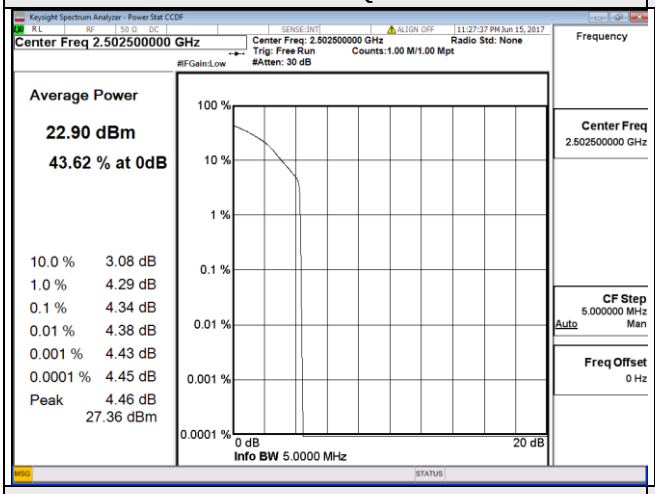
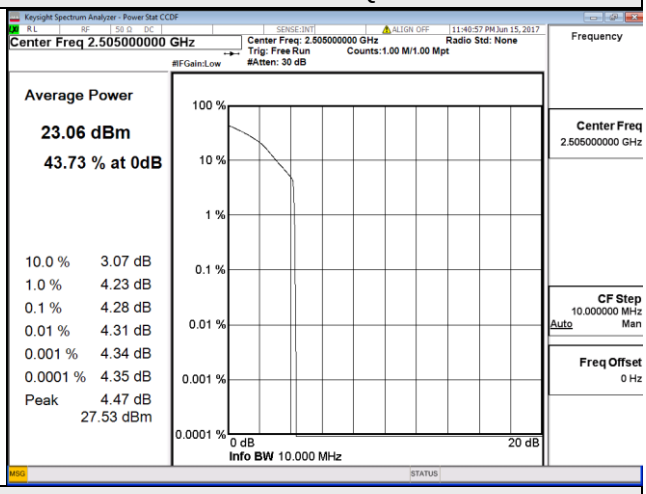
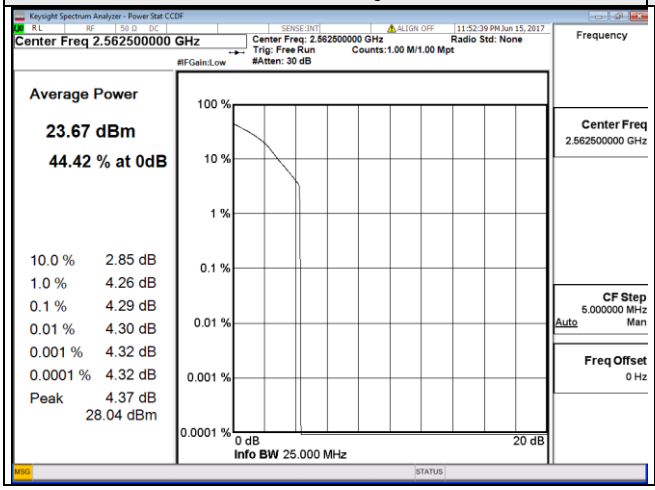
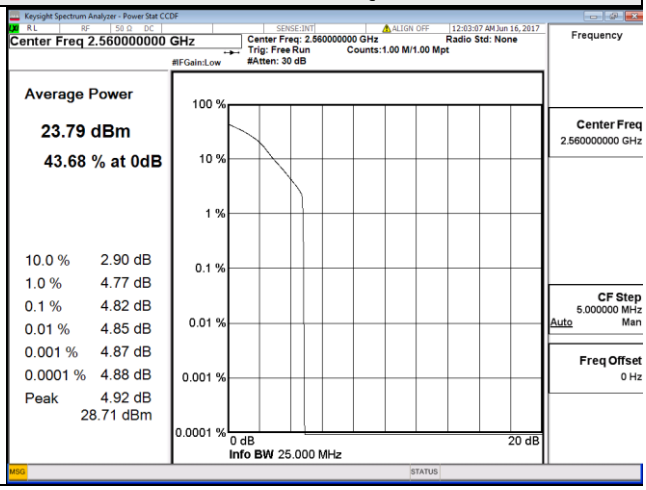
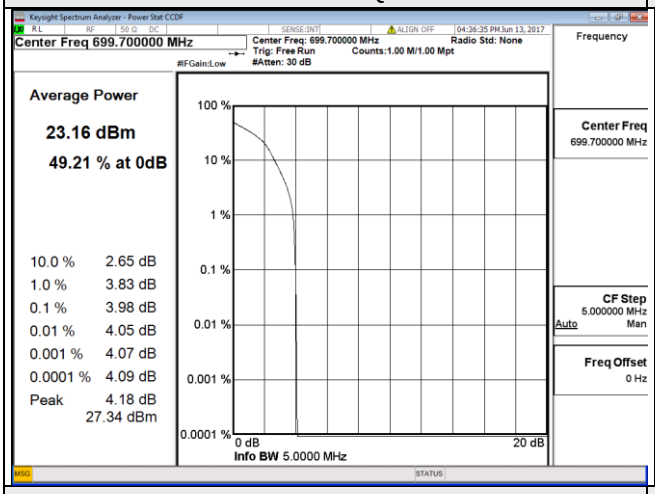
LTE Band 7							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20775	2502.5	3.57	4.34	20800	2505	3.51	4.28
21100	2535	3.54	4.32	21100	2535	3.48	4.22
21425	2567.5	3.45	4.17	21400	2565	3.34	4.10
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
20825	2507.5	3.46	4.18	20850	2510	3.49	4.26
21100	2535	3.41	4.14	21100	2535	3.42	4.21
21375	2562.5	3.51	4.29	21350	2560	4.11	4.82

Spectrum Plot of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	
15MHz / 16QAM	20MHz / 16QAM
	

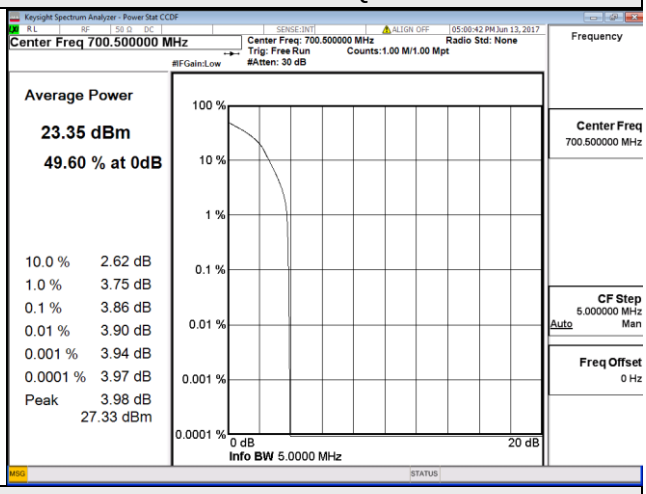
LTE Band 12							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23017	699.7	3.35	3.98	23025	700.5	3.15	3.86
23095	707.5	3.14	3.83	23095	707.5	3.05	3.67
23173	715.3	3.22	3.78	23165	714.5	3.13	3.80
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	3.17	3.86	23060	704	3.20	3.87
23095	707.5	3.09	3.80	23095	707.5	3.16	3.89
23155	713.5	2.96	3.69	23130	711	3.09	3.82

Spectrum Plot of Worst Value

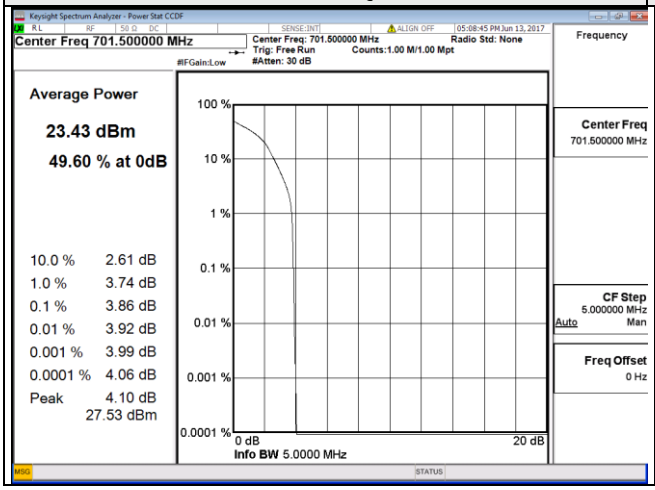
1.4MHz / 16QAM



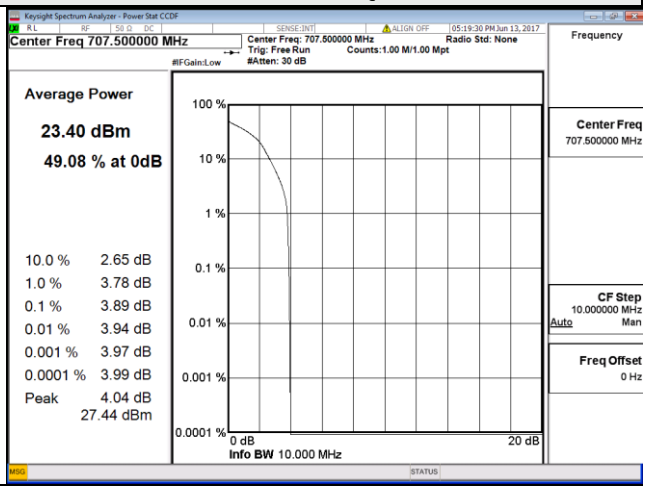
3MHz / 16QAM



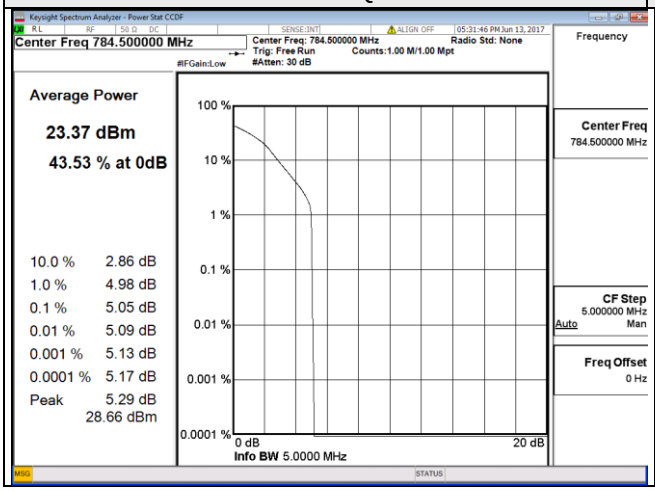
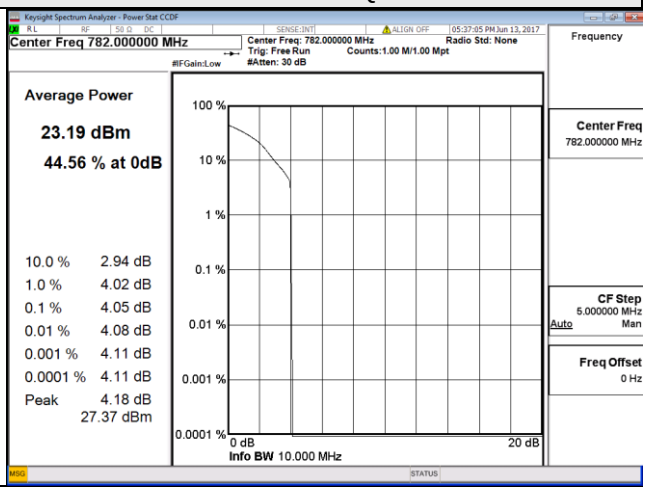
5MHz / 16QAM



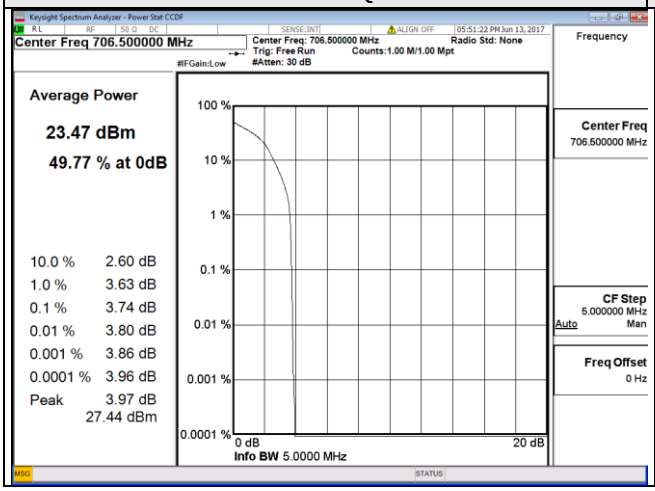
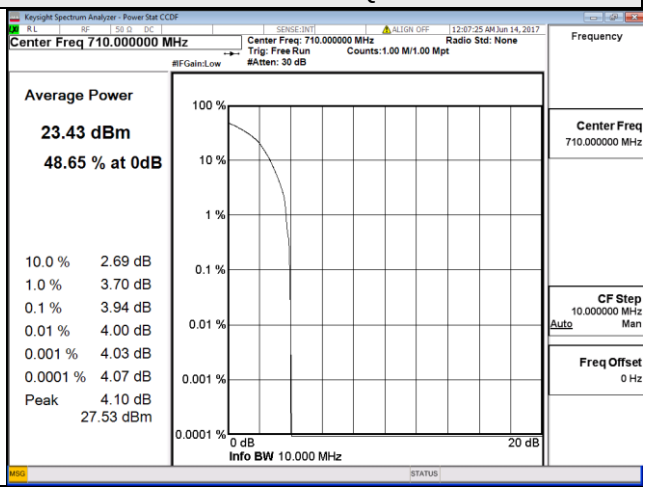
10MHz / 16QAM



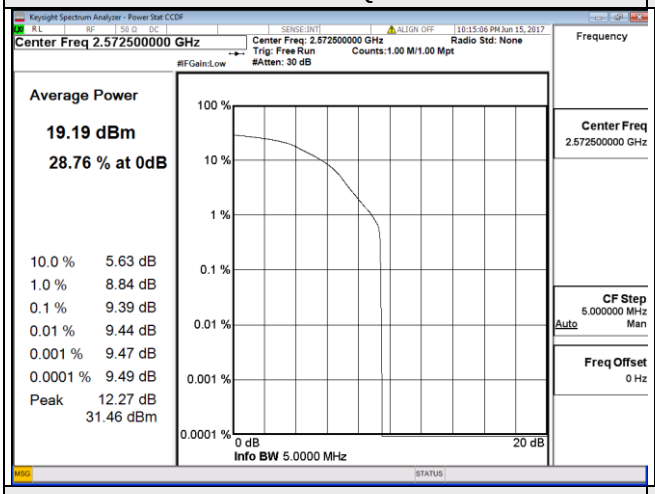
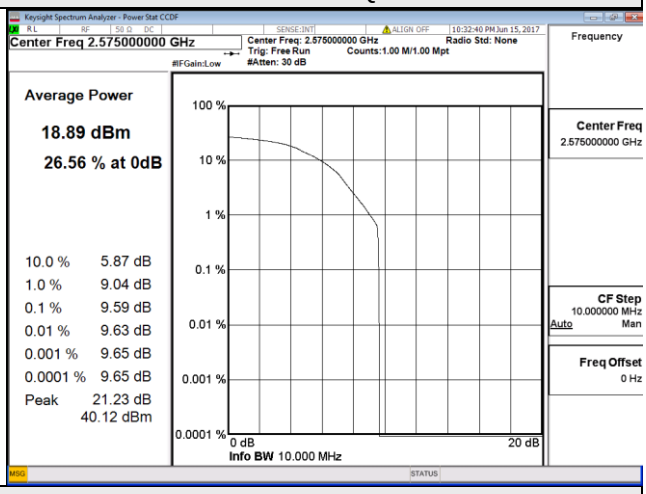
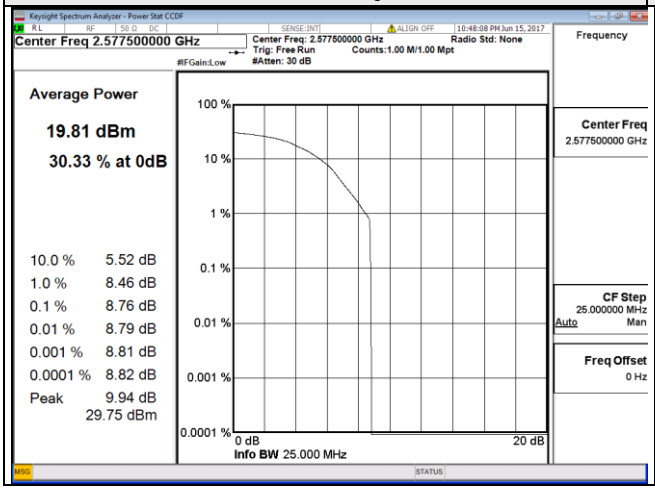
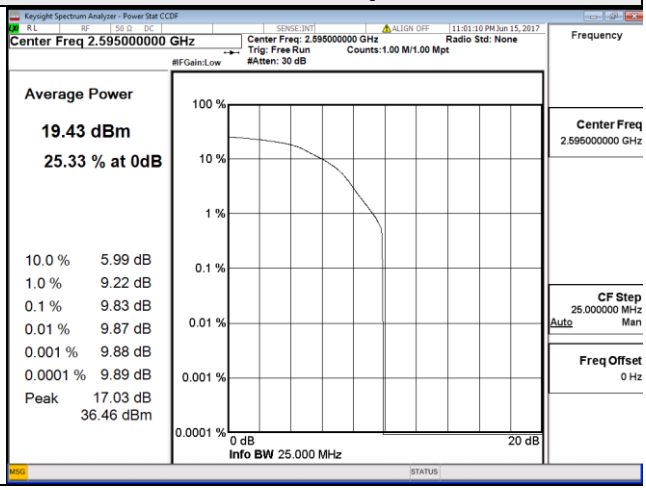
LTE Band 13							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23205	779.5	3.39	4.15	23230	782	3.36	4.05
23230	782	3.97	4.75				
23255	784.5	4.32	5.05				

Spectrum Plot of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	

LTE Band 17							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
23775	706.5	3.01	3.74	23780	709	3.23	3.93
23790	710	2.93	3.57	23790	710	3.10	3.94
23825	713.5	3.00	3.71	23800	711	3.12	3.92

Spectrum Plot of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	

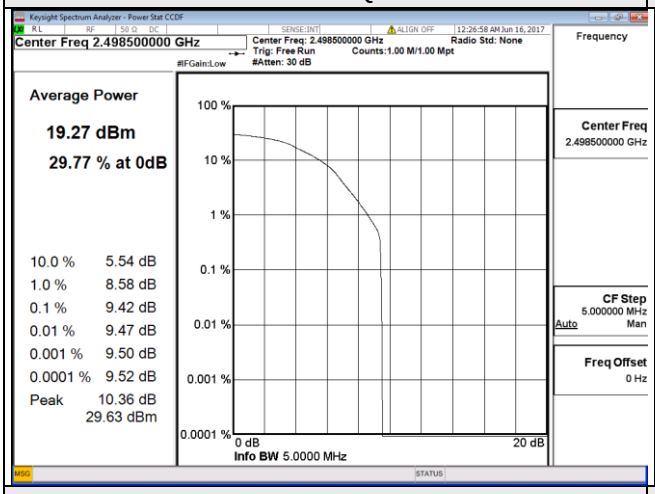
LTE Band 38							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
37775	2572.5	7.92	9.39	37800	2575	7.26	9.59
38000	2595	7.95	9.05	38000	2595	7.45	8.63
38225	2617.5	8.07	9.32	38200	2615	7.87	8.34
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
37825	2577.5	8.51	8.76	37850	2580	6.79	7.99
38000	2595	8.32	8.69	38000	2595	8.01	9.83
38175	2612.5	7.66	8.64	38150	2610	7.78	8.68

Spectrum Plot of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	
15MHz / 16QAM	20MHz / 16QAM
	

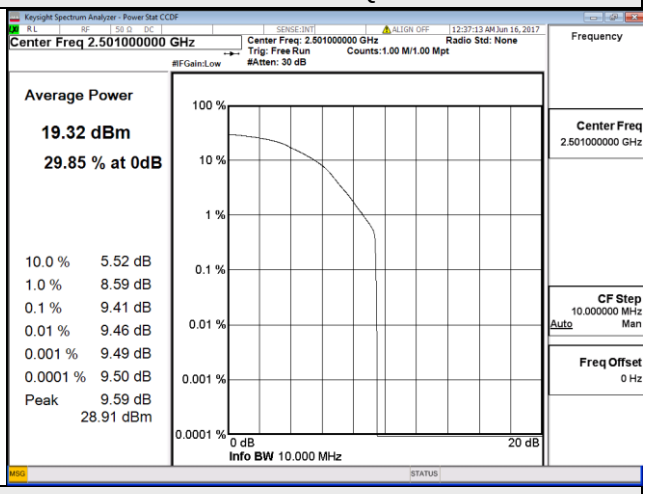
LTE Band 41							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
39675	2498.5	8.16	9.42	39700	2501	8.85	9.41
40620	2593	8.07	9.29	50620	2593	8.76	8.91
41565	2687.5	7.65	9.11	41540	2685	7.12	8.61
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
39725	2503.5	8.81	10.04	39750	2506	9.70	8.70
40620	2593	8.06	8.84	40620	2593	8.28	8.42
41515	2682.5	7.83	8.79	41490	2680	8.60	10.15

Spectrum Plot of Worst Value

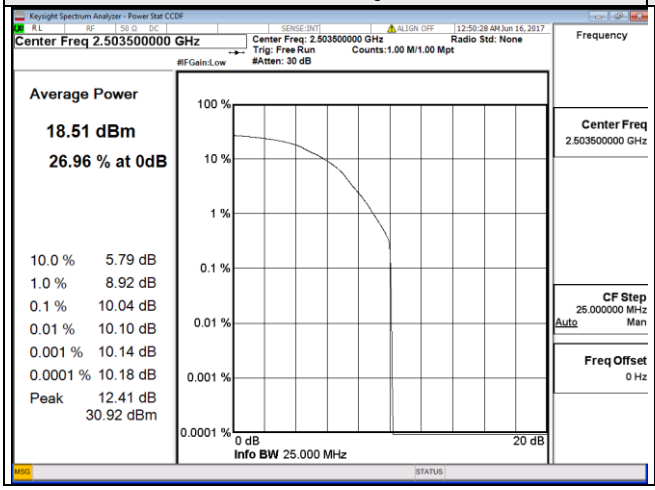
5MHz / 16QAM



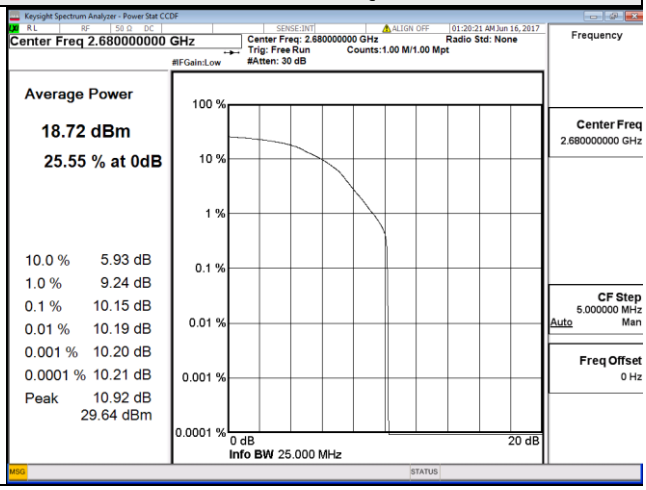
10MHz / 16QAM



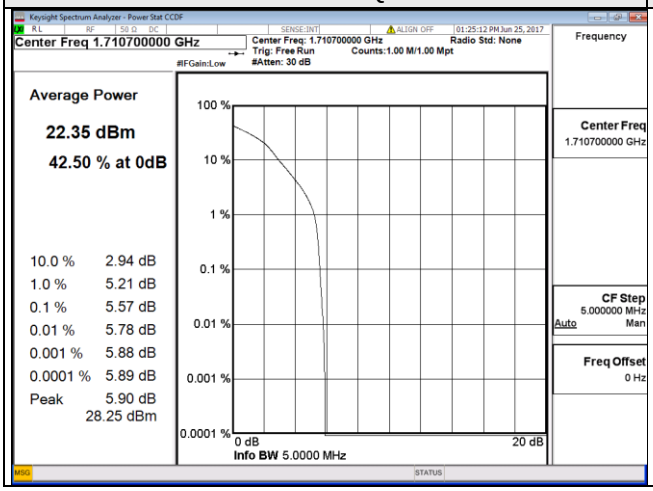
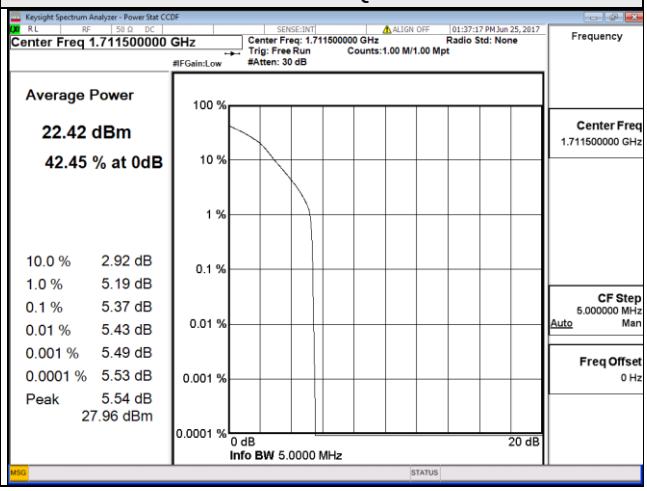
15MHz / 16QAM



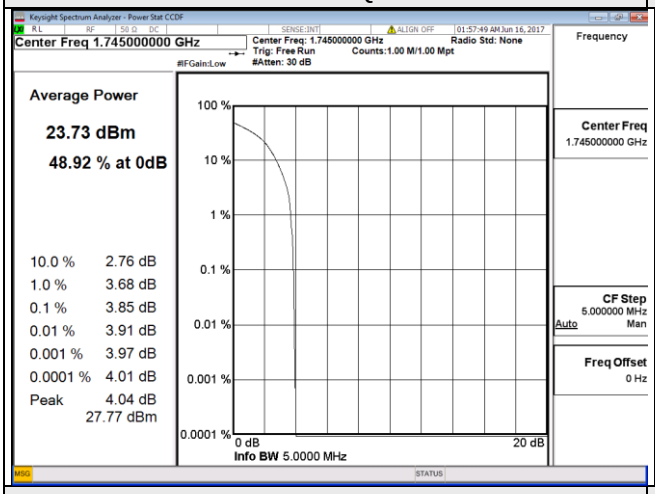
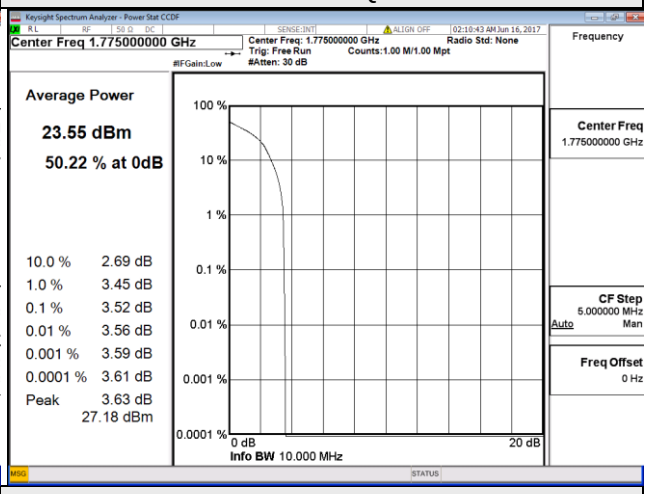
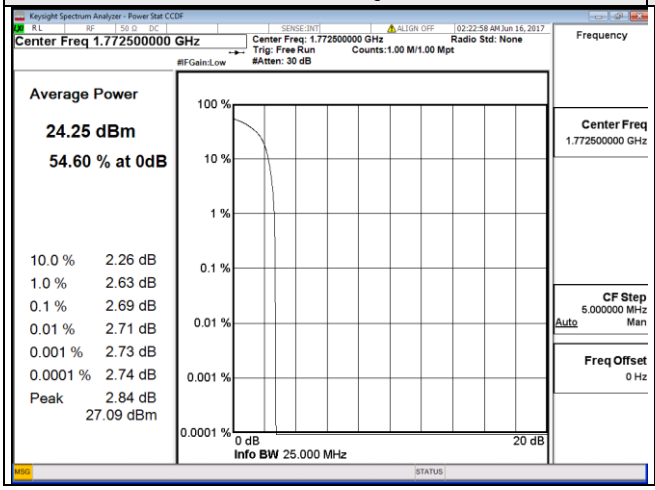
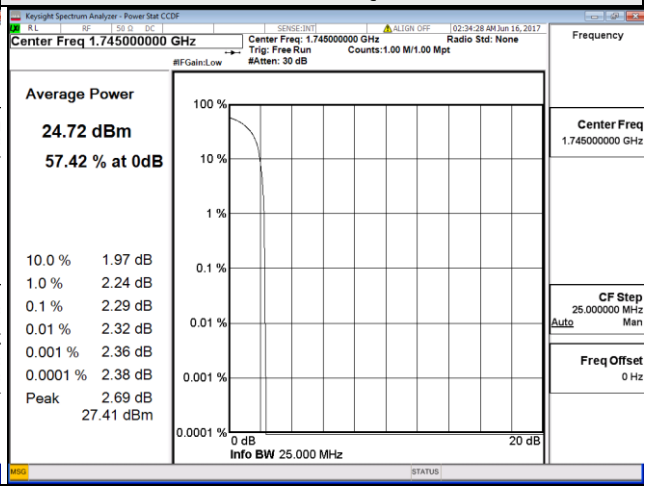
20MHz / 16QAM



LTE Band 66							
Channel Bandwidth 1.4MHz				Channel Bandwidth 3MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
131997	1712.5	4.79	5.57	132022	1715	4.64	5.37
132322	1745	4.14	4.87	132322	1745	4.02	4.78
132647	1777.5	4.36	5.12	132622	1775	4.11	4.87

Spectrum Plot of Worst Value	
1.4MHz / 16QAM	3MHz / 16QAM
	

LTE Band 66							
Channel Bandwidth 5MHz				Channel Bandwidth 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
131997	1712.5	2.01	2.57	132022	1715	1.82	2.47
132322	1745	3.18	3.85	132322	1745	2.89	3.44
132647	1777.5	2.54	3.08	132622	1775	2.77	3.52
Channel Bandwidth 15MHz				Channel Bandwidth 20MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM			QPSK	16QAM
132047	1717.5	1.45	2.28	132072	1720	1.30	1.93
132322	1745	2.15	2.69	132322	1745	1.48	2.29
132597	1722.5	1.82	2.69	132572	1770	1.32	1.89

Spectrum Plot of Worst Value	
5MHz / 16QAM	10MHz / 16QAM
	
15MHz / 16QAM	20MHz / 16QAM
	

4.6 Conducted Spurious Emissions

4.6.1 Limits of Conducted Spurious Emissions Measurement

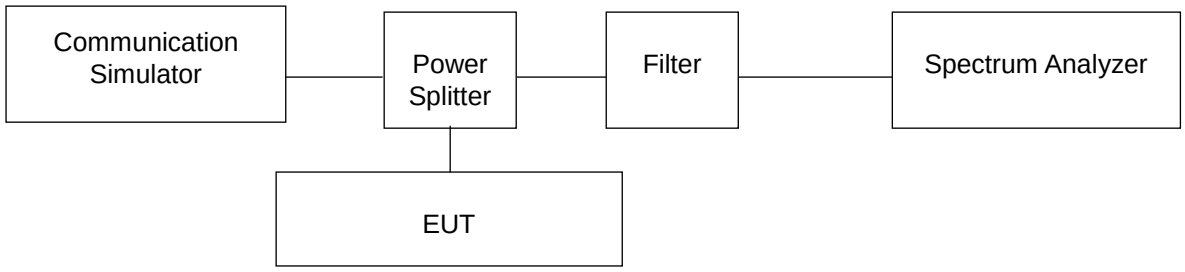
According to FCC 27.53(a)(4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands: (i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz; (ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; (iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

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

According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

According to FCC 27.53(v)(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.

4.6.2 Test Setup



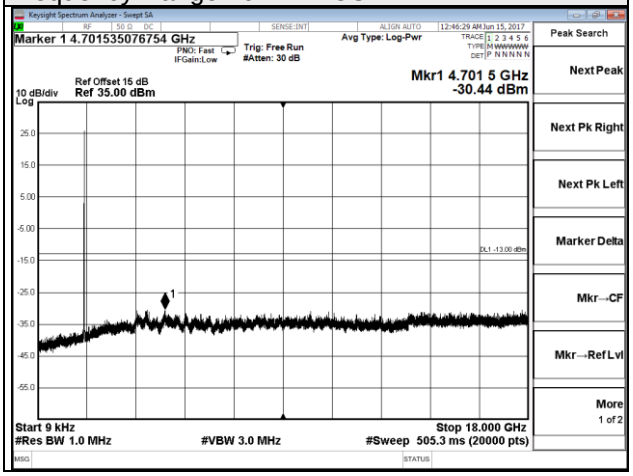
4.6.3 Test Procedure

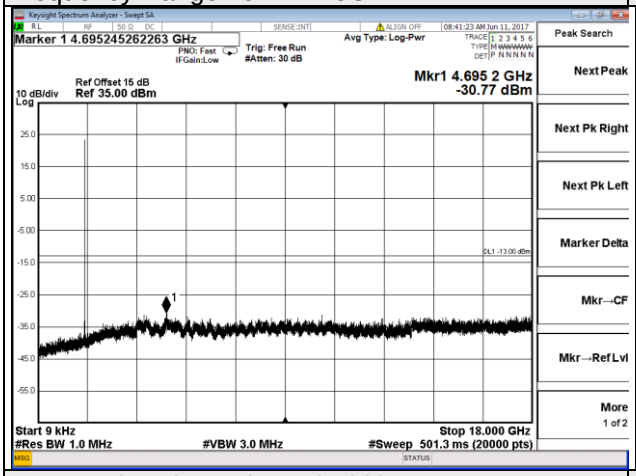
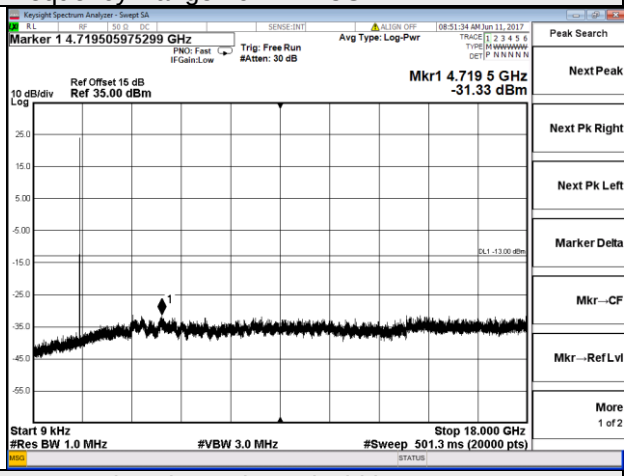
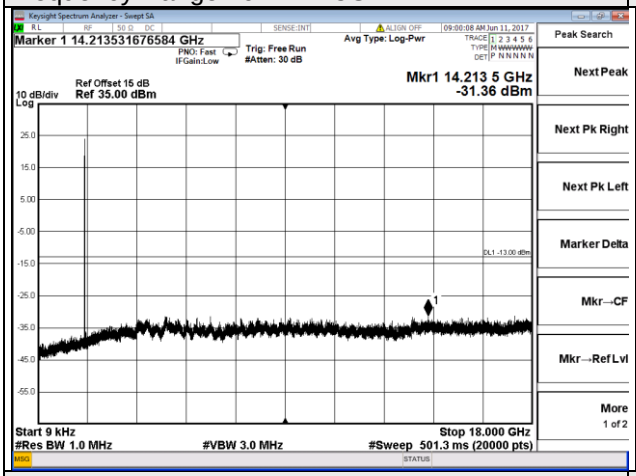
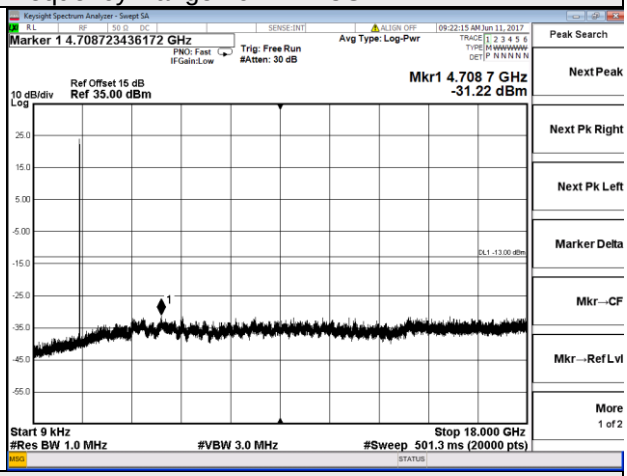
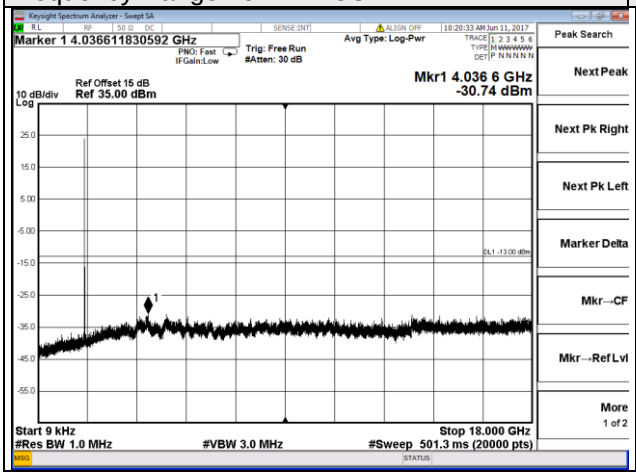
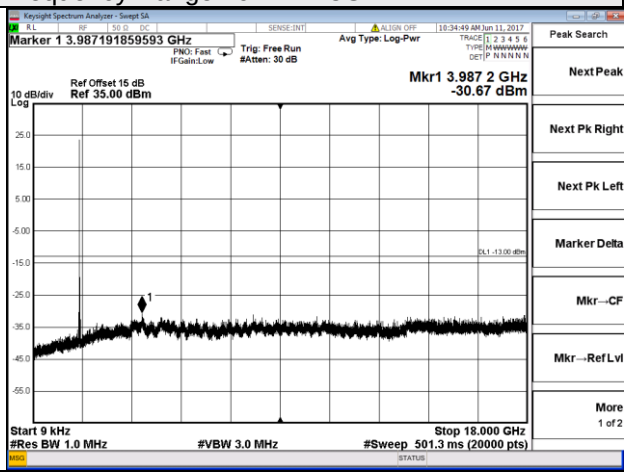
a. All measurements were done at 3 channels: low, middle and high operational frequency range.

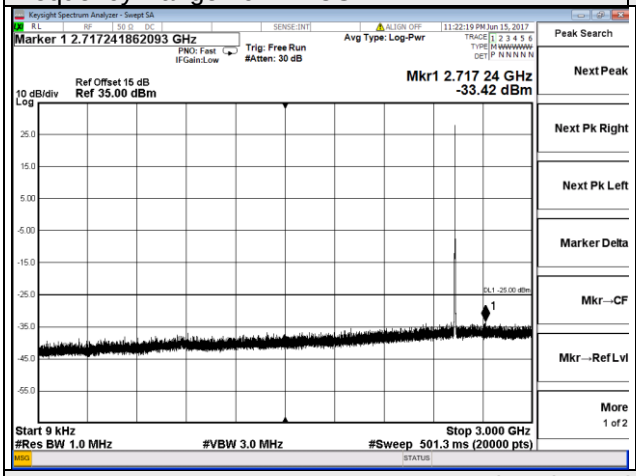
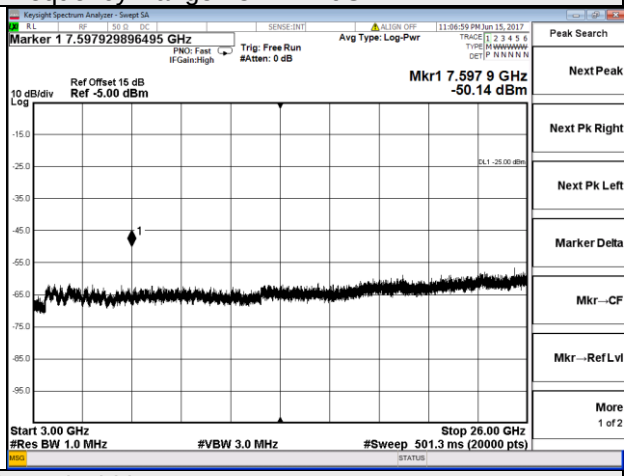
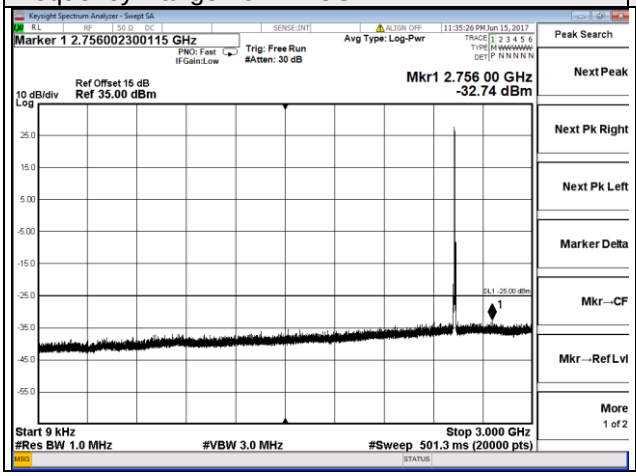
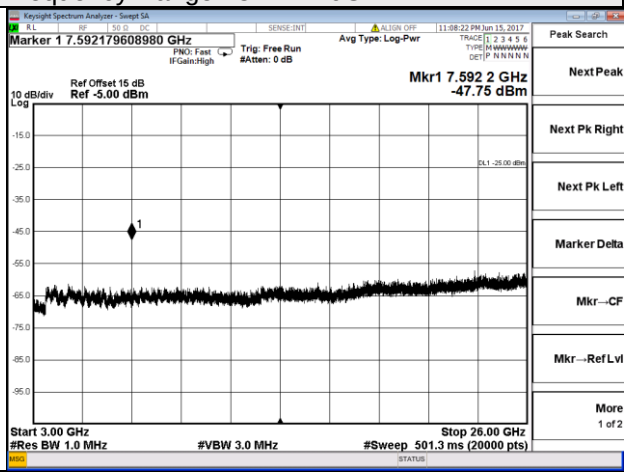
b. When the spectrum scanned from 9 kHz to suitable frequency, it shall be connected to the 20dB pad attenuated the carried frequency.

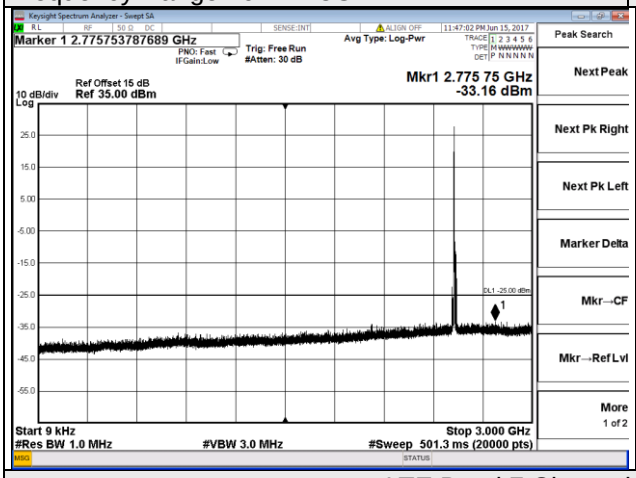
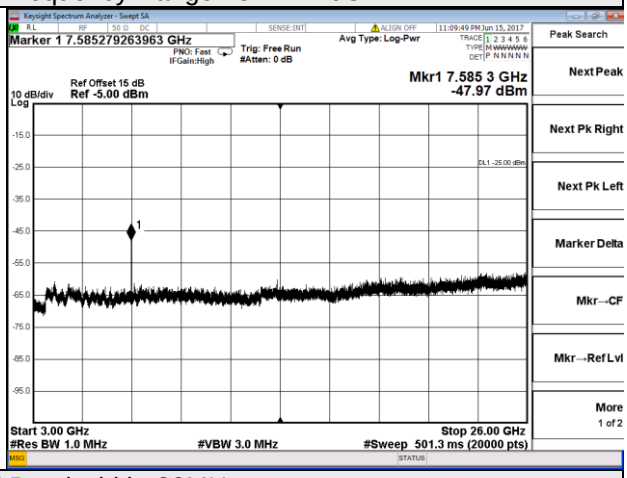
4.6.5 Test Results (Subcontract Item)

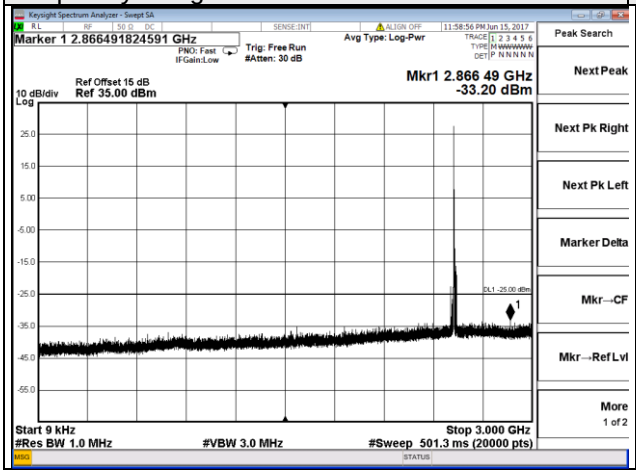
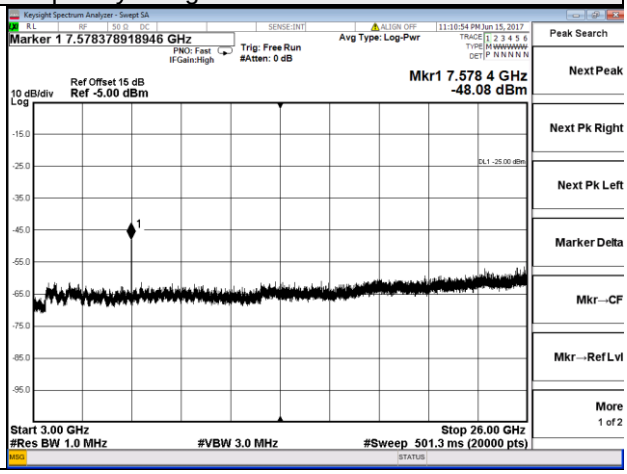
WCDMA
Channel 1413
Frequency Range : 9kHz~18GHz

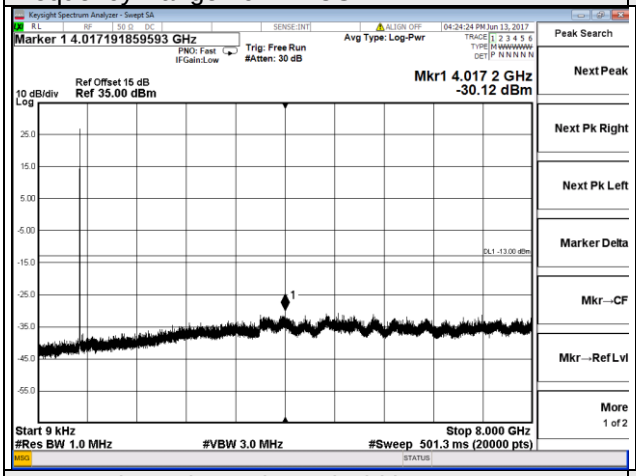
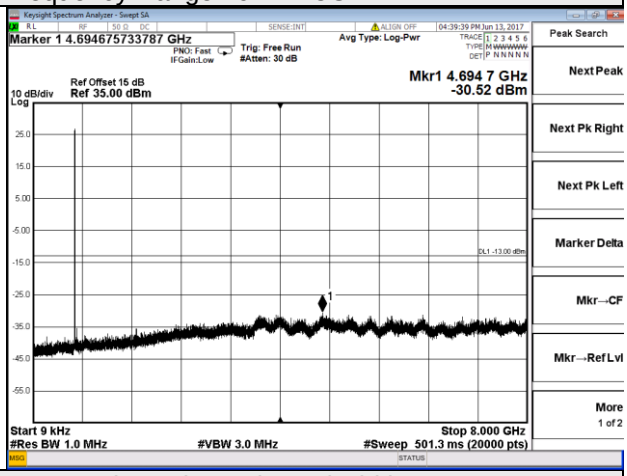
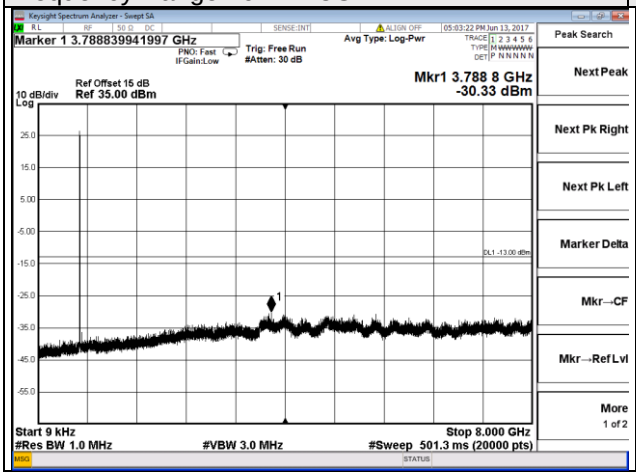
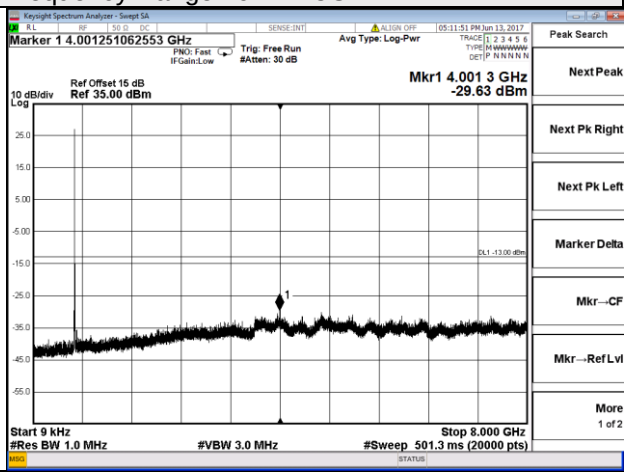


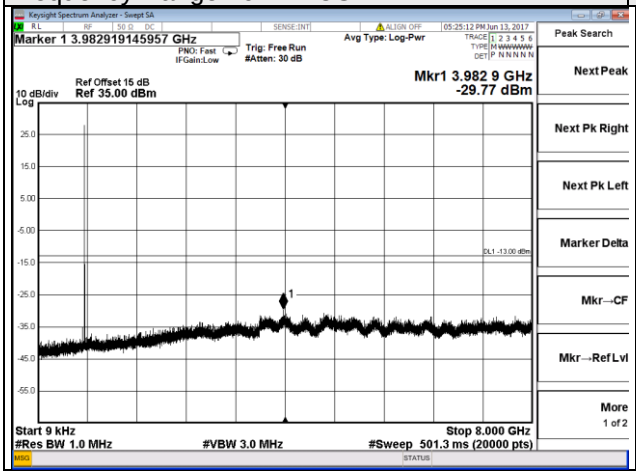
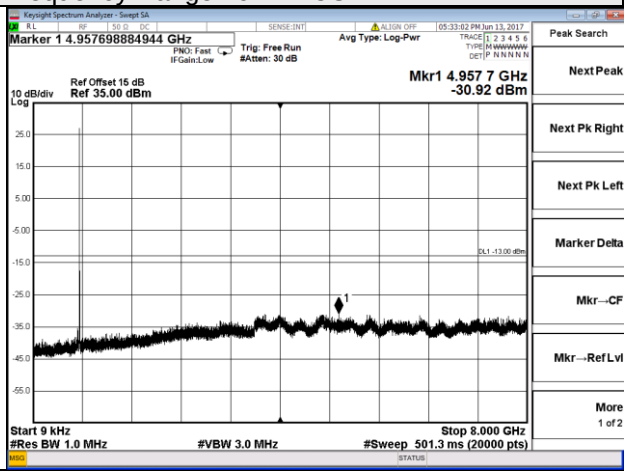
LTE Band 4 Channel Band width: 1.4MHz	LTE Band 4 Channel Band width: 3MHz
Channel 20175	Channel 20175
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	
LTE Band 4 Channel Band width: 5MHz	LTE Band 4 Channel Band width: 10MHz
Channel 20175	Channel 20175
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	
LTE Band 4 Channel Band width: 15MHz	LTE Band 4 Channel Band width: 20MHz
Channel 20175	Channel 20175
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	

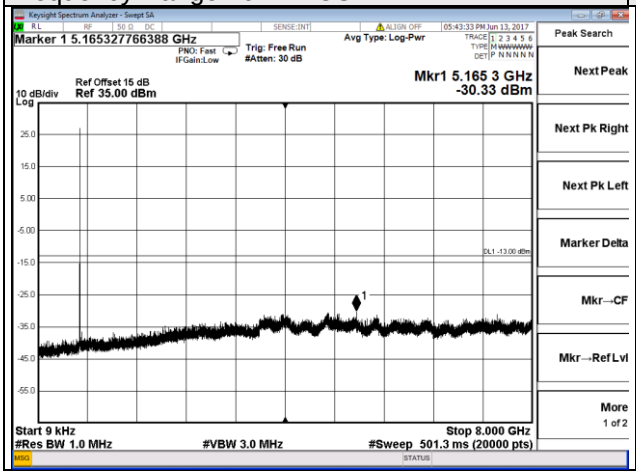
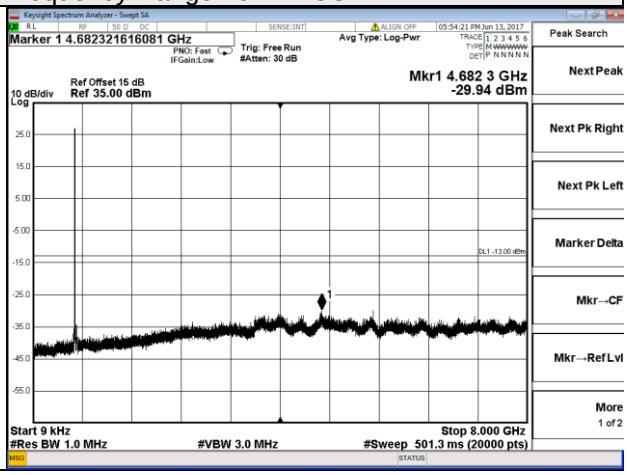
LTE Band 7 Channel Band width: 5MHz	
Channel 21100	Channel 21100
Frequency Range : 9kHz~3GHz	Frequency Range : 3kHz~26GHz
	
LTE Band 7 Channel Band width: 10MHz	
Channel 21100	Channel 21100
Frequency Range : 9kHz~3GHz	Frequency Range : 3kHz~26GHz
	

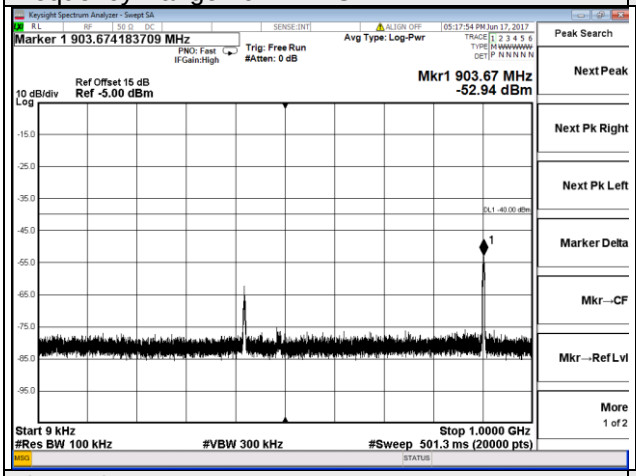
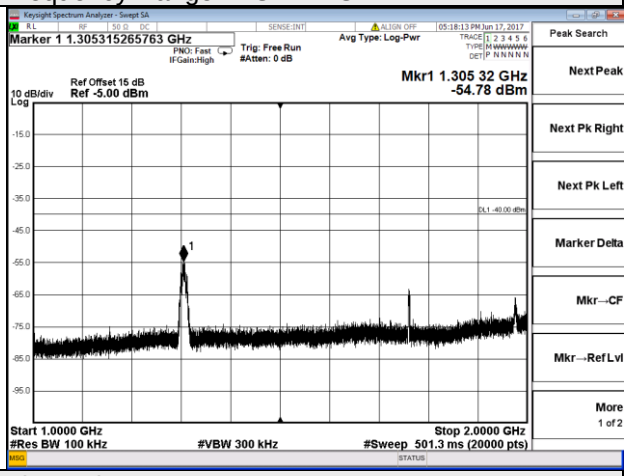
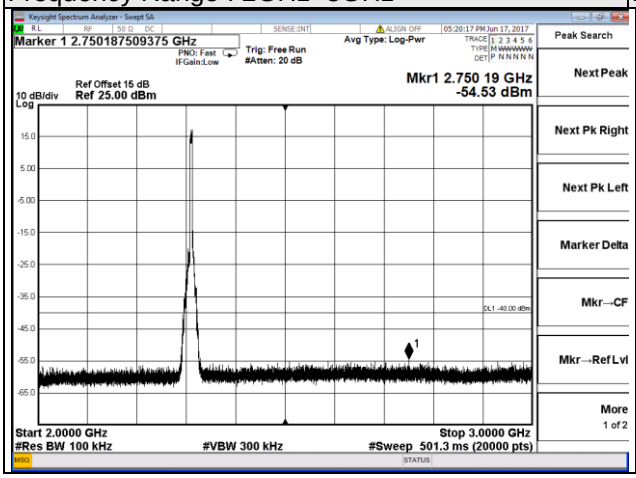
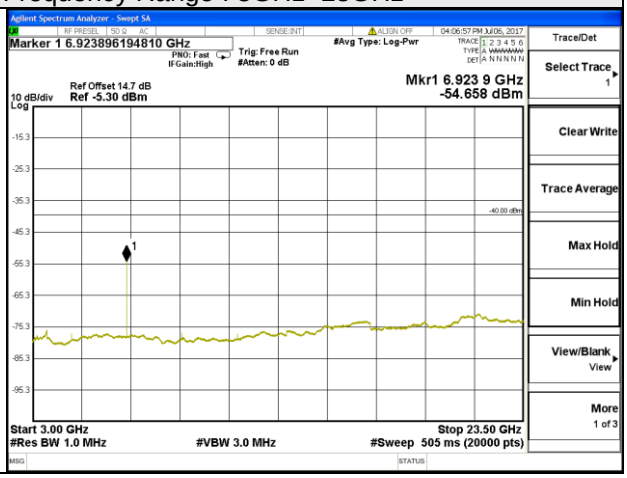
LTE Band 7 Channel Band width: 15MHz	
Channel 21100	Channel 21100
Frequency Range : 9kHz~3GHz	Frequency Range : 3kHz~26GHz
	

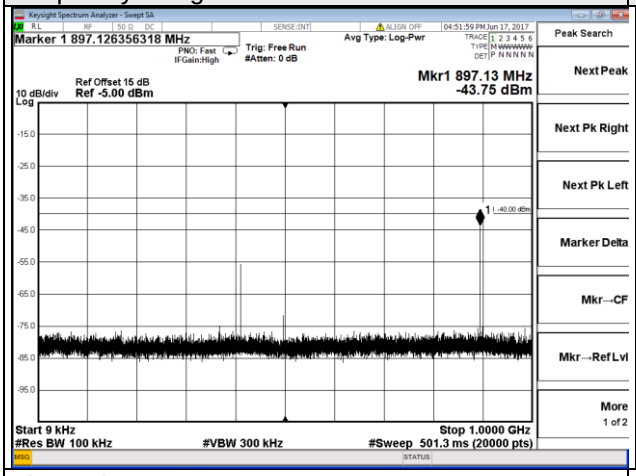
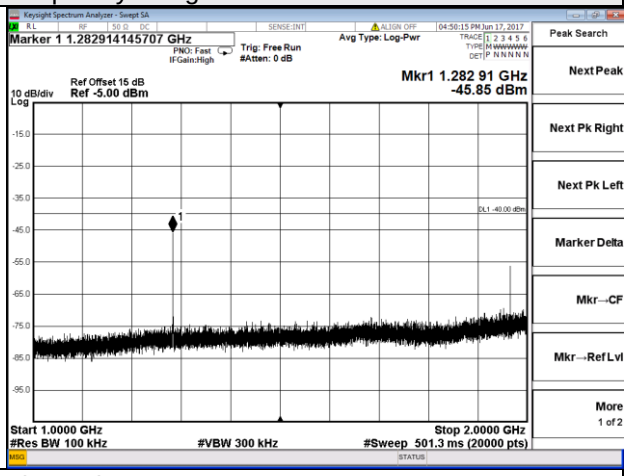
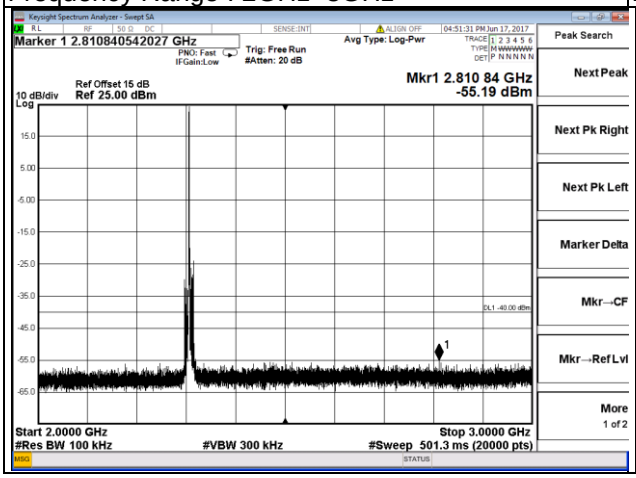
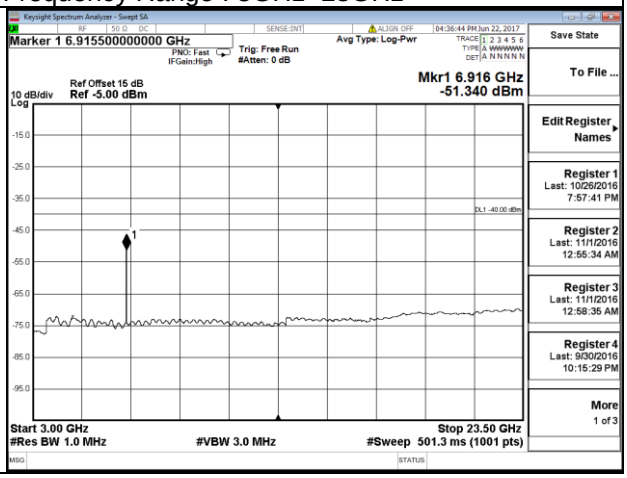
LTE Band 7 Channel Band width: 20MHz	
Channel 21100	Channel 21100
Frequency Range : 9kHz~3GHz	Frequency Range : 3kHz~26GHz
	

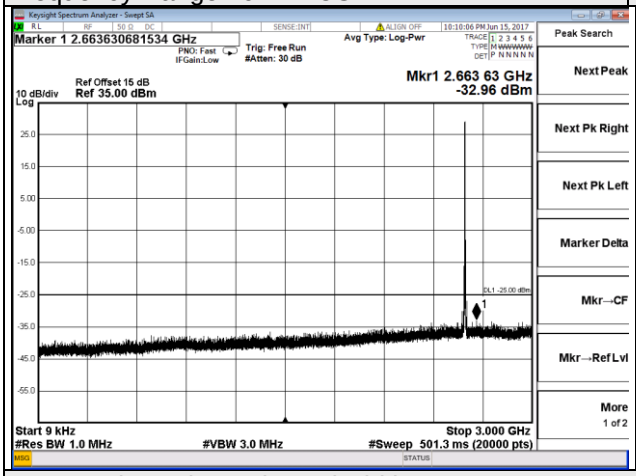
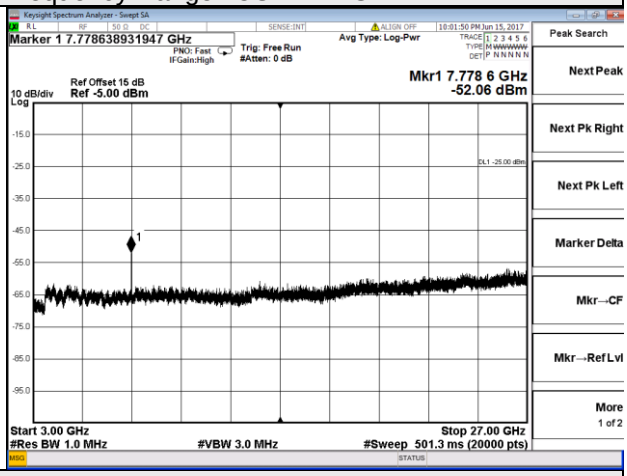
LTE Band 12 Channel Band width: 1.4MHz	LTE Band 12 Channel Band width: 3MHz
Channel 23095	Channel 23095
Frequency Range : 9kHz~8GHz	Frequency Range : 9kHz~8GHz
	
LTE Band 12 Channel Band width: 5MHz	LTE Band 12 Channel Band width: 10MHz
Channel 23095	Channel 23095
Frequency Range : 9kHz~8GHz	Frequency Range : 9kHz~8GHz
	

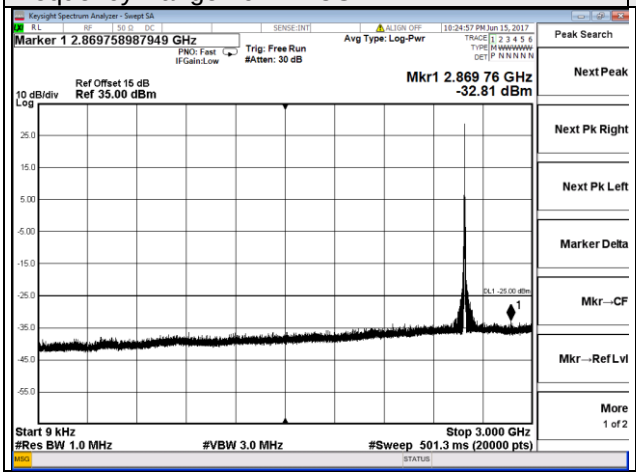
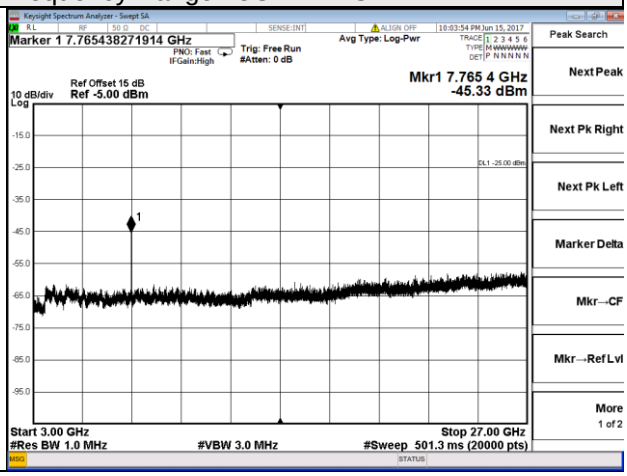
LTE Band 13 Channel Band width: 5MHz	LTE Band 13 Channel Band width: 10MHz
Channel 23230	Channel 23230
Frequency Range : 9kHz~8GHz	Frequency Range : 9kHz~8GHz
	

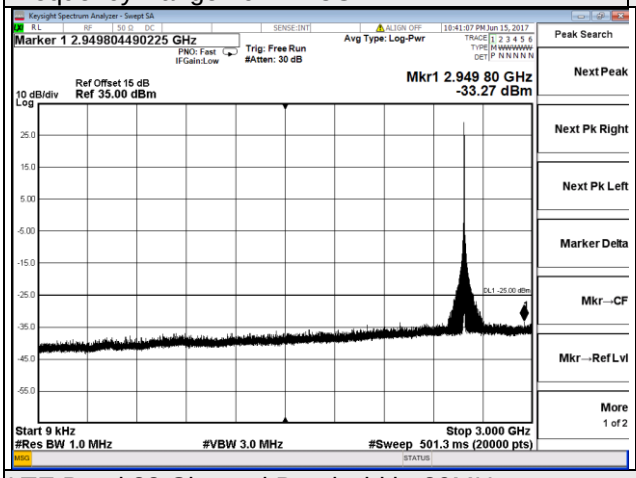
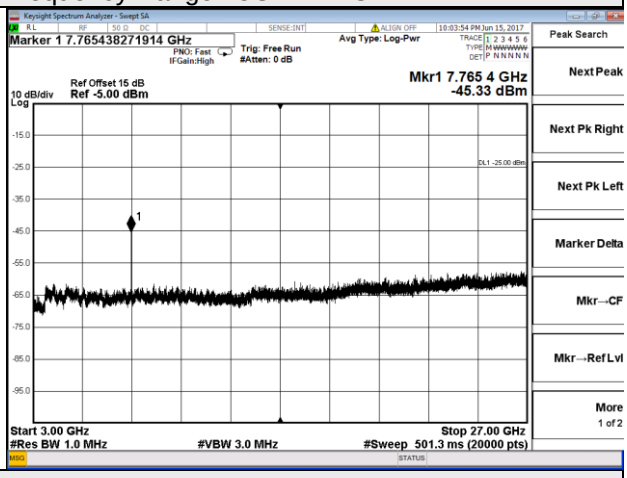
LTE Band 17 Channel Band width: 5MHz	LTE Band 17 Channel Band width: 10MHz
Channel 23790	Channel 23790
Frequency Range : 9kHz~8GHz	Frequency Range : 9kHz~8GHz
	

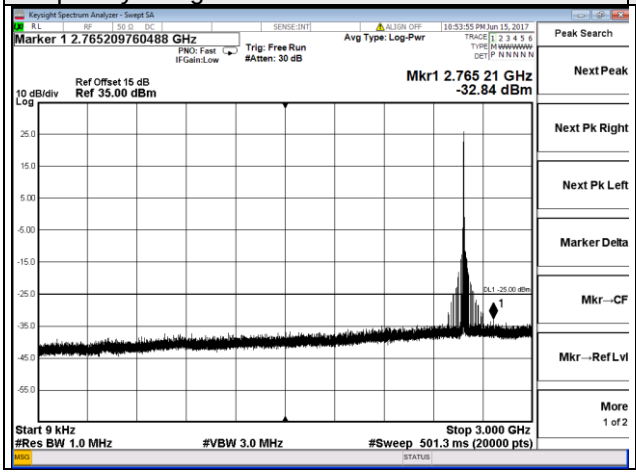
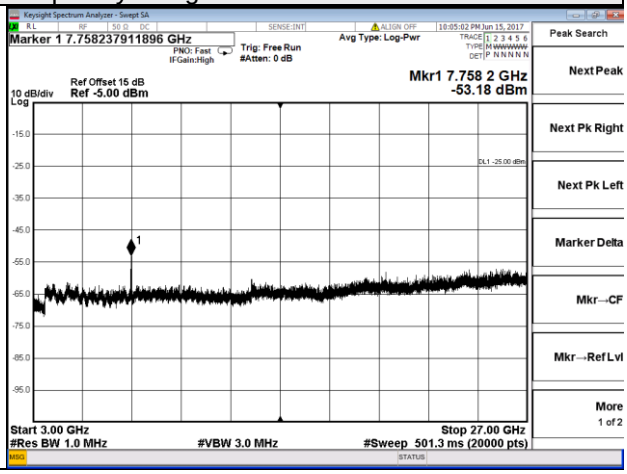
LTE Band 30 Channel Band width: 5MHz	
Channel 27710	Channel 27710
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~2GHz
	
Channel 27710	Channel 27710
Frequency Range : 2GHz~3GHz	Frequency Range : 3GHz~23GHz
	

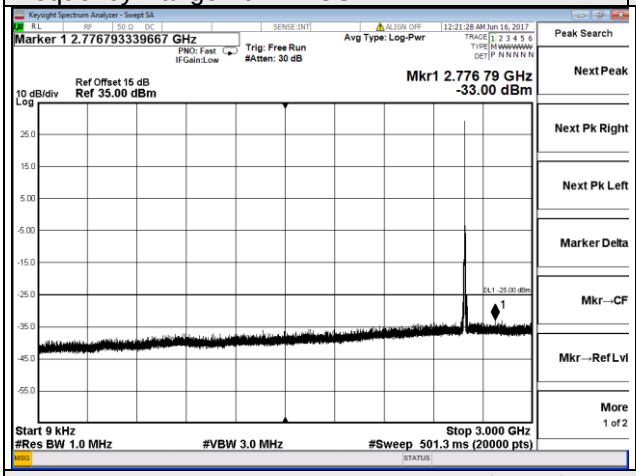
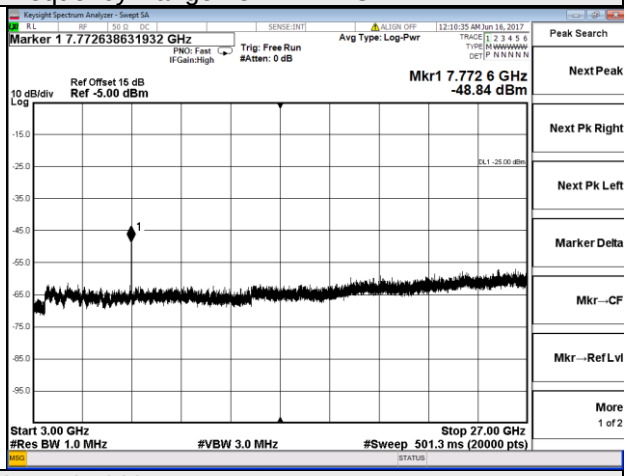
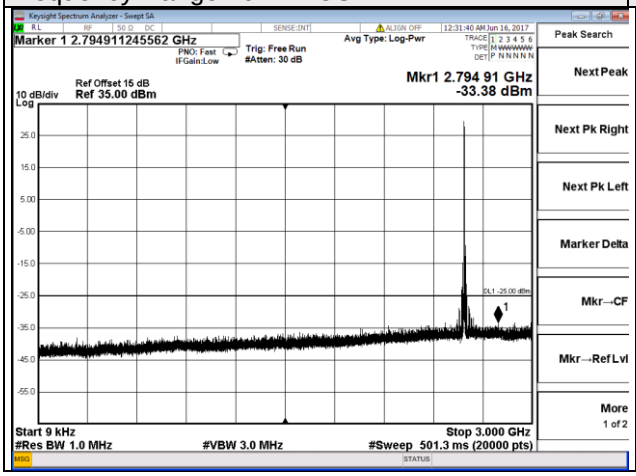
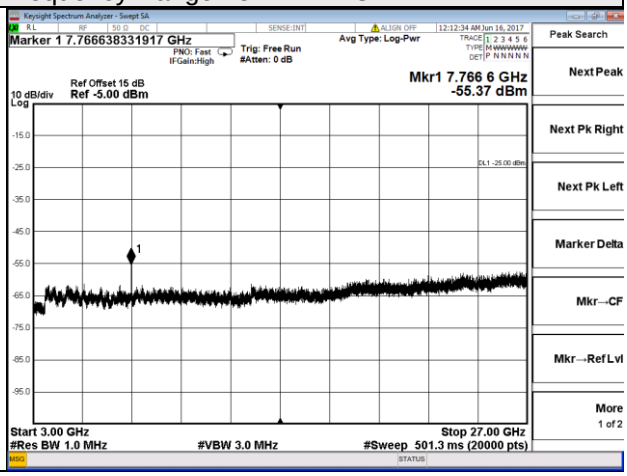
LTE Band 30 Channel Band width: 10MHz	
Channel 27710	Channel 27710
Frequency Range : 9kHz~1GHz	Frequency Range : 1GHz~2GHz
	
Channel 27710	Channel 27710
Frequency Range : 2GHz~3GHz	Frequency Range : 3GHz~23GHz
	

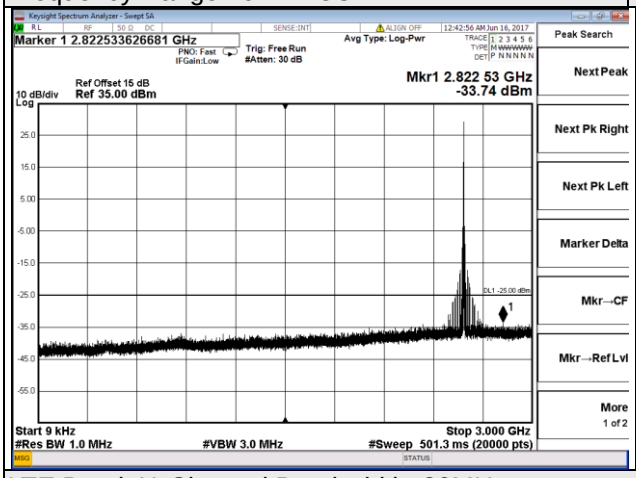
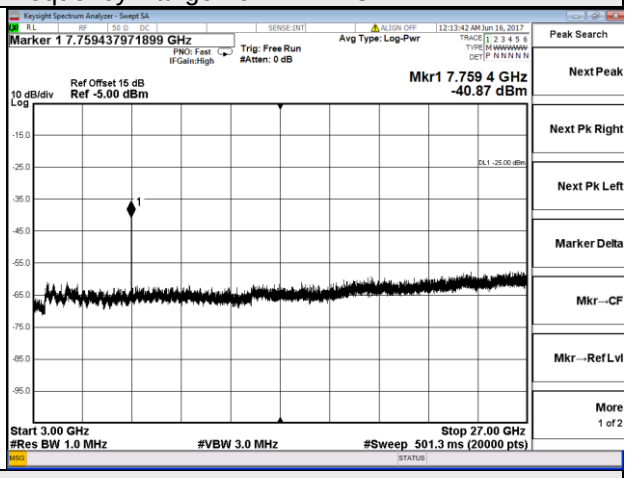
LTE Band 38 Channel Band width: 5MHz	
Channel 38000	
Frequency Range : 9kHz~3GHz	Frequency Range : 3GHz~27GHz
	

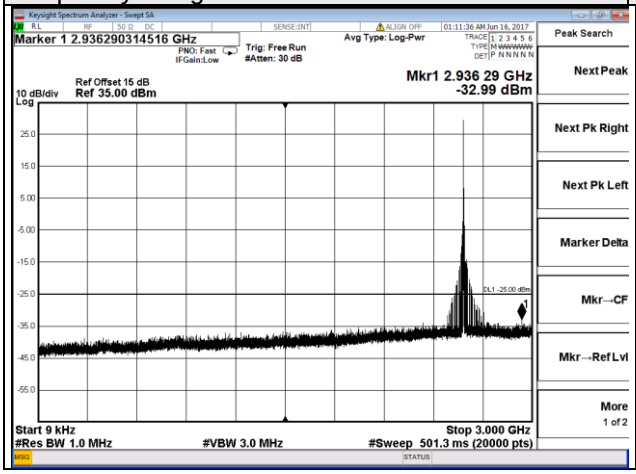
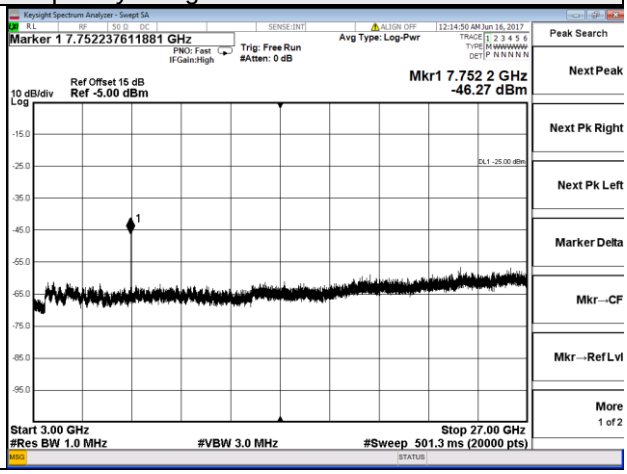
LTE Band 38 Channel Band width: 10MHz	
Channel 38000	
Frequency Range : 9kHz~3GHz	Frequency Range : 3GHz~27GHz
	

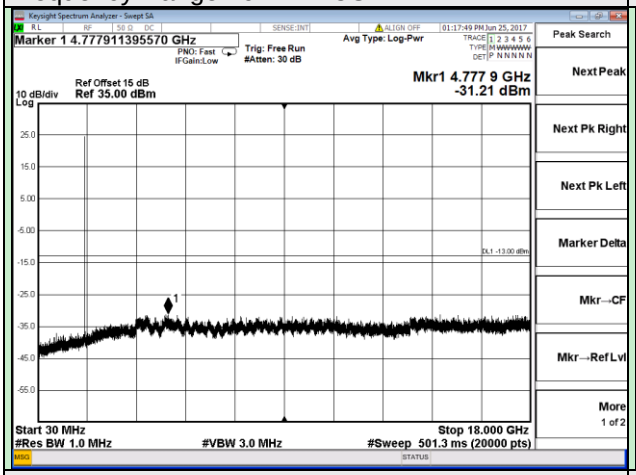
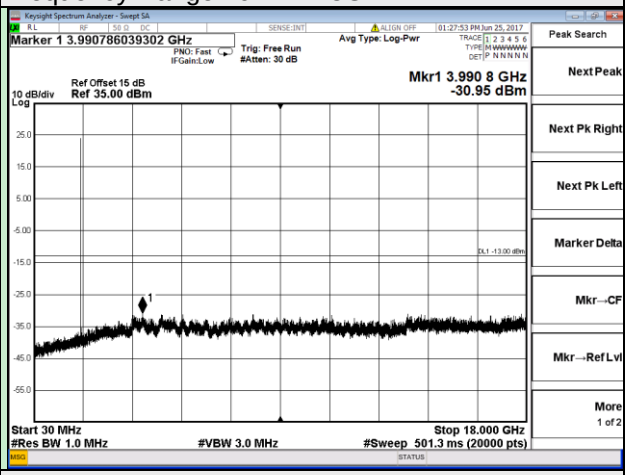
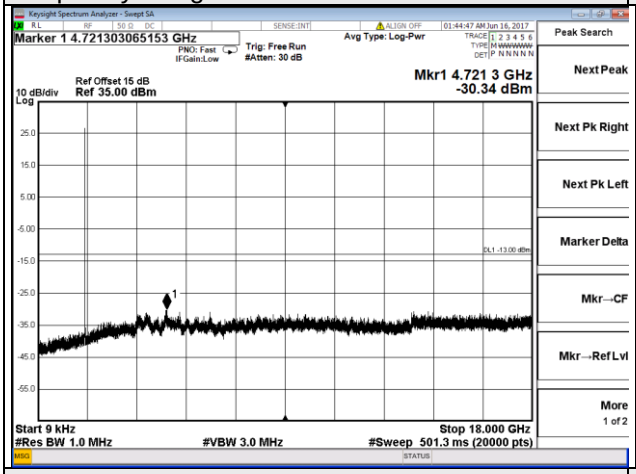
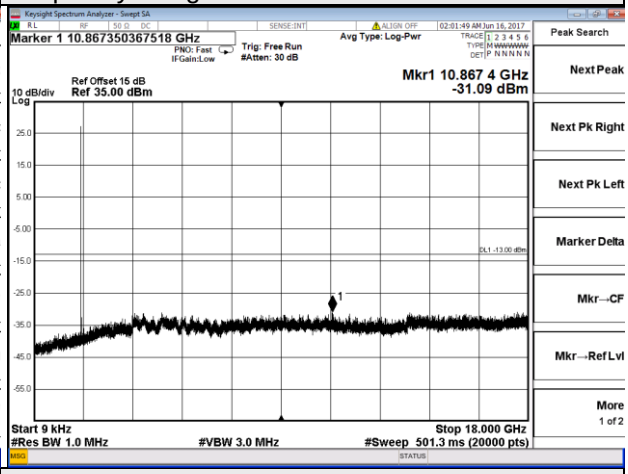
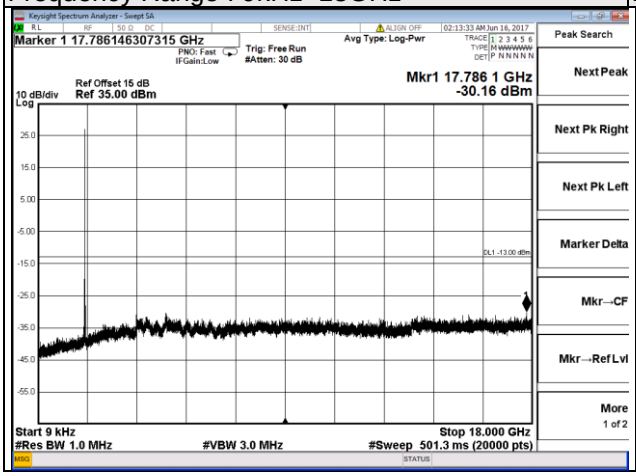
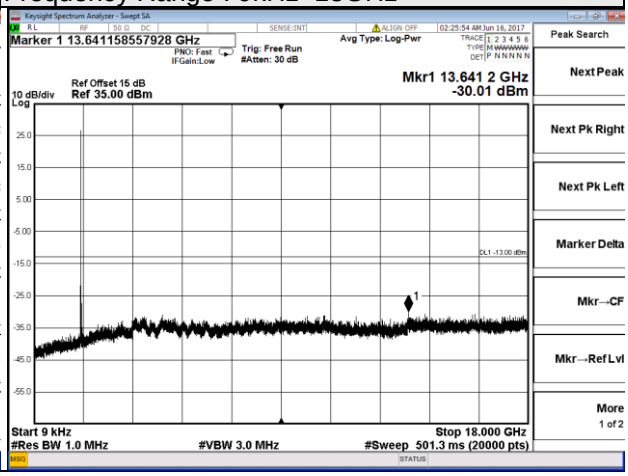
LTE Band 38 Channel Band width: 15MHz	
Channel 38000	
Frequency Range : 9kHz~3GHz	Frequency Range : 3GHz~27GHz
	

LTE Band 38 Channel Band width: 20MHz	
Channel 38000	
Frequency Range : 9kHz~3GHz	Frequency Range : 3GHz~27GHz
	

LTE Band 41 Channel Band width: 5MHz	
Channel 40620	Channel 40620
Frequency Range : 9kHz~3GHz	Frequency Range : 3MHz~27GHz
	
LTE Band 41 Channel Band width: 10MHz	
Channel 40620	Channel 40620
Frequency Range : 9kHz~3GHz	Frequency Range : 3MHz~27GHz
	

LTE Band 41 Channel Band width: 15MHz	
Channel 40620	Channel 40620
Frequency Range : 9kHz~3GHz	Frequency Range : 3MHz~27GHz
	

LTE Band 41 Channel Band width: 20MHz	
Channel 40620	Channel 40620
Frequency Range : 9kHz~3GHz	Frequency Range : 3MHz~27GHz
	

LTE Band 66 Channel Band width: 1.4MHz	LTE Band 66 Channel Band width: 3MHz
Channel 132322	Channel 132322
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	
LTE Band 66 Channel Band width: 5MHz	LTE Band 66 Channel Band width: 10MHz
Channel 132322	Channel 132322
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	
LTE Band 66 Channel Band width: 15MHz	LTE Band 66 Channel Band width: 20MHz
Channel 132322	Channel 132322
Frequency Range : 9kHz~18GHz	Frequency Range : 9kHz~18GHz
	

4.7 Radiated Emission Measurement

4.7.1 Limits of Radiated Emission Measurement

According to FCC 27.53(a)(4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands: (i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz; (ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; (iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

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

According to FCC 27.53(h) AWS emission limits— General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

According to FCC 27.53(v)(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.

4.7.2 Test Procedure

a. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high channel of operational frequency range.)

b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. The substitution antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step b. Record the power level of S.G

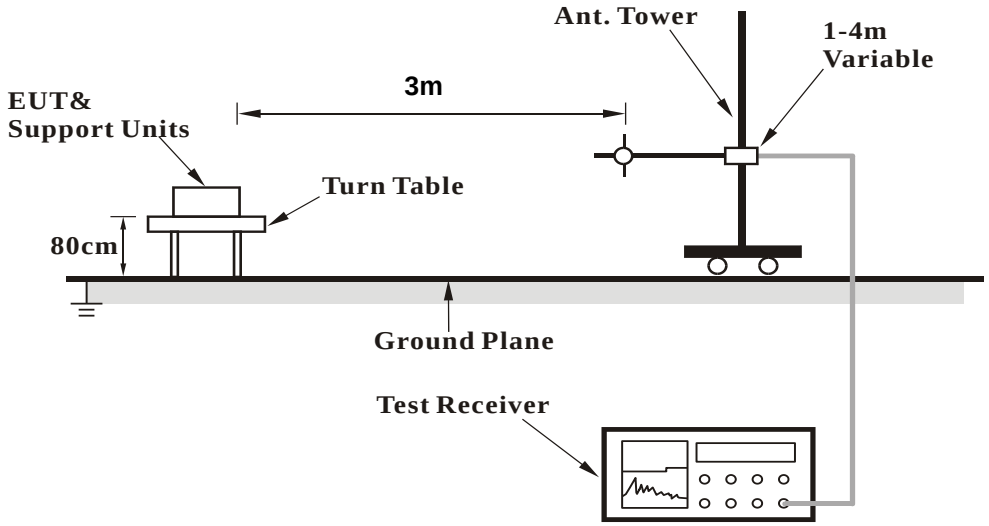
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution antenna.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz/300kHz.

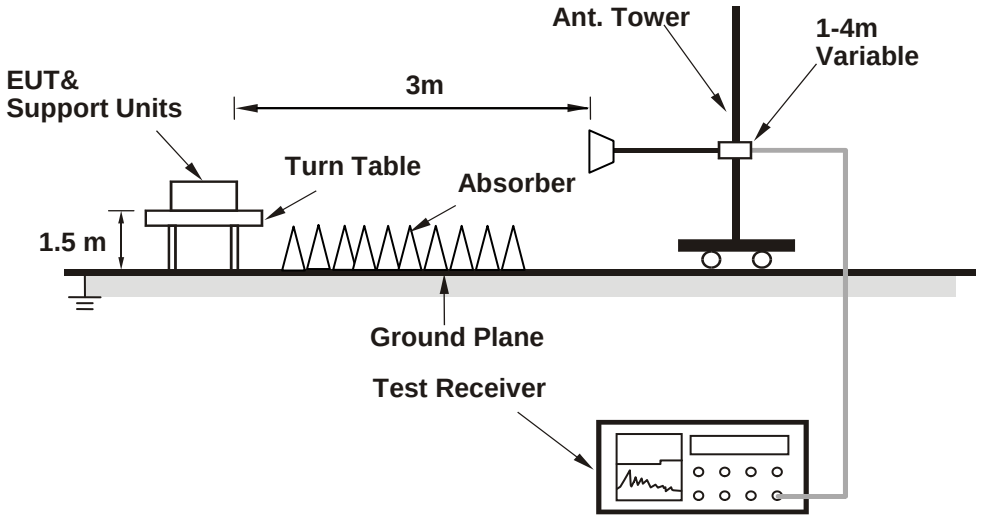
4.7.3 Deviation from Test Standard
No deviation.

4.7.4 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).