



REPORT No.: SZ18110028W01

TEST REPORT

APPLICANT : Shareasy Inc Pte Ltd

PRODUCT NAME : Charge System

MODEL NAME : ML-108

BRAND NAME : Brezze

FCC ID : 2ARR4-ML10801

STANDARD(S) : 47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E
47 CFR Part 27 Subpart L

RECEIPT DATE : 2018-11-13

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Change History		
Version	Date	Reason for change
1.0	2018-12-19	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Shareeasy Inc Pte Ltd
Applicant Address:	7 Kaki Bukit Road 1,#04-09 Eunostech Technolink,Singapore 415937
Manufacturer:	Shenzhen Manunited Electronics Co., Ltd
Manufacturer Address:	8 building 2 Floor, Yu Sheng Industrial District,Xixiang Street,Baoan District,Shenzhen

1.2. Equipment Under Test (EUT) Description

Product Name:	Charge System
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	20180904 V1.3
Software Version:	MM10_20181023_M3A.0.0
Modulation Type:	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: 824.2 - 848.8MHz (at intervals of 200kHz); Rx: 869.2 - 893.8MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.2 - 1909.8MHz (at intervals of 200kHz); Rx: 1930.2 - 1989.8MHz (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)



	WCDMA Band IV Tx: 1712.4 – 1752.6MHz (at intervals of 200kHz); Rx: 2112.4 - 2152.6MHz (at intervals of 200kHz)	
Emission Designators:	GSM 850:265KGXW, GSM 1900:237KGXW EDGE850:284KG7W, EDGE1900:263KG7W, WCDMA Band V:4M20F9W , WCDMA Band II:4M20F9W, WCDMA Band IV:4M18F9W	
Antenna Type:	FPC Antenna	
Antenna Gain:	GSM 850:	0.8 dBi
	GSM1900:	1.7 dBi
	WCDMA Band V:	0.8 dBi
	WCDMA Band II:	1.7 dBi
	WCDMA Band IV:	2.6 dBi
Operating voltage:	Normal(NV):	110 V /240 V
	Lowest(LV):	93.5 V /204 V
	Highest(HV):	126.5 V /276 V

- Note 1:** The EUT can working in both 110 V and 240V normal operate voltage, both of the two operate voltage were tested, only the worst test result (240V) were recorded in the test report.
- Note 2:** The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128 \leq n \leq 251$; 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 3:** The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula $F(n)=1850.2+0.2*(n-512)$, $512 \leq n \leq 810$; 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 4:** The transmitter (Tx) frequency arrangement of the WCDMA Band V used by the EUT can be represented with the formula $F(n)=826.4+0.2*(n-4132)$, $4132 \leq n \leq 4233$; 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 5:** The transmitter (Tx) frequency arrangement of the WCDMA Band II used by the EUT can be represented with the formula $F(n)=1852.4+0.2*(n-9262)$, $9262 \leq n \leq 9538$; 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 6: The transmitter (Tx) frequency arrangement of the WCDMA 1700MHz band used by the EUT can be represented with the formula $F(n)=1712.4+0.2*(n-1312)$, $1312 \leq n \leq 1513$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1413 (1732.6MHz) and 1513 (1752.6MHz).

Note 7: 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	Nov 05, 2018	Gao Mingzhou	PASS
2	24.232(d), 27.50(d)	Peak - Average Ratio	Nov 05&22, 2018	Gao Mingzhou	PASS
3	2.1049	99% Occupied Bandwidth	Nov 06&23, 2018	Gao Mingzhou	PASS
4	2.1055, 22.355, 24.235, 27.54	Frequency Stability	Nov 05, 2018	Gao Mingzhou	PASS
5	2.1051, 22.917(a), 24.238(a), 27.53(h)	Conducted Out of Band Emissions	Nov 05&22, 2018	Gao Mingzhou	PASS
6	2.1051, 22.917(a), 24.238(a), 27.53(h)	Band Edge	Nov 06&22, 2018	Gao Mingzhou	PASS
7	22.913(a), 24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Nov 21, 2018	Zheng Fengjian	PASS
8	2.1051, 22.917(a), 24.238(a), 27.53(h)	Radiated Out of Band Emissions	Nov 15&20, 2018	Zheng Fengjian	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 power splitter 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&27L Requirements

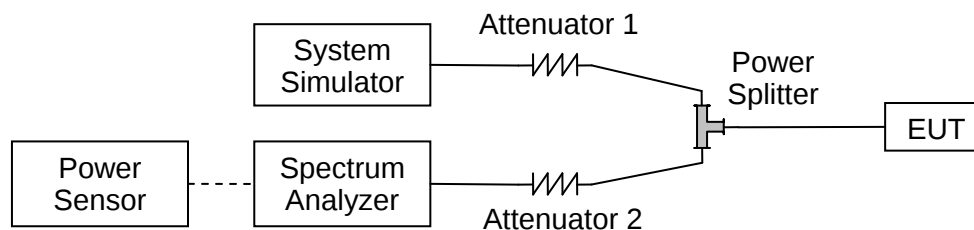
2.1. Conducted RF Output Power

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.

GSM850	Average Power (dBm)		
TX Channel	128	190	251
Frequency (MHz)	824.2	836.6	848.8
GPRS 1 Tx slot	33.37	33.07	33.44
GPRS 2 Tx slots	32.40	32.08	32.41
GPRS 3 Tx slots	30.66	30.28	30.89
GPRS 4 Tx slots	29.84	29.50	30.09
EDGE 1 Tx slot	26.80	26.86	26.88
EDGE 2 Tx slots	25.87	25.94	26.01
EDGE 3 Tx slots	23.92	24.04	24.05
EDGE 4 Tx slots	23.41	23.17	23.26

GSM1900	Average Power (dBm)		
TX Channel	512	661	810
Frequency (MHz)	1850.2	1880	1909.8
GPRS 1 Tx slot	28.80	28.89	29.02
GPRS 2 Tx slots	27.93	27.95	28.02
GPRS 3 Tx slots	26.16	26.11	26.15
GPRS 4 Tx slots	25.37	25.31	25.34
EDGE 1 Tx slot	24.73	24.31	24.15
EDGE 2 Tx slots	23.47	23.06	22.94
EDGE 3 Tx slots	21.59	21.23	21.11
EDGE 4 Tx slots	20.06	19.92	19.76



WCDMA Band V		Average Power (dBm)		
TX Channel		4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
3GPP Rel 99	RMR 12.2Kbps	23.62	23.49	23.56
3GPP Rel 6	HSDPA Subtest-1	22.64	22.48	22.57
3GPP Rel 6	HSDPA Subtest-2	22.60	22.43	22.53
3GPP Rel 6	HSDPA Subtest-3	22.11	21.98	22.07
3GPP Rel 6	HSDPA Subtest-4	22.07	21.93	22.05
3GPP Rel 6	HSUPA Subtest-1	20.60	20.47	20.53
3GPP Rel 6	HSUPA Subtest-2	20.59	20.47	20.53
3GPP Rel 6	HSUPA Subtest-3	21.59	21.48	21.52
3GPP Rel 6	HSUPA Subtest-4	19.97	19.85	19.98
3GPP Rel 6	HSUPA Subtest-5	22.57	22.48	22.49
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	20.81	20.92	20.78

WCDMA Band II		Average Power (dBm)		
TX Channel		9262	9400	9538
Frequency (MHz)		1852.4	1880.0	1907.6
3GPP Rel 99	RMR 12.2Kbps	22.78	22.91	22.62
3GPP Rel 6	HSDPA Subtest-1	21.97	22.06	21.77
3GPP Rel 6	HSDPA Subtest-2	21.92	22.08	21.74
3GPP Rel 6	HSDPA Subtest-3	21.44	21.58	21.29
3GPP Rel 6	HSDPA Subtest-4	21.41	21.55	22.27
3GPP Rel 6	HSUPA Subtest-1	19.88	19.88	19.67
3GPP Rel 6	HSUPA Subtest-2	19.88	19.98	19.68
3GPP Rel 6	HSUPA Subtest-3	20.87	20.98	20.72
3GPP Rel 6	HSUPA Subtest-4	19.34	19.38	19.16
3GPP Rel 6	HSUPA Subtest-5	21.83	21.99	21.70
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	20.22	20.31	20.35



WCDMA Band IV		Average Power (dBm)		
TX Channel		1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
3GPP Rel 99	RMR 12.2Kbps	22.90	22.69	22.97
3GPP Rel 6	HSDPA Subtest-1	22.00	21.73	22.04
3GPP Rel 6	HSDPA Subtest-2	21.96	21.72	21.98
3GPP Rel 6	HSDPA Subtest-3	21.47	21.24	21.52
3GPP Rel 6	HSDPA Subtest-4	21.47	21.22	21.47
3GPP Rel 6	HSUPA Subtest-1	19.93	19.65	19.92
3GPP Rel 6	HSUPA Subtest-2	19.89	19.63	19.90
3GPP Rel 6	HSUPA Subtest-3	20.89	20.72	20.98
3GPP Rel 6	HSUPA Subtest-4	19.39	19.11	19.37
3GPP Rel 6	HSUPA Subtest-5	21.97	21.74	21.98
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	20.19	20.11	20.23

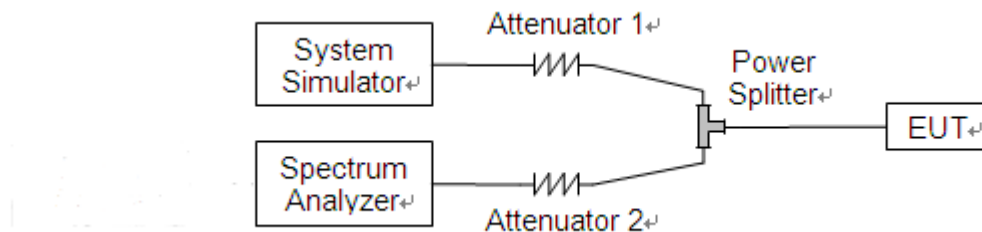
2.2. Peak to Average Ratio

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	0.011	13	PASS
	190	836.6	0.055		PASS
	251	848.8	0.046		PASS
GSM 1900MHz	512	1850.2	0.005		PASS
	661	1880.0	0.030		PASS
	810	1909.8	0.006		PASS
EDGE 850MHz	128	824.2	0.003		PASS
	190	836.6	0.010		PASS
	251	848.8	0.003		PASS
EDGE 1900MHz	512	1850.2	0.022		PASS
	661	1880.0	0.033		PASS
	810	1909.8	0.006		PASS
WCDMA Band V	4132	826.4	2.66		PASS
	4182	836.4	2.57		PASS
	4233	846.6	2.34		PASS
WCDMA Band II	9262	1852.4	1.98		PASS
	9400	1880.0	2.81		PASS
	9538	1907.6	2.60		PASS
WCDMA Band IV	1312	1712.4	2.69		PASS
	1413	1732.6	2.48		PASS
	1513	1752.6	2.73		PASS



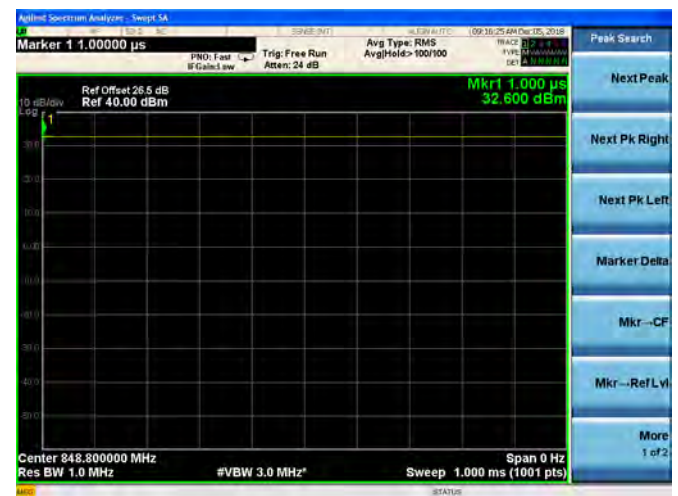
GSM 850MHz CH128 824.2MHz



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





WCDMA Band IV CH1312 1712.4MHz



WCDMA Band IV CH1413 1732.6MHz



WCDMA Band IV CH1513 1752.6MHz



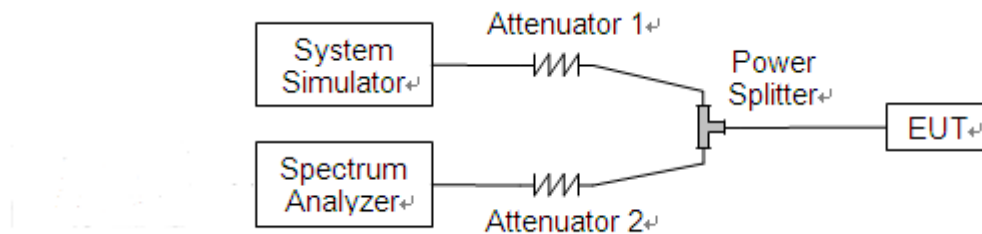
2.3. 99% Occupied Bandwidth

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.

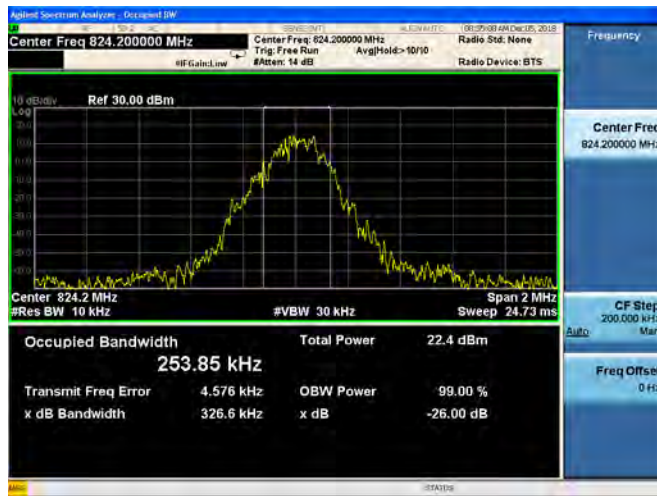
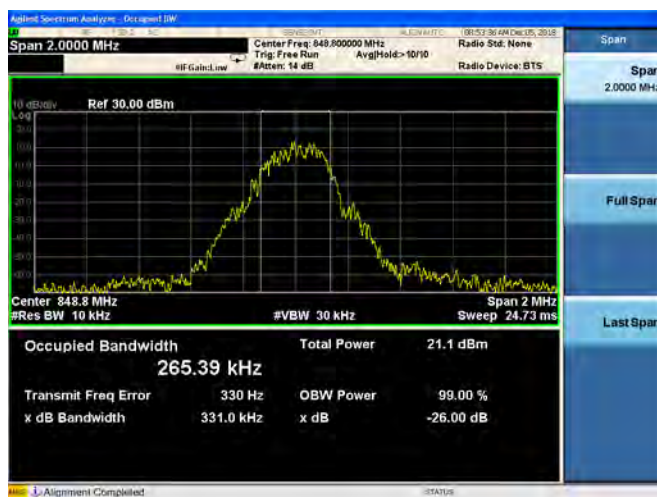
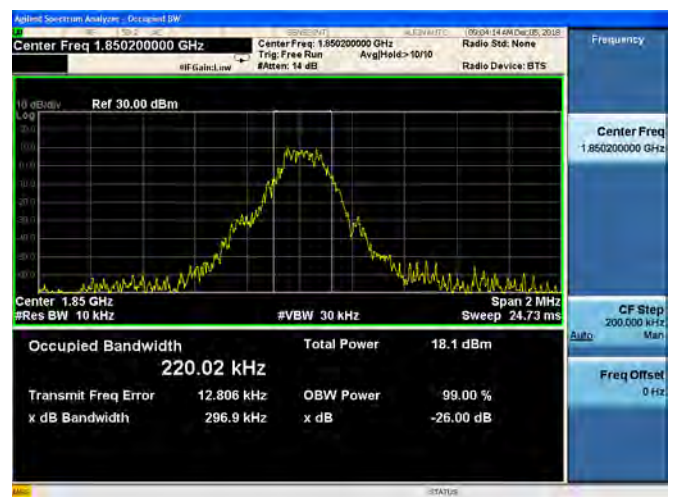
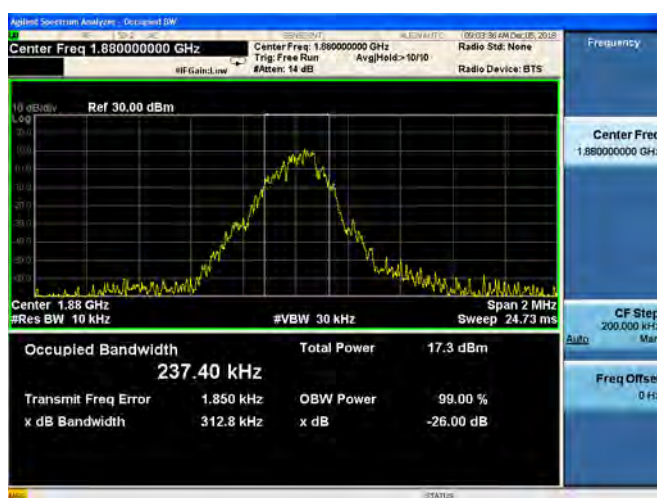
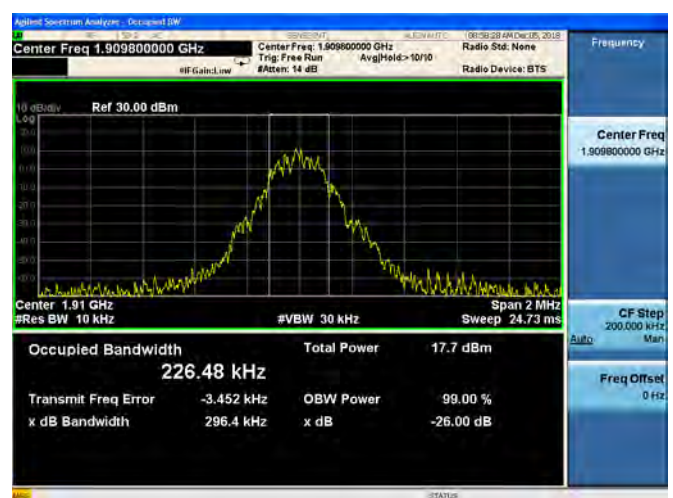


2.3.3. Test Result

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

GSM Test Verdict:

Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	253.85	326.6
	190	836.6	242.63	312.3
	251	848.8	265.39	331.0
GSM 1900MHz	512	1850.2	220.02	296.9
	661	1880.0	237.40	312.8
	810	1909.8	226.48	296.4
EDGE 850MHz	128	824.2	236.58	291.2
	190	836.6	261.26	296.6
	251	848.8	284.10	328.3
EDGE 1900MHz	512	1850.2	249.29	292.7
	661	1880.0	263.18	322.8
	810	1909.8	231.80	304.0

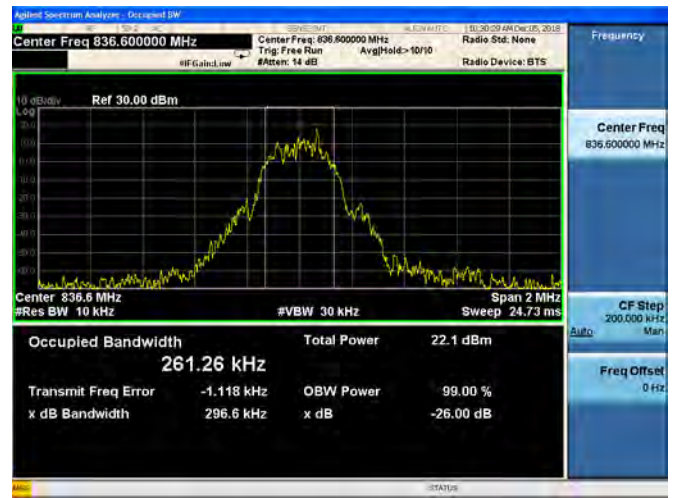
**GSM 850MHz CH128 824.2MHz****GSM 850MHz CH190 836.6MHz****GSM 850MHz CH251 848.8MHz****GSM 1900MHz CH512 1850.2MHz****GSM 1900MHz CH661 1880.0MHz****GSM 1900MHz CH810 1909.8MHz**



EDGE 850MHz CH128 824.2MHz



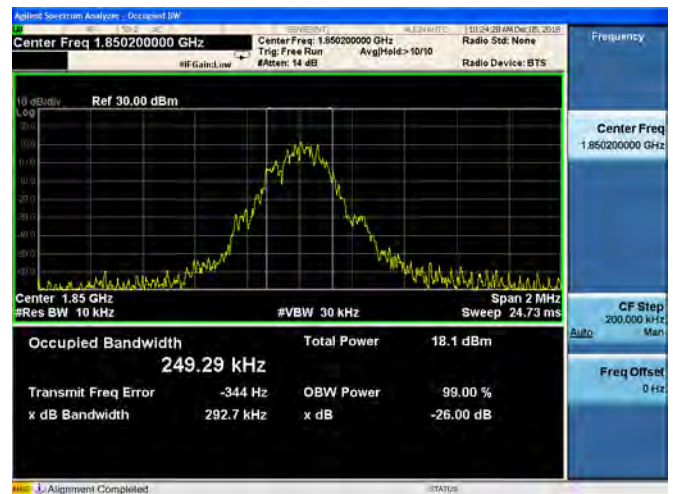
EDGE 850MHz CH190 836.6MHz



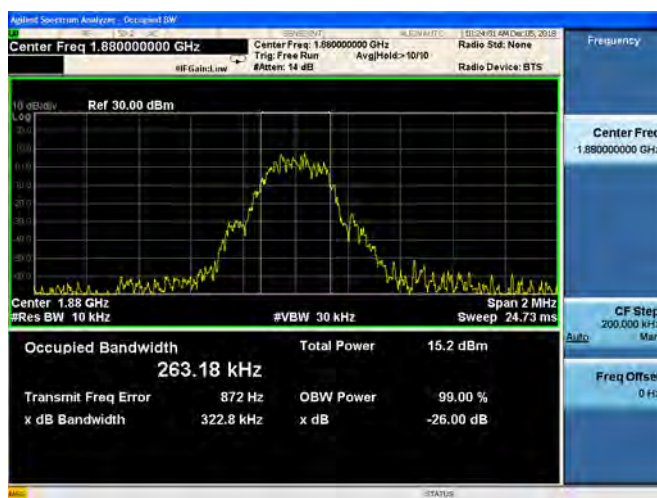
EDGE 850MHz CH251 848.8MHz



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	4.159	4.660
	4182	836.4	4.172	4.668
	4233	846.6	4.164	4.710
WCDMA Band II	9262	1852.4	4.204	4.752
	9400	1880.0	4.183	4.677
	9538	1907.6	4.195	4.712
WCDMA Band IV	1312	1712.4	4.169	4.693
	1413	1732.6	4.166	4.658
	1513	1752.6	4.171	4.651
HSDPA Band V	4132	826.4	4.158	4.645
	4182	836.4	4.137	4.631
	4233	846.6	4.146	4.668
HSDPA Band II	9262	1852.4	4.161	4.656
	9400	1880.0	4.134	4.648
	9538	1907.6	4.152	4.629
HSDPA Band IV	1312	1712.4	4.150	4.656
	1413	1732.6	4.166	4.655
	1513	1752.6	4.152	4.646
HSUPA Band V	4132	826.4	4.163	4.623
	4182	836.4	4.138	4.628
	4233	846.6	4.159	4.646
HSUPA Band II	9262	1852.4	4.140	4.645
	9400	1880.0	4.132	4.645
	9538	1907.6	4.153	4.642
HSUPA Band IV	1312	1712.4	4.153	4.633
	1413	1732.6	4.158	4.639
	1513	1752.6	4.160	4.655



Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
HSPA+ Band V	4132	826.4	4.194	4.679
	4182	836.4	4.172	4.663
	4233	846.6	4.200	4.708
HSPA+ Band II	9262	1852.4	4.203	4.756
	9400	1880.0	4.177	4.650
	9538	1907.6	4.201	4.715
HSPA+ Band IV	1312	1712.4	4.167	4.681
	1413	1732.6	4.173	4.679
	1513	1752.6	4.179	4.658



WCDMA Band V CH4132 826.4MHz



WCDMA Band V CH4182 836.4MHz



WCDMA Band V CH4233 846.6MHz



WCDMA Band II CH9262 1852.4MHz

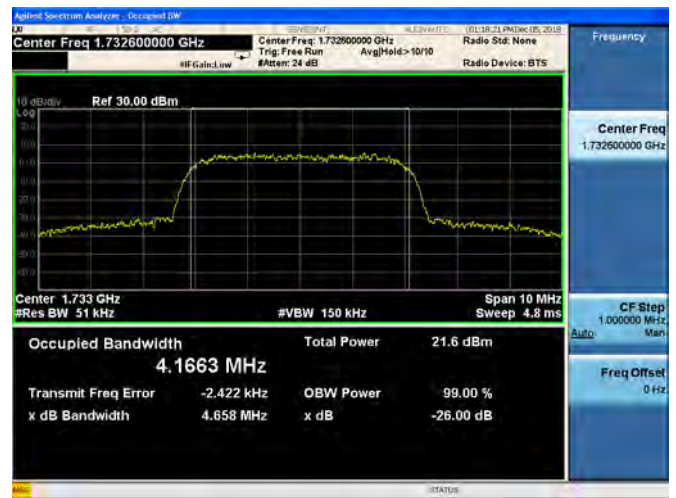
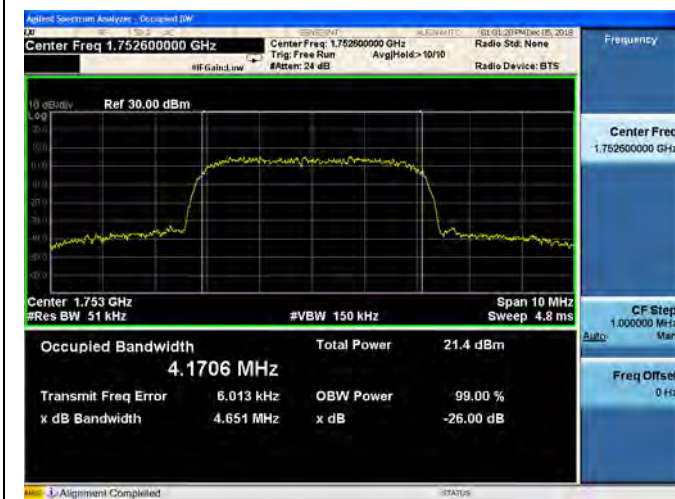


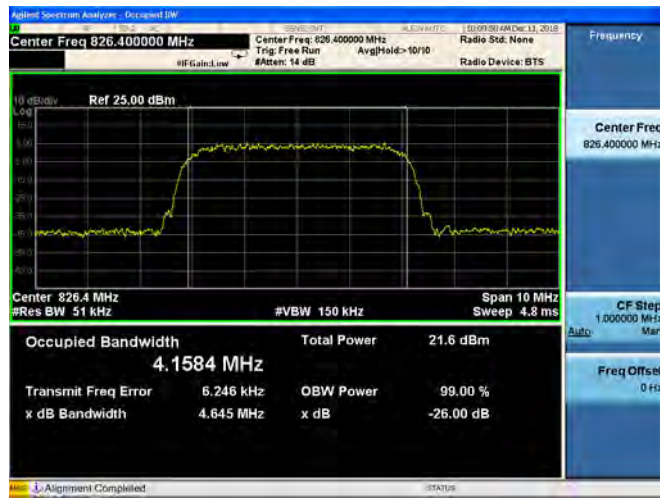
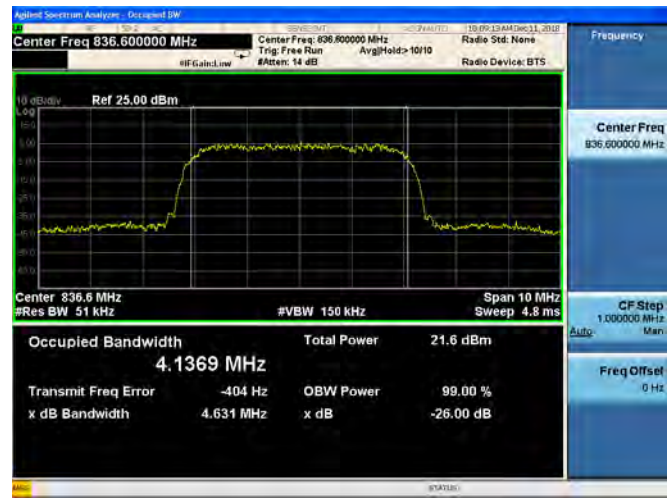
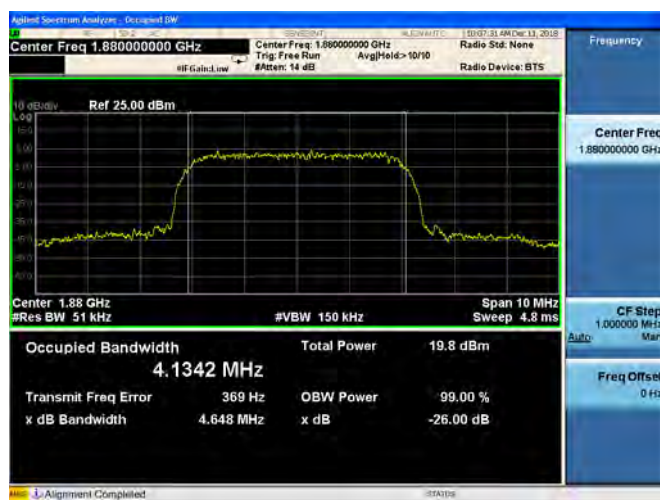
WCDMA Band II CH9400 1880.0MHz

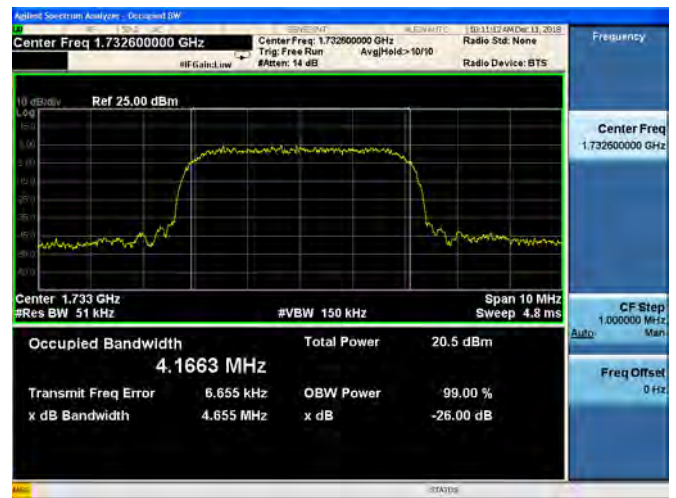


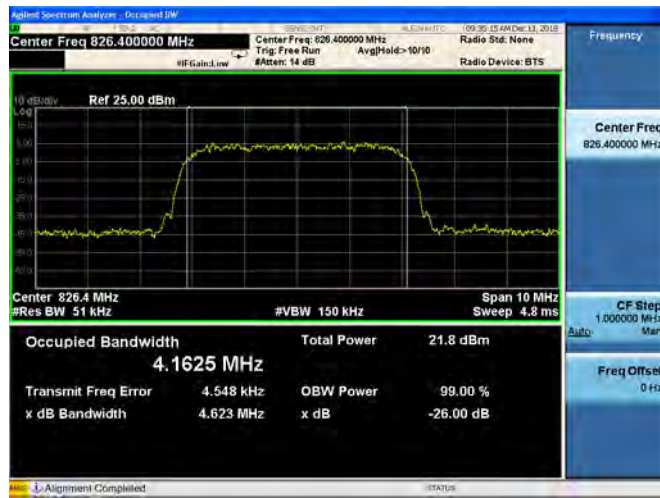
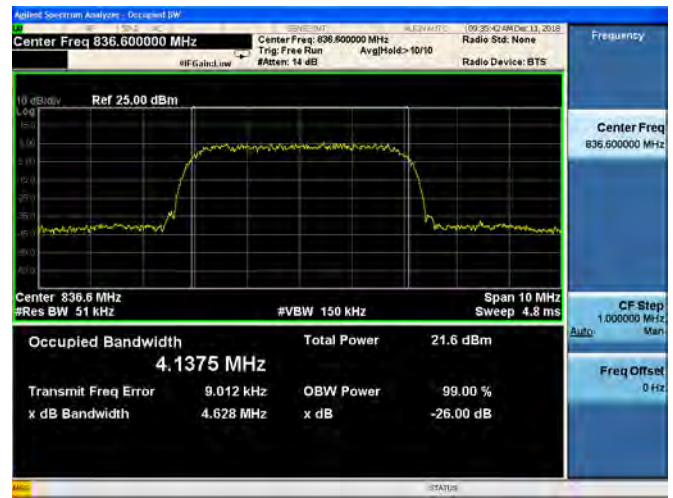
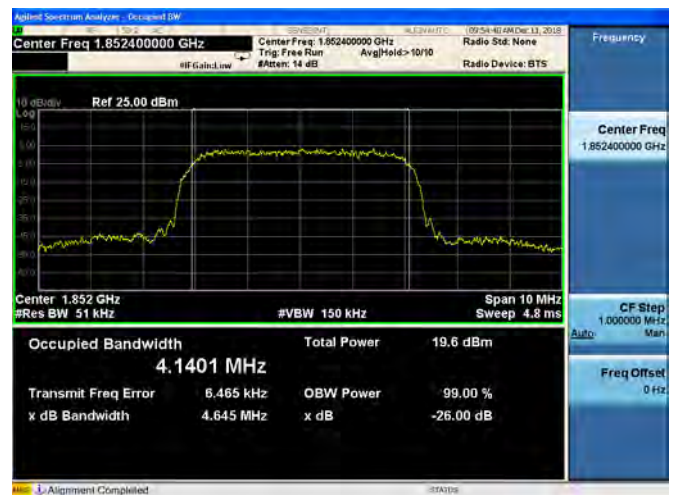
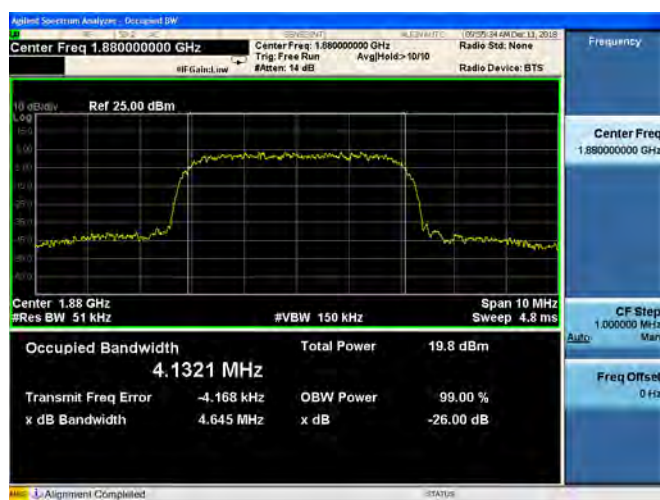
WCDMA Band II CH9538 1907.6MHz

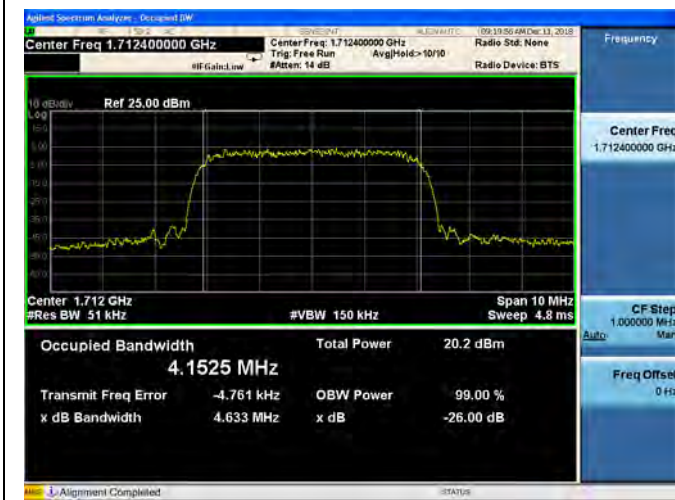
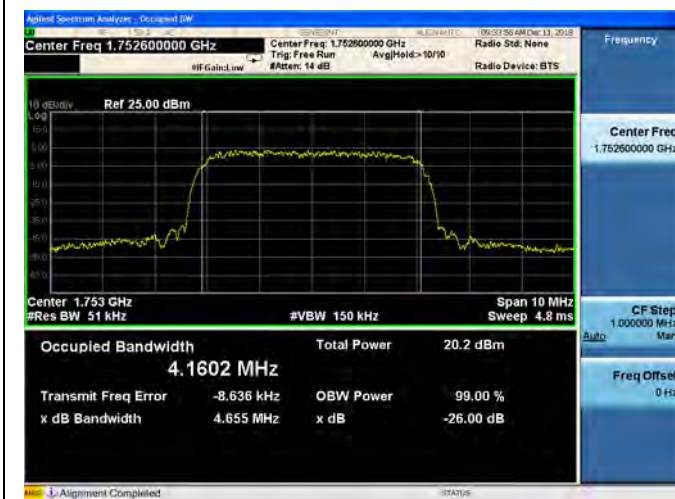


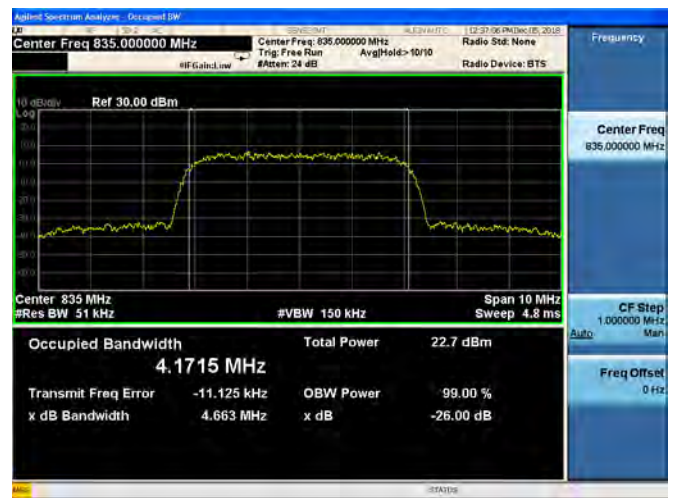
**WCDMA Band IV CH1312 1712.4MHz****WCDMA Band IV CH1413 1732.6MHz****WCDMA Band IV CH1513 1752.6MHz**

**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**

**HSDPA Band IV CH1312 1712.4MHz****HSDPA Band IV CH1413 1732.6MHz****HSDPA Band IV CH1513 1752.6MHz**

**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**

**HSUPA Band IV CH1312 1712.4MHz****HSUPA Band IV CH1413 1732.6MHz****HSUPA Band IV CH1513 1752.6MHz**

**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**

**HSPA+ Band IV CH1312 1712.4MHz****HSPA+ Band IV CH1413 1732.6MHz****HSPA+ Band IV CH1513 1752.6MHz**

2.4. Frequency Stability

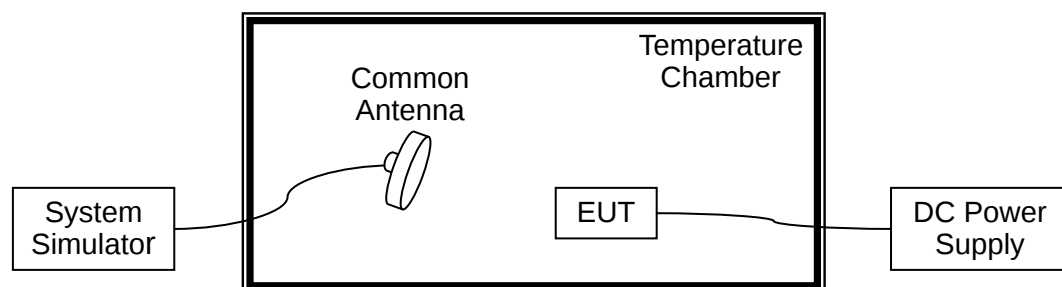
2.4.1. Requirement

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 $+50^{\circ}\text{C}$ 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 204VAC, 240VAC and 276VAC, 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 (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	18	0.022	PASS
100		-30	23	0.027	
100		-20	21	0.025	
100		-10	-81	-0.097	
100		0	-65	-0.078	
100		+10	48	0.057	
100		+20	18	0.022	
100		+30	-82	-0.098	
100		+40	-82	-0.098	
100		+50	18	0.022	
115	276	+20	18	0.022	PASS
85	204	+20	-73	-0.087	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	67	0.036	PASS
100		-30	53	0.028	
100		-20	-58	-0.031	
100		-10	29	0.015	
100		0	-79	-0.042	
100		+10	-79	-0.042	
100		+20	26	0.014	
100		+30	19	0.010	
100		+40	17	0.009	
100		+50	35	0.019	
115	276	+20	-81	-0.043	PASS
85	204	+20	29	0.015	



EDGE 850MHz, Channel 190, Frequency 836.6MHz					
Limit = $\pm$ 2.5ppm					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	17	0.020	PASS
100		-30	29	0.035	
100		-20	21	0.025	
100		-10	-69	-0.082	
100		0	-65	-0.078	
100		+10	48	0.057	
100		+20	18	0.022	
100		+30	-82	-0.098	
100		+40	-82	-0.098	
100		+50	18	0.022	
115	276	+20	18	0.022	PASS
85	204	+20	-65	-0.078	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	65	0.035	PASS
100		-30	59	0.031	
100		-20	-58	-0.031	
100		-10	29	0.015	
100		0	-79	-0.042	
100		+10	-79	-0.042	
100		+20	26	0.014	
100		+30	22	0.012	
100		+40	17	0.009	
100		+50	35	0.019	
115	276	+20	-84	-0.045	PASS
85	204	+20	27	0.014	



WCDMA Band V, Channel 4182, Frequency 836.4MHz					
Limit = ± 2.5 ppm					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	21	0.025	PASS
100		-30	22	0.026	
100		-20	33	0.039	
100		-10	-63	-0.075	
100		0	-65	-0.078	
100		+10	41	0.049	
100		+20	19	0.023	
100		+30	-82	-0.098	
100		+40	-83	-0.099	
100		+50	18	0.022	
115	276	+20	18	0.022	
85	204	+20	-57	-0.068	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz					
Limit =Within Authorized Band					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	55	0.029	PASS
100		-30	39	0.021	
100		-20	-54	-0.029	
100		-10	29	0.015	
100		0	-79	-0.042	
100		+10	-79	-0.042	
100		+20	16	0.009	
100		+30	22	0.012	
100		+40	26	0.014	
100		+50	36	0.019	
115	276	+20	-82	-0.044	
85	204	+20	29	0.015	



WCDMA Band IV, Channel 1413, Frequency 1732.6MHz Limit =Within Authorized Band					
Voltage (%)	Power (VAC)	Temp (°C)	Fre. Dev. (Hz)	Deviation (ppm)	Result
100	240	+20(Ref)	44	0.025	PASS
100		-30	45	0.026	
100		-20	-49	-0.028	
100		-10	-41	-0.024	
100		0	-75	-0.043	
100		+10	-77	-0.044	
100		+20	61	0.035	
100		+30	33	0.019	
100		+40	-81	-0.047	
100		+50	27	0.016	
115	276	+20	43	0.025	
85	204	+20	36	0.021	

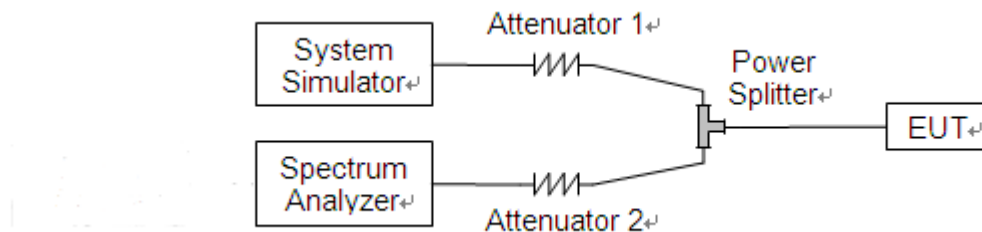
2.5. Conducted Out of Band Emissions

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:



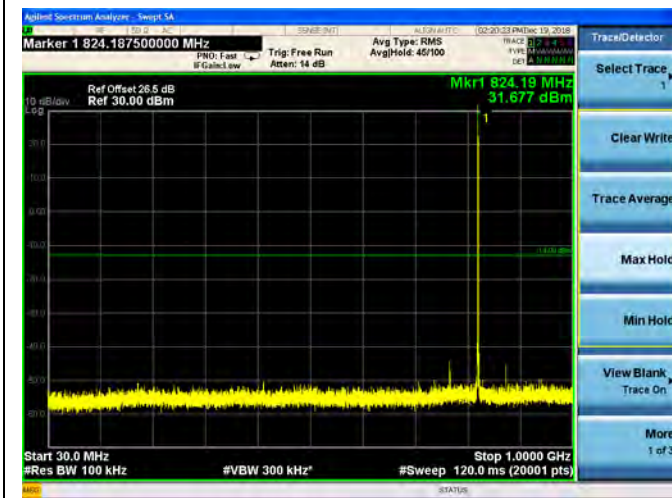
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

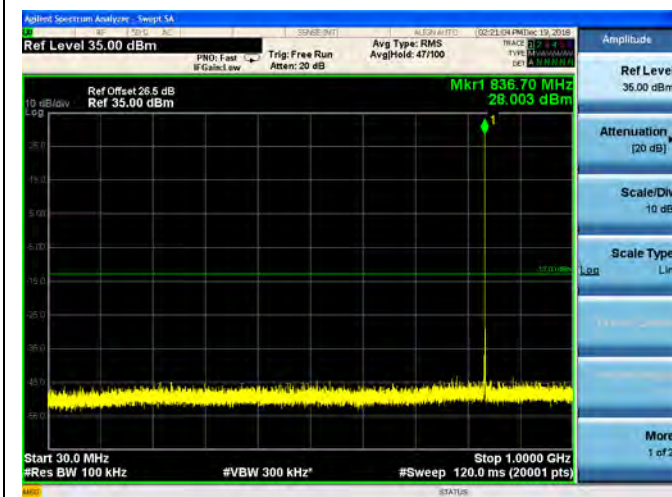
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.



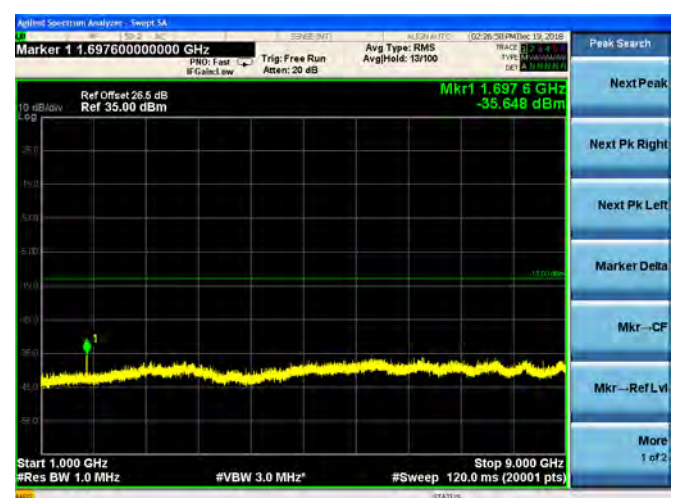
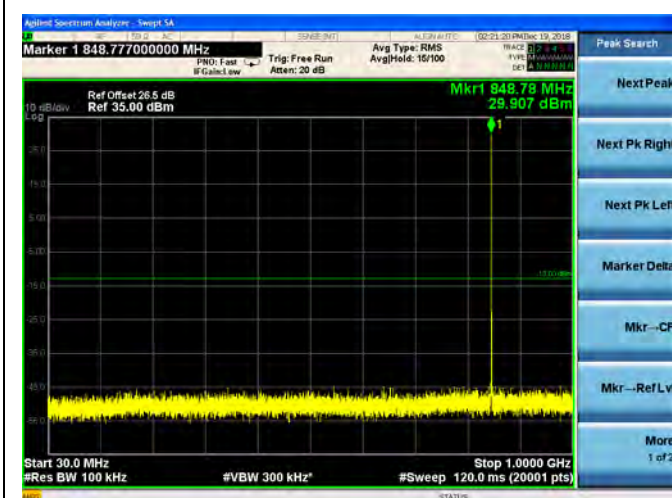
GSM 850MHz CH128 824.2MHz



GSM 850MHz CH190 836.6MHz

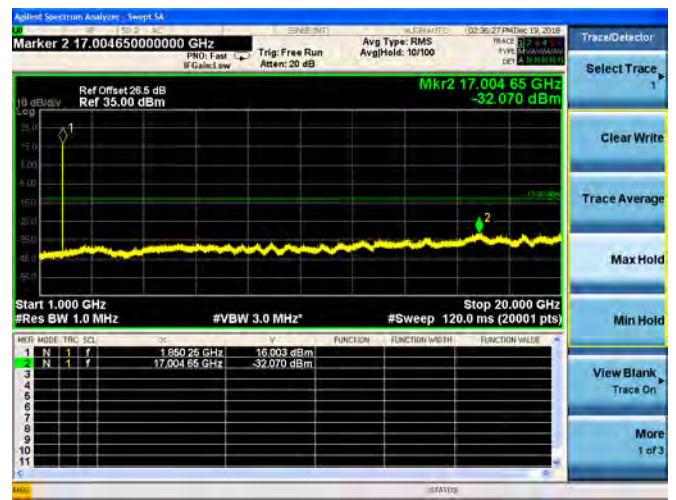
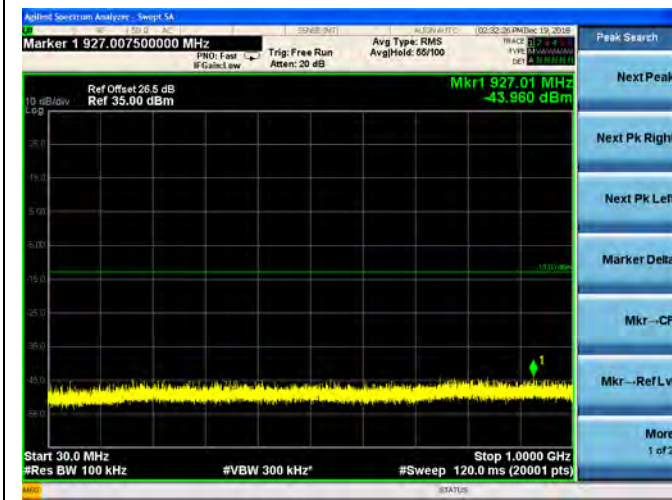


GSM 850MHz CH251 848.8MHz

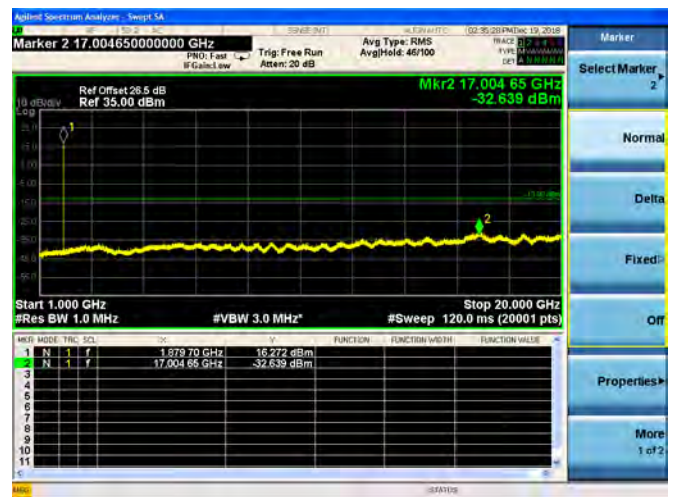
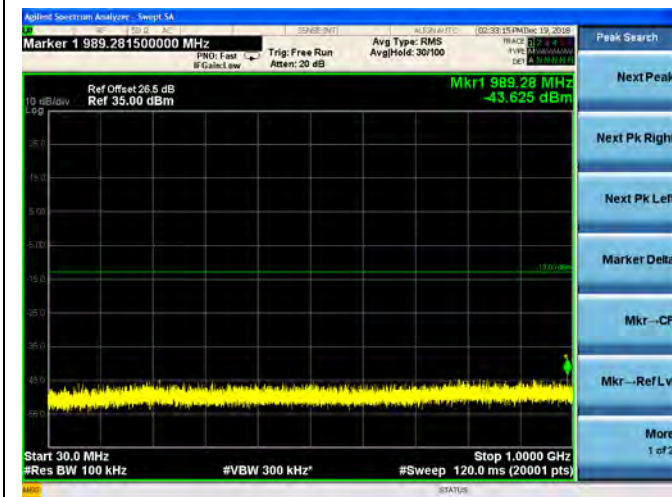




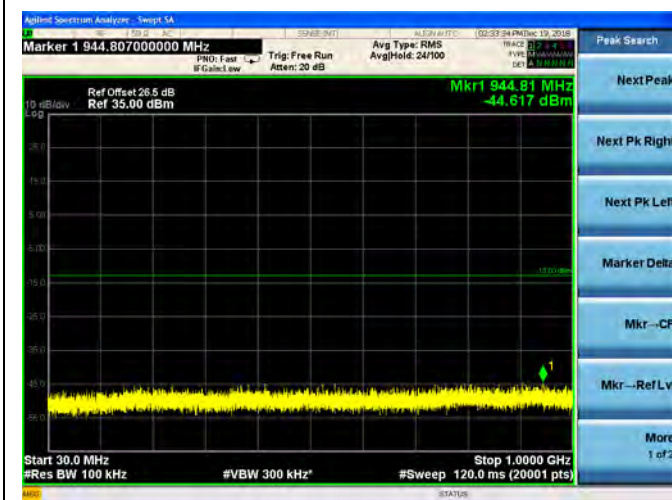
GSM 1900MHz CH521 1850.2MHz



GSM 1900MHz CH661 1880.0MHz

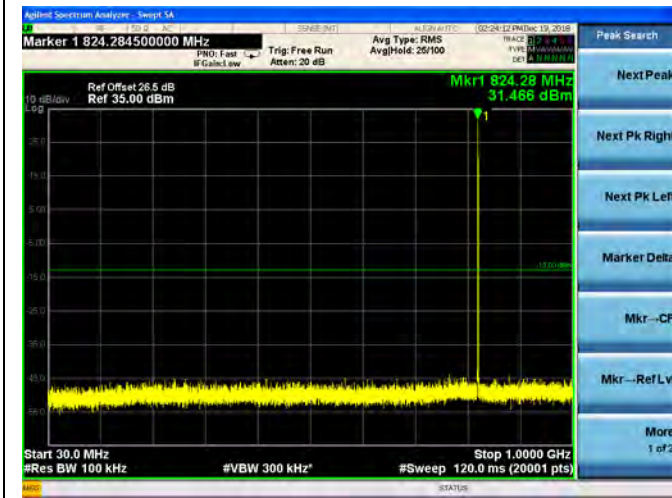


GSM 1900MHz CH810 1909.8MHz

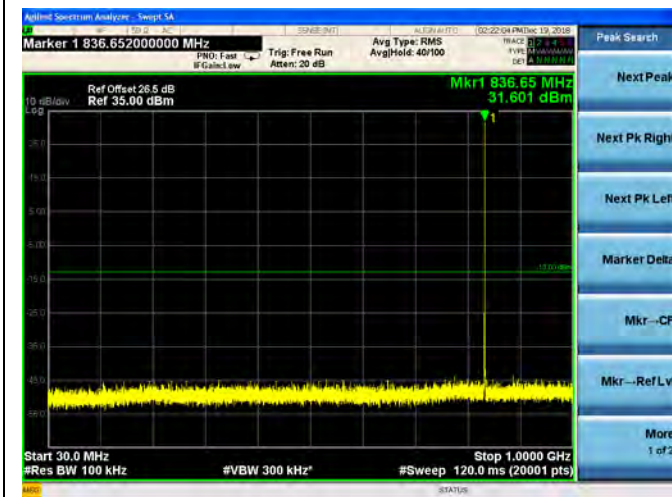




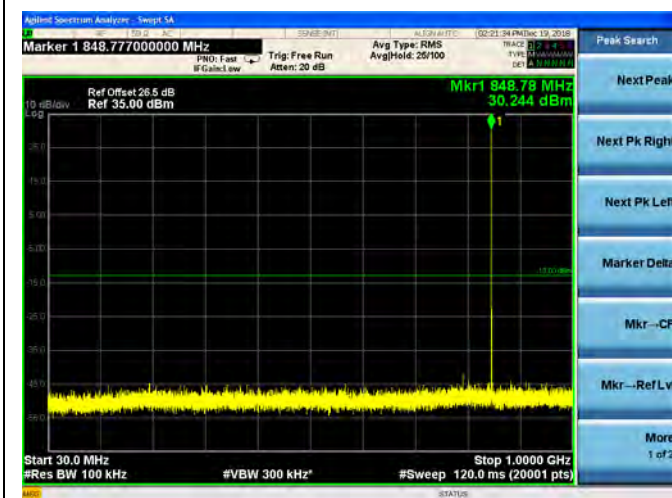
EDGE 850MHz CH128 824.2MHz



EDGE 850MHz CH190 836.6MHz

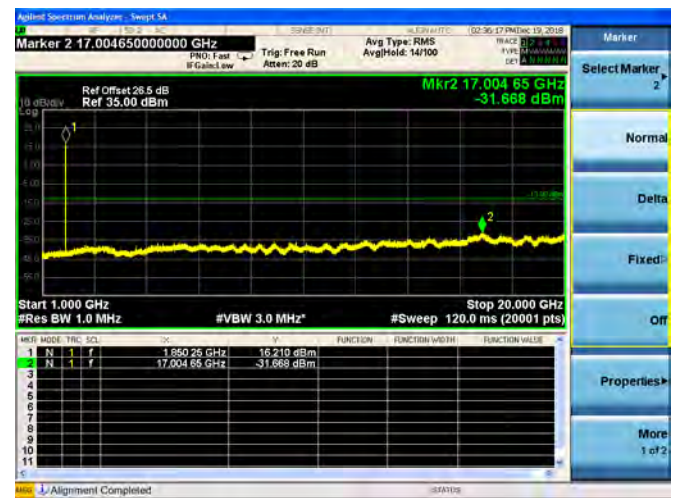
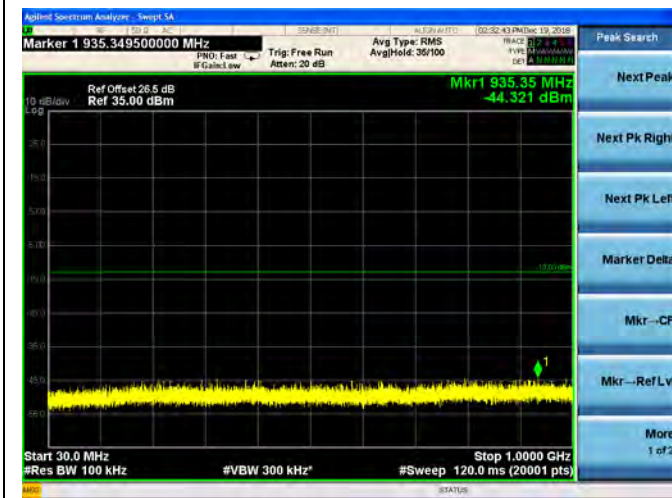


EDGE 850MHz CH251 848.8MHz

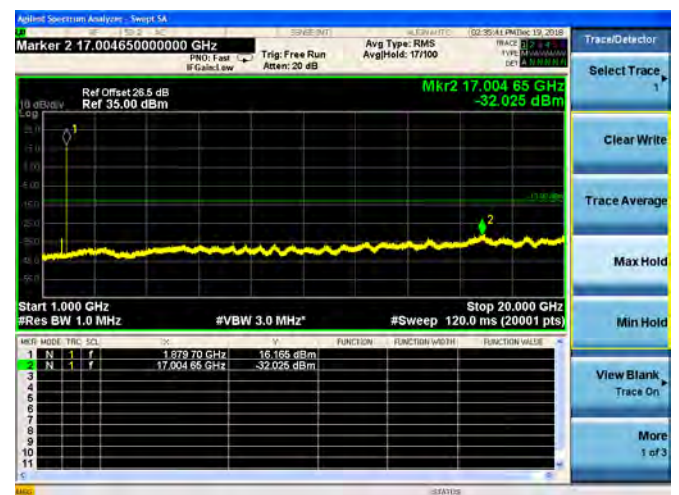
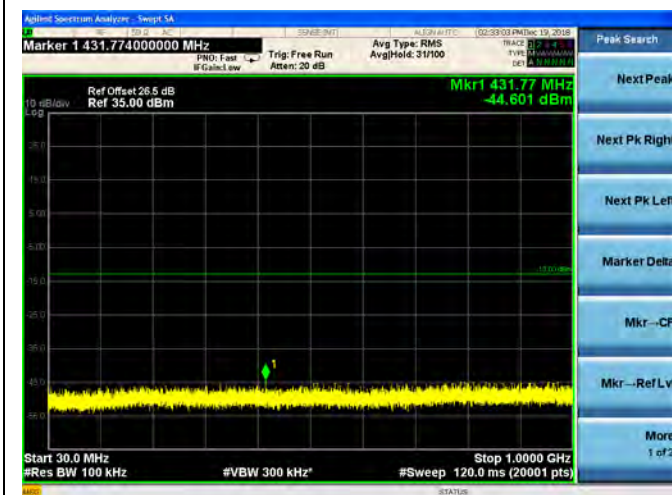




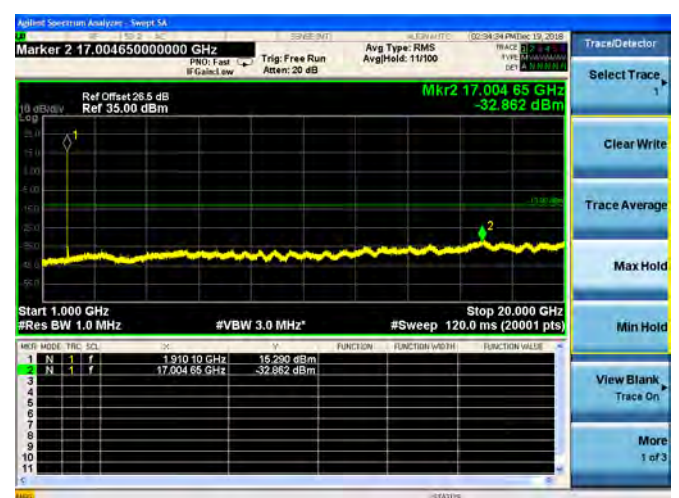
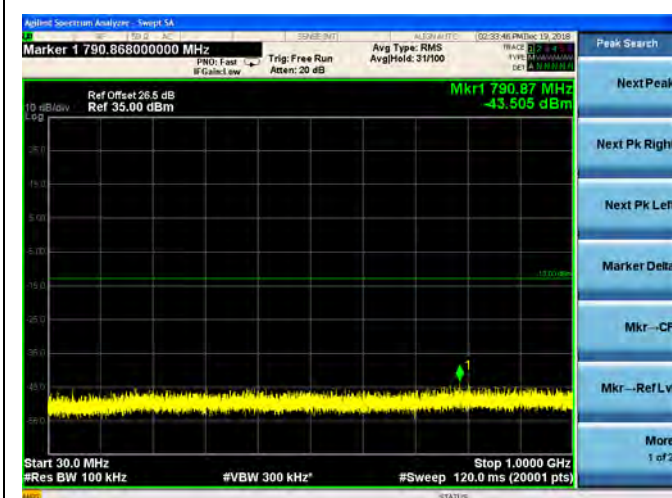
EDGE 1900MHz CH521 1850.2MHz



EDGE 1900MHz CH661 1880.0MHz

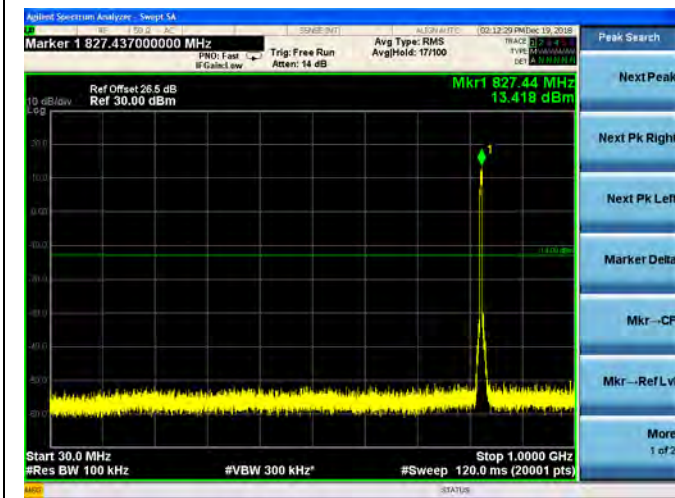


EDGE 1900MHz CH810 1909.8MHz

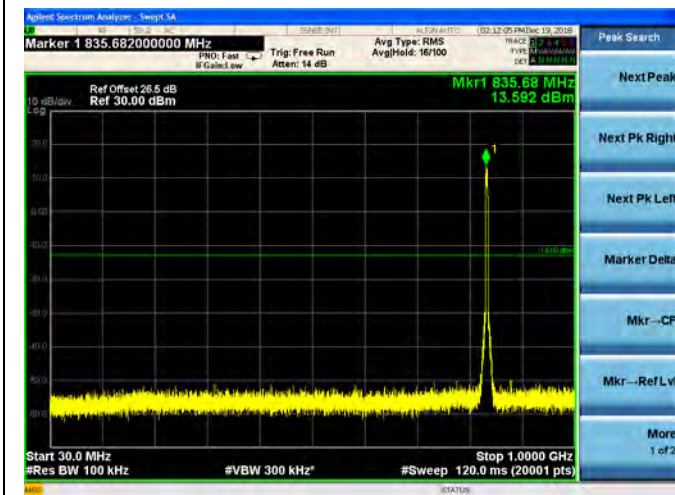




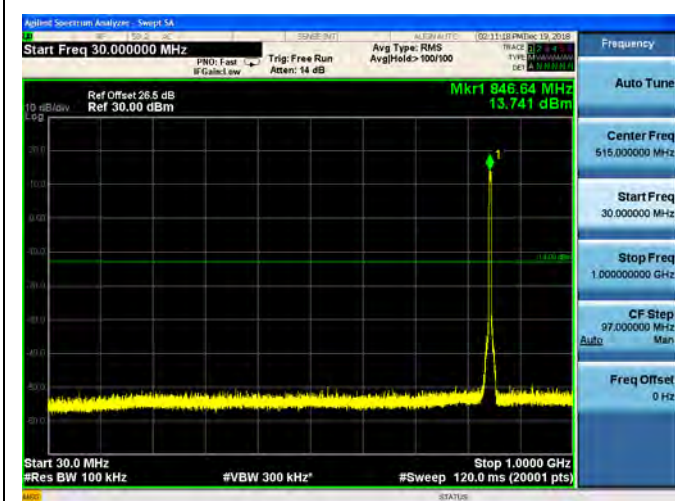
WCDMA Band V CH4132 826.4MHz



WCDMA Band V CH4182 836.4MHz

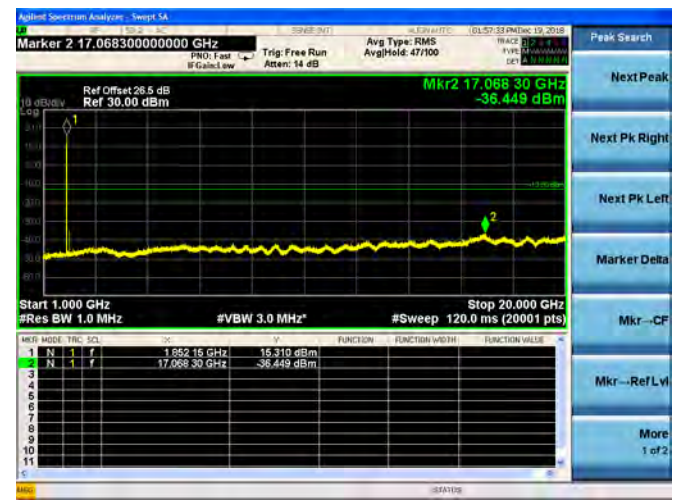
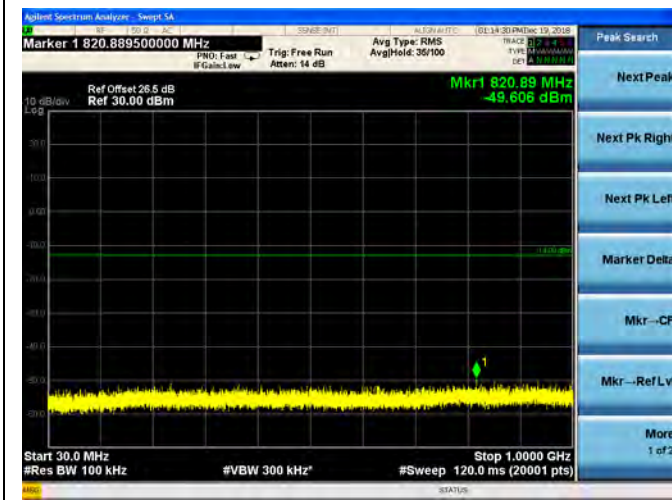


WCDMA Band V CH4233 846.6MHz

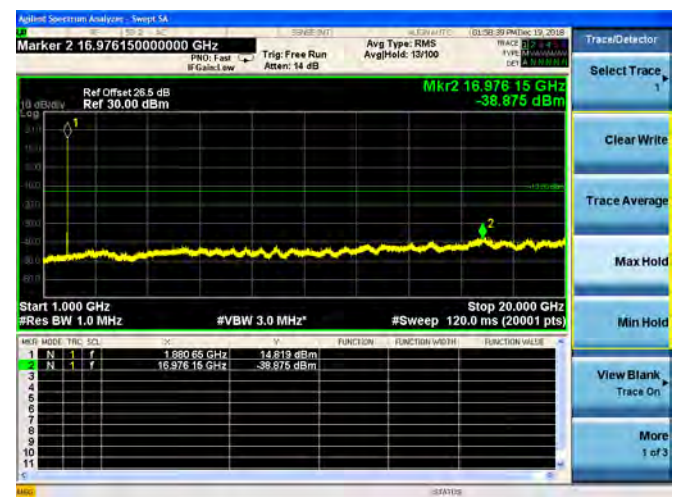
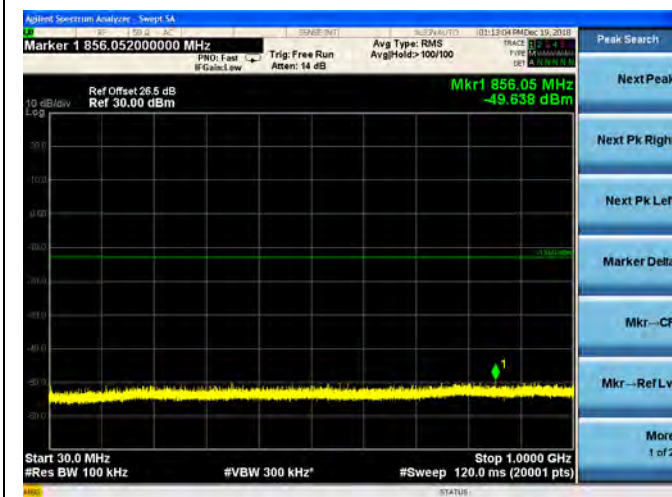




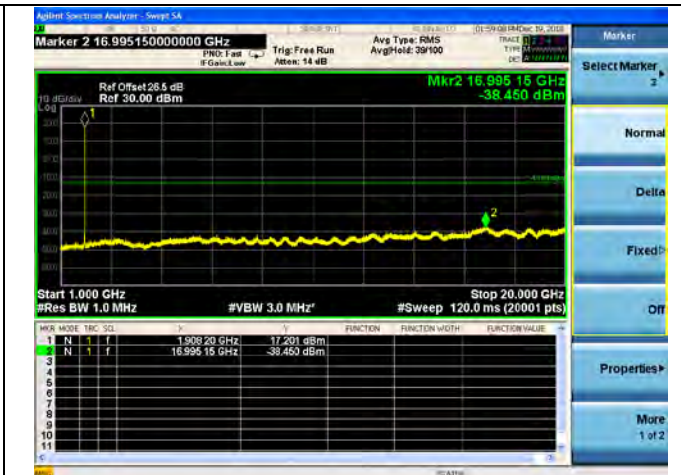
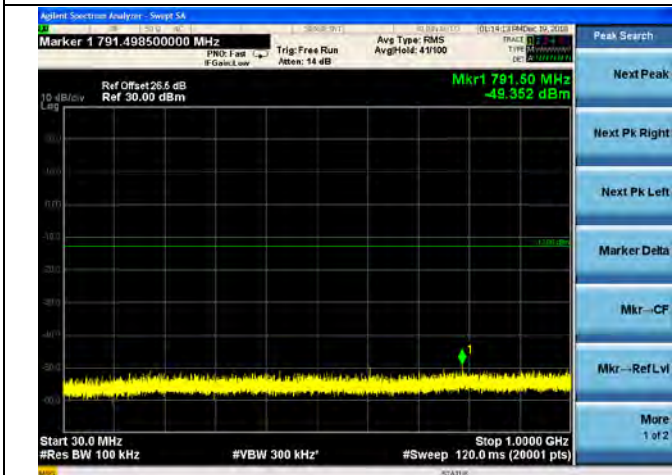
WCDMA Band II CH9262 1852.4MHz



WCDMA Band II CH9400 1880.0MHz

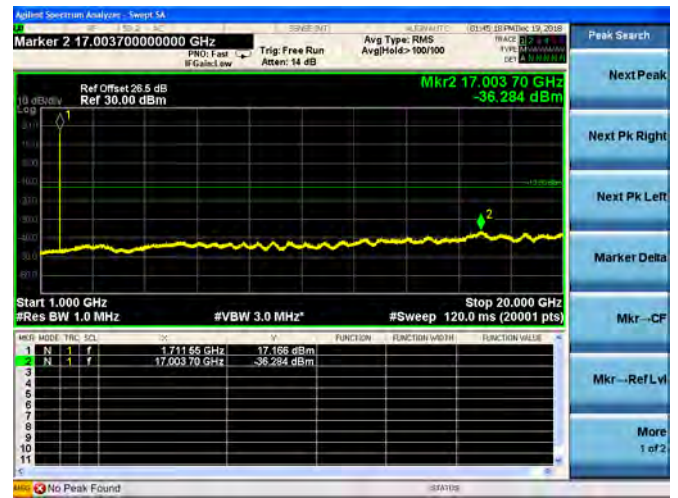
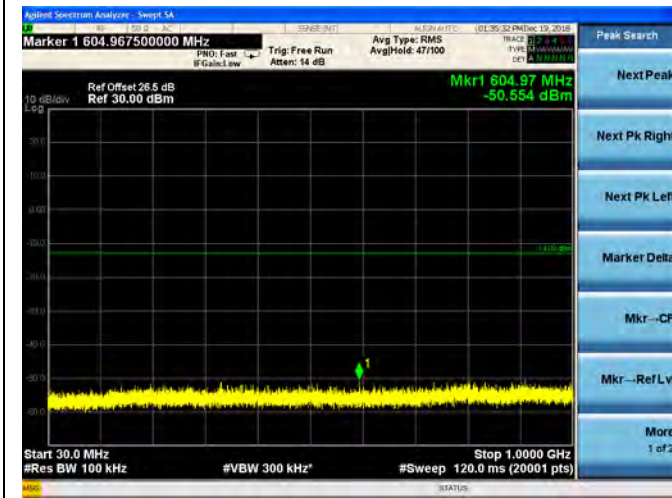


WCDMA Band II CH9538 1907.6MHz

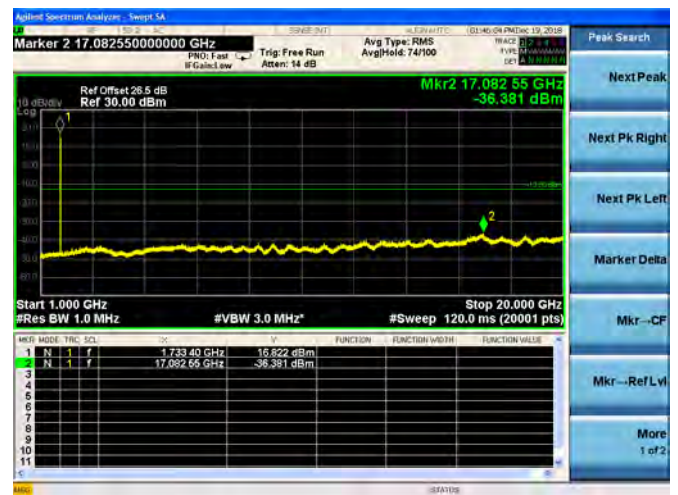
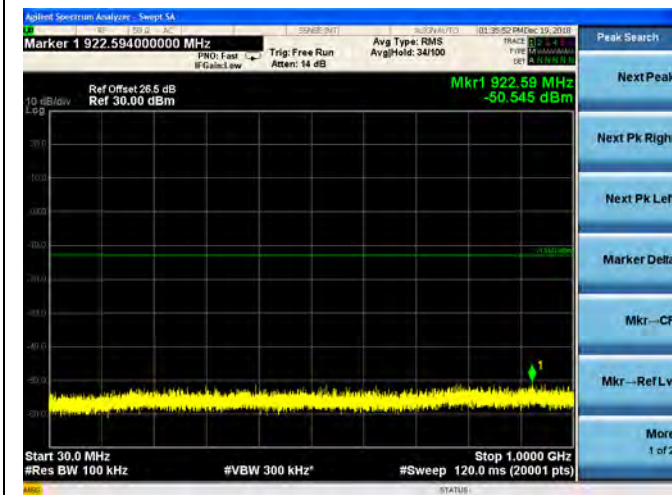




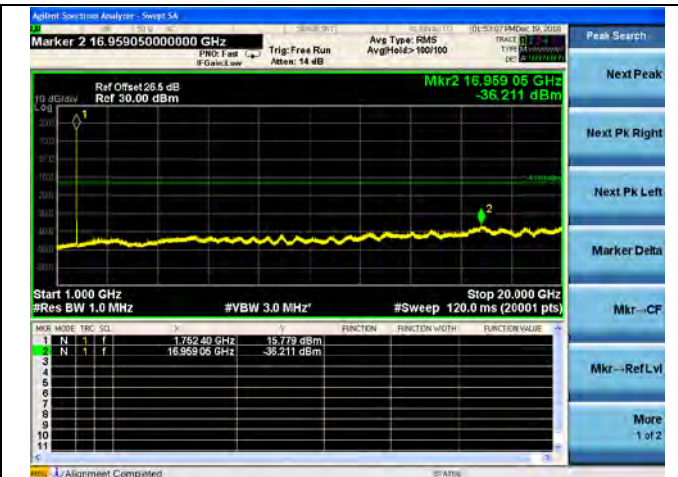
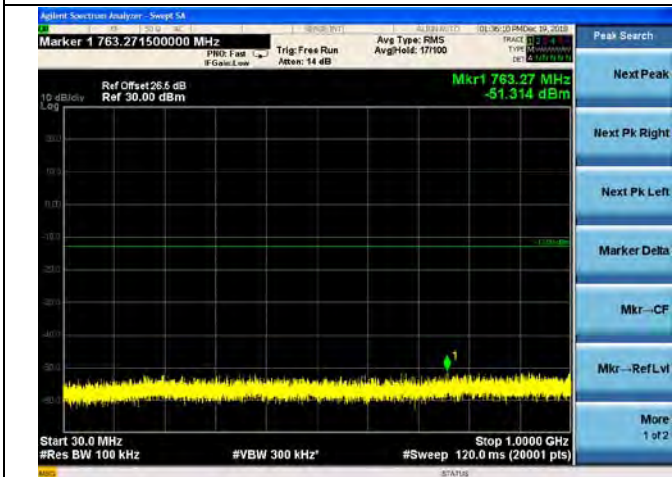
WCDMA Band IV CH1312 1712.4MHz



WCDMA Band IV CH1413 1732.6MHz

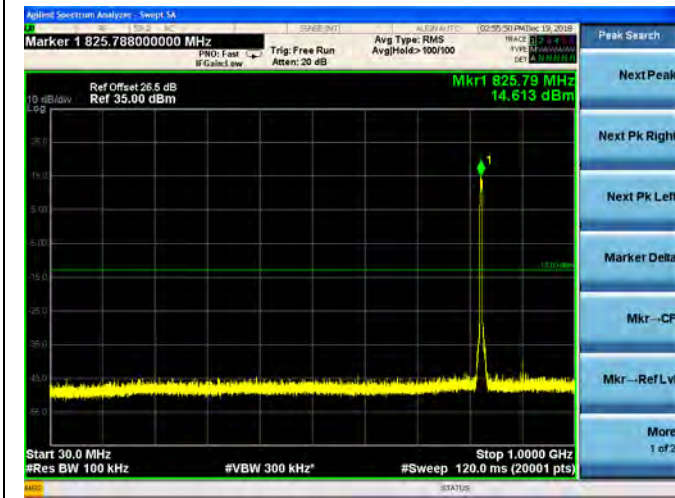


WCDMA Band IV CH1513 1752.6MHz

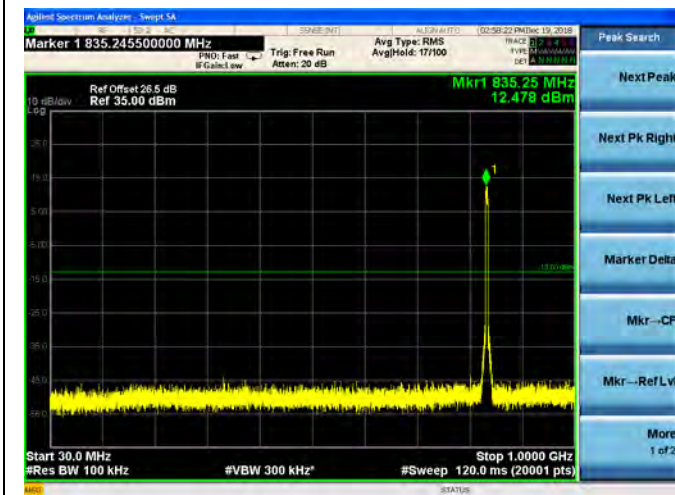




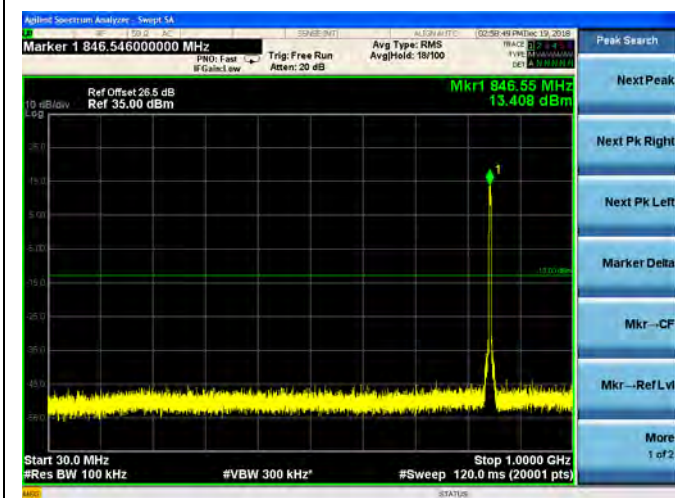
HSDPA Band V CH4132 826.4MHz



HSDPA Band V CH4182 836.4MHz

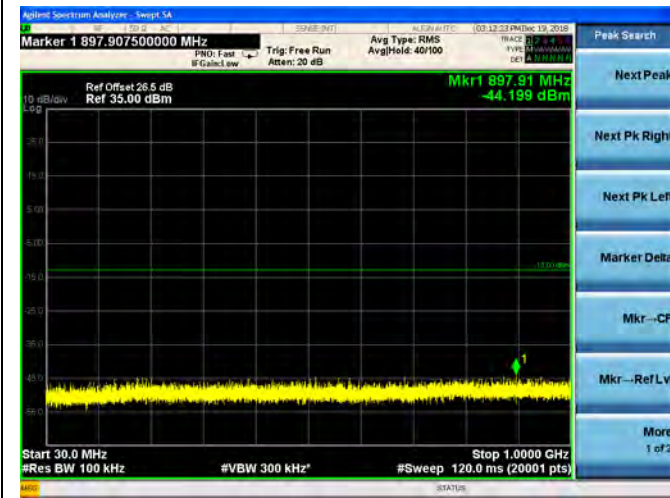


HSDPA Band V CH4233 846.6MHz

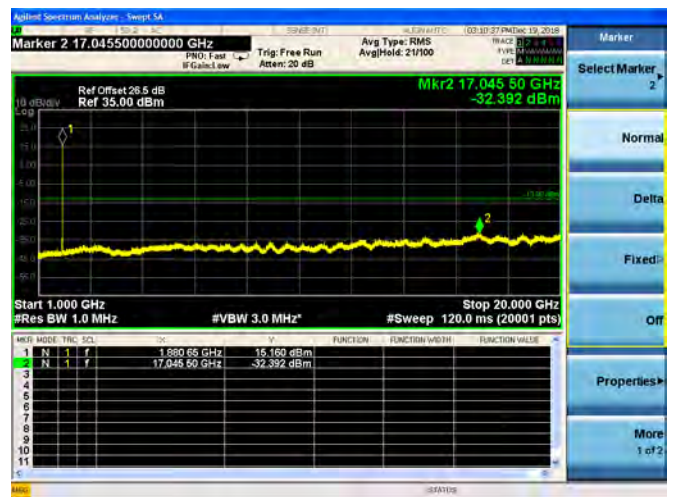
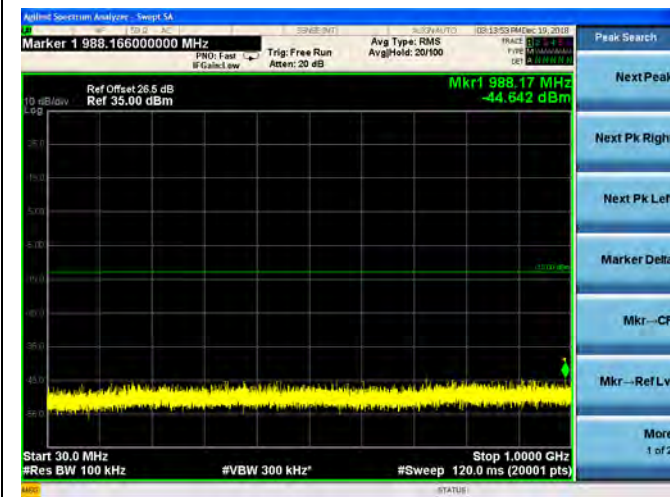




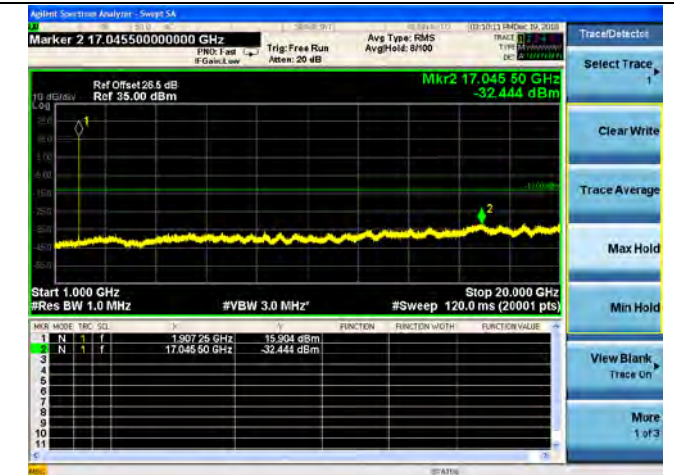
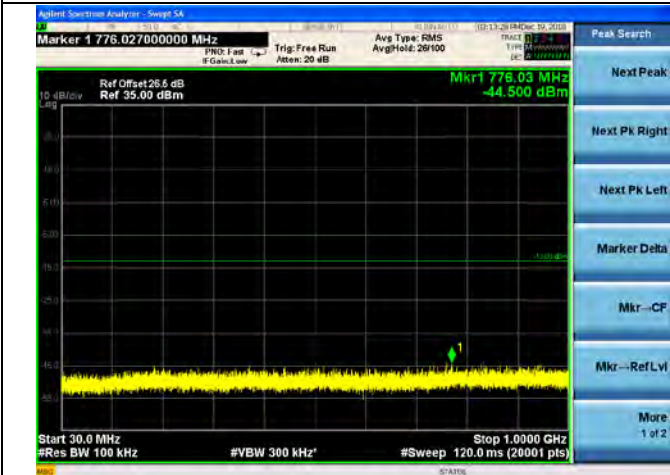
HSDPA Band II CH9262 1852.4MHz



HSDPA Band II CH9400 1880.0MHz

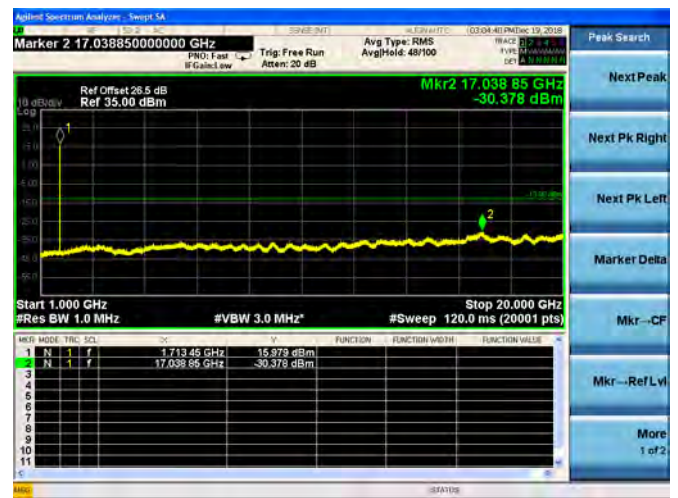
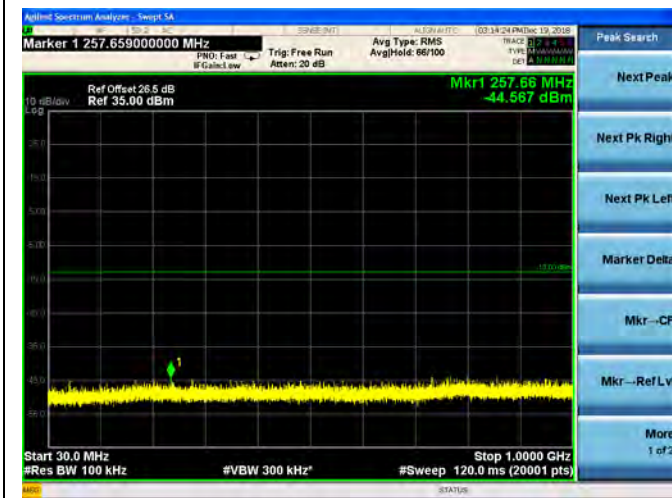


HSDPA Band II CH9538 1907.6MHz

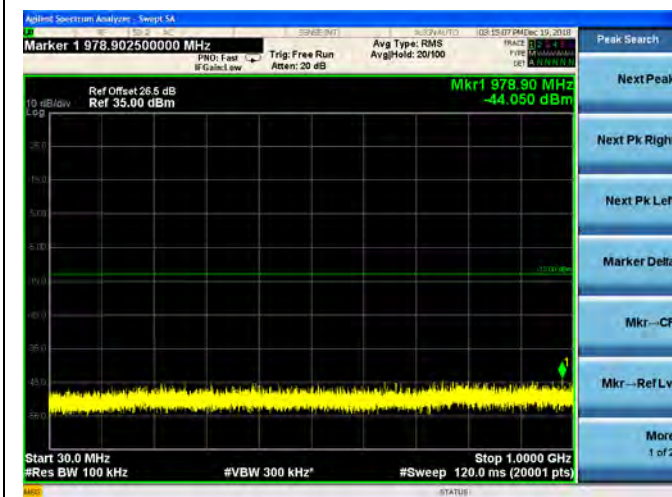




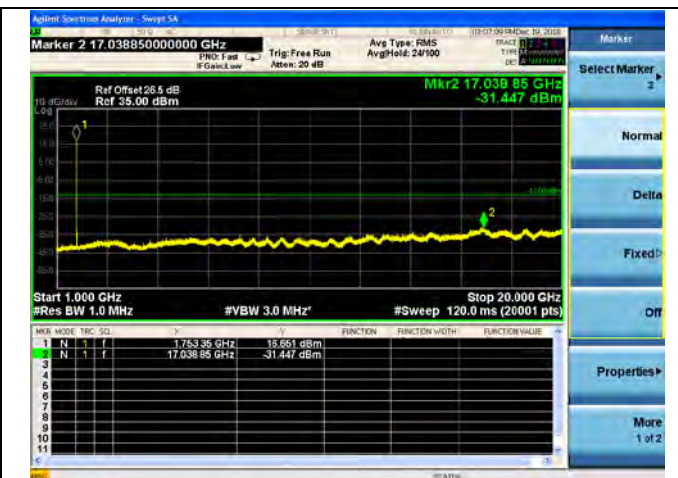
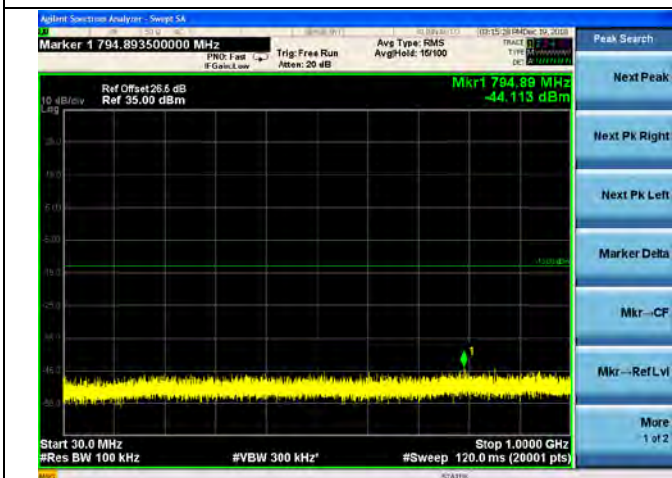
HSDPA Band IV CH1312 1712.4MHz



HSDPA Band IV CH1413 1732.6MHz

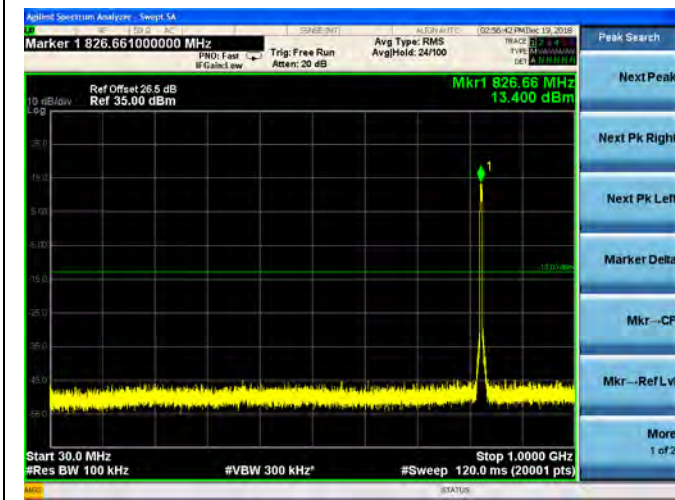


HSDPA Band IV CH1513 1752.6MHz

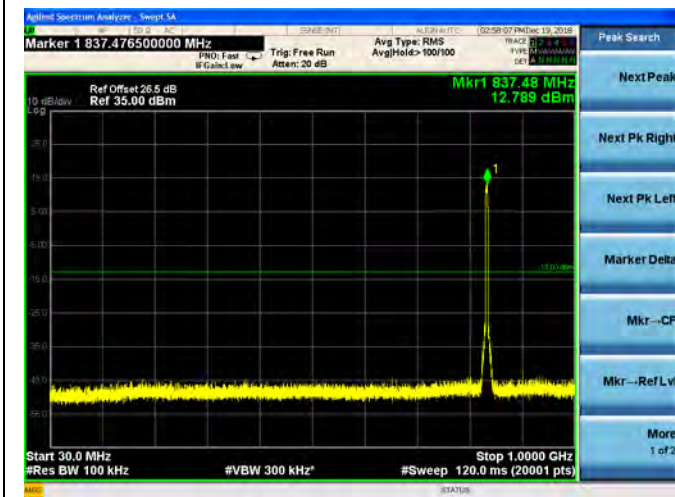




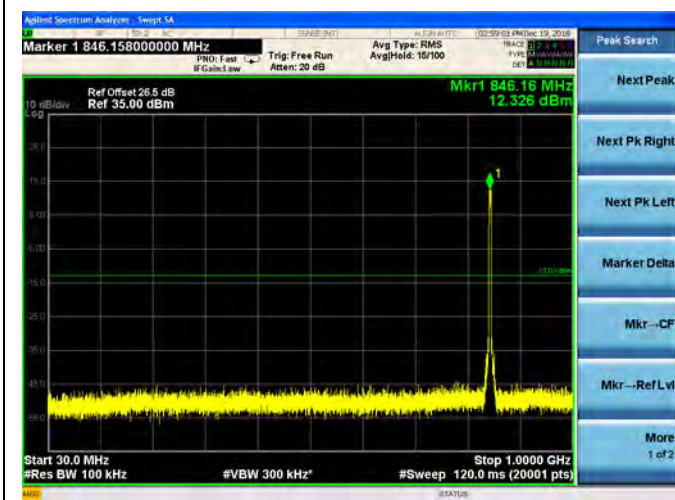
HSUPA Band V CH4132 826.4MHz



HSUPA Band V CH4182 836.4MHz

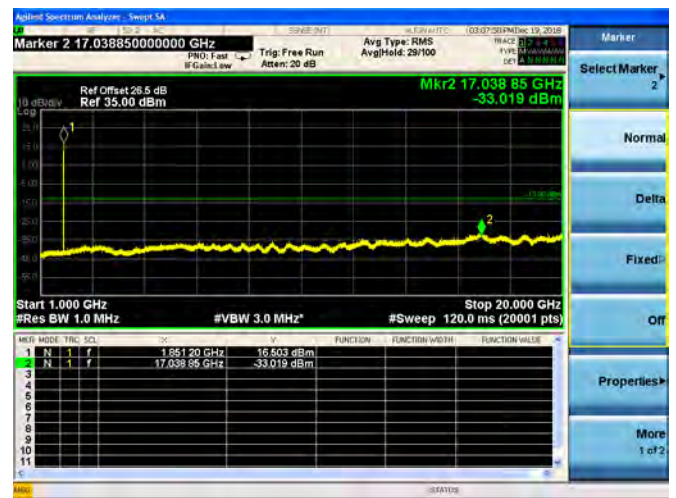
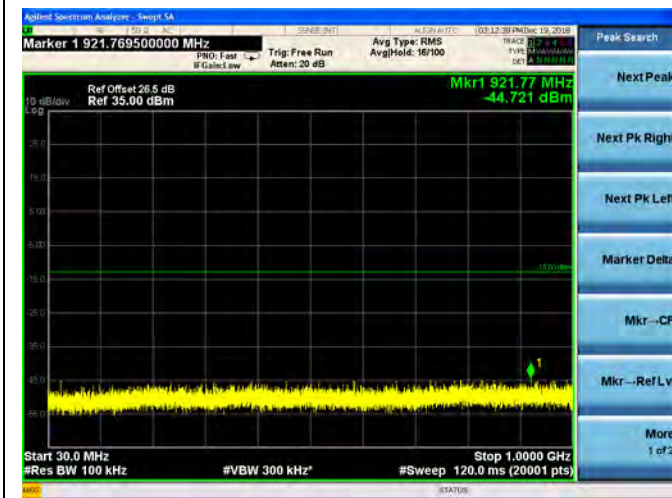


HSUPA Band V CH4233 846.6MHz

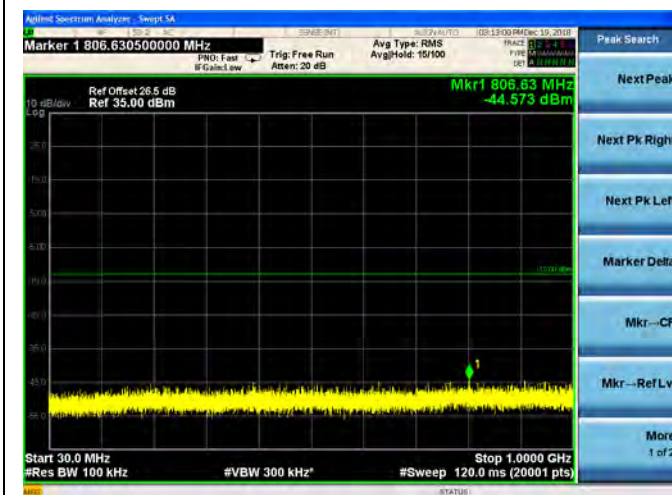




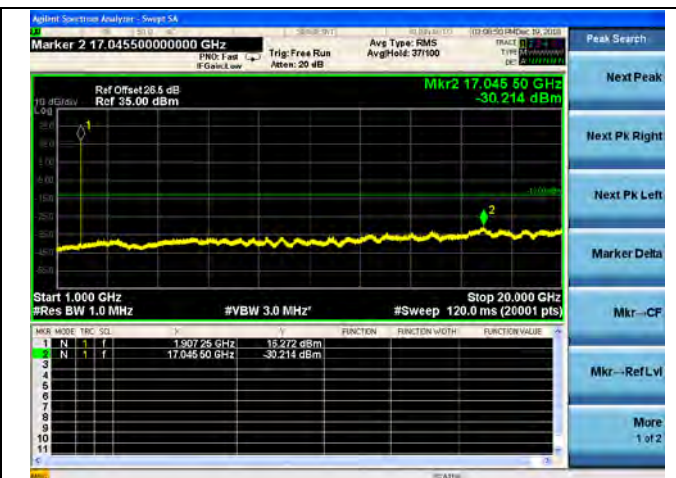
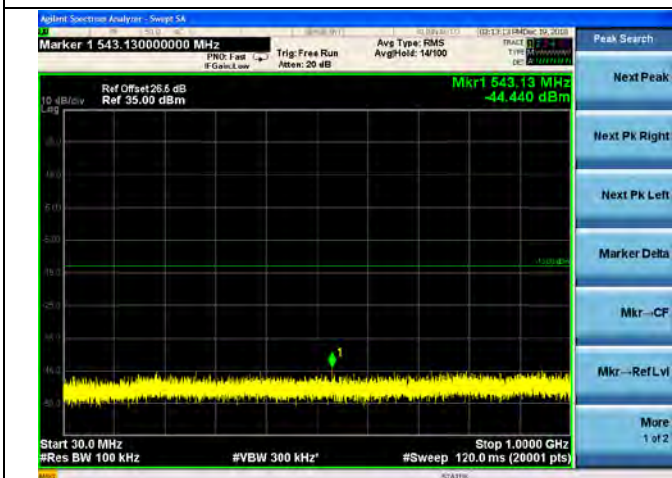
HSUPA Band II CH9262 1852.4MHz



HSUPA Band II CH9400 1880.0MHz

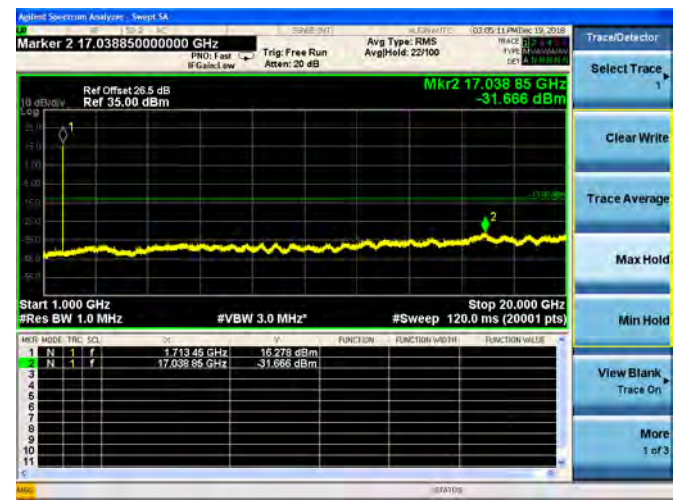
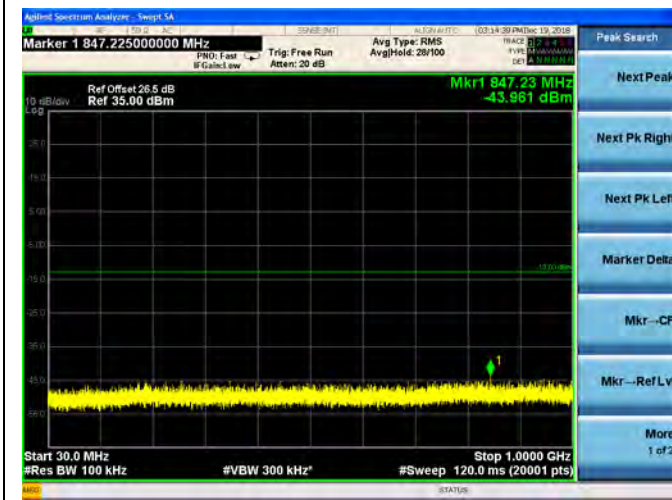


HSUPA Band II CH9538 1907.6MHz

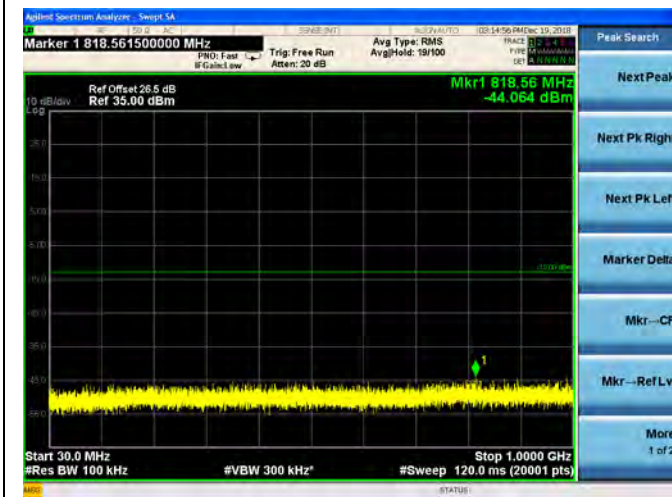




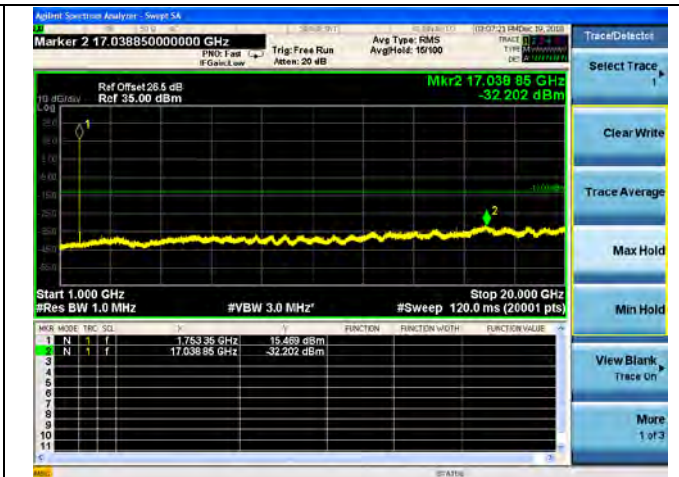
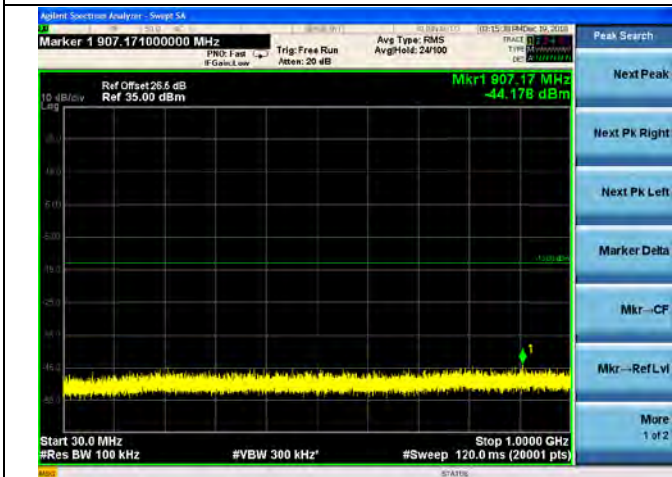
HSUPA Band IV CH1312 1712.4MHz

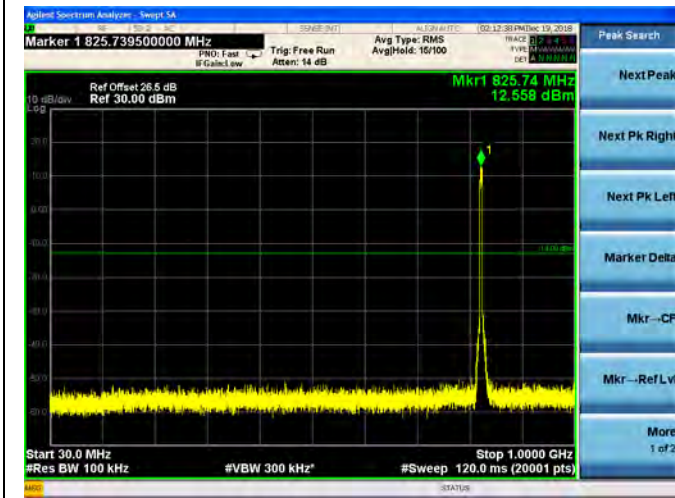
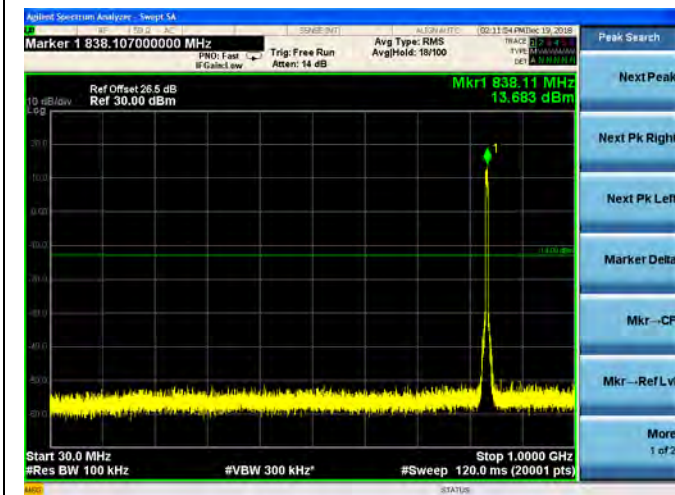
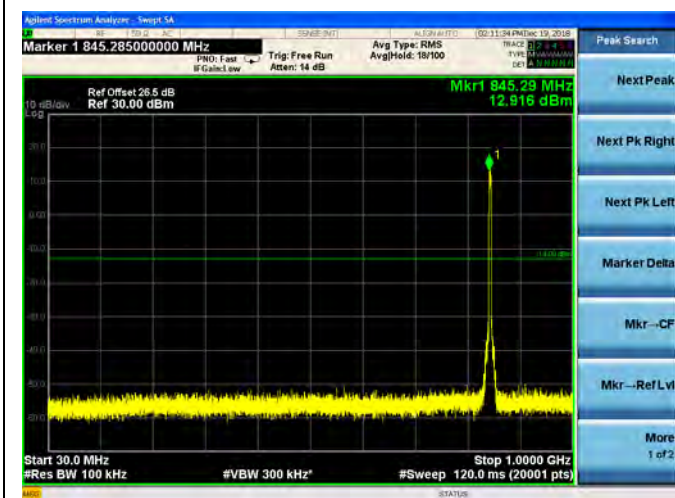


HSUPA Band IV CH1413 1732.6MHz



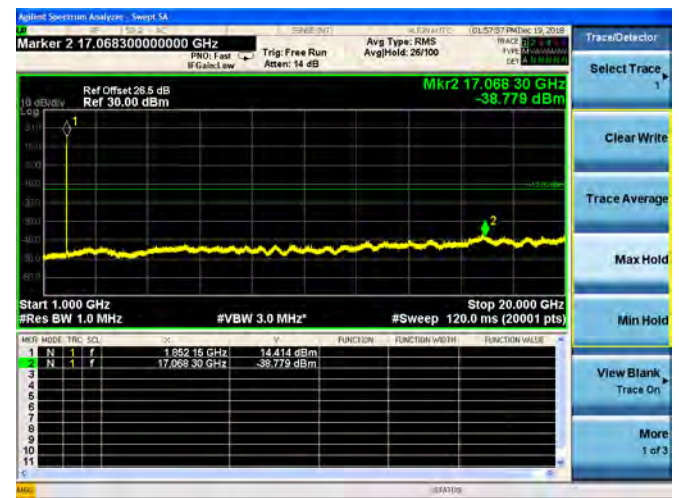
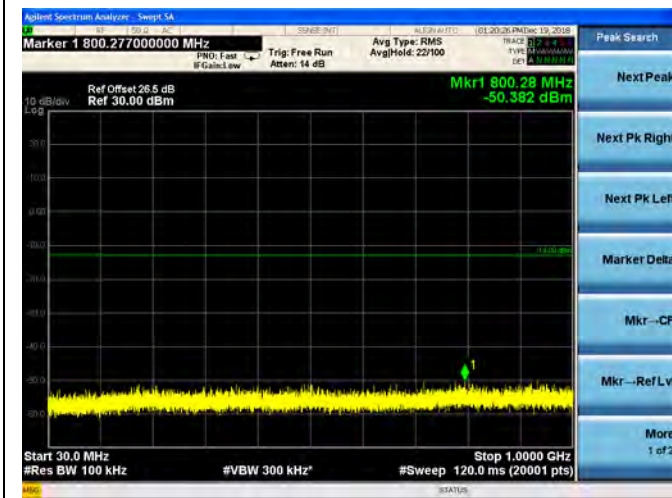
HSUPA Band IV CH1513 1752.6MHz



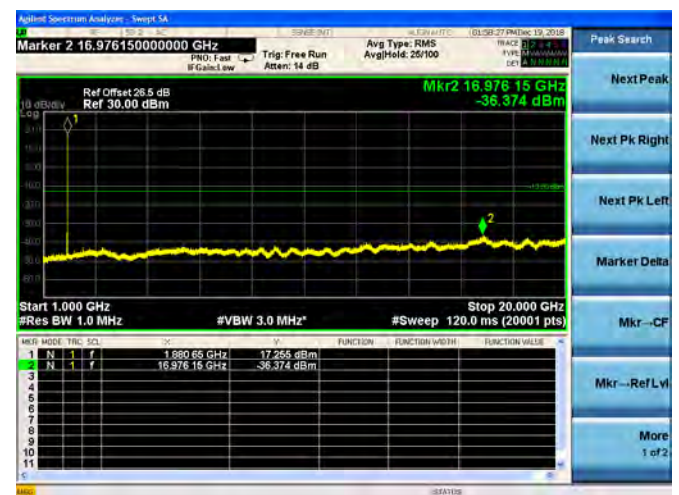
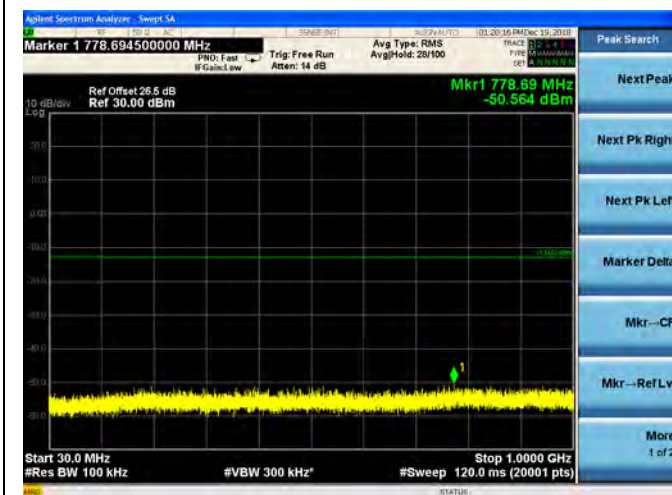
**HSPA+ Band V CH4132 826.4MHz****HSPA+ Band V CH4182 836.4MHz****HSPA+ Band V CH4233 846.6MHz**



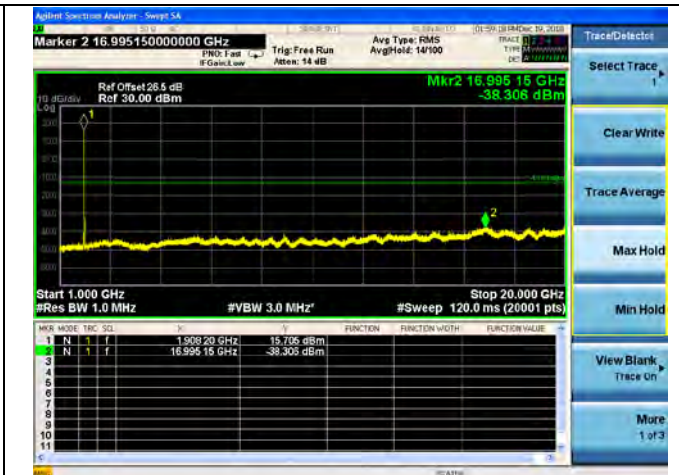
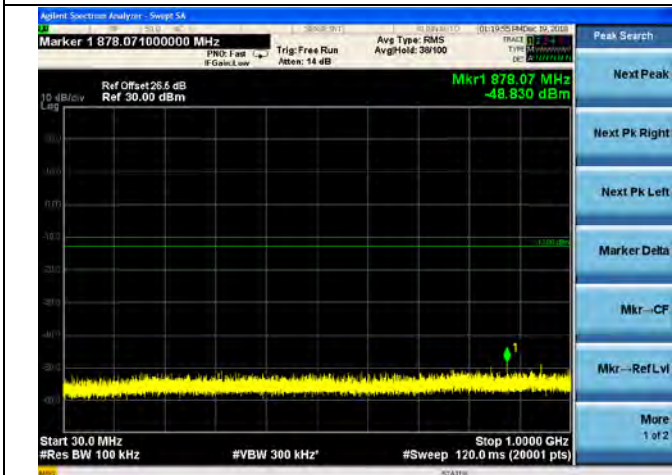
HSPA+ Band II CH9262 1852.4MHz



HSPA+ Band II CH9400 1880.0MHz



HSPA+ Band II CH9538 1907.6MHz





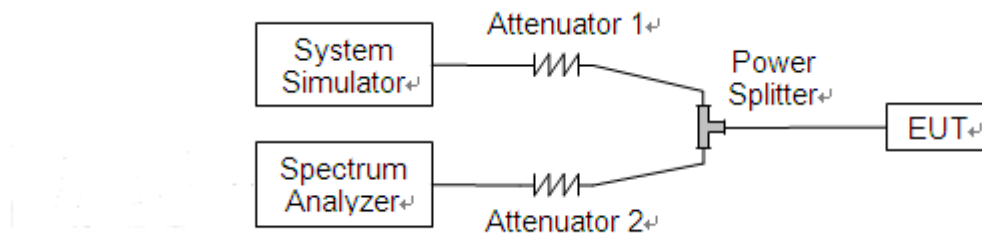
2.6. Band Edge

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:

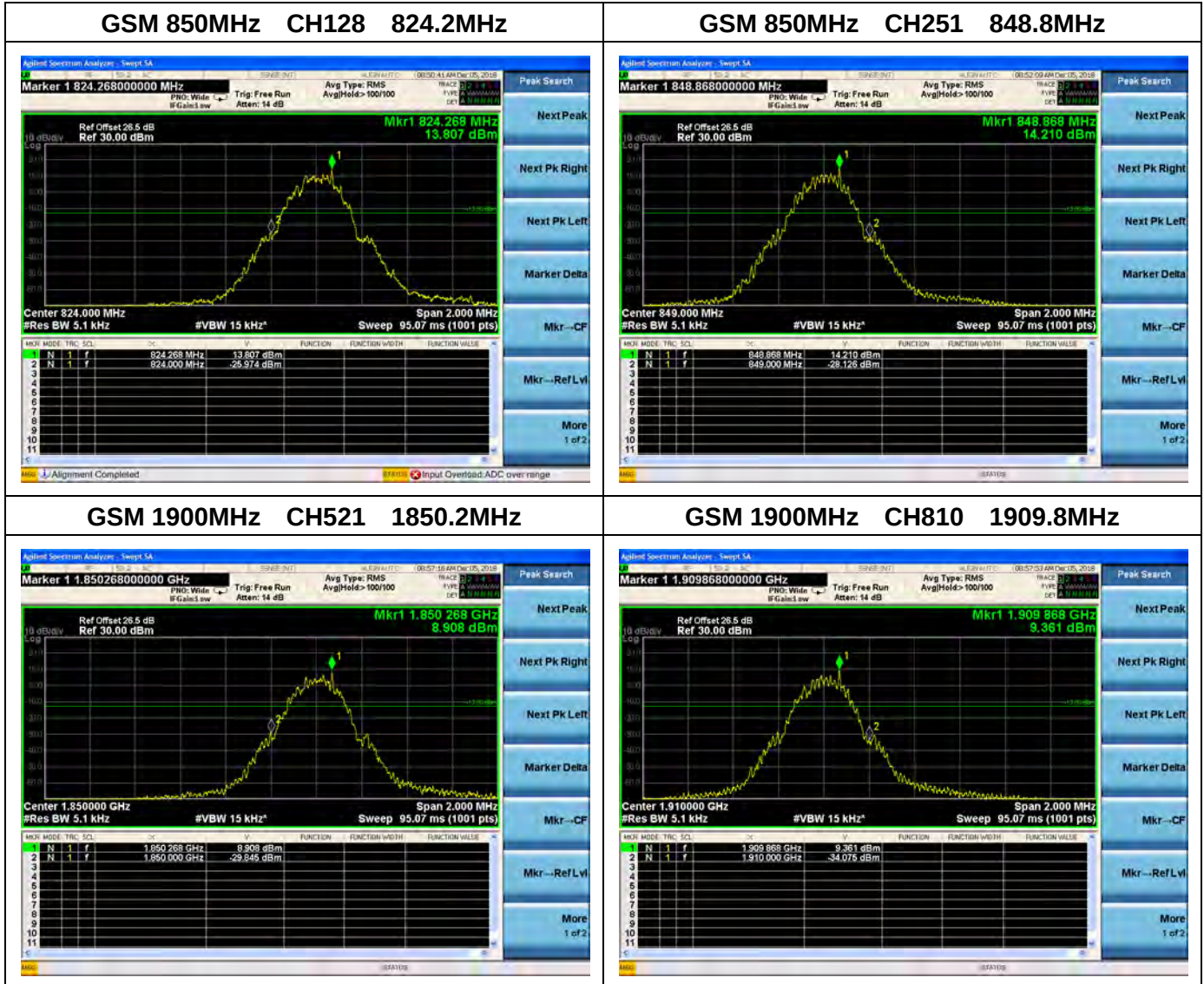


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

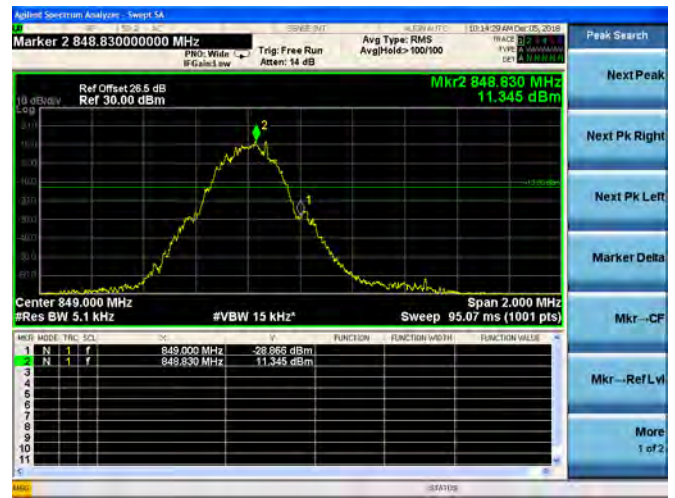




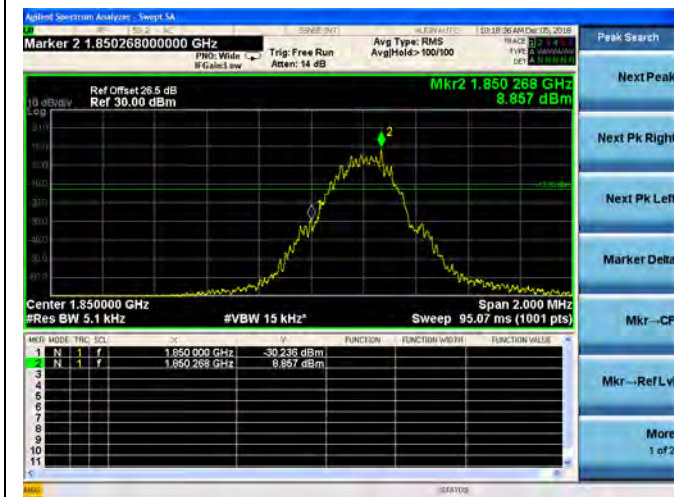
EDGE 850MHz CH128 824.2MHz



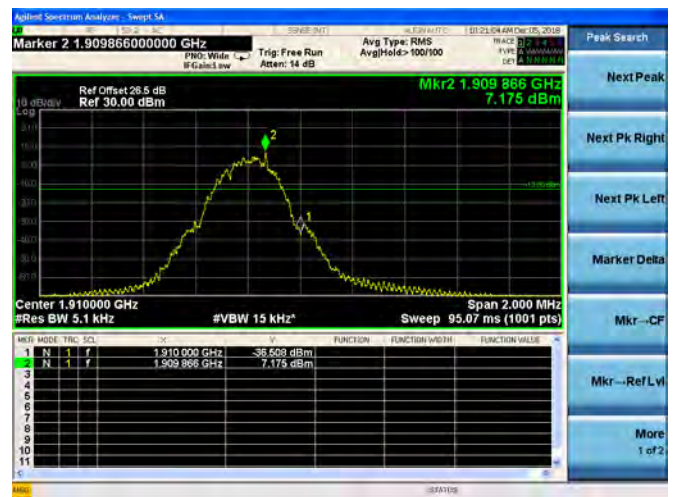
EDGE 850MHz CH251 848.8MHz



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



WCDMA Band IV CH1312 1712.4MHz



WCDMA Band IV CH1513 1752.6MHz





HSDPA Band V CH4132 826.4MHz



HSDPA Band V CH4233 846.6MHz



HSDPA Band II CH9262 1852.4MHz



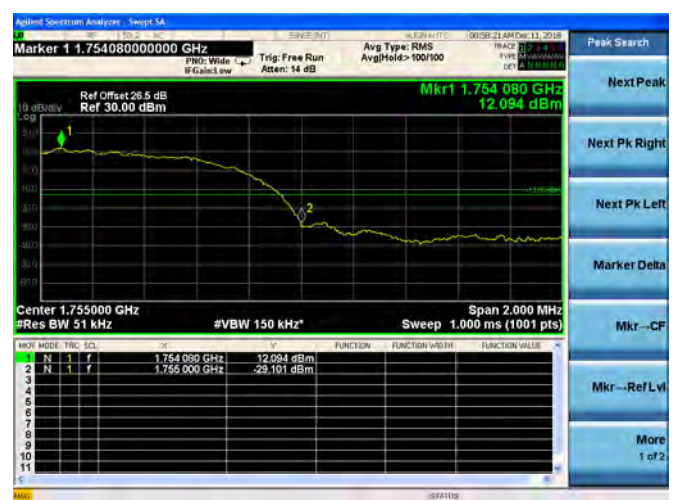
HSDPA Band II CH9538 1907.6MHz



HSDPA Band IV CH1312 1712.4MHz



HSDPA Band IV CH1513 1752.6MHz





HSUPA Band V CH4132 826.4MHz



HSUPA Band V CH4233 846.6MHz



HSUPA Band II CH9262 1852.4MHz



HSUPA Band II CH9538 1907.6MHz



HSUPA Band IV CH1312 1712.4MHz



HSUPA Band IV CH1513 1752.6MHz





HSUPA Band V CH4132 826.4MHz



HSUPA Band V CH4233 846.6MHz



HSUPA Band II CH9262 1852.4MHz



HSUPA Band II CH9538 1907.6MHz



HSUPA Band IV CH1312 1712.4MHz



HSUPA Band IV 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.

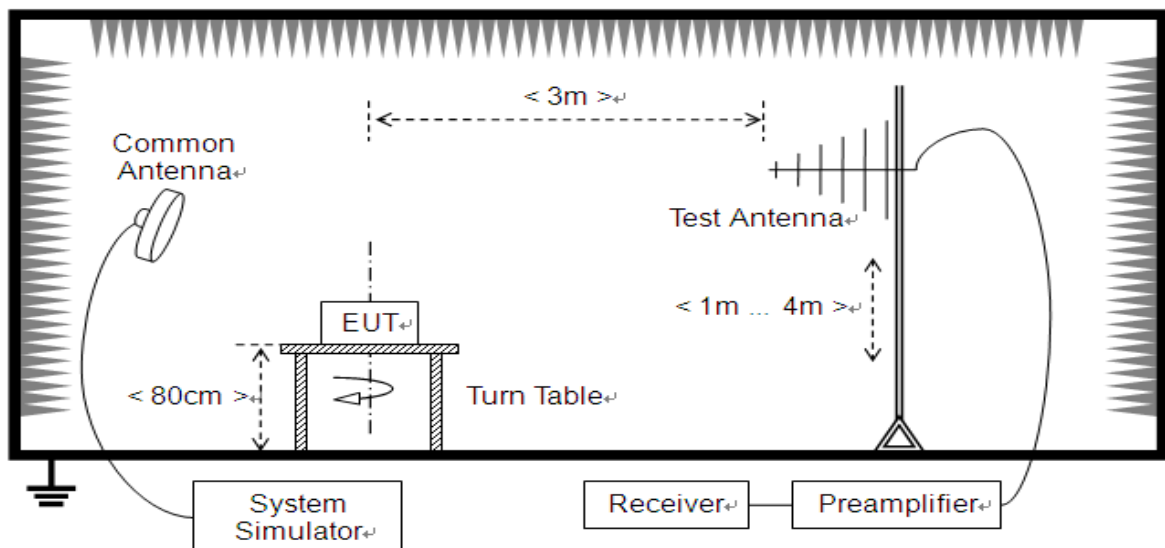
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.

According to FCC section 27.50, mobile, and portable (hand-held) stations is limited to 1 Watts e.i.r.p. peak power.

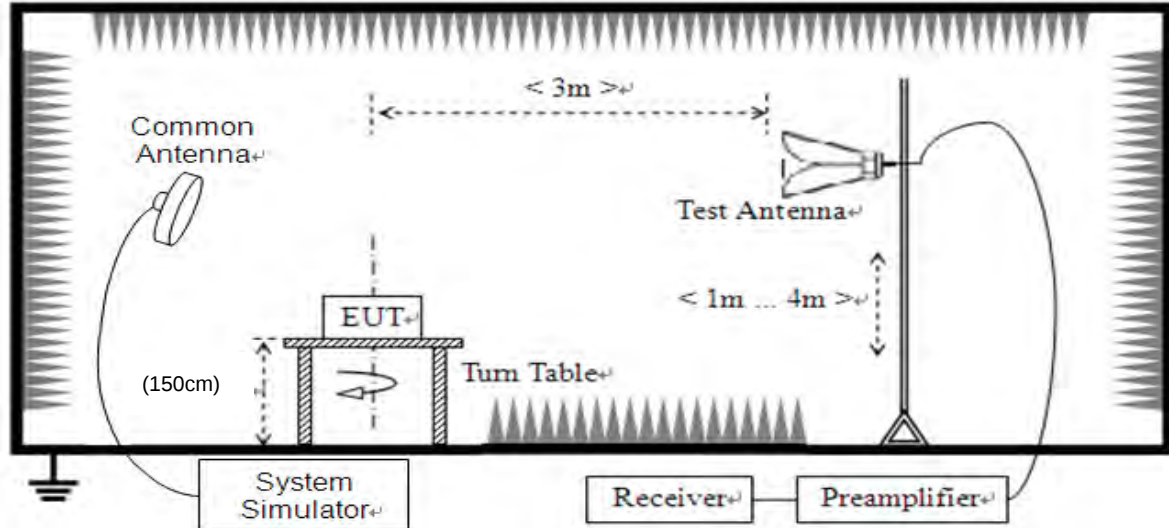
2.7.2. Test Description

Test Setup:

1) Below 1GHz



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:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

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

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ 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	
GPRS 850MHz	128	824.20	5	27.18	0.522	38.5	7	PASS
	190	836.60	5	29.24	0.839			PASS
	251	848.80	5	27.43	0.553			PASS
EDGE 850MHz	128	824.20	5	27.19	0.524	38.5	7	PASS
	190	836.60	5	29.25	0.841			PASS
	251	848.80	5	27.45	0.556			PASS

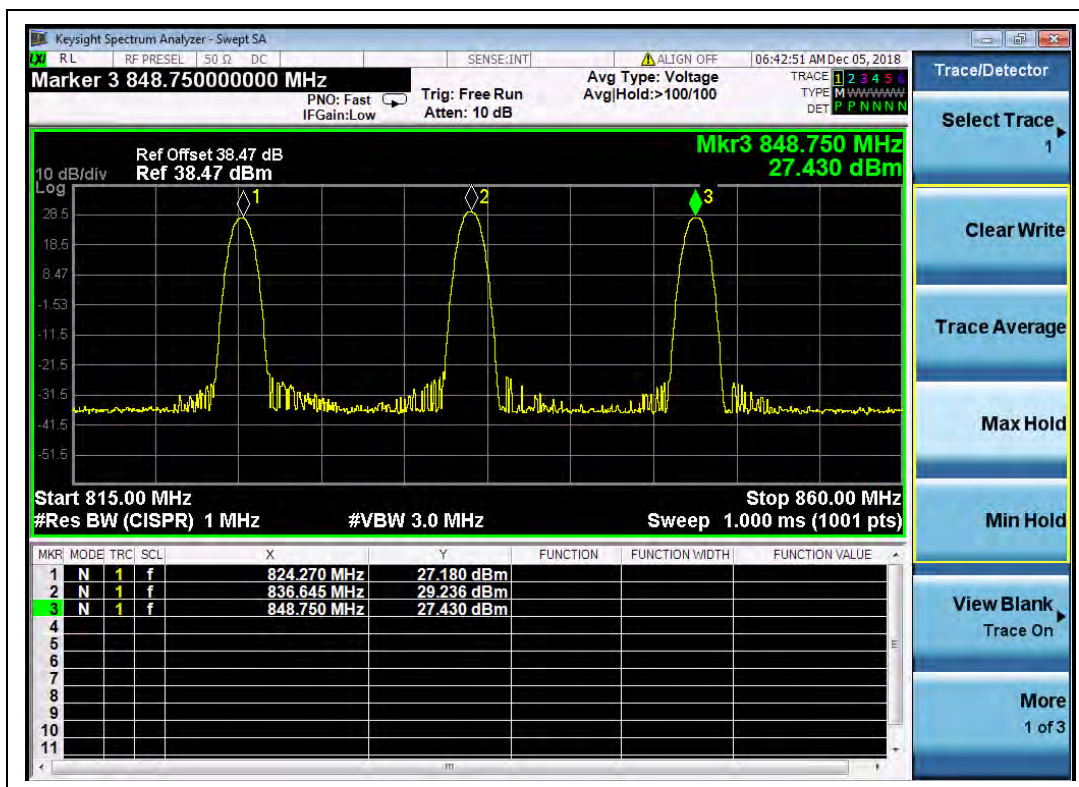
Note 1: For the GPRS and EDGE model, all the slots were tested and just the worst data were recorded in this report.

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

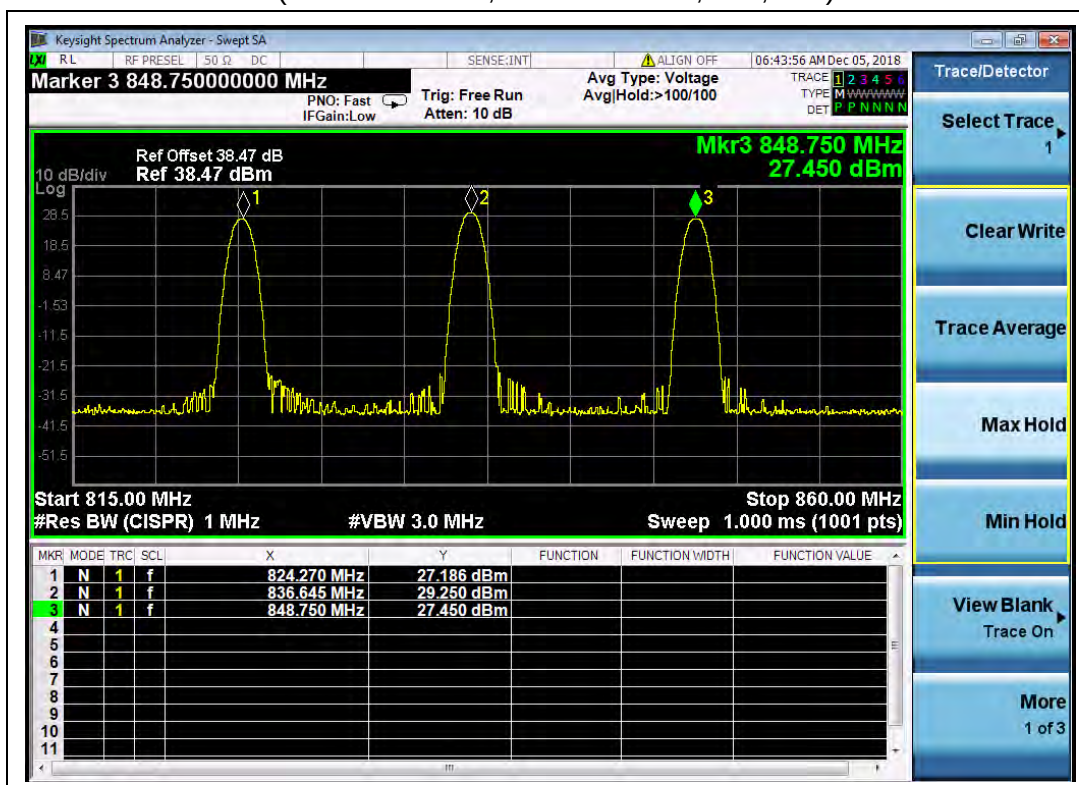
Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GPRS 1900MHz	512	1850.2	0	25.80	0.380	33	2	PASS
	661	1880.0	0	24.42	0.277			PASS
	810	1909.8	0	23.38	0.218			PASS
EDGE 1900MHz	512	1850.2	0	25.80	0.380	33	2	PASS
	661	1880.0	0	24.43	0.277			PASS
	810	1909.8	0	23.40	0.219			PASS

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

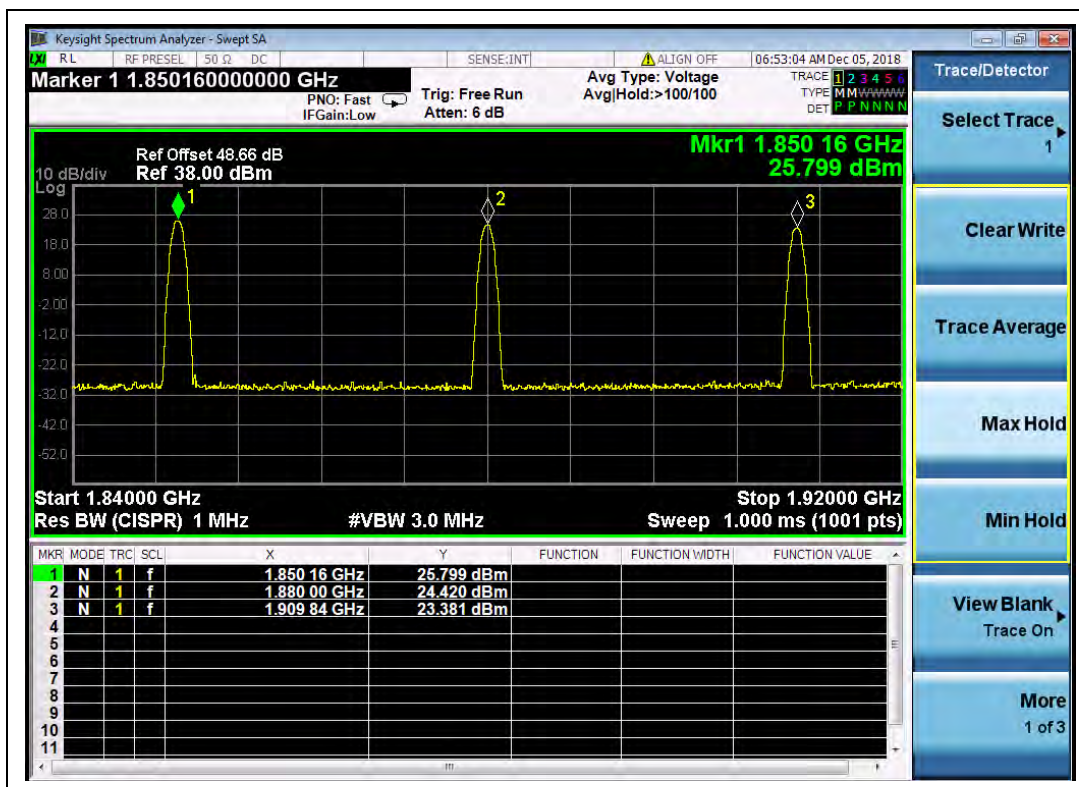
Note 2: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



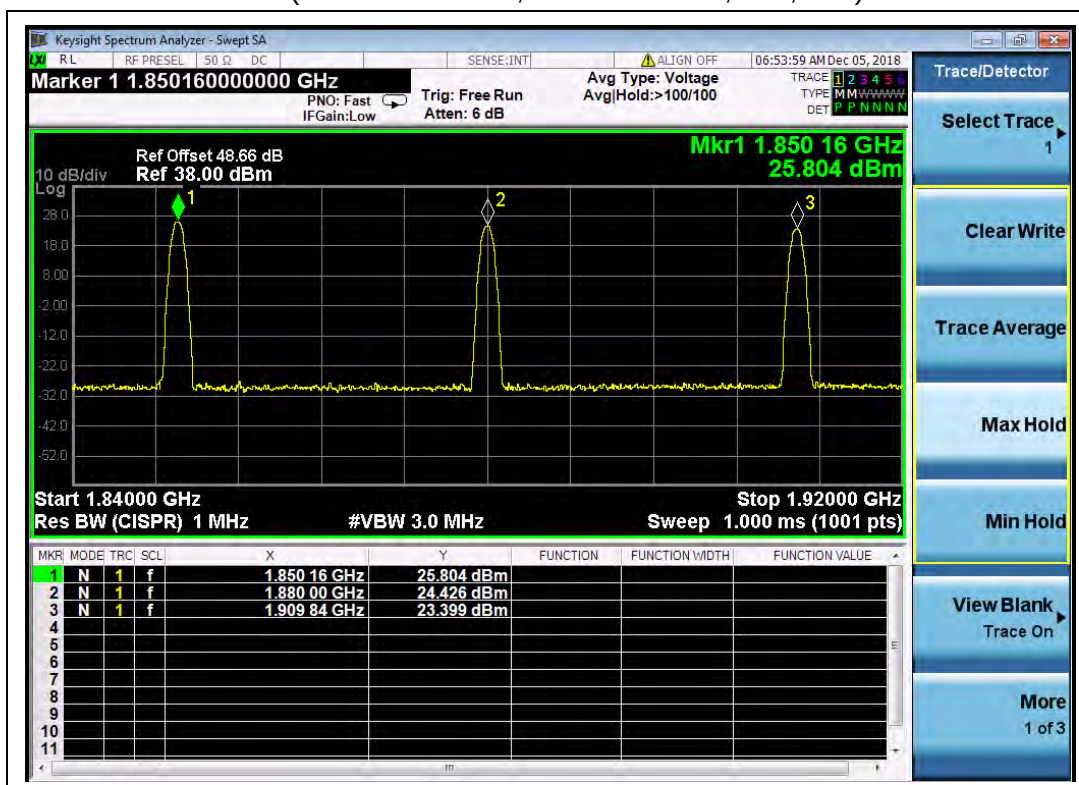
(GPRS 850MHz, Channel = 128, 190, 251)



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



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



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

**WCDMA Test verdict:**

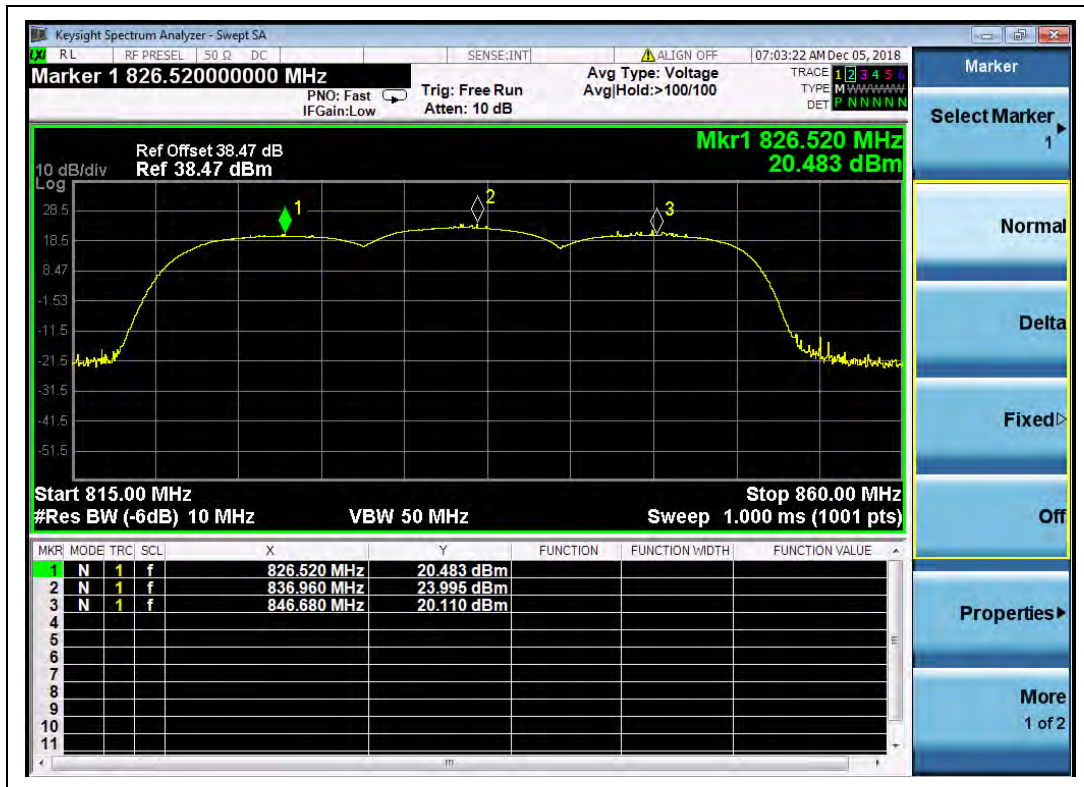
Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	20.48	0.112	38.5	7	PASS
	4182	836.4	24.00	0.251			PASS
	4233	846.6	20.11	0.103			PASS
HSDPA Band V	4132	826.4	20.10	0.102	38.5	7	PASS
	4182	836.4	23.04	0.201			PASS
	4233	846.6	25.63	0.366			PASS
HSUPA Band V	4132	826.4	19.90	0.098	38.5	7	PASS
	4182	836.4	22.33	0.171			PASS
	4233	846.6	25.35	0.343			PASS
HSPA+ Band V	4132	826.4	19.78	0.095	38.5	7	PASS
	4182	836.4	22.38	0.173			PASS
	4233	846.6	20.06	0.101			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.

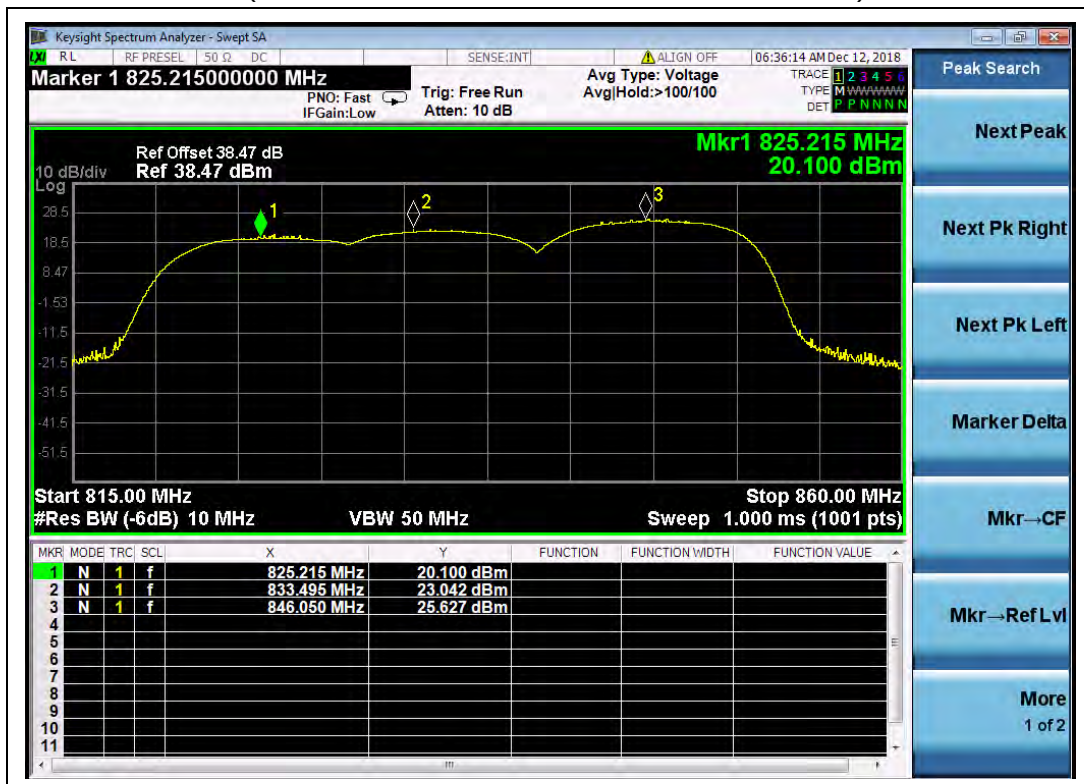


Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	21.15	0.130	33	2	PASS
	9400	1880.0	22.22	0.167			PASS
	9538	1907.6	20.03	0.101			PASS
HSDPA Band II	9262	1852.4	18.18	0.066	33	2	PASS
	9400	1880.0	21.52	0.142			PASS
	9538	1907.6	20.13	0.103			PASS
HSUPA Band II	9262	1852.4	15.95	0.039	33	2	PASS
	9400	1880.0	20.96	0.125			PASS
	9538	1907.6	20.87	0.122			PASS
HSPA+ Band II	9262	1852.4	21.29	0.135	33	2	PASS
	9400	1880.0	22.01	0.159			PASS
	9538	1907.6	19.96	0.099			PASS
WCDMA Band IV	1312	1712.4	20.49	0.112	30	1	PASS
	1413	1732.6	19.91	0.098			PASS
	1513	1752.6	21.02	0.126			PASS
HSDPA Band IV	1312	1712.4	16.99	0.050	30	1	PASS
	1413	1732.6	20.17	0.104			PASS
	1513	1752.6	22.68	0.185			PASS
HSUPA Band IV	1312	1712.4	20.54	0.113	30	1	PASS
	1413	1732.6	20.63	0.116			PASS
	1513	1752.6	22.02	0.159			PASS
HSPA+ Band IV	1312	1712.4	20.72	0.118	30	1	PASS
	1413	1732.6	19.96	0.099			PASS
	1513	1752.6	18.29	0.067			PASS

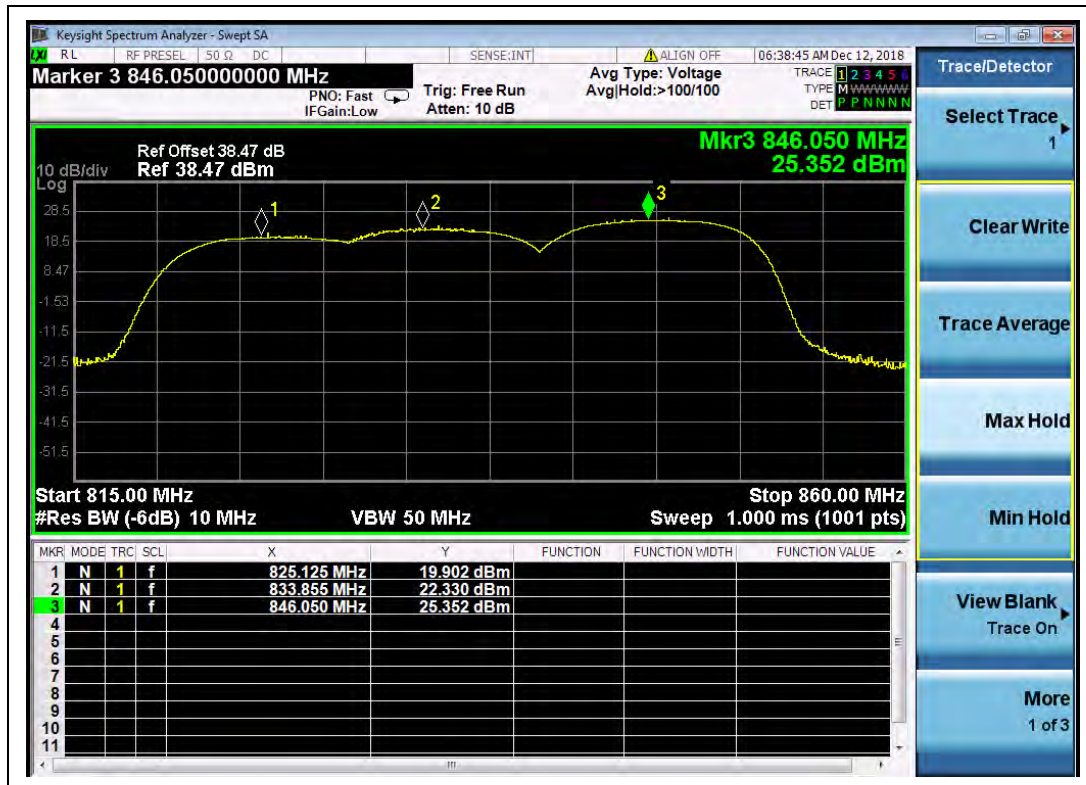
Note 1: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.



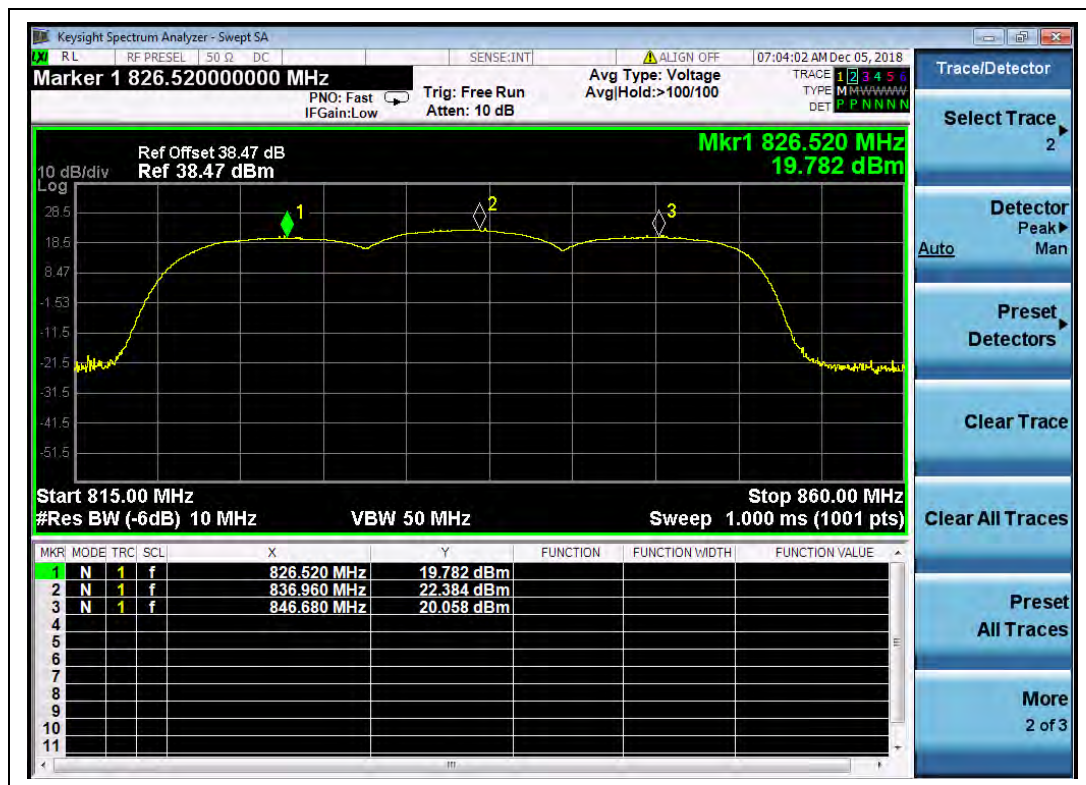
(WCDMA Band V, Channel = 4132, 4182, 4233)



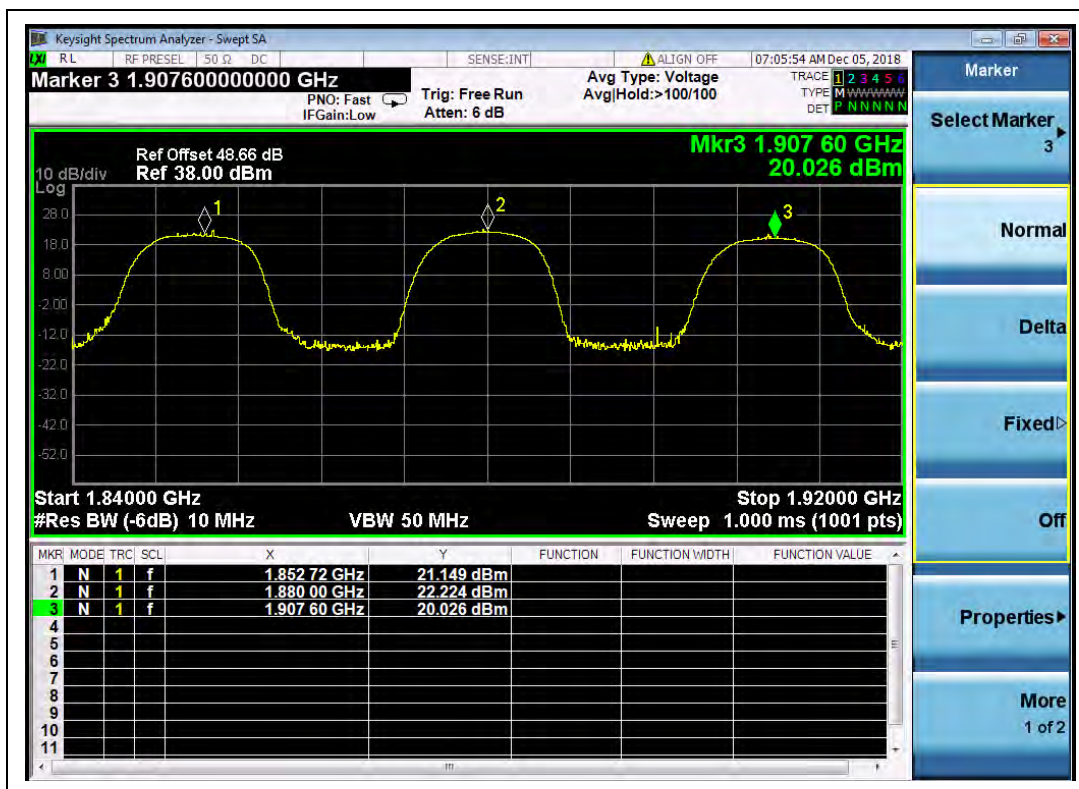
(HSDPA Band V, Channel = 4132, 4182, 4233)



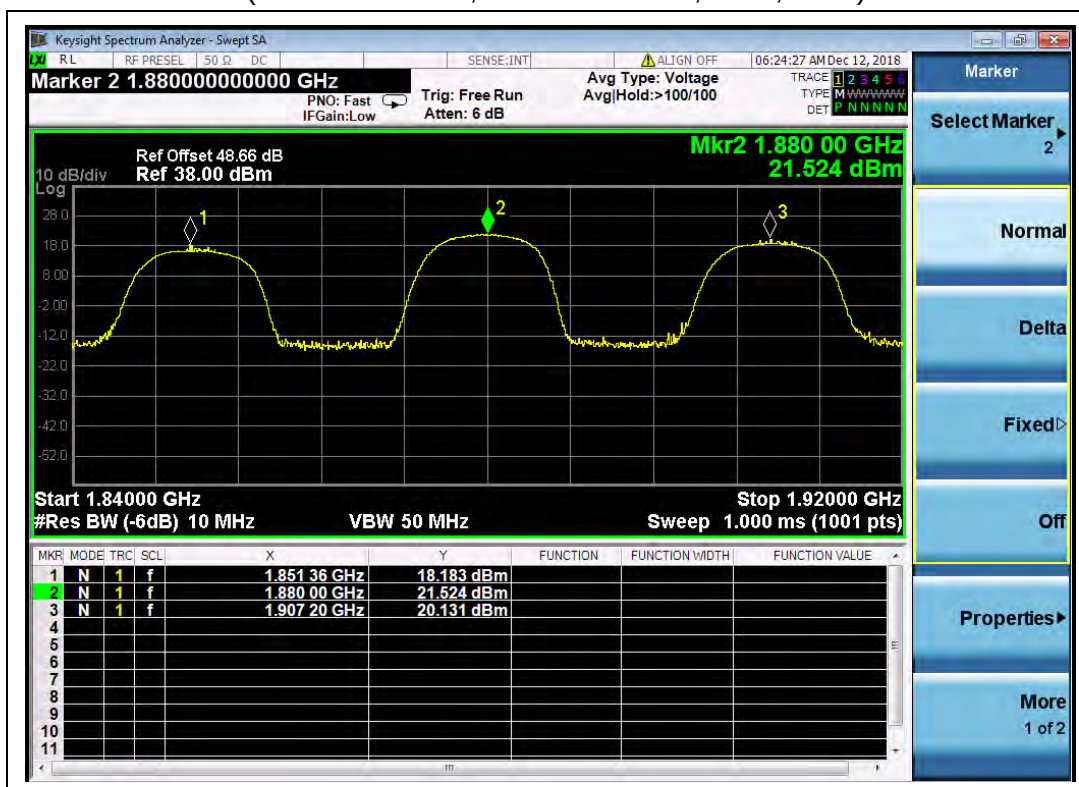
(HSUPA Band V, Channel = 4132, 4182, 4233)



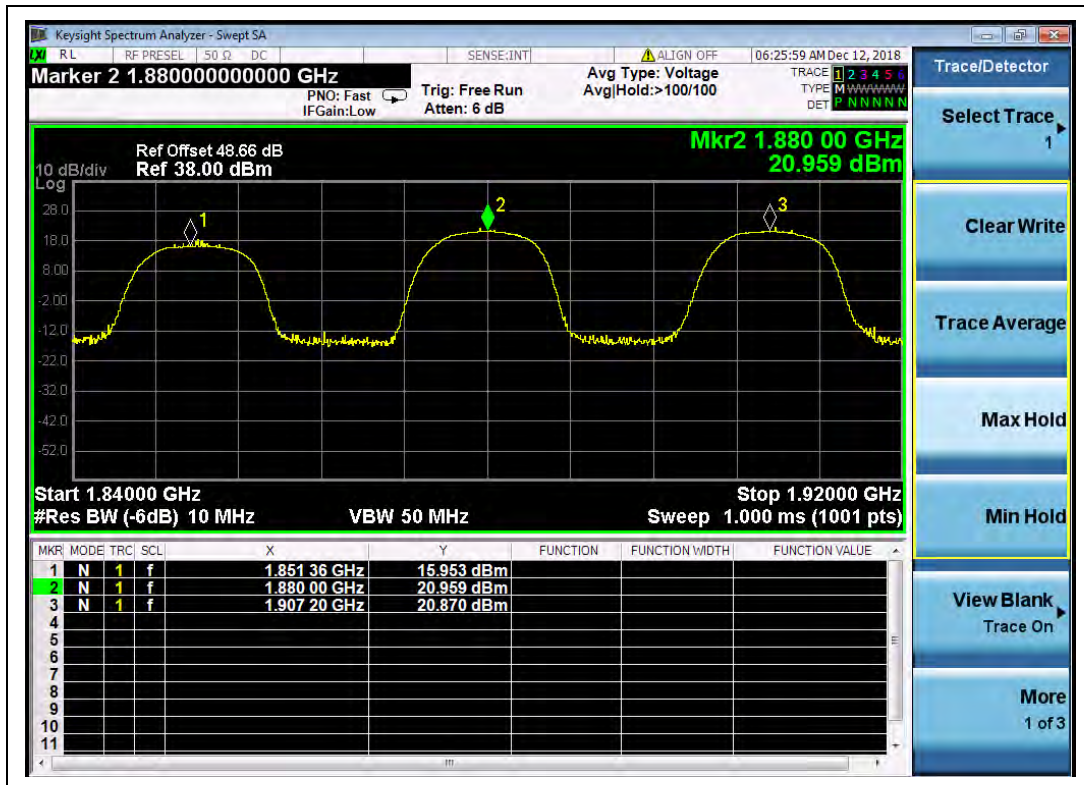
(HSPA+ Band V, Channel = 4132, 4182, 4233)



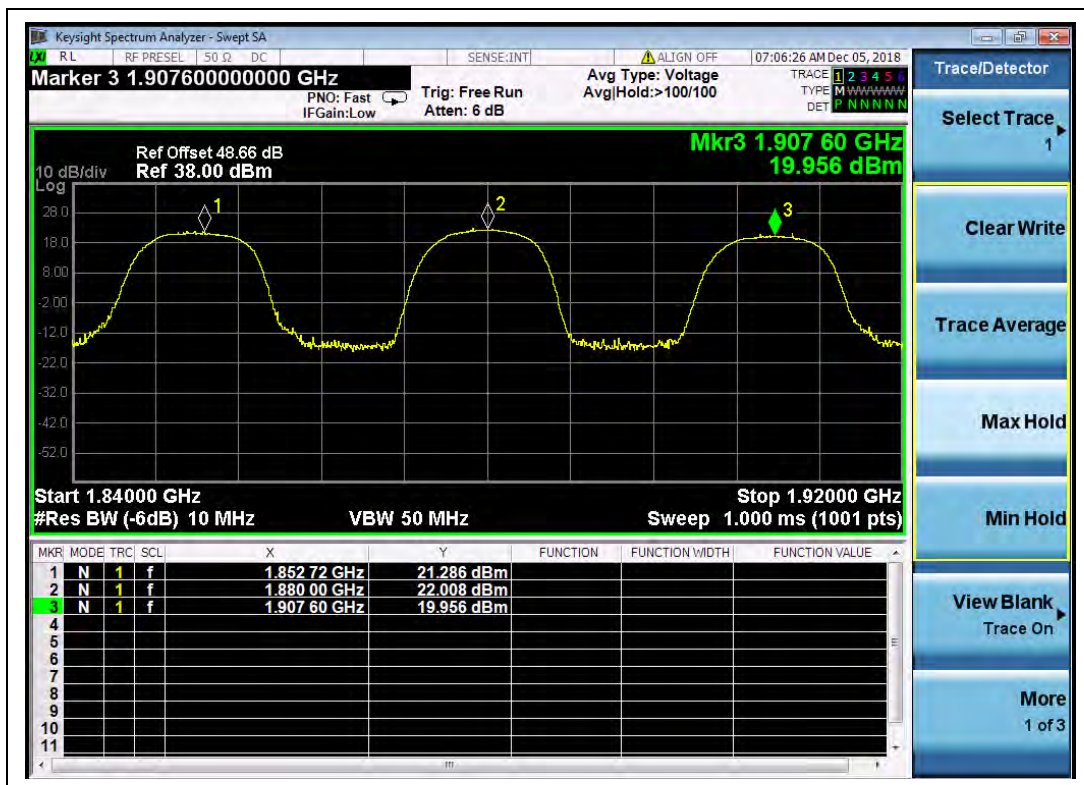
(WCDMA Band II, Channel = 9262, 9400, 9538)



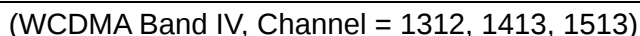
(HSDPA Band II, Channel = 9262, 9400, 9538)

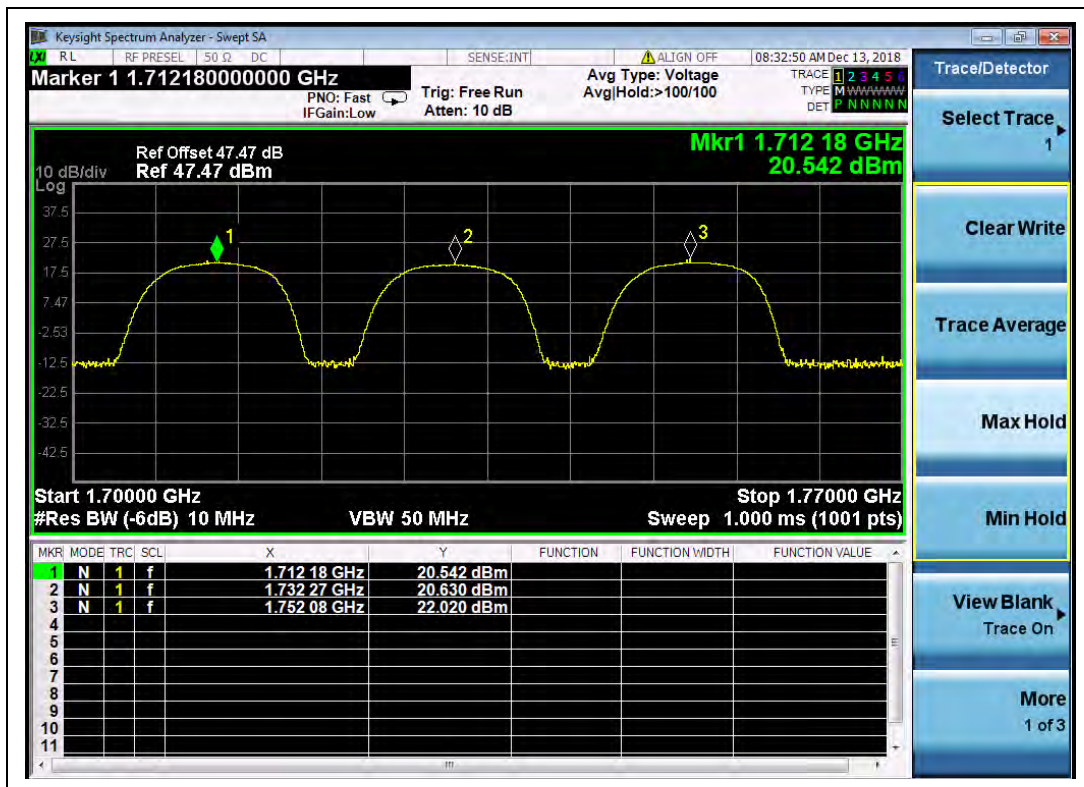


(HSUPA Band II, Channel = 9262, 9400, 9538)

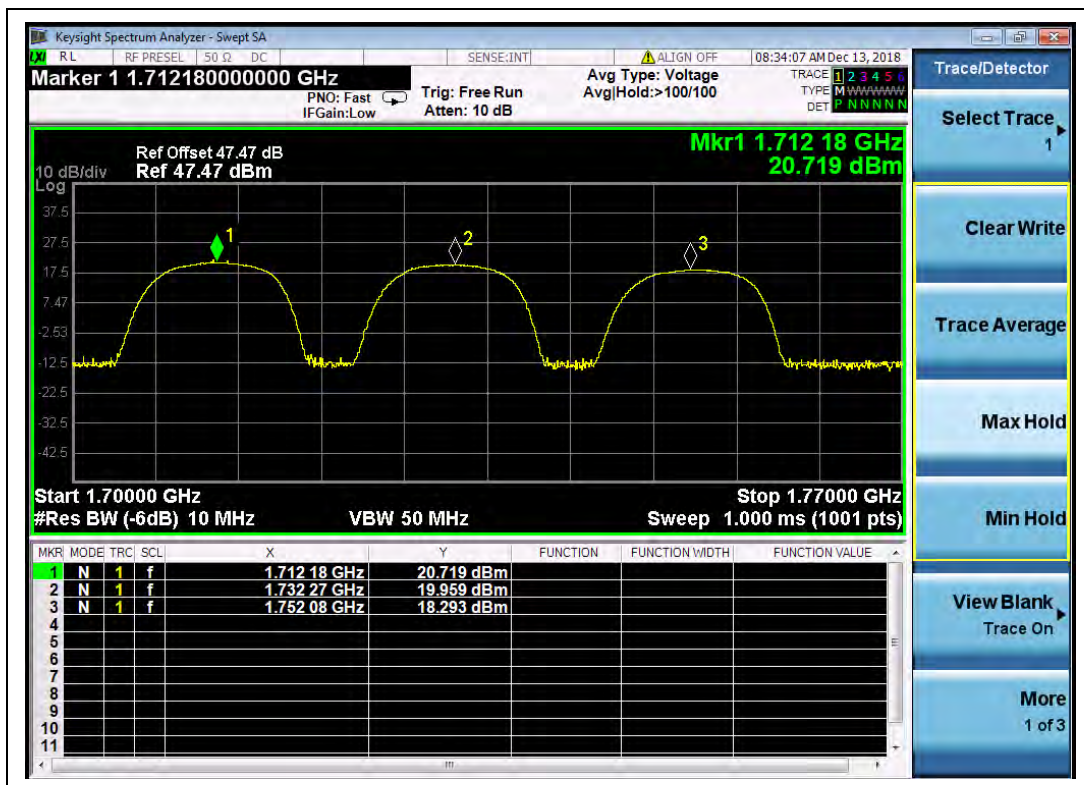


(HSPA+ Band II, Channel = 9262, 9400, 9538)





(HSUPA Band IV, Channel = 1312, 1413, 1513)



(HSPA+ Band IV, Channel = 1312, 1413, 1513)

2.8. Radiated Out of Band Emissions

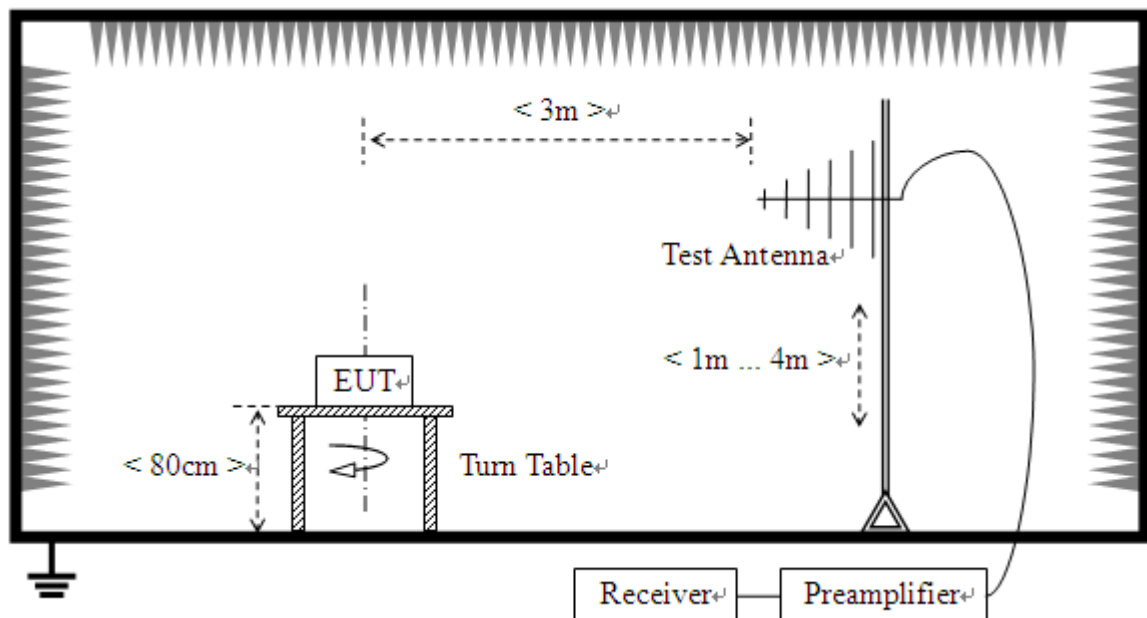
2.8.1. Requirement

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.

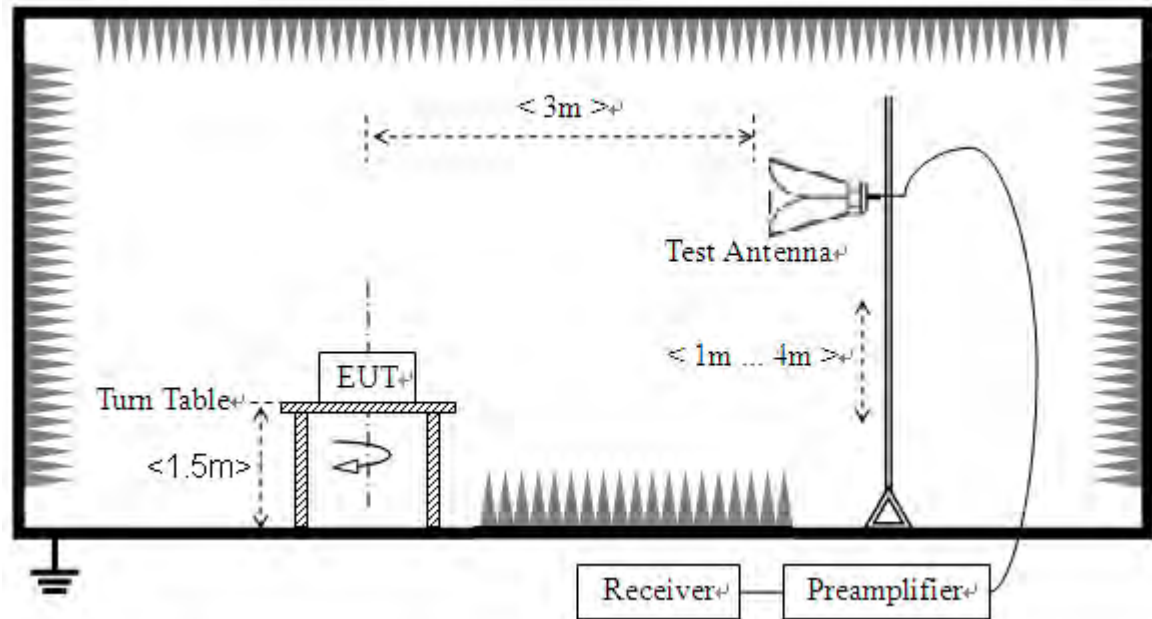
2.8.2. Test Description

Test Setup:

- 1) Below 1GHz



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.



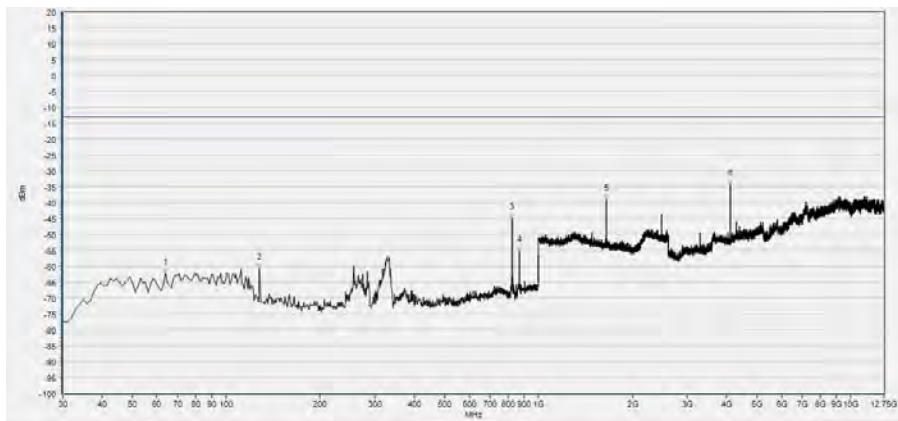
2.8.3. Test Result

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
WCDMA Band IV	1312	1712.4	< -25	< -25	-13	PASS
	1413	1732.6	< -25	< -25		PASS
	1513	1752.6	< -25	< -25		PASS

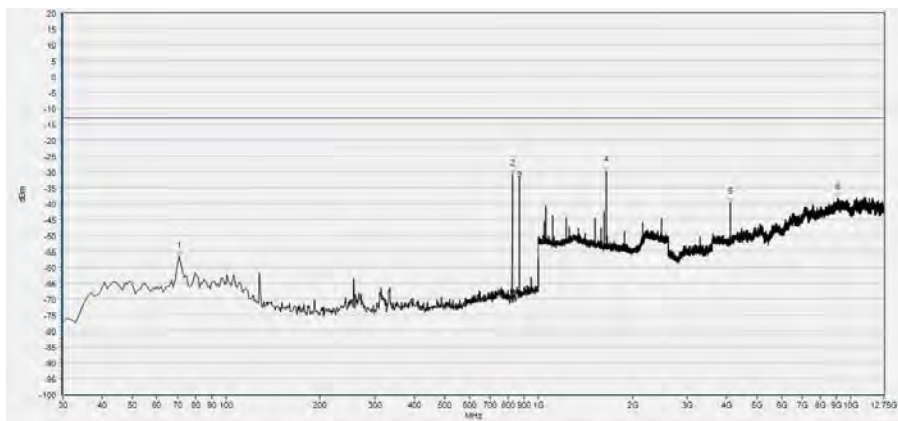
Note 1: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

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.



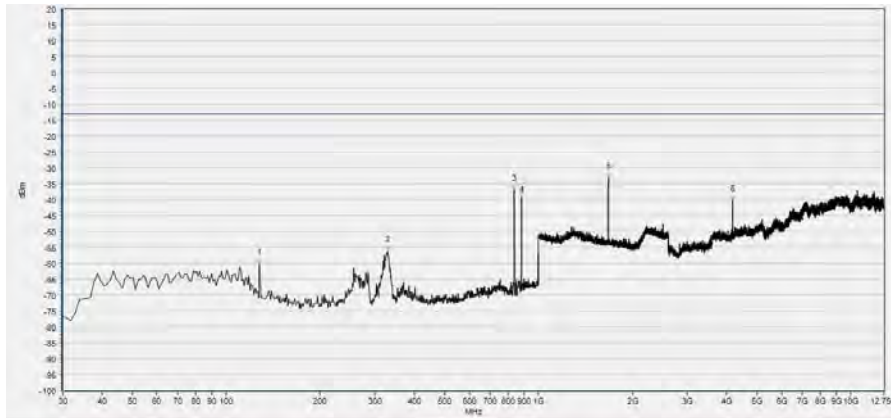
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	63.950	-62.47	-13.00	Horizontal	PASS
2	127.970	-60.62	-13.00	Horizontal	PASS
3	823.460	-45.70	-13.00	Horizontal	N/A
4	869.050	-55.29	-13.00	Horizontal	N/A
5	1649.220	-39.00	-13.00	Horizontal	PASS
6	4120.931	-34.19	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 128, Horizontal)



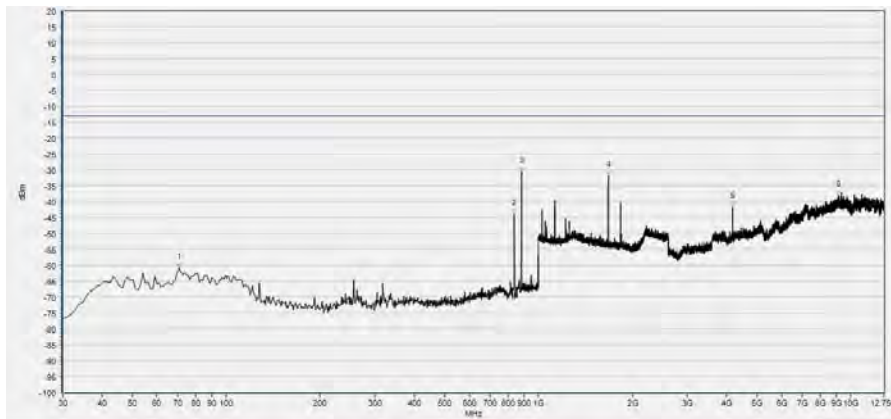
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	70.740	-56.59	-13.00	Vertical	PASS
2	824.430	-30.99	-13.00	Vertical	N/A
3	869.050	-31.55	-13.00	Vertical	N/A
4	1648.579	-29.87	-13.00	Vertical	PASS
5	4120.931	-39.82	-13.00	Vertical	PASS
6	9069.494	-38.27	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 128, Vertical)



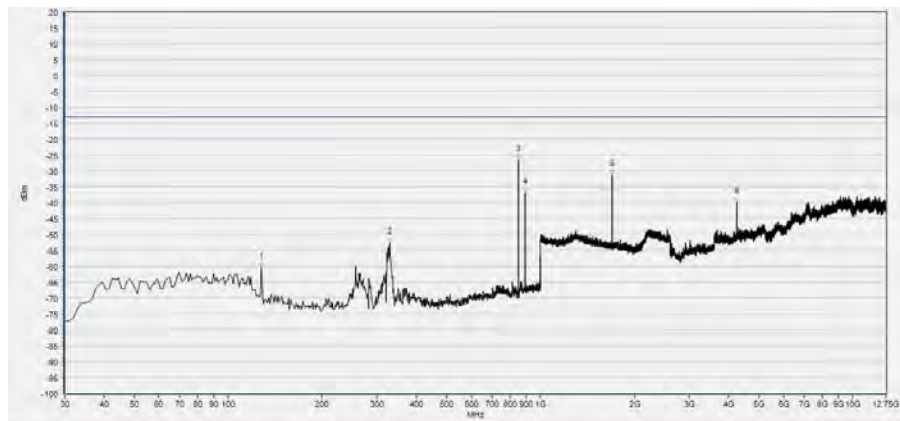
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.14	-13.00	Horizontal	PASS
2	328.760	-56.08	-13.00	Horizontal	PASS
3	836.070	-36.79	-13.00	Horizontal	N/A
4	881.660	-38.91	-13.00	Horizontal	N/A
5	1672.909	-33.21	-13.00	Horizontal	PASS
6	4181.842	-40.23	-13.00	Horizontal	PASS

(GSM850MHz, Channel = 190, Horizontal)



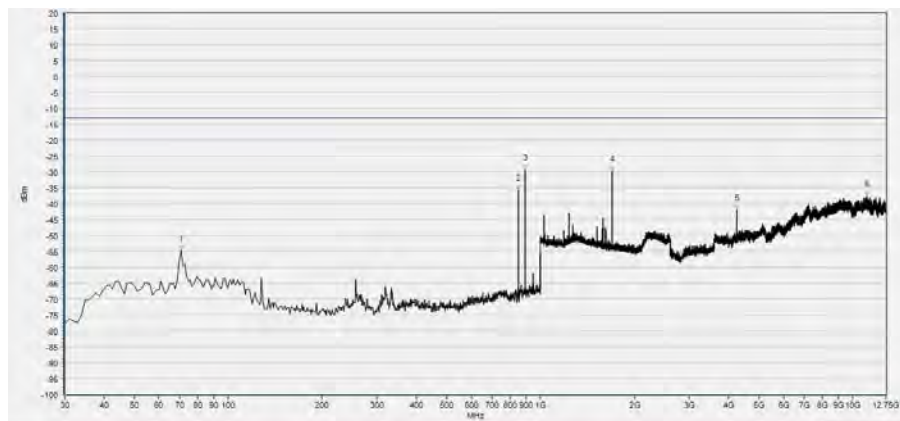
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	70.740	-60.85	-13.00	Vertical	PASS
2	836.070	-43.94	-13.00	Vertical	N/A
3	881.660	-30.76	-13.00	Vertical	N/A
4	1672.909	-31.95	-13.00	Vertical	PASS
5	4183.688	-41.77	-13.00	Vertical	PASS
6	9113.793	-38.10	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 190, Vertical)



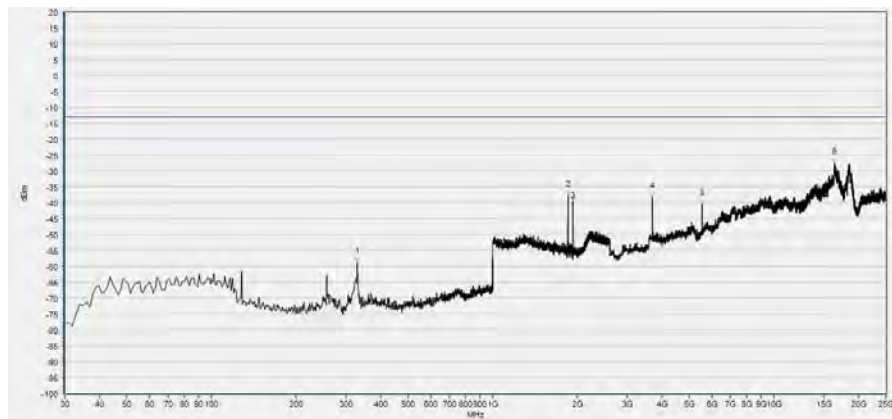
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.52	-13.00	Horizontal	PASS
2	328.760	-52.60	-13.00	Horizontal	PASS
3	848.680	-26.76	-13.00	Horizontal	N/A
4	893.300	-36.80	-13.00	Horizontal	N/A
5	1697.239	-31.09	-13.00	Horizontal	PASS
6	4242.753	-39.97	-13.00	Horizontal	PASS

(GSM 850MHz, Channel = 251, Horizontal)



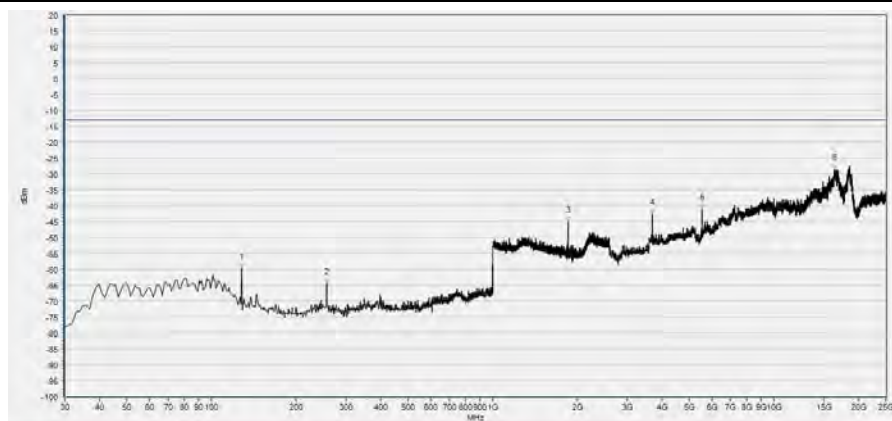
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	70.740	-54.79	-13.00	Vertical	PASS
2	848.680	-35.68	-13.00	Vertical	N/A
3	894.270	-29.32	-13.00	Vertical	N/A
4	1697.239	-29.83	-13.00	Vertical	PASS
5	4244.599	-41.95	-13.00	Vertical	PASS
6	11064.794	-37.70	-13.00	Vertical	PASS

(GSM 850MHz, Channel = 251, Vertical)



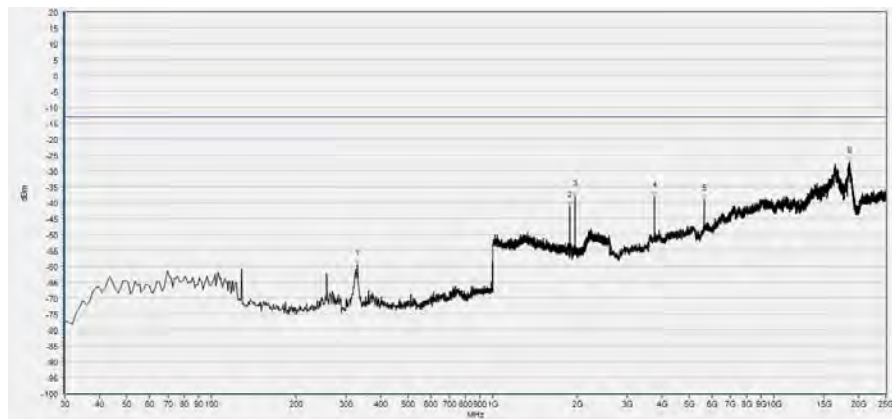
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	328.760	-58.87	-13.00	Horizontal	PASS
2	1850.260	-37.96	-13.00	Horizontal	N/A
3	1930.292	-39.50	-13.00	Horizontal	N/A
4	3699.836	-38.38	-13.00	Horizontal	PASS
5	5549.191	-40.39	-13.00	Horizontal	PASS
6	16457.938	-27.60	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 512, Horizontal)



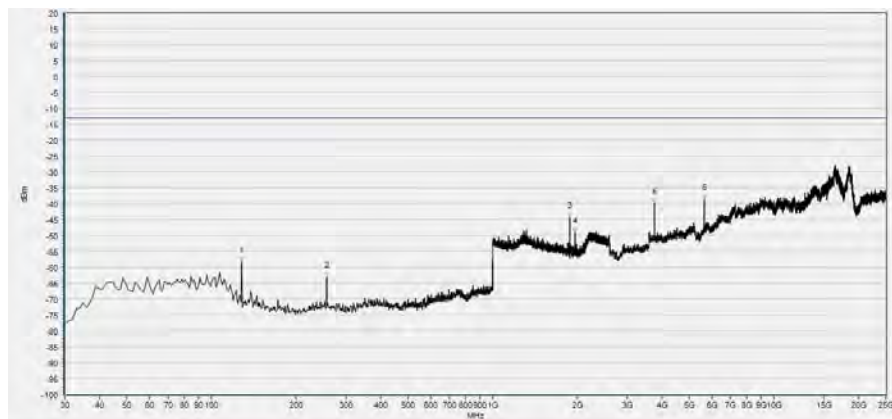
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.70	-13.00	Vertical	PASS
2	256.980	-64.53	-13.00	Vertical	PASS
3	1850.260	-44.99	-13.00	Vertical	N/A
4	3699.836	-42.69	-13.00	Vertical	PASS
5	5549.191	-41.14	-13.00	Vertical	PASS
6	16417.203	-28.65	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 512, Vertical)



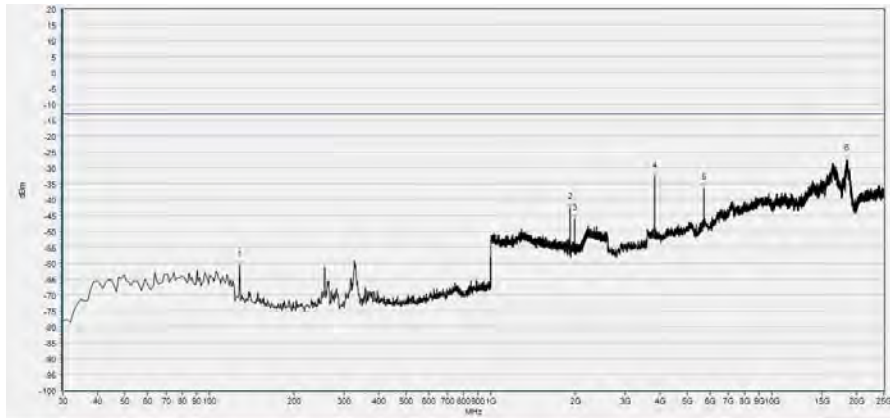
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	329.730	-59.54	-13.00	Horizontal	PASS
2	1879.712	-41.19	-13.00	Horizontal	N/A
3	1959.744	-38.25	-13.00	Horizontal	N/A
4	3760.938	-38.08	-13.00	Horizontal	PASS
5	5638.807	-39.11	-13.00	Horizontal	PASS
6	18559.847	-27.22	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 661, Horizontal)



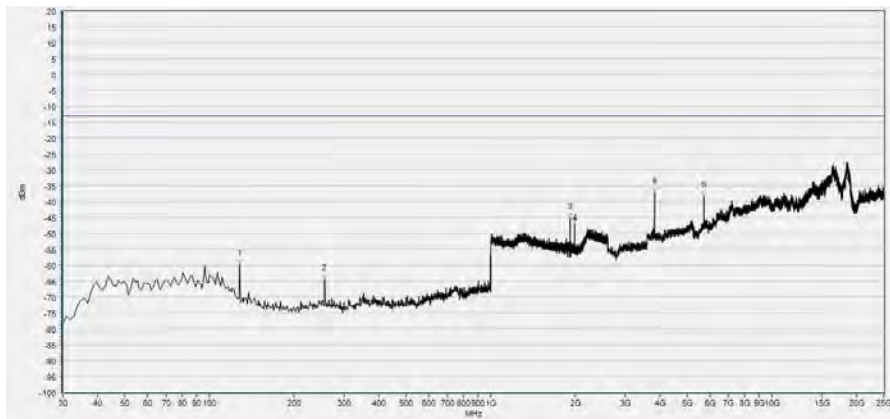
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.26	-13.00	Vertical	PASS
2	256.980	-63.06	-13.00	Vertical	PASS
3	1879.712	-44.34	-13.00	Vertical	N/A
4	1959.744	-49.14	-13.00	Vertical	N/A
5	3760.938	-39.89	-13.00	Vertical	PASS
6	5638.807	-38.47	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 661, Vertical)



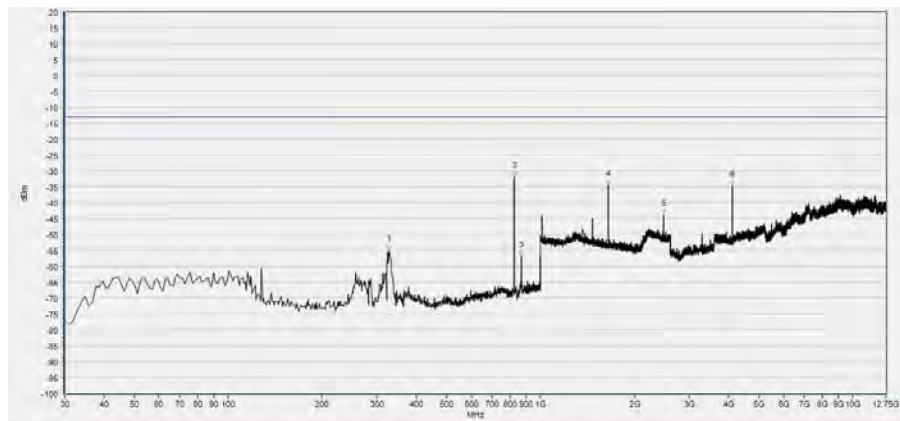
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.64	-13.00	Horizontal	PASS
2	1909.804	-42.70	-13.00	Horizontal	N/A
3	1989.836	-46.02	-13.00	Horizontal	N/A
4	3817.967	-32.96	-13.00	Horizontal	PASS
5	5728.423	-36.33	-13.00	Horizontal	PASS
6	18470.231	-27.50	-13.00	Horizontal	PASS

(GSM 1900MHz, Channel = 810, Horizontal)



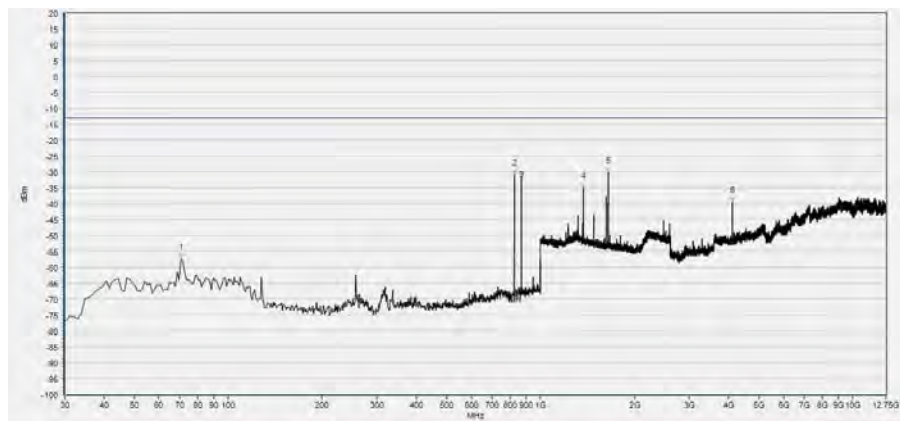
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.78	-13.00	Vertical	PASS
2	256.010	-64.56	-13.00	Vertical	PASS
3	1909.804	-45.18	-13.00	Vertical	N/A
4	1989.836	-46.86	-13.00	Vertical	N/A
5	3817.967	-37.07	-13.00	Vertical	PASS
6	5728.423	-38.40	-13.00	Vertical	PASS

(GSM 1900MHz, Channel = 810, Vertical)



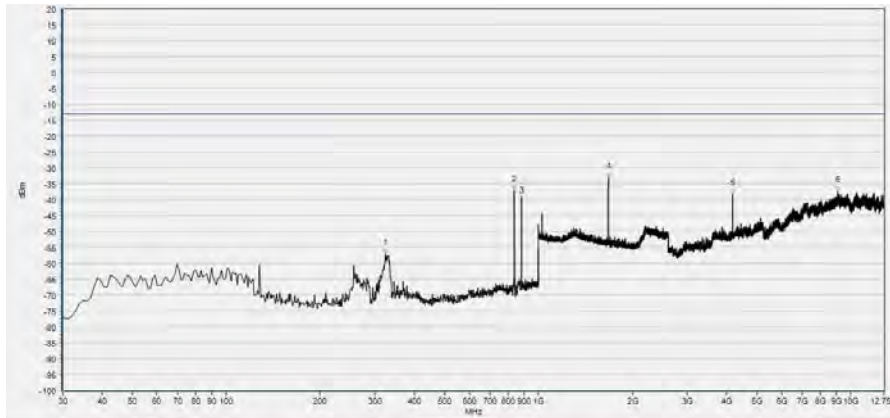
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	326.820	-55.06	-13.00	Horizontal	PASS
2	824.430	-32.59	-13.00	Horizontal	N/A
3	869.050	-57.01	-13.00	Horizontal	N/A
4	1648.579	-34.62	-13.00	Horizontal	PASS
5	2471.949	-43.76	-13.00	Horizontal	PASS
6	4120.931	-34.75	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 128, Horizontal)



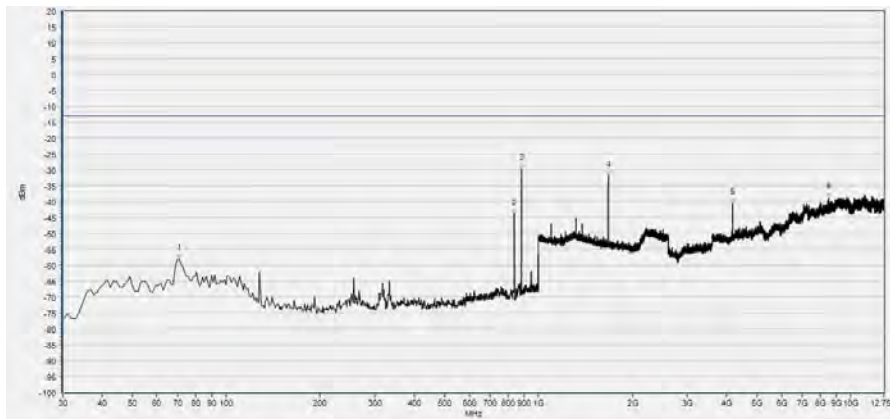
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	70.740	-57.44	-13.00	Vertical	PASS
2	824.430	-30.89	-13.00	Vertical	N/A
3	869.050	-31.55	-13.00	Vertical	N/A
4	1373.910	-35.00	-13.00	Vertical	PASS
5	1647.939	-30.35	-13.00	Vertical	PASS
6	4120.931	-39.48	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 128, Vertical)



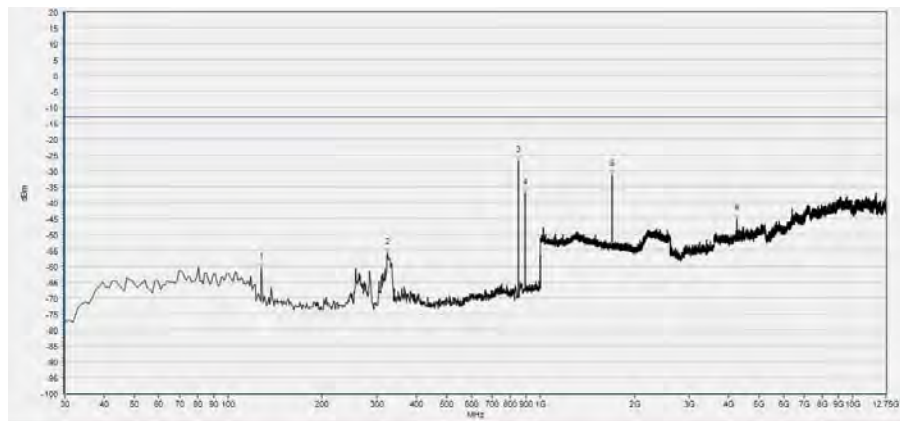
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	323.910	-57.12	-13.00	Horizontal	PASS
2	836.070	-37.17	-13.00	Horizontal	N/A
3	881.660	-38.97	-13.00	Horizontal	N/A
4	1672.909	-33.18	-13.00	Horizontal	PASS
5	4183.688	-38.41	-13.00	Horizontal	PASS
6	9089.798	-37.31	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 190, Horizontal)



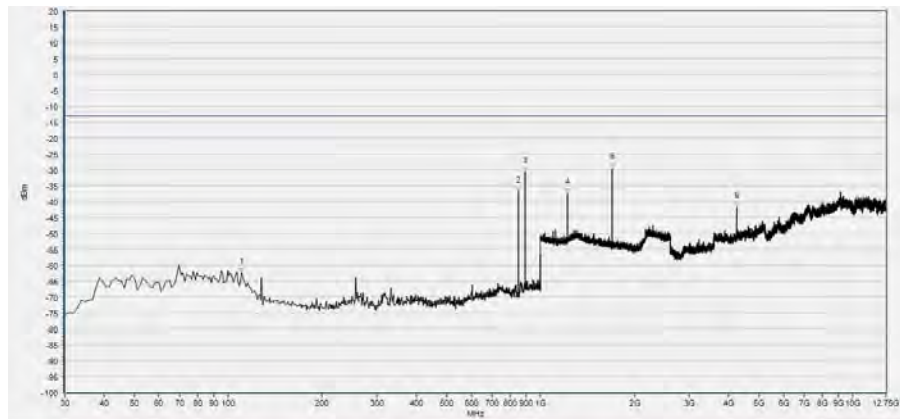
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	70.740	-58.07	-13.00	Vertical	PASS
2	836.070	-44.10	-13.00	Vertical	N/A
3	881.660	-29.71	-13.00	Vertical	N/A
4	1672.909	-31.94	-13.00	Vertical	PASS
5	4181.842	-40.45	-13.00	Vertical	PASS
6	8495.454	-38.72	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 190, Vertical)



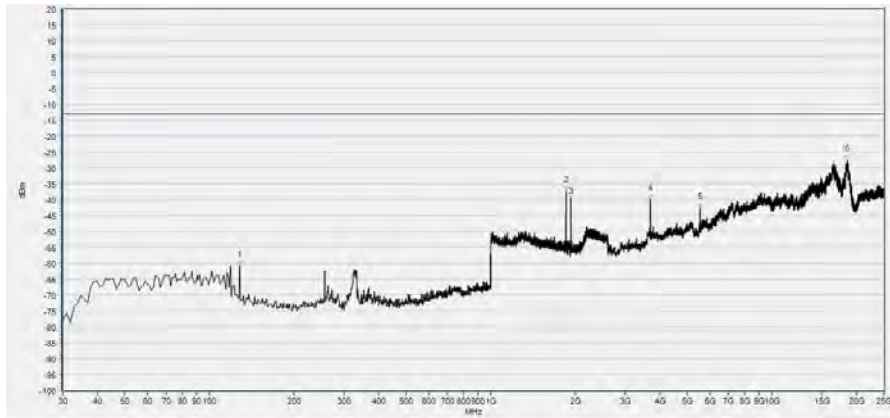
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.42	-13.00	Horizontal	PASS
2	324.880	-55.96	-13.00	Horizontal	PASS
3	848.680	-26.89	-13.00	Horizontal	N/A
4	893.300	-37.07	-13.00	Horizontal	N/A
5	1697.239	-31.21	-13.00	Horizontal	PASS
6	4244.599	-45.30	-13.00	Horizontal	PASS

(EDGE 850MHz, Channel = 251, Horizontal)



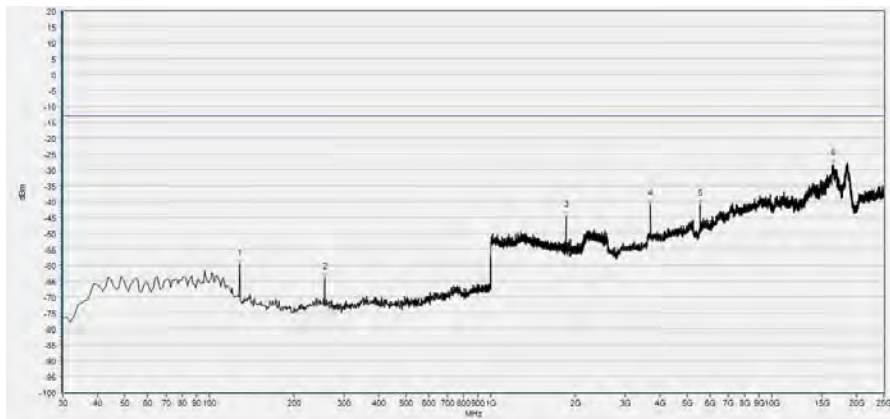
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	110.510	-62.39	-13.00	Vertical	PASS
2	848.680	-36.82	-13.00	Vertical	N/A
3	893.300	-30.79	-13.00	Vertical	N/A
4	1221.529	-37.48	-13.00	Vertical	PASS
5	1697.239	-29.57	-13.00	Vertical	PASS
6	4242.753	-41.60	-13.00	Vertical	PASS

(EDGE 850MHz, Channel = 251, Vertical)



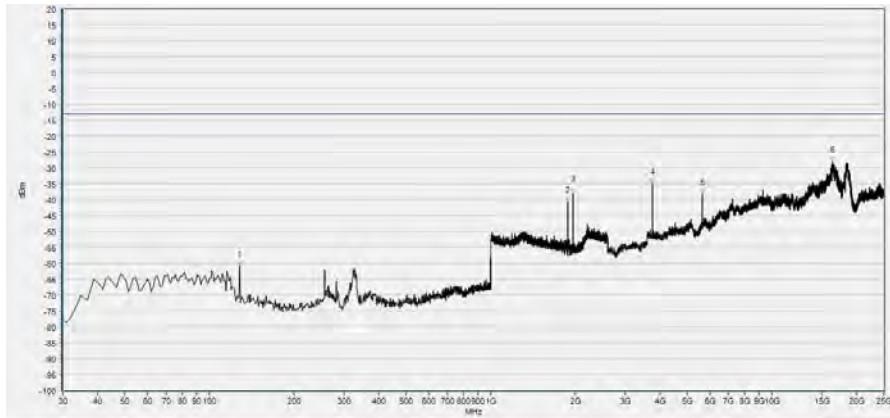
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.86	-13.00	Horizontal	PASS
2	1850.260	-37.28	-13.00	Horizontal	N/A
3	1929.652	-39.98	-13.00	Horizontal	N/A
4	3699.836	-39.91	-13.00	Horizontal	PASS
5	5549.191	-42.58	-13.00	Horizontal	PASS
6	18547.627	-27.64	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 512, Horizontal)



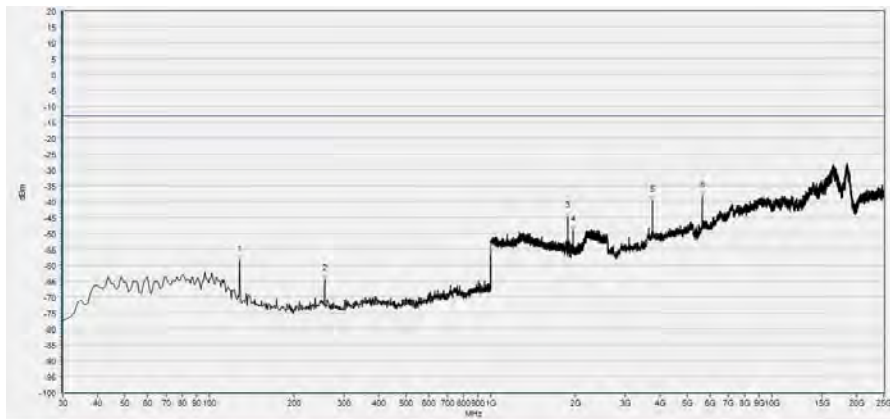
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.81	-13.00	Vertical	PASS
2	256.980	-64.16	-13.00	Vertical	PASS
3	1850.260	-44.49	-13.00	Vertical	N/A
4	3699.836	-40.91	-13.00	Vertical	PASS
5	5549.191	-40.95	-13.00	Vertical	PASS
6	16523.113	-28.45	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 512, Vertical)



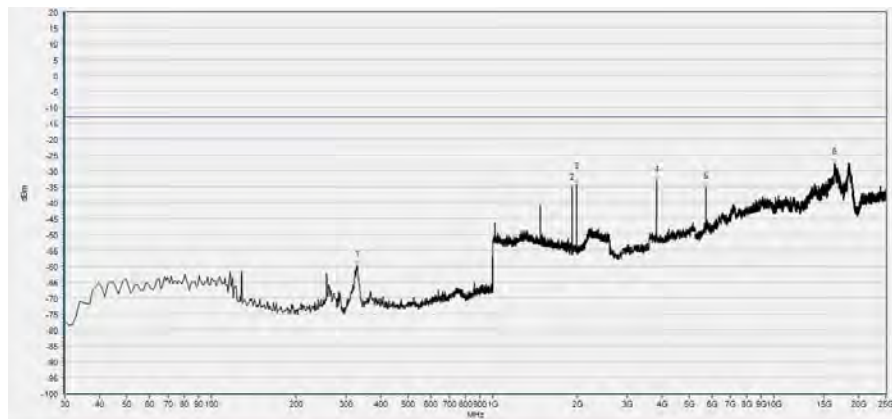
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-60.84	-13.00	Horizontal	PASS
2	1879.712	-40.81	-13.00	Horizontal	N/A
3	1959.744	-37.98	-13.00	Horizontal	N/A
4	3760.938	-35.04	-13.00	Horizontal	PASS
5	5638.807	-38.34	-13.00	Horizontal	PASS
6	16441.644	-28.12	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 661, Horizontal)



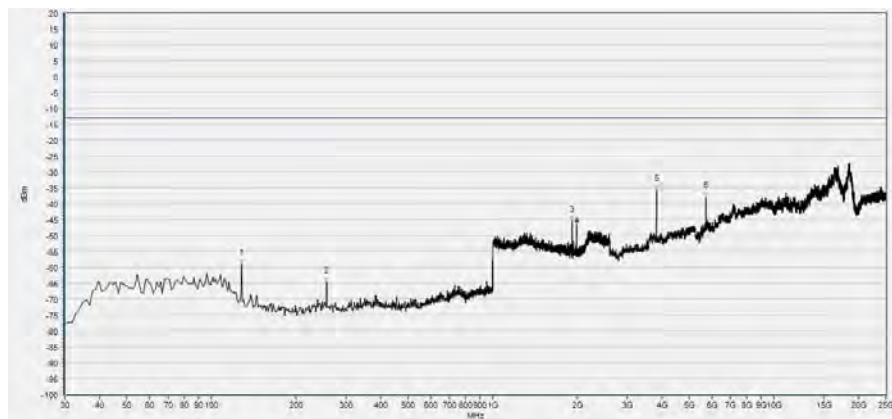
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.60	-13.00	Vertical	PASS
2	256.980	-64.55	-13.00	Vertical	PASS
3	1879.712	-44.83	-13.00	Vertical	N/A
4	1959.744	-48.94	-13.00	Vertical	N/A
5	3760.938	-39.87	-13.00	Vertical	PASS
6	5638.807	-38.30	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 661, Vertical)



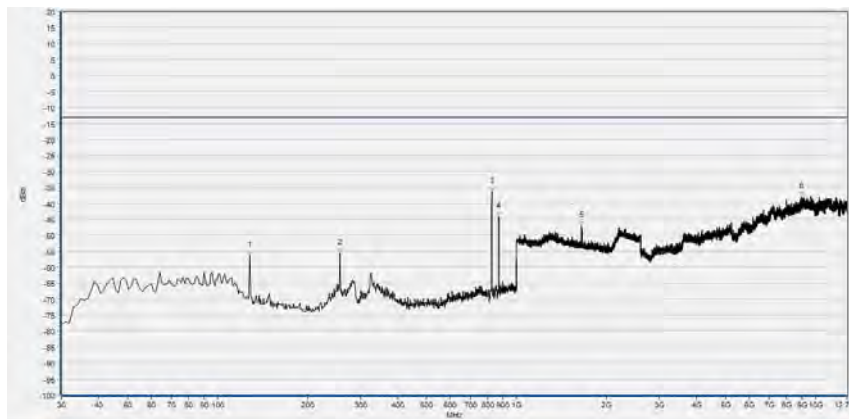
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	328.760	-59.87	-13.00	Horizontal	PASS
2	1909.164	-35.75	-13.00	Horizontal	N/A
3	1989.836	-34.34	-13.00	Horizontal	N/A
4	3817.967	-33.06	-13.00	Horizontal	PASS
5	5728.423	-35.20	-13.00	Horizontal	PASS
6	16404.983	-27.62	-13.00	Horizontal	PASS

(EDGE 1900MHz, Channel = 810, Horizontal)



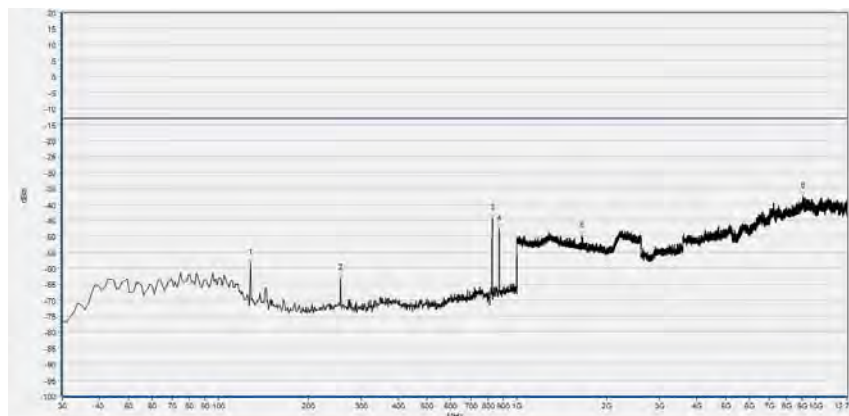
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.99	-13.00	Vertical	PASS
2	256.010	-64.67	-13.00	Vertical	PASS
3	1909.804	-45.46	-13.00	Vertical	N/A
4	1989.196	-46.33	-13.00	Vertical	N/A
5	3817.967	-35.83	-13.00	Vertical	PASS
6	5728.423	-37.79	-13.00	Vertical	PASS

(EDGE 1900MHz, Channel = 810, Vertical)



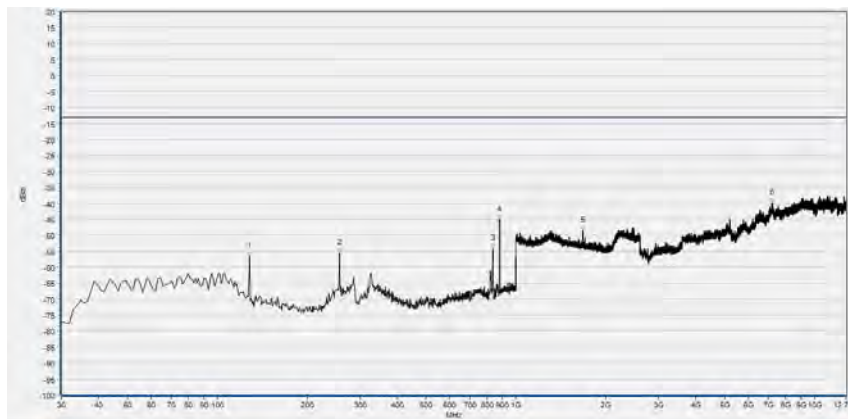
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-56.48	-13.00	Horizontal	PASS
2	256.010	-55.43	-13.00	Horizontal	PASS
3	826.370	-36.30	-13.00	Horizontal	PASS
4	870.990	-44.03	-13.00	Horizontal	PASS
5	1650.500	-46.94	-13.00	Horizontal	PASS
6	8966.130	-37.98	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4132, Horizontal)



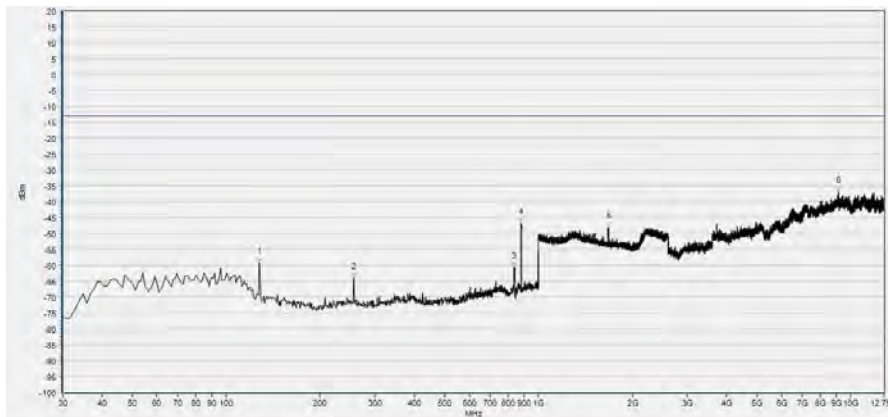
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.34	-13.00	Vertical	PASS
2	256.980	-63.05	-13.00	Vertical	PASS
3	827.340	-44.46	-13.00	Vertical	N/A
4	871.960	-47.43	-13.00	Vertical	N/A
5	1650.500	-49.90	-13.00	Vertical	PASS
6	9086.107	-37.52	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4132, Vertical)



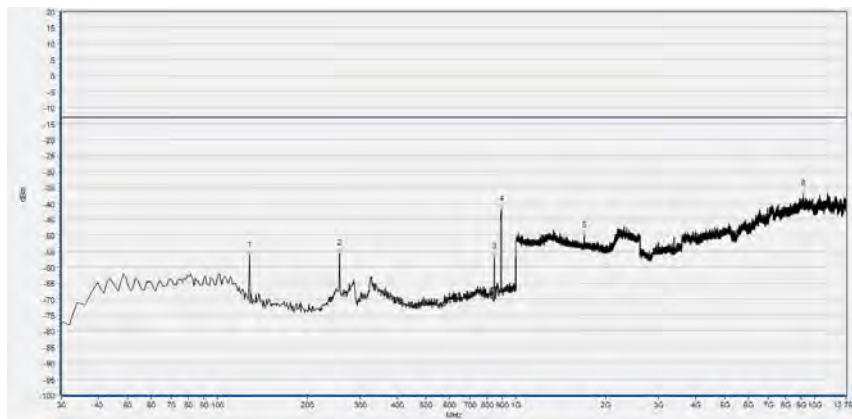
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-56.65	-13.00	Horizontal	PASS
2	256.010	-55.52	-13.00	Horizontal	PASS
3	838.010	-54.29	-13.00	Horizontal	N/A
4	879.720	-45.33	-13.00	Horizontal	N/A
5	1674.830	-48.70	-13.00	Horizontal	PASS
6	7179.405	-39.89	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4182, Horizontal)



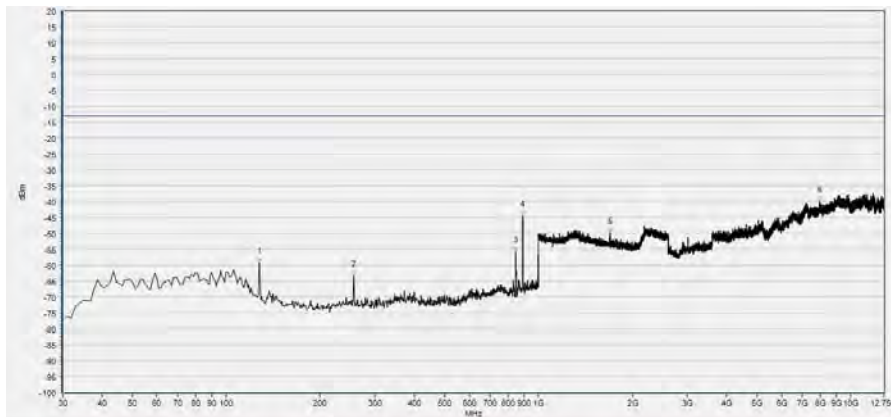
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.26	-13.00	Vertical	PASS
2	256.010	-64.05	-13.00	Vertical	PASS
3	836.070	-60.78	-13.00	Vertical	N/A
4	879.720	-46.99	-13.00	Vertical	N/A
5	1674.190	-48.07	-13.00	Vertical	PASS
6	9139.634	-36.79	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4182, Vertical)



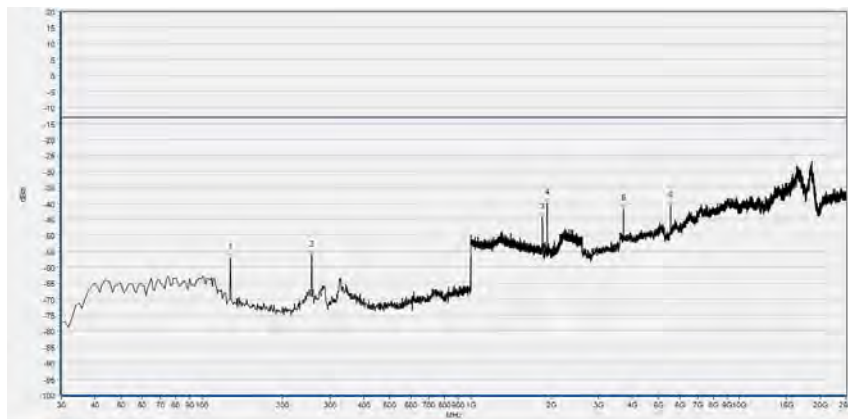
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-56.47	-13.00	Horizontal	PASS
2	256.010	-55.71	-13.00	Horizontal	PASS
3	845.770	-56.79	-13.00	Horizontal	N/A
4	892.330	-41.95	-13.00	Horizontal	N/A
5	1690.196	-50.08	-13.00	Horizontal	PASS
6	9174.704	-37.23	-13.00	Horizontal	PASS

(WCDMA Band V, Channel = 4233, Horizontal)



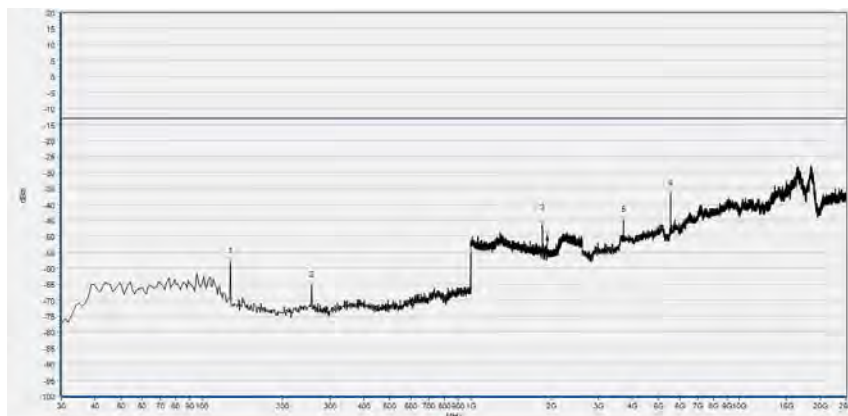
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.32	-13.00	Vertical	PASS
2	256.010	-63.41	-13.00	Vertical	PASS
3	844.800	-55.74	-13.00	Vertical	N/A
4	890.390	-44.49	-13.00	Vertical	N/A
5	1695.318	-49.71	-13.00	Vertical	PASS
6	7930.642	-40.10	-13.00	Vertical	PASS

(WCDMA Band V, Channel = 4233, Vertical)



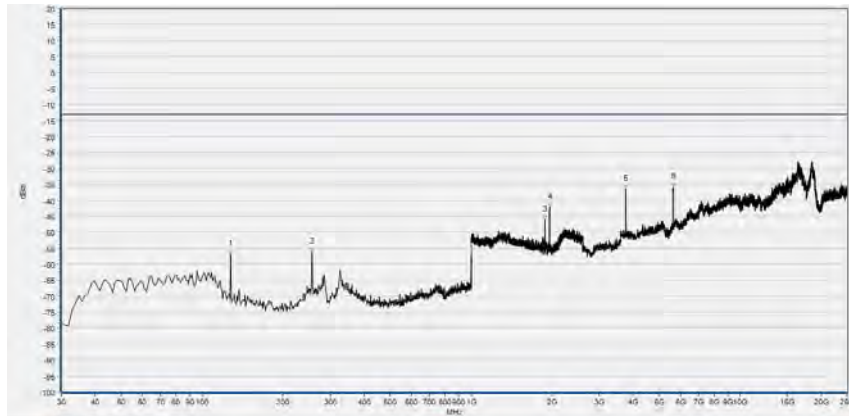
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-57.05	-13.00	Horizontal	PASS
2	256.980	-56.23	-13.00	Horizontal	PASS
3	1851.541	-44.46	-13.00	Horizontal	N/A
4	1933.493	-39.86	-13.00	Horizontal	N/A
5	3707.983	-41.59	-13.00	Horizontal	PASS
6	5553.264	-40.73	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9262, Horizontal)



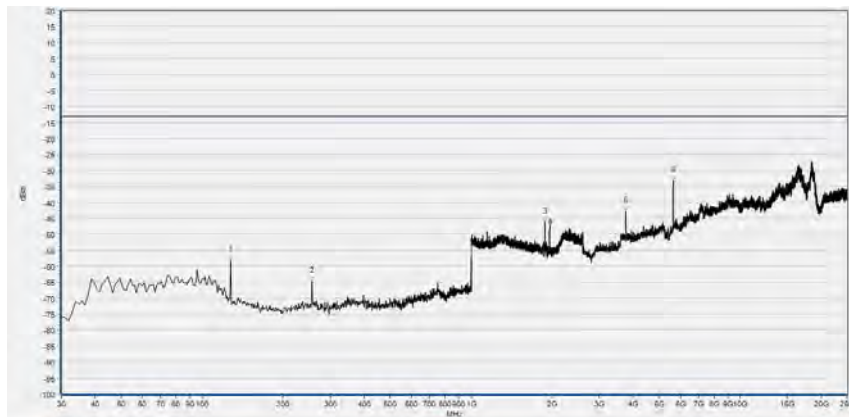
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-57.94	-13.00	Vertical	PASS
2	256.010	-65.28	-13.00	Vertical	PASS
3	1851.541	-46.26	-13.00	Vertical	N/A
4	1931.573	-49.45	-13.00	Vertical	N/A
5	3703.910	-45.09	-13.00	Vertical	PASS
6	5553.264	-36.87	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9262, Vertical)



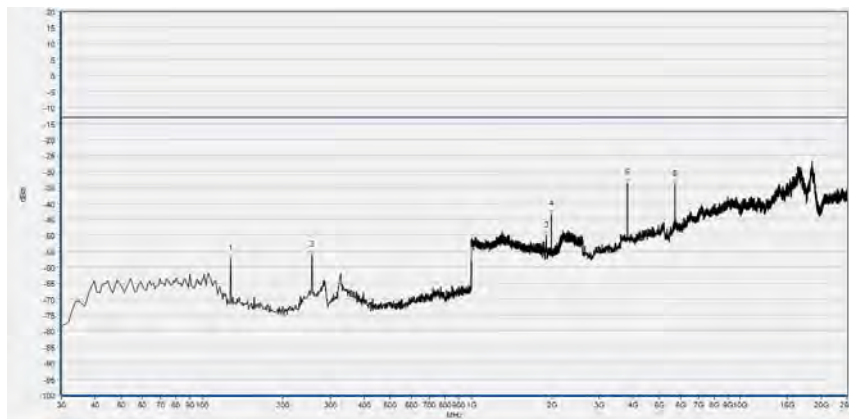
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-56.88	-13.00	Horizontal	PASS
2	256.010	-56.11	-13.00	Horizontal	PASS
3	1879.072	-46.17	-13.00	Horizontal	N/A
4	1959.744	-42.22	-13.00	Horizontal	N/A
5	3760.938	-36.49	-13.00	Horizontal	PASS
6	5642.881	-35.91	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9400, Horizontal)



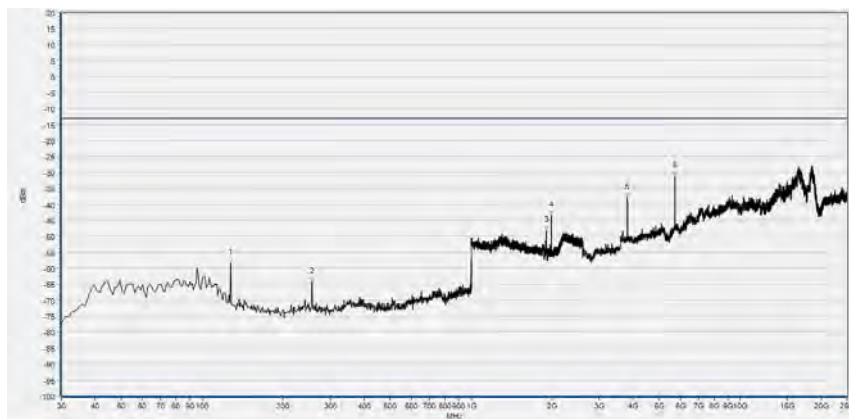
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.19	-13.00	Vertical	PASS
2	256.010	-64.69	-13.00	Vertical	PASS
3	1878.431	-46.09	-13.00	Vertical	N/A
4	1960.384	-46.80	-13.00	Vertical	N/A
5	3756.865	-42.86	-13.00	Vertical	PASS
6	5642.881	-33.24	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9400, Vertical)



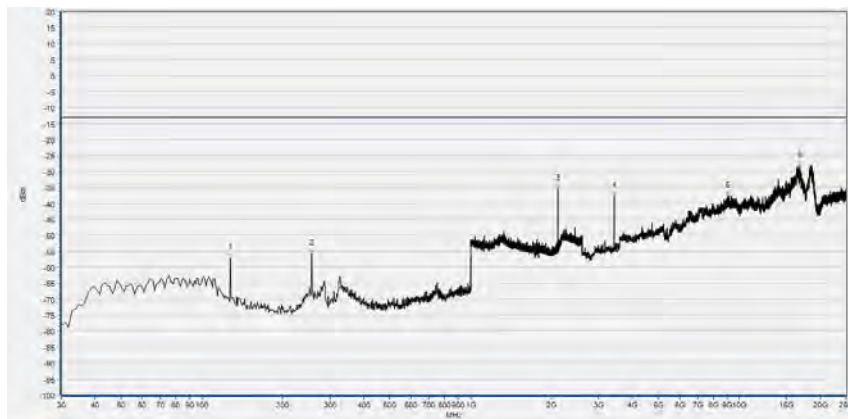
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-57.35	-13.00	Horizontal	PASS
2	256.010	-56.23	-13.00	Horizontal	PASS
3	1907.883	-50.21	-13.00	Horizontal	N/A
4	1986.635	-43.55	-13.00	Horizontal	N/A
5	3813.893	-33.74	-13.00	Horizontal	PASS
6	5724.350	-34.19	-13.00	Horizontal	PASS

(WCDMA Band II, Channel = 9538, Horizontal)



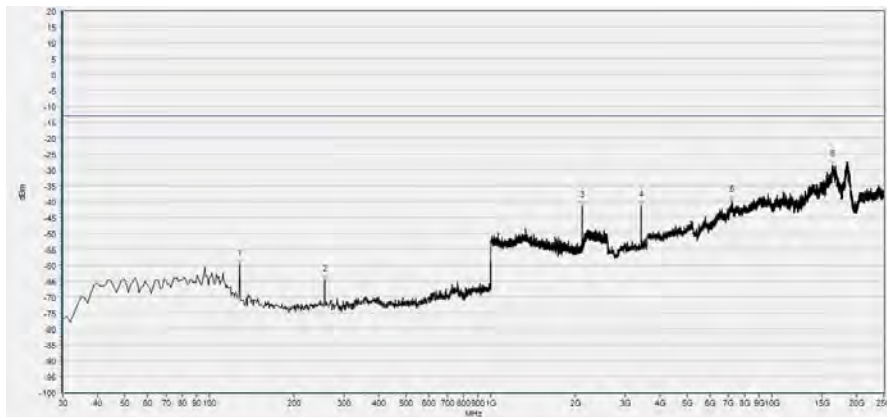
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.44	-13.00	Vertical	PASS
2	256.010	-64.35	-13.00	Vertical	PASS
3	1908.523	-48.07	-13.00	Vertical	N/A
4	1986.635	-43.51	-13.00	Vertical	N/A
5	3813.893	-37.99	-13.00	Vertical	PASS
6	5728.423	-31.11	-13.00	Vertical	PASS

(WCDMA Band II, Channel = 9538, Vertical)



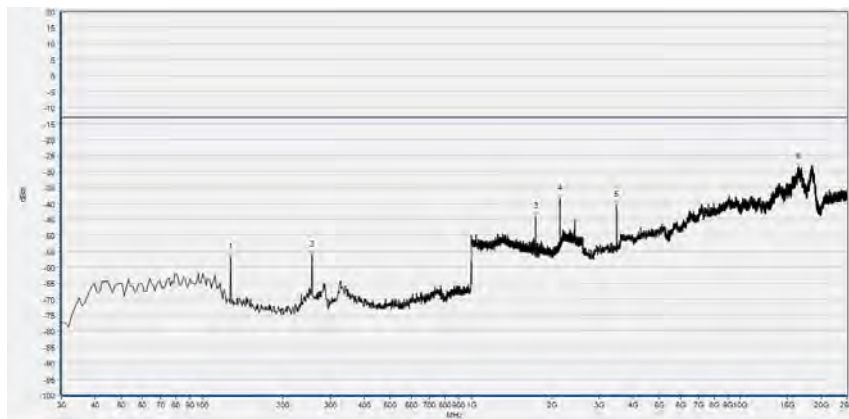
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-57.04	-13.00	Horizontal	PASS
2	256.010	-55.79	-13.00	Horizontal	PASS
3	2112.125	-35.35	-13.00	Horizontal	N/A
4	3426.914	-37.75	-13.00	Horizontal	PASS
5	9080.887	-37.70	-13.00	Horizontal	PASS
6	16820.476	-28.30	-13.00	Horizontal	PASS

(WCDMA Band IV, Channel = 1312, Horizontal)



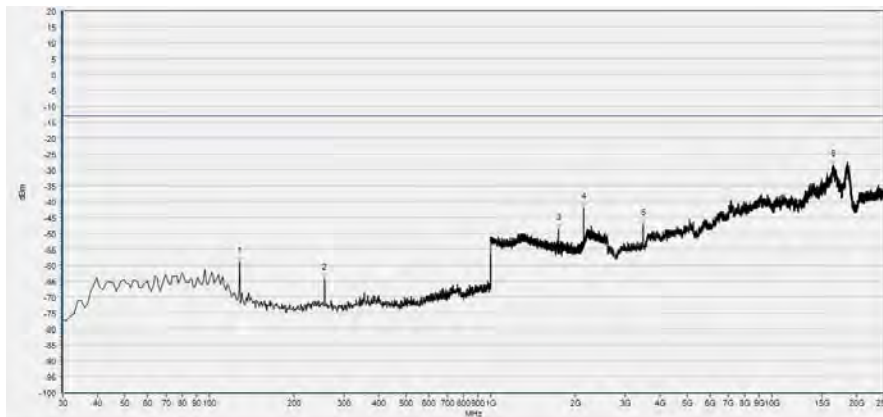
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.79	-13.00	Vertical	PASS
2	256.980	-64.71	-13.00	Vertical	PASS
3	2112.765	-41.41	-13.00	Vertical	N/A
4	3422.841	-41.38	-13.00	Vertical	PASS
5	7178.578	-39.65	-13.00	Vertical	PASS
6	16400.909	-28.67	-13.00	Vertical	PASS

(WCDMA Band IV, Channel = 1312, Vertical)



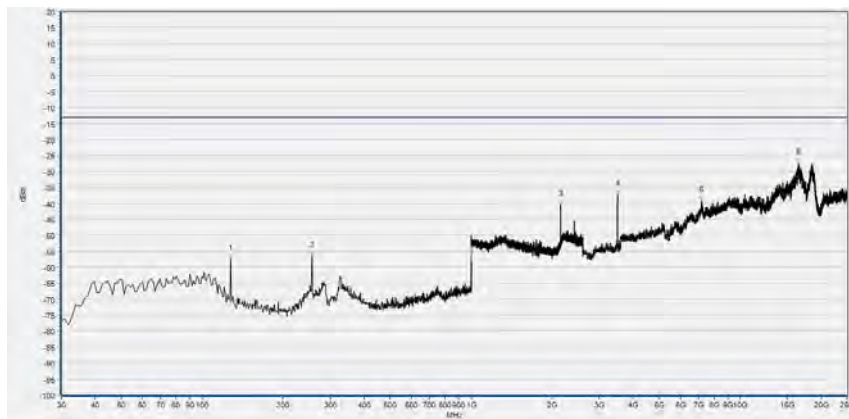
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-56.96	-13.00	Horizontal	PASS
2	256.010	-56.26	-13.00	Horizontal	PASS
3	1738.856	-44.18	-13.00	Horizontal	N/A
4	2139.656	-38.63	-13.00	Horizontal	N/A
5	3475.796	-40.46	-13.00	Horizontal	PASS
6	16470.158	-28.68	-13.00	Horizontal	PASS

(WCDMA Band IV, Channel = 1413, Horizontal)



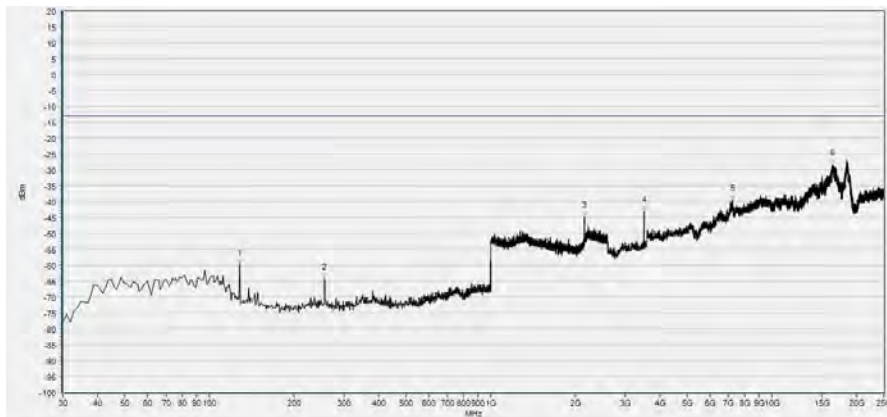
Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-58.98	-13.00	Vertical	PASS
2	256.010	-64.36	-13.00	Vertical	PASS
3	1738.215	-48.53	-13.00	Vertical	N/A
4	2139.656	-42.01	-13.00	Vertical	N/A
5	3479.869	-47.13	-13.00	Vertical	PASS
6	16502.746	-28.55	-13.00	Vertical	PASS

(WCDMA Band IV, Channel = 1413, Vertical)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-57.26	-13.00	Horizontal	PASS
2	256.010	-56.44	-13.00	Horizontal	PASS
3	2151.180	-40.42	-13.00	Horizontal	N/A
4	3504.310	-37.21	-13.00	Horizontal	PASS
5	7203.019	-39.22	-13.00	Horizontal	PASS
6	16527.187	-27.31	-13.00	Horizontal	PASS

(WCDMA Band IV, Channel = 1513, Horizontal)



Num	Freq(MHz)	PK	limit PK	Antenna	Verdict
1	127.970	-59.69	-13.00	Vertical	PASS
2	256.010	-64.23	-13.00	Vertical	PASS
3	2153.101	-44.71	-13.00	Vertical	N/A
4	3504.310	-43.02	-13.00	Vertical	PASS
5	7227.460	-39.45	-13.00	Vertical	PASS
6	16404.983	-28.33	-13.00	Vertical	PASS

(WCDMA Band IV, 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	$\pm 2.22\text{dB}$
Bandwidth	$\pm 5\%$
Conducted Spurious Emission	$\pm 2.77\text{ dB}$
Radiated Emission	$\pm 2.95\text{dB}$

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 Analyzer	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 II	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCGV-W Band IV	Wainwright	2018.12.01	2019.11.30
Notch Filter	N/A	WRCGV-W Band V	Wainwright	2018.12.01	2019.11.30
Anechoic Chamber	N/A	9m*6m*6m	CRT	2017.11.19	2020.11.18

————— END OF REPORT —————