FCC RF Test Report

APPLICANT	:	Brightstar Corporation
EQUIPMENT	:	CDMA mobile phone
BRAND NAME	:	Avvio
MODEL NAME	:	Avvio C622
FCC ID	:	WVBAC622X
STANDARD	:	FCC 47 CFR Part 2, 22(H), 24(E)
CLASSIFICATION	:	PCS Licensed Transmitter Held to Ear (PCE)

The product was received on Dec. 04, 2015 and testing was completed on Dec. 15, 2015. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA / EIA-603-D-2010 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL (SHENZHEN) INC., the test report shall not be reproduced except in full.

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Approved by: Jones Tsai / Manager

Testing Laboratory
2353

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG5D0405	Rev. 01	Initial issue of report	Dec. 29, 2015

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1046	Conducted Output Power	Reporting Only	PASS	-
3.5	§24.232(d)	Peak-to-Average Ratio	< 13 dB	PASS	-
3.6	§2.1049 §22.917(b) §24.238(b)	Occupied Bandwidth	Reporting Only	PASS	-
3.7	§2.1051 §22.917(a) §24.238(a)	Band Edge Measurement	< 43+10log10(P[Watts])	PASS	-
3.8	§2.1051 §22.917(a) §24.238(a)	Conducted Emission	< 43+10log10(P[Watts])	PASS	-
3.9	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm for Part 22H	PASS	-
	§2.1055 §24.235		Within Authorized Band		
4.4	§22.913(a)(2)	Effective Radiated Power	< 7 Watts	PASS	-
	§24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts	PASS	-
4.5	§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	< 43+10log10(P[Watts])	PASS	Under limit 14.42 dB at 3760.000 MHz

1 General Description

1.1 Applicant

Brightstar Corporation
9725 NW 117th Ave., Miami, Florida, FL 33178, United States

1.2 Manufacturer

Lakia Networks Co., Ltd.
2F, Unit A, Technology Service Building, Software Garden 1, Xiamen, Fujian, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	CDMA mobile phone
Brand Name	Avvio
Model Name	Avvio C622
FCC ID	WVBAC622X
EUT supports Radios application	CDMA
MEID Code	Conducted: A100002107E094 Radiation: N/A ERP/EIRP:N/A
HW Version	MC6022 V1.2
SW Version	C622_V0.1.0
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Product Specification subjective to this standard

Product Specification subjective to this standard	
Tx Frequency	**CDMA2000:** BC0: 824.70 MHz ~ 848.31 MHz BC1: 1851.25 MHz ~ 1908.75 MHz
Rx Frequency	**CDMA2000:** BC0: 869.70 MHz ~ 893.31 MHz BC1: 1931.25 MHz ~ 1988.75 MHz
Maximum Output Power to Antenna	**CDMA2000:** BC0: 21.52 dBm BC1: 21.61 dBm
Antenna Type	PIFA Antenna
Type of Modulation	CDMA2000 1xRTT: QPSK

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum ERP/EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Type of Modulation	Maximum ERP/EIRP (W)	Frequency Tolerance (ppm)	Emission Designator
Part 22H	CDMA2000 BC0 1xRTT	QPSK	0.1175	0.0046 ppm	1M27F9W
Part 24E	CDMA2000 BC1 1xRTT	QPSK	0.2805	0.0075 ppm	1M29F9W

1.7 Testing Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	1F & 2F, Building A, Morning Business Center, No. 4003 ShiGu Rd., Xili Town, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755-8637-9589 FAX: +86-755-8637-9595	
Test Site No.	**Sporton Site No.**	
	TH01-SZ	

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P. R. China TEL: +86-755- 3320-2398	
Test Site No.	**Sporton Site No.**	**FCC Registration No.**
	03CH01-SZ	831040

Note: The test site complies with ANSI C63.4 2009 requirement.

1.8 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2, 22(H), 24(E)
- ANSI / TIA / EIA-603-D-2010
- FCC KDB 971168 D01 Power Meas. License Digital Systems v02r02

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to10th harmonic for CDMA BC0.
2. 30 MHz to 10th harmonic for CDMA BC1.

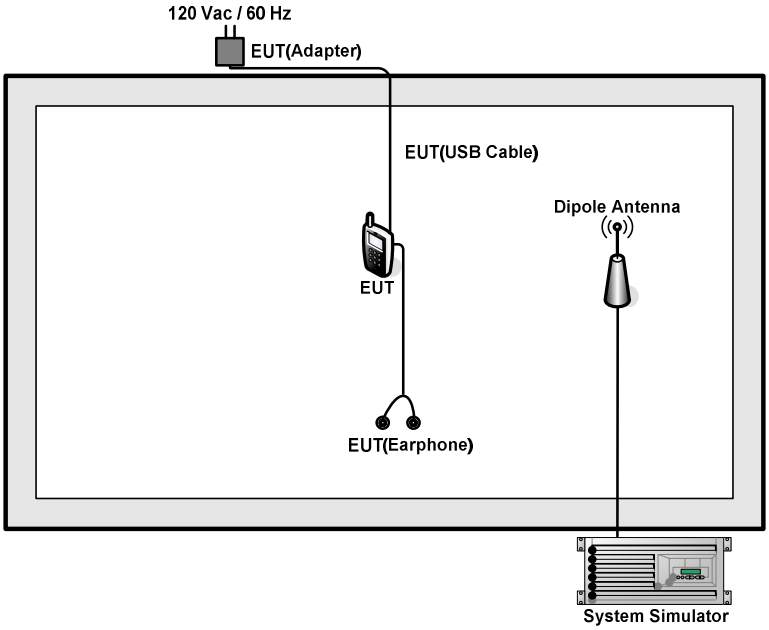
All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

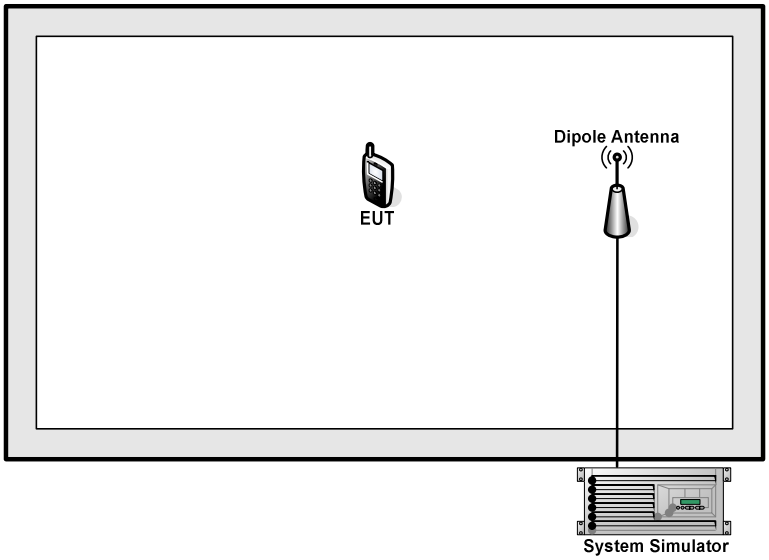
Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
CDMA BC0	■ 1xRTT Link	■ 1xRTT Link
CDMA BC1	■ 1xRTT Link	■ 1xRTT Link

2.2 Connection Diagram of Test System

For 22H



For 24E



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW INSTEK	GPS-3030D	N/A	N/A	Unshielded, 1.8 m

2.4 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.5 dB and a 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.5 + 10 = 14.5 (dB)

3 Conducted Test Result

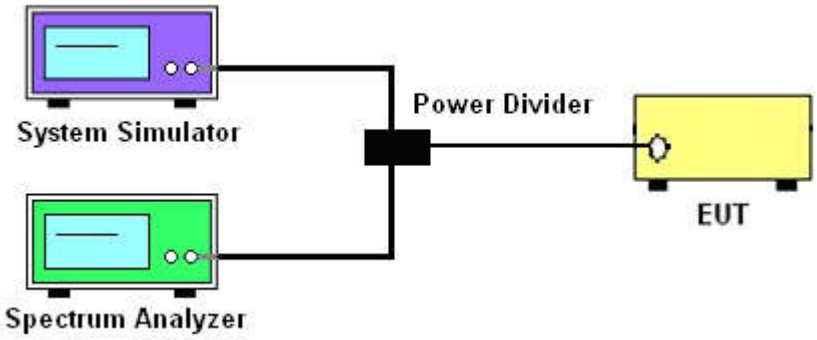
3.1 Measuring Instruments

See list of measuring instruments of this test report.

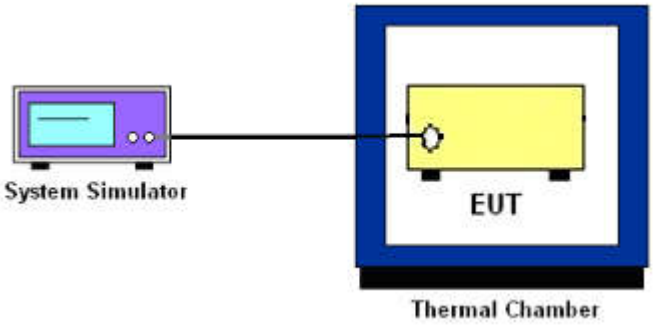
3.2 Test Setup

3.2.1 Conducted Output Power

3.2.2 Peak-to-Average Ratio, Occupied Bandwidth, Conducted Band-Edge and Conducted Spurious Emission



3.2.3 Frequency Stability



3.3 Test Result of Conducted Test

Please refer to Appendix A.

3.4 Conducted Output Power

3.4.1 Description of the Conducted Output Power

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

3.4.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure the maximum burst average power for CDMA.

3.5 Peak-to-Average Ratio

3.5.1 Description of the PAR Measurement

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. Set EUT to transmit at maximum output power.
4. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.

Record the maximum PAPR level associated with a probability of 0.1%.

3.6 99% Occupied Bandwidth and 26dB Bandwidth Measurement

3.6.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

3.6.2 Test Procedures

1. The testing follows FCC KDB 971168 v02r02 Section 4.2.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
4. The nominal resolution bandwidth (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.
5. Set the detection mode to peak, and the trace mode to max hold.
6. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
7. Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
8. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
9. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

3.7 Conducted Band Edge

3.7.1 Description of Conducted Band Edge Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

3.7.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The band edges of low and high channels for the highest RF powers were measured.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
   = P(W) - [43 + 10log(P)] (dB)
   = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
   = -13dBm.

3.8 Conducted Spurious Emission

3.8.1 Description of Conducted Spurious Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10^{th} harmonic.

3.8.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 6.0.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

= -13dBm.

3.9 Frequency Stability

3.9.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

3.9.2 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.9.3 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

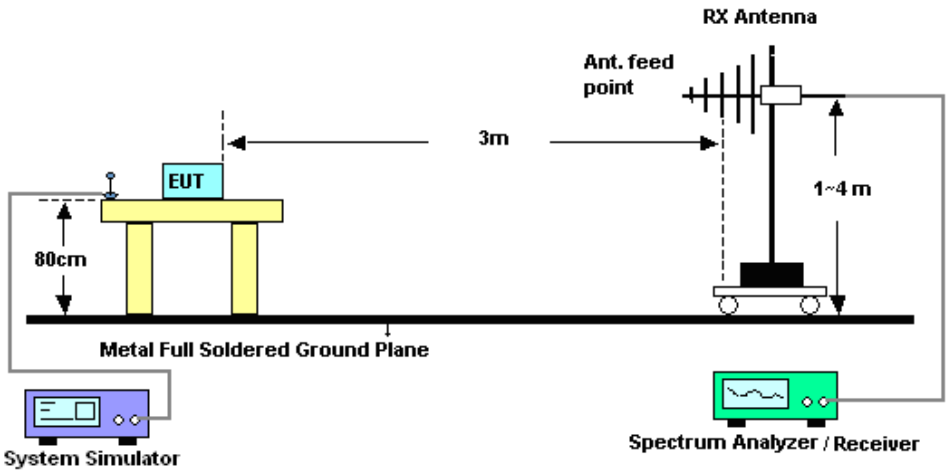
4 Radiated Test Items

4.1 Measuring Instruments

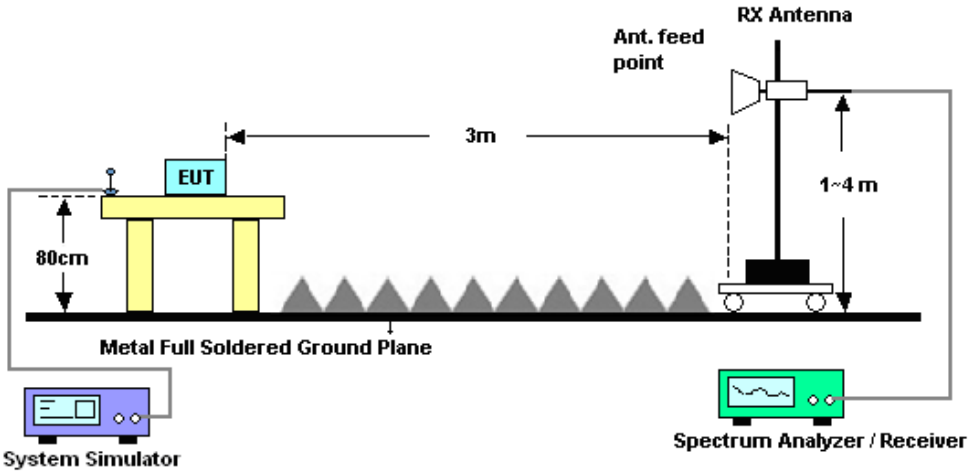
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Effective Radiated Power and Effective Isotropic Radiated Power Measurement

4.4.1 Description of the ERP/EIRP Measurement

The substitution method, in ANSI / TIA / EIA-603-D-2010, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 7 Watts and the EIRP of mobile transmitters are limited to 2 Watts.

4.4.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/EDGE) and ANSI / TIA-603-D-2010 Section 2.2.17.
2. The EUT was placed on a non-conductive rotating platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.
4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, EIRP = LVL + Correction factor and ERP = EIRP - 2.15. Take the record of the output power at substitution antenna.

	CDMA2000/EV-DO
SPAN	3MHz
RBW	30kHz
VBW	100kHz
Detector	RMS
Trace	Average
Average Type	Power
Sweep Count	100

4.5 Field Strength of Spurious Radiation Measurement

4.5.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.5.2 Test Procedures

1. The testing follows FCC KDB 971168 D01 v02r02 Section 5.8 and ANSI / TIA-603-D-2010 Section 2.2.12.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
12. ERP (dBm) = EIRP - 2.15
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
14. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

    = P(W) - [43 + 10log(P)] (dB)

    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

    = -13dBm.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Jan. 28, 2015	Dec. 04, 2015~ Dec. 05, 2015	Jan. 27, 2016	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Aug. 07, 2015	Dec. 04, 2015~ Dec. 05, 2015	Aug. 06, 2016	Conducted (TH01-SZ)
Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz;Max 30dBm	Jun. 07, 2015	Dec. 15, 2015	Jun. 06, 2016	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	23188	30MHz-2GHz	Oct. 17, 2015	Dec. 15, 2015	Oct. 16, 2016	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1285	1GHz~18GHz	Jan. 20, 2015	Dec. 15, 2015	Jan. 19, 2016	Radiation (03CH02-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz-40GHz	Aug.19, 2015	Dec. 15, 2015	Aug. 18, 2016	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz ~3000MHz / 30 dB	Jan. 28, 2015	Dec. 15, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 28, 2015	Dec. 15, 2015	Jan. 27, 2016	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 05, 2015	Dec. 15, 2015	May 04, 2016	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	NCR	Dec. 15, 2015	NCR	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec. 15, 2015	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec. 15, 2015	NCR	Radiation (03CH01-SZ)

6 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.8dB**

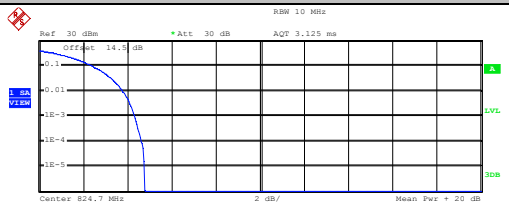
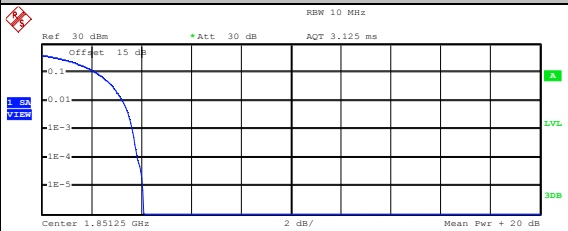
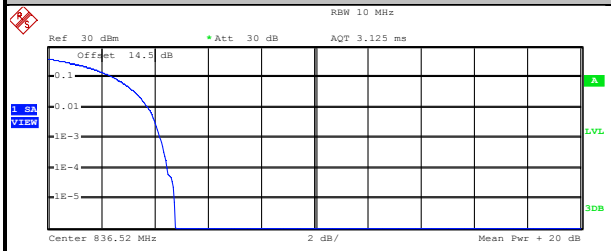
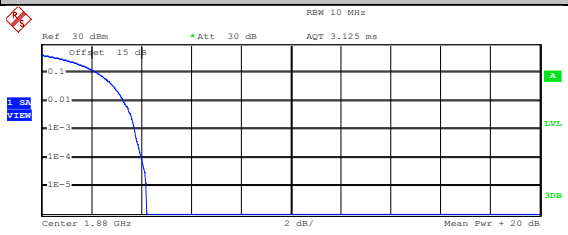
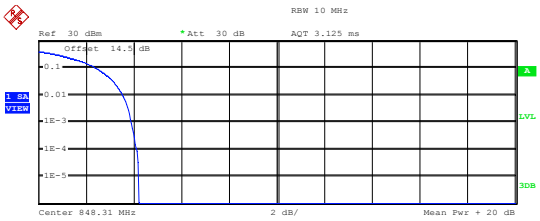
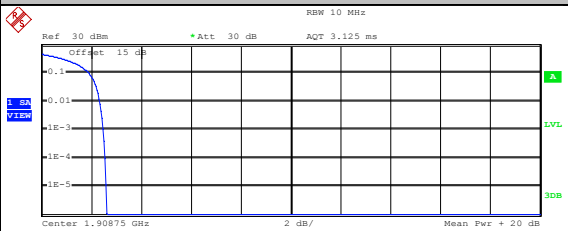
Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Conducted Power (*Unit: dBm)						
Band	**CDMA2000 BC0**			**CDMA2000 BC1**		
Channel	**1013**	**384**	**777**	**25**	**600**	**1175**
Frequency	**824.7**	**836.52**	**848.31**	**1851.25**	**1880**	**1908.75**
1xRTT RC1 SO55	21.24	21.51	21.35	21.59	21.20	21.21
1xRTT RC3 SO55	21.29	**21.52**	21.37	**21.61**	21.27	21.31
1xRTT RC3 SO32(+ F-SCH)	21.19	21.37	21.35	21.48	21.25	21.38
1xRTT RC3 SO32(+SCH)	21.16	21.36	21.33	21.47	21.20	21.35

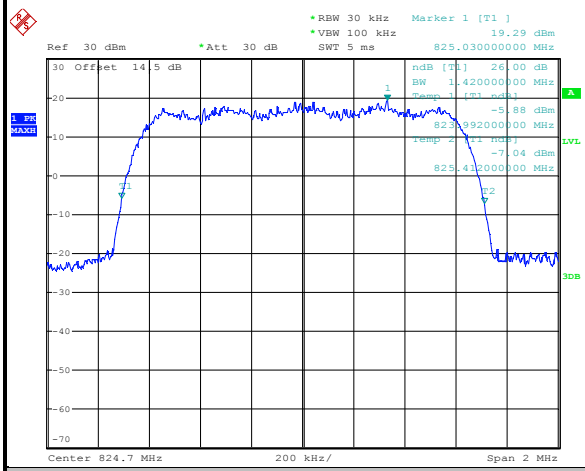
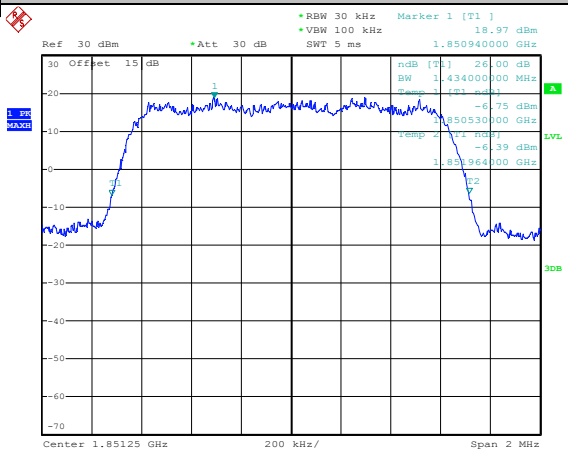
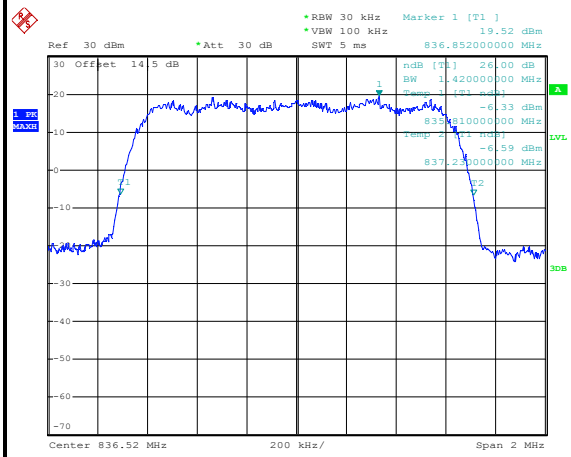
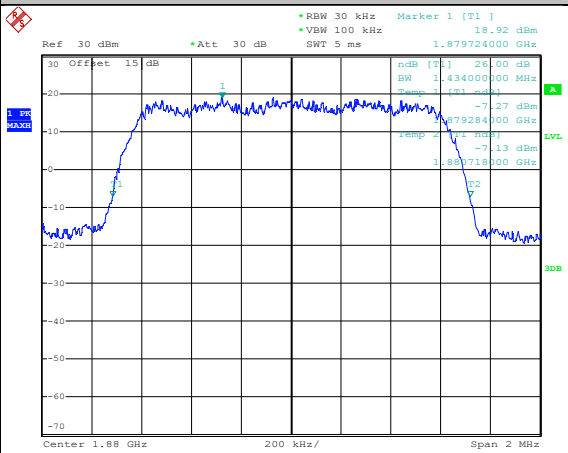
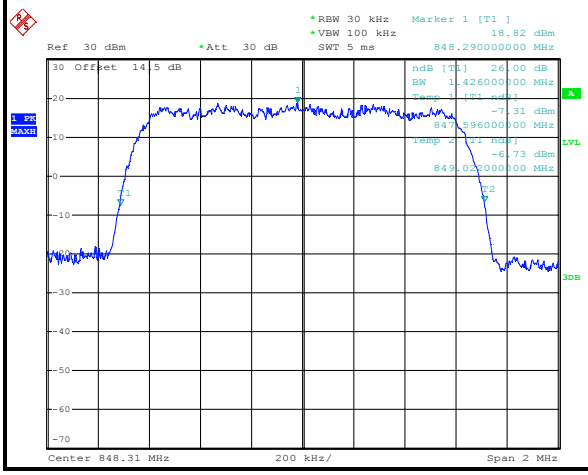
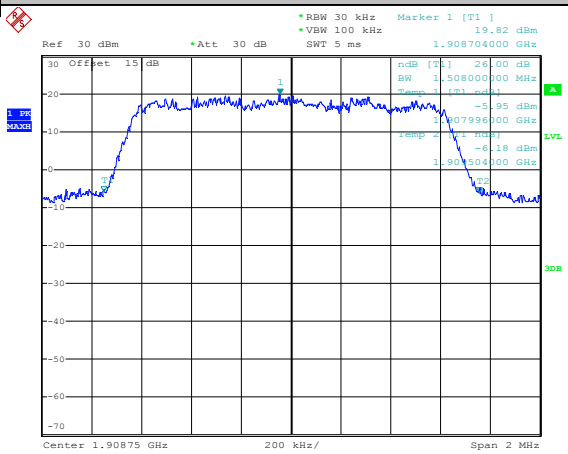
Peak-to-Average Ratio

Mode	CDMA BC0	CDMA BC1	Limit: 13dB
Mod.	1xRTT RC3 SO55	1xRTT RC3 SO55	Result
Lowest CH	4.32	3.64	PASS
Middle CH	4.20	3.76	
Highest CH	3.92	2.48	

CDMA BC0 (1xRTT RC3 SO55)	CDMA BC1 (1xRTT RC3 SO55)
Lowest Channel	**Lowest Channel**
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.09 dBm Peak 27.85 dBm Crest 4.77 dB 10 % 2.44 dB 1 % 3.80 dB .1 % 4.32 dB .01 % 4.64 dB Date: 4.DEC.2015 22:15:58	 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 22.49 dBm Peak 26.58 dBm Crest 4.10 dB 10 % 2.20 dB 1 % 3.28 dB .1 % 3.64 dB .01 % 3.88 dB
Middle Channel	**Middle Channel**
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.58 dBm Peak 28.35 dBm Crest 4.77 dB 10 % 2.48 dB 1 % 3.76 dB .1 % 4.20 dB .01 % 4.48 dB	 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.42 dBm Peak 27.64 dBm Crest 4.22 dB 10 % 2.28 dB 1 % 3.32 dB .1 % 3.76 dB .01 % 4.04 dB
Highest Channel	**Highest Channel**
 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.42 dBm Peak 27.64 dBm Crest 4.22 dB 10 % 2.44 dB 1 % 3.56 dB .1 % 3.92 dB .01 % 4.16 dB	 Complementary Cumulative Distribution Function (100000 samples) Trace 1 Mean 23.49 dBm Peak 26.09 dBm Crest 2.60 dB 10 % 1.92 dB 1 % 2.36 dB .1 % 2.48 dB .01 % 2.56 dB

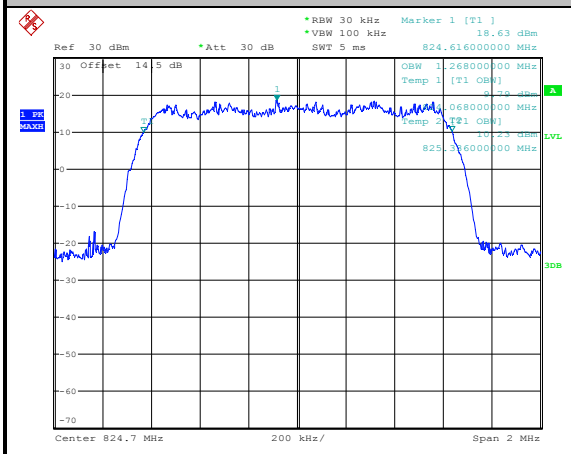
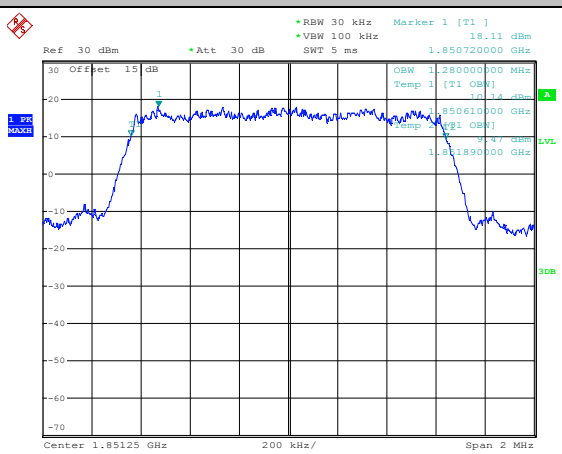
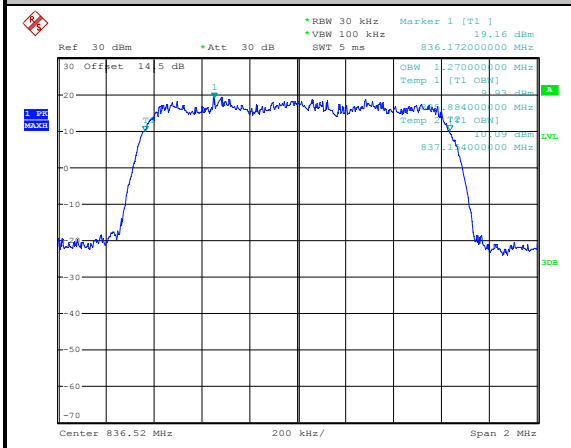
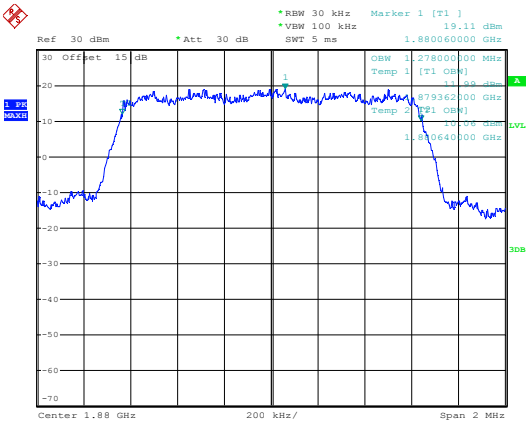
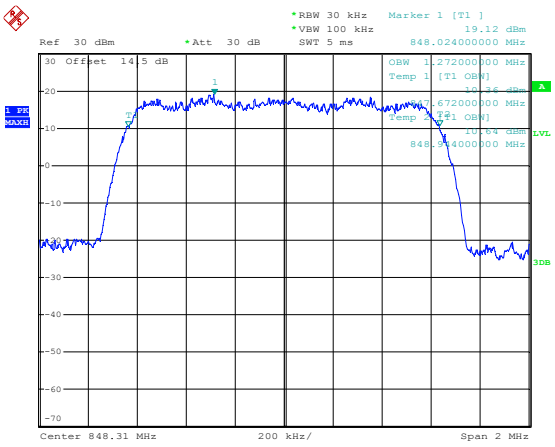
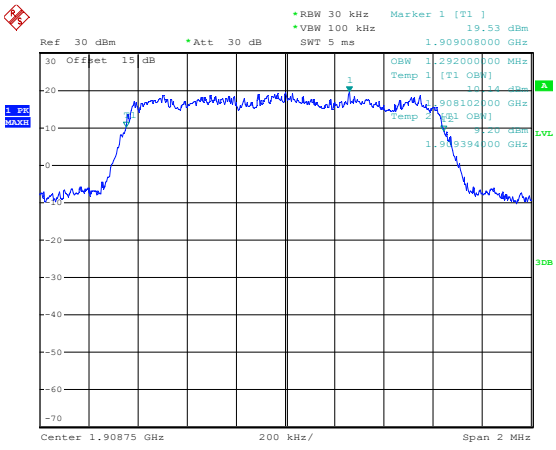
26dB Bandwidth

Mode	CDMA BC0	CDMA BC1
Mod.	1xRTT RC3 SO55	1xRTT RC3 SO55
Lowest CH	1.42	1.43
Middle CH	1.42	1.43
Highest CH	1.43	1.51

CDMA BC0 (1xRTT RC3 SO55)	CDMA BC1 (1xRTT RC3 SO55)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

Occupied Bandwidth

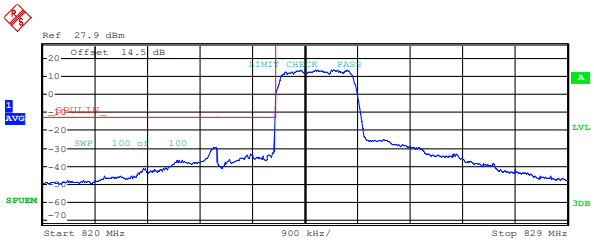
Mode	CDMA BC0	CDMA BC1
Mod.	1xRTT RC3 SO55	1xRTT RC3 SO55
Lowest CH	1.27	1.28
Middle CH	1.27	1.28
Highest CH	1.27	1.29

CDMA BC0 (1xRTT RC3 SO55)	CDMA BC1 (1xRTT RC3 SO55)
Lowest Channel	**Lowest Channel**
	
Middle Channel	**Middle Channel**
	
Highest Channel	**Highest Channel**
	

Conducted Band Edge

CDMA BC0 (1xRTT RC3 SO55)

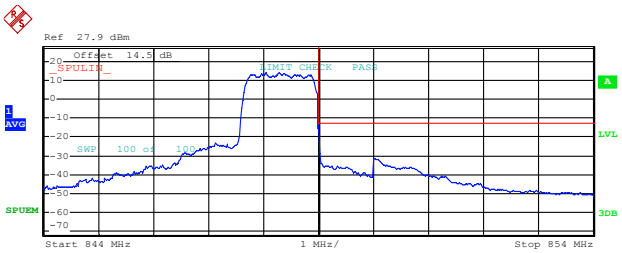
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
820.000 M	823.000 M	100.00 k	822.964000 M	-29.66	-16.66
823.000 M	824.000 M	14.00 k	823.996000 M	-20.73	-7.73
824.000 M	829.000 M	100.00 k	824.425000 M	13.84	-21.16

Date: 4.DEC.2015 22:01:16

Highest Band Edge

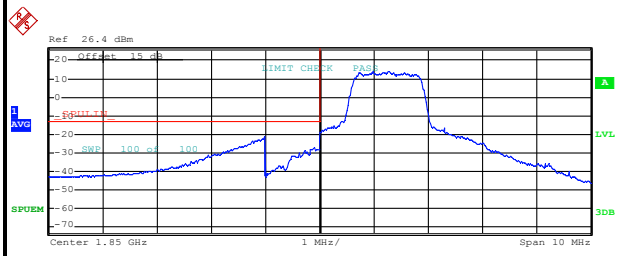


Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
844.000 M	849.000 M	100.00 k	848.035000 M	14.30	-20.70
849.000 M	850.000 M	14.00 k	849.008000 M	-15.99	-2.99
850.000 M	854.000 M	100.00 k	850.024000 M	-31.45	-18.45

Date: 4.DEC.2015 22:04:17

CDMA BC1 (1xRTT RC3 SO55)

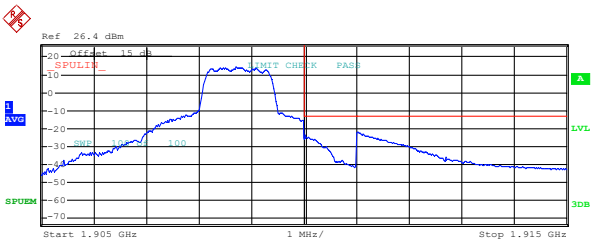
Lowest Band Edge



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.845 G	1.849 G	1.00 M	1.849000 G	-21.03	-8.03
1.849 G	1.850 G	14.00 k	1.849896 G	-27.35	-14.35
1.850 G	1.855 G	100.00 k	1.851280 G	13.84	-21.16

Date: 5.DEC.2015 00:18:50

Highest Band Edge



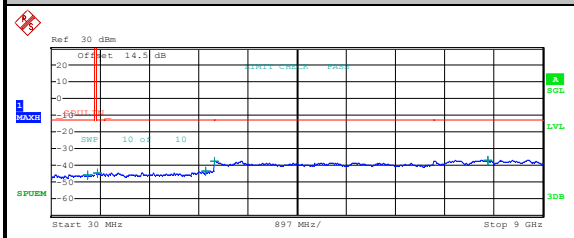
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
1.905 G	1.910 G	100.00 k	1.908705 G	14.55	-20.45
1.910 G	1.911 G	14.00 k	1.910020 G	-23.49	-10.49
1.911 G	1.915 G	1.00 M	1.911008 G	-21.98	-8.98

Date: 4.DEC.2015 21:24:09

Conducted Spurious Emission

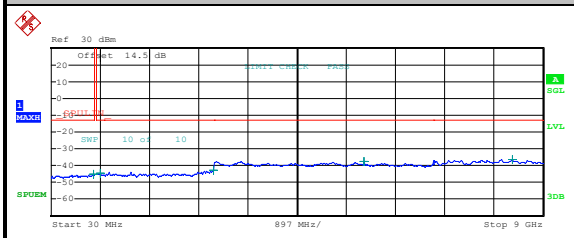
CDMA BC0 (1xRTT RC3 SO55)

Lowest Channel



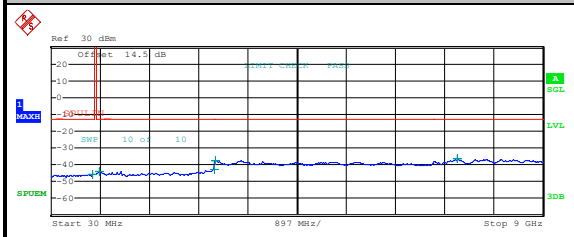
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	695.180000 M	-45.71	-32.71
855.000 M	1.000 G	1.00 M	880.411252 M	-44.73	-31.73
1.000 G	3.000 G	1.00 M	2.844500 G	-43.27	-30.27
3.000 G	7.000 G	1.00 M	3.017000 G	-37.68	-24.68
7.000 G	9.000 G	1.00 M	7.992000 G	-36.80	-23.80

Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	805.780000 M	-45.41	-32.41
855.000 M	1.000 G	1.00 M	934.278755 M	-44.64	-31.64
1.000 G	3.000 G	1.00 M	2.993000 G	-42.89	-29.89
3.000 G	7.000 G	1.00 M	5.742000 G	-37.61	-24.61
7.000 G	9.000 G	1.00 M	8.451000 G	-36.15	-23.15

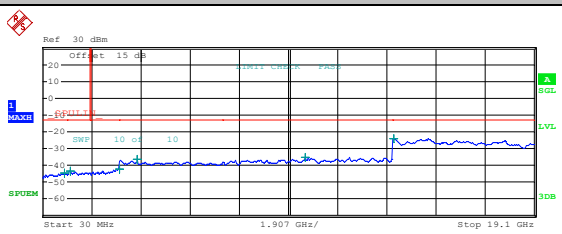
Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	820.000 M	1.00 M	782.080000 M	-45.61	-32.61
855.000 M	1.000 G	1.00 M	913.398754 M	-44.09	-31.09
1.000 G	3.000 G	1.00 M	2.999500 G	-42.74	-29.74
3.000 G	7.000 G	1.00 M	3.029000 G	-37.64	-24.64
7.000 G	9.000 G	1.00 M	7.448000 G	-36.58	-23.58

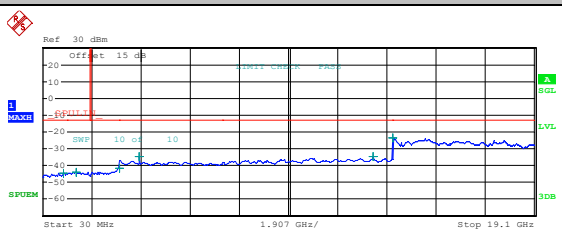
CDMA BC1 (1xRTT RC3 SO55)

Lowest Channel



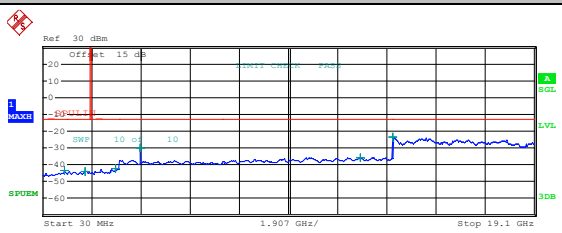
Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	857.652500 M	-44.63	-31.63
1.000 G	1.845 G	1.00 M	1.091894 G	-43.51	-30.51
1.915 G	3.000 G	1.00 M	2.994032 G	-42.40	-29.40
3.000 G	7.000 G	1.00 M	3.702000 G	-36.21	-23.21
7.000 G	13.600 G	1.00 M	10.224925 G	-35.19	-22.19
13.600 G	19.100 G	1.00 M	13.631625 G	-23.96	-10.96

Middle Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	820.065000 M	-44.50	-31.50
1.000 G	1.845 G	1.00 M	1.330395 G	-44.02	-31.02
1.915 G	3.000 G	1.00 M	2.986166 G	-41.92	-28.92
3.000 G	7.000 G	1.00 M	3.760000 G	-34.61	-21.61
7.000 G	13.600 G	1.00 M	12.838525 G	-34.68	-21.68
13.600 G	19.100 G	1.00 M	13.617875 G	-23.54	-10.54

Highest Channel



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
30.000 M	1.000 G	1.00 M	856.440000 M	-43.60	-30.60
1.000 G	1.845 G	1.00 M	1.677901 G	-43.98	-30.98
1.915 G	3.000 G	1.00 M	2.840234 G	-42.47	-29.47
3.000 G	7.000 G	1.00 M	3.817000 G	-29.79	-16.79
7.000 G	13.600 G	1.00 M	12.338575 G	-35.77	-22.77
13.600 G	19.100 G	1.00 M	13.605500 G	-23.67	-10.67

Frequency Stability

Test Conditions	Middle Channel	CDMA BC0 (1xRTT)	Limit 2.5ppm
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0023	PASS
40	Normal Voltage	0.0029	
30	Normal Voltage	0.0012	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0035	
-20	Normal Voltage	0.0029	
-30	Normal Voltage	0.0046	
20	Maximum Voltage	0.0023	
20	Normal Voltage	0.0012	
20	Battery End Point	0.0017	

Note: Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.55 V.；Maximum Voltage =4.2 V

Test Conditions	Middle Channel	CDMA BC1 (1xRTT)	Limit Note 2.
Temperature (°C)	Voltage (Volt)	Deviation (ppm)	Result
50	Normal Voltage	0.0046	PASS
40	Normal Voltage	0.0023	
30	Normal Voltage	0.0017	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0029	
0	Normal Voltage	0.0017	
-10	Normal Voltage	0.0006	
-20	Normal Voltage	0.0052	
-30	Normal Voltage	0.0075	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0012	

Note:

1. Normal Voltage = 3.8V. ；Battery End Point (BEP) = 3.55 V. ；Maximum Voltage =4.2 V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Appendix B. Test Results of Radiated Test

ERP/EIRP

Channel	Mode	Horizontal		Vertical	
		ERP(dBm)	ERP(W)	ERP(dBm)	ERP(W)
Lowest	CDMA BC0 1xRTT	20.70	0.1175	5.89	0.0039
Middle		20.54	0.1132	5.78	0.0038
Highest		19.32	0.0855	4.30	0.0027
Limit	ERP < 7W	Result		PASS	

Channel	Mode	Horizontal		Vertical	
		EIRP(dBm)	EIRP(W)	EIRP(dBm)	EIRP(W)
Lowest	CDMA BC1 1xRTT	23.83	0.2415	23.96	0.2489
Middle		24.33	0.2710	24.48	0.2805
Highest		23.42	0.2198	23.51	0.2244
Limit	EIRP < 2W	Result		PASS	

Radiated Spurious Emission

CDMA BC0(1xRTT RC3 SO55)									
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1673.04	-42.92	-13	-29.92	-46.31	-49.61	0.56	9.40	H
	2509.56	-45.95	-13	-32.95	-51.41	-53.65	0.75	10.60	H
	3346.08	-38.89	-13	-25.89	-50.07	-48.49	0.85	12.60	H
	4182.6	-49.06	-13	-36.06	-59.88	-58.62	0.89	12.60	H
	1673.04	-45.00	-13	-32.00	-49.90	-51.69	0.56	9.40	V
	2509.56	-48.71	-13	-35.71	-54.84	-56.41	0.75	10.60	V
	3346.08	-40.62	-13	-27.62	-50.24	-50.22	0.85	12.60	V
	4182.6	-48.62	-13	-35.62	-58.91	-58.18	0.89	12.60	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

CDMA BC1(1xRTT RC3 SO55)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3760	-35.56	-13	-22.56	-47.85	-47.29	0.87	12.60	H
	5640	-48.91	-13	-35.91	-64.79	-60.94	1.07	13.10	H
	7520	-48.18	-13	-35.18	-66.50	-57.79	1.69	11.30	H
	9400	-42.62	-13	-29.62	-66.05	-52.69	1.83	11.90	H
	11280	-46.30	-13	-33.30	-69.35	-55.91	1.89	11.50	H
	13160	-38.35	-13	-25.35	-62.28	-50.02	1.93	13.60	H
	3760	-27.42	-13	-14.42	-42.29	-39.15	0.87	12.6	V
	5640	-45.94	-13	-32.94	-62.26	-57.97	1.07	13.1	V
	7520	-44.70	-13	-31.70	-62.92	-54.31	1.69	11.3	V
	9400	-41.97	-13	-28.97	-64.78	-52.04	1.83	11.9	V
	11280	-45.91	-13	-32.91	-68.71	-55.52	1.89	11.5	V
	13160	-35.10	-13	-22.10	-58.75	-46.77	1.93	13.6	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.