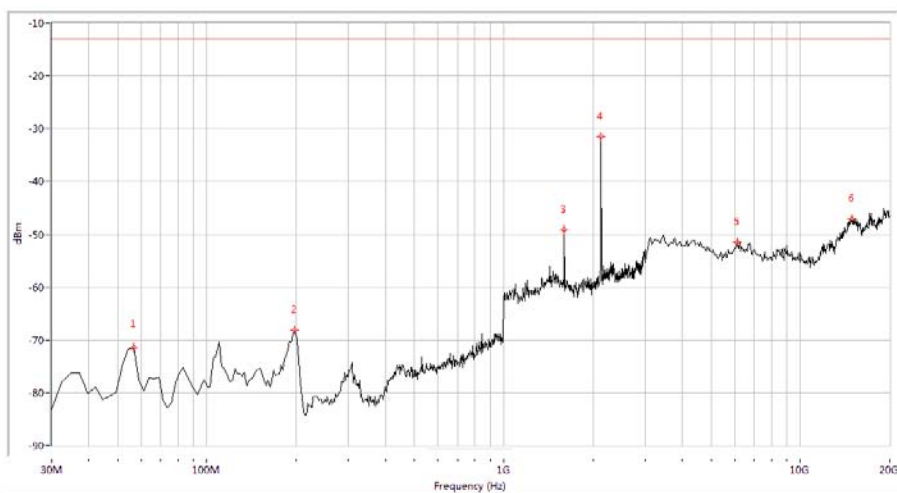


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.39	-13.0	55.4	360.0	Horizontal	<u>PASS</u>
199.327	-68.33	-13.0	55.3	201.1	Horizontal	<u>PASS</u>
1598.504	-50.06	-13.0	37.1	-0.0	Horizontal	<u>PASS</u>
2132.170	-32.95	-13.0	19.9	171.2	Horizontal	<u>PASS</u>
6094.763	-50.50	-13.0	37.5	277.7	Horizontal	<u>PASS</u>
14827.930	-46.81	-13.0	33.8	-0.0	Horizontal	<u>PASS</u>

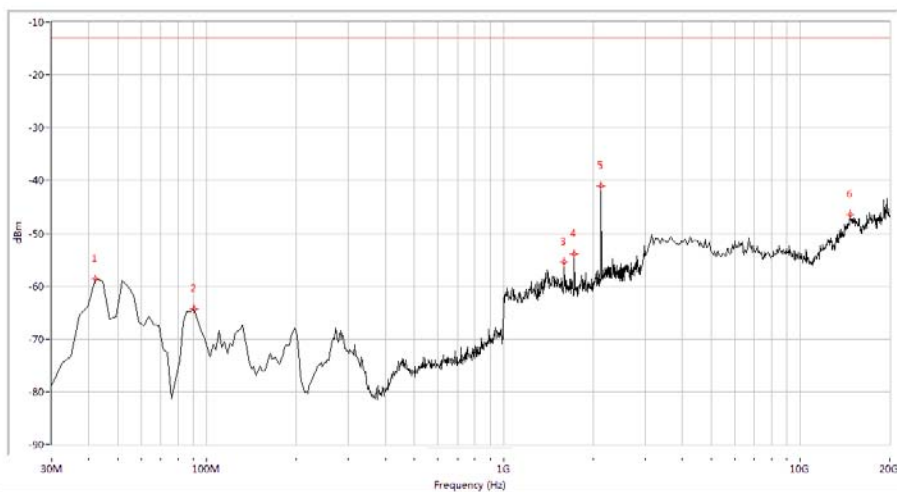


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-59.18	-13.0	46.2	57.1	Vertical	<u>PASS</u>
90.474	-63.30	-13.0	50.3	307.1	Vertical	<u>PASS</u>
1598.504	-54.97	-13.0	42.0	97.1	Vertical	<u>PASS</u>
1733.167	-56.10	-13.0	43.1	59.2	Vertical	<u>PASS</u>
2132.170	-39.25	-13.0	26.3	133.3	Vertical	<u>PASS</u>
15082.294	-45.18	-13.0	32.2	43.3	Vertical	<u>PASS</u>

LTE Band 4 5MHz BW, Mid Channel, QPSK

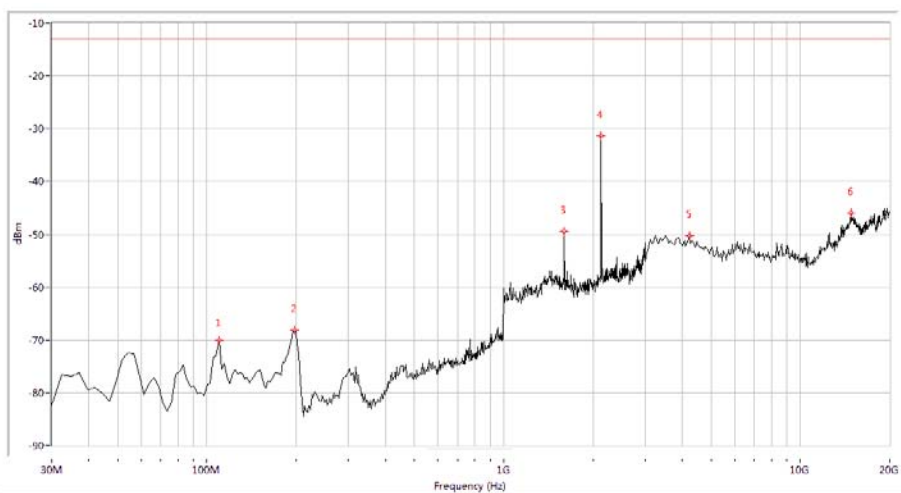


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
56.608	-71.46	-13.0	58.5	56.2	Horizontal	<u>PASS</u>
196.908	-68.15	-13.0	55.1	199.4	Horizontal	<u>PASS</u>
1598.504	-49.20	-13.0	36.2	335.7	Horizontal	<u>PASS</u>
2127.182	-31.53	-13.0	18.5	263.5	Horizontal	<u>PASS</u>
6137.157	-51.47	-13.0	38.5	166.6	Horizontal	<u>PASS</u>
14912.718	-47.09	-13.0	34.1	74.8	Horizontal	<u>PASS</u>

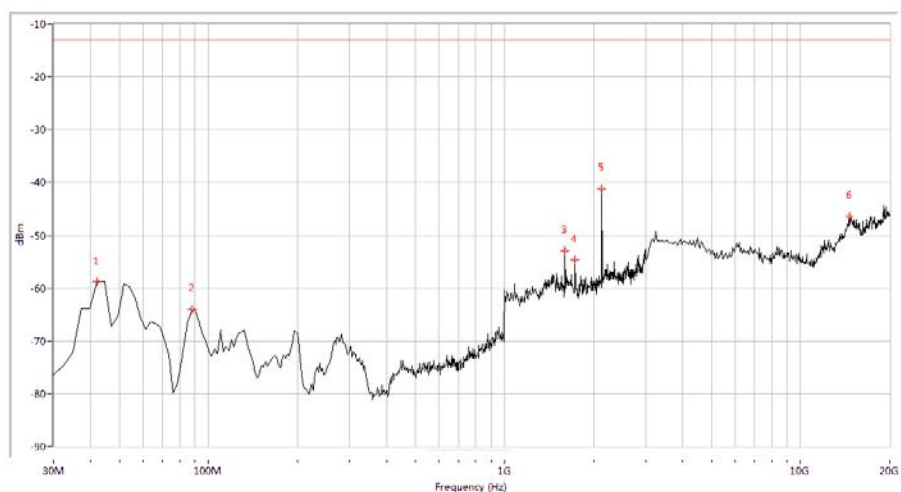


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.71	-13.0	45.7	312.6	Vertical	<u>PASS</u>
90.474	-64.41	-13.0	51.4	21.3	Vertical	<u>PASS</u>
1598.504	-55.47	-13.0	42.5	229.9	Vertical	<u>PASS</u>
1733.167	-53.93	-13.0	40.9	87.5	Vertical	<u>PASS</u>
2132.170	-41.09	-13.0	28.1	19.6	Vertical	<u>PASS</u>
14743.142	-46.47	-13.0	33.5	-0.0	Vertical	<u>PASS</u>

LTE Band 4 5MHz BW, Mid Channel, 16QAM

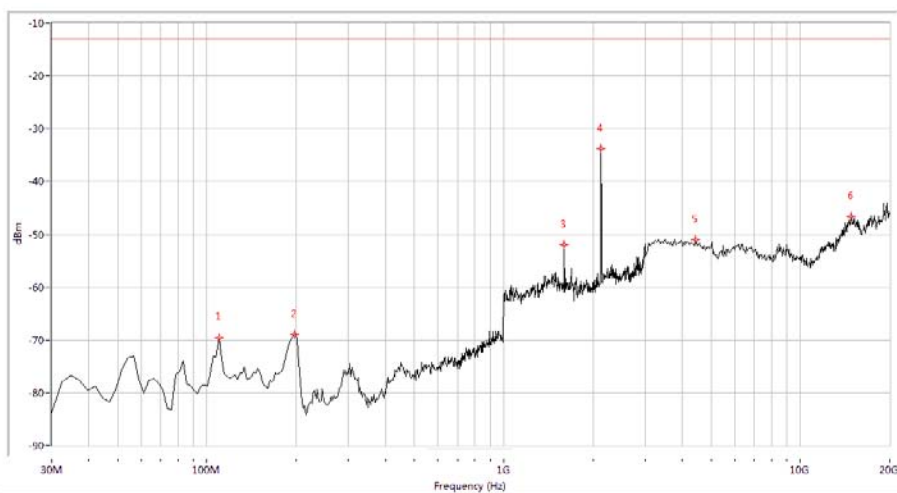


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.11	-13.0	57.1	174.4	Horizontal	<u>PASS</u>
196.908	-68.12	-13.0	55.1	94.1	Horizontal	<u>PASS</u>
1598.504	-49.45	-13.0	36.4	275.9	Horizontal	<u>PASS</u>
2132.170	-31.35	-13.0	18.4	354.1	Horizontal	<u>PASS</u>
4229.426	-50.29	-13.0	37.3	33.2	Horizontal	<u>PASS</u>
14870.324	-45.95	-13.0	32.9	81.1	Horizontal	<u>PASS</u>

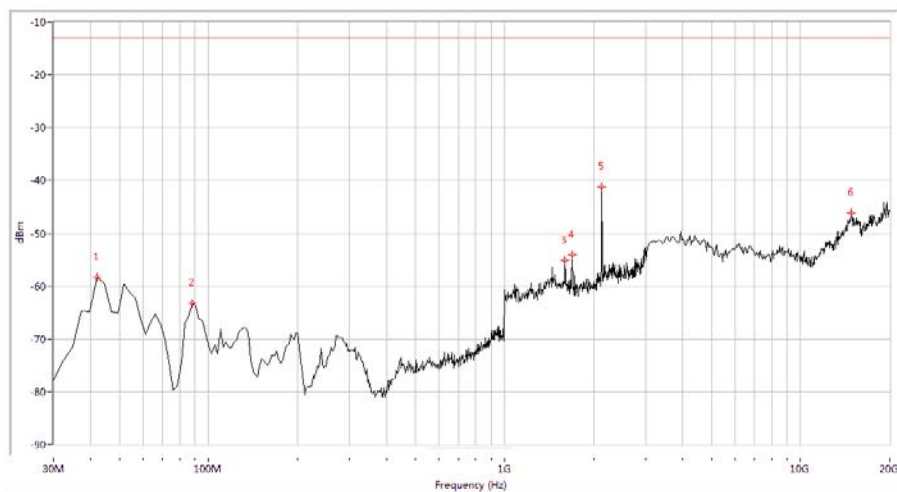


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.80	-13.0	45.8	346.6	Vertical	<u>PASS</u>
88.055	-64.09	-13.0	51.1	262.6	Vertical	<u>PASS</u>
1598.504	-52.96	-13.0	40.0	343.2	Vertical	<u>PASS</u>
1733.167	-54.67	-13.0	41.7	360.0	Vertical	<u>PASS</u>
2132.170	-41.18	-13.0	28.2	131.4	Vertical	<u>PASS</u>
14615.960	-46.50	-13.0	33.5	131.4	Vertical	<u>PASS</u>

LTE Band 4 10MHz BW, Mid Channel, QPSK

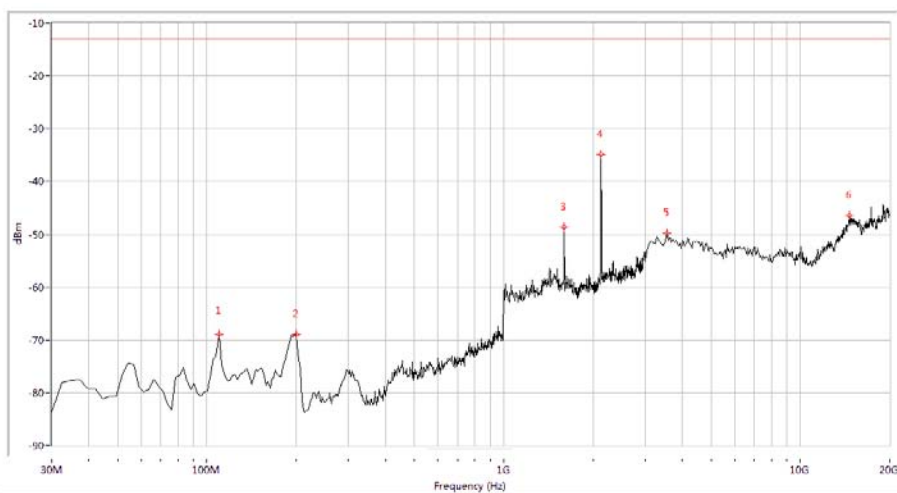


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.63	-13.0	56.6	105.7	Horizontal	<u>PASS</u>
196.908	-68.96	-13.0	56.0	350.1	Horizontal	<u>PASS</u>
1598.504	-52.05	-13.0	39.0	330.9	Horizontal	<u>PASS</u>
2132.170	-33.80	-13.0	20.8	47.1	Horizontal	<u>PASS</u>
4441.397	-51.01	-13.0	38.0	330.3	Horizontal	<u>PASS</u>
14870.324	-46.65	-13.0	33.6	91.9	Horizontal	<u>PASS</u>

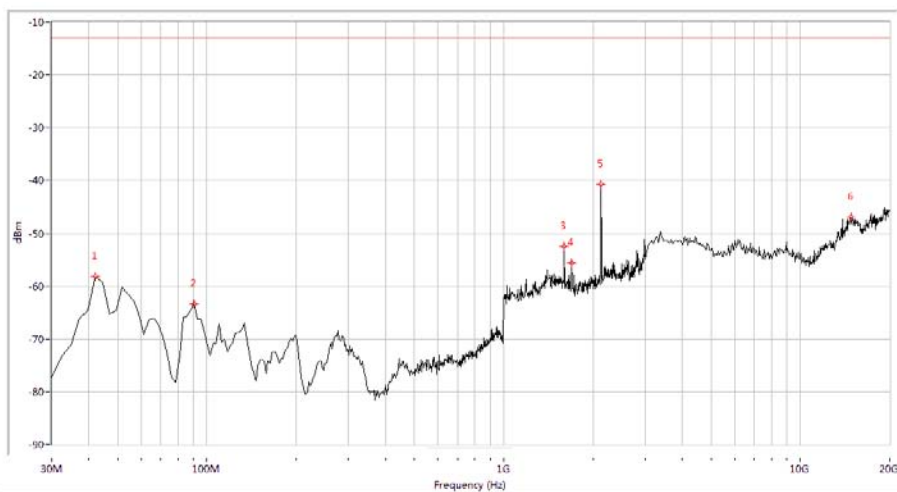


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.34	-13.0	45.3	197.1	Vertical	<u>PASS</u>
88.055	-63.22	-13.0	50.2	208.3	Vertical	<u>PASS</u>
1598.504	-55.16	-13.0	42.2	230.8	Vertical	<u>PASS</u>
1693.267	-54.12	-13.0	41.1	316.0	Vertical	<u>PASS</u>
2132.170	-41.16	-13.0	28.2	32.1	Vertical	<u>PASS</u>
14870.324	-46.05	-13.0	33.0	135.8	Vertical	<u>PASS</u>

LTE Band 4 10MHz BW, Mid Channel, 16QAM

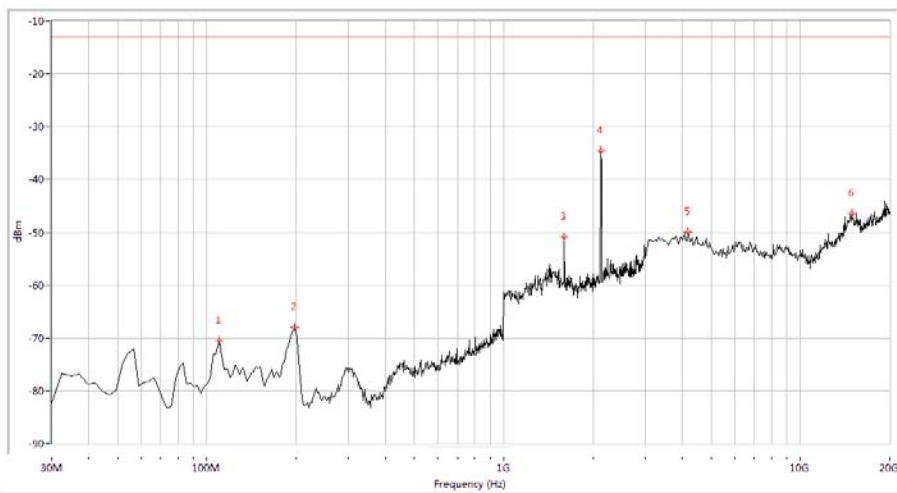


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-68.94	-13.0	55.9	57.2	Horizontal	<u>PASS</u>
199.327	-68.93	-13.0	55.9	190.4	Horizontal	<u>PASS</u>
1598.504	-48.62	-13.0	35.6	0.4	Horizontal	<u>PASS</u>
2132.170	-34.84	-13.0	21.8	110.5	Horizontal	<u>PASS</u>
3551.122	-49.73	-13.0	36.7	99.2	Horizontal	<u>PASS</u>
14615.960	-46.46	-13.0	33.5	333.9	Horizontal	<u>PASS</u>

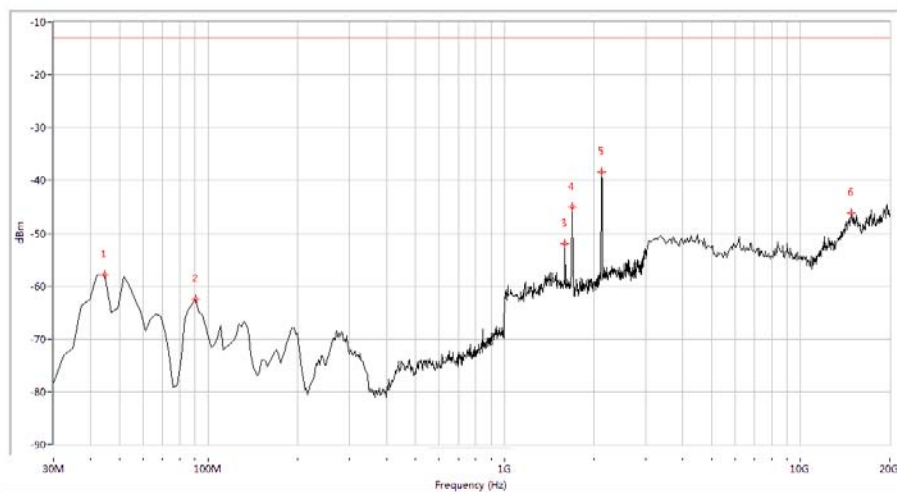


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-58.15	-13.0	45.1	-0.0	Vertical	<u>PASS</u>
90.474	-63.33	-13.0	50.3	262.8	Vertical	<u>PASS</u>
1598.504	-52.48	-13.0	39.5	108.6	Vertical	<u>PASS</u>
1698.254	-55.55	-13.0	42.5	184.9	Vertical	<u>PASS</u>
2132.170	-40.71	-13.0	27.7	83.1	Vertical	<u>PASS</u>
14827.930	-46.92	-13.0	33.9	310.4	Vertical	<u>PASS</u>

LTE Band 4 15MHz BW, Mid Channel, QPSK

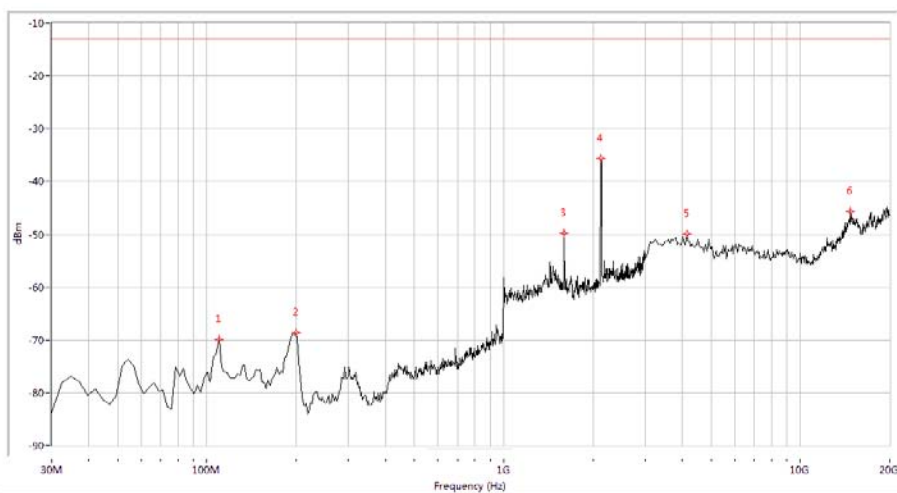


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.51	-13.0	57.5	210.7	Horizontal	<u>PASS</u>
196.908	-67.95	-13.0	55.0	-0.0	Horizontal	<u>PASS</u>
1598.504	-50.86	-13.0	37.9	253.4	Horizontal	<u>PASS</u>
2132.170	-34.58	-13.0	21.6	350.1	Horizontal	<u>PASS</u>
4187.032	-49.90	-13.0	36.9	142.3	Horizontal	<u>PASS</u>
14912.718	-46.48	-13.0	33.5	142.3	Horizontal	<u>PASS</u>

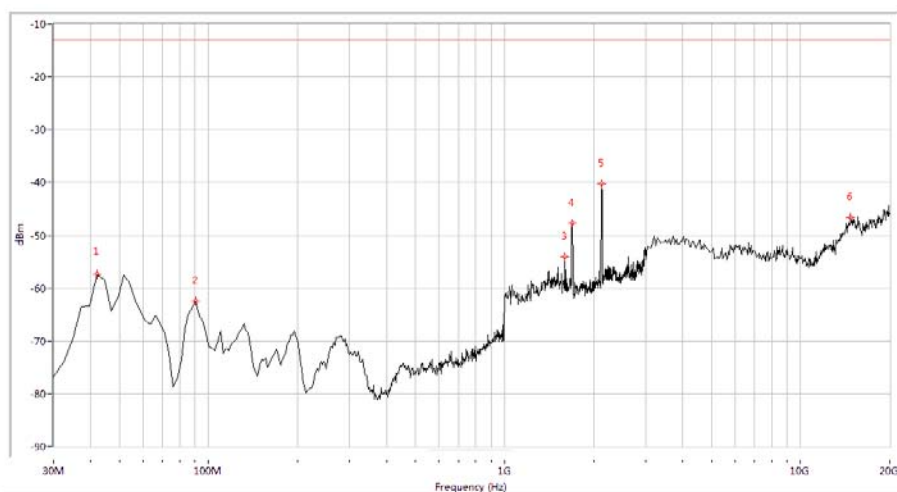


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
44.514	-57.77	-13.0	44.8	152.2	Vertical	<u>PASS</u>
90.474	-62.51	-13.0	49.5	274.5	Vertical	<u>PASS</u>
1598.504	-51.96	-13.0	39.0	97.6	Vertical	<u>PASS</u>
1698.254	-45.06	-13.0	32.1	21.0	Vertical	<u>PASS</u>
2132.170	-38.31	-13.0	25.3	130.3	Vertical	<u>PASS</u>
14870.324	-46.07	-13.0	33.1	360.0	Vertical	<u>PASS</u>

LTE Band 4 15MHz BW, Mid Channel, 16QAM

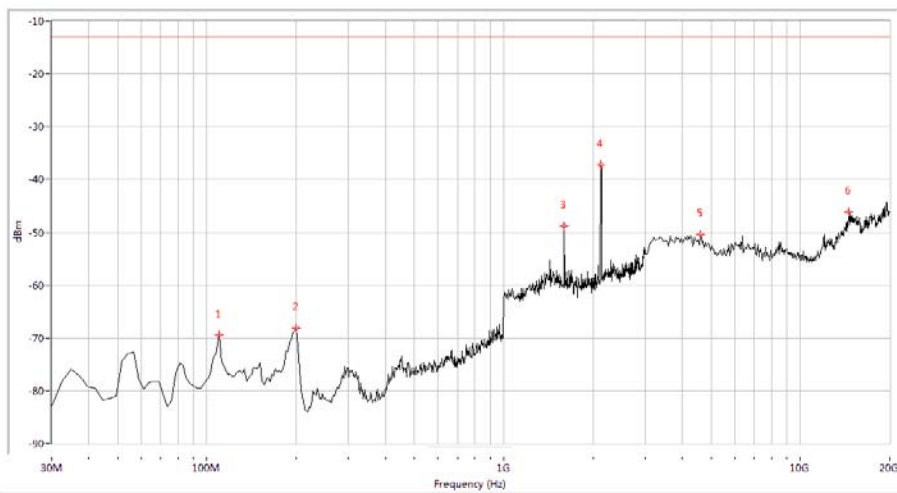


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.92	-13.0	56.9	158.7	Horizontal	<u>PASS</u>
199.327	-68.68	-13.0	55.7	47.2	Horizontal	<u>PASS</u>
1598.504	-49.84	-13.0	36.8	0.4	Horizontal	<u>PASS</u>
2132.170	-35.69	-13.0	22.7	250.6	Horizontal	<u>PASS</u>
4144.638	-49.85	-13.0	36.8	260.6	Horizontal	<u>PASS</u>
14785.536	-45.57	-13.0	32.6	105.6	Horizontal	<u>PASS</u>

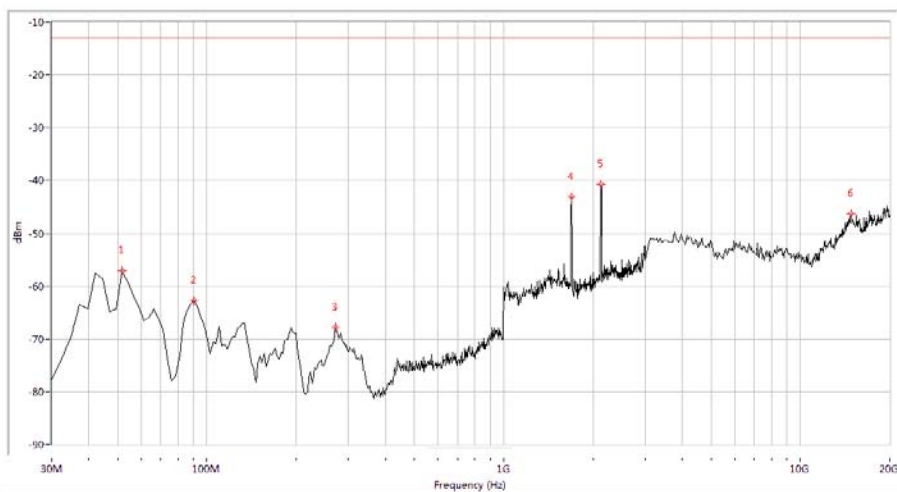


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-57.37	-13.0	44.4	82.4	Vertical	<u>PASS</u>
90.474	-62.46	-13.0	49.5	173.9	Vertical	<u>PASS</u>
1598.504	-53.99	-13.0	41.0	232.0	Vertical	<u>PASS</u>
1698.254	-47.74	-13.0	34.7	333.2	Vertical	<u>PASS</u>
2127.182	-40.19	-13.0	27.2	16.2	Vertical	<u>PASS</u>
14743.142	-46.56	-13.0	33.6	172.9	Vertical	<u>PASS</u>

LTE Band 4 20MHz BW, Mid Channel, QPSK

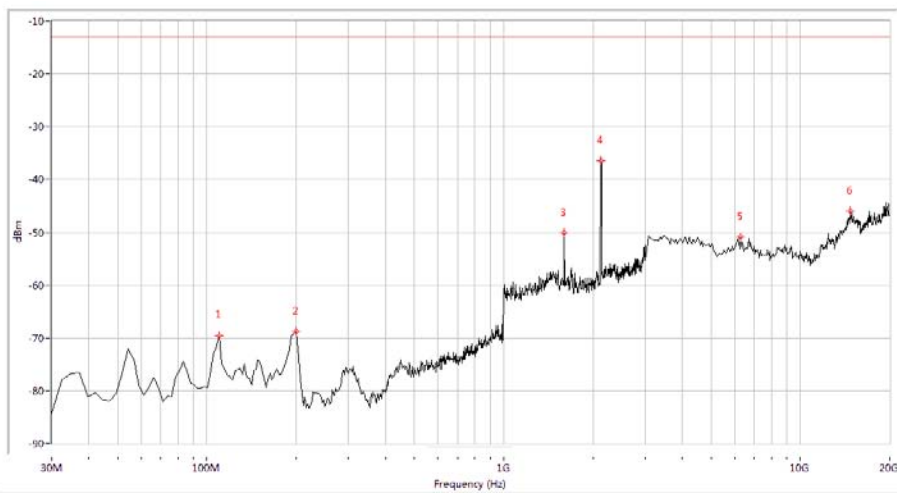


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.35	-13.0	56.4	78.0	Horizontal	<u>PASS</u>
199.327	-68.13	-13.0	55.1	245.0	Horizontal	<u>PASS</u>
1598.504	-48.82	-13.0	35.8	0.3	Horizontal	<u>PASS</u>
2127.182	-37.25	-13.0	24.2	-0.0	Horizontal	<u>PASS</u>
4610.973	-50.43	-13.0	37.4	276.6	Horizontal	<u>PASS</u>
14573.566	-46.08	-13.0	33.1	130.0	Horizontal	<u>PASS</u>

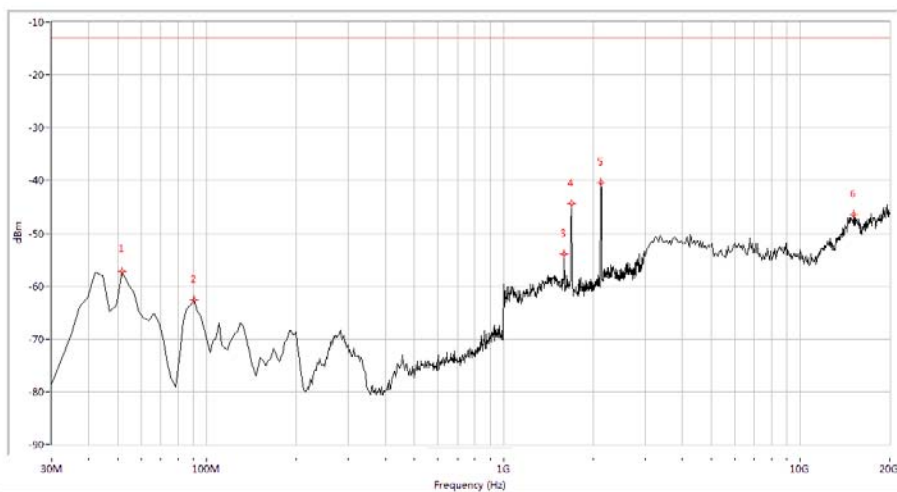


Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
51.771	-57.01	-13.0	44.0	269.2	Vertical	<u>PASS</u>
90.474	-62.82	-13.0	49.8	248.0	Vertical	<u>PASS</u>
271.895	-67.82	-13.0	54.8	131.7	Vertical	<u>PASS</u>
1698.254	-43.12	-13.0	30.1	4.9	Vertical	<u>PASS</u>
2132.170	-40.71	-13.0	27.7	196.2	Vertical	<u>PASS</u>
14827.930	-46.23	-13.0	33.2	116.2	Vertical	<u>PASS</u>

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



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-69.58	-13.0	56.6	60.3	Horizontal	<u>PASS</u>
199.327	-68.77	-13.0	55.8	27.9	Horizontal	<u>PASS</u>
1598.504	-50.02	-13.0	37.0	-0.0	Horizontal	<u>PASS</u>
2132.170	-36.48	-13.0	23.5	145.7	Horizontal	<u>PASS</u>
6306.733	-50.90	-13.0	37.9	9.1	Horizontal	<u>PASS</u>
14785.536	-45.95	-13.0	33.0	360.0	Horizontal	<u>PASS</u>



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
51.771	-57.19	-13.0	44.2	1.9	Vertical	<u>PASS</u>
90.474	-62.64	-13.0	49.6	47.6	Vertical	<u>PASS</u>
1598.504	-53.91	-13.0	40.9	108.8	Vertical	<u>PASS</u>
1693.267	-44.34	-13.0	31.3	291.8	Vertical	<u>PASS</u>
2132.170	-40.39	-13.0	27.4	301.2	Vertical	<u>PASS</u>
15167.082	-46.43	-13.0	33.4	244.7	Vertical	<u>PASS</u>

** END OF REPORT **