TEST REPORT

MANUFACTURER	:	Bullitt Group
PRODUCT NAME	:	4G Mobile Phone
MODEL NAME	:	S62
BRAND NAME	:	CAT
FCC ID	:	ZL5S62
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27 Subpart L
RECEIPT DATE	:	2020-10-10
TEST DATE	:	2010-10-30 to 2021-01-15
ISSUE DATE	:	2021-02-19

Edited by : Qijie Xiao

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DIRECTORY

Change History		
Version	Date	Reason for change
1.0	2021-02-19	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Bullitt Group
Applicant Address:	One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom
Manufacturer:	Bullitt Group
Manufacturer Address:	One Valpy, Valpy Street, Reading, Berkshire, RG1 1AR, United Kingdom

1.2. Equipment Under Test (EUT) Description

Product Name:	4G Mobile Phone
Hardware Version:	Q190_V1
Software Version:	LTE_S02111.10_N_S62_0
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
Operating Frequency Range:	**GSM 850MHz:** Tx: 824.20 - 848.80MHz Rx: 869.20 - 893.80MHz **GSM 1900MHz:** Tx: 1850.20 - 1909.80MHz Rx: 1930.20 - 1989.80MHz **WCDMA Band V** Tx: 826.4 - 846.6MHz Rx: 871.4 - 891.6MHz **WCDMA Band II** Tx: 1852.4 - 1907.6MHz Rx: 1932.4 - 1987.6MHz

Operating Frequency Range:	**WCDMA Band IV** Tx: 1712.4 – 1752.6MHz Rx: 2112.4 - 2152.6MHz	
Antenna Type:	Fixed Internal	
Antenna Gain:	GSM 850:	-2.17 dBi
	GSM1900:	0.21dBi
	WCDMA Band V:	-2.17 dBi
	WCDMA Band II:	0.21 dBi
	WCDMA Band IV:	-0.16dBi
Accessory Information:	**Battery**	
	Manufacturer:	Hunan Gaoyuan Battery Co., Ltd.
	Brand Name:	Gaoyuan Battery
	Model No.:	XQ6602G
	Serial No.:	(N/A, marked #1 by test site)
	Capacity:	4000mAh
	Rated Voltage:	3.80V
	Charge Limit:	4.35V
	AC Adapter	
	Manufacturer:	Jiangxi Jian Aohai Technology Co.,Ltd.
	Brand Name:	AOHAI
	Model No.:	A138-120150C-US1
	Serial No.:	(N/A, marked #1 by test site)
	Rated Input:	AC
	Rated Output:	DC

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

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

Note 3: The transmitter (Tx) frequency arrangement of the WCDMA Band V used by the EUT can be represented with the formula F(n)=826.4+0.2*(n-4132), 4132<=n<=4233; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4182(836.4MHz) and 4233 (846.6MHz).

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA Band II used by the EUT can

be represented with the formula F(n)=1852.4+0.2*(n-9262), 9262<=n<=9538; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 5: The transmitter (Tx) frequency arrangement of the WCDMA 1700MHz band used by the EUT can be represented with the formula F(n)=1712.4+0.2*(n-1312), 1312<=n<=1513; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 1312 (1712.4MHz), 1413 (1732.6MHz) and 1513 (1752.6MHz).

Note 6: All 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:
GPRS mode and EDGE mode for GSM 850;
GPRS mode and EDGE mode for GSM 1900;
WCDMA mode for WCDMA band V;
WCDMA mode for WCDMA band II;
WCDMA mode for WCDMA band IV;

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 ERP/EIRP and Emission Designator

System	Maximum ERP/EIRP (W)	Emission Designator
GSM850	0.39	248KGXW
EDGE850	0.09	238KG7W
GSM1900	0.76	253KGXW
EDGE1900	0.23	253KG7W
WCDMA Band V	0.13	4M14F9W
WCDMA Band II	0.23	4M17F9W
WCDMA Band IV	0.19	4M13F9W

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	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	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	Jan 11,2021 Jan 15,2021	Stefan Sun	PASS
2	22.913(d) 24.232(d), 27.50(d)	Peak - Average Ratio	Jan 11,2021 Jan 15,2021	Stefan Sun	PASS
3	2.1049	99% Occupied Bandwidth	Oct 30,2020 Jan 11,2021	Stefan Sun	PASS
4	2.1055, 22.355, 24.235, 27.54	Frequency Stability	Jan 11,2021 Jan 15,2021	Stefan Sun	PASS
5	2.1051, 22.917(a), 24.238(a), 27.53(h)	Conducted Out of Band Emissions	Oct 30,2020 Jan 11,2021	Stefan Sun	PASS
6	2.1051, 22.917(a),	Band Edge	Jan 11,2021	Stefan Sun	PASS

	24.238(a), 27.53(h)		Jan 15,2021		
7	22.913(a), 27.50(d),24.232(a)	Transmitter Radiated Power (EIPR/ERP)	Jan 11,2021 Jan 15,2021	Stefan Sun	PASS
8	2.1051, 22.917(a), 24.238(a), 27.53(h)	Radiated Out of Band Emissions	Nov 05,2020 Dec 08,2020	Yaming Luo Yaming Luo	PASS
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.					

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

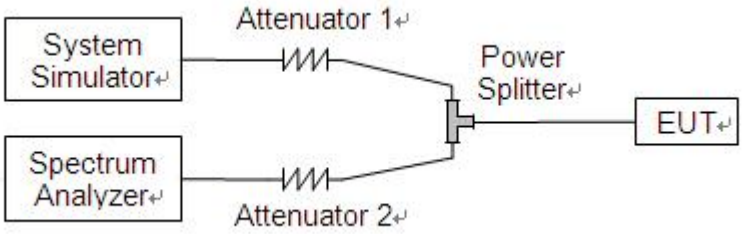
2.1. Conducted RF Output Power

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**	**190**	**251**
Frequency (MHz)	**824.2**	**836.6**	**848.8**
GSM 1 Tx slot	31.10	31.40	31.42
GPRS 1 Tx slot	31.50	31.76	31.75
GPRS 2 Tx slots	30.93	31.04	30.95
GPRS 3 Tx slots	29.95	30.05	29.93
GPRS 4 Tx slots	29.02	29.08	28.94
EDGE 1 Tx slot	24.27	24.86	24.16
EDGE 2 Tx slots	24.50	23.90	23.72
EDGE 3 Tx slots	23.91	23.09	22.58
EDGE 4 Tx slots	22.60	22.12	21.59

GSM1900	Average Power (dBm)		
TX Channel	**512**	**661**	**810**
Frequency (MHz)	**1850.2**	**1880**	**1909.8**
GSM 1 Tx slot	28.97	29.72	29.86
GPRS 1 Tx slot	28.79	29.57	29.70
GPRS 2 Tx slots	28.76	29.36	29.45
GPRS 3 Tx slots	28.18	28.92	29.08
GPRS 4 Tx slots	27.72	28.51	28.65
EDGE 1 Tx slot	24.27	23.98	24.73
EDGE 2 Tx slots	23.61	24.53	24.53
EDGE 3 Tx slots	23.53	23.92	24.24
EDGE 4 Tx slots	23.01	23.40	23.53

WCDMA Band II	Average Power (dBm)		
TX Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880.0**	**1907.6**
AMR 12.2Kbps	24.93	25.02	25.09
RMC 12.2Kbps	25.01	25.13	25.18
HSDPA Subtest-1	23.40	23.06	22.77
HSDPA Subtest-2	23.10	22.98	22.86
HSDPA Subtest-3	22.23	21.96	21.82
HSDPA Subtest-4	22.48	21.88	21.63
HSUPA Subtest-1	22.94	22.40	22.28

HSUPA Subtest-2	23.49	23.16	22.93
HSUPA Subtest-3	22.76	22.60	22.22
HSUPA Subtest-4	23.54	23.12	22.96
HSUPA Subtest-5	22.65	22.50	22.21
HSPA+ (16QAM) Subtest-1	19.80	19.60	19.90

WCDMA Band IV	**Average Power (dBm)**		
TX Channel	**1312**	**1413**	**1513**
Frequency (MHz)	**1712.4**	**1732.6**	**1752.6**
AMR 12.2Kbps	23.99	24.08	24.08
RMC 12.2Kbps	24.05	24.10	24.16
HSDPA Subtest-1	22.68	22.56	22.79
HSDPA Subtest-2	22.55	22.44	22.48
HSDPA Subtest-3	21.58	21.30	21.44
HSDPA Subtest-4	21.28	21.12	21.26
HSUPA Subtest-1	21.94	21.84	22.23
HSUPA Subtest-2	22.72	22.52	22.88
HSUPA Subtest-3	21.81	21.89	22.23
HSUPA Subtest-4	22.75	22.53	22.87
HSUPA Subtest-5	21.84	21.99	22.11
HSPA+ (16QAM) Subtest-1	19.40	19.03	19.90

WCDMA Band V	**Average Power (dBm)**		
TX Channel	**4132**	**4182**	**4233**
Frequency (MHz)	**826.4**	**836.4**	**846.6**
AMR 12.2Kbps	25.26	25.17	25.24
RMC 12.2Kbps	25.29	25.31	25.30
HSDPA Subtest-1	22.71	22.59	22.76
HSDPA Subtest-2	22.31	22.35	22.62
HSDPA Subtest-3	21.62	21.25	21.63
HSDPA Subtest-4	21.10	21.44	21.61
HSUPA Subtest-1	21.98	21.81	22.25
HSUPA Subtest-2	22.69	22.49	22.74
HSUPA Subtest-3	21.94	21.95	22.17
HSUPA Subtest-4	22.66	22.58	22.74
HSUPA Subtest-5	21.94	21.63	22.19
HSPA+ (16QAM) Subtest-1	19.05	19.22	19.54

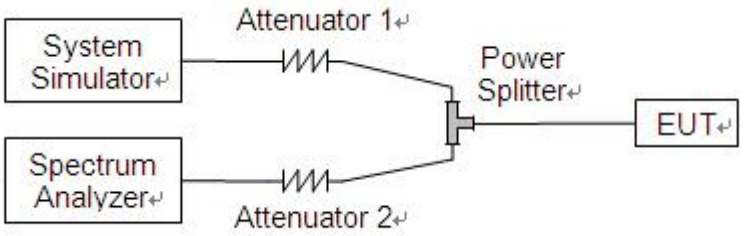
2.2. Peak to Average Ratio

2.2.1. Requirement

According to FCC 24.232(d)&22.913(d)&27.50(d) the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

2.2.2. Test Description

Test Setup:



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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.

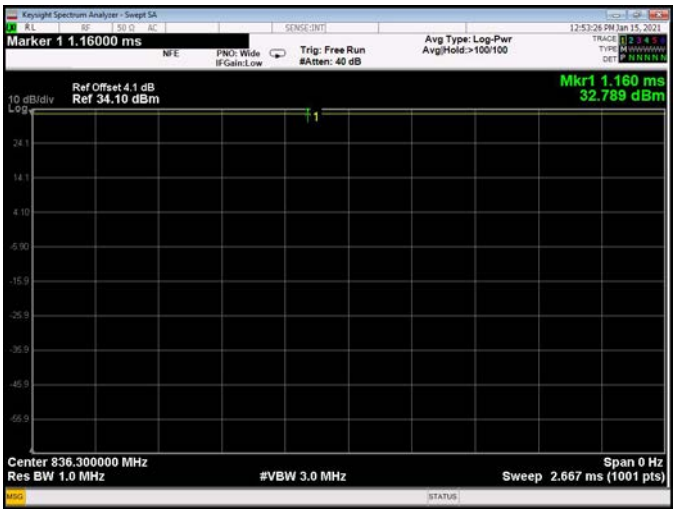
A. Test Verdict:

Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
GSM 850MHz	128	824.2	0.034	13	PASS
	190	836.6	0.020		PASS
	251	848.8	0.007		PASS
GSM 1900MHz	512	1850.2	0.054		PASS
	661	1880.0	0.016		PASS
	810	1909.8	0.041		PASS
EDGE 850MHz	128	824.2	0.078		PASS
	190	836.6	0.107		PASS
	251	848.8	0.028		PASS
EDGE 1900MHz	512	1850.2	0.229		PASS
	661	1880.0	0.062		PASS
	810	1909.8	0.046		PASS

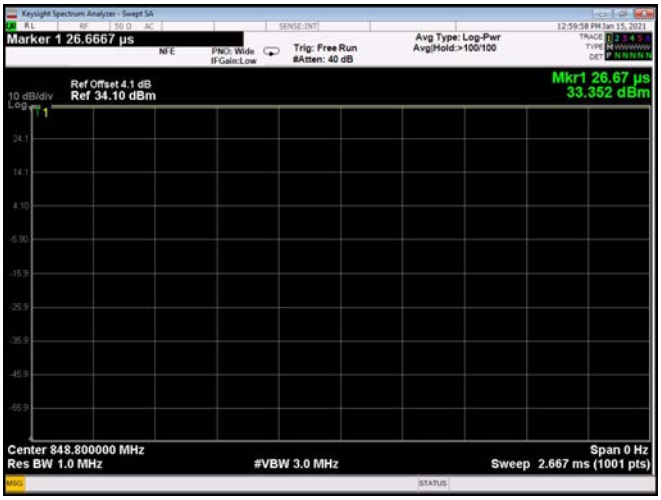
Band	Channel	Frequency (MHz)	Peak to Average ratio	Limit	Verdict
			dB	dB	
WCDMA Band II	9262	1852.4	2.77	13	PASS
	9400	1880.0	2.87		PASS
	9538	1907.6	3.01		PASS
WCDMA Band IV	1312	1712.4	3.15		PASS
	1413	1732.6	2.96		PASS
	1513	1752.6	3.15		PASS
WCDMA Band V	4132	826.4	3.02		PASS
	4182	836.4	2.86		PASS
	4233	846.6	2.97		PASS

GSM 850MHz CH128 824.2MHz

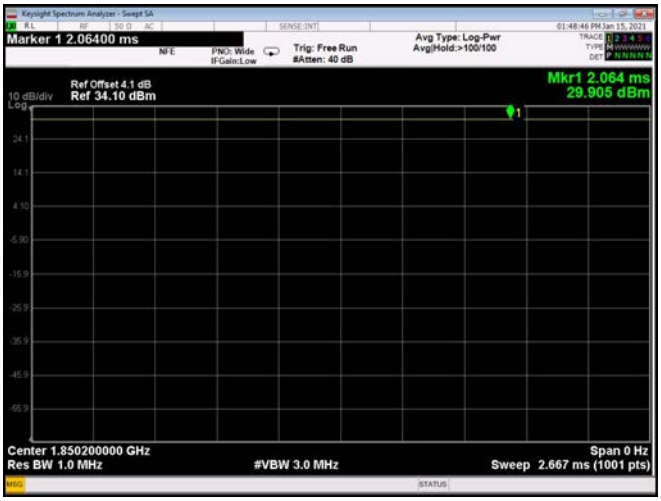
GSM 850MHz CH190 836.6MHz



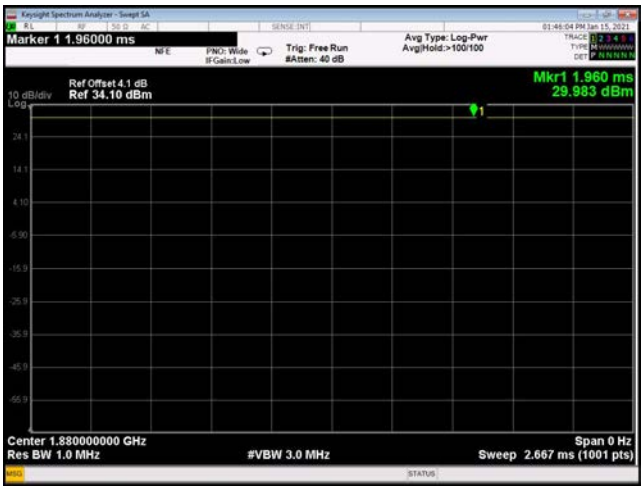
GSM 850MHz CH251 848.8MHz



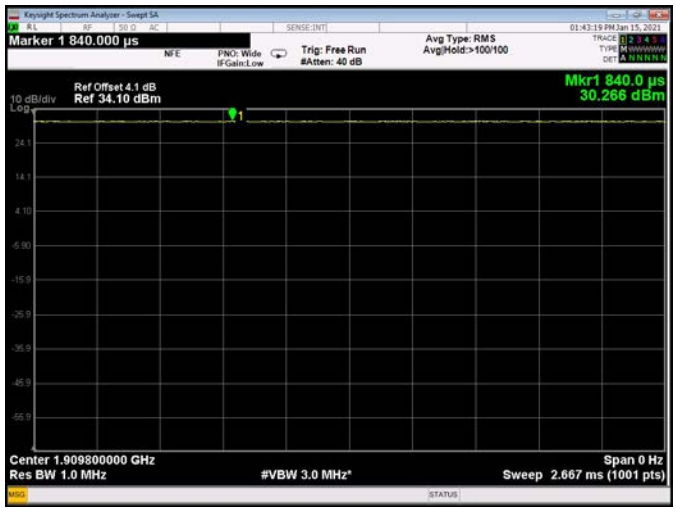
GSM 1900MHz CH512 1850.2MHz



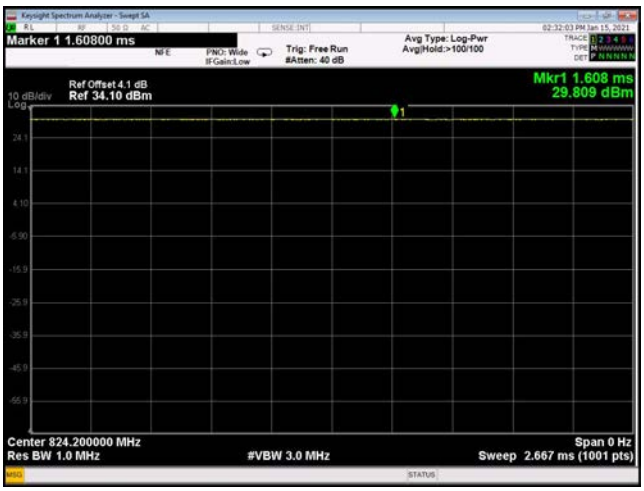
GSM 1900MHz CH661 1880.0MHz



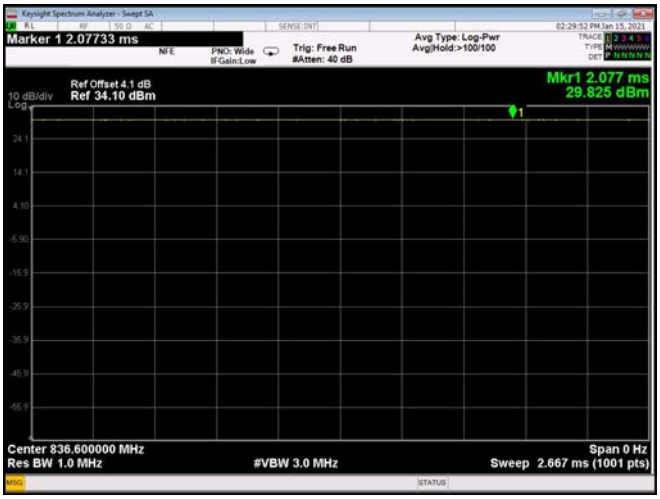
GSM 1900MHz CH810 1909.8MHz

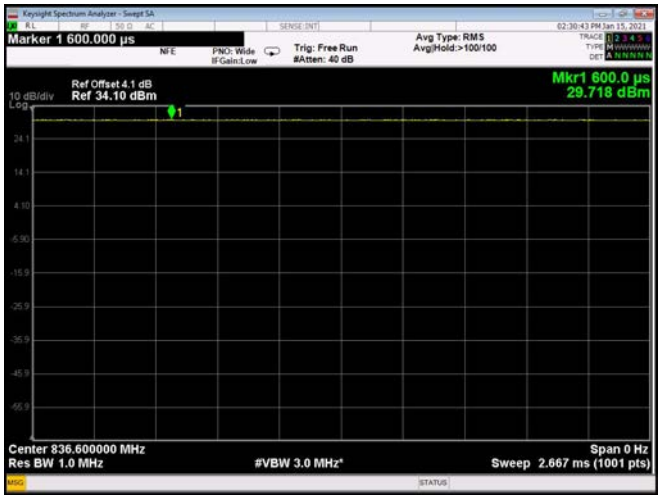


EDGE 850MHz CH128 824.2MHz

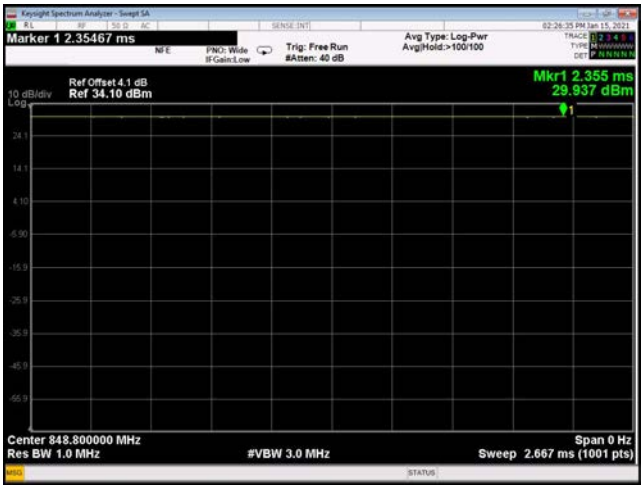


EDGE 850MHz CH190 836.6MHz

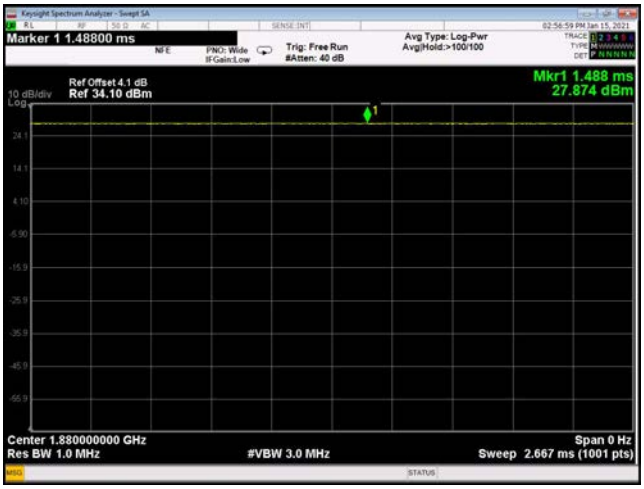
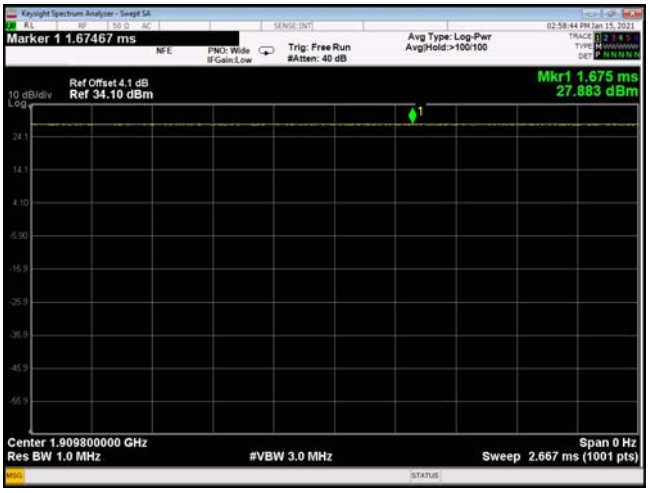
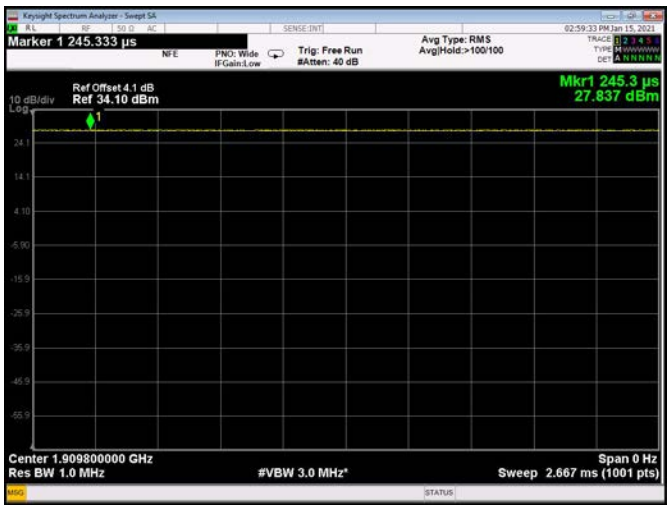


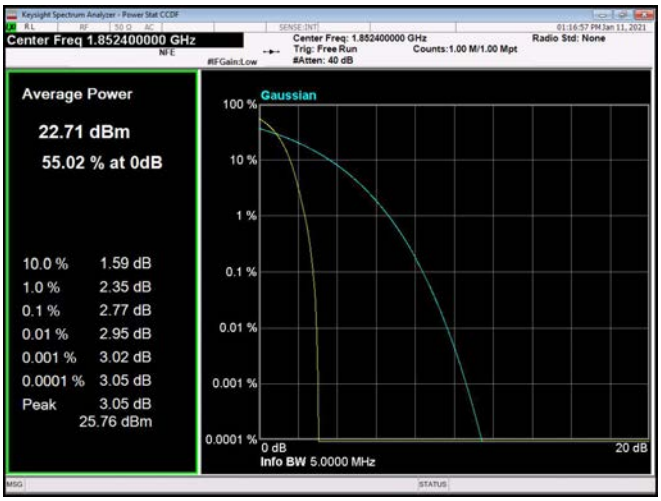


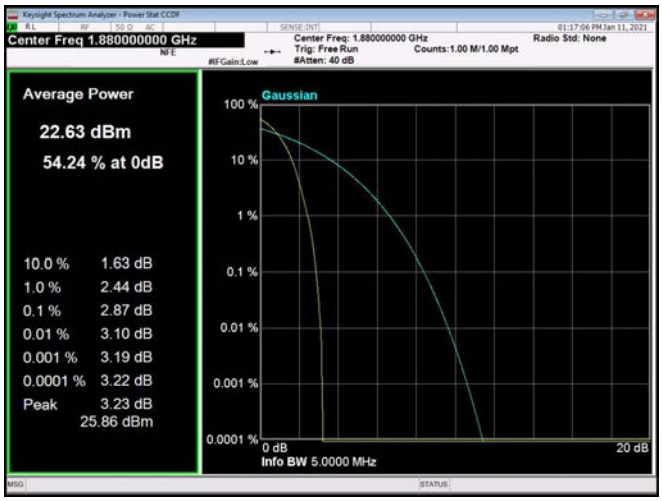
EDGE 850MHz CH251 848.8MHz



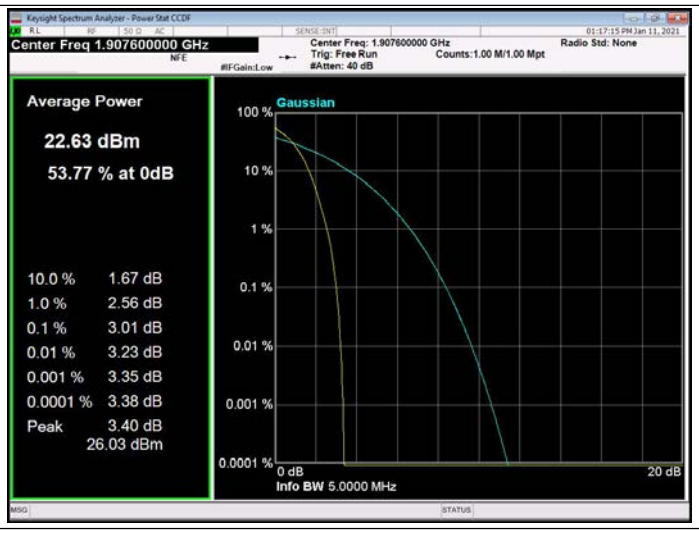
EDGE 1900MHz CH512 1850.2MHz

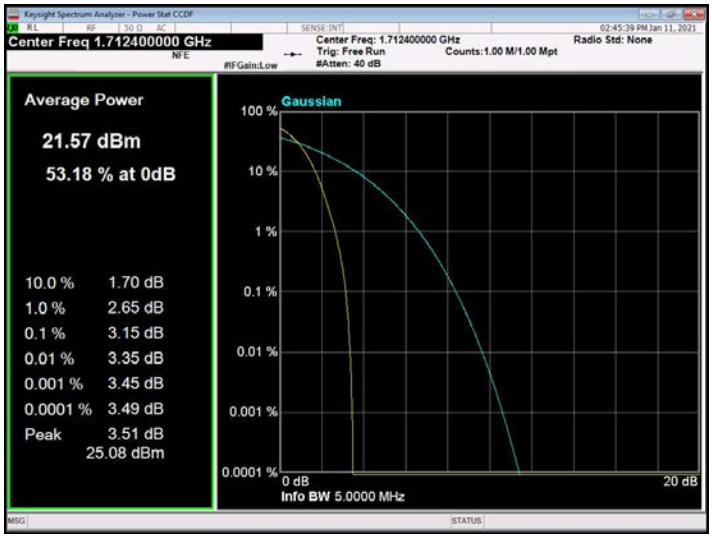
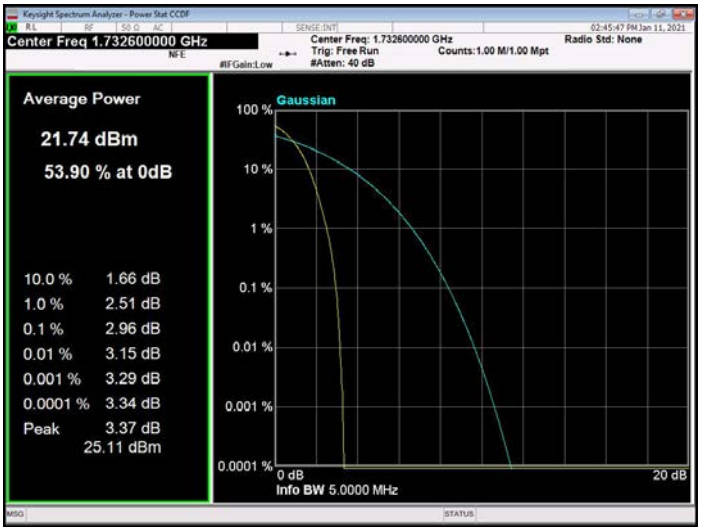
EDGE 1900MHz CH661 1880.0MHz	
	
EDGE 1900MHz CH810 1909.8MHz	
	
WCDMA Band II CH9262 1852.4MHz	**WCDMA Band II CH9400 1880.0MHz**



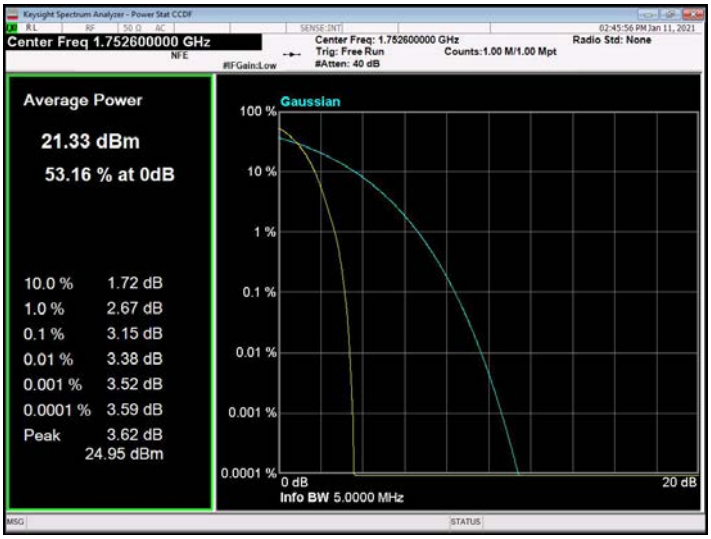


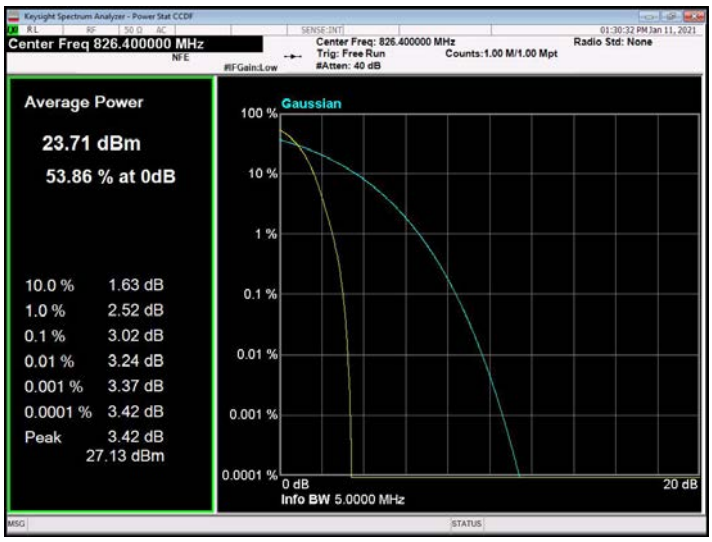
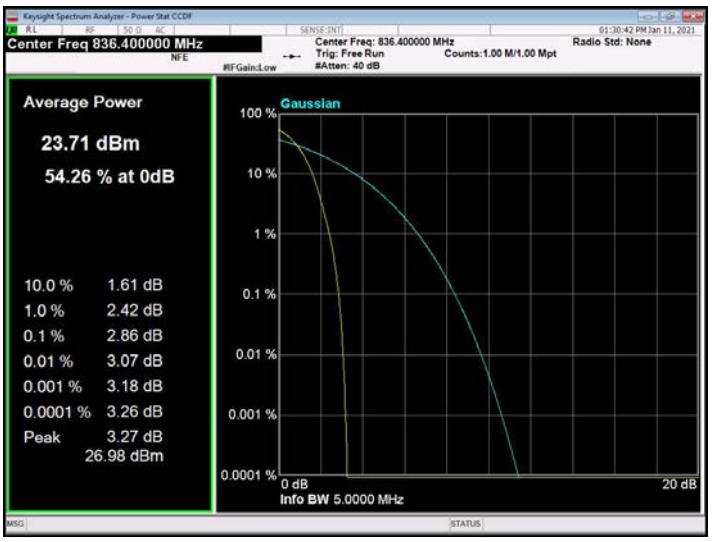
WCDMA Band II CH9538 1907.6MHz

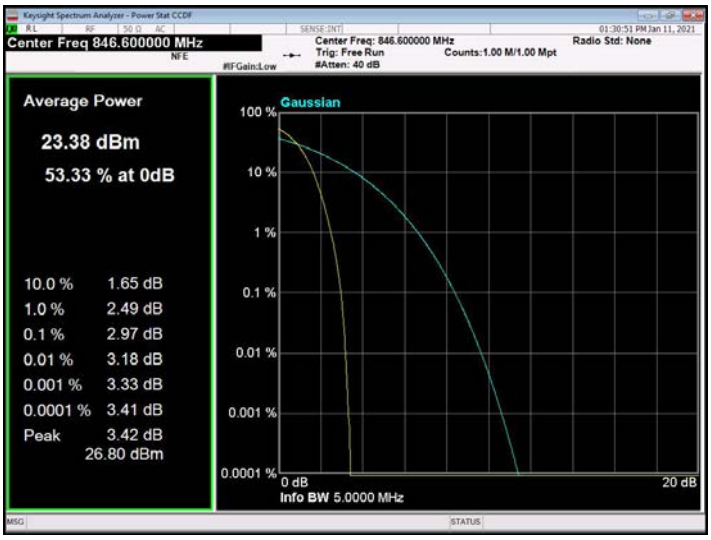


WCDMA Band IV CH1312 1712.4MHz	WCDMA Band IV CH1413 1732.6MHz
	

WCDMA Band IV CH1513 1752.6MHz



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

WCDMA Band V CH4233 846.6MHz


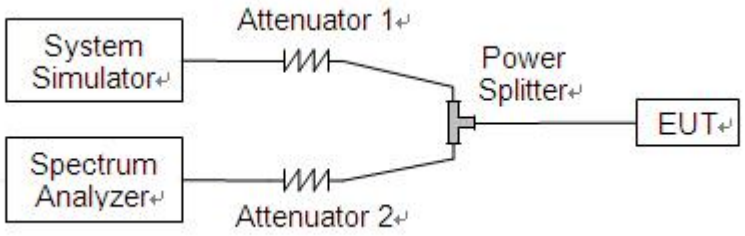
2.3. 99% Occupied Bandwidth

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:

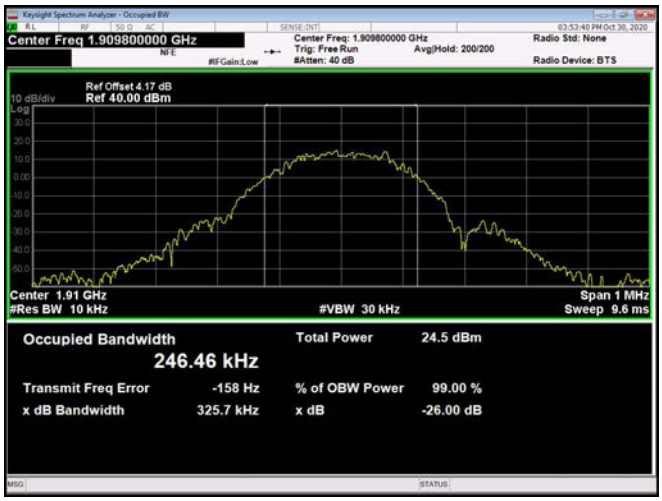
Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26dB Bandwidth (kHz)
GSM 850MHz	128	824.2	242.77	316.8
	190	836.6	248.38	318.4
	251	848.8	246.10	318.6
GSM 1900MHz	512	1850.2	244.73	312.9
	661	1880.0	253.08	318.3
	810	1909.8	246.46	325.7
EDGE 850MHz	128	824.2	227.93	292.0
	190	836.6	233.96	285.9
	251	848.8	238.75	299.4
EDGE 1900MHz	512	1850.2	253.84	319.0
	661	1880.0	238.94	297.4
	810	1909.8	239.45	310.5

WCDMA Test Verdict:

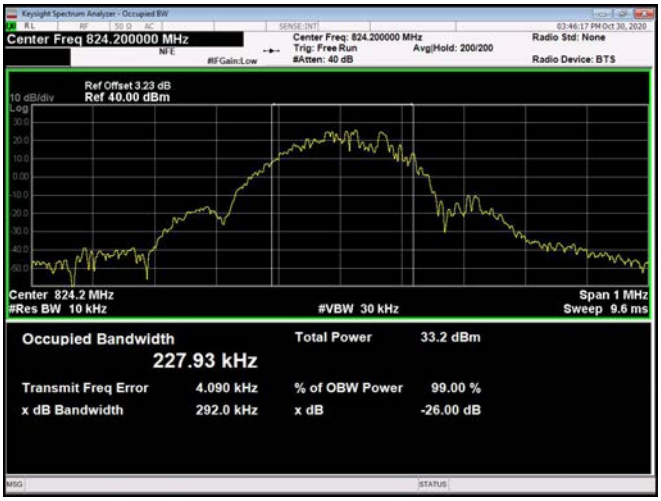
Band	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
WCDMA Band II	9262	1852.4	4.137	4.723
	9400	1880.0	4.134	4.696
	9538	1907.6	4.172	4.698
WCDMA Band IV	1312	1712.4	4.120	4.681
	1413	1732.6	4.138	4.702
	1513	1752.6	4.133	4.683
WCDMA Band V	4132	826.4	4.139	4.700
	4182	836.4	4.137	4.737
	4233	846.6	4.144	4.710

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

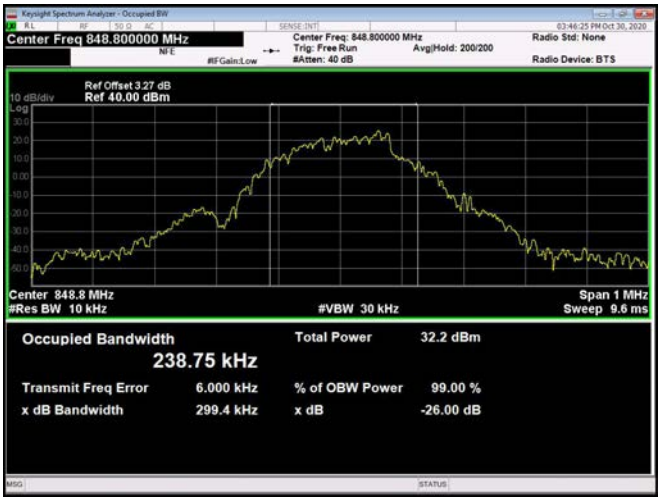


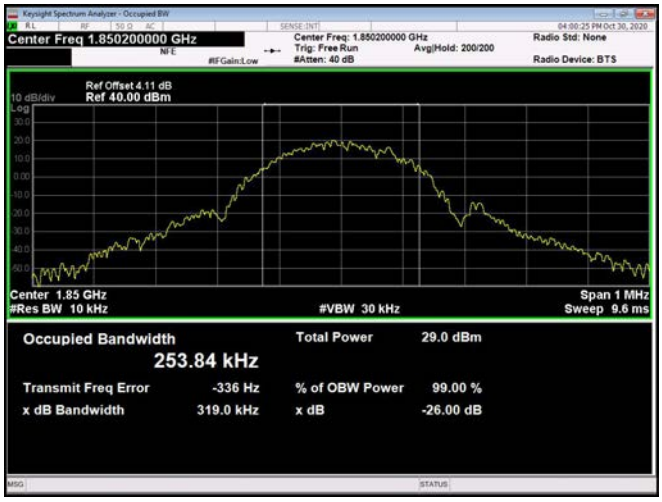
EDGE 850MHz CH190 836.6MHz

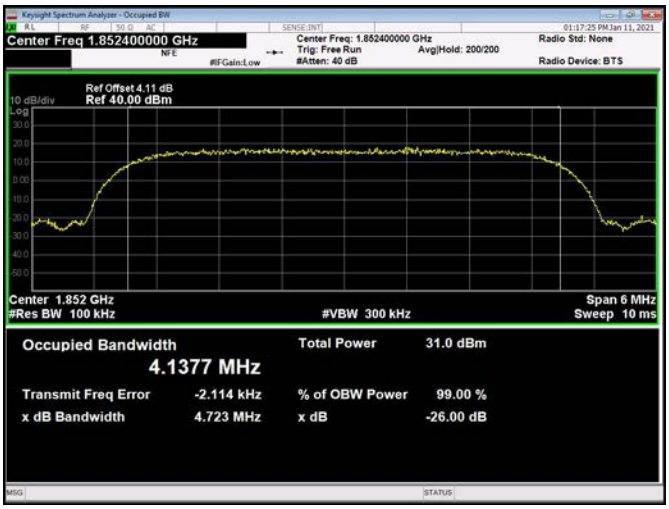
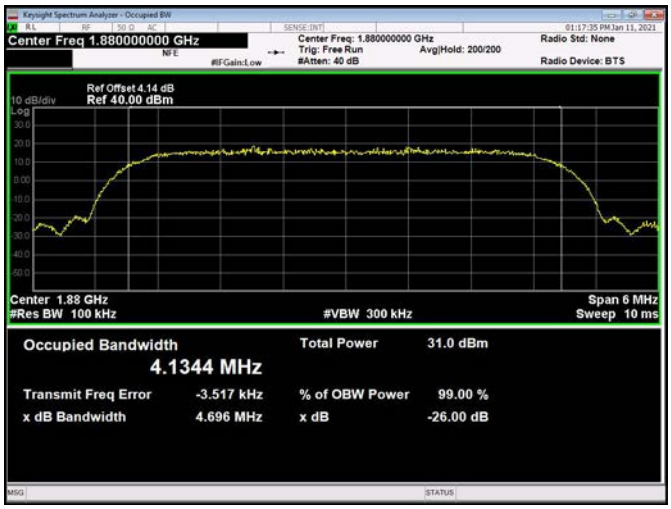


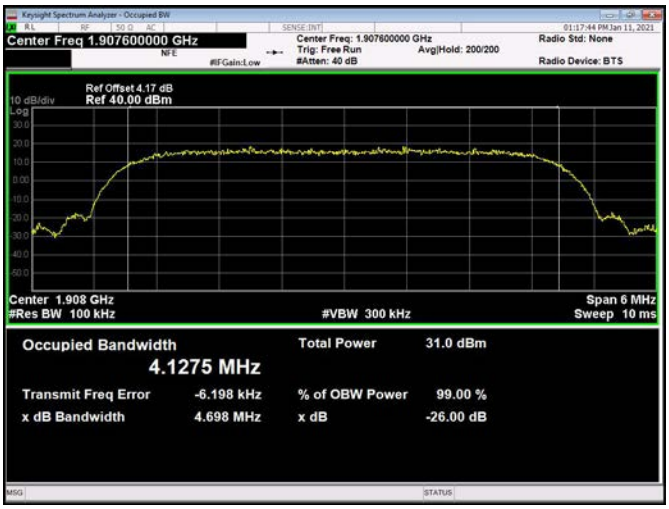
EDGE 850MHz CH251 848.8MHz

EDGE 1900MHz CH512 1850.2MHz

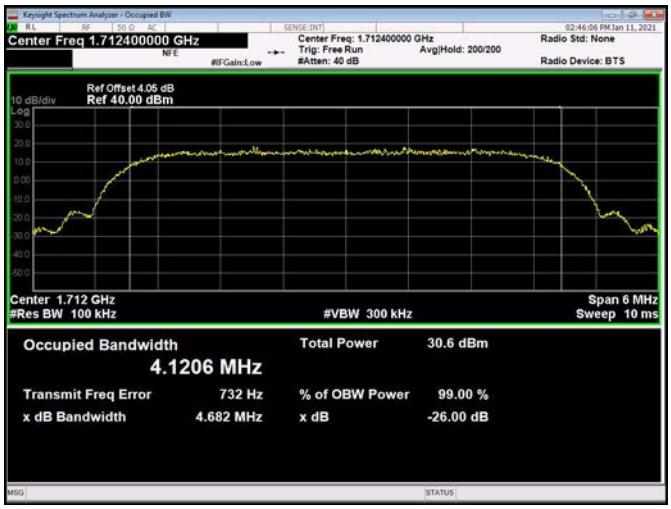




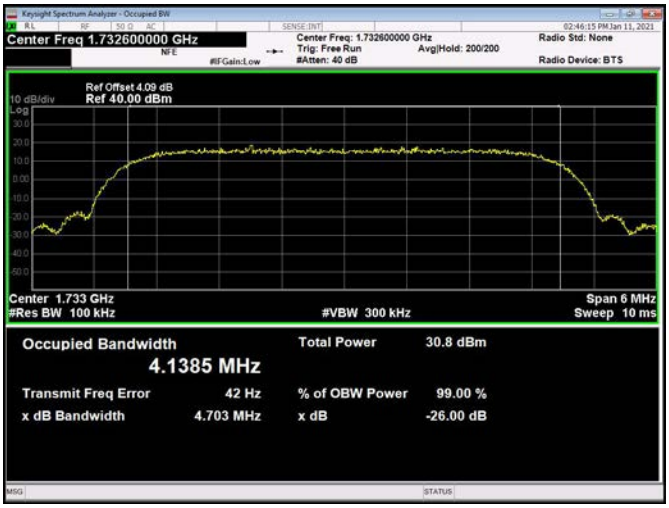
EDGE 1900MHz CH661 1880.0MHz	EDGE 1900MHz CH810 1909.8MHz
	
WCDMA Band II CH9262 1852.4MHz	**WCDMA Band II CH9400 1880.0MHz**
	
WCDMA Band II CH9538 1907.6MHz	**WCDMA Band IV CH1312 1712.4MHz**



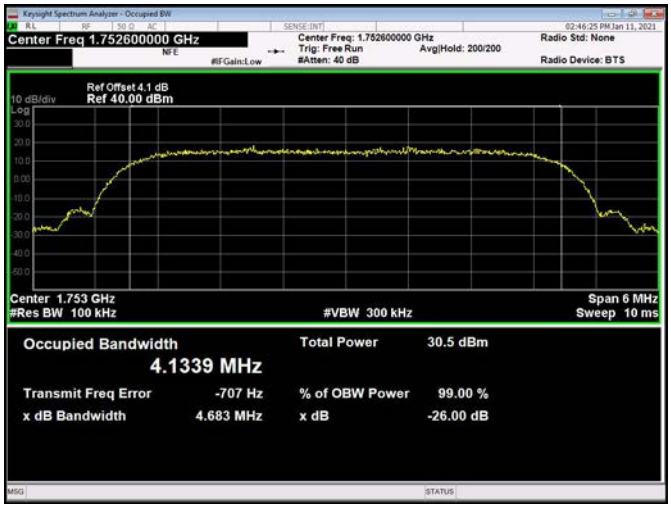
WCDMA Band IV CH1413 1732.6MHz



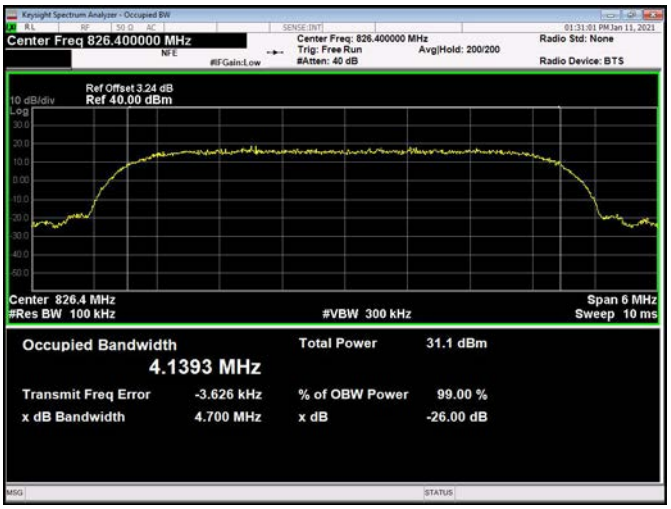
WCDMA Band IV CH1513 1752.6MHz

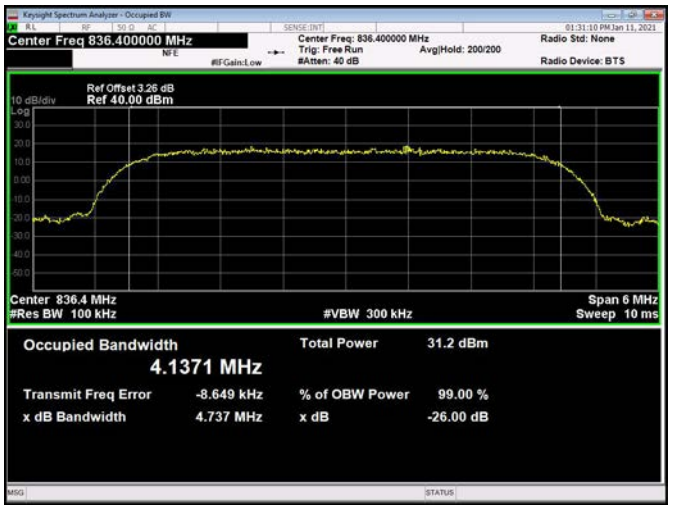


WCDMA Band V CH4132 826.4MHz

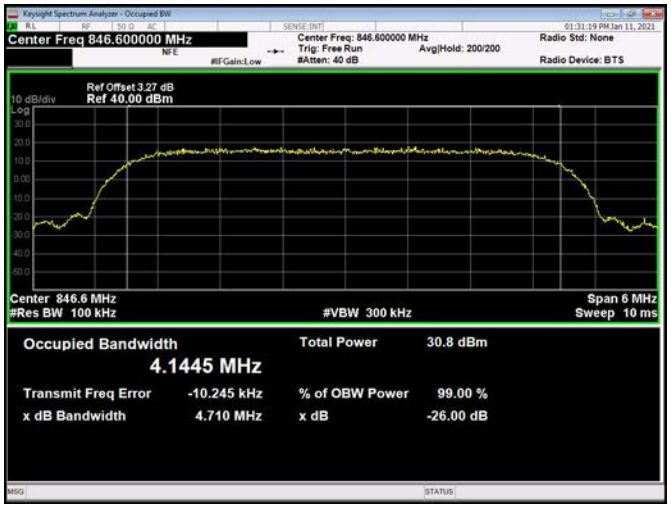


WCDMA Band V CH4182 836.4MHz





WCDMA Band V CH4233 846.6MHz



2.4. Frequency Stability

2.4.1. Requirement

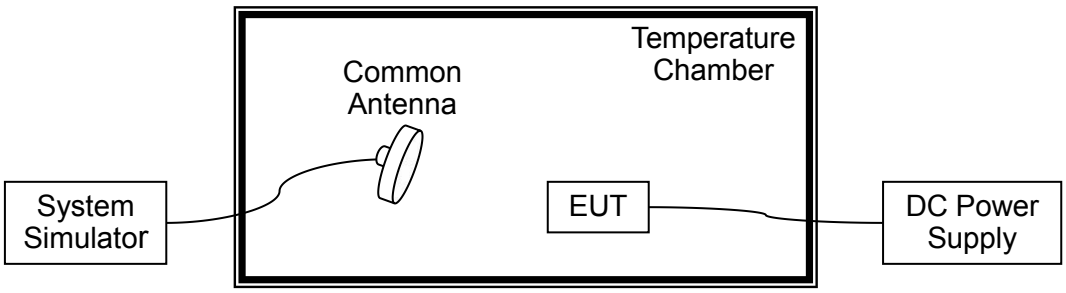
According to FCC section 22.355, 24.235 and 27.54 the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

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

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

2.4.2. Test Description

Test Setup:



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

2.4.3. Test Result

A. Test Verdict:

GSM 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	58	0.069	PASS
100		-20	-84	-0.100	
100		-10	-42	-0.050	
100		0	59	0.071	
100		+10	45	0.054	
100		+20	57	0.068	
100		+30	-3	-0.004	
100		+40	-69	-0.082	
100		+50	32	0.038	
115	4.35	+20	74	0.088	
85	3.23	+20	58	0.069	

GSM 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	-39	-0.021	PASS
100		-20	70	0.037	
100		-10	-70	-0.037	
100		0	-3	-0.002	
100		+10	-29	-0.015	
100		+20	-82	-0.044	
100		+30	-6	-0.003	
100		+40	59	0.031	
100		+50	-38	-0.020	
115	4.35	+20	12	0.006	
85	3.23	+20	-53	-0.028	

EDGE 850MHz, Channel 190, Frequency 836.6MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	-29	-0.035	PASS
100		-20	-80	-0.096	
100		-10	-29	-0.035	
100		0	-43	-0.051	
100		+10	20	0.024	
100		+20	29	0.035	
100		+30	-67	-0.080	
100		+40	-13	-0.016	
100		+50	-69	-0.082	
115	4.35	+20	-72	-0.086	
85	3.23	+20	-90	-0.108	

EDGE 1900MHz, Channel 661, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	28	0.015	PASS
100		-20	42	0.022	
100		-10	47	0.025	
100		0	15	0.008	
100		+10	48	0.026	
100		+20	23	0.012	
100		+30	-5	-0.003	
100		+40	31	0.016	
100		+50	71	0.038	
115	4.35	+20	18	0.010	
85	3.23	+20	11	0.006	

WCDMA Band V, Channel 4182, Frequency 836.4MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	-85	-0.102	PASS
100		-20	16	0.019	
100		-10	77	0.092	
100		0	5	0.006	
100		+10	36	0.043	
100		+20	-90	-0.108	
100		+30	34	0.041	
100		+40	62	0.074	
100		+50	-74	-0.088	
115	4.35	+20	90	0.108	
85	3.23	+20	20	0.024	

WCDMA Band II, Channel 9400, Frequency 1880.0MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	-6	-0.003	PASS
100		-20	-40	-0.021	
100		-10	71	0.038	
100		0	5	0.003	
100		+10	63	0.034	
100		+20	-63	-0.034	
100		+30	-80	-0.043	
100		+40	41	0.022	
100		+50	46	0.024	
115	4.35	+20	-16	-0.009	
85	3.23	+20	-87	-0.046	

WCDMA Band IV, Channel 1413, Frequency 1732.6MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	3.8	-30	-42	-0.024	PASS
100		-20	74	0.043	
100		-10	76	0.044	
100		0	81	0.047	
100		+10	-71	-0.041	
100		+20	8	0.005	
100		+30	-29	-0.017	
100		+40	-26	-0.015	
100		+50	40	0.023	
115	4.35	+20	53	0.031	
85	3.23	+20	-19	-0.011	

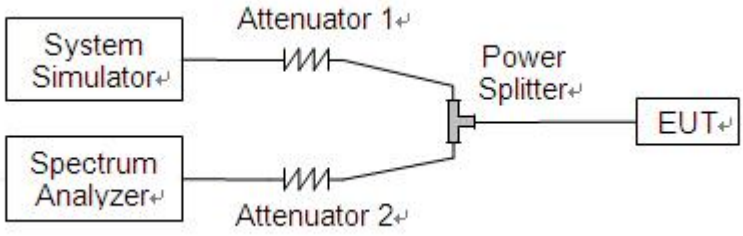
2.5. Conducted Out of Band Emissions

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

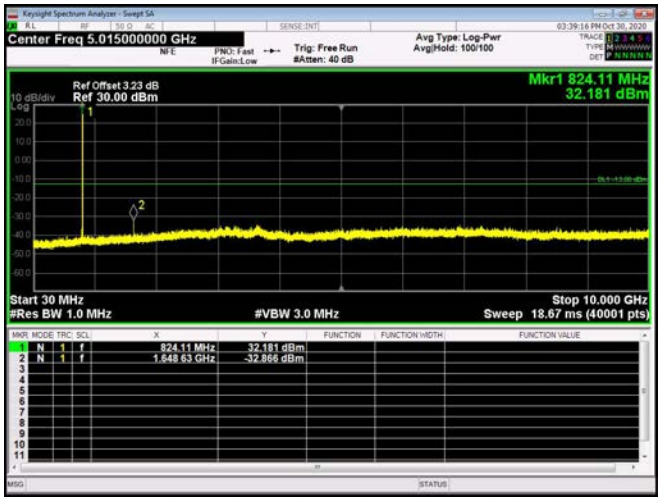
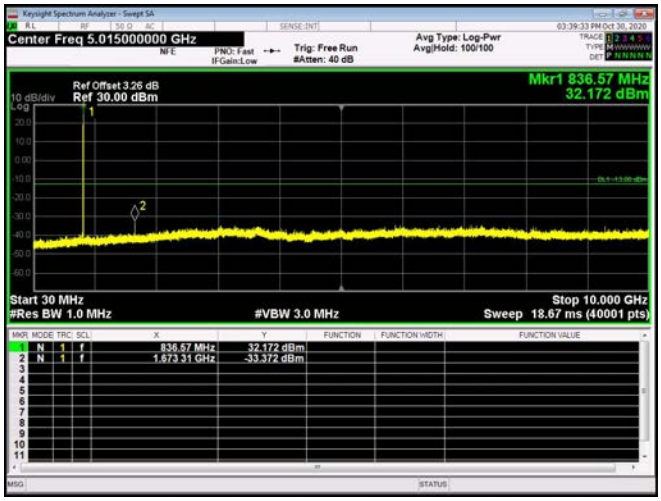
Test Setup:

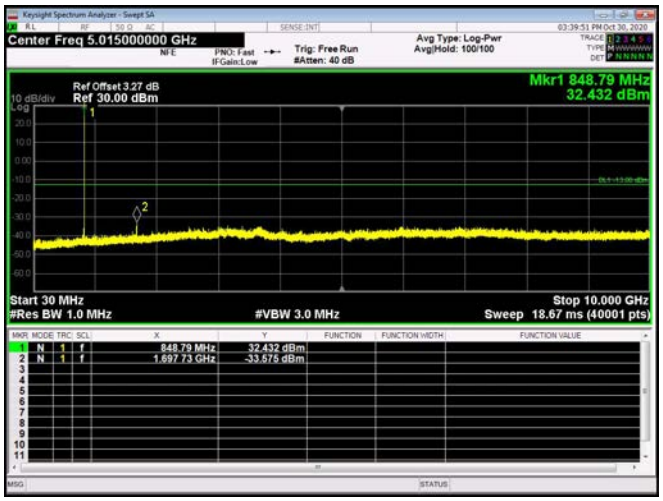


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

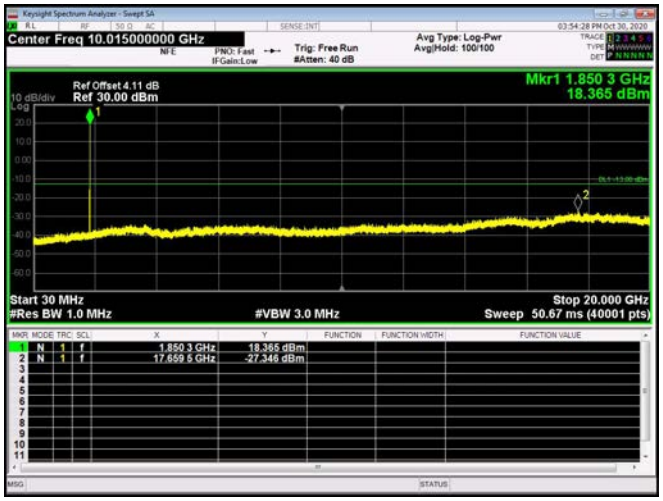
2.5.3. Test Result

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.

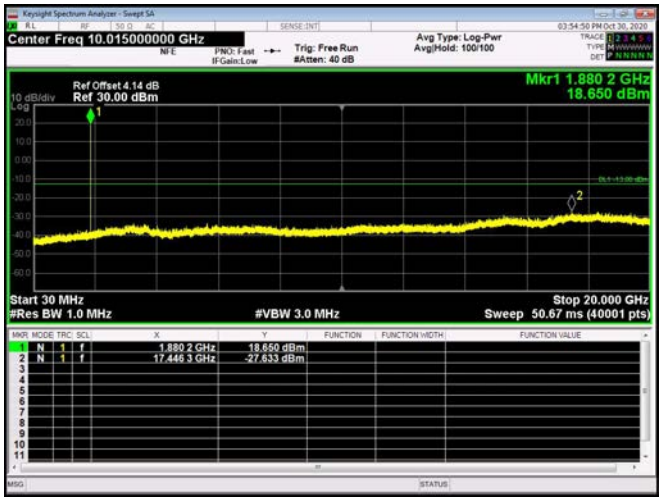
GSM 850MHz CH128 824.2MHz

GSM 850MHz CH190 836.6MHz

GSM 850MHz CH251 848.8MHz

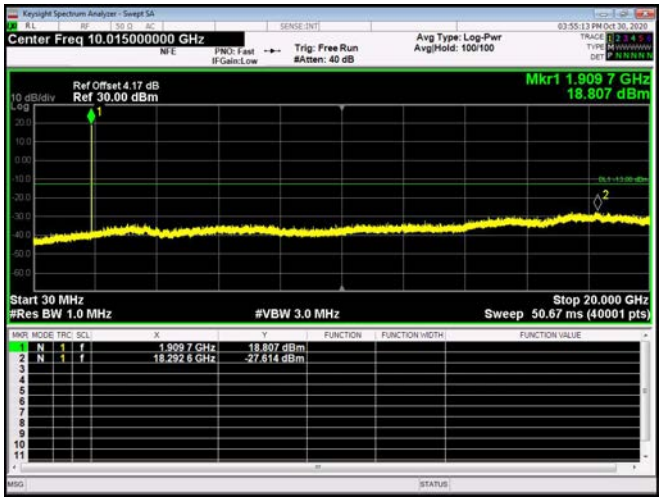
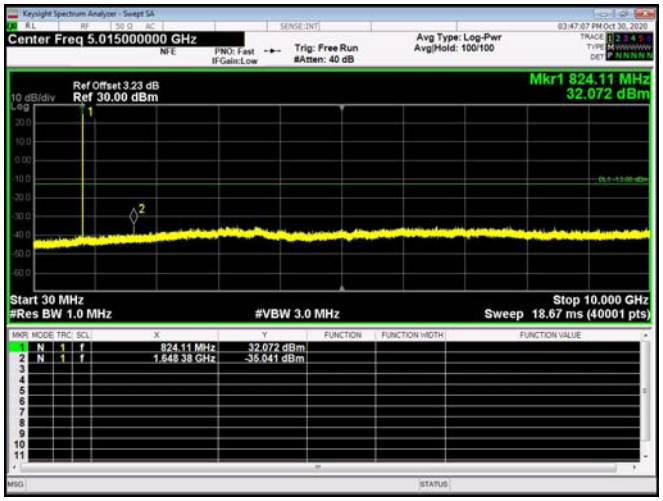


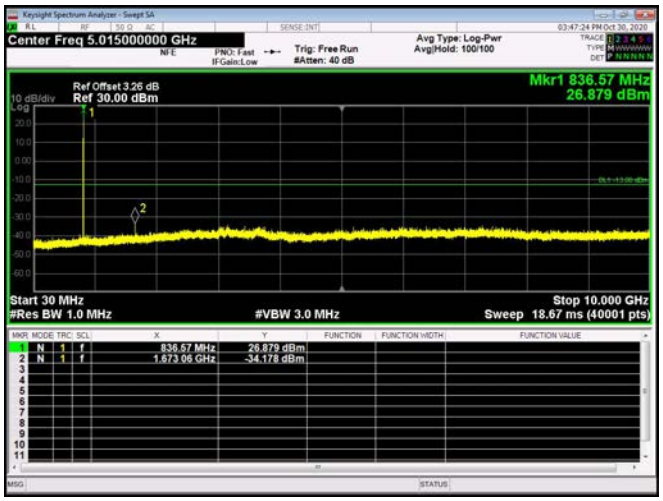
GSM 1900MHz CH512 1850.2MHz



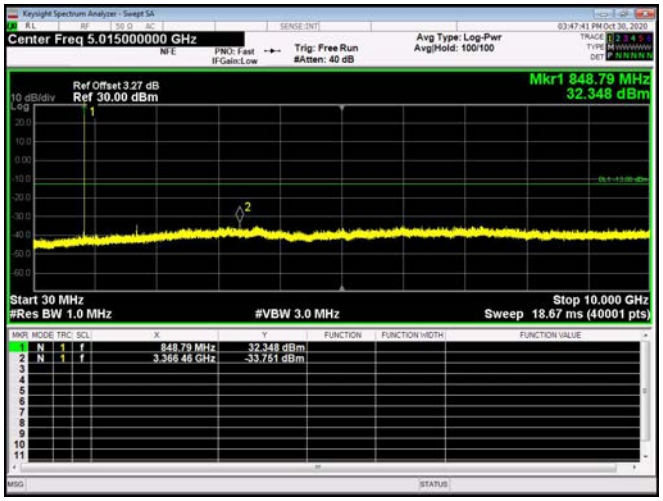
GSM 1900MHz CH661 1880.0MHz



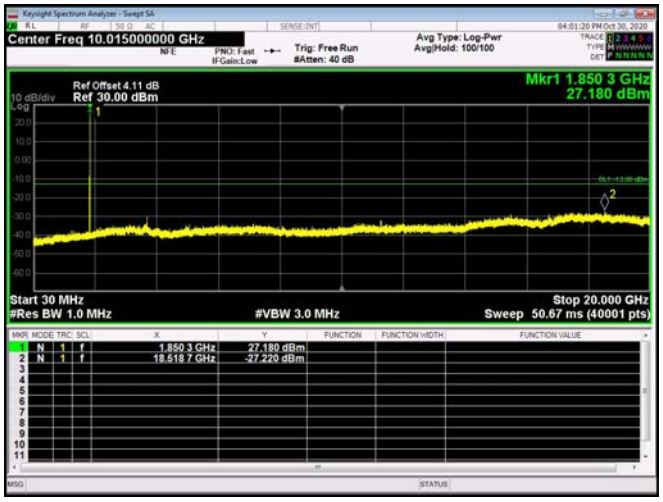
GSM 1900MHz CH810 1909.8MHz

EDGE 850MHz CH128 824.2MHz

EDGE 850MHz CH190 836.6MHz

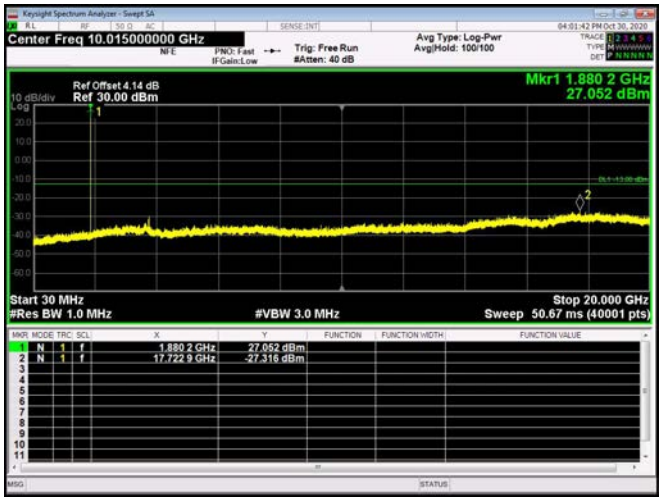
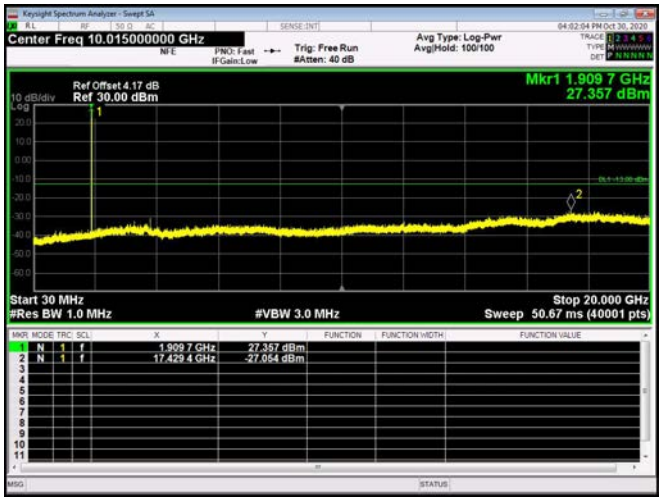


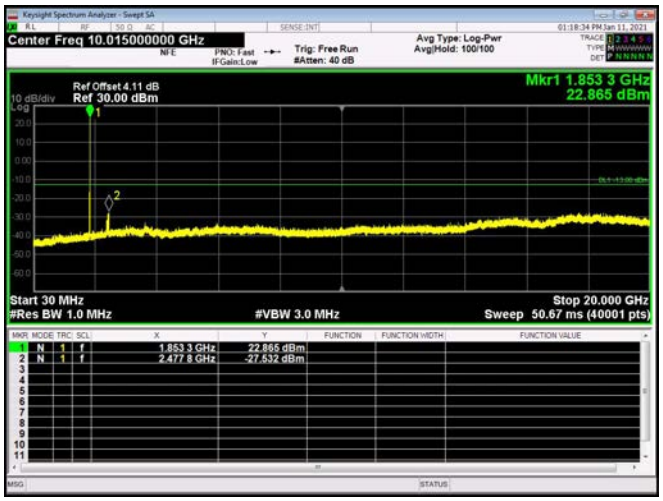
EDGE 850MHz CH251 848.8MHz



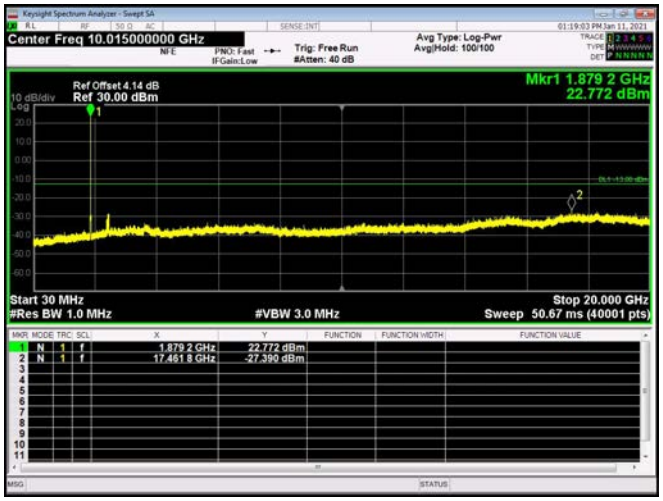
EDGE 1900MHz CH512 1850.2MHz



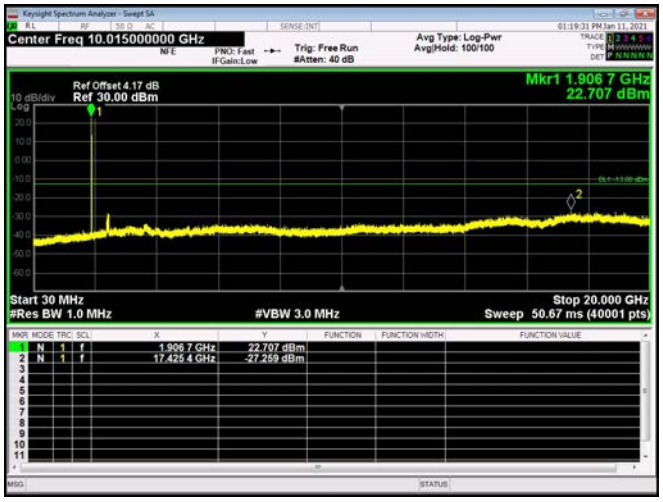
EDGE 1900MHz CH661 1880.0MHz

EDGE 1900MHz CH810 1909.8MHz

WCDMA Band II CH9262 1852.4MHz

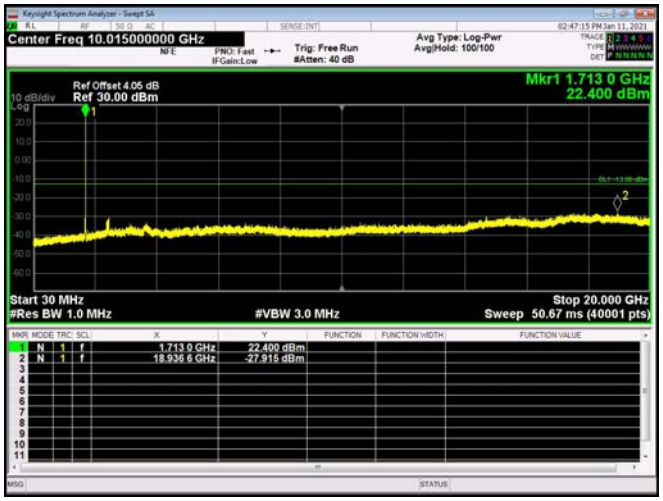
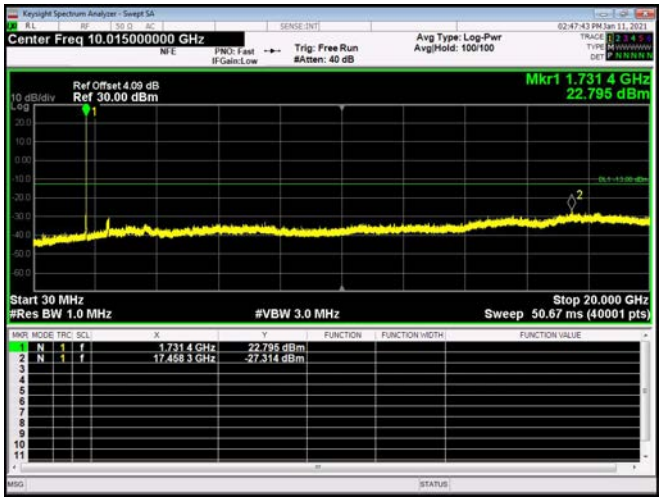


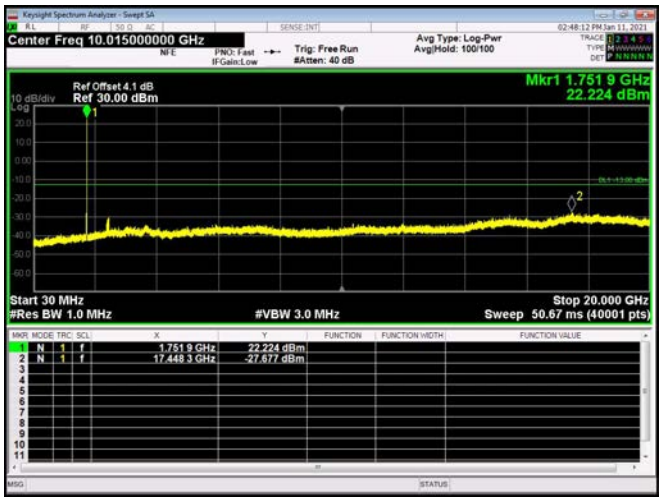
WCDMA Band II CH9400 1880.0MHz



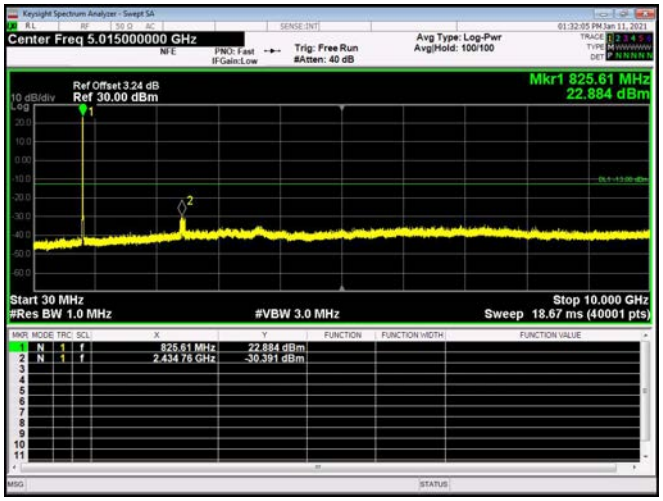
WCDMA Band II CH9538 1907.6MHz



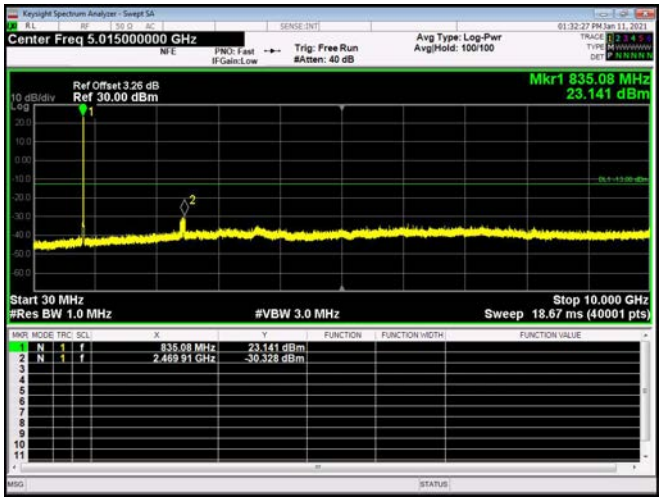
WCDMA Band IV CH1312 1712.4MHz

WCDMA Band IV CH1413 1732.6MHz

WCDMA Band IV CH1513 1755MHz

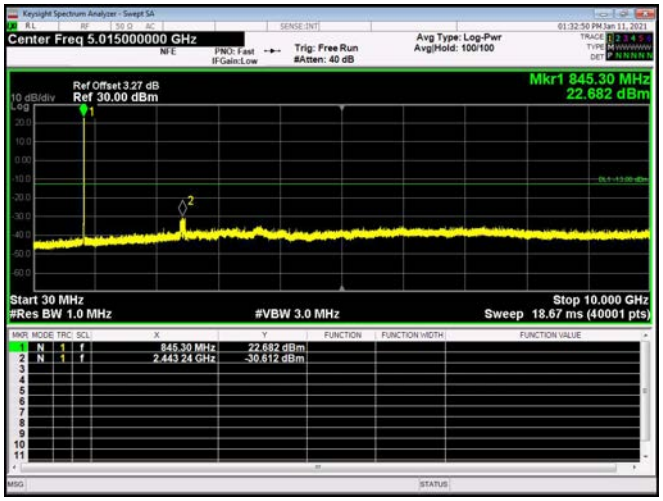


WCDMA Band V CH4132 826.4MHz



WCDMA Band V CH4182 836.4MHz



WCDMA Band V CH4233 846.6MHz


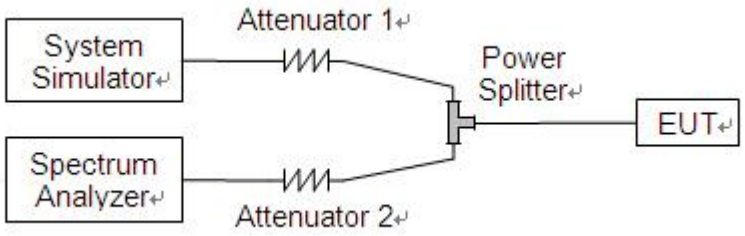
2.6. Band Edge

2.6.1. Requirement

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

2.6.2. Test Description

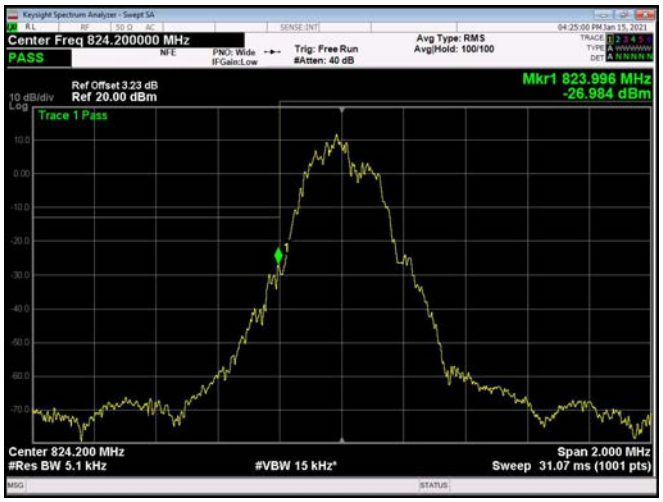
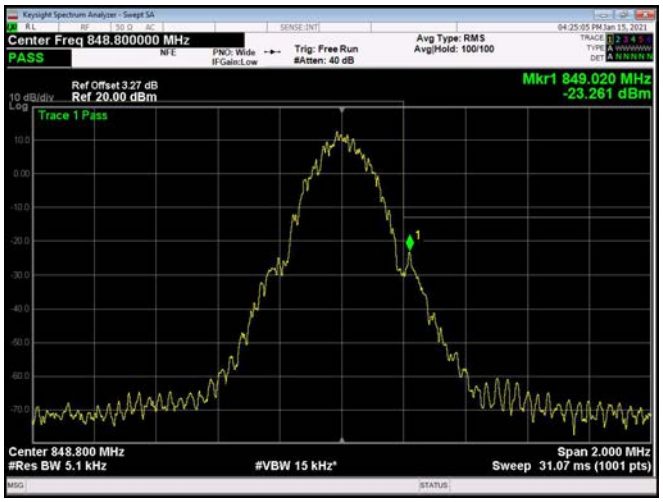
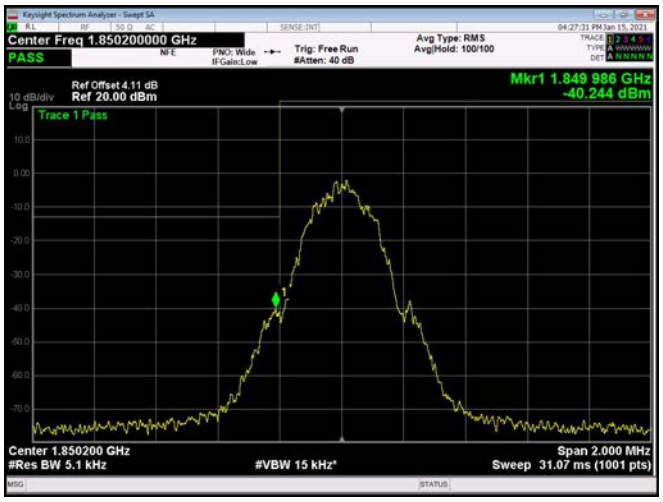
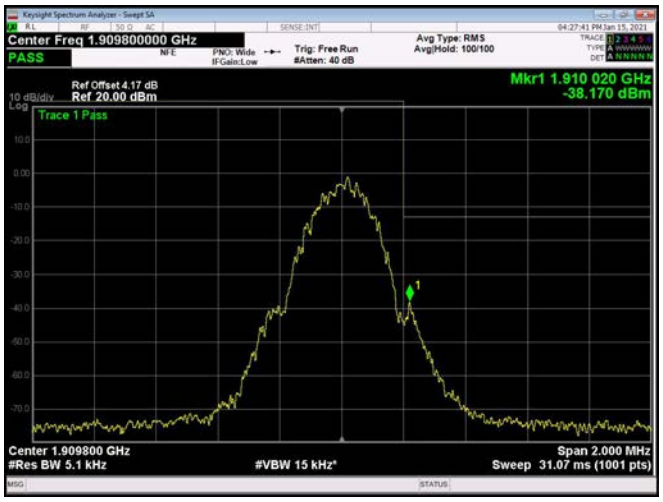
Test Setup:

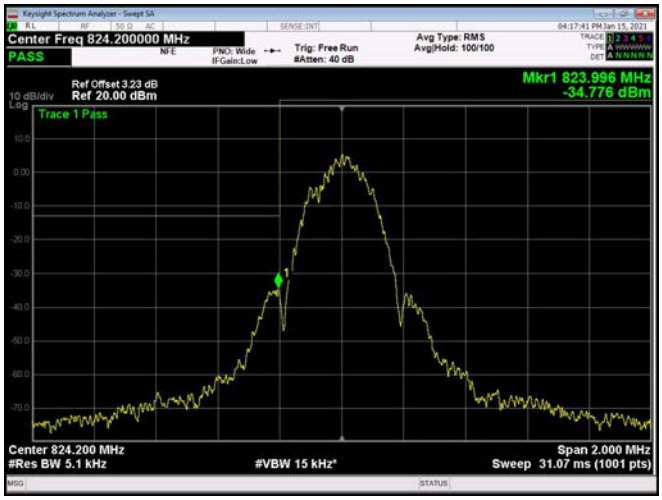
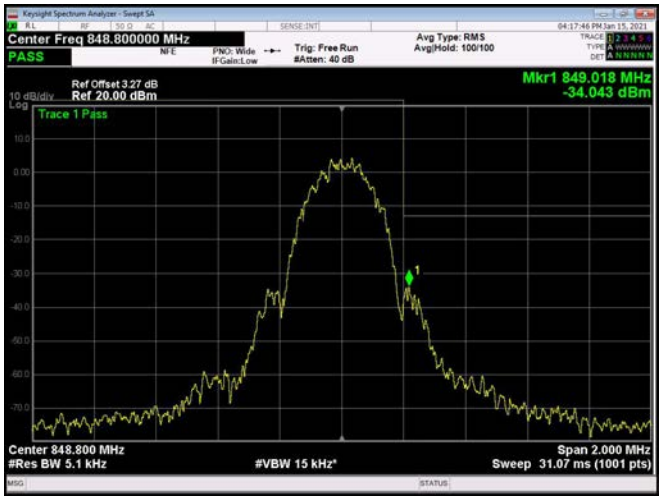
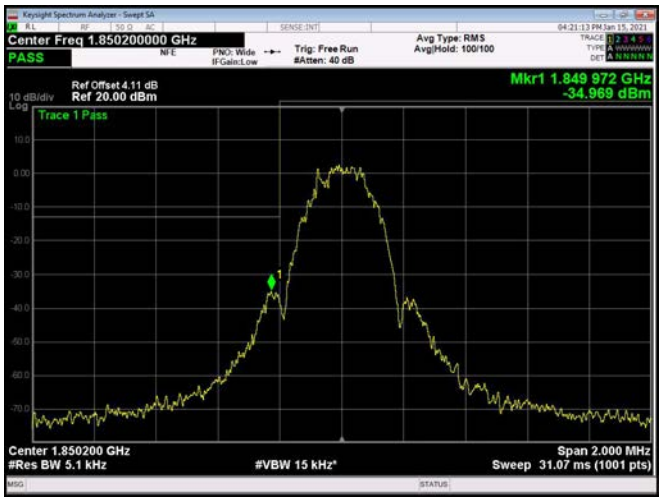
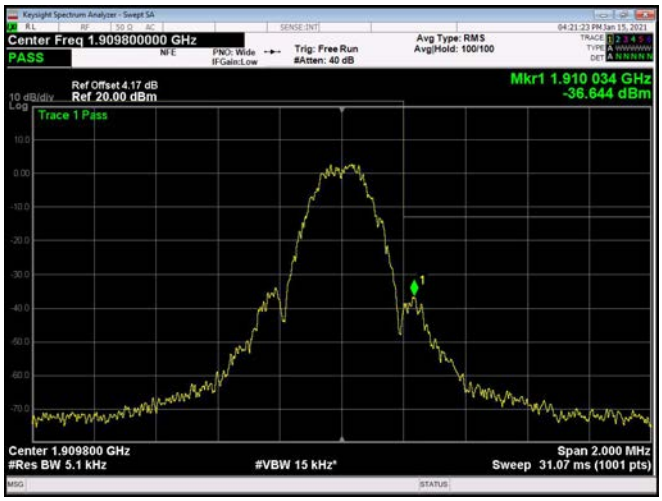


The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

2.6.3. Test Result

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

GSM 850MHz CH128 824.2MHz	GSM 850MHz CH251 848.8MHz
	
GSM 1900MHz CH512 1850.2MHz	**GSM 1900MHz CH810 1909.8MHz**
	

EDGE 850MHz CH128 824.2MHz	EDGE 850MHz CH251 848.8MHz
	
EDGE 1900MHz CH512 1850.2MHz	**EDGE 1900MHz CH810 1909.8MHz**
	

WCDMA Band II CH9262 1852.4MHz	WCDMA Band II CH9538 1907.6MHz
	
WCDMA Band IV CH1312 1714.8MHz	**WCDMA Band IV CH1513 1755MHz**
	
WCDMA Band V CH4132 826.4MHz	**WCDMA Band V CH4233 846.6MHz**


Center Freq 824.000000 MHz
PASS
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 3.24 dB
10 dB/div Ref 30.00 dBm
Mkr1 823.998 MHz
-20.807 dBm
Trace 1 Pass
Center 824.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
Sweep 3.333 ms (1001 pts)


Center Freq 849.000000 MHz
PASS
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 100/100
Ref Offset 3.27 dB
10 dB/div Ref 30.00 dBm
Mkr1 849.002 MHz
-21.390 dBm
Trace 1 Pass
Center 849.000 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Span 2.000 MHz
Sweep 3.333 ms (1001 pts)

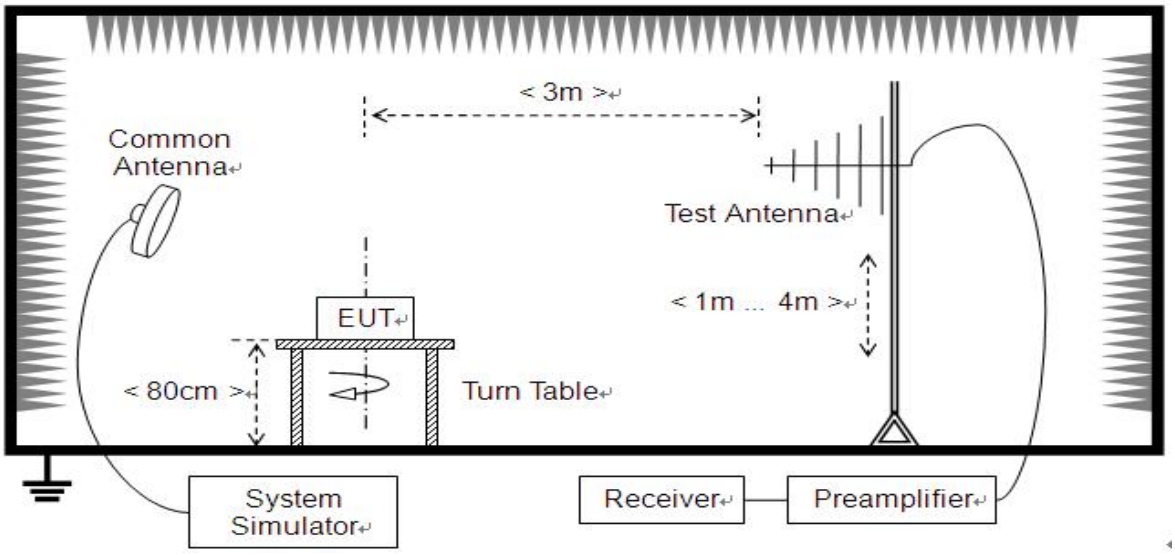
2.7. Transmitter Radiated Power (EIRP/ERP)

2.7.1. Requirement

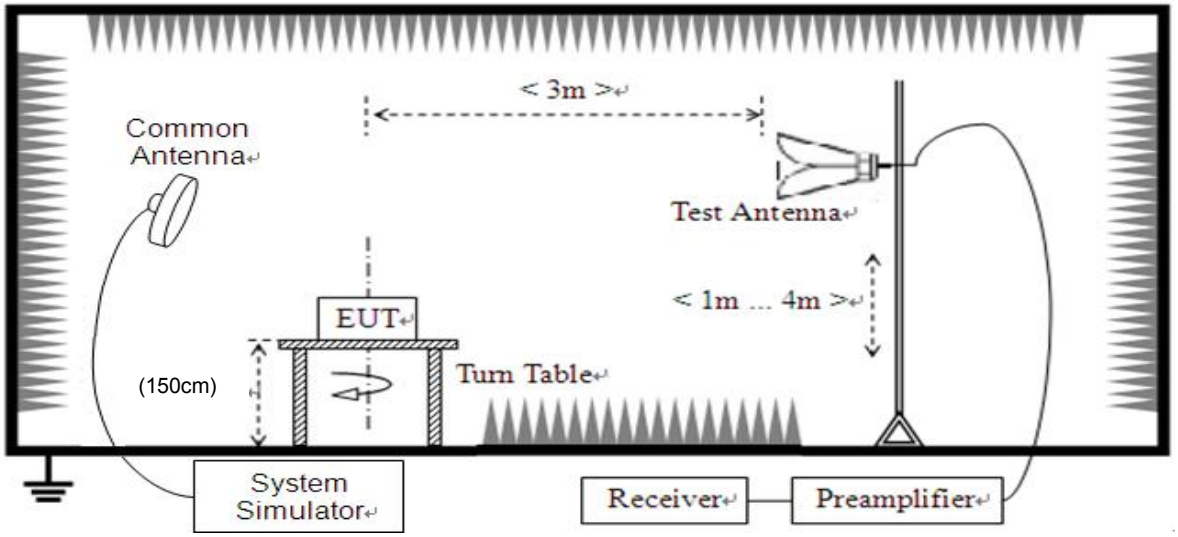
According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
According to FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power.
According to FCC section 27.50, mobile, and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

2.7.2. Test Description

Test Setup:
1) Below1GHz



2) Above 1GHz



The EUT is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.
A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded. Please refer to section 2.1.3 of this report.
- Step size (dB): 3dB
The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2.7.3. Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$A_{SUBST} = P_{SUBST\_TX} - P_{SUBST\_RX} - L_{SUBST\_CABLES} + G_{SUBST\_TX\_ANT}$

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

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

P_{SUBST_TX} is signal generator level,

P_{SUBST_RX} is receiver level,

L_{SUBST_CABLES} is cable losses including TX cable,

$G_{SUBST\_TX\_ANT}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT}.

GSM Test verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP		Limit		Verdict
				dBm	W	dBm	W	
GSM 850MHz	128	824.20	5	25.58	0.36	38.5	7	PASS
	190	836.60	5	25.84	0.38			PASS
	251	848.80	5	25.90	0.39			PASS
GPRS 850MHz	128	824.20	5	25.98	0.40	38.5	7	PASS
	190	836.60	5	26.24	0.42			PASS
	251	848.80	5	26.23	0.42			PASS
EDGE 850MHz	128	824.20	5	18.75	0.07	38.5	7	PASS
	190	836.60	5	19.34	0.09			PASS
	251	848.80	5	18.64	0.07			PASS

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

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

Band	Channel	Frequency (MHz)	PCL	Measured EIRP		Limit		Verdict
				dBm	W	dBm	W	
GSM 1900MHz	512	1850.2	0	27.93	0.62	33	2	PASS
	661	1880.0	0	28.68	0.74			PASS
	810	1909.8	0	28.82	0.76			PASS
GPRS 1900MHz	512	1850.2	0	27.75	0.60	33	2	PASS
	661	1880.0	0	28.53	0.71			PASS
	810	1909.8	0	28.66	0.73			PASS
EDGE 1900MHz	512	1850.2	0	23.23	0.21	33	2	PASS
	661	1880.0	0	22.94	0.20			PASS
	810	1909.8	0	23.61	0.23			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.

WCDMA Test verdict:

Band	Channel	Frequency (MHz)	Measured ERP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band V	4132	826.4	21.08	0.13	38.5	7	PASS
	4182	836.4	20.99	0.13			PASS
	4233	846.6	21.06	0.13			PASS
HSDPA Band V	4132	826.4	18.53	0.07	38.5	7	PASS
	4182	836.4	18.41	0.07			PASS
	4233	846.6	18.62	0.07			PASS
HSUPA Band V	4132	826.4	18.53	0.07	38.5	7	PASS
	4182	836.4	18.67	0.07			PASS
	4233	846.6	18.51	0.07			PASS

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

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band II	9262	1852.4	23.54	0.23	33	2	PASS
	9400	1880.0	23.24	0.21			PASS
	9538	1907.6	23.40	0.22			PASS
HSDPA Band II	9262	1852.4	22.07	0.16	33	2	PASS
	9400	1880.0	21.89	0.15			PASS
	9538	1907.6	21.77	0.15			PASS
HSUPA Band II	9262	1852.4	22.45	0.18	33	2	PASS
	9400	1880.0	22.03	0.16			PASS
	9538	1907.6	21.87	0.15			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

Band	Channel	Frequency (MHz)	Measured EIRP		Limit		Verdict
			dBm	W	dBm	W	
WCDMA Band IV	1312	1712.4	22.72	0.19	30	1	PASS
	1413	1732.6	22.84	0.19			PASS
	1513	1752.6	22.76	0.19			PASS
HSDPA Band IV	1312	1712.4	21.41	0.14	30	1	PASS
	1413	1732.6	21.52	0.14			PASS
	1513	1752.6	21.17	0.13			PASS
HSUPA Band IV	1312	1712.4	21.45	0.14	30	1	PASS
	1413	1732.6	21.25	0.13			PASS
	1513	1752.6	21.61	0.14			PASS
Note: Both horizontal and vertical polarizations of the test antenna are evaluated respectively, only the worst data (horizontal) were recorded in this report.							

2.8. Radiated Out of Band Emissions

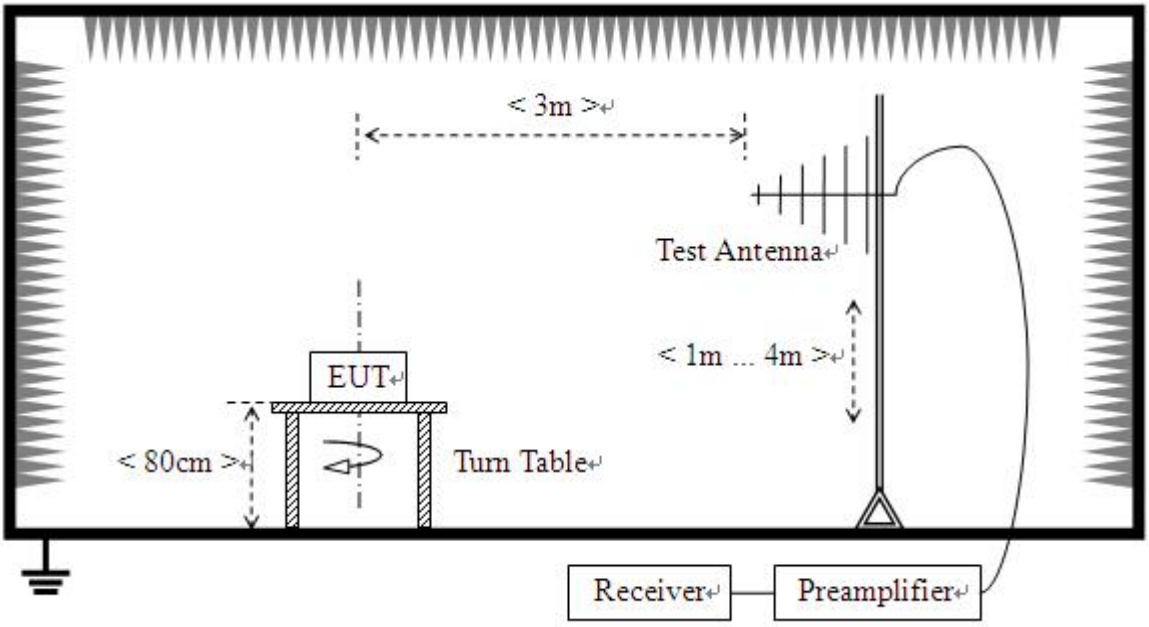
2.8.1. Requirement

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.

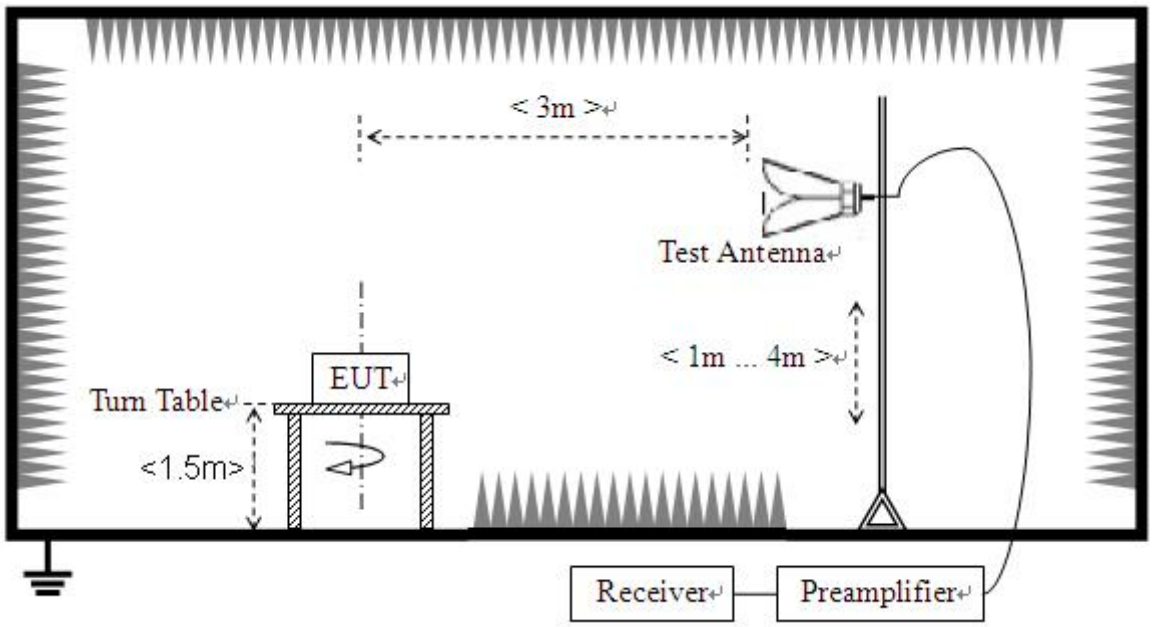
2.8.2. Test Description

Test Setup:

1) Below1GHz



2) Above 1GHz



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

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

- Step size (dB): 3dB

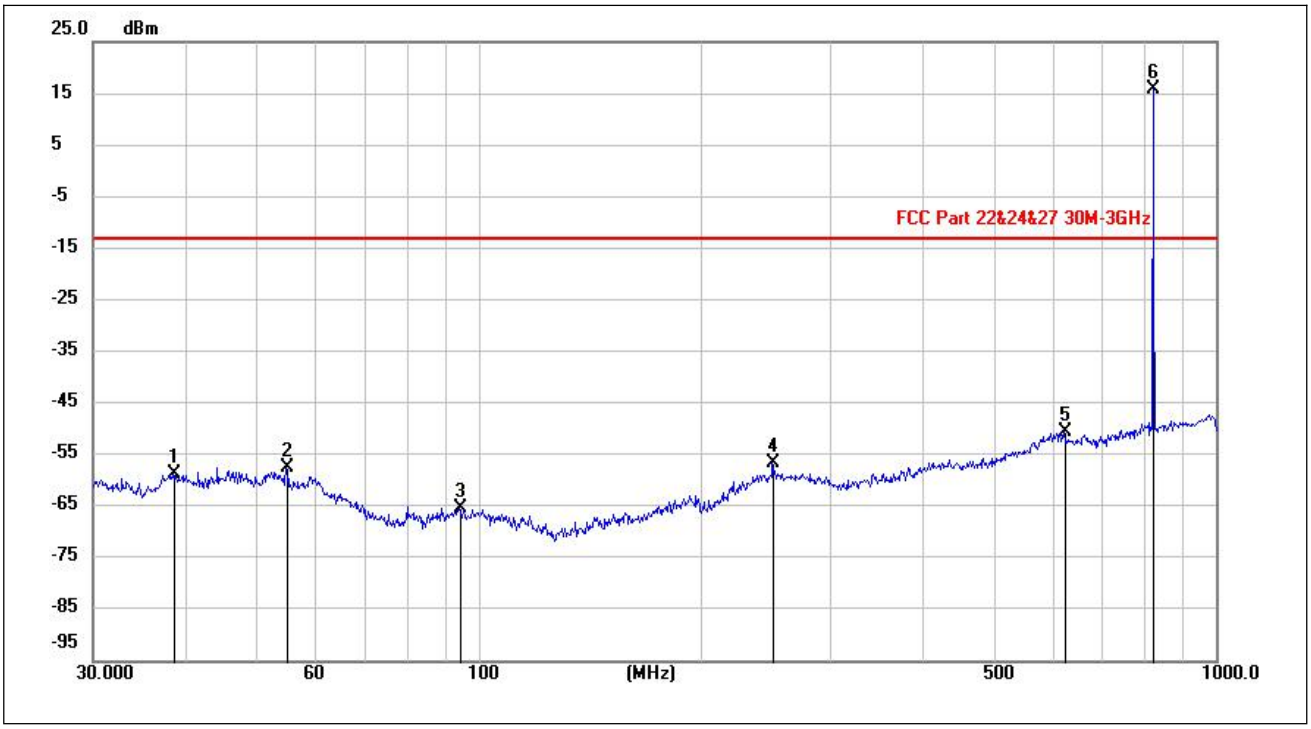
The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) and a Horn one (used for above 3 GHz), it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

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

2.8.3. Test Result

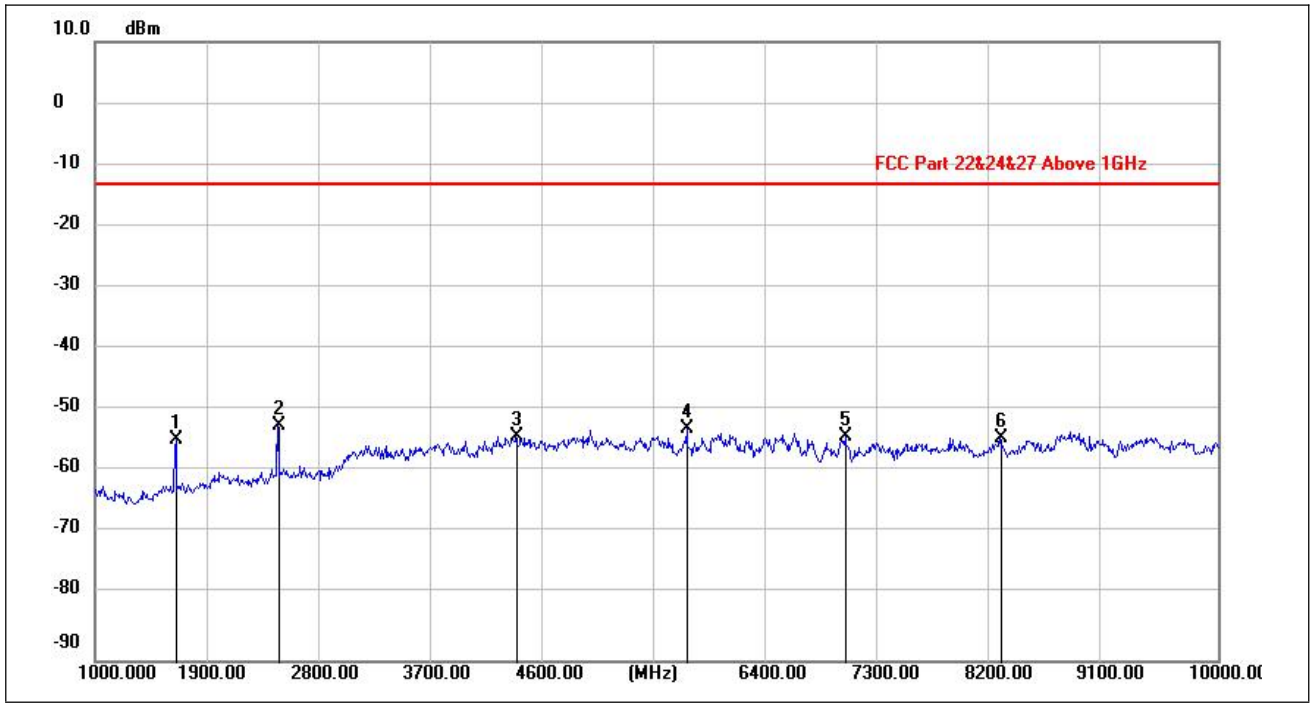
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels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

Note: For the frequency, which started from 18GHz to 40GHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.



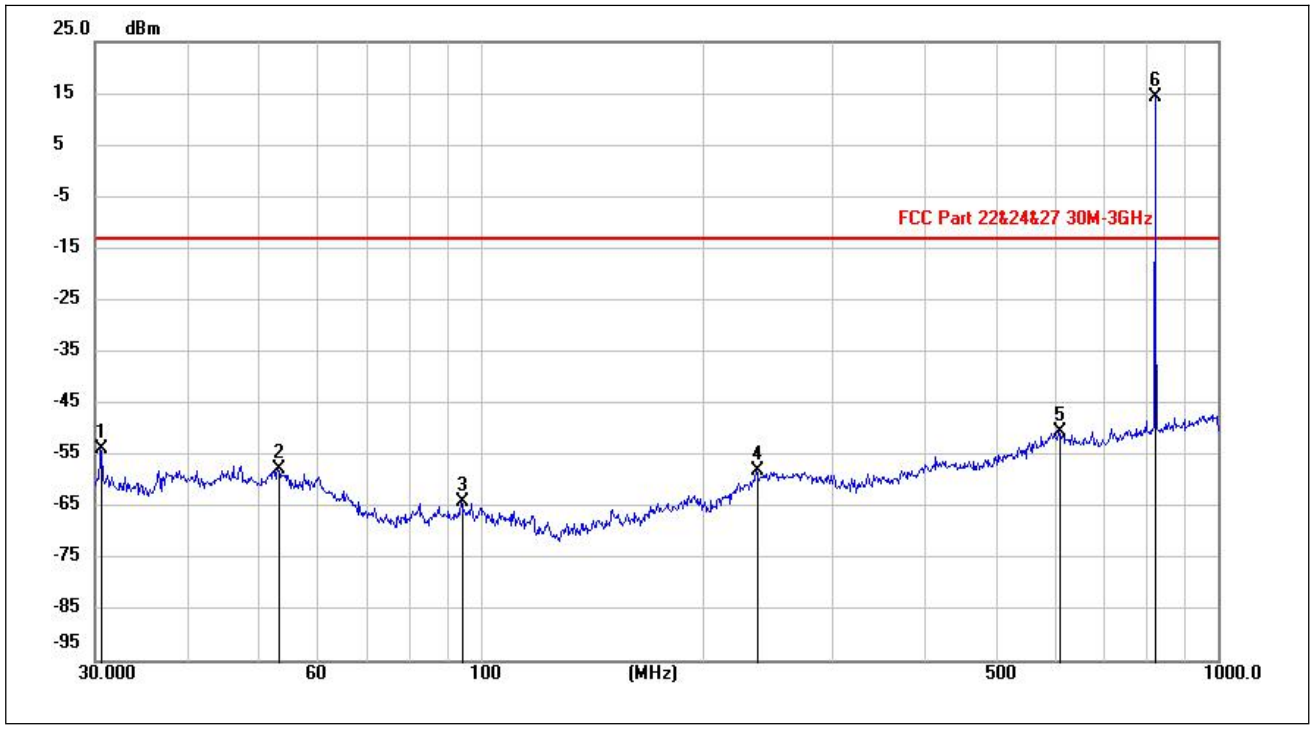
(GSM 850MHz _ 30MHz to 1GHz _ Channel = 128_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.5890	-58.80	-13.00	-45.80	H	29.66	PASS
54.8444	-57.45	-13.00	-44.45	H	28.98	PASS
94.3126	-65.25	-13.00	-52.25	H	22.75	PASS
251.0043	-56.53	-13.00	-43.53	H	28.98	PASS
622.9992	-50.48	-13.00	-37.48	H	35.27	PASS
824.3077	15.80	N/A	N/A	H	37.26	N/A



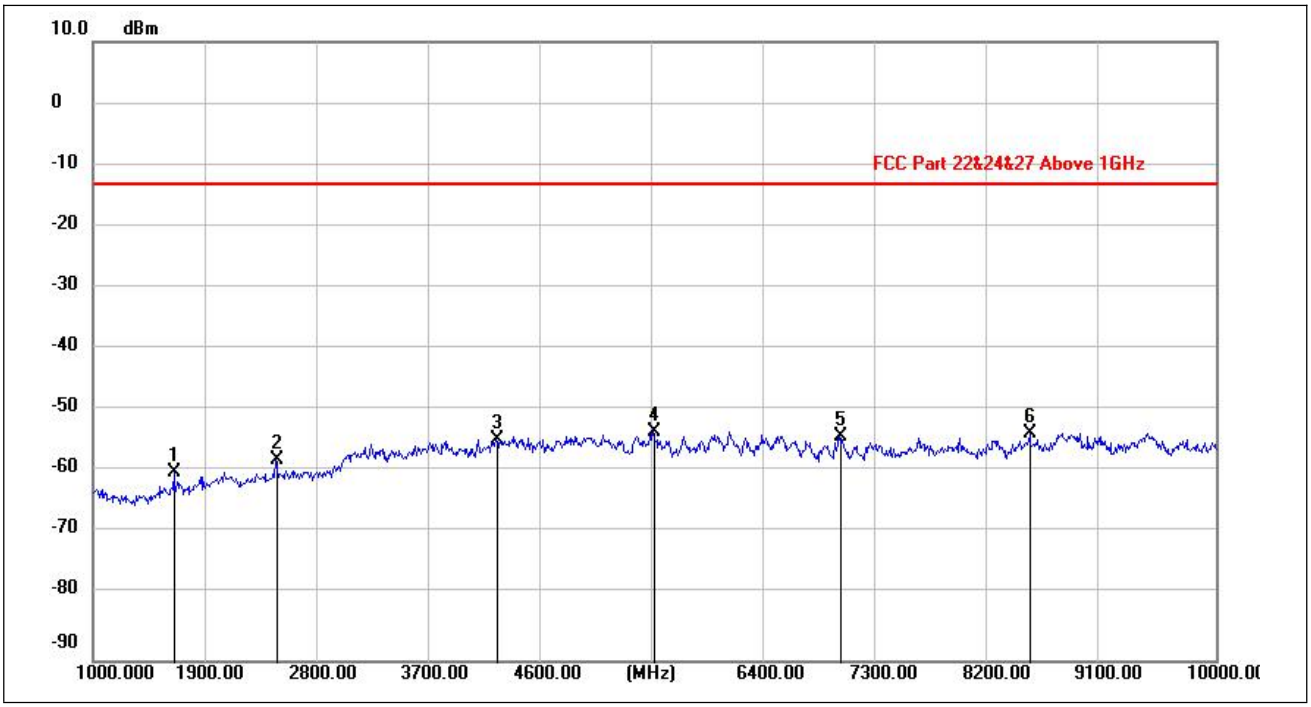
(GSM 850MHz _ 1GHz to 10GHz _ Channel = 128_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1648.000	-54.31	-13.00	-41.31	H	-3.26	PASS
2472.400	-51.87	-13.00	-38.87	H	0.31	PASS
4380.400	-53.59	-13.00	-40.59	H	8.39	PASS
5747.500	-52.45	-13.00	-39.45	H	9.20	PASS
7013.350	-53.81	-13.00	-40.81	H	10.15	PASS
8258.050	-54.01	-13.00	-41.01	H	11.44	PASS



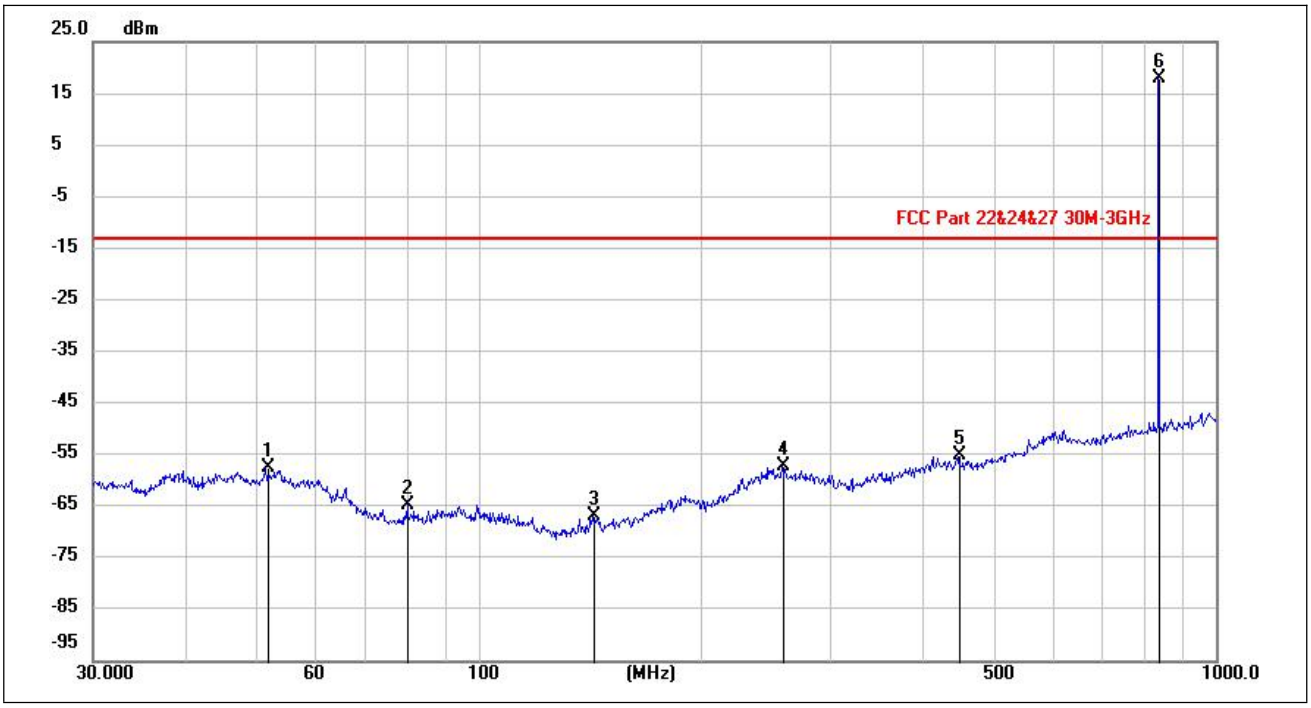
(GSM 850MHz _ 30MHz to 1GHz _ Channel = 128_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5681	-53.74	-13.00	-40.74	V	19.72	PASS
53.2059	-57.89	-13.00	-44.89	V	23.42	PASS
94.2299	-64.03	-13.00	-51.03	V	26.75	PASS
236.6862	-58.17	-13.00	-45.17	V	24.72	PASS
609.0668	-50.60	-13.00	-37.60	V	34.35	PASS
824.3077	14.21	N/A	N/A	V	36.96	N/A



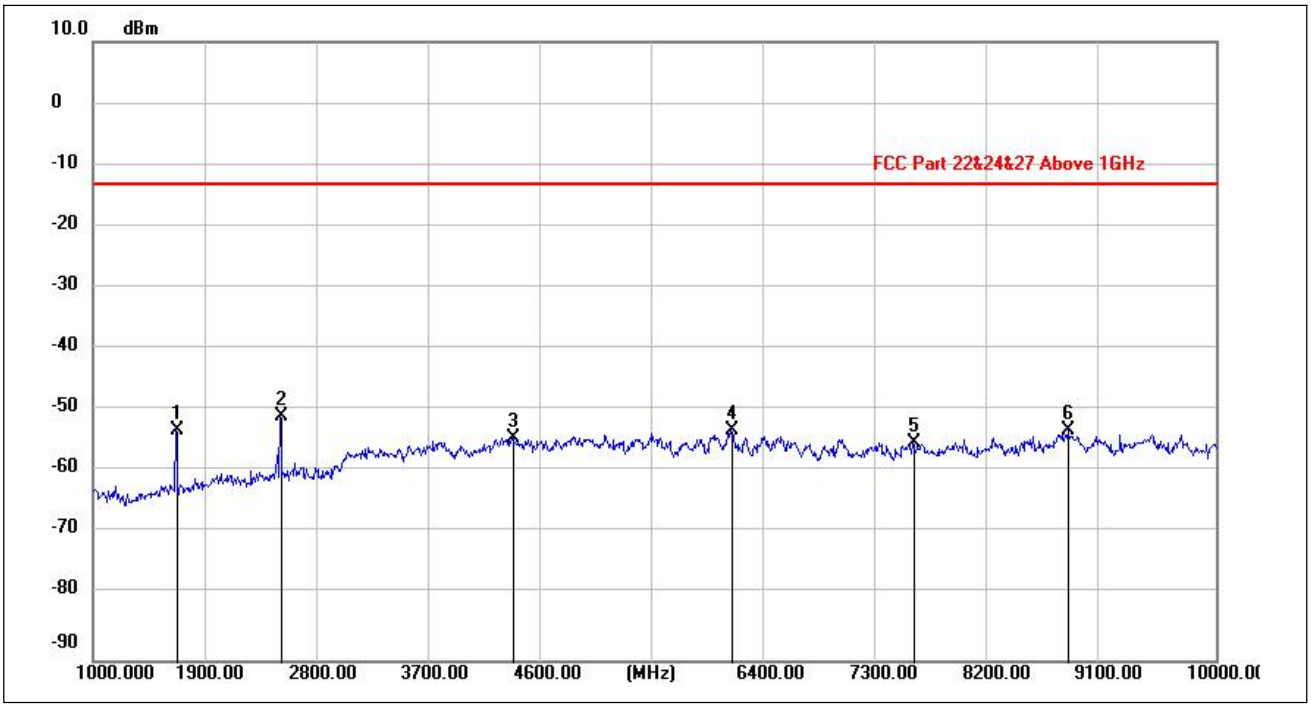
(GSM 850MHz _ 1GHz to 10GHz _ Channel = 128_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1648.000	-59.40	-13.00	-46.40	V	-3.24	PASS
2472.400	-57.46	-13.00	-44.46	V	0.41	PASS
4235.500	-54.27	-13.00	-41.27	V	7.57	PASS
5491.900	-52.94	-13.00	-39.94	V	8.79	PASS
6987.250	-53.69	-13.00	-40.69	V	10.02	PASS
8509.150	-53.29	-13.00	-40.29	V	11.81	PASS



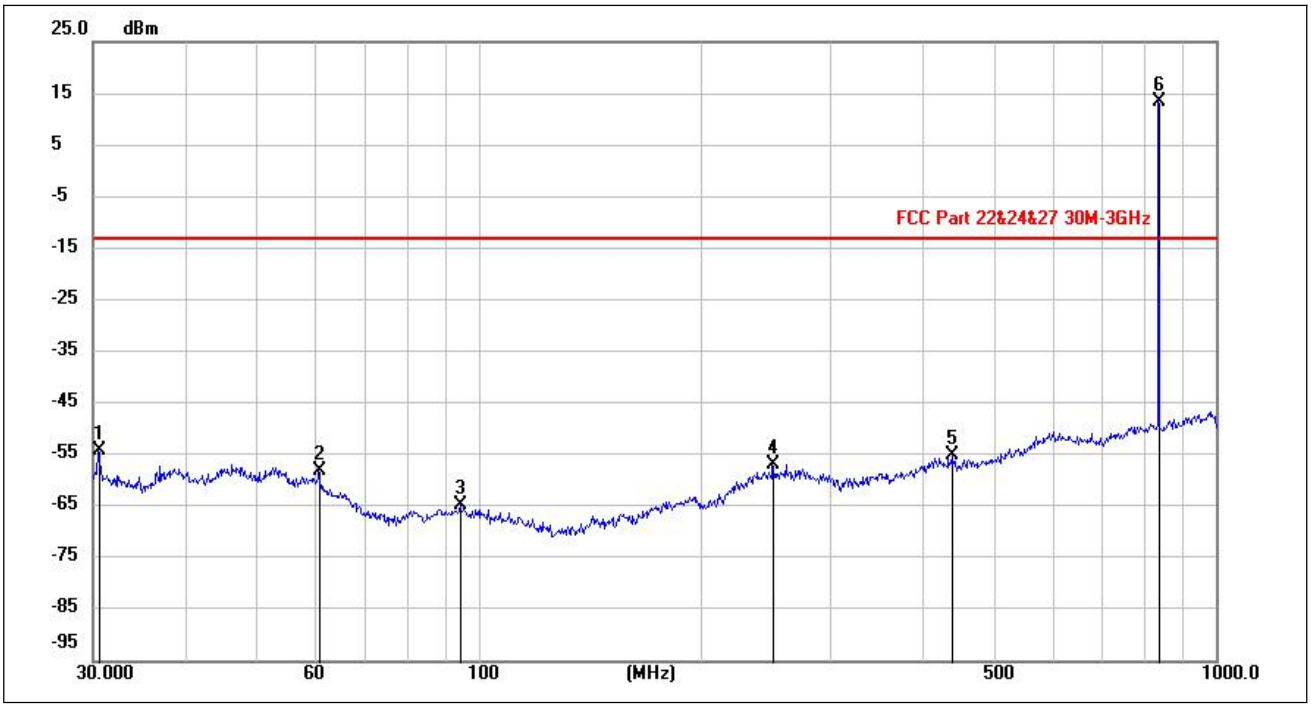
(GSM850MHz_ 30MHz to 1GHz _ Channel = 190_Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
51.6616	-57.47	-13.00	-44.47	H	29.51	PASS
80.3056	-64.66	-13.00	-51.66	H	21.38	PASS
143.2507	-66.75	-13.00	-53.75	H	19.51	PASS
259.1884	-57.13	-13.00	-44.13	H	29.06	PASS
448.6110	-55.20	-13.00	-42.20	H	30.38	PASS
837.1245	17.88	N/A	N/A	H	36.97	N/A



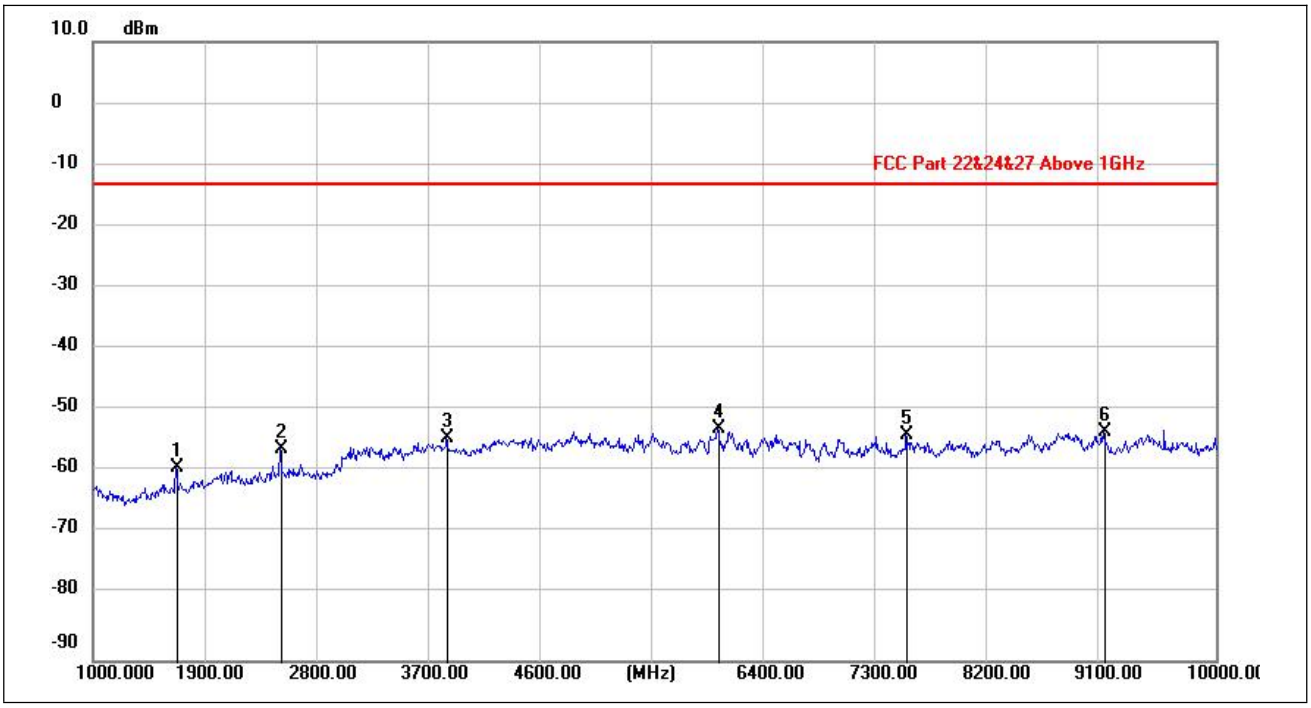
(GSM 850MHz _ 1GHz to 10GHz _ Channel = 190_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1673.200	-52.65	-13.00	-39.65	H	-2.83	PASS
2509.750	-50.53	-13.00	-37.53	H	0.48	PASS
4367.350	-53.95	-13.00	-40.95	H	5.05	PASS
6116.050	-52.72	-13.00	-39.72	H	9.04	PASS
7573.600	-54.59	-13.00	-41.59	H	10.10	PASS
8815.150	-52.71	-13.00	-39.71	H	12.22	PASS



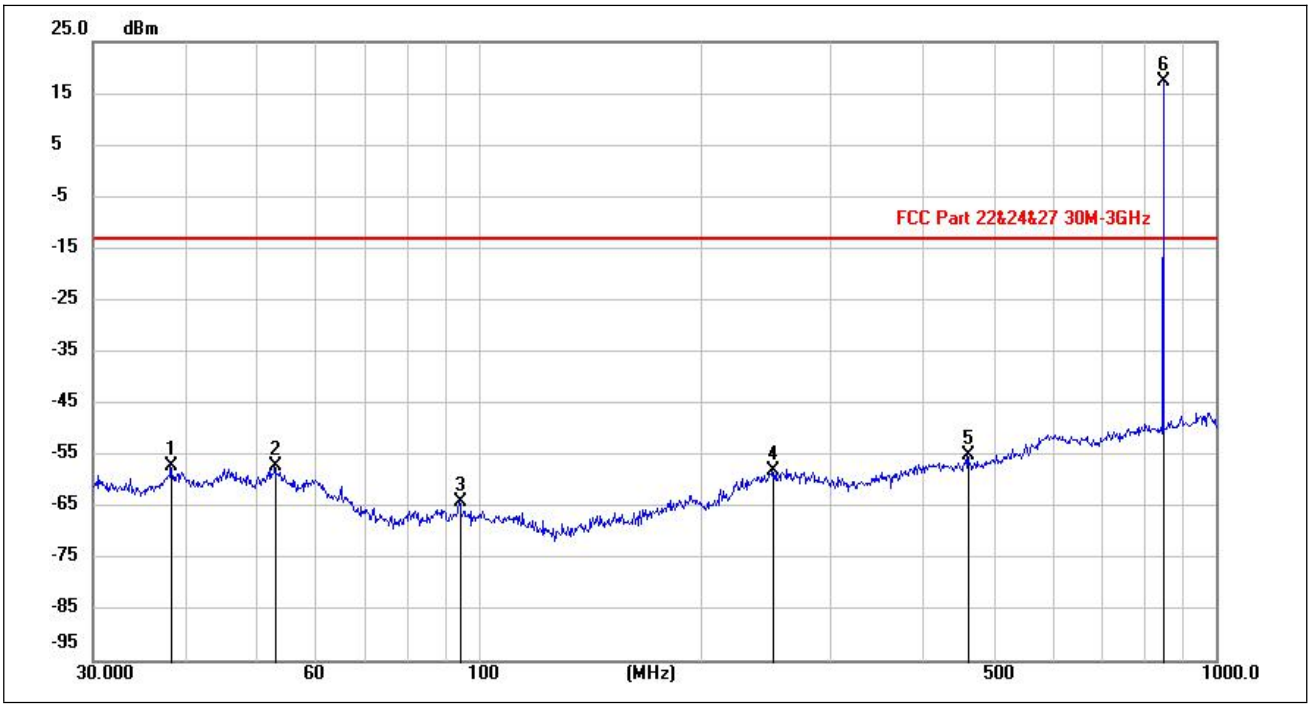
(GSM850MHz_ 30MHz to 1GHz _ Channel = 190_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.6325	-54.12	-13.00	-41.12	V	19.73	PASS
60.8429	-58.11	-13.00	-45.11	V	23.99	PASS
94.6439	-64.58	-13.00	-51.58	V	27.01	PASS
250.6965	-56.82	-13.00	-43.82	V	25.18	PASS
439.5793	-54.97	-13.00	-41.97	V	29.83	PASS
837.1245	13.52	N/A	N/A	V	37.02	N/A



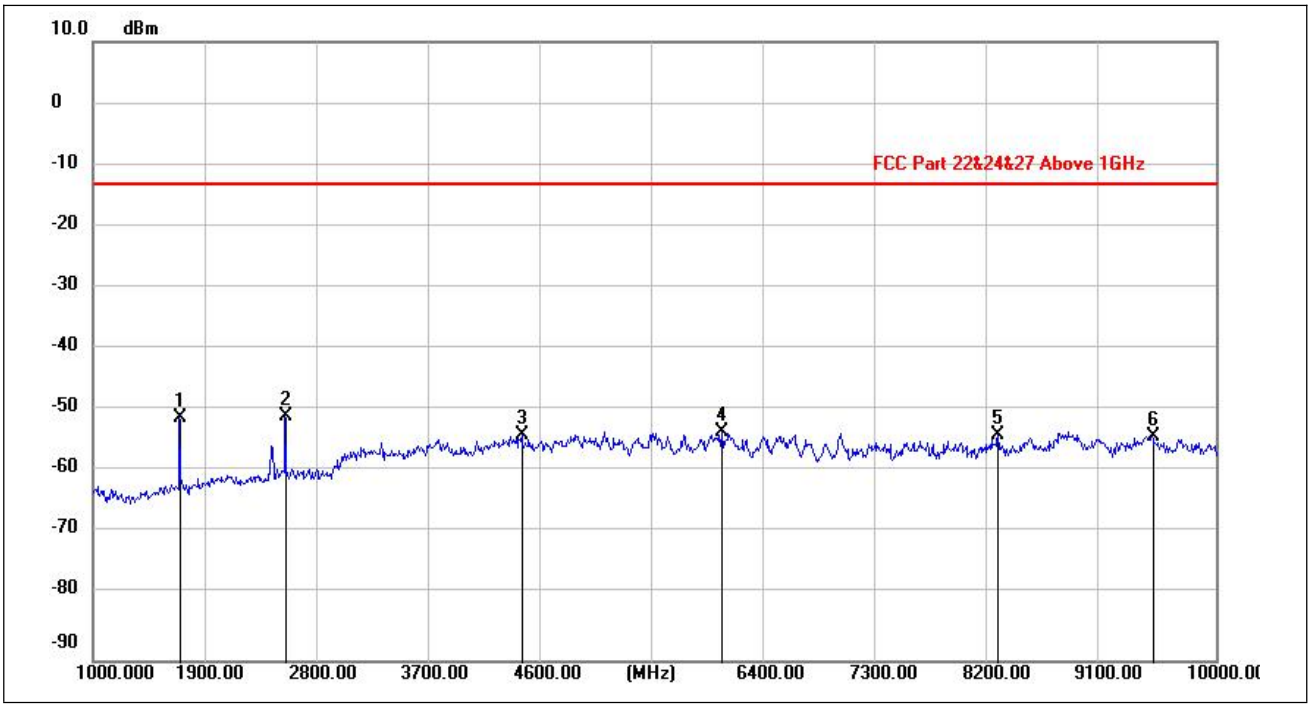
(GSM 850MHz _ 1GHz to 10GHz _ Channel = 190_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1673.200	-58.68	-13.00	-45.68	V	-2.58	PASS
2509.750	-55.74	-13.00	-42.74	V	0.59	PASS
3836.350	-53.87	-13.00	-40.87	V	6.31	PASS
6008.500	-52.49	-13.00	-39.49	V	9.64	PASS
7518.250	-53.35	-13.00	-40.35	V	10.38	PASS
9101.350	-53.06	-13.00	-40.06	V	13.03	PASS



(GSM850MHz_ 30MHz to 1GHz _ Channel = 251_Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.2858	-57.30	-13.00	-44.30	H	29.61	PASS
53.1127	-57.22	-13.00	-44.22	H	30.03	PASS
94.3291	-64.08	-13.00	-51.08	H	22.75	PASS
250.3451	-58.01	-13.00	-45.01	H	29.03	PASS
462.2645	-54.98	-13.00	-41.98	H	30.56	PASS
848.9489	17.24	N/A	N/A	H	37.13	N/A

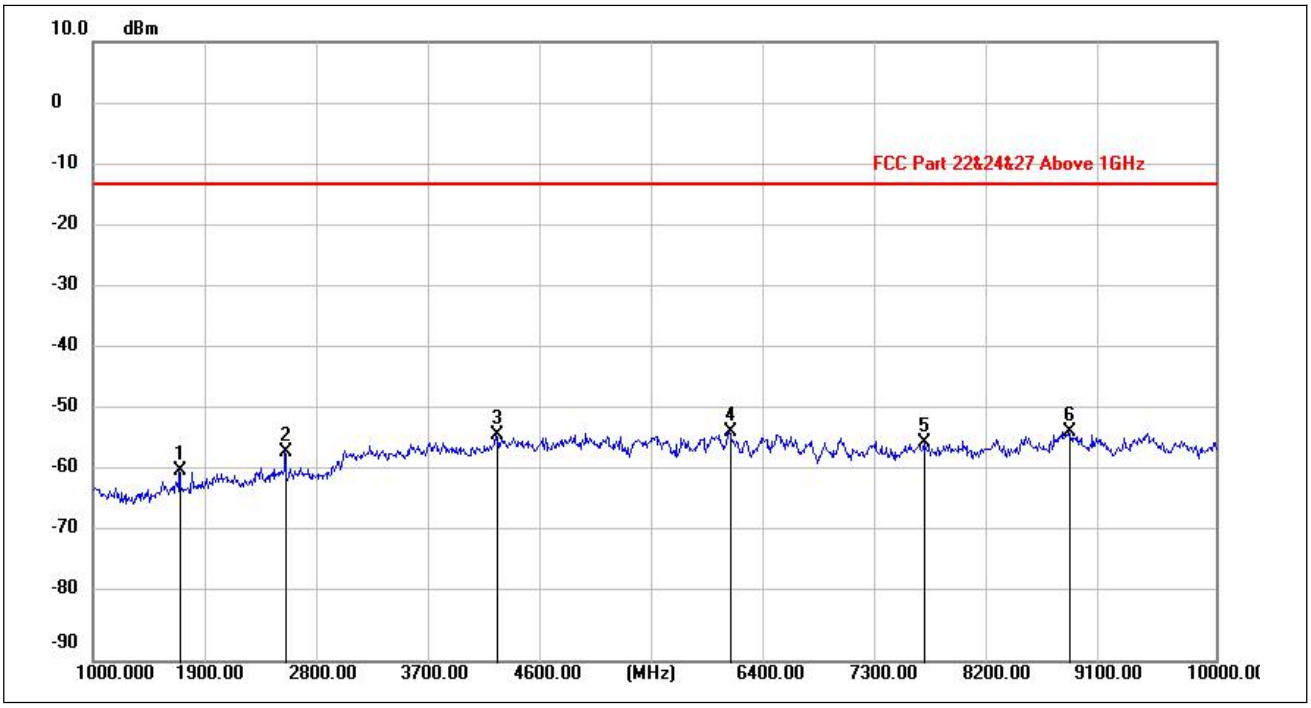


(GSM 850MHz _ 1GHz to 10GHz _ Channel = 251_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1697.500	-50.73	-13.00	-37.73	H	-3.09	PASS
2546.200	-50.44	-13.00	-37.44	H	0.41	PASS
4438.000	-53.45	-13.00	-40.45	H	8.02	PASS
6040.000	-52.95	-13.00	-39.95	H	9.92	PASS
8254.000	-53.35	-13.00	-40.35	H	11.44	PASS
9495.550	-53.63	-13.00	-40.63	H	13.24	PASS

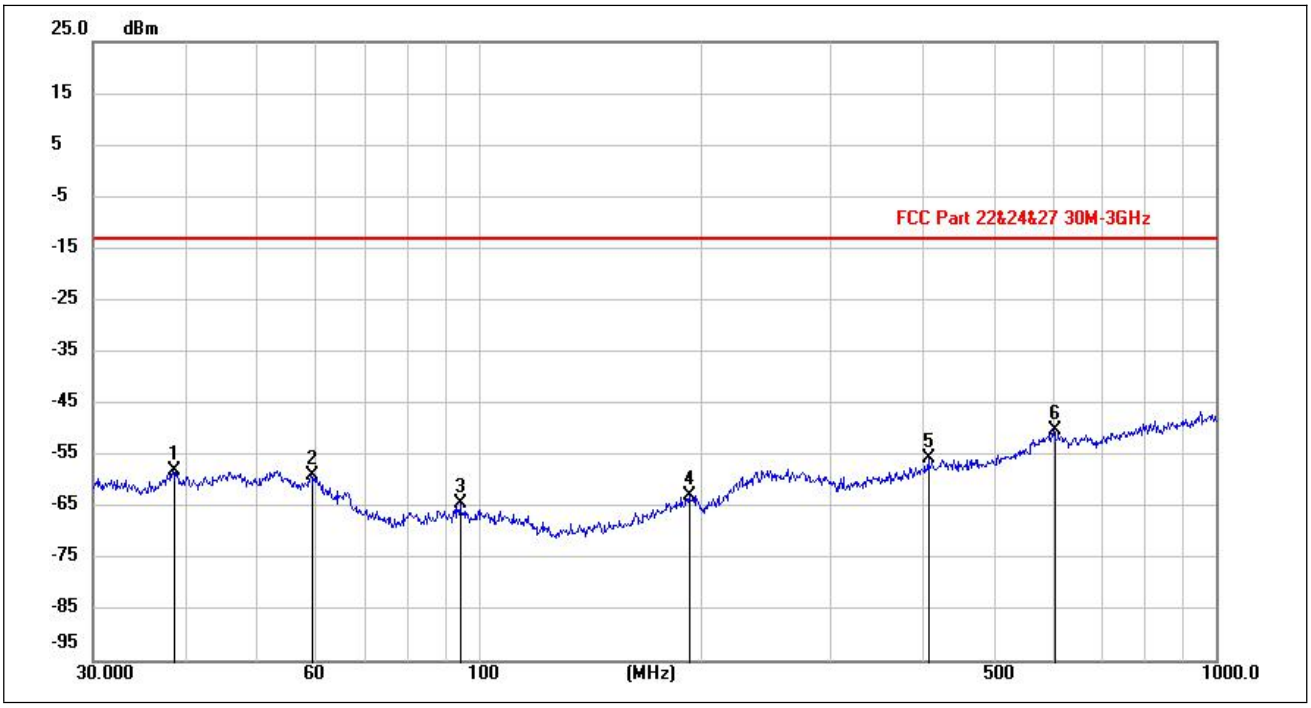
(GSM850MHz_ 30MHz to 1GHz _ Channel = 251_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5199	-53.03	-13.00	-40.03	V	19.70	PASS
59.2428	-58.90	-13.00	-45.90	V	23.56	PASS
118.0827	-66.23	-13.00	-53.23	V	30.81	PASS
273.2820	-57.17	-13.00	-44.17	V	26.05	PASS
599.2162	-49.79	-13.00	-36.79	V	34.45	PASS
848.8001	13.21	N/A	N/A	V	37.05	N/A



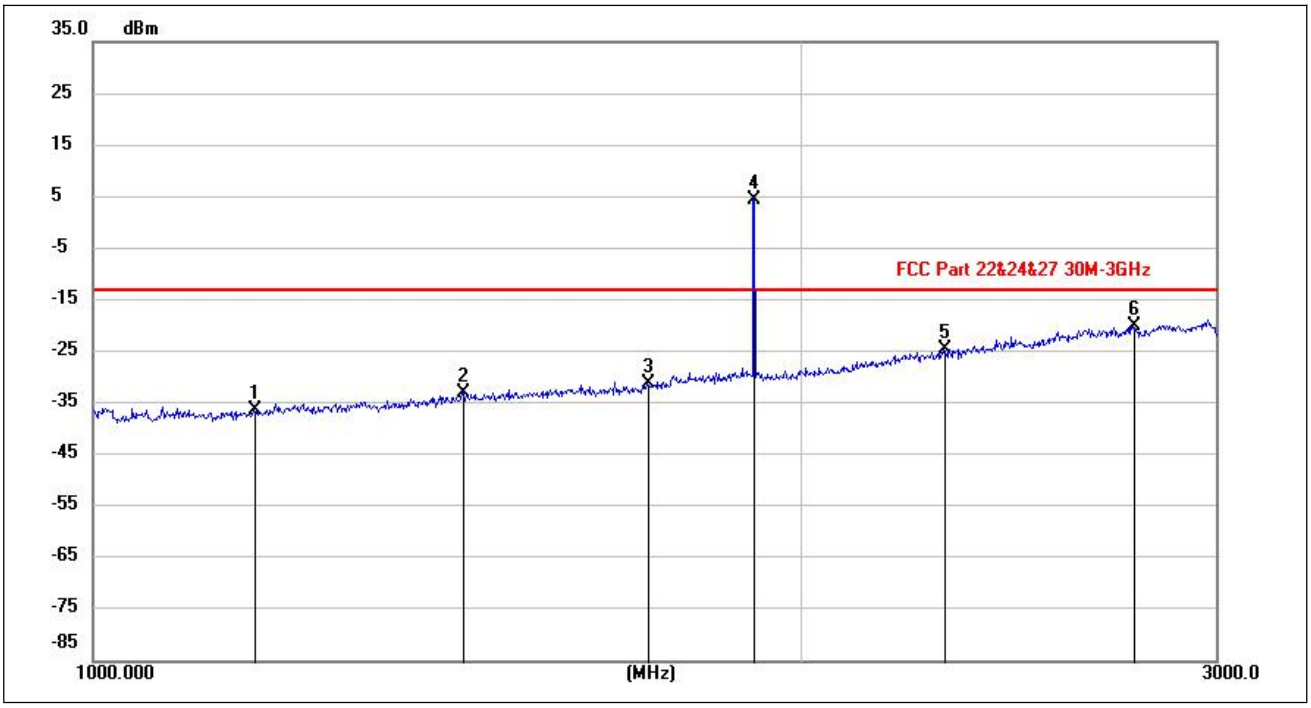
(GSM 850MHz _ 1GHz to 10GHz _ Channel = 251_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1697.500	-59.34	-13.00	-46.34	V	-3.19	PASS
2546.650	-56.20	-13.00	-43.20	V	0.50	PASS
4239.550	-53.34	-13.00	-40.34	V	7.55	PASS
6110.650	-52.96	-13.00	-39.96	V	9.69	PASS
7664.500	-54.76	-13.00	-41.76	V	10.84	PASS
8827.300	-52.94	-13.00	-39.94	V	12.94	PASS



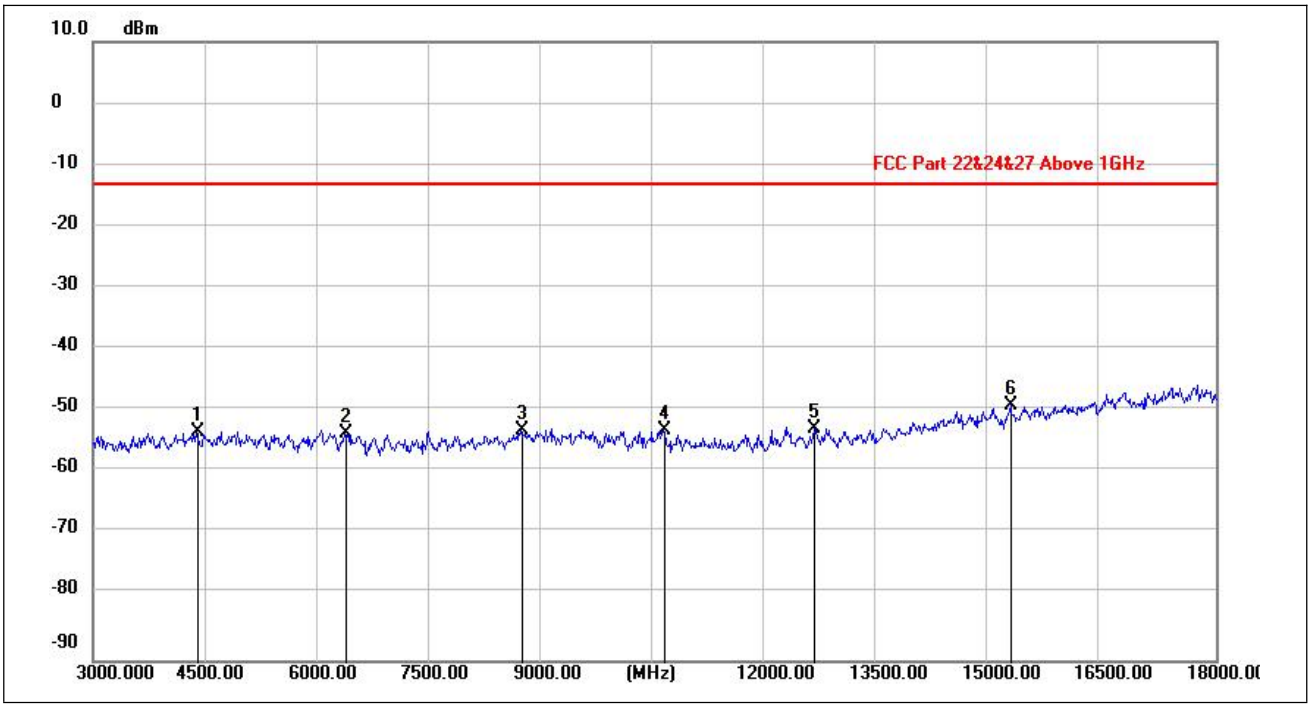
(GSM 1900MHz _30MHz to 1GHz _ Channel = 512_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.5823	-58.08	-13.00	-45.08	H	29.66	PASS
59.4197	-58.88	-13.00	-45.88	H	28.75	PASS
94.5112	-64.43	-13.00	-51.43	H	22.76	PASS
193.4333	-62.97	-13.00	-49.97	H	24.39	PASS
408.6593	-55.71	-13.00	-42.71	H	30.43	PASS
604.1744	-50.32	-13.00	-37.32	H	35.41	PASS



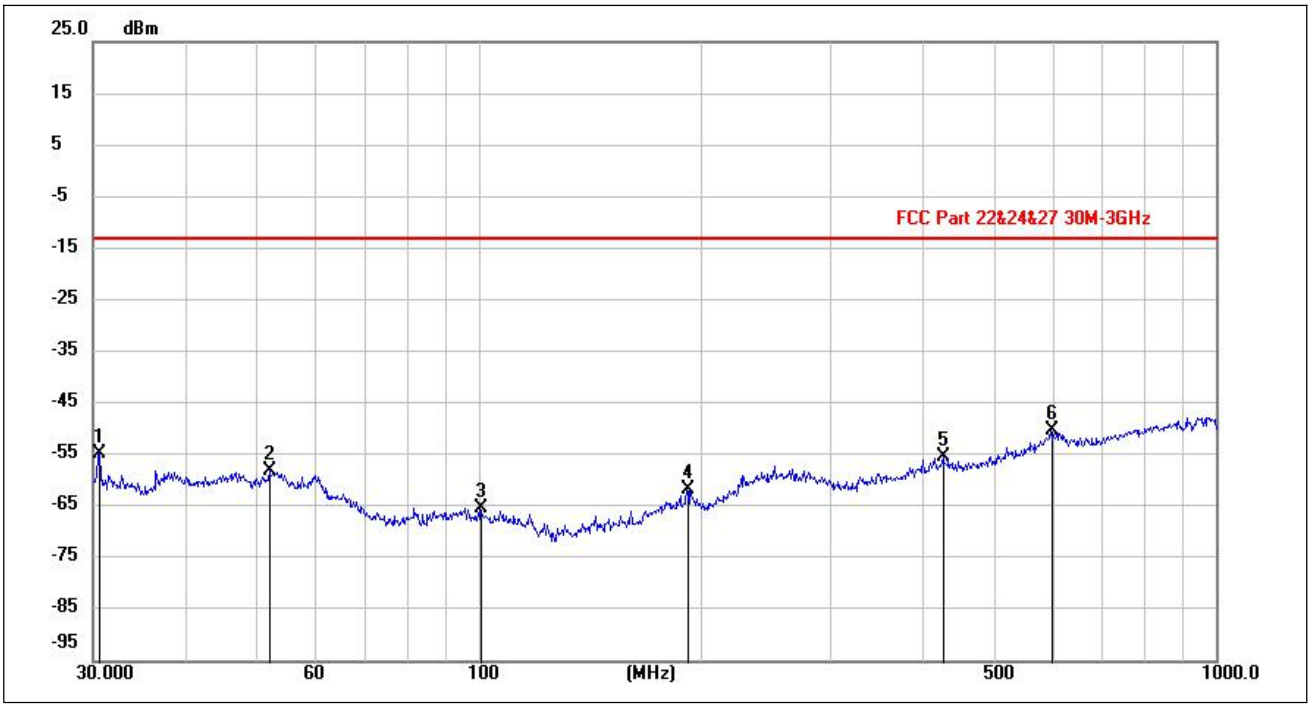
(GSM 1900MHz _1GHz to 3GHz _ Channel = 512_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1170.757	-36.36	-13.00	-23.36	H	40.40	PASS
1436.741	-32.95	-13.00	-19.95	H	43.22	PASS
1722.373	-31.16	-13.00	-18.16	H	45.06	PASS
1909.751	4.48	N/A	N/A	H	47.01	N/A
2301.020	-24.49	-13.00	-11.49	H	50.59	PASS
2768.343	-19.91	-13.00	-6.91	H	54.08	PASS



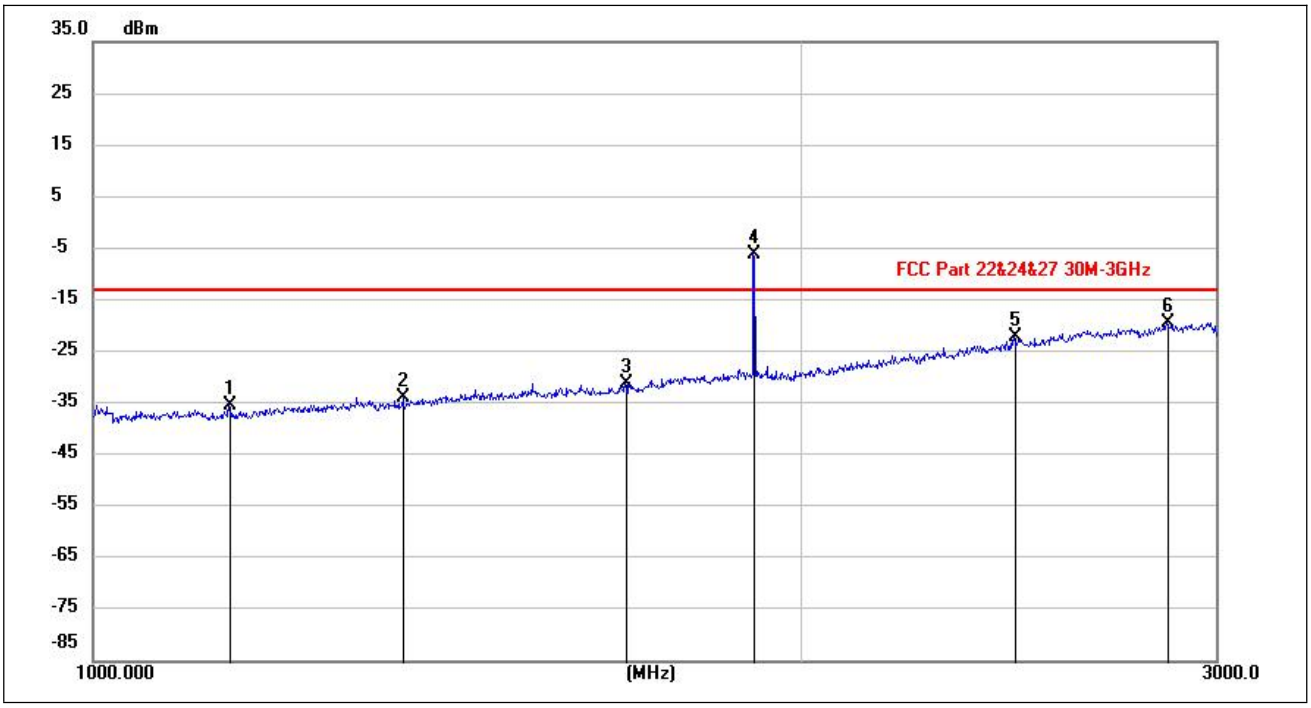
(GSM 1900MHz _3GHz to 18GHz _ Channel = 512_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
4386.000	-53.04	-13.00	-40.04	H	9.47	PASS
6360.750	-53.27	-13.00	-40.27	H	11.57	PASS
8724.750	-52.63	-13.00	-39.63	H	13.61	PASS
10629.750	-52.60	-13.00	-39.60	H	14.40	PASS
12645.000	-52.38	-13.00	-39.38	H	16.67	PASS
15267.000	-48.65	-13.00	-35.65	H	20.99	PASS



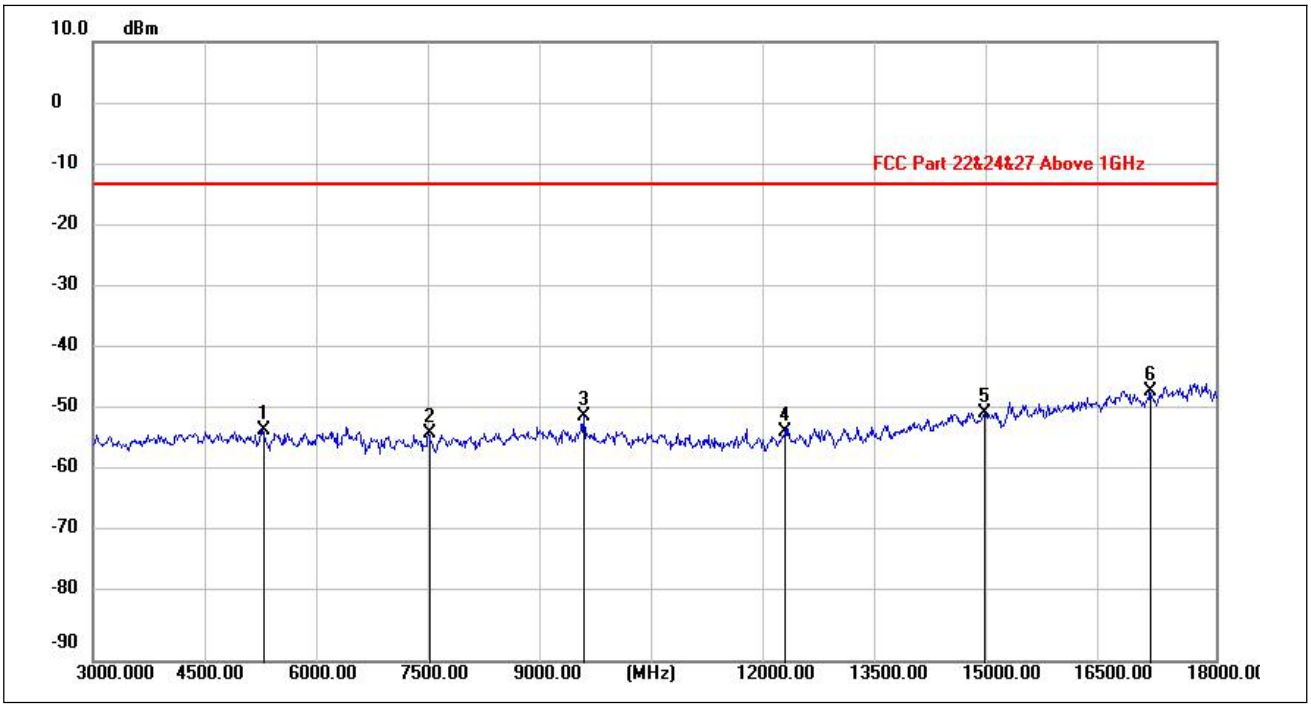
(GSM 1900MHz _30MHz to 1GHz _ Channel = 512_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5413	-54.61	-13.00	-41.61	V	19.70	PASS
52.1256	-58.17	-13.00	-45.17	V	23.17	PASS
100.6159	-65.19	-13.00	-52.19	V	30.43	PASS
192.2837	-61.72	-13.00	-48.72	V	24.04	PASS
427.1946	-55.35	-13.00	-42.35	V	30.00	PASS
597.3281	-50.24	-13.00	-37.24	V	34.53	PASS



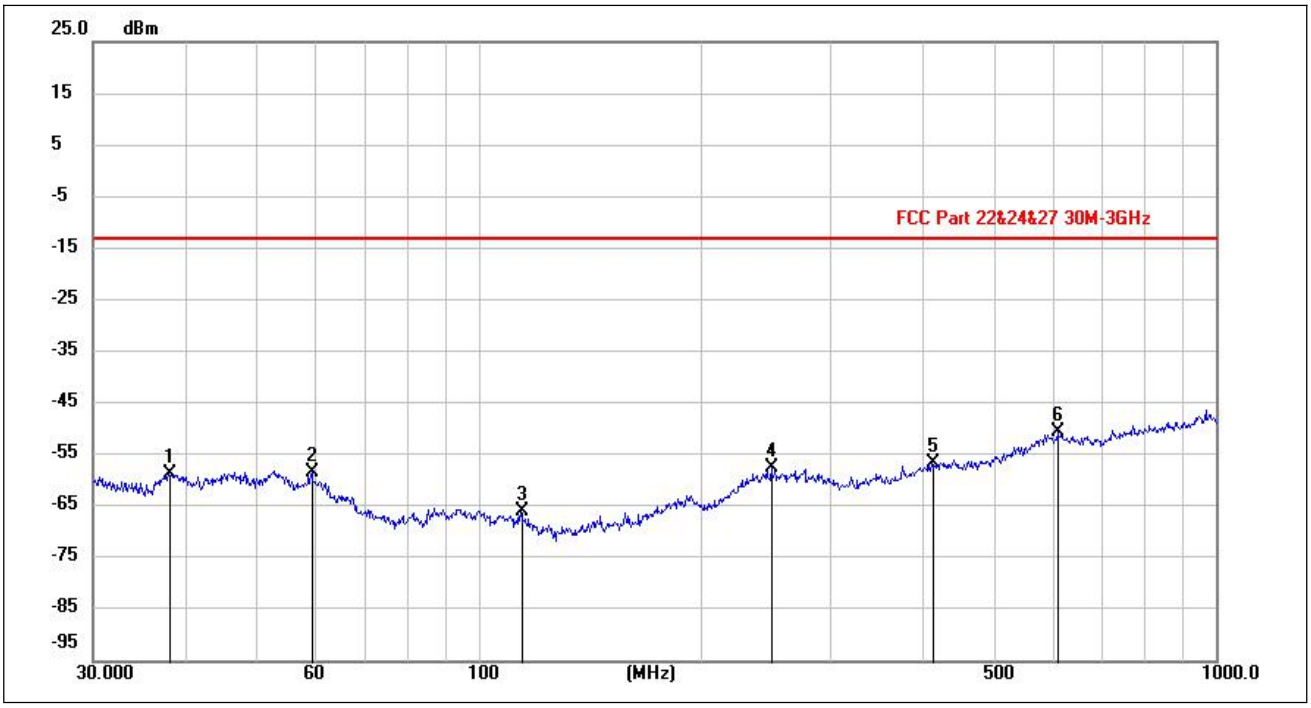
(GSM 1900MHz _1GHz to 3GHz _ Channel = 512_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1142.863	-35.44	-13.00	-22.44	V	40.27	PASS
1354.804	-33.84	-13.00	-20.84	V	42.06	PASS
1684.016	-31.23	-13.00	-18.23	V	44.66	PASS
1909.751	-6.06	N/A	N/A	V	47.31	N/A
2464.430	-22.04	-13.00	-9.04	V	52.19	PASS
2861.574	-19.45	-13.00	-6.45	V	54.84	PASS



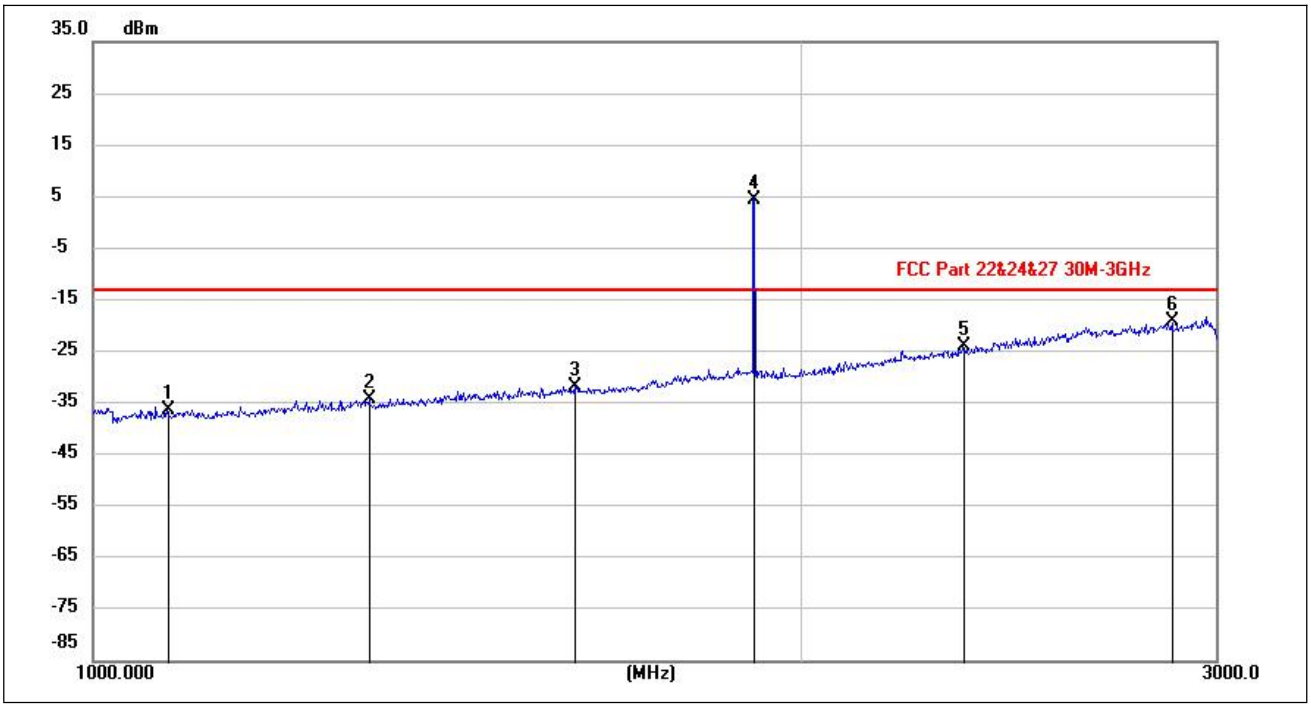
(GSM 1900MHz _3GHz to 18GHz _ Channel = 512_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
5270.250	-52.59	-13.00	-39.59	V	9.59	PASS
7499.250	-53.14	-13.00	-40.14	V	11.47	PASS
9555.000	-50.50	-13.00	-37.50	V	14.94	PASS
12240.000	-52.92	-13.00	-39.92	V	15.58	PASS
14910.000	-49.83	-13.00	-36.83	V	19.86	PASS
17128.500	-46.51	-13.00	-33.51	V	23.15	PASS



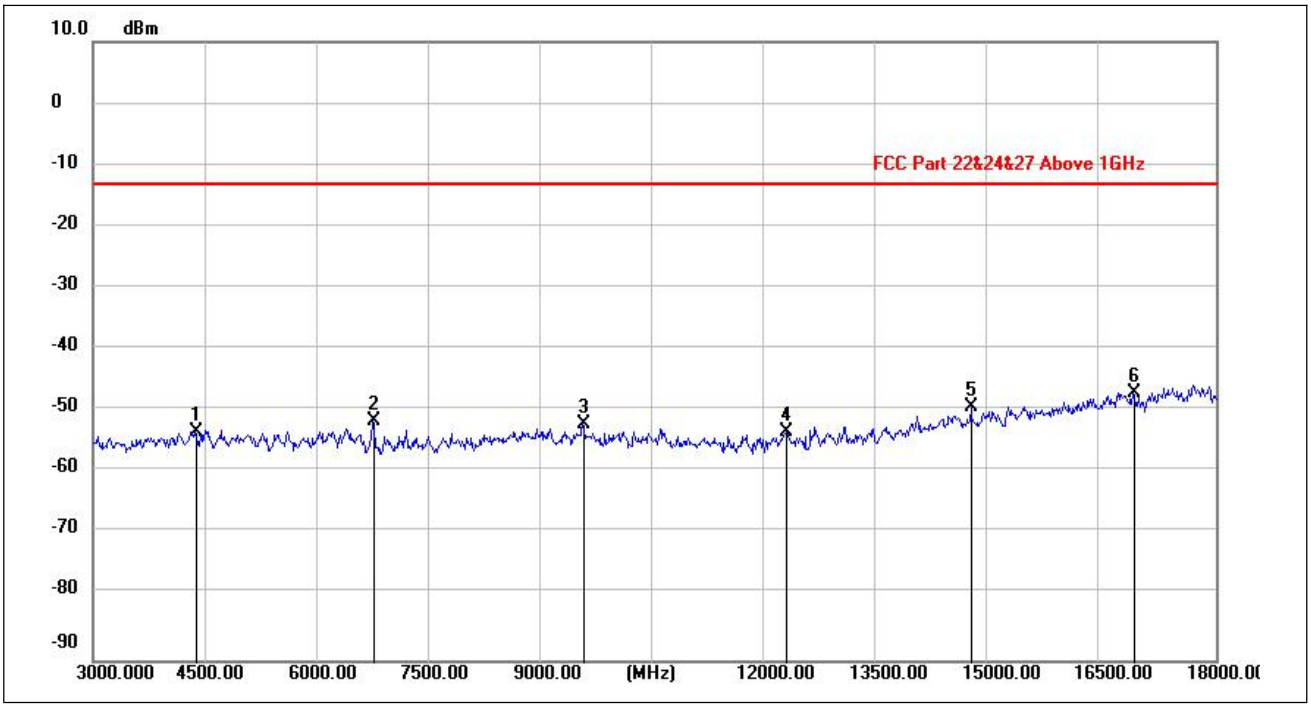
(GSM 1900MHz _30MHz to 1GHz _ Channel = 661_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.0315	-58.56	-13.00	-45.56	H	29.52	PASS
59.6284	-58.43	-13.00	-45.43	H	28.87	PASS
114.3140	-65.93	-13.00	-52.93	H	20.70	PASS
249.8189	-57.48	-13.00	-44.48	H	29.11	PASS
412.8361	-56.49	-13.00	-43.49	H	30.81	PASS
610.3496	-50.41	-13.00	-37.41	H	35.49	PASS



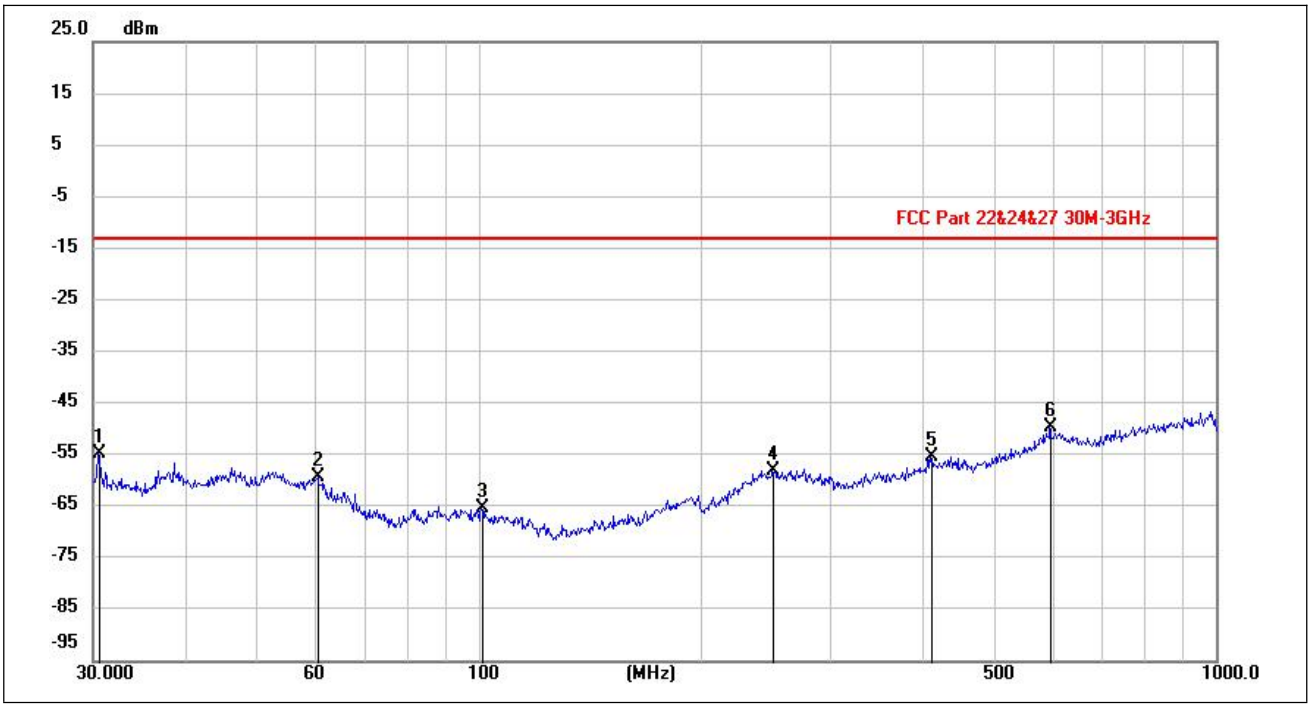
(GSM 1900MHz _1GHz to 3GHz _ Channel = 661_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1075.379	-36.31	-13.00	-23.31	H	39.85	PASS
1311.527	-34.16	-13.00	-21.16	H	42.05	PASS
1602.171	-31.66	-13.00	-18.66	H	44.33	PASS
1909.856	4.50	N/A	N/A	H	47.01	N/A
2344.785	-23.81	-13.00	-10.81	H	50.71	PASS
2874.177	-19.27	-13.00	-6.27	H	55.08	PASS



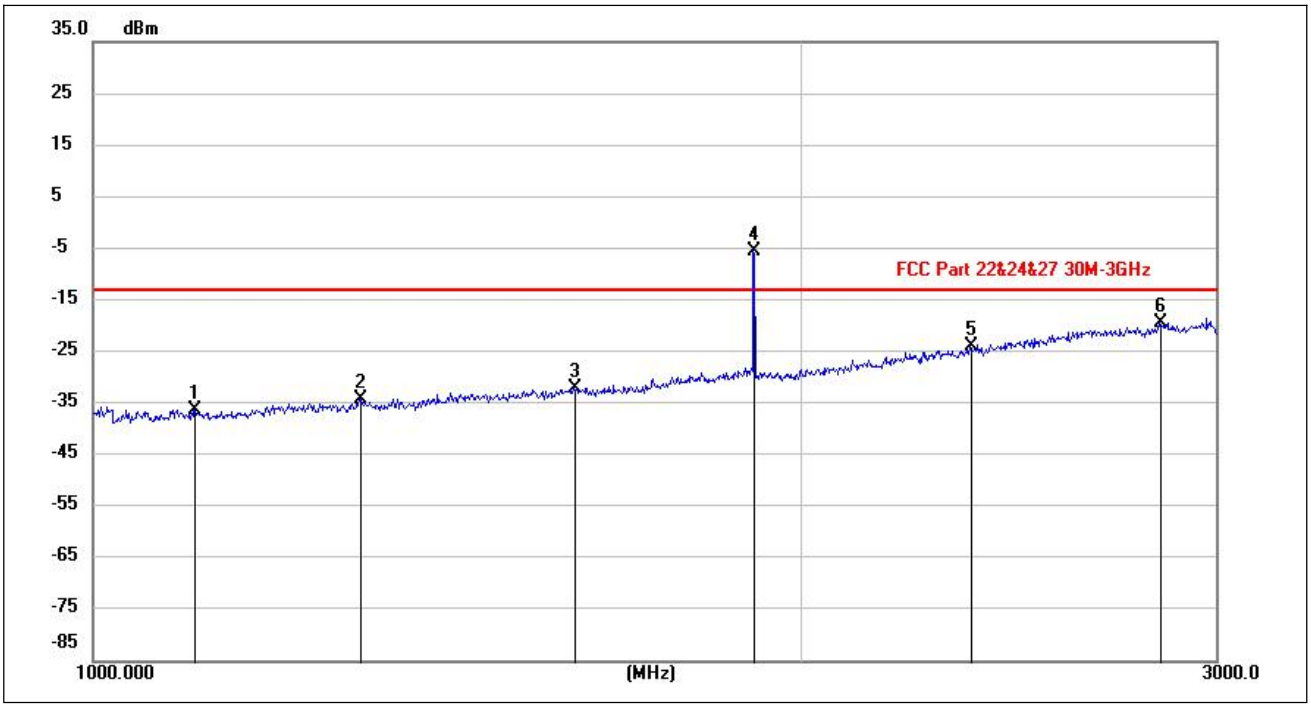
(GSM 1900MHz _3GHz to 18GHz _ Channel = 661_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
4376.250	-52.96	-13.00	-39.96	H	9.47	PASS
6743.250	-51.18	-13.00	-38.18	H	10.63	PASS
9540.750	-51.62	-13.00	-38.62	H	14.58	PASS
12255.750	-52.88	-13.00	-39.88	H	15.74	PASS
14739.750	-48.88	-13.00	-35.88	H	20.45	PASS
16904.250	-46.60	-13.00	-33.60	H	23.43	PASS



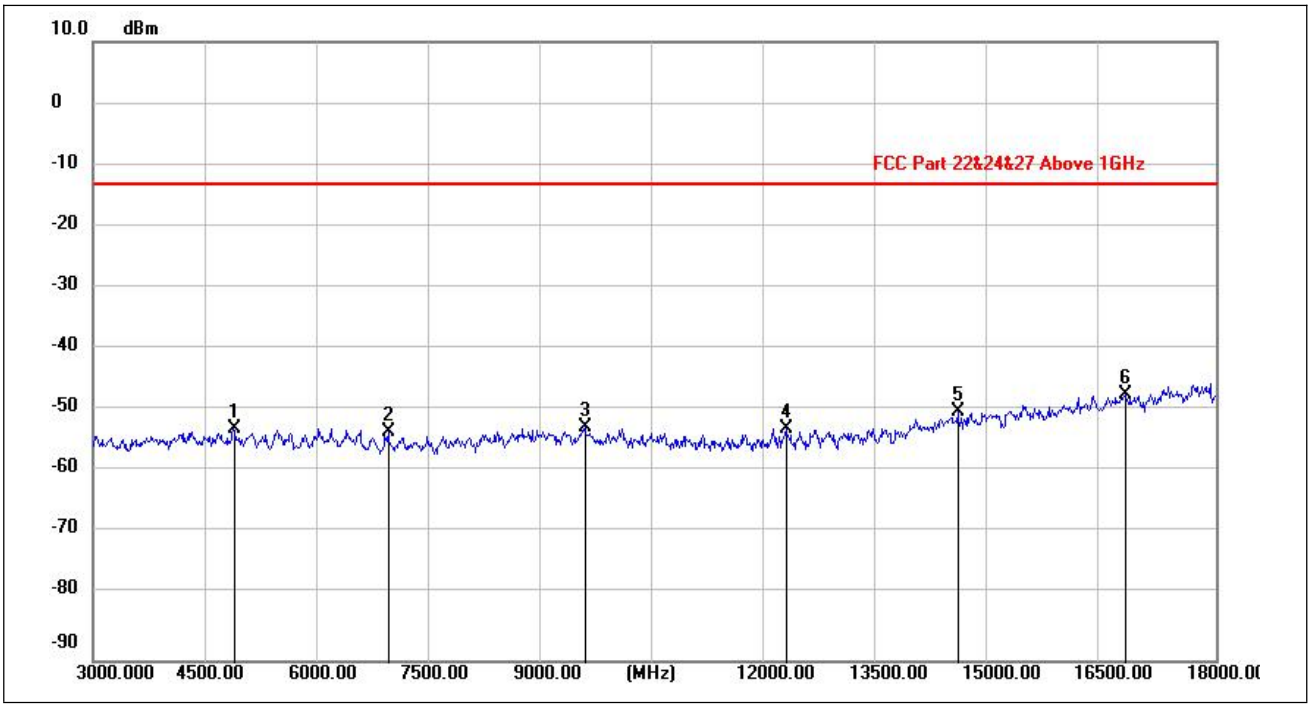
(GSM 1900MHz _30MHz to 1GHz _ Channel = 661_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.6271	-54.70	-13.00	-41.70	V	19.73	PASS
60.5980	-59.25	-13.00	-46.25	V	24.08	PASS
101.0225	-65.17	-13.00	-52.17	V	30.69	PASS
250.8723	-57.96	-13.00	-44.96	V	25.19	PASS
411.7518	-55.48	-13.00	-42.48	V	30.16	PASS
595.4460	-49.73	-13.00	-36.73	V	34.59	PASS



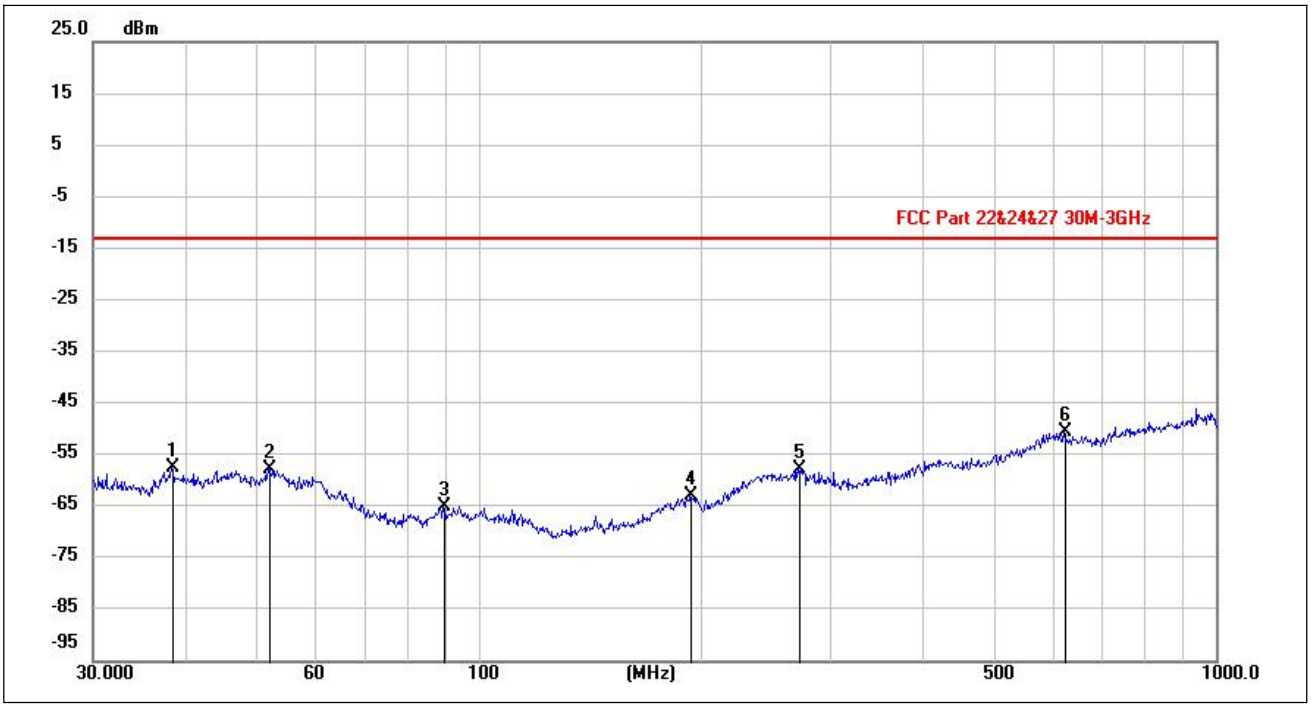
(GSM 1900MHz _1GHz to 3GHz _ Channel = 661_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1104.171	-36.29	-13.00	-23.29	V	39.85	PASS
1297.697	-34.29	-13.00	-21.29	V	42.01	PASS
1601.555	-32.06	-13.00	-19.06	V	43.90	PASS
1909.856	-5.64	N/A	N/A	V	47.32	N/A
2359.384	-23.94	-13.00	-10.94	V	50.91	PASS
2841.525	-19.34	-13.00	-6.34	V	54.17	PASS



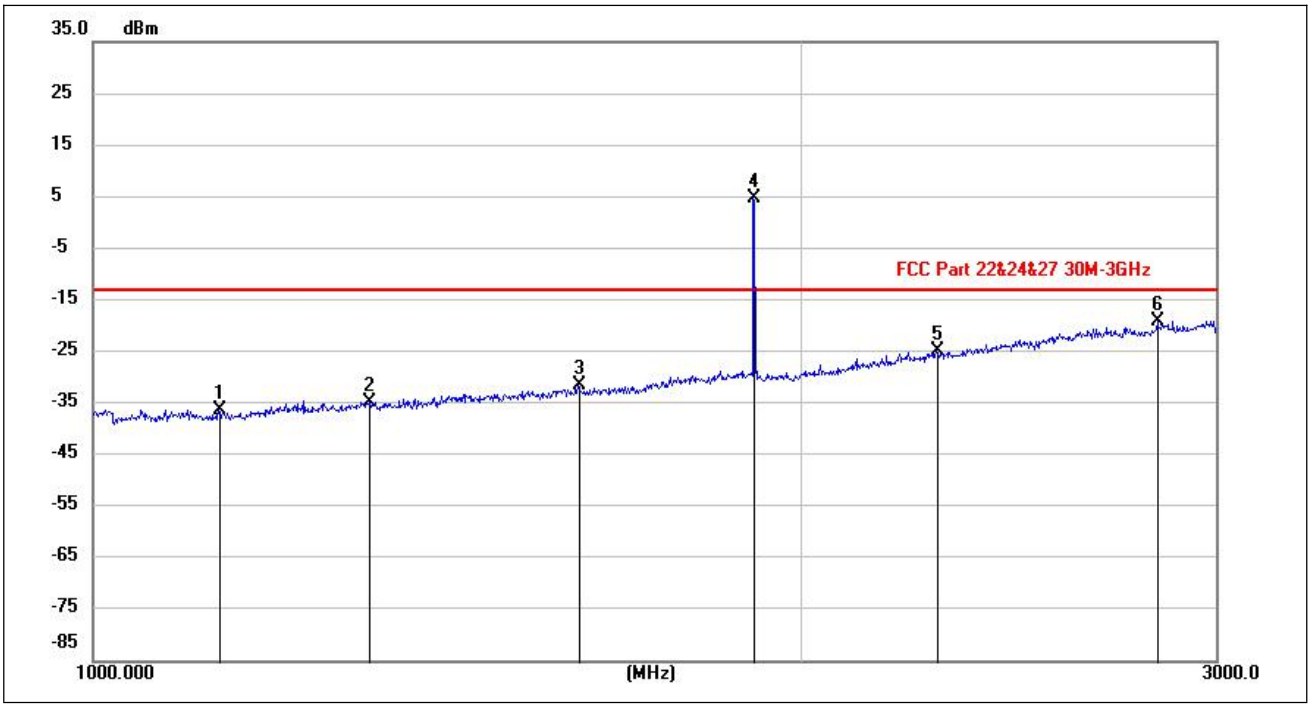
(GSM 1900MHz _3GHz to 18GHz _ Channel = 661_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
4885.500	-52.52	-13.00	-39.52	V	9.51	PASS
6954.000	-53.06	-13.00	-40.06	V	11.19	PASS
9575.250	-52.31	-13.00	-39.31	V	14.76	PASS
12258.000	-52.33	-13.00	-39.33	V	15.56	PASS
14560.500	-49.61	-13.00	-36.61	V	19.94	PASS
16790.250	-47.00	-13.00	-34.00	V	22.43	PASS



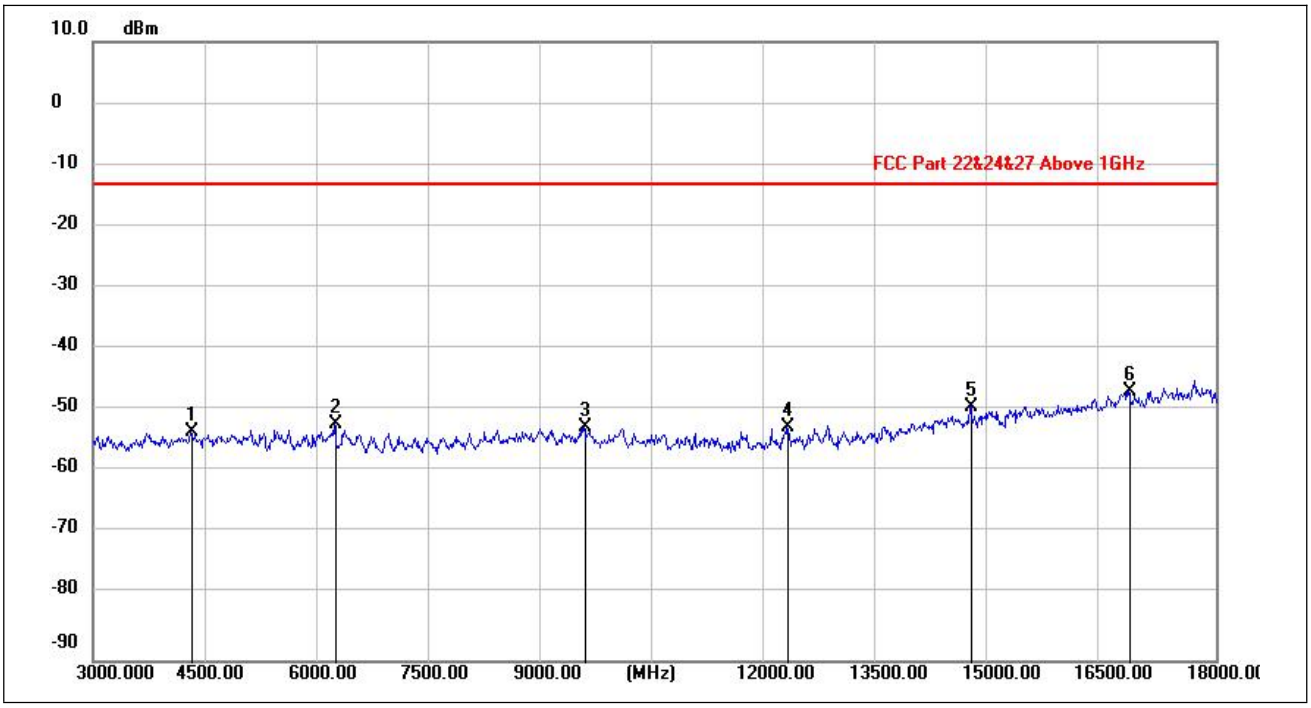
(GSM 1900MHz _30MHz to 1GHz _ Channel = 810_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.4001	-57.52	-13.00	-44.52	H	29.64	PASS
51.9795	-57.86	-13.00	-44.86	H	29.61	PASS
89.7315	-64.91	-13.00	-51.91	H	21.94	PASS
194.3853	-62.82	-13.00	-49.82	H	24.64	PASS
271.3721	-57.90	-13.00	-44.90	H	28.94	PASS
623.2177	-50.57	-13.00	-37.57	H	35.26	PASS



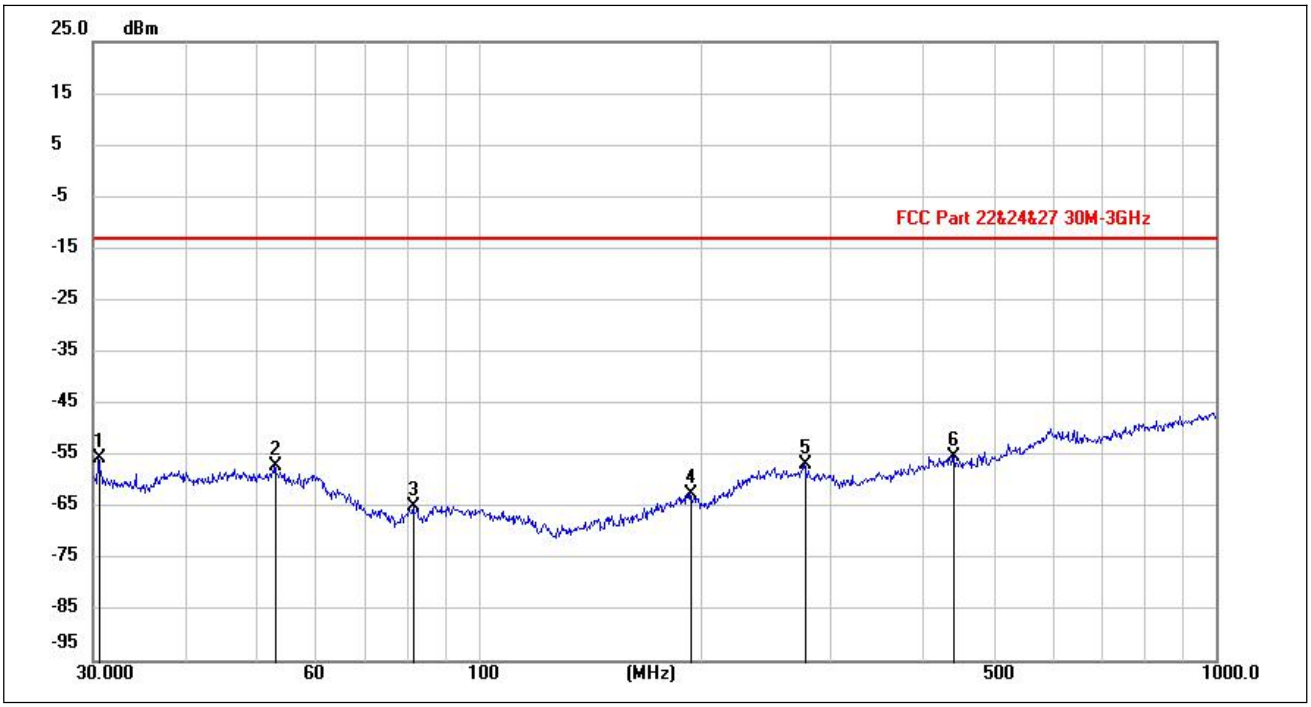
(GSM 1900MHz _1GHz to 3GHz _ Channel = 810_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1131.743	-36.17	-13.00	-23.17	H	39.84	PASS
1310.519	-34.72	-13.00	-21.72	H	42.09	PASS
1607.813	-31.57	-13.00	-18.57	H	44.33	PASS
1909.856	4.58	N/A	N/A	H	47.01	N/A
2284.145	-24.72	-13.00	-11.72	H	50.31	PASS
2835.133	-19.00	-13.00	-6.00	H	54.20	PASS



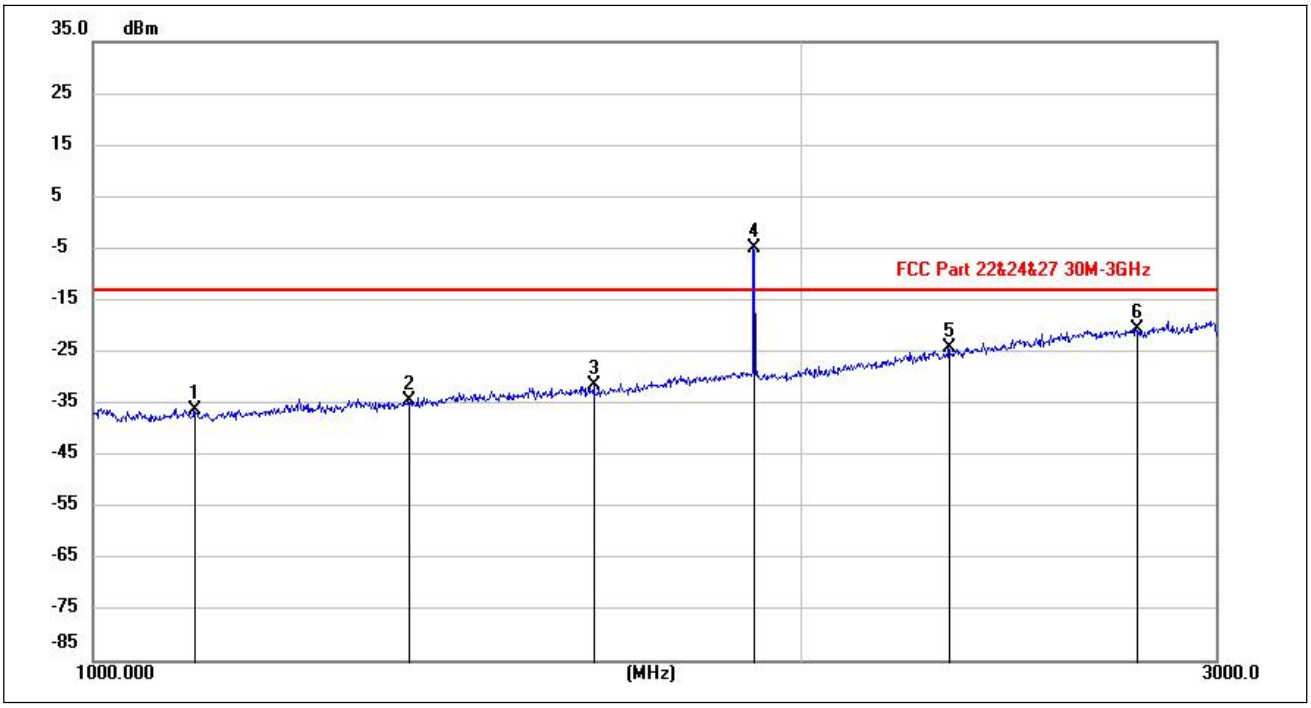
(GSM 1900MHz _3GHz to 18GHz _ Channel = 810_ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
4305.750	-53.00	-13.00	-40.00	H	9.13	PASS
6229.500	-51.75	-13.00	-38.75	H	11.13	PASS
9558.750	-52.25	-13.00	-39.25	H	14.77	PASS
12280.500	-52.30	-13.00	-39.30	H	15.73	PASS
14721.750	-48.90	-13.00	-35.90	H	20.66	PASS
16834.500	-46.51	-13.00	-33.51	H	23.23	PASS



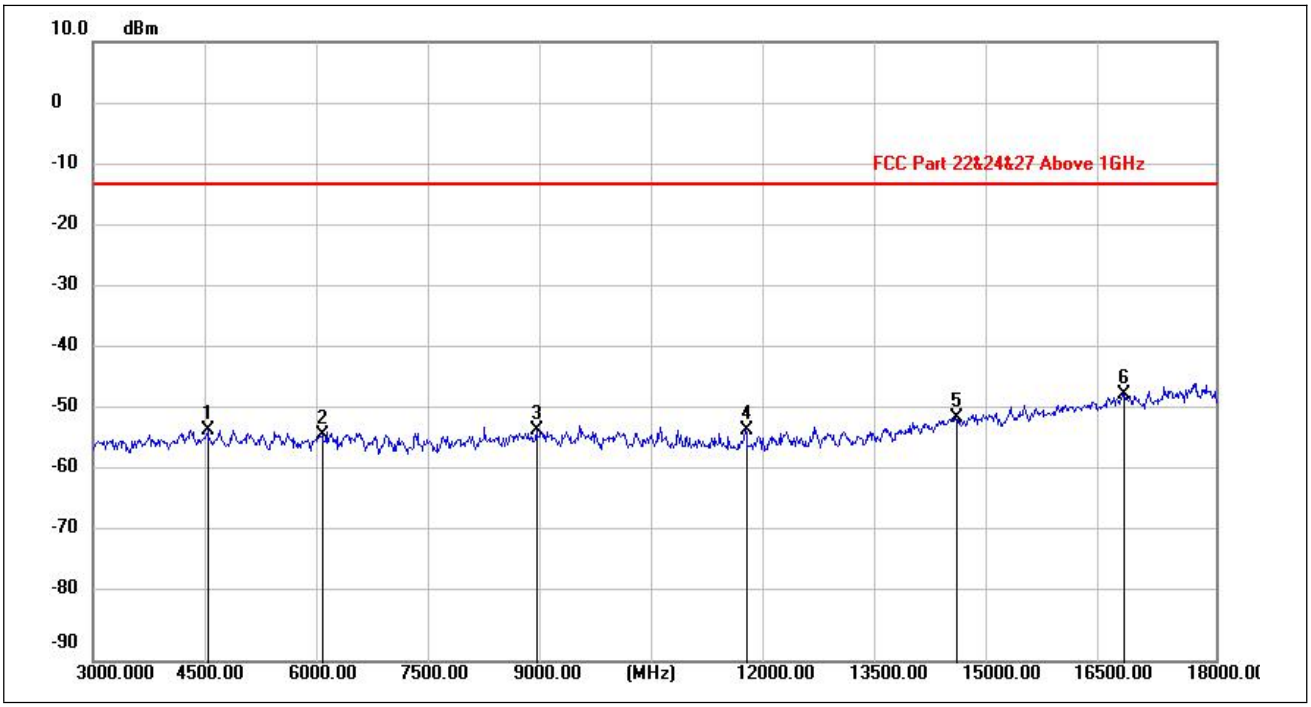
(GSM 1900MHz _30MHz to 1GHz _ Channel = 810_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.6271	-55.71	-13.00	-42.71	V	19.73	PASS
52.9546	-57.11	-13.00	-44.11	V	23.47	PASS
81.7260	-64.92	-13.00	-51.92	V	22.45	PASS
194.2830	-62.49	-13.00	-49.49	V	24.51	PASS
276.3657	-56.96	-13.00	-43.96	V	26.65	PASS
441.4329	-55.23	-13.00	-42.23	V	29.82	PASS



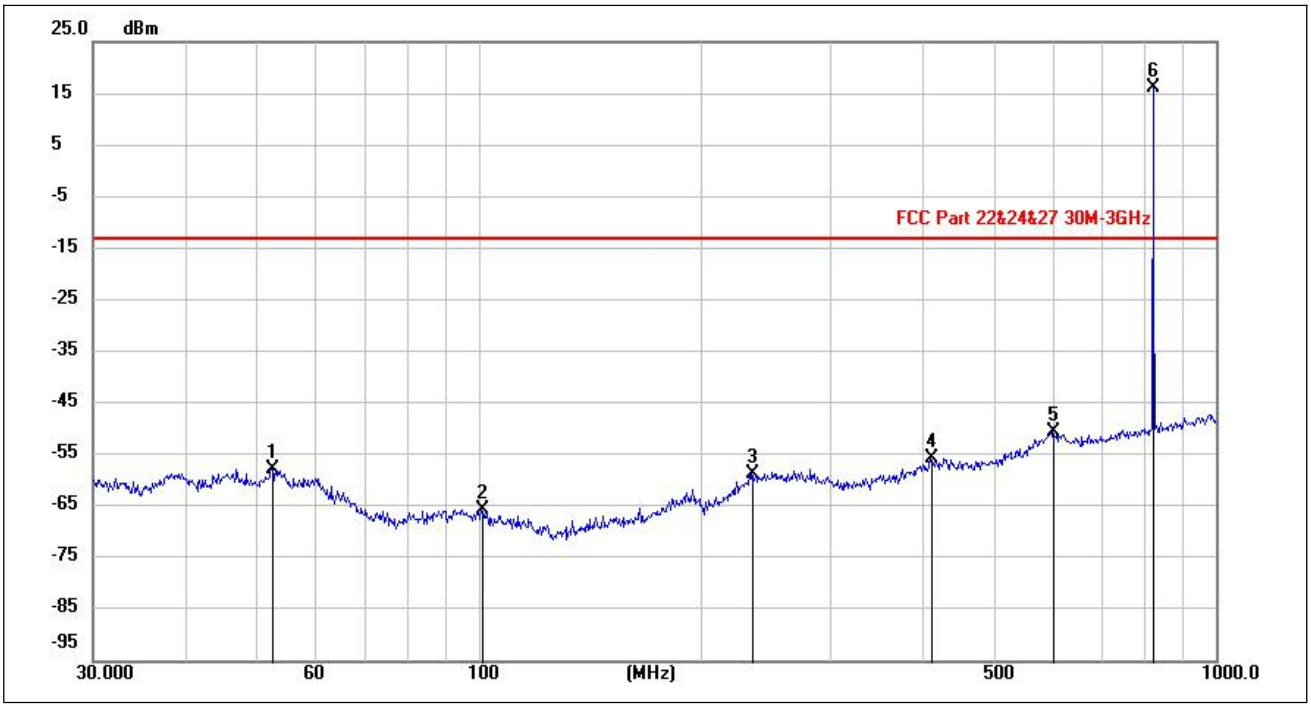
(GSM 1900MHz _1GHz to 3GHz _ Channel = 810_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1104.899	-36.23	-13.00	-23.23	V	39.84	PASS
1362.940	-34.60	-13.00	-21.60	V	42.17	PASS
1633.092	-31.52	-13.00	-18.52	V	43.94	PASS
1909.856	-5.09	N/A	N/A	V	47.32	N/A
2310.773	-24.30	-13.00	-11.30	V	50.82	PASS
2775.651	-20.50	-13.00	-7.50	V	53.92	PASS



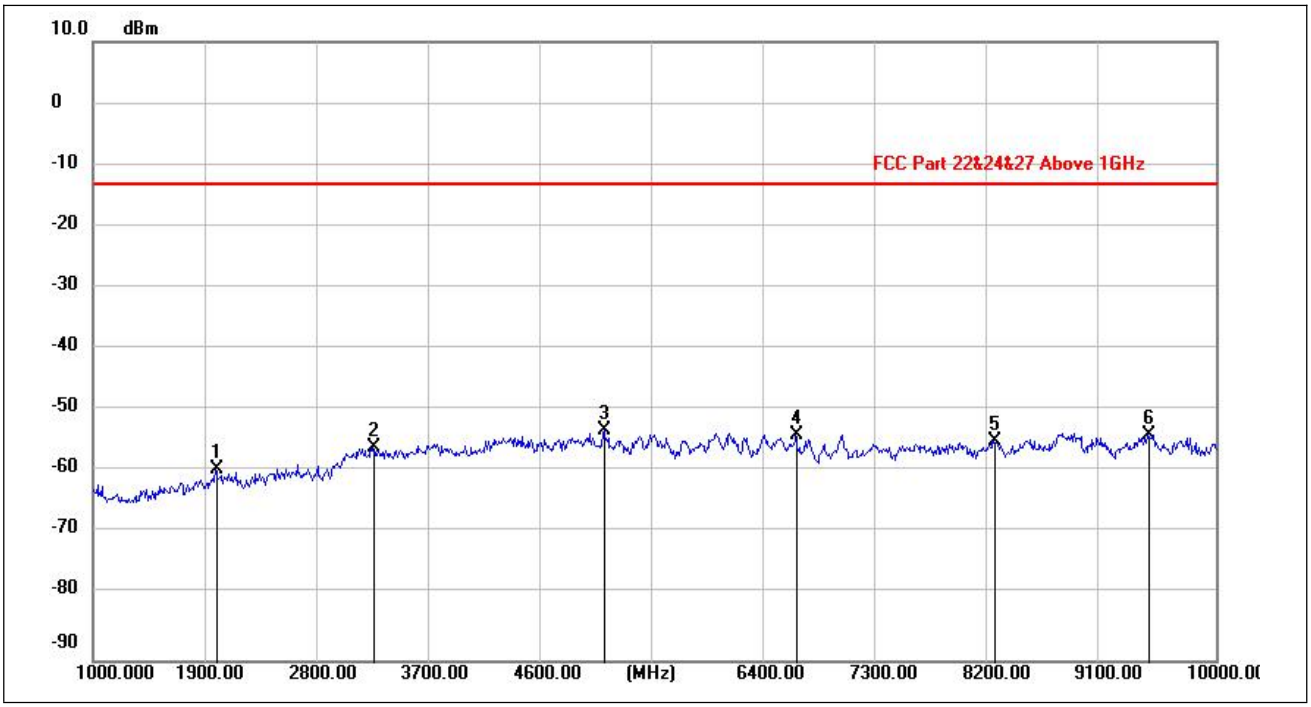
(GSM 1900MHz _3GHz to 18GHz _ Channel = 810_ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
4539.750	-52.70	-13.00	-39.70	V	8.97	PASS
6065.250	-53.45	-13.00	-40.45	V	11.30	PASS
8928.750	-52.63	-13.00	-39.63	V	14.51	PASS
11725.500	-52.71	-13.00	-39.71	V	15.10	PASS
14531.250	-50.75	-13.00	-37.75	V	19.82	PASS
16767.000	-46.93	-13.00	-33.93	V	22.67	PASS



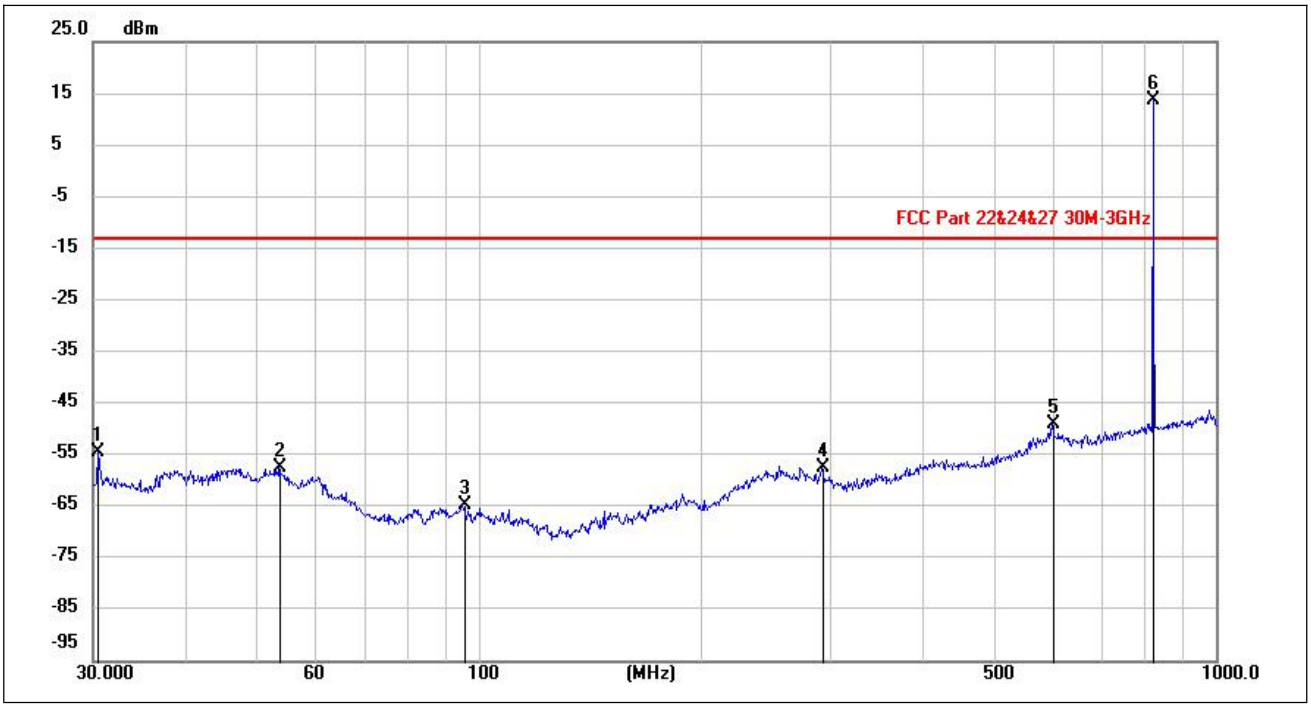
(EDGE 850MHz_ 30MHz to 1GHz _ 128 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
52.5753	-57.67	-13.00	-44.67	H	29.97	PASS
101.0579	-65.63	-13.00	-52.63	H	22.38	PASS
234.6204	-58.52	-13.00	-45.52	H	27.89	PASS
411.1747	-55.56	-13.00	-42.56	H	30.72	PASS
599.7417	-50.63	-13.00	-37.63	H	35.62	PASS
824.3077	16.25	N/A	N/A	H	37.26	N/A



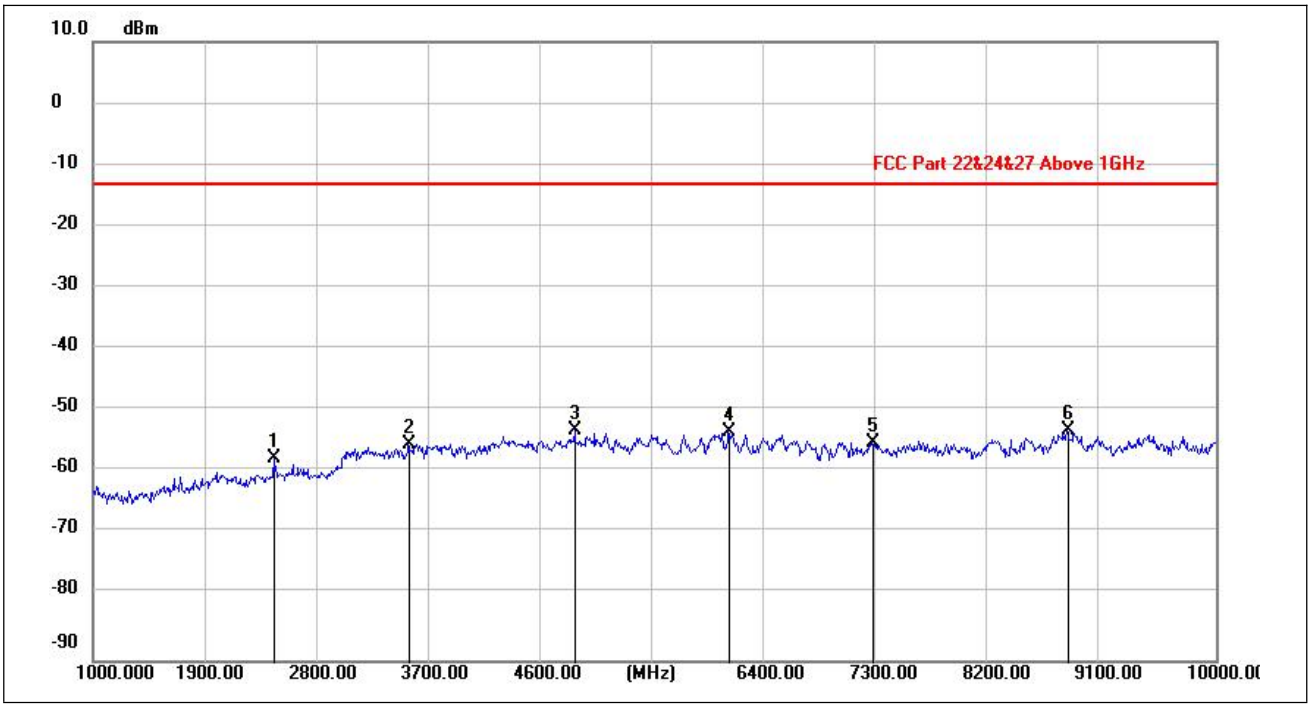
(EDGE 850MHz_ 1GHz to 10GHz _ 128 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1989.550	-59.00	-13.00	-46.00	H	-0.73	PASS
3247.750	-55.55	-13.00	-42.55	H	4.93	PASS
5102.650	-52.57	-13.00	-39.57	H	8.73	PASS
6636.250	-53.54	-13.00	-40.54	H	9.74	PASS
8222.950	-54.39	-13.00	-41.39	H	11.41	PASS
9455.050	-53.34	-13.00	-40.34	H	13.13	PASS



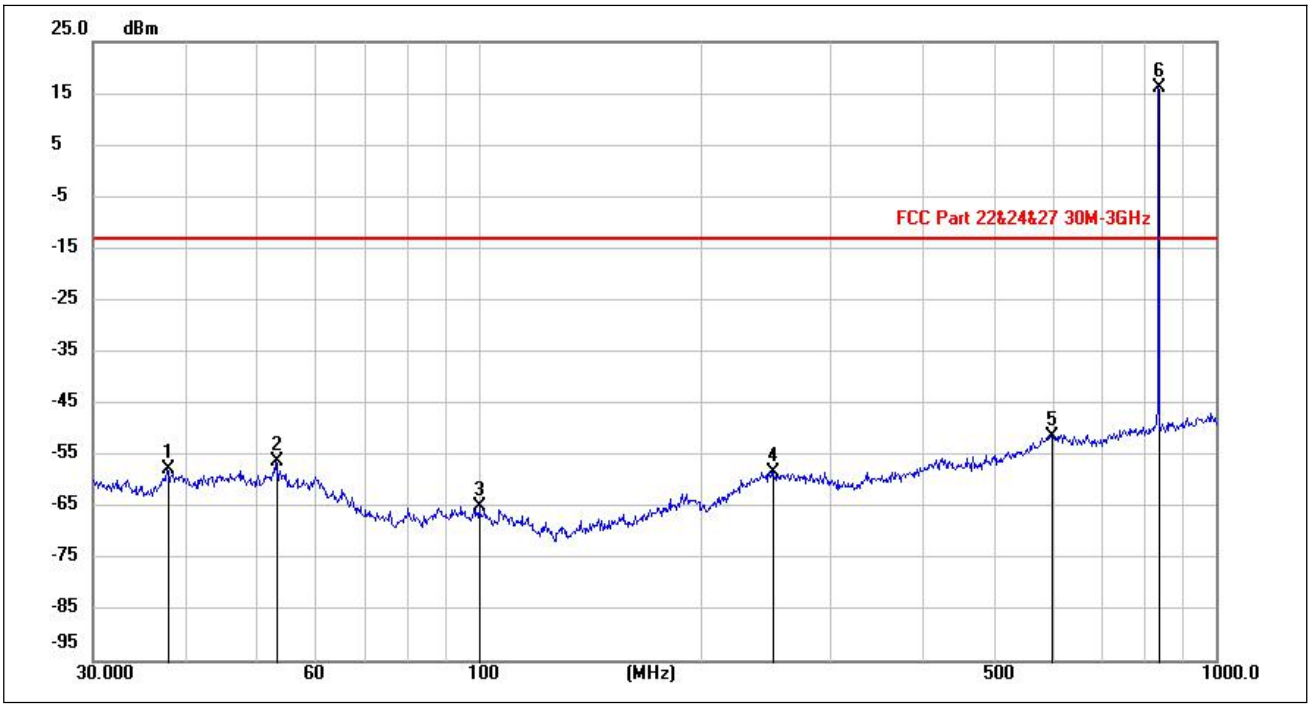
(EDGE 850MHz_ 30MHz to 1GHz_ 128 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5146	-54.38	-13.00	-41.38	V	19.69	PASS
53.7497	-57.59	-13.00	-44.59	V	23.20	PASS
95.4270	-64.83	-13.00	-51.83	V	27.30	PASS
292.4170	-57.40	-13.00	-44.40	V	27.23	PASS
600.5835	-49.17	-13.00	-36.17	V	34.36	PASS
824.1632	13.68	N/A	N/A	V	36.95	N/A



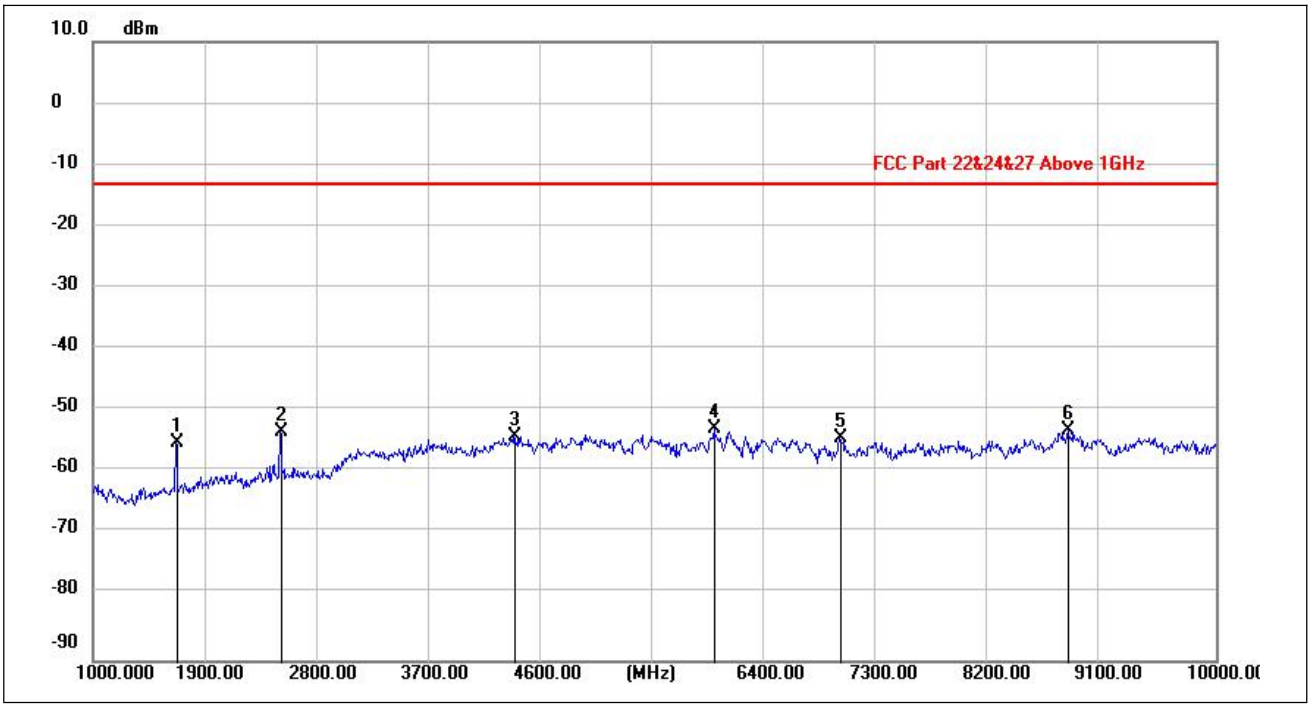
(EDGE 850MHz_ 1GHz to 10GHz _ 128 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
2455.750	-57.32	-13.00	-44.32	V	0.05	PASS
3532.600	-54.88	-13.00	-41.88	V	5.24	PASS
4867.750	-52.62	-13.00	-39.62	V	8.23	PASS
6098.950	-53.01	-13.00	-40.01	V	9.77	PASS
7252.300	-54.66	-13.00	-41.66	V	10.14	PASS
8805.250	-52.76	-13.00	-39.76	V	13.01	PASS



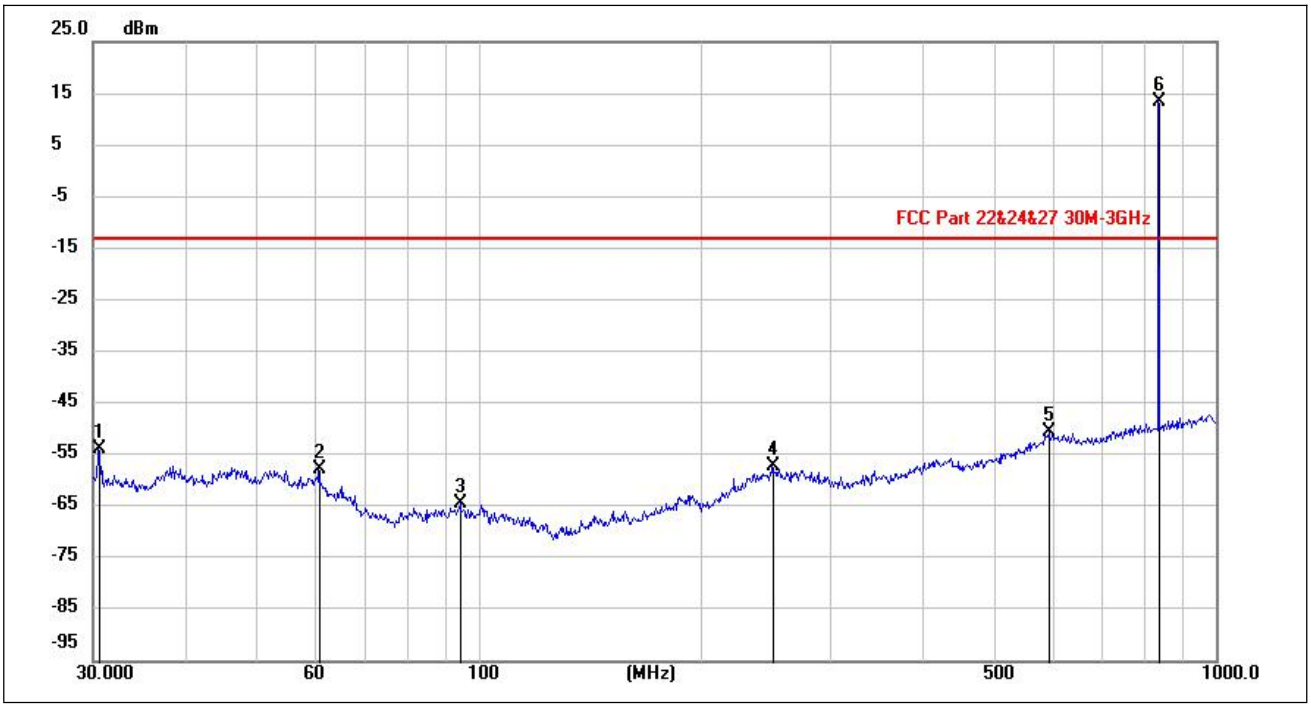
(EDGE 850MHz_ 30MHz to 1GHz _ 190 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
37.8785	-57.78	-13.00	-44.78	H	29.39	PASS
53.1406	-56.32	-13.00	-43.32	H	30.03	PASS
100.4749	-64.86	-13.00	-51.86	H	22.30	PASS
250.5207	-58.25	-13.00	-45.25	H	29.01	PASS
598.9011	-51.32	-13.00	-38.32	H	35.65	PASS
836.5376	16.17	N/A	N/A	H	36.96	N/A



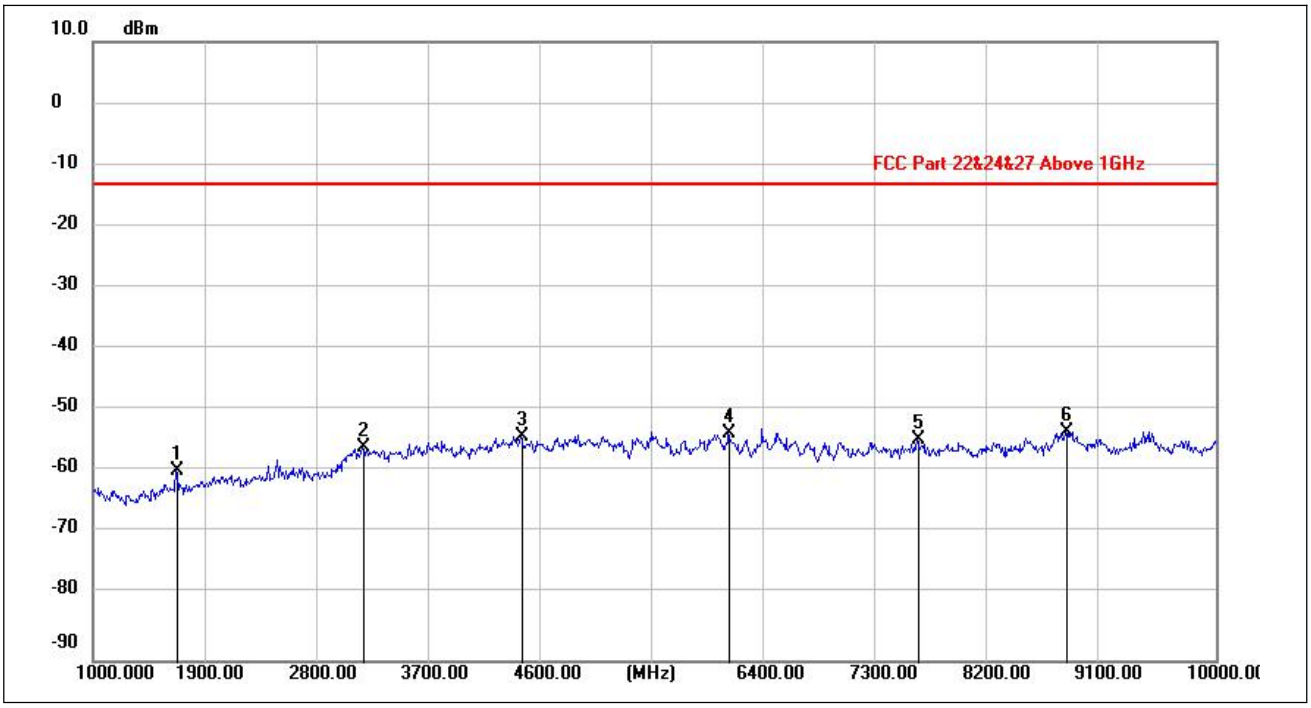
(EDGE 850MHz _ 1MHz to 10GHz _ 190 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1673.200	-54.82	-13.00	-41.82	H	-2.83	PASS
2509.750	-53.05	-13.00	-40.05	H	0.48	PASS
4382.200	-53.57	-13.00	-40.57	H	8.38	PASS
5984.650	-52.36	-13.00	-39.36	H	9.55	PASS
6992.650	-53.88	-13.00	-40.88	H	10.12	PASS
8814.700	-52.70	-13.00	-39.70	H	12.95	PASS



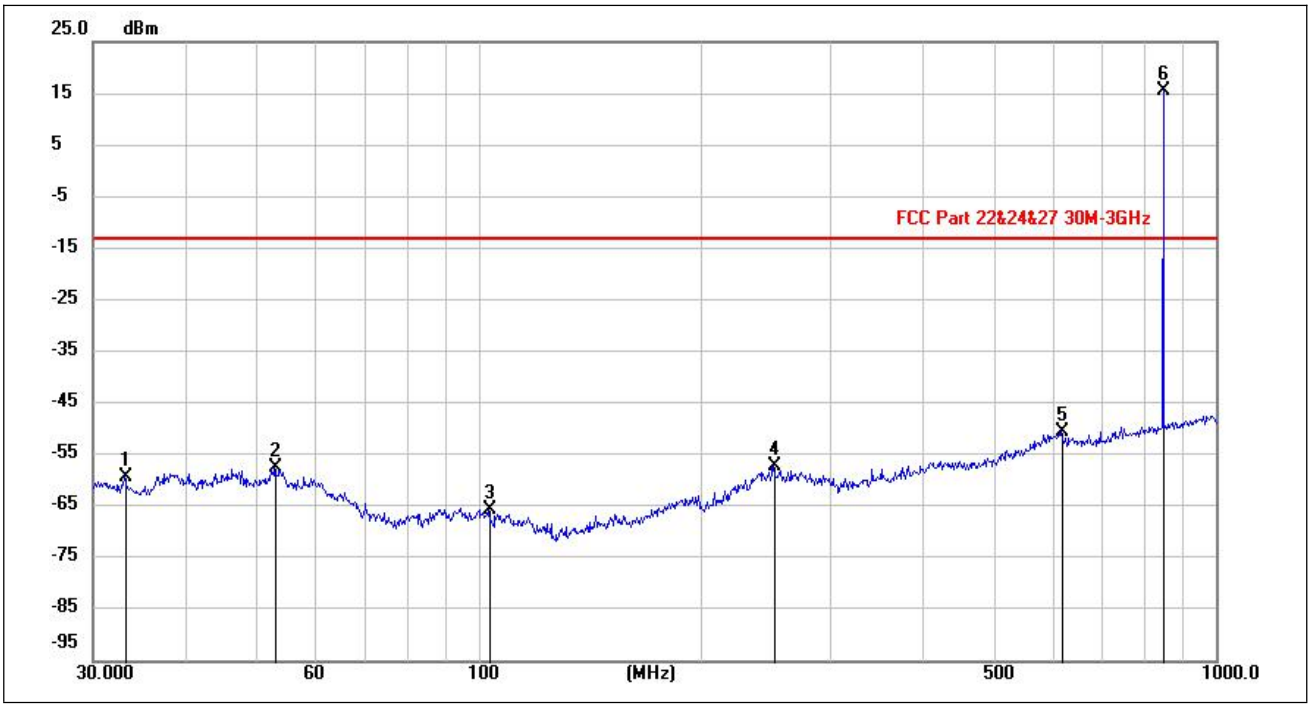
(EDGE 850MHz _ 30MHz to 1GHz_ 190 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5681	-53.77	-13.00	-40.77	V	19.72	PASS
60.9176	-57.87	-13.00	-44.87	V	23.93	PASS
94.5609	-64.30	-13.00	-51.30	V	26.96	PASS
250.9603	-57.28	-13.00	-44.28	V	25.18	PASS
593.4657	-50.62	-13.00	-37.62	V	34.49	PASS
836.6843	13.28	N/A	N/A	V	37.01	N/A



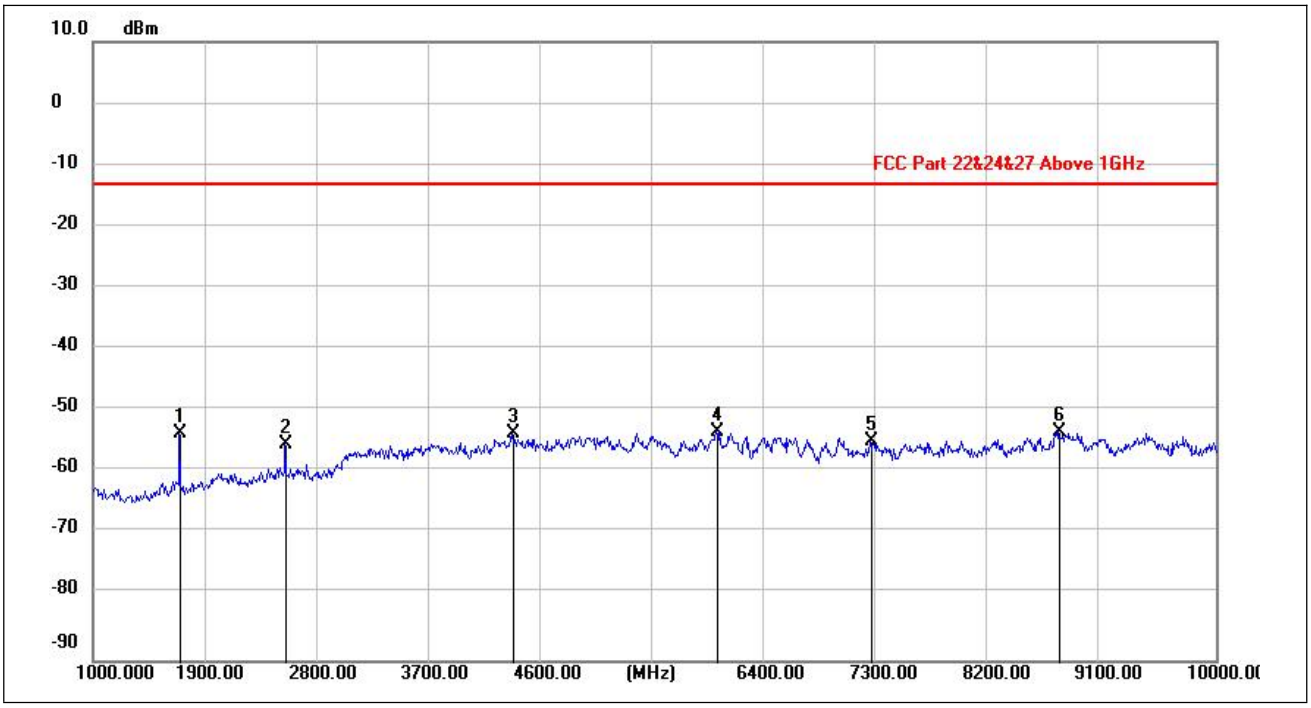
(EDGE 850MHz _ 1GHz to 10GHz_ 190 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1673.200	-59.10	-13.00	-46.10	V	-2.58	PASS
3167.650	-55.57	-13.00	-42.57	V	5.13	PASS
4434.850	-53.65	-13.00	-40.65	V	7.94	PASS
6095.350	-53.10	-13.00	-40.10	V	9.79	PASS
7613.650	-54.22	-13.00	-41.22	V	10.78	PASS
8801.650	-52.93	-13.00	-39.93	V	13.02	PASS



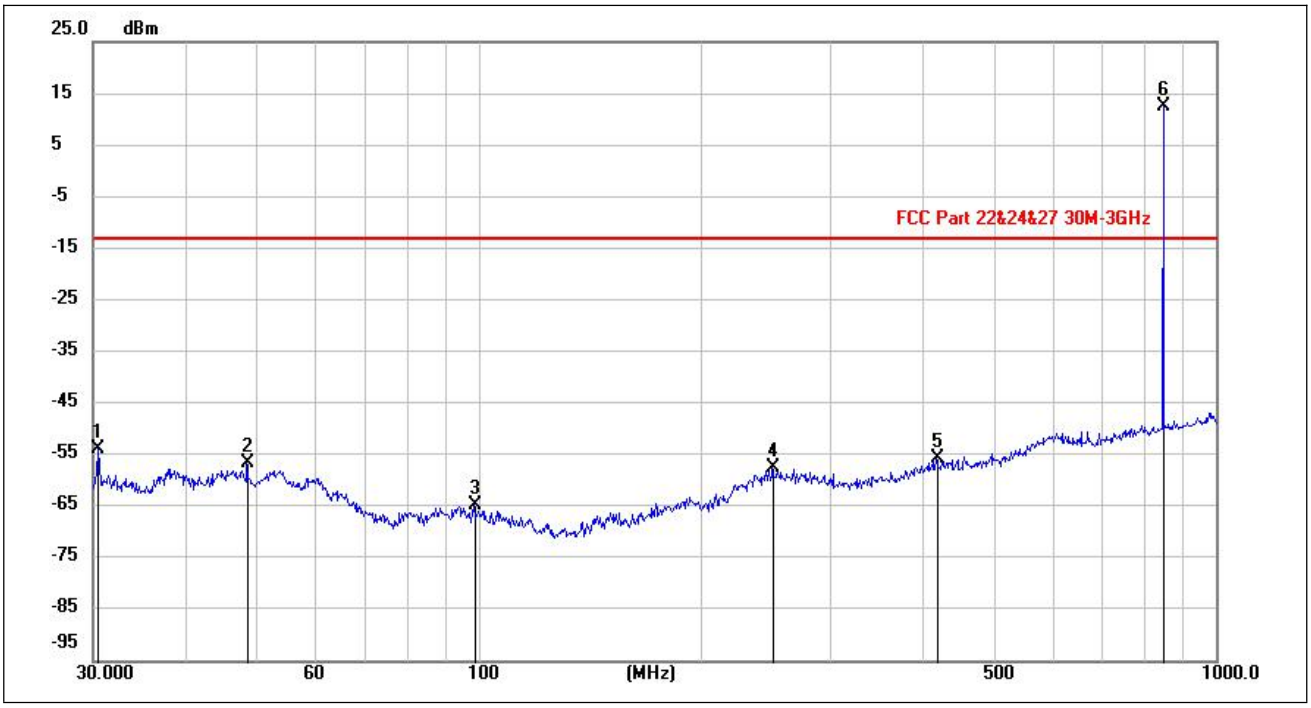
(EDGE 850MHz _ 30MHz to 1GHz_ 251 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
33.1879	-59.19	-13.00	-46.19	H	27.47	PASS
53.1220	-57.35	-13.00	-44.35	H	30.04	PASS
103.1162	-65.47	-13.00	-52.47	H	21.59	PASS
251.5771	-57.02	-13.00	-44.02	H	28.96	PASS
617.7782	-50.65	-13.00	-37.65	H	35.40	PASS
848.8001	15.52	N/A	N/A	H	37.13	N/A



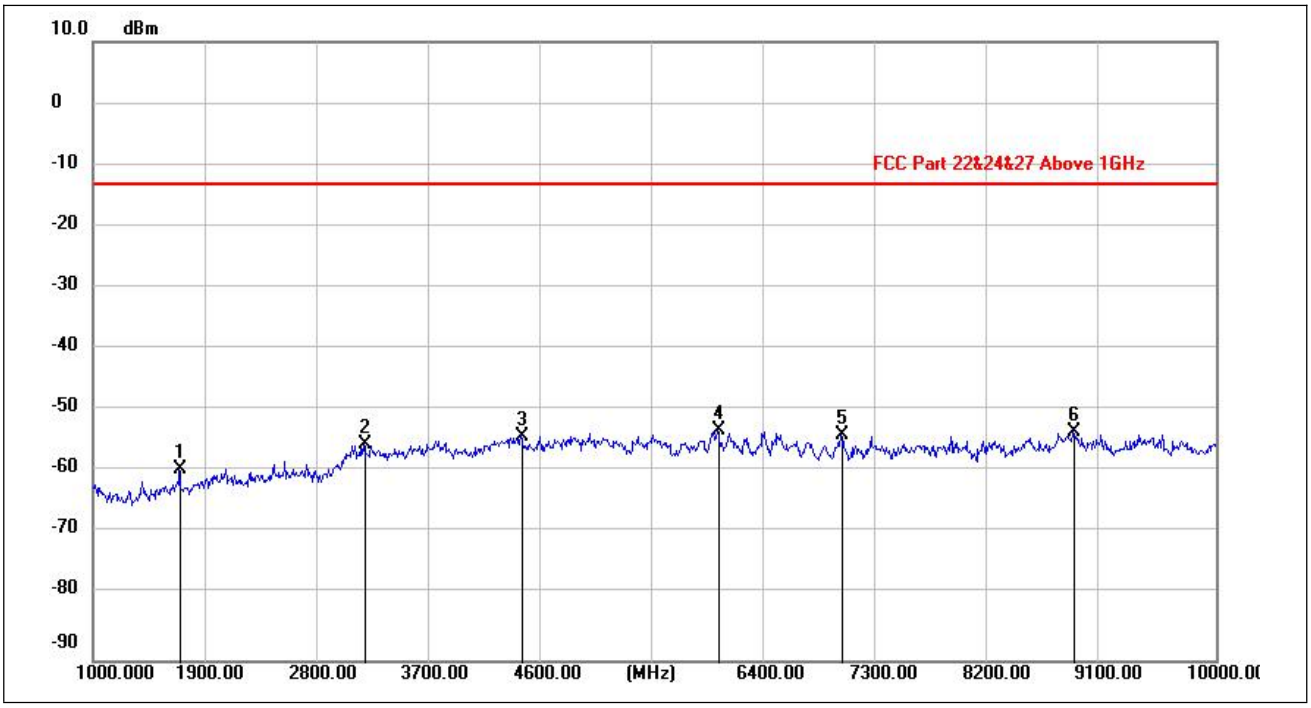
(EDGE 850MHz _ 1GHz to 10GHz_ 251 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1697.500	-53.24	-13.00	-40.24	H	-3.09	PASS
2546.200	-54.88	-13.00	-41.88	H	0.41	PASS
4364.650	-53.29	-13.00	-40.29	H	8.56	PASS
6002.200	-52.89	-13.00	-39.89	H	9.69	PASS
7229.800	-54.48	-13.00	-41.48	H	10.20	PASS
8744.050	-52.94	-13.00	-39.94	H	12.55	PASS



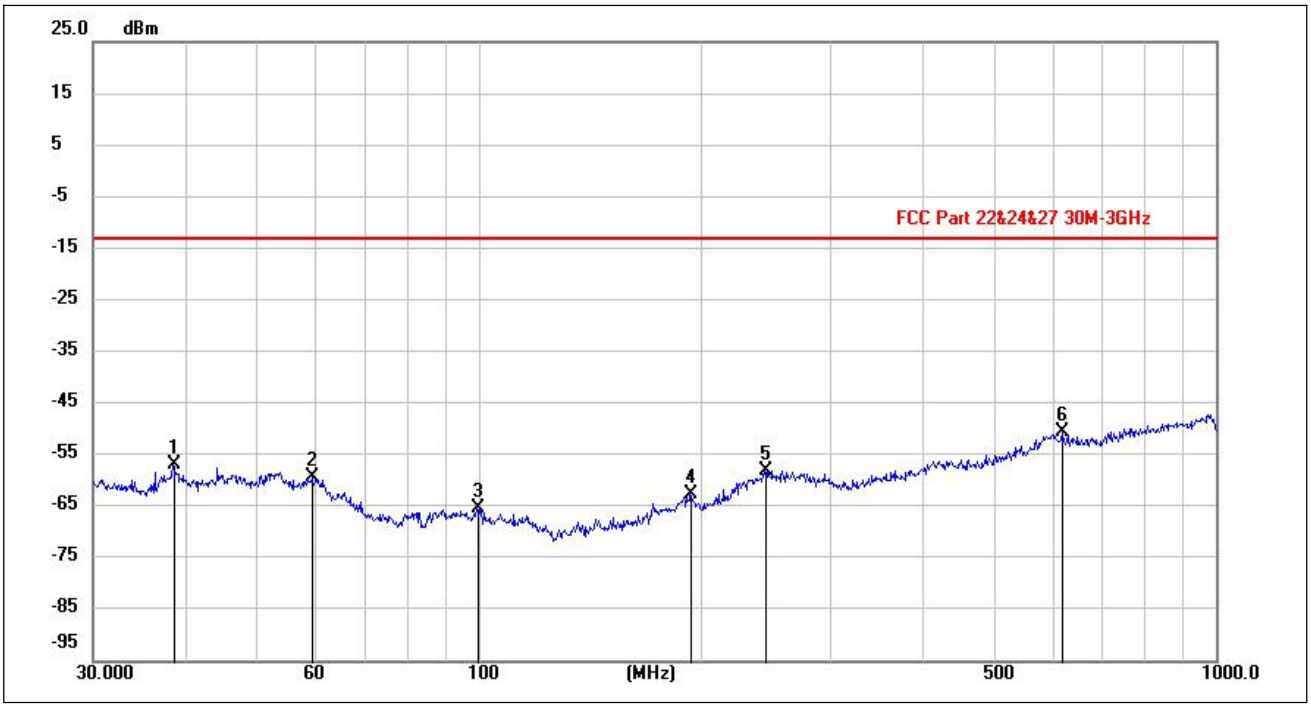
(EDGE 850MHz_ 30MHz to 1GHz _ 251 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.5253	-53.97	-13.00	-40.97	V	19.70	PASS
48.5696	-56.69	-13.00	-43.69	V	22.26	PASS
98.5903	-64.60	-13.00	-51.60	V	28.47	PASS
250.8723	-57.37	-13.00	-44.37	V	25.19	PASS
418.8877	-55.63	-13.00	-42.63	V	29.99	PASS
848.9489	12.51	N/A	N/A	V	37.05	N/A



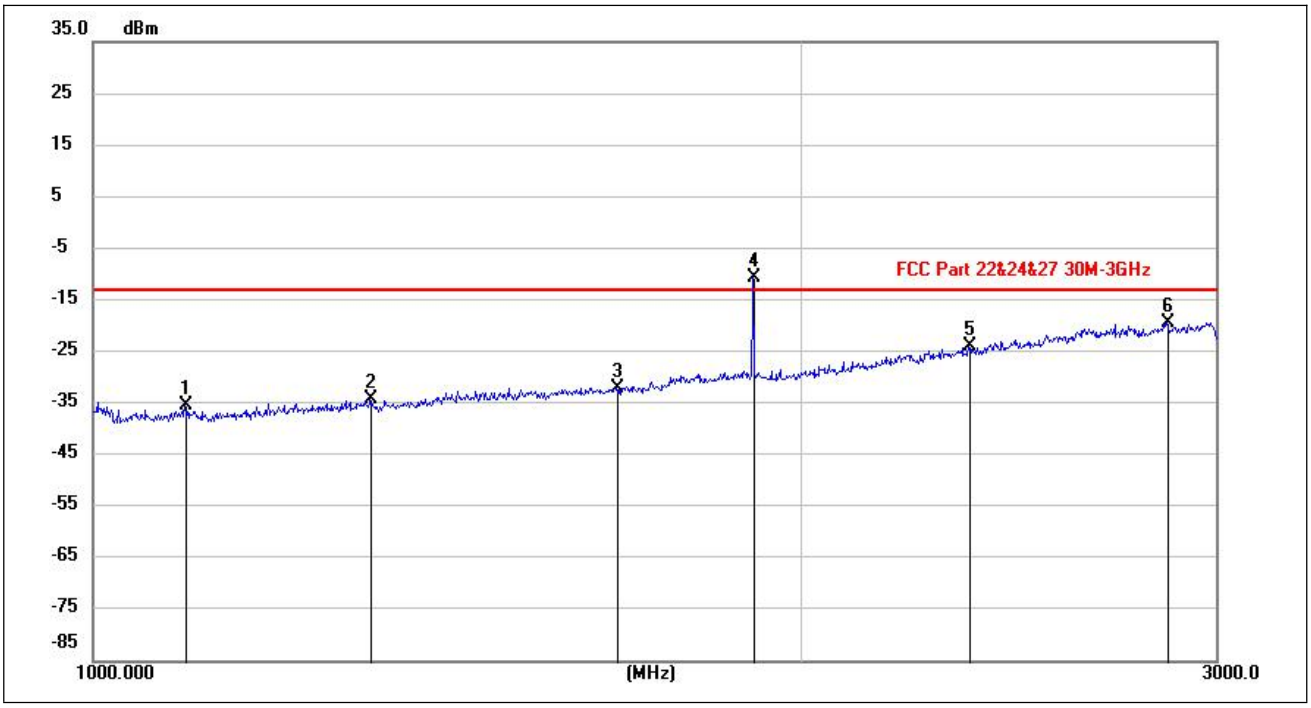
(EDGE 850MHz _ 1GHz to 10GHz_ 251 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1697.050	-59.06	-13.00	-46.06	V	-3.21	PASS
3175.750	-54.84	-13.00	-41.84	V	5.10	PASS
4429.900	-53.57	-13.00	-40.57	V	7.96	PASS
6009.850	-52.76	-13.00	-39.76	V	9.65	PASS
6999.850	-53.51	-13.00	-40.51	V	10.11	PASS
8865.100	-52.89	-13.00	-39.89	V	12.96	PASS



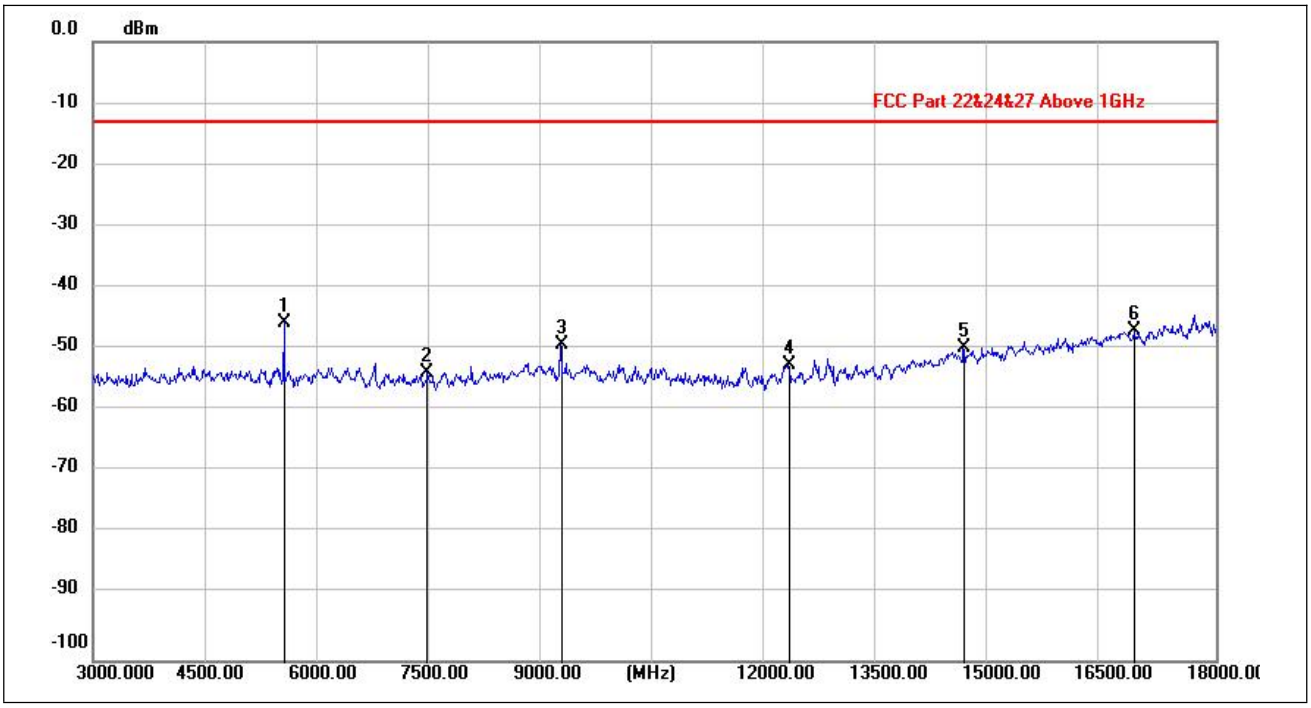
(EDGE 1900MHz _ 30MHz to 1GHz _ 512 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
38.5350	-56.97	-13.00	-43.97	H	29.66	PASS
59.5448	-59.16	-13.00	-46.16	H	28.82	PASS
99.7902	-65.24	-13.00	-52.24	H	22.12	PASS
193.8747	-62.67	-13.00	-49.67	H	24.50	PASS
244.8323	-58.03	-13.00	-45.03	H	29.03	PASS
620.6008	-50.62	-13.00	-37.62	H	35.33	PASS



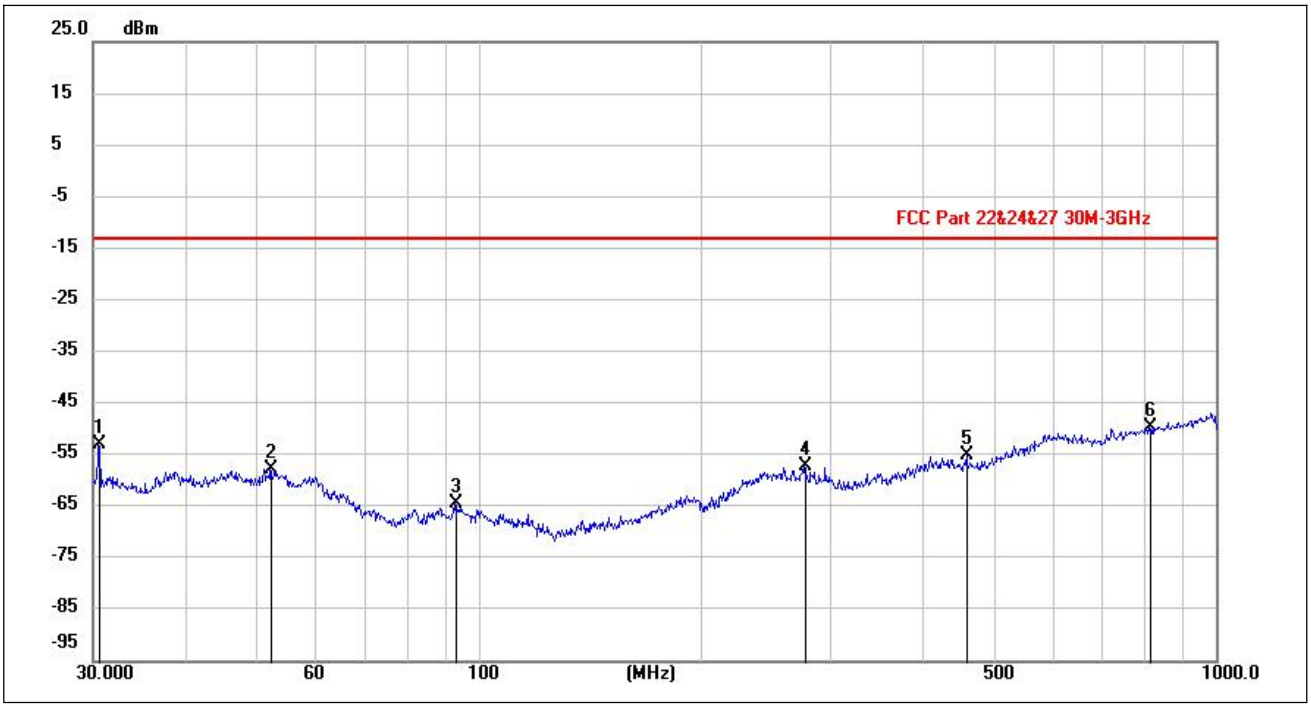
(EDGE 1900MHz _ 1GHz to 3GHz_ 512 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
1094.329	-35.46	-13.00	-22.46	H	40.17	PASS
1312.248	-34.32	-13.00	-21.32	H	42.00	PASS
1670.290	-32.00	-13.00	-19.00	H	44.40	PASS
1907.968	-10.65	N/A	N/A	H	47.07	N/A
2356.276	-24.00	-13.00	-11.00	H	50.87	PASS
2860.160	-19.52	-13.00	-6.52	H	54.99	PASS



(EDGE 1900MHz_ 3GHz to 18GHz _ 512 Channel _ Horizontal)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
5550.000	-45.28	-13.00	-32.28	H	10.05	PASS
7470.000	-53.27	-13.00	-40.27	H	11.50	PASS
9251.250	-48.87	-13.00	-35.87	H	14.67	PASS
12290.250	-52.20	-13.00	-39.20	H	15.73	PASS
14638.500	-49.29	-13.00	-36.29	H	20.02	PASS
16914.000	-46.55	-13.00	-33.55	H	23.38	PASS



(EDGE 1900MHz _ 30MHz to 1GHz _ 512 Channel _ Vertical)

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Pol	Corr. (dB)	Verdict
30.6325	-52.79	-13.00	-39.79	V	19.73	PASS
52.2354	-57.65	-13.00	-44.65	V	23.22	PASS
93.0479	-64.32	-13.00	-51.32	V	25.66	PASS
276.6566	-57.06	-13.00	-44.06	V	26.59	PASS
459.6782	-54.93	-13.00	-41.93	V	30.79	PASS
813.5394	-49.56	-13.00	-36.56	V	36.71	PASS