REPORT No.: SZ18080124W02

TEST REPORT

APPLICANT	:	Social Bicycles LLC
PRODUCT NAME	:	Clarion Module
MODEL NAME	:	Clarion Module R6
BRAND NAME	:	JUMP Bikes
FCC ID	:	2ADEK1808R6
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27 Subpart L
TEST DATE	:	2018-09-29 to 2018-10-10
ISSUE DATE	:	2018-10-15

Tested by: Gao Mingzhou (Test Engineer)

Approved by: Peng Huarui (Supervisor)

MORLAB

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.cn E-mail: service@morlab.cn

DIRECTORY

Change History		
Issue	**Date**	**Reason for change**
1.0	2018-10-15	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Social Bicycles LLC
Applicant Address:	55 Prospect ST. Suite 410 Brooklyn, New York 11201, United States
Manufacturer:	E-BUSINESS INTERNATIONAL TECHNOLOGY(SHENZHEN) CO.LTD
Manufacturer Address:	Floor 2, Tower A, New Energy Building, Nanhai Road, Nanshan, Shenzhen,China

1.2. Equipment Under Test (EUT) Description

Product Name:	Clarion Module	
Serial No:	(N/A, marked #1 by test site)	
Hardware Version:	R6	
Software Version:	1.0.3_rc1	
Modulation Type:	WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation HSPA+ Mode with QPSK Modulation	
Operating Frequency Range:	WCDMA 850MHz Tx: 826.4 - 846.6MHz (at intervals of 200kHz); Rx: 871.4 - 891.6MHz (at intervals of 200kHz) WCDMA 1700MHz Tx: 1712.4 – 1752.6MHz (at intervals of 200kHz); Rx: 2112.4 - 2152.6MHz (at intervals of 200kHz) WCDMA 1900MHz Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)	
Emission Designators:	WCDMA 850:4M14F9W , WCDMA1700:4M16F9W WCDMA1900:4M16F9W	
Antenna Type:	Chip Antenna	
Antenna Gain:	WCDMA 850:	1.0 dBi
	WCDMA 1900:	1.0 dBi

	WCDMA 1700:	1.0 dBi
Operating voltage:	Normal(NV):	5.0V
	Lowest(LV):	4.8V
	Highest(HV):	5.2V

Note 1: The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula F(n)=826.4+0.2*(n-4132), 4132<=n<=4233; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175(835MHz) and 4233 (846.6MHz).

Note 2: The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can be represented with the formula F(n)=1852.4+0.2*(n-9262), 9262<=n<=9538; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 3: The transmitter (Tx) frequency arrangement of the WCDMA 1700MHz band used by the EUT can be represented with the formula F(n)=1712.4+0.2*(n-1312), 1312<=n<=1513; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1412 (1732.4MHz) and 1513 (1752.6MHz).

Note 4: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22, Part 24 and Part 27 for the EUT FCC ID Certification:

No	Identity	Document Title
1	47 CFR Part 2 (10-1-12 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-12 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-12 Edition)	Personal Communications Services
4	47 CFR Part 27 (10-1-12 Edition)	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	2.1046	Conducted RF Output Power	Sep 30, 2018	Gao Mingzhou	PASS
2	24.232(d) 27.50(d)	Peak - Average Ratio	Sep 30, 2018	Gao Mingzhou	PASS
3	2.1049	99% Occupied Bandwidth	Sep 30, 2018	Gao Mingzhou	PASS
4	2.1055,22.355, 24.235,27.54	Frequency Stability	Sep 30, 2018	Gao Mingzhou	PASS
5	2.1051, 22.917(a), 24.238(a), 27.53(h)	Conducted Out of Band Emissions	Sep 30, 2018	Gao Mingzhou	PASS
6	2.1051, 22.917(a), 24.238(a), 27.53(h)	Band Edge	Sep 30, 2018	Gao Mingzhou	PASS
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Oct 11, 2018	Peng Xuewei	PASS
8	2.1051, 22.917(a), 24.238(a), 27.53(h)	Radiated Out of Band Emissions	Sep 29 2018	Peng Xuewei	PASS
Note: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 (Oct 27, 2017) and ANSI/TIA-603-E-2016.					

1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR Part 2, Part 22H & 24E&27L Requirements

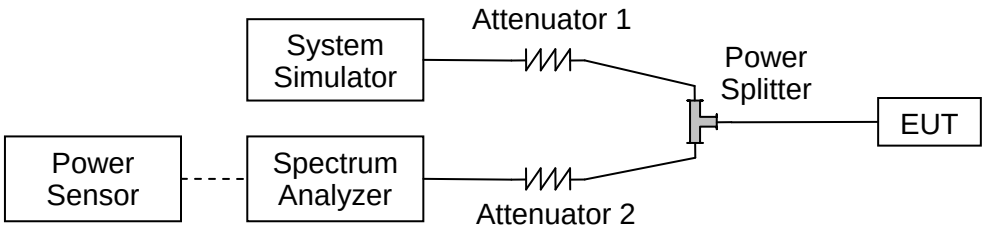
2.1. Conducted RF Output Power

2.1.1. Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.1.3. Test Results

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

WCDMA Test Verdict:

WCDMA 850		Average Power (dBm)		
TX Channel		4132	4175	4233
Frequency (MHz)		826.4	835.0	846.6
3GPP Rel 99	AMR 12.2Kbps	24.40	24.32	24.41
3GPP Rel 99	RMC 12.2Kbps	24.41	24.35	24.46
3GPP Rel 6	HSDPA Subtest-1	24.35	24.29	24.36
3GPP Rel 6	HSDPA Subtest-2	24.33	24.21	24.34
3GPP Rel 6	HSDPA Subtest-3	23.89	23.75	23.83
3GPP Rel 6	HSDPA Subtest-4	23.78	23.69	23.79
3GPP Rel 6	HSUPA Subtest-1	24.38	24.35	24.48
3GPP Rel 6	HSUPA Subtest-2	22.40	22.33	22.45
3GPP Rel 6	HSUPA Subtest-3	23.44	23.35	23.57
3GPP Rel 6	HSUPA Subtest-4	22.45	22.32	22.47
3GPP Rel 6	HSUPA Subtest-5	24.38	24.35	24.48
3GPP Rel 7	HSPA+(16QAM)Subtest-1	24.34	24.36	24.44

WCDMA 1900		Average Power (dBm)		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880.0	1907.6
3GPP Rel 99	AMR 12.2Kbps	22.30	23.07	22.52
3GPP Rel 99	RMC 12.2Kbps	22.27	22.92	22.20
3GPP Rel 6	HSDPA Subtest-1	22.27	23.05	22.49
3GPP Rel 6	HSDPA Subtest-2	22.23	23.02	22.49
3GPP Rel 6	HSDPA Subtest-3	21.79	22.51	21.87
3GPP Rel 6	HSDPA Subtest-4	21.77	22.51	21.85
3GPP Rel 6	HSUPA Subtest-1	22.25	22.93	22.47
3GPP Rel 6	HSUPA Subtest-2	20.33	21.02	20.39
3GPP Rel 6	HSUPA Subtest-3	21.22	21.88	21.43
3GPP Rel 6	HSUPA Subtest-4	20.35	21.04	20.37
3GPP Rel 6	HSUPA Subtest-5	22.27	22.92	22.46
3GPP Rel 7	HSPA+(16QAM)Subtest-1	22.11	22.78	22.12

WCDMA 1700		Average Power (dBm)		
TX Channel		1312	1412	1513
Frequency (MHz)		1712.4	1732.4	1752.6
3GPP Rel 99	AMR 12.2Kbps	23.34	23.15	23.11
3GPP Rel 99	RMC 12.2Kbps	23.32	23.14	23.04
3GPP Rel 6	HSDPA Subtest-1	23.32	23.14	23.04
3GPP Rel 6	HSDPA Subtest-2	23.22	23.12	23.16
3GPP Rel 6	HSDPA Subtest-3	22.75	22.54	22.59
3GPP Rel 6	HSDPA Subtest-4	22.72	22.57	22.56
3GPP Rel 6	HSUPA Subtest-1	23.32	23.14	23.04
3GPP Rel 6	HSUPA Subtest-2	21.23	21.06	21.01
3GPP Rel 6	HSUPA Subtest-3	22.22	22.15	22.09
3GPP Rel 6	HSUPA Subtest-4	21.24	21.10	21.06
3GPP Rel 6	HSUPA Subtest-5	23.22	23.16	23.12
3GPP Rel 7	HSPA+(16QAM)Subtest-1	23.24	23.08	23.05

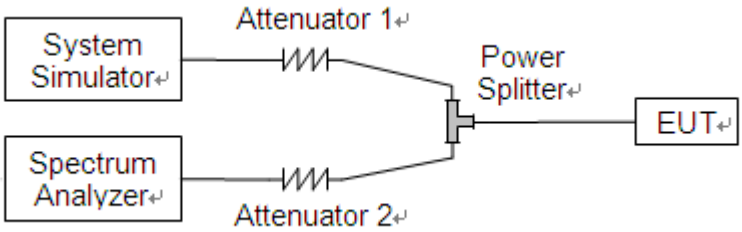
2.2. Peak to Average Ratio

2.2.1. Requirement

According to FCC 24.232(d) the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

2.2.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.2.3. Test procedure

1 .For GSM/EGPRS operating mode:

a. Set RBW=1MHz, VBW=3MHz, peak detector in spectrum analyzer.
b. Set EUT in maximum output power, and triggered the bust signal.
c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

2. For UMTS operating mode:

a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

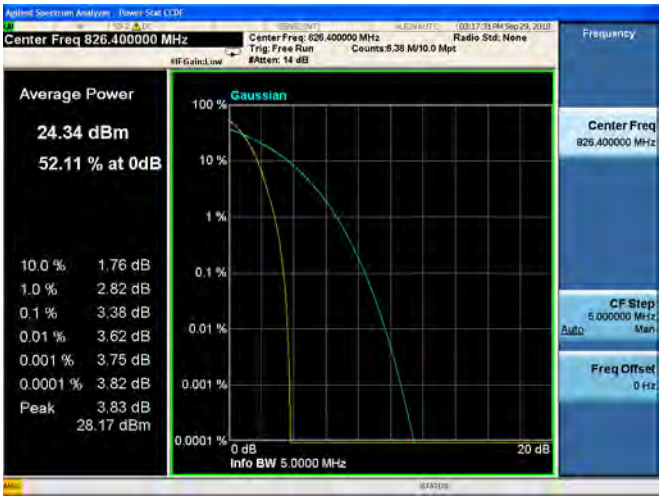
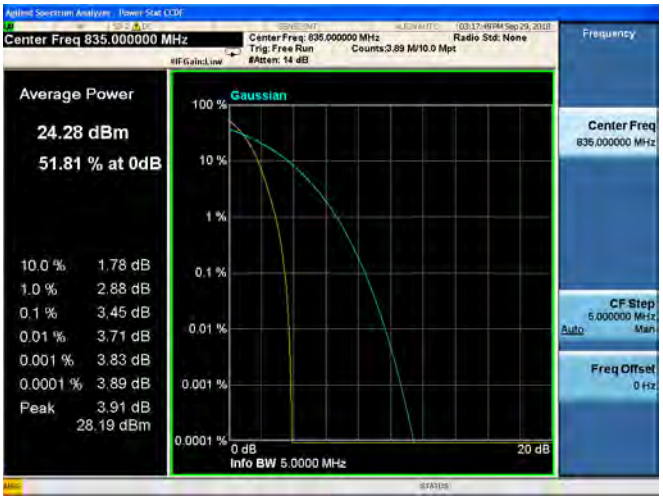
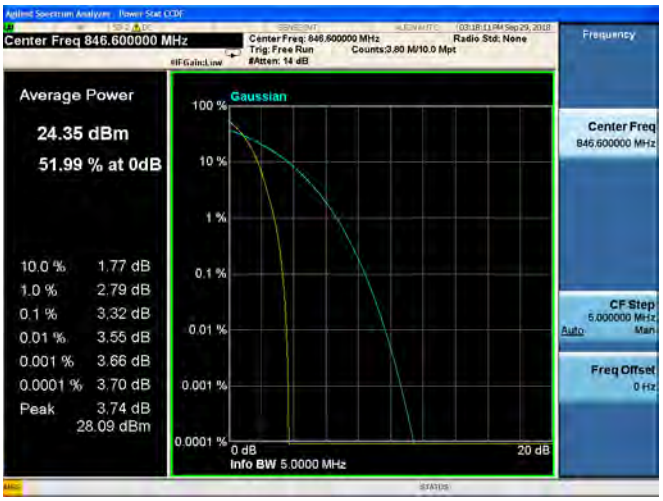
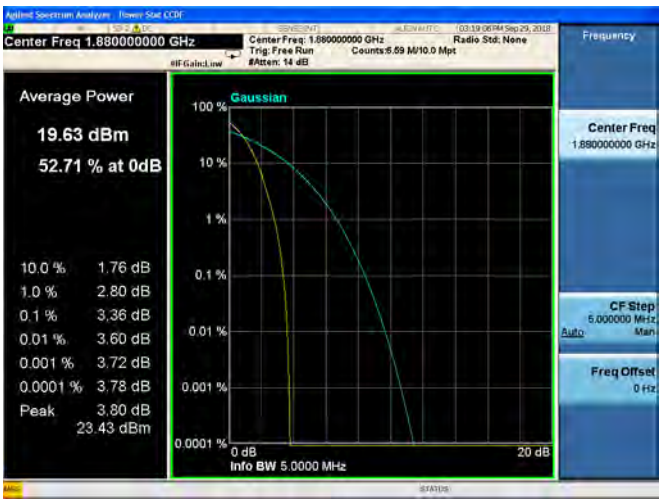
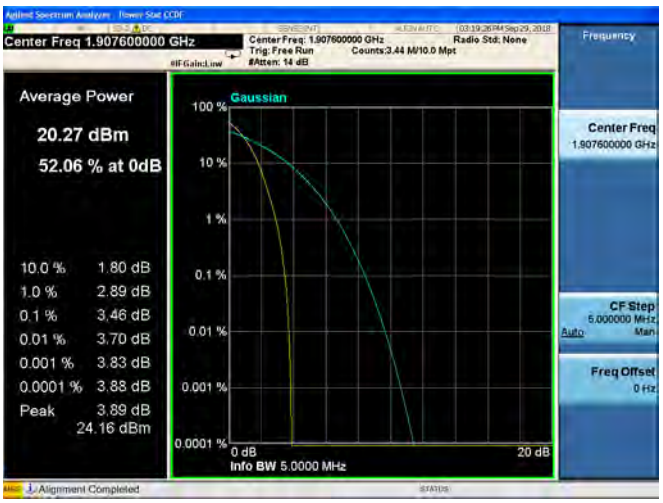
2.2.4. Test Result

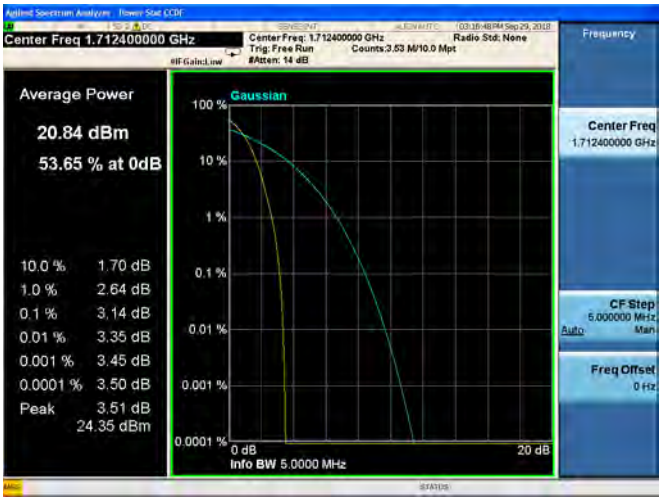
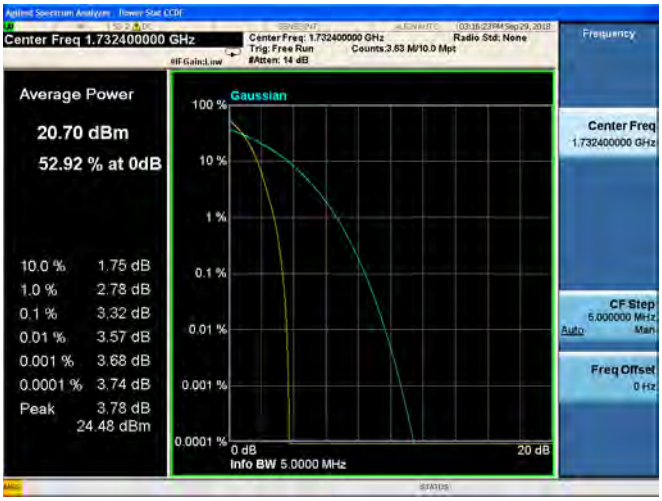
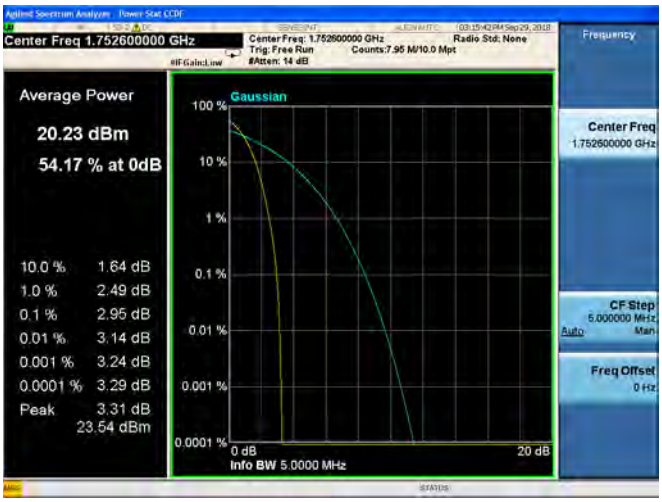
The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the Module.

A. Test Verdict:

Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
WCDMA 850MHz	4132	826.4	3.38	13	PASS
	4175	835.0	3.45		PASS
	4233	846.6	3.32		PASS
WCDMA 1900MHz	9262	1852.4	3.25	13	PASS
	9400	1880.0	3.36		PASS
	9538	1907.6	3.46		PASS
WCDMA 1700MHz	1312	1712.4	3.14	13	PASS
	1412	1732.4	3.32		PASS
	1513	1752.6	2.95		PASS

B. Test Plots:

WCDMA 850MHz CH4132 826.4MHz	WCDMA 850MHz CH4175 835.0MHz
	
WCDMA 850MHz CH4233 846.6MHz	**WCDMA 1900MHz CH9262 1852.4MHz**
	
WCDMA 1900MHz CH9400 1880.0MHz	**WCDMA 1900MHz CH9538 1907.6MHz**
	

WCDMA 1700MHz CH1312 1712.4MHz	WCDMA 1700MHz CH1412 1732.4MHz
	
WCDMA 1900MHz CH1513 1752.6MHz	
	

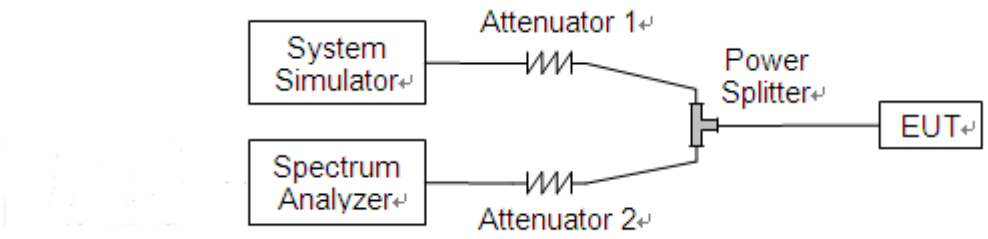
2.3. 99% Occupied Bandwidth

2.3.1. Requirement

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. Occupied bandwidth is also known as the 99% emission bandwidth.

2.3.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.3.3. Test Result

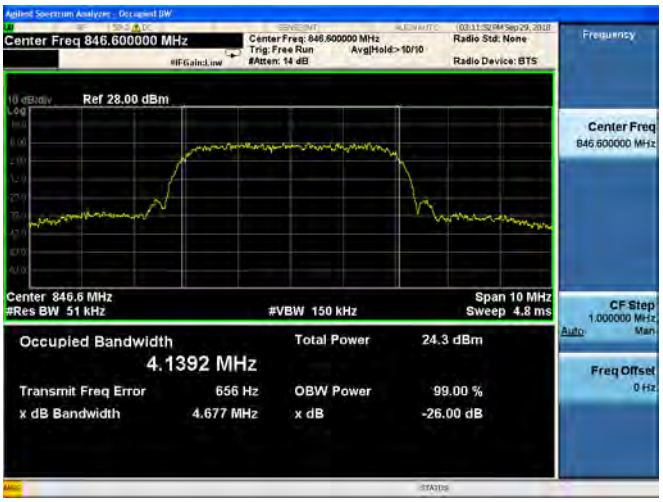
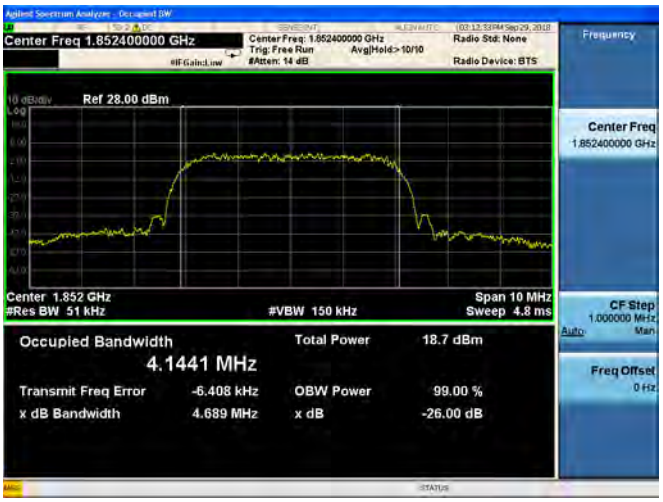
The lowest, middle and highest channels are selected to perform testing to record the 99% occupied bandwidth.

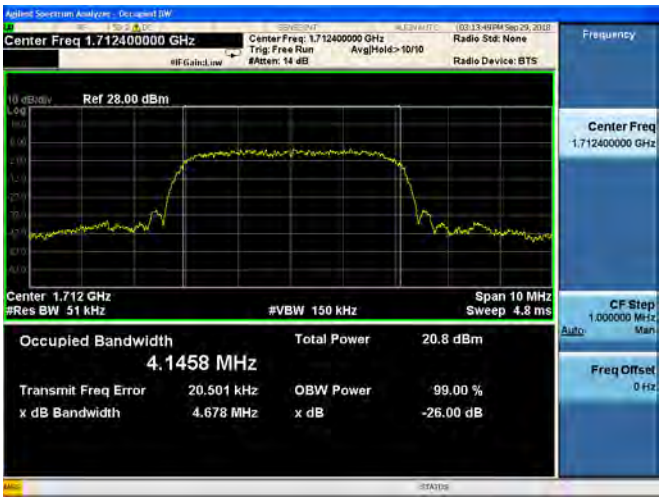
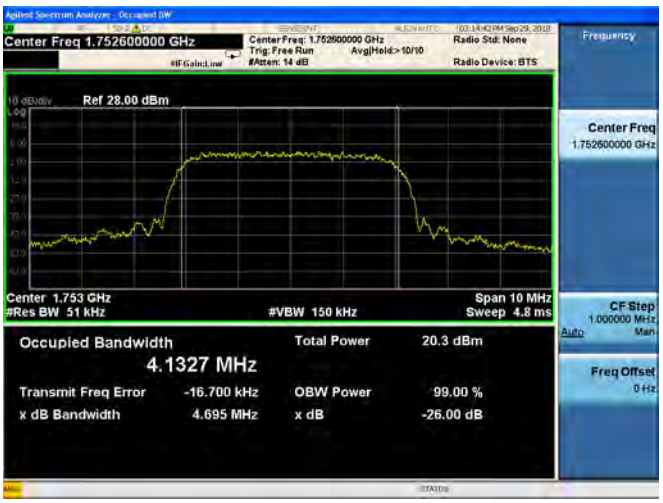
WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied Bandwidth (MHz)
WCDMA 850MHz	4132	826.4	4.663	4.132
	4175	835.0	4.660	4.131
	4233	846.6	4.677	4.139
WCDMA 1900MHz	9262	1852.4	4.689	4.144
	9400	1880.0	4.678	4.157
	9538	1907.6	4.660	4.138
WCDMA 1700MHz	1312	1712.4	4.678	4.146
	1412	1732.4	4.674	4.125
	1513	1752.6	4.695	4.133
HSDPA 850MHz	4132	826.4	4.655	4.116
	4175	835.0	4.666	4.103
	4233	846.6	4.692	4.136
HSDPA 1900MHz	9262	1852.4	4.655	4.127
	9400	1880.0	4.650	4.128
	9538	1907.6	4.666	4.125
HSDPA 1700MHz	1312	1712.4	4.681	4.111
	1412	1732.4	4.644	4.157
	1513	1752.6	4.712	4.127
HSUPA 850MHz	4132	826.4	4.663	4.145
	4175	835.0	4.632	4.110
	4233	846.6	4.662	4.132
HSUPA 1900MHz	9262	1852.4	4.674	4.121
	9400	1880.0	4.671	4.139
	9538	1907.6	4.655	4.115
HSUPA 1700MHz	1312	1712.4	4.681	4.132
	1412	1732.4	4.675	4.150
	1513	1752.6	4.685	4.140

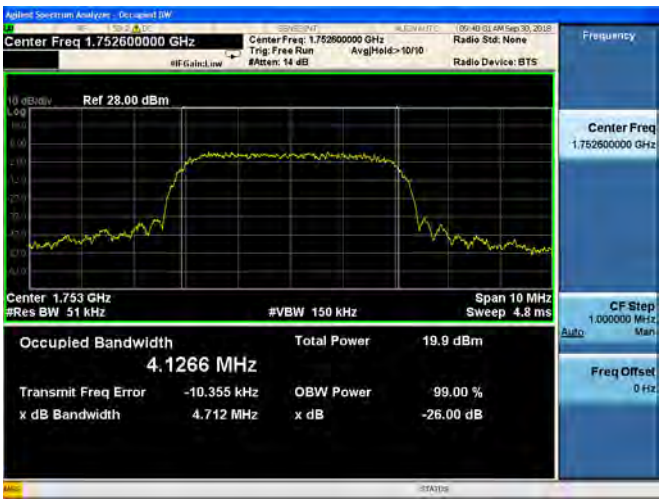
Band	Channel	Frequency (MHz)	26dB bandwidth (MHz)	99% Occupied Bandwidth (MHz)
HSPA+ 850MHz	4132	826.4	4.649	4.121
	4175	835.0	4.662	4.131
	4233	846.6	4.678	4.138
HSPA+ 1900MHz	9262	1852.4	4.674	4.139
	9400	1880.0	4.683	4.148
	9538	1907.6	4.635	4.121
HSPA+ 1700MHz	1312	1712.4	4.680	4.148
	1412	1732.4	4.666	4.133
	1513	1752.6	4.684	4.144

Test Plots

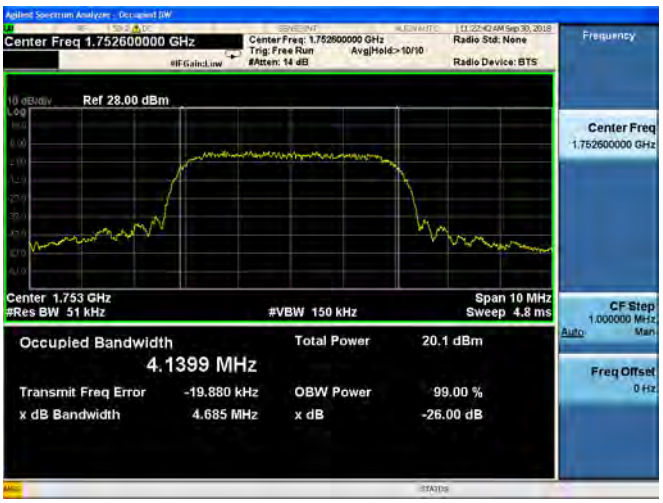
WCDMA 850MHz CH4132 826.4MHz	WCDMA 850MHz CH4175 835.0MHz
	
WCDMA 850MHz CH4233 846.6MHz	**WCDMA 1900MHz CH9262 1852.4MHz**
	

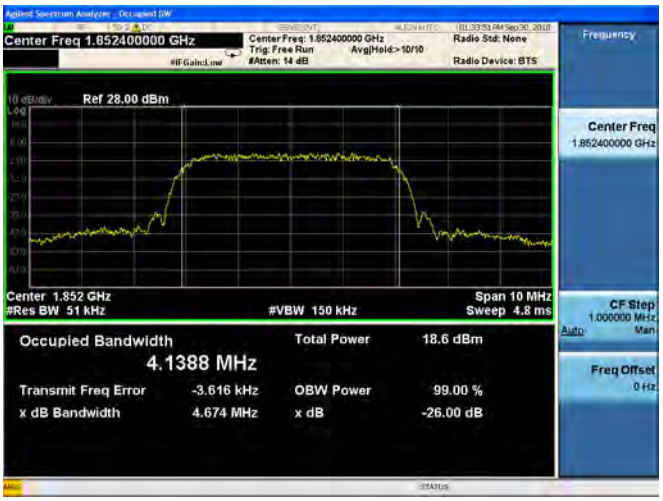
WCDMA 1900MHz CH9400 1880.0MHz	WCDMA 1900MHz CH9538 1907.6MHz
	
WCDMA 1700MHz CH1312 1712.4MHz	**WCDMA 1700MHz CH1412 1732.4MHz**
	
WCDMA 1700MHz CH1513 1752.6MHz	
	

HSDPA 850MHz CH4132 826.4MHz	HSDPA 850MHz CH4175 835.0MHz
	
HSDPA 850MHz CH4233 846.6MHz	**HSDPA 1900MHz CH9262 1852.4MHz**
	

HSDPA 1900MHz CH9400 1880.0MHz	HSDPA 1900MHz CH9538 1907.6MHz
	
HSDPA 1700MHz CH1312 1712.4MHz	**HSDPA 1700MHz CH1412 1732.4MHz**
	
HSDPA 1700MHz CH1513 1752.6MHz	
	

HSUPA 850MHz CH4132 826.4MHz	HSUPA 850MHz CH4175 835.0MHz
	
HSUPA 850MHz CH4233 846.6MHz	**HSUPA 1900MHz CH9262 1852.4MHz**
	

HSUPA 1900MHz CH9400 1880.0MHz	HSUPA 1900MHz CH9538 1907.6MHz
	
HSUPA 1700MHz CH1312 1712.4MHz	**HSUPA 1700MHz CH1412 1732.4MHz**
	
HSUPA 1700MHz CH1513 1752.6MHz	
	

HSPA+ 850MHz CH4132 826.4MHz	HSPA+ 850MHz CH4175 835.0MHz
	
HSPA+ 850MHz CH4233 846.6MHz	**HSPA+ 1900MHz CH9262 1852.4MHz**
	

HSPA+ 1900MHz CH9400 1880.0MHz	HSPA+ 1900MHz CH9538 1907.6MHz
	
HSPA+ 1700MHz CH1312 1712.4MHz	**HSPA+ 1700MHz CH1412 1732.4MHz**
	
HSPA+ 1700MHz CH1513 1752.6MHz	
	

2.4. Frequency Stability

2.4.1. Requirement

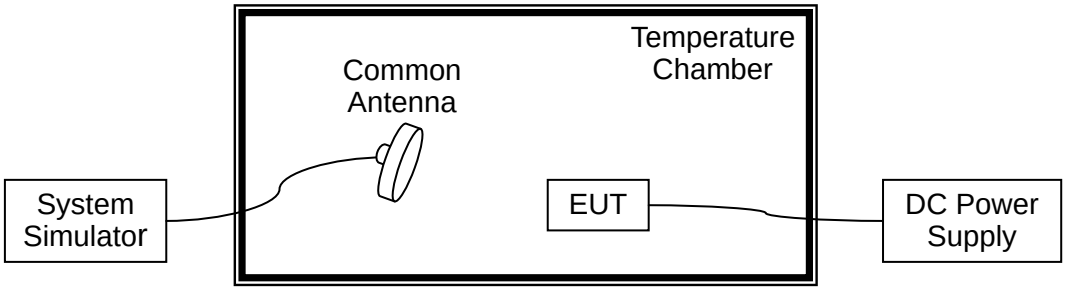
According to FCC section 22.355, 24.235 and 27.54, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(a) The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.

(b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.4.2. Test Description

Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

2.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 5.0VDC, 5.2VDC and 4.8VDC, which are specified by the applicant; the normal temperature here used is 25°C.

A. Test Verdict:

WCDMA 850MHz, Channel 4400, Frequency 835.0MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	+20(Ref)	1.39	0.067	PASS
100		-30	-10.83	-0.519	
100		-20	8.66	0.415	
100		-10	10.57	0.506	
100		0	-2.49	-0.119	
100		+10	8.31	0.398	
100		+20	-2.06	-0.099	
100		+30	9.66	0.463	
100		+40	8.61	0.412	
100		+50	10.39	0.498	
115	5.2	+20	-4.84	-0.232	
85	4.8	+20	9.51	0.456	

WCDMA 1900MHz, Channel 9800, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	+20(Ref)	6.93	0.369	PASS
100		-30	8.44	0.449	
100		-20	1.14	0.061	
100		-10	5.25	0.279	
100		0	6.94	0.369	
100		+10	-5.56	-0.296	
100		+20	2.41	0.128	
100		+30	-5.85	-0.311	
100		+40	8.53	0.454	
100		+50	4.06	0.216	
115	5.2	+20	-3.98	-0.212	
85	4.8	+20	4.89	0.260	

WCDMA 1700MHz, Channel 1412, Frequency 1732.4MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	5.0	+20(Ref)	-7.42	-0.428	PASS
100		-30	3.15	0.182	
100		-20	-2.31	-0.133	
100		-10	4.65	0.268	
100		0	-6.83	-0.394	
100		+10	-10.05	-0.580	
100		+20	4.97	0.287	
100		+30	8.9	0.514	
100		+40	5.75	0.332	
100		+50	8.32	0.480	
115	5.2	+20	1.39	0.080	
85	4.8	+20	6.43	0.371	

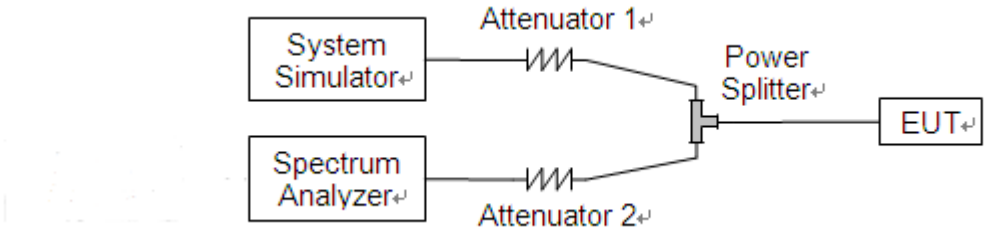
2.5. Conducted Out of Band Emissions

2.5.1. Requirement

According to FCC section 22.917(a), 24.238(a) and 27.53(h) 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.

2.5.2. Test Description

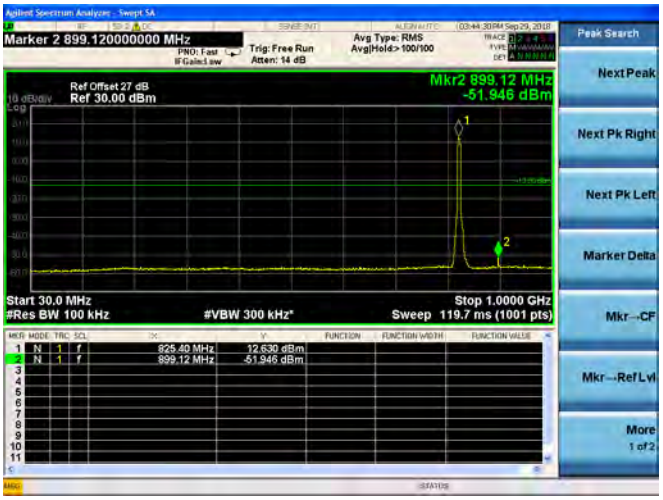
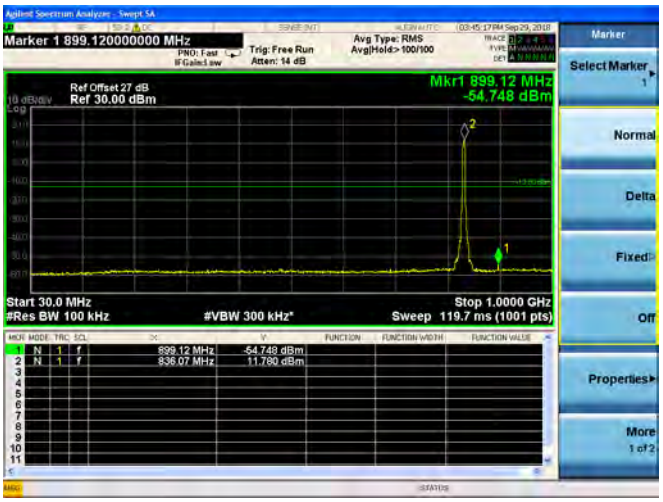
Test Setup:

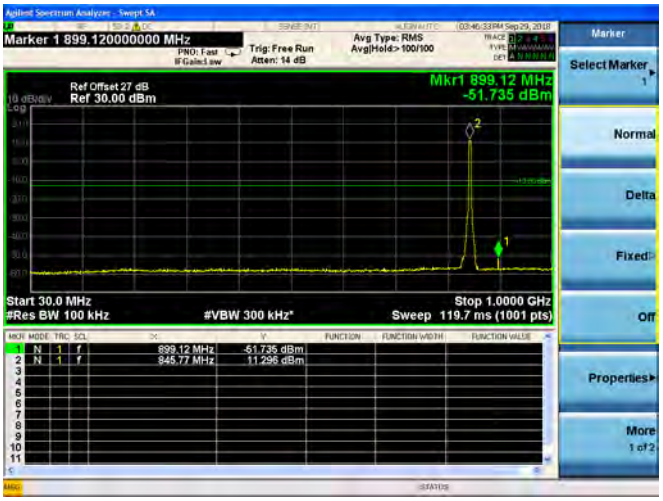
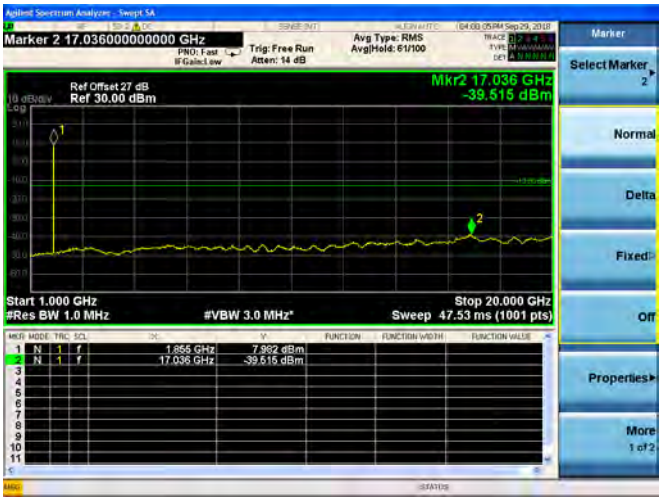


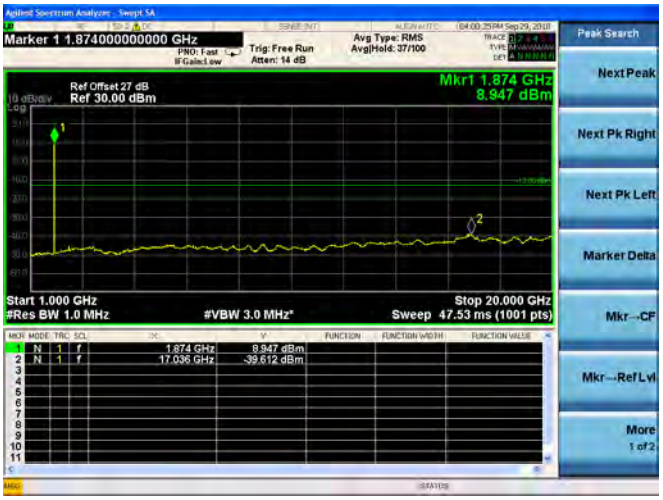
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

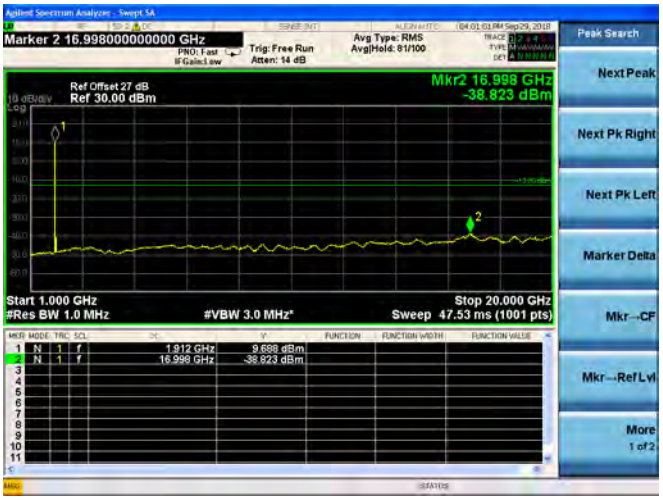
2.5.3. Test Result

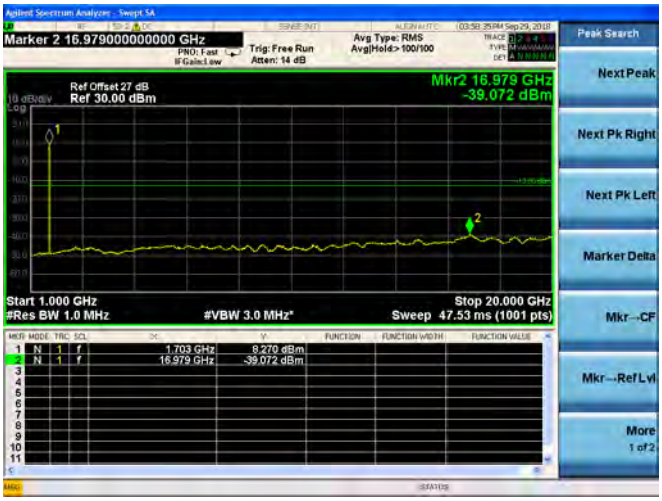
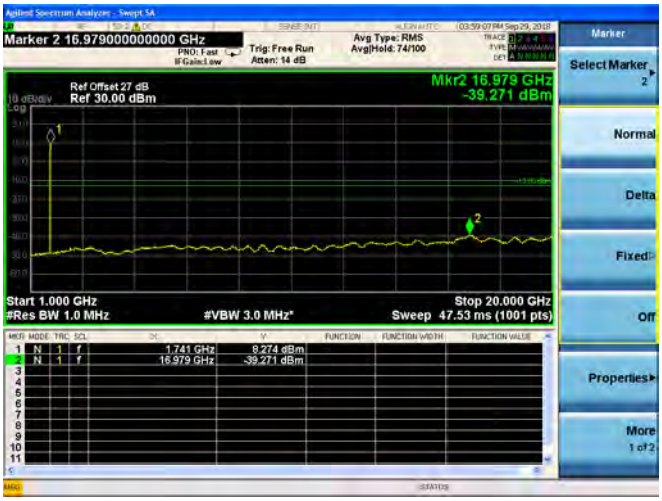
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

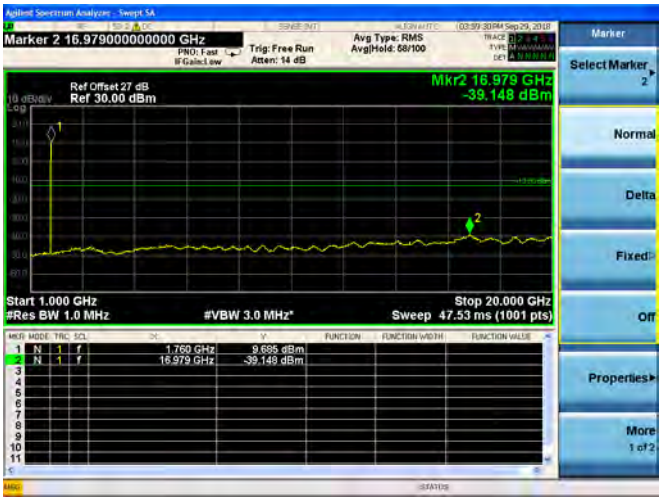
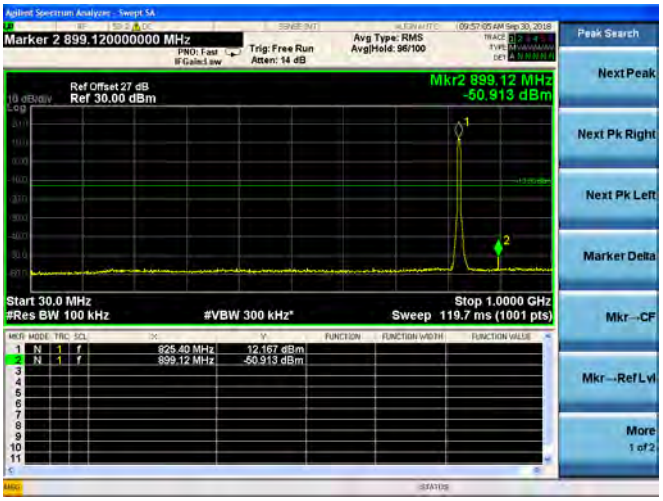
WCDMA 850MHz CH4132 826.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
WCDMA 850MHz CH4175 835.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

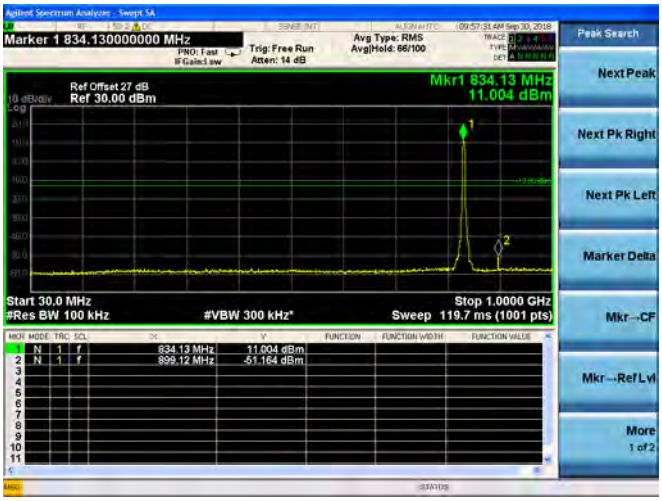
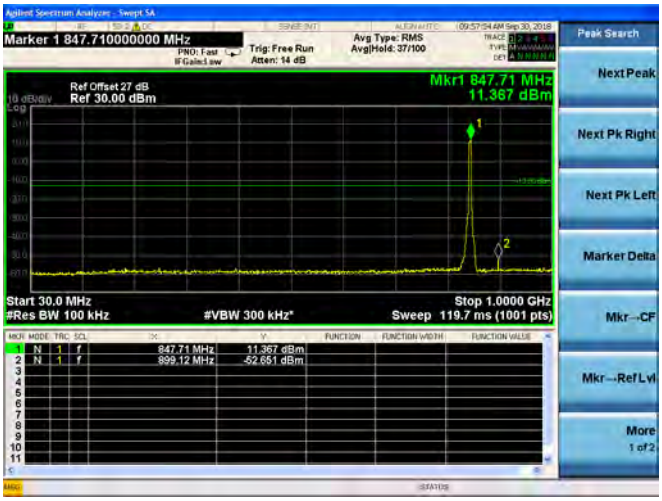
WCDMA 850MHz CH4233 846.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
WCDMA 1900MHz CH9262 1852.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

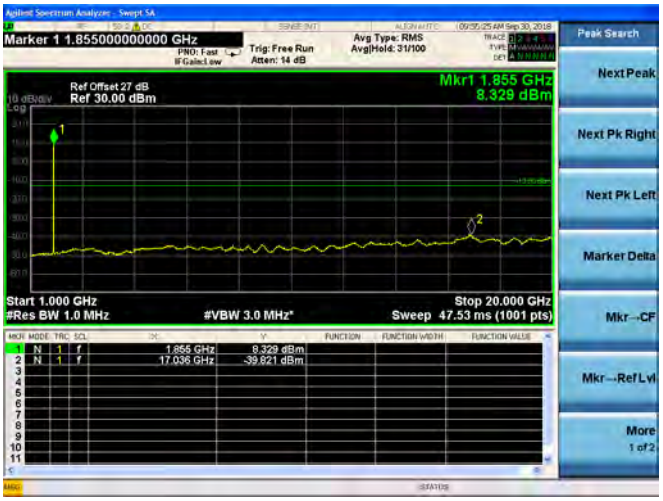
WCDMA 1900MHz CH9400 1880.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

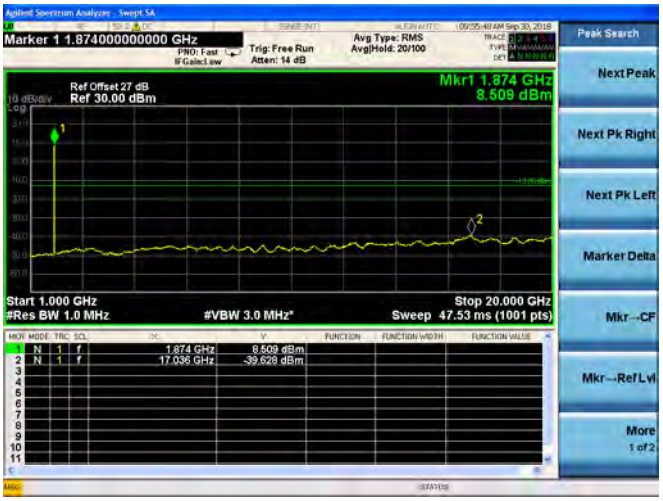
WCDMA 1900MHz CH9538 1907.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

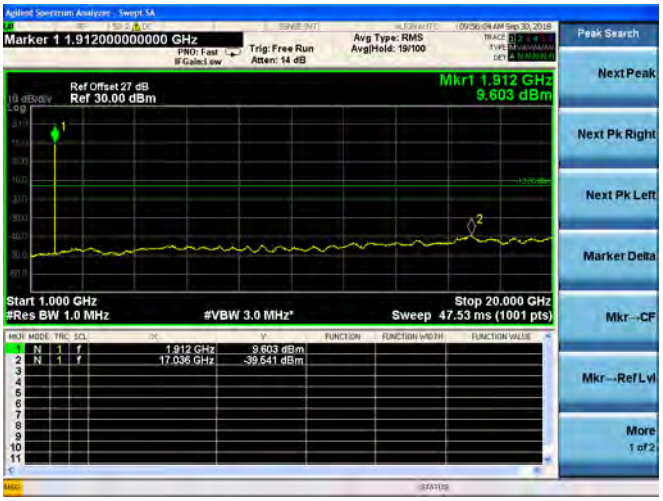
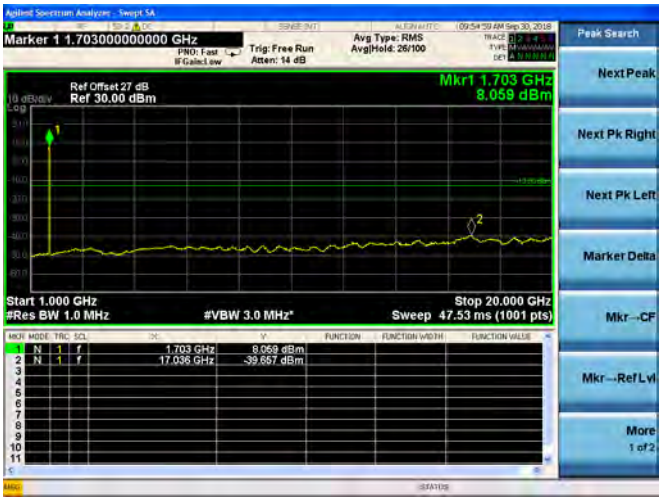
WCDMA 1700MHz CH1312 1712.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
WCDMA 1700MHz CH1412 1732.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

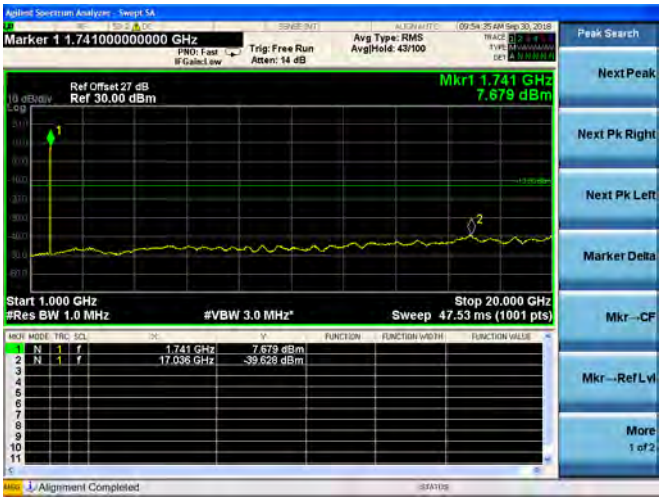
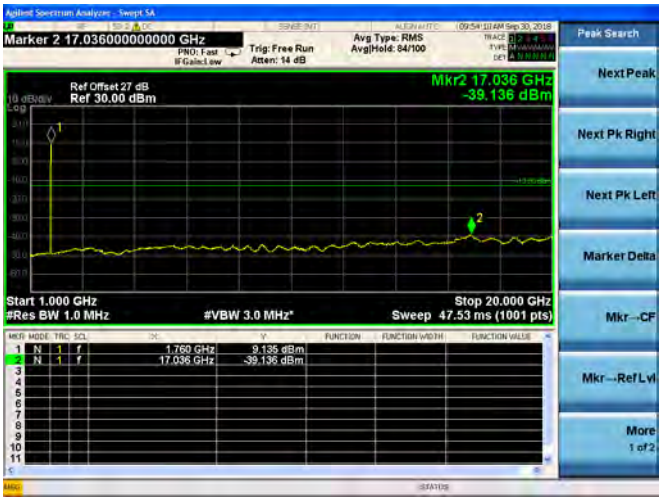
WCDMA 1700MHz CH1513 1752.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSDPA 850MHz CH4132 826.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

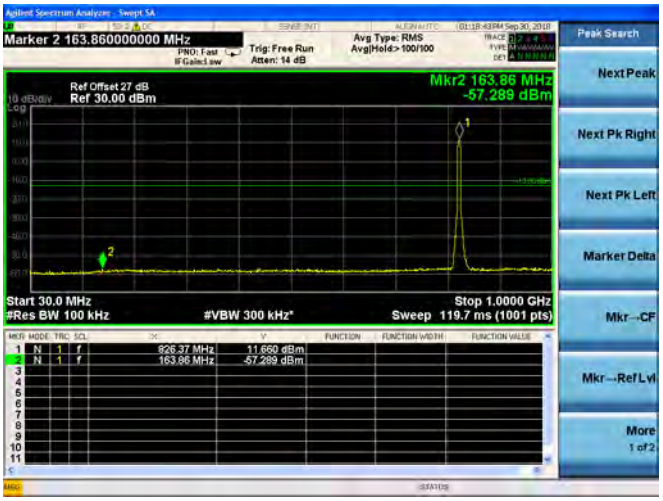
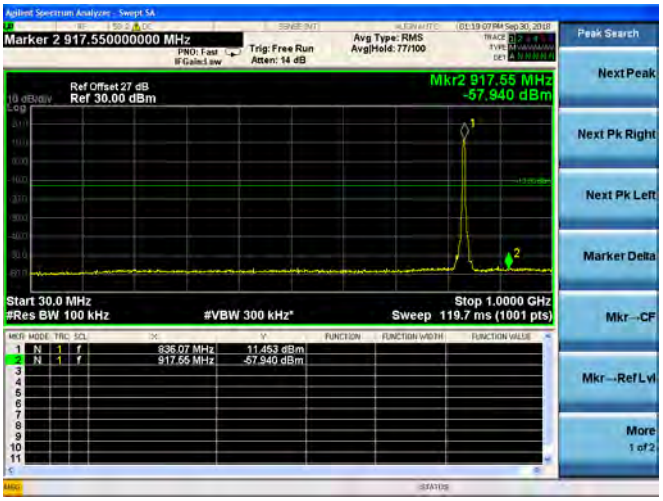
HSDPA 850MHz CH4175 835.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
HSDPA 850MHz CH4233 846.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

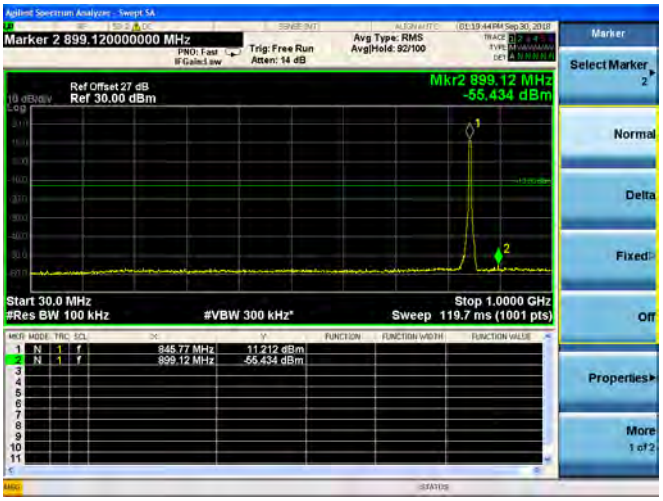
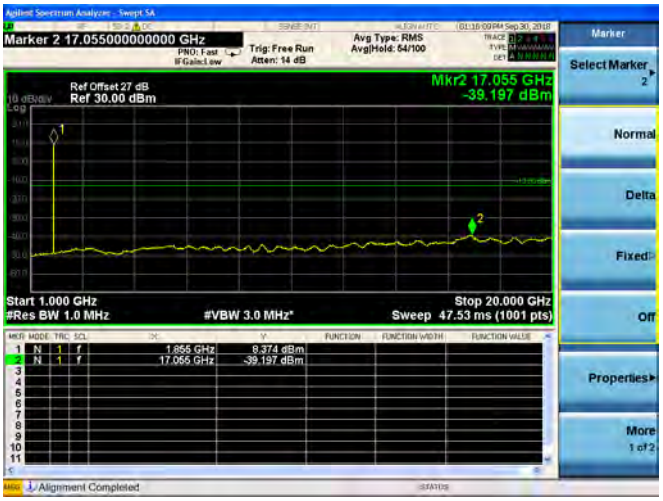
HSDPA 1900MHz CH9262 1852.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

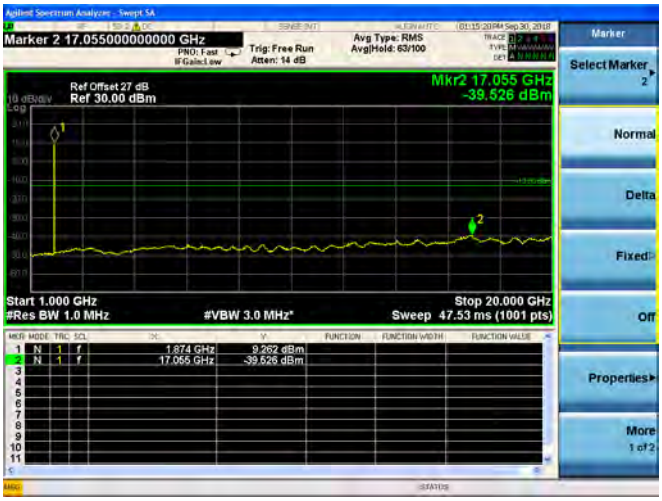
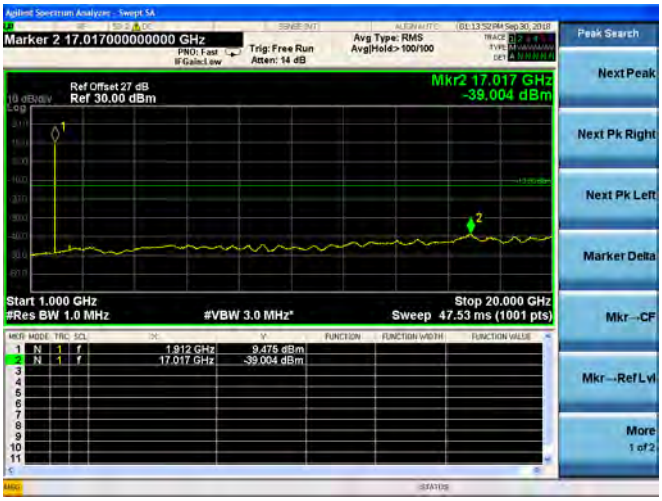
HSDPA 1900MHz CH9400 1880.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

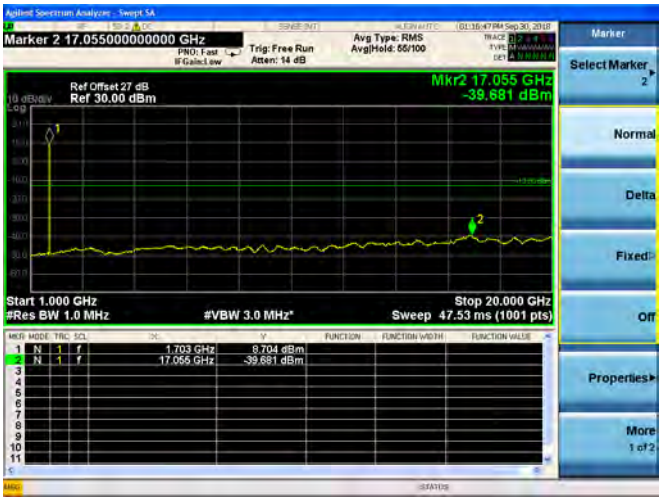
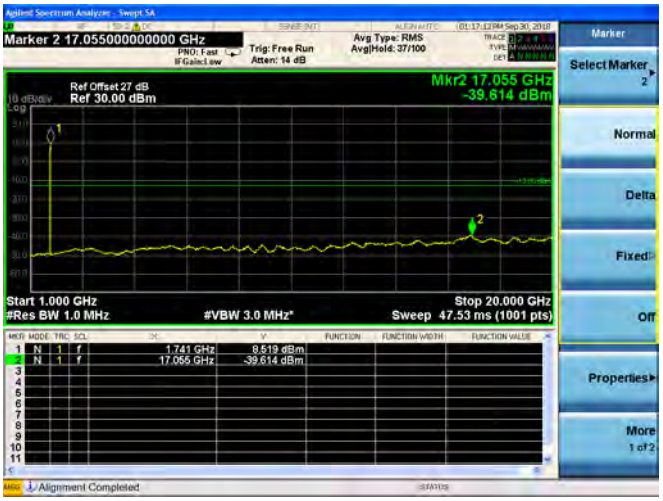
HSDPA 1900MHz CH9538 1907.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSDPA 1700MHz CH1312 1712.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

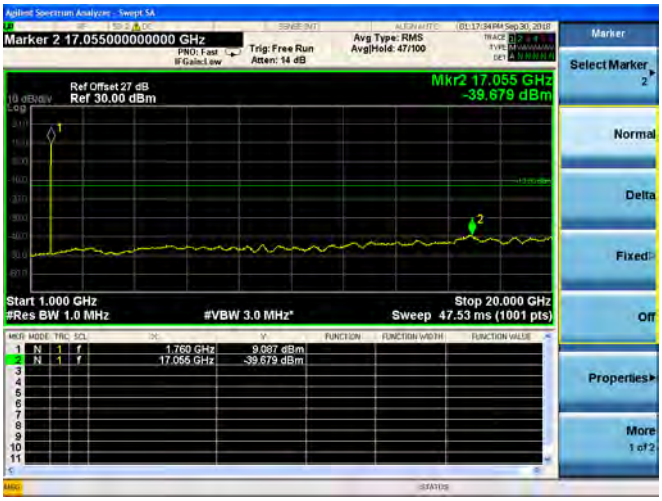
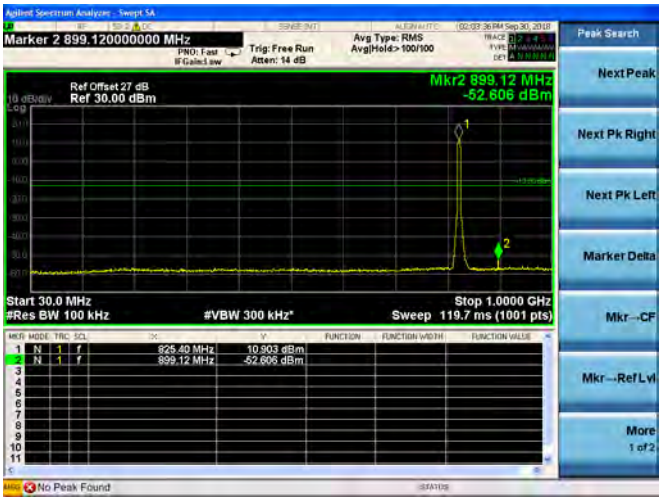
HSDPA 1700MHz CH1412 1732.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSDPA 1700MHz CH1513 1752.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

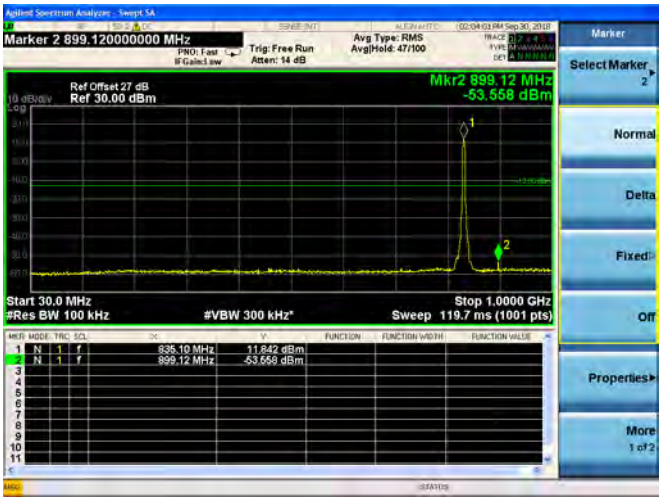
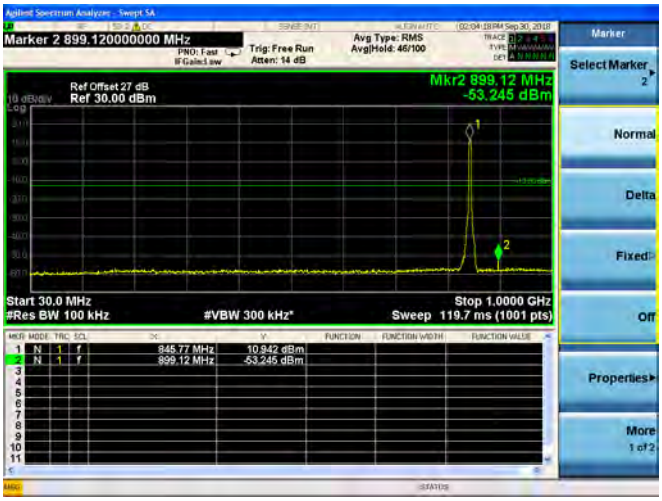
HSUPA 850MHz CH4132 826.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
HSUPA 850MHz CH4175 835.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

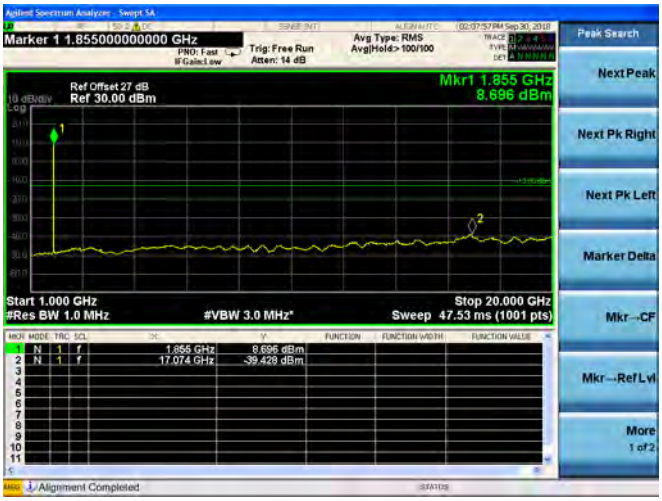
HSUPA 850MHz CH4233 846.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
HSUPA 1900MHz CH9262 1852.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

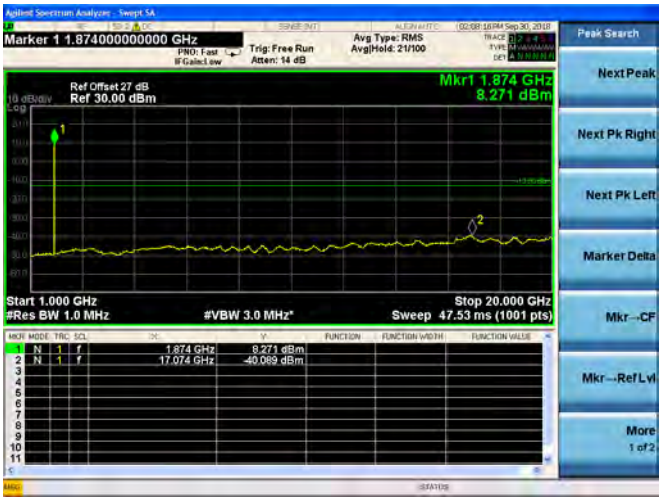
HSUPA 1900MHz CH9400 1880.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSUPA 1900MHz CH9538 1907.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

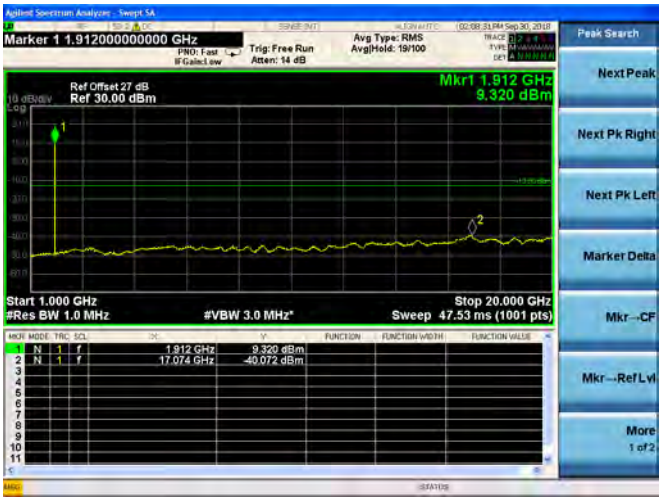
HSUPA 1700MHz CH1312 1712.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSUPA 1700MHz CH1412 1732.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

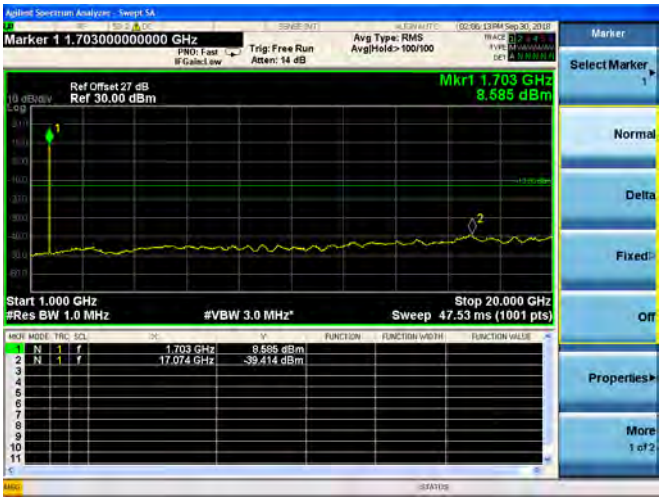
HSUPA 1700MHz CH1513 1752.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	
HSPA+ 850MHz CH4132 826.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

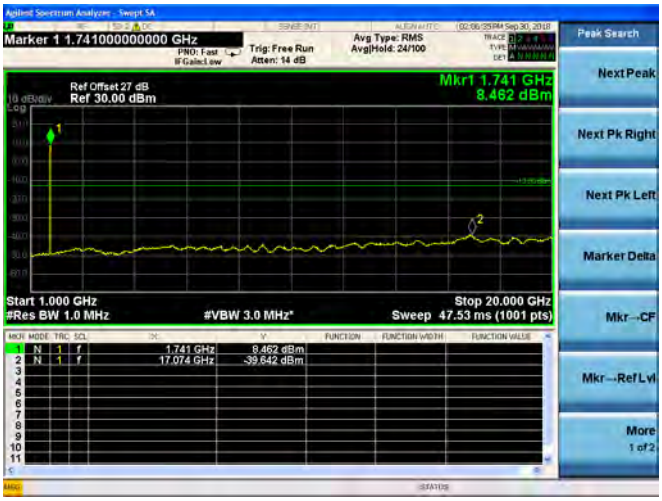
HSPA+ 850MHz CH4175 835.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	
HSPA+ 850MHz CH4233 846.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-9GHz**
	

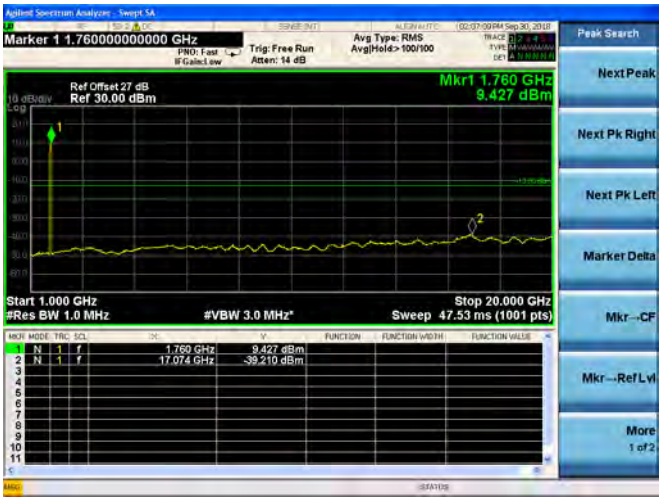
HSPA+ 1900MHz CH9262 1852.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

HSPA+ 1900MHz CH9400 1880.0MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

HSPA+ 1900MHz CH9538 1907.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

HSPA+ 1700MHz CH1312 1712.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

HSPA+ 1700MHz CH1412 1732.4MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

HSPA+ 1700MHz CH1513 1752.6MHz	
Frequency Range: 30MHz-1GHz	**Frequency Range: 1GHz-20GHz**
	

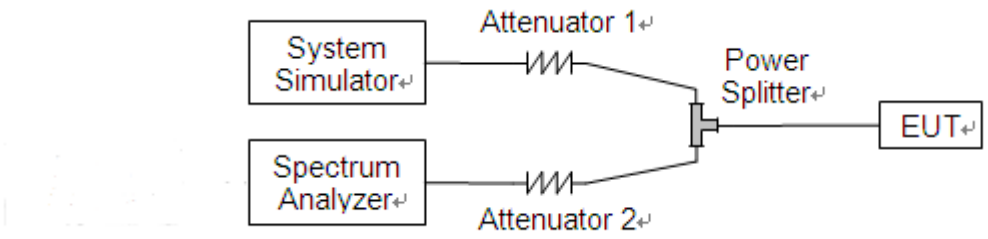
2.6. Band Edge

2.6.1. Requirement

According to FCC section 22.917(b), 24.238(b) and 27.53(h) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

2.6.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

2.6.3. Test Result

The lowest and highest channels are tested to verify the band edge emissions.

WCDMA 850MHz CH4132 826.4MHz	WCDMA 850MHz CH4233 846.6MHz
	
WCDMA 1900MHz CH9262 1852.4MHz	**WCDMA 1900MHz CH9538 1907.6MHz**
	

WCDMA 1700MHz CH1312 1712.4MHz	WCDMA 1700MHz CH1513 1752.6MHz
	
HSDPA 850MHz CH4132 826.4MHz	**HSDPA 850MHz CH4233 846.6MHz**
	
HSDPA 1900MHz CH9262 1852.4MHz	**HSDPA 1900MHz CH9538 1907.6MHz**
	

HSDPA 1700MHz CH1312 1712.4MHz	HSDPA 1700MHz CH1513 1752.6MHz
	
HSUPA 850MHz CH4132 826.4MHz	**HSUPA 850MHz CH4233 846.6MHz**
	

HSUPA 1900MHz CH9262 1852.4MHz	HSUPA 1900MHz CH9538 1907.6MHz
	
HSUPA 1700MHz CH1312 1712.4MHz	**HSUPA 1700MHz CH1513 1752.6MHz**
	

HSPA+ 850MHz CH4132 826.4MHz	HSPA+ 850MHz CH4233 846.6MHz
	
HSPA+ 1900MHz CH9262 1852.4MHz	**HSPA+ 1900MHz CH9538 1907.6MHz**
	
HSPA+ 1700MHz CH1312 1712.4MHz	**HSPA+ 1700MHz CH1513 1752.6MHz**
	

2.7. Transmitter Radiated Power (EIRP/ERP)

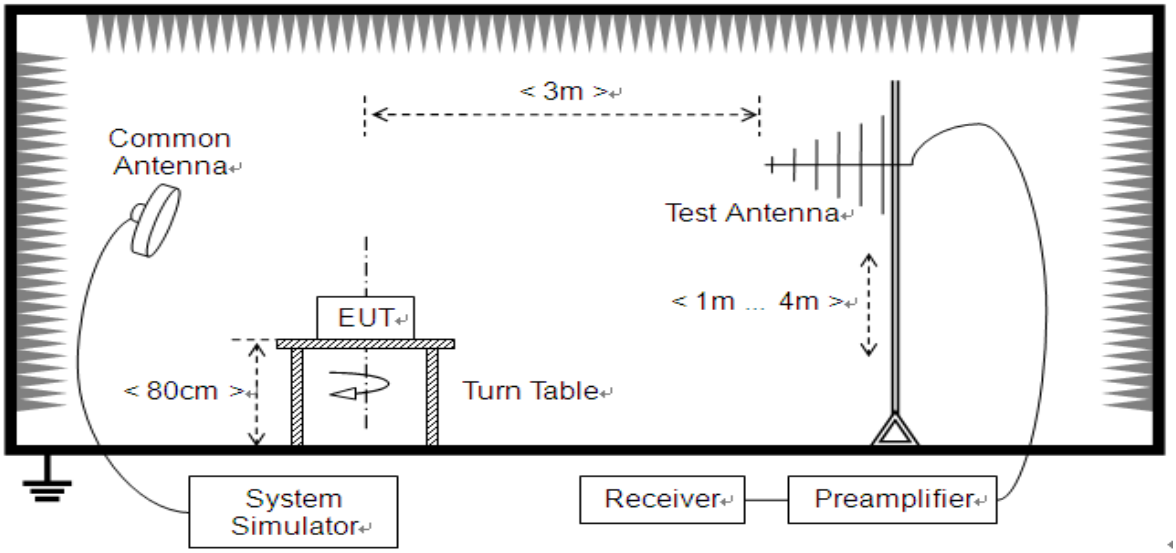
2.7.1. Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.
According to FCC section 27.50, mobile, and portable (hand-held) stations is limited to 1 Watts e.i.r.p. peak power.

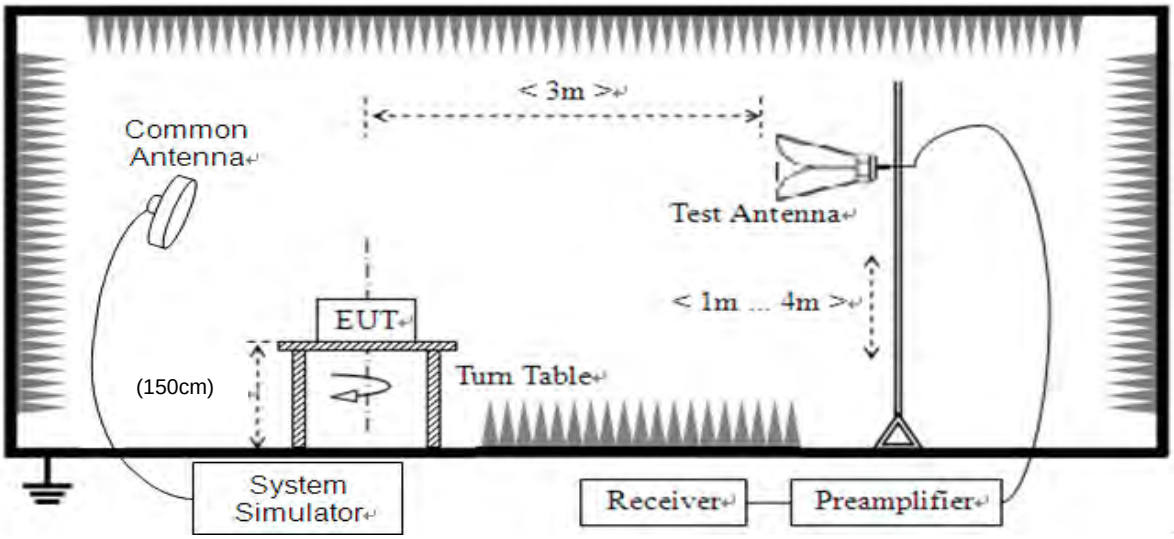
2.7.2. Test Description

Test Setup:

1) Below1GHz



2) Above 1GHz



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

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2.7.3. Test Result

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}.

WCDMA Test verdict:

Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	23.34	0.216	Plot G	38.5	7	PASS
	4175	835.0	22.96	0.198				PASS
	4233	846.6	23.43	0.220				PASS
HSDPA 850MHz	4132	826.4	23.02	0.200	Plot H	38.5	7	PASS
	4175	835.0	23.52	0.225				PASS
	4233	846.6	23.78	0.239				PASS
HSUPA 850MHz	4132	826.4	22.89	0.195	Plot I	38.5	7	PASS
	4175	835.0	22.96	0.198				PASS
	4233	846.6	23.27	0.212				PASS
HSPA+ 850MHz	4132	826.4	22.91	0.195	Plot J	38.5	7	PASS
	4175	835.0	23.77	0.238				PASS
	4233	846.6	23.57	0.228				PASS
WCDMA 1900MHz	9262	1852.4	24.61	0.289	Plot K	33	2	PASS
	9400	1880.0	24.73	0.297				PASS
	9538	1907.6	23.09	0.204				PASS
HSDPA 1900MHz	9262	1852.4	24.19	0.262	Plot L	33	2	PASS
	9400	1880.0	24.71	0.296				PASS
	9538	1907.6	23.13	0.206				PASS
HSUPA 1900MHz	9262	1852.4	24.09	0.256	Plot M	33	2	PASS
	9400	1880.0	24.65	0.292				PASS
	9538	1907.6	23.15	0.207				PASS
HSPA+ 1900MHz	9262	1852.4	24.22	0.264	Plot N	33	2	PASS
	9400	1880.0	24.74	0.298				PASS
	9538	1907.6	23.48	0.223				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 1700MHz	1312	1712.4	26.35	0.432	Plot O	30	1	PASS
	1412	1732.4	24.38	0.274				PASS
	1513	1752.6	24.46	0.279				PASS
HSDPA 1700MHz	1312	1712.4	26.05	0.403	Plot P	30	1	PASS
	1412	1732.4	23.84	0.242				PASS
	1513	1752.6	24.97	0.314				PASS
HSUPA 1700MHz	1312	1712.4	26.22	0.419	Plot Q	30	1	PASS
	1412	1732.4	23.70	0.234				PASS
	1513	1752.6	24.39	0.275				PASS
HSPA+ 1700MHz	1312	1712.4	25.96	0.394	Plot R	30	1	PASS
	1412	1732.4	23.90	0.245				PASS
	1513	1752.6	24.94	0.312				PASS
Note 1: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.								

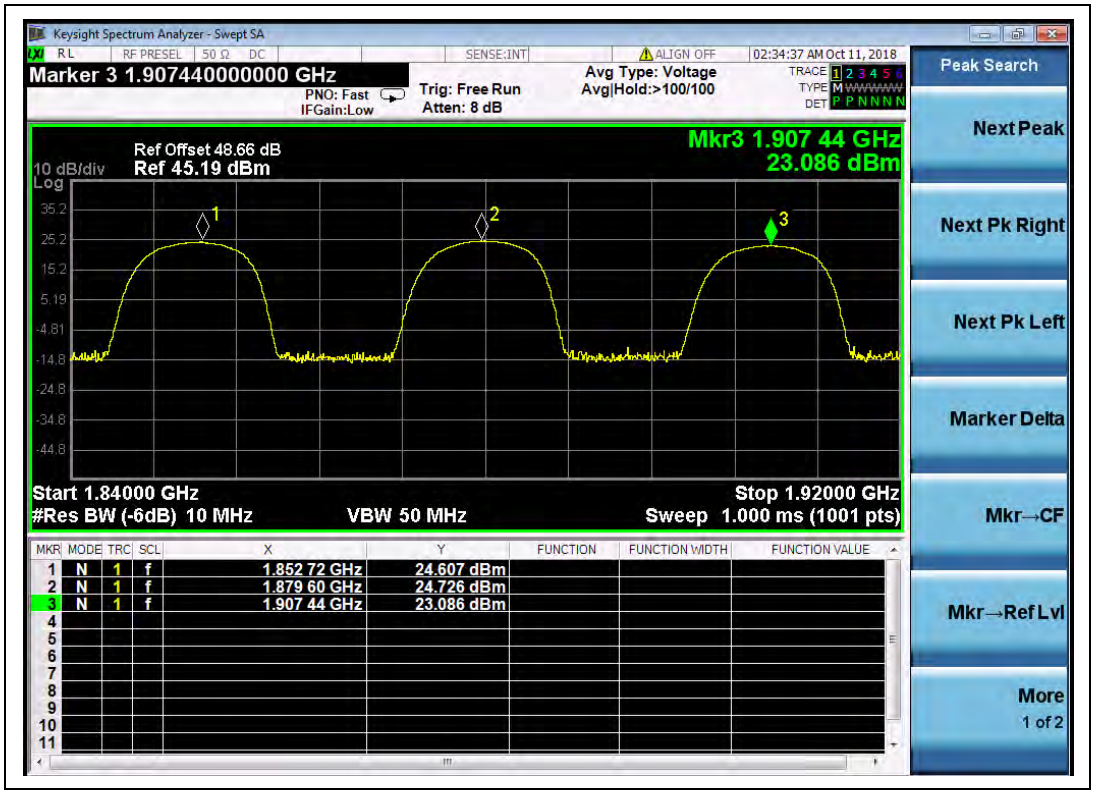
Test Plot

(Plot G, WCDMA 850 MHz, Channel = 4132, 4175, 4233)

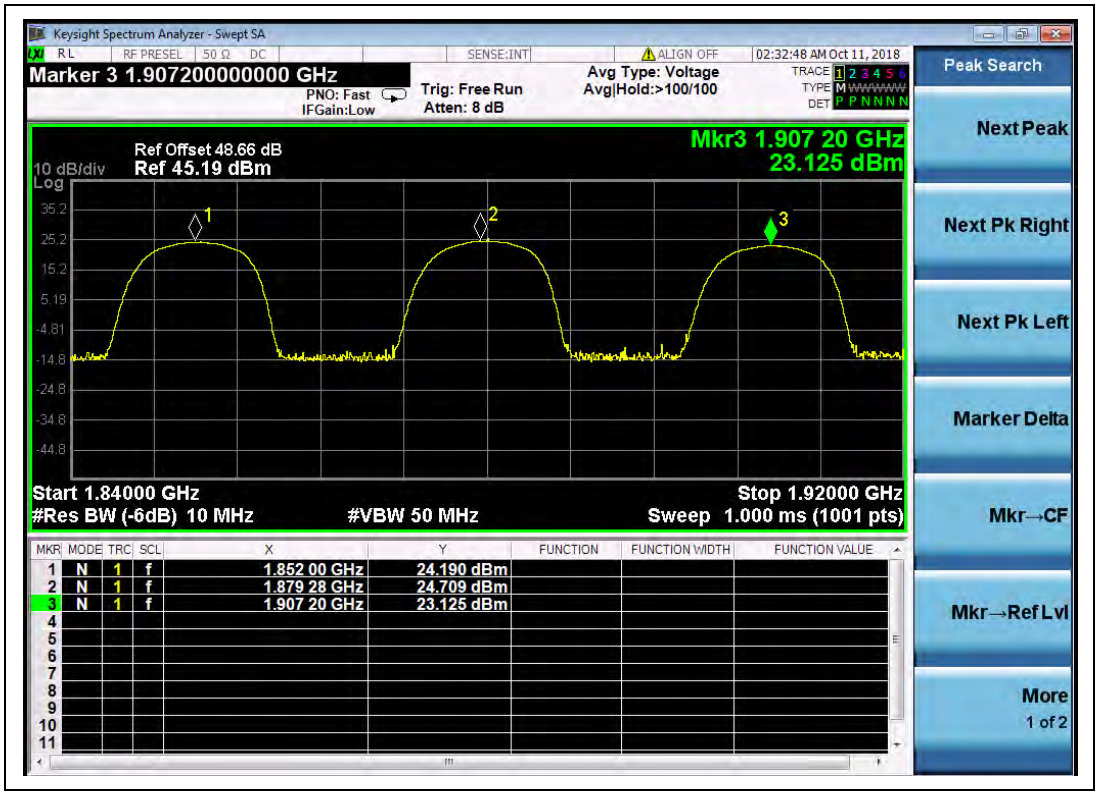
(Plot H, HSDPA 850 MHz, Channel = 4132, 4175, 4233)

(Plot I, HSUPA 850 MHz, Channel = 4132, 4175, 4233)

(Plot J, HSPA+ 850 MHz, Channel = 4132, 4175, 4233)



(Plot K, WCDMA 1900 MHz, Channel = 9262, 9400, 9538)



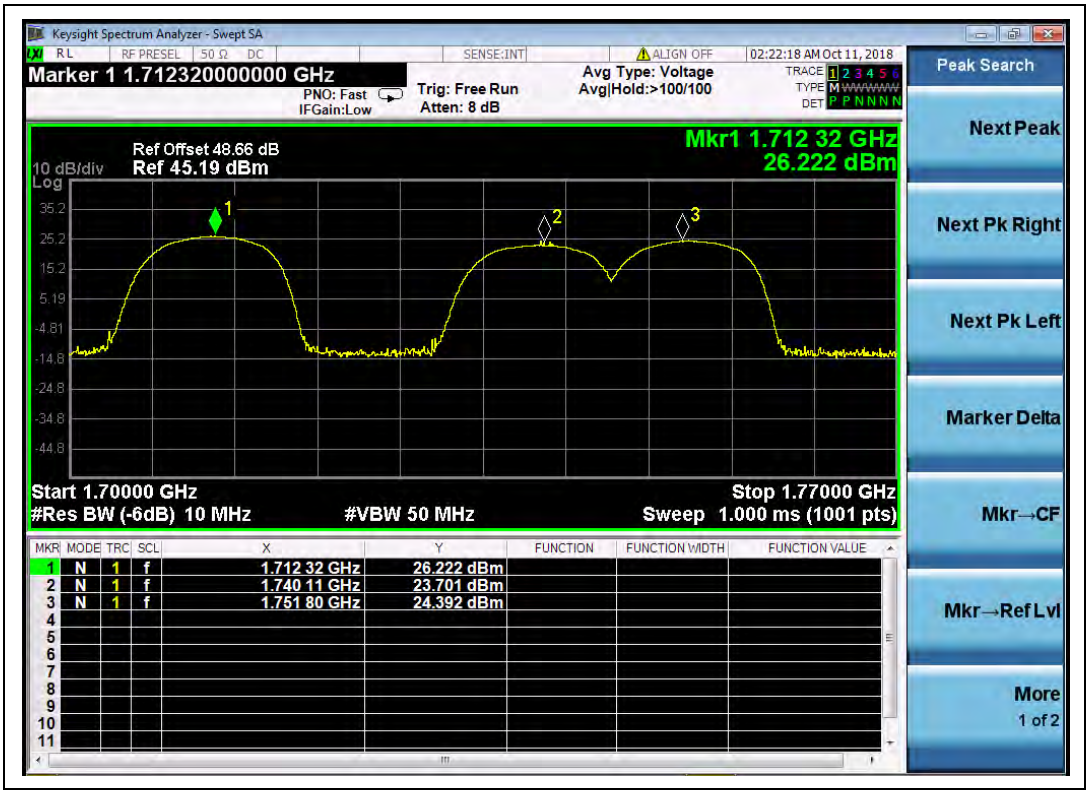
(Plot L, HSDPA1900 MHz, Channel = 9262, 9400, 9538)

(Plot M, HSUPA1900 MHz, Channel = 9262, 9400, 9538)

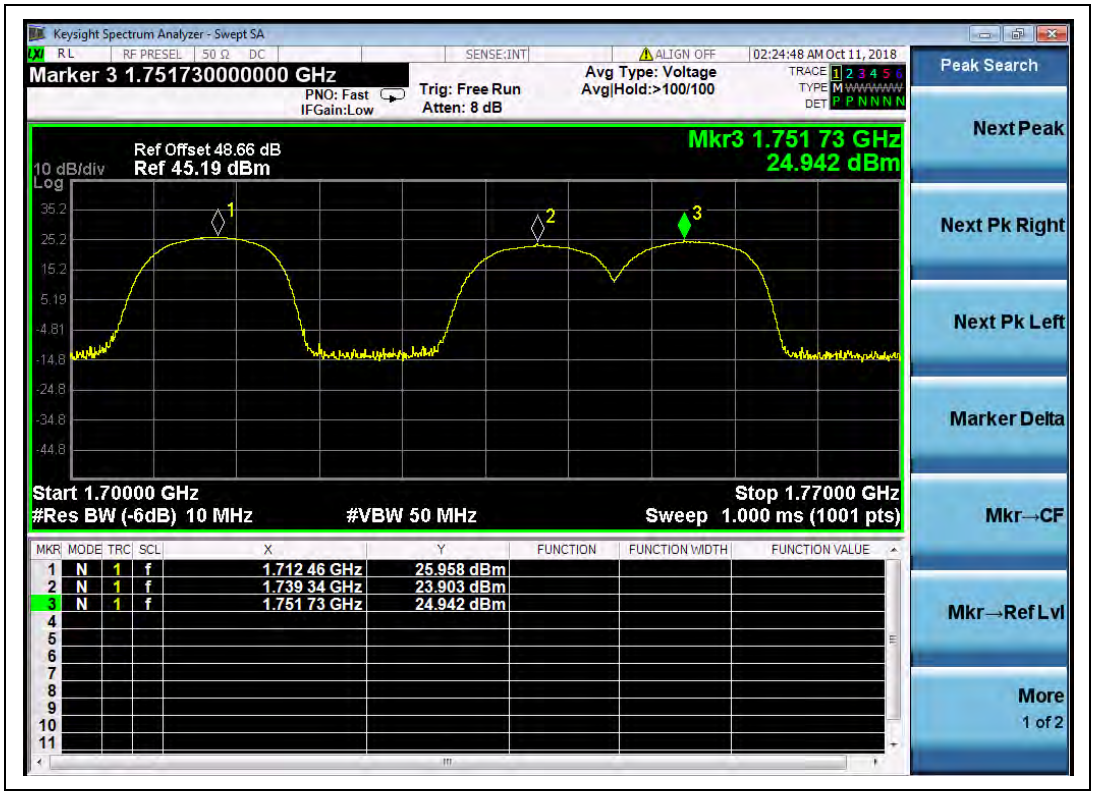
(Plot N, HSPA+ 1900 MHz, Channel = 9262, 9400, 9538)

(Plot O, WCDMA 1700 MHz, Channel = 1312, 1412, 1513)

(Plot P, HSDPA1700 MHz, Channel = 1312, 1412, 1513)



(Plot Q, HSUPA1700 MHz, Channel = 1312, 1412, 1513)



(Plot R, HSPA+1700 MHz, Channel = 1312, 1412, 1513)

2.8. Radiated Out of Band Emissions

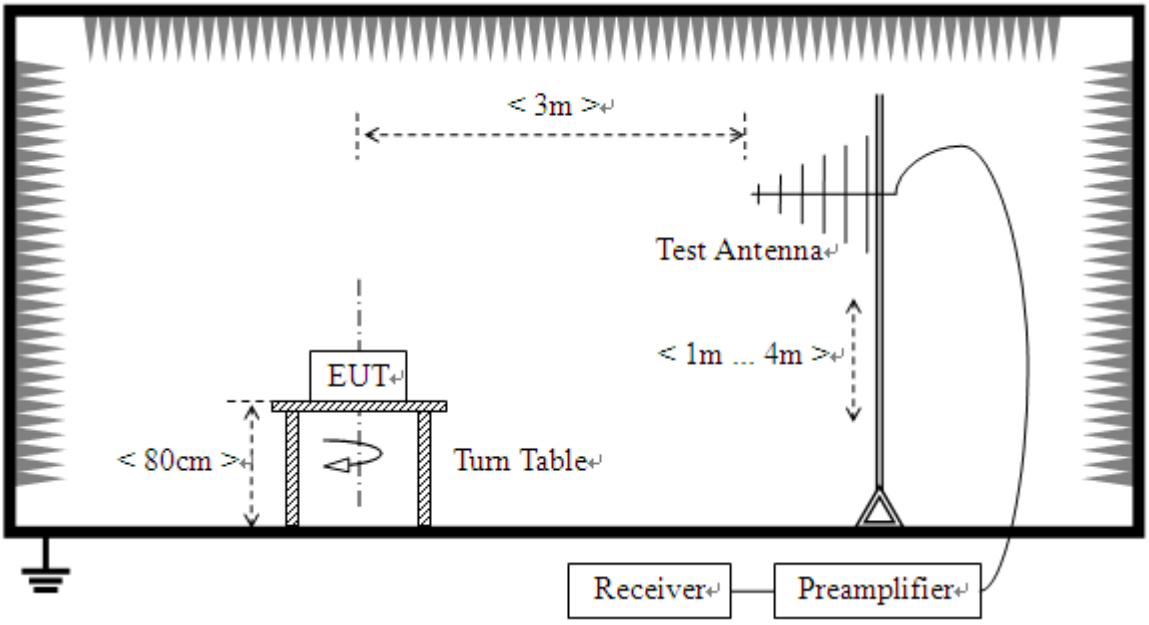
2.8.1. Requirement

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.

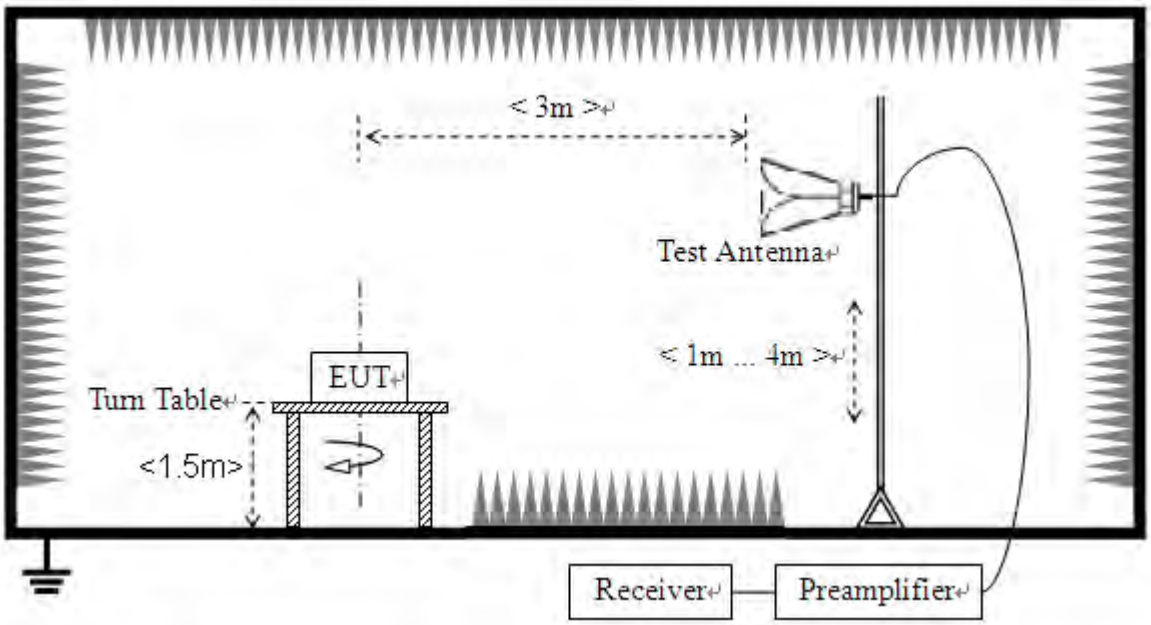
2.8.2. Test Description

Test Setup:

1) Below1GHz



2) Above 1GHz



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

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) and a Horn one (used for above 3 GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

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

2.8.3. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions. The power of the EUT transmitting frequency should be ignored.

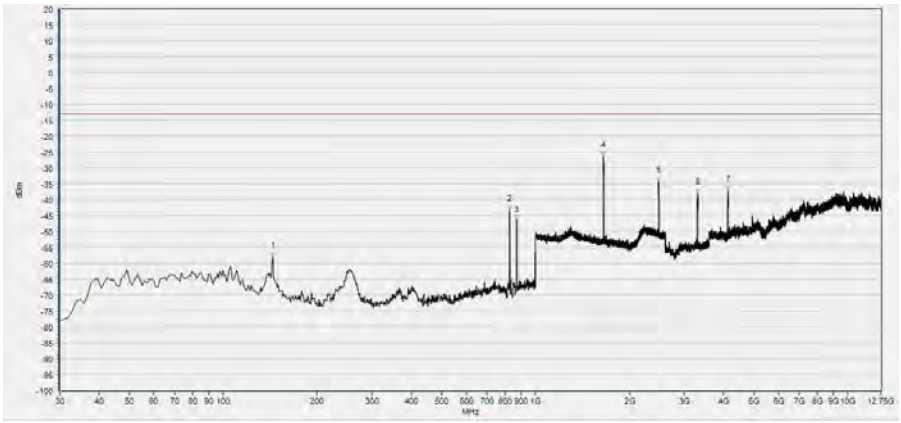
Note 1: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

Note 2: 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.

A. Test Verdict:

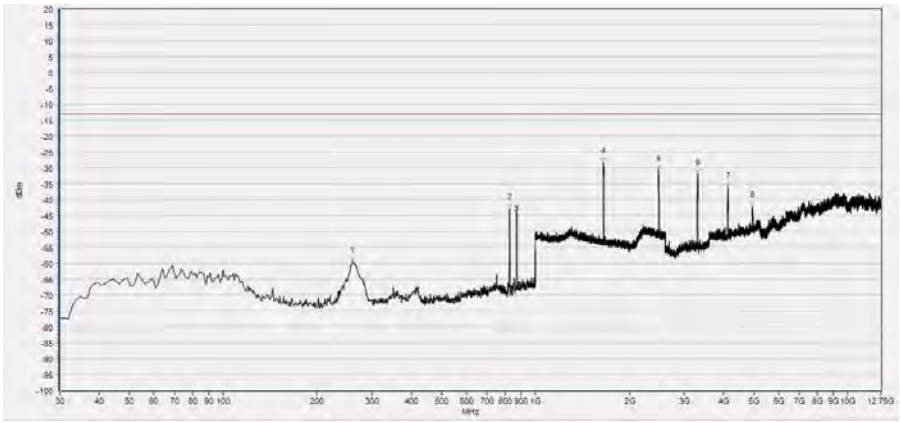
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E1/E2	-13	PASS
	4175	835.0	< -25	< -25	Plot E3/E4		PASS
	4233	846.6	< -25	< -25	Plot E5/E6		PASS
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F1/F2	-13	PASS
	9400	1880.0	< -25	< -25	Plot F3/F4		PASS
	9538	1907.6	< -25	< -25	Plot F5/F6		PASS
WCDMA 1700MHz	1312	1712.4	< -25	< -25	Plot G1/G2	-13	PASS
	1412	1732.4	< -25	< -25	Plot G3/G4		PASS
	1513	1752.6	< -25	< -25	Plot G5/G6		PASS

B. Test Plots



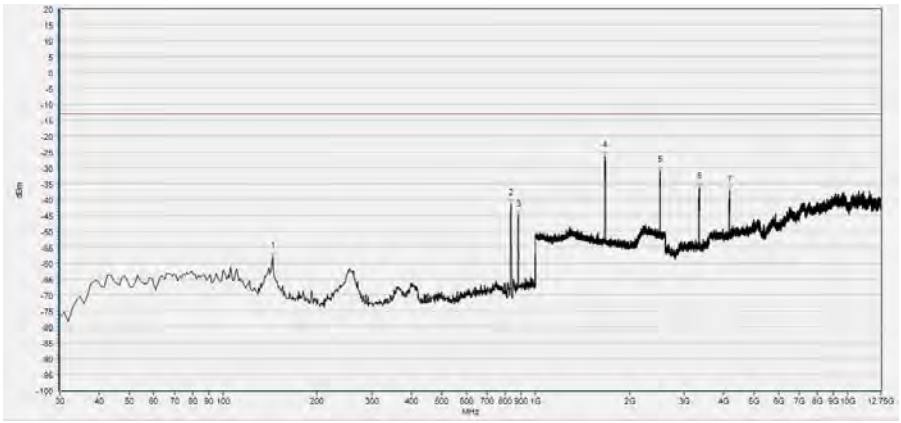
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-58.07	-13.00	Horizontal	PASS
2	827.340	-43.30	-13.00	Horizontal	N/A
3	870.990	-46.18	-13.00	Horizontal	N/A
4	1650.500	-26.35	-13.00	Horizontal	PASS
5	2475.790	-34.31	-13.00	Horizontal	PASS
6	3301.400	-38.15	-13.00	Horizontal	PASS
7	4126.468	-37.12	-13.00	Horizontal	PASS

(Plot E1, WCDMA 850MHz, Channel = 4132, Horizontal)



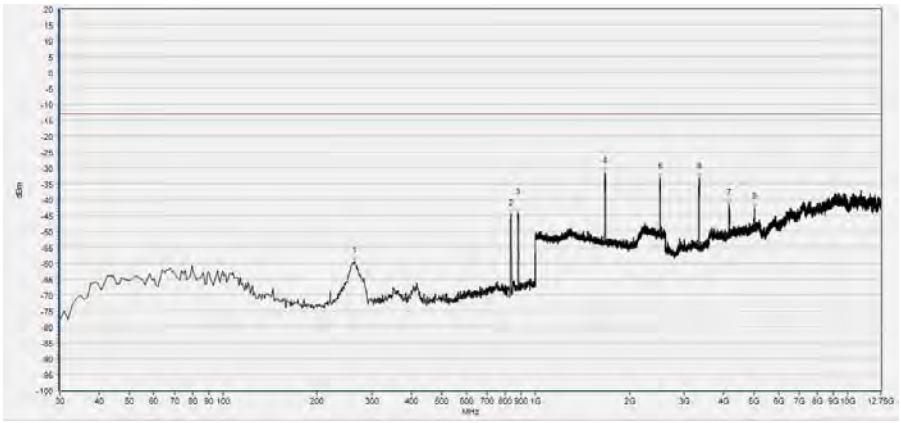
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	258.920	-59.47	-13.00	Vertical	PASS
2	827.340	-42.92	-13.00	Vertical	N/A
3	870.990	-43.39	-13.00	Vertical	N/A
4	1650.500	-28.26	-13.00	Vertical	PASS
5	2476.431	-30.71	-13.00	Vertical	PASS
6	3301.400	-31.99	-13.00	Vertical	PASS
7	4126.468	-36.13	-13.00	Vertical	PASS
8	4953.382	-42.05	-13.00	Vertical	PASS

(Plot E2, WCDMA 850MHz, Channel = 4132, Vertical)



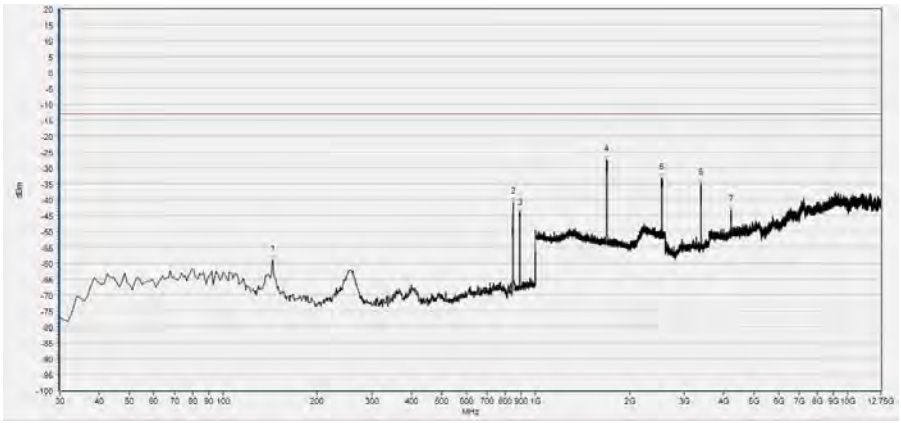
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-58.16	-13.00	Horizontal	PASS
2	835.100	-41.35	-13.00	Horizontal	N/A
3	881.660	-44.90	-13.00	Horizontal	N/A
4	1671.629	-26.47	-13.00	Horizontal	PASS
5	2507.803	-30.87	-13.00	Horizontal	PASS
6	3343.853	-36.26	-13.00	Horizontal	PASS
7	4179.996	-37.23	-13.00	Horizontal	PASS

(Plot E3, WCDMA 850MHz, Channel = 4175, Horizontal)



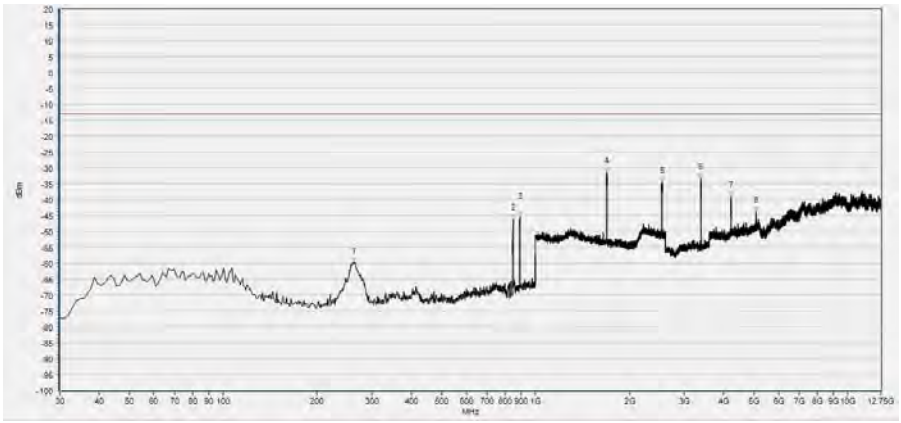
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	263.770	-59.43	-13.00	Vertical	PASS
2	834.130	-44.87	-13.00	Vertical	N/A
3	878.750	-44.32	-13.00	Vertical	N/A
4	1672.269	-31.45	-13.00	Vertical	PASS
5	2507.803	-33.18	-13.00	Vertical	PASS
6	3343.853	-33.21	-13.00	Vertical	PASS
7	4170.767	-41.54	-13.00	Vertical	PASS
8	5016.139	-42.55	-13.00	Vertical	PASS

(Plot E4, WCDMA 850MHz, Channel = 4175, Vertical)



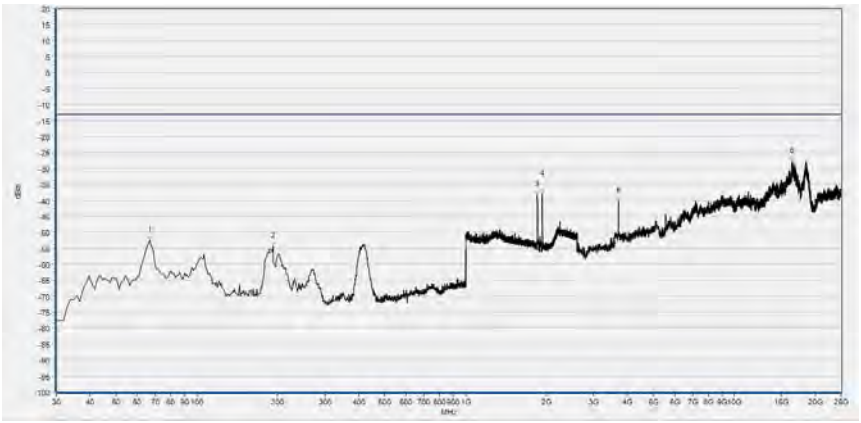
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-59.08	-13.00	Horizontal	PASS
2	847.710	-40.99	-13.00	Horizontal	N/A
3	893.300	-44.19	-13.00	Horizontal	N/A
4	1690.836	-27.52	-13.00	Horizontal	PASS
5	2539.176	-33.32	-13.00	Horizontal	PASS
6	3382.615	-35.03	-13.00	Horizontal	PASS
7	4227.987	-43.32	-13.00	Horizontal	PASS

(Plot E5, WCDMA 850MHz, Channel = 4233, Horizontal)



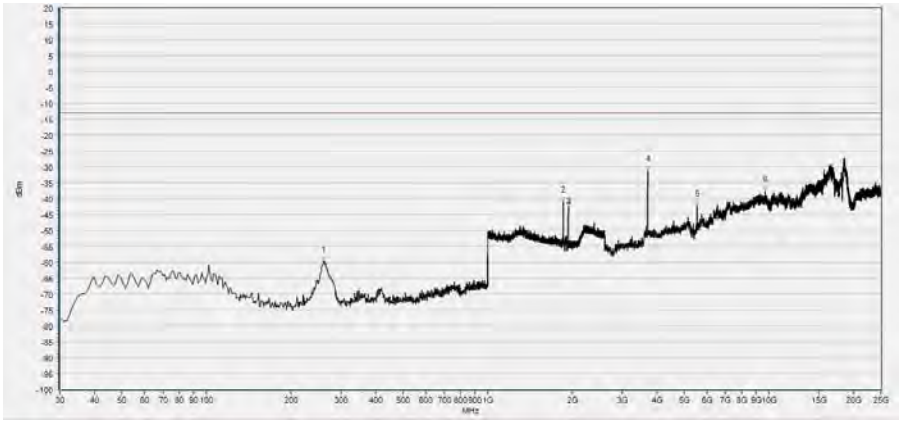
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	261.830	-59.83	-13.00	Vertical	PASS
2	848.680	-46.18	-13.00	Vertical	N/A
3	892.330	-45.55	-13.00	Vertical	N/A
4	1690.836	-31.43	-13.00	Vertical	PASS
5	2542.377	-34.51	-13.00	Vertical	PASS
6	3386.307	-33.34	-13.00	Vertical	PASS
7	4237.216	-39.11	-13.00	Vertical	PASS
8	5084.434	-43.71	-13.00	Vertical	PASS

(Plot E6, WCDMA 850MHz, Channel = 4233, Vertical)



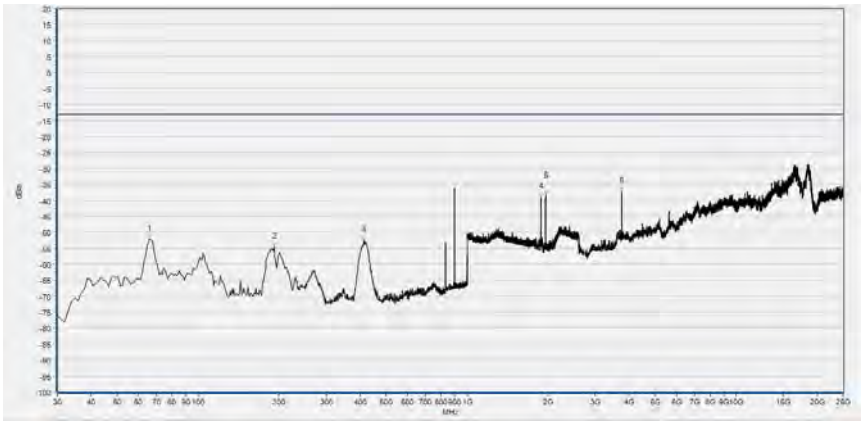
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	66.860	-52.55	-13.00	Horizontal	PASS
2	191.990	-54.36	-13.00	Horizontal	PASS
3	1851.541	-38.28	-13.00	Horizontal	N/A
4	1933.493	-37.90	-13.00	Horizontal	N/A
5	3703.910	-40.35	-13.00	Horizontal	PASS
6	16437.570	-27.85	-13.00	Horizontal	PASS

(Plot F1, WCDMA 1900MHz, Channel = 9262, Horizontal)



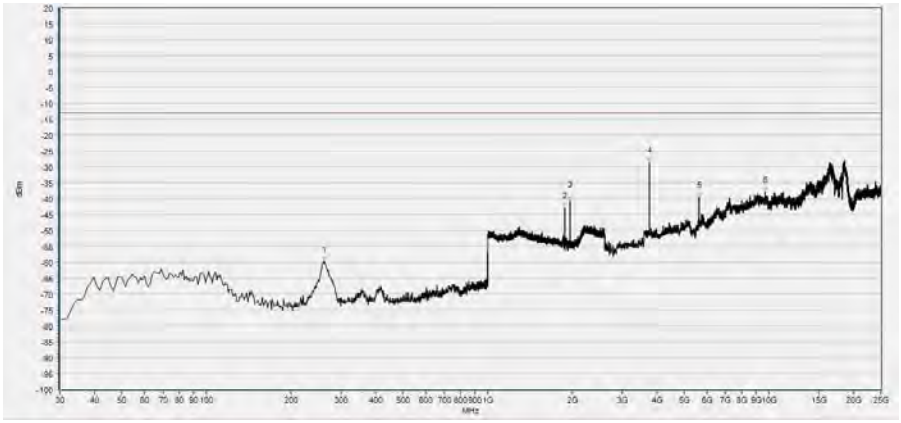
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	260.860	-59.66	-13.00	Vertical	PASS
2	1851.541	-40.94	-13.00	Vertical	N/A
3	1933.493	-42.40	-13.00	Vertical	N/A
4	3707.983	-31.26	-13.00	Vertical	PASS
5	5553.264	-42.08	-13.00	Vertical	PASS
6	9708.201	-37.53	-13.00	Vertical	PASS

(Plot F2, WCDMA 1900MHz, Channel = 9262, Vertical)



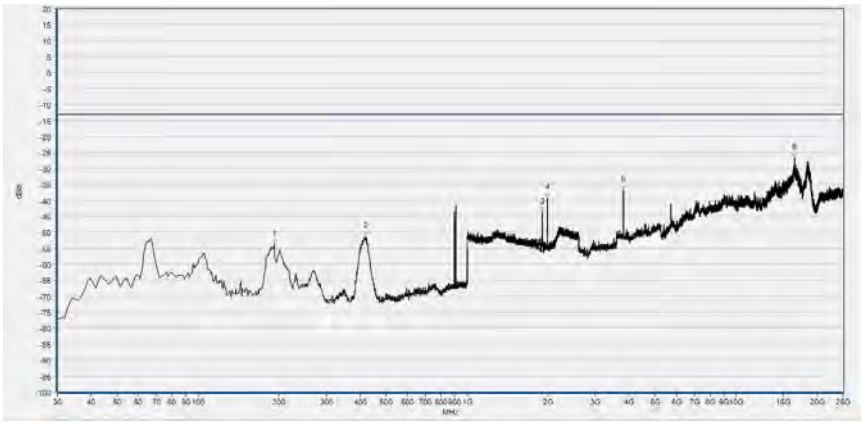
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	65.890	-52.09	-13.00	Horizontal	PASS
2	191.990	-54.69	-13.00	Horizontal	PASS
3	414.120	-52.37	-13.00	Horizontal	PASS
4	1879.072	-39.08	-13.00	Horizontal	N/A
5	1959.744	-38.23	-13.00	Horizontal	N/A
6	3756.865	-37.22	-13.00	Horizontal	PASS

(Plot F3, WCDMA 1900MHz, Channel = 9400, Horizontal)



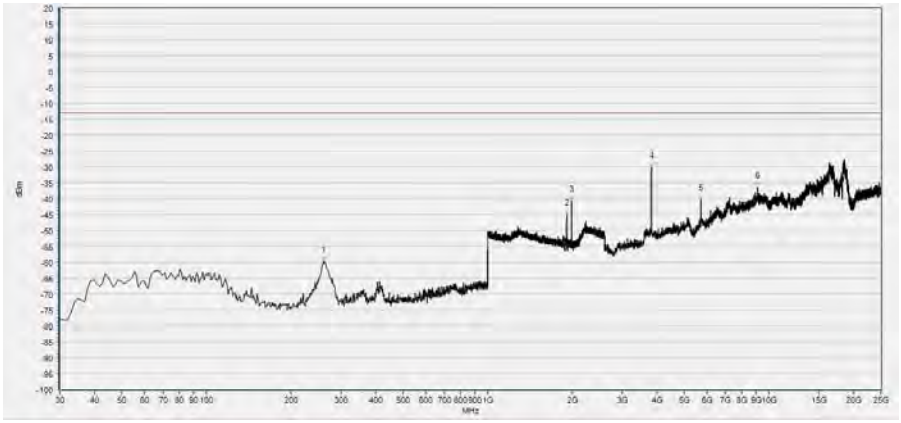
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	262.800	-59.82	-13.00	Vertical	PASS
2	1878.431	-42.91	-13.00	Vertical	N/A
3	1959.744	-40.62	-13.00	Vertical	N/A
4	3756.865	-28.67	-13.00	Vertical	PASS
5	5638.807	-39.54	-13.00	Vertical	PASS
6	9704.128	-37.75	-13.00	Vertical	PASS

(Plot F4, WCDMA 1900MHz, Channel = 9400, Vertical)



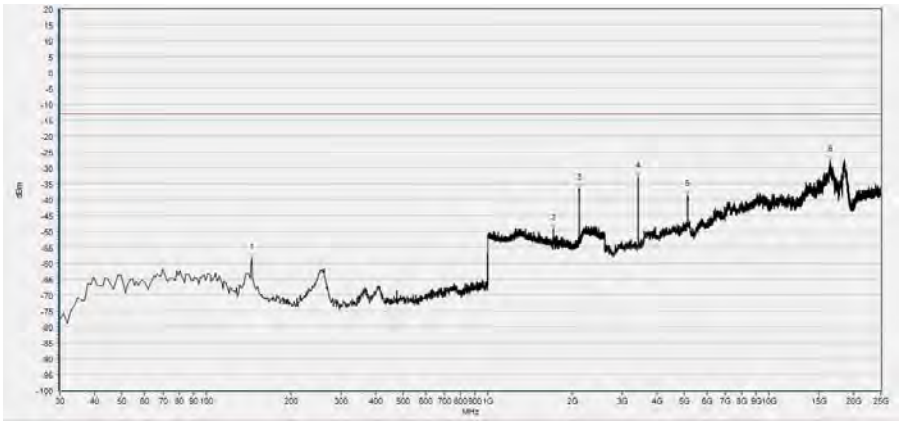
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	191.990	-53.70	-13.00	Horizontal	PASS
2	421.880	-51.37	-13.00	Horizontal	PASS
3	1908.523	-43.63	-13.00	Horizontal	N/A
4	1986.635	-39.27	-13.00	Horizontal	N/A
5	3813.893	-36.78	-13.00	Horizontal	PASS
6	16539.407	-26.70	-13.00	Horizontal	PASS

(Plot F5, WCDMA 1900MHz, Channel = 9538, Horizontal)



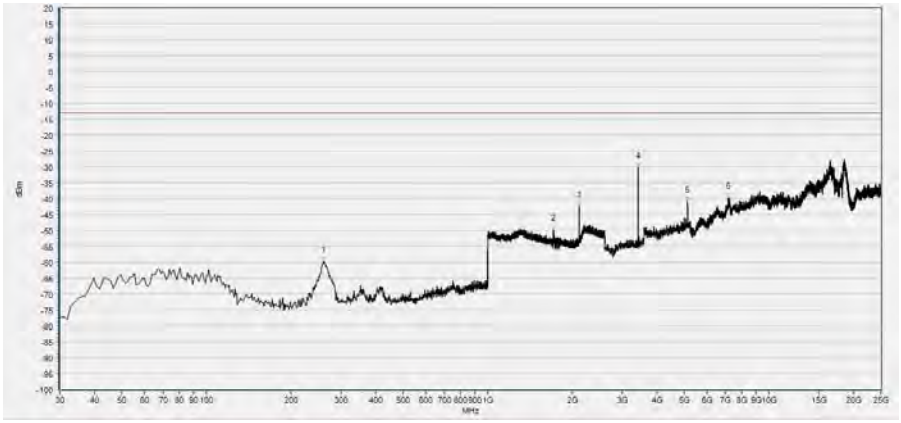
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	260.860	-59.70	-13.00	Vertical	PASS
2	1907.883	-45.09	-13.00	Vertical	N/A
3	1986.635	-40.63	-13.00	Vertical	N/A
4	3817.967	-30.35	-13.00	Vertical	PASS
5	5720.276	-40.27	-13.00	Vertical	PASS
6	9089.034	-36.37	-13.00	Vertical	PASS

(Plot F6, WCDMA 1900MHz, Channel = 9538, Vertical)



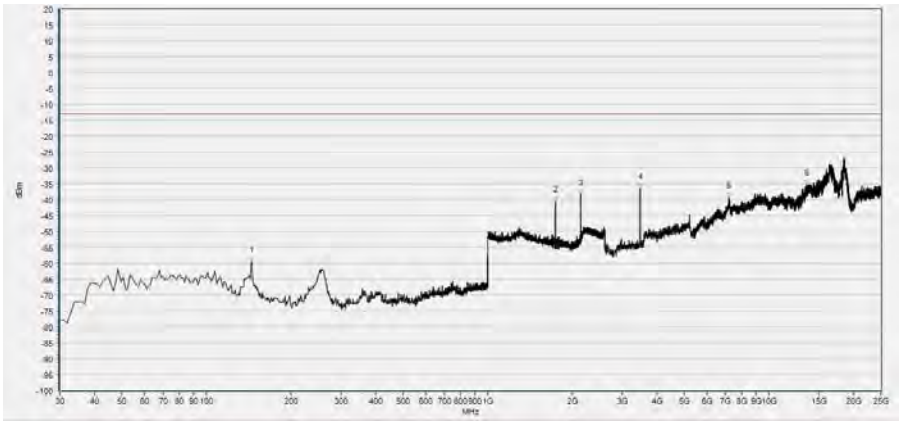
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-58.66	-13.00	Horizontal	PASS
2	1711.325	-49.33	-13.00	Horizontal	N/A
3	2110.844	-36.71	-13.00	Horizontal	N/A
4	3422.841	-32.77	-13.00	Horizontal	PASS
5	5133.697	-38.52	-13.00	Horizontal	PASS
6	16519.040	-27.51	-13.00	Horizontal	PASS

(Plot G1, WCDMA 1700MHz, Channel = 1312, Horizontal)



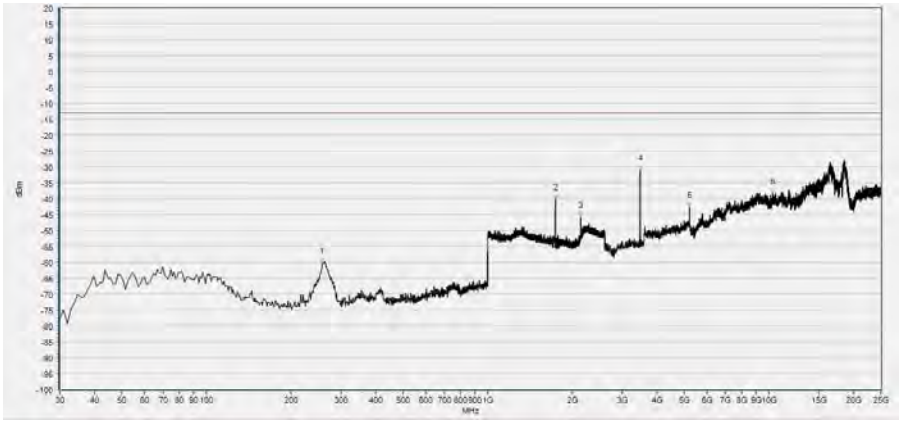
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	259.890	-59.74	-13.00	Vertical	PASS
2	1710.684	-49.83	-13.00	Vertical	N/A
3	2112.125	-42.45	-13.00	Vertical	N/A
4	3422.841	-30.24	-13.00	Vertical	PASS
5	5133.697	-40.85	-13.00	Vertical	PASS
6	7154.137	-39.87	-13.00	Vertical	PASS

(Plot G2, WCDMA 1700MHz, Channel = 1312, Vertical)



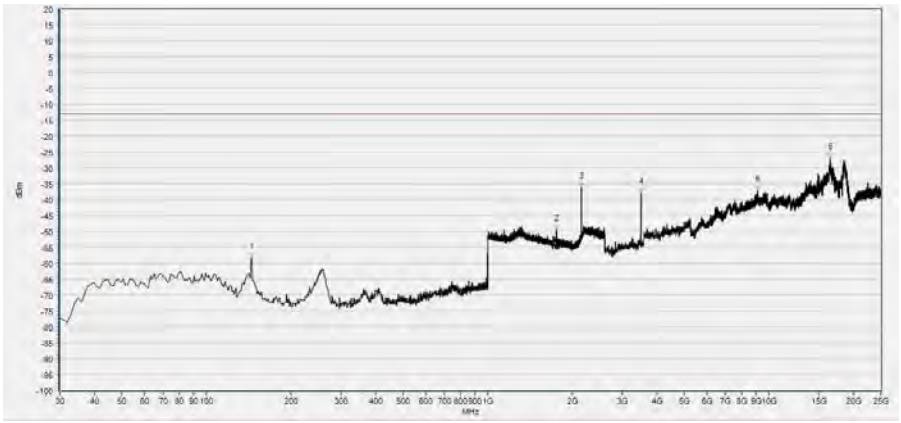
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-59.43	-13.00	Horizontal	PASS
2	1738.215	-40.40	-13.00	Horizontal	N/A
3	2139.656	-38.45	-13.00	Horizontal	N/A
4	3479.869	-36.39	-13.00	Horizontal	PASS
5	7207.092	-39.25	-13.00	Horizontal	PASS
6	13594.290	-35.28	-13.00	Horizontal	PASS

(Plot G3. WCDMA 1700MHz. Channel = 1412, Horizontal)



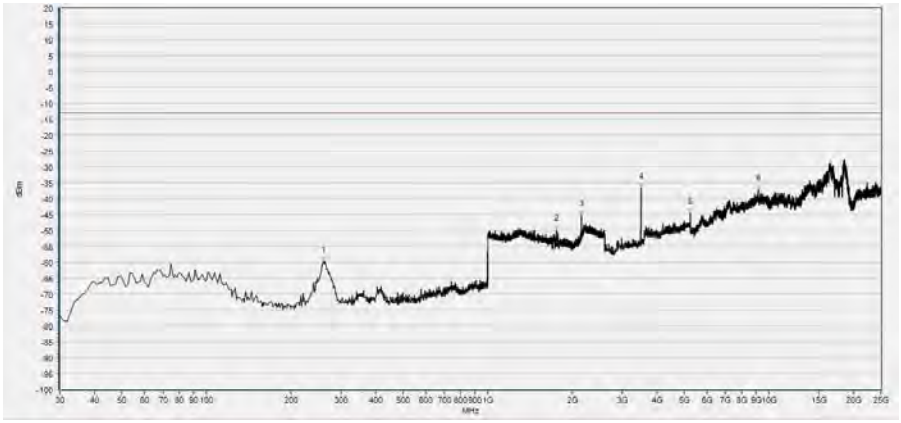
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	257.950	-60.30	-13.00	Vertical	PASS
2	1738.215	-40.26	-13.00	Vertical	N/A
3	2140.296	-45.78	-13.00	Vertical	N/A
4	3479.869	-30.90	-13.00	Vertical	PASS
5	5223.313	-42.54	-13.00	Vertical	PASS
6	10298.854	-38.28	-13.00	Vertical	PASS

(Plot G4, WCDMA 1700MHz, Channel = 1412, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	144.460	-58.29	-13.00	Horizontal	PASS
2	1751.020	-49.52	-13.00	Horizontal	N/A
3	2151.180	-36.11	-13.00	Horizontal	N/A
4	3504.310	-37.75	-13.00	Horizontal	PASS
5	9137.916	-37.19	-13.00	Horizontal	PASS
6	16543.481	-26.94	-13.00	Horizontal	PASS

(Plot G5, WCDMA 1700MHz, Channel = 1513, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	259.890	-59.71	-13.00	Vertical	PASS
2	1751.020	-49.84	-13.00	Vertical	N/A
3	2151.180	-45.14	-13.00	Vertical	N/A
4	3504.310	-36.60	-13.00	Vertical	PASS
5	5259.975	-44.64	-13.00	Vertical	PASS
6	9166.430	-37.25	-13.00	Vertical	PASS

(Plot G6, WCDMA 1700MHz, Channel = 1513, Vertical)

Annex A Test Uncertainty

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

Test items	Uncertainty
Output Power	±2.22dB
Bandwidth	±5%
Conducted Spurious Emission	±2.77 dB
Radiated Emission	±2.95dB

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

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

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

2. Identification of the Responsible Testing Location

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

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2013 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.

4. Test Equipments Utilized

4.1 Conducted Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
Power Splitter	NW521	1506A	Weinschel	2018.04.17	2019.04.16
Attenuator 1	(N/A.)	10dB	Resnet	2018.04.17	2019.04.16
Attenuator 2	(N/A.)	3dB	Resnet	2018.04.17	2019.04.16
EXA Signal Analzyer	MY53470836	N9010A	Agilent	2017.12.03	2018.12.02
Wireless synthesizer	MY48364176	8960 -E5515C	Agilent	2018.04.17	2019.04.16
RF cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial cable	CB02	RF02	Morlab	N/A	N/A
SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	(N/A)	HUT705P	CHONGQING HANBA EXPERIMENTAL EQUIPMENT CO.,LTD	2018.04.17	2019.04.16

4.2 Auxiliary Test Equipment

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

4.3 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
System Simulator	152038	CMW500	R&S	2018.08.04	2019.08.03
Receiver	MY54130016	N9038A	Agilent	2018.05.18	2019.05.17
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2018.03.03	2019.03.02
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2018.08.06	2019.08.05
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2018.08.02	2019.08.01
Coaxial cable (N male) (9KHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde& Schwarz	2018.05.08	2019.05.07
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT