TEST REPORT

APPLICANT	:	Nubia Technology Co., Ltd.
PRODUCT NAME	:	5G Mobile Phone
MODEL NAME	:	NX679J
BRAND NAME	:	REDMAGIC
FCC ID	:	2AHJO-NX679J
STANDARD(S)	:	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
RECEIPT DATE	:	2021-10-22
TEST DATE	:	2021-11-11 to 2022-01-04
ISSUE DATE	:	2022-01-10

Edited by: Zeng Xiaoying (Rapporteur)

Approved by: Shen Junsheng (Supervisor)

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Change History		
Version	Date	Reason for change
1.0	2022-01-10	First edition

1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nubia Technology Co., Ltd.
Applicant Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China
Manufacturer:	Nubia Technology Co., Ltd.
Manufacturer Address:	Room 1801, Building 2, Chongwen Park, Nanshan Zhiyuan, No.3370, Liuxian Rd, Nanshan District, Shenzhen City, Guangdong Province, P. R. China

1.2. Equipment Under Test (EUT) Description

Product Name:	5G Mobile Phone	
Sample No.:	3#	
Hardware Version:	NX679J_V1AMB	
Software Version:	NX679J_UNCommon_V4.01	
Modulation Type:	CDMA2000 1xRTT: BPSK,QPSK	
Operating Frequency Range:	CDMA 2000 BC0	Tx: 824MHz-849MHz
		Rx: 869MHz-894MHz
	CDMA 2000 BC1	Tx: 1850MHz-1910MHz
		Rx: 1930MHz-1990MHz
Antenna Type:	Fixed Internal Antenna	
Antenna Gain:	Top Antenna	
	CDMA 2000 BC0	-1.8dBi
	CDMA 2000 BC1	-0.7dBi
	Bottom Antenna	
	CDMA 2000 BC0	-1.3dBi
	CDMA 2000 BC1	-0.5dBi

Accessory Information:	Battery	
	Brand Name:	nubia
	Model No.:	Li3945T44P8h556490
	Serial No.:	N/A
	Capacity:	2190mAh
	Rated Voltage:	7.74V
	Charge Limit:	8.9V
	Manufacturer:	Dongguan Amperex Technology Limited
	AC Adapter	
	Brand Name:	nubia
	Model No.:	STC-A59152050AC-Z
	Serial No.:	N/A
	Rated Output:	5.0V⎓3.0A, 9.0V⎓3.0A, 15.0V⎓3.0A, 20.0V⎓3.25A PPS: 5.0V-11.0V⎓5.0A, 5.0V-20.0V⎓3.25A
	Rated Input:	100-240V～50/60Hz, 1.5A
	Manufacturer:	ShenZhen KunXing Technology Co.,Ltd.

Note 1: SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test.

Note 2: 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
CDMA2000 BC0	0.097	1M27F9W
CDMA2000 BC1	0.200	1M28F9W

1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22 and Part24 for the EUT FCC ID Certification:

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

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

No.	Section	Description	Test Date	Test Engineer	Result	Method determination/ Remark
1	2.1046	Conducted RF Output Power	Jan 04, 2021	Yu Xiaoming	PASS	No deviation
2	24.232(d)	Peak -Average Ratio	Nov 10, 2021	Li Huaijie	PASS	No deviation
3	2.1049	Occupied Bandwidth	Nov 10, 2021	Li Huaijie	PASS	No deviation
4	2.1055, 22.355, 24.235	Frequency Stability	Nov 10, 2021	Li Huaijie	PASS	No deviation
5	2.1051, 22.917(a), 24.238(a)	Conducted Out of Band Emissions	Nov 10, 2021	Li Huaijie	PASS	No deviation
6	2.1051, 22.917(a), 24.238(a)	Band Edge	Nov 10, 2021	Li Huaijie	PASS	No deviation
7	22.913(a) 24.232(c)	Transmitter Radiated Power (EIPR/E.R.P.)	Jan 04, 2021	Li Huaijie	PASS	No deviation
8	2.1051, 22.917(a), 24.238(a)	Radiated Out of Band Emissions	Dec 07&10, 2021	Su Zhan	PASS	No deviation

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， Part24E Requirements

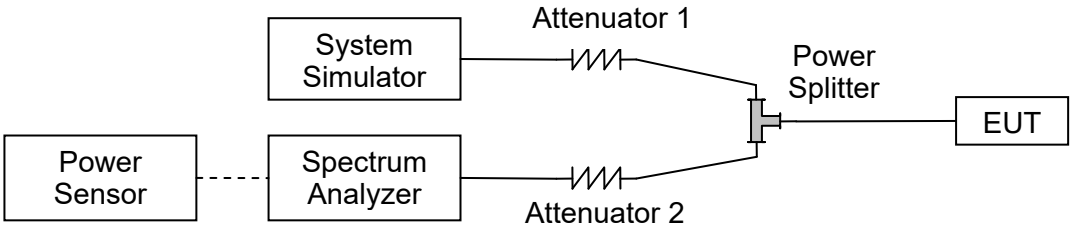
2.1. Conducted RF Output Power

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 Result

CDMA2000 BC0	Average Power (dBm)		
TX Channel	**1013**	**384**	**777**
Frequency (MHz)	**824.7**	**836.52**	**848.31**
1xRTT RC1 SO55	23.48	23.57	23.52
1xRTT RC3 SO55	23.58	23.65	23.62
1xRTT RC3 SO32 (F+SCH)	23.54	23.58	23.64
1xRTT RC3 SO32 (+SCH)	23.41	23.51	23.55

CDMA2000 BC1	Average Power (dBm)		
TX Channel	**25**	**600**	**1175**
Frequency (MHz)	**1851.25**	**1880**	**1908.75**
1xRTT RC1 SO55	23.38	23.31	23.34
1xRTT RC3 SO55	23.21	23.42	23.23
1xRTT RC3 SO32 (F+SCH)	23.37	23.33	23.32
1xRTT RC3 SO32 (+SCH)	23.42	23.41	23.50

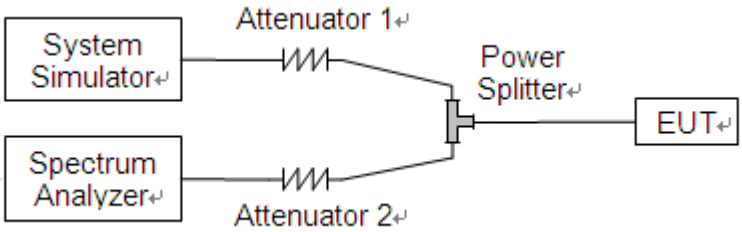
2.2. Peak to Average Ratio

2.2.1. Requirement

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

2.2.2. Test Description

Test Setup:



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

2.2.3. Test Procedure

1 .For GSM/EDGE operating mode:

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

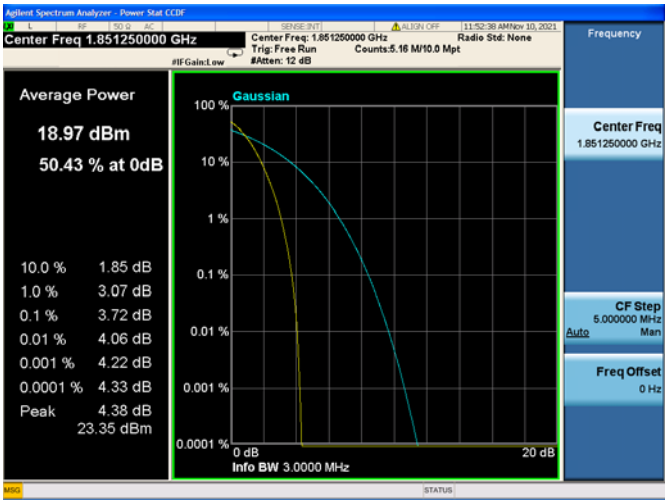
2. For UMTS operating mode:

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

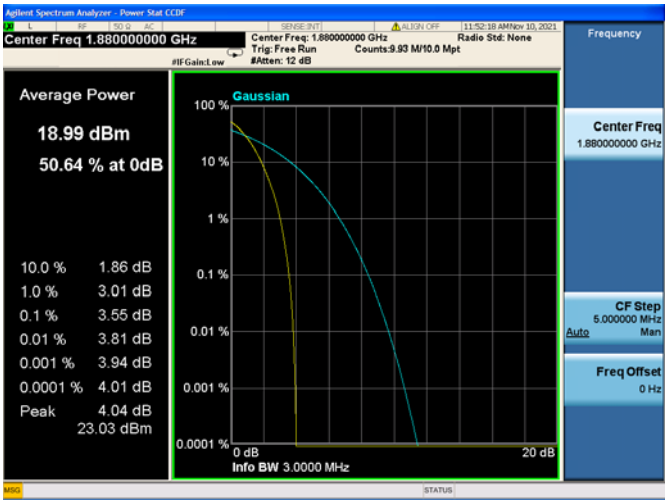
2.2.4. Test Result

CDMA2000 BC1					
Mode	**Channel**	**Frequency (MHz)**	**Peak to Average ratio (dB)**	**Limit (dB)**	**Verdict**
1xRTT	25	1851.25	3.72	13	PASS
	600	1880.00	3.55		PASS
	1175	1908.75	3.07		PASS

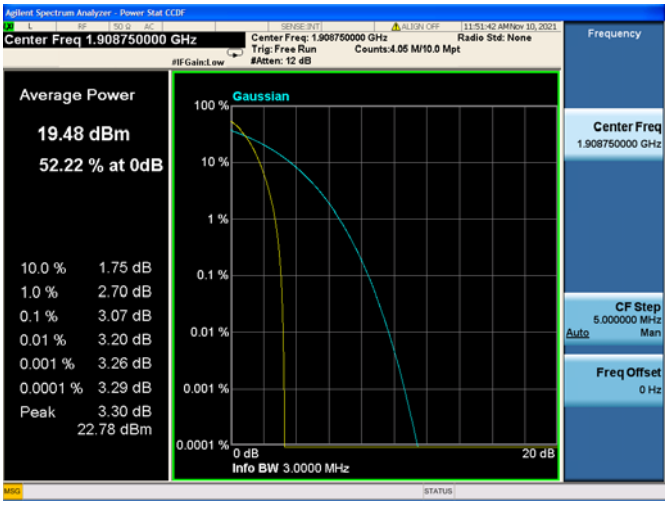
CDMA BC1 (1xRTT), CH25, 1851.25MHz



CDMA BC1 (1xRTT), CH600, 1880.00MHz



CDMA BC1 (1xRTT), CH1175, 1908.75MHz



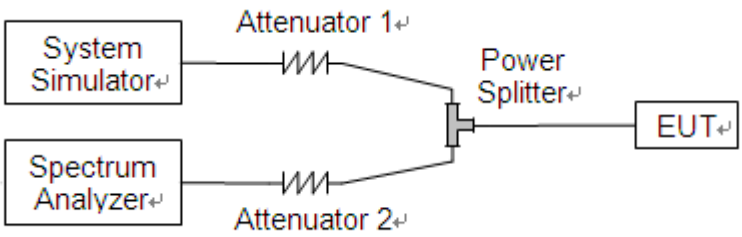
2.3. Occupied Bandwidth

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:

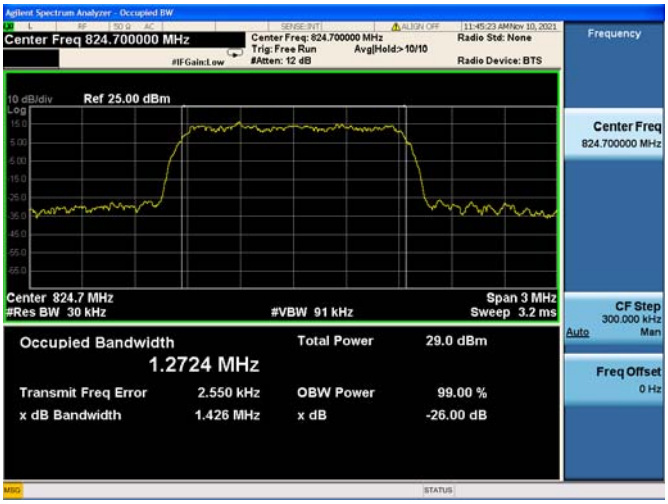


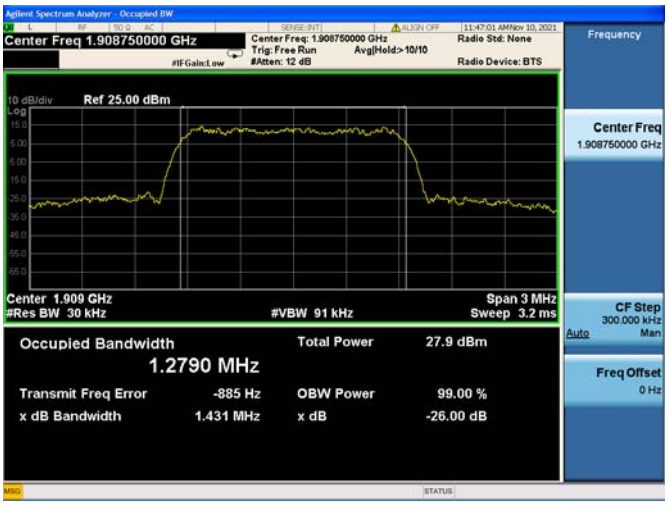
The EUT is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum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

CDMA2000 BC0				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**	**26dB Bandwidth (MHz)**
1xRTT	1013	824.70	1.27	1.43
	384	836.52	1.27	1.43
	777	848.31	1.27	1.43

CDMA2000 BC1				
Mode	**Channel**	**Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**	**26dB Bandwidth (MHz)**
1xRTT	25	1851.25	1.28	1.43
	600	1880.00	1.28	1.43
	1175	1908.75	1.28	1.43

CDMA BC0 (1xRTT), CH1013, 824.70MHz	CDMA BC0 (1xRTT), CH384, 836.52MHz
	
CDMA BC0 (1xRTT), CH777, 848.31MHz	

CDMA BC1 (1xRTT), CH25, 1851.25MHz	CDMA BC1 (1xRTT), CH600, 1880.00MHz
CDMA BC1 (1xRTT), CH1175, 1908.75MHz	
	

2.4. Frequency Stability

2.4.1. Requirement

According to FCC section 22.355 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:

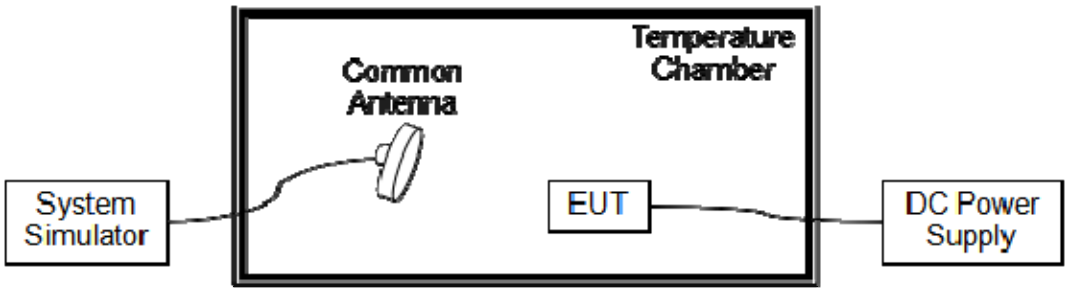
(a) The temperature is varied from-30°C to +50°C at intervals of not more than 10°C.

(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 0°C to 40°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 7.74V, 8.90V and 6.00V, which are specified by the applicant; the normal temperature here used is 20°C.

CDMA2000 BC0 (1xRTT), CH384, 836.52MHz Limit =±2.5ppm					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	7.74	+20(Ref)	56	0.067	PASS
100		0	13	0.016	
100		+10	-44	-0.053	
100		+20	-21	-0.025	
100		+30	34	0.041	
100		+40	46	0.055	
115	8.90	+20	40	0.048	
85	6.00	+20	32	0.038	

CDMA2000 BC1 (1xRTT), Channel 600, Frequency 1880.00MHz Limit =Within Authorized Band					
Voltage (%)	**Power (VDC)**	**Temp (°C)**	**Fre. Dev. (Hz)**	**Deviation (ppm)**	**Result**
100	7.74	+20(Ref)	40	0.021	PASS
100		0	14	0.007	
100		+10	-17	-0.009	
100		+20	-32	-0.017	
100		+30	-34	-0.018	
100		+40	-58	-0.031	
115	8.90	+20	26	0.014	
85	6.00	+20	-15	-0.008	

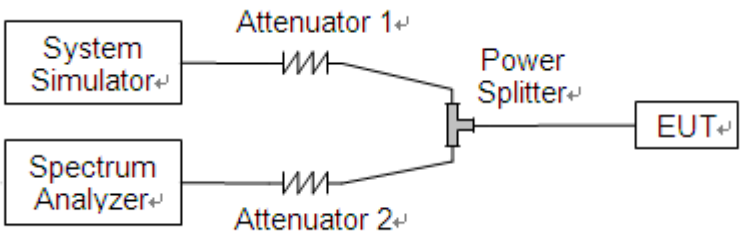
2.5. Conducted Out of Band Emissions

2.5.1. Requirement

According to FCC section 22.917(a) and 24.238(a) 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.

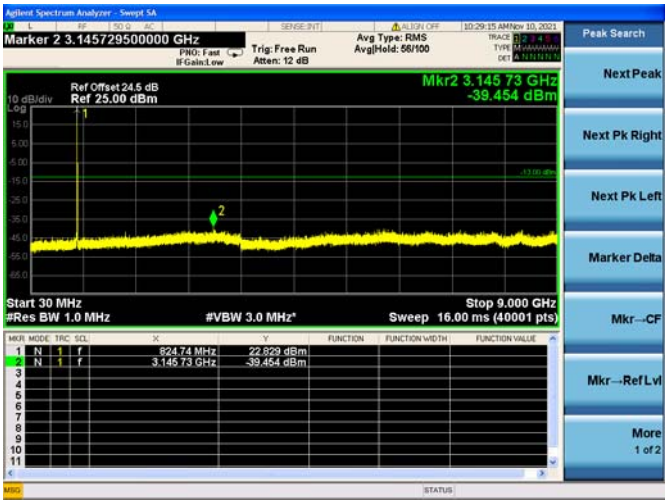
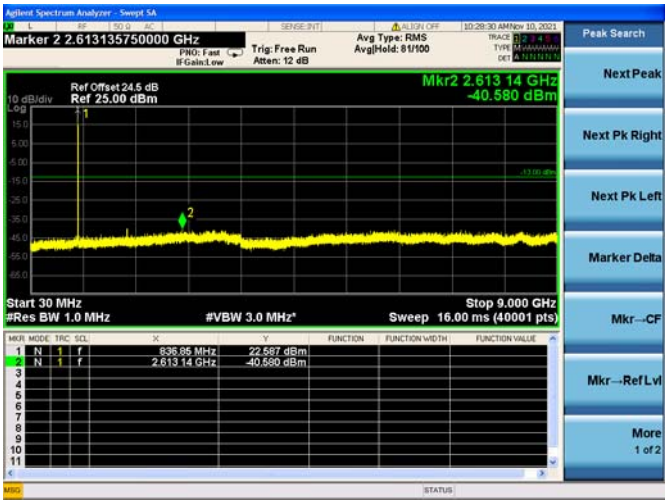
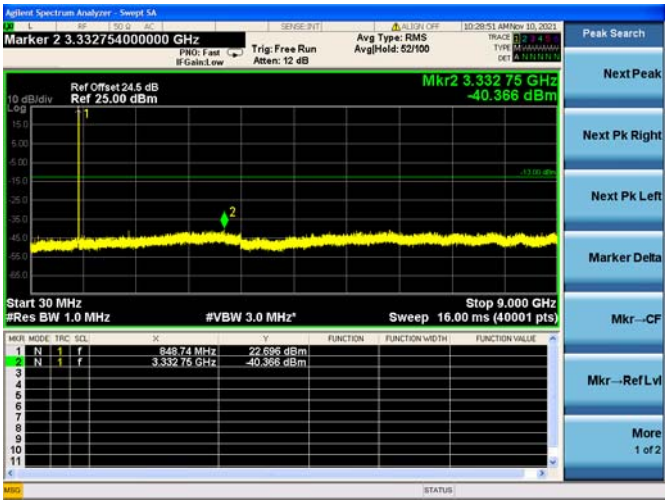
2.5.2. Test Description

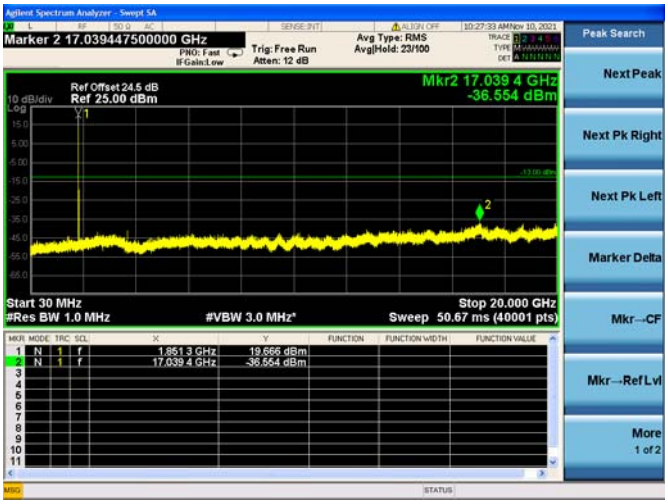
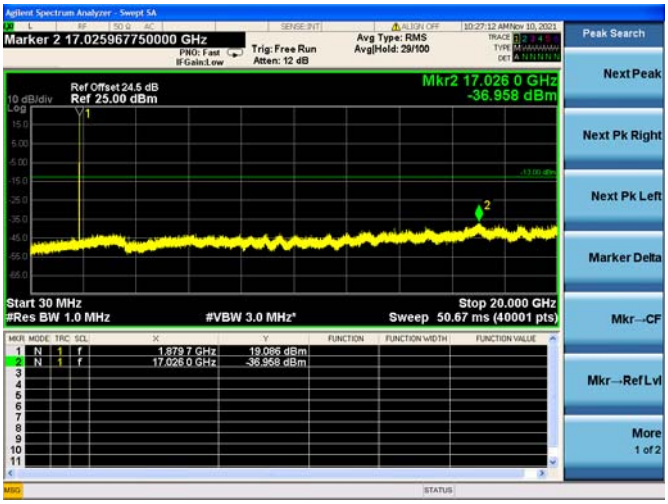
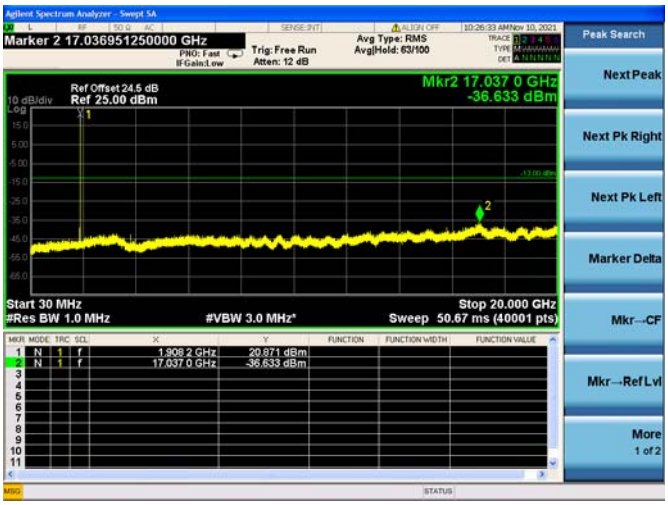
Test Setup:



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

CDMA BC0 (1xRTT), CH1013, 824.70MHz	CDMA BC0 (1xRTT), CH384, 836.52MHz
	
CDMA BC0 (1xRTT), CH777, 848.31MHz	
	

CDMA BC1 (1xRTT), CH25, 1851.25MHz	CDMA BC1 (1xRTT), CH600, 1880.00MHz
	
CDMA BC1 (1xRTT), CH1175, 1908.75MHz	
	

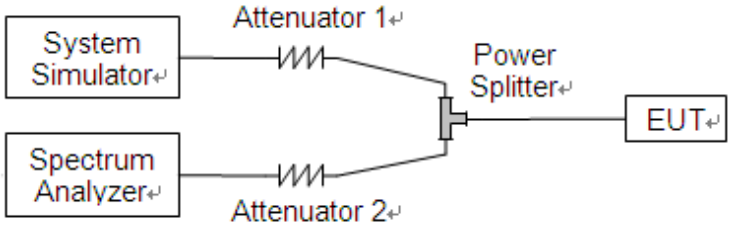
2.6. Band Edge

2.6.1. Requirement

According to FCC section 22.917(a) and 24.238(a) 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.

2.6.2. Test Description

Test Setup:



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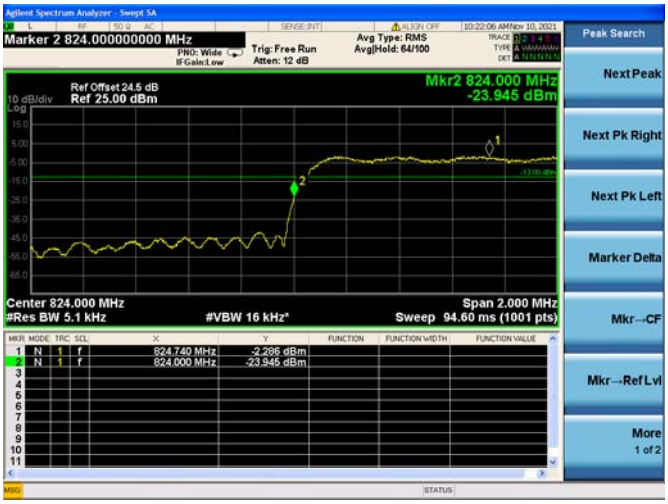
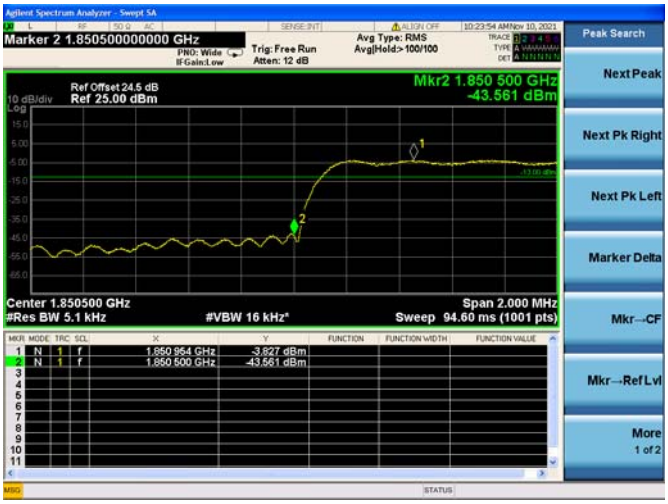
2.6.3. Test Result

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

CDMA BC0 (1xRTT), CH1013, 824.70MHz	CDMA BC0 (1xRTT), CH777, 848.31MHz
	
CDMA BC1 (1xRTT), CH25,1851.25MHz	**CDMA BC1 (1xRTT), CH1175,1908.75MHz**
	

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.

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

CDMA2000 BC0								
Band	Channel	Frequency (MHz)	PCL	Measured E.R.P.		Limit		Verdict
				dBm	W	dBm	W	
1xRTT	1013	824.70	5	19.78	0.095	38.5	7	PASS
	384	836.52	5	19.85	0.097			PASS
	777	848.31	5	19.82	0.096			PASS
Note 1: Only the worst data were recorded in this report.								

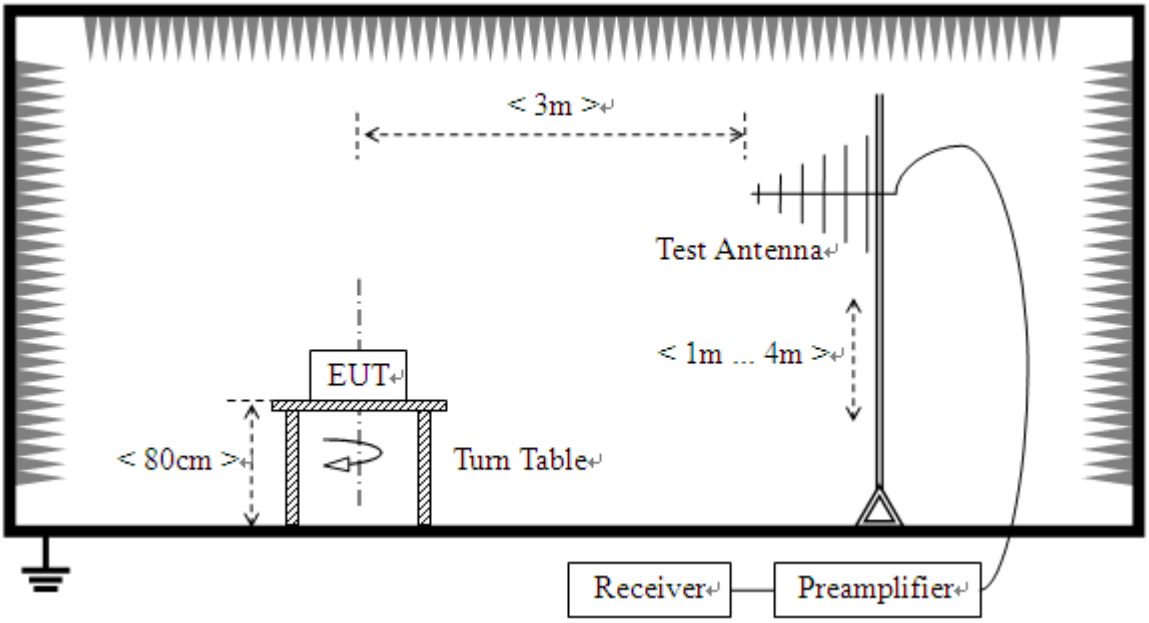
CDMA2000 BC1								
Band	Channel	Frequency (MHz)	PCL	Measured E.R.P.		Limit		Verdict
				dBm	W	dBm	W	
1xRTT	25	1851.25	5	22.92	0.196	33	2	PASS
	600	1880.00	5	22.91	0.195			PASS
	1175	1908.75	5	23.00	0.200			PASS
Note 1: Only the worst data were recorded in this report.								

2.8. Radiated Out of Band Emissions

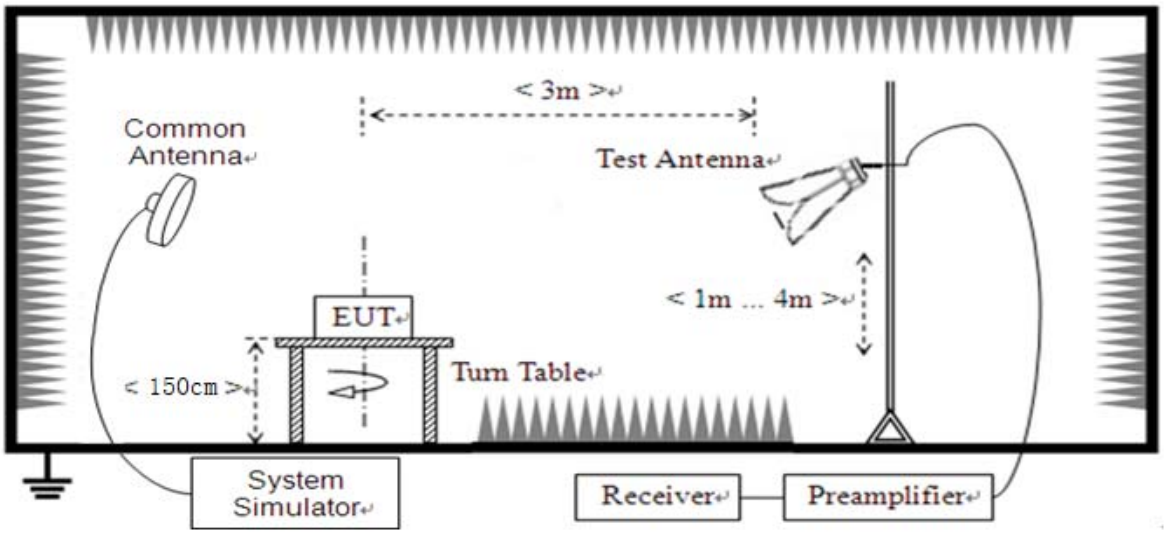
2.8.1. Requirement

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.

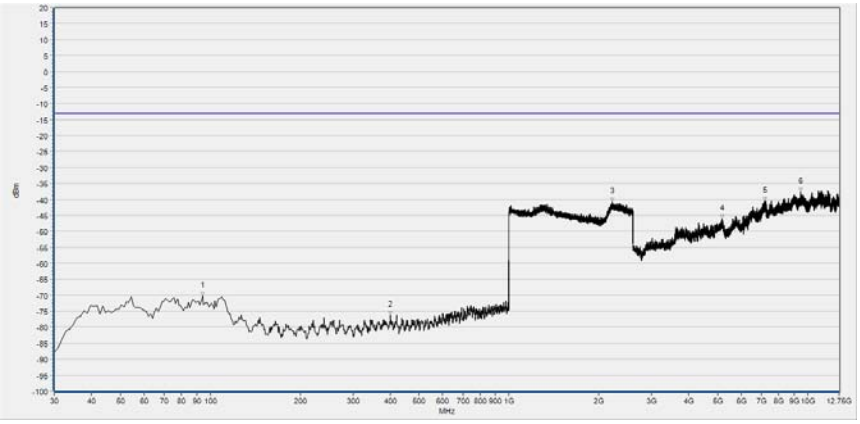
Note2: All test mode and condition mentioned were considered and evaluated respectively by performing full test, only the worst data were recorded and reported.

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.

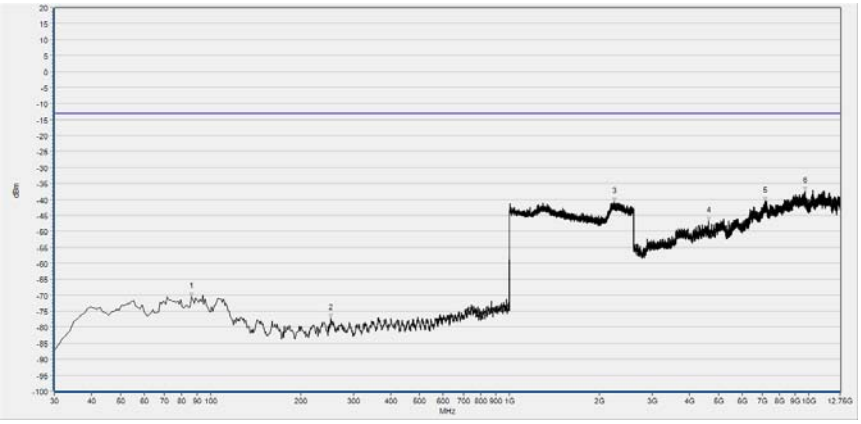
Note 4: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

Top Antenna

CDMA2000 BC0 (1xRTT), Low Channel

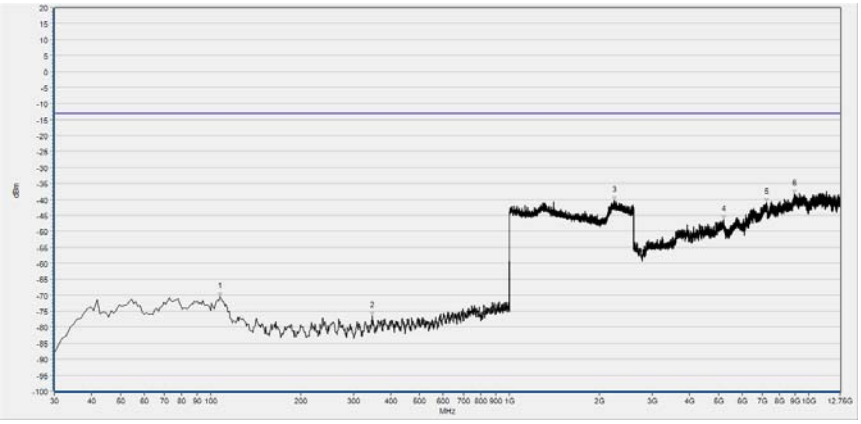


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	94.020	-70.34	-13.00	Horizontal	PASS
2	400.540	-76.38	-13.00	Horizontal	PASS
3	2214.566	-40.83	-13.00	Horizontal	PASS
4	5182.260	-46.15	-13.00	Horizontal	PASS
5	7199.709	-40.49	-13.00	Horizontal	PASS
6	9495.872	-37.59	-13.00	Horizontal	PASS

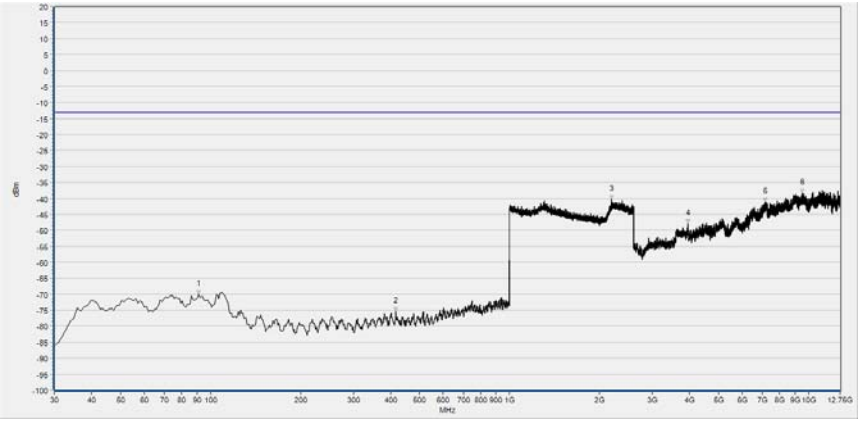


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	86.260	-70.44	-13.00	Vertical	PASS
2	252.130	-77.25	-13.00	Vertical	PASS
3	2236.335	-40.89	-13.00	Vertical	PASS
4	4621.140	-46.79	-13.00	Vertical	PASS
5	7159.102	-40.66	-13.00	Vertical	PASS
6	9746.899	-37.44	-13.00	Vertical	PASS

CDMA2000 BC0 (1xRTT), Mid Channel

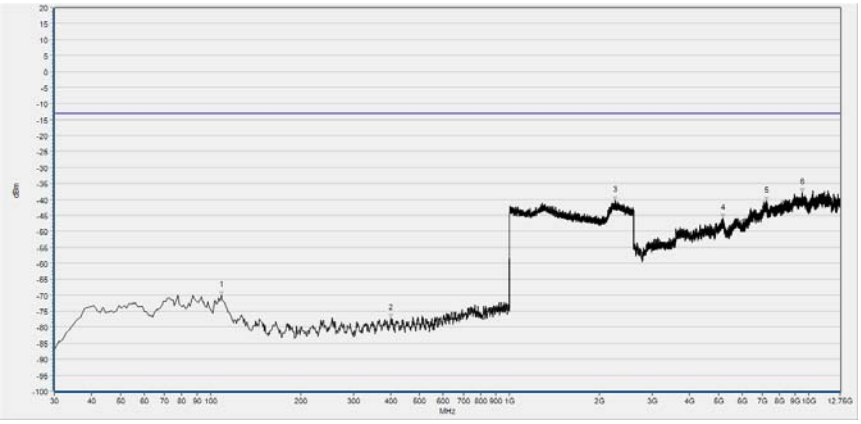


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	107.600	-70.57	-13.00	Horizontal	PASS
2	347.190	-76.52	-13.00	Horizontal	PASS
3	2242.097	-40.44	-13.00	Horizontal	PASS
4	5195.181	-46.46	-13.00	Horizontal	PASS
5	7214.475	-41.11	-13.00	Horizontal	PASS
6	8958.747	-38.22	-13.00	Horizontal	PASS

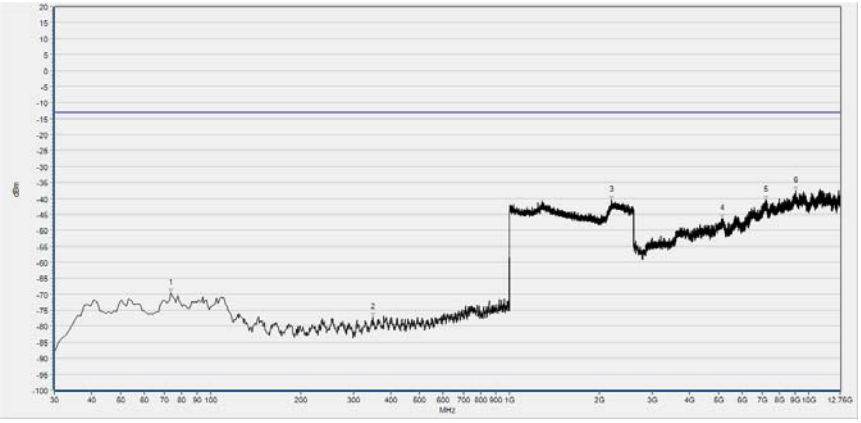


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	91.110	-70.07	-13.00	Vertical	PASS
2	416.060	-75.50	-13.00	Vertical	PASS
3	2194.718	-40.32	-13.00	Vertical	PASS
4	3945.581	-47.97	-13.00	Vertical	PASS
5	7153.564	-41.27	-13.00	Vertical	PASS
6	9508.793	-38.26	-13.00	Vertical	PASS

CDMA2000 BC0 (1xRTT), High Channel

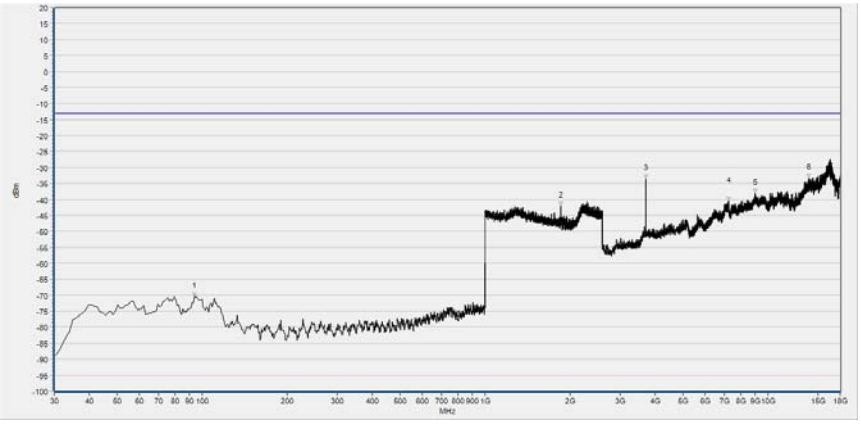


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	108.570	-70.03	-13.00	Horizontal	PASS
2	401.510	-77.19	-13.00	Horizontal	PASS
3	2249.140	-40.44	-13.00	Horizontal	PASS
4	5158.265	-45.85	-13.00	Horizontal	PASS
5	7240.316	-40.67	-13.00	Horizontal	PASS
6	9506.947	-37.83	-13.00	Horizontal	PASS

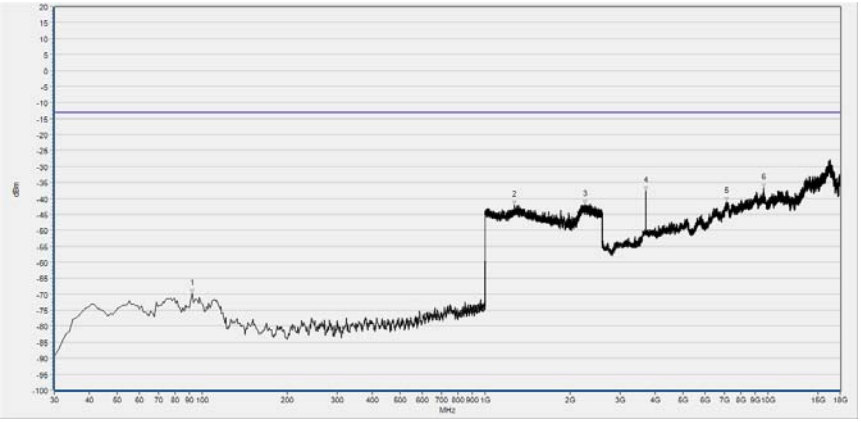


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	73.650	-69.66	-13.00	Vertical	PASS
2	348.160	-77.28	-13.00	Vertical	PASS
3	2193.437	-40.59	-13.00	Vertical	PASS
4	5150.882	-46.44	-13.00	Vertical	PASS
5	7183.097	-40.62	-13.00	Vertical	PASS
6	9065.803	-37.60	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), Low Channel

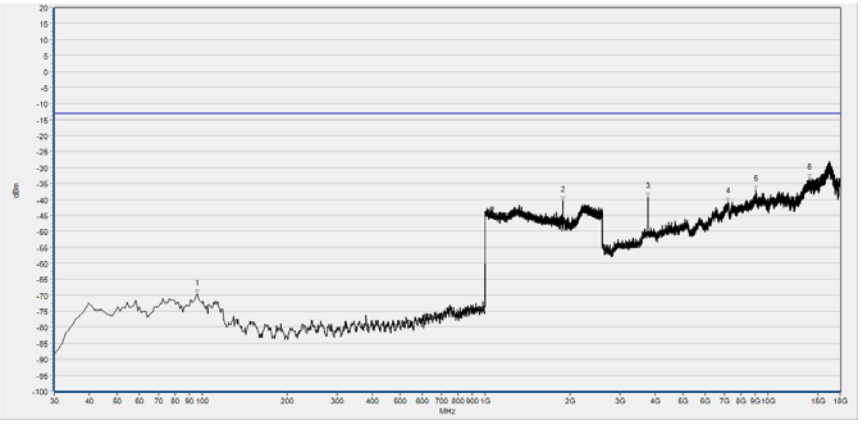


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	94.020	-70.42	-13.00	Horizontal	PASS
2	1851.541	-42.14	-13.00	Horizontal	N/A
3	3703.401	-33.65	-13.00	Horizontal	PASS
4	7254.446	-40.60	-13.00	Horizontal	PASS
5	8996.363	-38.18	-13.00	Horizontal	PASS
6	13919.658	-33.47	-13.00	Horizontal	PASS

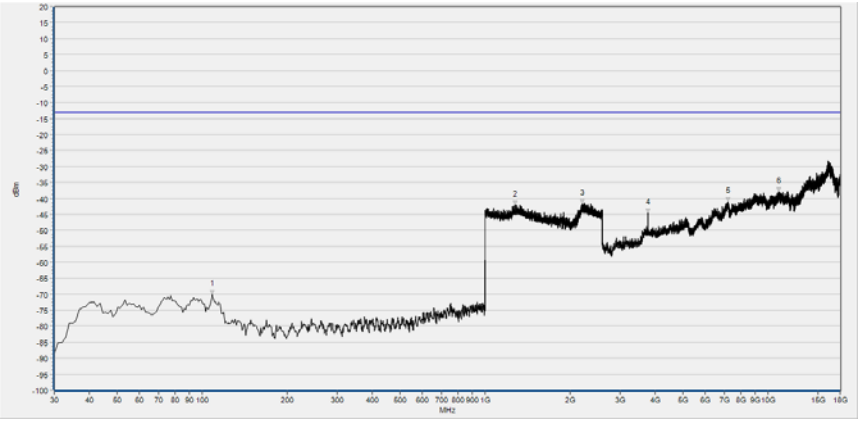


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	92.080	-69.89	-13.00	Vertical	PASS
2	1269.548	-42.04	-13.00	Vertical	PASS
3	2253.621	-42.01	-13.00	Vertical	PASS
4	3703.401	-37.62	-13.00	Vertical	PASS
5	7150.827	-40.93	-13.00	Vertical	PASS
6	9634.879	-36.69	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), Mid Channel

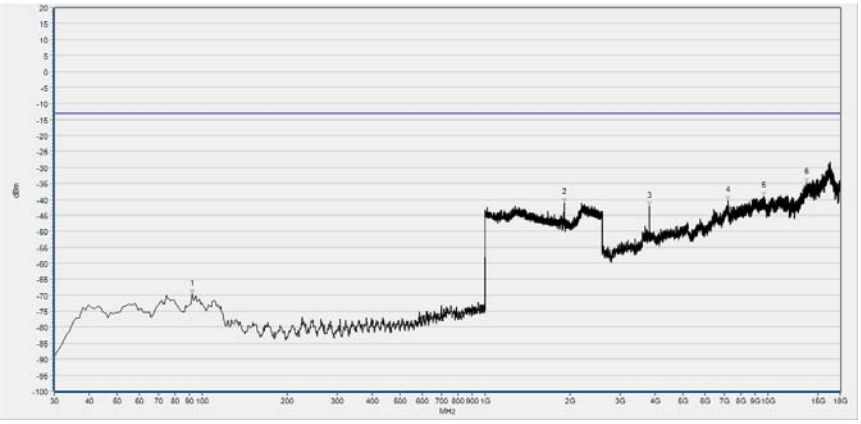


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	95.960	-69.56	-13.00	Horizontal	PASS
2	1880.352	-40.33	-13.00	Horizontal	N/A
3	3759.411	-39.14	-13.00	Horizontal	PASS
4	7237.643	-40.71	-13.00	Horizontal	PASS
5	9069.176	-36.98	-13.00	Horizontal	PASS
6	14006.474	-33.38	-13.00	Horizontal	PASS

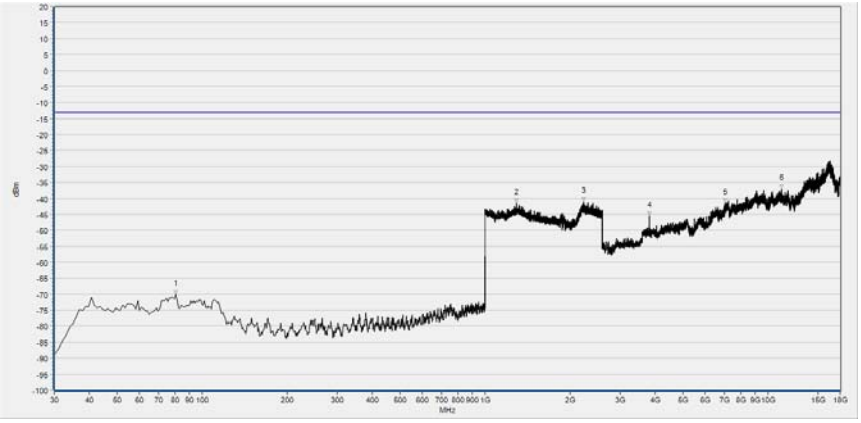


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	108.570	-69.99	-13.00	Vertical	PASS
2	1280.432	-42.19	-13.00	Vertical	PASS
3	2210.724	-41.72	-13.00	Vertical	PASS
4	3759.411	-44.52	-13.00	Vertical	PASS
5	7234.843	-41.02	-13.00	Vertical	PASS
6	10945.517	-37.95	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), High Channel



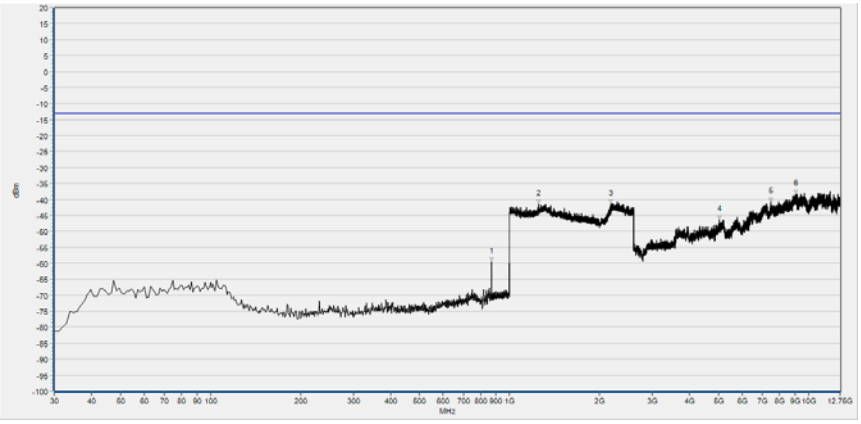
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	92.080	-69.52	-13.00	Horizontal	PASS
2	1909.164	-40.98	-13.00	Horizontal	N/A
3	3818.221	-42.18	-13.00	Horizontal	PASS
4	7243.244	-40.25	-13.00	Horizontal	PASS
5	9640.480	-39.04	-13.00	Horizontal	PASS
6	13701.218	-34.84	-13.00	Horizontal	PASS



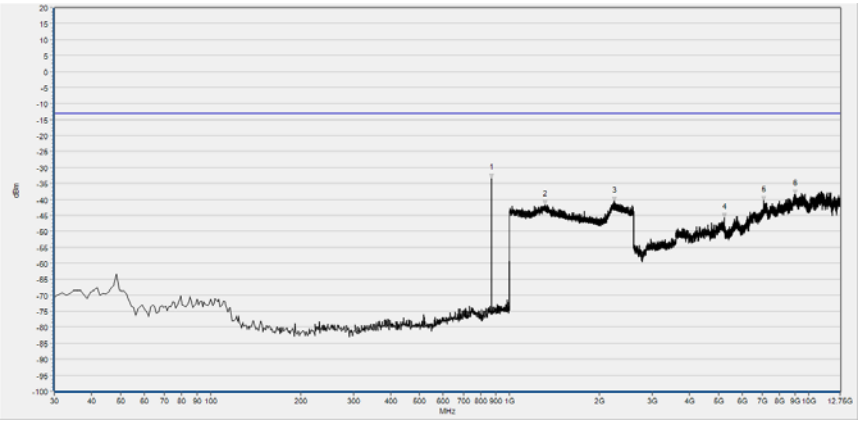
No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.440	-70.05	-13.00	Vertical	PASS
2	1290.036	-41.44	-13.00	Vertical	PASS
3	2227.371	-41.08	-13.00	Vertical	PASS
4	3818.221	-45.36	-13.00	Vertical	PASS
5	7075.214	-41.43	-13.00	Vertical	PASS
6	11144.354	-37.06	-13.00	Vertical	PASS

Bottom Antenna

CDMA2000 BC0 (1xRTT), Low Channel

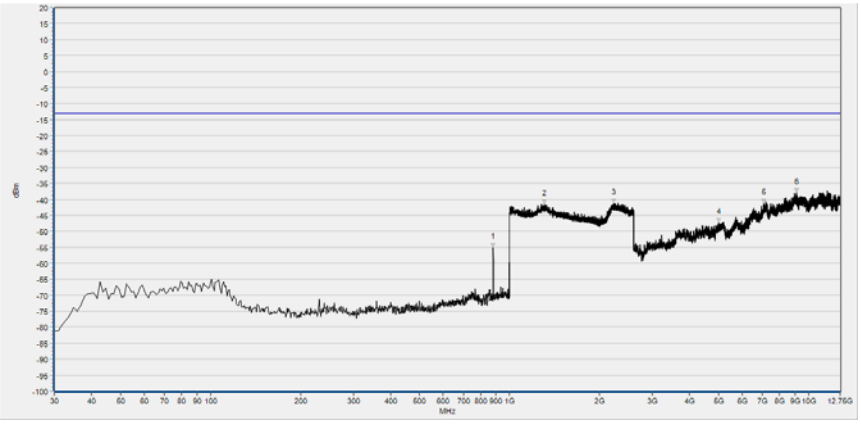


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	869.050	-59.50	-13.00	Horizontal	PASS
2	1250.980	-41.43	-13.00	Horizontal	PASS
3	2178.711	-41.47	-13.00	Horizontal	PASS
4	5027.214	-46.31	-13.00	Horizontal	PASS
5	7493.190	-40.86	-13.00	Horizontal	PASS
6	9084.261	-38.31	-13.00	Horizontal	PASS

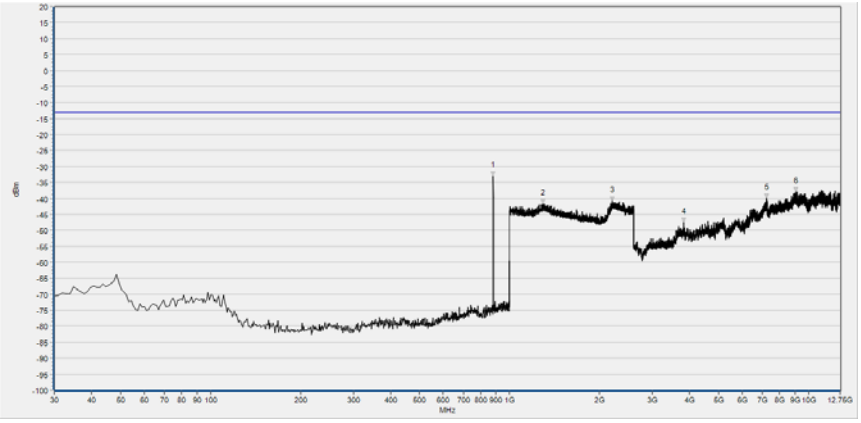


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	870.020	-33.31	-13.00	Vertical	N/A
2	1311.805	-41.63	-13.00	Vertical	PASS
3	2245.298	-40.59	-13.00	Vertical	PASS
4	5215.485	-45.68	-13.00	Vertical	PASS
5	7088.962	-40.27	-13.00	Vertical	PASS
6	9034.424	-38.22	-13.00	Vertical	PASS

CDMA2000 BC0 (1xRTT), Mid Channel

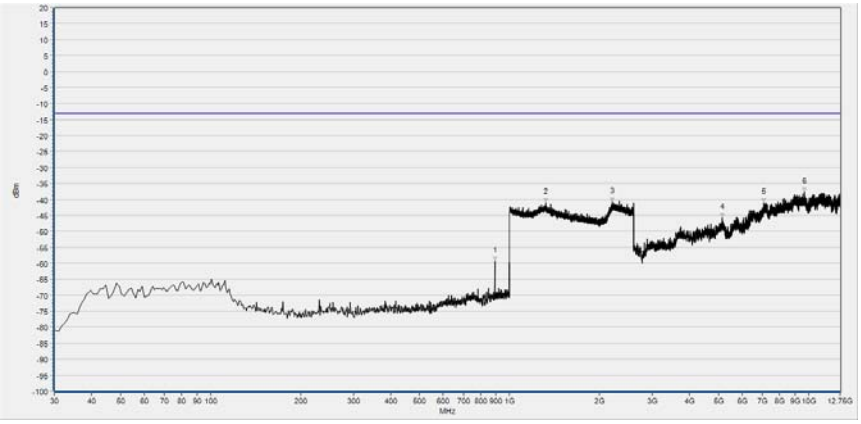


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	881.660	-55.00	-13.00	Horizontal	N/A
2	1305.402	-41.37	-13.00	Horizontal	PASS
3	2231.853	-41.25	-13.00	Horizontal	PASS
4	4999.527	-47.28	-13.00	Horizontal	PASS
5	7074.195	-41.22	-13.00	Horizontal	PASS
6	9132.251	-37.91	-13.00	Horizontal	PASS

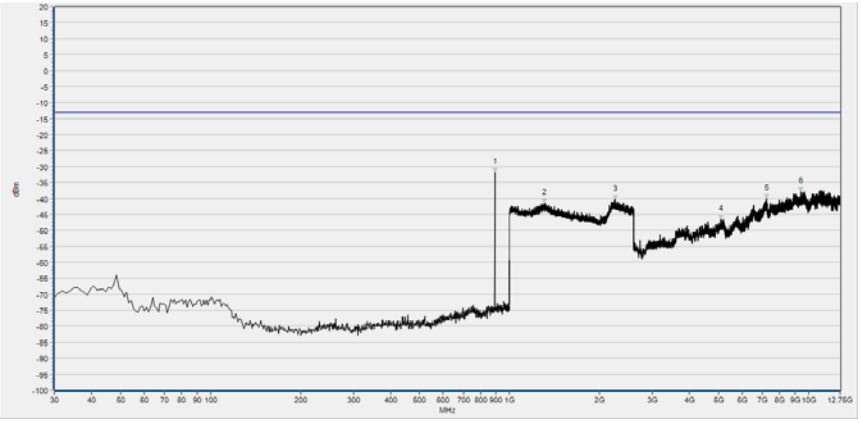


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	881.660	-33.01	-13.00	Vertical	N/A
2	1291.957	-41.64	-13.00	Vertical	PASS
3	2202.401	-40.82	-13.00	Vertical	PASS
4	3821.913	-47.56	-13.00	Vertical	PASS
5	7236.625	-39.90	-13.00	Vertical	PASS
6	9065.803	-37.82	-13.00	Vertical	PASS

CDMA2000 BC0 (1xRTT), High Channel

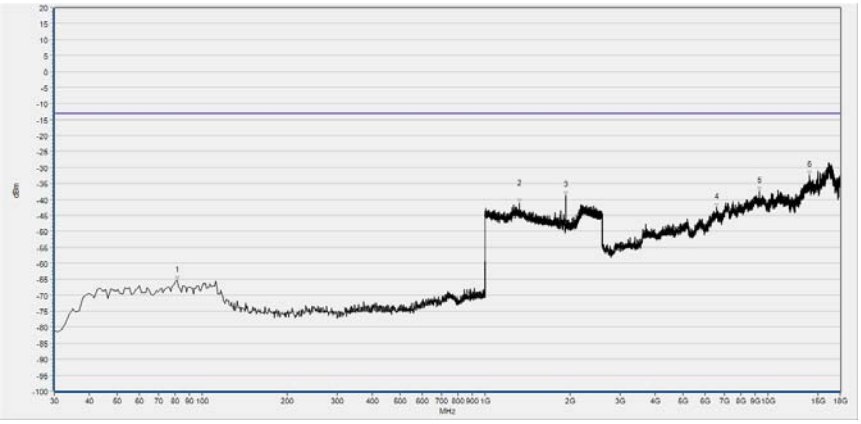


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	893.300	-59.38	-13.00	Horizontal	N/A
2	1324.610	-41.01	-13.00	Horizontal	PASS
3	2204.962	-40.82	-13.00	Horizontal	PASS
4	5130.578	-45.73	-13.00	Horizontal	PASS
5	7090.807	-41.10	-13.00	Horizontal	PASS
6	9709.984	-37.66	-13.00	Horizontal	PASS

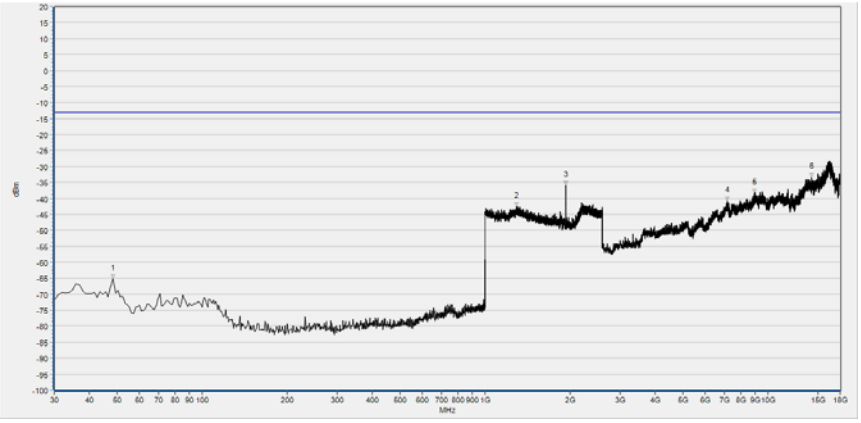


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	893.300	-31.85	-13.00	Vertical	N/A
2	1306.042	-41.44	-13.00	Vertical	PASS
3	2252.341	-40.42	-13.00	Vertical	PASS
4	5082.588	-46.68	-13.00	Vertical	PASS
5	7225.550	-40.06	-13.00	Vertical	PASS
6	9401.737	-37.81	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), Low Channel

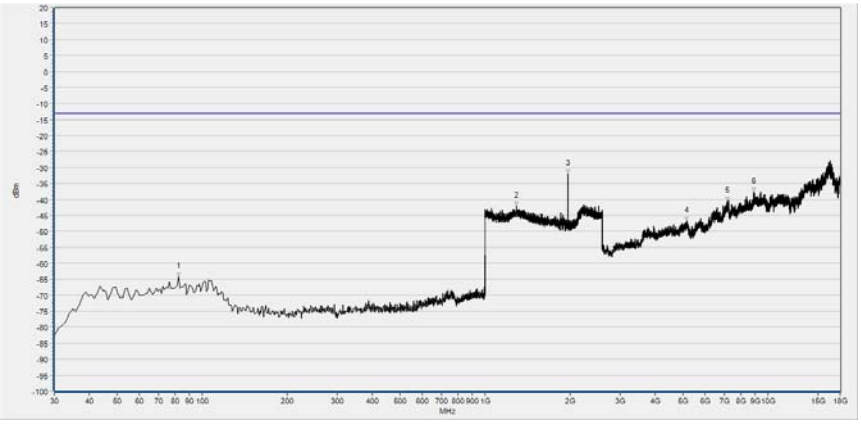


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	81.410	-65.44	-13.00	Horizontal	PASS
2	1319.488	-41.28	-13.00	Horizontal	PASS
3	1931.573	-38.86	-13.00	Horizontal	N/A
4	9343.626	-37.41	-13.00	Horizontal	PASS
5	15014.657	-31.23	-13.00	Horizontal	PASS
6	14056.883	-32.50	-13.00	Horizontal	PASS

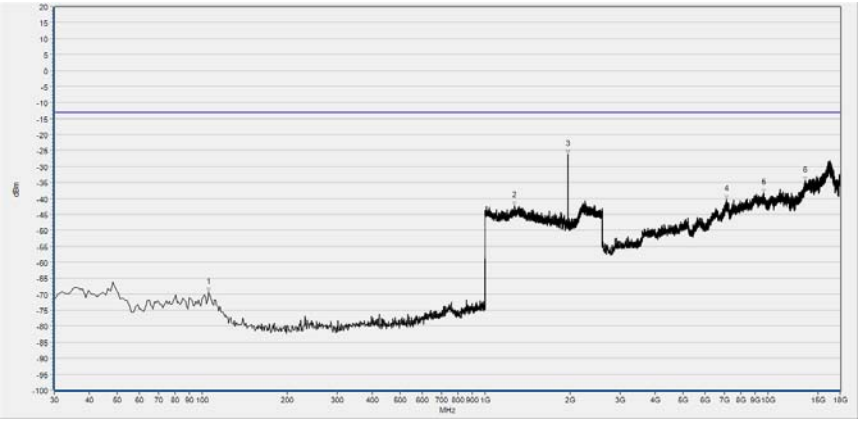


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	48.430	-65.15	-13.00	Vertical	PASS
2	1293.237	-42.46	-13.00	Vertical	PASS
3	1932.213	-35.94	-13.00	Vertical	N/A
4	7164.830	-40.73	-13.00	Vertical	PASS
5	8982.360	-38.22	-13.00	Vertical	PASS
6	14261.320	-33.40	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), Mid Channel

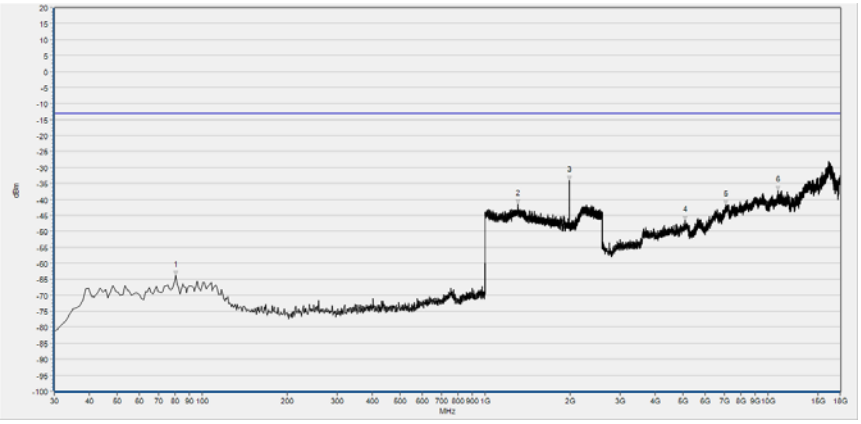


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	82.380	-64.30	-13.00	Horizontal	PASS
2	1291.317	-42.11	-13.00	Horizontal	PASS
3	1961.024	-32.16	-13.00	Horizontal	N/A
4	5159.665	-46.75	-13.00	Horizontal	PASS
5	7162.029	-40.62	-13.00	Horizontal	PASS
6	8917.949	-37.75	-13.00	Horizontal	PASS

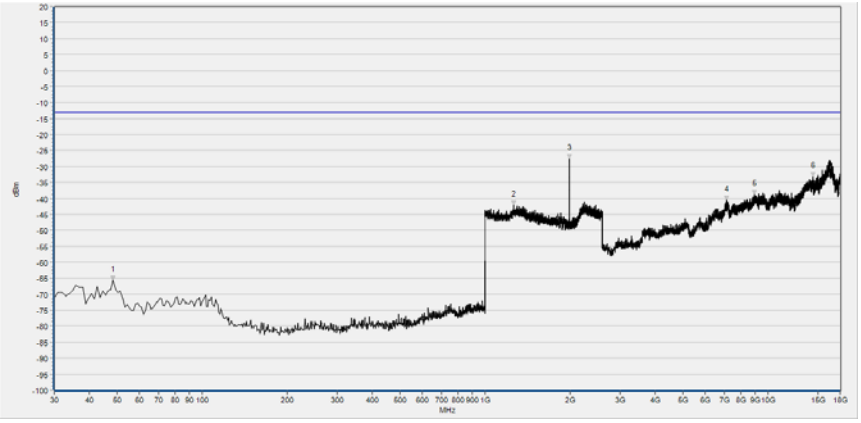


No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	105.660	-69.29	-13.00	Vertical	PASS
2	1270.188	-42.46	-13.00	Vertical	PASS
3	1960.384	-26.29	-13.00	Vertical	N/A
4	7142.426	-40.24	-13.00	Vertical	PASS
5	9637.680	-38.40	-13.00	Vertical	PASS
6	13569.594	-34.51	-13.00	Vertical	PASS

CDMA2000 BC1 (1xRTT), High Channel



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	80.440	-63.90	-13.00	Horizontal	PASS
2	1306.683	-41.55	-13.00	Horizontal	PASS
3	1989.196	-34.04	-13.00	Horizontal	N/A
4	5084.052	-46.55	-13.00	Horizontal	PASS
5	7089.216	-41.62	-13.00	Horizontal	PASS
6	10847.500	-37.15	-13.00	Horizontal	PASS



No.	Fre.(MHz)	PK (dBm)	Limit (dBm)	Antenna	Verdict
1	48.430	-65.65	-13.00	Vertical	PASS
2	1260.584	-42.20	-13.00	Vertical	PASS
3	1988.555	-27.53	-13.00	Vertical	N/A
4	7134.024	-40.63	-13.00	Vertical	PASS
5	8943.153	-38.78	-13.00	Vertical	PASS
6	14426.550	-33.12	-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	±2.77 dB
Radiated Emission	±2.95dB

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

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
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 Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Due Date
Power Splitter	NW521	1506A	Weinschel	N/A	N/A
Attenuator 1	(N/A.)	10dB	Resnet	N/A	N/A
Attenuator 2	(N/A.)	3dB	Resnet	N/A	N/A
EXA Signal Analzyer	MY51511149	N9020A	Agilent	2021.07.26	2022.07.25
System Simulator	6200995016	MT8820C	Anritsu	2021.10.21	2022.10.20
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
Coaxial Cable	CB02	RF02	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A
Temperature Chamber	20171112102	HZ-2019	Dongguan Lixian Instrument Technology Co., Ltd	2021.10.20	2022.10.19
Computer	T430i	Think Pad	Lenovo	N/A	N/A

4.2 Radiated Test Equipments

Equipment Name	Serial No.	Type	Manufacturer	Cal. Date	Cal. Due
System Simulator	152038	CMW500	R&S	2021.10.21	2022.10.20
Receiver	MY54130016	N9038A	Agilent	2021.07.16	2022.07.15
Test Antenna - Bi-Log	9163-519	VULB 9163	Schwarzbeck	2019.05.24	2022.05.23
Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2019.07.26	2022.07.25
Test Antenna - Horn	01774	BBHA 9120D	Schwarzbeck	2019.07.26	2022.07.25
Coaxial cable (N male) (9kHz-30MHz)	CB04	EMC04	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB02	EMC02	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-26GHz)	CB03	EMC03	Morlab	N/A	N/A
Coaxial cable (N male) (30MHz-40GHz)	CB05	EMC05	Morlab	N/A	N/A
1-18GHz pre-Amplifier	61171/61172	S020180L3203	Tonscend	2021.07.16	2022.07.15
18-26.5GHz pre-Amplifier	46732	S10M100L3802	Tonscend	2021.07.16	2022.07.15
26-40GHz pre-Amplifier	56774	S40M400L4002	Tonscend	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-CDMA2000 BC0	Wainwright	2021.07.16	2022.07.15
Notch Filter	N/A	WRCG-CDMA2000 BC1	Wainwright	2021.07.16	2022.07.15
Anechoic Chamber	N/A	9m*6m*6m	CRT	2019.07.13	2022.07.12

END OF REPORT