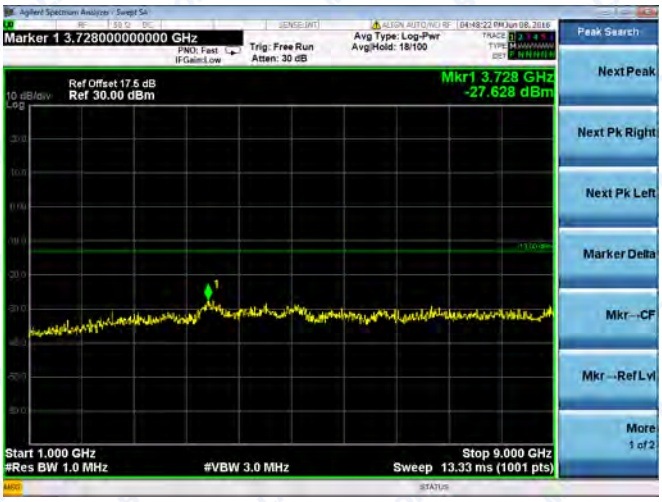
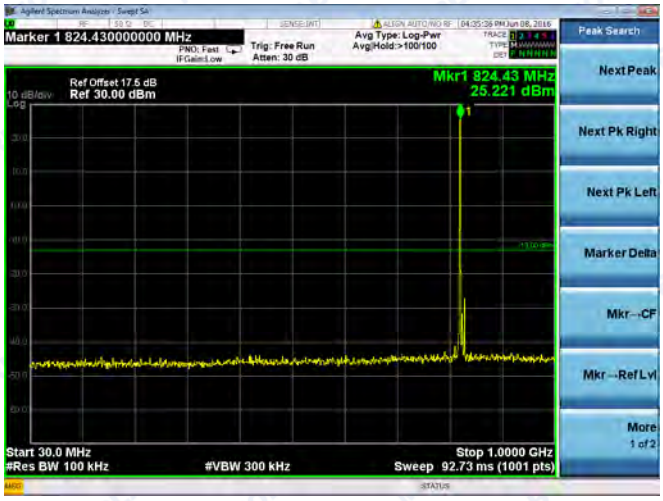
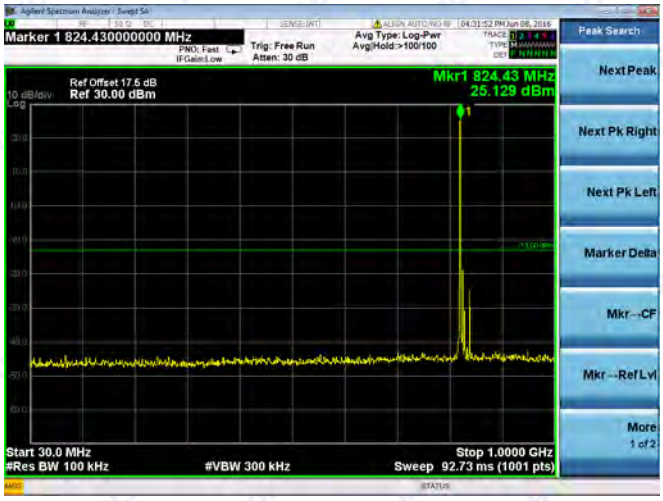
LTE Band 5 1.4MHz BW Low Channel
QPSK
 
16QAM
 

LTE Band 5 3MHz BW Low Channel
QPSK
	
16QAM
	

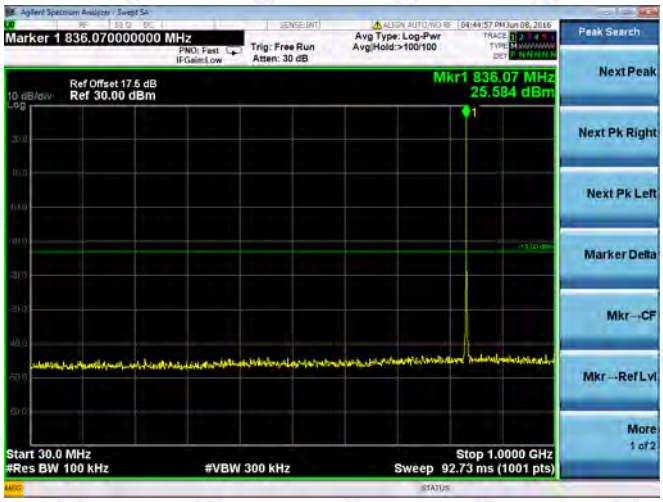
LTE Band 5 5MHz BW Low Channel	
QPSK	
	
16QAM	
	

LTE Band 5 10MHz BW Low Channel
QPSK

16QAM



Middle channel:

LTE Band 5 1.4MHz BW Mid Channel	
QPSK	
	
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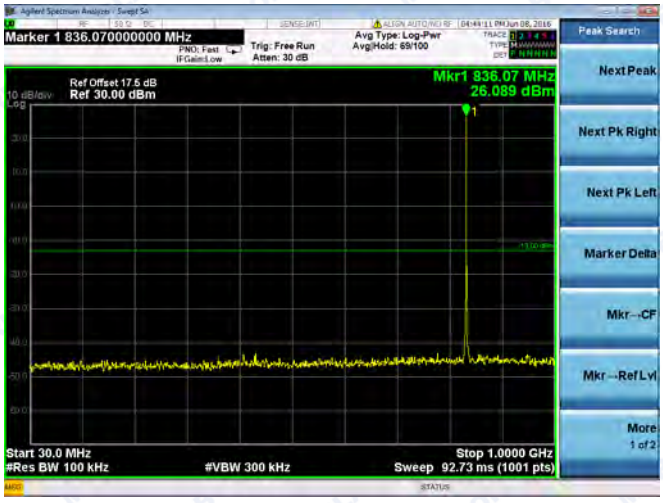
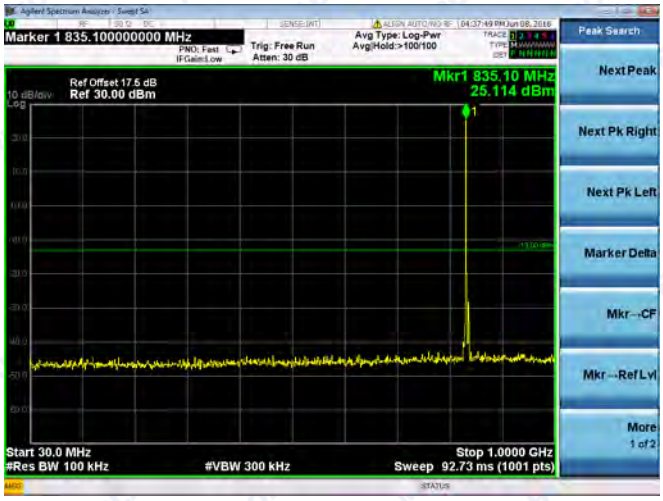
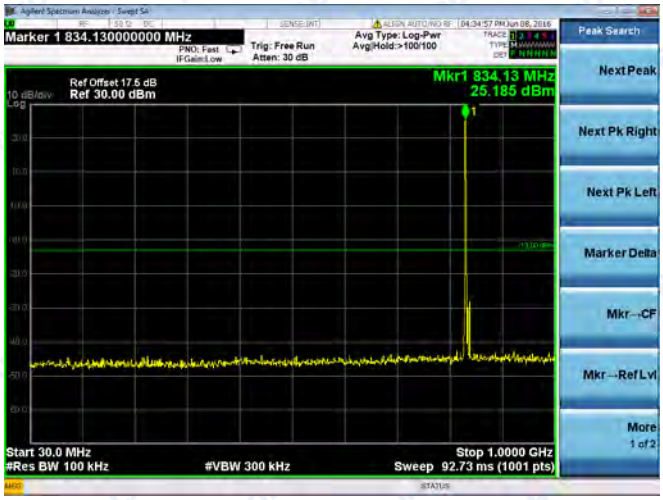
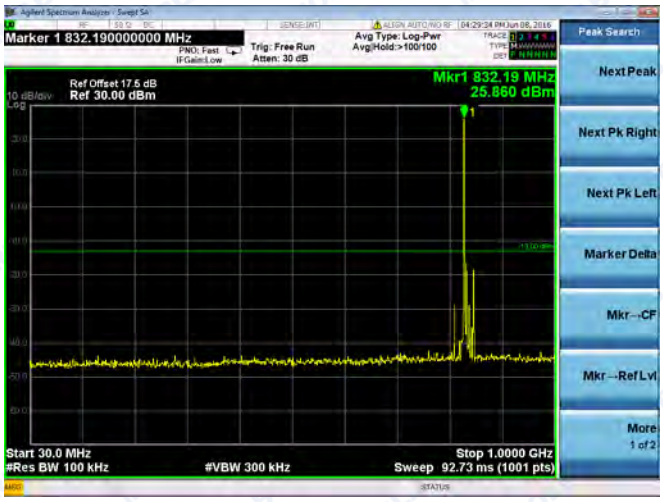
	

LTE Band 5 3MHz BW Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 5 5MHz BW Mid Channel
QPSK
 
16QAM
 

LTE Band 5 10MHz BW Mid Channel	
QPSK	
	
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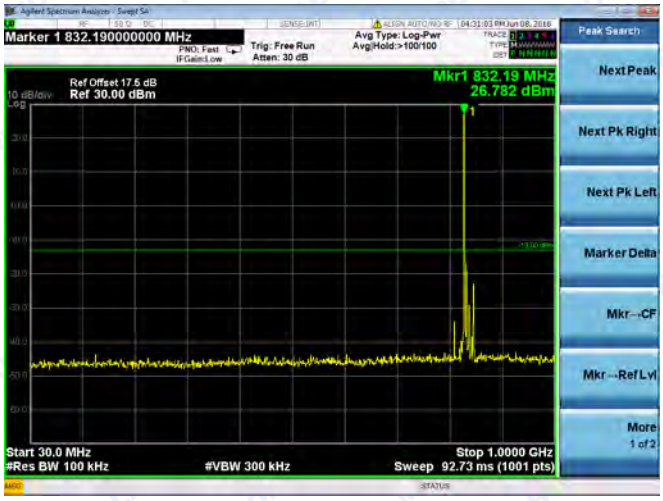
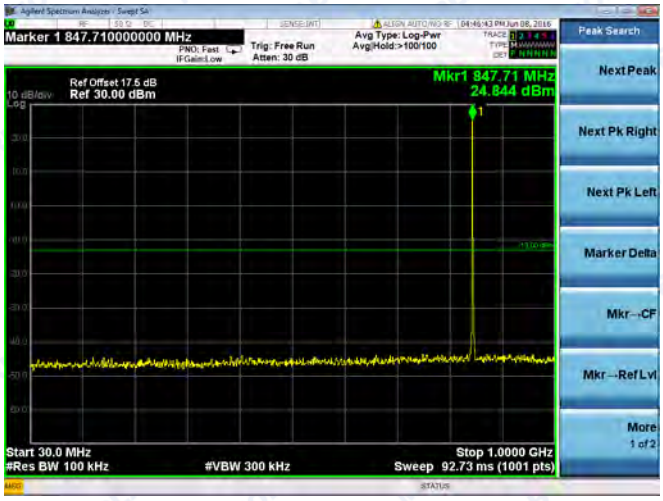
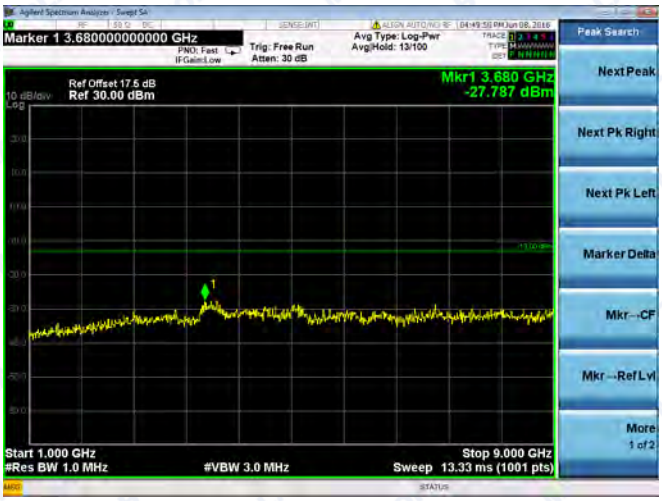
	

LTE Band 5 1.4MHz BW High Channel
QPSK

16QAM



LTE Band 5 3MHz BW High Channel	
QPSK	
	
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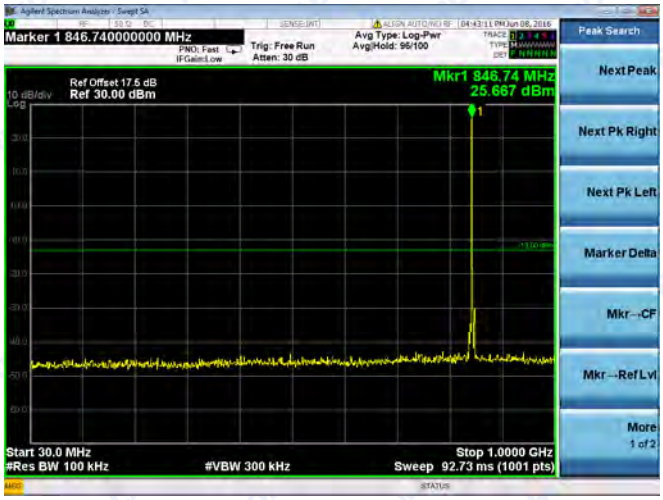
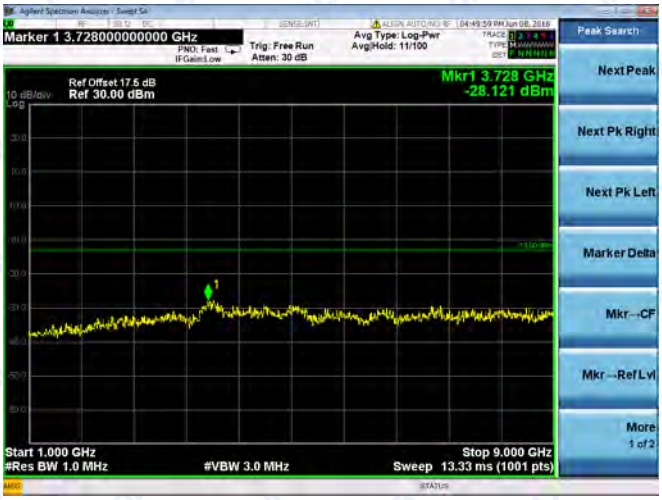
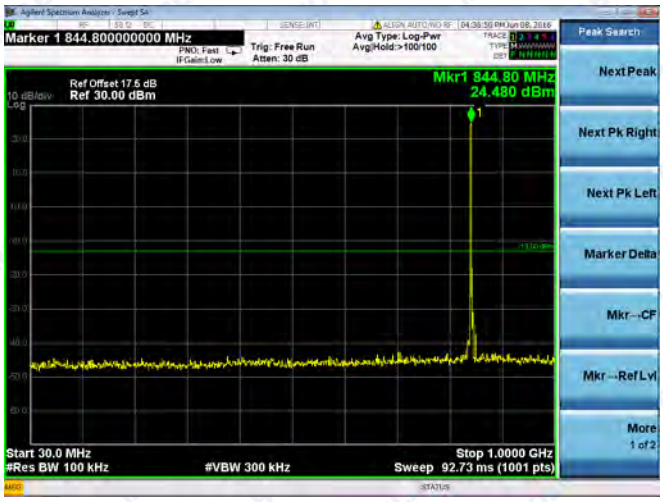
	

LTE Band 5 5MHz BW High Channel	
QPSK	
	
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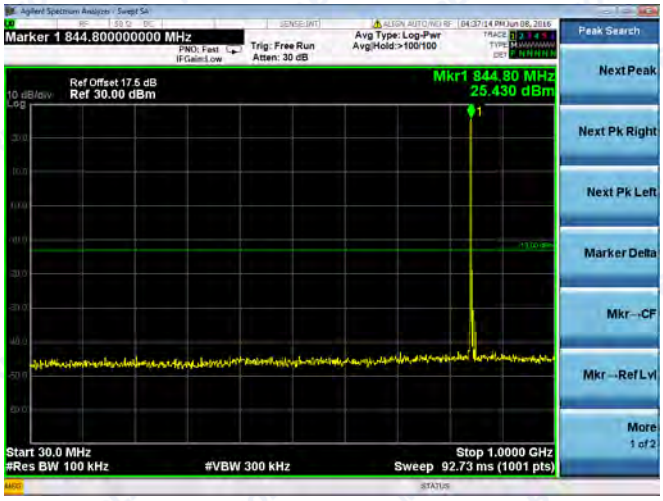
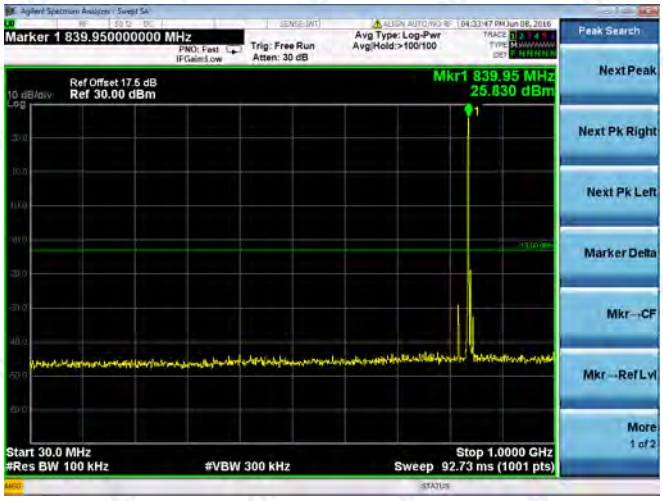
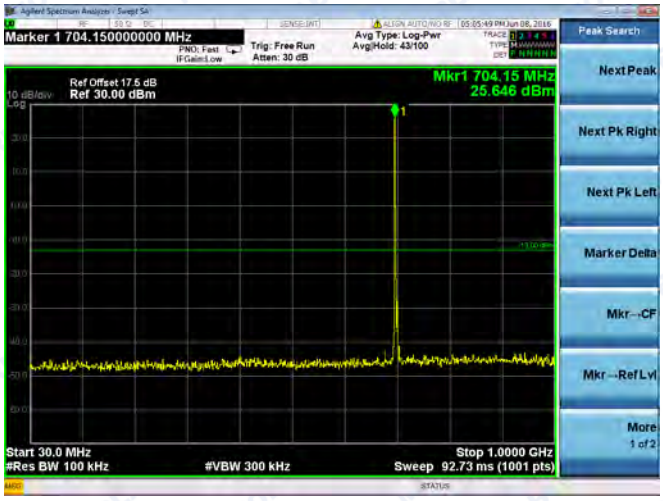
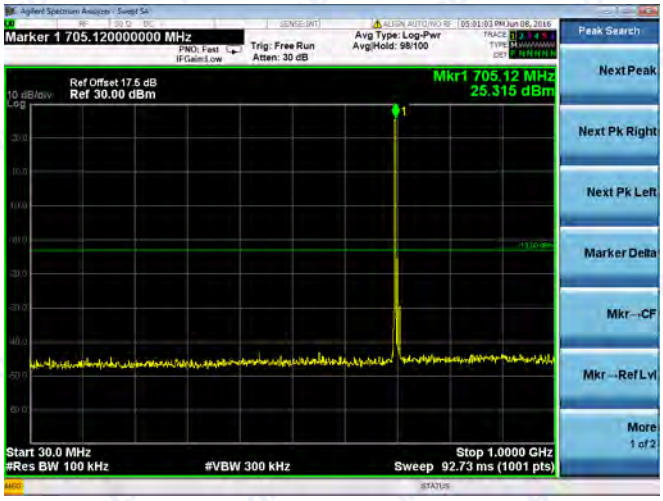
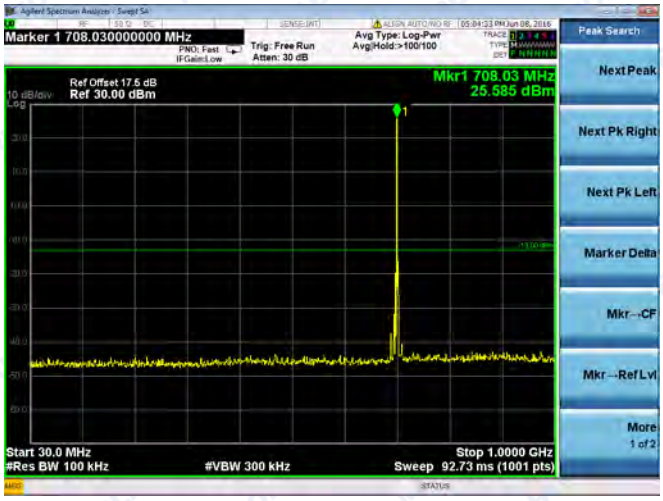
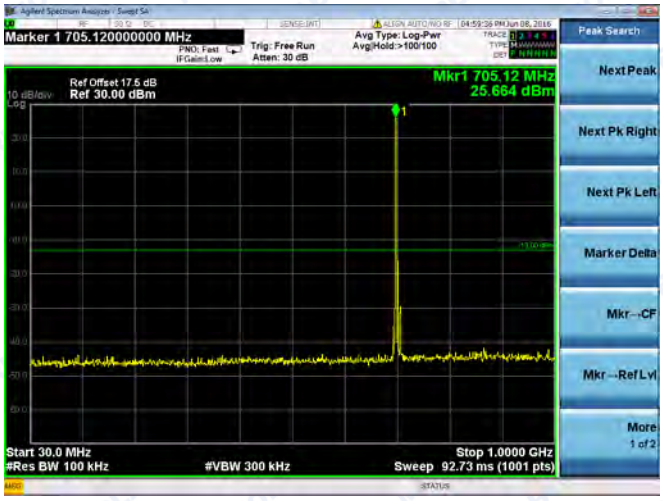
	

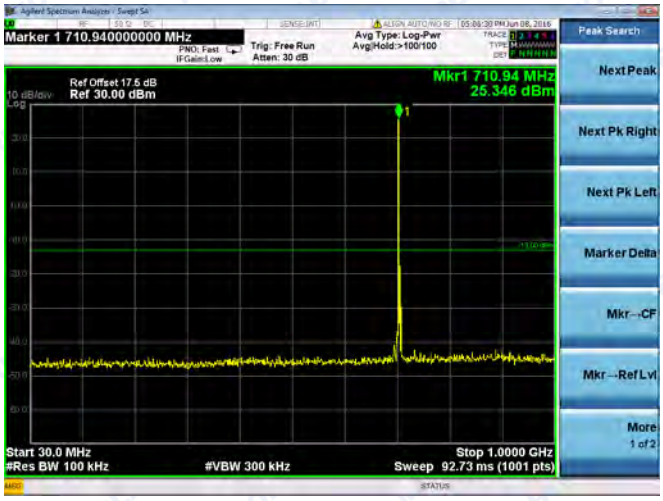
LTE Band 5 10MHz BW High Channel	
QPSK	
	
16QAM	
	

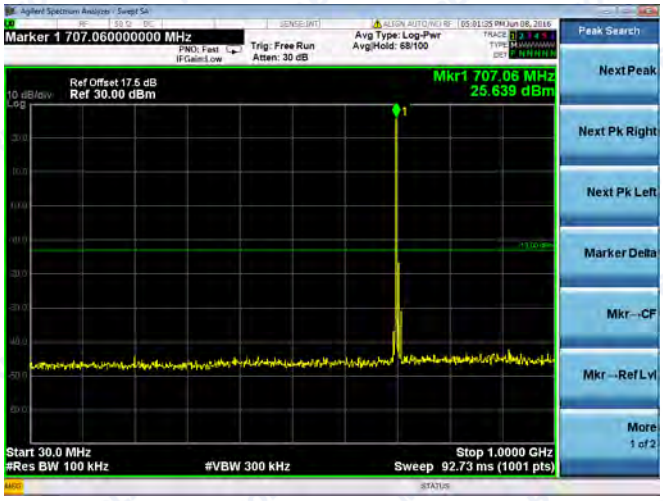
LTE Band 17 5MHz BW Low Channel	
QPSK	
	
16QAM	
	

LTE Band 17 10MHz BW Low Channel	
QPSK	
	
16QAM	
	

LTE Band 17 5MHz BW Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 17 10MHz BW Mid Channel	
QPSK	
	
16QAM	
	

LTE Band 17 5MHz BW High Channel	
QPSK	
	
16QAM	
	

LTE Band 17 10MHz BW High Channel	
QPSK	
	
16QAM	
	

2.6 Band Edge

2.6.1 Requirement

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

(h) For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dB.

According to FCC section 27.53(m) (4), (m) (4) For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees

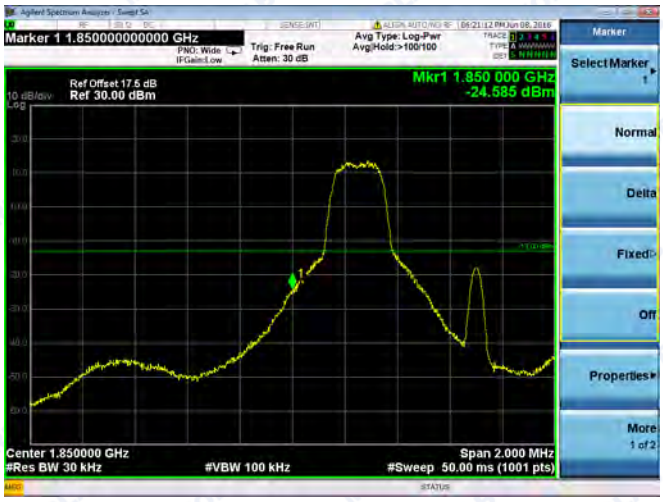
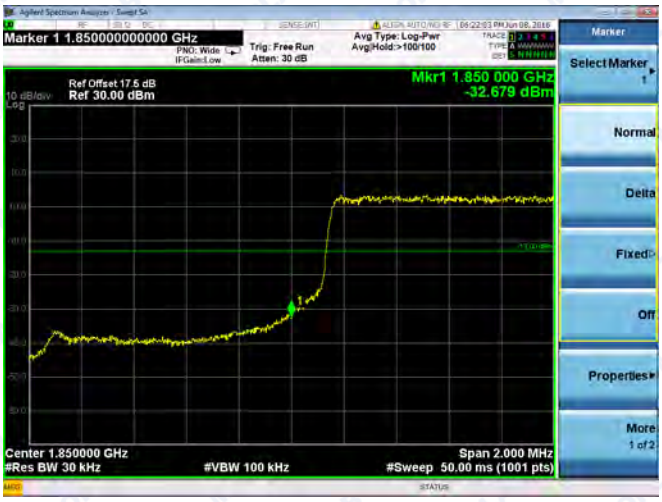
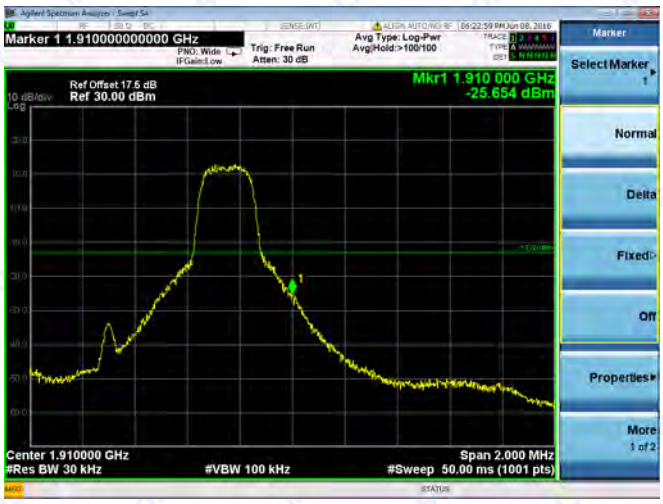
2.6.2 Test Description

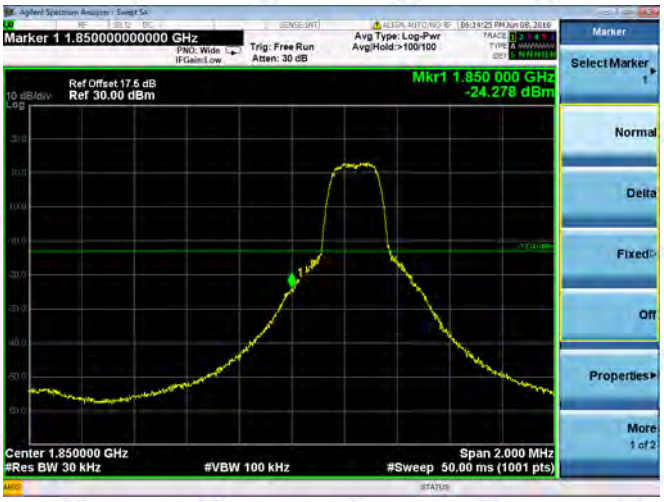
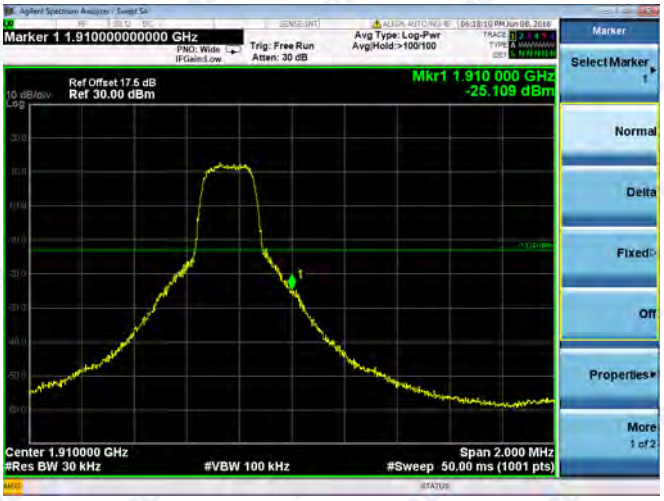
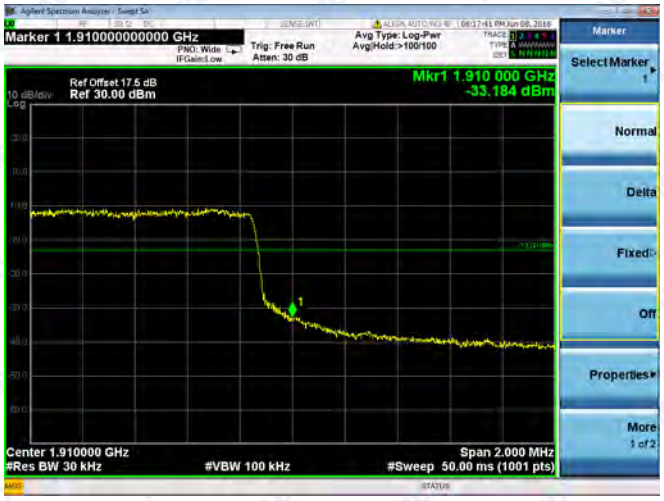
See section 2.1.2 of this report.

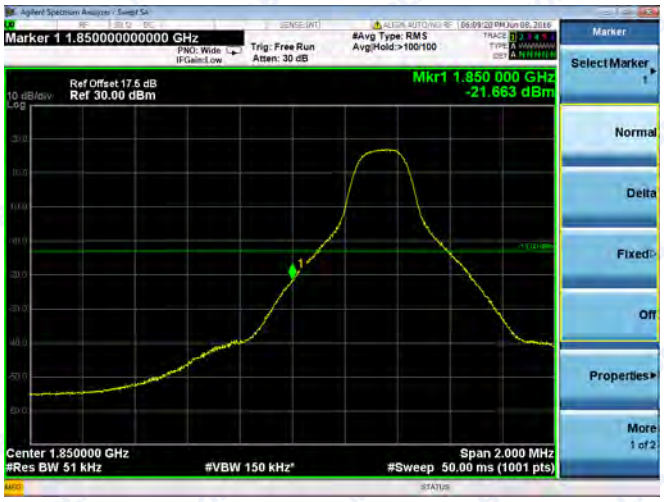
2.6.3 Test Result

The center frequency of spectrum is the band edge frequency and span is 2MHz, Record the max trace into the test report.

PASS. See the attached plots.

LTE Band 2							
Channel Bandwidth: 1.4MHz							
Channel	18607	RB Size 1	RB Offset 0	Channel	18607	RB Size 6	RB Offset 0
							
Channel Bandwidth: 1.4MHz							
Channel	19192	RB Size 1	RB Offset 5	Channel	19192	RB Size 6	RB Offset 0
							

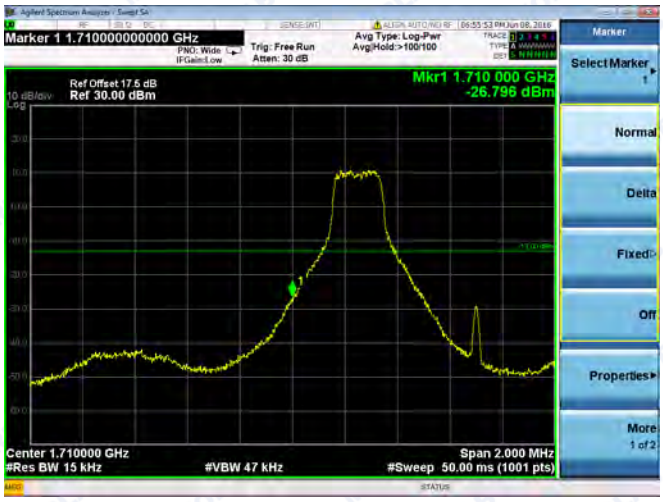
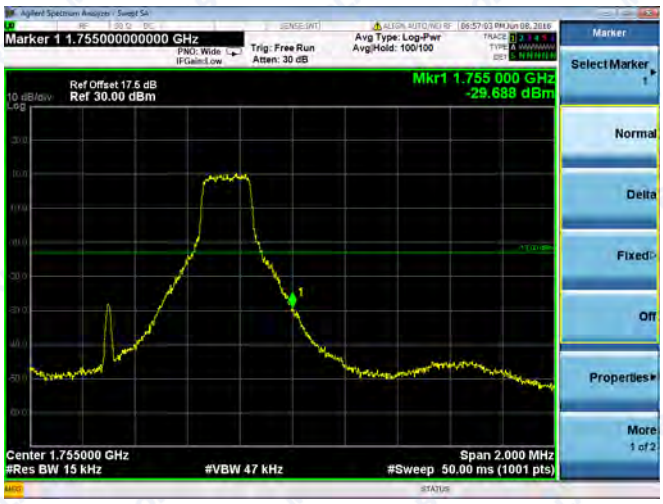
LTE Band 2							
Channel Bandwidth: 3MHz							
Channel	18165	RB Size 1	RB Offset 0	Channel	18165	RB Size 15	RB Offset 0
							
Channel Bandwidth: 3MHz							
Channel	19184	RB Size 1	RB Offset 14	Channel	19184	RB Size 15	RB Offset 0
							

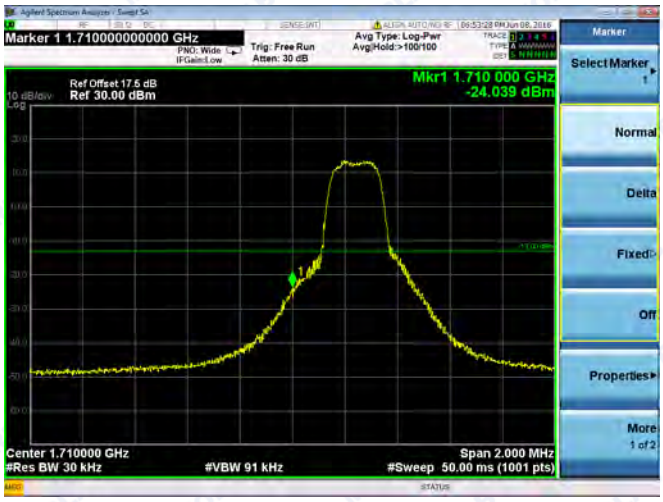
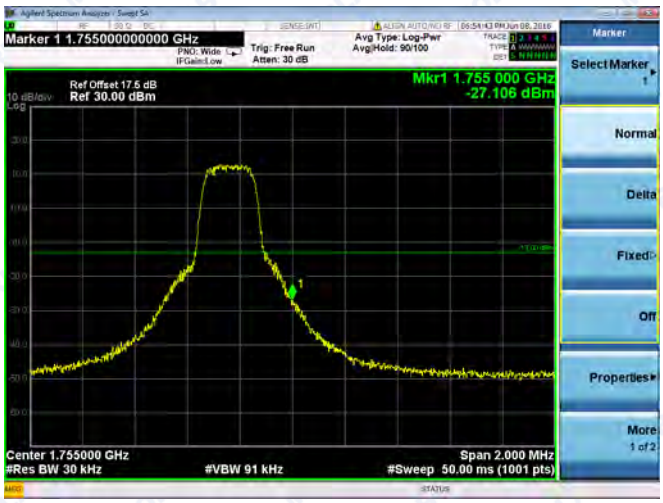
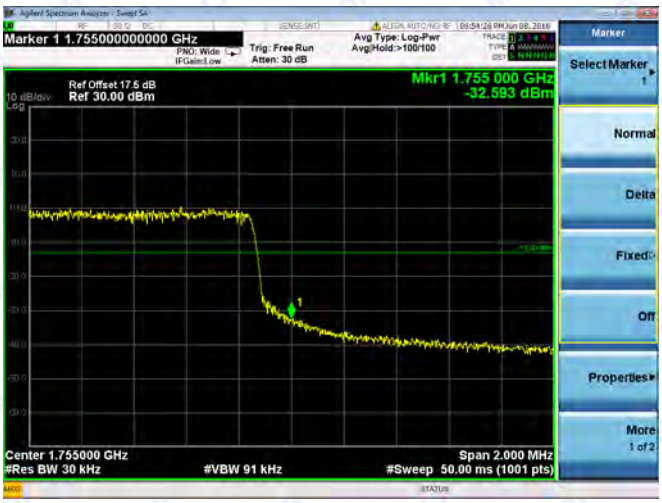
LTE Band 2							
Channel Bandwidth: 5MHz							
Channel	18625	RB Size 1	RB Offset 0	Channel	18625	RB Size 25	RB Offset 0
							
Channel Bandwidth: 5MHz							
Channel	19175	RB Size 1	RB Offset 24	Channel	19175	RB Size 25	RB Offset 0
							

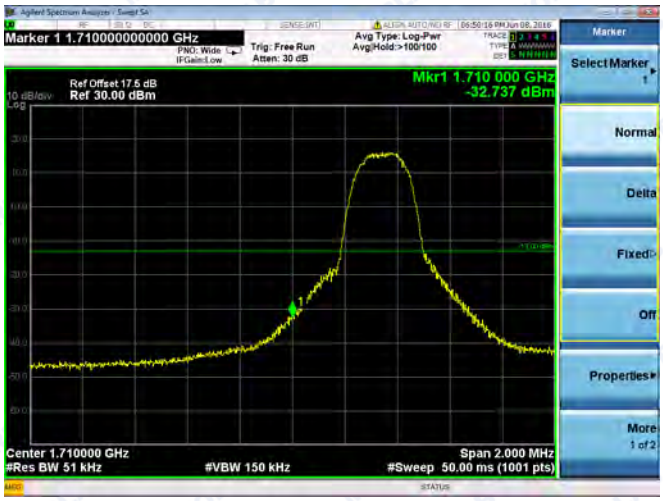
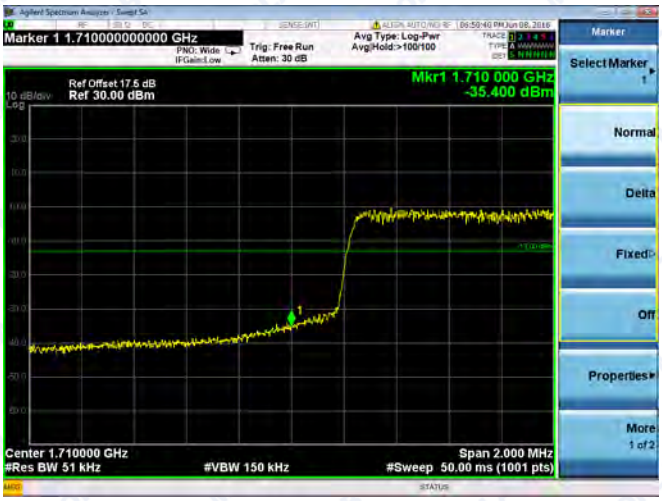
LTE Band 2							
Channel Bandwidth: 10MHz							
Channel	18650	RB Size 1	RB Offset 0	Channel	18650	RB Size 50	RB Offset 0
							
Channel Bandwidth: 10MHz							
Channel	19150	RB Size 1	RB Offset 49	Channel	19150	RB Size 50	RB Offset 0
							

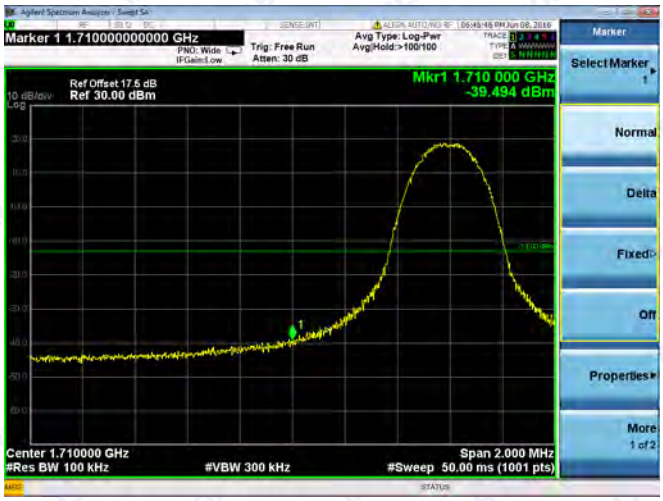
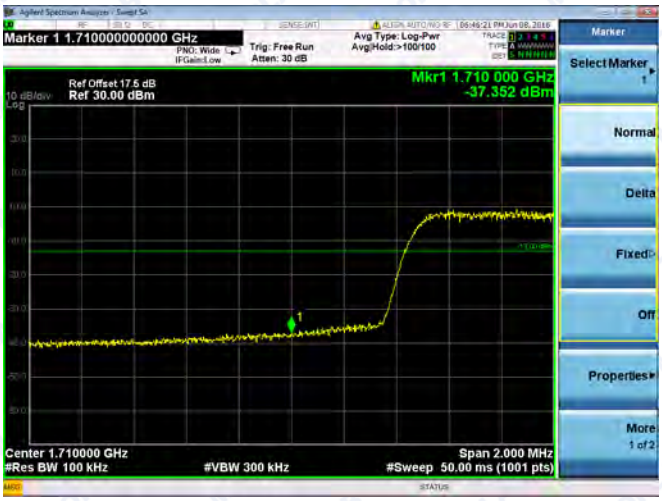
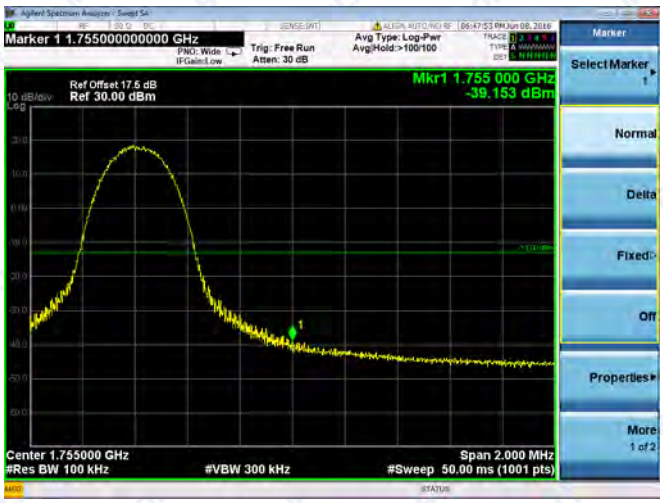
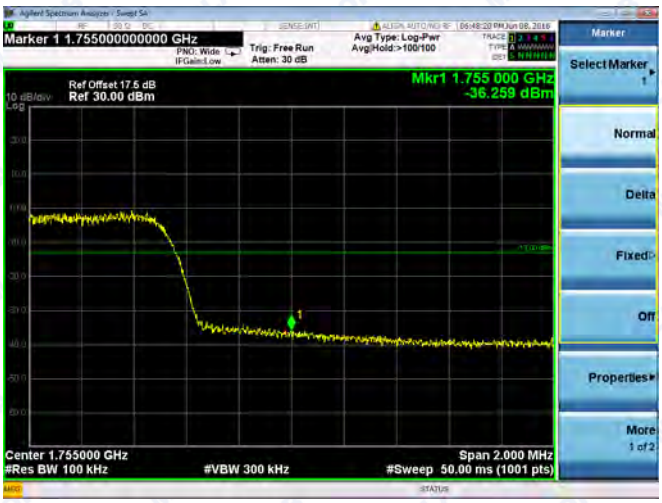
LTE Band 2							
Channel Bandwidth: 15MHz							
Channel	18675	RB Size 1	RB Offset 0	Channel	18675	RB Size 75	RB Offset 0
						
Channel Bandwidth: 15MHz							
Channel	19125	RB Size 1	RB Offset 74	Channel	19125	RB Size 75	RB Offset 0
						

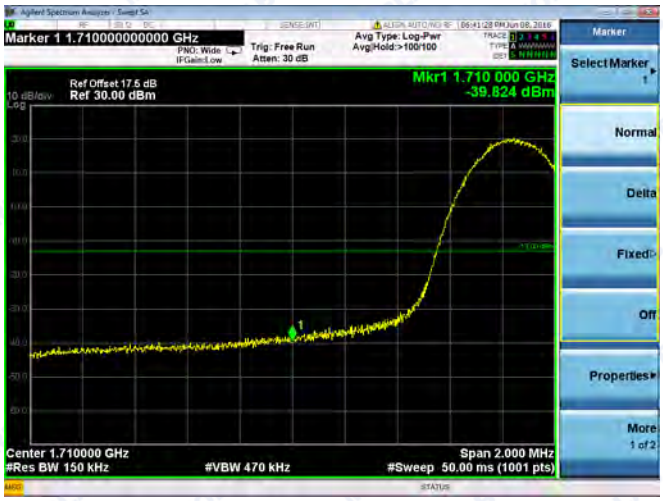
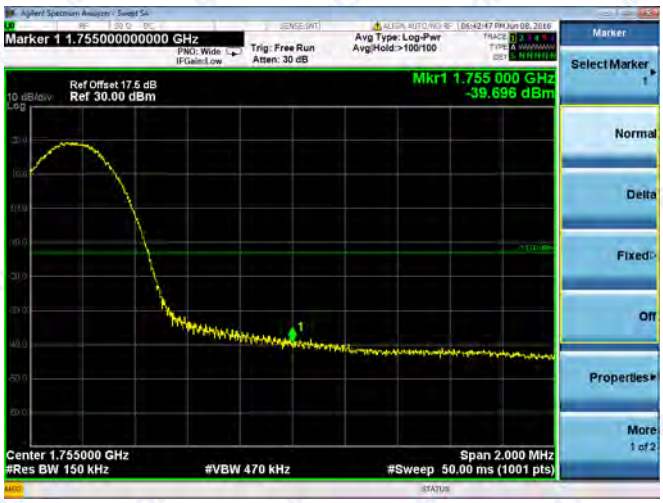
LTE Band 2							
Channel Bandwidth: 20MHz							
Channel	18700	RB Size 1	RB Offset 0	Channel	18700	RB Size 100	RB Offset 0
								
Channel Bandwidth: 20MHz							
Channel	19100	RB Size 1	RB Offset 99	Channel	19100	RB Size 100	RB Offset 0
								

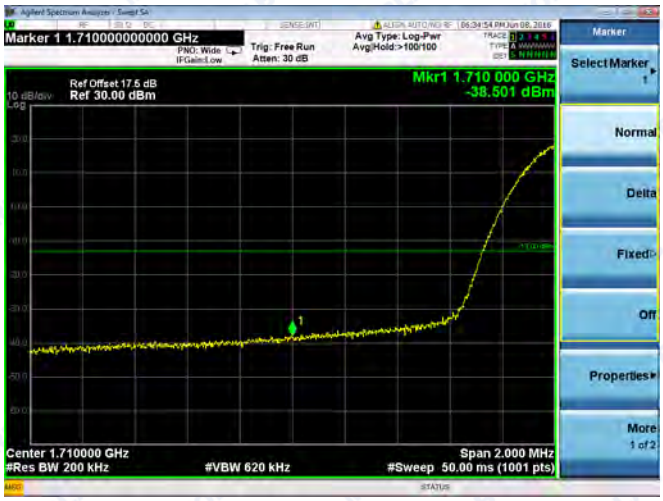
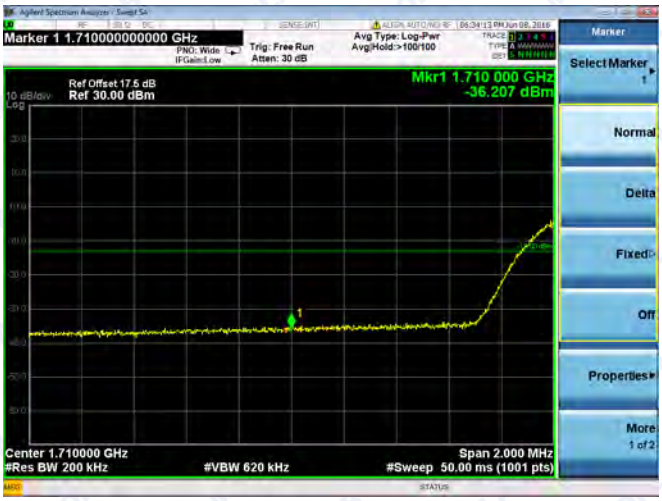
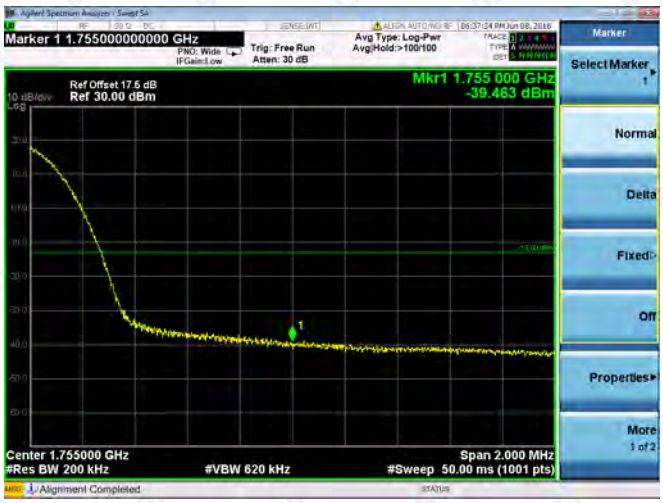
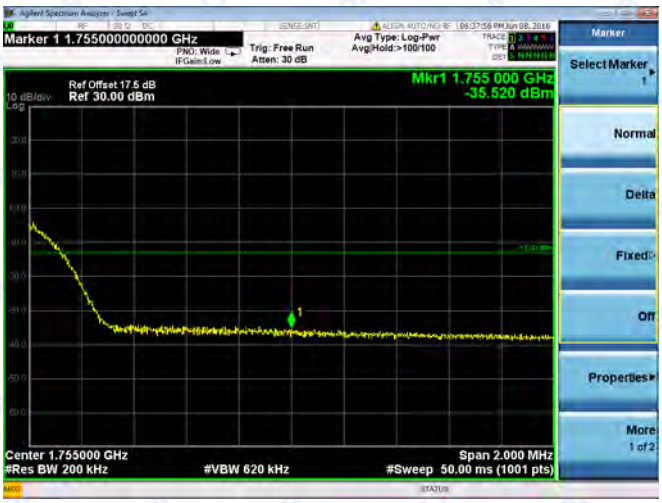
LTE Band 4							
Channel Bandwidth: 1.4MHz							
Channel	19957	RB Size 1	RB Offset 0	Channel	20393	RB Size 6	RB Offset 0
							
Channel Bandwidth: 1.4MHz							
Channel	19957	RB Size 1	RB Offset 5	Channel	20393	RB Size 6	RB Offset 0
							

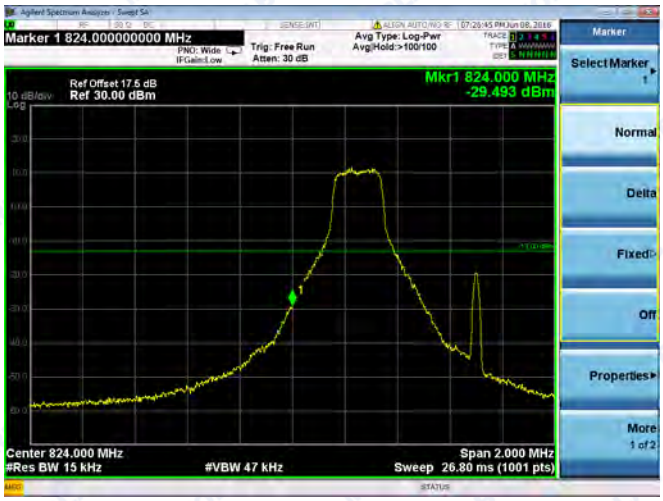
LTE Band 4							
Channel Bandwidth: 3MHz							
Channel	19965	RB Size 1	RB Offset 0	Channel	20385	RB Size 15	RB Offset 0
							
Channel Bandwidth: 3MHz							
Channel	19965	RB Size 1	RB Offset 14	Channel	20385	RB Size 15	RB Offset 0
							

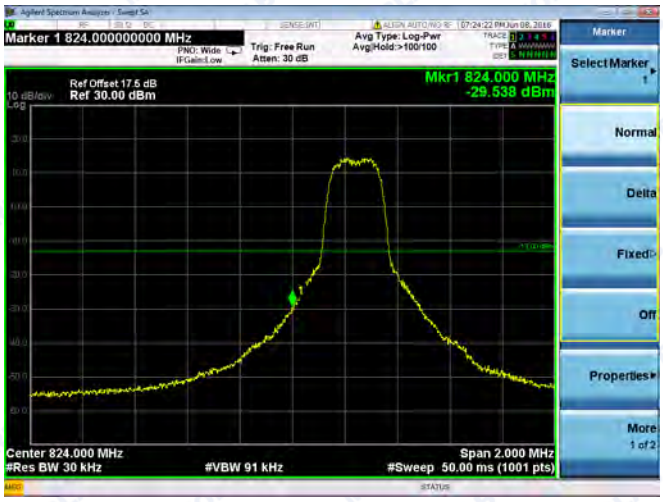
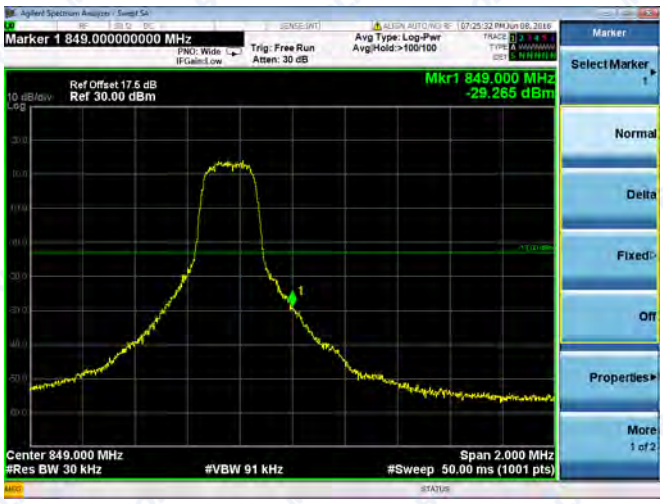
LTE Band 4							
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 0	Channel	20375	RB Size 25	RB Offset 0
							
Channel Bandwidth: 5MHz							
Channel	19975	RB Size 1	RB Offset 24	Channel	20375	RB Size 25	RB Offset 0
							

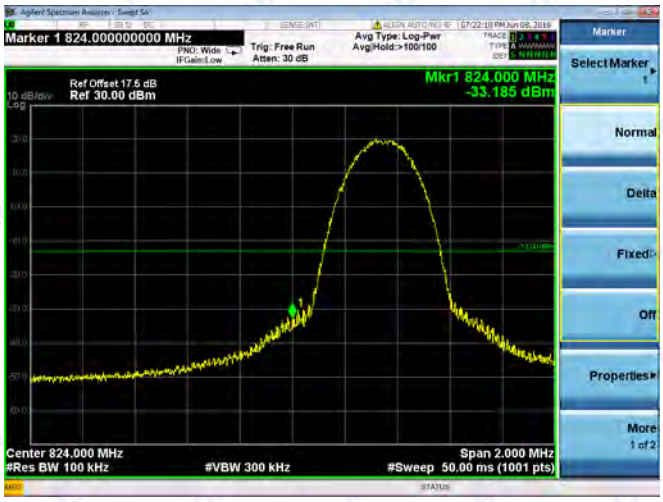
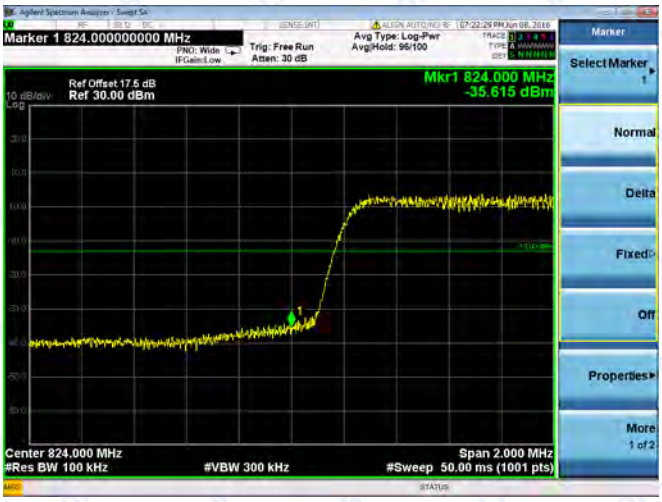
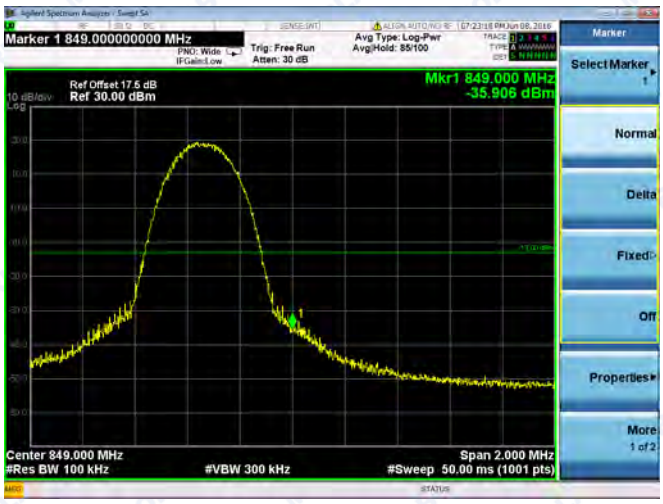
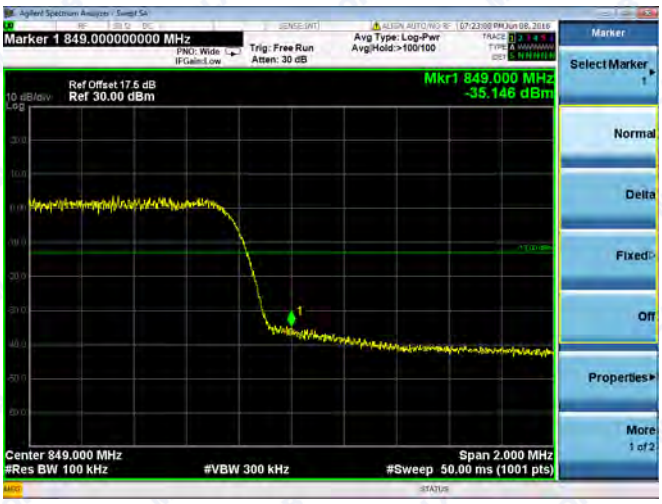
LTE Band 4							
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 0	Channel	20350	RB Size 50	RB Offset 0
							
Channel Bandwidth: 10MHz							
Channel	20000	RB Size 1	RB Offset 49	Channel	20350	RB Size 50	RB Offset 0
							

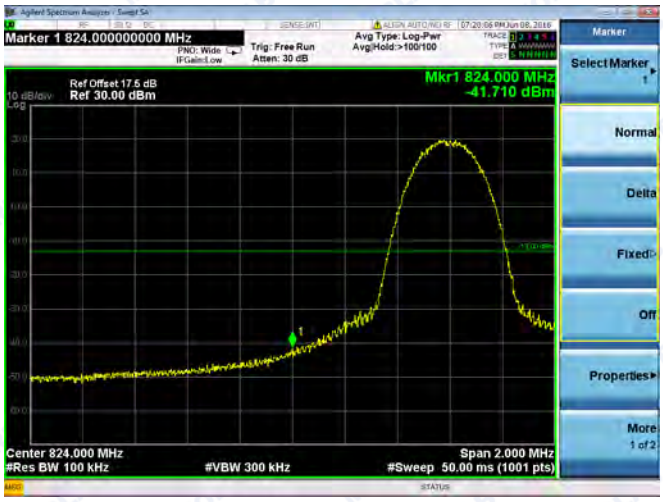
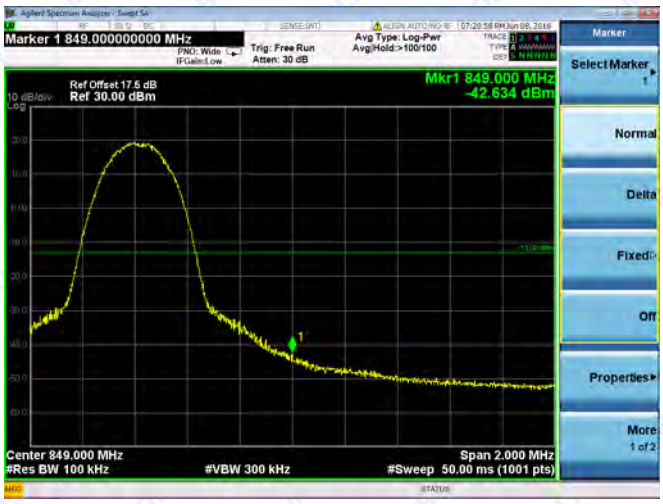
LTE Band 4							
Channel Bandwidth: 15MHz							
Channel	20025	RB Size 1	RB Offset 0	Channel	20325	RB Size 75	RB Offset 0
							
Channel Bandwidth: 15MHz							
Channel	20025	RB Size 1	RB Offset 74	Channel	20325	RB Size 75	RB Offset 0
							

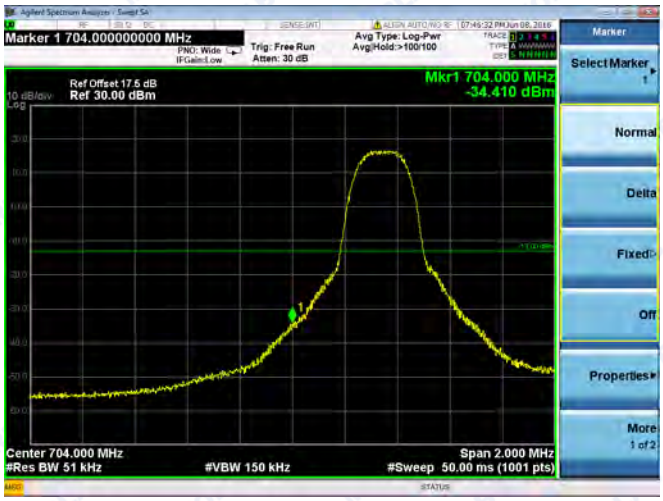
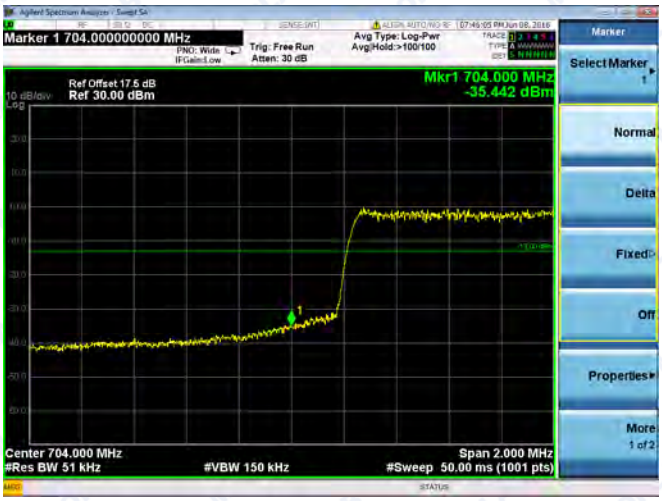
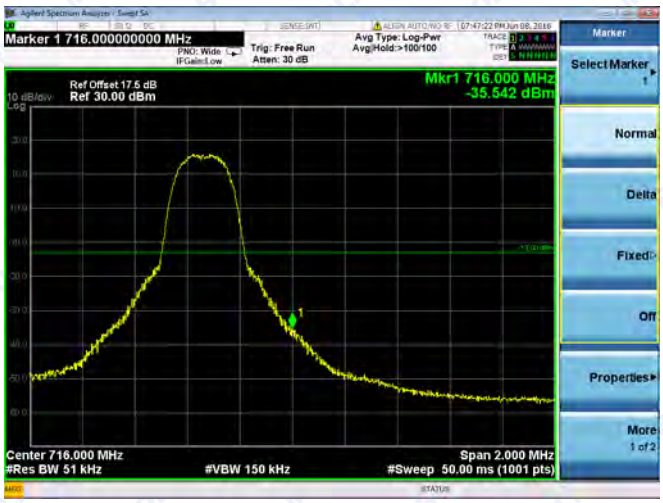
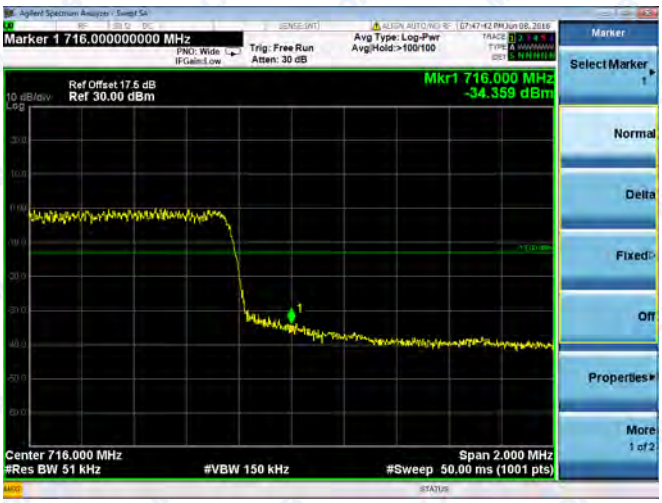
LTE Band 4							
Channel Bandwidth: 20MHz							
Channel	20050	RB Size 1	RB Offset 0	Channel	20300	RB Size 100	RB Offset 0
							
Channel Bandwidth: 20MHz							
Channel	20050	RB Size 1	RB Offset 99	Channel	20300	RB Size 100	RB Offset 0
							

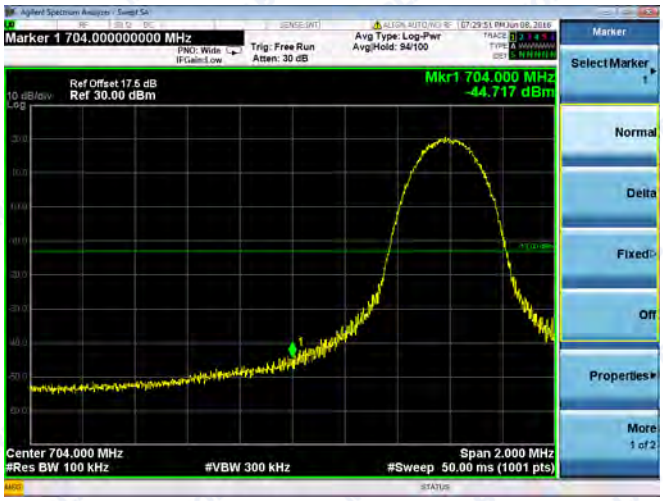
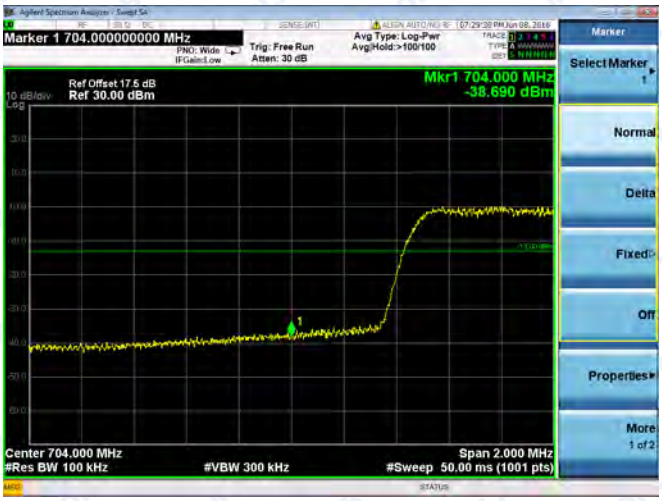
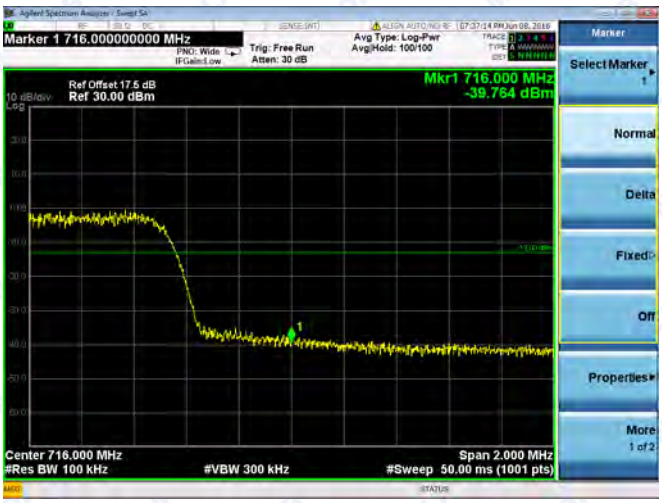
LTE Band 5							
Channel Bandwidth: 1.4MHz							
Channel	20407	RB Size 1	RB Offset 0	Channel	20407	RB Size 6	RB Offset 0
							
Channel Bandwidth: 1.4MHz							
Channel	20642	RB Size 1	RB Offset 5	Channel	20642	RB Size 6	RB Offset 0
							

LTE Band 5							
Channel Bandwidth: 3MHz							
Channel	20415	RB Size 1	RB Offset 0	Channel	20415	RB Size 15	RB Offset 0
							
Channel Bandwidth: 3MHz							
Channel	20634	RB Size 1	RB Offset 14	Channel	20634	RB Size 15	RB Offset 0
							

LTE Band 5							
Channel Bandwidth: 5MHz							
Channel	20425	RB Size 1	RB Offset 0	Channel	20425	RB Size 25	RB Offset 0
							
Channel Bandwidth: 5MHz							
Channel	20625	RB Size 1	RB Offset 24	Channel	20625	RB Size 25	RB Offset 0
							

LTE Band 5							
Channel Bandwidth: 10MHz							
Channel	20450	RB Size 1	RB Offset 0	Channel	20450	RB Size 50	RB Offset 0
							
Channel Bandwidth: 10MHz							
Channel	20600	RB Size 1	RB Offset 49	Channel	20600	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

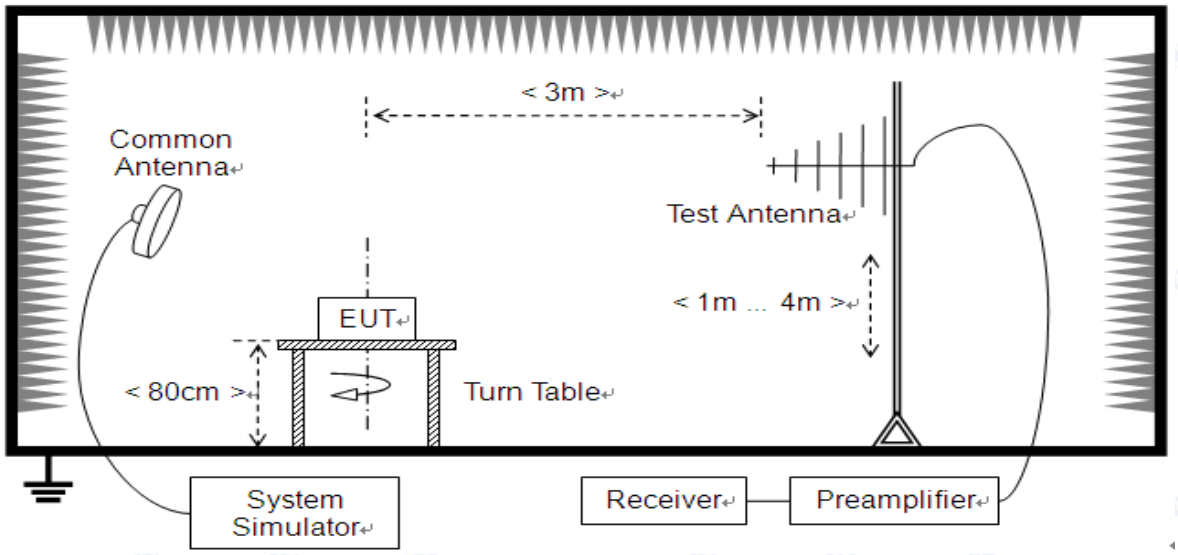
According to FCC section 27.50 (d), fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

According to FCC section 22.913, in 824-849MHz band must not exceed 7Watts, and FCC section 24.232, in1850-1910MHz band are limited to 2 Watts e.i.r.p. peak power.

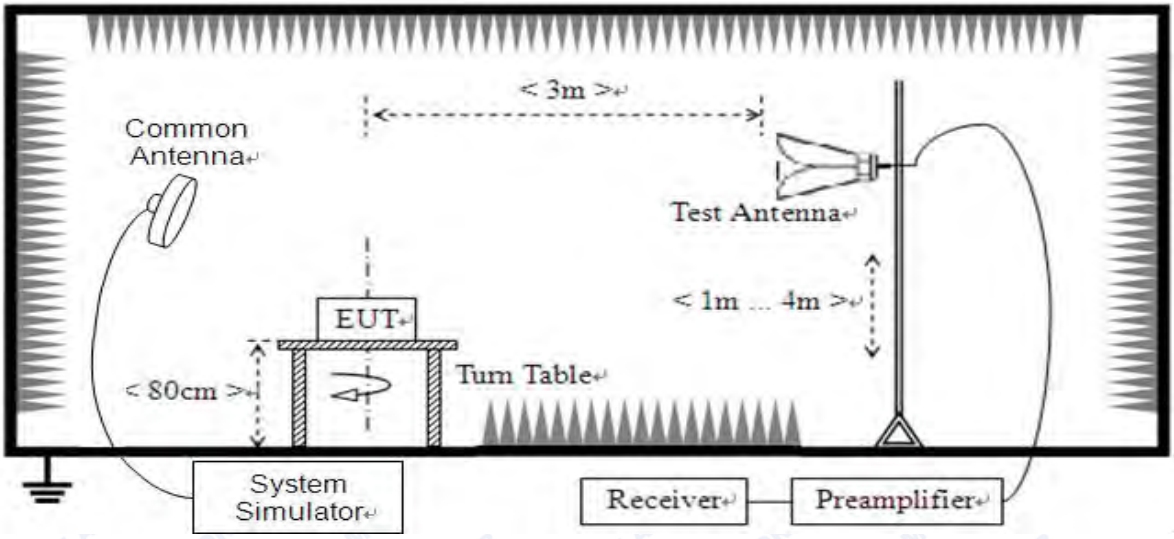
Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.7.2 Test Description

Test Setup:



(For the test frequency from 30MHz to1GHz)



(For the test frequency above 1GHz)

The EUT, which is powered by the PC, 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.

Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50/ 124534/wk	2016.03.02	2017.03.01
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2016.03.02	2017.03.01
Spectrum Analyzer	Agilent	E4445A	MY44200685	2016.03.02	2017.03.01
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2016.03.02	2017.03.01
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2016.03.02	2017.03.01
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2016.03.02	2017.03.01

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:

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

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

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}.

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	23.48
					100	0	22.36
				16-QAM	1	0	22.85
					100	0	21.22
		M 18900	1880	QPSK	1	0	22.89
					100	0	22.41
				16-QAM	1	0	22.35
					100	0	21.88
		H 19100	1900	QPSK	1	0	23.14
					100	0	22.54
				16-QAM	1	0	22.14
					100	0	21.58
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	23.21
					75	0	22.89
				16-QAM	1	0	22.68
					75	0	22.47
		M 18900	1880	QPSK	1	0	23.56
					75	0	22.57
				16-QAM	1	0	22.94
					75	0	22.14
		H 19125	1902.5	QPSK	1	0	22.96
					75	0	22.21
				16-QAM	1	0	22.09
					75	0	22.15

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	22.58
					50	0	22.57
				16-QAM	1	0	22.47
					50	0	22.19
		M 18900	1880	QPSK	1	0	22.87
					50	0	22.68
				16-QAM	1	0	22.58
					50	0	22.69
		H 19150	1905	QPSK	1	0	22.96
					50	0	22.58
				16-QAM	1	0	22.69
					50	0	22.28

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 2	5MHz	L 18625	1852.5	QPSK	1	0	23.44
					25	0	22.54
				16-QAM	1	0	23.31
					25	0	22.36
		M 18900	1880	QPSK	1	0	23.14
					25	0	22.58
				16-QAM	1	0	22.47
					25	0	22.36
		H 19175	1907.5	QPSK	1	0	23.69
					25	0	22.57
				16-QAM	1	0	23.14
					25	0	22.48
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 2	3MHz	L 18615	1851.5	QPSK	1	0	22.58
					15	0	22.36
				16-QAM	1	0	23.14
					15	0	22.48
		M 18900	1880	QPSK	1	0	23.51
					15	0	22.58
				16-QAM	1	0	22.69
					15	0	21.96
		H 19185	1908.5	QPSK	1	0	22.88
					15	0	22.15
				16-QAM	1	0	22.19
					15	0	20.33

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	22.39
					6	0	22.48
				16-QAM	1	0	22.36
					6	0	22.45
		18900	1880	QPSK	1	0	23.55
					6	0	31.69
				16-QAM	1	0	22.18
					6	0	21.33
		H 19193	1909.3	QPSK	1	0	22.18
					6	0	21.99
				16-QAM	1	0	22.36
					6	0	21.66

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	23.99
					100	0	22.58
				16-QAM	1	0	22.96
					100	0	21.69
		M 20175	1732.5	QPSK	1	0	23.66
					100	0	22.69
				16-QAM	1	0	22.85
					100	0	21.92
		H 20300	1745.0	QPSK	1	0	22.68
					100	0	22.66
				16-QAM	1	0	23.09
					100	0	21.53
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	23.88
					75	0	23.04
				16-QAM	1	0	22.96
					75	0	22.53
		M 20175	1732.5	QPSK	1	0	23.68
					75	0	22.66
				16-QAM	1	0	23.74
					75	0	21.99
		H 20325	1747.5	QPSK	1	0	22.79
					75	0	23.34
				16-QAM	1	0	23.38
					75	0	22.63

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 4	10MHz	L 20000	1715.0	QPSK	1	0	23.89
					50	0	23.52
				16-QAM	1	0	22.77
					50	0	22.17
		M 20175	1732.5	QPSK	1	0	22.68
					50	0	22.69
				16-QAM	1	0	22.98
					50	0	22.09
		H 20350	1750.0	QPSK	1	0	23.54
					50	0	23.55
				16-QAM	1	0	23.24
					50	0	22.69

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 4	5MHz	L 19975	1712.5	QPSK	1	0	23.66
					25	0	23.51
				16-QAM	1	0	24.01
					25	0	22.54
		M 20175	1732.5	QPSK	1	0	23.63
					25	0	22.35
				16-QAM	1	0	22.58
					25	0	21.66
		H 20375	1752.5	QPSK	1	0	23.67
					25	0	23.24
				16-QAM	1	0	22.99
					25	0	22.31
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		EIRP (dBm)
					RB Size	RB Offset	
LTE Band 4	3MHz	L 19965	1711.5	QPSK	1	0	23.75
					15	0	23.66
				16-QAM	1	0	22.85
					15	0	22.63
		M 20175	1732.5	QPSK	1	0	24.08
					15	0	23.17
				16-QAM	1	0	23.24
					15	0	22.59
		H 20385	1753.5	QPSK	1	0	24.38
					15	0	23.07
				16-QAM	1	0	22.58
					15	0	23.07

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	24.09
					6	0	23.08
				16-QAM	1	0	23.09
					6	0	22.59
		M 20175	1732.5	QPSK	1	0	23.34
					6	0	22.86
				16-QAM	1	0	22.93
					6	0	21.99
		H 20393	1754.3	QPSK	1	0	22.38
					6	0	22.09
				16-QAM	1	0	22.39
					6	0	22.87

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 5	10MHz	L 20450	829	QPSK	1	0	22.53
					50	0	22.69
				16-QAM	1	0	22.69
					50	0	22.58
		M 20525	836.5	QPSK	1	0	23.69
					50	0	22.99
				16-QAM	1	0	23.35
					50	0	22.36
		H 20600	844	QPSK	1	0	23.69
					50	0	23.66
				16-QAM	1	0	22.58
					50	0	22.58
Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 5	5MHz	L 20425	826.5	QPSK	1	0	22.58
					25	0	22.38
				16-QAM	1	0	23.68
					25	0	22.58
		M 20525	836.5	QPSK	1	0	23.54
					25	0	22.58
				16-QAM	1	0	23.14
					25	0	22.58
		H 20625	846.5	QPSK	1	0	23.69
					25	0	23.58
				16-QAM	1	0	22.58
					25	0	23.58

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 5	3MHz	L 20415	825.5	QPSK	1	0	23.66
					15	0	22.58
				16-QAM	1	0	22.87
					15	0	22.89
		M 20525	836.5	QPSK	1	0	22.68
					15	0	22.85
				16-QAM	1	0	22.64
					15	0	22.47
		H 20635	847.5	QPSK	1	0	23.57
					15	0	22.54
				16-QAM	1	0	22.89
					15	0	22.74

Band	Band Width	Channel	Freq.(MHz)	Modulation	RB Configuration		ERP
					RB Size	RB Offset	(dBm)
LTE Band 5	1.4MHz	L 20407	824.7	QPSK	1	0	23.66
					6	0	22.54
				16-QAM	1	0	22.67
					6	0	22.85
		M 20525	836.5	QPSK	1	0	23.65
					6	0	22.58
				16-QAM	1	0	22.39
					6	0	22.38
		H 20643	848.3	QPSK	1	0	22.38
					6	0	22.37
				16-QAM	1	0	22.58
					6	0	22.37

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	24.88
					50	0	23.68
				16-QAM	1	0	24.12
					50	0	23.22
		M 23790	710	QPSK	1	0	23.88
					50	0	23.22
				16-QAM	1	0	23.11
					50	0	22.58
		H 23800	711	QPSK	1	0	23.63
					50	0	23.66
				16-QAM	1	0	23.62
					50	0	23.96
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	24.88
					25	0	23.66
				16-QAM	1	0	23.55
					25	0	22.99
		M 23790	710	QPSK	1	0	23.66
					25	0	23.85
				16-QAM	1	0	22.85
					25	0	22.85
		H 23825	713.5	QPSK	1	0	23.65
					25	0	22.68
				16-QAM	1	0	23.62
					25	0	23.65

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

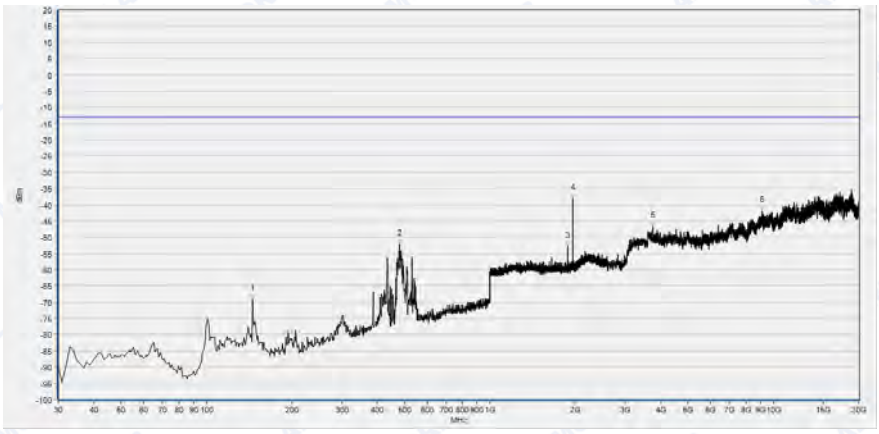
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. Test Antenna height is varied from 1m to 4m above the ground, and the Turn Table is actuated to turn from 0° to 360°, both horizontal and vertical polarizations of the Test Antenna are used to find the maximum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

Test Plots for the Whole Measurement Frequency Range:

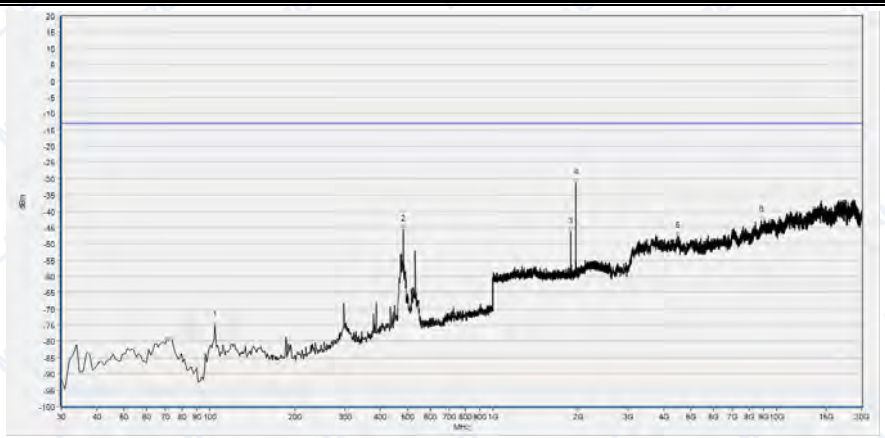
Note1: the power of the EUT transmitting frequency should be ignored.

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 2 1.4MHz BW, Mid Channel, QPSK

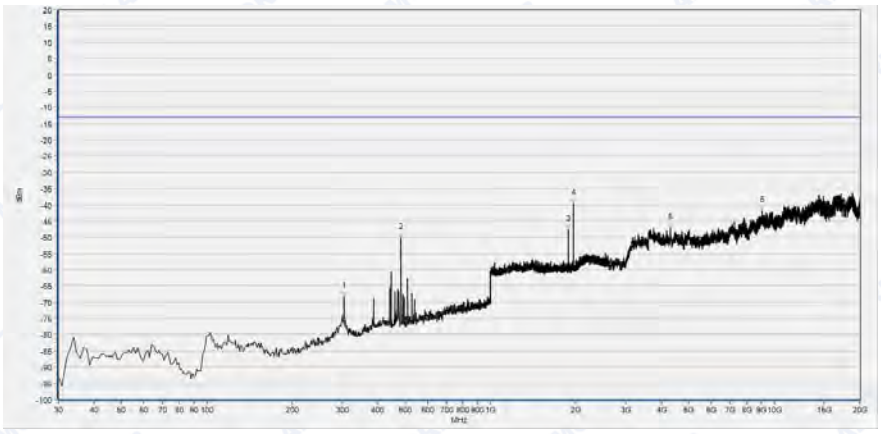


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	145.430	-69.06	-13.00	Horizontal	PASS
2	480.080	-52.16	-13.00	Horizontal	PASS
3	1880.352	-52.80	-13.00	Horizontal	PASS
4	1959.744	-38.08	-13.00	Horizontal	PASS
5	3761.266	-46.58	-13.00	Horizontal	PASS
6	9092.962	-41.97	-13.00	Horizontal	PASS

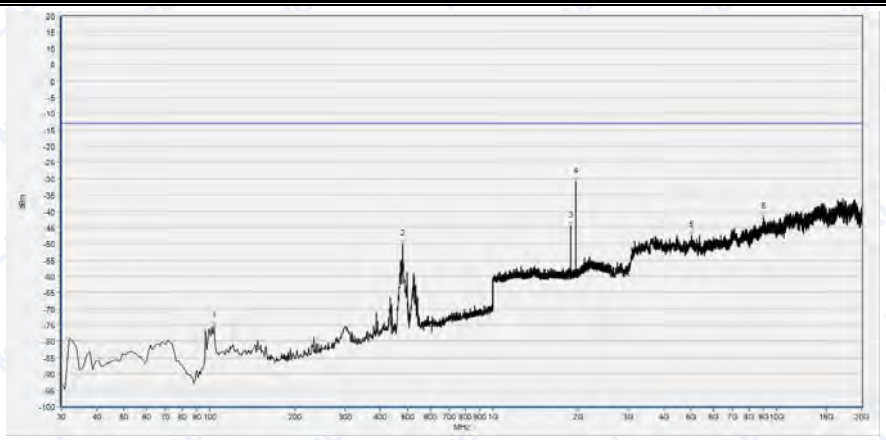


Num.	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	104.690	-74.94	-13.00	Vertical	PASS
2	482.990	-45.71	-13.00	Vertical	PASS
3	1879.712	-46.30	-13.00	Vertical	PASS
4	1960.384	-31.48	-13.00	Vertical	PASS
5	4479.542	-47.81	-13.00	Vertical	PASS
6	8846.154	-42.70	-13.00	Vertical	PASS

LTE Band 2 1.4MHz BW, Mid Channel, 16QAM

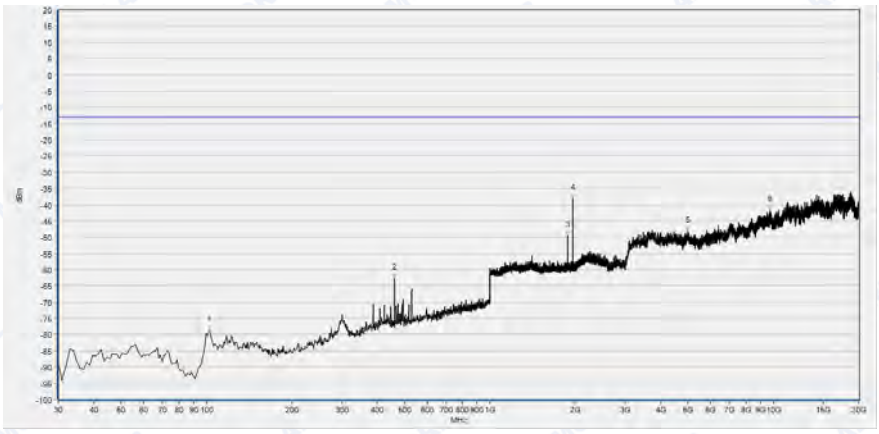


Num	Freq(MHz)	Peak	limit PK	Antenna	Verdict
1	304.510	-68.16	-13.00	Horizontal	PASS
2	482.990	-50.15	-13.00	Horizontal	PASS
3	1879.712	-47.74	-13.00	Horizontal	PASS
4	1959.744	-39.69	-13.00	Horizontal	PASS
5	4311.839	-47.33	-13.00	Horizontal	PASS
6	9032.842	-42.01	-13.00	Horizontal	PASS

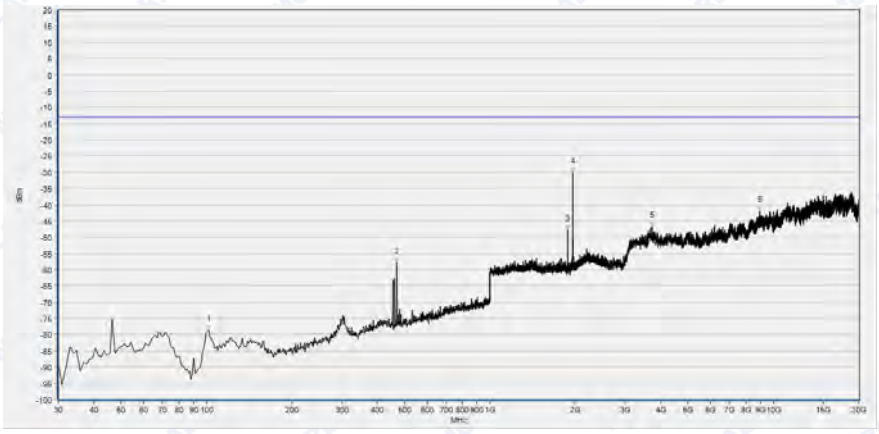


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	103.720	-75.38	-13.00	Vertical	PASS
2	481.050	-50.12	-13.00	Vertical	PASS
3	1879.712	-44.65	-13.00	Vertical	PASS
4	1959.744	-30.91	-13.00	Vertical	PASS
5	5017.458	-47.51	-13.00	Vertical	PASS
6	9023.350	-41.97	-13.00	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, QPSK

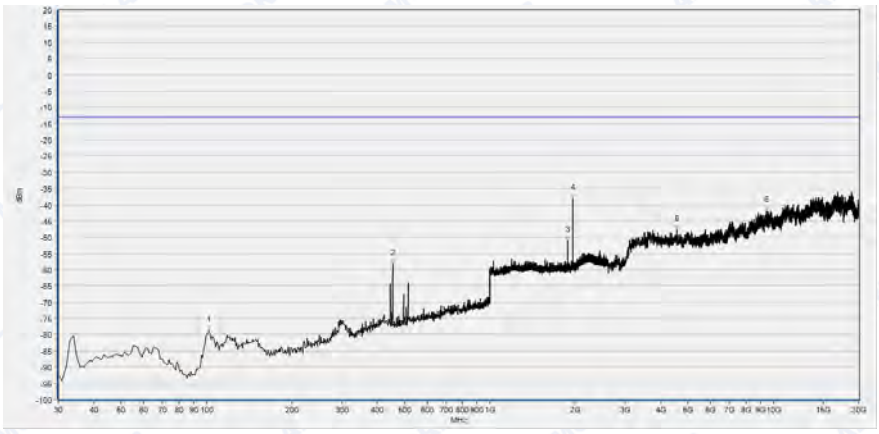


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	102.750	-78.86	-13.00	Horizontal	PASS
2	460.680	-62.78	-13.00	Horizontal	PASS
3	1878.431	-49.48	-13.00	Horizontal	PASS
4	1960.384	-38.21	-13.00	Horizontal	PASS
5	4995.308	-48.21	-13.00	Horizontal	PASS
6	9722.640	-41.58	-13.00	Horizontal	PASS

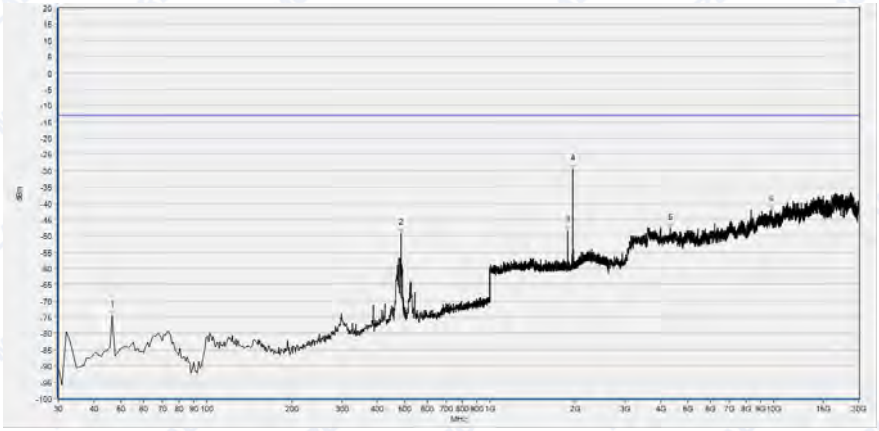


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	101.780	-78.50	-13.00	Vertical	PASS
2	468.440	-57.76	-13.00	Vertical	PASS
3	1879.072	-47.67	-13.00	Vertical	PASS
4	1960.384	-30.14	-13.00	Vertical	PASS
5	3735.952	-46.69	-13.00	Vertical	PASS
6	8969.558	-41.97	-13.00	Vertical	PASS

LTE Band 2 3MHz BW, Mid Channel, 16QAM

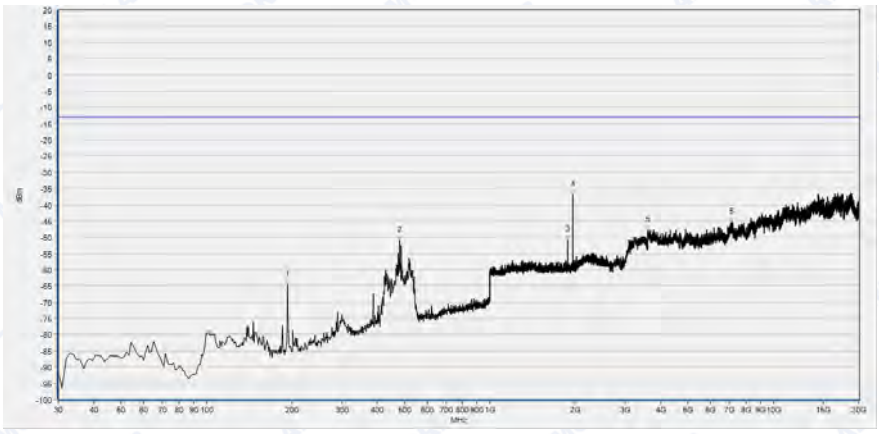


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	101.780	-78.76	-13.00	Horizontal	PASS
2	453.890	-58.19	-13.00	Horizontal	PASS
3	1880.352	-51.01	-13.00	Horizontal	PASS
4	1959.104	-38.13	-13.00	Horizontal	PASS
5	4558.647	-47.78	-13.00	Horizontal	PASS
6	9418.876	-41.82	-13.00	Horizontal	PASS

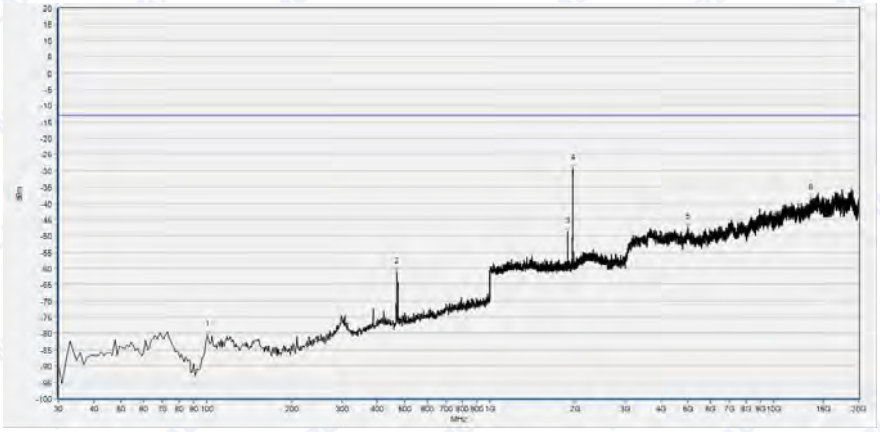


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	46.490	-74.47	-13.00	Vertical	PASS
2	485.900	-49.33	-13.00	Vertical	PASS
3	1879.072	-48.47	-13.00	Vertical	PASS
4	1959.104	-29.55	-13.00	Vertical	PASS
5	4315.003	-47.66	-13.00	Vertical	PASS
6	9849.209	-42.10	-13.00	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, QPSK

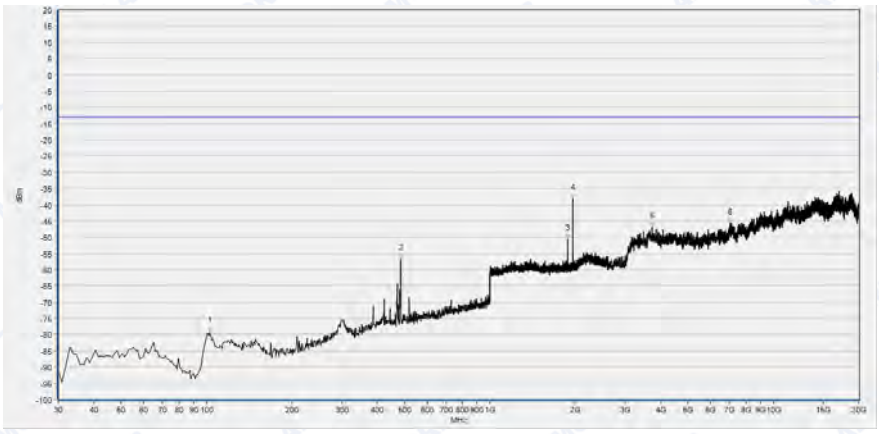


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	192.960	-64.67	-13.00	Horizontal	PASS
2	480.080	-51.03	-13.00	Horizontal	PASS
3	1878.431	-50.84	-13.00	Horizontal	PASS
4	1959.744	-37.09	-13.00	Horizontal	PASS
5	3599.891	-47.89	-13.00	Horizontal	PASS
6	7115.330	-45.44	-13.00	Horizontal	PASS

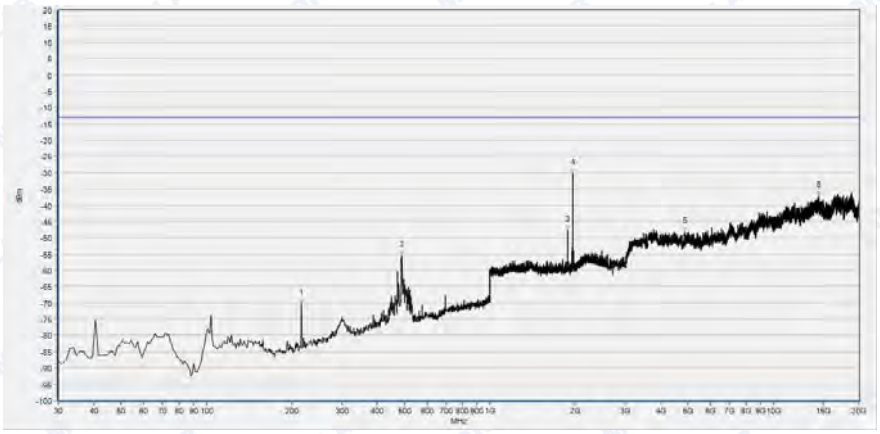


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	100.810	-80.64	-13.00	Vertical	PASS
2	469.410	-61.18	-13.00	Vertical	PASS
3	1878.431	-48.87	-13.00	Vertical	PASS
4	1957.823	-29.40	-13.00	Vertical	PASS
5	4988.980	-47.57	-13.00	Vertical	PASS
6	13560.829	-38.46	-13.00	Vertical	PASS

LTE Band 2 5MHz BW, Mid Channel, 16QAM

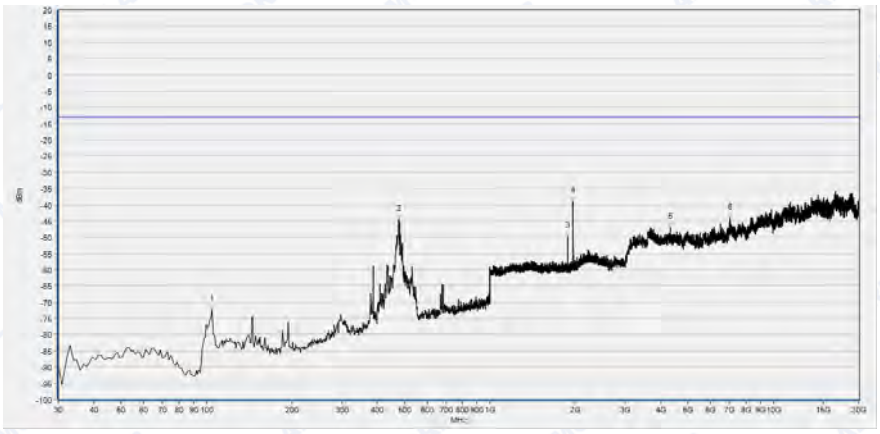


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	102.750	-79.08	-13.00	Horizontal	PASS
2	484.930	-56.70	-13.00	Horizontal	PASS
3	1878.431	-50.60	-13.00	Horizontal	PASS
4	1961.665	-38.04	-13.00	Horizontal	PASS
5	3739.116	-46.77	-13.00	Horizontal	PASS
6	7026.732	-45.68	-13.00	Horizontal	PASS

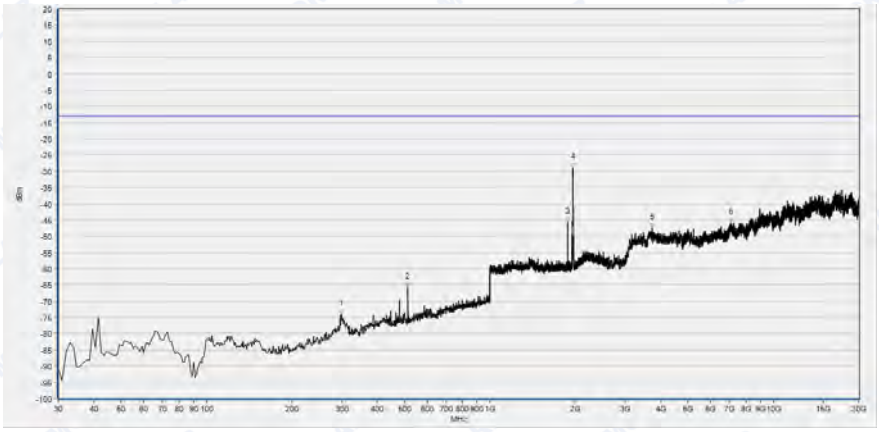


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	216.240	-70.26	-13.00	Vertical	PASS
2	489.780	-55.62	-13.00	Vertical	PASS
3	1879.712	-47.64	-13.00	Vertical	PASS
4	1960.384	-30.21	-13.00	Vertical	PASS
5	4875.068	-48.19	-13.00	Vertical	PASS
6	14468.958	-37.24	-13.00	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, QPSK

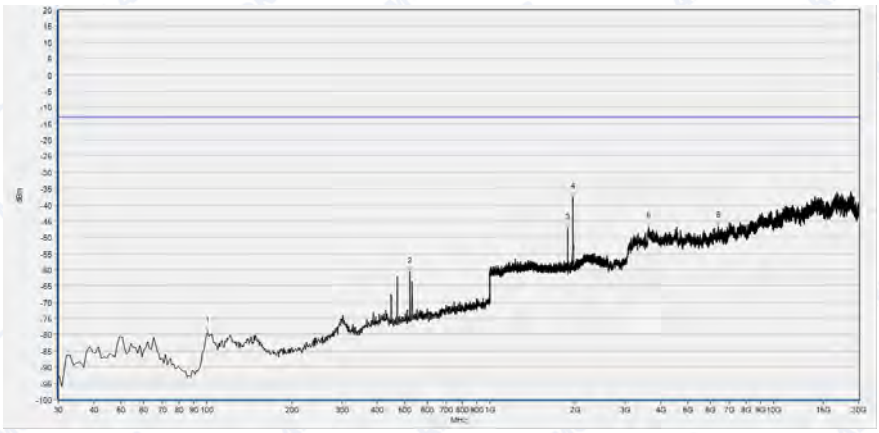


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	104.690	-72.28	-13.00	Horizontal	PASS
2	476.200	-44.57	-13.00	Horizontal	PASS
3	1875.230	-49.71	-13.00	Horizontal	PASS
4	1962.305	-39.02	-13.00	Horizontal	PASS
5	4324.495	-47.02	-13.00	Horizontal	PASS
6	7020.404	-44.19	-13.00	Horizontal	PASS

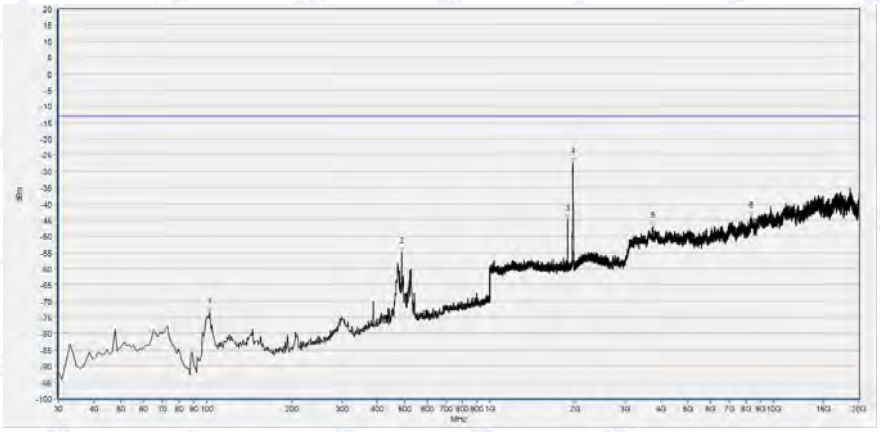


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	299.660	-74.16	-13.00	Vertical	PASS
2	513.060	-65.87	-13.00	Vertical	PASS
3	1875.230	-45.66	-13.00	Vertical	PASS
4	1962.945	-28.86	-13.00	Vertical	PASS
5	3735.952	-47.43	-13.00	Vertical	PASS
6	7058.374	-45.91	-13.00	Vertical	PASS

LTE Band 2 10MHz BW, Mid Channel, 16QAM

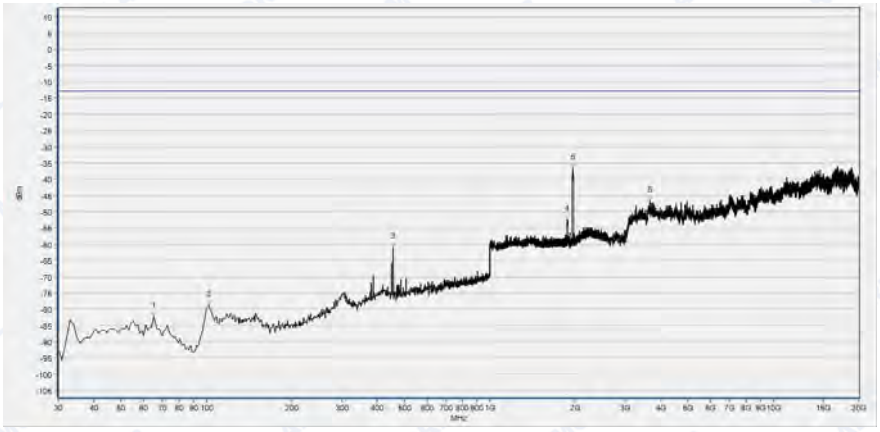


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	100.810	-78.95	-13.00	Horizontal	PASS
2	520.820	-60.66	-13.00	Horizontal	PASS
3	1875.870	-47.35	-13.00	Horizontal	PASS
4	1959.104	-37.59	-13.00	Horizontal	PASS
5	3631.533	-46.75	-13.00	Horizontal	PASS
6	6378.069	-46.54	-13.00	Horizontal	PASS

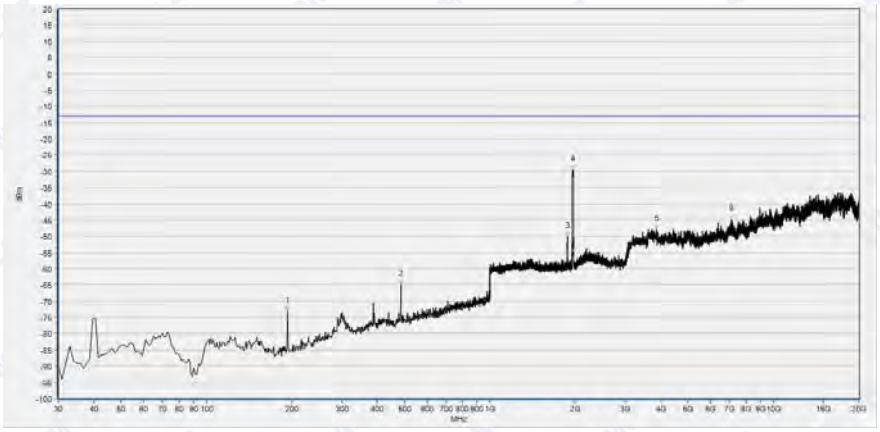


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	102.750	-73.52	-13.00	Vertical	PASS
2	488.810	-54.83	-13.00	Vertical	PASS
3	1875.870	-44.85	-13.00	Vertical	PASS
4	1962.945	-27.28	-13.00	Vertical	PASS
5	3751.773	-47.09	-13.00	Vertical	PASS
6	8339.880	-44.02	-13.00	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, QPSK

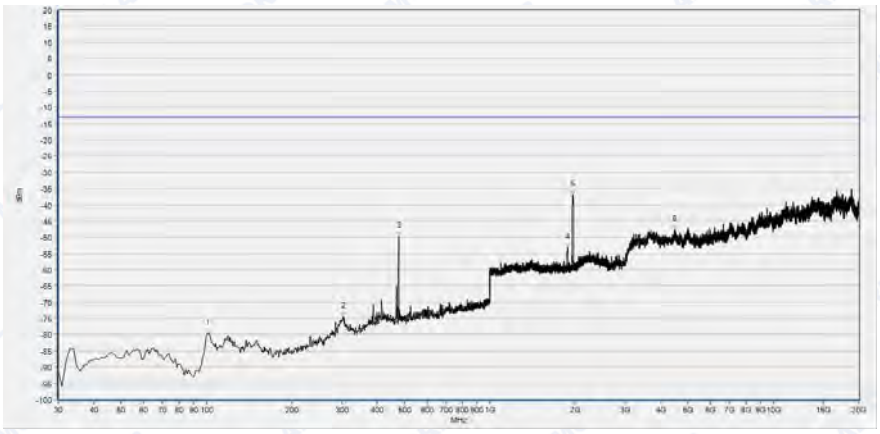


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	64.920	-82.25	-13.00	Horizontal	PASS
2	101.780	-78.81	-13.00	Horizontal	PASS
3	455.830	-60.89	-13.00	Horizontal	PASS
4	1873.309	-52.41	-13.00	Horizontal	PASS
5	1958.463	-36.62	-13.00	Horizontal	PASS
6	3672.668	-46.57	-13.00	Horizontal	PASS

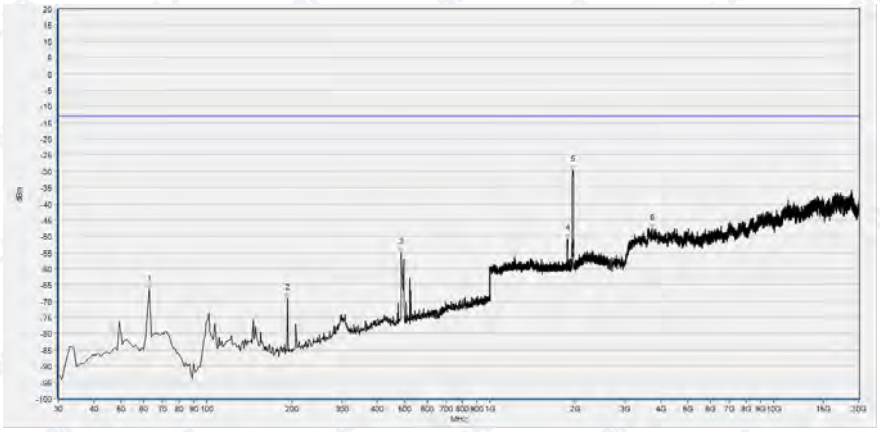


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	192.960	-73.25	-13.00	Vertical	PASS
2	484.930	-64.96	-13.00	Vertical	PASS
3	1875.870	-50.27	-13.00	Vertical	PASS
4	1954.622	-29.53	-13.00	Vertical	PASS
5	3872.013	-47.94	-13.00	Vertical	PASS
6	7090.016	-44.70	-13.00	Vertical	PASS

LTE Band 2 15MHz BW, Mid Channel, 16QAM

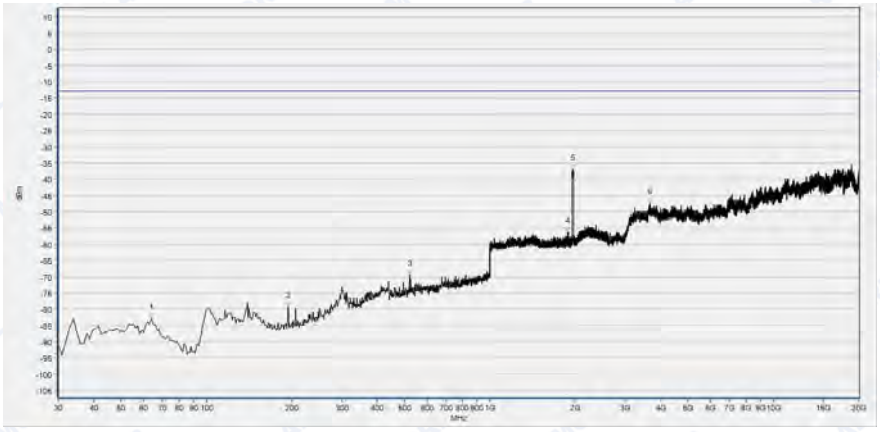


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	100.810	-79.64	-13.00	Horizontal	PASS
2	304.510	-74.62	-13.00	Horizontal	PASS
3	476.200	-49.74	-13.00	Horizontal	PASS
4	1875.230	-53.28	-13.00	Horizontal	PASS
5	1962.305	-37.02	-13.00	Horizontal	PASS
6	4473.213	-47.81	-13.00	Horizontal	PASS



Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	62.980	-66.50	-13.00	Vertical	PASS
2	192.960	-69.18	-13.00	Vertical	PASS
3	486.870	-55.12	-13.00	Vertical	PASS
4	1874.590	-50.92	-13.00	Vertical	PASS
5	1959.744	-29.68	-13.00	Vertical	PASS
6	3723.295	-47.75	-13.00	Vertical	PASS

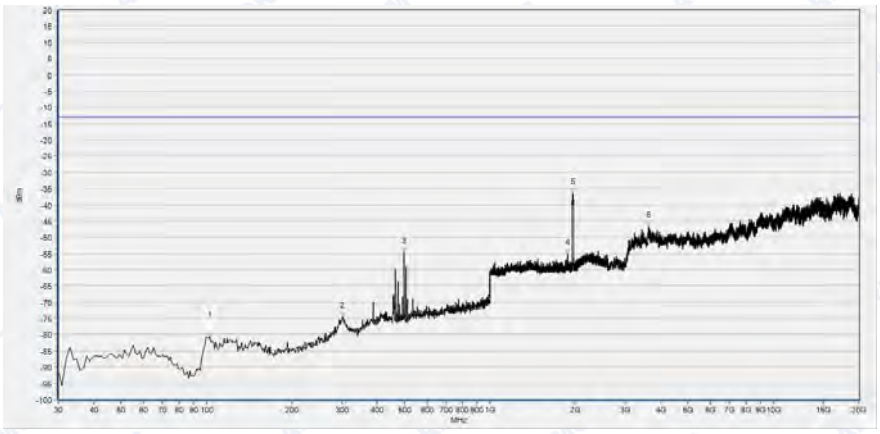
LTE Band 2 20MHz BW, Mid Channel, QPSK



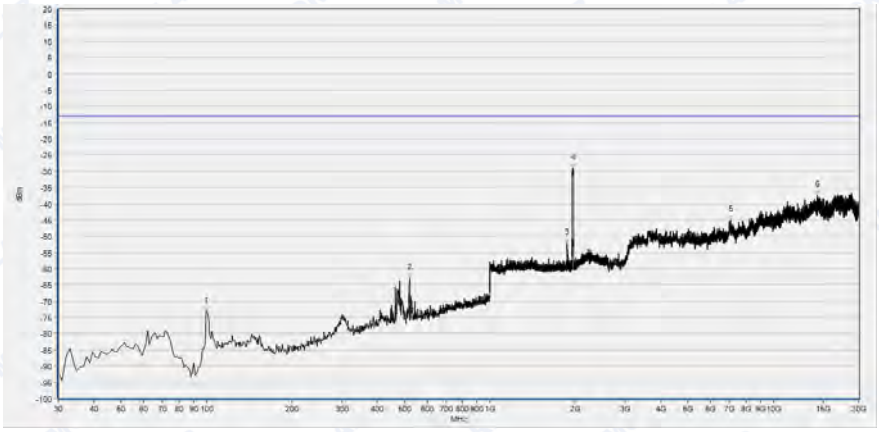
Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	63.950	-82.79	-13.00	Horizontal	PASS
2	193.930	-79.36	-13.00	Horizontal	PASS
3	519.850	-69.47	-13.00	Horizontal	PASS
4	1875.230	-56.25	-13.00	Horizontal	PASS
5	1959.744	-36.89	-13.00	Horizontal	PASS
6	3675.832	-47.38	-13.00	Horizontal	PASS

Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	42.610	-74.41	-13.00	Vertical	PASS
2	487.840	-58.02	-13.00	Vertical	PASS
3	1875.870	-54.97	-13.00	Vertical	PASS
4	1961.024	-28.79	-13.00	Vertical	PASS
5	4944.681	-47.82	-13.00	Vertical	PASS
6	11193.999	-38.70	-13.00	Vertical	PASS

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

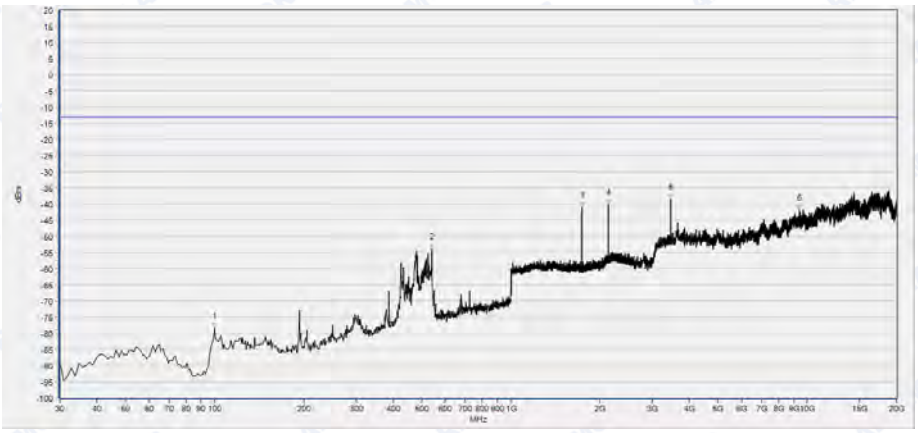


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	102.750	-80.54	-13.00	Horizontal	PASS
2	301.600	-74.47	-13.00	Horizontal	PASS
3	498.510	-54.66	-13.00	Horizontal	PASS
4	1876.511	-55.00	-13.00	Horizontal	PASS
5	1959.744	-36.21	-13.00	Horizontal	PASS
6	3628.369	-46.48	-13.00	Horizontal	PASS

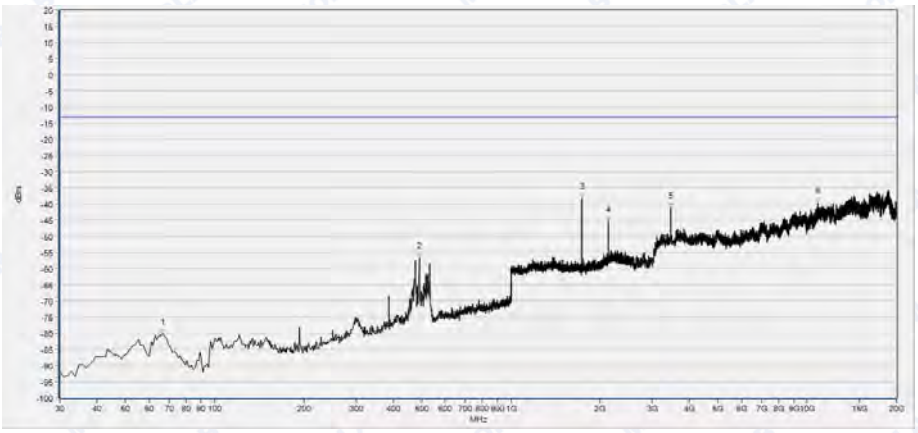


Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	99.840	-73.11	-13.00	Vertical	PASS
2	519.850	-62.83	-13.00	Vertical	PASS
3	1873.309	-52.25	-13.00	Vertical	PASS
4	1962.945	-29.19	-13.00	Vertical	PASS
5	7058.374	-45.00	-13.00	Vertical	PASS
6	14307.583	-37.46	-13.00	Vertical	PASS

LTE Band 4 1.4MHz BW, Mid Channel, QPSK



Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	99.840	-78.25	-13.00	Horizontal	PASS
2	539.250	-53.84	-13.00	Horizontal	PASS
3	1733.093	-41.03	-13.00	Horizontal	PASS
4	2133.253	-40.31	-13.00	Horizontal	PASS
5	3466.994	-38.61	-13.00	Horizontal	PASS
6	9387.234	-41.99	-13.00	Horizontal	PASS



Num.	Fre. (MHz)	Peak	Limit(PK)	Antenna	Verdict
1	66.860	-80.22	-13.00	Vertical	PASS
2	490.750	-56.72	-13.00	Vertical	PASS
3	1733.093	-38.44	-13.00	Vertical	PASS
4	2132.613	-45.55	-13.00	Vertical	PASS
5	3466.994	-41.08	-13.00	Vertical	PASS
6	10830.115	-39.71	-13.00	Vertical	PASS