FCC RF TEST REPORT

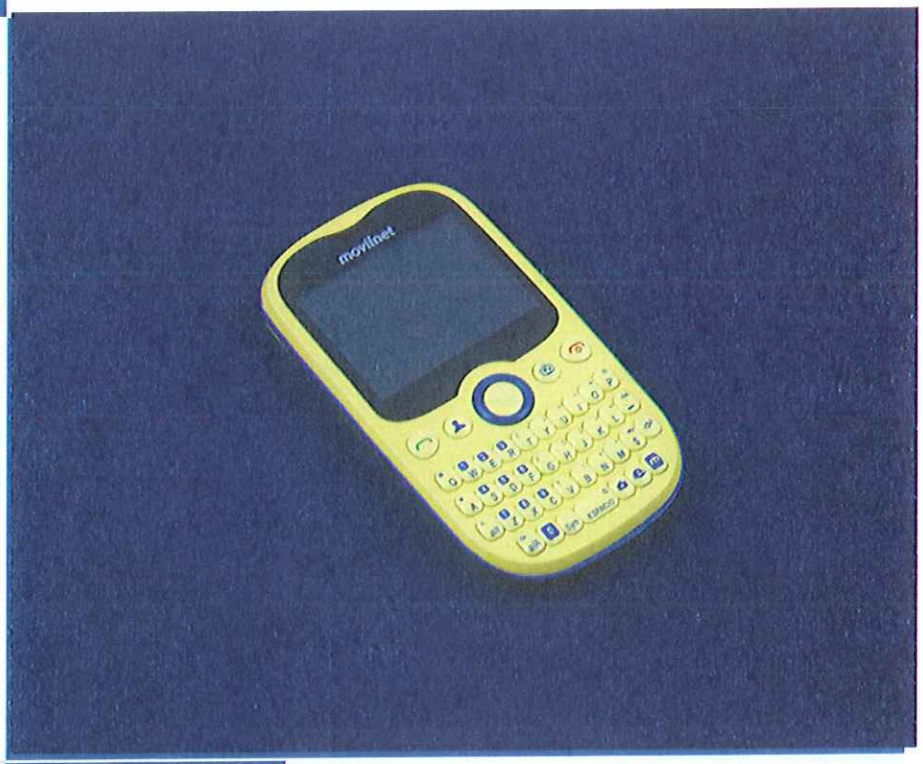
ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

handset

ISSUED TO
HIPAD INTELLIGENT TECHNOLOGY COMPANY LIMITED

NO.2366 ChangXi Avenue Economic -Technological Development Area
NanChang Jiangxi



Report No.:	BL-SZ1590048-602
EUT Type:	handset
Model Name:	E3240
Brand Name:	movilnet
Test Standard:	47 CFR Part 2 47 CFR Part 22 Subpart H
FCC ID:	2AFSPE3240
Test conclusion:	Pass
Test Date:	Sep. 10, 2015 ~ Sep. 21, 2015
Date of Issue:	Sep. 28, 2015

Tested by: Cao shaodong (Engineer)
Date Sep. 28, 2015

Approved by: Wei Yanquan (Chief Engineer)
Date Sep. 28, 2015

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Revision History

Version	Issue Date	Revisions
Rev. 01	Sep. 28, 2015	Initial Issue

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Phone Number	+86 755 6683 0100
Fax Number	+86 755 6182 4271

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province,P. R. China
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory has been listed by US Federal Communications Commission to perform electromagnetic emission measurements. The recognition numbers of test site are 832625. The laboratory has met the requirements of the IAS Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ISO/IEC Standard 17025:2005. The accreditation certificate number is TL-588. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20 to 25℃
Ambient Relative Humidity	45% - 55%
Ambient Pressure	100 kPa - 102 kPa

1.4 Announce

(1) The test report reference to the report template version v1.0.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	HIPAD INTELLIGENT TECHNOLOGY COMPANY LIMITED
Address	NO.2366 ChangXi Avenue Economic -Technological Development Area NanChang Jiangxi

2.2 Manufacturer Information

Manufacturer	HIPAD INTELLIGENT TECHNOLOGY COMPANY LIMITED
Address	NO.2366 ChangXi Avenue Economic -Technological Development Area NanChang Jiangxi

2.3 Factory Information

Factory	HIPAD INTELLIGENT TECHNOLOGY COMPANY LIMITED
Address	NO.2366 ChangXi Avenue Economic -Technological Development Area NanChang Jiangxi

2.4 General Description for Equipment under Test (EUT)

EUT Type	handset
Model Name Under Test	E3240
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	SP
Software Version	E3240-S052
Dimensions (Approx.)	112 × 60 × 11 mm
Weight (Approx.)	92.4 g (with battery)
Network and Wireless connectivity	Bluetooth 3.0, CDMA2000

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	movilnet
	Model No.	BL-5C
	Serial No.	N/A
	Capacitance	1000 mAh
	Rated Voltage	3.7 V
	Limit Charge Voltage	4.2 V
Ancillary Equipment 2	Charger	
	Brand Name	movilnet
	Model No.	NBT-005A-173C
	Serial No.	N/A
	Rated Input	100-300 V~, 0.15 A, 50/60 Hz
	Rated Output	5 V⎓, 0.5 A

Ancillary Equipment 3	Earphone	
	Length (Approx)	1.2 m
Ancillary Equipment 4	USB Data Cable	
	Length (Approx)	1.0 m

2.6 Technical Information

The requirement for the following technical information of the EUT was tested in this report:

Frequency Bands	CDMA BC0 EVDO Rev.A
Modulation Type	QPSK,16QAM, 64QAM
TX Frequency Range	CDMA/EVDO: 824 MHz ~ 849 MHz
Rx Frequency Range	CDMA/EVDO: 869 MHz ~ 894 MHz
Power Class	CDMA/EVDO: 3
Multislot Class	EVDO Rev: 12
Antenna Type	PIFA Antenna
Antenna Gain	0 dBi
About the Product	The equipment is handset, intended for used with information technology equipment.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2 (10–1–14 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10–1–14 Edition)	Public Mobile Services
3	TIA/EIA 603.D-2010	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
4	KDB 971168 D01 v02r02	Measurement Guidance For Certification of Licensed Digital Transmitters

3.2 Verdict

No.	Description	FCC Part No.	Test Result	Verdict
1	Conducted RF Output Power	2.1046	Reporting only (Show in ANNEX A.1)	Pass
2	Effective (Isotropic) Radiated Power	2.1046 22.913	ANNEX A.1	Pass
3	Occupied Bandwidth	2.1049 22.917	ANNEX A.3	Pass
4	Frequency Stability	2.1055 22.355	ANNEX A.4	Pass
5	Spurious Emission at Antenna Terminals	2.1051 22.917	ANNEX A.5	Pass
6	Band Edge	2.1051 22.917	ANNEX A.6	Pass
7	Field Strength of Spurious Radiation	2.1053 22.917	ANNEX A.7	Pass

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the normal environmental conditions were within the listed ranges:

Relative Humidity	45% - 55%	
Atmospheric Pressure	100 kPa -102 kPa	
Temperature	NT (Normal Temperature)	+22 to +25°C
Working Voltage of the EUT	NV (Normal Voltage)	3.7 V
	LV (Low Voltage)	3.6 V
	HV (High Voltage)	4.2 V

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSV-30	103118	2015.07.16	2016.07.15
Vector Signal Generator	ROHDE&SCHWARZ	SMBV100A	177746	2015.07.16	2016.07.15
Signal Generator	ROHDE&SCHWARZ	SMB100A	260592	2015.07.01	2016.06.30
Switch Unit with OSP-B157	ROHDE&SCHWARZ	OSP120	101270	2015.07.16	2016.07.15
Spectrum Analyzer	AGILENT	E4440A	MY45304434	2014.10.18	2015.10.17
Universal Radio Communication Tester	ROHDE&SCHWARZ	CMU 200	123666	2015.07.01	2016.06.30
Wireless Communications Test Set	ROHDE&SCHWARZ	CMW 500	138884	2015.07.01	2016.06.30
EMI Receiver	ROHDE&SCHWARZ	ESRP	101036	2015.07.14	2016.07.13
LISN	SCHWARZBECK	NSLK 8127	8127-687	2015.07.14	2016.07.13
Bluetooth Tester	ROHDE&SCHWARZ	CBT	101005	2015.07.16	2016.07.15
Power Splitter	KMW	DCPD-LDC	1305003215	2015.07.01	2016.06.30
Power Sensor	ROHDE&SCHWARZ	NRP-Z21	103971	2015.07.21	2016.07.20
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	--	--
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	--	--
DC Power Supply	ROHDE&SCHWARZ	HMP2020	18141664	2015.07.17	2016.07.16
Temperature Chamber	ANGELANTIONI SCIENCE	NTH64-40A	1310	2015.08.07	2016.08.06
Test Antenna-Loop(9 kHz-30 MHz)	SCHWARZBECK	FMZB 1519	1519-037	2015.07.22	2017.07.21
Test Antenna-Bi-Log(30 MHz-3 GHz)	SCHWARZBECK	VULB 9163	9163-624	2015.07.22	2017.07.21
Test Antenna-Horn(1-18 GHz)	SCHWARZBECK	BBHA 9120D	9120D-1148	2015.07.22	2017.07.21
Test Antenna-Horn(15-26.5 GHz)	SCHWARZBECK	BBHA 9170	9170-305	2015.07.22	2017.07.21
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	2014.10.07	2015.10.06

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Shielded Enclosure	ChangNing	CN-130701	130703	--	--

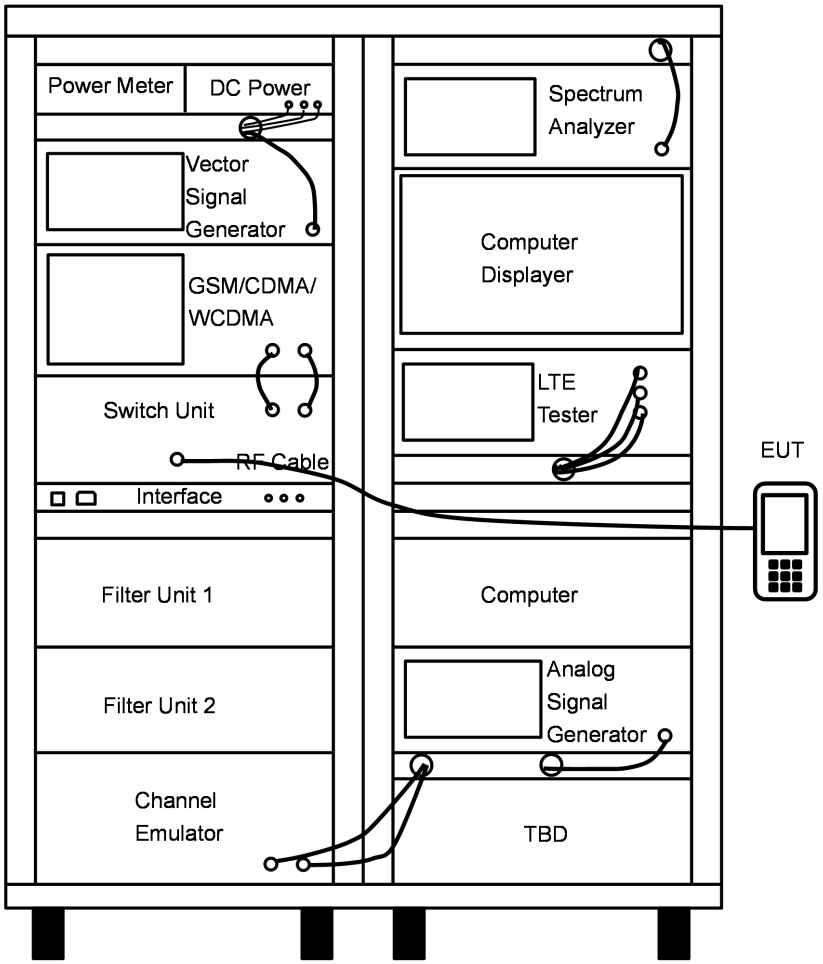
4.3 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Conducted RF Output Power	CDMA2000 BCO	v	v	v
	EVDO Rev.A	v	v	v
Occupied Bandwidth	CDMA 2000 BCO	v	v	v
	EVDO Rev.A	v	v	v
Frequency Stability	CDMA 2000 BCO	v	v	v
Spurious Emission at Antenna Terminals	CDMA2000 BCO	v	v	v
Band Edge	CDMA2000 BCO	v	--	v
	EVDO Rev.A	v	--	v
Field Strength of Spurious Radiation	CDMA2000 BCO	v	v	v
	EVDO Rev.A	v	v	v
Note 1: The mark “v” means that this configuration is chosen for testing.				

Test Mode	Channal	ARFCN	Frequency (MHz)
CDMA2000 BC0	LCH	1013	824.7
	MCH	384	836.52
	HCH	777	848.31
EVDO Rev.A	LCH	1013	824.7
	MCH	384	836.52
	HCH	777	848.31

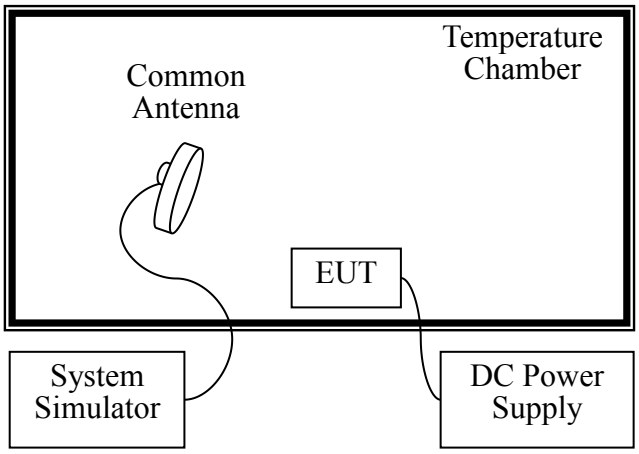
4.4 Description of Test Setup

4.4.1 For Antenna Port Test



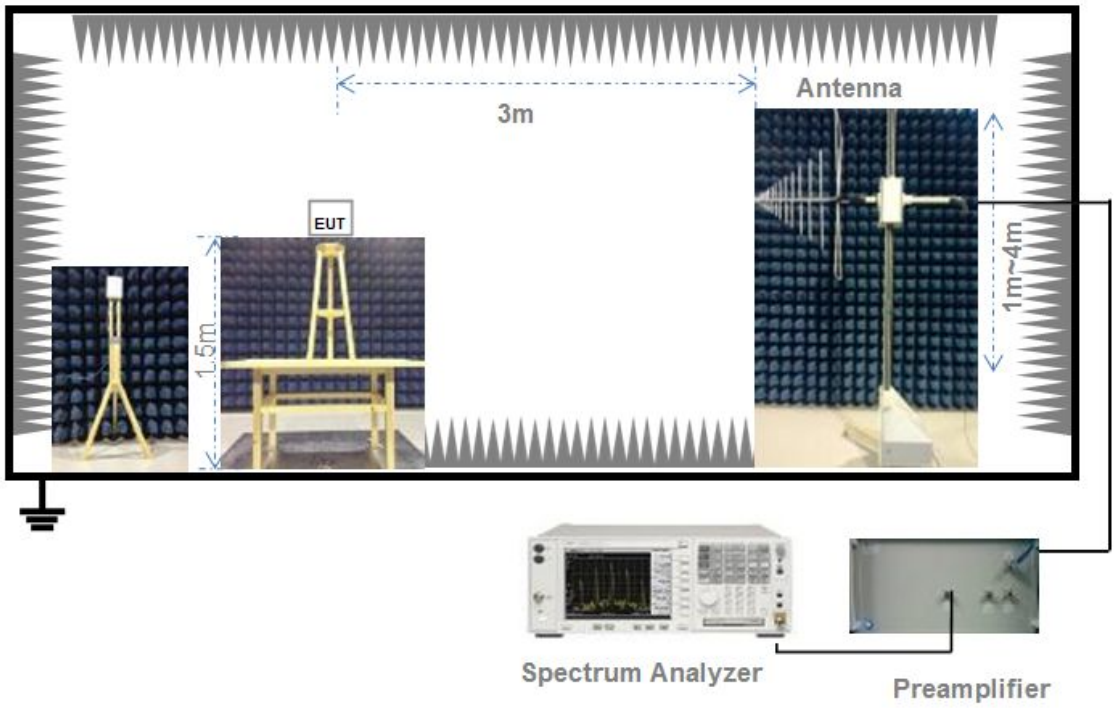
(Diagram 1)

4.4.2 For Frequency Stability Test



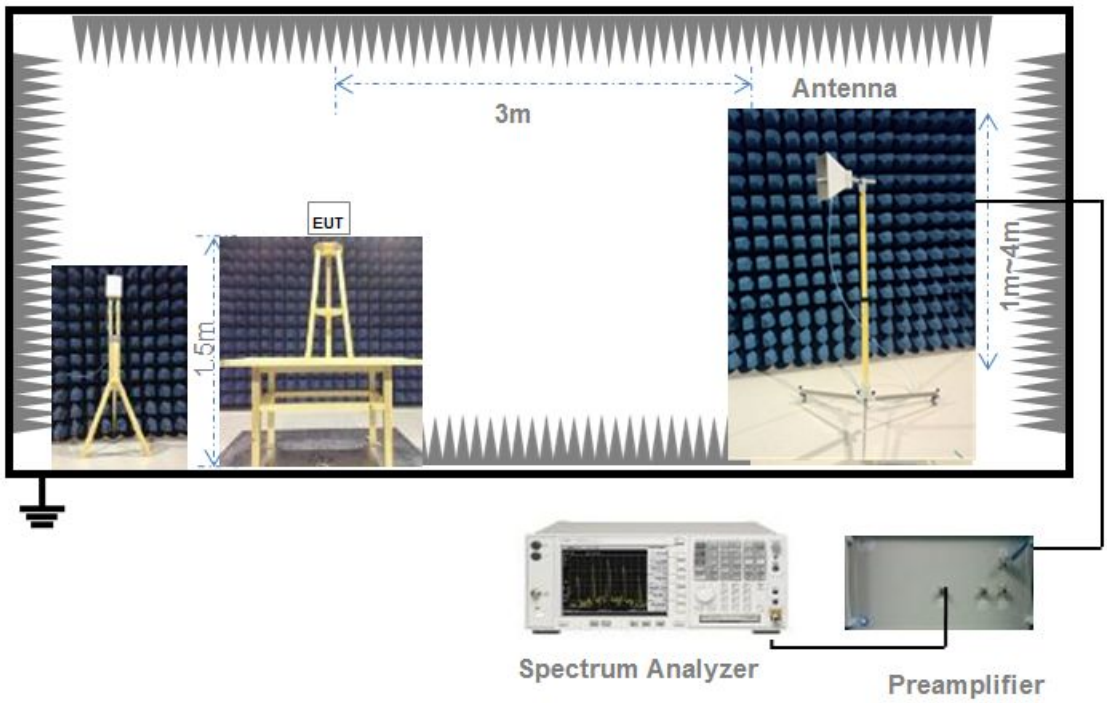
(Diagram 2)

4.4.3 For Radiated Test (30 MHz-1 GHz)



(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

5 TEST ITEMS

5.1 Transmitter Radiated Power (EIRP/ERP)

5.1.1 Limit

FCC §2.1046(a) & 22.913

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts, FCC section 24.232, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
FCC section 27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications, and FCC section 27.50(h) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

Description of the Conducted Output Power Measurement

A system simulator was used to estabilish communication with the EUT, Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output teminals shall be reported.

Note: Reference test setup 4.4.1 (Diagram 1)

Description of the Transmitter Radiated Power Measurement

In many cases, the RF output power limits for licensed digital transmission devices is specified in terms of effective radiated power (ERP) or equivalent isotropic radiated power (EIRP). Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP/EIRP = PMeas + GT − LC

where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically

dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

dBd (ERP)=dBi-2.15

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

Note: Reference test setup 4.4.3 and 4.4.4 (Diagram 3, 4)

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Occupied Bandwidth

5.2.1 Limit

FCC § 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

5.2.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

The following procedure shall be used for measuring (99 %) power bandwidth

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the OBW).

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.

c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least 10log (OBW / RBW) below the reference level.

d) NOTE—Steps a) through c) may require iteration to adjust within the specified tolerances.

e) Set the detection mode to peak, and the trace mode to max hold..

f) Use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

g) If the instrument does not have a 99 % power bandwidth function, the trace data points are to be recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % power bandwidth is the difference between these two frequencies.

h) The OBW shall be reported by providing plot(s) of the measuring instrument display. The frequency and amplitude axes and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Note: Reference test setup 4.4.1 (Diagram 1).

5.2.4 Test Result

Please refer to ANNEX A.2.

5.3 Frequency Stability

5.3.1 Limit

FCC § 2.1055 & 22.355

§ 22.355
Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

1. The test is performed in a Temperature Chamber.
2. The EUT is configured as MS + DC Power Supply.

Note: Reference test setup 4.4.2 (Diagram 2).

5.3.4 Test Result

Please refer to ANNEX A.3.

5.4 Spurious Emission at Antenna Terminals

5.4.1 Limit

FCC §2.1051 & 22.917(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 -13 dBm.

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}$ (P) dB.

5.4.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee’s frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Band Edge

5.5.1 Limit

FCC § 2.1051 & 22.917(b)
The power of any emission outside of the authorized operating frequency must be attenuated below the transmitting (P) by a factor of at least 43+10log(P) dB.
In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26 dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

5.5.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The EUT, which is powered by the Battery, 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 50 Ohm; the path loss as the factor is calibrated to correct the reading.

1. The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.
2. The center of the spectrum analyzer was set to block edge frequency.

Note: Reference test setup 4.4.1 (Diagram 1).

5.5.4 Test Result

Please refer to ANNEX A.5.

5.6 Field Strength of Spurious Radiation

5.6.1 Limit

FCC § 2.1053 & 22.917

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 -13 dBm.

5.6.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth was set to 1 MHz.
5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Note: Reference test setup 4.4.3 and 4.4.4 (Diagram 3, 4)

5.6.4 Test Result

Please refer to ANNEX A.6.

ANNEX A **TEST RESULT**

A.1 Conducted RF Output Power and Effective (Isotropic) Radiated power

CDMA2000 Mode Test data:

Test Band	Test Channel	Frequency (MHz)	Conducted Output Peak Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Verdict
CDMA2000 BC0	1013	824.7	27.64	0	-2.15	29.79	38.5	Pass
	384	836.52	27.66	0	-2.15	29.81	38.5	Pass
	777	848.31	26.82	0	-2.15	28.97	38.5	Pass
EVDO Rev.A	1013	824.7	27.56	0	-2.15	29.71	38.5	Pass
	384	836.52	27.71	0	-2.15	29.86	38.5	Pass
	777	848.31	27.08	0	-2.15	29.23	38.5	Pass

Note : ERP/EIRP = PMeas + GT − LC

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

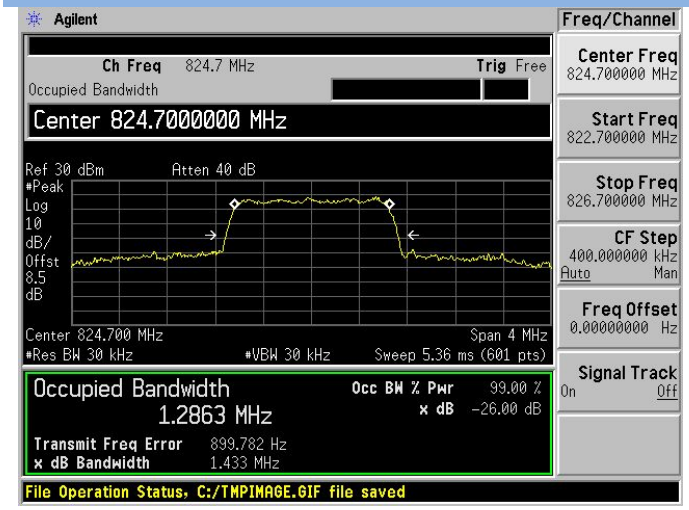
ERP = EIRP – 2.15; where ERP and EIRP are expressed in consistent units.

A.2 Occupied Bandwidth

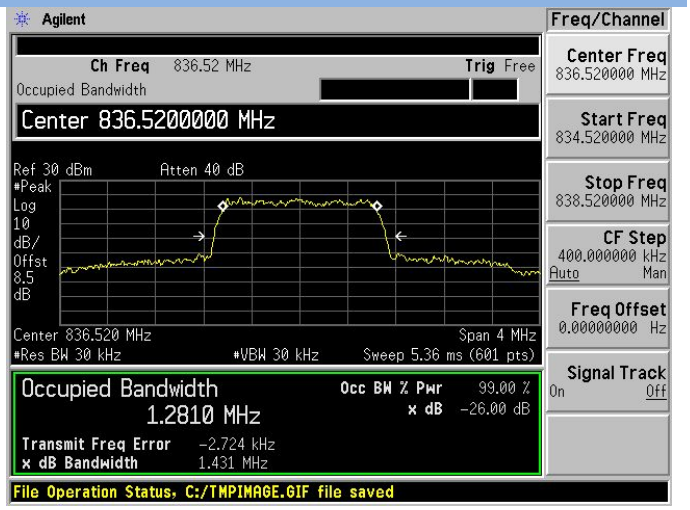
CDMA Mode Test Data

Test Band	Test Channel	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)
CDMA2000 BC0	LCH	1.2863	1.433
	MCH	1.2810	1.431
	HCH	1.2847	1.436
EVDO Rev.A	LCH	1.2788	1.431
	MCH	1.2754	1.434
	HCH	1.2807	1.431

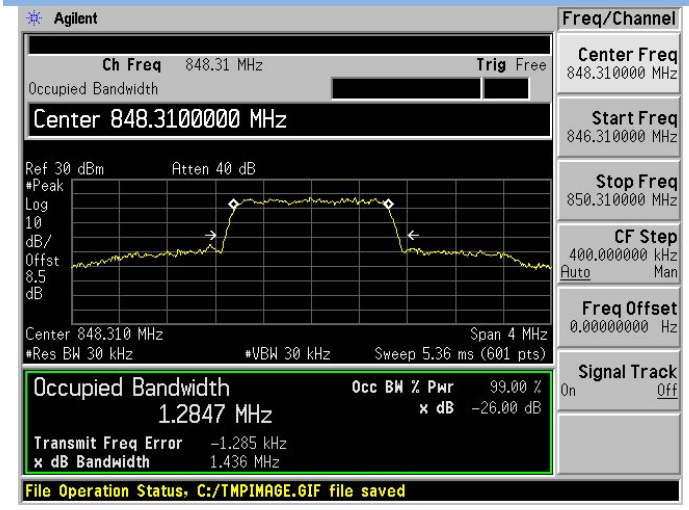
CDMA2000 BC0 MHz LCH



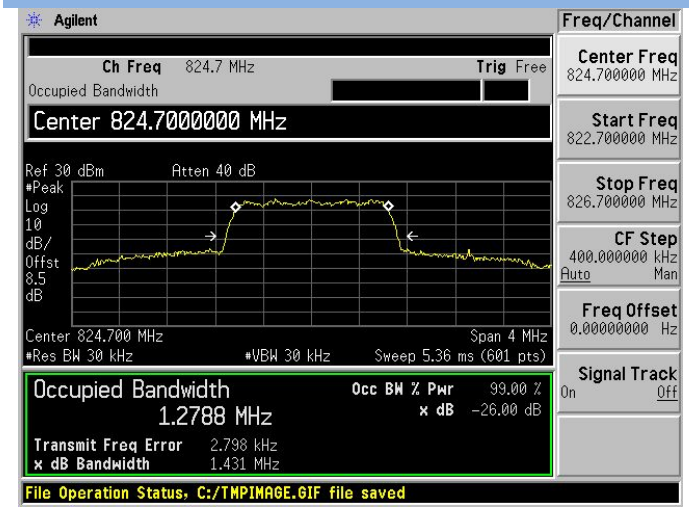
CDMA2000 BC0 MHz MCH



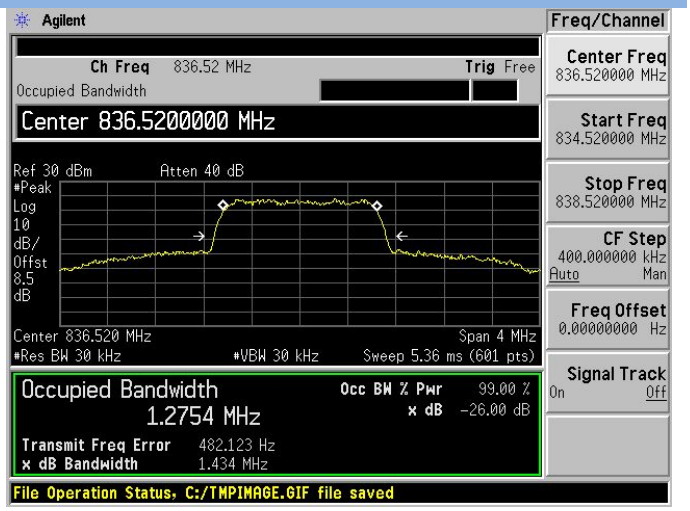
CDMA2000 BC0 MHz HCH



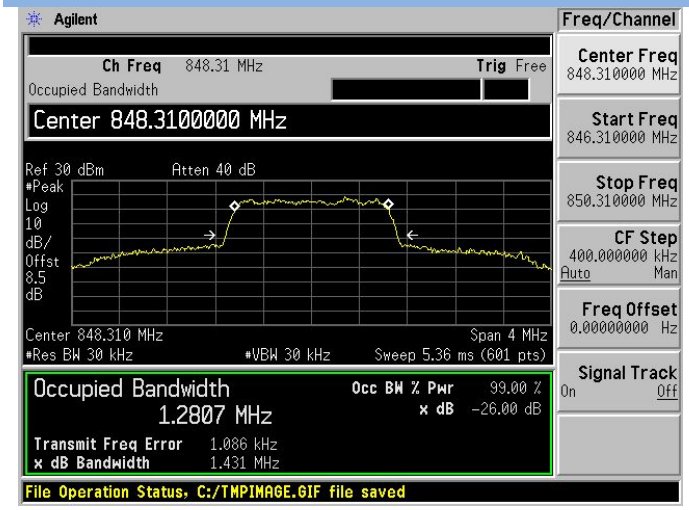
EVDO Rev.A MHz LCH



EVDO Rev.A MHz MCH



EVDO Rev.A MHz HCH



A.3 Frequency Stability

CDMA2000 BC0

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 824.7 MHz		MCH 836.52 MHz		HCH 848.31 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.8	-30	-28.69	±2061.75	4.54	±2091.3	-8.33	±212.775	Pass
	-20	-18.25		12.54		-12.54		
	-10	-27.27		-8.43		-5.54		
	0	-25.08		11.57		1.24		
	+10	1.37		-17.51		17.52		
	+20	-15.78		-3.58		-18.54		
	+30	-12.74		-7.65		-4.57		
	+40	11.57		4.45		14.54		
	+50	-0.54		2.40		-2.74		
4.35	+25	-17.58		-28.37		-0.40		
3.6	+25	-14.87		-21.45		-28.26		

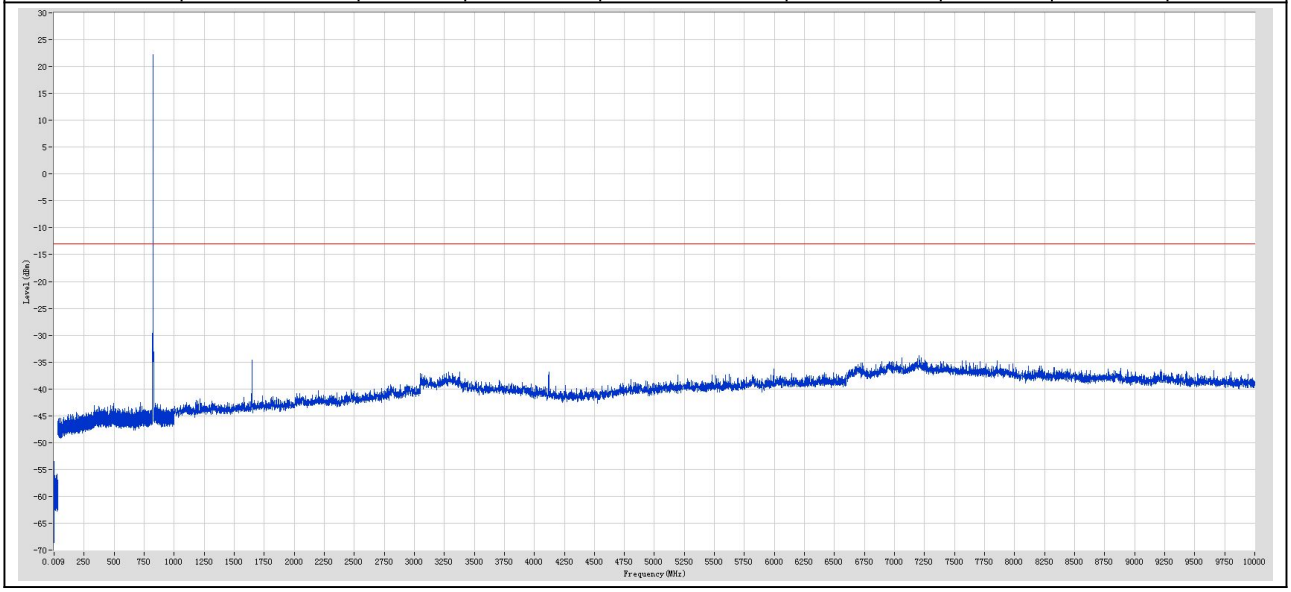
A.4 Spurious Emission at Antenna Terminals

Note 1: The frequency of verdict which mark by "N/A" should be ignored because they are MS carrier frequency.

Test Data

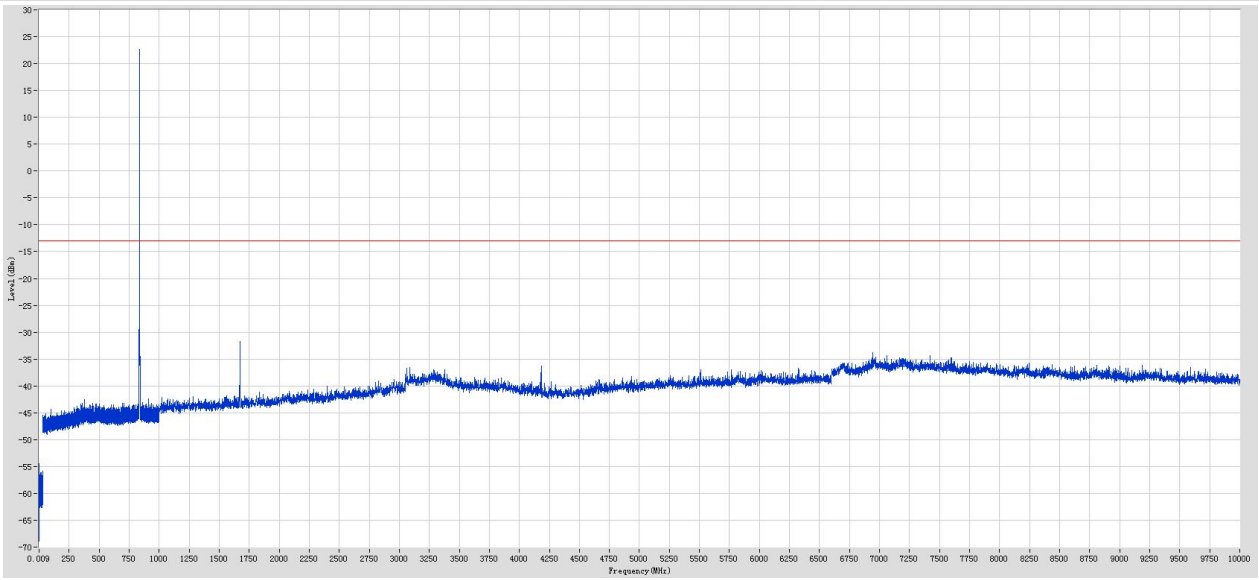
CDMA2000 BC0 LCH

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	9.235 k	-57.39	-13	Pass	601
0.15	30	0.01	Peak	160.003 k	-53.45	-13	Pass	2985
30	500	0.1	Peak	494.198766 M	-42.67	-13	Pass	4700
500	1000	0.1	Peak	824.364873 M	22.23	-13	N/A	5000
1000	10000	1	Peak	7206.757661 M	-33.87	-13	Pass	9000



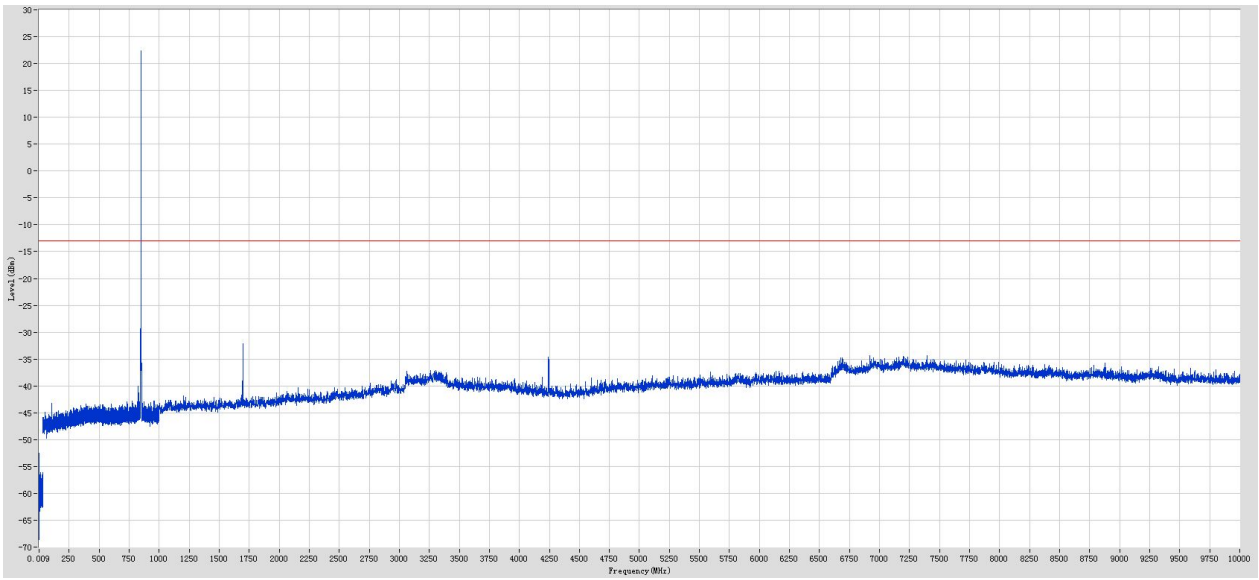
CDMA2000 BC0 MCH

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	9 k	-57.31	-13	Pass	601
0.15	30	0.01	Peak	380.077 k	-54.5	-13	Pass	2985
30	500	0.1	Peak	378.274101 M	-42.56	-13	Pass	4700
500	1000	0.1	Peak	836.567313 M	22.69	-13	N/A	5000
1000	10000	1	Peak	1672.082041 M	-31.74	-13	Pass	9000



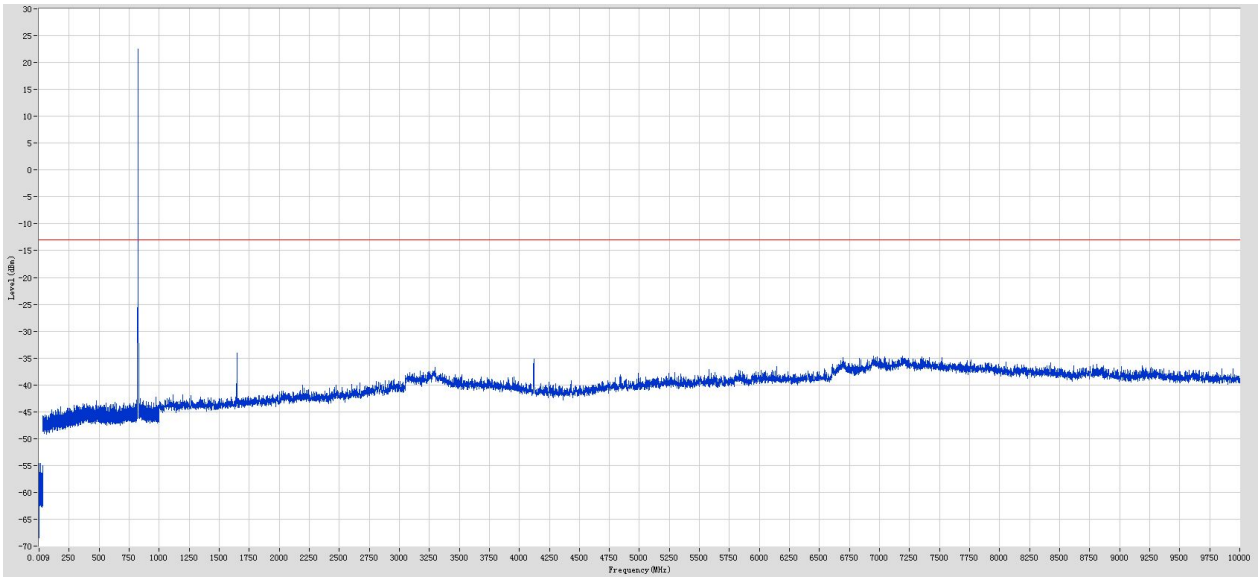
CDMA2000 BC0 HCH

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	12.29 k	-57.27	-13	Pass	601
0.15	30	0.01	Peak	180.01 k	-52.59	-13	Pass	2985
30	500	0.1	Peak	103.815705 M	-43.18	-13	Pass	4700
500	1000	0.1	Peak	848.969794 M	22.38	-13	N/A	5000
1000	10000	1	Peak	1698.085215 M	-32.14	-13	Pass	9000



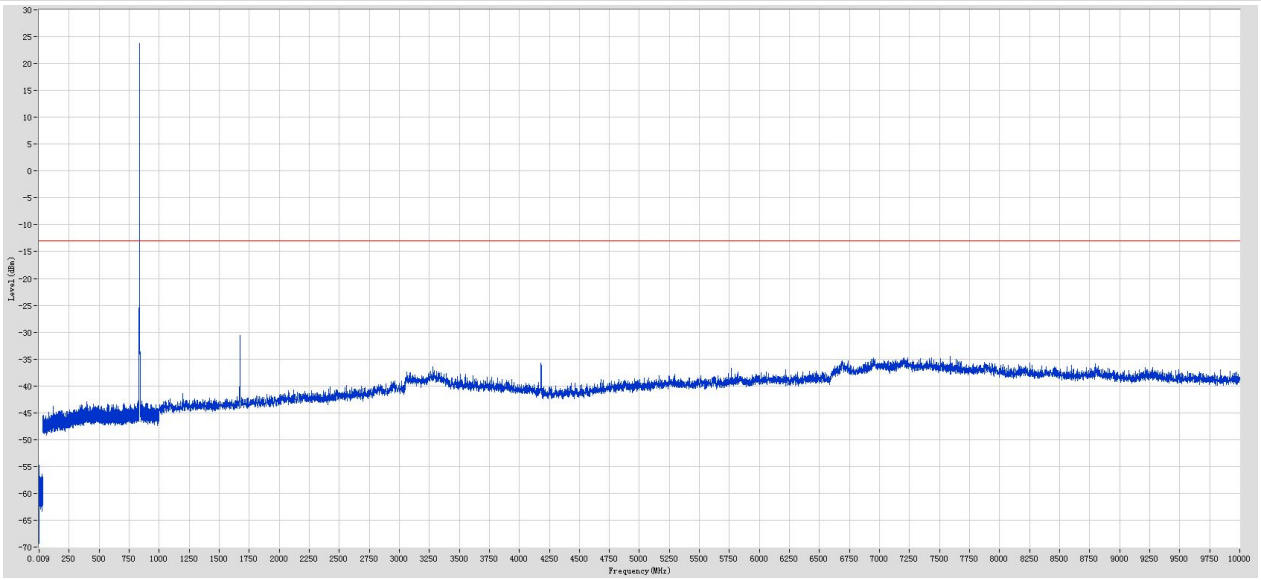
EVDO Rev.A LCH

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	9 k	-57.1	-13	Pass	601
0.15	30	0.01	Peak	13.624514 M	-54.54	-13	Pass	2985
30	500	0.1	Peak	475.094701 M	-42.99	-13	Pass	4700
500	1000	0.1	Peak	824.364873 M	22.53	-13	N/A	5000
1000	10000	1	Peak	1647.078989 M	-34.14	-13	Pass	9000



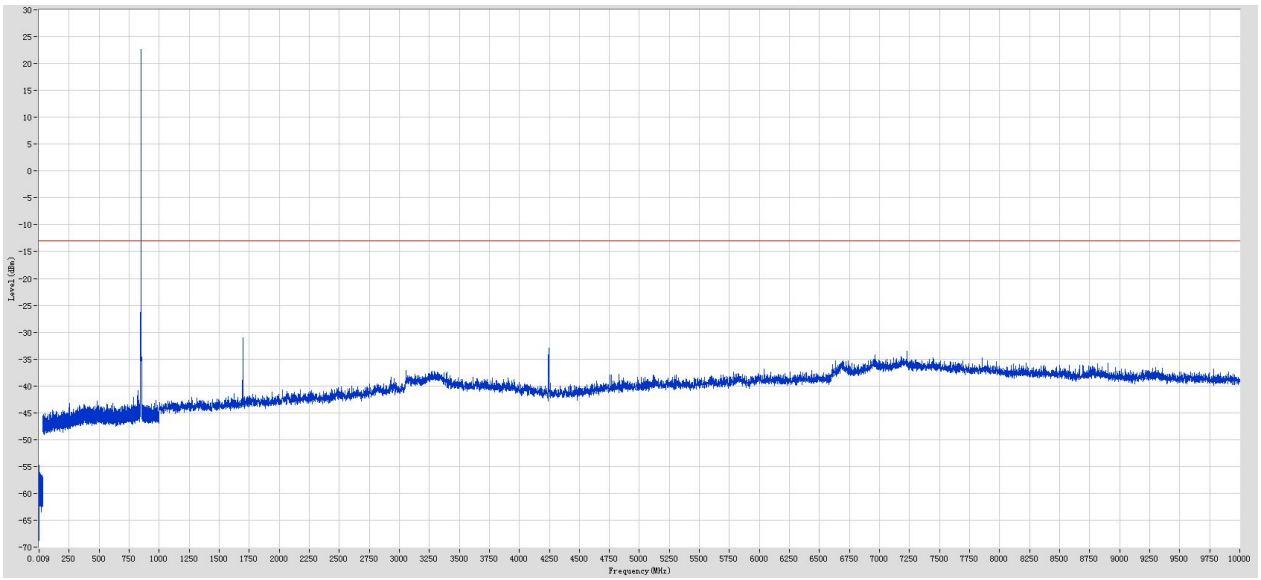
EVDO Rev.A MCH

Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	11.585 k	-57.31	-13	Pass	601
0.15	30	0.01	Peak	160.003 k	-54.8	-13	Pass	2985
30	500	0.1	Peak	395.677804 M	-43.01	-13	Pass	4700
500	1000	0.1	Peak	836.867373 M	23.8	-13	N/A	5000
1000	10000	1	Peak	1673.082163 M	-30.67	-13	Pass	9000



EVDO Rev.A HCH

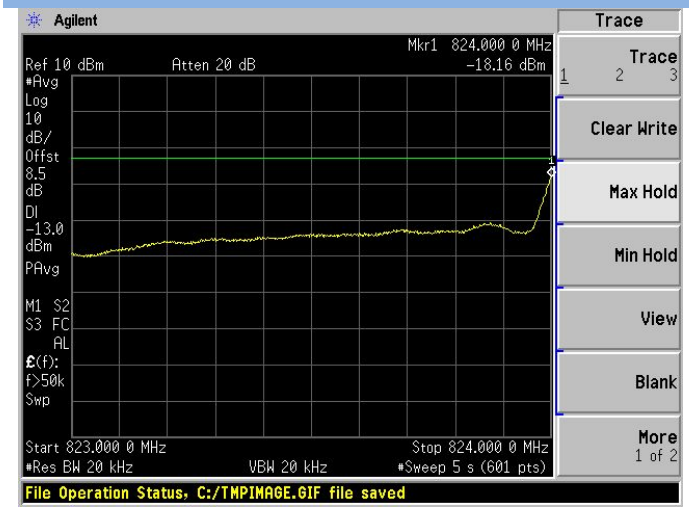
Start Frequency [MHz]	Stop Frequency [MHz]	RBW [MHz]	Detector	Frequency [Hz]	Emission [dBm]	Limit [dBm]	Verdict	Sweep Point
0.009	0.15	0.001	Peak	11.82 k	-57.44	-13	Pass	601
0.15	30	0.01	Peak	710.188 k	-54.75	-13	Pass	2985
30	500	0.1	Peak	485.296872 M	-42.88	-13	Pass	4700
500	1000	0.1	Peak	848.569714 M	22.6	-13	N/A	5000
1000	10000	1	Peak	1698.085215 M	-31.05	-13	Pass	9000



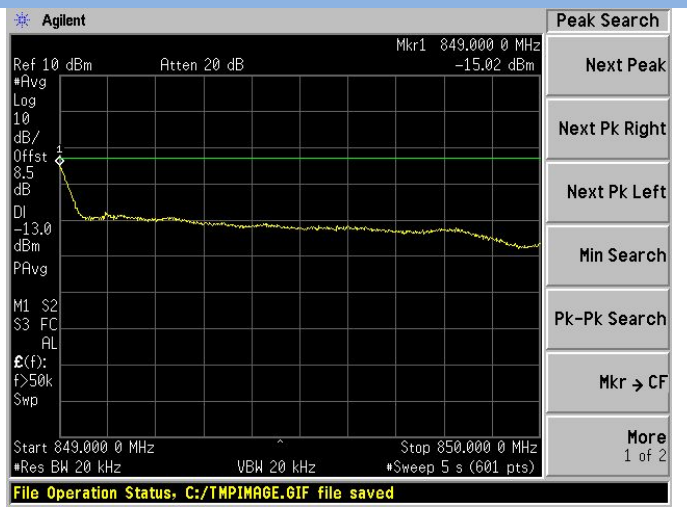
A.5 Band Edge

Test Result of Plots

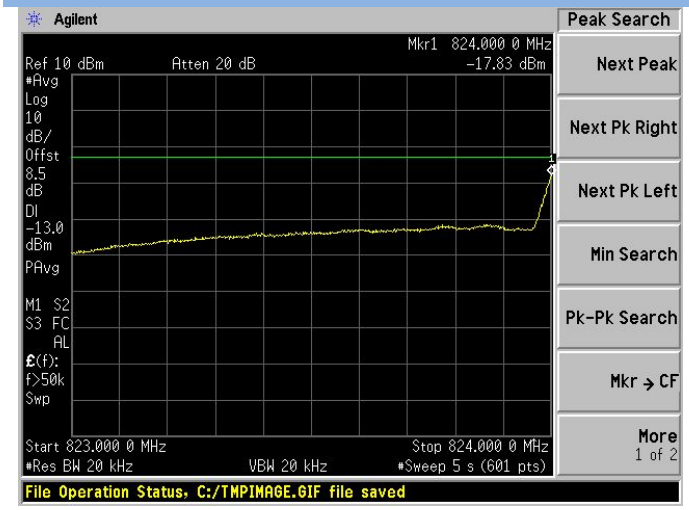
CDMA2000 BC0 LCH



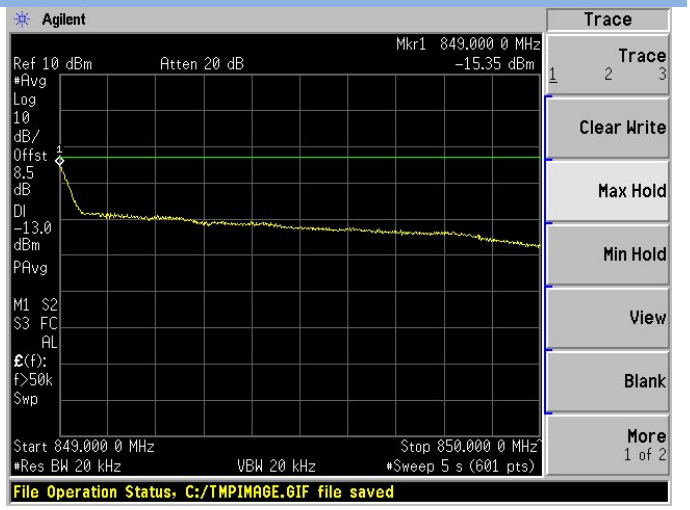
CDMA2000 BC0 HCH



EVDO Rev.A LCH



EVDO Rev.A HCH

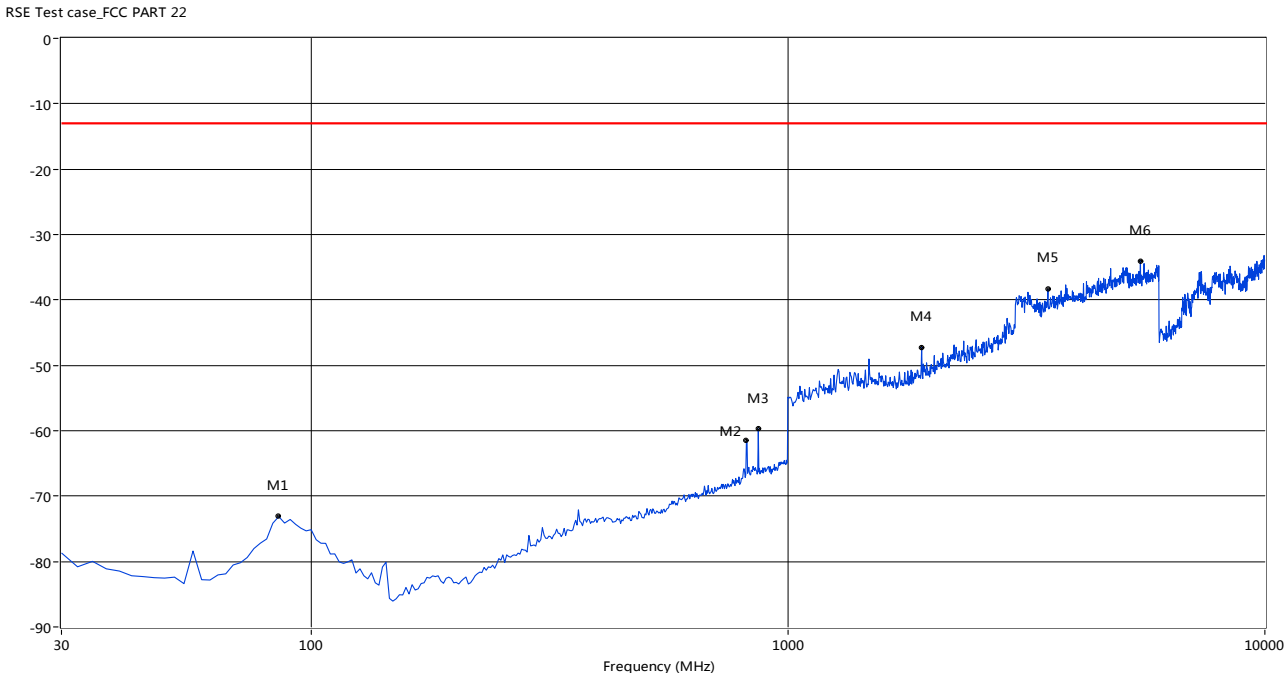


A.6 Field Strength of Spurious Radiation

Note 1: The frequency of verdict which mark by "N/A" should be ignored because they are MS carrier frequency.

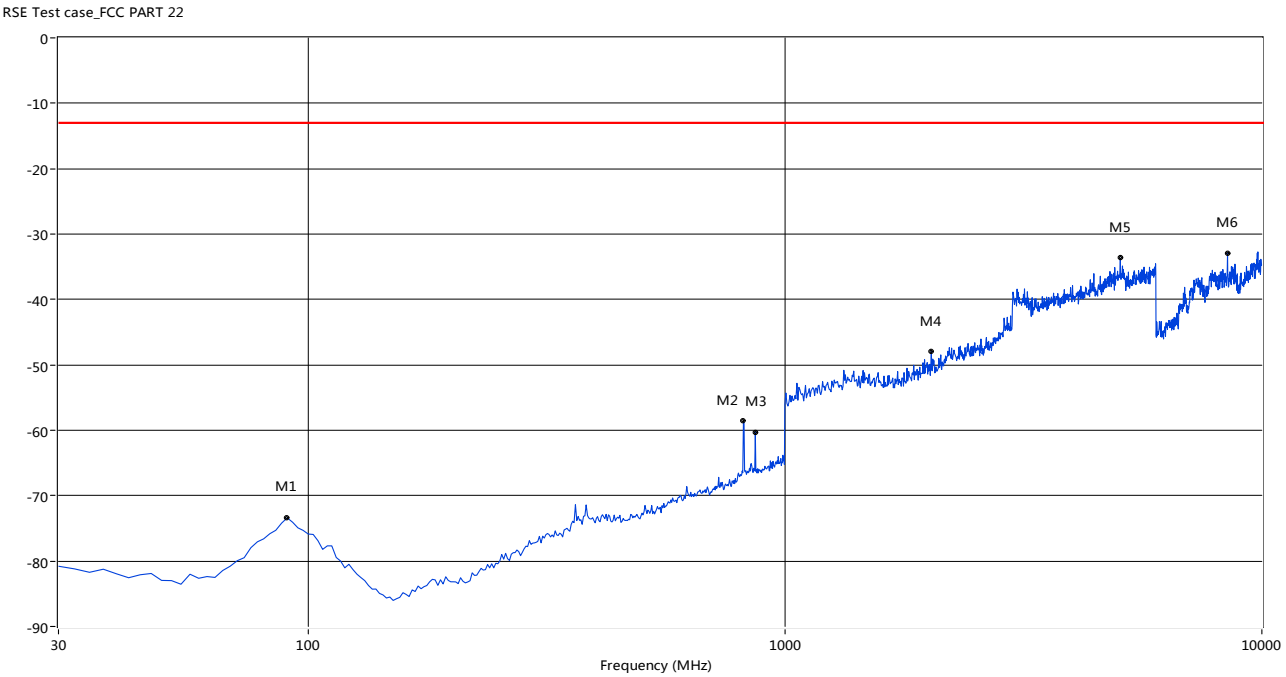
Test Data

CDMA2000 BC0 LCH, ANT V



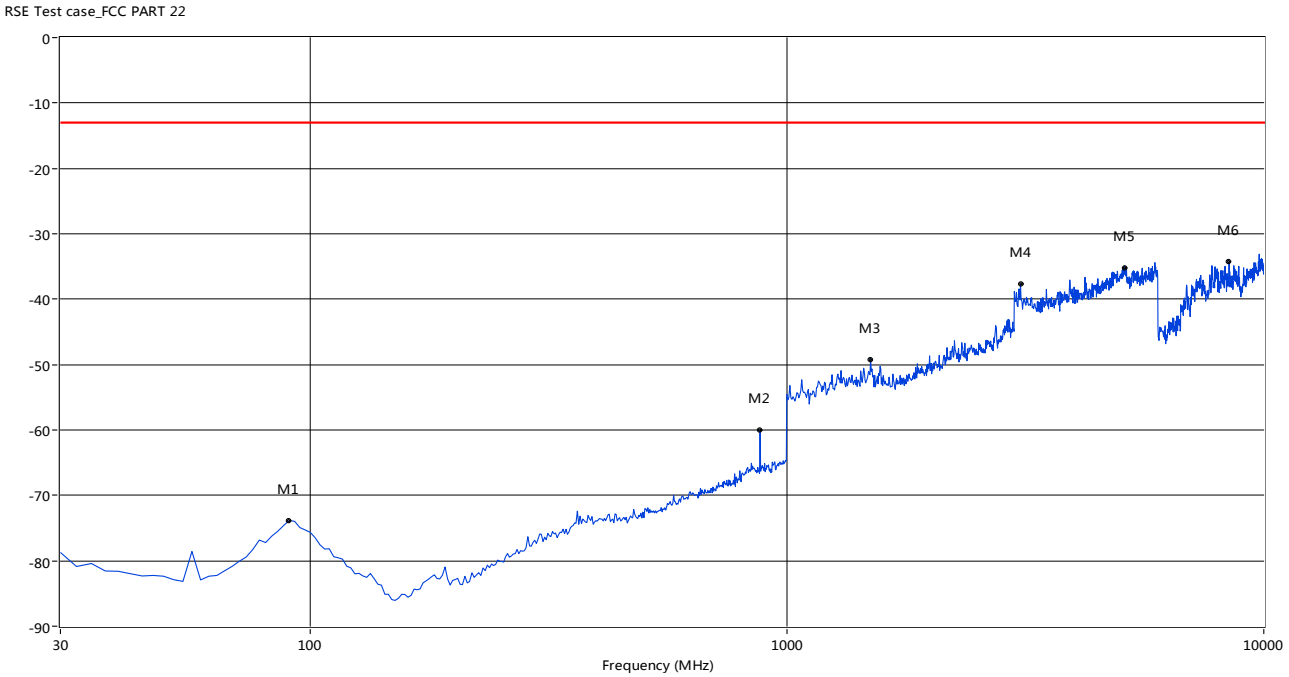
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
85.64	-73.12	-3.55	-13.0	60.12	21.70	Vertical	Pass
818.58	-61.39	5.15	-13.0	48.39	246.00	Vertical	Pass
866.96	-59.70	5.27	-13.0	46.70	199.40	Vertical	Pass
1907.73	-47.25	10.35	-13.0	34.25	158.30	Vertical	Pass
3508.73	-38.38	22.39	-13.0	25.38	321.20	Vertical	Pass
5483.79	-34.00	27.76	-13.0	21.00	30.40	Vertical	Pass

CDMA2000 BC0 LCH, ANT H



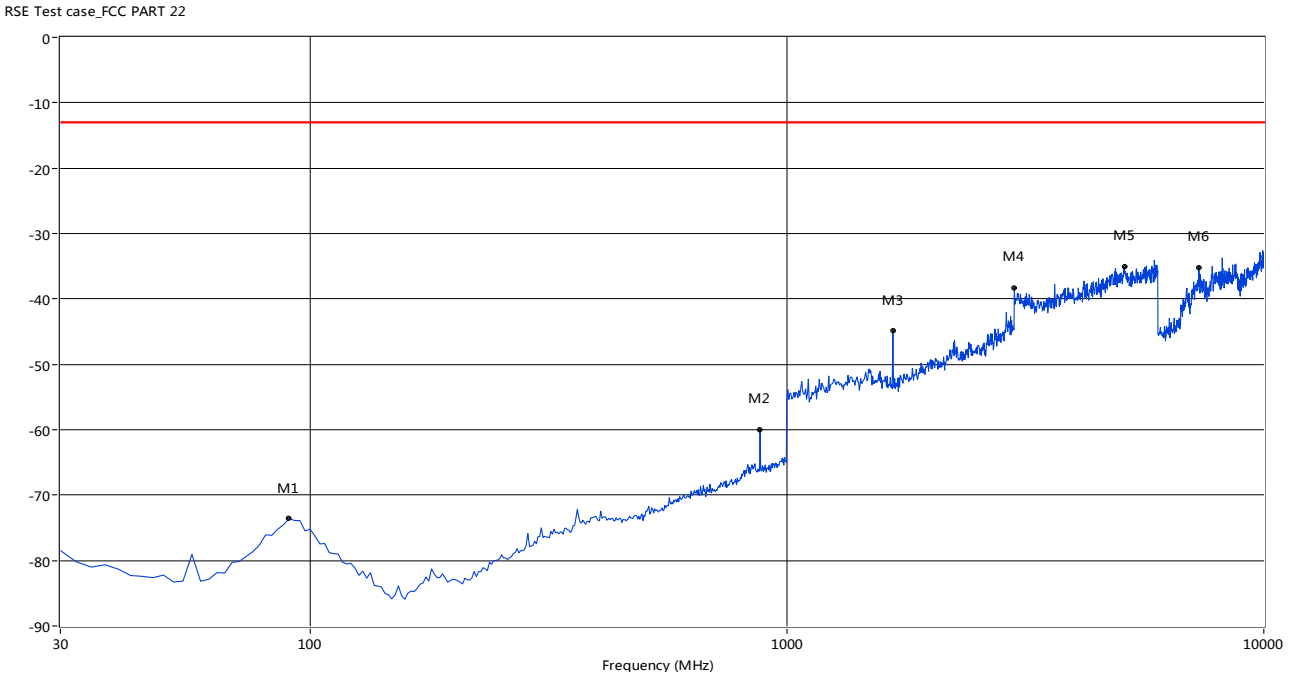
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-73.39	-2.10	-13.0	60.39	179.30	Horizontal	Pass
818.58	-58.60	5.15	-13.0	45.60	219.70	Horizontal	Pass
866.96	-60.30	5.27	-13.0	47.30	100.10	Horizontal	Pass
2027.43	-47.97	11.15	-13.0	34.97	173.40	Horizontal	Pass
5049.88	-33.67	27.86	-13.0	20.67	43.50	Horizontal	Pass
8473.82	-32.90	35.47	-13.0	19.90	354.40	Horizontal	Pass

CDMA2000 BC0 MCH, ANT V



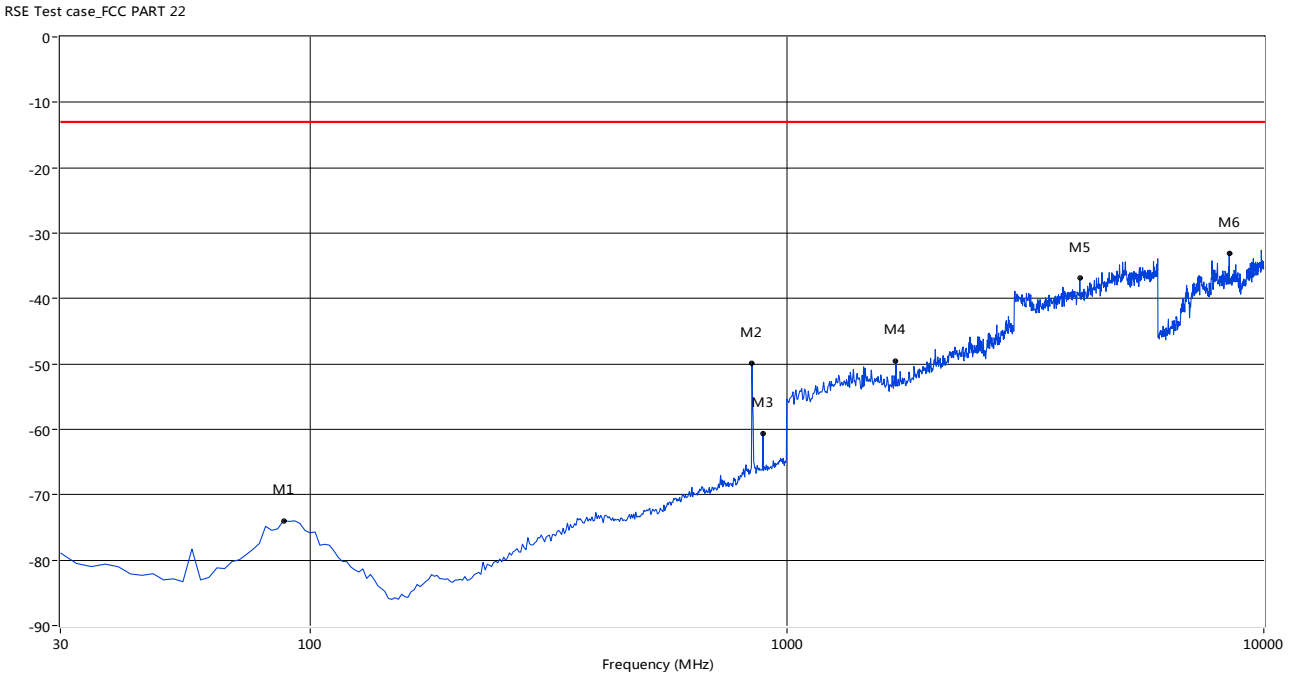
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-73.85	-2.10	-13.0	60.85	327.50	Vertical	Pass
879.05	-60.02	5.43	-13.0	47.02	190.50	Vertical	Pass
1498.75	-49.24	9.64	-13.0	36.24	65.20	Vertical	Pass
3089.78	-37.67	21.82	-13.0	24.67	343.40	Vertical	Pass
5102.24	-35.15	28.38	-13.0	22.15	179.70	Vertical	Pass
8453.87	-34.23	35.49	-13.0	21.23	299.60	Vertical	Pass

CDMA2000 BC0 MCH, ANT H



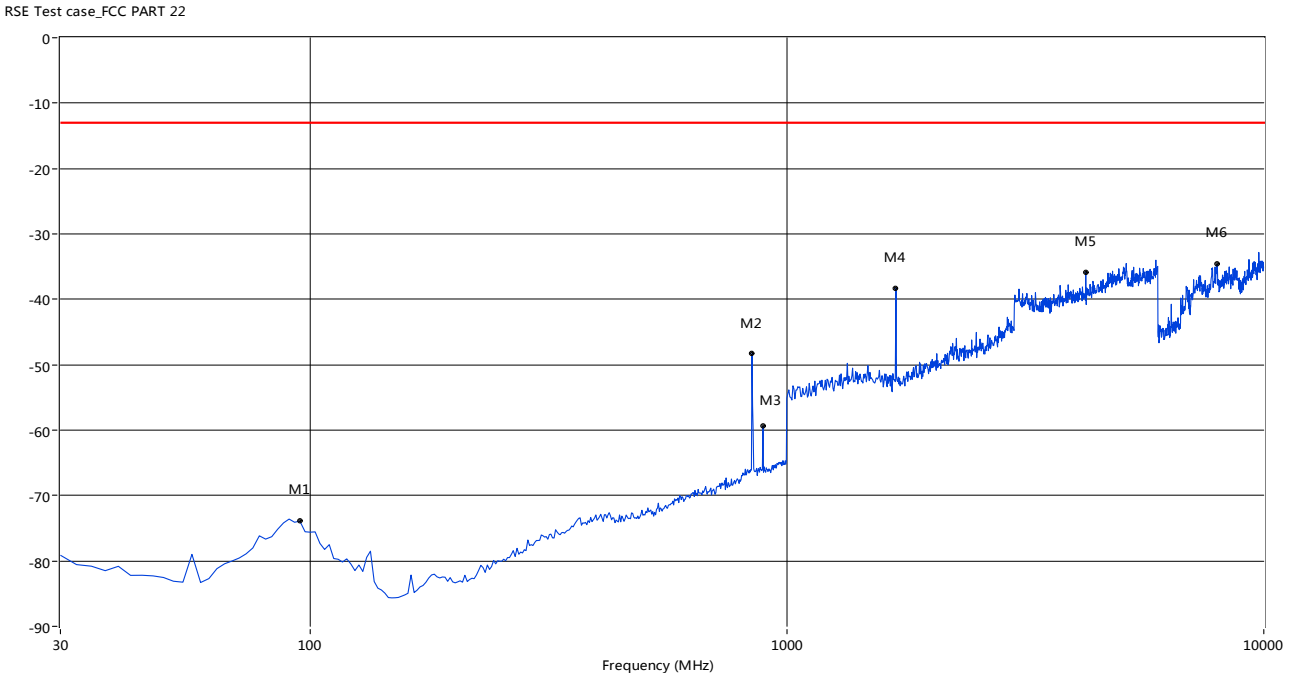
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-73.60	-2.10	-13.0	60.60	154.50	Horizontal	Pass
879.05	-59.98	5.43	-13.0	46.98	166.00	Horizontal	Pass
1668.33	-44.91	8.80	-13.0	31.91	347.60	Horizontal	Pass
3000.00	-38.38	21.87	-13.0	25.38	299.60	Horizontal	Pass
5094.76	-35.09	28.31	-13.0	22.09	86.50	Horizontal	Pass
7306.73	-35.17	33.71	-13.0	22.17	1.20	Horizontal	Pass

CDMA2000 BC0 HCH, ANT V



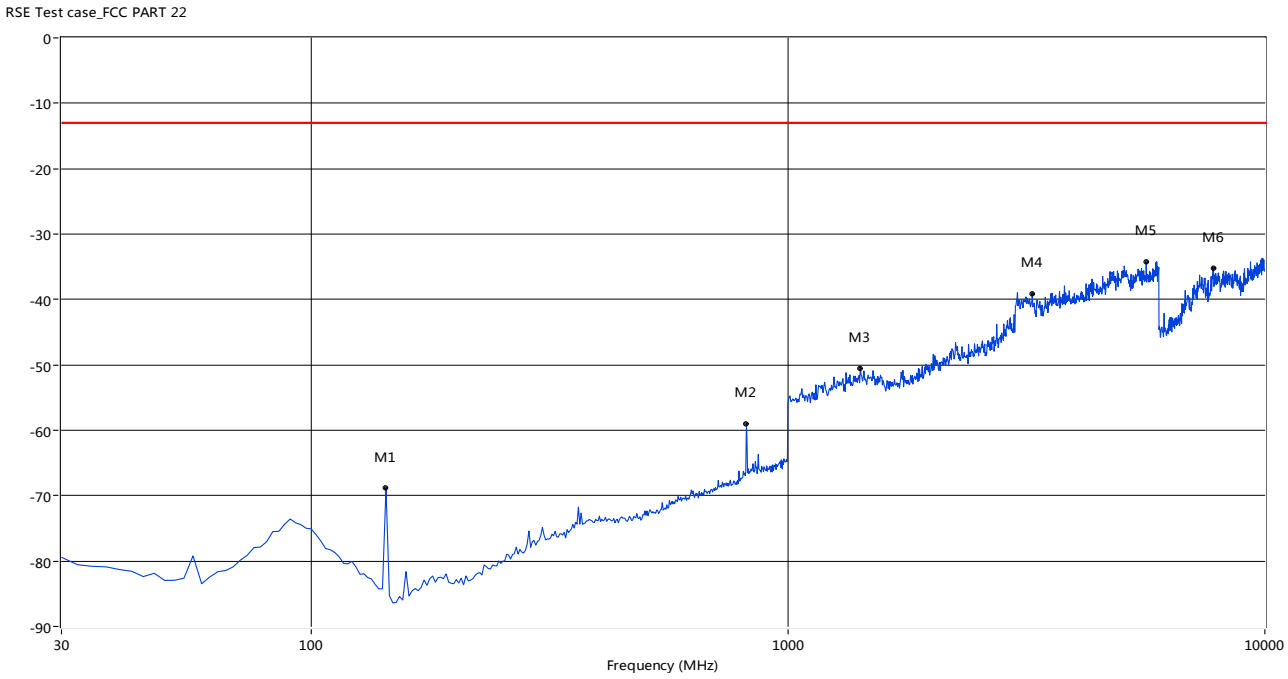
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
88.06	-73.95	-2.64	-13.0	60.95	219.40	Vertical	Pass
845.19	-49.91	5.58	-13.0	36.91	334.90	Vertical	Pass
891.15	-60.57	5.60	-13.0	47.57	188.70	Vertical	Pass
1693.27	-49.56	8.77	-13.0	36.56	191.80	Vertical	Pass
4114.71	-36.88	24.19	-13.0	23.88	205.10	Vertical	Pass
8463.84	-33.05	35.97	-13.0	20.05	109.90	Vertical	Pass

CDMA2000 BC0 HCH, ANT H



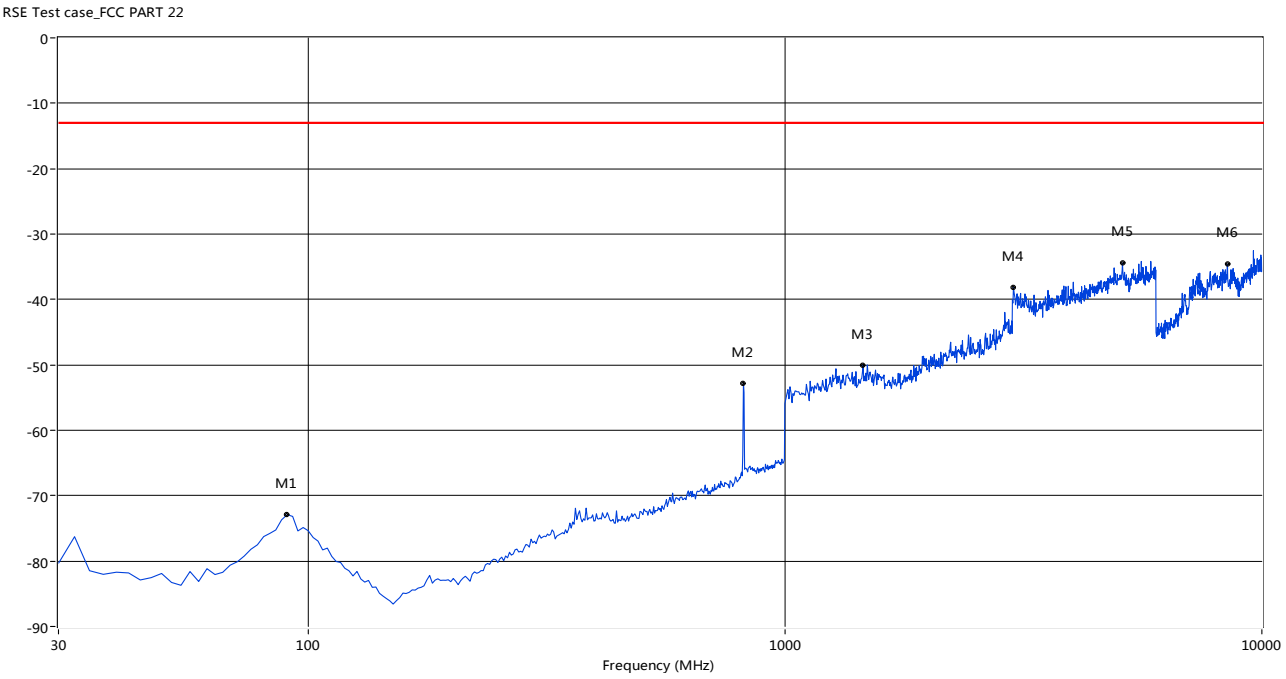
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
95.31	-73.90	-3.33	-13.0	60.90	269.00	Horizontal	Pass
845.19	-48.32	5.58	-13.0	35.32	341.60	Horizontal	Pass
891.15	-59.41	5.60	-13.0	46.41	160.10	Horizontal	Pass
1693.27	-38.29	8.77	-13.0	25.29	247.50	Horizontal	Pass
4234.41	-35.88	24.76	-13.0	22.88	14.90	Horizontal	Pass
7985.04	-34.65	35.01	-13.0	21.65	217.30	Horizontal	Pass

EVDO Rev.A LCH, ANT V



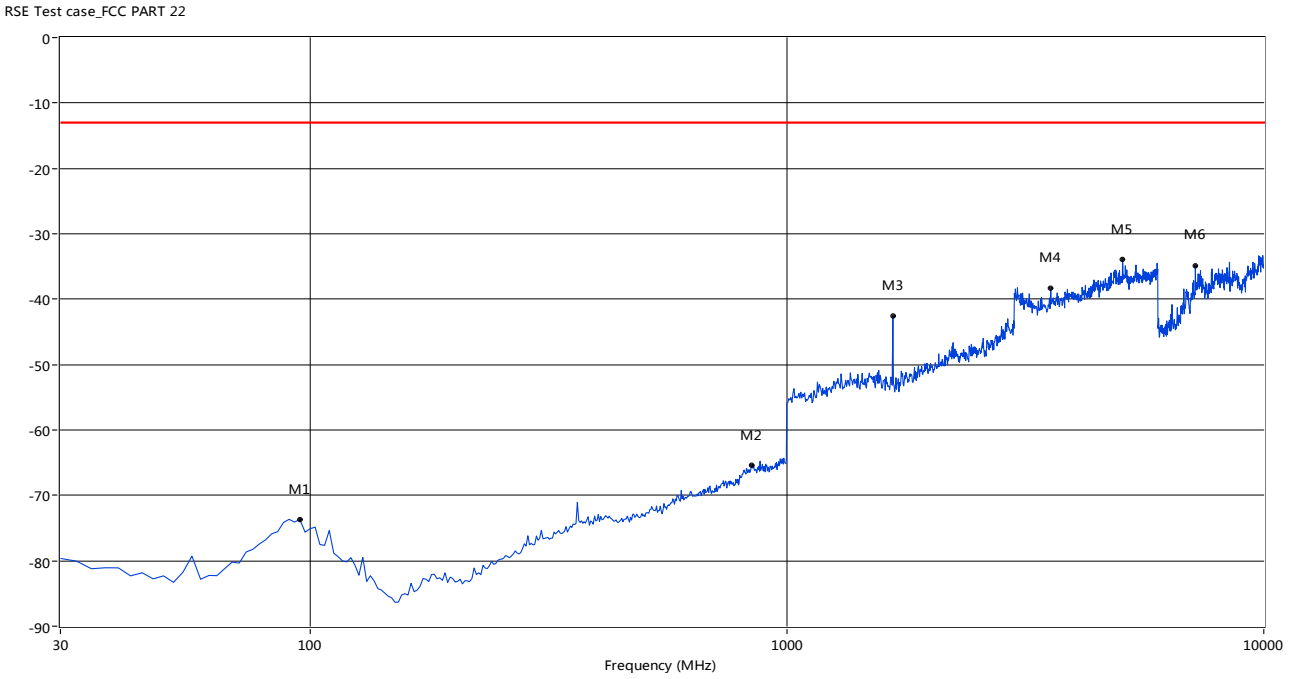
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
143.69	-68.79	-13.84	-13.0	55.79	8.00	Vertical	Pass
818.58	-58.99	5.15	-13.0	45.99	243.40	Vertical	Pass
1418.95	-50.49	9.26	-13.0	37.49	268.80	Vertical	Pass
3254.36	-39.11	21.75	-13.0	26.11	71.30	Vertical	Pass
5640.90	-34.32	27.85	-13.0	21.32	-0.00	Vertical	Pass
7785.54	-35.15	34.92	-13.0	22.15	169.20	Vertical	Pass

EVDO Rev.A LCH, ANT H



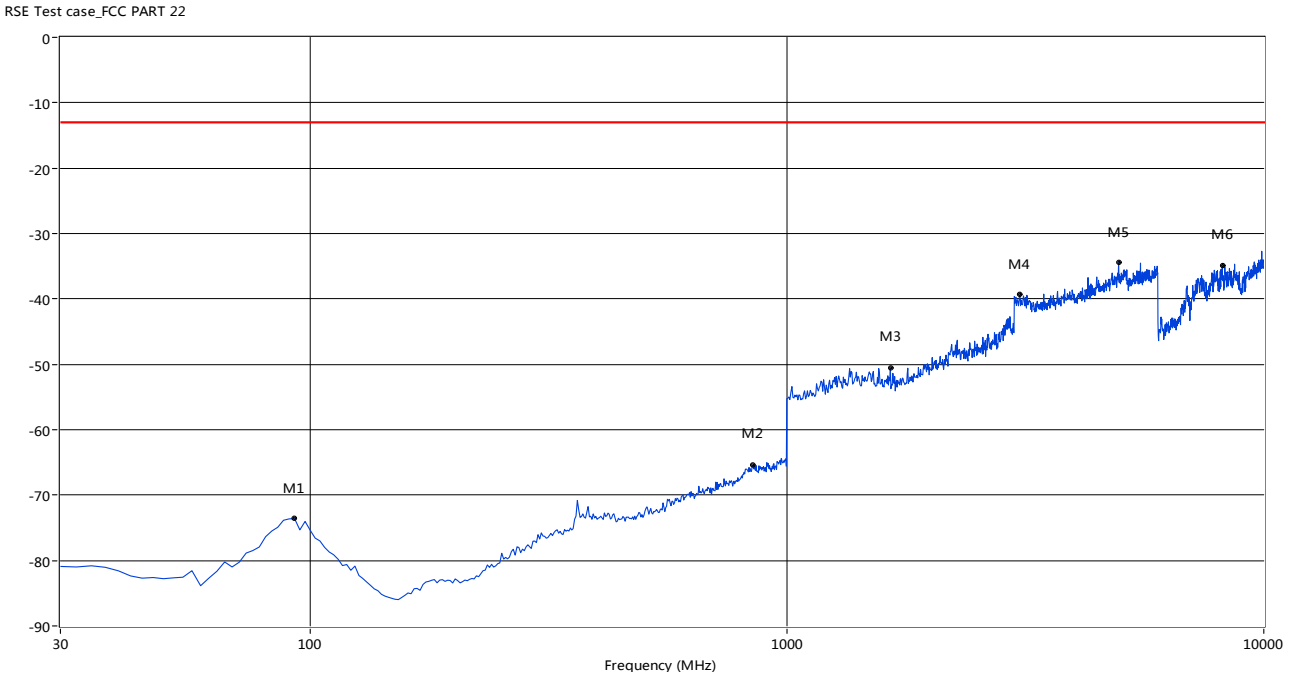
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-72.90	-2.10	-13.0	59.90	75.00	Horizontal	Pass
818.58	-52.76	5.15	-13.0	39.76	1.00	Horizontal	Pass
1458.85	-49.99	9.20	-13.0	36.99	43.80	Horizontal	Pass
3014.96	-38.08	21.89	-13.0	25.08	360.60	Horizontal	Pass
5102.24	-34.41	28.38	-13.0	21.41	358.10	Horizontal	Pass
8463.84	-34.62	35.97	-13.0	21.62	310.90	Horizontal	Pass

EVDO Rev.A MCH, ANT V



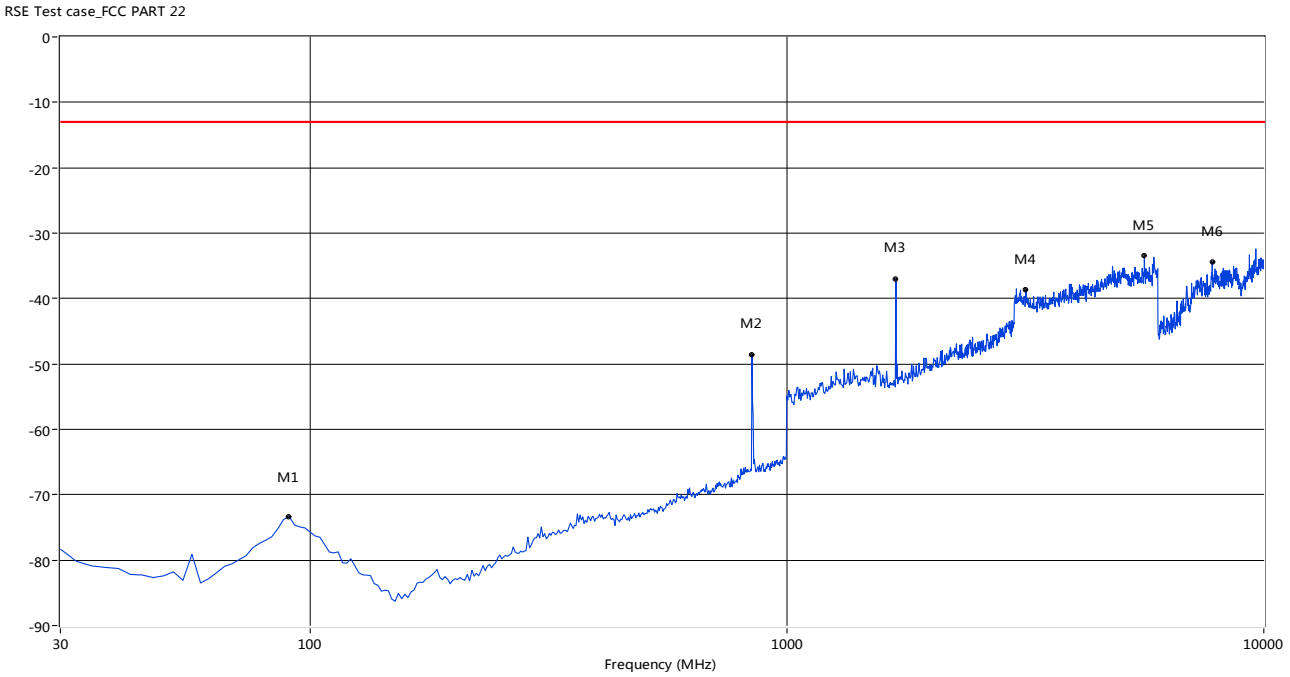
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
95.31	-73.66	-3.33	-13.0	60.66	359.10	Vertical	Pass
842.77	-65.37	5.54	-13.0	52.37	302.70	Vertical	Pass
1668.33	-46.22	8.80	-13.0	33.22	11.40	Vertical	Pass
3576.06	-38.39	22.65	-13.0	25.39	348.90	Vertical	Pass
5057.36	-33.95	28.02	-13.0	20.95	79.10	Vertical	Pass
7187.03	-34.81	33.09	-13.0	21.81	82.80	Vertical	Pass

EVDO Rev.A MCH, ANT H



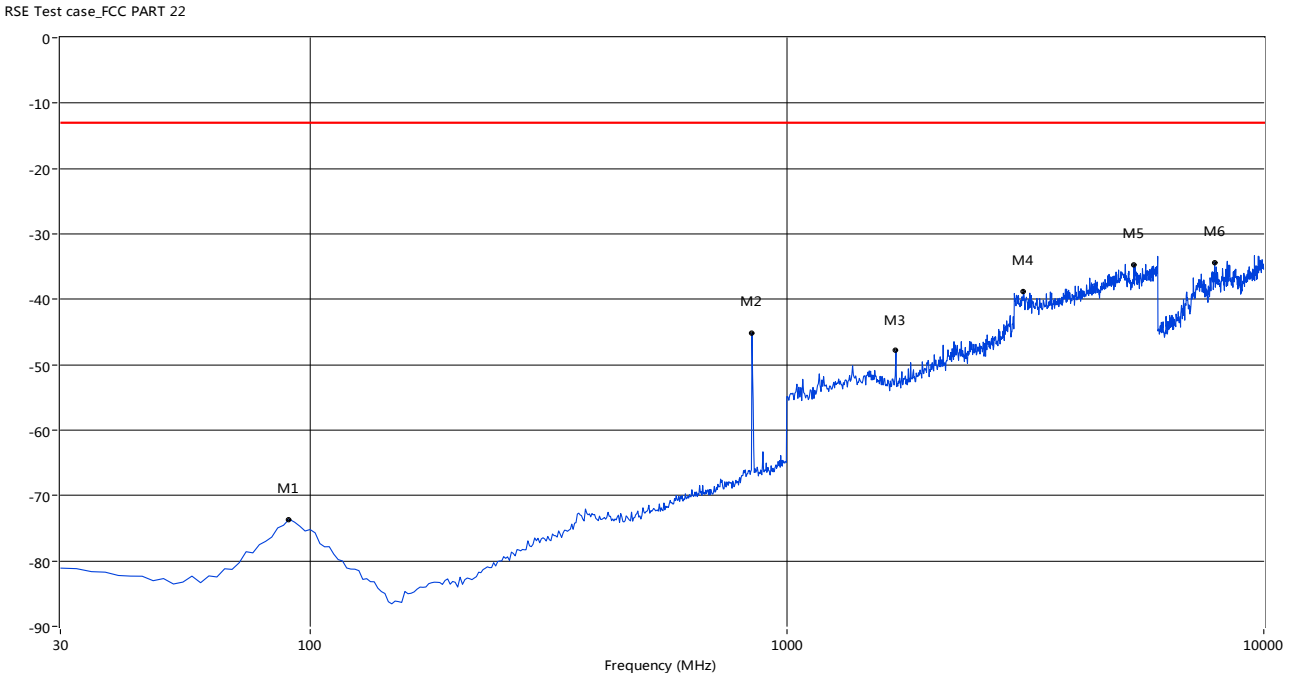
Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
92.89	-73.59	-2.67	-13.0	60.59	66.90	Horizontal	Pass
847.61	-65.43	5.62	-13.0	52.43	153.10	Horizontal	Pass
1648.38	-50.55	8.87	-13.0	37.55	-0.10	Horizontal	Pass
3082.29	-39.34	21.88	-13.0	26.34	359.30	Horizontal	Pass
4960.10	-34.47	27.39	-13.0	21.47	171.30	Horizontal	Pass
8184.54	-34.86	35.53	-13.0	21.86	7.80	Horizontal	Pass

EVDO Rev.A HCH, ANT V



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-73.31	-2.10	-13.0	60.31	244.90	Vertical	Pass
845.19	-48.53	5.58	-13.0	35.53	233.10	Vertical	Pass
1693.27	-36.99	8.77	-13.0	23.99	253.90	Vertical	Pass
3172.07	-38.60	21.94	-13.0	25.60	316.00	Vertical	Pass
5618.45	-33.50	27.80	-13.0	20.50	219.60	Vertical	Pass
7795.51	-34.45	35.21	-13.0	21.45	195.60	Vertical	Pass

EVDO Rev.A HCH, ANT H



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Margin (dB)	Table (o)	ANT	Verdict
90.47	-73.62	-2.10	-13.0	60.62	326.70	Horizontal	Pass
845.19	-45.16	5.58	-13.0	32.16	357.20	Horizontal	Pass
1693.27	-47.85	8.77	-13.0	34.85	297.20	Horizontal	Pass
3134.66	-38.81	21.88	-13.0	25.81	51.60	Horizontal	Pass
5341.65	-34.70	27.70	-13.0	21.70	170.80	Horizontal	Pass
7885.29	-34.35	35.38	-13.0	21.35	253.90	Horizontal	Pass

ANNEX B TEST SETUP PHOTO

Please refer the document “BL-SZ1590048-AR.pdf”.

ANNEX C EUT EXTERNAL PHOTO

Please refer the document “BL-SZ1590048-AW.pdf”.

ANNEX D EUT INTERNAL PHOTO

Please refer the document “BL-SZ1590048-AI.pdf”.

--END OF REPORT--