



**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: MC8781**

**FCC ID: N7NMC8781**

**IC: 2417C-MC8781**

**REPORT NUMBER: 07U10929-1**

**ISSUE DATE: APRIL 03, 2007**

*Prepared for*  
**SIERRA WIRELESS INC.  
13811 WIRELESS WAY  
RICHMOND, BC V6V 3A4, CANADA**

*Prepared by*  
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**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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# 1. ATTESTATION OF TEST RESULTS

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

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

**MODEL:** MC8781

**SERIAL NUMBER:** S3505870144E3

**DATE TESTED:** MARCH 27-28, 2007

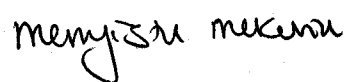
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H and 24E	NO NON-COMPLIANCE NOTED (Radiated Portion)
IC RSS-132 ISSUE 2 and RSS-133 ISSUE 3	NO NON-COMPLIANCE NOTED (Radiated Portion)

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:

Tested By:



THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

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), ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15 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. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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
Radiated Emission Above 2000 MHz	+/- 3.4 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

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:
  - DL Channel: 

	<u>PCS band</u>	<u>Cell band</u>
	9662 / 9800 / 9938	4357 / 4407 / 4458
	9262 / 9400 / 9538	4132 / 4182 / 4233
  - UL Channel: 

	<u>PCS band</u>	<u>Cell band</u>
	9662 / 9800 / 9938	4357 / 4407 / 4458
	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	46688	NA
Communications Test Set	Agilent	E5515C	10092	DoC
Test Fixture	Sierra Wireless	Mini Card Dev Board	1201102 Rev 2.X	NA

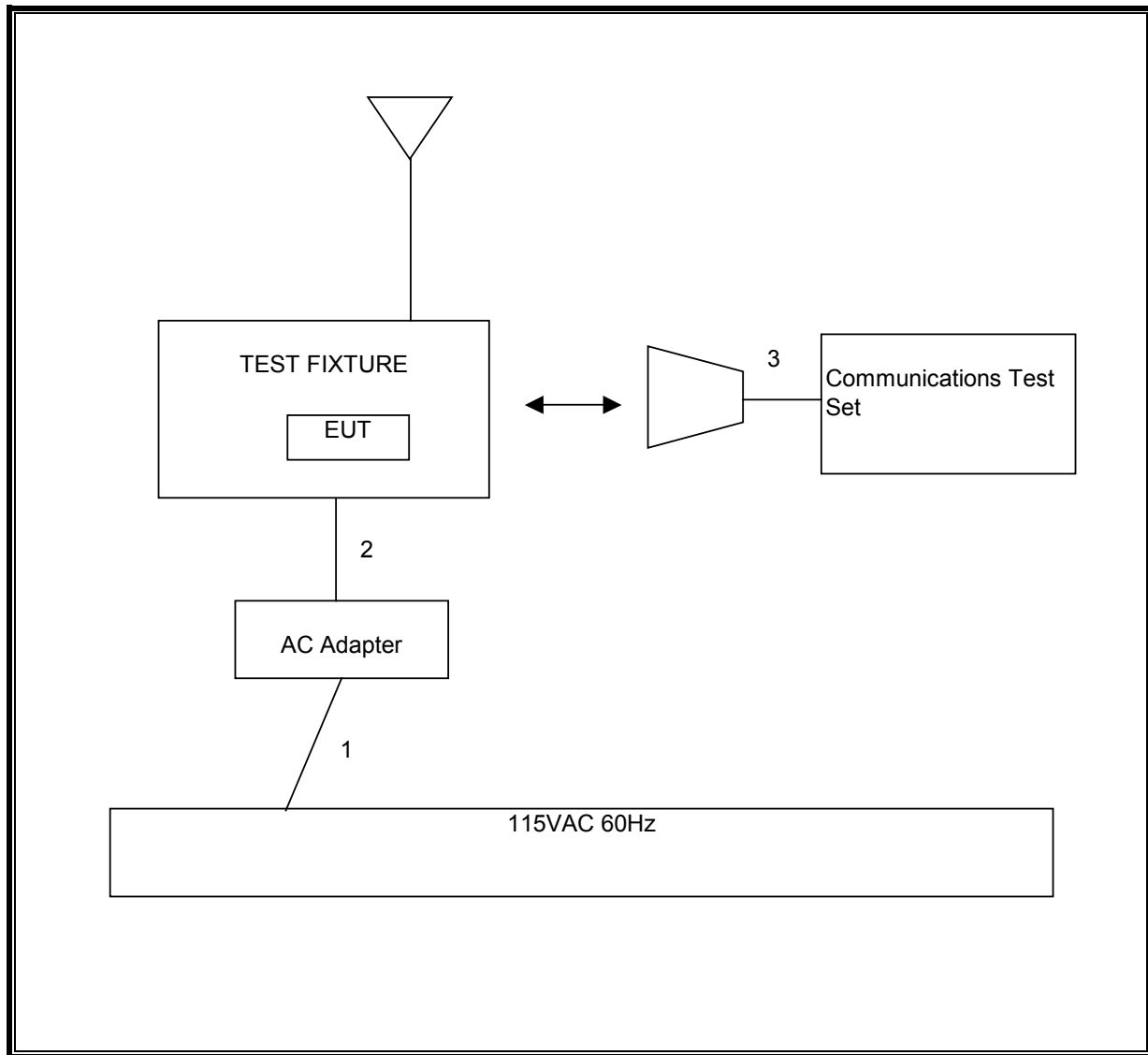
#### I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	NA
2	DC	1	DC	Un-shielded	2m	NA
3	RF In/Out	1	Horn	Un-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	Serial Number	Cal Due
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00561	10/03/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	04/22/07
Antenna, Horn 1 ~ 18 GHz	ETS	3117	35234	04/22/07
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	MY43360112	05/03/07
Wireless Communications Test Set	Agilent	E5515C	10092	10/19/07
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	06/02/07
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	05/11/07
Dipole	EMCO	3121C-DB2	22435	06/25/07

## 7. LIMITS AND RESULTS

### 7.1. FIELD STRENGTH OF SPURIOUS RADIATION

#### LIMIT

22.917 (e), §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

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

#### RESULTS

No non-compliance noted.

**GSM850 GPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement											
Compliance Certification Services, Fremont Chamber B											
Company:		Sierra Wireless									
Project #:		07U10929									
Date:		3/27/2007									
Test Engineer:		Mengistu Mekuria									
Configuration:		EUT and Supporting Devices									
Mode:		Cell TX, GPRS									
<b>Test Equipment:</b>											
EMCO Horn 1-18GHz			Horn > 18GHz			Limit		<input checked="" type="checkbox"/> High Pass Filter			
T 73; S/N: 6717 @3m						FCC 22					
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								
T145 Agilent 3008A											
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low Ch</b>											
1.64840	61.4	V	-44.6	3.8	8.0	5.8	-42.7	-13.0	-29.7		
2.47260	56.5	V	-45.9	4.9	9.5	7.4	-43.4	-13.0	-30.4		
3.29680	47.0	V	-52.1	5.6	9.8	7.6	-50.0	-13.0	-37.0		
1.64840	60.8	H	-44.5	3.8	8.0	5.8	-42.5	-13.0	-29.5		
2.47260	57.8	H	-44.4	4.9	9.5	7.4	-41.9	-13.0	-28.9		
3.29680	43.7	H	-55.2	5.6	9.8	7.6	-53.2	-13.0	-40.2		
<b>Mid Ch</b>											
1.67400	60.1	V	-45.8	3.9	8.0	5.9	-43.8	-13.0	-30.8		
2.51100	52.8	V	-49.5	4.9	9.6	7.4	-47.0	-13.0	-34.0		
3.34800	46.1	V	-52.7	5.6	9.8	7.6	-50.7	-13.0	-37.7		
1.67400	59.5	H	-45.6	3.9	8.0	5.9	-43.6	-13.0	-30.6		
2.51100	52.6	H	-49.5	4.9	9.6	7.4	-47.0	-13.0	-34.0		
3.34800	43.0	H	-55.6	5.6	9.8	7.6	-53.7	-13.0	-40.7		
<b>High Ch</b>											
1.69760	53.6	V	-52.1	3.9	8.1	5.9	-50.1	-13.0	-37.1		
2.54640	52.6	V	-49.6	4.9	9.6	7.4	-47.1	-13.0	-34.1		
3.39520	44.7	V	-53.9	5.7	9.7	7.6	-51.9	-13.0	-38.9		
1.69760	54.3	H	-50.7	3.9	8.1	5.9	-48.7	-13.0	-35.7		
2.54640	51.6	H	-50.4	4.9	9.6	7.4	-47.9	-13.0	-34.9		
3.39520	42.4	H	-56.0	5.7	9.7	7.6	-54.1	-13.0	-41.1		
Rev. 1.24.7											

**GSM850 EGPRS Spurious & Harmonic (ERP)**

**High Frequency Substitution Measurement**  
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless  
 Project #: 07U10929  
 Date: 3/27/2007  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT and Supporting Devices  
 Mode: Cell TX, EGPRS

**Test Equipment:**

EMCO Horn 1-18GHz  
T 73; S/N: 6717 @3m

Horn > 18GHz

Limit  
FCC 22

High Pass Filter

Hi Frequency Cables  
 (2 ft)  
  (2 ~ 3 ft)  
  (4 ~ 6 ft)  
  (12 ft)

Pre-amplifier 1-26GHz  
T145 Agilent 3008A

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
1.64840	60.1	V	-45.9	3.8	8.0	5.8	-43.9	-13.0	-30.9	
2.47260	50.4	V	-52.1	4.9	9.5	7.4	-49.6	-13.0	-36.6	
3.29680	45.5	V	-53.5	5.6	9.8	7.6	-51.5	-13.0	-38.5	
1.64840	59.7	H	-45.6	3.8	8.0	5.8	-43.6	-13.0	-30.6	
2.47260	52.0	H	-50.2	4.9	9.5	7.4	-47.7	-13.0	-34.7	
3.29680	42.7	H	-56.2	5.6	9.8	7.6	-54.2	-13.0	-41.2	
<b>Mid Ch</b>										
1.67400	59.3	V	-46.6	3.9	8.0	5.9	-44.6	-13.0	-31.6	
2.51100	48.8	V	-53.5	4.9	9.6	7.4	-51.0	-13.0	-38.0	
3.34800	44.3	V	-54.4	5.6	9.8	7.6	-52.5	-13.0	-39.5	
1.67400	58.9	H	-46.3	3.9	8.0	5.9	-44.3	-13.0	-31.3	
2.51100	49.1	H	-53.0	4.9	9.6	7.4	-50.5	-13.0	-37.5	
3.34800	42.0	H	-56.6	5.6	9.8	7.6	-54.7	-13.0	-41.7	
<b>High Ch</b>										
1.69760	52.6	V	-53.2	3.9	8.1	5.9	-51.2	-13.0	-38.2	
2.54640	51.5	V	-50.7	4.9	9.6	7.4	-48.2	-13.0	-35.2	
3.39520	43.2	V	-55.3	5.7	9.7	7.6	-53.4	-13.0	-40.4	
1.69760	53.1	H	-52.0	3.9	8.1	5.9	-50.0	-13.0	-37.0	
2.54640	50.3	H	-51.6	4.9	9.6	7.4	-49.2	-13.0	-36.2	
3.39520	42.0	H	-56.4	5.7	9.7	7.6	-54.5	-13.0	-41.5	

Rev. 1.24.7

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

**High Frequency Substitution Measurement**  
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless  
 Project #: 07U10929  
 Date: 3/28/2007  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT and Supporting Devices  
 Mode: Cell TX, WCDMA

**Test Equipment:**

EMCO Horn 1-18GHz  
T 73; S/N: 6717 @3m

Horn > 18GHz

Limit  
FCC 22

High Pass Filter

Hi Frequency Cables  
 (2 ft)    (2 ~ 3 ft)    (4 ~ 6 ft)    (12 ft)

Pre-amplifier 1-26GHz  
T145 Agilent 3008A

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
1.65280	46.9	V	-59.1	3.8	8.0	5.8	-57.1	-13.0	-44.1	
2.47920	43.7	V	-58.8	4.9	9.6	7.4	-56.2	-13.0	-43.2	
1.65280	50.9	H	-54.4	3.8	8.0	5.8	-52.4	-13.0	-39.4	
2.47920	43.0	H	-59.2	4.9	9.6	7.4	-56.7	-13.0	-43.7	
<b>Mid Ch</b>										
1.67280	48.1	V	-57.8	3.9	8.0	5.9	-55.8	-13.0	-42.8	
2.50920	44.2	V	-58.1	4.9	9.6	7.4	-55.6	-13.0	-42.6	
1.67280	48.2	H	-57.0	3.9	8.0	5.9	-55.0	-13.0	-42.0	
2.50920	43.2	H	-58.9	4.9	9.6	7.4	-56.4	-13.0	-43.4	
<b>High Ch</b>										
1.69320	44.9	V	-60.9	3.9	8.1	5.9	-58.9	-13.0	-45.9	
2.53980	42.3	V	-59.9	4.9	9.6	7.4	-57.4	-13.0	-44.4	
1.69320	45.4	H	-59.7	3.9	8.1	5.9	-57.7	-13.0	-44.7	
2.53980	43.1	H	-58.9	4.9	9.6	7.4	-56.4	-13.0	-43.4	

Rev. 1.24.7

**CELL Band WCDMA+HSPDA Spurious & Harmonic (ERP)**

**High Frequency Substitution Measurement**  
 Compliance Certification Services, Fremont Chamber B

**Company:** Sierra Wireless  
**Project #:** 07U10929  
**Date:** 3/28/2007  
**Test Engineer:** Mengistu Mekuria  
**Configuration:** EUT and Supporting Devices  
**Mode:** Cell TX, WCDMA + H

**Test Equipment:**

EMCO Horn 1-18GHz  
T 73; S/N: 6717 @3m

Horn > 18GHz

Limit  
FCC 22

High Pass Filter

Hi Frequency Cables  
 (2 ft)   
  (2 ~ 3 ft)   
  (4 ~ 6 ft)   
  (12 ft)

Pre-amplifier 1-26GHz  
T145 Agilent 3008A

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
1.65280	46.9	V	-59.1	3.8	8.0	5.8	-57.1	-13.0	-44.1	
2.47920	42.8	V	-59.6	4.9	9.6	7.4	-57.1	-13.0	-44.1	
1.65280	51.3	H	-54.0	3.8	8.0	5.8	-52.0	-13.0	-39.0	
2.47920	42.9	H	-59.3	4.9	9.6	7.4	-56.8	-13.0	-43.8	
<b>Mid Ch</b>										
1.67280	46.5	V	-59.4	3.9	8.0	5.9	-57.4	-13.0	-44.4	
2.50920	43.4	V	-58.9	4.9	9.6	7.4	-56.4	-13.0	-43.4	
1.67280	48.1	H	-57.1	3.9	8.0	5.9	-55.1	-13.0	-42.1	
2.50920	43.1	H	-59.0	4.9	9.6	7.4	-56.5	-13.0	-43.5	
<b>High Ch</b>										
1.69320	45.1	V	-60.7	3.9	8.1	5.9	-58.7	-13.0	-45.7	
2.53980	43.1	V	-59.1	4.9	9.6	7.4	-56.6	-13.0	-43.6	
1.69320	46.0	H	-59.1	3.9	8.1	5.9	-57.1	-13.0	-44.1	
2.53980	43.1	H	-58.9	4.9	9.6	7.4	-56.4	-13.0	-43.4	

Rev. 1.24.7



**GSM1900 Band GPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement											
Compliance Certification Services, Fremont Chamber B											
Company:		Sierra Wireless									
Project #:		07U10929									
Date:		3/27/2007									
Test Engineer:		Mengistu Mekuria									
Configuration:		EUT and Supporting Devices									
Mode:		PCS TX, GPRS									
<b>Test Equipment:</b>											
EMCO Horn 1-18GHz			Horn > 18GHz			Limit			High Pass Filter		
T 73; S/N: 6717 @3m						FCC 24			<input checked="" type="checkbox"/>		
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)						T145 Agilent 3008A					
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low Ch</b>											
3.70040	42.7	V	-54.4	5.9	9.7	7.6	-50.6	-13.0	-37.6		
3.70040	42.9	H	-54.1	5.9	9.7	7.6	-50.3	-13.0	-37.3		
<b>Mid Ch</b>											
3.76000	43.8	V	-53.0	6.0	9.7	7.6	-49.2	-13.0	-36.2		
3.76000	42.0	H	-54.7	6.0	9.7	7.6	-51.0	-13.0	-38.0		
<b>High Ch</b>											
3.81960	43.0	V	-53.4	6.0	9.7	7.5	-49.8	-13.0	-36.8		
3.81960	41.4	H	-55.0	6.0	9.7	7.5	-51.4	-13.0	-38.4		
Rev. 1.24.7											
Note: No other emissions were detected above the system noise floor.,											

**GSM1900 Band EGPRS Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement											
Compliance Certification Services, Fremont Chamber B											
<b>Company:</b>		Sierra Wireless									
<b>Project #:</b>		07U10929									
<b>Date:</b>		3/27/2007									
<b>Test Engineer:</b>		Mengistu Mekuria									
<b>Configuration:</b>		EUT and Supporting Devices									
<b>Mode:</b>		PCS TX, EGPRS									
<b>Test Equipment:</b>											
EMCO Horn 1-18GHz			Horn > 18GHz			Limit		High Pass Filter			
T 73; S/N: 6717 @3m						FCC 24		<input checked="" type="checkbox"/>			
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)						T145 Agilent 3008A					
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low Ch</b>											
3.70040	41.7	V	-55.4	5.9	9.7	7.6	-51.6	-13.0	-38.6		
3.70040	41.7	H	-55.2	5.9	9.7	7.6	-51.5	-13.0	-38.5		
<b>Mid Ch</b>											
3.76000	42.4	V	-54.4	6.0	9.7	7.6	-50.7	-13.0	-37.7		
3.76000	42.0	H	-54.7	6.0	9.7	7.6	-50.9	-13.0	-37.9		
<b>High Ch</b>											
3.81960	42.0	V	-54.5	6.0	9.7	7.5	-50.9	-13.0	-37.9		
3.81960	41.8	H	-54.6	6.0	9.7	7.5	-50.9	-13.0	-37.9		
Rev. 1.24.7											
Note: No other emissions were detected above the system noise floor.,											

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

**High Frequency Substitution Measurement**  
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless  
 Project #: 07U10929  
 Date: 3/28/2007  
 Test Engineer: Mengistu Mekuria  
 Configuration: EUT and Supporting Devices  
 Mode: PCS TX, WCDMA

**Test Equipment:**

EMCO Horn 1-18GHz

T73; S/N: 6717 @3m

Horn > 18GHz

Limit

FCC 24

High Pass Filter

Hi Frequency Cables

(2 ft)    (2 ~ 3 ft)    (4 ~ 6 ft)    (12 ft)

Pre-amplifier 1-26GHz

T145 Agilent 3008A

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
3.70480	42.3	V	-54.7	5.9	9.7	7.6	-50.9	-13.0	-37.9	
3.70480	42.9	H	-54.1	5.9	9.7	7.6	-50.3	-13.0	-37.3	
<b>Mid Ch</b>										
3.76000	43.3	V	-53.5	6.0	9.7	7.6	-49.8	-13.0	-36.8	
3.76000	42.6	H	-54.1	6.0	9.7	7.6	-50.3	-13.0	-37.3	
<b>High Ch</b>										
3.81520	49.1	V	-47.4	6.0	9.7	7.5	-43.7	-13.0	-30.7	
3.81520	44.0	H	-52.4	6.0	9.7	7.5	-48.8	-13.0	-35.8	

Rev. 1.24.7  
 Note: No other emissions were detected above the system noise floor..

**PCS Band WCDMA+HSPDA Spurious & Harmonic (EIRP)**

**High Frequency Substitution Measurement**  
**Compliance Certification Services, Fremont Chamber B**

**Company:** Sierra Wireless  
**Project #:** 07U10929  
**Date:** 3/28/2007  
**Test Engineer:** Mengistu Mekuria  
**Configuration:** EUT and Supporting Devices  
**Mode:** PCS TX, WCDMA + H

**Test Equipment:**

EMCO Horn 1-18GHz  
T 73; S/N: 6717 @3m

Horn > 18GHz

Limit  
FCC 24

High Pass Filter

Hi Frequency Cables  
 (2 ft)  
  (2 ~ 3 ft)  
  (4 ~ 6 ft)  
  (12 ft)

Pre-amplifier 1-26GHz  
T145 Agilent 3008A

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading 75.0	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>										
3.70480	44.2	V	-52.8	5.9	9.7	7.6	-49.0	-13.0	-36.0	
3.70480	42.9	H	-54.1	5.9	9.7	7.6	-50.3	-13.0	-37.3	
<b>Mid Ch</b>										
3.76000	43.6	V	-53.2	6.0	9.7	7.6	-49.5	-13.0	-36.5	
3.76000	42.4	H	-54.2	6.0	9.7	7.6	-50.5	-13.0	-37.5	
<b>High Ch</b>										
3.81520	47.7	V	-48.8	6.0	9.7	7.5	-45.2	-13.0	-32.2	
3.81520	44.3	H	-52.1	6.0	9.7	7.5	-48.4	-13.0	-35.4	

Rev. 1.24.7  
 Note: No other emissions were detected above the system noise floor.