FCC CFR47 PART 22 SUBPART H
AND PART 24 SUBPART E
CERTIFICATION TEST REPORT

FOR

PC CARD WIRELESS MODEM

MODEL NUMBER: AirCard 881

FCC ID: N7NAC881

REPORT NUMBER: 07U10987-1

ISSUE DATE: APRIL 22, 2007

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

Prepared by
COMPLIANCE CERTIFICATION SERVICES
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	04/22/07	Initial Issue	T. Chan

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: PC CARD WIRELESS MODEM

MODEL: AirCard 881

SERIAL NUMBER: S4108270208E3

DATE TESTED: APRIL 12-16, 2007

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22 SUBPART H	NO NON-COMPLIANCE NOTED
FCC PART 24 SUBPART E	NO NON-COMPLIANCE NOTED

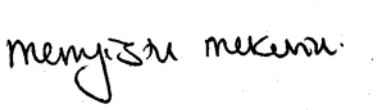
Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



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 and 24E.

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 to 2000 MHz	+/- 4.3 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 PC Card Wireless Modem and is 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:

	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	SONY	PCG691L	147774951 0618578	DoC
Communications Test Set	Agilent	E5515C	10092	DoC
Laptop	SONY	PCGA-AC16V6	3000007	DoC

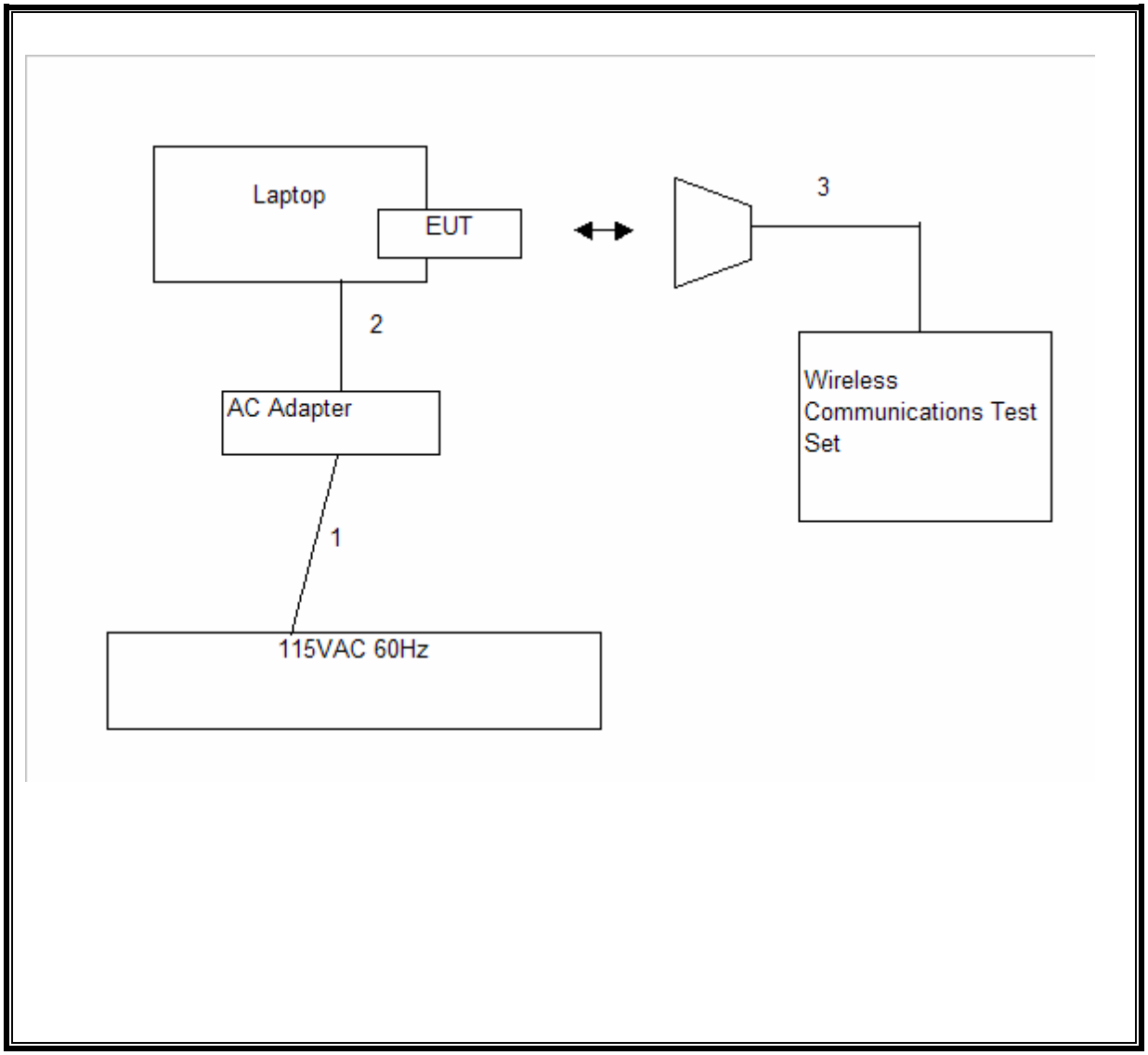
I/O CABLES

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	3m	NA

TEST SETUP

The EUT is installed in a Sony Laptop during the test. 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**
Antenna, Horn 1 ~ 18 GHz	ETS	3117	29301	04/22/07
EMI Test Receiver	R & S	ESHS 20	827129/006	06/03/07
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	08/30/07
Quasi-Peak Adaptor	Agilent / HP	85650A	3145A01654	01/21/08
SA RF Section, 1.5 GHz	Agilent / HP	85680B	2814A04227	01/07/08
SA Display Section 2	Agilent / HP	85662A	2816A16696	04/07/08
Preamplifier, 1300 MHz	Agilent / HP	8447D	1937A02062	01/23/08
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	09/03/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00561	10/03/07
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. RADIATED OUTPUT POWER

LIMIT

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.
24.232(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17

RESULTS

No non-compliance noted.

850 MHz GPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	30.50	1122.02
Middle	837	29.90	977.24
High	848.8	29.20	831.76

850 MHz EGPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	25.60	363.08
Middle	837	25.00	316.23
High	848.8	24.30	269.15

850 MHz WCDMA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	23.80	239.88
Middle	836.4	23.20	208.93
High	846.6	22.80	190.55

850 MHz WCDMA+HSDPA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	24.60	288.40
Middle	836.4	23.70	234.42
High	846.6	23.10	204.17

1900 MHz GPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	29.20	831.76
Middle	1880.00	28.90	776.25
High	1909.8	28.60	724.44

1900 MHz EGPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	25.80	380.19
Middle	1880.00	25.90	389.05
High	1909.8	25.40	346.74

1900 MHz WCDMA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.4	23.70	234.42
Middle	1880.00	23.30	213.80
High	1907.6	23.50	223.87

1900 MHz WCDMA+HSDPA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.40	24.70	295.12
Middle	1880.00	24.40	275.42
High	1907.60	24.50	281.84

GSM850 GPRS Output Power (ERP)

High Frequency Substitution Measurement
Compliance Certification Services, Fremontl 5m Chamber Site

Company: Sierra Wireless
Project #: 07U10987
Date: 04/12/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, GPRS

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
824.20	104.2	V	30.6	0.5	0.0	30.1	38.5	-8.3	
824.20	107.5	H	31.0	0.5	0.0	30.5	38.5	-7.9	
Mid Ch									
836.50	104.0	V	30.2	0.6	0.0	29.6	38.5	-8.8	
836.50	107.3	H	30.5	0.6	0.0	29.9	38.5	-8.6	
High Ch									
848.80	103.5	V	29.9	0.7	0.0	29.2	38.5	-9.3	
848.80	106.0	H	29.4	0.7	0.0	28.7	38.5	-9.8	

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GSM850 EGPRS Output Power (ERP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/12/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, EGPRS

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
824.20	99.3	V	25.7	0.5	0.0	25.2	38.5	-13.3	
824.20	102.6	H	26.1	0.5	0.0	25.6	38.5	-12.8	
Mid Ch									
836.50	99.0	V	25.2	0.6	0.0	24.6	38.5	-13.8	
836.50	102.4	H	25.6	0.6	0.0	25.0	38.5	-13.5	
High Ch									
848.80	98.6	V	25.0	0.7	0.0	24.3	38.5	-14.2	
848.80	101.1	H	24.5	0.7	0.0	23.8	38.5	-14.7	

Rev. 1.24.7

Cell Band WCDMA Output Power (ERP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, WCDMA

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
826.40	97.6	V	24.0	0.5	0.0	23.5	38.5	-15.0	
826.40	100.8	H	24.3	0.5	0.0	23.8	38.5	-14.7	
Mid Ch									
836.40	97.2	V	23.4	0.6	0.0	22.8	38.5	-15.6	
836.40	100.6	H	23.8	0.6	0.0	23.2	38.5	-15.2	
High Ch									
846.60	96.7	V	23.1	0.7	0.0	22.4	38.5	-16.1	
846.60	100.1	H	23.5	0.7	0.0	22.8	38.5	-15.7	

Rev. 1.24.7

Cell Band WCDMA+HSDPA Output Power (ERP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, WCDMA + HSDPA

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
826.40	98.0	V	24.4	0.5	0.0	23.9	38.5	-14.5	
826.40	101.6	H	25.1	0.5	0.0	24.6	38.5	-13.8	
Mid Ch									
836.40	97.7	V	24.0	0.6	0.0	23.4	38.5	-15.1	
836.40	101.1	H	24.3	0.6	0.0	23.7	38.5	-14.7	
High Ch									
846.60	97.0	V	23.4	0.7	0.0	22.7	38.5	-15.8	
846.60	100.4	H	23.8	0.7	0.0	23.1	38.5	-15.4	

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GSM1900 Band GPRS Output Power (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services, Fremont 5m Chamber Site

Company: Sierra Wireless
Project #: 07U10987
Date: 04/12/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, GPRS

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.850	95.2	V	21.8	0.9	8.3	29.2	33.0	-3.8	
1.850	93.2	H	19.3	0.9	8.3	26.7	33.0	-6.4	
Mid Ch									
1.880	95.8	V	21.5	0.9	8.3	28.9	33.0	-4.1	
1.880	92.0	H	17.2	0.9	8.3	24.6	33.0	-8.4	
High Ch									
1.910	94.4	V	21.1	0.9	8.4	28.6	33.0	-4.4	
1.910	90.7	H	17.9	0.9	8.4	25.3	33.0	-7.7	

Rev. 1.24.7

GSM1900 Band EGPRS Output Power (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services, Fremont 5m Chamber Site

Company: Sierra Wireless
Project #: 07U10987
Date: 04/12/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, EGPRS

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Cg									
1.850	91.8	V	18.4	0.9	8.3	25.8	33.0	-7.2	
1.850	90.2	H	16.3	0.9	8.3	23.7	33.0	-9.3	
Mid Ch									
1.880	92.8	V	18.5	0.9	8.3	25.9	33.0	-7.1	
1.880	89.1	H	14.3	0.9	8.3	21.7	33.0	-11.3	
High Ch									
1.910	91.2	V	17.9	0.9	8.4	25.4	33.0	-7.6	
1.910	87.8	H	15.0	0.9	8.4	22.5	33.0	-10.6	

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PCS Band WCDMA Output Power (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services, Fremont 5m Chamber Site

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, WCDMA

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.852	89.7	V	16.3	0.9	8.3	23.7	33.0	-9.3	
1.852	87.8	H	13.9	0.9	8.3	21.3	33.0	-11.7	
Mid Ch									
1.880	90.2	V	15.9	0.9	8.3	23.3	33.0	-9.7	
1.880	88.6	H	13.8	0.9	8.3	21.2	33.0	-11.8	
High Ch									
1.908	89.3	V	16.0	0.9	8.4	23.5	33.0	-9.5	
1.908	86.7	H	13.9	0.9	8.4	21.4	33.0	-11.7	

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PCS Band WCDMA + HSDPA Output Power (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services, Fremont 5m Chamber Site

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, WCDMA + HSDPA

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.852	90.7	V	17.3	0.9	8.3	24.7	33.0	-8.3	
1.852	88.6	H	14.7	0.9	8.3	22.1	33.0	-10.9	
Mid Ch									
1.880	91.3	V	17.0	0.9	8.3	24.4	33.0	-8.6	
1.880	89.4	H	14.6	0.9	8.3	22.0	33.0	-11.0	
High Ch									
1.908	90.3	V	17.0	0.9	8.4	24.5	33.0	-8.5	
1.908	87.8	H	15.0	0.9	8.4	22.5	33.0	-10.6	

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7.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (a) and §24.238 (a) 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 603 Clause 3.2.12, FCC 22.917 (b), & FCC 24.238 (b)

RESULTS

No non-compliance noted.

GSM850 GPRS Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless
Project #: 07U10987
Date: April 12th 2007
Test Engine Anoop Singh
Configuratio EUT Only
Mode: TX,GSM 850, GPRS

Test Equipment:
Receiving: Horn T60, Pre-amp T145, CAN SMA Cables 3 & 12 ft (Setup this one for testing EUT) S/N: 187207004 & 187308840
Substitution: Horn T59, 6ft SMA Cable Warehouse S/N: 187215001

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel	824.2MHz								
1.648	57.3	V	-49.7	0.8	7.7	-42.8	-13.0	-29.8	
2.473	53.5	V	-56.4	1.0	9.4	-48.0	-13.0	-35.0	
1.648	58.4	H	-47.3	1.2	9.7	-38.8	-13.0	-25.8	
2.473	53.8	H	-50.9	1.3	9.9	-42.3	-13.0	-29.3	
Mid Channel	837.0MHz								
1.674	53.2	V	-52.5	0.8	7.7	-45.7	-13.0	-32.7	
2.511	53.3	V	-56.5	1.0	9.4	-48.1	-13.0	-35.1	
1.674	56.5	H	-49.2	0.8	7.7	-42.4	-13.0	-29.4	
2.511	55.1	H	-54.0	1.0	9.4	-45.6	-13.0	-32.6	
High Channel	848.8MHz								
1.698	56.2	V	-52.7	0.8	7.8	-45.8	-13.0	-32.8	
2.546	54.8	V	-54.5	1.0	9.4	-46.1	-13.0	-33.1	
1.698	53.7	H	-52.3	1.2	9.7	-43.8	-13.0	-30.8	
2.546	54.5	H	-50.8	1.4	10.1	-42.1	-13.0	-29.1	

No other frequency was detected above the nosie floor

GSM850 EGPRS Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless
Project #: 07U10987
Date: April 12th 2007
Test Engine Anoop Singh
Configuratio EUT Only
Mode: TX,GSM 850, EGPRS

Test Equipment:
Receiving: Horn T60, Pre-amp T145, CAN SMA Cables 3 & 12 ft (Setup this one for testing EUT) S/N: 187207004 & 187308840
Substitution: Horn T59, 6ft SMA Cable Warehouse S/N: 187215001

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel	824.2MHz								
1.648	57.5	V	-49.4	0.8	7.7	-42.5	-13.0	-29.5	
2.473	56.8	V	-53.1	1.0	9.4	-44.8	-13.0	-31.8	
1.648	59.4	H	-46.3	1.2	9.7	-37.8	-13.0	-24.8	
2.473	58.7	H	-46.1	1.3	9.9	-37.4	-13.0	-24.4	
Mid Channel	837.0MHz								
1.674	55.0	V	-50.7	0.8	7.7	-43.9	-13.0	-30.9	
2.511	56.4	V	-53.4	1.0	9.4	-45.0	-13.0	-32.0	
1.674	55.5	H	-50.2	0.8	7.7	-43.3	-13.0	-30.3	
2.511	57.0	H	-52.1	1.0	9.4	-43.7	-13.0	-30.7	
High Channel	848.8MHz								
1.698	54.5	V	-54.4	0.8	7.8	-47.5	-13.0	-34.5	
2.546	53.6	V	-55.7	1.0	9.4	-47.3	-13.0	-34.3	
1.698	55.5	H	-50.6	1.2	9.7	-42.1	-13.0	-29.1	
2.546	56.0	H	-49.3	1.4	10.1	-40.6	-13.0	-27.6	

No other frequency was detected above the nosie floor

CELL Band WCDMA Spurious & Harmonic (ERP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, WCDMA

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Horn > 18GHz:
Limit: ERP
☑ High Pass Filter
Hi Frequency Cables: ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

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
Low Ch 826.4MHz										
1.648	50.3	H	-54.9	3.8	7.1	4.9	-53.8	-13.0	-40.8	
1.653	49.4	H	-55.8	3.8	7.1	4.9	-54.7	-13.0	-41.7	
1.653	50.6	V	-55.3	3.8	7.1	4.9	-54.2	-13.0	-41.2	
Mid Ch 836.4MHz										
1.648	50.6	H	-54.6	3.8	7.1	4.9	-53.5	-13.0	-40.5	
1.673	48.7	H	-56.4	3.9	7.2	5.0	-55.3	-13.0	-42.3	
1.656	49.3	V	-56.6	3.9	7.1	4.9	-55.5	-13.0	-42.5	
1.673	46.1	V	-59.7	3.9	7.2	5.0	-58.6	-13.0	-45.6	
Hi Ch 846.6MHz										
1.648	50.8	H	-54.4	3.8	7.1	4.9	-53.3	-13.0	-40.3	
1.693	47.3	H	-57.7	3.9	7.2	5.1	-56.6	-13.0	-43.6	
1.648	48.7	V	-57.2	3.8	7.1	4.9	-56.1	-13.0	-43.1	
1.693	46.5	V	-59.2	3.9	7.2	5.1	-58.1	-13.0	-45.1	

Rev. 5.1.6
Note: No other emissions were detected above the system noise floor.

CELL Band WCDMA+HSPDA Spurious & Harmonic (ERP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: CELL TX, WCDMA + HSDPA

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Horn > 18GHz:
Limit: ERP
☑ High Pass Filter
Hi Frequency Cables: ☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☑ (12 ft)
Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

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
Low Ch 826.4MHz										
1.648	52.4	H	-52.8	3.8	7.1	4.9	-51.7	-13.0	-38.7	
1.653	49.2	H	-55.9	3.8	7.1	4.9	-54.9	-13.0	-41.9	
1.653	50.4	V	-55.4	3.8	7.1	4.9	-54.3	-13.0	-41.3	
Mid Ch 836.4MHz										
1.648	51.7	H	-53.5	3.8	7.1	4.9	-52.4	-13.0	-39.4	
1.673	48.6	H	-56.5	3.9	7.2	5.0	-55.4	-13.0	-42.4	
1.656	50.5	V	-55.4	3.9	7.1	4.9	-54.3	-13.0	-41.3	
1.673	46.5	V	-59.3	3.9	7.2	5.0	-58.2	-13.0	-45.2	
Hi Ch 846.6MHz										
1.648	51.4	H	-53.7	3.8	7.1	4.9	-52.7	-13.0	-39.7	
1.693	48.4	H	-56.6	3.9	7.2	5.1	-55.4	-13.0	-42.4	
1.648	49.9	V	-56.0	3.8	7.1	4.9	-54.9	-13.0	-41.9	
1.693	47.8	V	-58.0	3.9	7.2	5.1	-56.8	-13.0	-43.8	

Rev. 5.1.6
Note: No other emissions were detected above the system noise floor.

GSM1900 Band GPRS Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless
Project #: 07U10987
Date: April 12th 2007
Test Engineer: Anoop Singh
Configuration: EUT Only
Mode: TX,GSM 1900, GPRS

Test Equipment:
Receiving: Horn T60, Pre-amp T145, SMA Cables 3 & 12 ft (Setup this one for testing EUT) S/N: 187207004 & 187308840
Substitution: Horn T59, 6ft SMA Cable Warehouse S/N: 187215001

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel	1850.2MHz								
3.700	52.1	V	-52.5	0.9	9.7	-43.7	-13.0	-30.7	
5.551	52.6	V	-50.0	1.3	11.0	-40.3	-13.0	-27.3	
3.700	53.4	H	-47.6	1.4	12.0	-37.0	-13.0	-24.0	
5.551	52.9	H	-44.3	1.9	12.7	-33.5	-13.0	-20.5	
Mid Channel	1880MHz								
3.760	52.1	V	-52.7	0.9	9.7	-43.9	-13.0	-30.9	
5.640	51.9	V	-51.3	1.4	11.2	-41.5	-13.0	-28.5	
3.760	52.4	H	-48.7	1.4	12.0	-38.2	-13.0	-25.2	
5.640	51.6	H	-46.3	1.9	12.7	-35.5	-13.0	-22.5	
High Channel	1909.8MHz								
3.820	51.2	V	-52.8	0.9	9.7	-44.0	-13.0	-31.0	
5.729	50.9	V	-52.6	1.4	11.3	-42.7	-13.0	-29.7	
3.820	52.0	H	-48.5	1.5	12.0	-38.0	-13.0	-25.0	
5.729	50.5	H	-46.9	1.9	12.7	-36.0	-13.0	-23.0	

No other frequency was detected above the nosie floor

GSM1900 Band EGPRS Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless
Project #: 07U10987
Date: April 12th 2007
Test Engineer: Anoop Singh
Configuration: EUT Only
Mode: TX,GSM 1900, EGPRS

Test Equipment:
Receiving: Horn T60, Pre-amp T145, SMA Cables 3 & 12 ft (Setup this one for testing EUT) S/N: 187207004 & 187308840
Substitution: Horn T59, 6ft SMA Cable Warehouse S/N: 187215001

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel	1850.2MHz								
3.700	53.2	V	-51.4	0.9	9.7	-42.6	-13.0	-29.6	
5.551	52.6	V	-50.0	1.3	11.0	-40.4	-13.0	-27.4	
3.700	53.5	H	-47.5	1.4	12.0	-36.9	-13.0	-23.9	
5.551	53.1	H	-44.1	1.9	12.7	-33.3	-13.0	-20.3	
Mid Channel	1880MHz								
3.760	53.1	V	-51.7	0.9	9.7	-42.9	-13.0	-29.9	
5.640	52.1	V	-51.1	1.4	11.2	-41.3	-13.0	-28.3	
3.760	53.5	H	-47.6	1.4	12.0	-37.1	-13.0	-24.1	
5.640	52.7	H	-45.2	1.9	12.7	-34.3	-13.0	-21.3	
High Channel	1909.8MHz								
3.820	53.2	V	-50.8	0.9	9.7	-42.0	-13.0	-29.0	
5.729	52.6	V	-51.0	1.4	11.3	-41.0	-13.0	-28.0	
3.820	52.9	H	-47.6	1.5	12.0	-37.0	-13.0	-24.0	
5.729	52.3	H	-45.1	1.9	12.7	-34.2	-13.0	-21.2	

No other frequency was detected above the nosie floor

PCS Band WCDMA Spurious & Harmonic (EIRP)

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

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, WCDMA

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Horn > 18GHz:
Limit: EIRP
☑ High Pass Filter

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

Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

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 1852.4MHz										
3.705	42.2	H	-55.0	5.9	9.7	7.5	-51.3	-13.0	-38.3	
3.705	41.6	V	-55.7	5.9	9.7	7.5	-52.0	-13.0	-39.0	
Mid Ch 1880.0MHz										
3.760	41.9	H	-55.1	6.0	9.7	7.5	-51.4	-13.0	-38.4	
3.760	40.8	V	-56.3	6.0	9.7	7.5	-52.6	-13.0	-39.6	
Hi Ch 1907.6MHz										
3.815	41.5	H	-55.2	6.0	9.7	7.6	-51.6	-13.0	-38.6	
3.815	40.6	V	-56.2	6.0	9.7	7.6	-52.6	-13.0	-39.6	

Rev. 5.1.6
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 5m B-Chamber

Company: Sierra Wireless
Project #: 07U10987
Date: 04/16/2007
Test Engineer: Mengistu Mekuria
Configuration: EUT With Support PC
Mode: PCS TX, WCDMA + HSDPA

Test Equipment:

EMCO Horn 1-18GHz: T60; S/N: 2238 @3m
Horn > 18GHz:
Limit: EIRP
☑ High Pass Filter

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

Pre-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

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 1852.4MHz										
3.705	55.3	H	-41.9	5.9	9.7	7.5	-38.2	-13.0	-25.2	
3.705	50.2	V	-47.1	5.9	9.7	7.5	-43.4	-13.0	-30.4	
Mid Ch 1880.0MHz										
3.760	56.7	H	-40.3	6.0	9.7	7.5	-36.6	-13.0	-23.6	
3.760	51.3	V	-45.8	6.0	9.7	7.5	-42.1	-13.0	-29.1	
Hi Ch 1907.6MHz										
3.815	56.0	H	-40.7	6.0	9.7	7.6	-37.1	-13.0	-24.1	
3.815	52.0	V	-44.8	6.0	9.7	7.6	-41.2	-13.0	-28.2	

Rev. 5.1.6
Note: No other emissions were detected above the system noise floor.

8. SETUP PHOTOS

RADIATED RF MEASUREMENT SETUP FOR MOBILE CONFIGURATION

RADIATED FRONT PHOTO

RADIATED BACK PHOTO

END OF REPORT