

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E AND INDUSTRY CANADA RSS-132 and RSS-133

OF

**Product Name:** DUAL-BAND CDMA (1xRTT & EVDO) MODULE

**Brand Name:** SIERRA WIRELESS

**Model Name:** SL5011

**Model Different:** N/A

**Report No.:** EH/2011/10053

**Issue Date:** Feb. 16, 2011

**FCC ID:** N7NSL5011

**IC:** 2417C-SL5011

**FCC Rule Part:** 2, 22H & 24E

**IC Rule Part:** RSS 132 Issue 2 and RSS 133 Issue 5

**Prepared for:** Sierra Wireless Inc.  
13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.

**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No. 134, Wu Kung Rd., Wuku Industrial Zone,  
Taipei County, Taiwan.

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## VERIFICATION OF COMPLIANCE

**Applicant:** Sierra Wireless Inc.  
 13811 Wireless Way Richmond, British Columbia, Canada, V6V 3A4.

**Product Name:** DUAL-BAND CDMA (1xRTT & EVDO) MODULE

**Brand Name:** SIERRA WIRELESS

**Model No.:** SL5011

**Model Difference:** N/A

**FCC ID:** N7NSL5011

**IC:** 2417C-SL5011

**File Number:** EH/2011/10053

**Date of Test:** Jan. 28, 2011 ~ Feb. 15, 2011

**Date of EUT Received:** Jan. 28, 2011

### We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004, Issue 3 of RSS-Gen and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule PART 22 subpart H, PART 24 subpart E and IC standards Issue 2 of RSS-132, Issue 5 of RSS-133.

The test results of this report relate only to the tested sample identified in this report.

**Test By:**

*Jazz Huang*

**Date:**

Feb. 16, 2011

*Jazz Huang / Engineer*

**Prepared By:**

*Gigi yeh*

**Date:**

Feb. 16, 2011

*Gigi Yeh / Clerk*

**Approved By**

*Jim Chang*

**Date:**

Feb. 16, 2011

*Jim Chang / supervisor*

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## Version

Version No.	Date	Description
00	Feb. 16, 2011	Initial creation of document

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## 1. GENERAL PRODUCT INFORMATION

General:

Product Name	DUAL-BAND CDMA (1xRTT & EVDO) MODULE
Brand Name	SIERRA WIRELESS
Model Name	SL5011
Model Difference	N/A
Power Supply	3.6 V

CDMA 2000:

DUT Standards And Power:	Operating Frequency		Rated Power
	CDMA 2000 Cellular / EVDO Cellular	824.7MHz – 848.31MHz	24 dBm
	CDMA 2000 PCS / EVDO PCS	1851.25MHz– 1908.75MHz	24 dBm
Type of Emission	CDMA2000 Cellular: 1M27F9W CDMA2000 PCS: 1M28F9W EVDO Cellular: 1M27F9W EVDO PCS: 1M28F9W		

### Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
CDMA2000 Cellular	3.6Vdc	585
CDMA2000 PCS	3.6Vdc	550
EVDO Cellular	3.6Vdc	545
EVDO PCS	3.6Vdc	535

This test report applies for CDMA 2000 and EVDO.

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### 1.1. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules.

### 1.2. Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of TIA/EIA 603C and FCC 47 CFR 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, issue 2 of RSS-132 and issue 3 of RSS-133.

### 1.3. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-4

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

All equipment is calibrated externally and traceable to SI (International System of Unit).

### 1.4. Special Accessories

Not available for this EUT intended for grant.

### 1.5. Equipment Modifications

Not available for this EUT intended for grant.

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**Measurement Equipment Used:**

<b>ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber</b>					
<b>EQUIPMENT TYPE</b>	<b>MFR</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>LAST CAL.</b>	<b>CAL DUE.</b>
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2011	02/11/2012
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2010	11/18/2011
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/17/2010	07/16/2012
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/17/2010	07/16/2012
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/09/2009	03/08/2011
Signal Generator	R&S	SMR40	100210	02/10/2010	02/09/2012
Signal Generator	Agilent	E4438C	MY45093613	07/08/2010	07/07/2011
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2009	11/27/2010
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2011	01/04/2012
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2010	07/04/2011
Radio Communication Analyzer	R&S	CMU200	111787	10/31/2008	10/30/2010
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2011	01/04/2012
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2011	01/04/2012
Filter 800-1000	Micro-Tronics	BRM13462	1	01/05/2011	01/04/2012
Filter 1800-2000	Micro-Tronics	BRM13463	1	01/05/2011	01/04/2012
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010

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### 1.6. Configuration of Tested System

Fig. 2-1 Configuration of Tested System (Fixed Channel)

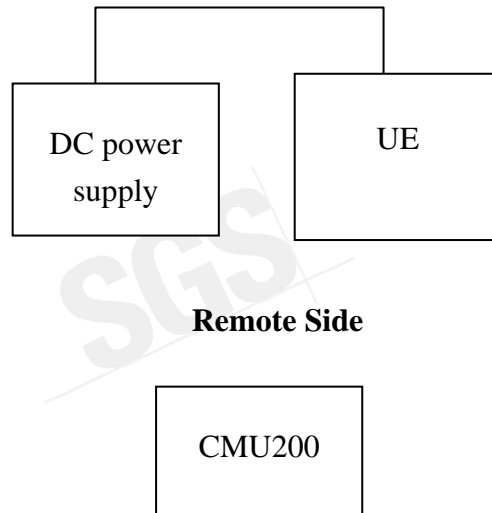


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	DC power supply	Topward	3303A	715856	N/A	N/A

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## 2. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	Compliant

## 3. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.

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## 4. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT (TX)

### 4.1. Standard Applicable:

According to FCC §2.1053,

FCC §22.917(a), §24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

According to RSS-132 §4.5

#### 4.5.1 Out-of-block Emissions

Mobile and base station equipment with emission bandwidth less than or equal to 4 MHz shall comply with 4.5.1.1. Mobile station equipment with emission bandwidth greater than 4 MHz shall comply with 4.5.1.2. Base station equipment with emission bandwidth greater than 4 MHz shall comply with either 4.5.1.2 or 4.5.1.3.

4.5.1.1 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least

$43 + 10 \log (P)$ , dB, in any 100 kHz bandwidth.

4.5.1.2 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least

$43 + 10 \log (P)$ , dB, in any 1 MHz bandwidth

According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$  dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with all of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

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(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyzer resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

#### 6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

#### 4.2. EUT Setup (Block Diagram of Configuration):

Refer to section 6.2 in this report

#### 4.3. Measurement Procedure:

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$ERP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$

$EIRP = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$

#### 4.4. Measurement Equipment Used:

Refer to section 2.4 in this report

#### 4.5. Measurement Result:

Refer to attach tabular data sheets.

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode : TX CH Low Mode

Test Date: Feb. 08, 2011

Fundamental Frequency : 824.70MHz

Test By: Jazz

Temperature : 25

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
31.94	45.14	V	-59.00	-6.43	0.94	-66.37	-13.00	-53.37
78.50	42.05	V	-69.33	-2.25	1.21	-72.79	-13.00	-59.79
90.14	42.60	V	-60.58	-7.75	1.27	-69.60	-13.00	-56.60
107.60	44.06	V	-57.16	-7.77	1.39	-66.32	-13.00	-53.32
202.66	41.64	V	-60.04	-7.84	1.72	-69.61	-13.00	-56.61
429.64	33.80	V	-60.77	-7.68	2.60	-71.05	-13.00	-58.05
1649.40	35.92	V	-68.66	9.29	5.23	-64.60	-13.00	-51.60
2474.10	---	V		10.08	6.53		-13.00	
3298.80	---	V		12.17	7.72		-13.00	
4123.50	---	V		12.61	8.86		-13.00	
4948.20	---	V		12.65	9.74		-13.00	
5772.90	---	V		13.56	10.54		-13.00	
6597.60	---	V		12.04	11.30		-13.00	
7422.30	---	V		11.49	12.10		-13.00	
8247.00	---	V		11.48	12.72		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode : TX CH Low Mode

Test Date: Feb. 08, 2011

Fundamental Frequency : 824.70MHz

Test By: Jazz

Temperature : 25

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
31.94	39.33	H	-65.97	-6.43	0.94	-73.34	-13.00	-60.34
78.50	37.21	H	-75.18	-2.25	1.21	-78.64	-13.00	-65.64
107.60	40.38	H	-61.83	-7.77	1.39	-70.99	-13.00	-57.99
148.34	32.36	H	-65.58	-7.80	1.58	-74.96	-13.00	-61.96
325.85	33.58	H	-63.84	-7.78	2.27	-73.89	-13.00	-60.89
707.06	33.83	H	-55.12	-7.86	3.32	-66.30	-13.00	-53.30
1649.40	35.57	H	-68.83	9.29	5.23	-64.77	-13.00	-51.77
2474.10	---	H		10.08	6.53		-13.00	
3298.80	---	H		12.17	7.72		-13.00	
4123.50	---	H		12.61	8.86		-13.00	
4948.20	---	H		12.65	9.74		-13.00	
5772.90	---	H		13.56	10.54		-13.00	
6597.60	---	H		12.04	11.30		-13.00	
7422.30	---	H		11.49	12.10		-13.00	
8247.00	---	H		11.48	12.72		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode : TX CH Mid Mode  
 Fundamental Frequency : 836.52MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Ver

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
78.50	42.81	V	-68.57	-2.25	1.21	-72.03	-13.00	-59.03
107.60	43.98	V	-57.24	-7.77	1.39	-66.40	-13.00	-53.40
148.34	31.58	V	-65.86	-7.80	1.58	-75.24	-13.00	-62.24
410.24	32.59	V	-62.59	-7.67	2.54	-72.80	-13.00	-59.80
589.55	32.93	V	-57.25	-7.78	3.02	-68.05	-13.00	-55.05
643.04	33.04	V	-55.97	-7.81	3.14	-66.92	-13.00	-53.92
1673.04	35.17	V	-69.39	9.36	5.27	-65.30	-13.00	-52.30
2509.56	---	V		10.09	6.58		-13.00	
3346.08	---	V		12.27	7.79		-13.00	
4182.60	---	V		12.62	8.93		-13.00	
5019.12	---	V		12.67	9.81		-13.00	
5855.64	---	V		13.68	10.62		-13.00	
6692.16	---	V		11.95	11.39		-13.00	
7528.68	---	V		11.45	12.20		-13.00	
8365.20	---	V		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode	: TX CH Mid Mode	Test Date:	Feb. 08, 2011
Fundamental Frequency	: 836.52MHz	Test By:	Jazz
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
30.00	39.95	H	-65.95	-7.34	0.95	-74.24	-13.00	-61.24
107.60	40.47	H	-61.74	-7.77	1.39	-70.90	-13.00	-57.90
163.86	32.99	H	-65.86	-7.81	1.62	-75.29	-13.00	-62.29
413.15	32.93	H	-62.83	-7.67	2.55	-73.05	-13.00	-60.05
478.14	33.28	H	-60.36	-7.71	2.74	-70.81	-13.00	-57.81
697.36	33.93	H	-53.81	-7.86	3.28	-64.95	-13.00	-51.95
1673.04	35.39	H	-68.99	9.36	5.27	-64.89	-13.00	-51.89
2509.56	---	H		10.09	6.58		-13.00	
3346.08	---	H		12.27	7.79		-13.00	
4182.60	---	H		12.62	8.93		-13.00	
5019.12	---	H		12.67	9.81		-13.00	
5855.64	---	H		13.68	10.62		-13.00	
6692.16	---	H		11.95	11.39		-13.00	
7528.68	---	H		11.45	12.20		-13.00	
8365.20	---	H		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode : TX CH High Mode  
 Fundamental Frequency : 848.31MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Ver

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
31.94	45.69	V	-58.45	-6.43	0.94	-65.82	-13.00	-52.82
78.50	42.40	V	-68.98	-2.25	1.21	-72.44	-13.00	-59.44
107.60	44.81	V	-56.41	-7.77	1.39	-65.57	-13.00	-52.57
148.34	31.83	V	-65.61	-7.80	1.58	-74.99	-13.00	-61.99
328.76	32.87	V	-65.02	-7.76	2.28	-75.06	-13.00	-62.06
437.40	32.79	V	-61.54	-7.69	2.62	-71.85	-13.00	-58.85
1696.62	35.69	V	-68.85	9.43	5.31	-64.72	-13.00	-51.72
2544.93	---	V		10.19	6.63		-13.00	
3393.24	---	V		12.38	7.86		-13.00	
4241.55	---	V		12.63	9.00		-13.00	
5089.86	---	V		12.74	9.88		-13.00	
5938.17	---	V		13.81	10.70		-13.00	
6786.48	---	V		11.86	11.48		-13.00	
7634.79	---	V		11.41	12.27		-13.00	
8483.10	---	V		11.69	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 Cellular Mode**

Operation Mode : TX CH High Mode  
 Fundamental Frequency : 848.31MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Hor

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
31.94	39.77	H	-65.53	-6.43	0.94	-72.90	-13.00	-59.90
107.60	40.81	H	-61.40	-7.77	1.39	-70.56	-13.00	-57.56
148.34	32.23	H	-65.71	-7.80	1.58	-75.09	-13.00	-62.09
319.06	31.89	H	-65.59	-7.81	2.24	-75.65	-13.00	-62.65
396.66	32.79	H	-63.69	-7.66	2.50	-73.85	-13.00	-60.85
561.56	33.76	H	-57.72	-7.77	2.98	-68.47	-13.00	-55.47
1696.62	35.09	H	-69.26	9.43	5.31	-65.13	-13.00	-52.13
2544.93	---	H		10.19	6.63		-13.00	
3393.24	---	H		12.38	7.86		-13.00	
4241.55	---	H		12.63	9.00		-13.00	
5089.86	---	H		12.74	9.88		-13.00	
5938.17	---	H		13.81	10.70		-13.00	
6786.48	---	H		11.86	11.48		-13.00	
7634.79	---	H		11.41	12.27		-13.00	
8483.10	---	H		11.69	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH Low Mode

Test Date: Feb. 08, 2011

Fundamental Frequency : 1851.25MHz

Test By: Jazz

Temperature : 25

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBUV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
78.50	49.84	V	-61.54	-2.25	1.21	-65.00	-13.00	-52.00
105.66	48.51	V	-52.89	-7.76	1.39	-62.04	-13.00	-49.04
154.16	32.93	V	-64.73	-7.80	1.60	-74.14	-13.00	-61.14
321.00	32.83	V	-65.16	-7.80	2.25	-75.21	-13.00	-62.21
429.64	32.92	V	-61.65	-7.68	2.60	-71.93	-13.00	-58.93
658.56	32.93	V	-56.08	-7.82	3.18	-67.08	-13.00	-54.08
3702.50	34.28	V	-63.64	12.61	8.31	-59.34	-13.00	-46.34
5553.75	---	V		13.23	10.33		-13.00	
7405.00	---	V		11.50	12.09		-13.00	
9256.25	---	V		11.92	13.50		-13.00	
11107.50	---	V		11.67	15.12		-13.00	
12958.75	---	V		13.62	16.61		-13.00	
14810.00	---	V		12.79	17.96		-13.00	
16661.25	---	V		15.89	19.14		-13.00	
18512.50	---	V		18.75	10.62		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH Low Mode

Test Date: Feb. 08, 2011

Fundamental Frequency : 1851.25MHz

Test By: Jazz

Temperature : 25

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBUV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	43.56	H	-58.65	-7.77	1.39	-67.81	-13.00	-54.81
149.31	32.46	H	-65.38	-7.80	1.59	-74.77	-13.00	-61.77
348.16	32.48	H	-64.74	-7.65	2.35	-74.74	-13.00	-61.74
476.20	32.18	H	-61.48	-7.71	2.73	-71.92	-13.00	-58.92
655.65	33.30	H	-56.18	-7.82	3.17	-67.17	-13.00	-54.17
844.80	32.86	H	-53.35	-7.88	3.67	-64.89	-13.00	-51.89
3702.50	34.61	H	-63.42	12.61	8.31	-59.13	-13.00	-46.13
5553.75	---	H		13.23	10.33		-13.00	
7405.00	---	H		11.50	12.09		-13.00	
9256.25	---	H		11.92	13.50		-13.00	
11107.50	---	H		11.67	15.12		-13.00	
12958.75	---	H		13.62	16.61		-13.00	
14810.00	---	H		12.79	17.96		-13.00	
16661.25	---	H		15.89	19.14		-13.00	
18512.50	---	H		18.75	10.62		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH Mid Mode

Test Date: Feb. 08, 2011

Fundamental Frequency : 1880MHz

Test By: Jazz

Temperature : 25

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
78.50	48.90	V	-62.48	-2.25	1.21	-65.94	-13.00	-52.94
105.66	48.35	V	-53.05	-7.76	1.39	-62.20	-13.00	-49.20
154.16	33.28	V	-64.38	-7.80	1.60	-73.79	-13.00	-60.79
413.15	32.08	V	-63.01	-7.67	2.55	-73.23	-13.00	-60.23
658.56	33.32	V	-55.69	-7.82	3.18	-66.69	-13.00	-53.69
901.06	32.81	V	-51.94	-7.95	3.79	-63.68	-13.00	-50.68
3760.00	33.76	V	-63.90	12.60	8.39	-59.68	-13.00	-46.68
5640.00	---	V		13.36	10.41		-13.00	
7520.00	---	V		11.45	12.19		-13.00	
9400.00	---	V		11.93	13.61		-13.00	
11280.00	---	V		11.92	15.27		-13.00	
13160.00	---	V		13.33	16.71		-13.00	
15040.00	---	V		13.76	18.15		-13.00	
16920.00	---	V		15.27	19.32		-13.00	
18800.00	---	V		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH Mid Mode  
 Fundamental Frequency : 1880MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Hor

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
105.66	44.35	H	-58.06	-7.76	1.39	-67.21	-13.00	-54.21
148.34	32.90	H	-65.04	-7.80	1.58	-74.42	-13.00	-61.42
238.55	33.60	H	-66.18	-7.88	1.93	-75.98	-13.00	-62.98
425.76	33.23	H	-61.89	-7.68	2.59	-72.16	-13.00	-59.16
655.65	33.05	H	-56.43	-7.82	3.17	-67.42	-13.00	-54.42
846.74	32.20	H	-54.00	-7.88	3.67	-65.55	-13.00	-52.55
3760.00	34.22	H	-63.55	12.60	8.39	-59.34	-13.00	-46.34
5640.00	---	H		13.36	10.41		-13.00	
7520.00	---	H		11.45	12.19		-13.00	
9400.00	---	H		11.93	13.61		-13.00	
11280.00	---	H		11.92	15.27		-13.00	
13160.00	---	H		13.33	16.71		-13.00	
15040.00	---	H		13.76	18.15		-13.00	
16920.00	---	H		15.27	19.32		-13.00	
18800.00	---	H		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH High Mode  
 Fundamental Frequency : 1908.75MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Ver

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
78.50	48.61	V	-62.77	-2.25	1.21	-66.23	-13.00	-53.23
105.66	48.93	V	-52.47	-7.76	1.39	-61.62	-13.00	-48.62
148.34	32.80	V	-64.64	-7.80	1.58	-74.02	-13.00	-61.02
374.35	32.60	V	-63.99	-7.65	2.43	-74.08	-13.00	-61.08
610.06	33.93	V	-55.51	-7.79	3.06	-66.36	-13.00	-53.36
796.30	32.32	V	-54.36	-7.87	3.56	-65.80	-13.00	-52.80
3817.50	34.36	V	-63.04	12.60	8.47	-58.91	-13.00	-45.91
5726.25	---	V		13.49	10.50		-13.00	
7635.00	---	V		11.41	12.27		-13.00	
9543.75	---	V		11.95	13.73		-13.00	
11452.50	---	V		12.16	15.43		-13.00	
13361.25	---	V		12.99	16.82		-13.00	
15270.00	---	V		14.95	18.28		-13.00	
17178.75	---	V		14.50	19.51		-13.00	
19087.50	---	V		18.65	20.77		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: CDMA 2000 PCS Mode**

Operation Mode : TX CH High Mode  
 Fundamental Frequency : 1908.75MHz  
 Temperature : 25  
 Humidity : 65%

Test Date: Feb. 08, 2011  
 Test By: Jazz  
 Pol: Hor

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
78.50	43.47	H	-68.92	-2.25	1.21	-72.38	-13.00	-59.38
90.14	44.24	H	-59.49	-7.75	1.27	-68.51	-13.00	-55.51
105.66	43.84	H	-58.57	-7.76	1.39	-67.72	-13.00	-54.72
163.86	32.78	H	-66.07	-7.81	1.62	-75.50	-13.00	-62.50
422.85	32.58	H	-62.69	-7.68	2.58	-72.95	-13.00	-59.95
660.50	32.73	H	-56.55	-7.82	3.19	-67.56	-13.00	-54.56
3817.50	34.51	H	-63.00	12.60	8.47	-58.87	-13.00	-45.87
5726.25	---	H		13.49	10.50		-13.00	
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17178.75	---	H		14.50	19.51		-13.00	
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Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

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