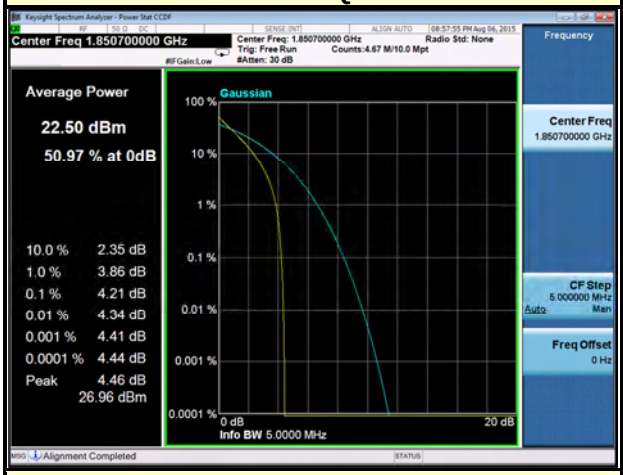
LTE BAND 2

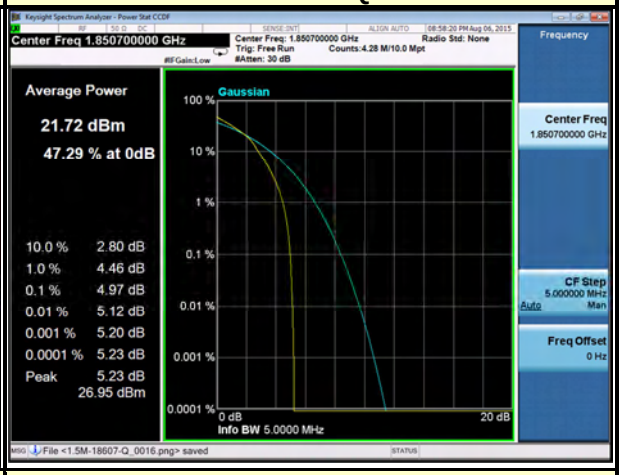
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	4.21	4.97	18615	1851.5	6.24	6.59
18900	1880	3.96	4.79	18900	1880	4.41	5.25
19193	1909.3	3.69	4.86	19185	1908.5	3.84	4.58

SPECTRUM PLOT OF WORST VALUE

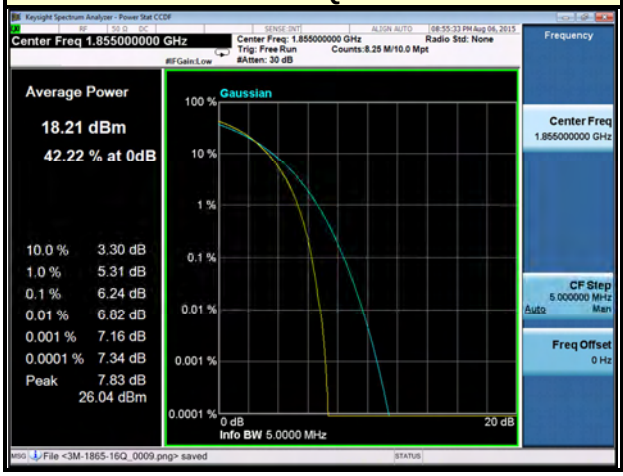
1.4MHz / QPSK



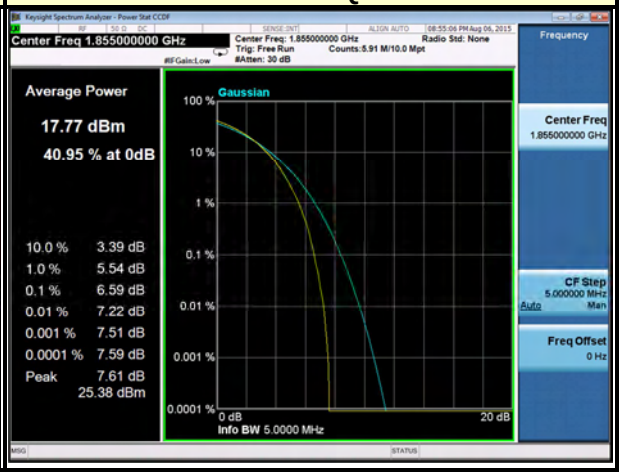
1.4MHz / 16QAM



3MHz / QPSK



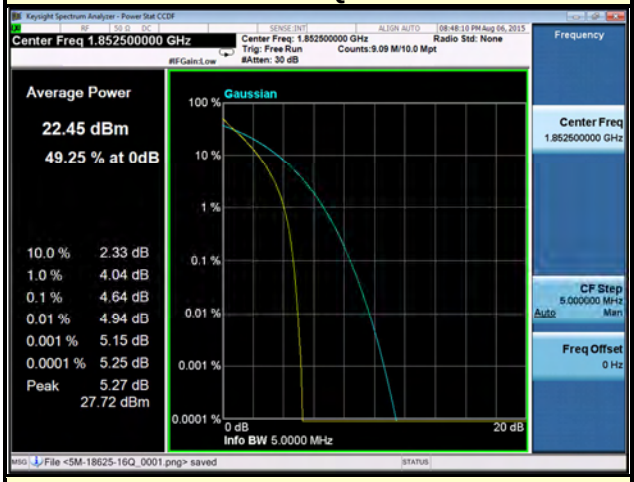
3MHz / 16QAM



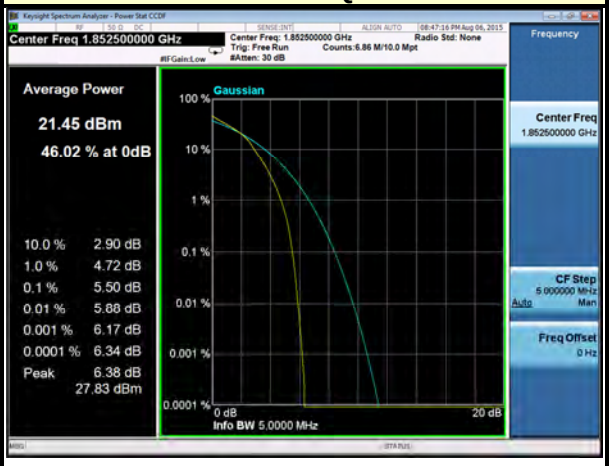
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.64	5.50	18650	1855	4.43	5.25
18900	1880	4.22	5.09	18900	1880	4.01	4.91
19175	1907.5	4.22	4.98	19150	1905	3.76	4.58

SPECTRUM PLOT OF WORST VALUE

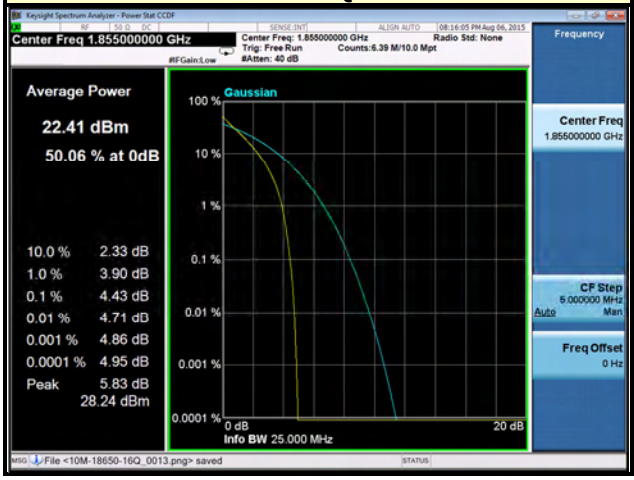
5MHz / QPSK



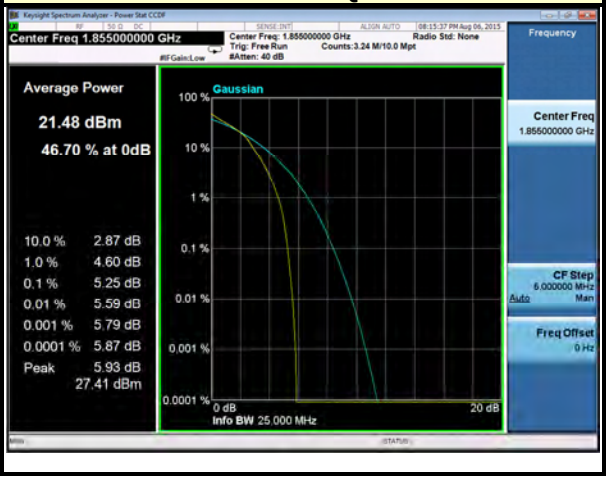
5MHz / 16QAM



10MHz / QPSK



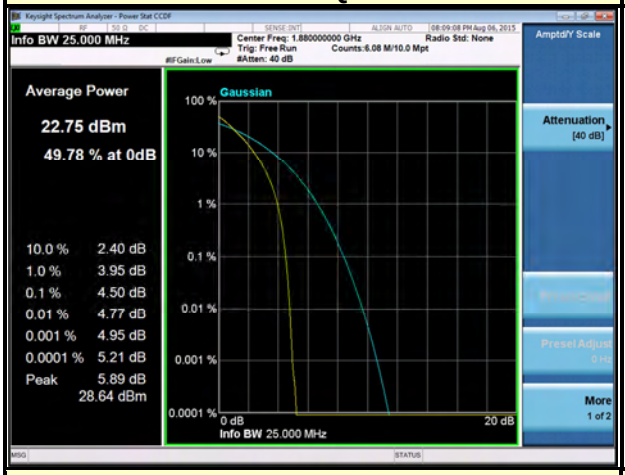
10MHz / 16QAM



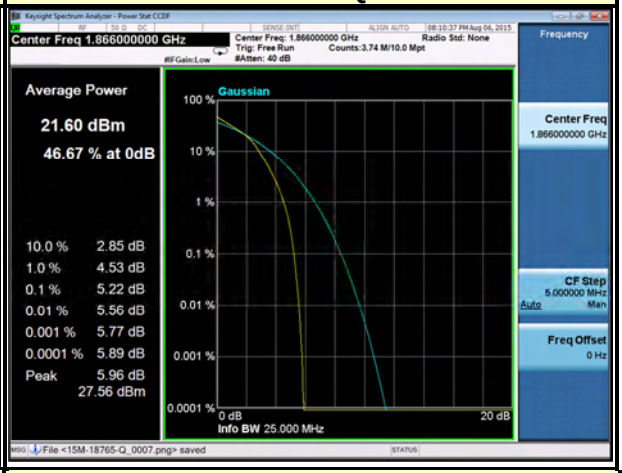
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	4.45	5.22	18700	1860	4.70	5.49
18900	1880	4.50	5.15	18900	1880	4.60	5.32
19125	1902.5	4.07	4.85	19100	1900	4.36	5.10

SPECTRUM PLOT OF WORST VALUE

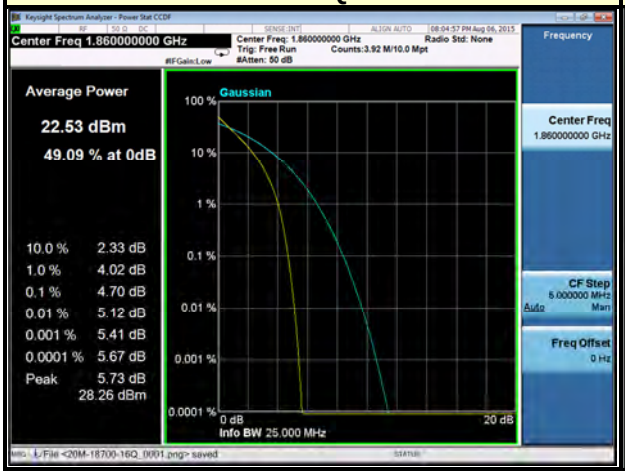
15MHz / QPSK



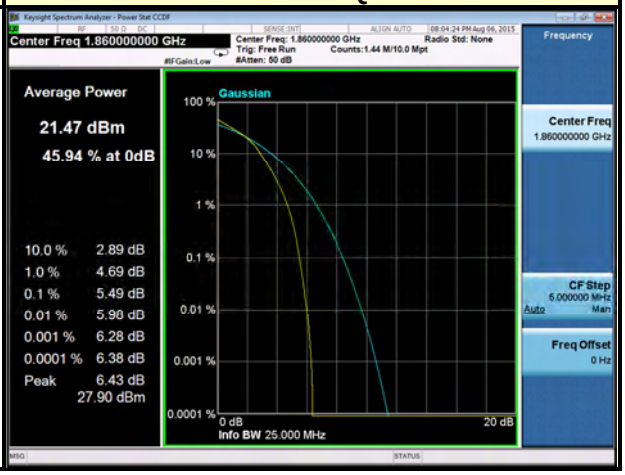
15MHz / 16QAM



20MHz / QPSK



20MHz / 16QAM

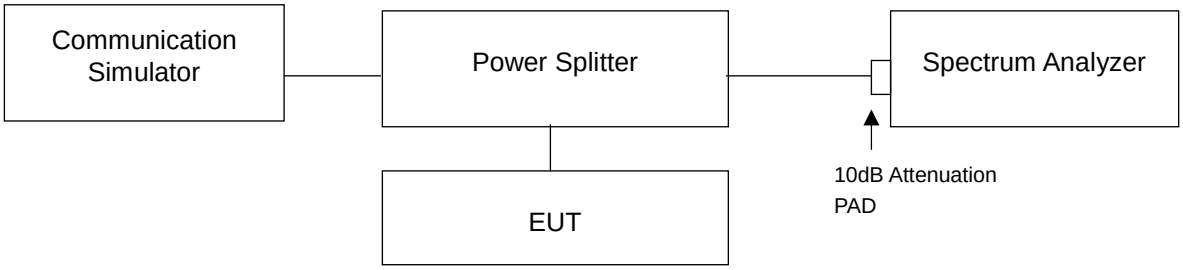


4.6 Conducted Spurious Emissions

4.6.1 Limits of Conducted Spurious Emissions Measurement

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. The emission limit equal to –13dBm.

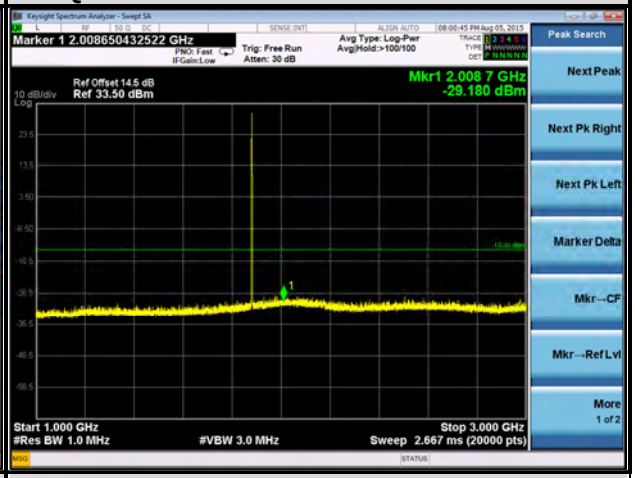
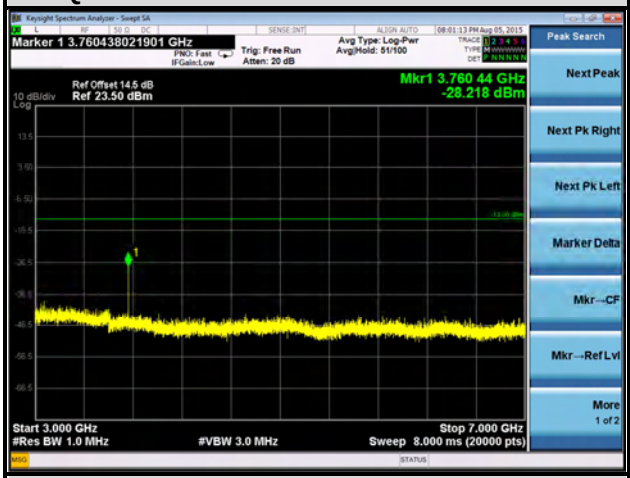
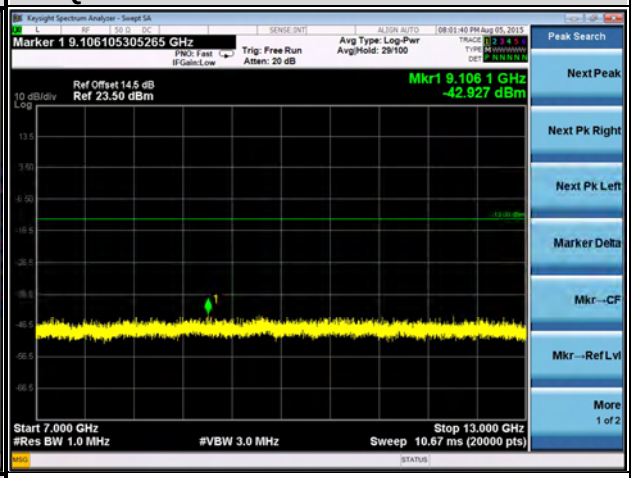
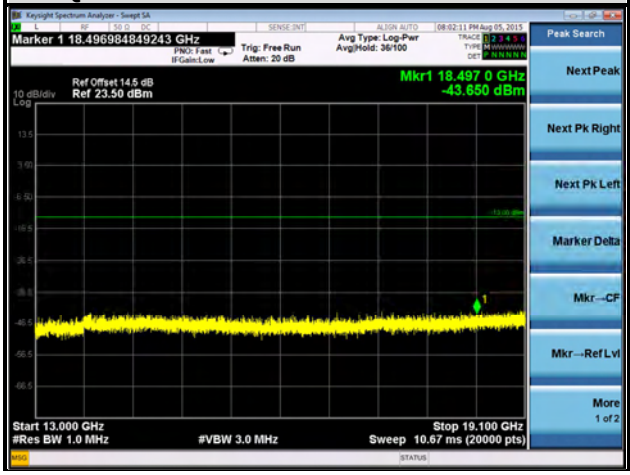
4.6.2 Test Setup

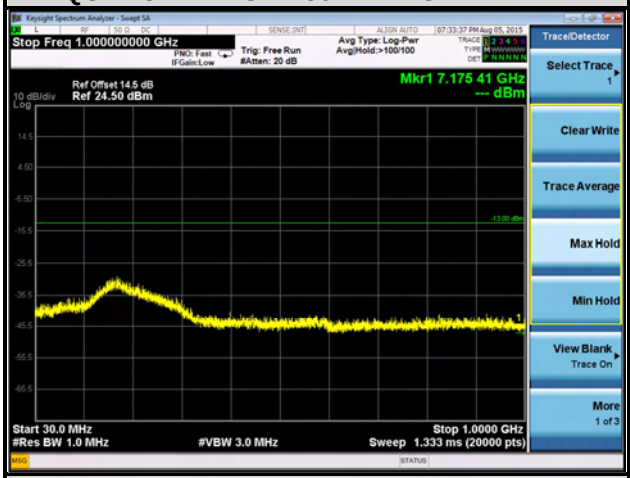
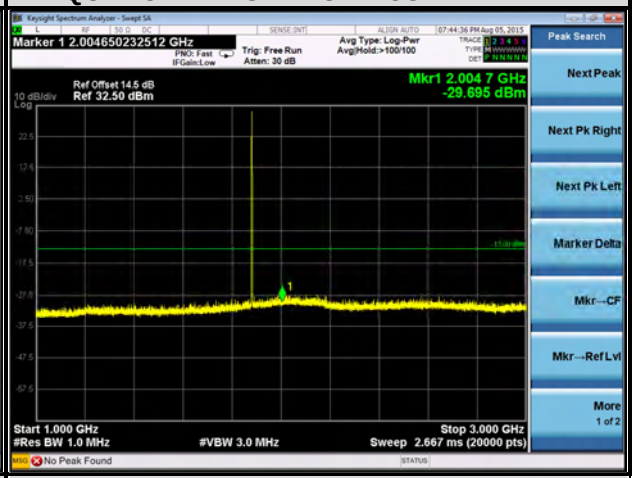
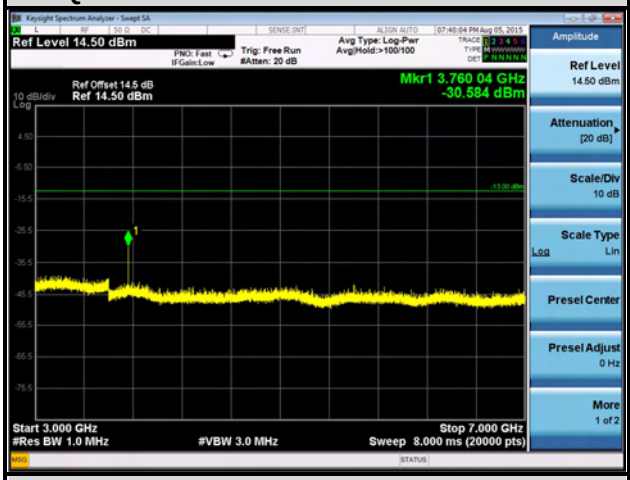
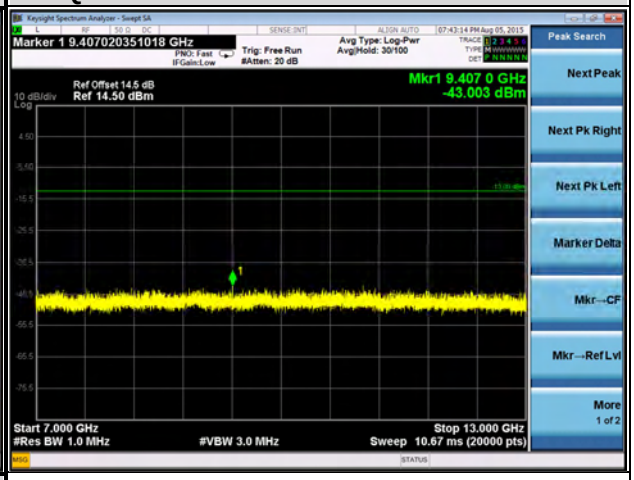
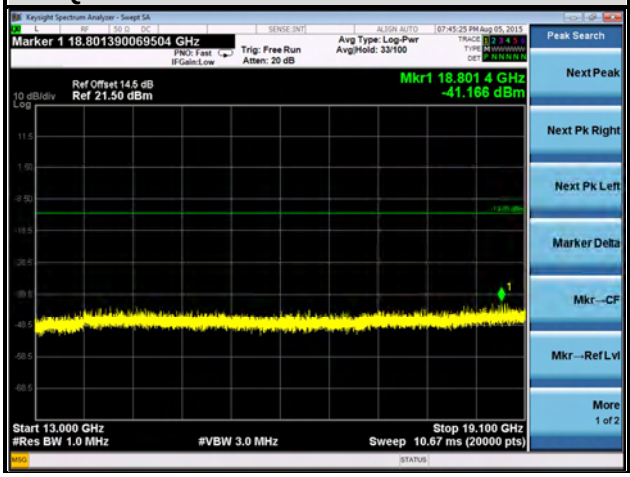


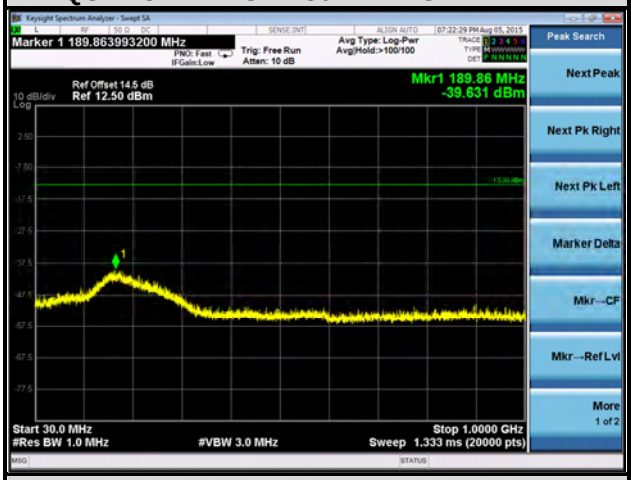
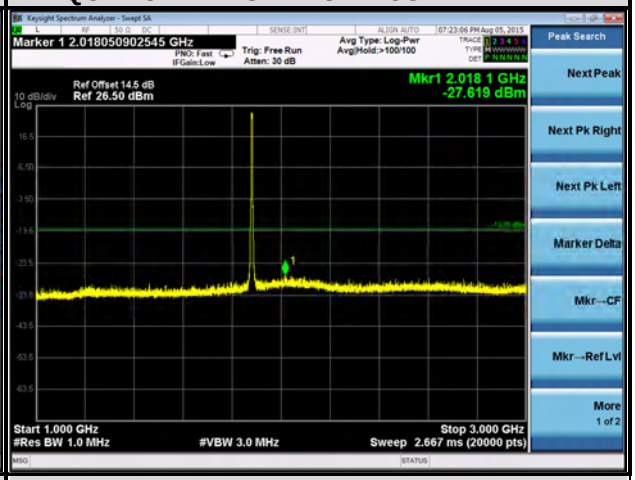
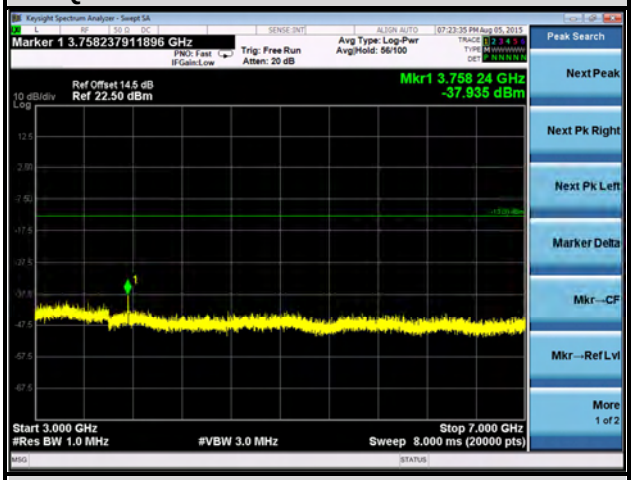
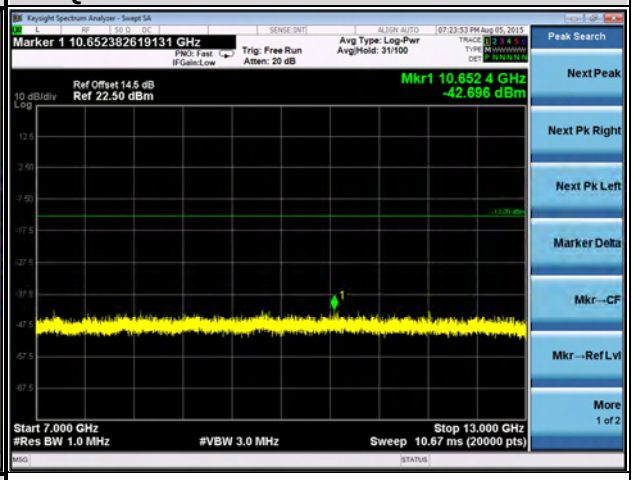
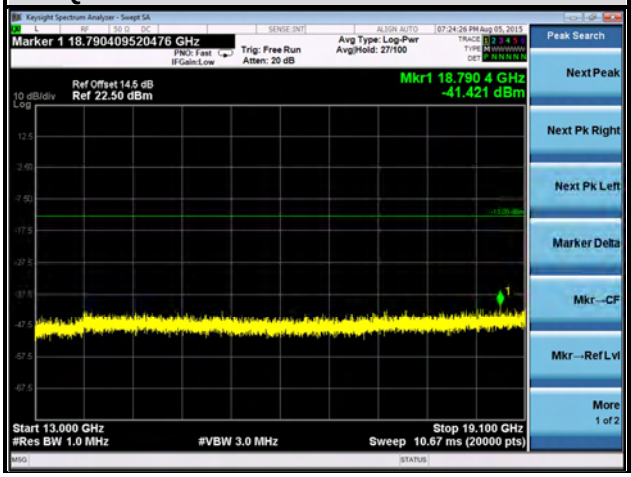
4.6.3 Test Procedure

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9 kHz to 9GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

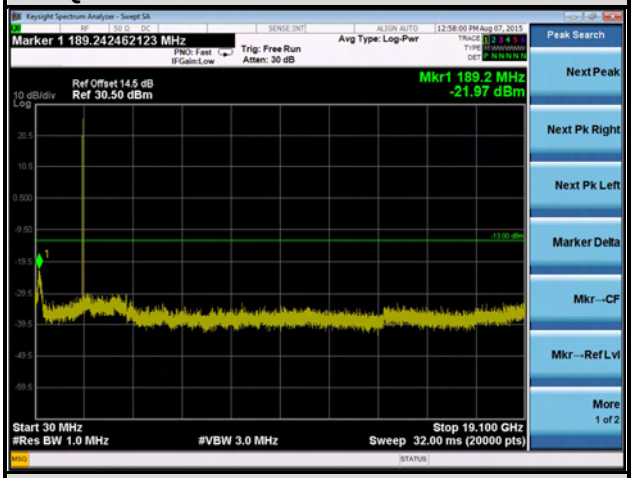
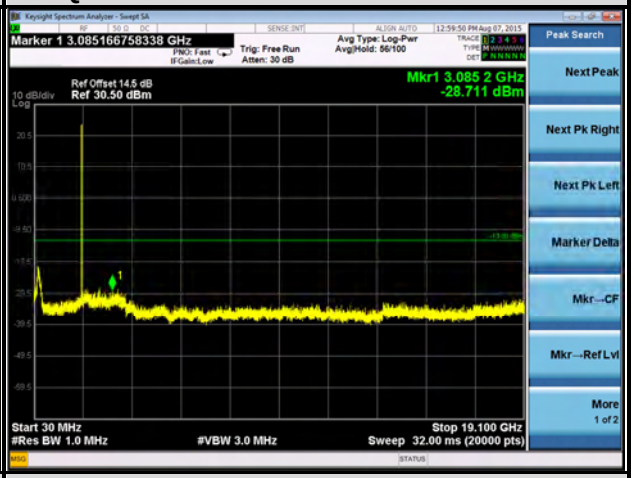
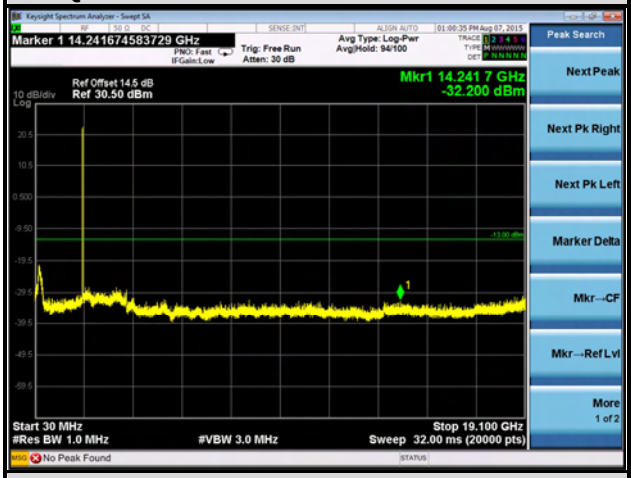
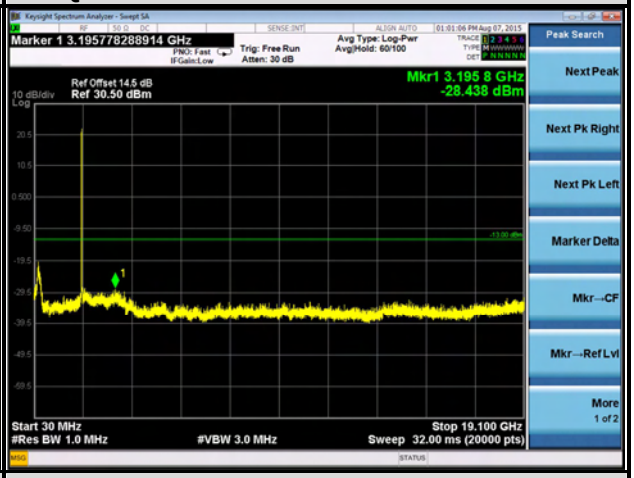
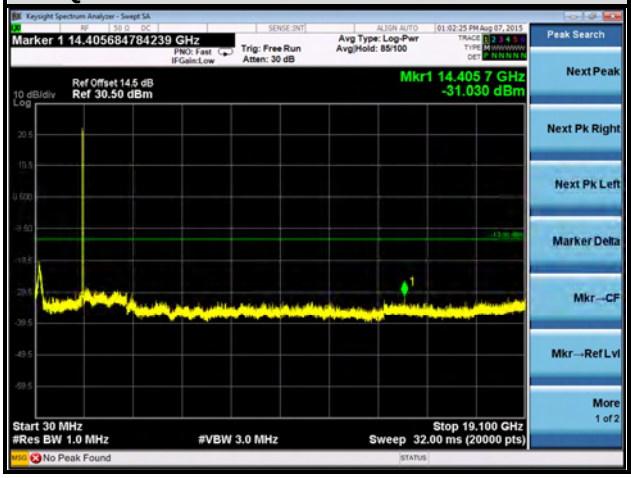
4.6.4 Test Results

GSM	
CHANNEL 661	
FREQUENCY RANGE : 30MHz~1GHz	FREQUENCY RANGE : 1GHz~3GHz
	
FREQUENCY RANGE : 3GHz~7GHz	FREQUENCY RANGE : 7GHz~13GHz
	
FREQUENCY RANGE : 13GHz~19.1GHz	
	

EDGE	
CHANNEL 512	
FREQUENCY RANGE : 30MHz~1GHz	FREQUENCY RANGE : 1GHz~3GHz
	
FREQUENCY RANGE : 3GHz~7GHz	FREQUENCY RANGE : 7GHz~13GHz
	
FREQUENCY RANGE : 13GHz~19.1GHz	
	

WCDMA	
CHANNEL 9400	
FREQUENCY RANGE : 30MHz~1GHz	FREQUENCY RANGE : 1GHz~3GHz
	
FREQUENCY RANGE : 3GHz~7GHz	FREQUENCY RANGE : 7GHz~13GHz
	
FREQUENCY RANGE : 13GHz~19.1GHz	
	

LTE BAND 2

CHANNEL 18900	CHANNEL 18900
1.4MHz / QPSK	3MHz / QPSK
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
	
CHANNEL 18900	CHANNEL 18900
5MHz / QPSK	10MHz / QPSK
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
	
CHANNEL 18900	CHANNEL 18900
15MHz / QPSK	20MHz / QPSK
FREQUENCY RANGE : 30MHz~19.1GHz	FREQUENCY RANGE : 30MHz~19.1GHz
	

4.7 Radiated Emission Measurement

4.7.1 Limits of Radiated Emission Measurement

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. The emission limit equal to –13dBm.

4.7.2 Test Procedure

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m 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.

b. The substitution horn 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 a. Record the power level of S.G

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

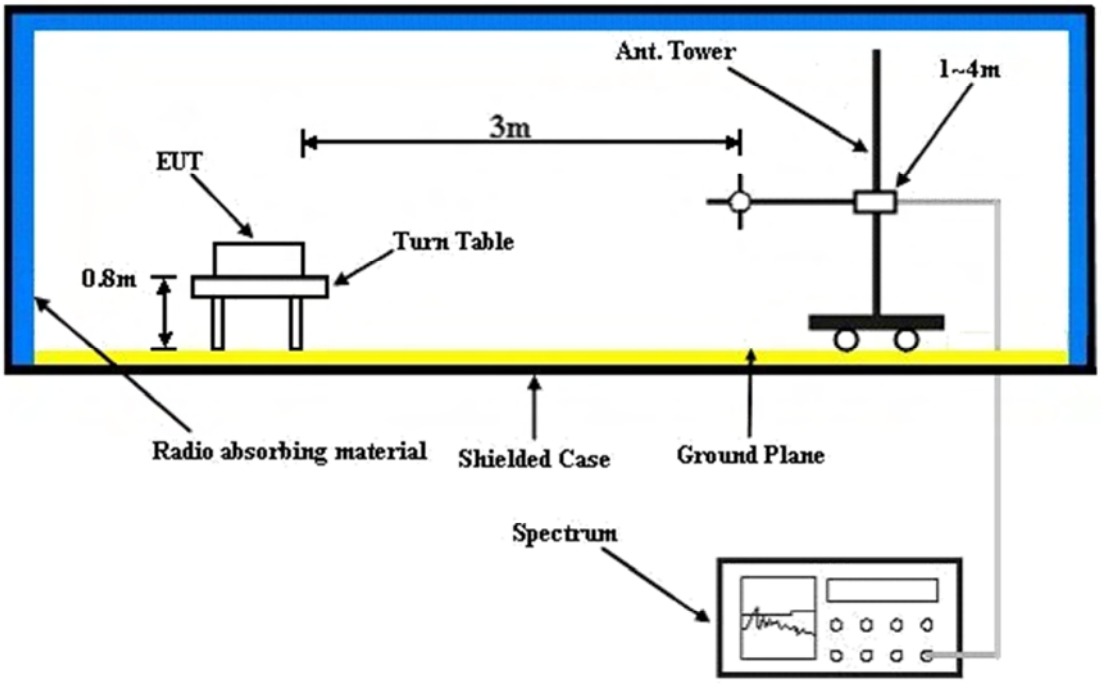
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.7.3 Deviation from Test Standard

No deviation.

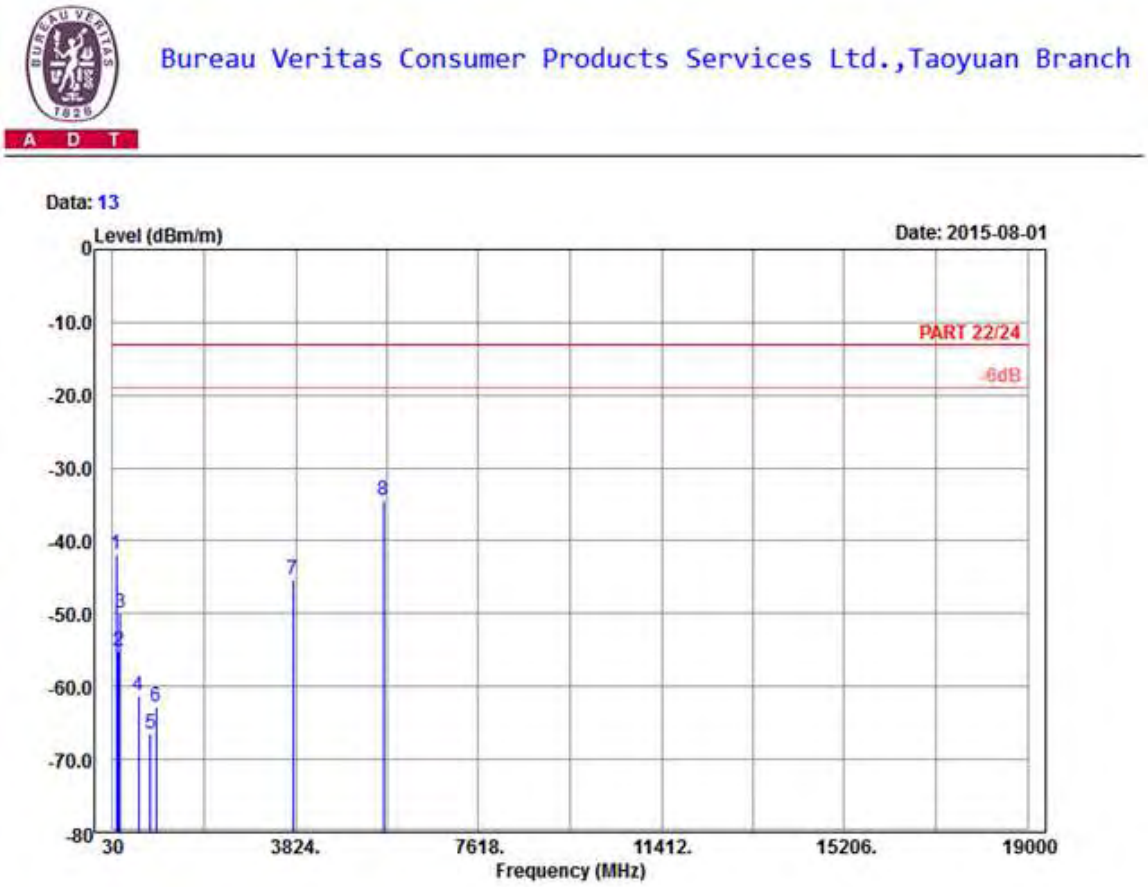
4.7.4 Test Setup



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

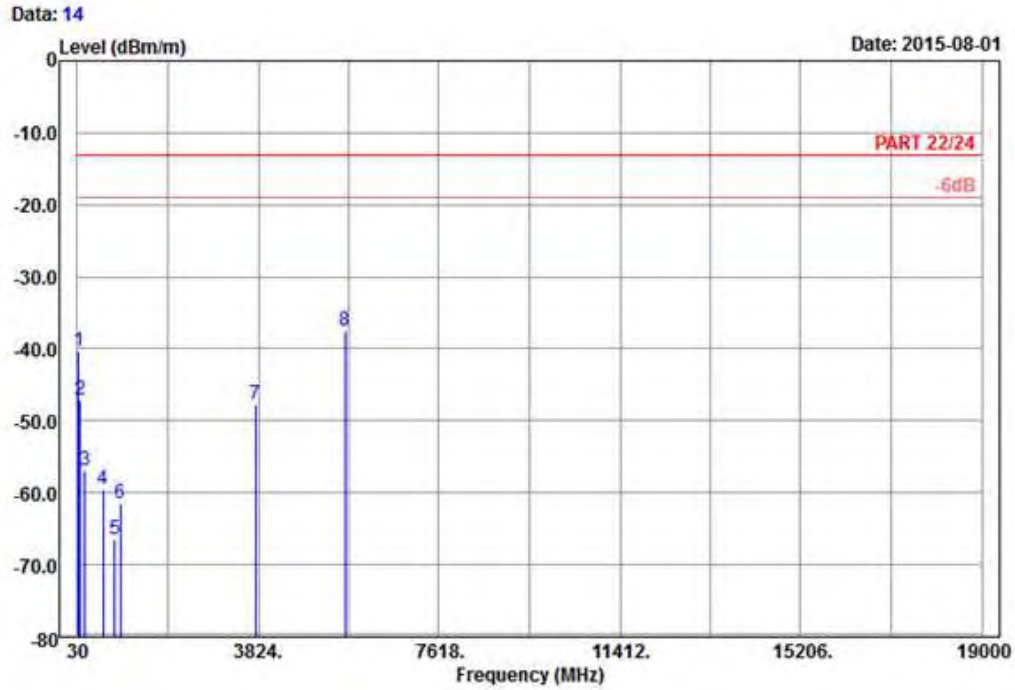
4.7.5 Test Results

GSM:



Site : 966 chamber 1
Condition: PART 22/24 3m Horizontal
Remark : PCS 1900_Link_CH661
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	98.58	-41.75	-31.57	-13.00	-28.75	-10.18	Peak
2	160.14	-55.14	-47.47	-13.00	-42.14	-7.67	Peak
3	186.87	-50.02	-44.33	-13.00	-37.02	-5.69	Peak
4	559.70	-61.22	-59.96	-13.00	-48.22	-1.26	Peak
5	806.80	-66.49	-68.42	-13.00	-53.49	1.93	Peak
6	933.50	-62.85	-67.22	-13.00	-49.85	4.37	Peak
7	3760.00	-45.35	-61.49	-13.00	-32.35	16.14	Peak
8 pp	5640.00	-34.54	-55.01	-13.00	-21.54	20.47	Peak

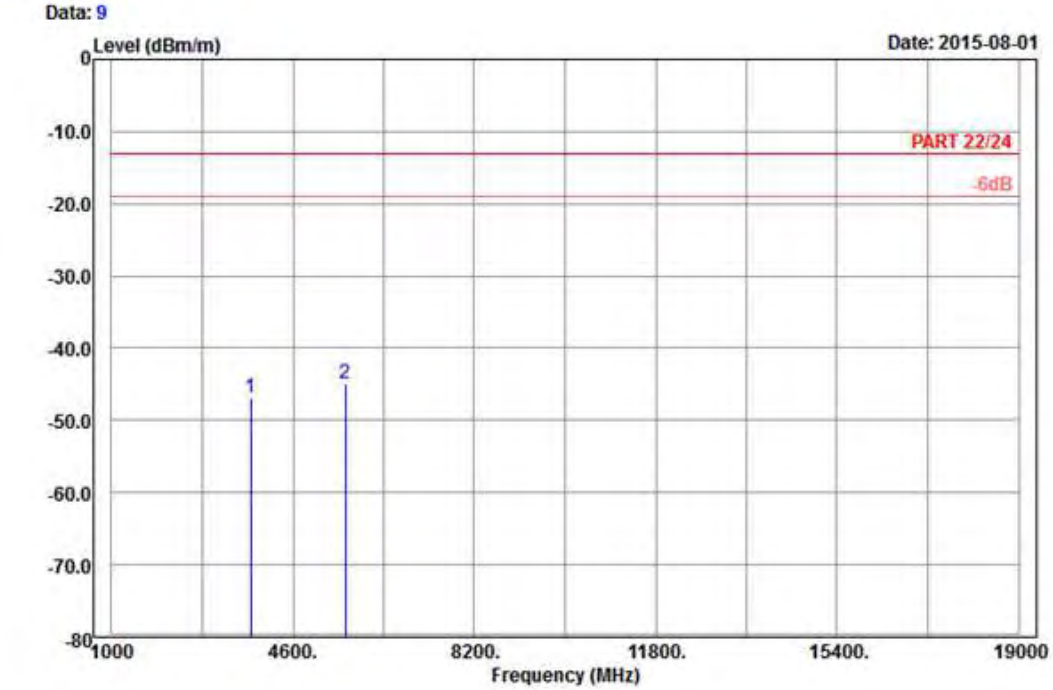


Site : 966 chamber 1
Condition: PART 22/24 3m Vertical
Remark : PCS 1900_Link_CH661
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	54.84	-40.29	-26.23	-13.00	-27.29	-14.06	Peak
2	95.07	-47.07	-36.67	-13.00	-34.07	-10.40	Peak
3	184.44	-56.83	-51.19	-13.00	-43.83	-5.64	Peak
4	559.70	-59.51	-58.25	-13.00	-46.51	-1.26	Peak
5	807.50	-66.54	-68.46	-13.00	-53.54	1.92	Peak
6	933.50	-61.56	-65.93	-13.00	-48.56	4.37	Peak
7	3760.00	-47.66	-63.80	-13.00	-34.66	16.14	Peak
8 pp	5640.00	-37.60	-58.07	-13.00	-24.60	20.47	Peak

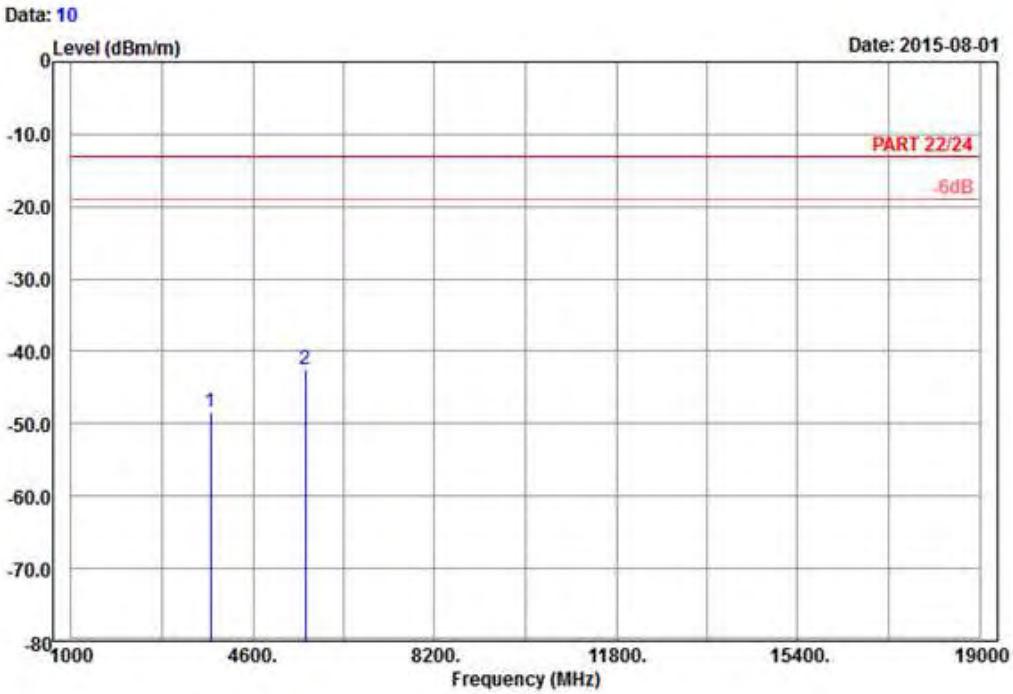
EDGE:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 3m Horizontal
Remark : EDGE 1900_Link_CH661
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3760.00	-46.97	-63.11	-13.00	-33.97	16.14	Peak
2 pp	5640.00	-44.80	-65.27	-13.00	-31.80	20.47	Peak

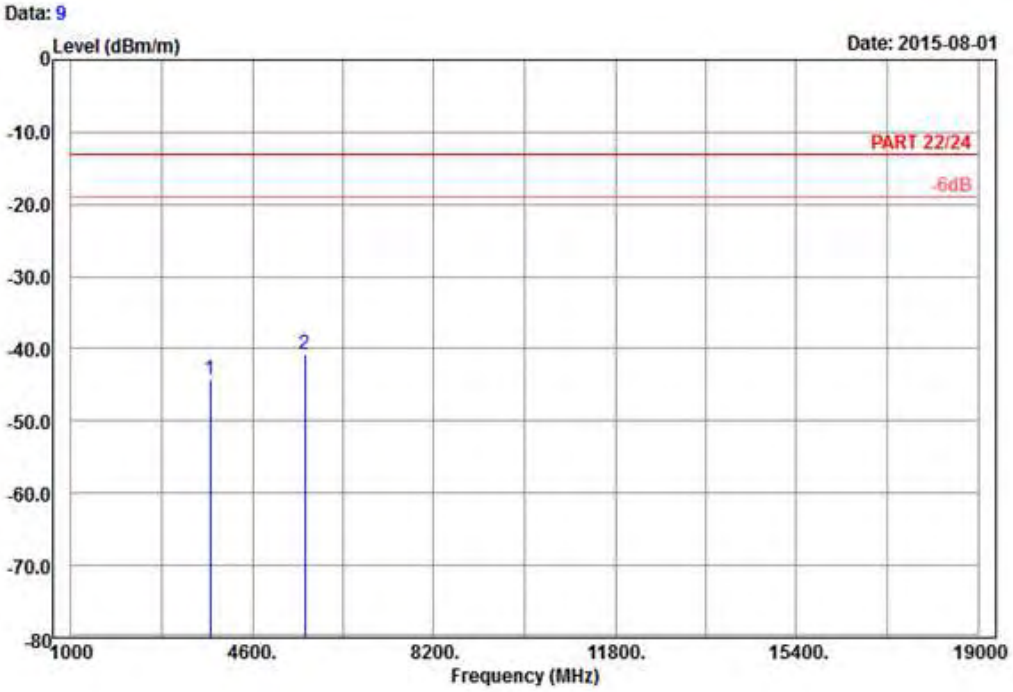


Site : 966 chamber 1
Condition: PART 22/24 3m Vertical
Remark : EDGE 1900_Link_CH661
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3760.00	-48.33	-64.47	-13.00	-35.33	16.14	Peak
2 pp	5640.00	-42.60	-63.07	-13.00	-29.60	20.47	Peak

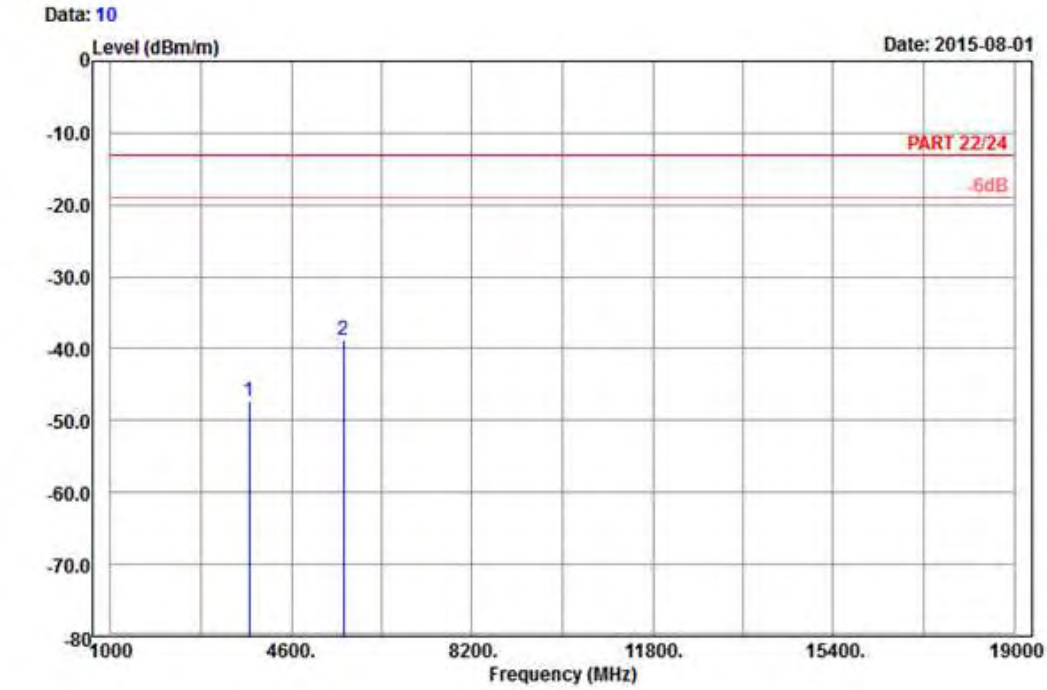
WCDMA:

Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 chamber 1
Condition: PART 22/24 3m Horizontal
Remark : Band II_Link_CH9400
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3760.00	-44.26	-60.40	-13.00	-31.26	16.14	Peak
2 pp	5640.00	-40.68	-61.15	-13.00	-27.68	20.47	Peak



Site : 966 chamber 1
Condition: PART 22/24 3m Vertical
Remark : Band II_Link_CH9400
Tested by: Charles Hsiao
Plane : X
SIM : 1

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3760.00	-47.36	-63.50	-13.00	-34.36	16.14	Peak
2 pp	5640.00	-38.90	-59.37	-13.00	-25.90	20.47	Peak

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab/Telecom Lab
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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