TEST REPORT

APPLICANT	:	BLU Products, Inc.
PRODUCT NAME	:	Smart Phone
MODEL NAME	:	G74
BRAND NAME	:	BLU
FCC ID	:	YHLBLUWW74
STANDARD(S)	:	47 CFR Part 2 47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27 Subpart L
RECEIPT DATE	:	2024-04-22
TEST DATE	:	2024-04-26 to 2024-06-06
ISSUE DATE	:	2024-07-01

Edited by: Peng Mi (Rapporteur)

Approved by: Shen Junsheng (Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2024-07-01	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	BLU Products, Inc.
Applicant Address:	8600 NW 36th Street, Suite #300 Miami, FL 33166, USA
Manufacturer:	BLU Products, Inc.
Manufacturer Address:	8600 NW 36th Street, Suite #300 Miami, FL 33166, USA

1.2. Equipment Under Test (EUT) Description

Product Name:	Smart Phone	
Sample No.:	8#	
Hardware Version:	A660-MB-V2.0	
Software Version:	A660_20F_WS691C_BLU_G1030_V14.0.02.00_GENERIC_11-04-2024_2241	
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 16QAM Modulation	
Operating Frequency Range:	GSM 850MHz	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	GSM 1900MHz	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
	WCDMA Band V	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	WCDMA Band IV	Tx: 1710MHz-1755MHz
		Rx: 2110MHz-2155MHz
	WCDMA Band II	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
Antenna Type:	PIFA Antenna	
Antenna Gain:	GSM 850:	-2.90dBi
	GSM1900:	-1.70dBi

Antenna Gain:	WCDMA Band V:	-2.90dBi
	WCDMA Band IV:	-1.90dBi
	WCDMA Band II:	-1.70dBi
Accessory Information:	Battery	
	Brand Name:	BLU
	Model No.:	C936548500P
	Serial No.:	N/A
	Capacity:	5000mAh
	Rated Voltage:	3.87V
	Charge Limit:	4.45V
	Manufacturer:	Shenzhen Aerospace Electronic Co.,Ltd.
	AC Adapter	
	Brand Name:	BLU
	Model No.:	US-DC-2000
	Serial No.:	N/A
	Rated Output:	5V⎓3000mA or 9V⎓2000mA or 12V⎓1500mA
	Rated Input:	100-240V~50/60Hz, 0.6A
	Manufacturer:	SHENZHEN EAST SUN ELECTRONIC CO.. LTD

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), 189 (836.4MHz) 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 IV band used by the EUT can be represented with the formula F(n)=1712.4+0.2*(n-1312), 1312<=n<=1513; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1413 (1732.6MHz) and 1513 (1752.6MHz).

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<=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 6: All test modes and data rates were considered and evaluated respectively by performing full test. Test modes are chosen to be reported as the worst case below:

GSM mode and EDGE mode for GSM 850;

GSM mode and EDGE mode for GSM 1900;

WCDMA mode for WCDMA band V;

WCDMA mode for WCDMA band IV;

WCDMA mode for WCDMA band II;

Note 7: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Maximum E.R.P./E.I.R.P. and Emission Designator

Test Mode	Maximum E.R.P./E.I.R.P. (W)	Emission Designator
GSM850(GSM)	0.525	247KGXW
GSM850(EDGE)	0.113	246KG7W
GSM1900(GSM)	0.592	245KGXW
GSM1900(EDGE)	0.286	249KG7W
WCDMA Band V	0.064	4M17F9W
WCDMA Band IV	0.122	4M17F9W
WCDMA Band II	0.129	4M16F9W

1.4. 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	Method determination/ Remark
1	2.1046	Conducted RF Output Power	May 06, 2024	Yu Zhizheng	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	May 27, 2024	Gan Jing	PASS	No deviation
3	2.1049	Occupied Bandwidth	May 27, 2024	Gan Jing	PASS	No deviation
4	2.1055, 22.355, 24.235, 27.54	Frequency Stability	May 27, 2024	Gan Jing	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a), 27.53(h)	Conducted Out of Band Emissions	May 27, 2024	Gan Jing	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a), 27.53(h)	Band Edge	May 27, 2024	Gan Jing	PASS	No deviation
7	22.913(a), 24.232(c) 27.50(d)	Transmitter Radiated Power (E.I.P.R./E.R.P.)	May 27, 2024	Gan Jing	PASS	No deviation
8	2.1051, 22.917(a),	Radiated Out of Band Emissions	May 11,2024 to	Li Hanbin	PASS	No deviation

	24.238(a), 27.53(h)		Jun. 06, 2024			

Note 1: The tests were performed according to the method of measurements prescribed in KDB971168 D01 v03r01 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 24.5dB contains two parts that cable loss 14.5dB and Attenuator 10dB.
Note 3: Additions to, deviation, or exclusions from the method shall be judged in the "method determination" column of add, deviate or exclude from the specific method shall be explained in the "Remark" of the above table.
Note 4: When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% confidence intervals.

1.5. 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

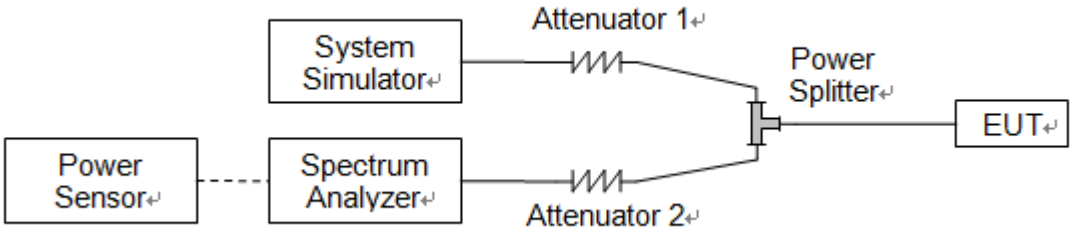
2.1. Conducted RF Output Power

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

GSM850	Average Power (dBm)		
TX Channel	**128**	**189**	**251**
Frequency (MHz)	**824.2**	**836.4**	**848.8**
GSM 1 Tx slot	32.09	32.18	32.11
GPRS 1 Tx slot	32.15	32.25	32.19
GPRS 2 Tx slots	30.11	30.13	30.01
GPRS 3 Tx slots	28.23	28.21	28.04
GPRS 4 Tx slots	26.08	26.03	25.93
EDGE 1 Tx slot	25.48	25.58	25.24
EDGE 2 Tx slots	24.29	24.34	24.20
EDGE 3 Tx slots	22.11	22.09	22.01
EDGE 4 Tx slots	19.32	19.41	19.23

GSM1900	Average Power (dBm)		
TX Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM 1 Tx slot	29.09	29.11	29.03
GPRS 1 Tx slot	29.38	29.42	29.24
GPRS 2 Tx slots	27.05	27.22	27.06
GPRS 3 Tx slots	25.42	25.57	25.38
GPRS 4 Tx slots	23.31	23.55	23.47
EDGE 1 Tx slot	26.11	26.26	26.13
EDGE 2 Tx slots	24.03	24.13	24.00
EDGE 3 Tx slots	21.86	21.86	21.73
EDGE 4 Tx slots	19.53	19.63	19.50

WCDMA Band V	Average Power (dBm)		
TX Channel	**4132**	**4182**	**4233**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
RMC 12.2Kbps	23.08	23.11	22.89
HSDPA Subtest-1	21.69	21.82	21.72
HSDPA Subtest-2	21.59	21.68	21.55
HSDPA Subtest-3	21.39	21.45	21.48
HSDPA Subtest-4	21.20	21.33	21.38
HSUPA Subtest-1	22.54	22.58	22.57
HSUPA Subtest-2	22.44	22.51	22.50
HSUPA Subtest-3	22.54	22.59	22.49
HSUPA Subtest-4	22.41	22.47	22.51
HSUPA Subtest-5	22.50	22.59	22.53
HSPA+ (16QAM) Subtest-1	22.66	22.71	22.61

WCDMA Band IV	Average Power (dBm)		
TX Channel	**1312**	**1413**	**1513**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**
RMC 12.2Kbps	22.67	22.77	22.59
HSDPA Subtest-1	21.79	21.79	21.70
HSDPA Subtest-2	21.90	21.87	21.77
HSDPA Subtest-3	21.90	21.87	21.76
HSDPA Subtest-4	21.89	21.89	21.79
HSUPA Subtest-1	21.77	21.86	21.80
HSUPA Subtest-2	21.76	21.90	21.77
HSUPA Subtest-3	21.83	21.93	21.82
HSUPA Subtest-4	21.74	21.93	21.72
HSUPA Subtest-5	21.76	21.83	21.82
HSPA+ (16QAM) Subtest-1	21.96	21.95	21.84

WCDMA Band II	Average Power (dBm)		
TX Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**
RMC 12.2Kbps	22.63	22.81	22.79
HSDPA Subtest-1	22.11	21.71	22.01
HSDPA Subtest-2	21.88	21.45	21.76
HSDPA Subtest-3	21.23	20.75	21.12
HSDPA Subtest-4	21.24	21.33	21.67
HSUPA Subtest-1	22.18	21.73	22.05
HSUPA Subtest-2	22.20	21.78	21.96
HSUPA Subtest-3	22.28	21.95	22.06
HSUPA Subtest-4	22.15	21.68	21.84
HSUPA Subtest-5	22.25	21.80	22.04
HSPA+ (16QAM) Subtest-1	22.49	22.01	22.19

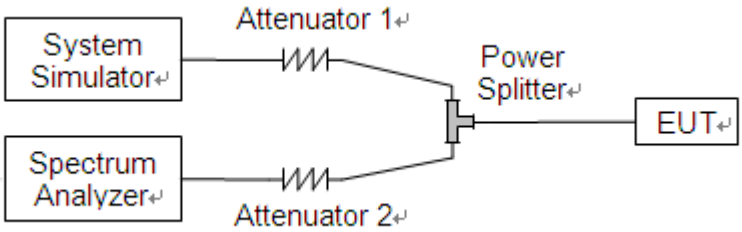
2.2. Peak to Average Ratio

2.2.1.Requirement

According to FCC 24.232(d) and 27.50(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%.

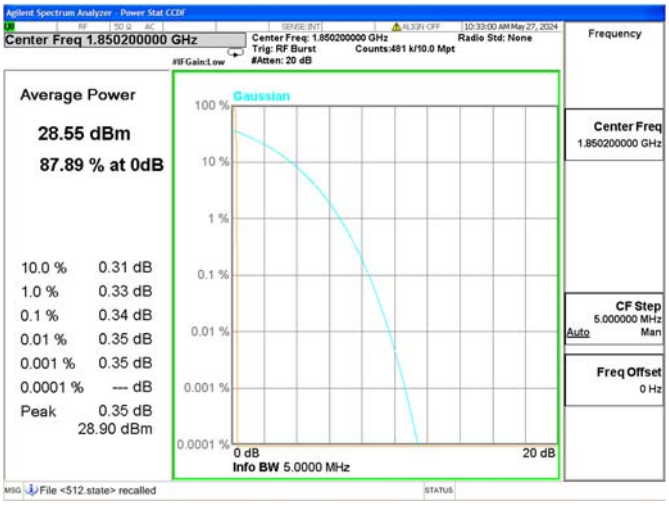
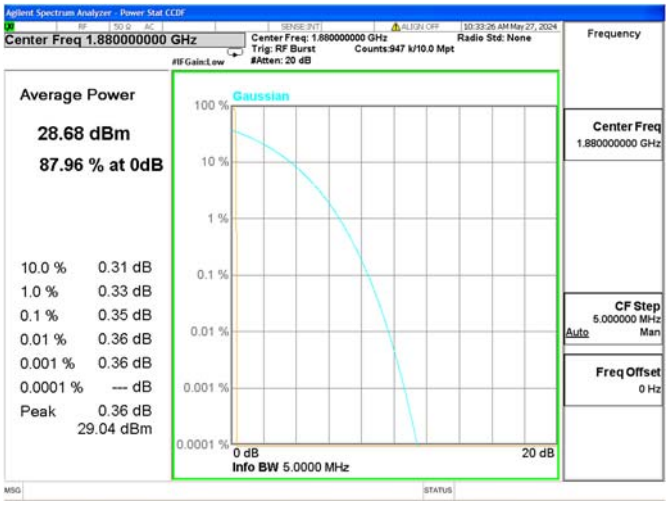
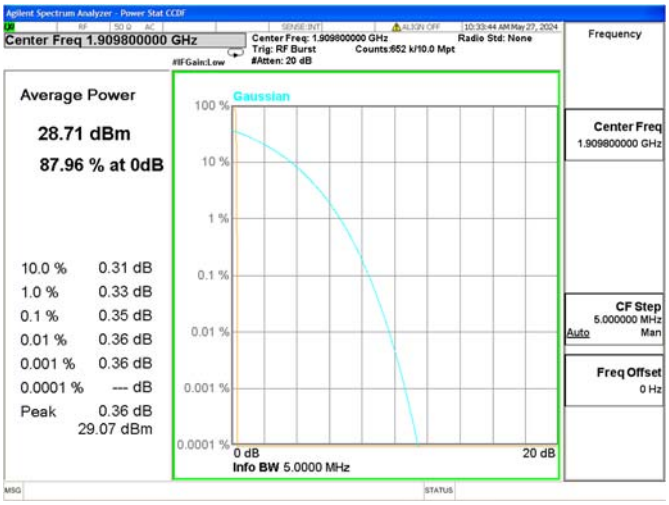
2.2.4.Test Result

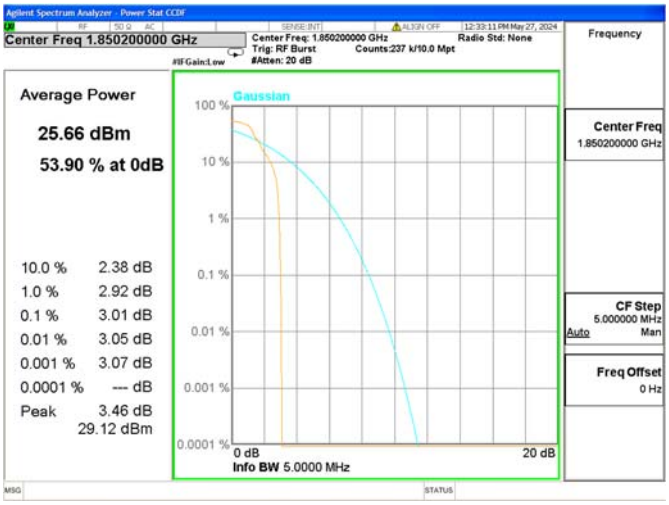
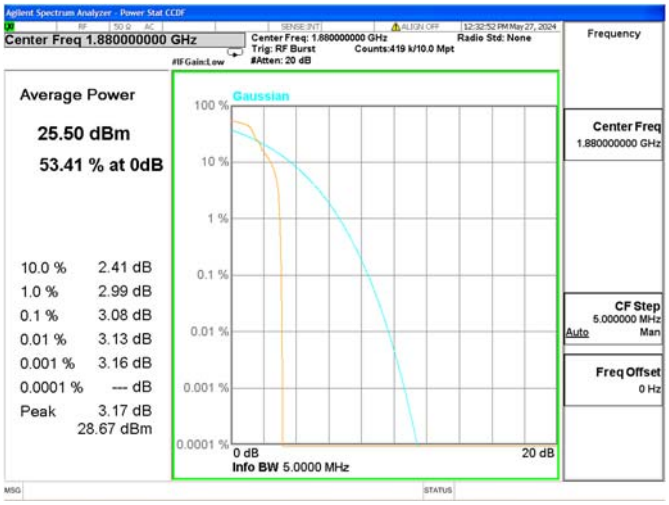
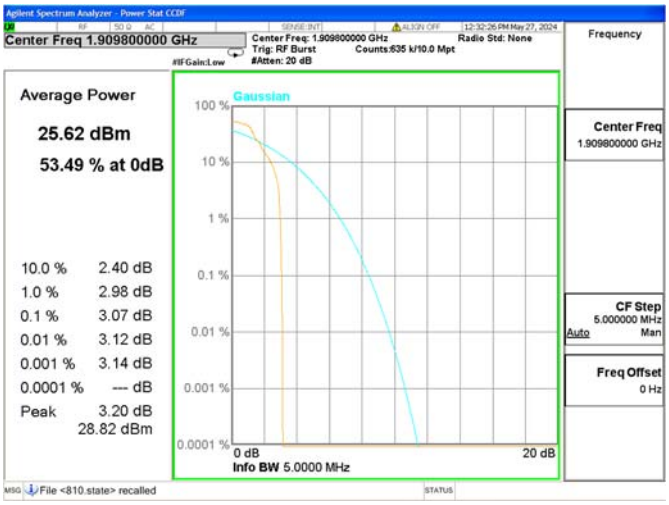
A. Test Verdict:

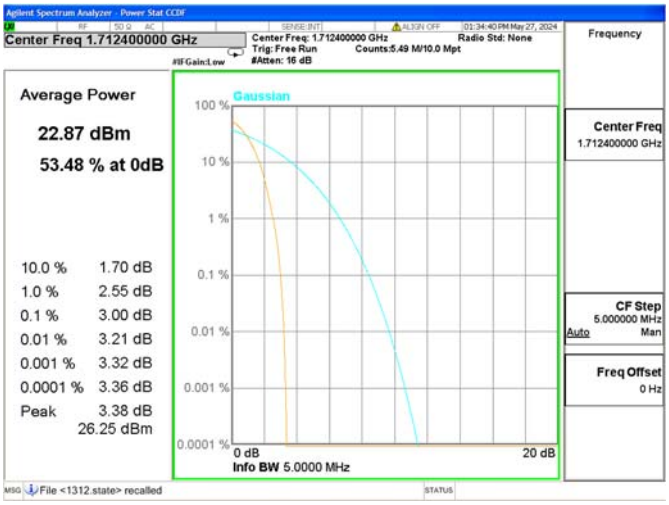
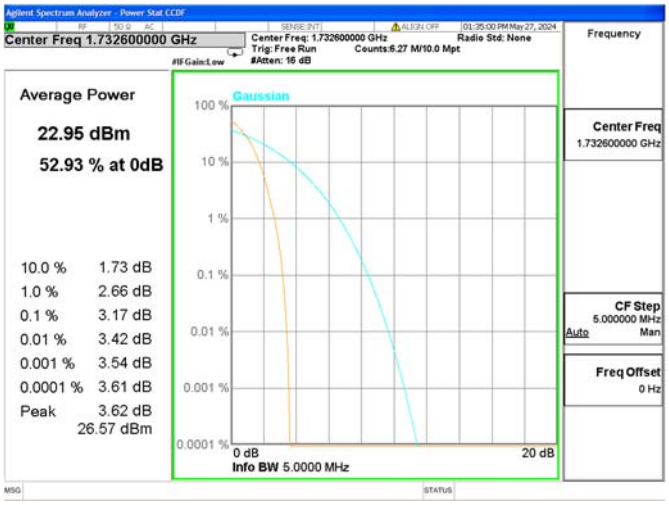
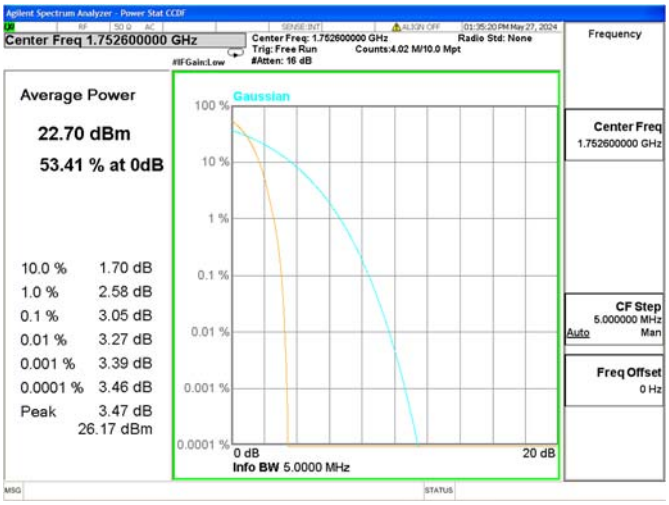
GSM1900					
Mode	**Channel**	**Frequency (MHz)**	**Peak to Average ratio (dB)**	**Limit (dB)**	**Verdict**
GSM	512	1850.2	0.34	13	PASS
	661	1880.0	0.35		PASS
	810	1909.8	0.35		PASS
EDGE	512	1850.2	3.01		PASS
	661	1880.0	3.08		PASS
	810	1909.8	3.07		PASS

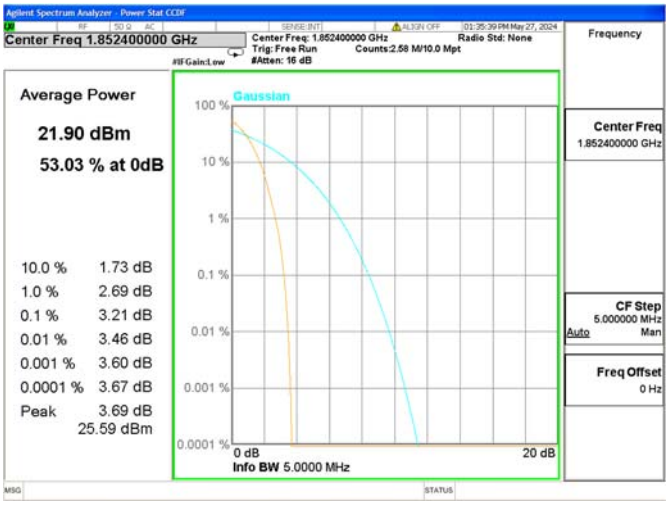
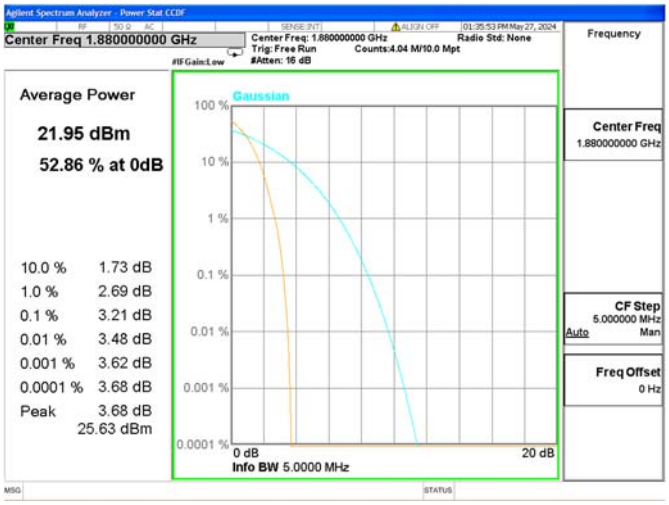
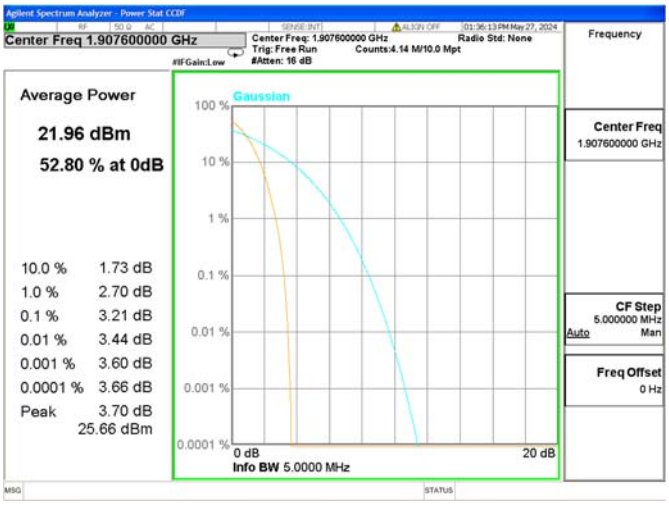
WCDMA Band IV					
Mode	**Channel**	**Frequency (MHz)**	**Peak to Average ratio (dB)**	**Limit (dB)**	**Verdict**
WCDMA	1312	1712.4	3.00	13	PASS
	1413	1732.6	3.17		PASS
	1513	1752.6	3.05		PASS

WCDMA Band II					
Mode	**Channel**	**Frequency (MHz)**	**Peak to Average ratio (dB)**	**Limit (dB)**	**Verdict**
WCDMA	9262	1852.4	3.21	13	PASS
	9400	1880.0	3.21		PASS
	9538	1907.6	3.21		PASS

GSM1900(GSM), CH512, 1850.2MHz	GSM1900(GSM), CH661, 1880.0MHz
	
GSM1900(GSM), CH810, 1909.8MHz	
	

GSM1900(EDGE), CH512, 1850.2MHz	GSM1900(EDGE), CH661, 1880.0MHz
	
GSM1900(EDGE), CH810, 1909.8MHz	
	

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

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

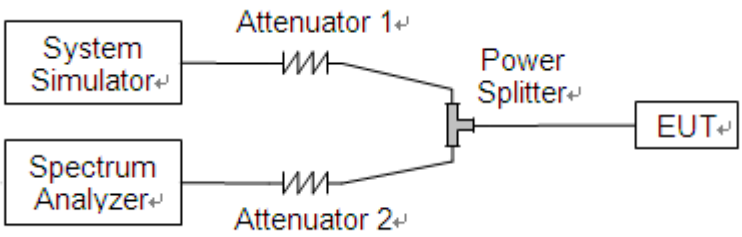
2.3. Occupied Bandwidth

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

GSM850				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (kHz)**	**26dB Bandwidth (kHz)**
GSM	128	824.2	240.75	300.8
	189	836.4	245.04	310.8
	251	848.8	246.59	308.9
EDGE	128	824.2	246.07	311.7
	189	836.4	246.17	319.8
	251	848.8	235.16	293.0

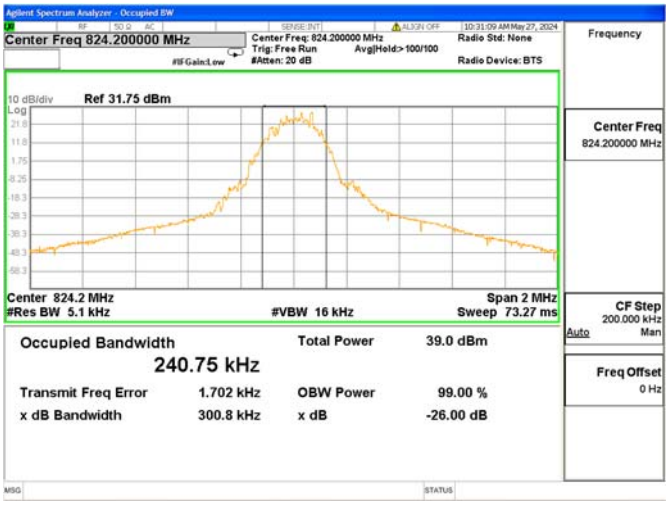
GSM1900				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (kHz)**	**26dB Bandwidth (kHz)**
GSM	512	1850.2	244.51	304.7
	661	1880.0	243.40	304.4
	810	1909.8	243.38	311.7
EDGE	512	1850.2	249.12	312.1
	661	1880.0	239.55	317.2
	810	1909.8	245.55	320.7

WCDMA Band V				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**	**26dB Bandwidth (MHz)**
WCDMA	4132	826.4	4.17	4.69
	4182	836.4	4.16	4.68
	4233	846.6	4.15	4.65

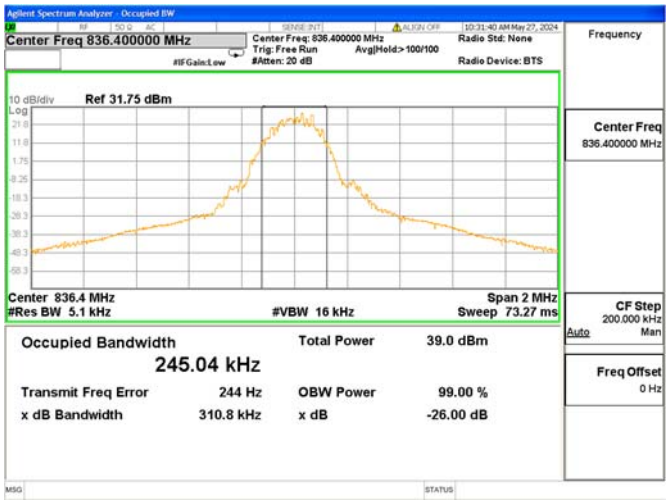
WCDMA Band IV				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**	**26dB Bandwidth (MHz)**
WCDMA	1312	1712.4	4.17	4.68
	1413	1732.6	4.17	4.68
	1513	1752.6	4.16	4.67

WCDMA Band II				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**	**26dB Bandwidth (MHz)**
WCDMA	9262	1852.4	4.15	4.68
	9400	1880.0	4.16	4.68
	9538	1907.6	4.13	4.67

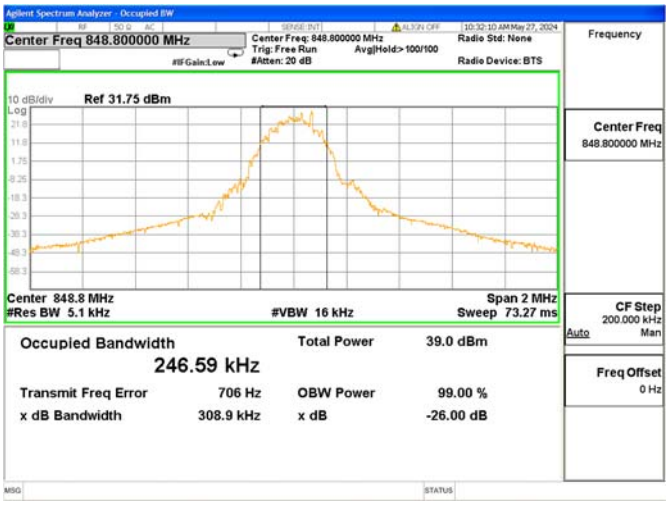
GSM850(GSM), CH128, 824.2MHz



GSM850(GSM), CH189, 836.4MHz

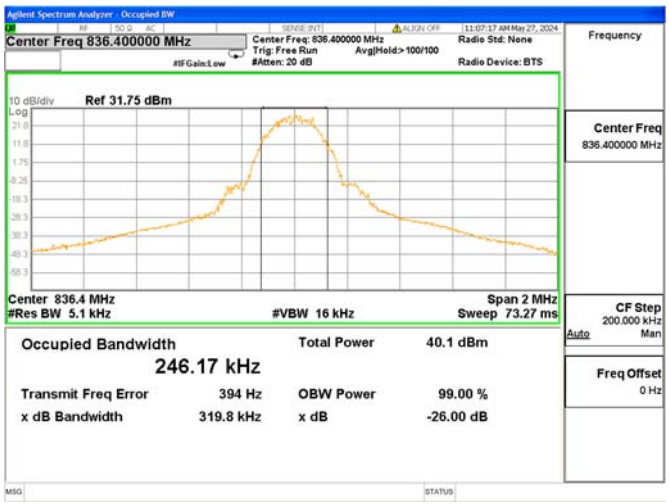


GSM850(GSM), CH251, 848.8MHz

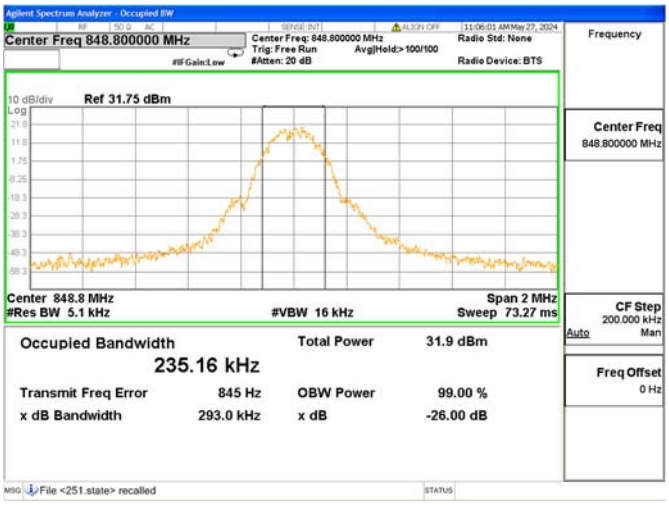


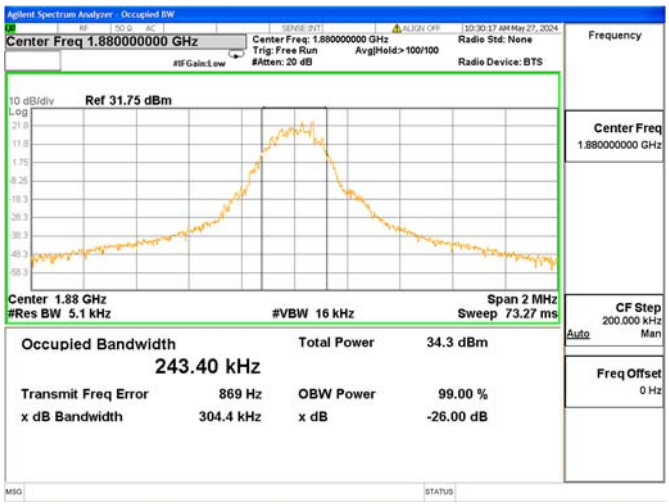
GSM850(EDGE), CH128, 824.2MHz

GSM850(EDGE), CH189, 836.4MHz

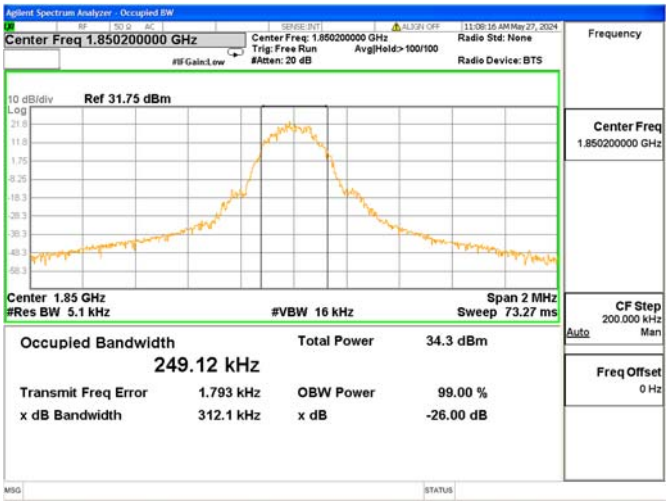


GSM850(EDGE), CH251, 848.8MHz

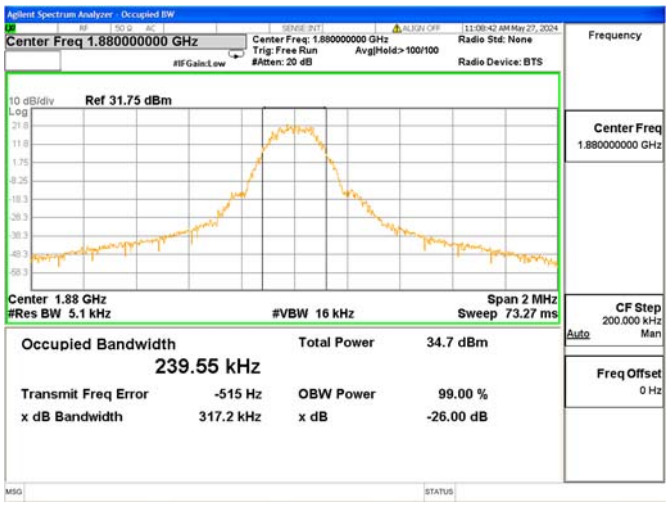


GSM1900(GSM), CH512, 1850.2MHz	GSM1900(GSM), CH661, 1880.0MHz
	
GSM1900(GSM), CH810, 1909.8MHz	

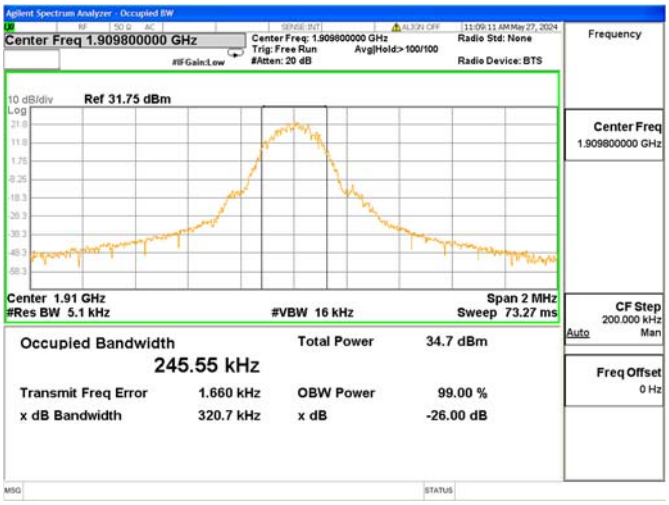
GSM1900(EDGE), CH512, 1850.2MHz



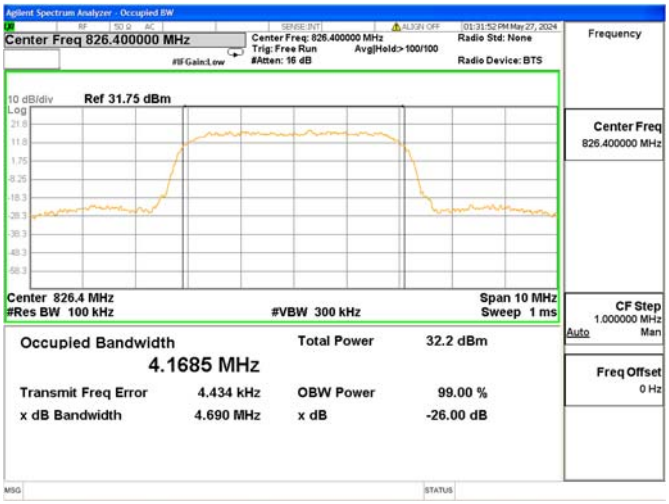
GSM1900(EDGE), CH661, 1880.0MHz



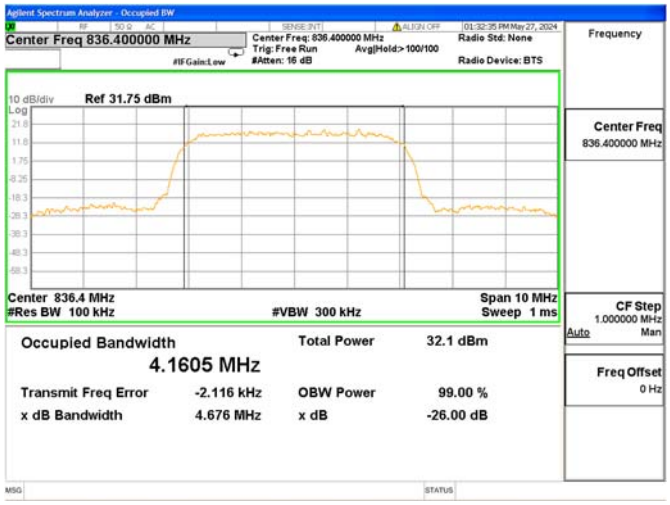
GSM1900(EDGE), CH810, 1909.8MHz



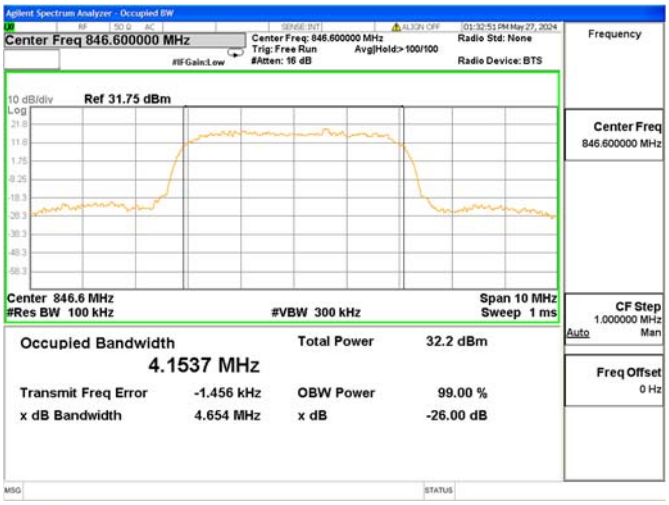
WCDMA Band V, CH4132, 826.4MHz



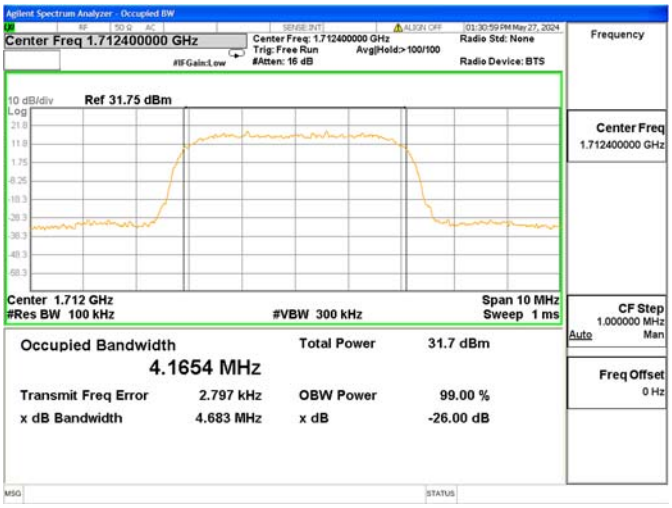
WCDMA Band V, CH4182, 836.4MHz



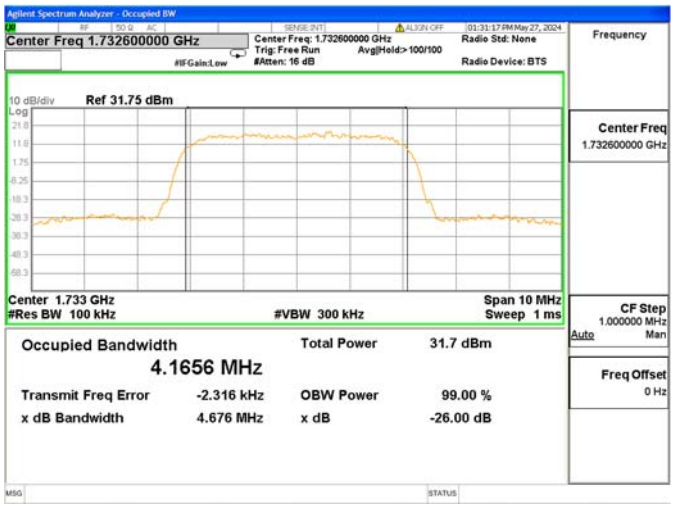
WCDMA Band V, CH4233, 846.6MHz



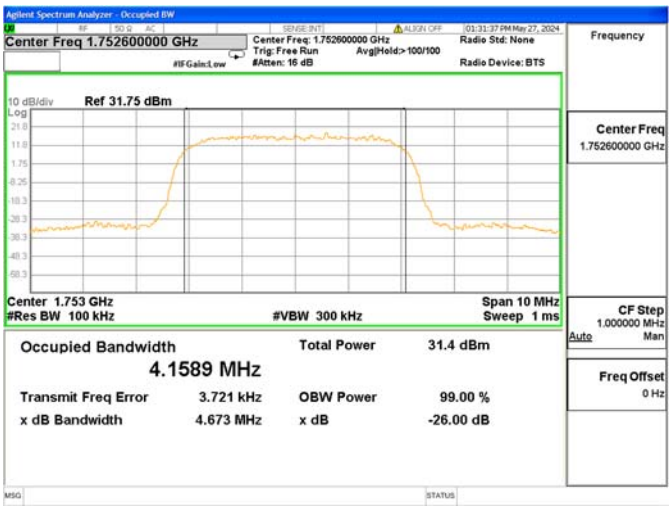
WCDMA Band IV, CH1312, 1712.4MHz



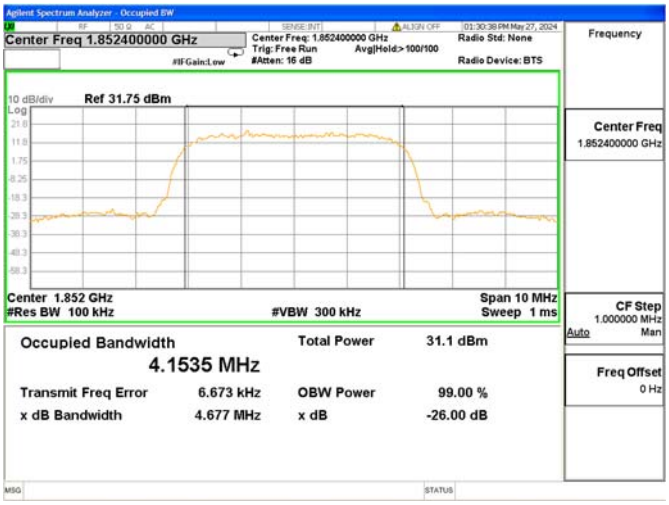
WCDMA Band IV, CH1413, 1732.6MHz



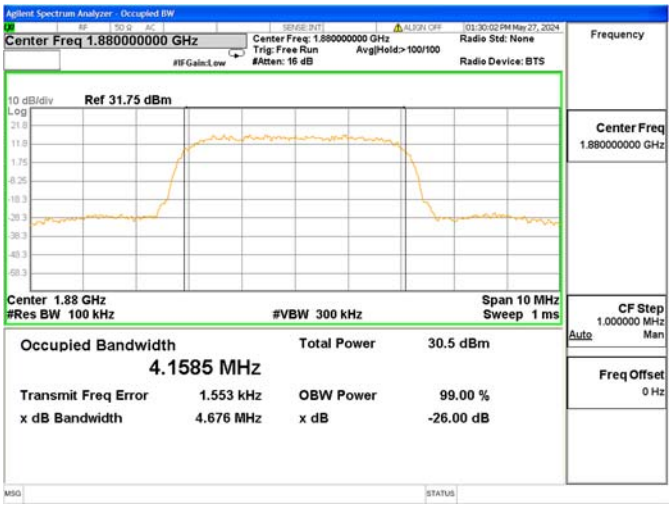
WCDMA Band IV, CH1513, 1752.6MHz



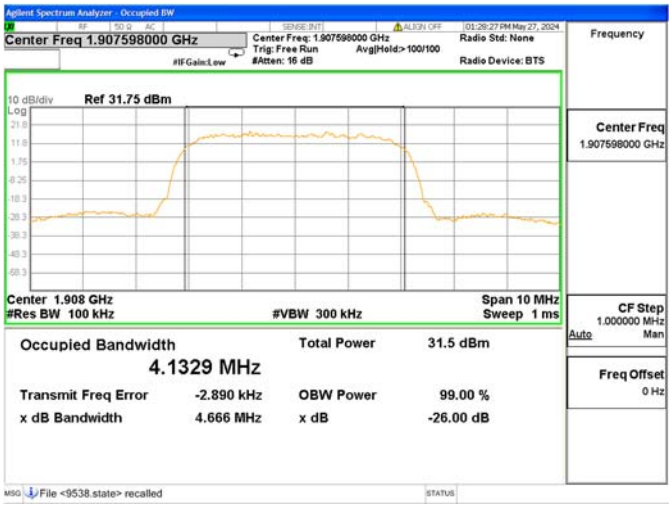
WCDMA Band II, CH9262, 1852.4MHz



WCDMA Band II, CH9400, 1880.0MHz



WCDMA 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:

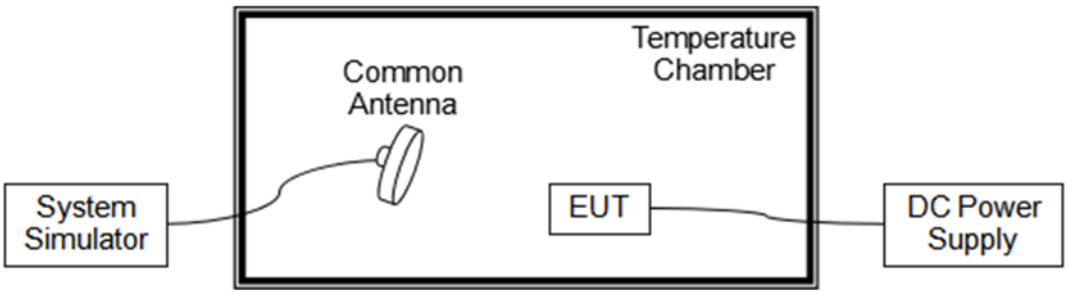
(a) The temperature is varied from-30°C to +50°C at intervals of not more than 10°C.

(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.

Note: The operating temperature of EUT is from -20°C to 60°C, which are specified by the applicant.

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 3.87V, 4.45V and 3.55V, which are specified by the applicant; the normal temperature here used is 20°C.

GSM850(GSM), CH189, 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	-5	-0.006	PASS
Normal		-20	18	0.022	
Normal		-10	14	0.017	
Normal		0	18	0.022	
Normal		+10	-7	-0.008	
Normal		+20	13	0.016	
Normal		+30	14	0.017	
Normal		+40	-20	-0.024	
Normal		+50	12	0.014	
Normal		+60	19	**0.023**	
High	4.45	+20	17	0.020	
BATT.ENDPOINT	3.55	+20	-20	-0.024	

GSM850(EDGE), CH189, 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	-3	-0.004	PASS
Normal		-20	18	0.022	
Normal		-10	-4	-0.005	
Normal		0	16	0.019	
Normal		+10	15	0.018	
Normal		+20	17	0.020	
Normal		+30	20	**0.024**	
Normal		+40	19	0.023	
Normal		+50	20	**0.024**	
Normal		+60	17	0.020	
High	4.45	+20	15	0.018	
BATT.ENDPOINT	3.55	+20	6	0.007	

GSM1900(GSM), CH661, 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	0	0.000	PASS
Normal		-20	16	0.009	
Normal		-10	5	0.003	
Normal		0	16	0.009	
Normal		+10	8	0.004	
Normal		+20	16	0.009	
Normal		+30	22	**0.012**	
Normal		+40	17	0.009	
Normal		+50	-13	-0.007	
Normal		+60	21	0.011	
High	4.45	+20	-14	-0.007	
BATT.ENDPOINT	3.55	+20	0	0.000	

GSM1900(EDGE), CH661, 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	13	0.007	PASS
Normal		-20	0	0.000	
Normal		-10	15	0.008	
Normal		0	17	0.009	
Normal		+10	-5	-0.003	
Normal		+20	19	0.010	
Normal		+30	20	**0.011**	
Normal		+40	-11	-0.006	
Normal		+50	20	**0.011**	
Normal		+60	15	0.008	
High	4.45	+20	17	0.009	
BATT.ENDPOINT	3.55	+20	20	**0.011**	

WCDMA Band V, CH4182, 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	15	0.018	PASS
Normal		-20	23	**0.027**	
Normal		-10	-10	-0.012	
Normal		0	18	0.022	
Normal		+10	-2	-0.002	
Normal		+20	17	0.020	
Normal		+30	14	0.017	
Normal		+40	18	0.022	
Normal		+50	-1	-0.001	
Normal		+60	20	0.024	
High	4.45	+20	17	0.020	
BATT.ENDPOINT	3.55	+20	17	0.020	

WCDMA Band IV, CH1413, 1732.6MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	20	**0.012**	PASS
Normal		-20	14	0.008	
Normal		-10	17	0.010	
Normal		0	16	0.009	
Normal		+10	13	0.008	
Normal		+20	-10	-0.006	
Normal		+30	13	0.008	
Normal		+40	14	0.008	
Normal		+50	14	0.008	
Normal		+60	19	0.011	
High	4.45	+20	7	0.004	
BATT.ENDPOINT	3.55	+20	20	**0.012**	

WCDMA Band II, CH9400, 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
Normal	3.87	+20(Ref)	17	0.009	PASS
Normal		-20	19	**0.010**	
Normal		-10	-4	-0.002	
Normal		0	17	0.009	
Normal		+10	15	0.008	
Normal		+20	14	0.007	
Normal		+30	-1	-0.001	
Normal		+40	16	0.009	
Normal		+50	10	0.005	
Normal		+60	19	**0.010**	
High	4.45	+20	13	0.007	
BATT.ENDPOINT	3.55	+20	13	0.007	

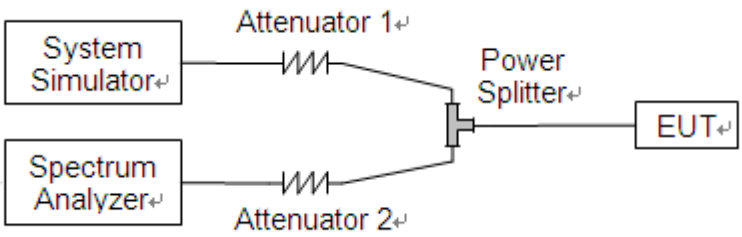
2.5. Conducted Out of Band Emissions

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. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency.

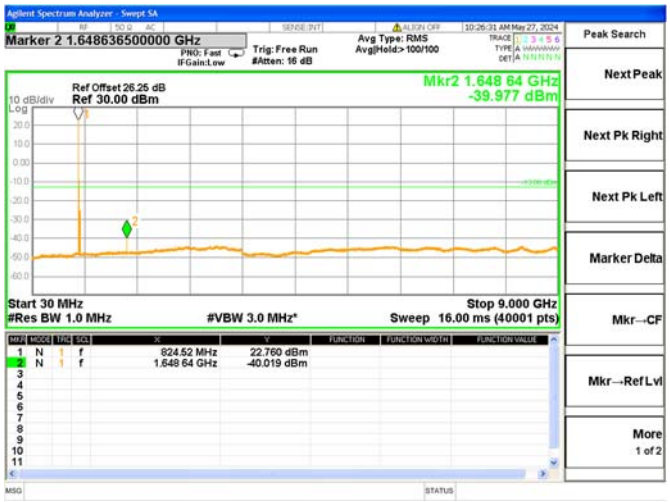
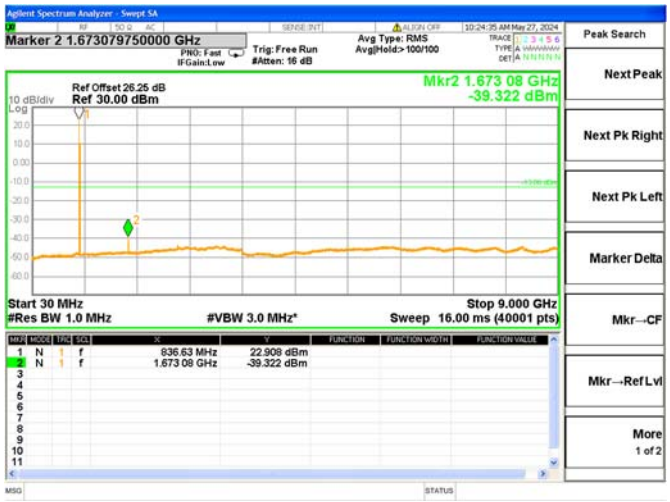
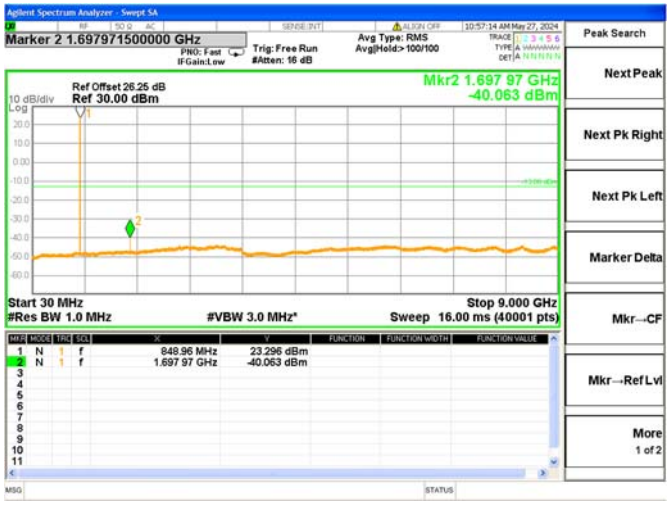
2.5.2. Test Description

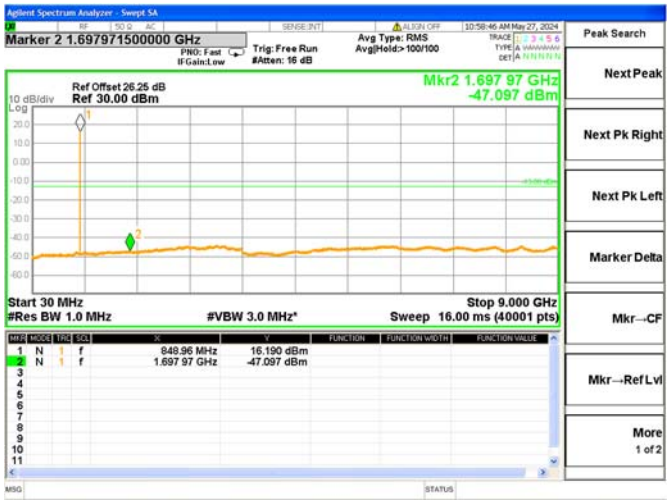
Test Setup:

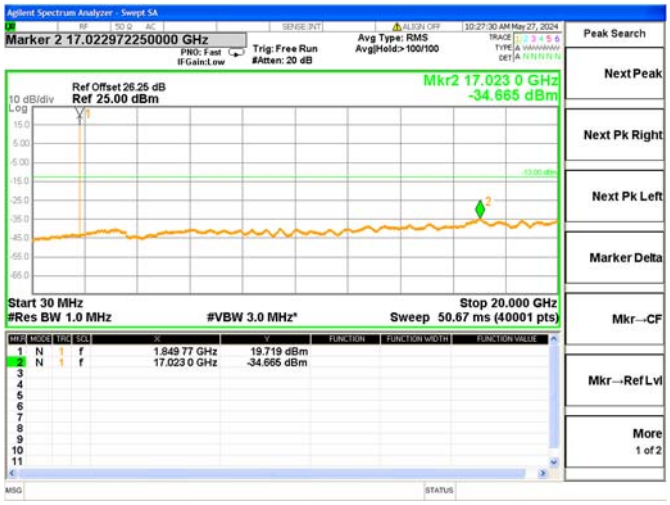
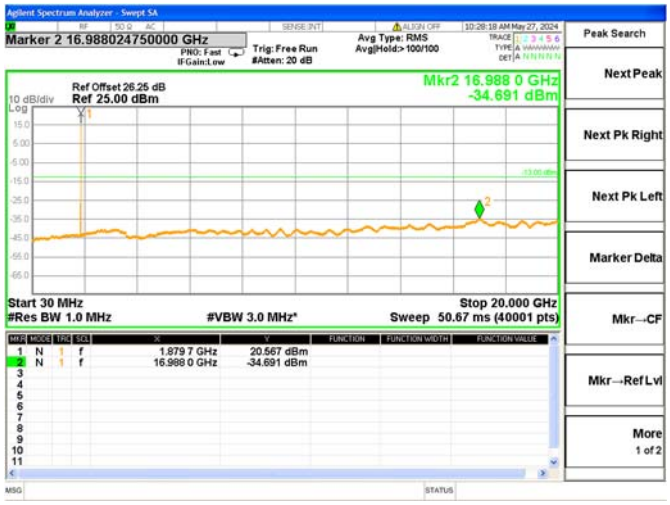
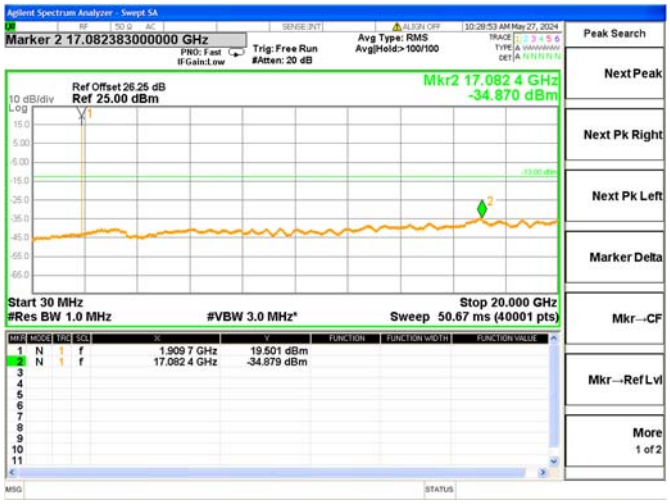


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

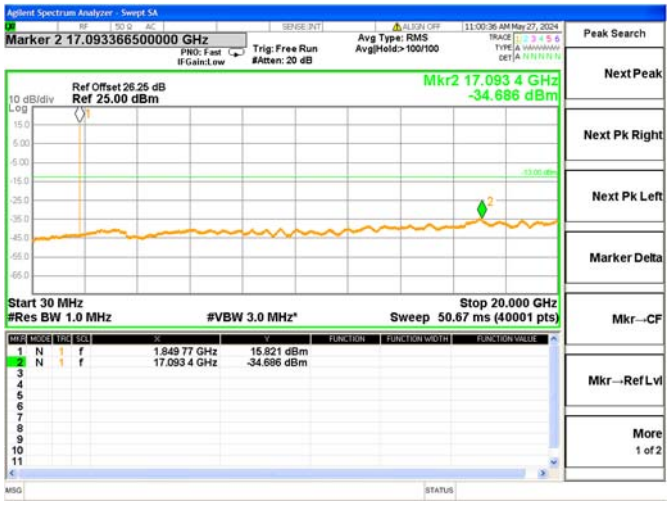
2.5.3.Test Result

GSM850(GSM), CH128, 824.2MHz	GSM850(GSM), CH189, 836.4MHz
	
GSM850(GSM), CH251, 848.8MHz	
	

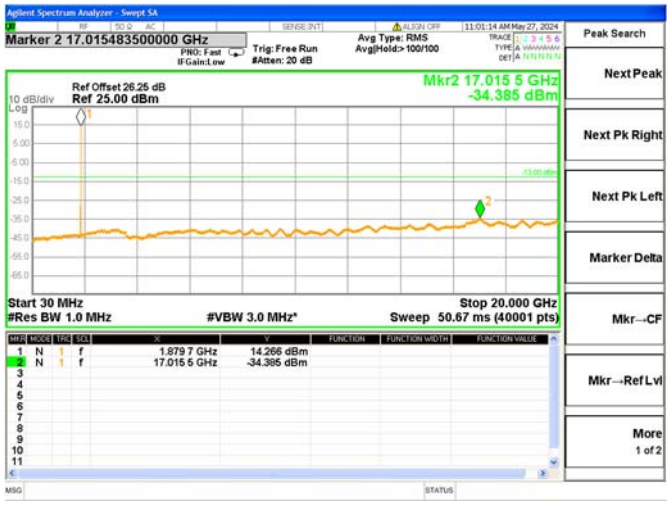
GSM850(EDGE), CH128, 824.2MHz	GSM850(EDGE), CH189, 836.4MHz
GSM850(EDGE), CH251, 848.8MHz	
	

GSM1900(GSM), CH512, 1850.2MHz	GSM1900(GSM), CH661, 1880.0MHz
	
GSM1900(GSM), CH810, 1909.8MHz	
	

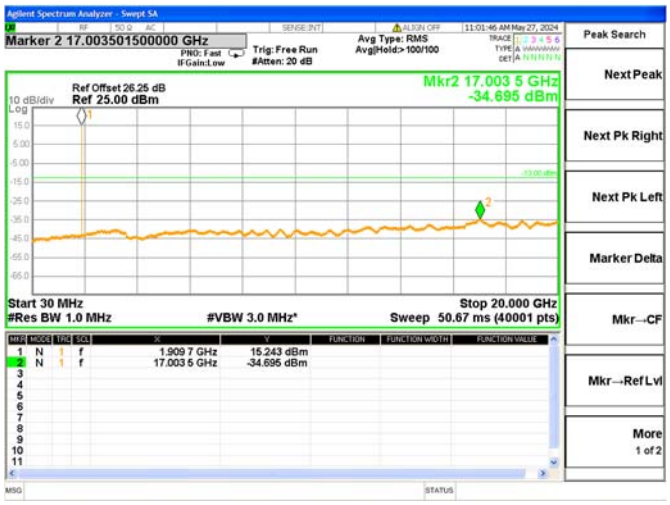
GSM1900(EDGE), CH512, 1850.2MHz

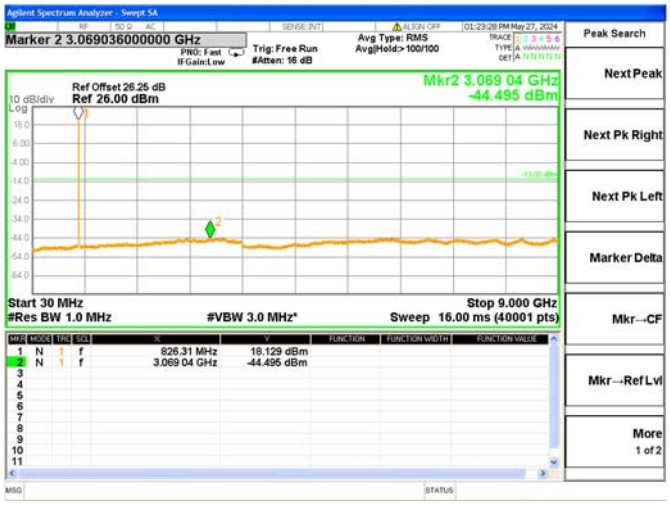
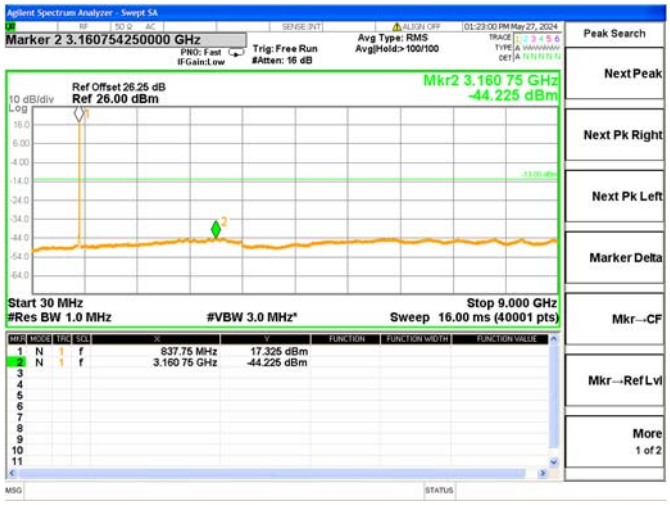
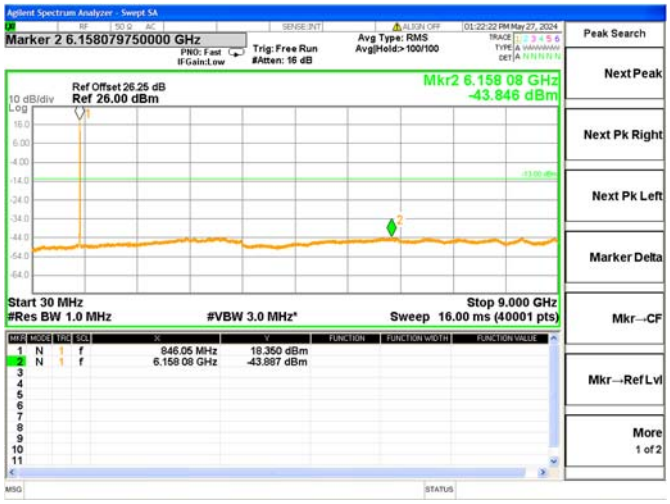


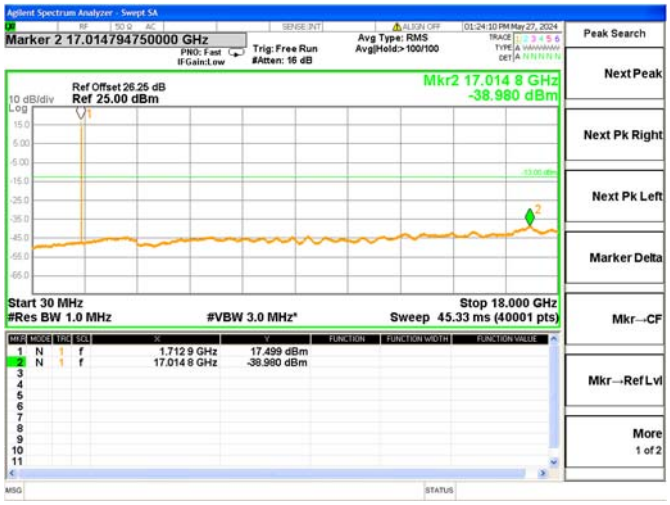
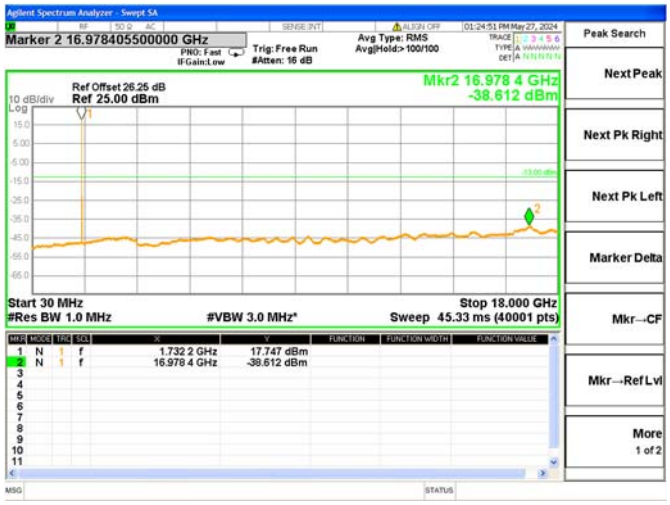
GSM1900(EDGE), CH661, 1880.0MHz



GSM1900(EDGE), CH810, 1909.8MHz



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

WCDMA Band IV,CH1312, 1712.4MHz	WCDMA Band IV, CH1413, 1732.6MHz
	
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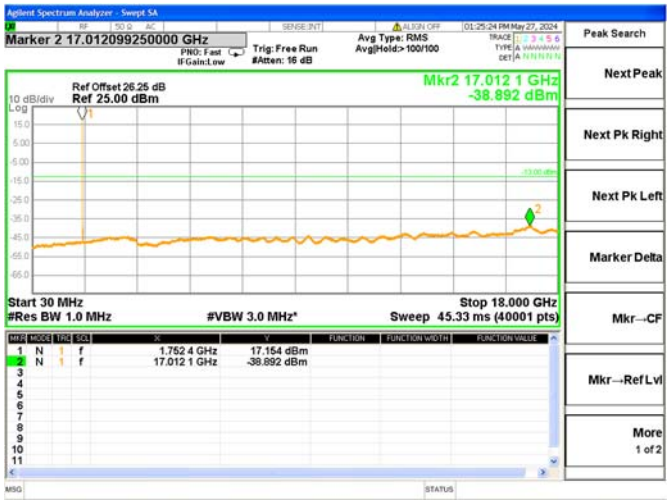
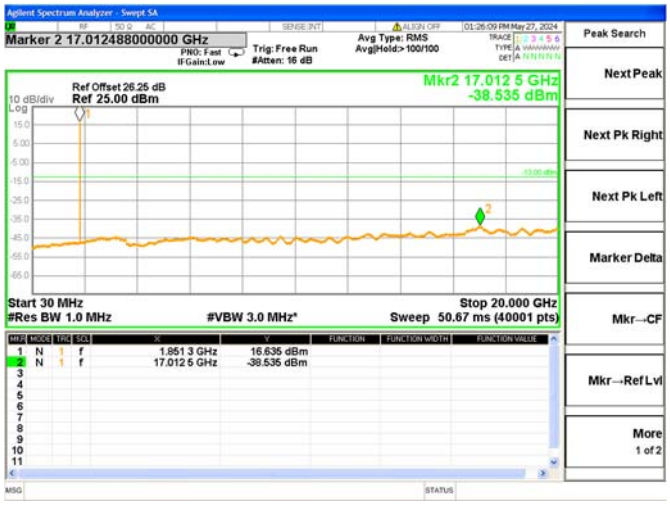
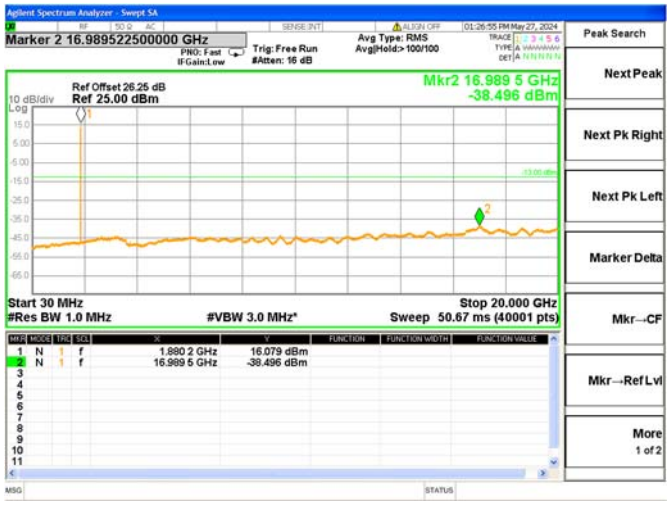
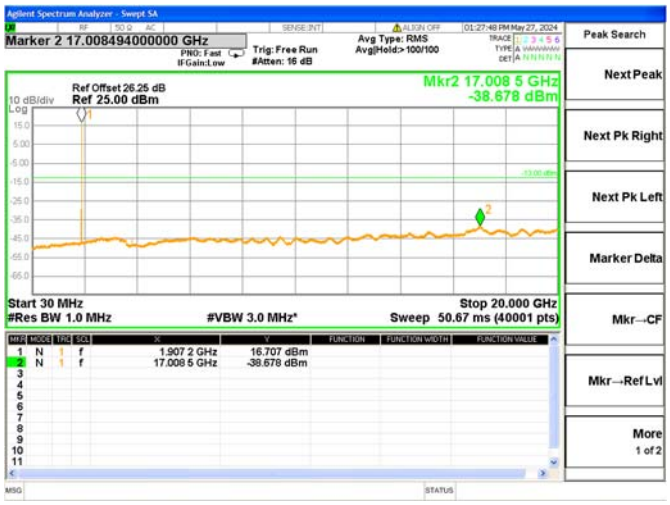
	

WCDMA Band II, CH9262, 1852.4MHz	WCDMA Band II, CH9400, 1880.0MHz
	
WCDMA Band II, CH9538, 1907.6MHz	
	

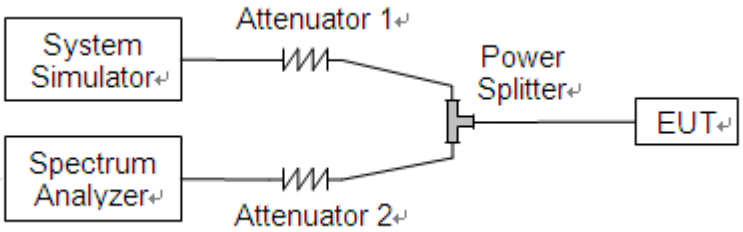
2.6. Band Edge

2.6.1.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.

2.6.2.Test Description

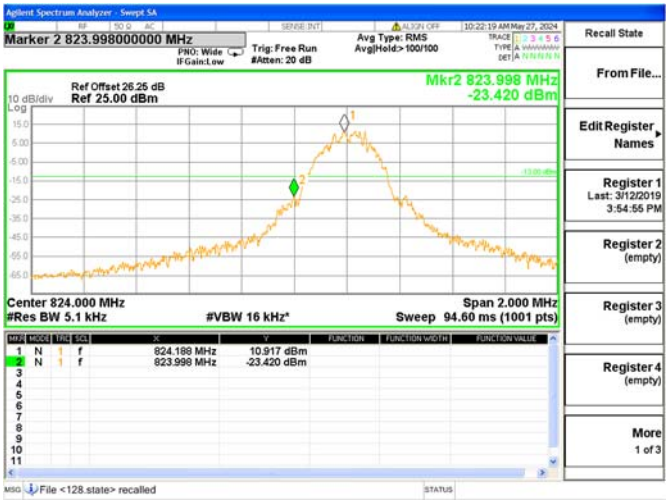
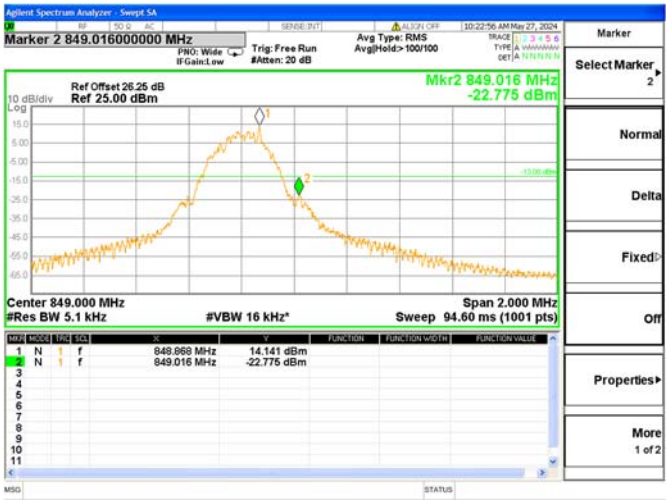
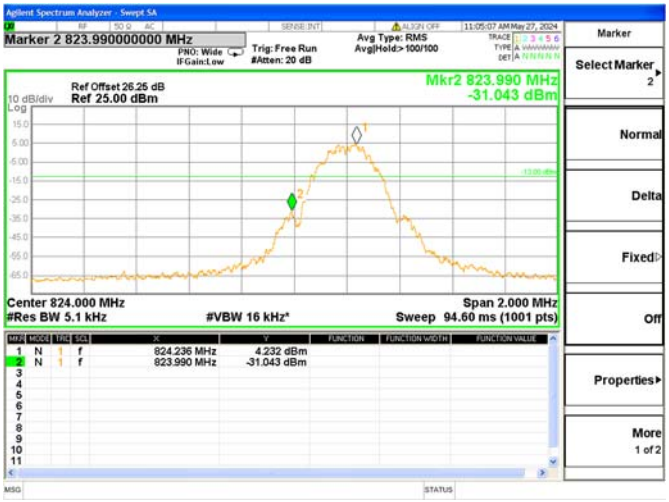
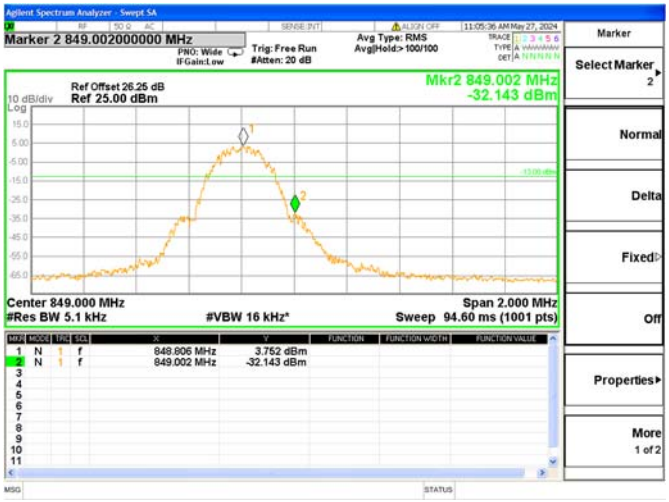
Test Setup:



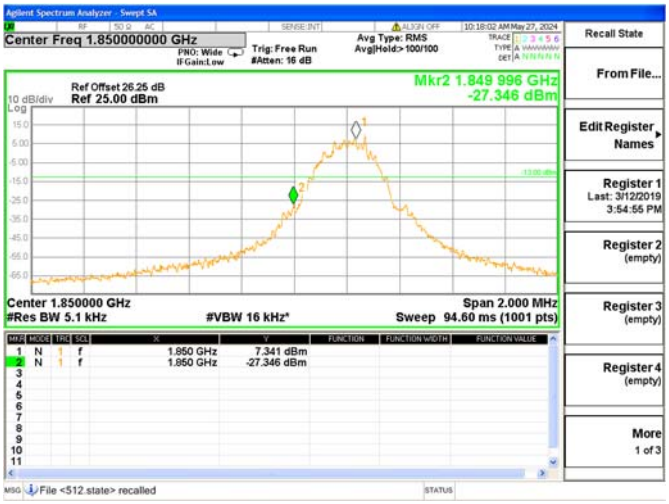
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

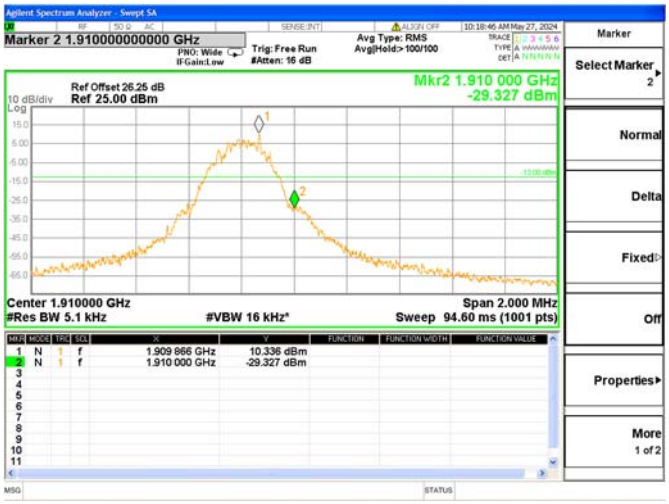
The lowest and highest channels are tested to verify the band edge emissions.

GSM850(GSM), CH128, 824.2MHz	GSM850(GSM), CH251, 848.8MHz
	
GSM850(EDGE), CH128, 824.2MHz	**GSM850(EDGE), CH251, 848.8MHz**
	

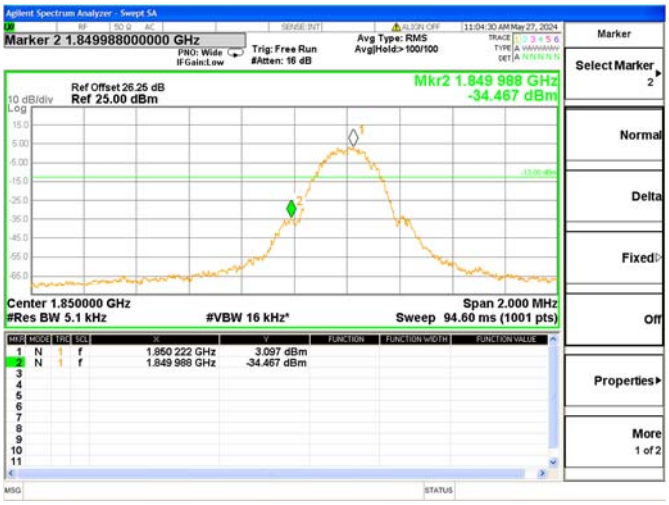
GSM1900(GSM), CH512, 1850.2MHz



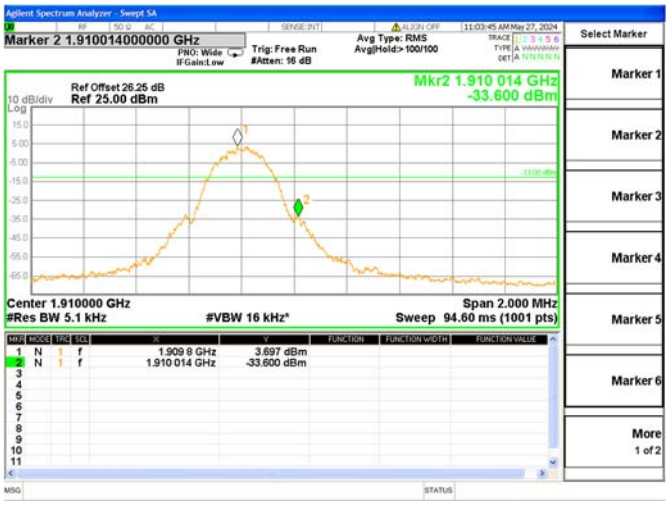
GSM1900(GSM), CH810, 1909.8MHz



GSM1900(EDGE), CH512, 1850.2MHz

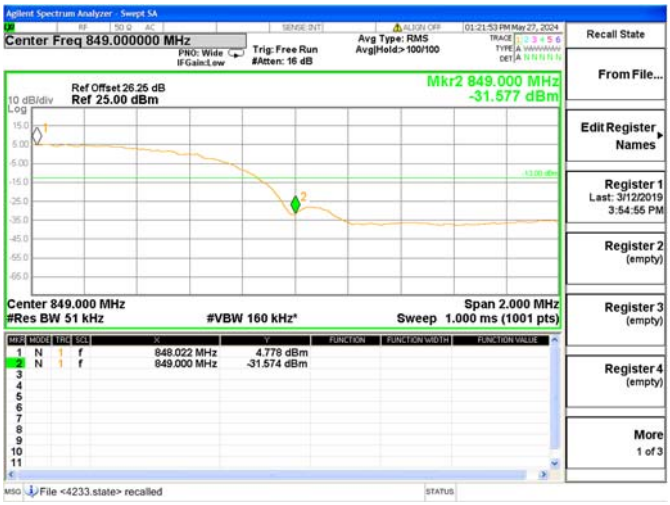


GSM1900(EDGE), CH810, 1909.8MHz

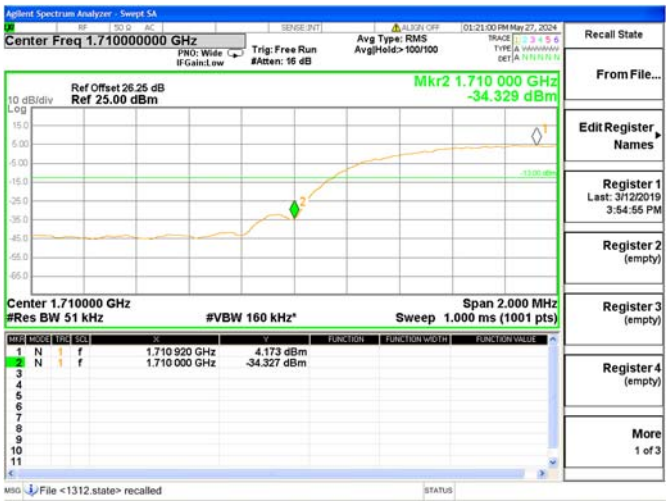


WCDMA Band V, CH4132, 826.4MHz

WCDMA Band V, CH4233, 846.6MHz

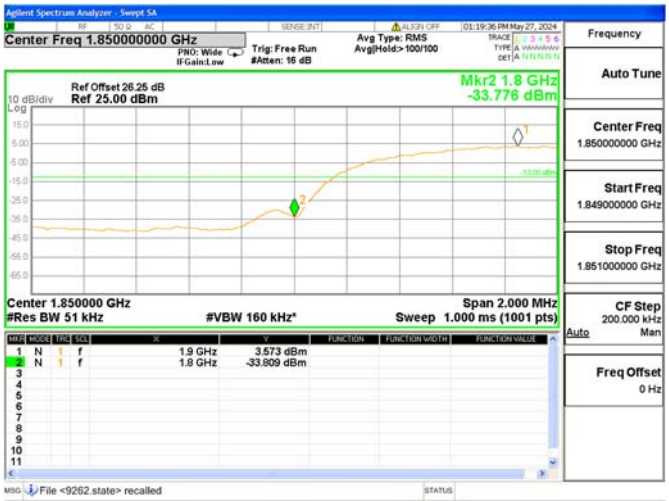


WCDMA Band IV, CH1312, 1712.4MHz



WCDMA Band IV, CH1513, 1752.6MHz

WCDMA Band II, CH9262, 1852.4MHz



WCDMA Band II, CH9538, 1907.6MHz

2.7. Determining E.R.P. and/or E.I.R.P. from conducted RF output power measurements

2.7.1. Requirement

According to FCC section 22.913, the Effective Radiated Power (E.R.P.) 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

The test setups refer to section 2.1.3
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.
The relevant equation for determining the maximum E.R.P. or E.I.R.P. from the measured RF output power is given in Equation (1) as follows:
E.R.P. or E.I.R.P. = $P_{Meas} + G_T$
Where:
E.R.P. or E.I.R.P. effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)
P_{Meas} measured transmitter output power or PSD, in dBm or dBW
G_T gain of the transmitting antenna, in dBd (E.R.P.) or dBi (E.I.R.P.)
For devices utilizing multiple antennas, see ANSI C63.25-2015 6.4 for guidance with respect to determining the effective array transmit antenna gain term to be used in the above equation.
The following equations demonstrate the mathematical relationship between E.R.P. and E.I.R.P.:
a) E.R.P. = E.I.R.P. − 2.15, where E.R.P. and E.I.R.P. are expressed in consistent units.
b) E.I.R.P. = E.R.P. + 2.15, where E.R.P. and E.I.R.P. are expressed in consistent units.

2.7.3.Test Result

GSM850								
Band	Channel	Frequency (MHz)	PCL	Measured E.R.P.		Limit		Verdict
				dBm	W	dBm	W	
GSM	128	824.20	5	27.04	0.506	38.5	7	PASS
	189	836.40	5	27.13	0.516			PASS
	251	848.80	5	27.06	0.508			PASS
GPRS	128	824.20	5	27.10	0.513	38.5	7	PASS
	189	836.40	5	27.20	0.525			PASS
	251	848.80	5	27.14	0.518			PASS
EDGE	128	824.20	5	20.43	0.110	38.5	7	PASS
	189	836.40	5	20.53	0.113			PASS
	251	848.80	5	20.19	0.104			PASS
Note 1: For the GPRS and EDGE mode, all the slots were tested and just the worst data were recorded in this report.								

GSM1900								
Band	Channel	Frequency (MHz)	PCL	Measured E.I.R.P.		Limit		Verdict
				dBm	W	dBm	W	
GSM	512	1850.2	0	27.39	0.548	33	2	PASS
	661	1880.0	0	27.41	0.551			PASS
	810	1909.8	0	27.33	0.541			PASS
GPRS	512	1850.2	0	27.68	0.586	33	2	PASS
	661	1880.0	0	27.72	0.592			PASS
	810	1909.8	0	27.54	0.568			PASS
EDGE	512	1850.2	0	24.41	0.276	33	2	PASS
	661	1880.0	0	24.56	0.286			PASS
	810	1909.8	0	24.43	0.277			PASS
Note 1: For the GPRS and EDGE mode, all the slots were tested and just the worst data were recorded in this report.								

WCDMA Band V							
Band	Channel	Frequency (MHz)	Measured E.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	4132	826.4	18.03	0.064	38.5	7	PASS
	4182	836.4	18.06	0.064			PASS
	4233	846.6	17.84	0.061			PASS
HSDPA	4132	826.4	16.64	0.046	38.5	7	PASS
	4182	836.4	16.77	0.048			PASS
	4233	846.6	16.67	0.046			PASS
HSUPA	4132	826.4	17.49	0.056	38.5	7	PASS
	4182	836.4	17.54	0.057			PASS
	4233	846.6	17.52	0.056			PASS
HSPA+	4132	826.4	17.61	0.058	38.5	7	PASS
	4182	836.4	17.66	0.058			PASS
	4233	846.6	17.56	0.057			PASS
Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.							

WCDMA Band IV							
Band	Channel	Frequency (MHz)	Measured E.I.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	1312	1712.4	20.77	0.119	30	1	PASS
	1413	1732.6	20.87	0.122			PASS
	1513	1752.6	20.69	0.117			PASS
HSDPA	1312	1712.4	20.00	0.100	30	1	PASS
	1413	1732.6	19.99	0.100			PASS
	1513	1752.6	19.89	0.097			PASS
HSUPA	1312	1712.4	19.93	0.098	30	1	PASS
	1413	1732.6	20.03	0.101			PASS
	1513	1752.6	19.92	0.098			PASS
HSPA+	1312	1712.4	20.06	0.101	30	1	PASS
	1413	1732.6	20.05	0.101			PASS
	1513	1752.6	19.94	0.099			PASS
Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.							

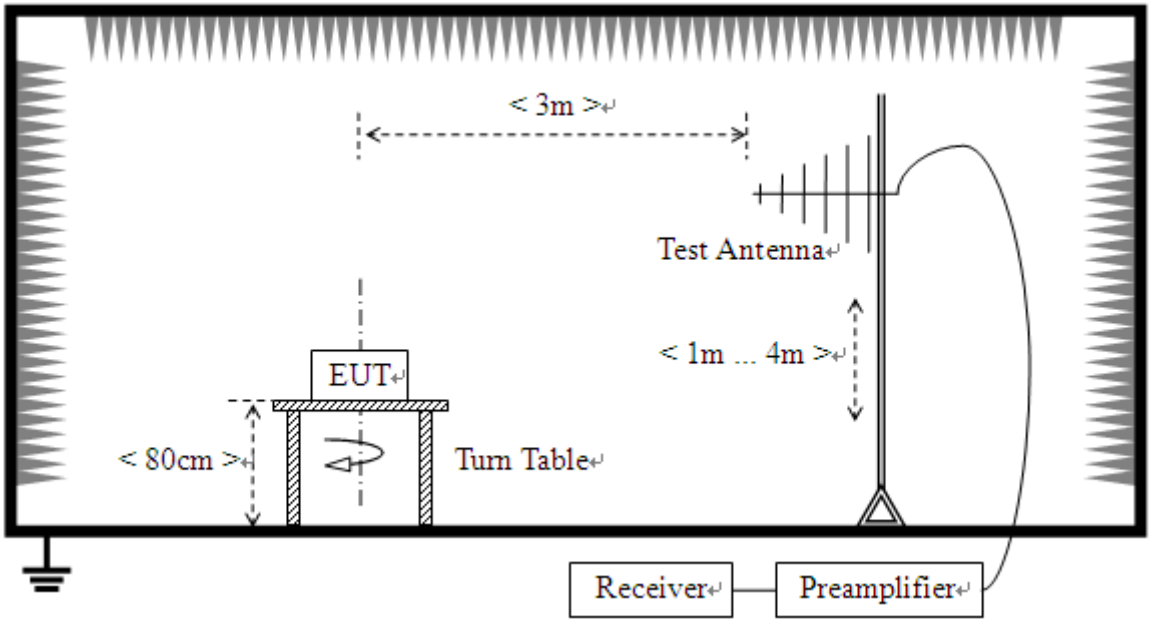
WCDMA Band II							
Band	Channel	Frequency (MHz)	Measured E.I.R.P.		Limit		Verdict
			dBm	W	dBm	W	
WCDMA	9262	1852.4	20.93	0.124	33	2	PASS
	9400	1880.0	21.11	0.129			PASS
	9538	1907.6	21.09	0.129			PASS
HSDPA	9262	1852.4	20.41	0.110	33	2	PASS
	9400	1880.0	20.01	0.100			PASS
	9538	1907.6	20.31	0.107			PASS
HSUPA	9262	1852.4	20.58	0.114	33	2	PASS
	9400	1880.0	20.25	0.106			PASS
	9538	1907.6	20.36	0.109			PASS
HSPA+	9262	1852.4	20.79	0.120	33	2	PASS
	9400	1880.0	20.31	0.107			PASS
	9538	1907.6	20.49	0.112			PASS
Note 1: For the HSDPA and HSUPA mode, all the subtests were tested and just the worst data were recorded in this report.							

2.8. Radiated Out of Band Emissions

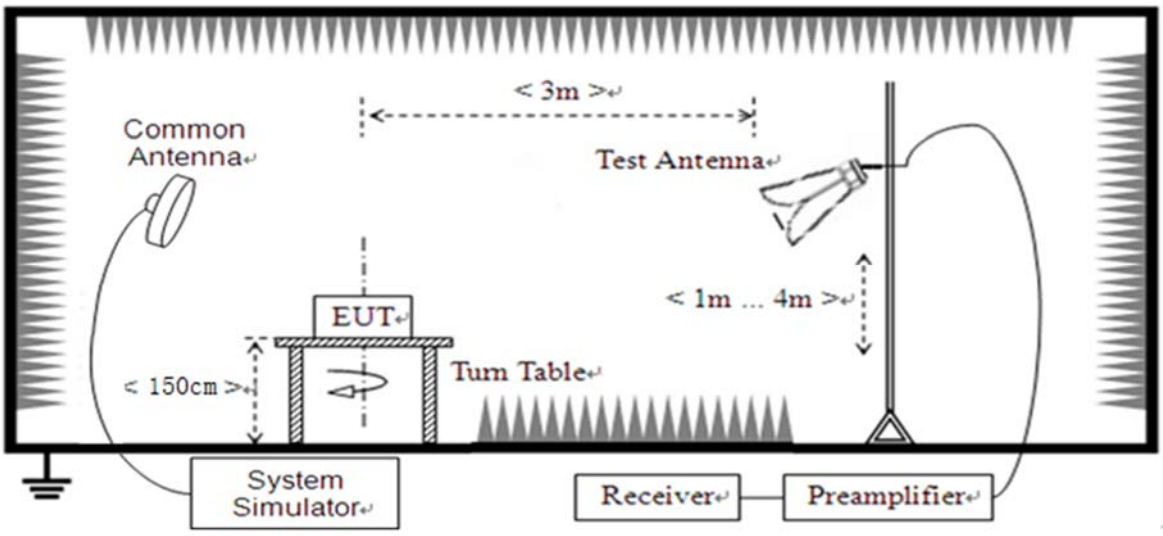
2.8.1.Requirement

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. The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency.

2.8.2.Test Description



(For the test frequency from 30MHz to1GHz)



(For the test frequency 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 and only the test result of the maximum output power was recorded.
In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground and the Turn Table is actuated to turn from 0° to 360°to determine the maximum value of the radiated power. The emission levels at both horizontal and vertical polarizations should be tested. 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 Procedure

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements.

2.8.4.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 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}.

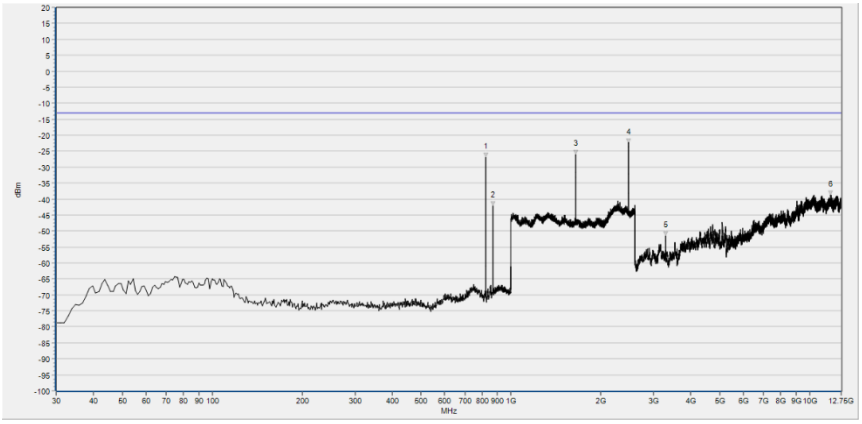
Note1: The power of the EUT transmitting frequency should be ignored.

Note2: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

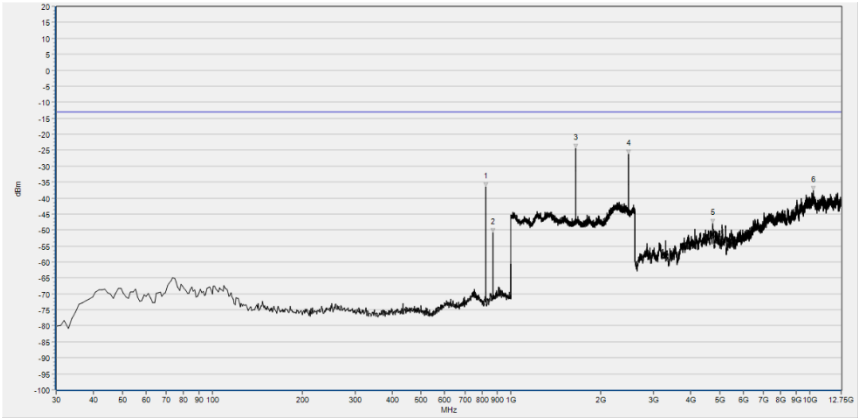
Note3: All spurious emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

GSM850(GSM), Low Channel

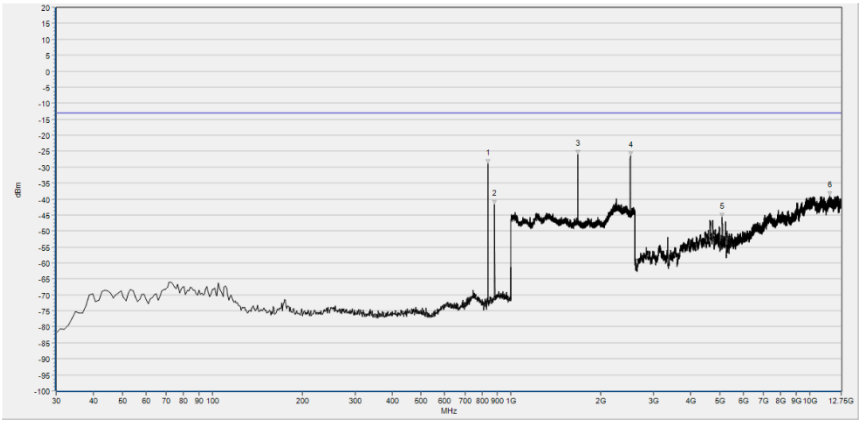


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	824.430	-26.99	-13.00	Horizontal	N/A
2	869.050	-42.20	-13.00	Horizontal	N/A
3	1648.579	-26.13	-13.00	Horizontal	PASS
4	2471.949	-22.38	-13.00	Horizontal	PASS
5	3297.709	-51.46	-13.00	Horizontal	PASS
6	11771.731	-38.66	-13.00	Horizontal	PASS

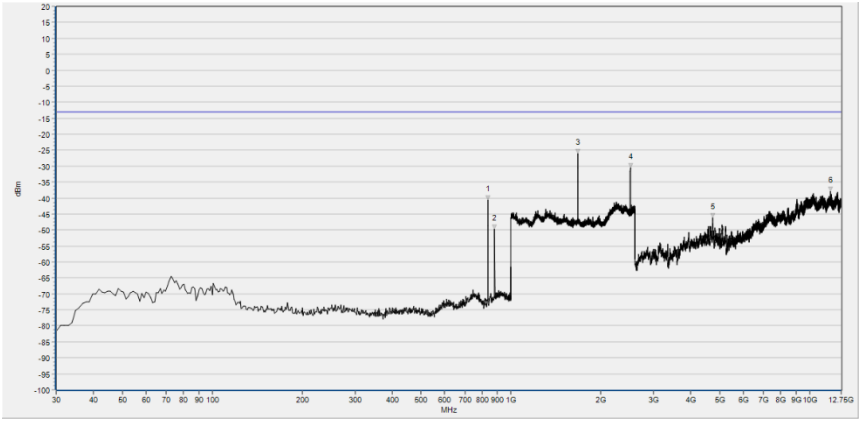


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	824.430	-36.48	-13.00	Vertical	N/A
2	869.050	-50.91	-13.00	Vertical	N/A
3	1647.939	-24.56	-13.00	Vertical	PASS
4	2472.589	-26.22	-13.00	Vertical	PASS
5	4737.425	-47.86	-13.00	Vertical	PASS
6	10267.412	-37.75	-13.00	Vertical	PASS

GSM850(GSM), Mid Channel

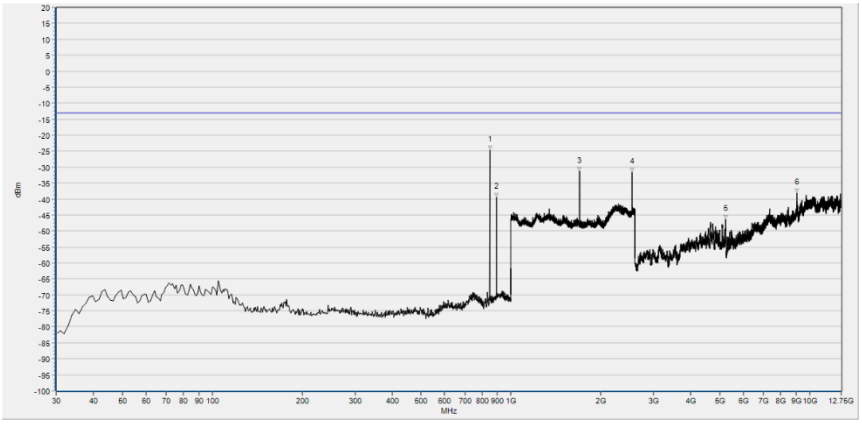


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	836.070	-28.85	-13.00	Horizontal	N/A
2	881.660	-41.68	-13.00	Horizontal	N/A
3	1672.269	-25.98	-13.00	Horizontal	PASS
4	2509.084	-26.39	-13.00	Horizontal	PASS
5	5099.200	-45.78	-13.00	Horizontal	PASS
6	11679.442	-39.03	-13.00	Horizontal	PASS

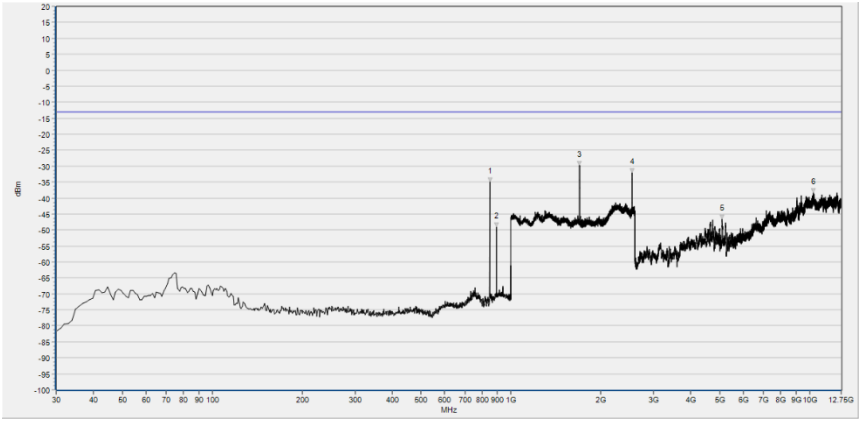


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	836.070	-40.54	-13.00	Vertical	N/A
2	881.660	-49.73	-13.00	Vertical	N/A
3	1672.909	-26.14	-13.00	Vertical	PASS
4	2509.084	-30.49	-13.00	Vertical	PASS
5	4735.579	-46.17	-13.00	Vertical	PASS
6	11756.965	-37.91	-13.00	Vertical	PASS

GSM850(GSM), High Channel

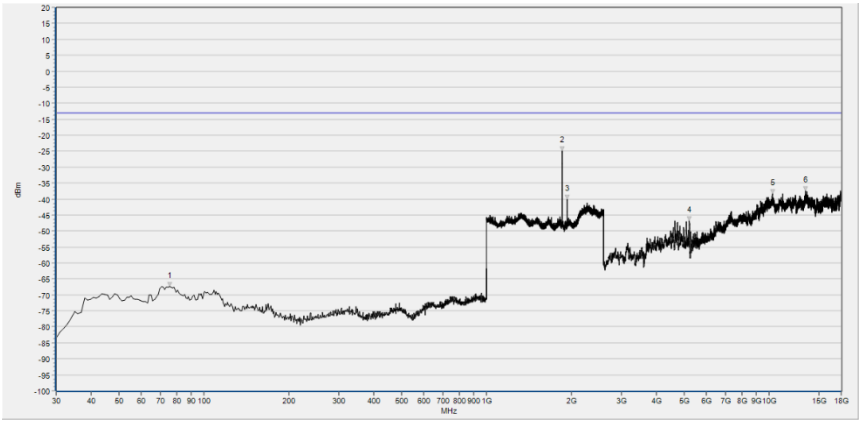


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-24.63	-13.00	Horizontal	N/A
2	893.300	-39.50	-13.00	Horizontal	N/A
3	1697.239	-31.33	-13.00	Horizontal	PASS
4	2546.218	-31.52	-13.00	Horizontal	PASS
5	5233.943	-46.43	-13.00	Horizontal	PASS
6	9082.415	-38.20	-13.00	Horizontal	PASS

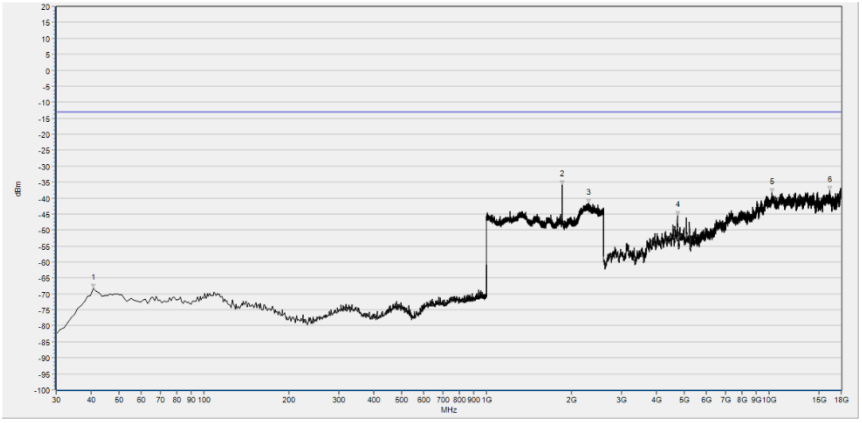


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-34.98	-13.00	Vertical	N/A
2	894.270	-49.07	-13.00	Vertical	N/A
3	1697.239	-29.83	-13.00	Vertical	PASS
4	2546.218	-32.06	-13.00	Vertical	PASS
5	5099.200	-46.70	-13.00	Vertical	PASS
6	10285.870	-38.42	-13.00	Vertical	PASS

GSM1900(GSM), Low Channel

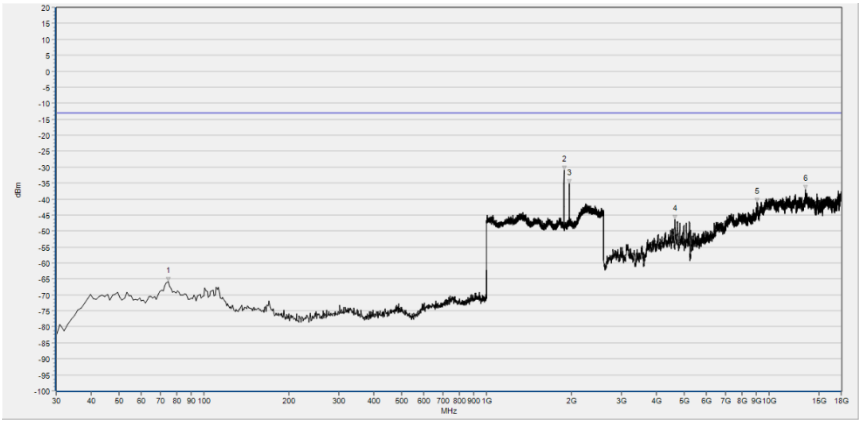


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	75.590	-67.37	-13.00	Horizontal	PASS
2	1850.260	-25.01	-13.00	Horizontal	N/A
3	1930.292	-40.17	-13.00	Horizontal	N/A
4	5229.678	-46.72	-13.00	Horizontal	PASS
5	10270.595	-38.43	-13.00	Horizontal	PASS
6	13479.978	-37.52	-13.00	Horizontal	PASS

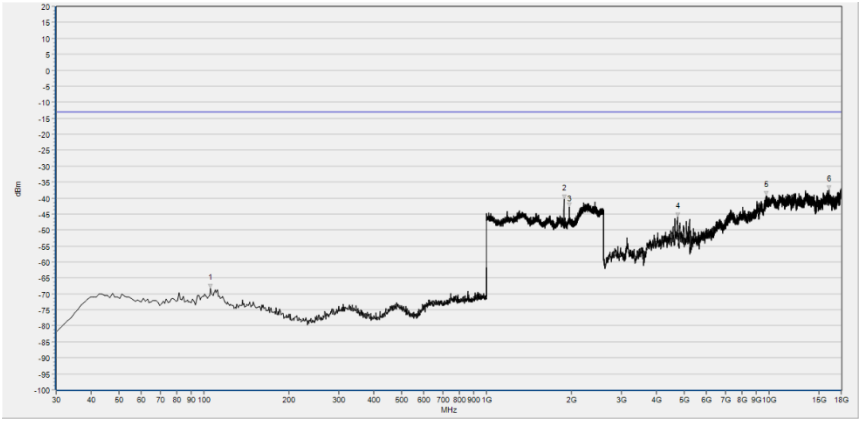


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	40.670	-68.33	-13.00	Vertical	PASS
2	1850.260	-35.85	-13.00	Vertical	N/A
3	2296.519	-41.78	-13.00	Vertical	PASS
4	4739.589	-45.56	-13.00	Vertical	PASS
5	10259.393	-38.42	-13.00	Vertical	PASS
6	16431.715	-37.69	-13.00	Vertical	PASS

GSM1900(GSM), Mid Channel

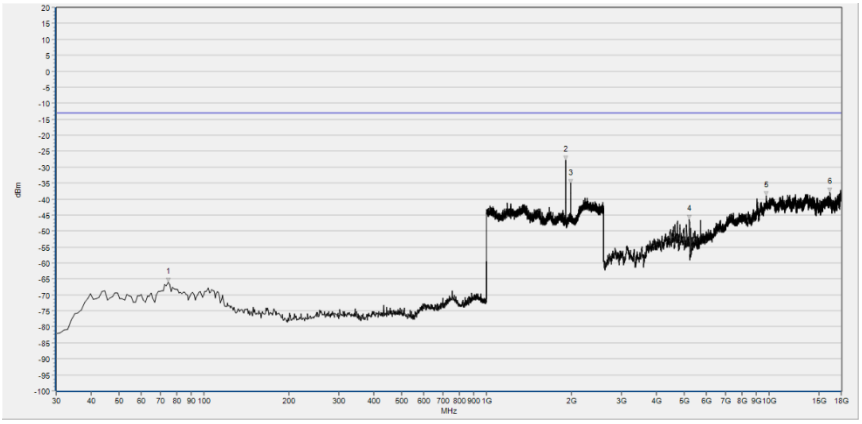


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	74.620	-65.79	-13.00	Horizontal	PASS
2	1879.712	-30.99	-13.00	Horizontal	N/A
3	1959.744	-35.23	-13.00	Horizontal	N/A
4	4649.973	-46.29	-13.00	Horizontal	PASS
5	9085.979	-40.99	-13.00	Horizontal	PASS
6	13488.380	-37.07	-13.00	Horizontal	PASS

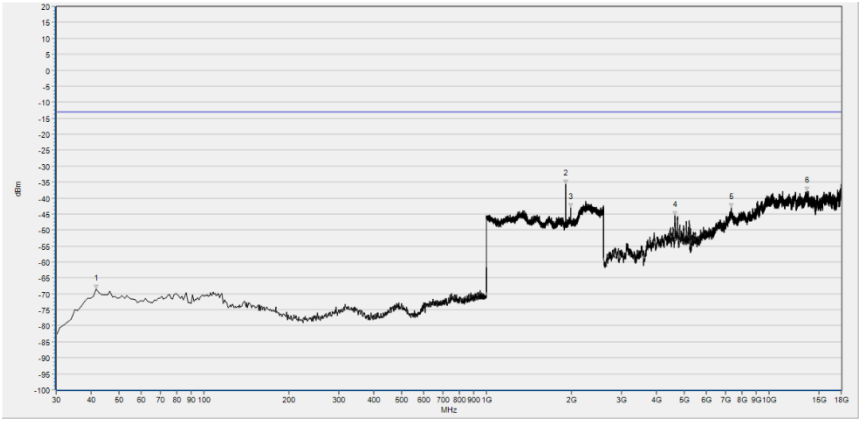


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	105.660	-68.21	-13.00	Vertical	PASS
2	1879.712	-40.44	-13.00	Vertical	N/A
3	1959.744	-42.70	-13.00	Vertical	N/A
4	4739.589	-45.88	-13.00	Vertical	PASS
5	9746.899	-39.13	-13.00	Vertical	PASS
6	16302.891	-37.38	-13.00	Vertical	PASS

GSM1900(GSM), High Channel

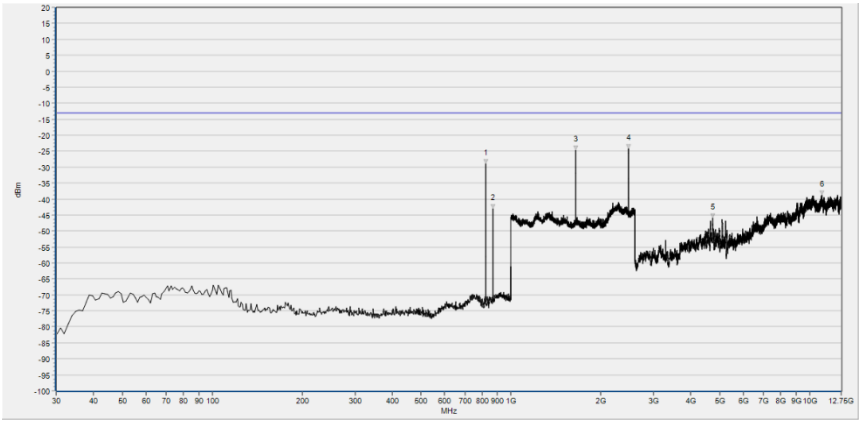


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	74.620	-65.96	-13.00	Horizontal	PASS
2	1909.804	-27.81	-13.00	Horizontal	N/A
3	1989.196	-35.29	-13.00	Horizontal	N/A
4	5226.878	-46.30	-13.00	Horizontal	PASS
5	9749.700	-38.90	-13.00	Horizontal	PASS
6	16445.717	-37.96	-13.00	Horizontal	PASS

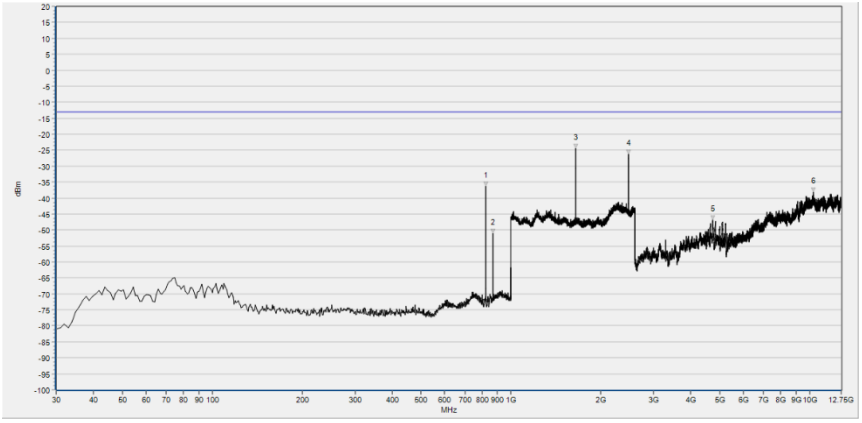


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	41.640	-68.58	-13.00	Vertical	PASS
2	1909.804	-35.57	-13.00	Vertical	N/A
3	1989.836	-42.91	-13.00	Vertical	N/A
4	4647.172	-45.56	-13.00	Vertical	PASS
5	7335.661	-43.12	-13.00	Vertical	PASS
6	13580.797	-37.86	-13.00	Vertical	PASS

GSM850(EDGE), Low Channel

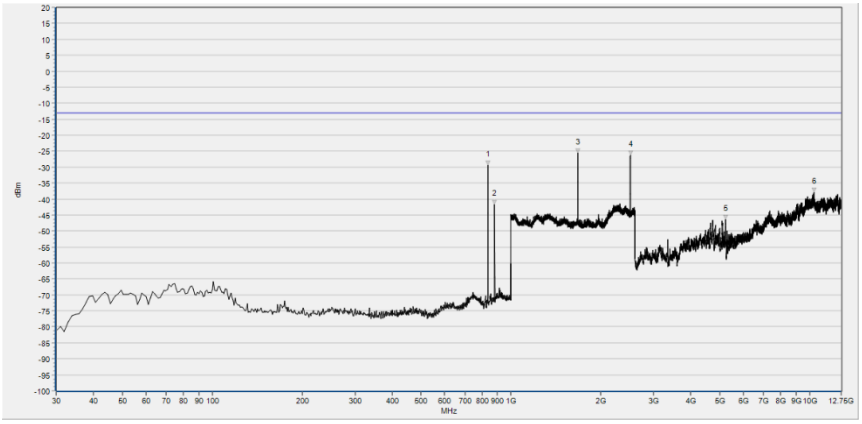


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	824.430	-28.84	-13.00	Horizontal	N/A
2	869.050	-43.04	-13.00	Horizontal	N/A
3	1647.939	-24.77	-13.00	Horizontal	PASS
4	2472.589	-24.29	-13.00	Horizontal	PASS
5	4737.425	-45.96	-13.00	Horizontal	PASS
6	10992.808	-38.88	-13.00	Horizontal	PASS

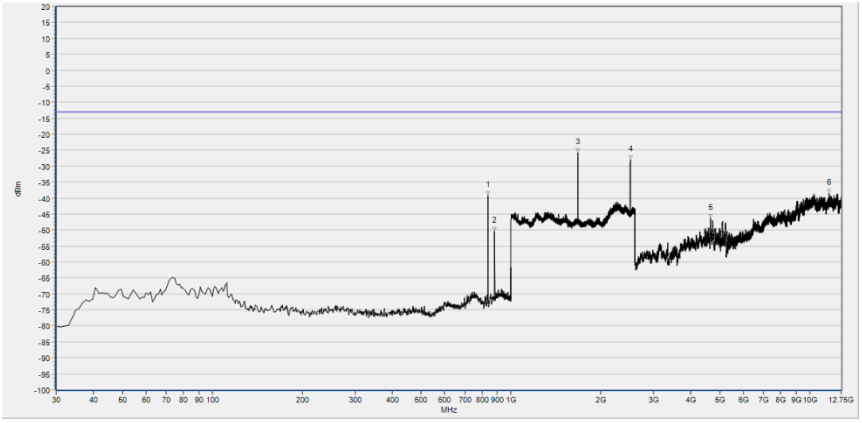


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	824.430	-36.26	-13.00	Vertical	N/A
2	869.050	-51.07	-13.00	Vertical	N/A
3	1647.939	-24.40	-13.00	Vertical	PASS
4	2471.949	-26.29	-13.00	Vertical	PASS
5	4742.962	-46.91	-13.00	Vertical	PASS
6	10271.104	-38.09	-13.00	Vertical	PASS

GSM850(EDGE), Mid Channel

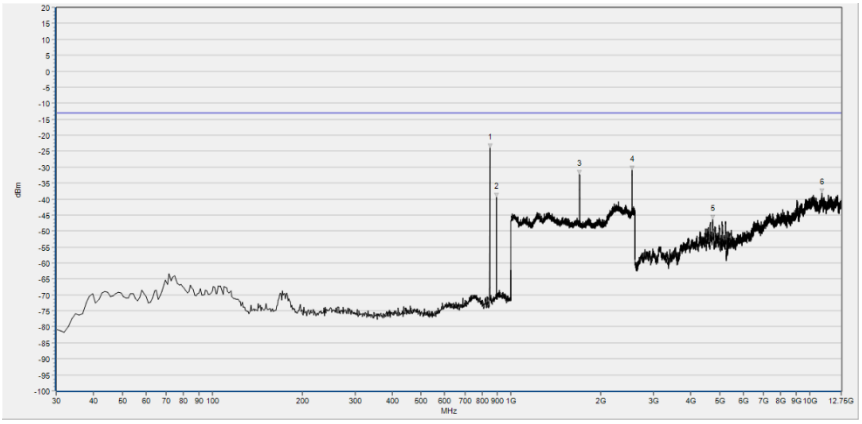


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	836.070	-29.44	-13.00	Horizontal	N/A
2	881.660	-41.57	-13.00	Horizontal	N/A
3	1672.269	-25.64	-13.00	Horizontal	PASS
4	2509.084	-26.17	-13.00	Horizontal	PASS
5	5230.251	-46.46	-13.00	Horizontal	PASS
6	10330.169	-37.90	-13.00	Horizontal	PASS

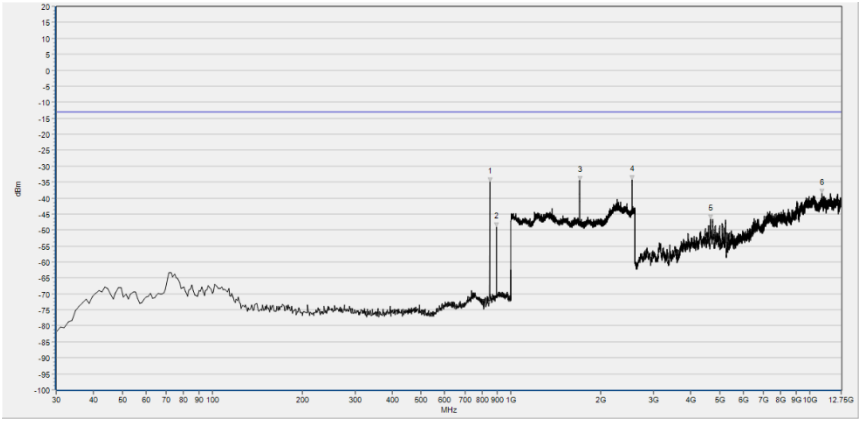


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	836.070	-39.24	-13.00	Vertical	N/A
2	881.660	-50.35	-13.00	Vertical	N/A
3	1672.909	-25.81	-13.00	Vertical	PASS
4	2509.084	-28.15	-13.00	Vertical	PASS
5	4648.827	-46.36	-13.00	Vertical	PASS
6	11594.535	-38.61	-13.00	Vertical	PASS

GSM850(EDGE), High Channel

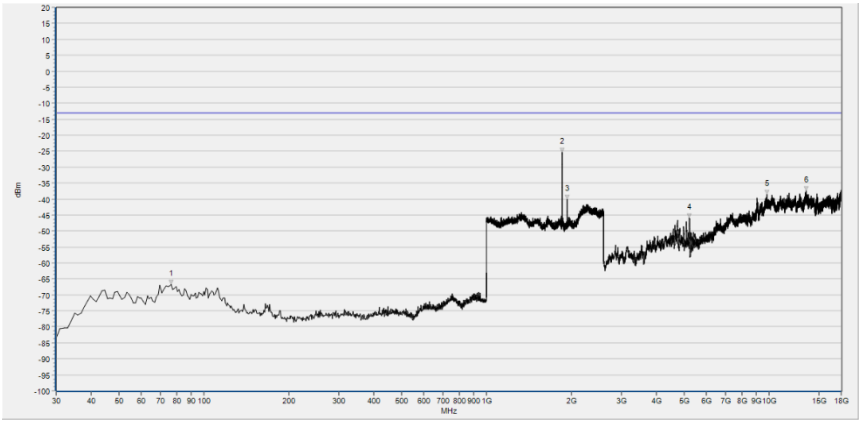


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-23.98	-13.00	Horizontal	N/A
2	893.300	-39.47	-13.00	Horizontal	N/A
3	1697.239	-32.38	-13.00	Horizontal	PASS
4	2546.218	-31.00	-13.00	Horizontal	PASS
5	4733.733	-46.37	-13.00	Horizontal	PASS
6	10970.658	-38.09	-13.00	Horizontal	PASS

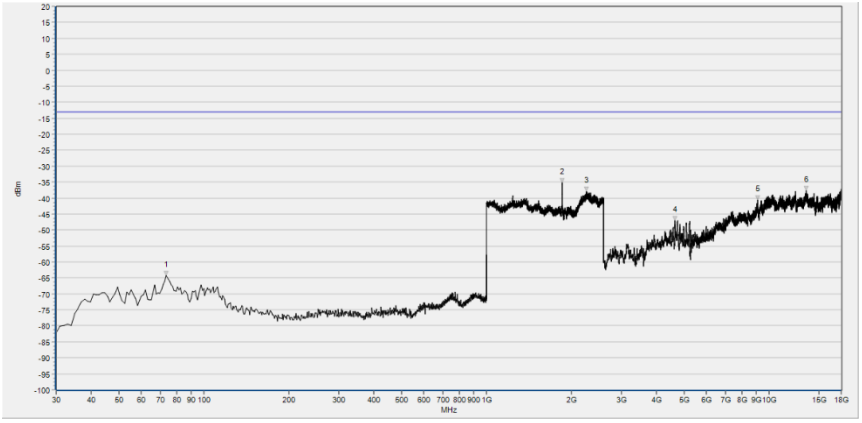


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	848.680	-34.92	-13.00	Vertical	N/A
2	894.270	-49.11	-13.00	Vertical	N/A
3	1697.879	-34.53	-13.00	Vertical	PASS
4	2546.218	-34.30	-13.00	Vertical	PASS
5	4648.827	-46.49	-13.00	Vertical	PASS
6	11011.266	-38.50	-13.00	Vertical	PASS

GSM1900(EDGE), Low Channel

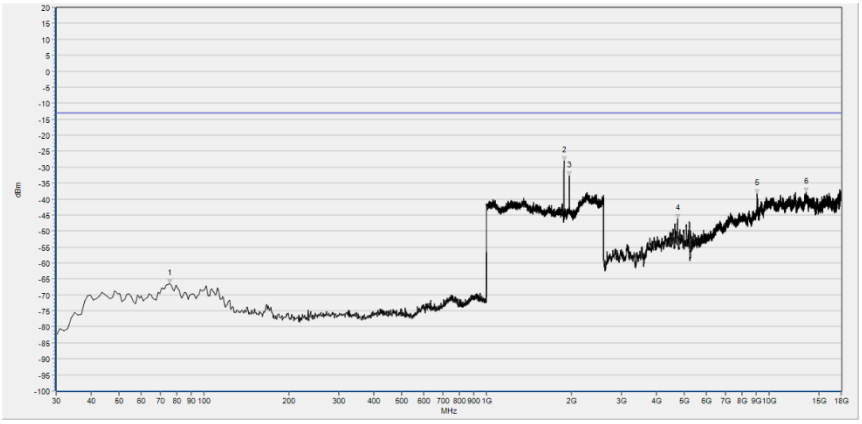


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	76.560	-66.72	-13.00	Horizontal	PASS
2	1850.260	-25.26	-13.00	Horizontal	N/A
3	1929.652	-40.18	-13.00	Horizontal	N/A
4	5229.678	-45.89	-13.00	Horizontal	PASS
5	9816.912	-38.54	-13.00	Horizontal	PASS
6	13547.190	-37.48	-13.00	Horizontal	PASS

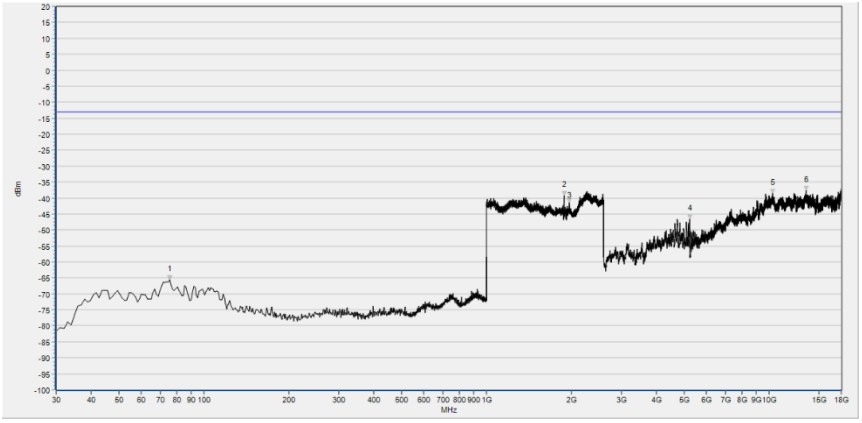


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	73.650	-64.21	-13.00	Vertical	PASS
2	1850.260	-35.10	-13.00	Vertical	N/A
3	2260.664	-37.94	-13.00	Vertical	PASS
4	4647.172	-47.14	-13.00	Vertical	PASS
5	9099.982	-40.63	-13.00	Vertical	PASS
6	13575.195	-37.73	-13.00	Vertical	PASS

GSM1900(EDGE), Mid Channel

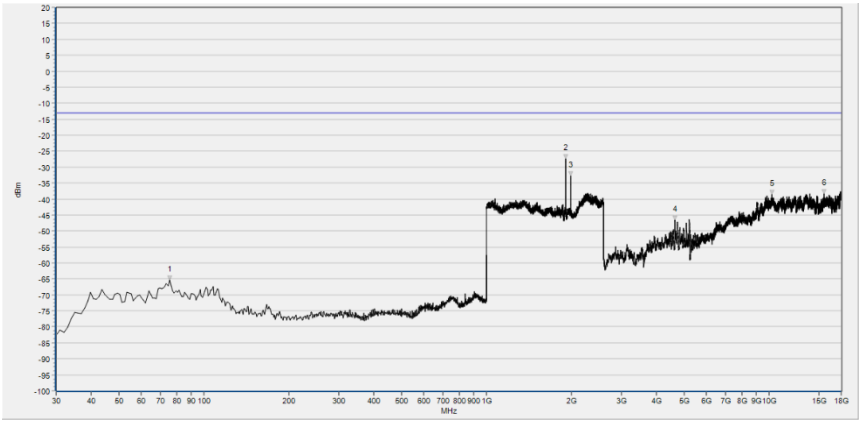


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	75.590	-66.58	-13.00	Horizontal	PASS
2	1879.712	-28.02	-13.00	Horizontal	N/A
3	1959.744	-32.81	-13.00	Horizontal	N/A
4	4739.589	-46.20	-13.00	Horizontal	PASS
5	9088.780	-38.25	-13.00	Horizontal	PASS
6	13502.382	-37.97	-13.00	Horizontal	PASS

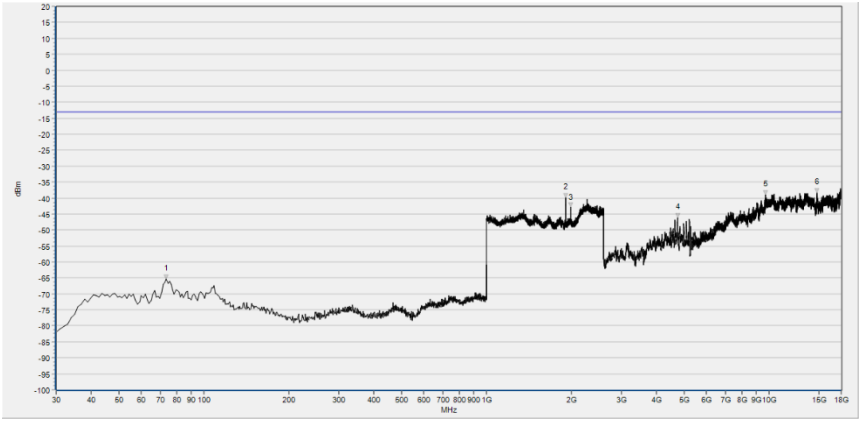


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	75.590	-65.64	-13.00	Vertical	PASS
2	1879.712	-39.30	-13.00	Vertical	N/A
3	1959.744	-41.39	-13.00	Vertical	N/A
4	5232.479	-46.49	-13.00	Vertical	PASS
5	10287.398	-38.60	-13.00	Vertical	PASS
6	13499.582	-37.64	-13.00	Vertical	PASS

GSM1900(EDGD), High Channel

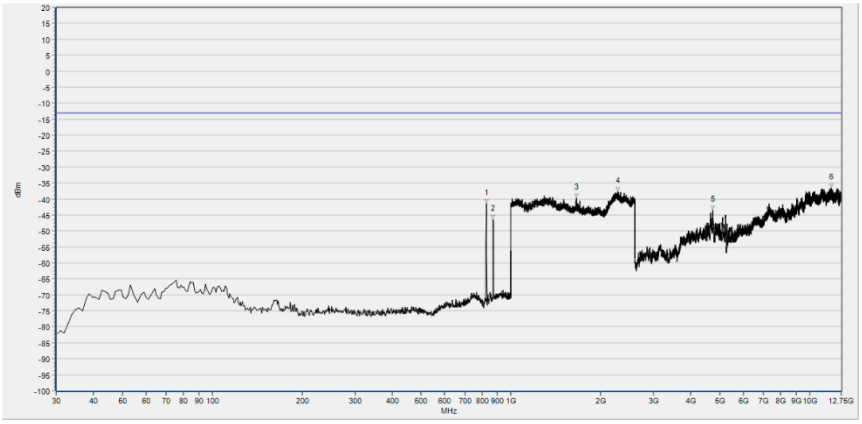


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	75.590	-65.28	-13.00	Horizontal	PASS
2	1909.804	-27.33	-13.00	Horizontal	N/A
3	1989.836	-32.65	-13.00	Horizontal	N/A
4	4647.172	-46.63	-13.00	Horizontal	PASS
5	10256.592	-38.47	-13.00	Horizontal	PASS
6	15686.779	-38.25	-13.00	Horizontal	PASS

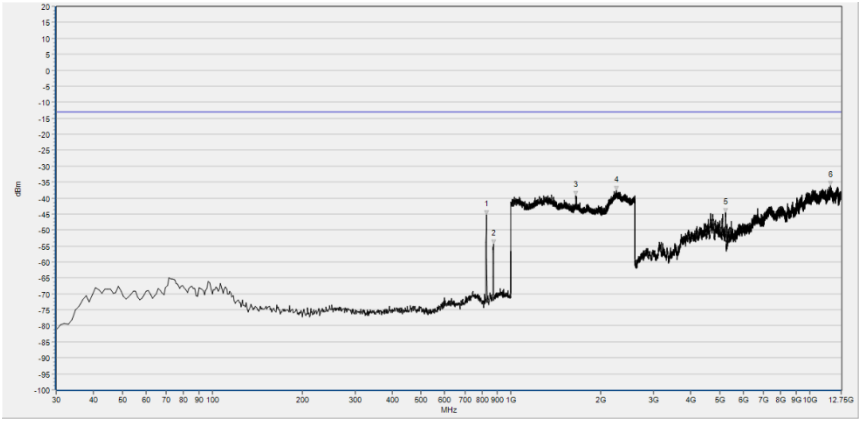


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	73.650	-65.47	-13.00	Vertical	PASS
2	1909.804	-39.79	-13.00	Vertical	N/A
3	1989.836	-42.70	-13.00	Vertical	N/A
4	4739.589	-46.08	-13.00	Vertical	PASS
5	9693.690	-38.93	-13.00	Vertical	PASS
6	14813.021	-38.29	-13.00	Vertical	PASS

WCDMA Band V(WCDMA), Low Channel

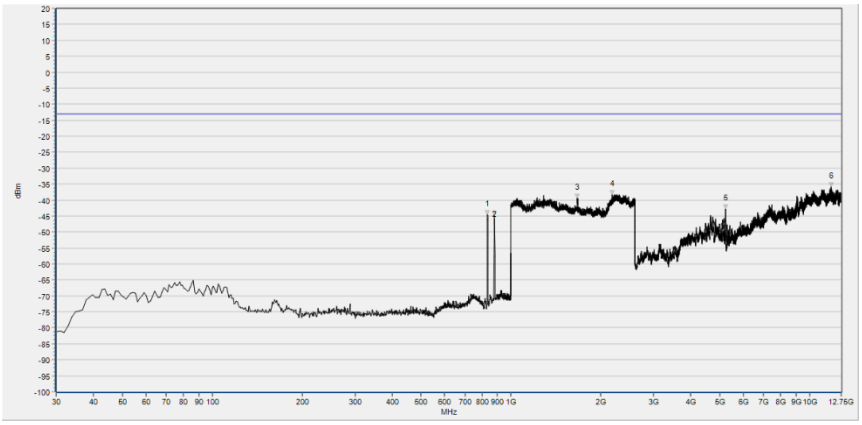


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	828.310	-41.50	-13.00	Horizontal	N/A
2	871.960	-46.45	-13.00	Horizontal	N/A
3	1655.622	-39.71	-13.00	Horizontal	PASS
4	2280.512	-37.57	-13.00	Horizontal	PASS
5	4744.808	-43.56	-13.00	Horizontal	PASS
6	11780.960	-36.61	-13.00	Horizontal	PASS

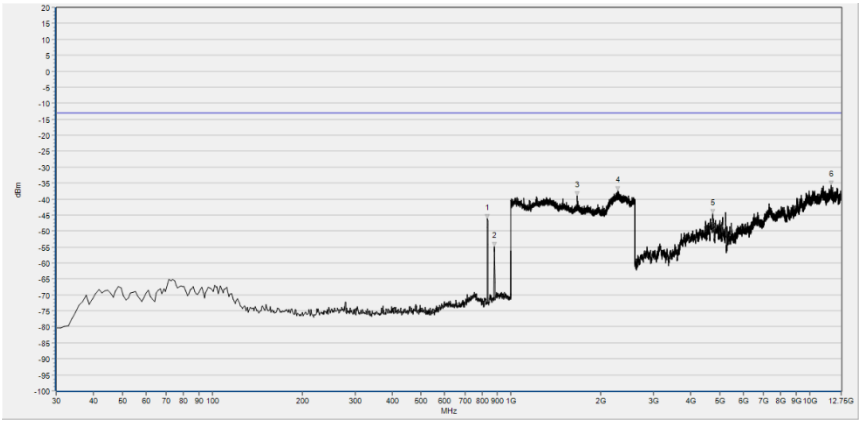


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	828.310	-45.32	-13.00	Vertical	N/A
2	872.930	-54.32	-13.00	Vertical	N/A
3	1650.500	-39.24	-13.00	Vertical	PASS
4	2249.780	-37.71	-13.00	Vertical	PASS
5	5232.097	-44.49	-13.00	Vertical	PASS
6	11771.731	-36.14	-13.00	Vertical	PASS

WCDMA Band V(WCDMA), Mid Channel

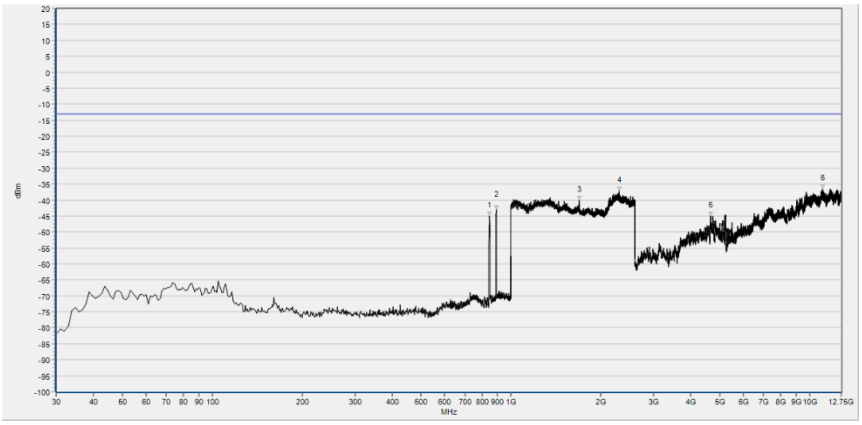


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	834.130	-44.63	-13.00	Horizontal	N/A
2	881.660	-44.83	-13.00	Horizontal	N/A
3	1667.787	-39.33	-13.00	Horizontal	PASS
4	2181.273	-38.34	-13.00	Horizontal	PASS
5	5233.943	-42.70	-13.00	Horizontal	PASS
6	11782.806	-35.89	-13.00	Horizontal	PASS

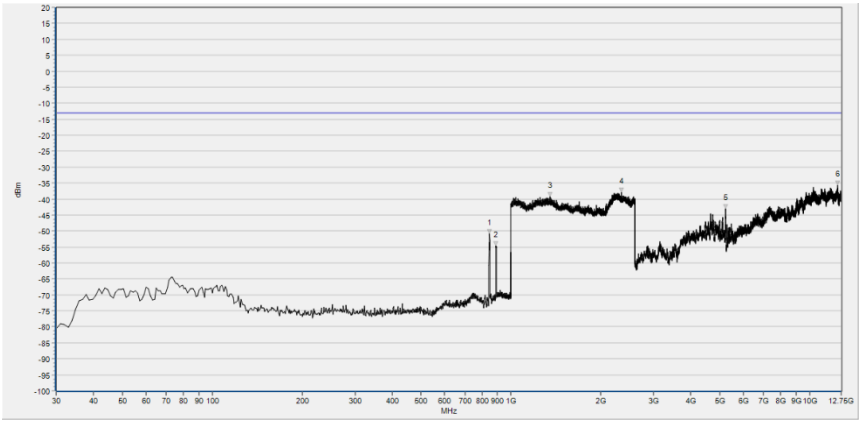


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	834.130	-46.17	-13.00	Vertical	N/A
2	878.750	-54.84	-13.00	Vertical	N/A
3	1667.147	-38.95	-13.00	Vertical	PASS
4	2276.671	-37.49	-13.00	Vertical	PASS
5	4744.808	-44.62	-13.00	Vertical	PASS
6	11780.960	-35.70	-13.00	Vertical	PASS

WCDMA Band V(WCDMA), High Channel

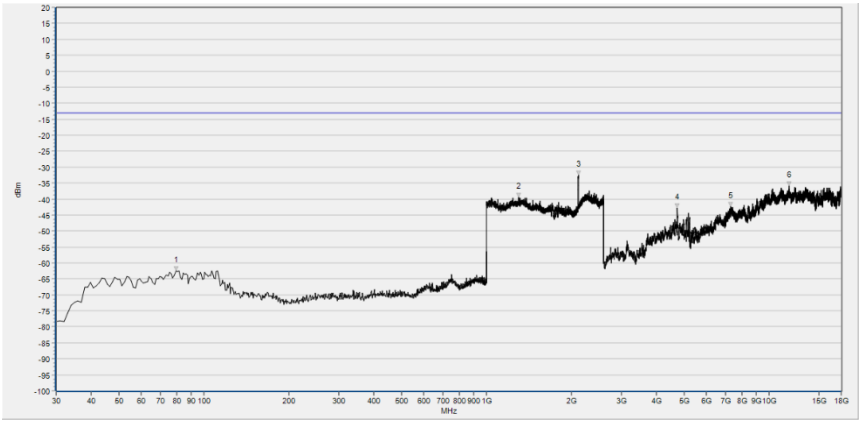


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	847.710	-44.98	-13.00	Horizontal	N/A
2	892.330	-43.02	-13.00	Horizontal	N/A
3	1690.836	-40.00	-13.00	Horizontal	PASS
4	2308.683	-37.18	-13.00	Horizontal	PASS
5	4648.827	-44.96	-13.00	Horizontal	PASS
6	11042.644	-36.61	-13.00	Horizontal	PASS

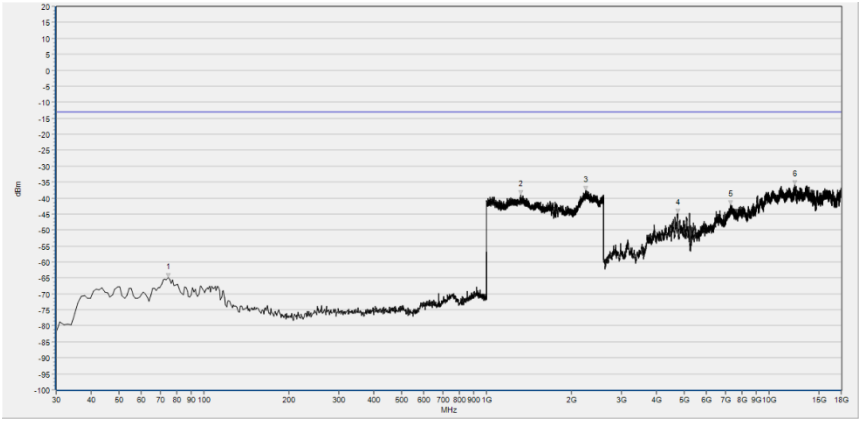


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	847.710	-50.90	-13.00	Vertical	N/A
2	891.360	-54.66	-13.00	Vertical	N/A
3	1351.501	-39.29	-13.00	Vertical	PASS
4	2345.818	-37.95	-13.00	Vertical	PASS
5	5233.943	-42.92	-13.00	Vertical	PASS
6	12408.529	-35.67	-13.00	Vertical	PASS

WCDMA Band IV(WCDMA), Low Channel

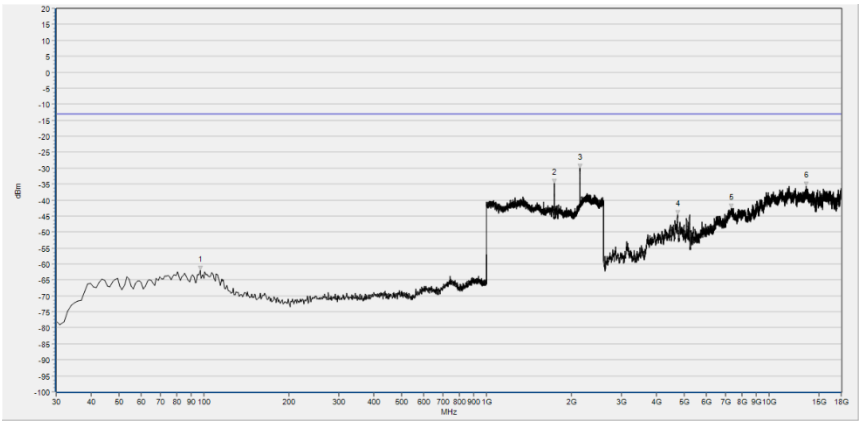


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	79.470	-62.48	-13.00	Horizontal	PASS
2	1299.640	-39.51	-13.00	Horizontal	PASS
3	2112.765	-32.40	-13.00	Horizontal	N/A
4	4736.789	-42.88	-13.00	Horizontal	PASS
5	7327.260	-42.36	-13.00	Horizontal	PASS
6	11782.870	-35.97	-13.00	Horizontal	PASS

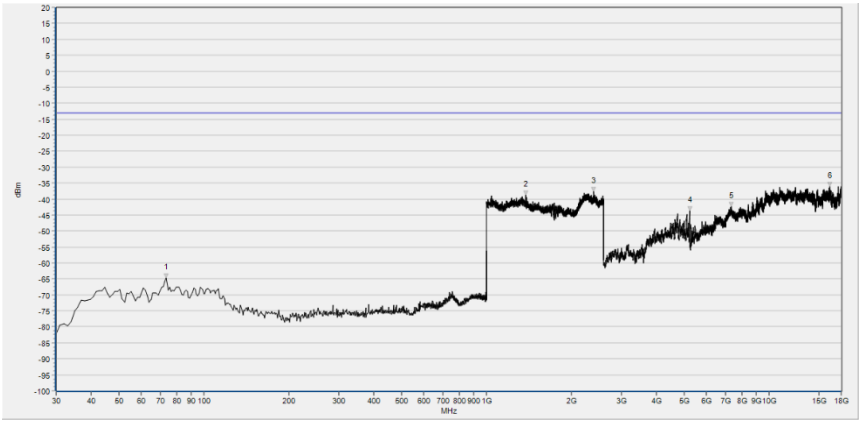


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	74.620	-65.02	-13.00	Vertical	PASS
2	1320.768	-39.01	-13.00	Vertical	PASS
3	2244.018	-37.60	-13.00	Vertical	PASS
4	4745.190	-44.74	-13.00	Vertical	PASS
5	7327.260	-42.21	-13.00	Vertical	PASS
6	12323.368	-35.86	-13.00	Vertical	PASS

WCDMA Band IV(WCDMA), Mid Channel

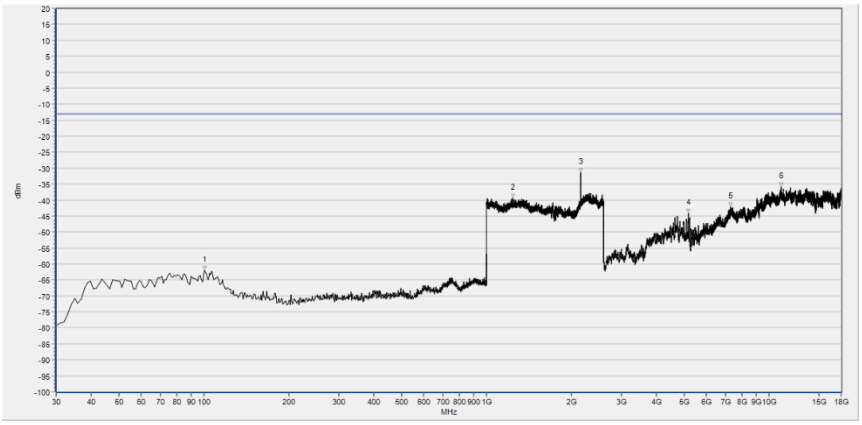


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	96.930	-62.09	-13.00	Horizontal	PASS
2	1738.215	-34.80	-13.00	Horizontal	N/A
3	2138.375	-30.05	-13.00	Horizontal	N/A
4	4739.589	-44.64	-13.00	Horizontal	PASS
5	7366.467	-42.52	-13.00	Horizontal	PASS
6	13561.193	-35.74	-13.00	Horizontal	PASS

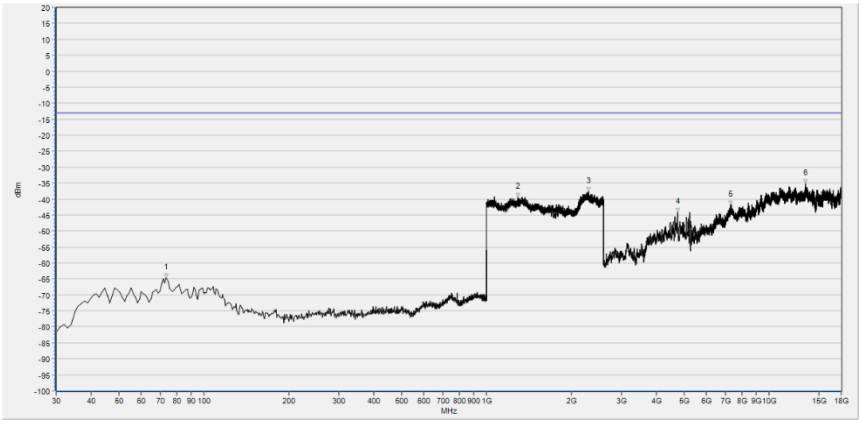


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	73.650	-64.60	-13.00	Vertical	PASS
2	1379.032	-38.86	-13.00	Vertical	PASS
3	2399.600	-37.71	-13.00	Vertical	PASS
4	5235.279	-43.78	-13.00	Vertical	PASS
5	7335.661	-42.38	-13.00	Vertical	PASS
6	16392.508	-36.09	-13.00	Vertical	PASS

WCDMA Band IV(WCDMA), High Channel

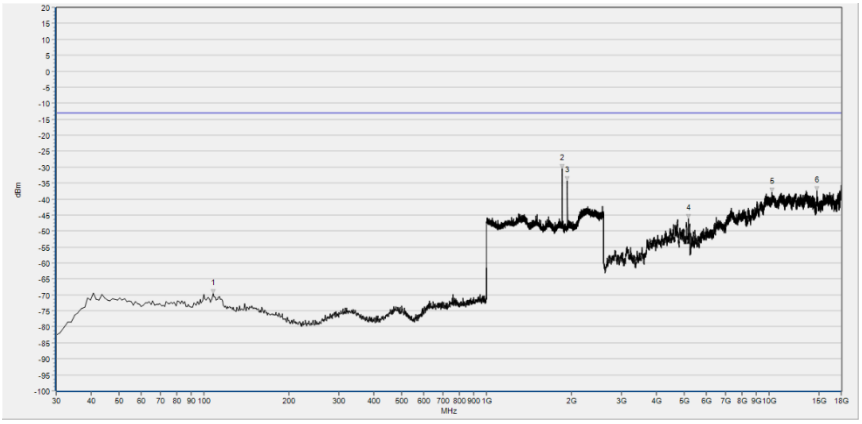


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	100.810	-62.05	-13.00	Horizontal	PASS
2	1240.096	-39.51	-13.00	Horizontal	PASS
3	2151.821	-31.49	-13.00	Horizontal	N/A
4	5187.670	-44.08	-13.00	Horizontal	PASS
5	7318.858	-42.04	-13.00	Horizontal	PASS
6	11035.134	-35.85	-13.00	Horizontal	PASS

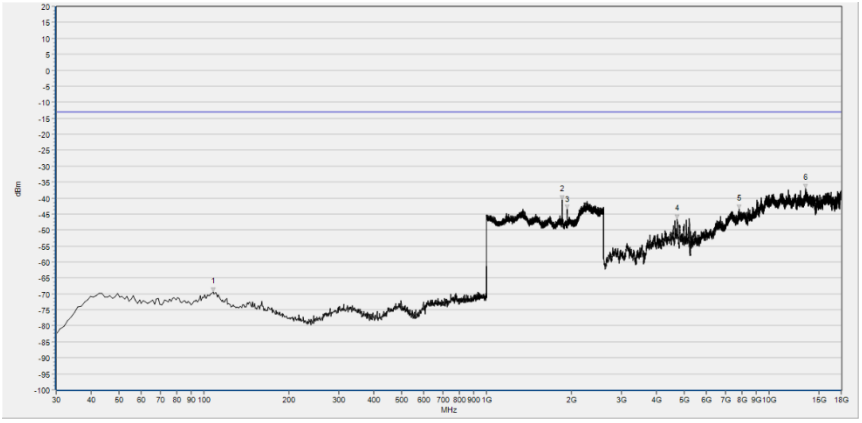


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	73.650	-64.72	-13.00	Vertical	PASS
2	1293.878	-39.41	-13.00	Vertical	PASS
3	2293.317	-37.64	-13.00	Vertical	PASS
4	4742.390	-44.17	-13.00	Vertical	PASS
5	7318.858	-41.82	-13.00	Vertical	PASS
6	13482.779	-35.29	-13.00	Vertical	PASS

WCDMA Band II(WCDMA), Low Channel

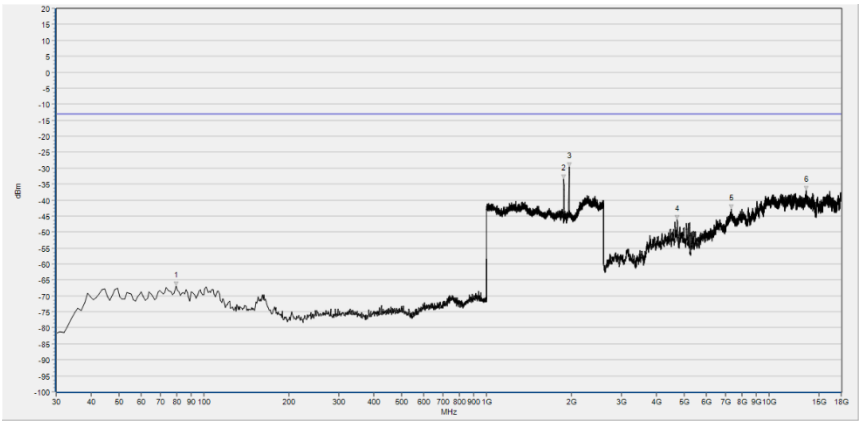


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.600	-69.61	-13.00	Horizontal	PASS
2	1851.541	-30.60	-13.00	Horizontal	N/A
3	1932.853	-34.28	-13.00	Horizontal	N/A
4	5182.069	-46.21	-13.00	Horizontal	PASS
5	10228.587	-37.83	-13.00	Horizontal	PASS
6	14771.013	-37.39	-13.00	Horizontal	PASS

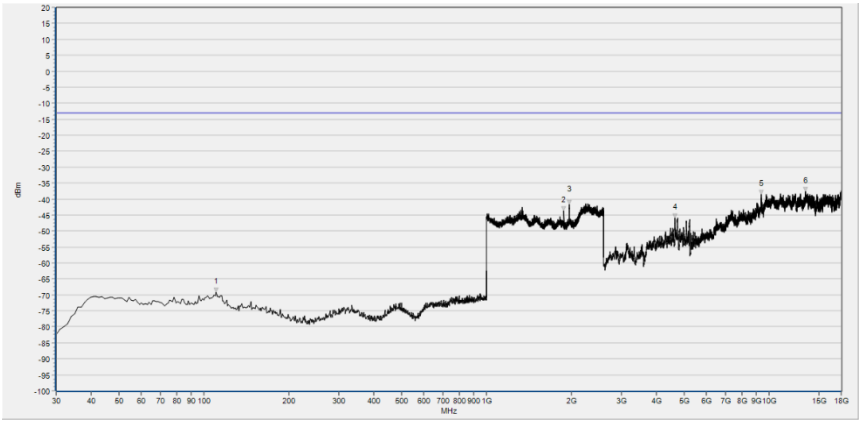


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.600	-69.42	-13.00	Vertical	PASS
2	1851.541	-40.57	-13.00	Vertical	N/A
3	1933.493	-43.40	-13.00	Vertical	N/A
4	4736.789	-46.66	-13.00	Vertical	PASS
5	7856.556	-43.48	-13.00	Vertical	PASS
6	13496.781	-36.88	-13.00	Vertical	PASS

WCDMA Band II(WCDMA), Mid Channel

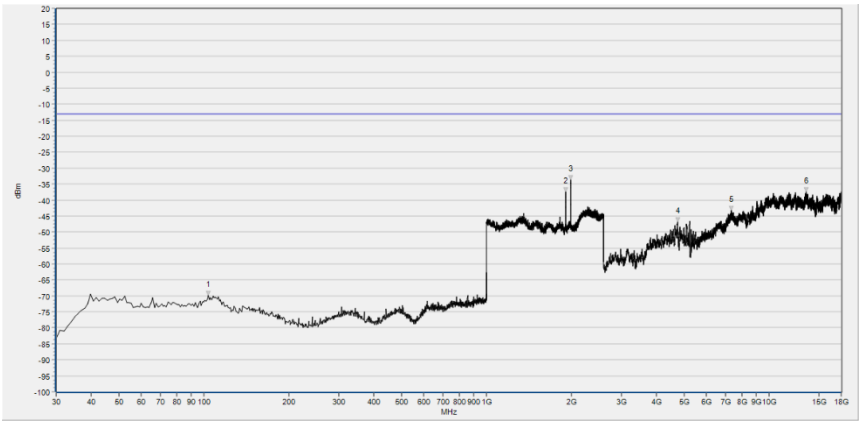


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	79.470	-66.98	-13.00	Horizontal	PASS
2	1878.431	-33.47	-13.00	Horizontal	N/A
3	1959.744	-29.54	-13.00	Horizontal	N/A
4	4736.789	-46.17	-13.00	Horizontal	PASS
5	7360.866	-42.85	-13.00	Horizontal	PASS
6	13561.193	-37.04	-13.00	Horizontal	PASS

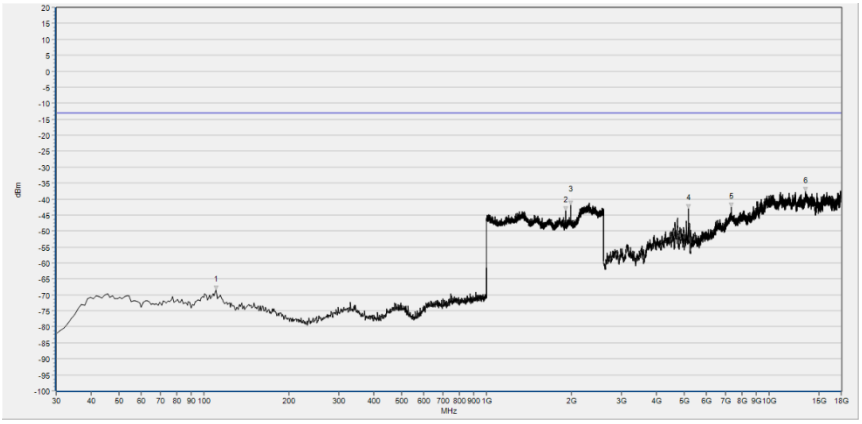


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	110.510	-69.21	-13.00	Vertical	PASS
2	1879.072	-43.74	-13.00	Vertical	N/A
3	1960.384	-41.59	-13.00	Vertical	N/A
4	4649.973	-45.85	-13.00	Vertical	PASS
5	9371.631	-38.49	-13.00	Vertical	PASS
6	13457.574	-37.71	-13.00	Vertical	PASS

WCDMA Band II(WCDMA), High Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	103.720	-69.90	-13.00	Horizontal	PASS
2	1908.523	-37.54	-13.00	Horizontal	N/A
3	1987.275	-33.62	-13.00	Horizontal	N/A
4	4739.589	-46.77	-13.00	Horizontal	PASS
5	7338.462	-43.23	-13.00	Horizontal	PASS
6	13561.193	-37.45	-13.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	110.510	-68.45	-13.00	Vertical	PASS
2	1908.523	-43.65	-13.00	Vertical	N/A
3	1987.915	-42.00	-13.00	Vertical	N/A
4	5187.670	-43.00	-13.00	Vertical	PASS
5	7346.863	-42.63	-13.00	Vertical	PASS
6	13457.574	-37.70	-13.00	Vertical	PASS

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	±2.77dB
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.
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.
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 Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY51511149	N9020A	Agilent	2023.06.21	2024.06.20
Communication Test Station	6200995016	MT8820C	Anritsu	2023.09.19	2024.09.18
Temperature Chamber	S022177101 00089002	KMT-36LF 1A0	KOMEG	2023.09.19	2024.09.18

4.2 List of Software Used

Description	Manufacturer	Software Version
MORLAB EMCR	MORLAB	V1.2

4.3 Radiated Test Equipment

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
System Simulator	152038	CMW500	R&S	2023.10.17	2024.10.16
Receiver	MY54130016	N9038A	Agilent	2023.06.21	2024.06.20
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2023.07.01	2024.06.30
Test Antenna - Horn	9120D-963	BBHA 9120D	Schwarzbeck	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	2023.06.27	2024.06.26
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40-K K-0.5	Qualwave	2023.07.04	2024.07.03
RF Coaxial Cable (DC-40GHz)	22290046	QA360-40-K KF-2	Qualwave	2023.07.04	2024.07.03
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	2023.06.27	2024.06.26
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118-40C-S	Decentest	2023.07.04	2024.07.03
Notch Filter	N/A	WRCG-GSM 850	Wainwright	N/A	N/A
Notch Filter	N/A	WRCG-GSM 1900	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV-W Band V	Wainwright	N/A	N/A
Notch Filter	N/A	WRCGV-W Band II	Wainwright	N/A	N/A

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Notch Filter	N/A	WRCGV-W Band IV	Wainwright	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.05.10	2025.05.09

END OF REPORT