TEST REPORT

APPLICANT	:	Jiangsu SEUIC Technology Co.,Ltd.
PRODUCT NAME	:	Portable Data Collection Terminal
MODEL NAME	:	CRUISE 1
BRAND NAME	:	CRUISE/SEUIC
FCC ID	:	2AC68-CRUISE1P
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2018-10-15
TEST DATE	:	2018-10-18 to 2018-12-21
ISSUE DATE	:	2018-12-21

Edited by: Zeng Xiaoying (Rapporteur)

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

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Change History		
Version	**Date**	**Reason for change**
1.0	2018-12-21	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Jiangsu SEUIC Technology Co.,Ltd.
Applicant Address:	NO.15 Xinghuo Road,Nanjing New & High Technology Industry Development Zone,210061,Nanjing City,Jiangsu Province,China
Manufacturer:	Jiangsu SEUIC Technology Co.,Ltd.
Manufacturer Address:	NO.15 Xinghuo Road,Nanjing New & High Technology Industry Development Zone,210061,Nanjing City,Jiangsu Province,China

1.2. Equipment Under Test (EUT) Description

Product Name:	Portable Data Collection Terminal
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	SLB761_MB_V1.02_PCB
Software Version:	D700P_I_V1.1.5
Modulation Type:	GSM/GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation HSPA+ Mode with QPSK Modulation
Operating Frequency Range:	GSM 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz) WCDMA Band V Tx: 826.4 - 846.6MHz (at intervals of 200kHz); Rx: 871.4 - 891.6MHz (at intervals of 200kHz) WCDMA Band II Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)

Emission Designators:	GSM 850:246KGXW, GSM 1900:245KGXW EDGE850:247KG7W, EDGE1900:274KG7W, WCDMA Band V:4M15F9W , WCDMA Band II:4M19F9W,	
Antenna Type:	PIFA Antenna	
Antenna Gain:	GSM 850:	-0.75 dBi
	GSM1900:	2.4 dBi
	WCDMA Band V:	-0.75 dBi
	WCDMA Band II:	2.4 dBi
Accessory Information:	Battery	
	Brand Name:	N/A
	Model No.:	BT01700CRUISE
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	4500mAh
	Rated Voltage:	3.8V
	Charge Limit:	4.35V
	AC Adapter	
	Brand Name:	SHENZHEN TIANYIN ELECTRONICS CO.,LTD
	Model No.:	TPA-23A050200UU01
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	100-240V ～ 50/60Hz 0.3A
	Rated Output:	5V⎓2.0A

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula F(n)=824.2+0.2*(n-128), 128<=n<=251; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).

Note 2: The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula F(n)=1850.2+0.2*(n-512), 512<=n<=810; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).

Note 3: The transmitter (Tx) frequency arrangement of the WCDMA Band V 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), 4182(836.4MHz) and 4233 (846.6MHz).

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA Band II 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 5: 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

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	Dec 21, 2018	Gao Mingzhou	PASS
2	24.232(d)	Peak - Average Ratio	Oct 18, 2018	Gao Mingzhou	PASS
3	2.1049	99% Occupied Bandwidth	Oct 18, 2018	Gao Mingzhou	PASS
4	2.1055, 22.355, 24.235	Frequency Stability	Dec 21, 2018	Gao Mingzhou	PASS
5	2.1051, 22.917(a), 24.238(a)	Conducted Out of Band Emissions	Dec 21, 2018	Gao Mingzhou	PASS
6	2.1051, 22.917(a), 24.238(a)	Band Edge	Oct 18, 2018	Gao Mingzhou	PASS
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Nov 01, 2018 Dec 21, 2018	Wang Dalong	PASS
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Nov 05, 2018	Wang Dalong	PASS

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03 (Oct 27, 2017) and ANSI/TIA-603-E-2016.

Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 26.5dB contains two parts that cable loss 16.5dB and Attenuator 10dB.

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 Requirements

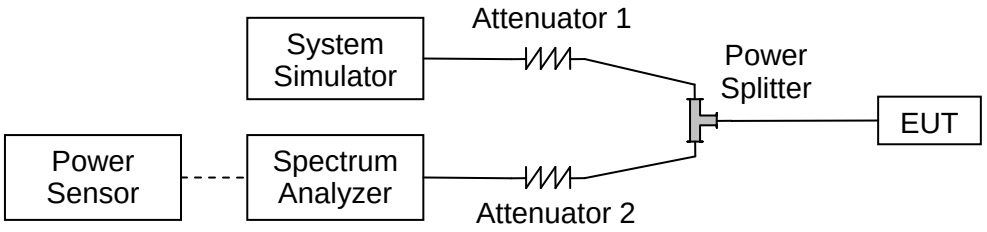
2.1. Conducted RF Output Power

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.

GSM850	Average Power (dBm)		
TX Channel	**128**	**190**	**251**
Frequency (MHz)	**824.2**	**836.6**	**848.8**
GSM 1 Tx slot	31.92	31.90	32.18
GPRS 1 Tx slot	31.98	31.90	32.19
GPRS 2 Tx slots	29.21	29.18	29.23
GPRS 3 Tx slots	27.47	27.56	27.58
GPRS 4 Tx slots	25.90	25.93	25.84
EDGE 1 Tx slot	26.78	26.81	26.80
EDGE 2 Tx slots	26.17	26.18	26.17
EDGE 3 Tx slots	23.52	23.54	23.51
EDGE 4 Tx slots	21.88	21.88	22.03

GSM1900	Average Power (dBm)		
TX Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM 1 Tx slot	29.38	29.47	29.35
GPRS 1 Tx slot	29.36	29.46	29.38
GPRS 2 Tx slots	26.91	27.00	26.95
GPRS 3 Tx slots	25.94	25.92	25.95
GPRS 4 Tx slots	24.60	24.56	24.52
EDGE 1 Tx slot	24.66	24.71	24.65
EDGE 2 Tx slots	24.48	24.53	24.39
EDGE 3 Tx slots	21.60	21.64	21.61
EDGE 4 Tx slots	19.27	19.30	19.25

WCDMA Band V		Average Power (dBm)		
TX Channel		4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
3GPP Rel 99	AMR 12.2Kbps	23.29	23.18	23.39
3GPP Rel 99	RMR 12.2Kbps	23.31	23.21	23.48
3GPP Rel 6	HSDPA Subtest-1	22.30	22.41	22.53
3GPP Rel 6	HSDPA Subtest-2	22.45	22.52	22.61
3GPP Rel 6	HSDPA Subtest-3	21.96	21.99	22.13
3GPP Rel 6	HSDPA Subtest-4	21.94	21.98	22.12
3GPP Rel 6	HSUPA Subtest-1	22.55	22.53	22.55
3GPP Rel 6	HSUPA Subtest-2	20.37	20.53	20.54
3GPP Rel 6	HSUPA Subtest-3	21.51	21.58	21.59
3GPP Rel 6	HSUPA Subtest-4	20.45	20.49	20.51
3GPP Rel 6	HSUPA Subtest-5	22.42	22.48	22.51
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	21.18	21.31	21.27

WCDMA Band II		Average Power (dBm)		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880.0	1907.6
3GPP Rel 99	AMR 12.2Kbps	20.80	20.71	20.73
3GPP Rel 99	RMR 12.2Kbps	20.82	20.72	20.76
3GPP Rel 6	HSDPA Subtest-1	20.25	20.15	20.29
3GPP Rel 6	HSDPA Subtest-2	20.27	20.22	20.37
3GPP Rel 6	HSDPA Subtest-3	19.82	19.74	19.90
3GPP Rel 6	HSDPA Subtest-4	19.81	19.72	19.86
3GPP Rel 6	HSUPA Subtest-1	20.13	20.16	20.33
3GPP Rel 6	HSUPA Subtest-2	18.25	18.14	18.32
3GPP Rel 6	HSUPA Subtest-3	19.26	19.13	19.31
3GPP Rel 6	HSUPA Subtest-4	18.25	18.14	18.31
3GPP Rel 6	HSUPA Subtest-5	20.11	20.07	20.18
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	19.12	19.19	19.32

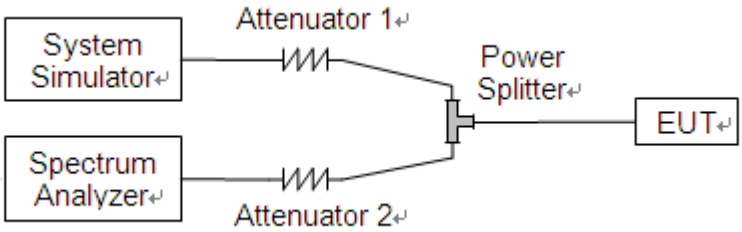
2.2. Peak to Average Ratio

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/EDGE 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	
GSM 850MHz	128	824.2	0.001	13	PASS
	190	836.6	0.049		PASS
	251	848.8	0.042		PASS
GSM 1900MHz	512	1850.2	0.065		PASS
	661	1880.0	0.045		PASS
	810	1909.8	0.045		PASS
EDGE 850MHz	128	824.2	0.003		PASS
	190	836.6	0.171		PASS
	251	848.8	0.097		PASS
EDGE 1900MHz	512	1850.2	0.032		PASS
	661	1880.0	0.198		PASS
	810	1909.8	0.303		PASS
WCDMA Band V	4132	826.4	3.08		PASS
	4182	836.4	3.13		PASS
	4233	846.6	3.12		PASS
WCDMA Band II	9262	1852.4	2.76		PASS
	9400	1880.0	2.29		PASS
	9538	1907.6	2.20		PASS

GSM 850MHz CH128 824.2MHz

GSM 850MHz CH190 836.6MHz

GSM 850MHz CH251 848.8MHz

GSM 1900MHz CH512 1850.2MHz

GSM 1900MHz CH661 1880.0MHz

GSM 1900MHz CH810 1909.8MHz

EDGE 850MHz CH128 824.2MHz

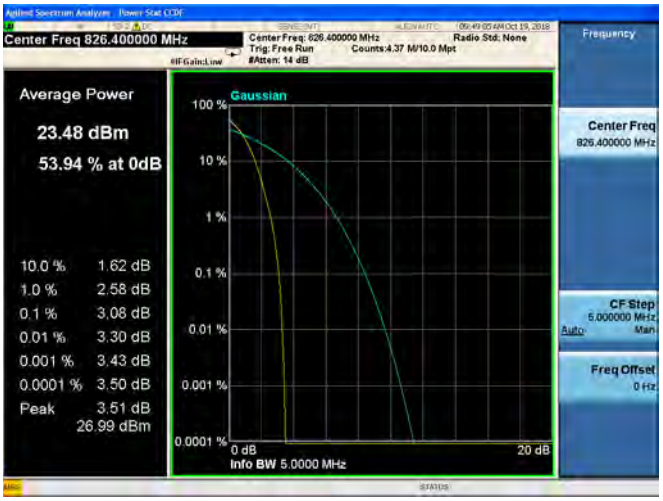
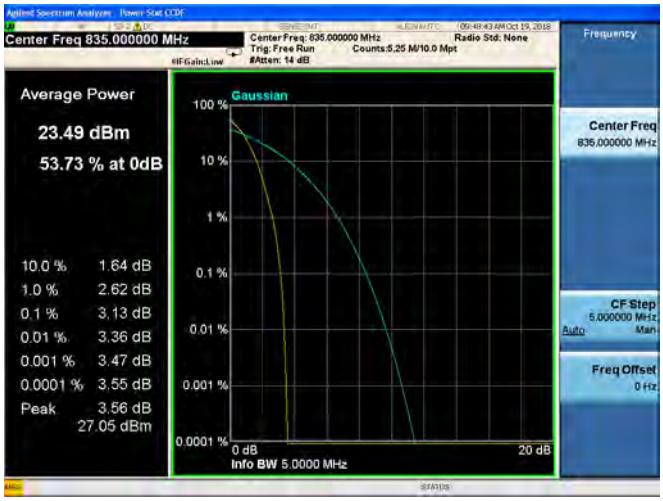
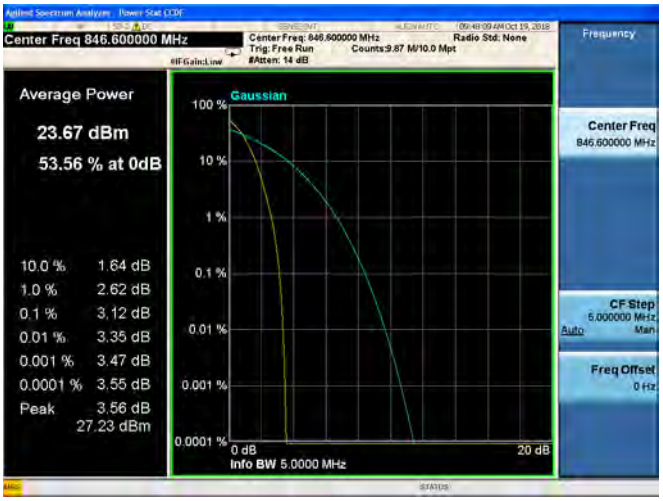
EDGE 850MHz CH190 836.6MHz

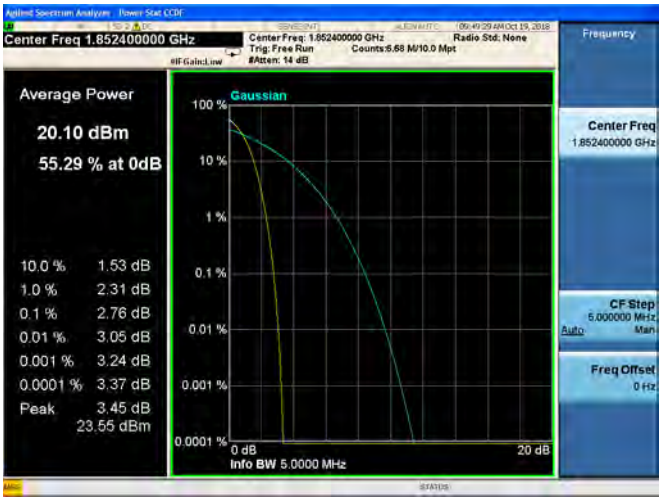
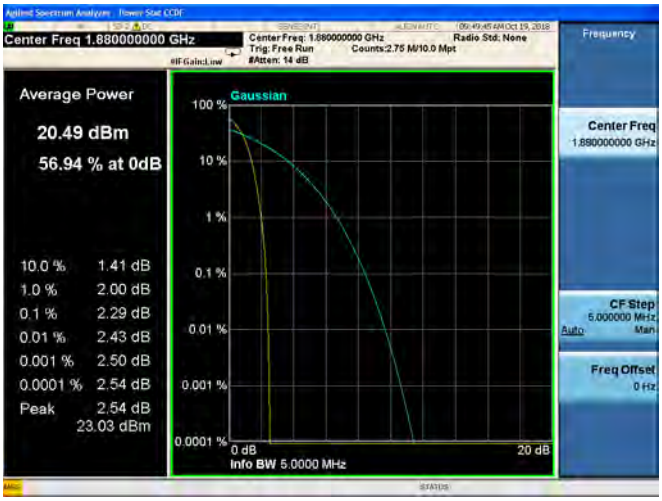
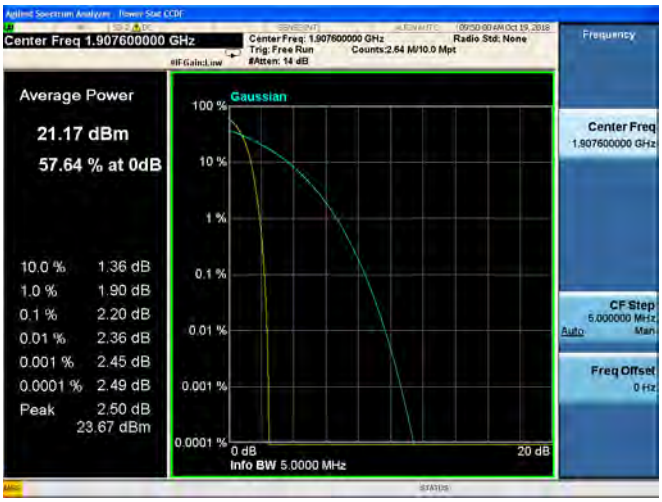
EDGE 850MHz CH251 848.8MHz

EDGE 1900MHz CH512 1850.2MHz

EDGE 1900MHz CH661 1880.0MHz

EDGE 1900MHz CH810 1909.8MHz

WCDMA Band V CH4132 826.4MHz	WCDMA Band V CH4182 836.4MHz
	
WCDMA Band V CH4233 846.6MHz	
	

WCDMA Band II CH9262 1852.4MHz	WCDMA Band II CH9400 1880.0MHz
	
WCDMA Band II CH9538 1907.6MHz	
	

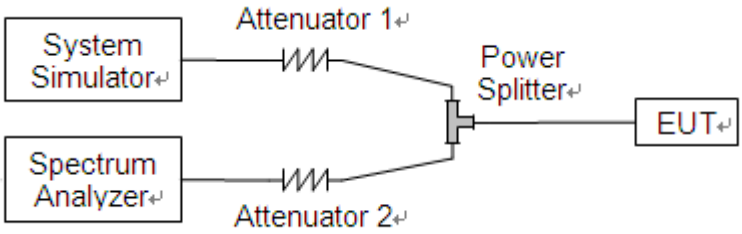
2.3. 99% Occupied Bandwidth

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:



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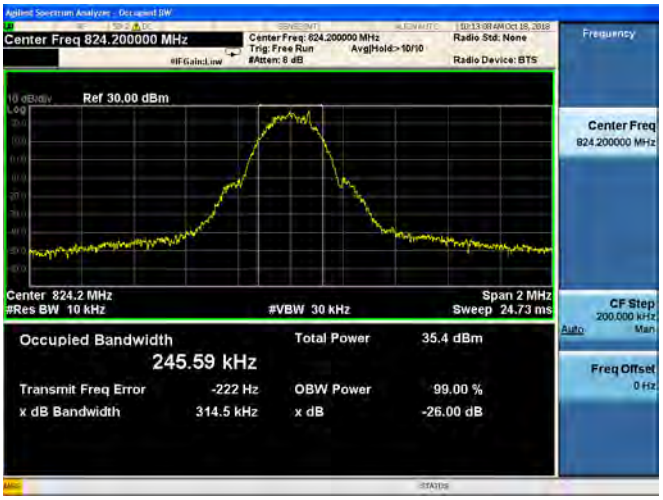
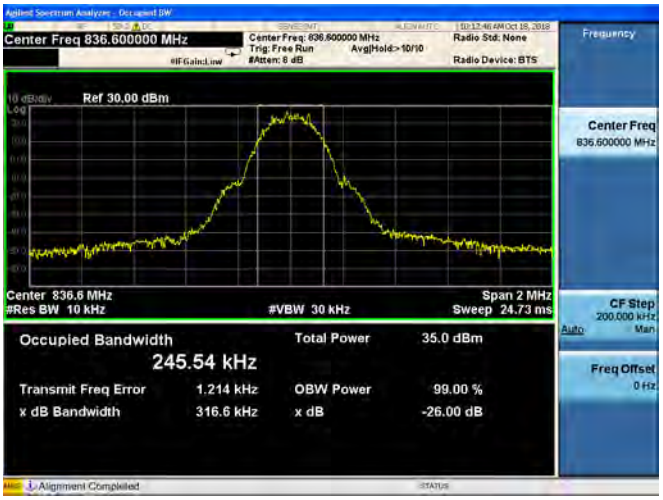
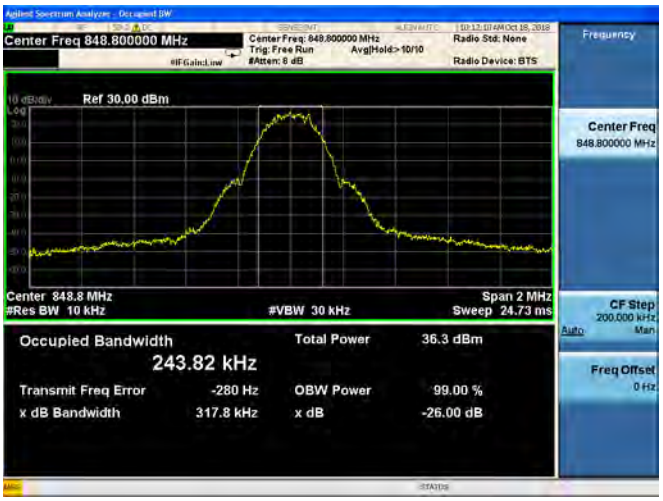
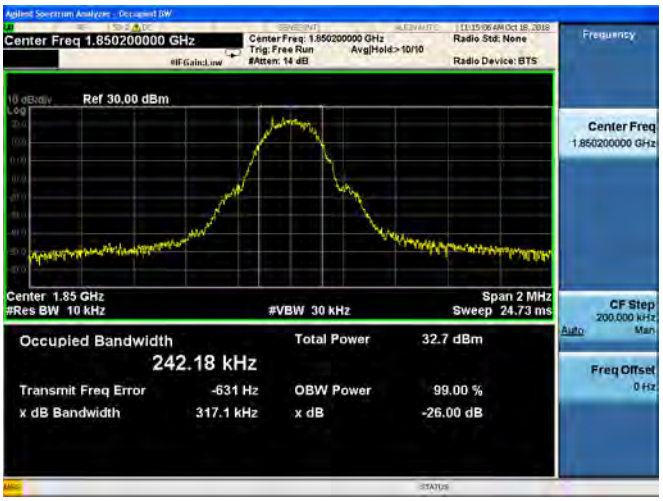
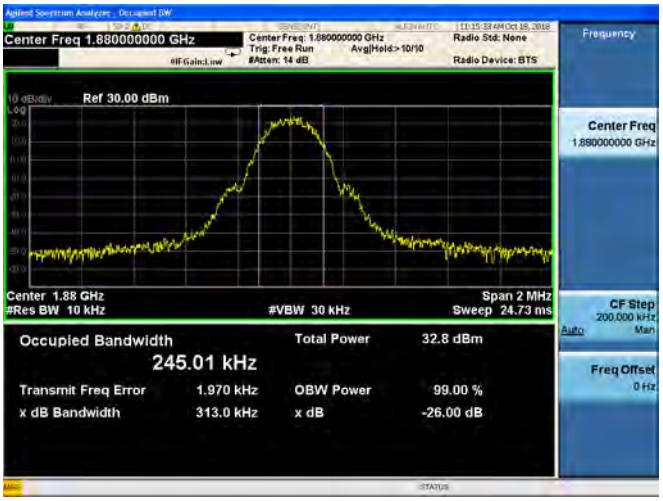
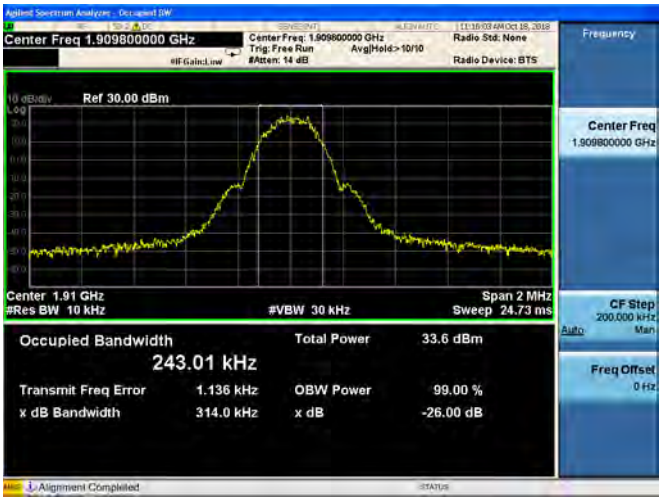
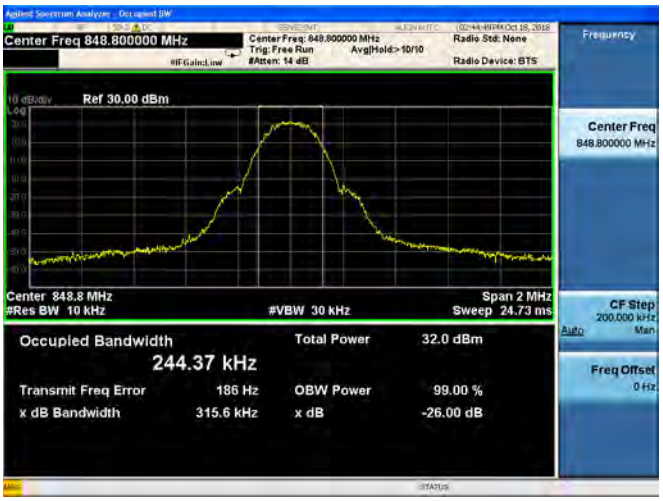
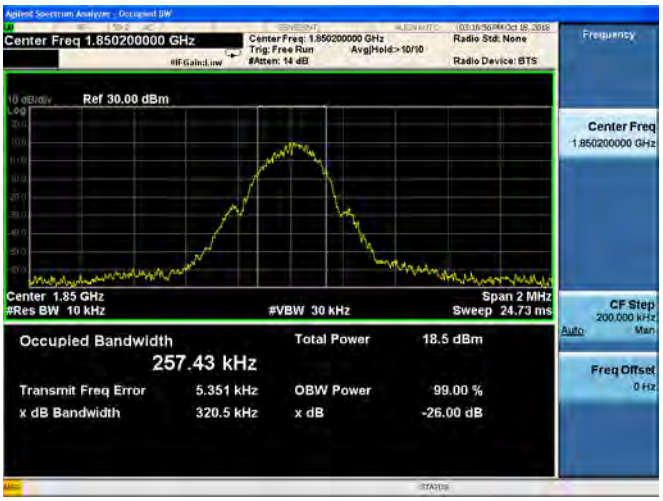
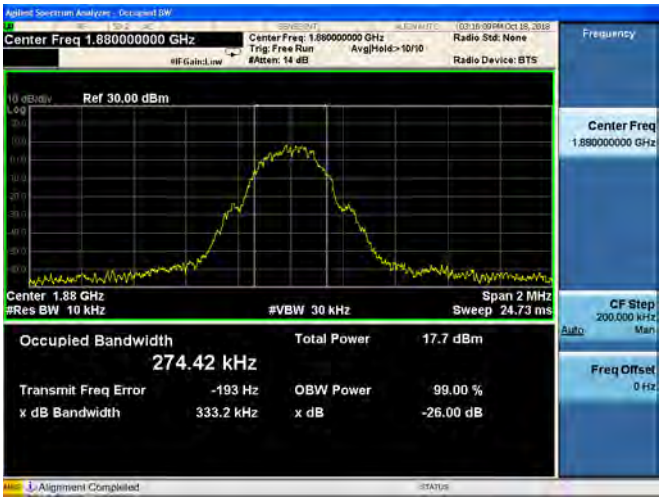
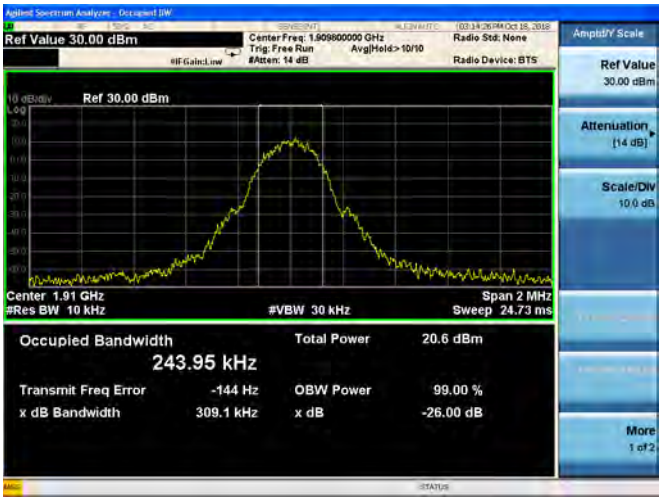
2.3.3. Test Result

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

GSM Test Verdict:

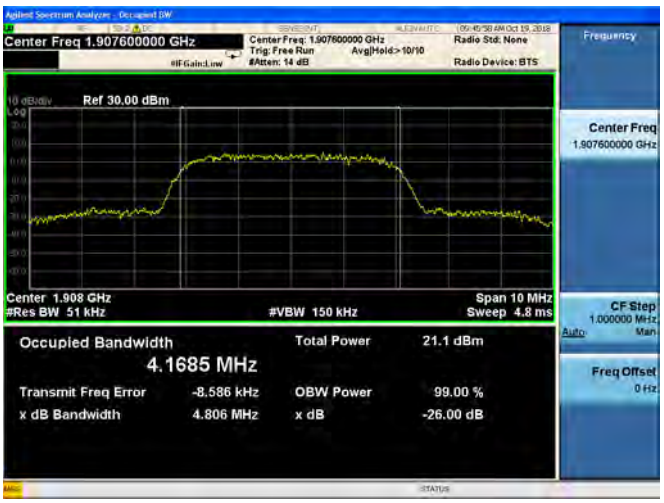
Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	245.59	314.5
	190	836.6	245.54	316.6
	251	848.8	243.82	317.8
GSM 1900MHz	512	1850.2	242.18	317.1
	661	1880.0	245.01	313.0
	810	1909.8	243.01	314.0
EDGE 850MHz	128	824.2	243.25	316.7
	190	836.6	246.63	314.0
	251	848.8	244.37	315.6
EDGE 1900MHz	512	1850.2	257.43	320.5
	661	1880.0	274.42	333.2
	810	1909.8	243.95	309.1

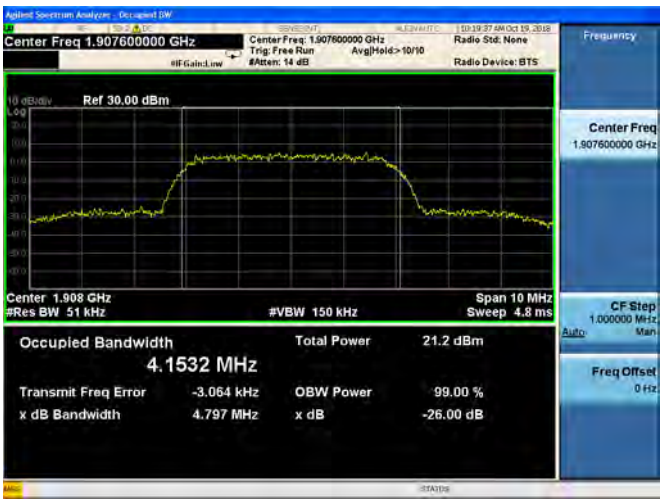
GSM 850MHz CH128 824.2MHz	GSM 850MHz CH190 836.6MHz
	
GSM 850MHz CH251 848.8MHz	**GSM 1900MHz CH512 1850.2MHz**
	
GSM 1900MHz CH661 1880.0MHz	**GSM 1900MHz CH810 1909.8MHz**
	

EDGE 850MHz CH128 824.2MHz	EDGE 850MHz CH190 836.6MHz
	
EDGE 850MHz CH251 848.8MHz	**EDGE 1900MHz CH512 1850.2MHz**
	
EDGE 1900MHz CH661 1880.0MHz	**EDGE 1900MHz CH810 1909.8MHz**
	

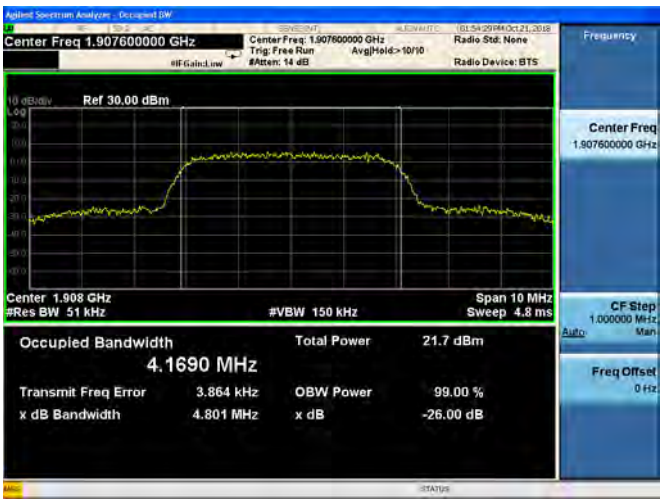
WCDMA Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band V	4132	826.4	4.102	4.692
	4182	836.4	4.146	4.688
	4233	846.6	4.101	4.686
WCDMA Band II	9262	1852.4	4.154	4.730
	9400	1880.0	4.174	4.734
	9538	1907.6	4.169	4.806
HSDPA Band V	4132	826.4	4.117	4.688
	4182	836.4	4.116	4.698
	4233	846.6	4.118	4.683
HSDPA Band II	9262	1852.4	4.158	4.707
	9400	1880.0	4.160	4.748
	9538	1907.6	4.153	4.797
HSUPA Band V	4132	826.4	4.129	4.680
	4182	836.4	4.114	4.652
	4233	846.6	4.129	4.674
HSUPA Band II	9262	1852.4	4.149	4.667
	9400	1880.0	4.156	4.753
	9538	1907.6	4.188	4.793
HSPA+ Band V	4132	826.4	4.135	4.685
	4182	836.4	4.110	4.667
	4233	846.6	4.107	4.668
HSPA+ Band II	9262	1852.4	4.114	4.668
	9400	1880.0	4.169	4.769
	9538	1907.6	4.169	4.801

WCDMA Band V CH4132 826.4MHz	WCDMA Band V CH4182 836.4MHz
	
WCDMA Band V CH4233 846.6MHz	**WCDMA Band II CH9262 1852.4MHz**
	
WCDMA Band II CH9400 1880.0MHz	**WCDMA Band II CH9538 1907.6MHz**
	

HSDPA Band V CH4132 826.4MHz	HSDPA Band V CH4182 836.4MHz
	
HSDPA Band V CH4233 846.6MHz	**HSDPA Band II CH9262 1852.4MHz**
	
HSDPA Band II CH9400 1880.0MHz	**HSDPA Band II CH9538 1907.6MHz**
	

HSUPA Band V CH4132 826.4MHz	HSUPA Band V CH4182 836.4MHz
	
HSUPA Band V CH4233 846.6MHz	**HSUPA Band II CH9262 1852.4MHz**
	
HSUPA Band II CH9400 1880.0MHz	**HSUPA Band II CH9538 1907.6MHz**
	

HSPA+ Band V CH4132 826.4MHz	HSPA+ Band V CH4182 836.4MHz
	
HSPA+ Band V CH4233 846.6MHz	**HSPA+ Band II CH9262 1852.4MHz**
	
HSPA+ Band II CH9400 1880.0MHz	**HSPA+ Band II CH9538 1907.6MHz**
	

2.4. Frequency Stability

2.4.1. Requirement

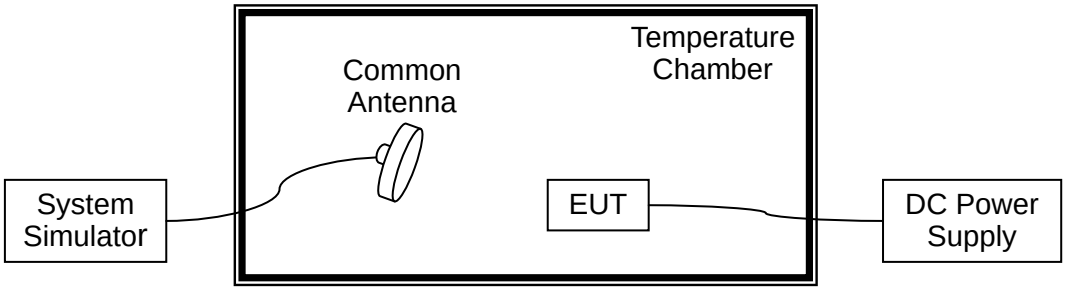
According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

(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 3.8VDC, 4.37VDC and 3.23VDC, which are specified by the applicant; the normal temperature here used is 25°C.

A. Test Verdict:

GSM 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	67	0.080	PASS
100		-30	-76	-0.091	
100		-20	-44	-0.053	
100		-10	-17	-0.020	
100		0	-34	-0.041	
100		+10	34	0.041	
100		+20	24	0.029	
100		+30	35	0.042	
100		+40	36	0.043	
100		+50	21	0.025	
115	4.37	+20	-53	-0.063	
85	3.23	+20	-47	-0.056	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	74	0.039	PASS
100		-30	35	0.019	
100		-20	-67	-0.036	
100		-10	62	0.033	
100		0	-46	-0.024	
100		+10	-26	-0.014	
100		+20	43	0.023	
100		+30	85	0.045	
100		+40	29	0.015	
100		+50	72	0.038	
115	4.37	+20	-7	-0.004	
85	3.23	+20	25	0.013	

EDGE 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	43	0.051	PASS
100		-30	-76	-0.091	
100		-20	-43	-0.051	
100		-10	-25	-0.030	
100		0	-36	-0.043	
100		+10	42	0.050	
100		+20	73	0.087	
100		+30	35	0.042	
100		+40	44	0.053	
100		+50	51	0.061	
115	4.37	+20	-64	-0.077	
85	3.23	+20	-25	-0.030	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	35	0.019	PASS
100		-30	44	0.023	
100		-20	-77	-0.041	
100		-10	63	0.034	
100		0	-26	-0.014	
100		+10	-19	-0.010	
100		+20	69	0.037	
100		+30	32	0.017	
100		+40	27	0.014	
100		+50	53	0.028	
115	4.37	+20	-33	-0.018	
85	3.23	+20	23	0.012	

WCDMA Band V, Channel 4182, Frequency 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	26	0.031	PASS
100		-30	-36	-0.043	
100		-20	-47	-0.056	
100		-10	-72	-0.086	
100		0	-45	-0.054	
100		+10	74	0.089	
100		+20	64	0.077	
100		+30	71	0.085	
100		+40	53	0.063	
100		+50	62	0.074	
115	4.37	+20	-74	-0.089	
85	3.23	+20	-43	-0.051	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	+20(Ref)	54	0.029	PASS
100		-30	25	0.013	
100		-20	-36	-0.019	
100		-10	73	0.039	
100		0	-19	-0.010	
100		+10	-34	-0.018	
100		+20	74	0.039	
100		+30	56	0.030	
100		+40	75	0.040	
100		+50	78	0.041	
115	4.37	+20	-26	-0.014	
85	3.23	+20	85	0.045	

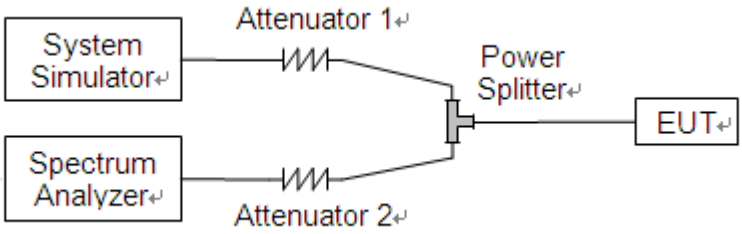
2.5. Conducted Out of Band Emissions

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:

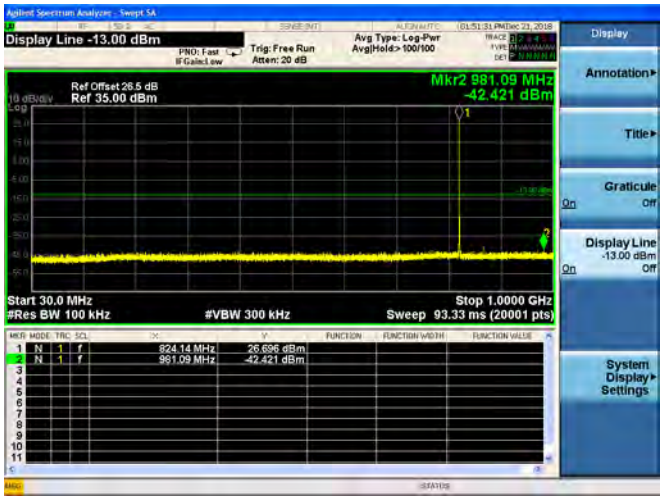


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

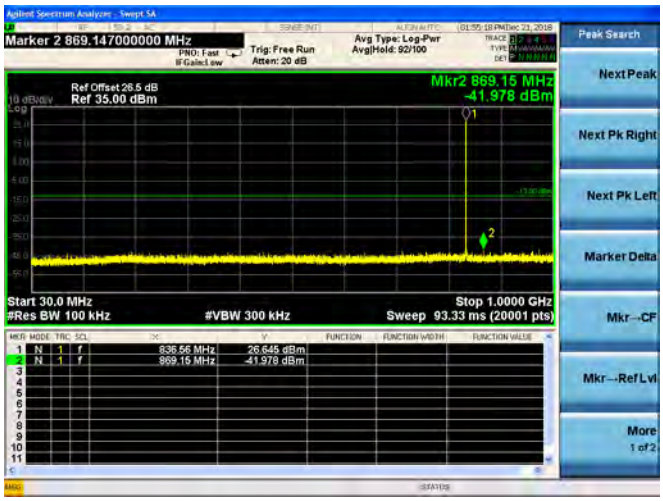
2.5.3. Test Result

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.

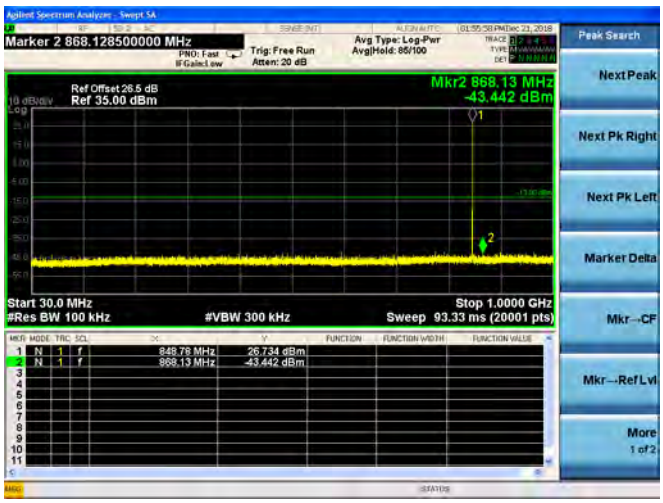
GSM 850MHz CH128 824.2MHz



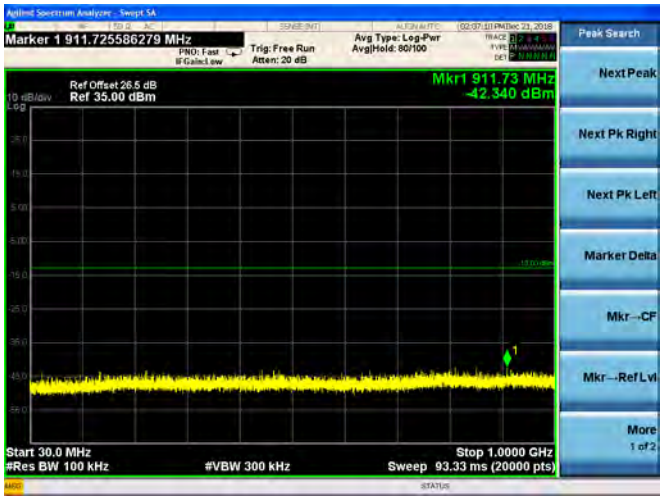
GSM 850MHz CH190 836.6MHz

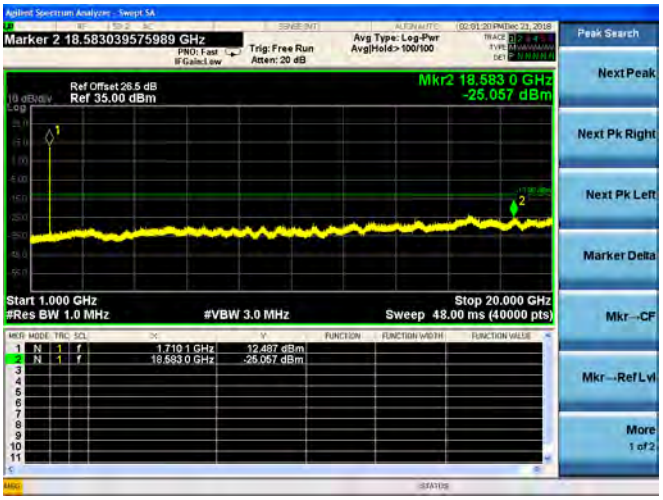


GSM 850MHz CH251 848.8MHz

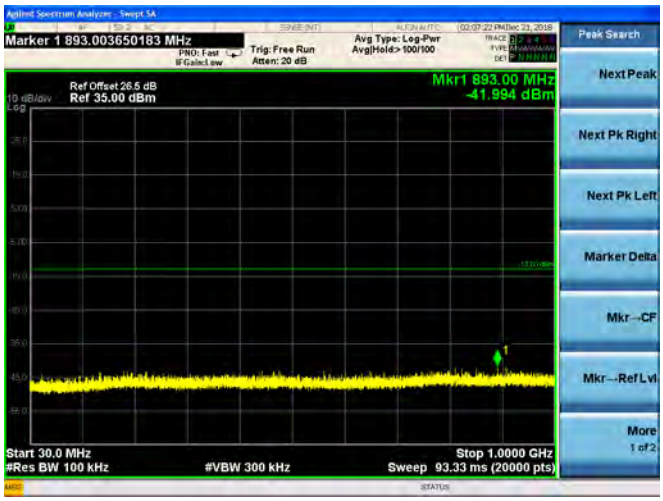


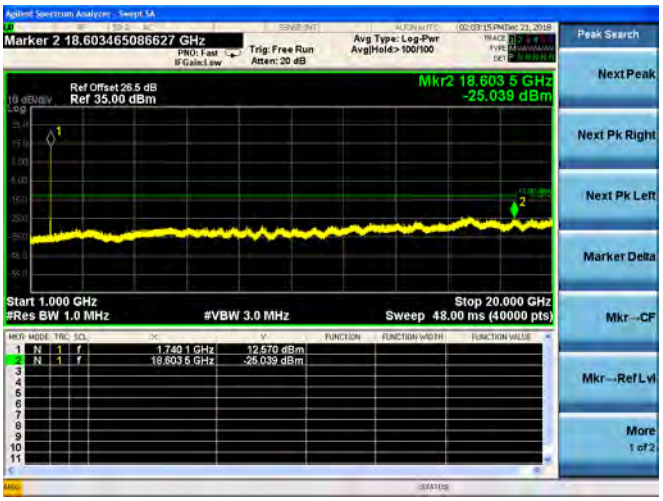
GSM 1900MHz CH521 1850.2MHz



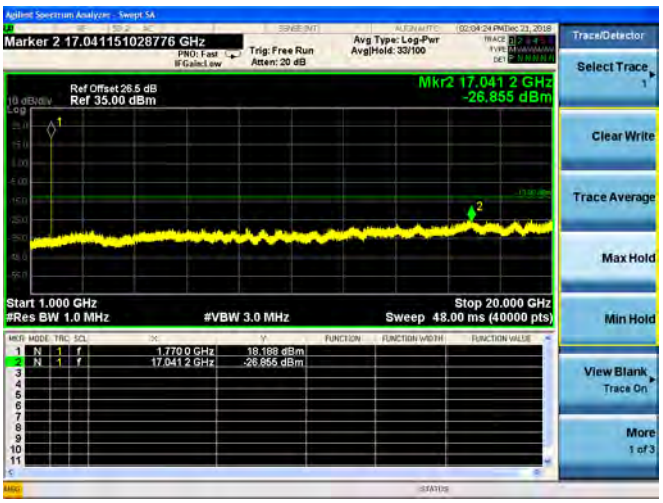


GSM 1900MHz CH661 1880.0MHz

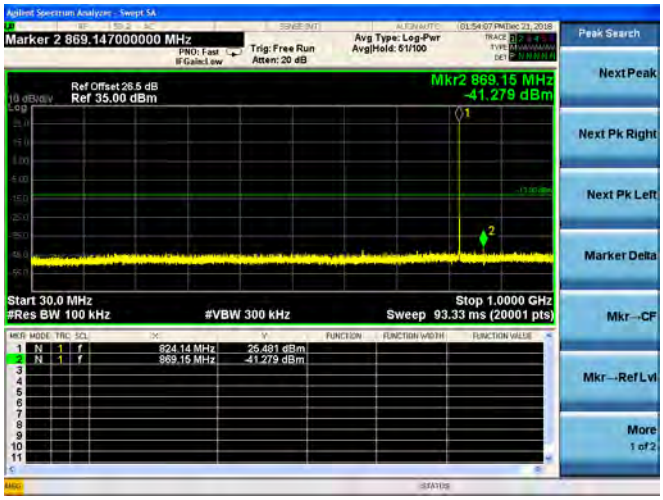




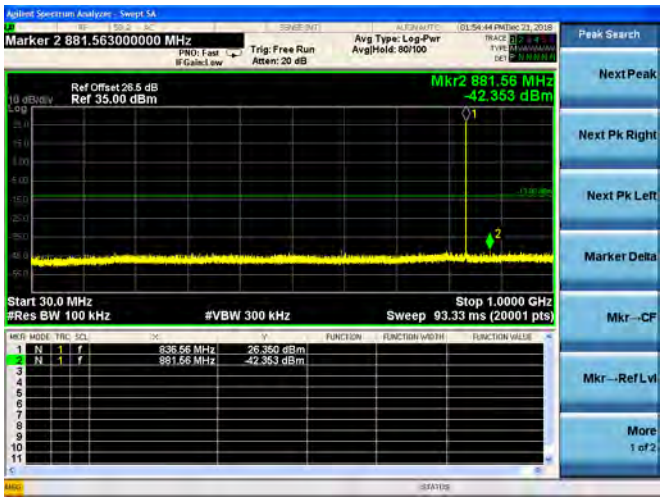
GSM 1900MHz CH810 1909.8MHz



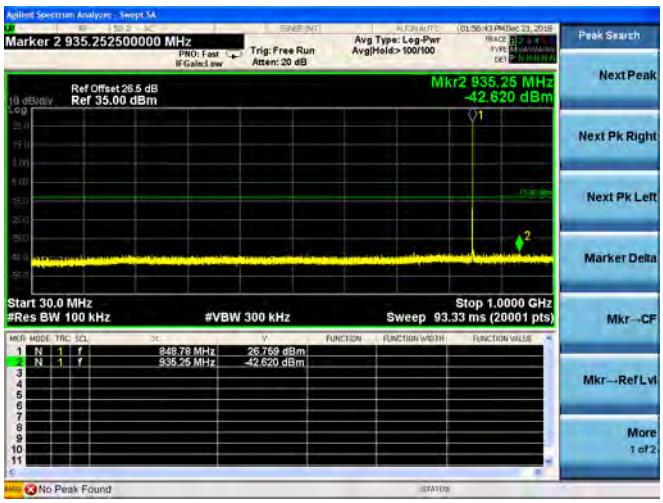
EDGE 850MHz CH128 824.2MHz



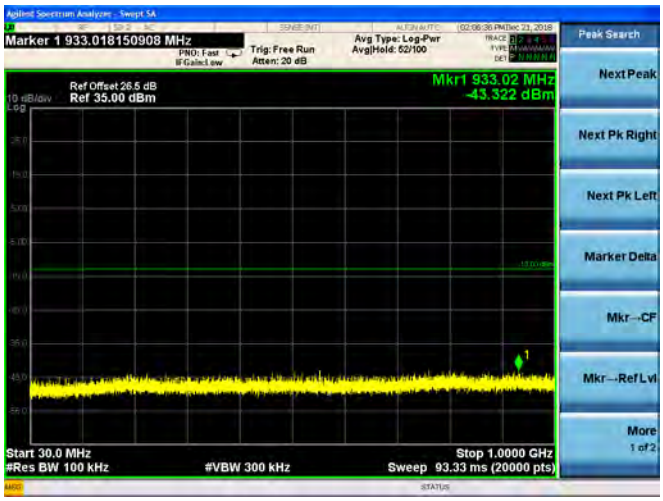
EDGE 850MHz CH190 836.6MHz

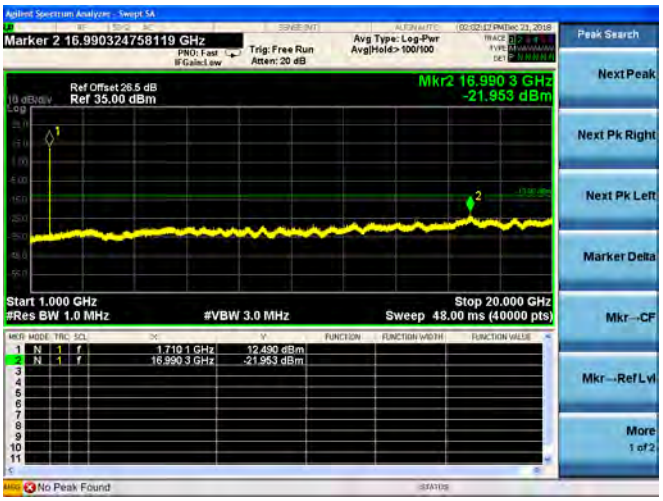


EDGE 850MHz CH251 848.8MHz

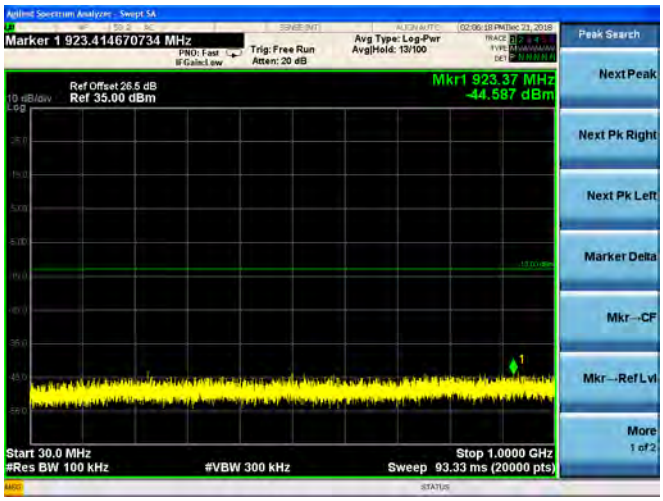


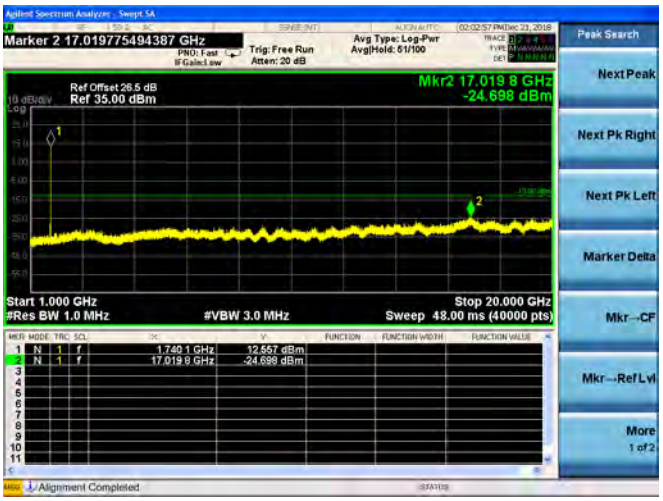
EDGE 1900MHz CH521 1850.2MHz



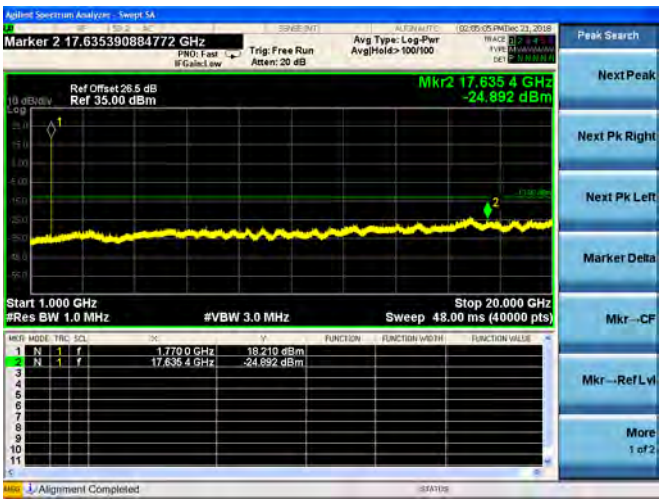


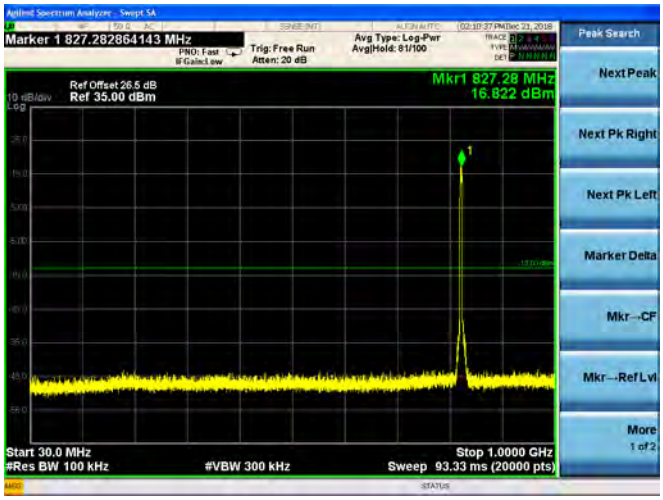
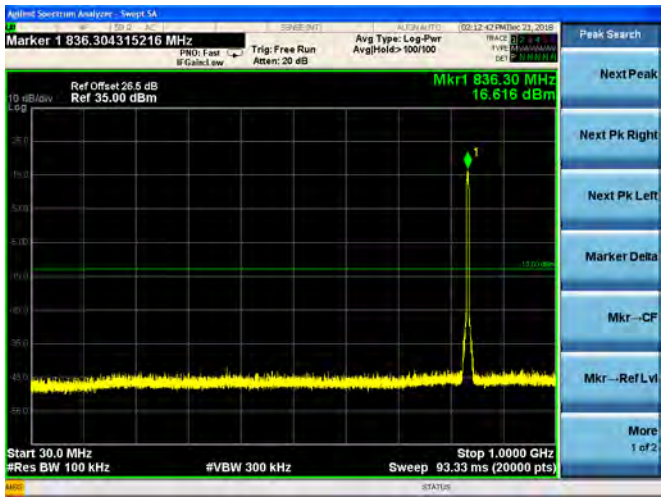
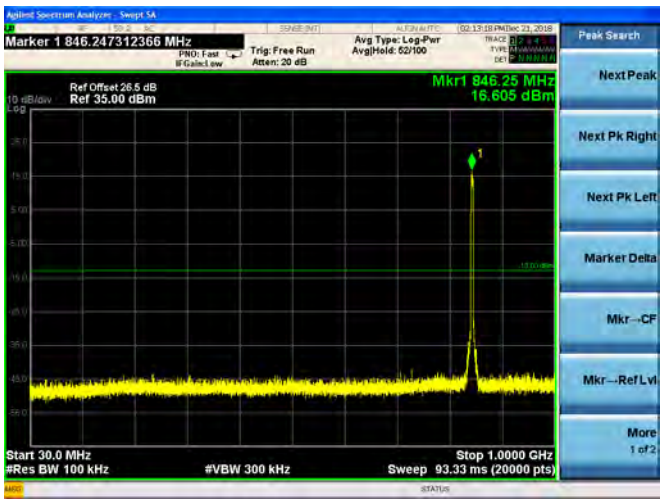
EDGE 1900MHz CH661 1880.0MHz

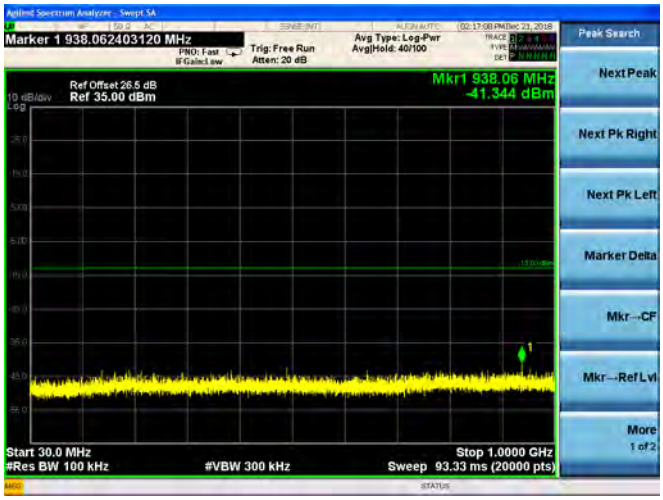
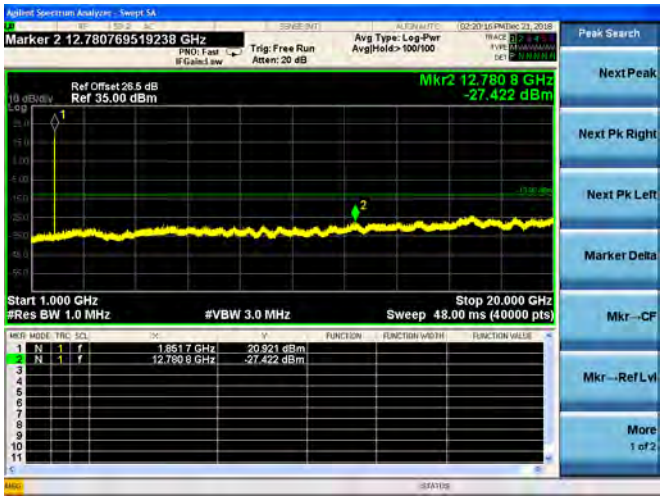
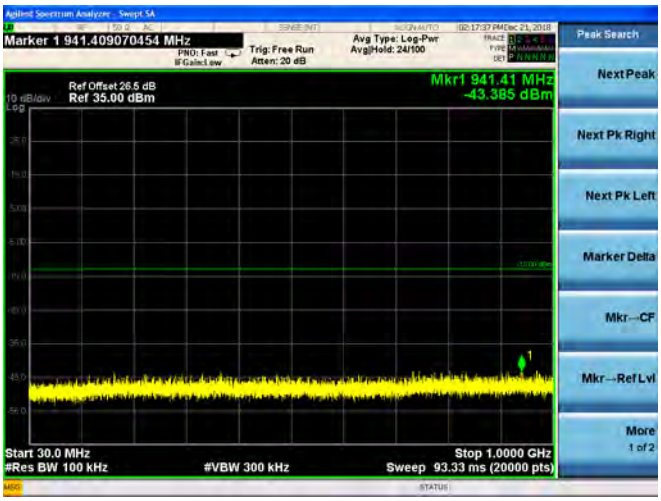
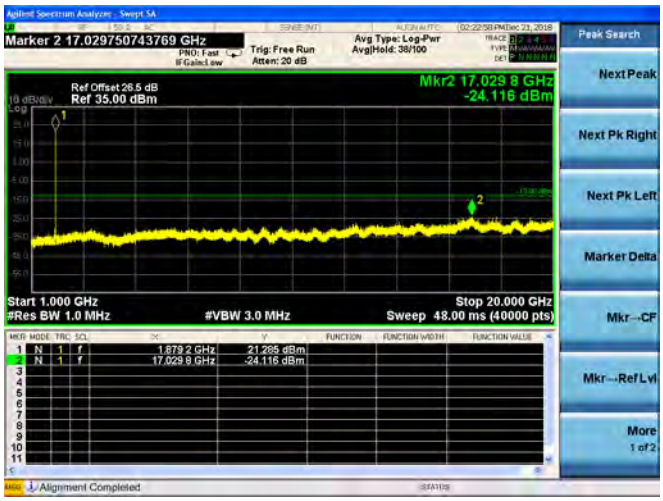
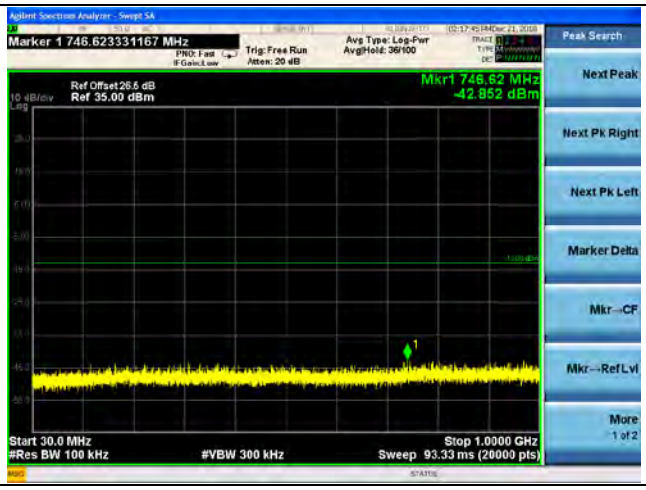
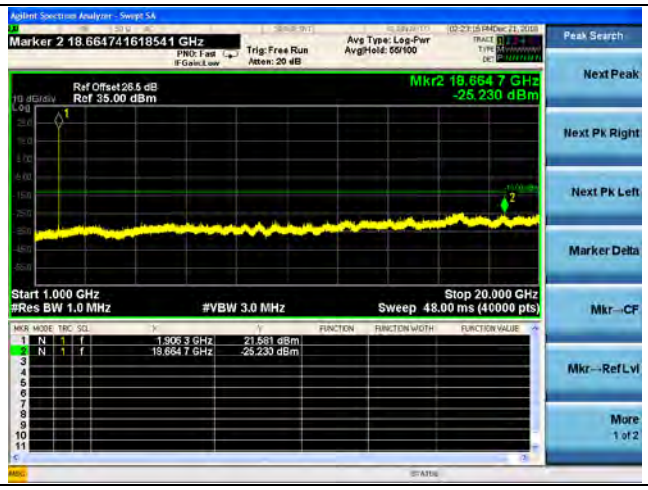




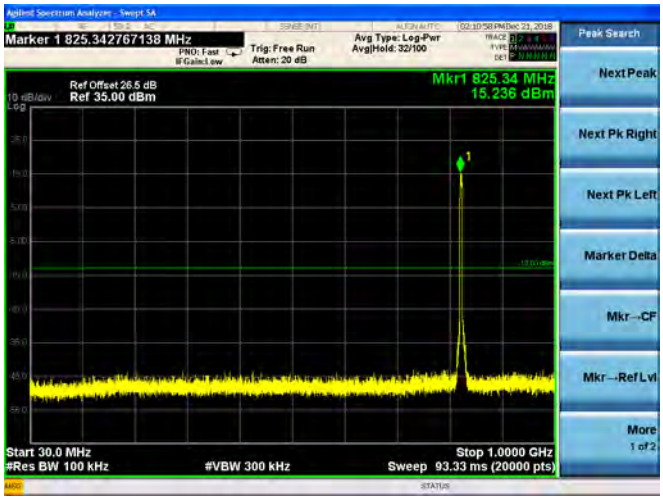
EDGE 1900MHz CH810 1909.8MHz



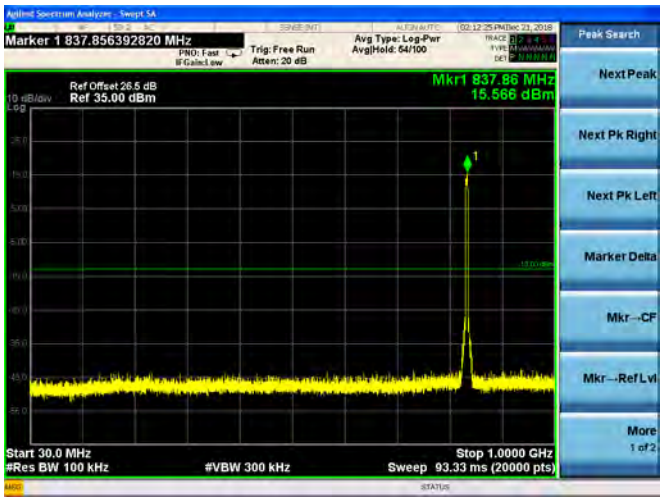
WCDMA Band V CH4132 826.4MHz	
	
WCDMA Band V CH4182 836.4MHz	
	
WCDMA Band V CH4233 846.6MHz	
	

WCDMA Band II CH9262 1852.4MHz	
	
WCDMA Band II CH9400 1880.0MHz	
	
WCDMA Band II CH9538 1907.6MHz	
	

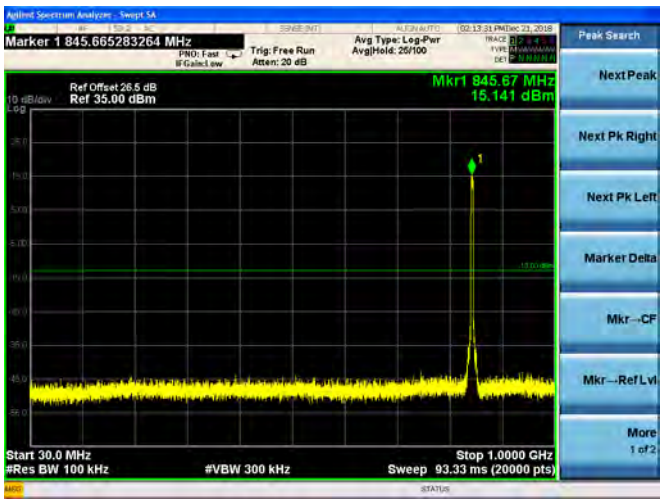
HSDPA Band V CH4132 826.4MHz



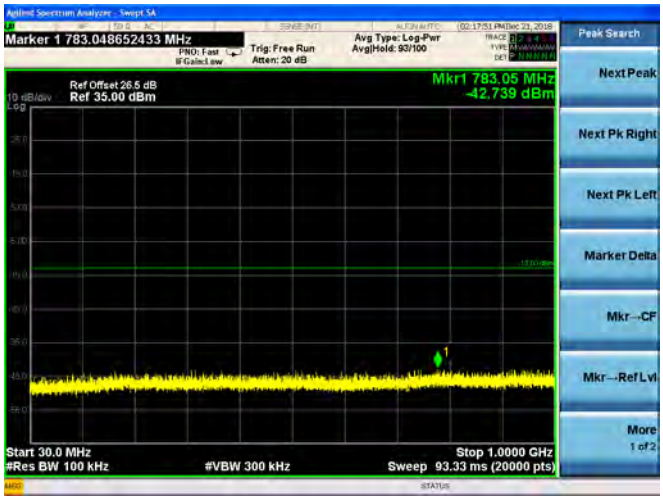
HSDPA Band V CH4182 836.4MHz

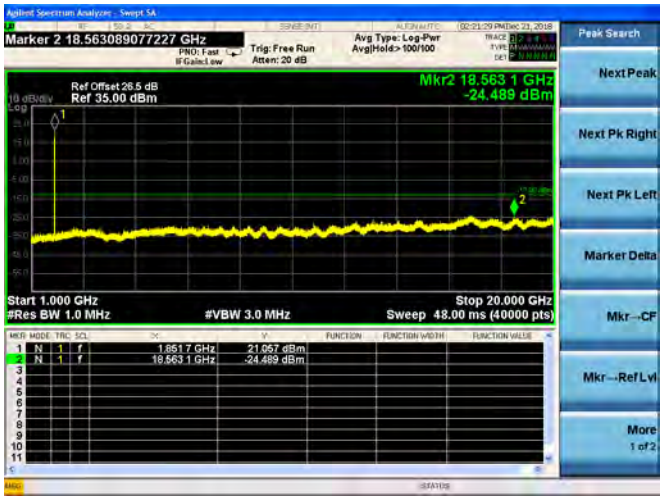


HSDPA Band V CH4233 846.6MHz

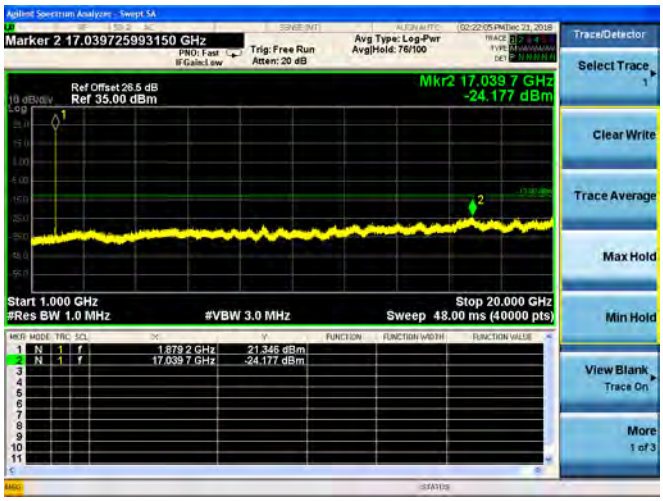


HSDPA Band II CH9262 1852.4MHz

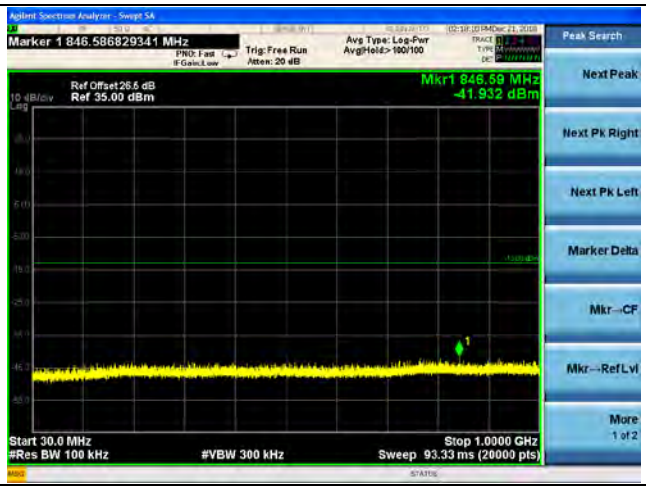


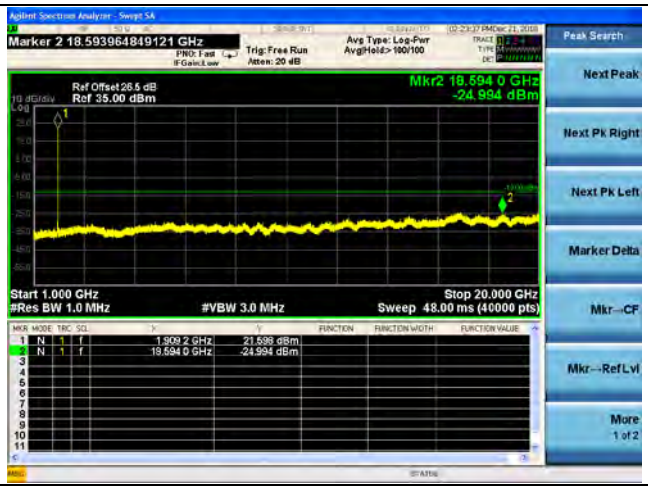


HSDPA Band II CH9400 1880.0MHz

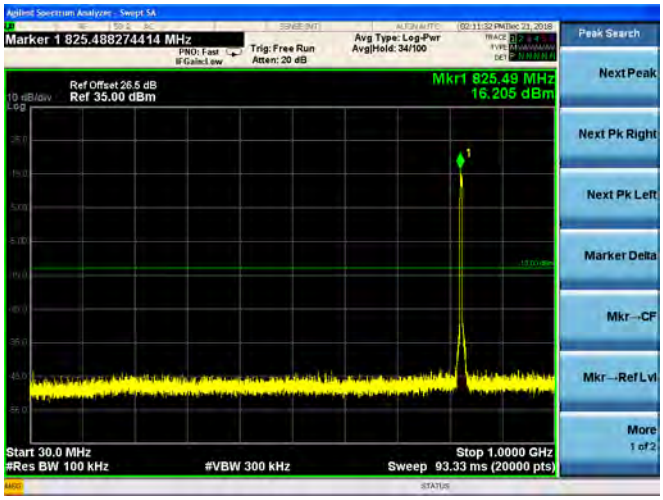


HSDPA Band II CH9538 1907.6MHz

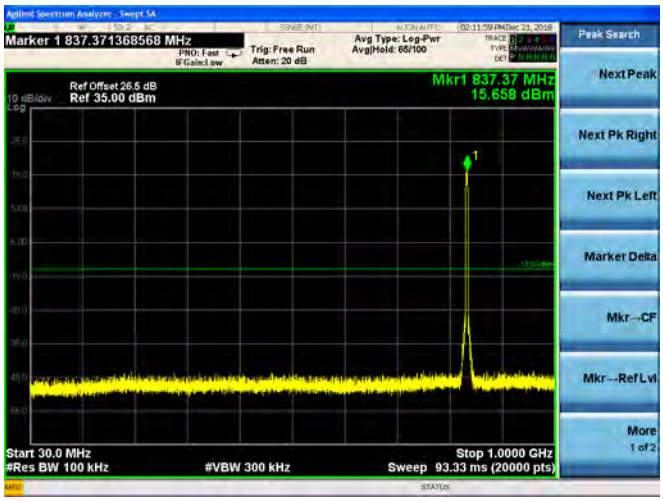




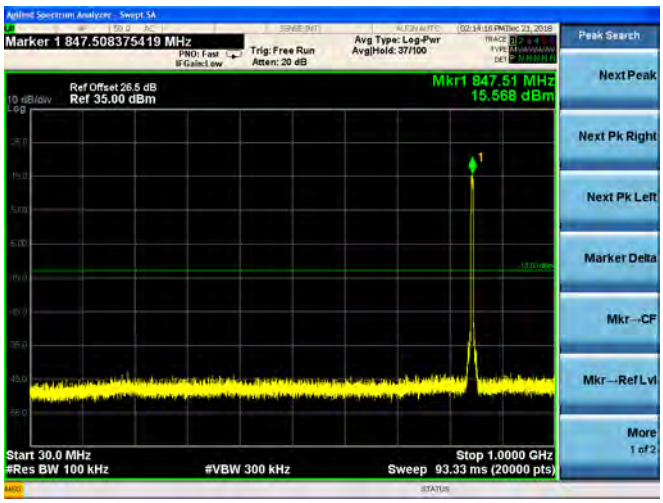
HSUPA Band V CH4132 826.4MHz



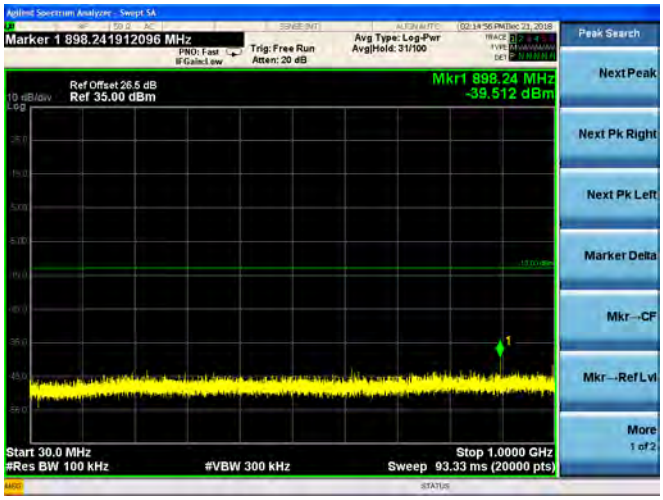
HSUPA Band V CH4182 836.4MHz

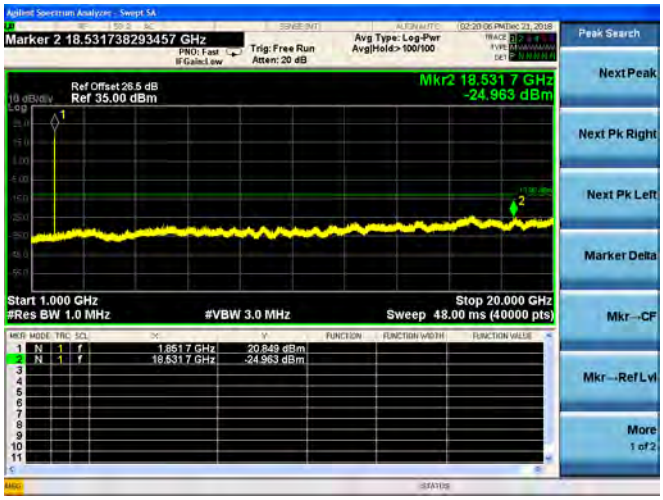


HSUPA Band V CH4233 846.6MHz

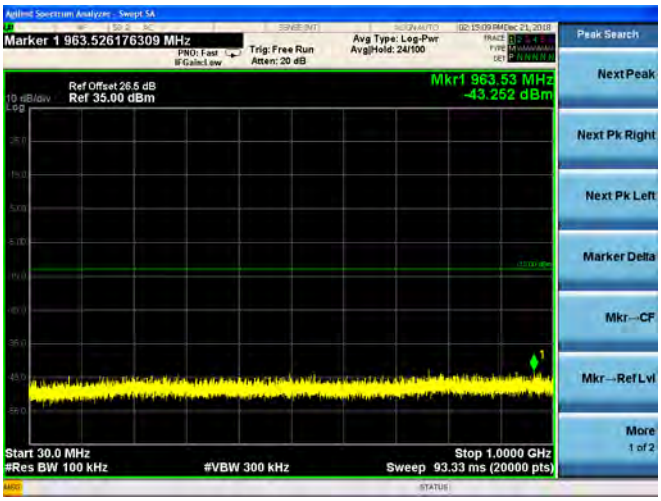


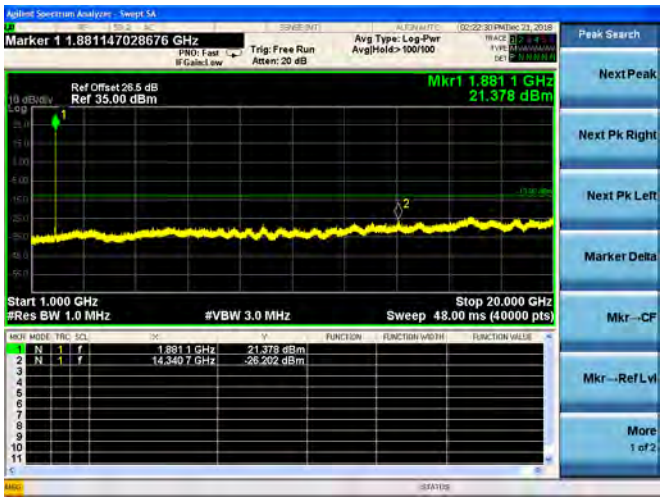
HSUPA Band II CH9262 1852.4MHz



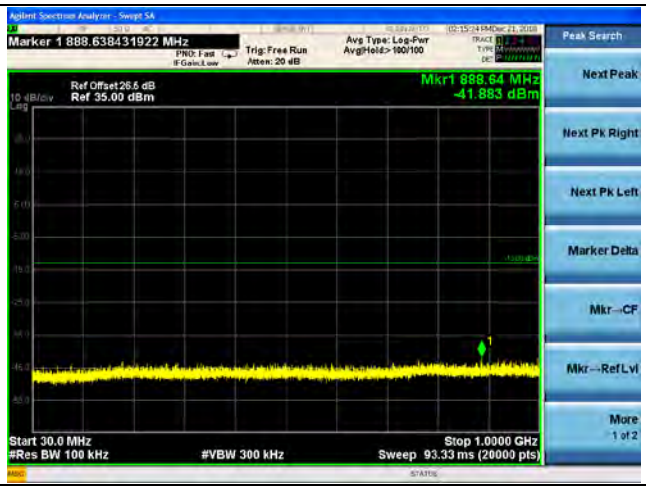


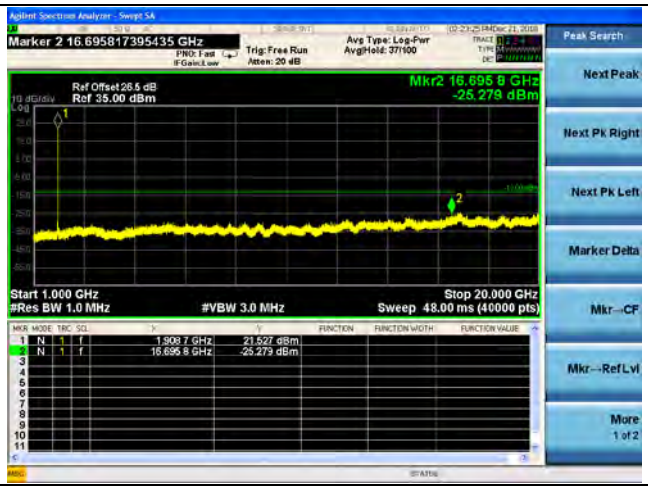
HSUPA Band II CH9400 1880.0MHz

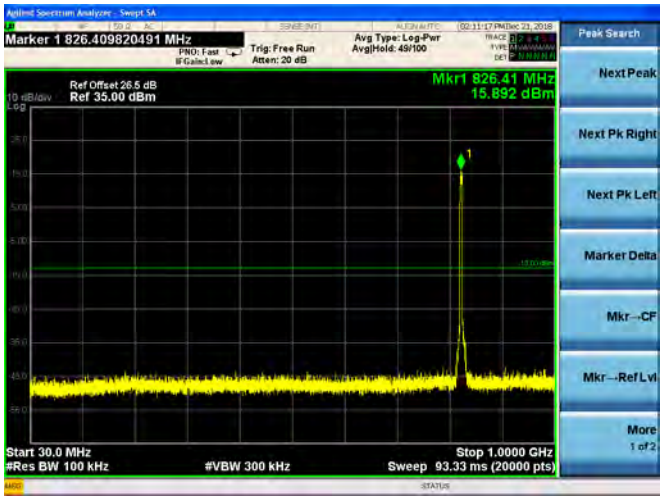
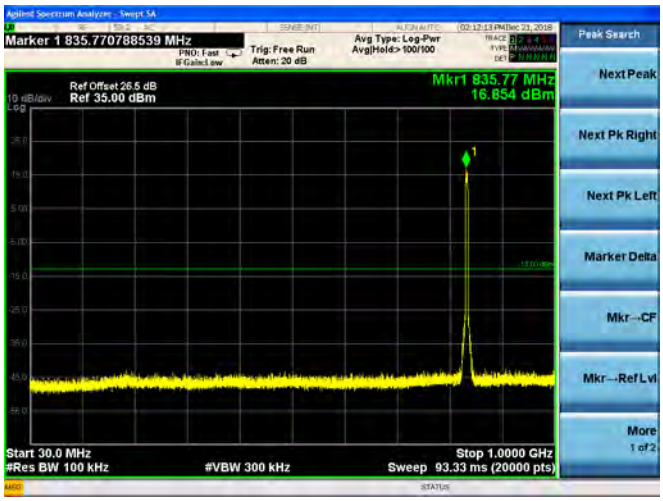
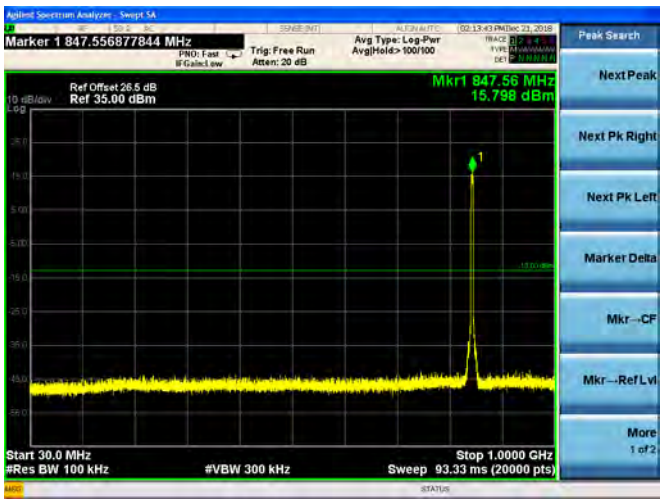




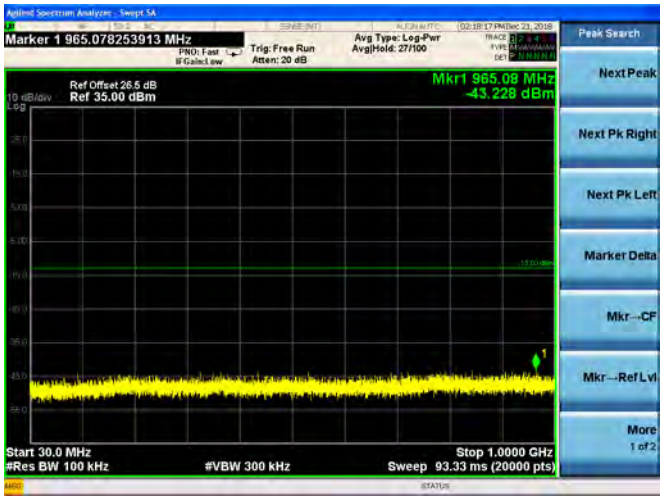
HSUPA Band II CH9538 1907.6MHz

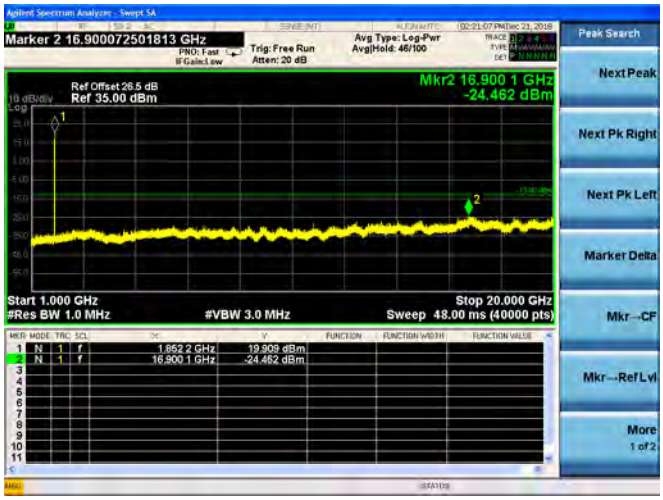




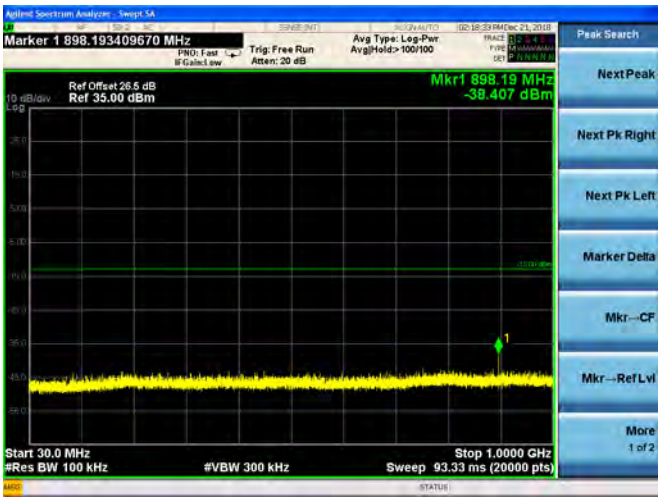
HSPA+ Band V CH4132 826.4MHz	
	
HSPA+ Band V CH4182 836.4MHz	
	
HSPA+ Band V CH4233 846.6MHz	
	

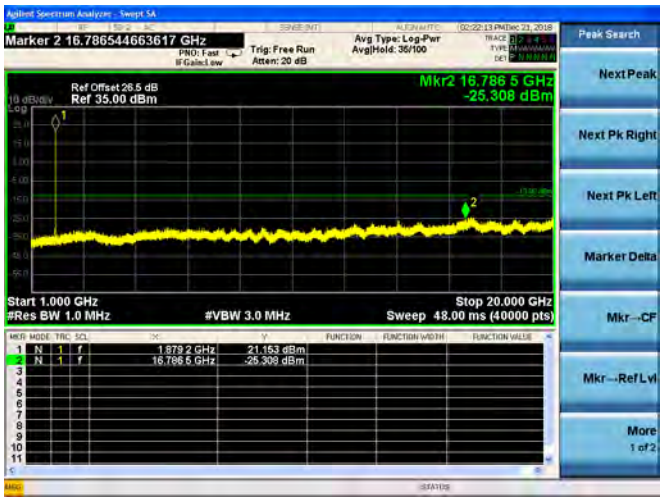
HSPA+ Band II CH9262 1852.4MHz



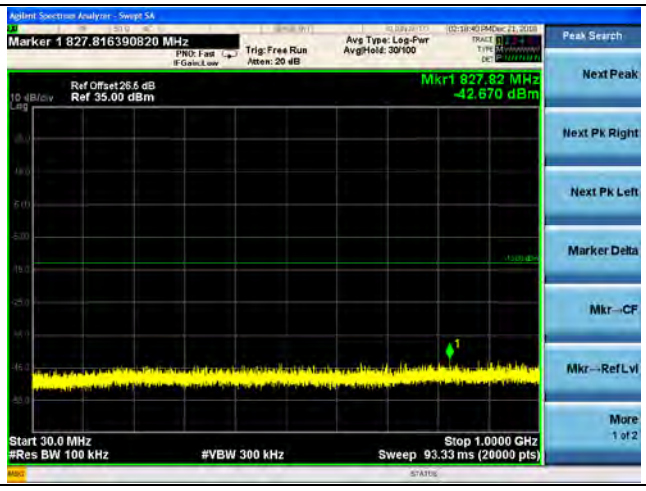


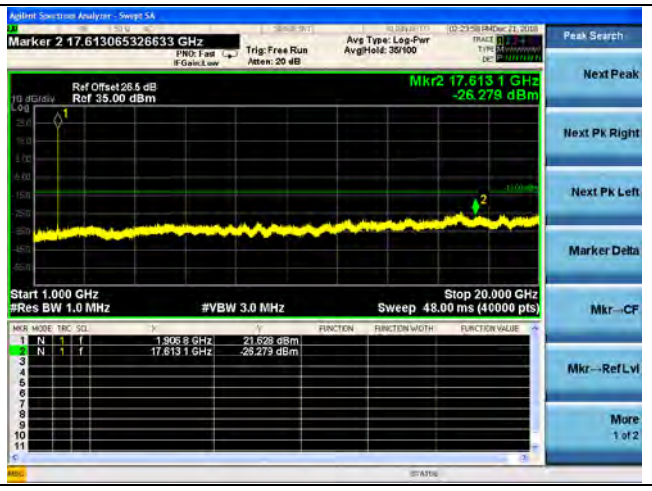
HSPA+ Band II CH9400 1880.0MHz





HSPA+ Band II CH9538 1907.6MHz





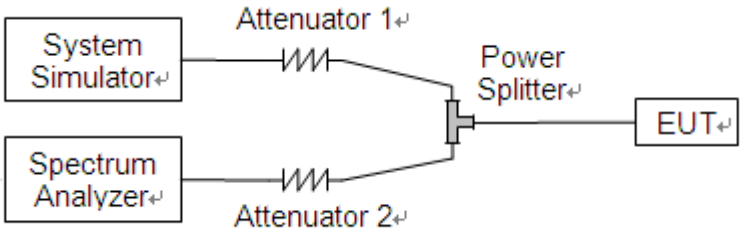
2.6. Band Edge

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

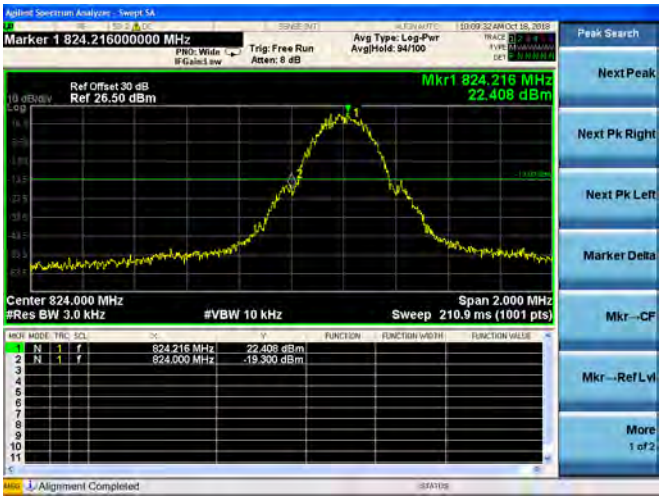
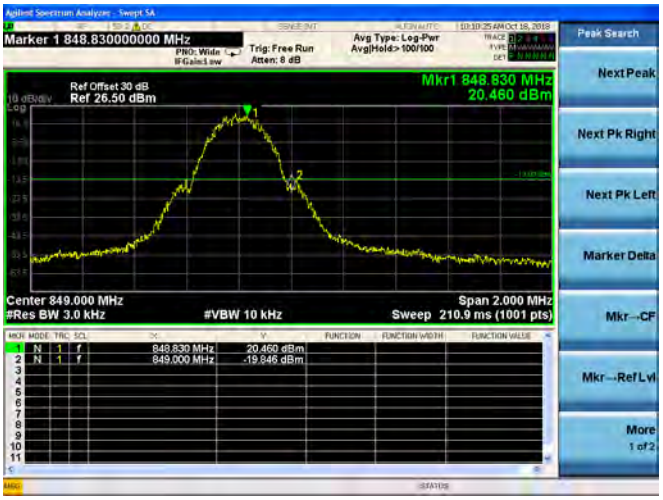
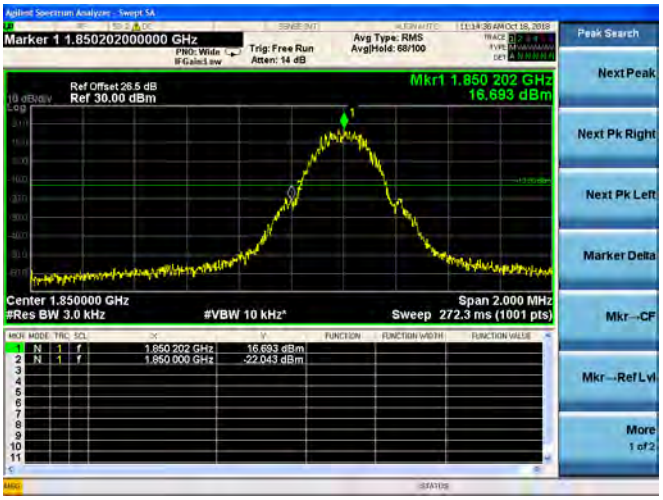
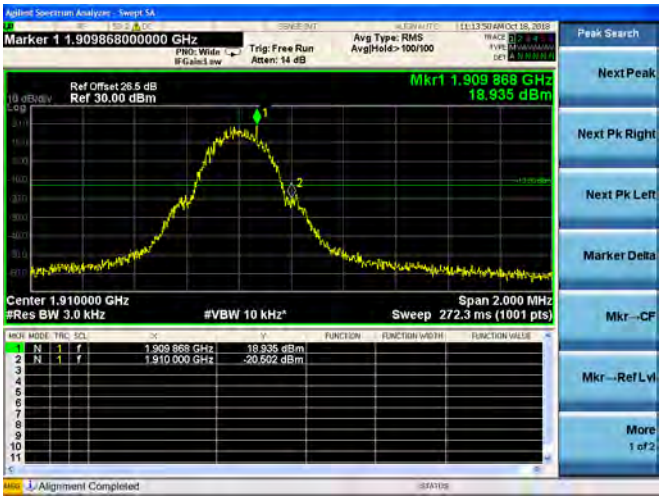
Test Setup:

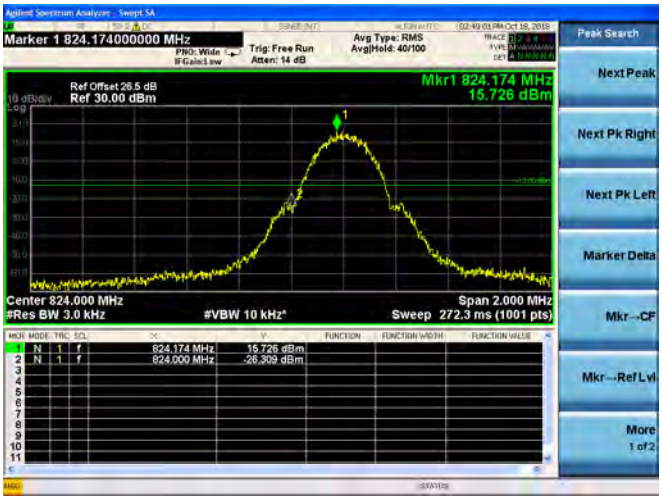
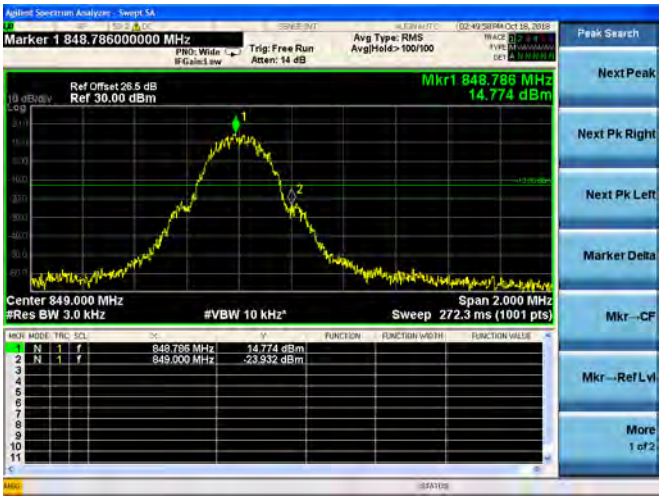
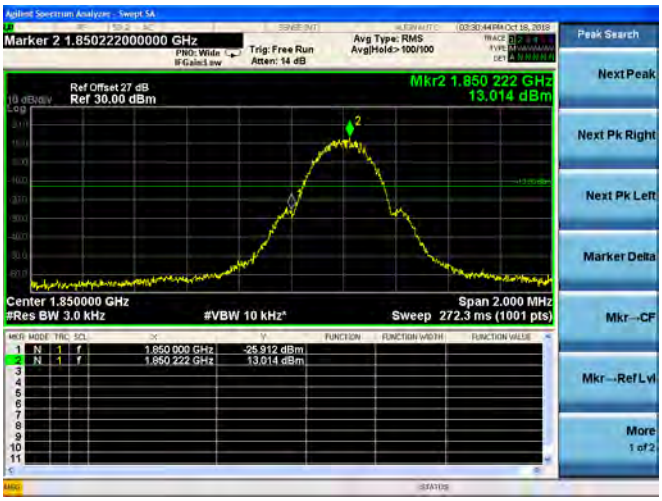
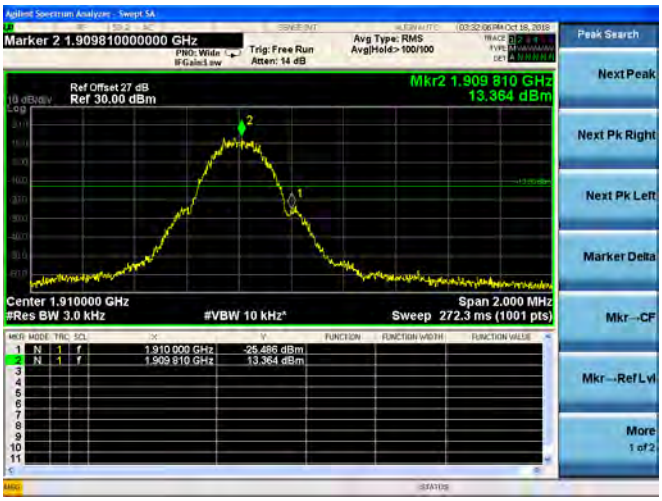


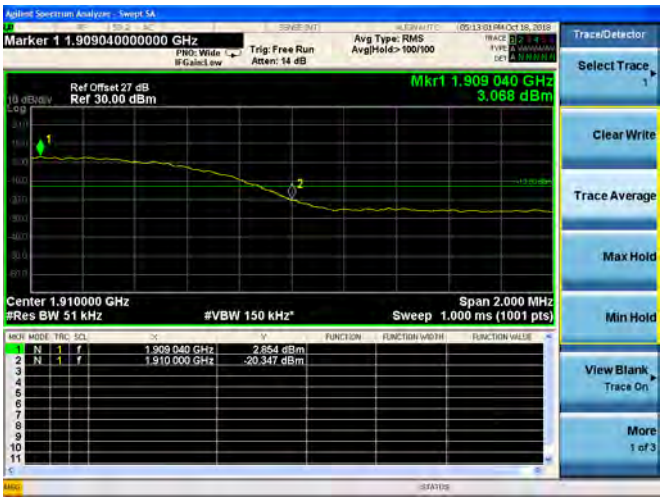
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum 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

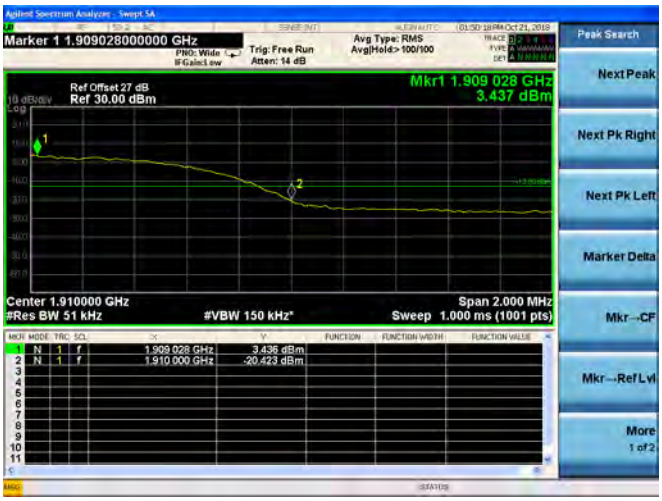
The lowest and highest channels are tested to verify the band edge emissions.

GSM 850MHz CH128 824.2MHz	GSM 850MHz CH251 848.8MHz
	
GSM 1900MHz CH521 1850.2MHz	**GSM 1900MHz CH810 1909.8MHz**
	

EDGE 850MHz CH128 824.2MHz	EDGE 850MHz CH251 848.8MHz
	
EDGE 1900MHz CH521 1850.2MHz	**EDGE 1900MHz CH810 1909.8MHz**
	

WCDMA Band V CH4132 826.4MHz	WCDMA Band V CH4233 846.6MHz
	
WCDMA Band II CH9262 1852.4MHz	**WCDMA Band II CH9538 1907.6MHz**
	

HSDPA Band V CH4132 826.4MHz	HSDPA Band V CH4233 846.6MHz
	
HSDPA Band II CH9262 1852.4MHz	**HSDPA Band II CH9538 1907.6MHz**
	

HSUPA Band V CH4132 826.4MHz	HSUPA Band V CH4233 846.6MHz
	
HSUPA Band II CH9262 1852.4MHz	**HSUPA Band II CH9538 1907.6MHz**
	

HSPA+ Band V CH4132 826.4MHz	HSPA+ Band V CH4233 846.6MHz
	
HSPA+ Band II CH9262 1852.4MHz	**HSPA+ Band II CH9538 1907.6MHz**
	

2.7. Transmitter Radiated Power (EIRP/ERP)

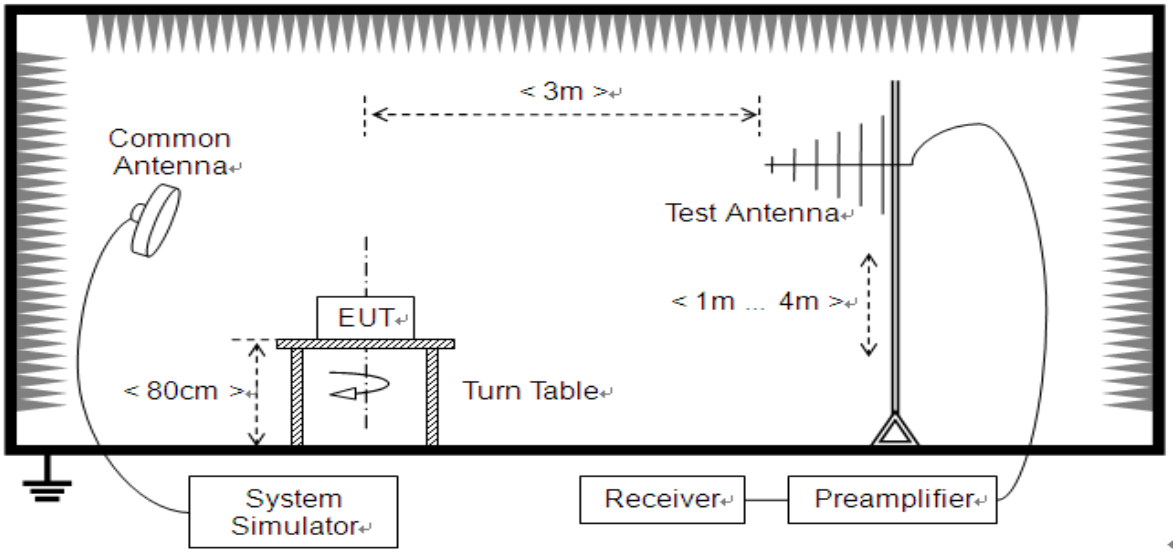
2.7.1. Requirement

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.

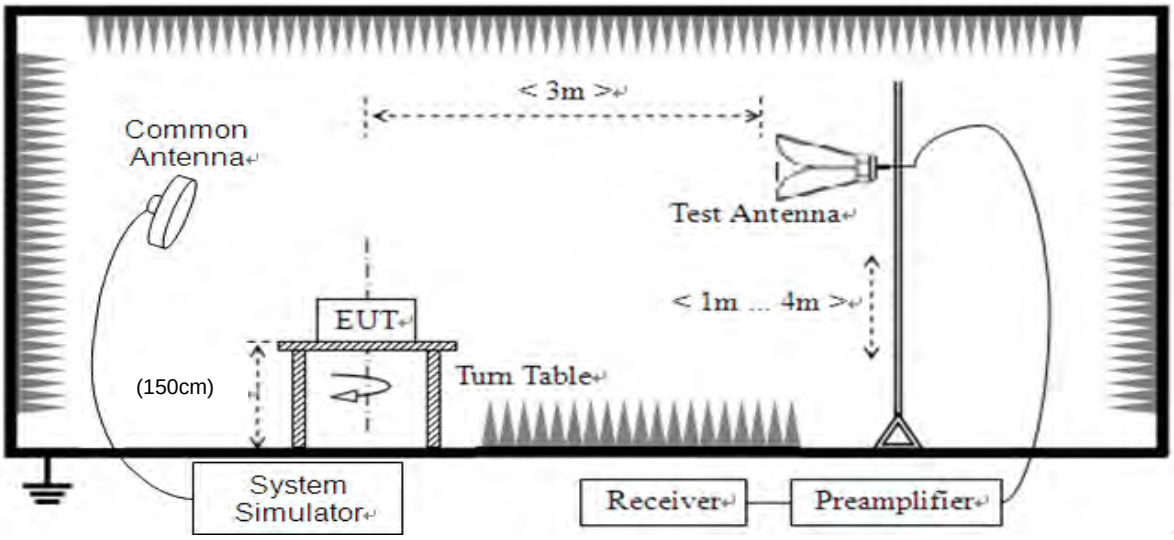
2.7.2. Test Description

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}.

GSM Test verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GSM 850MHz	128	824.20	5	34.78	3.006	38.5	7	PASS
	190	836.60	5	34.22	2.642			PASS
	251	848.80	5	34.41	2.761			PASS
GPRS 850MHz	128	824.20	5	34.22	2.642	38.5	7	PASS
	190	836.60	5	34.28	2.679			PASS
	251	848.80	5	34.05	2.541			PASS
EDGE 850MHz	128	824.20	5	33.25	2.113	38.5	7	PASS
	190	836.60	5	33.52	2.249			PASS
	251	848.80	5	33.25	2.113			PASS

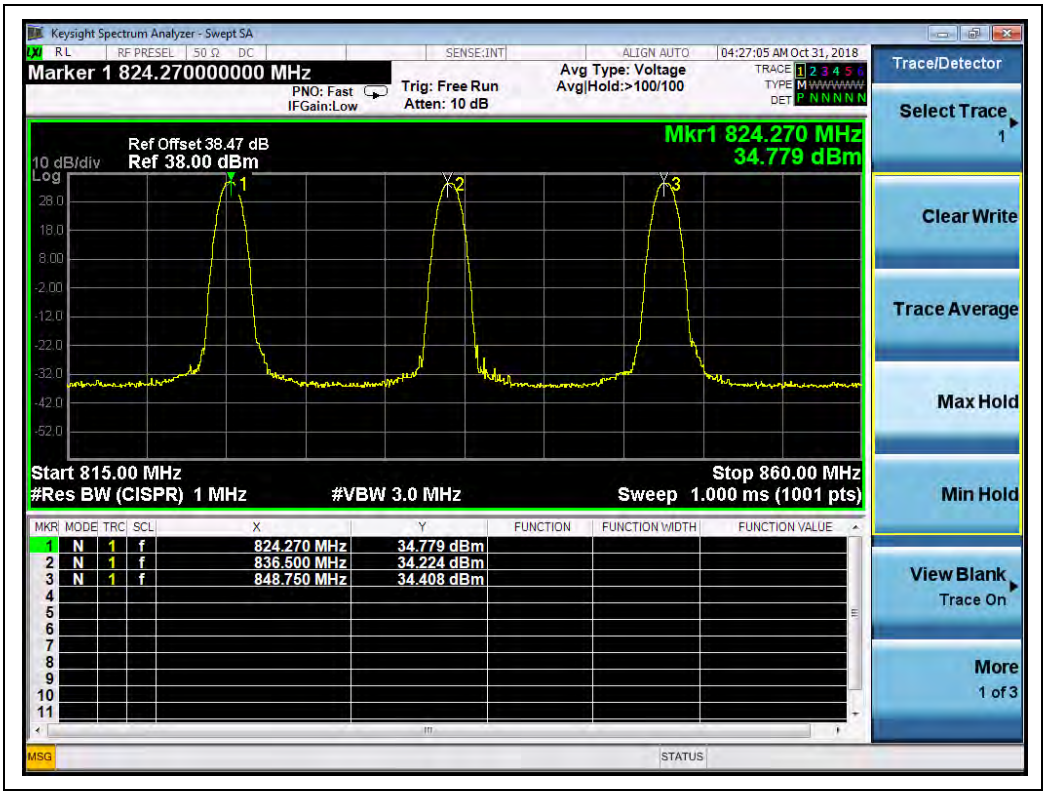
Note 1: For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

Note 2: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.

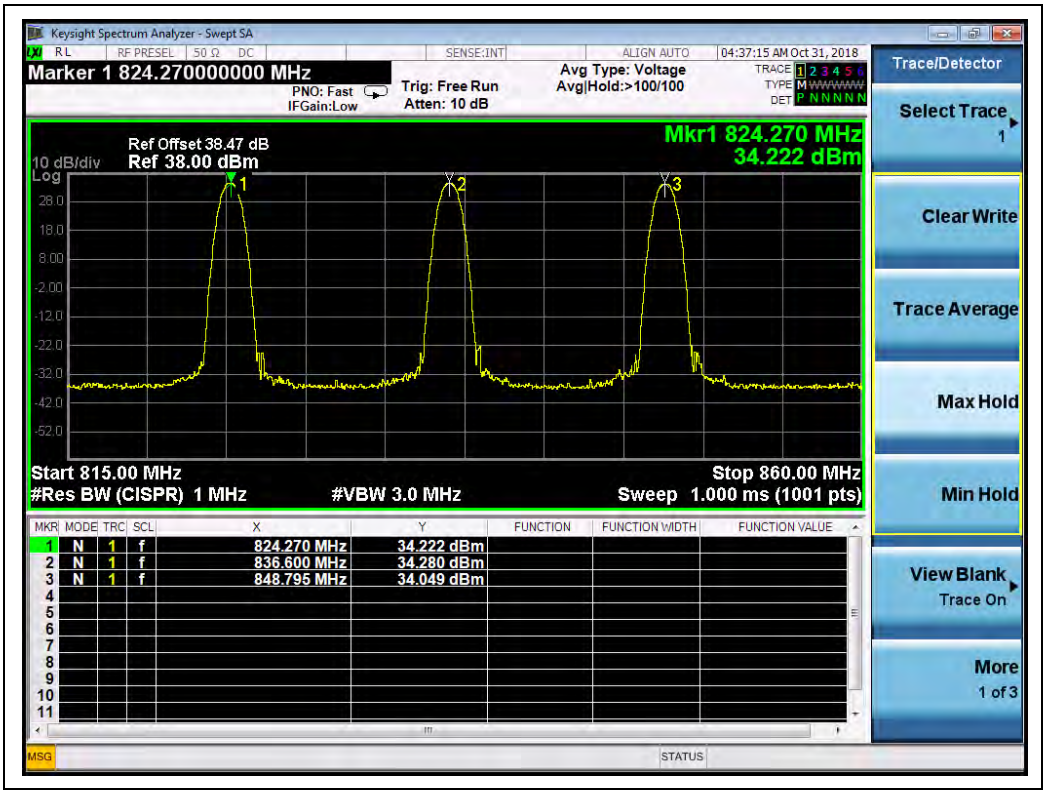
Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GSM 1900MHz	512	1850.2	0	30.90	1.230	33	2	PASS
	661	1880.0	0	30.60	1.148			PASS
	810	1909.8	0	30.48	1.117			PASS
GPRS 1900MHz	512	1850.2	0	30.68	1.169	33	2	PASS
	661	1880.0	0	30.40	1.096			PASS
	810	1909.8	0	30.28	1.067			PASS
EDGE 1900MHz	512	1850.2	0	29.41	0.873	33	2	PASS
	661	1880.0	0	29.62	0.916			PASS
	810	1909.8	0	29.26	0.843			PASS

Note 1: For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

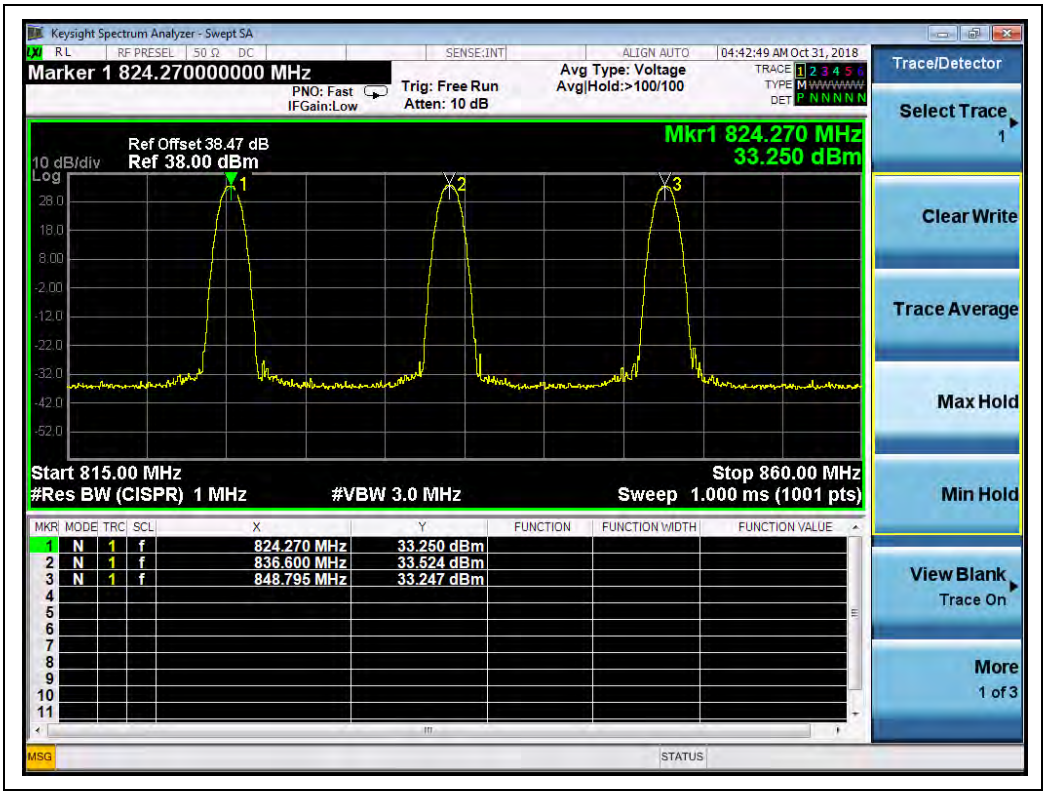
Note 2: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



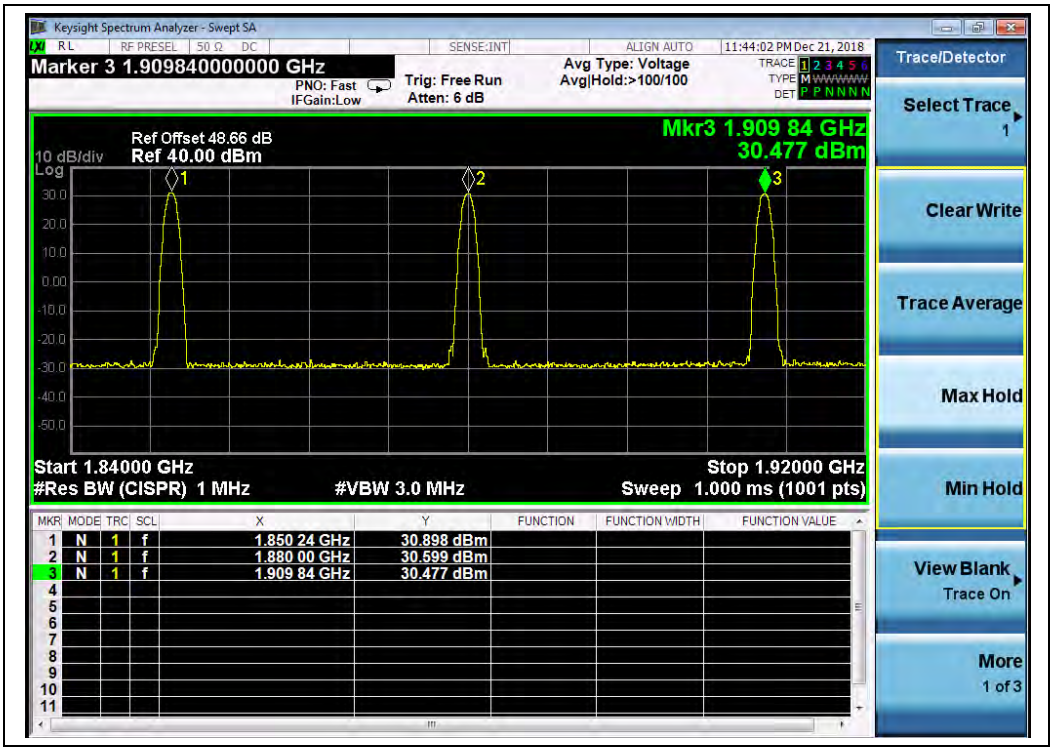
(GSM 850MHz, Channel = 128, 190, 251)



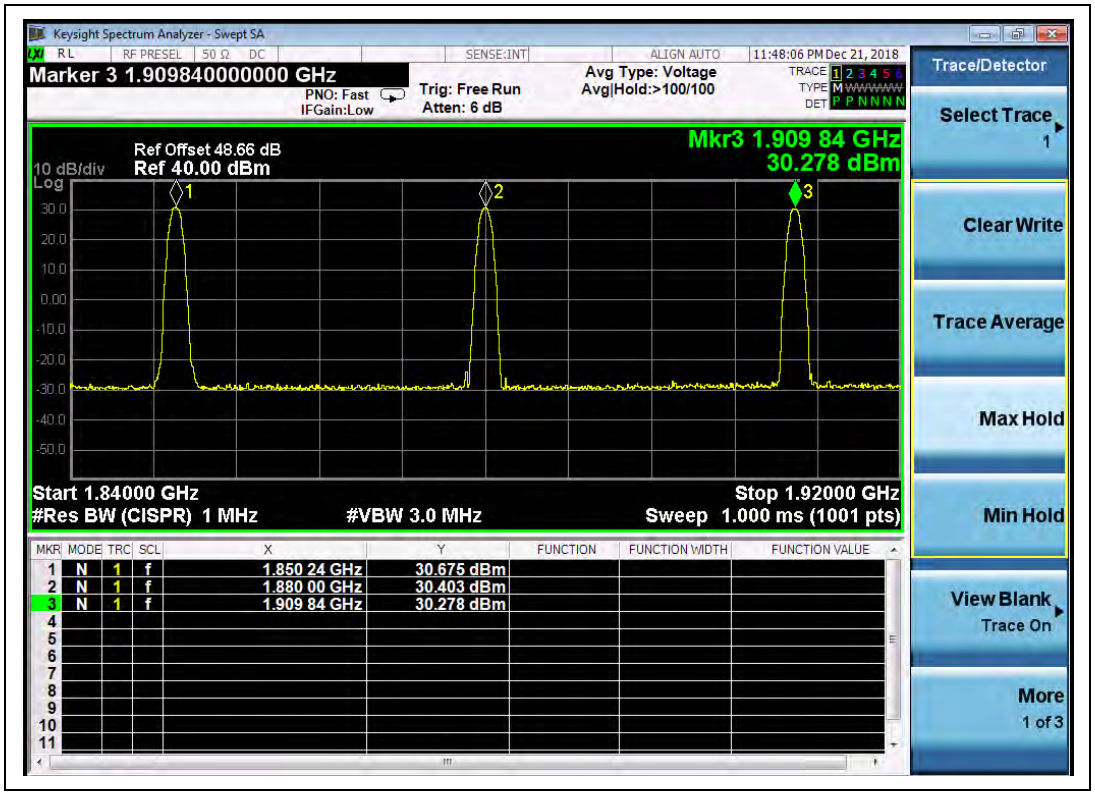
(GPRS 850MHz, Channel = 128, 190, 251)



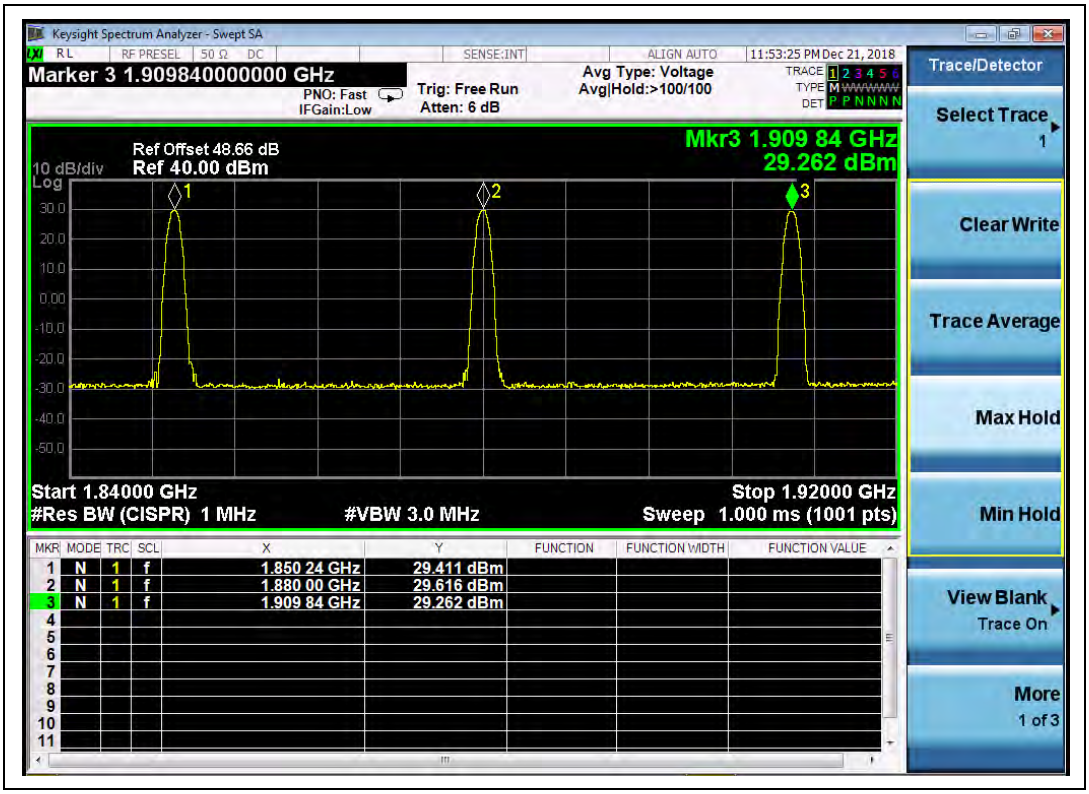
(EDGE 850MHz, Channel = 128, 190, 251)



(GSM 1900MHz, Channel = 512, 661, 810)



(GPRS 1900MHz, Channel = 512, 661, 810)



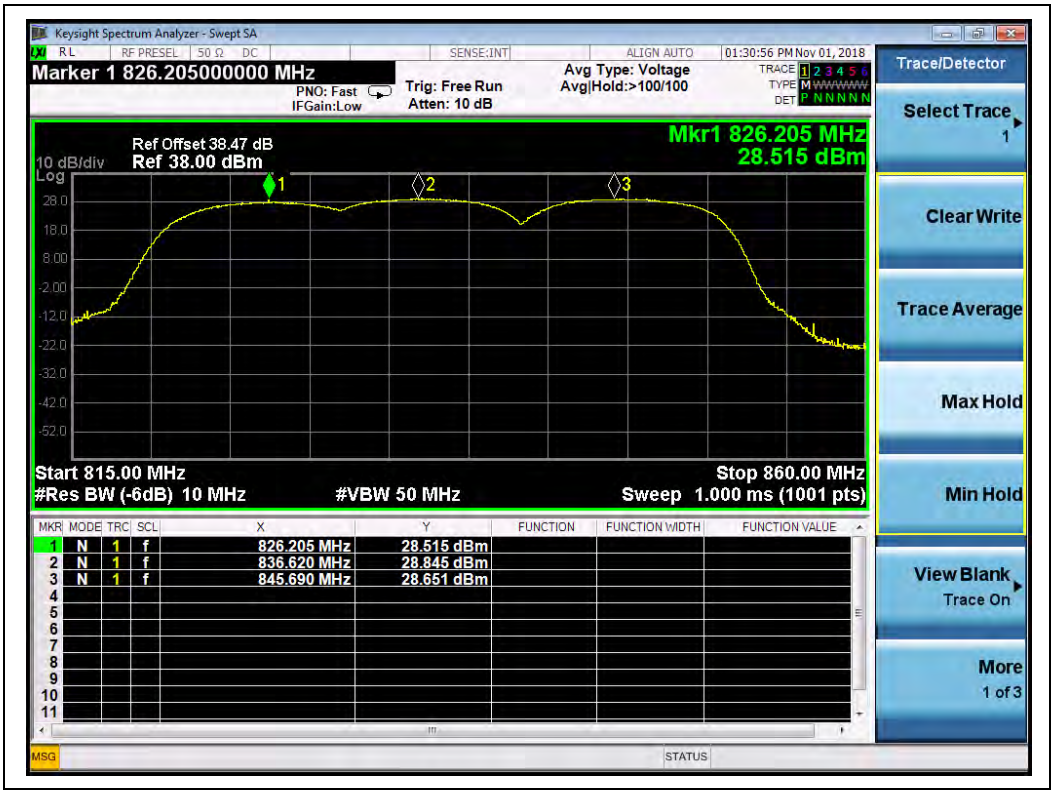
(EDGE 1900MHz, Channel = 512, 661, 810)

WCDMA Test verdict:

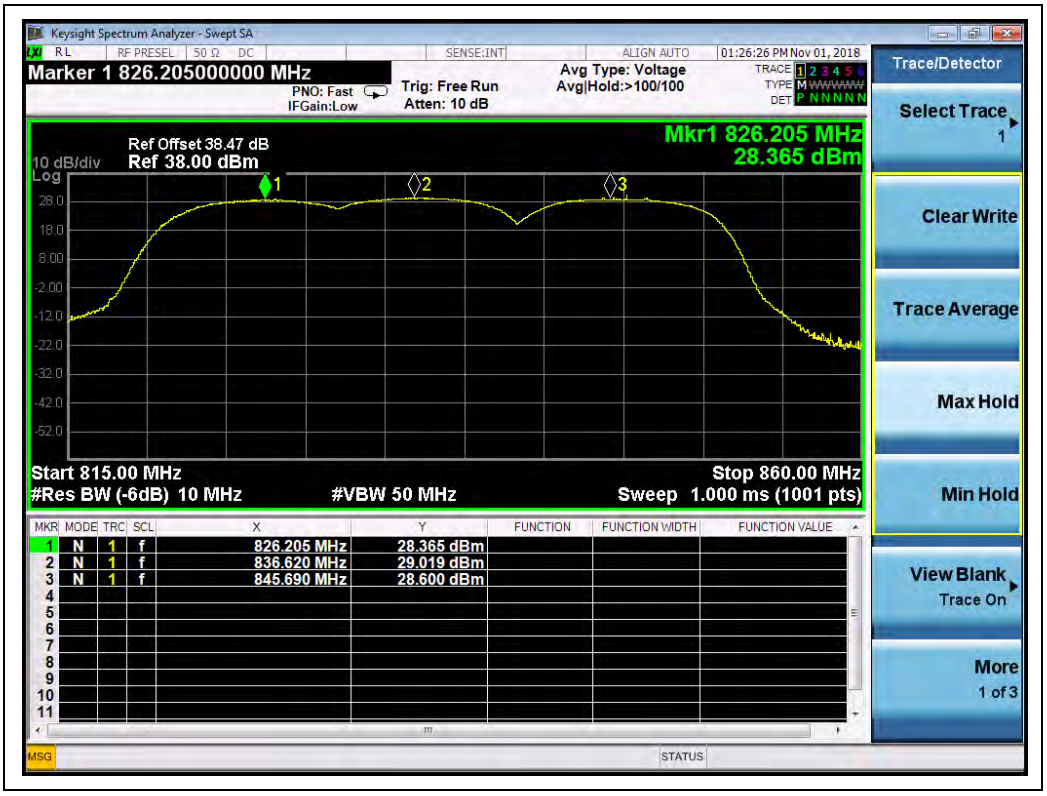
Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	28.44	0.698	38.5	7	PASS
	4182	836.4	28.68	0.738			PASS
	4233	846.6	28.49	0.706			PASS
HSDPA Band V	4132	826.4	28.52	0.711	38.5	7	PASS
	4182	836.4	28.85	0.767			PASS
	4233	846.6	28.65	0.733			PASS
HSUPA Band V	4132	826.4	28.37	0.687	38.5	7	PASS
	4182	836.4	29.02	0.798			PASS
	4233	846.6	28.60	0.724			PASS
HSPA+ Band V	4132	826.4	28.77	0.753	38.5	7	PASS
	4182	836.4	28.39	0.690			PASS
	4233	846.6	28.24	0.667			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	27.61	0.577	33	2	PASS
	9400	1880.0	27.46	0.557			PASS
	9538	1907.6	28.21	0.662			PASS
HSDPA Band II	9262	1852.4	27.37	0.546	33	2	PASS
	9400	1880.0	28.21	0.662			PASS
	9538	1907.6	28.09	0.644			PASS
HSUPA Band II	9262	1852.4	27.30	0.537	33	2	PASS
	9400	1880.0	28.17	0.656			PASS
	9538	1907.6	27.48	0.560			PASS
HSPA+ Band II	9262	1852.4	27.33	0.541	33	2	PASS
	9400	1880.0	27.55	0.569			PASS
	9538	1907.6	27.59	0.574			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

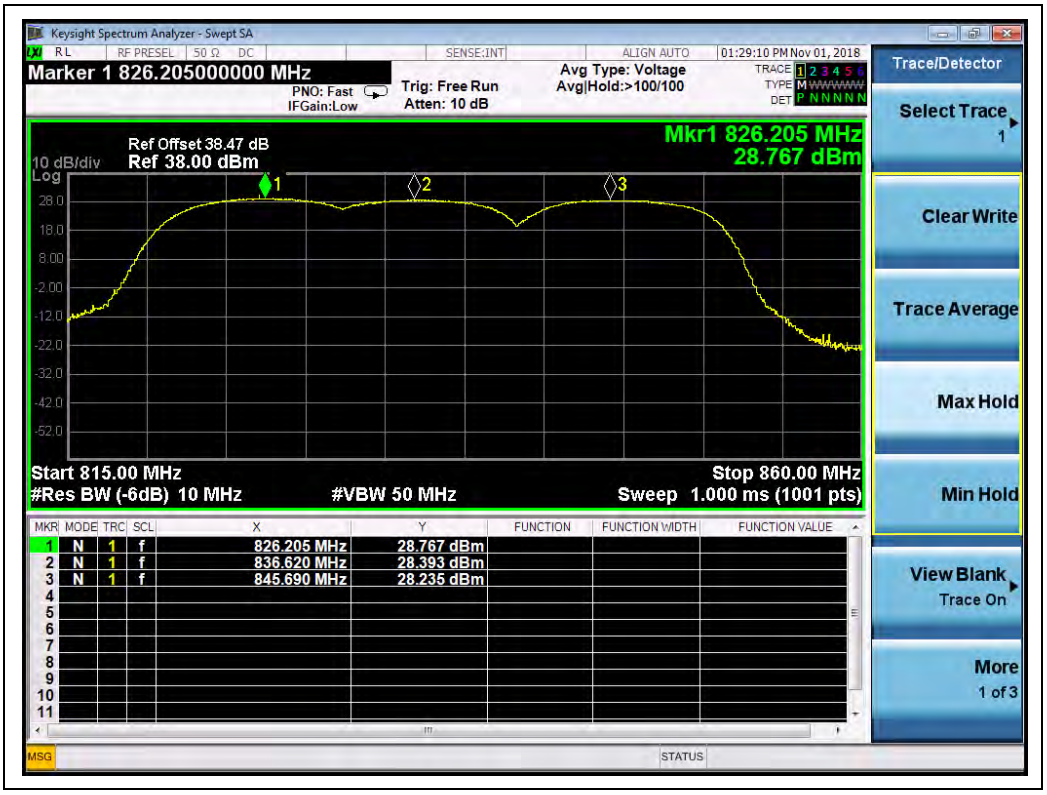
(WCDMA Band V, Channel = 4132, 4182, 4233)



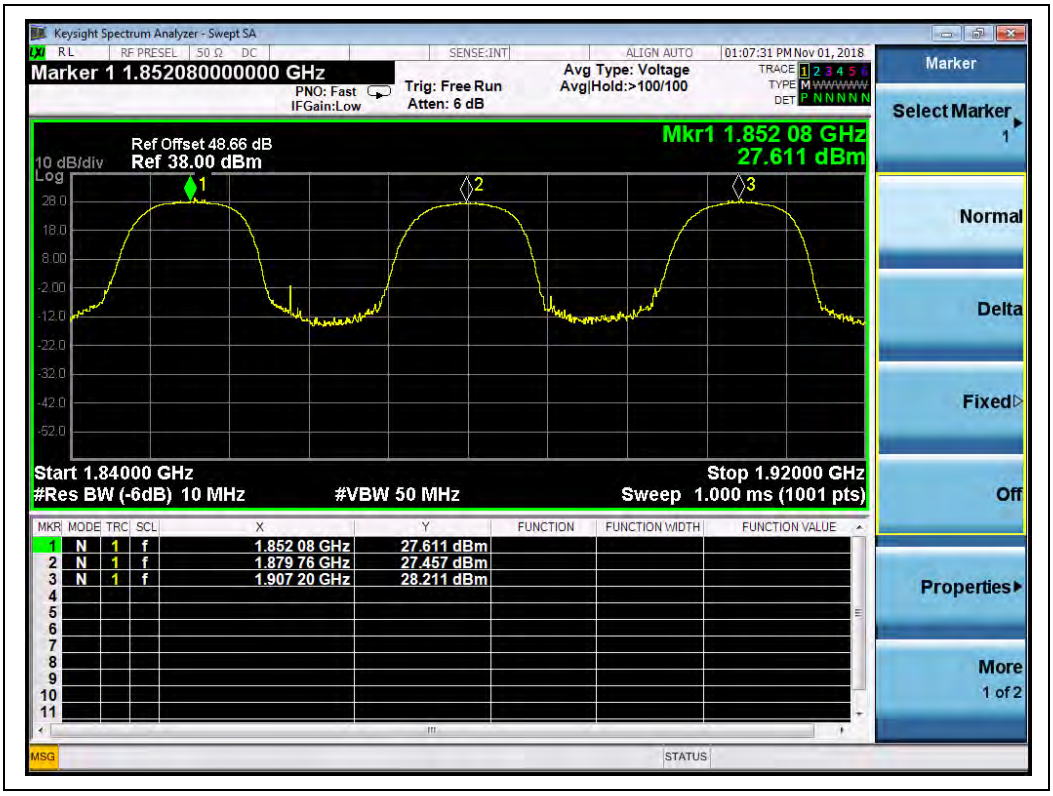
(HSDPA Band V, Channel = 4132, 4182, 4233)



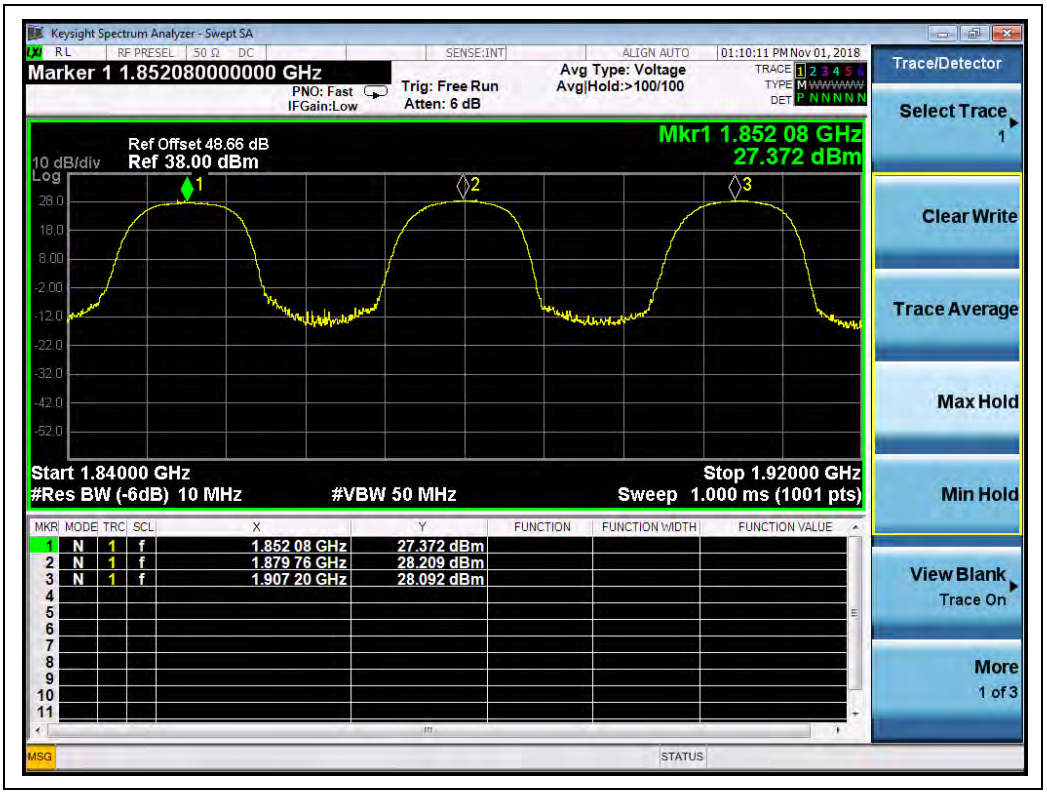
(HSUPA Band V, Channel = 4132, 4182, 4233)



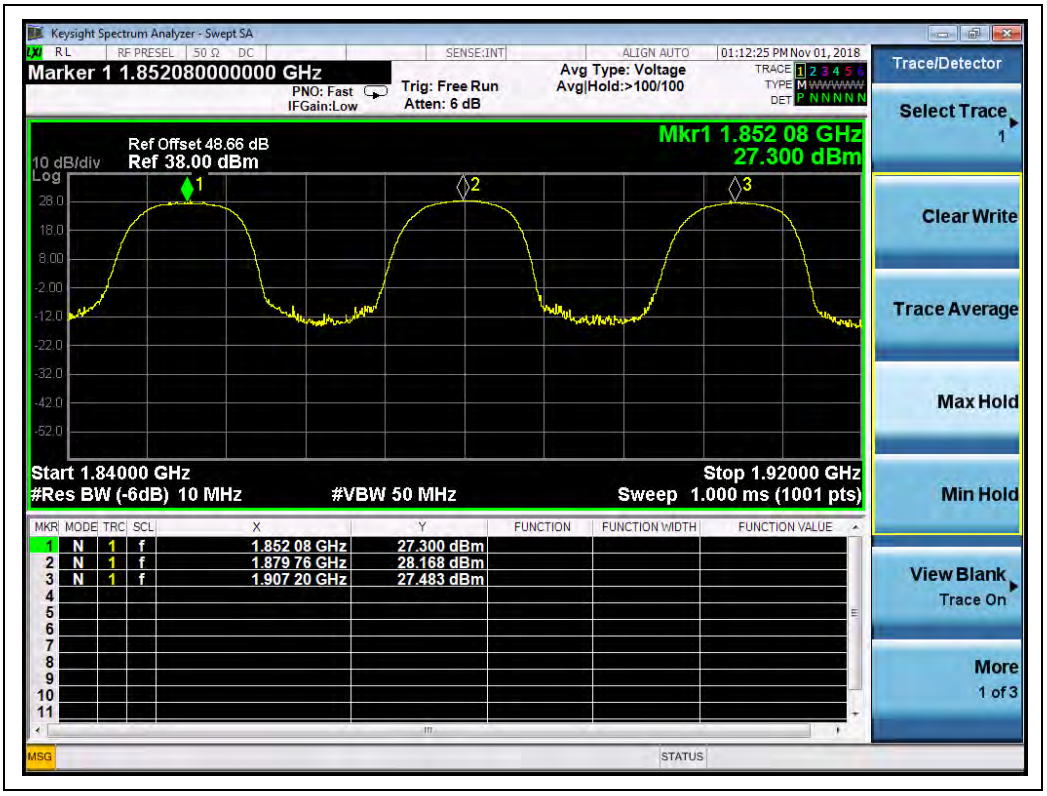
(HSPA+ Band V, Channel = 4132, 4182, 4233)



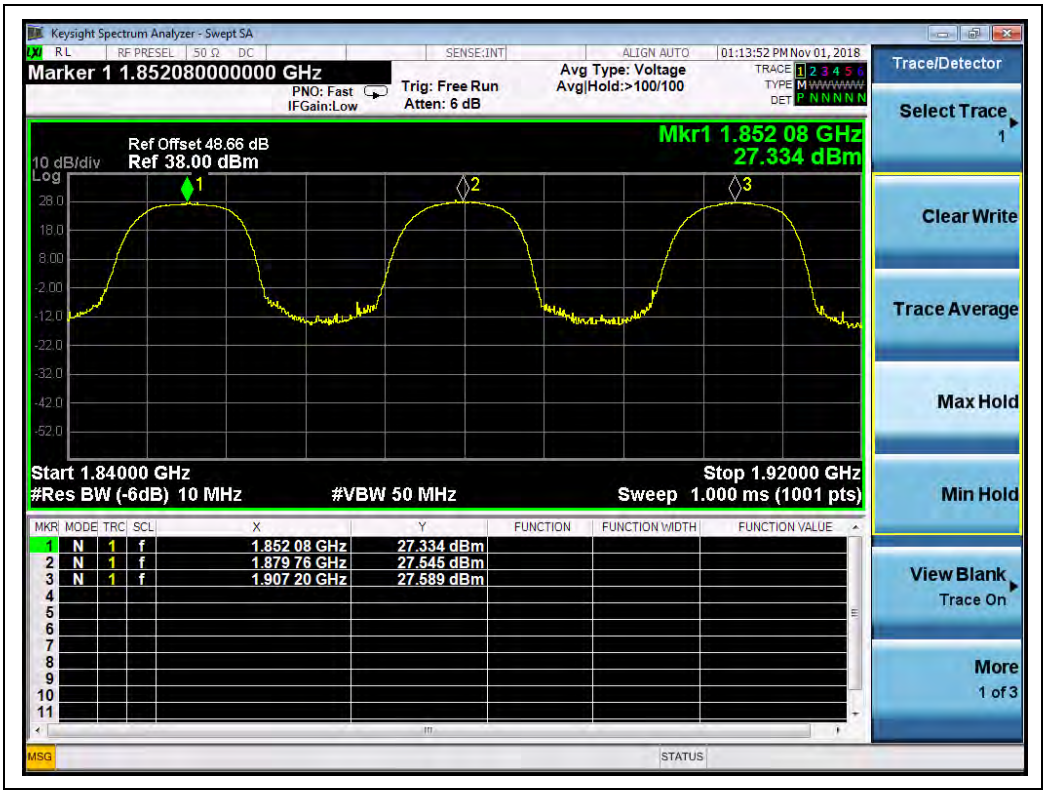
(WCDMA Band II, Channel = 9262, 9400, 9538)



(HSDPA Band II, Channel = 9262, 9400, 9538)



(HSUPA Band II, Channel = 9262, 9400, 9538)



(HSPA+ Band II, Channel = 9262, 9400, 9538)

2.8. Radiated Out of Band Emissions

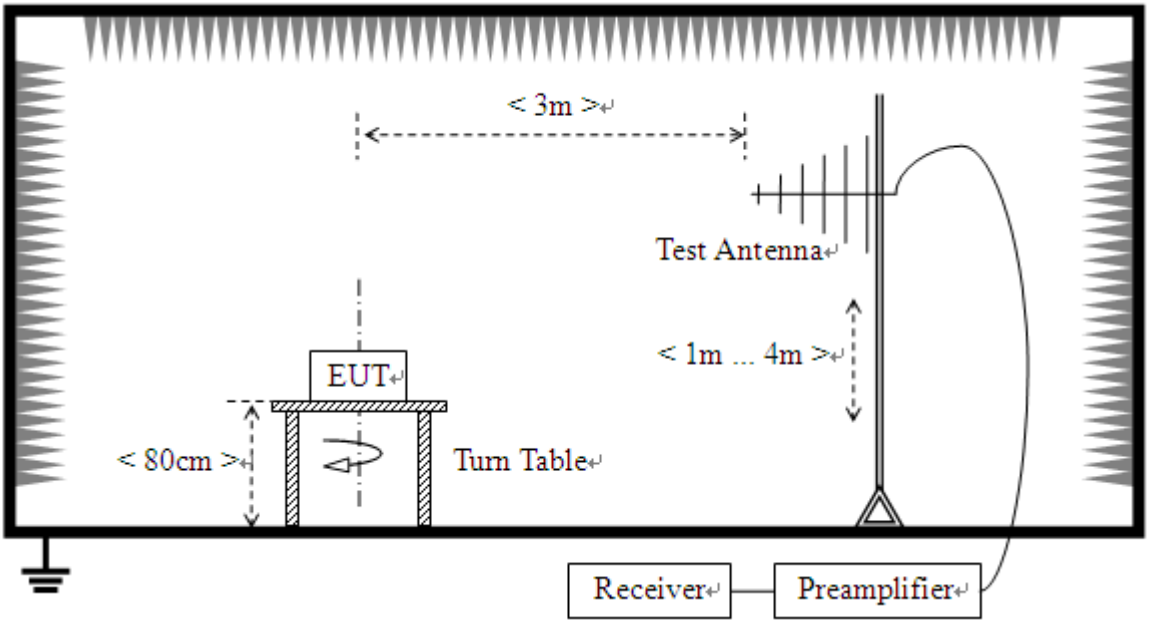
2.8.1. Requirement

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.

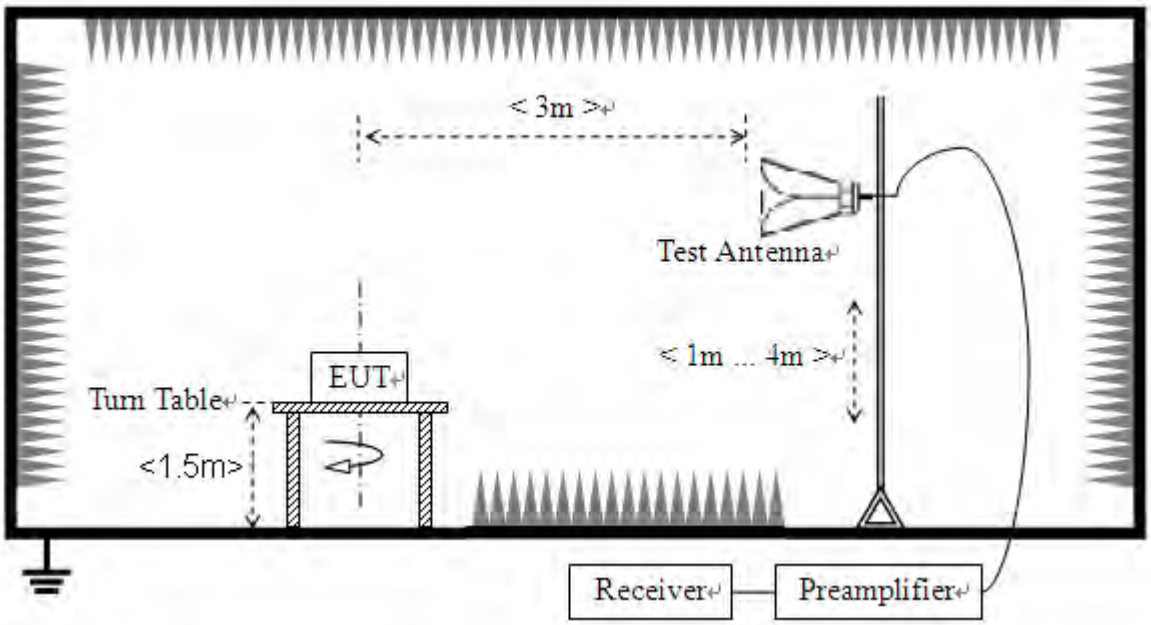
2.8.2. Test Description

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.

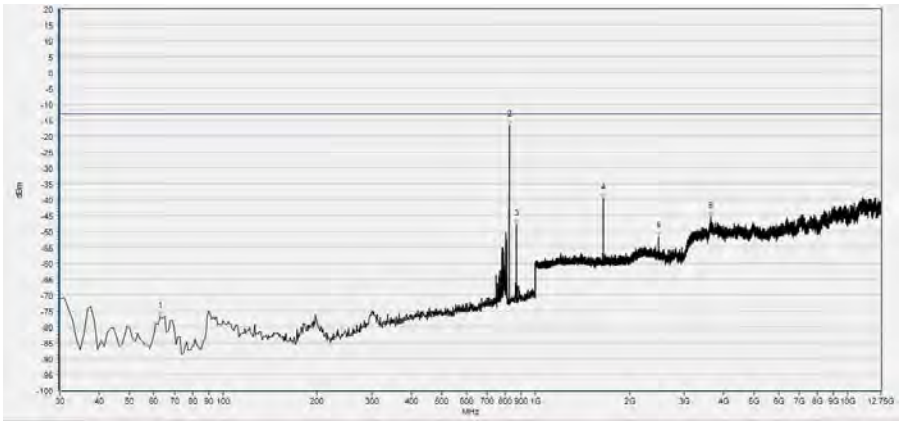
2.8.3. Test Result

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.

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical		
GSM 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
GSM 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -25		PASS
	810	1909.8	< -25	< -25		PASS
EDGE 850MHz	128	824.2	< -25	< -25	-13	PASS
	190	836.6	< -25	< -25		PASS
	251	848.8	< -25	< -25		PASS
EDGE 1900MHz	512	1850.2	< -25	< -25	-13	PASS
	661	1880.0	< -25	< -25		PASS
	810	1909.8	< -25	< -25		PASS
WCDMA Band V	4132	826.4	< -25	< -25	-13	PASS
	4182	836.4	< -25	< -25		PASS
	4233	846.6	< -25	< -25		PASS
WCDMA Band II	9262	1852.4	< -25	< -25	-13	PASS
	9400	1880.0	< -25	< -25		PASS
	9538	1907.6	< -25	< -25		PASS

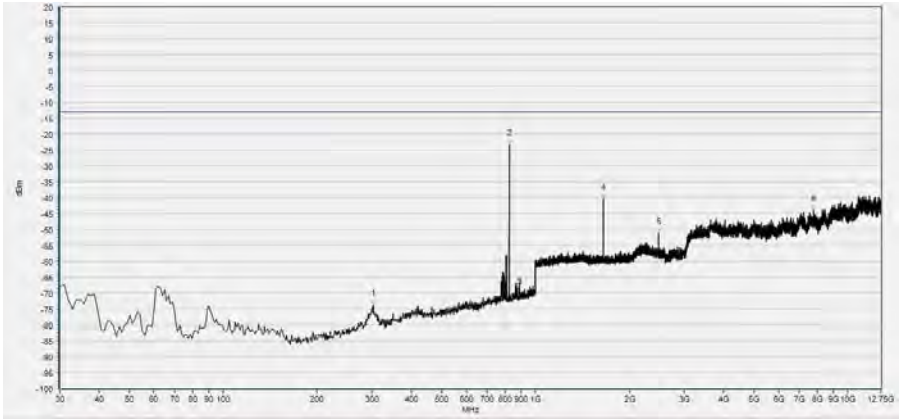
Note 1: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

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.



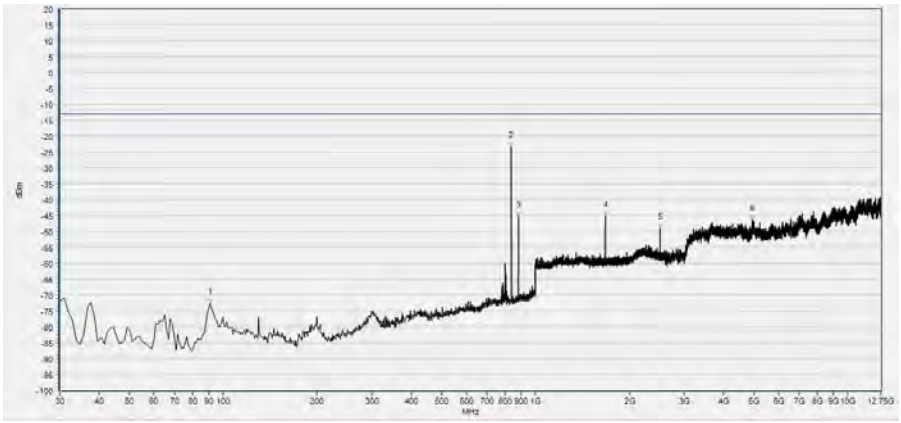
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.980	-76.93	-13.00	Horizontal	PASS
2	824.430	-16.73	-13.00	Horizontal	N/A
3	869.050	-47.93	-13.00	Horizontal	N/A
4	1648.579	-39.83	-13.00	Horizontal	PASS
5	2472.589	-51.72	-13.00	Horizontal	PASS
6	3642.871	-45.54	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 128, Horizontal)



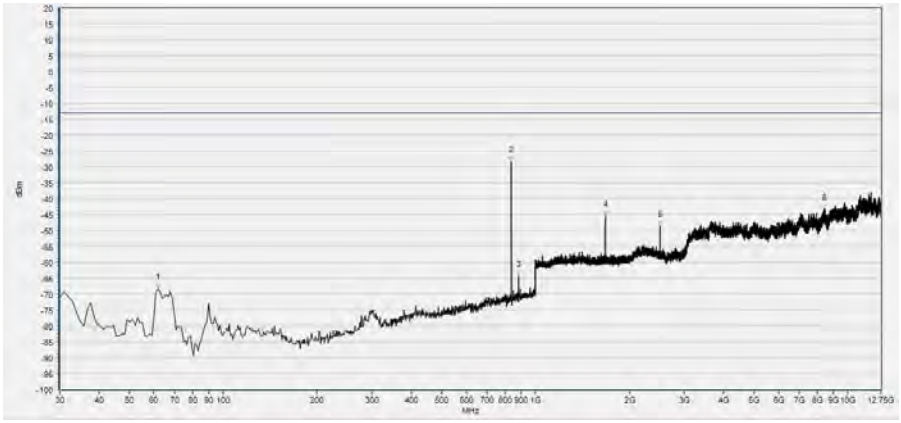
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	302.570	-73.86	-13.00	Vertical	PASS
2	824.430	-23.33	-13.00	Vertical	N/A
3	887.480	-66.72	-13.00	Vertical	N/A
4	1647.939	-40.46	-13.00	Vertical	PASS
5	2472.589	-51.13	-13.00	Vertical	PASS
6	7775.596	-44.16	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 128, Vertical)



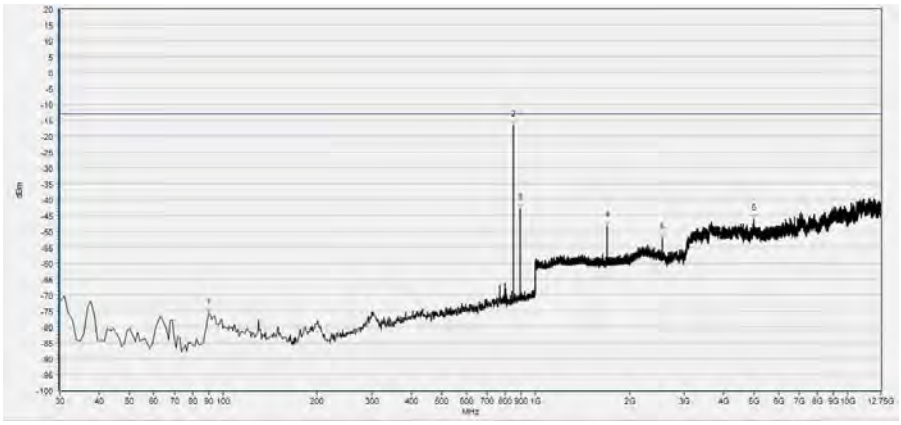
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	91.110	-72.64	-13.00	Horizontal	PASS
2	836.070	-23.36	-13.00	Horizontal	N/A
3	881.660	-45.17	-13.00	Horizontal	N/A
4	1672.909	-45.35	-13.00	Horizontal	PASS
5	2509.724	-49.05	-13.00	Horizontal	PASS
6	4949.691	-46.38	-13.00	Horizontal	PASS

(GSM850MHz, Channel = 190, Horizontal)



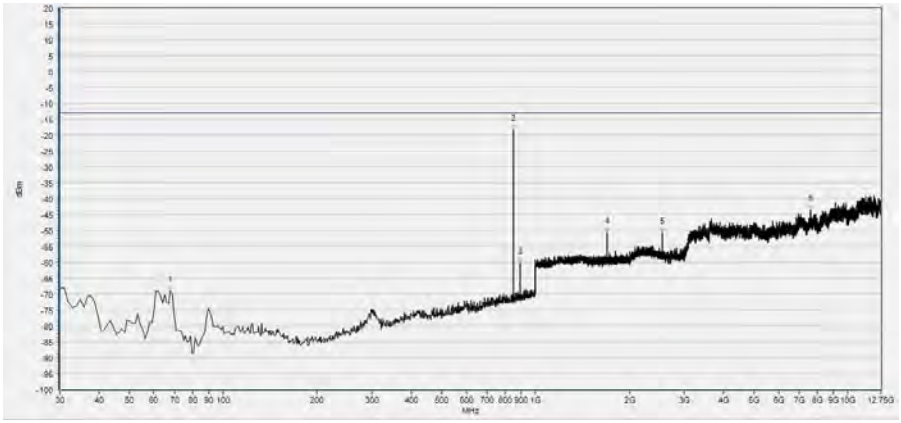
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.010	-68.27	-13.00	Vertical	PASS
2	836.070	-28.23	-13.00	Vertical	N/A
3	881.660	-64.22	-13.00	Vertical	N/A
4	1672.909	-45.50	-13.00	Vertical	PASS
5	2509.724	-48.54	-13.00	Vertical	PASS
6	8386.552	-43.40	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 190, Vertical)



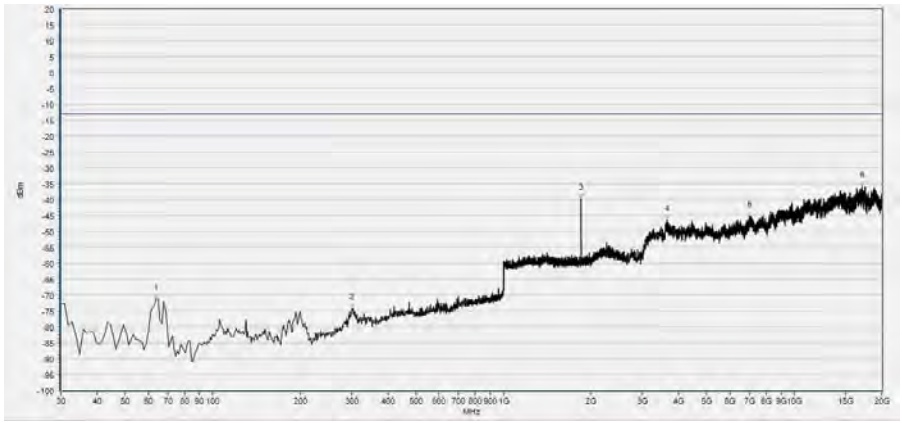
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	90.140	-75.79	-13.00	Horizontal	PASS
2	848.680	-16.56	-13.00	Horizontal	N/A
3	894.270	-42.77	-13.00	Horizontal	N/A
4	1697.239	-48.42	-13.00	Horizontal	PASS
5	2546.218	-52.18	-13.00	Horizontal	PASS
6	5008.756	-46.21	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 251, Horizontal)



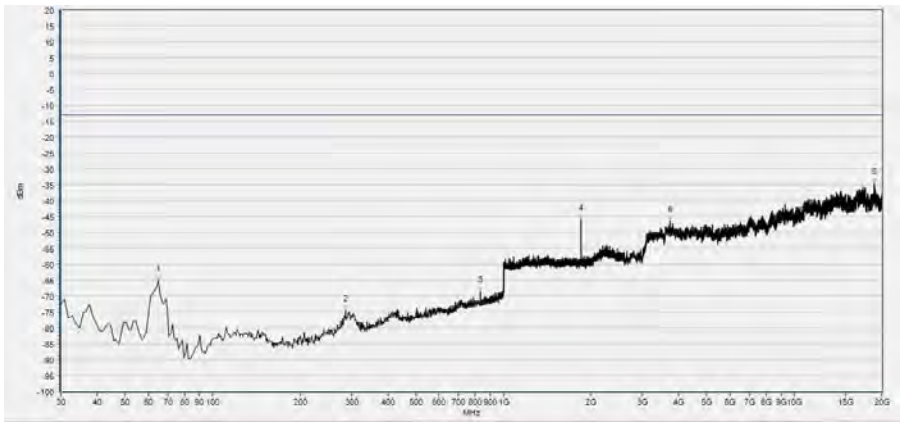
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	67.830	-69.15	-13.00	Vertical	PASS
2	848.680	-18.43	-13.00	Vertical	N/A
3	894.270	-60.18	-13.00	Vertical	N/A
4	1697.239	-50.75	-13.00	Vertical	PASS
5	2546.218	-50.75	-13.00	Vertical	PASS
6	7589.171	-43.57	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 251, Vertical)



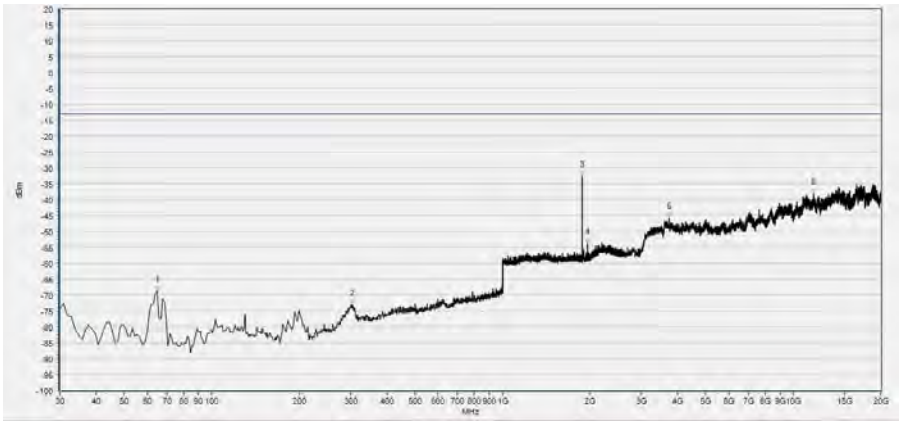
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	63.950	-71.12	-13.00	Horizontal	PASS
2	301.600	-74.23	-13.00	Horizontal	PASS
3	1850.260	-39.67	-13.00	Horizontal	N/A
4	3650.518	-46.50	-13.00	Horizontal	PASS
5	7026.732	-45.19	-13.00	Horizontal	PASS
6	17155.374	-36.02	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 512, Horizontal)



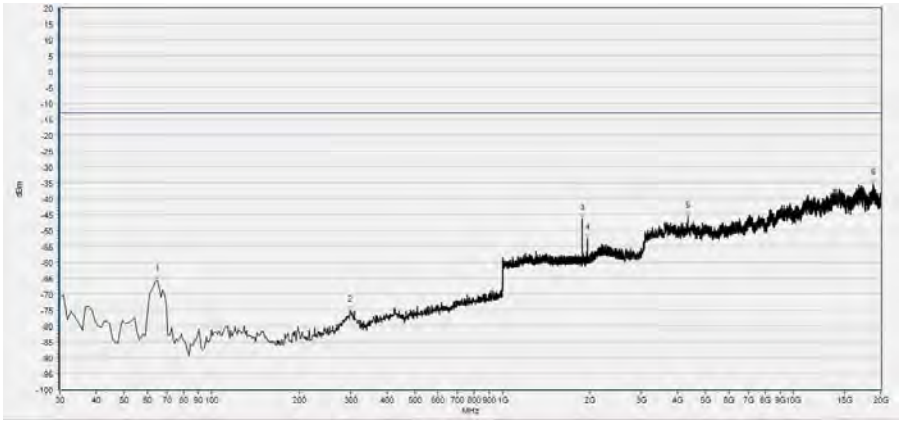
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-65.34	-13.00	Vertical	PASS
2	286.080	-74.56	-13.00	Vertical	PASS
3	832.190	-68.62	-13.00	Vertical	PASS
4	1850.260	-45.88	-13.00	Vertical	N/A
5	3745.445	-46.35	-13.00	Vertical	PASS
6	18854.555	-34.57	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 512, Vertical)



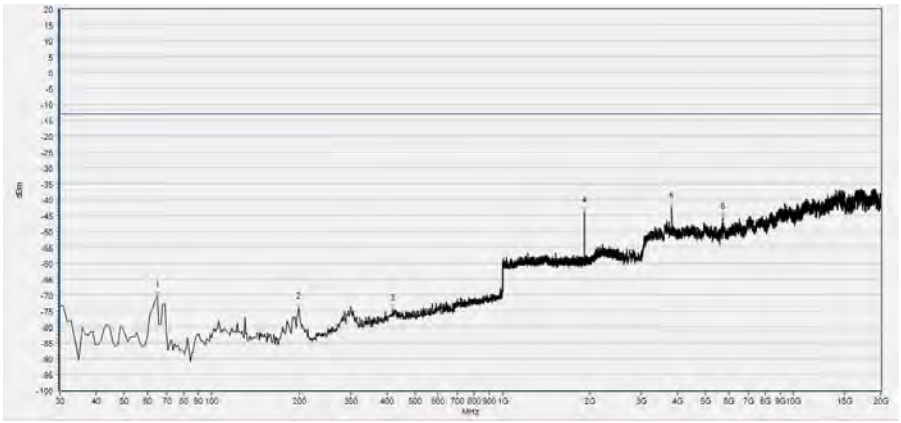
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-68.77	-13.00	Horizontal	PASS
2	303.540	-73.20	-13.00	Horizontal	PASS
3	1879.712	-32.73	-13.00	Horizontal	N/A
4	1959.744	-53.90	-13.00	Horizontal	N/A
5	3732.788	-45.60	-13.00	Horizontal	PASS
6	11719.258	-38.21	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 661, Horizontal)



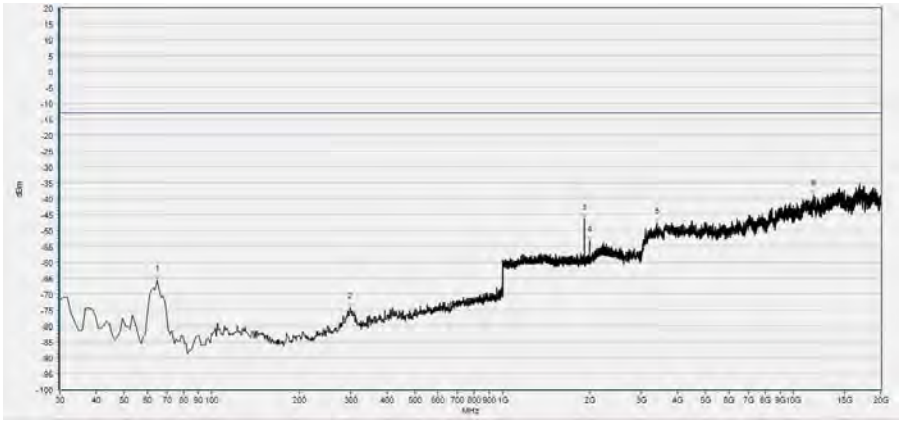
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-65.63	-13.00	Vertical	PASS
2	299.660	-75.29	-13.00	Vertical	PASS
3	1879.712	-46.48	-13.00	Vertical	N/A
4	1959.744	-52.57	-13.00	Vertical	N/A
5	4333.988	-45.78	-13.00	Vertical	PASS
6	18864.048	-35.34	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 661, Vertical)



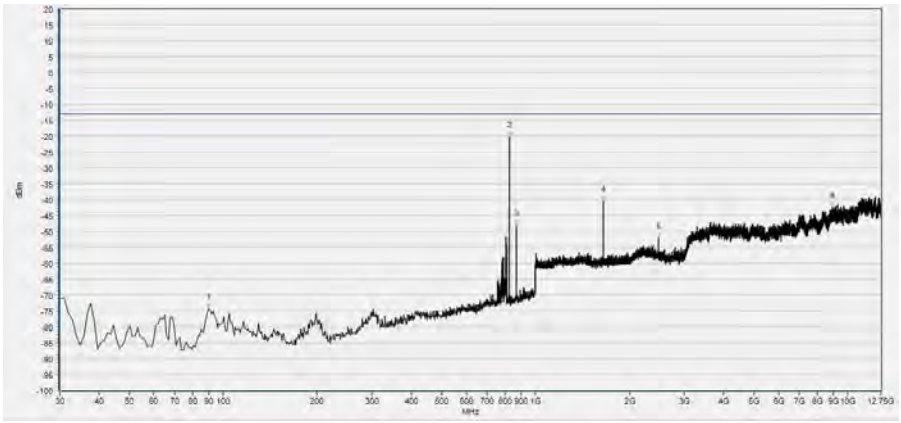
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-70.36	-13.00	Horizontal	PASS
2	198.780	-73.99	-13.00	Horizontal	PASS
3	418.000	-74.54	-13.00	Horizontal	PASS
4	1909.804	-43.80	-13.00	Horizontal	N/A
5	3818.221	-42.44	-13.00	Horizontal	PASS
6	5729.405	-45.60	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 810, Horizontal)



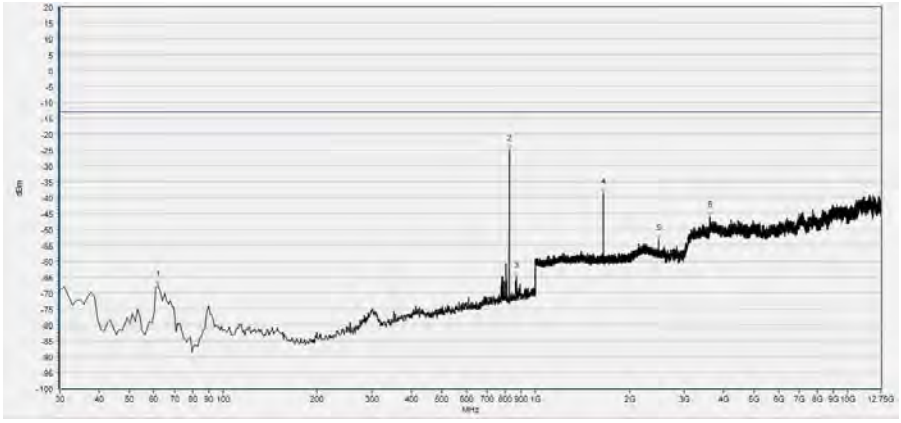
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-65.78	-13.00	Vertical	PASS
2	299.660	-74.27	-13.00	Vertical	PASS
3	1909.804	-46.49	-13.00	Vertical	N/A
4	1989.836	-53.28	-13.00	Vertical	N/A
5	3391.053	-47.55	-13.00	Vertical	PASS
6	11719.258	-38.88	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 810, Vertical)



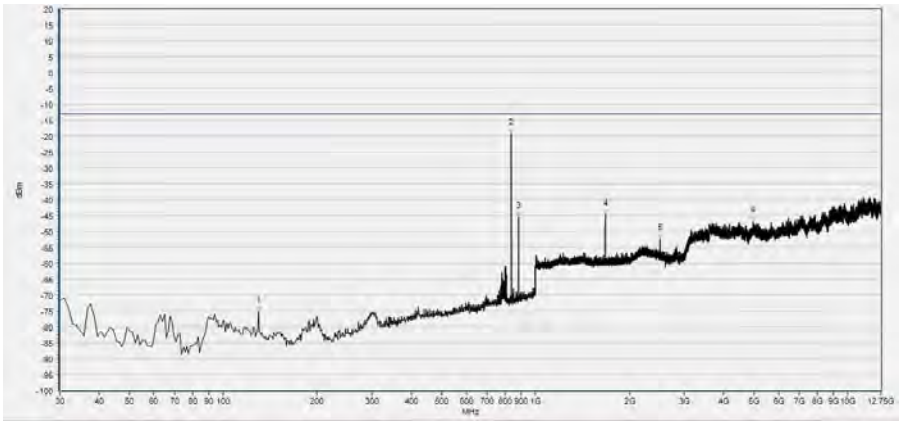
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	90.140	-74.18	-13.00	Horizontal	PASS
2	824.430	-20.25	-13.00	Horizontal	N/A
3	869.050	-48.07	-13.00	Horizontal	N/A
4	1647.939	-40.47	-13.00	Horizontal	PASS
5	2472.589	-52.03	-13.00	Horizontal	PASS
6	8940.289	-42.30	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 128, Horizontal)



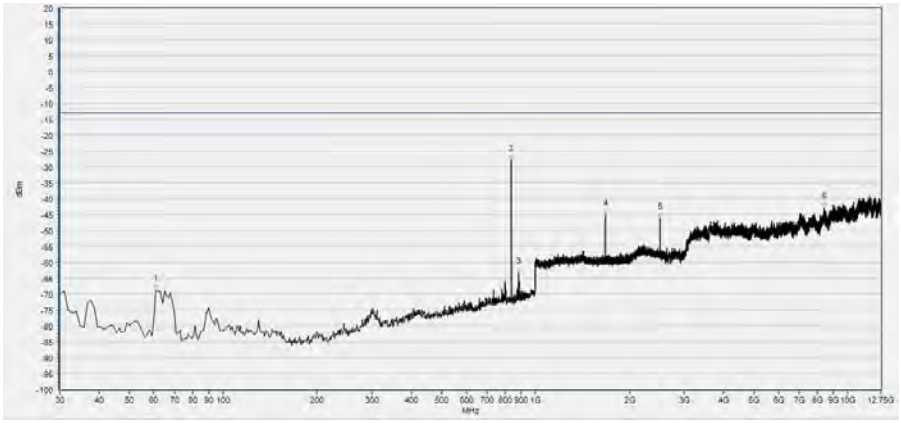
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.010	-67.67	-13.00	Vertical	PASS
2	824.430	-24.96	-13.00	Vertical	N/A
3	869.050	-65.06	-13.00	Vertical	N/A
4	1648.579	-38.69	-13.00	Vertical	PASS
5	2472.589	-52.99	-13.00	Vertical	PASS
6	3618.876	-45.86	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 128, Vertical)



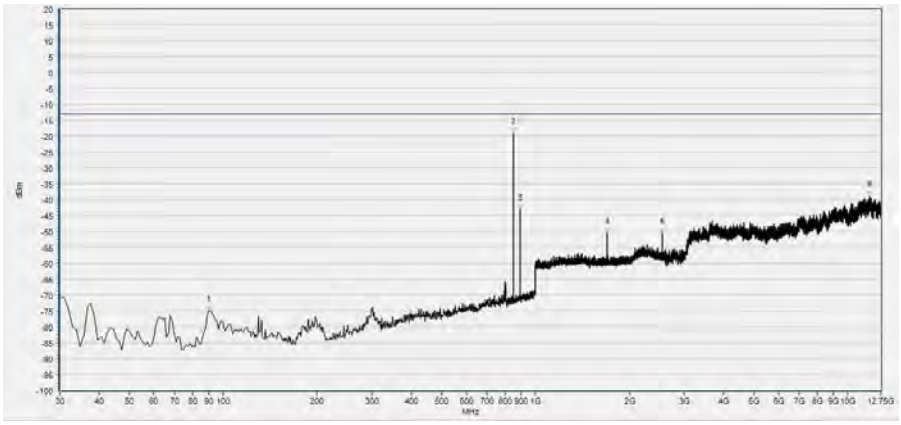
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	129.910	-75.17	-13.00	Horizontal	PASS
2	837.040	-19.36	-13.00	Horizontal	N/A
3	881.660	-45.55	-13.00	Horizontal	N/A
4	1672.909	-44.79	-13.00	Horizontal	PASS
5	2509.724	-52.29	-13.00	Horizontal	PASS
6	4968.149	-47.00	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 190, Horizontal)



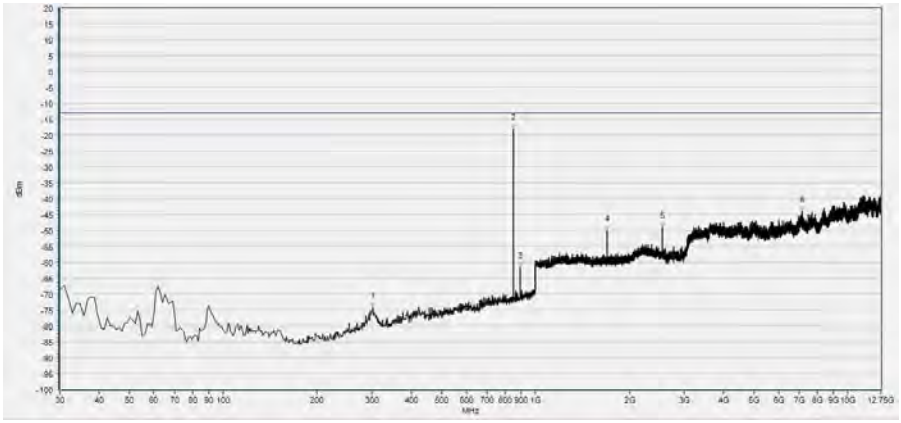
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	61.040	-68.84	-13.00	Vertical	PASS
2	837.040	-27.89	-13.00	Vertical	N/A
3	881.660	-63.39	-13.00	Vertical	N/A
4	1672.909	-45.07	-13.00	Vertical	PASS
5	2509.724	-46.09	-13.00	Vertical	PASS
6	8393.935	-42.79	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 190, Vertical)



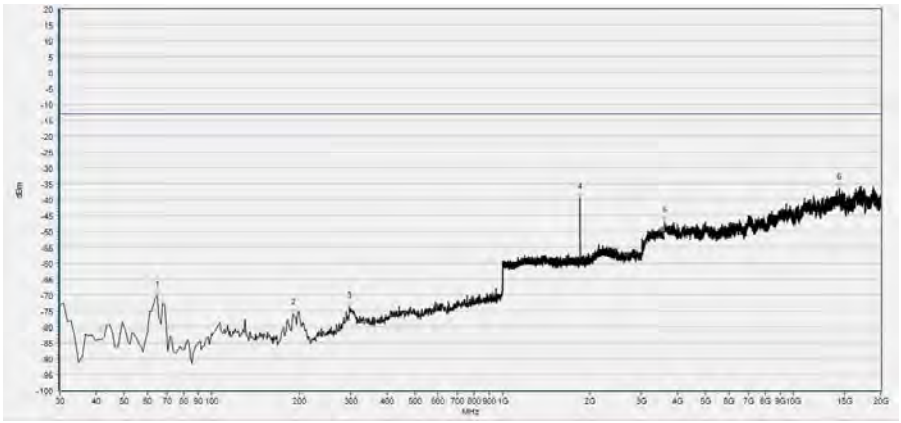
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	90.140	-74.93	-13.00	Horizontal	PASS
2	848.680	-19.12	-13.00	Horizontal	N/A
3	893.300	-43.17	-13.00	Horizontal	N/A
4	1697.239	-50.55	-13.00	Horizontal	PASS
5	2546.218	-50.42	-13.00	Horizontal	PASS
6	11740.353	-38.76	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 251, Horizontal)



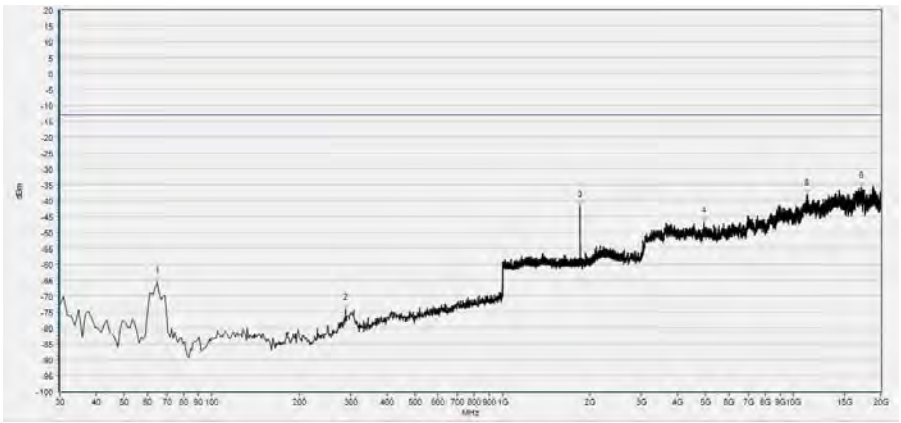
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	301.600	-74.18	-13.00	Vertical	PASS
2	848.680	-18.08	-13.00	Vertical	N/A
3	894.270	-61.69	-13.00	Vertical	N/A
4	1697.239	-50.11	-13.00	Vertical	PASS
5	2546.218	-49.08	-13.00	Vertical	PASS
6	7138.798	-44.07	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 251, Vertical)



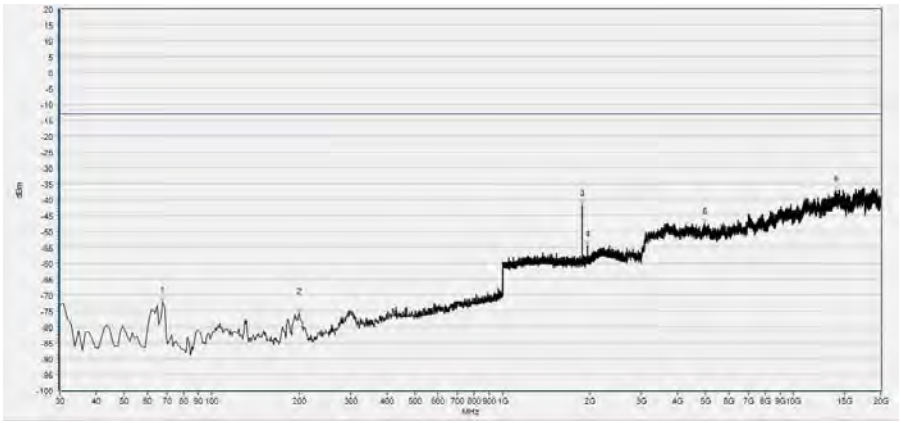
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-70.25	-13.00	Horizontal	PASS
2	191.020	-76.00	-13.00	Horizontal	PASS
3	297.720	-73.85	-13.00	Horizontal	PASS
4	1850.260	-39.52	-13.00	Horizontal	N/A
5	3612.548	-46.87	-13.00	Horizontal	PASS
6	14389.853	-36.37	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 512, Horizontal)



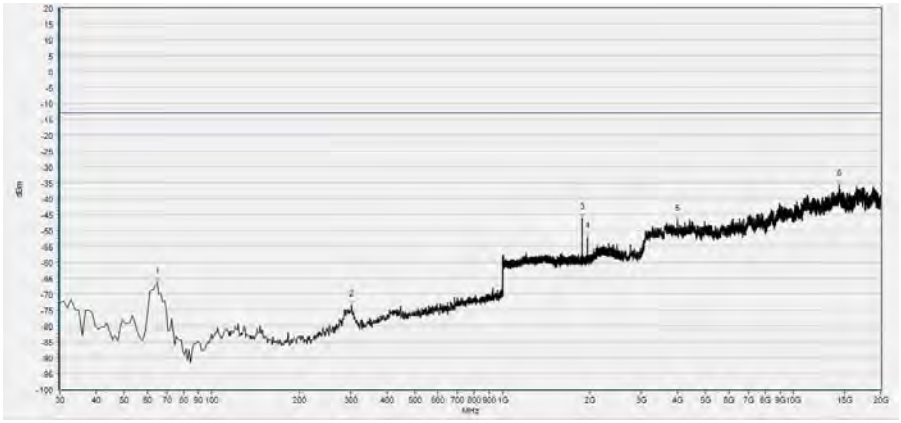
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-65.69	-13.00	Vertical	PASS
2	288.990	-74.09	-13.00	Vertical	PASS
3	1850.260	-41.77	-13.00	Vertical	N/A
4	4941.517	-46.77	-13.00	Vertical	PASS
5	11152.864	-38.14	-13.00	Vertical	PASS
6	17168.031	-35.77	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 512, Vertical)



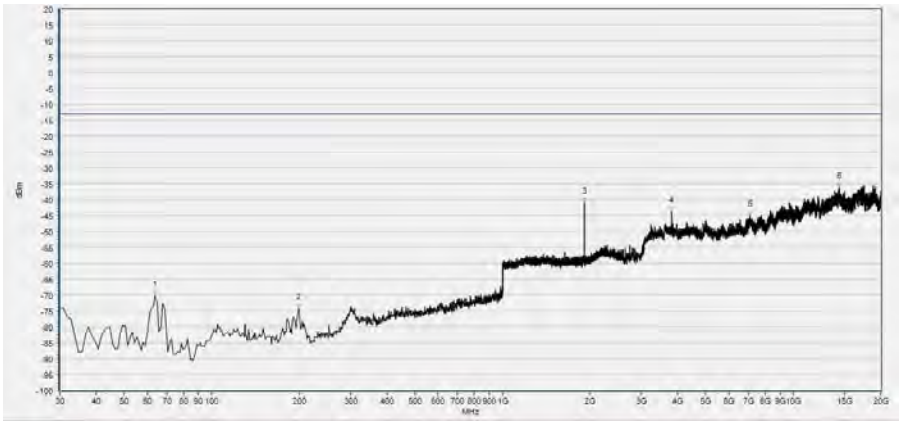
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	67.830	-72.23	-13.00	Horizontal	PASS
2	199.750	-75.79	-13.00	Horizontal	PASS
3	1879.712	-41.71	-13.00	Horizontal	N/A
4	1959.744	-54.53	-13.00	Horizontal	N/A
5	4963.666	-47.43	-13.00	Horizontal	PASS
6	14006.983	-37.15	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 661, Horizontal)



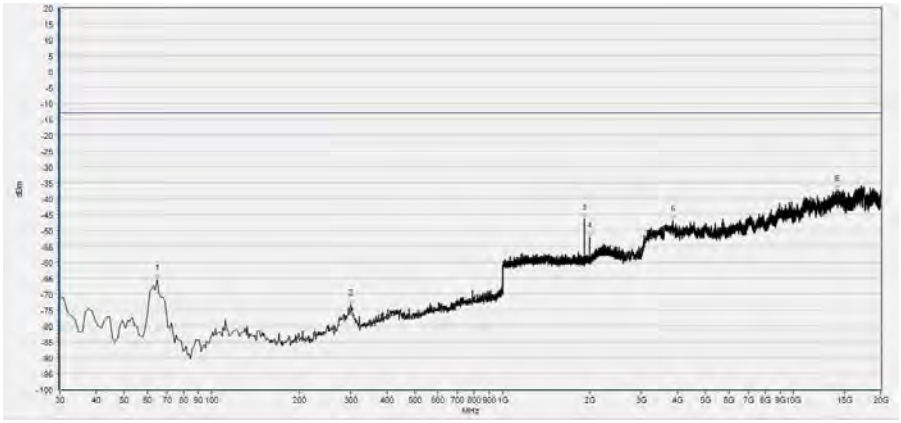
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-66.50	-13.00	Vertical	PASS
2	302.570	-73.50	-13.00	Vertical	PASS
3	1879.712	-46.12	-13.00	Vertical	N/A
4	1959.744	-52.19	-13.00	Vertical	N/A
5	3985.925	-46.69	-13.00	Vertical	PASS
6	14389.853	-35.73	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 661, Vertical)



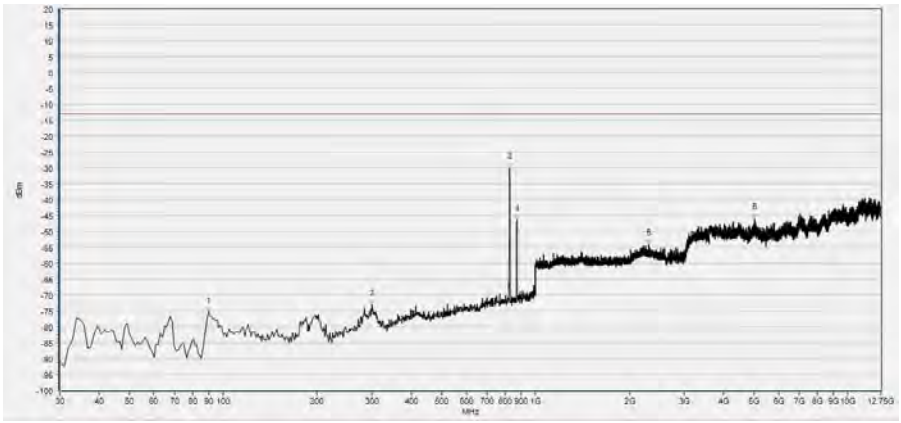
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	63.950	-70.23	-13.00	Horizontal	PASS
2	198.780	-74.20	-13.00	Horizontal	PASS
3	1909.804	-41.03	-13.00	Horizontal	N/A
4	14380.360	-36.17	-13.00	Horizontal	PASS
5	7090.016	-44.88	-13.00	Horizontal	PASS
6	14380.360	-36.17	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 810, Horizontal)



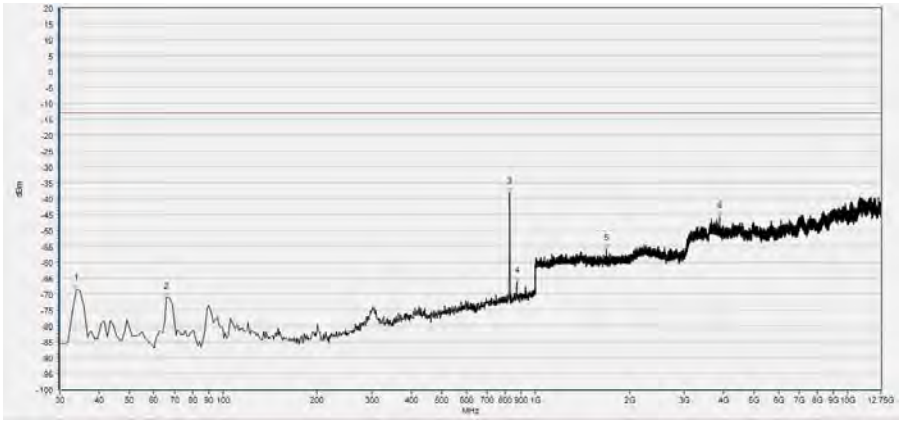
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-65.48	-13.00	Vertical	PASS
2	301.600	-73.27	-13.00	Vertical	PASS
3	1909.804	-46.51	-13.00	Vertical	N/A
4	1989.836	-52.17	-13.00	Vertical	N/A
5	3846.699	-46.98	-13.00	Vertical	PASS
6	14092.417	-37.30	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 810, Vertical)



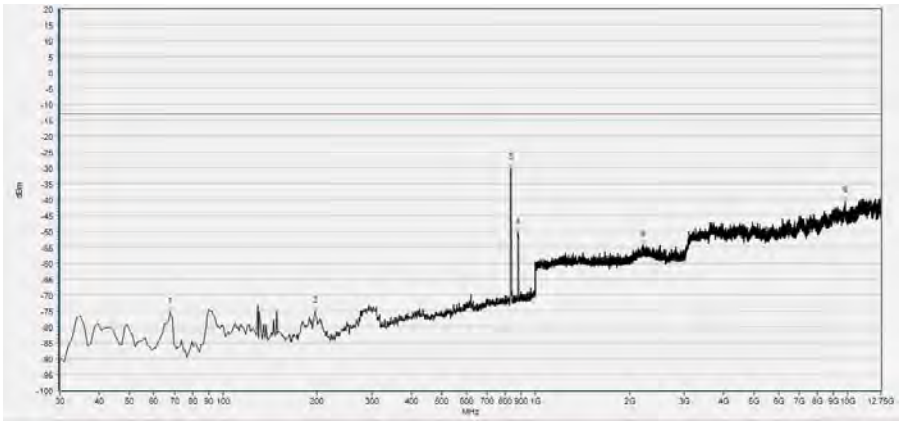
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	90.140	-75.41	-13.00	Horizontal	PASS
2	299.660	-73.12	-13.00	Horizontal	PASS
3	827.340	-30.08	-13.00	Horizontal	PASS
4	872.930	-46.52	-13.00	Horizontal	PASS
5	2299.720	-54.13	-13.00	Horizontal	PASS
6	5019.831	-45.92	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4132, Horizontal)



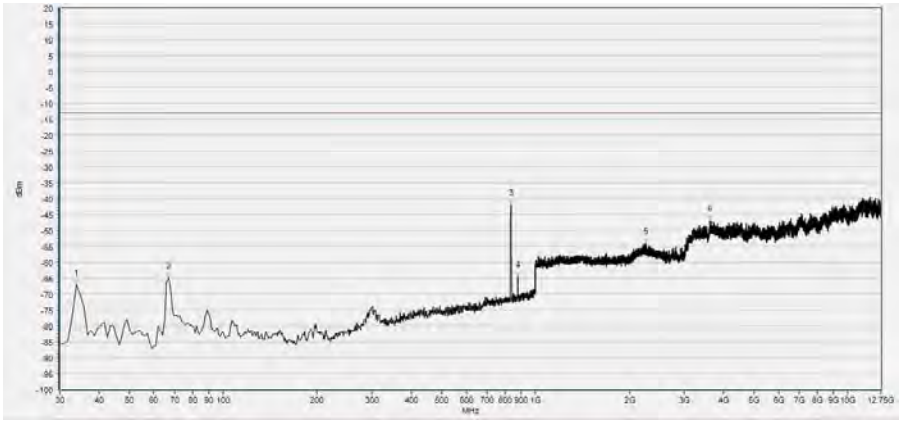
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	33.880	-68.58	-13.00	Vertical	PASS
2	65.890	-71.08	-13.00	Vertical	PASS
3	827.340	-38.09	-13.00	Vertical	PASS
4	871.960	-66.08	-13.00	Vertical	PASS
5	1683.794	-55.98	-13.00	Vertical	PASS
6	3880.978	-45.77	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4132, Vertical)



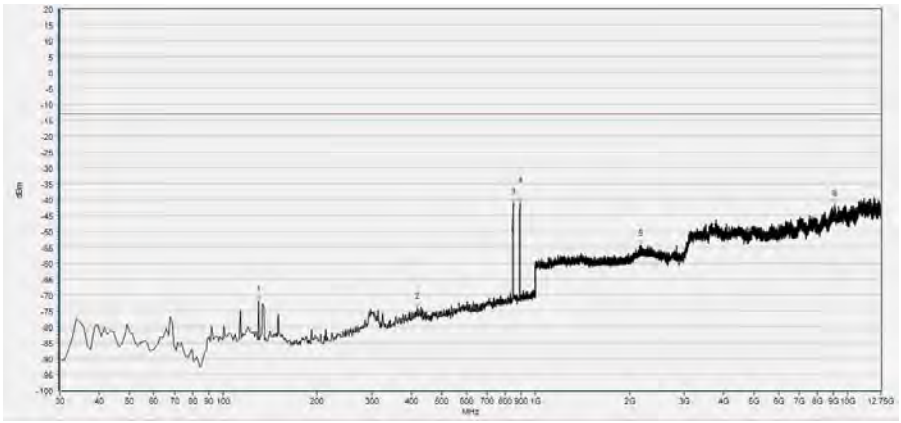
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	67.830	-75.42	-13.00	Horizontal	PASS
2	196.840	-75.23	-13.00	Horizontal	PASS
3	834.130	-30.12	-13.00	Horizontal	PASS
4	878.750	-50.46	-13.00	Horizontal	PASS
5	2203.681	-54.42	-13.00	Horizontal	PASS
6	9837.343	-40.54	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4182, Horizontal)



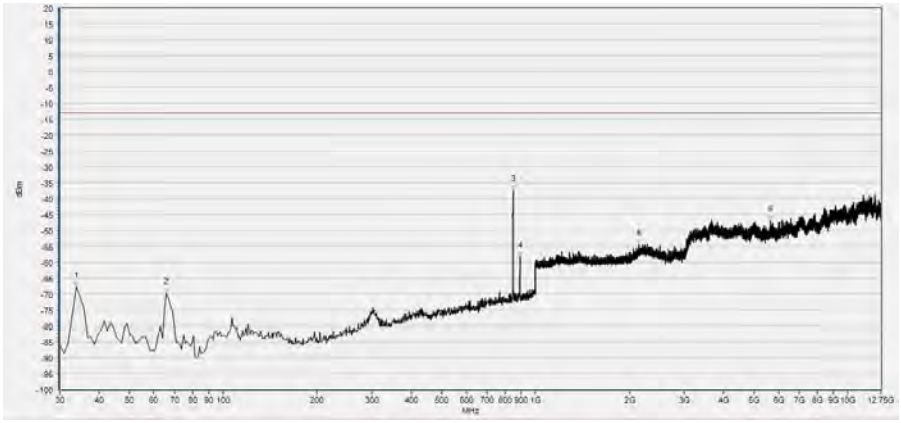
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	33.880	-67.06	-13.00	Vertical	PASS
2	66.860	-65.07	-13.00	Vertical	PASS
3	834.130	-41.79	-13.00	Vertical	PASS
4	878.750	-69.56	-13.00	Vertical	PASS
5	2250.420	-54.12	-13.00	Vertical	PASS
6	3622.568	-46.81	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4182, Vertical)



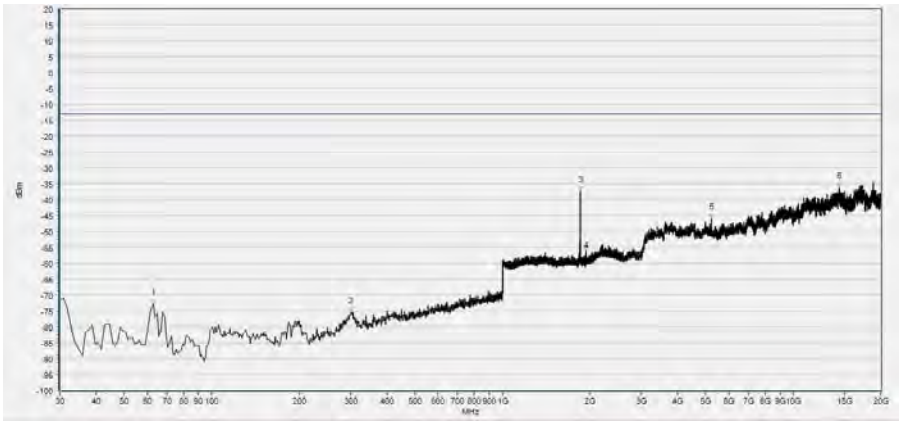
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	129.910	-72.00	-13.00	Horizontal	PASS
2	418.000	-74.16	-13.00	Horizontal	PASS
3	847.710	-41.10	-13.00	Horizontal	PASS
4	892.330	-40.88	-13.00	Horizontal	PASS
5	2172.309	-54.35	-13.00	Horizontal	PASS
6	9089.798	-41.70	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4233, Horizontal)



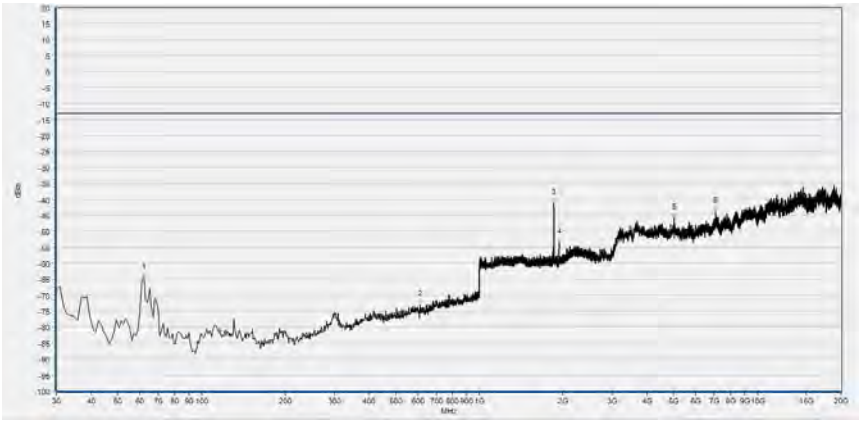
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	33.880	-67.92	-13.00	Vertical	PASS
2	65.890	-69.82	-13.00	Vertical	PASS
3	847.710	-37.36	-13.00	Vertical	PASS
4	892.330	-58.44	-13.00	Vertical	PASS
5	2147.339	-54.44	-13.00	Vertical	PASS
6	5658.474	-46.98	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4233, Vertical)



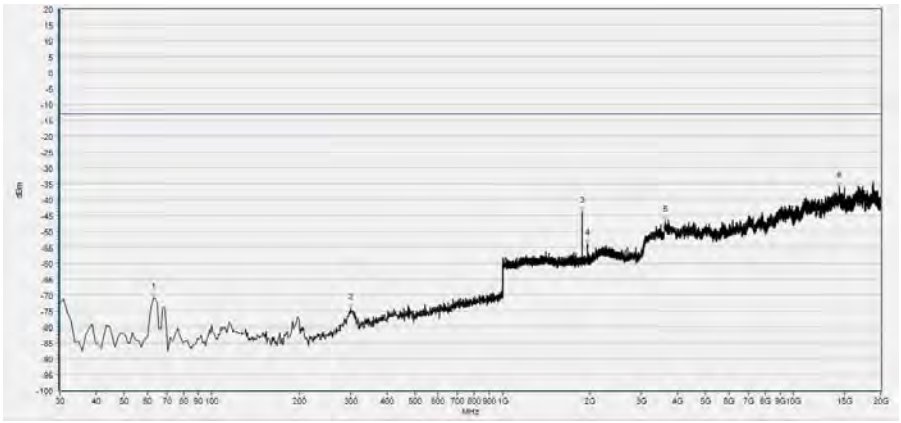
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.980	-72.84	-13.00	Horizontal	PASS
2	301.600	-75.54	-13.00	Horizontal	PASS
3	1851.541	-37.43	-13.00	Horizontal	PASS
4	1933.493	-55.94	-13.00	Horizontal	PASS
5	5232.624	-45.91	-13.00	Horizontal	PASS
6	14386.688	-36.24	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9262, Horizontal)



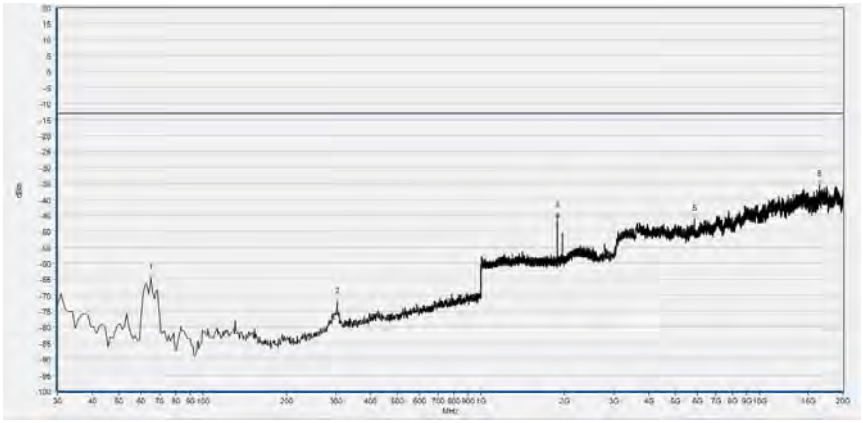
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.010	-64.56	-13.00	Vertical	PASS
2	610.060	-72.88	-13.00	Vertical	PASS
3	1851.541	-41.23	-13.00	Vertical	PASS
4	1931.573	-53.56	-13.00	Vertical	PASS
5	5001.637	-45.77	-13.00	Vertical	PASS
6	7086.852	-43.65	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9262, Vertical)



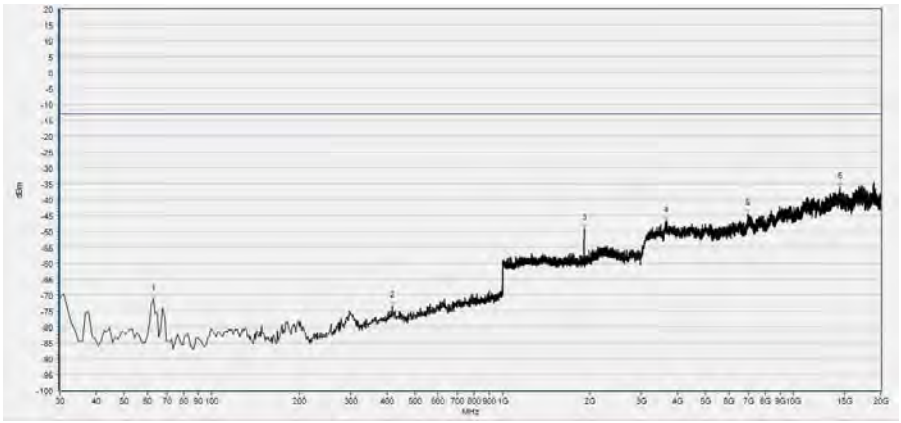
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.980	-70.96	-13.00	Horizontal	PASS
2	300.630	-74.19	-13.00	Horizontal	PASS
3	1878.431	-43.71	-13.00	Horizontal	PASS
4	1958.463	-53.95	-13.00	Horizontal	PASS
5	3622.040	-46.78	-13.00	Horizontal	PASS
6	14399.345	-35.85	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9400, Horizontal)



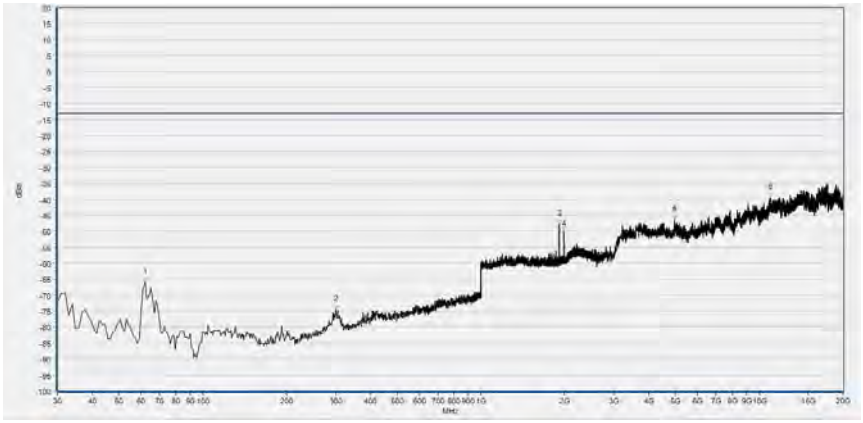
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	64.920	-64.72	-13.00	Vertical	PASS
2	303.540	-72.00	-13.00	Vertical	PASS
3	1879.072	-46.16	-13.00	Vertical	PASS
4	1877.791	-48.71	-13.00	Vertical	PASS
5	5840.153	-46.11	-13.00	Vertical	PASS
6	16484.561	-35.43	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9400, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.980	-71.48	-13.00	Horizontal	PASS
2	418.000	-73.65	-13.00	Horizontal	PASS
3	1908.523	-49.33	-13.00	Horizontal	PASS
4	3653.682	-47.02	-13.00	Horizontal	PASS
5	6966.612	-44.59	-13.00	Horizontal	PASS
6	14481.615	-36.14	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9538, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	62.010	-65.99	-13.00	Vertical	PASS
2	300.630	-74.51	-13.00	Vertical	PASS
3	1908.523	-47.65	-13.00	Vertical	PASS
4	1987.275	-50.02	-13.00	Vertical	PASS
5	4966.830	-46.42	-13.00	Vertical	PASS
6	10966.176	-39.48	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9538, 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

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
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	2018.11.06	2019.11.05
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
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 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
Notch Filter	N/A	WRCG-GSM 850	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCG-GSM 1900	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCGV-W Band V	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCGV-W Band II	Wainwright	2018.12.01	2019.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

END OF REPORT