



FCC CFR47 PART 22H AND 24E  
&  
INDUSTRY CANADA RSS-132 AND RSS-133  
CERTIFICATION  
TEST REPORT  
FOR

850/900/1800/1900/2100 MHZ MULTI-BAND MODULE

MODEL NUMBER: MC8785V

FCC ID: N7NMC8785

IC: 2417C-MC8785

REPORT NUMBER: 07U11543-1

ISSUE DATE: JANUARY 09, 2008

*Prepared for*

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RICHMOND, BC V6V 3A4, CANADA

*Prepared by*

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NVLAP®

NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
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## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS.....</b>	<b>4</b>
<b>2. TEST METHODOLOGY .....</b>	<b>5</b>
<b>3. FACILITIES AND ACCREDITATION.....</b>	<b>5</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>5</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION.....</i>	5
4.2. <i>MEASUREMENT UNCERTAINTY.....</i>	5
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>6</b>
5.1. <i>DESCRIPTION OF EUT.....</i>	6
5.2. <i>SOFTWARE AND FIRMWARE.....</i>	7
5.3. <i>DESCRIPTION OF TEST SETUP.....</i>	10
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>12</b>
<b>7. LIMITS AND RESULTS .....</b>	<b>13</b>
7.1. <i>FIELD STRENGTH OF SPURIOUS RADIATION.....</i>	13
<b>8. SETUP PHOTOS.....</b>	<b>22</b>

## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SIERRA WIRELESS INC.  
13811 WIRELESS WAY  
RICHMOND, BC V6V 3A4, CANADA

**EUT DESCRIPTION:** 850/900/1800/1900/2100 MHz MULTI-BAND MODULE

**MODEL:** MC8785V

**SERIAL NUMBER:** S5628970083E2-0L

**DATE TESTED:** JANUARY 2-3, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H and 24E AND IC RSS-132 ISSUE 2 and RSS-133 ISSUE 3	No Non-Compliance Noted (Radiated Portion)

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

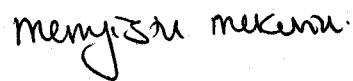
Approved & Released For CCS By:



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THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

Tested By:



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MENGISTU MEKURIA  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), FCC CFR 47 Part 2, and FCC CFR 47 Part 22H, 24E, RSS-GEN, RSS132, & RSS133.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is an 850/900/1800/1900/2100 MHz multi-band module and manufactured by Sierra Wireless, Inc.

The module supports GSM, GPRS, EGPRS and UMTS. Device capabilities are documented in the theory of operation

Only the 850/1900 MHz frequency bands were investigated under this project, and the test result documented in this report only applies to EUT operating in the 850/1900 MHz frequency bands. This device contains 900 MHz /1800 MHz/2100 MHz functions but these frequency bands are not operational in the U.S. territories.

## 5.2. SOFTWARE AND FIRMWARE

### PROCEDURE USED TO ESTABLISH TEST SIGNAL

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

#### GPRS Mode

- Call Setup > Shift & Preset
- Active Cell > Active Cell (GPRS)
- Connection Type > ETSI Type A
- BCH Parameters > Cell Band > PCS or GSM850 (US band)
- TCH Parameters > Traffic Band > PCS or GSM850 (US band)
  - > MS TX Level > 3 (33dBm for Cell band); 3 (30dBm for PCS band)
- PDTCH > Multislot Config > 1 Down, 4 Up
  - > MS TX Level > 3 (33dBm Cell band); 3 (30dBm PCS band)
  - > Coding Scheme > CS-4
- Press "Start Data Connection"

#### EGPRS Mode

- Call Setup > Shift & Preset
- Active Cell > Active Cell (EGPRS)
- Connection Type > ETSI Type A
- BCH Parameters > Cell Band > PCS or GSM850 (US band)
- TCH Parameters > Traffic Band > PCS or GSM850 (US band)
  - > MS TX Level > 6 (27dBm Cell band); 5 (26dBm PCS band)
- PDTCH > Multislot Config > 1 Down, 4 Up
  - > MS TX Level > 6 (27dBm Cell band); 5 (26dBm PCS band)
  - > Modulation Coding Scheme > Downlink > As Uplink
    - > Uplink > MSC-5 (8PSK)
- Press "Start Data Connection" and you will see "Transferring"

UMTS

- Call Setup > Shift & Preset
- Cell Parameters: PS Domain Information > Present
  - ATT (IMSI Attach) Flag State > Set
- Security Parameter - System Operations > None
- Channel Type:
  - RMC: 12.2k, 64k, 144k, or 384k
  - AMC: 12.2 UL / 64/ DL AM RMC, 12.2 UL / 144/ DL AM RMC, or 12.2 UL / 384/ DL AM RMC,
- Paging Service: RB Test Mode
- Channel (UARFCN)Parms:

PCS band	Cell band
▪ DL Channel: 9662 / 9800 / 9938 / 4357 / 4407 / 4458	
▪ UL Channel: 9262 / 9400 / 9538 / 4132 / 4182 / 4233	
- DL DTCH Data: All Ones
- RLC Reestablish: Off
- Call Limit State: Off
- Call Drop Timer: Off
- SRB Config.: 13.6k DCCH
- UE Target Power: 25 dBm
- UL CL Power Ctrl Parameters
  - UL CL Power Ctrl Mode: All Up Bits

HSDPA

- Uplink Parameter:
  - UPLINK DPCH Bc / Bd Control: Manual
  - Manual Uplink DPCH Bc: 9
  - Manual Uplink DPCH Bd: 15
- Channel Type: 12.2k+HSDPA
- HSDPA Parameters:
  - HSDPA RB Test Mode Setup
    - HS-DSCH Configuration Type: FRC
    - FRC Type: **H-Set 3**
    - CN Domain: CS Domain
    - Uplink 64k DTCH for HSDPA Loopback State: On
    - HS-DSCH Data Pattern: All Ones
    - RLC Header on HS-DSCH: Present
  - HSDPA Uplink Parameters
    - DeltaACK: 5
    - DeltaNACK: 5
    - DeltaCQI: 2

### 5.3. DESCRIPTION OF TEST SETUP

#### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	ELPAC	FW1805	37727	NA
Communications Test Set	Agilent	E5515C	10092	DoC
Test Fixture	Sierra Wireless	Mini Card Dev Board	1201102 Rev 2.X	NA

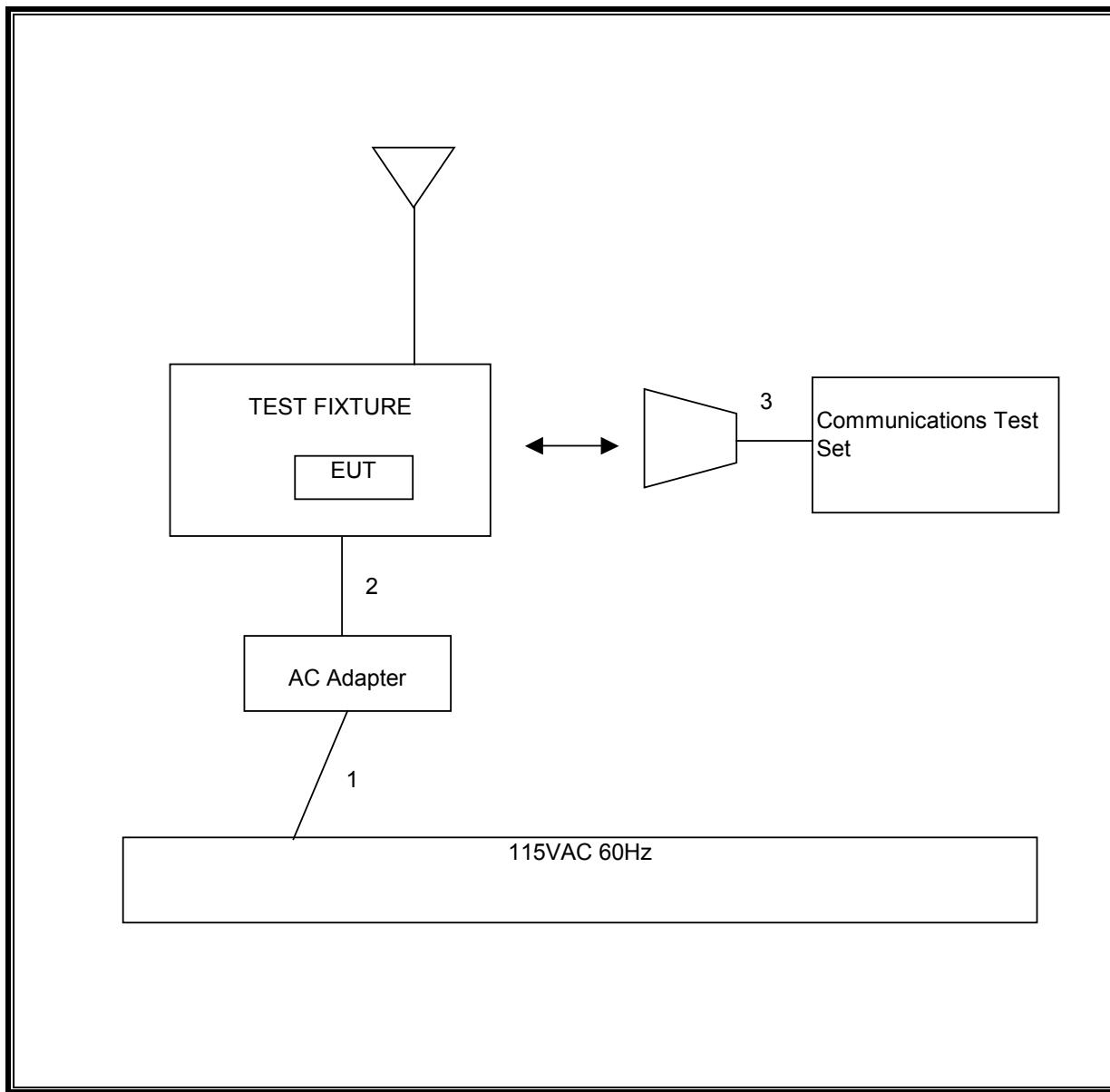
#### I/O CABLES

Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1/1/1900	US 115V	Un-shielded	2m	NA
2	DC	1/1/1900	DC	Un-shielded	2m	NA
3	RF In/Out	1/1/1900	SMA	Shielded	2m	NA

#### TEST SETUP

The EUT module is installed in a test fixture during the tests. The Wireless Communication test set exercised the EUT.

**SETUP DIAGRAM FOR TESTS**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	Asset	Cal Date	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	5/2/2007	8/7/2008
Antenna, Horn, 18 GHz	EMCO	3115	C00945	4/15/2007	4/15/2008
Antenna, Horn 1 ~ 18 GHz	ETS	3117	35234	4/15/2007	4/15/2008
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	9/27/2007	9/27/2008
Communication Test Set	Agilent	E5515C	6B46160222	6/29/2007	6/29/2008
2.7GHz HPF	MicroTronic	HPM13194	N02689`	CNR	CNR
1.5GHz HPF	MicroTronic	HPM13195	N02687	CNR	CNR

## 7. LIMITS AND RESULTS

### 7.1. FIELD STRENGTH OF SPURIOUS RADIATION

#### LIMIT

§§22.917 (e) and §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (a) (i) & (b): Out of band emissions. 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.

#### TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.12, FCC 22.917 (h), FCC 24.238 (b), RSS-132, & RSS-133

#### RESULTS

**CELL, GPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber										
Company:	Sierra Wireless									
Project #:	07U11543									
Date:	1/3/2008									
Test Engineer:	Mengistu Mekuria									
Configuration:	EUT and Supporting Devices									
Mode:	CELL TX, GPRS									
<u>Test Equipment:</u>										
<input type="checkbox"/> EMC O Horn 1-18GHz T59; S/N: 3245 @3m			<input type="checkbox"/> Horn > 18GHz			<input type="checkbox"/> Limit FCC 22		<input checked="" type="checkbox"/> High Pass Filter		
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input type="checkbox"/> (12 ft)			<input type="checkbox"/> Pre-amplifier 1-26GHz T144 Miteq 3008A00			<input type="checkbox"/> Pre-amplifier 26-40GHz				
<b>f</b> GHz	<b>SA reading</b> (dBuV/m)	<b>Ant. Pol.</b> (H/V)	<b>SG reading</b> (dBm)	<b>CL</b> (dB)	<b>Gain</b> (dBi)	<b>Gain</b> (dBd)	<b>ERP</b> (dBm)	<b>Limit</b> (dBm)	<b>Margin</b> (dB)	<b>Notes</b>
Low CH.										
1.648	63.8	V	-52.1	0.0	7.7	5.5	-46.6	-13.0	-33.6	
2.473	64.4	V	-49.8	0.0	9.4	7.2	-42.6	-13.0	-29.6	
3.297	58.4	V	-53.7	0.0	9.7	7.5	-46.2	-13.0	-33.2	
4.121	45.3	V	-64.7	0.0	9.9	7.8	-56.9	-13.0	-43.9	
1.648	68.5	H	-46.8	0.0	7.7	5.5	-41.3	-13.0	-28.3	
2.473	61.7	H	-52.3	0.0	9.4	7.2	-45.1	-13.0	-32.1	
3.297	52.2	H	-59.7	0.0	9.7	7.5	-52.2	-13.0	-39.2	
4.121	41.9	H	-67.7	0.0	9.9	7.8	-59.9	-13.0	-46.9	
Mid CH.		H								
1.674	62.0	V	-53.8	0.0	7.7	5.6	-48.3	-13.0	-35.3	
2.511	62.9	H	-51.0	0.0	9.4	7.2	-43.8	-13.0	-30.8	
3.348	55.9	H	-55.9	0.0	9.7	7.5	-48.4	-13.0	-35.4	
4.185	44.6	H	-65.1	0.0	10.0	7.9	-57.2	-13.0	-44.2	
1.674	68.3	H	-46.8	0.0	7.7	5.6	-41.3	-13.0	-28.3	
2.511	59.7	H	-54.3	0.0	9.4	7.2	-47.0	-13.0	-34.0	
3.348	50.0	H	-61.8	0.0	9.7	7.5	-54.3	-13.0	-41.3	
4.185	41.5	H	-68.1	0.0	10.0	7.9	-60.3	-13.0	-47.3	
Hi CH.										
1.698	62.8	V	-53.0	0.0	7.8	5.6	-47.4	-13.0	-34.4	
2.546	59.0	V	-55.0	0.0	9.4	7.3	-47.8	-13.0	-34.8	
3.395	53.5	V	-58.3	0.0	9.7	7.5	-50.7	-13.0	-37.7	
4.244	41.8	V	-68.2	0.0	10.1	7.9	-60.2	-13.0	-47.2	
1.698	66.0	H	-49.1	0.0	7.8	5.6	-43.5	-13.0	-30.5	
2.546	55.9	H	-57.9	0.0	9.4	7.3	-50.7	-13.0	-37.7	
3.395	49.7	H	-62.0	0.0	9.7	7.5	-54.4	-13.0	-41.4	
4.244	40.7	H	-69.0	0.0	10.1	7.9	-61.1	-13.0	-48.1	

Rev. 4.12.7  
Note: No other emissions till 10 times the oscillator frequency range were detected.

**PCS, GPRS Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber										
Company:	Sierra Wireless									
Project #:	07U11543									
Date:	1/2/2008									
Test Engineer:	Mengistu Mekuria									
Configuration:	EUT and Supporting Devices									
Mode:	PCS TX, GPRS									
<u>Test Equipment:</u>										
EMCO Horn 1-18GHz			Horn > 18GHz			Limit		High Pass Filter		
T59; S/N: 3245 @3m						FCC 24		<input checked="" type="checkbox"/> High Pass Filter		
Hi Frequency Cables										
<input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz				
T144 Miteq 3008A00										
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low CH										
3.700	51.7	V	-47.4	5.9	9.7	7.6	-43.6	-13.0	-30.6	
3.700	51.6	H	-47.4	5.9	9.7	7.6	-43.6	-13.0	-30.6	
Mid CH.										
3.760	50.4	V	-48.4	6.0	9.8	7.6	-44.6	-13.0	-31.6	
3.760	50.2	H	-48.5	6.0	9.8	7.6	-44.7	-13.0	-31.7	
Hi Ch										
3.820	49.9	V	-48.6	6.0	9.8	7.6	-44.9	-13.0	-31.9	
3.820	50.2	H	-48.2	6.0	9.8	7.6	-44.5	-13.0	-31.5	
Rev. 4.12.7										
Note: No other emissions till 10 times the oscillator frequency range were detected.										

**CELL, EGPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber											
Company:	Sierra Wireless										
Project #:	07U11543										
Date:	1/3/2008										
Test Engineer:	Mengistu Mekuria										
Configuration:	EUT and Supporting Devices										
Mode:	CELL TX, EGPRS										
<b>Test Equipment:</b>											
EMCO Horn 1-18GHz			Horn > 18GHz			Limit			High Pass Filter		
T59; S/N: 3245 @3m						FCC 22			<input checked="" type="checkbox"/>		
Hi Frequency Cables						Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz		
(2 ft)			(2 ~ 3 ft)			(4 ~ 6 ft)			(12 ft)		
						T144 Miteq 3008A00					
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low CH.</b>											
1.648	61.5	V	-54.5	0.0	7.7	5.5	-49.0	-13.0	-36.0		
2.473	59.9	V	-54.3	0.0	9.4	7.2	-47.1	-13.0	-34.1		
3.297	53.7	V	-58.4	0.0	9.7	7.5	-50.9	-13.0	-37.9		
4.121	46.2	V	-63.8	0.0	9.9	7.8	-56.0	-13.0	-43.0		
1.648	66.3	H	-49.0	0.0	7.7	5.5	-43.5	-13.0	-30.5		
2.473	56.5	H	-57.5	0.0	9.4	7.2	-50.3	-13.0	-37.3		
3.297	51.7	H	-60.2	0.0	9.7	7.5	-52.7	-13.0	-39.7		
4.121	45.0	H	-64.7	0.0	9.9	7.8	-56.9	-13.0	-43.9		
<b>Mid CH.</b>											
1.674	60.9	V	-55.0	0.0	7.7	5.6	-49.4	-13.0	-36.4		
2.511	58.4	V	-55.7	0.0	9.4	7.2	-48.5	-13.0	-35.5		
3.348	50.9	V	-61.0	0.0	9.7	7.5	-53.5	-13.0	-40.5		
4.185	44.6	V	-65.4	0.0	10.0	7.9	-57.5	-13.0	-44.5		
1.674	65.6	H	-49.6	0.0	7.7	5.6	-44.0	-13.0	-31.0		
2.511	53.8	H	-60.1	0.0	9.4	7.2	-52.9	-13.0	-39.9		
3.348	45.4	H	-66.4	0.0	9.7	7.5	-58.9	-13.0	-45.9		
4.185	41.3	H	-68.4	0.0	10.0	7.9	-60.5	-13.0	-47.5		
<b>Hi CH.</b>											
1.698	61.3	V	-54.5	0.0	7.8	5.6	-48.9	-13.0	-35.9		
2.546	56.1	V	-57.9	0.0	9.4	7.3	-50.6	-13.0	-37.6		
3.395	51.5	V	-60.3	0.0	9.7	7.5	-52.8	-13.0	-39.8		
4.244	47.3	V	-62.7	0.0	10.1	7.9	-54.8	-13.0	-41.8		
1.698	64.0	H	-51.0	0.0	7.8	5.6	-45.4	-13.0	-32.4		
2.546	55.6	H	-58.3	0.0	9.4	7.3	-51.0	-13.0	-38.0		
3.395	47.1	H	-64.5	0.0	9.7	7.5	-57.0	-13.0	-44.0		
4.244	44.4	H	-65.3	0.0	10.1	7.9	-57.3	-13.0	-44.3		

Rev. 4.12.7  
Note: No other emissions till 10 times the oscillator frequency range were detected.

**PCS, EGPRS Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber										
Company: Sierra Wireless Project #: 07U11543 Date: 3/2/2008 Test Engineer: Mengistu Mekuria Configuration: EUT and Supporting Devices Mode: PCS TX, EGPRS										
<u>Test Equipment:</u>										
EMCO Horn 1-18GHz			Horn > 18GHz			Limit			High Pass Filter	
T59; S/N: 3245 @3m						FCC 24			<input checked="" type="checkbox"/>	
Hi Frequency Cables										
<input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz				
T144 Miteq 3008A06										
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<u>Low CH.</u>										
3.700	50.3	V	-48.8	5.9	9.7	7.6	-45.0	-13.0	-32.0	
3.700	50.7	H	-48.3	5.9	9.7	7.6	-44.4	-13.0	-31.4	
<u>Mid CH.</u>										
3.760	48.5	V	-50.3	6.0	9.8	7.6	-46.6	-13.0	-33.6	
3.760	48.8	H	-50.0	6.0	9.8	7.6	-46.2	-13.0	-33.2	
<u>Hi Ch</u>										
3.820	48.0	V	-50.6	6.0	9.8	7.6	-46.8	-13.0	-33.8	
3.820	48.2	H	-50.2	6.0	9.8	7.6	-46.5	-13.0	-33.5	
Rev. 4.12.7 Note: No other emissions till 10 times the oscillator frequency range were detected.										

**CELL, WCDMA Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber											
Company: Sierra Wireless Project #: 07U11543 Date: 3/2/2008 Test Engineer: Mengistu Mekuria Configuration: EUT and Supporting Devices Mode: CELL TX, WCDMA											
<u>Test Equipment:</u>											
EMC O Horn 1-18GHz T59; S/N: 3245 @3m		Horn > 18GHz			Limit		High Pass Filter				
					FCC 22		<input checked="" type="checkbox"/>				
Hi Frequency Cables											
<input type="checkbox"/> (2 ft)		<input type="checkbox"/> (2 ~ 3 ft)		<input type="checkbox"/> (4 ~ 6 ft)		<input checked="" type="checkbox"/> (12 ft)		Pre-amplifier 1-26GHz T144 Miteq 3008A00		Pre-amplifier 26-40GHz	
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low Ch</b>											
1.653	51.4	V	-56.8	3.8	7.7	5.5	-55.2	-13.0	-42.2		
2.479	47.5	V	-56.9	4.9	9.4	7.2	-54.6	-13.0	-41.6		
1.653	50.4	H	-57.1	3.8	7.7	5.5	-55.4	-13.0	-42.4		
2.479	45.0	H	-59.2	4.9	9.4	7.2	-56.9	-13.0	-43.9		
<b>Mid Ch</b>											
1.673	53.1	V	-55.1	3.9	7.7	5.6	-53.4	-13.0	-40.4		
2.509	46.2	V	-58.1	4.9	9.4	7.2	-55.8	-13.0	-42.8		
1.673	52.0	H	-55.5	3.9	7.7	5.6	-53.8	-13.0	-40.8		
2.509	45.6	H	-58.5	4.9	9.4	7.2	-56.2	-13.0	-43.2		
<b>High Ch</b>											
1.693	52.1	V	-55.9	3.9	7.7	5.6	-54.2	-13.0	-41.2		
2.540	46.5	V	-57.6	4.9	9.4	7.2	-55.3	-13.0	-42.3		
1.693	51.0	H	-56.3	3.9	7.7	5.6	-54.6	-13.0	-41.6		
2.540	45.7	H	-58.3	4.9	9.4	7.2	-56.0	-13.0	-43.0		
Rev. 4.12.7											
Note: No other emissions till 10 times the oscillator frequency range were detected.											

**PCS, WCDMA Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber										
Company:	Sierra Wireless									
Project #:	07U11543									
Date:	3/2/2008									
Test Engineer:	Mengistu Mekuria									
Configuration:	EUT and Supporting Devices									
Mode:	PCS TX, WCDMA									
<u>Test Equipment:</u>										
EMC O Horn 1-18GHz			Horn > 18GHz			Limit		High Pass Filter		
T59; S/N: 3245 @3m						FCC 24		<input checked="" type="checkbox"/> High Pass Filter		
Hi Frequency Cables										
<input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz				
			T144 Miteq 3008A00							
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low CH										
3.705	52.9	V	-46.2	5.9	9.7	7.6	-42.4	-13.0	-29.4	
3.705	50.5	H	-48.5	5.9	9.7	7.6	-44.7	-13.0	-31.7	
Mid CH.										
3.760	48.5	V	-50.3	6.0	9.8	7.6	-46.5	-13.0	-33.5	
3.760	45.9	H	-52.8	6.0	9.8	7.6	-49.0	-13.0	-36.0	
Hi Ch										
3.815	51.5	V	-47.1	6.0	9.8	7.6	-43.4	-13.0	-30.4	
3.815	49.1	H	-49.3	6.0	9.8	7.6	-45.6	-13.0	-32.6	
Rev. 4.12.7										
Note: No other emissions till 10 times the oscillator frequency range were detected.										

CELL, WCDMA + HSDPA Spurious & Harmonic (ERP)

High Frequency Substitution Measurement  
Compliance Certification Services, Fremont 5m A-Chamber

Company: Sierra Wireless  
Project #: 07U11543  
Date: 3/2/2008  
Test Engineer: Mengistu Mekuria  
Configuration: EUT and Supporting Devices  
Mode: CELL TX, WCDMA + H

Test Equipment:

EMCO Horn 1-18GHz	Horn > 18GHz	Limit	<input checked="" type="checkbox"/> High Pass Filter
T59; S/N: 3245 @3m		FCC 22	
Hi Frequency Cables		Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz
<input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)		T144 Miteq 3008A00	

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
1.653	53.8	V	-54.5	3.8	7.7	5.5	-52.8	-13.0	-39.8	
2.479	49.1	V	-55.3	4.9	9.4	7.2	-53.0	-13.0	-40.0	
1.653	50.8	H	-56.7	3.8	7.7	5.5	-55.0	-13.0	-42.0	
2.479	45.8	H	-58.4	4.9	9.4	7.2	-56.1	-13.0	-43.1	
<b>Mid Ch</b>										
1.673	56.0	V	-52.2	3.9	7.7	5.6	-50.5	-13.0	-37.5	
2.509	49.4	V	-54.9	4.9	9.4	7.2	-52.6	-13.0	-39.6	
1.673	51.0	H	-56.4	3.9	7.7	5.6	-54.7	-13.0	-41.7	
2.509	46.2	H	-57.9	4.9	9.4	7.2	-55.6	-13.0	-42.6	
<b>High Ch</b>										
1.693	53.0	V	-55.0	3.9	7.7	5.6	-53.3	-13.0	-40.3	
2.540	51.2	V	-53.0	4.9	9.4	7.2	-50.7	-13.0	-37.7	
1.693	51.1	H	-56.2	3.9	7.7	5.6	-54.5	-13.0	-41.5	
2.540	44.6	H	-59.3	4.9	9.4	7.2	-57.0	-13.0	-44.0	

Rev. 4.12.7  
Note: No other emissions till 10 times the oscillator frequency range were detected.

**PCS, WCDMA + HSDPA Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement Compliance Certification Services, Fremont 5m A-Chamber										
<u>Company:</u> Sierra Wireless <u>Project #:</u> 07U11543 <u>Date:</u> 3/2/2008 <u>Test Engineer:</u> Mengistu Mekuria <u>Configuration:</u> EUT and Supporting Devices <u>Mode:</u> PCS TX, WCDMA + H										
<u>Test Equipment:</u>										
EMCO Horn 1-18GHz			Horn > 18GHz			Limit			High Pass Filter	
T59; S/N: 3245 @3m						FCC 24			<input checked="" type="checkbox"/>	
Hi Frequency Cables										
<input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)										
Pre-amplifier 1-26GHz			T144 Miteq 3008A01			Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	FIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low CH										
3.705	52.1	V	-47.0	5.9	9.7	7.6	-43.1	-13.0	-30.1	
3.705	50.0	H	-49.0	5.9	9.7	7.6	-45.2	-13.0	-32.2	
Mid CH.										
3.760	48.1	V	-50.7	6.0	9.8	7.6	-46.9	-13.0	-33.9	
3.760	47.4	H	-51.4	6.0	9.8	7.6	-47.6	-13.0	-34.6	
Hi Ch										
3.815	51.6	V	-47.0	6.0	9.8	7.6	-43.2	-13.0	-30.2	
3.815	49.6	H	-48.9	6.0	9.8	7.6	-45.2	-13.0	-32.2	
Rev. 4.12.7 Note: No other emissions till 10 times the oscillator frequency range were detected.										