



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

FOR

850/900/1800/1900/2100 MHZ USB MODEM

MODEL NUMBER: AirCard 881U

FCC ID: N7NMC8781U

REPORT NUMBER: 07U11027-1

ISSUE DATE: MAY 20, 2007

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

Prepared by
**COMPLIANCE CERTIFICATION SERVICES
47173 BENICIA STREET
FREMONT, CA 94538, USA
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/20/07	Initial Issue	T.Chan

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION	5
4. CALIBRATION AND UNCERTAINTY.....	5
4.1. MEASURING INSTRUMENT CALIBRATION.....	5
4.2. MEASUREMENT UNCERTAINTY.....	5
5. EQUIPMENT UNDER TEST.....	6
5.1. DESCRIPTION OF EUT	6
5.2. MAXIMUM OUTPUT POWER	6
5.3. SOFTWARE AND FIRMWARE	7
5.4. WORST-CASE CONFIGURATION AND MODE.....	8
5.5. DESCRIPTION OF TEST SETUP	8
6. TEST AND MEASUREMENT EQUIPMENT	10
7. LIMITS AND RESULTS	11
7.1. RADIATED RF POWER OUTPUT.....	11
7.2. FIELD STRENGTH OF SPURIOUS EMISSION	22
8. SETUP PHOTOS	31

1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: USB WIRELESS MODEM

MODEL: AirCard 881U

SERIAL NUMBER: IMEI352678010301551

DATE TESTED: MAY 04-08, 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:

Tested By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES



ANOOP SINGH
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
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 a multiband wireless modem operating on the GSM/GPRS/EDGE/UMTS network. In the US and Canada, only cellular and PCS bands are used for GSM/GPRS/UMTS operation, so this test report only contains data for these two bands (850MHz and 1900MHz). The EUT was tested in all modes of operation: GMSK Modulation, 8PSK and WCDMA modulation.

5.2. MAXIMUM OUTPUT POWER

The transmitter has maximum ERP and EIRP output powers as follows:

Part 22 (824 - 849MHz) & Part 24 (1850 - 1910MHz) Authorized Band:

Frequency Range (MHz)	Modulation	ERP Peak Power (dBm)	ERP Peak Power (mW)
824.2 - 848.8	GPRS	29.50	891.25
824.2 - 848.8	EGPRS	27.70	588.84
826.4 - 846.6	WCDMA	25.40	346.74
826.4 - 846.6	HSDPA	25.80	380.19

Frequency Range (MHz)	Modulation	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
1850.2 - 1909.8	GPRS	27.90	616.60
1850.2 - 1909.8	EGPRS	26.00	398.11
1852.4 - 1907.6	WCDMA	26.70	467.74
1852.4 - 1907.6	HSDPA	27.30	537.03

NOTE: RBW=VBW=8MHz

5.3. SOFTWARE AND FIRMWARE

The following settings were used to configure the Wireless Communications Test Set, Agilent 8960 Series 10, E5515C.

Instrument information: (by press SYSTEM CONFIG)

Application: WCDMA Lap App C
E6703C C.03.11
Format: WCDMA

Call Control: (by press CALL SETUP)

2 of 4 Cell Parameters: PS Domain Information > Present
ATT (IMSI Attach) Flag State > Set
4 of 4 Security Info: Security Parameter - System Operations > None

Call Params: (by press CALL SETUP)

1 of 3
Channel Type: 12.2k RMC
Paging Service: RB Test Mode

HSDPA Parameters:

1 of 2
HSDPA RB Test Mode Setup
FRC Type > H-Set 5 QPSK
CN Domain > PS Domain
Uplink 64k DTCH for HSDPA Loopback State > On
HS-DSCH Data Pattern > CCITT PRBS15
RLC Header on HS-DSCH > Present

Channel (UARFCN) Params: DL Channel: 4357 / 4407 / 4458
UL Channel: 4132 / 4182 / 4233
UL Sep (Band) > 400MHz (Band 4)
Freq Bnad Ind > On

2 of 3
DL DTCH Data: ALL ONES
RLC Reestablish: Off
Call Limit State: Off
Call Drop Timer: Off
SRB Config.: 13.6k DCCH

3 of 3
UE Target Power: -5 dBm
UL CL Pwr Ctrl Params: Active bits (Select "All Up bits" after linked to get maximum power)
DL Channel: 9662 / 9800 / 9938 / 4357 / 4407 / 4458
UL Channel: 9262 / 9400 / 9538 / 4132 / 4182 / 4233

5.4. WORST-CASE CONFIGURATION AND MODE

Based on all test cases, GPRS has the worst case between GPRS & EGPRS modulations. The worst-case channel is determined as the channel with the highest output power. The highest measured output power was at high channel for CELL band and low channel for PCS band the worst case on HSDPA mode for WCDMA modulation

For the worst case position, EUT at Y position in the cradle is determined to be the worst case for the Cell band and, with EUT at X-position connected directly to the Laptop is the worst case for PCS band

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Test Peripherals				
Device Type	Manufacturer	Model Number	Serial Number	FCC ID
Laptop	Compaq	Presario R3000	CND5011HNJ	DoC
AC Adapter	HP	PPP017L	4Z01237302	DoC
Communications Test Set	Agilent	E5515C	GB46160222	DoC

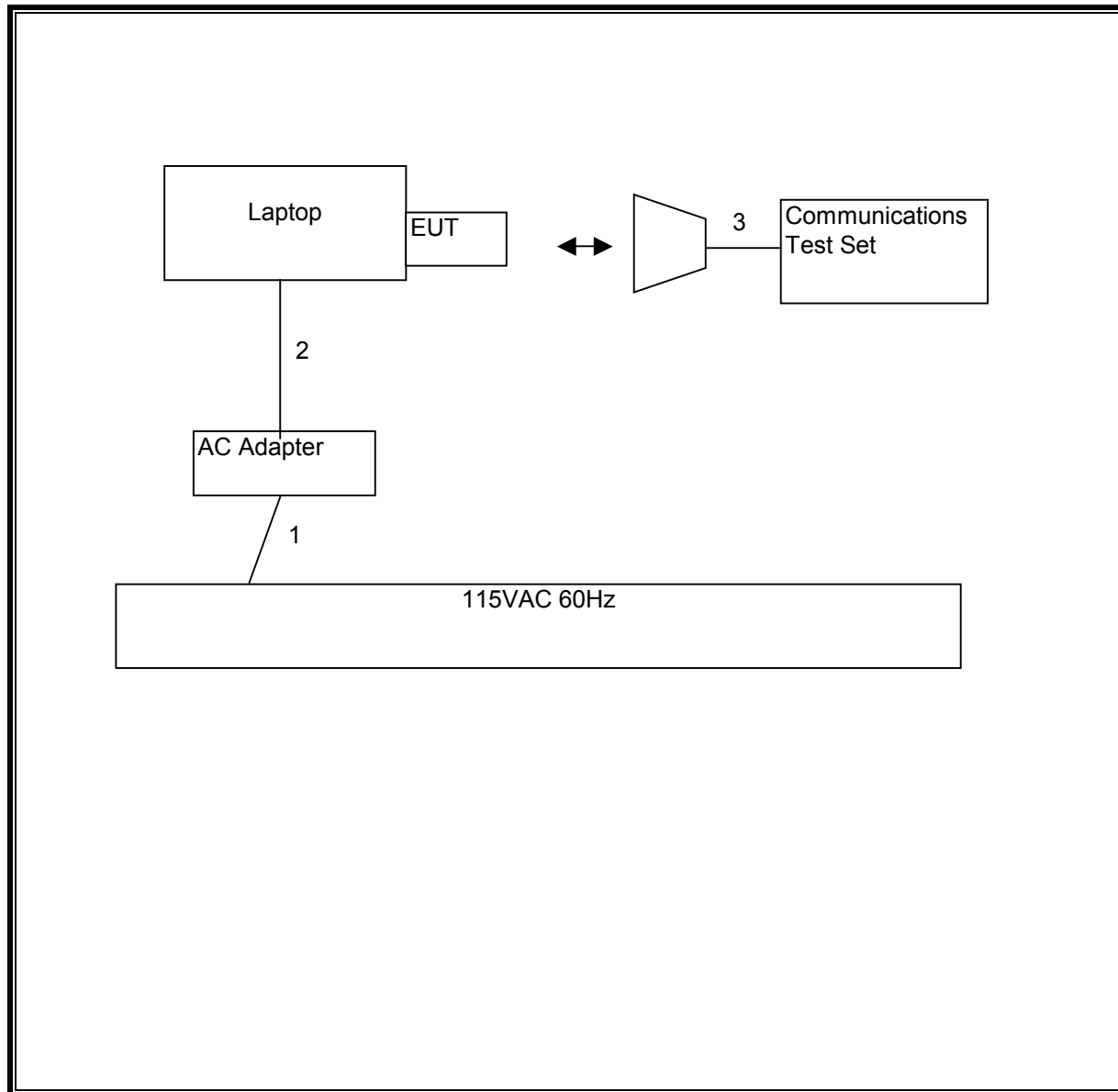
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2 m	NA
2	DC	1	DC	Un-shielded	2m	Ferrite on DC end
3	RF In/Out	1	SMA	Un-shielded	1m	NA

TEST SETUP

The EUT is connected directly to the laptop or through a cradle during the tests. The Wireless Communication test set exercised the EUT.

RADIATED TEST SETUP DIAGRAM



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, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/6/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/15/08
Antenna Biconical	EMCO	5116	9103163	3/11/08
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/15/08
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	6/2/07
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	5/11/08
Dipole	EMCO	3121C-DB2	22435	5/7/08
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR
Communication Test Set	Agilent	E5515C	91936	6/29/07

7. LIMITS AND RESULTS

7.1. RADIATED RF POWER OUTPUT

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	28.20	660.69
Middle	837	29.40	870.96
High	848.8	29.50	891.25

1900 MHz GPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	27.90	616.60
Middle	1880.00	26.30	426.58
High	1909.8	27.80	602.56

NOTE: RBW=VBW=8MHz.

850 MHz EGPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	27.50	562.34
Middle	837	27.70	588.84
High	848.8	27.00	501.19

1900 MHz EGPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	24.90	309.03
Middle	1880.00	23.40	218.78
High	1909.8	26.00	398.11

850 MHz WCDMA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	23.70	234.42
Middle	836.4	25.00	316.23
High	846.6	25.40	346.74

1900 MHz WCDMA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.4	26.70	467.74
Middle	1880.00	25.70	371.54
High	1907.6	25.20	331.13

NOTE: RBW=VBW=8MHz

850 MHz WCDMA+HSDPA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	25.80	380.19
Middle	836.4	25.10	323.59
High	846.6	25.10	323.59

1900 MHz WCDMA+HSDPA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.4	27.30	537.03
Middle	1880.00	26.30	426.58
High	1907.6	25.60	363.08

NOTE: RBW=VBW=8MHz

GPRS Output Power (ERP)

Cellular Fundamental Substitution Measurement

Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless INC - YW

Project #: 07U11027

Date: 05/07/2007

Test Engineer: Anoop Singh

Configuration: EUT with Cradle only (Worst Case)

Mode: TX, EUT Vertical Cell 850 Gprs

Test Equipment:

Receiving: EMCO LP T17, and 12 ft Chin SMA Cable (Setup this one for testing EUT)

Substitution: Dipole ETS S/N: 1629, and 6ft SMA Cable Warehouse S/N: 208947 002

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 Channel									
824.20	102.8	V	28.7	0.5	0.0	28.2	38.5	-10.2	
824.20	97.1	H	23.3	0.5	0.0	22.8	38.5	-15.7	
Mid Channel									
837.00	103.4	V	30.0	0.6	0.0	29.4	38.5	-9.0	
837.00	98.4	H	25.3	0.6	0.0	24.7	38.5	-13.8	
High Channel									
848.80	103.1	V	30.2	0.7	0.0	29.5	38.5	-9.0	
848.80	97.3	H	24.3	0.7	0.0	23.6	38.5	-14.8	

EGPRS Output Power (ERP)

Cellular Fundamental Substitution Measurement

Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless INC - YW

Project #: 07U11027

Date: 05/07/2007

Test Engineer: Anoop Singh

Configuration: EUT with Cradle Only (Worst Case)

Mode: TX, EUT Vertical Cell 850 EGPRS

Test Equipment:

Receiving: EMCO LP T17, and 12 ft Chin SMA Cable (Setup this one for testing EUT)

Substitution: Dipole ETS S/N: 1629, and 6ft SMA Cable Warehouse S/N: 208947 002

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 Channel									
824.20	102.1	V	28.0	0.5	0.0	27.5	38.5	-10.9	
824.20	95.1	H	21.2	0.5	0.0	20.7	38.5	-17.7	
Mid Channel									
837.00	101.7	V	28.3	0.6	0.0	27.7	38.5	-10.7	
837.00	95.5	H	22.3	0.6	0.0	21.7	38.5	-16.7	
High Channel									
848.80	100.6	V	27.7	0.7	0.0	27.0	38.5	-11.5	
848.80	95.3	H	22.3	0.7	0.0	21.6	38.5	-16.8	

WCDMA Output Power (ERP)

<p align="center">Cellular Fundamental Substitution Measurement Compliance Certification Services, Fremont Immunity Chamber</p> <p>Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Anoop Singh Configuration: EUT Only Mode: TX, EUT Vertical Cell 850 WCDMA</p> <p><u>Test Equipment:</u> Receiving: EMCO LP T17, and 12 ft Chin SMA Cable (Setup this one for testing EUT) Substitution: Dipole ETS S/N: 1629, and 6ft SMA Cable Warehouse S/N: 208947 002</p>									
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 Channel									
826.40	98.2	V	24.2	0.5	0.0	23.7	38.5	-14.8	
826.40	92.2	H	18.4	0.5	0.0	17.9	38.5	-20.6	
Mid Channel									
836.40	99.0	V	25.6	0.6	0.0	25.0	38.5	-13.4	
836.40	91.9	H	18.8	0.6	0.0	18.2	38.5	-20.3	
High Channel									
846.60	99.0	V	26.1	0.7	0.0	25.4	38.5	-13.1	
846.60	92.3	H	19.3	0.7	0.0	18.6	38.5	-19.8	

WCDMA+HSDPA Output Power (ERP)

<p align="center">Cellular Fundamental Substitution Measurement Compliance Certification Services, Fremont Immunity Chamber</p> <p>Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Anoop Singh Configuration: EUT Only Mode: TX, EUT Vertical Cell 850 WCDMA+HSDPA</p> <p><u>Test Equipment:</u> Receiving: EMCO LP T17, and 12 ft Chin SMA Cable (Setup this one for testing EUT) Substitution: Dipole ETS S/N: 1629, and 6ft SMA Cable Warehouse S/N: 208947 002</p>									
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 Channel									
826.40	100.4	V	26.3	0.5	0.0	25.8	38.5	-12.6	
826.40	90.9	H	17.1	0.5	0.0	16.6	38.5	-21.9	
Mid Channel									
836.40	99.1	V	25.7	0.6	0.0	25.1	38.5	-13.4	
836.40	92.4	H	19.3	0.6	0.0	18.7	38.5	-19.8	
High Channel									
846.60	98.7	V	25.8	0.7	0.0	25.1	38.5	-13.4	
846.60	91.1	H	18.1	0.7	0.0	17.4	38.5	-21.0	

GPRS Output Power (EIRP)

<p align="center">High Frequency Fundamental Measurement Compliance Certification Services, Fremont 5m Chamber Site</p> <p>Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Mengistu Mekuria Configuration: EUT Only Mode: PCS TX, GPRS Mode (Worst Case)</p> <p><u>Test Equipment:</u> Receiving: Horn T 73, and 12ft S/N: 197209005 (Setup this one for testing EUT) Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002</p>									
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1.850	93.9	V	20.5	0.9	8.3	27.9	33.0	-5.1	
1.850	87.7	H	13.8	0.9	8.3	21.2	33.0	-11.8	
1.880	93.2	V	18.9	0.9	8.3	26.3	33.0	-6.7	
1.880	88.4	H	13.6	0.9	8.3	21.0	33.0	-12.0	
1.910	93.6	V	20.3	0.9	8.4	27.8	33.0	-5.2	
1.910	88.4	H	15.6	0.9	8.4	23.1	33.0	-9.9	
Rev. 1.24.7									

EGPRS Output Power (EIRP)

<p align="center">High Frequency Fundamental Measurement Compliance Certification Services, Fremont 5m Chamber Site</p> <p>Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Mengistu Mekuria Configuration: EUT Only Mode: PCS TX, EGPRS Mode (Worst Case)</p> <p><u>Test Equipment:</u> 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</p>									
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1.850	90.9	V	17.5	0.9	8.3	24.9	33.0	-8.1	
1.850	87.5	H	13.6	0.9	8.3	21.0	33.0	-12.0	
1.880	90.3	V	16.0	0.9	8.3	23.4	33.0	-9.6	
1.880	88.4	H	13.6	0.9	8.3	21.0	33.0	-12.0	
1.910	91.8	V	18.5	0.9	8.4	26.0	33.0	-7.0	
1.910	88.4	H	15.6	0.9	8.4	23.1	33.0	-9.9	
Rev. 1.24.7									

WCDMA Output Power (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services, Fremont 5m Chamber Site Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Mengistu Mekuria Configuration: EUT Only Mode: PCS TX, WCDMA Mode (Worst Case) 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
1.852	92.7	V	19.3	0.9	8.3	26.7	33.0	-6.3	
1.852	90.5	H	16.6	0.9	8.3	24.0	33.0	-9.0	
1.880	92.6	V	18.3	0.9	8.3	25.7	33.0	-7.3	
1.880	90.6	H	15.8	0.9	8.3	23.3	33.0	-9.7	
1.908	91.0	V	17.7	0.9	8.4	25.2	33.0	-7.8	
1.908	88.3	H	15.5	0.9	8.4	23.0	33.0	-10.0	
Rev. 1.24.7									

WCDMA+HSDPA Output Power (EIRP)

High Frequency Fundamental Measurement Compliance Certification Services, Fremont 5m Chamber Site Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/03/2007 Test Engineer: Mengistu Mekuria Configuration: EUT Only Mode: PCS TX, HSDPA Mode (Worst Case) <u>Test Equipment:</u> 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
1.853	93.3	V	19.9	0.9	8.3	27.3	33.0	-5.7	
1.853	90.2	H	16.3	0.9	8.3	23.7	33.0	-9.3	
1.880	93.2	V	18.9	0.9	8.3	26.3	33.0	-6.7	
1.880	90.3	H	15.5	0.9	8.3	23.0	33.0	-10.0	
1.908	91.4	V	18.1	0.9	8.4	25.6	33.0	-7.4	
1.908	88.7	H	15.8	0.9	8.4	23.3	33.0	-9.7	
Rev. 1.24.7									

7.2. FIELD STRENGTH OF SPURIOUS EMISSION

LIMIT

§22.917 (e) 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 (h), & FCC 24.238 (b)

RESULTS

No non-compliance noted.

Note: No emissions were found within 30-1000MHz & after the third harmonic of 20dB below the system noise.

CELL Band GPRS Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement									
Compliance Certification Services, Fremont Immunity Chamber									
Company:	Sierra Wireless INC - YW								
Project #:	07U11027								
Date:	05/04/2007								
Test Engineer:	Anoop Singh								
Configuration:	EUT Only								
Mode:	TX, EUT Vertical Cell 850 Gprs								
<u>Test Equipment:</u>									
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	63.3	V	-43.6	0.8	7.7	-36.8	-13.0	-23.8	
2.473	68.4	V	-41.5	1.0	9.4	-33.1	-13.0	-20.1	
3.297	56.2	V	-49.6	1.2	9.7	-41.1	-13.0	-28.1	
1.648	59.2	H	-54.4	0.8	7.7	-47.6	-13.0	-34.6	
2.473	65.7	H	-44.8	1.0	9.4	-36.5	-13.0	-23.5	
3.297	55.8	H	-50.9	1.2	9.7	-42.4	-13.0	-29.4	
Mid Channel (837.0MHz)									
1.674	62.7	V	-43.0	0.8	7.7	-36.1	-13.0	-23.1	
2.511	65.3	V	-44.5	1.0	9.4	-36.1	-13.0	-23.1	
3.348	56.8	V	-49.4	1.2	9.7	-40.9	-13.0	-27.9	
1.674	60.0	H	-45.7	0.8	7.7	-38.8	-13.0	-25.8	
2.511	64.8	H	-44.3	1.0	9.4	-35.9	-13.0	-22.9	
3.348	56.1	H	-50.3	1.2	9.7	-41.8	-13.0	-28.8	
High Channel (848.8MHz)									
1.698	63.4	V	-45.5	0.8	7.8	-38.6	-13.0	-25.6	
2.546	68.3	V	-41.0	1.0	9.4	-32.6	-13.0	-19.6	
3.395	59.1	V	-46.9	1.2	9.7	-38.4	-13.0	-25.4	
1.698	61.0	H	-46.5	0.8	7.8	-39.6	-13.0	-26.6	
2.546	64.2	H	-45.3	1.0	9.4	-36.9	-13.0	-23.9	
3.395	56.1	H	-50.1	1.2	9.7	-41.6	-13.0	-28.6	
No other emission was detected above the system noise floor									

CELL Band EGPRS Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/04/2007 Test Engineer: Anoop Singh Configuration: EUT Only Mode: TX, EUT Vertical Cell 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	61.6	V	-45.3	0.8	7.7	-38.5	-13.0	-25.5	
2.473	63.1	V	-46.9	1.0	9.4	-38.5	-13.0	-25.5	
3.297	54.1	V	-51.6	1.2	9.7	-43.1	-13.0	-30.1	
1.648	58.3	H	-55.3	0.8	7.7	-48.4	-13.0	-35.4	
2.473	62.4	H	-48.1	1.0	9.4	-39.7	-13.0	-26.7	
3.297	52.2	H	-54.5	1.2	9.7	-46.0	-13.0	-33.0	
Mid Channel (837.0MHz)									
1.674	59.1	V	-46.6	0.8	7.7	-39.7	-13.0	-26.7	
2.511	66.0	V	-43.8	1.0	9.4	-35.4	-13.0	-22.4	
3.348	53.1	V	-53.1	1.2	9.7	-44.6	-13.0	-31.6	
1.674	57.2	H	-48.6	0.8	7.7	-41.7	-13.0	-28.7	
2.511	65.3	H	-43.8	1.0	9.4	-35.4	-13.0	-22.4	
3.348	52.7	H	-53.6	1.2	9.7	-45.1	-13.0	-32.1	
High Channel (848.8MHz)									
1.698	57.6	V	-51.3	0.8	7.8	-44.4	-13.0	-31.4	
2.546	67.0	V	-42.3	1.0	9.4	-33.9	-13.0	-20.9	
3.395	53.4	V	-52.6	1.2	9.7	-44.1	-13.0	-31.1	
1.698	56.9	H	-50.7	0.8	7.8	-43.7	-13.0	-30.7	
2.546	65.5	H	-44.0	1.0	9.4	-35.6	-13.0	-22.6	
3.395	51.9	H	-54.3	1.2	9.7	-45.8	-13.0	-32.8	
No other emission was detected above the system noise floor									

CELL Band WCDMA Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/04/2007 Test Engineer: Anoop Singh Configuration: EUT Only Mode: TX, EUT Vertical Cell 850 WCDMA									
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 (826.4MHz)									
1.653	57.0	V	-49.9	0.8	7.7	-43.1	-13.0	-30.1	
2.479	55.2	V	-54.7	1.0	9.4	-46.3	-13.0	-33.3	
3.306	54.1	V	-51.6	1.2	9.7	-43.1	-13.0	-30.1	
1.653	55.5	H	-58.1	0.8	7.7	-51.3	-13.0	-38.3	
2.479	53.9	H	-56.6	1.0	9.4	-48.2	-13.0	-35.2	
3.306	52.2	H	-54.6	1.2	9.7	-46.1	-13.0	-33.1	
Mid Channel (836.4MHz)									
1.673	56.8	V	-48.9	0.8	7.7	-42.1	-13.0	-29.1	
2.509	54.7	V	-55.1	1.0	9.4	-46.7	-13.0	-33.7	
3.346	53.7	V	-52.5	1.2	9.7	-44.0	-13.0	-31.0	
1.673	54.3	H	-51.4	0.8	7.7	-44.5	-13.0	-31.5	
2.509	53.1	H	-56.1	1.0	9.4	-47.7	-13.0	-34.7	
3.346	52.8	H	-53.5	1.2	9.7	-45.0	-13.0	-32.0	
High Channel (846.6MHz)									
1.693	53.8	V	-55.1	0.8	7.8	-48.2	-13.0	-35.2	
2.540	55.1	V	-54.2	1.0	9.4	-45.8	-13.0	-32.8	
3.386	51.8	V	-54.2	1.2	9.7	-45.7	-13.0	-32.7	
1.693	52.7	H	-54.8	0.8	7.8	-47.9	-13.0	-34.9	
2.540	53.4	H	-56.1	1.0	9.4	-47.7	-13.0	-34.7	
3.386	51.3	H	-54.9	1.2	9.7	-46.4	-13.0	-33.4	
No other emission was detected above the system noise floor									

CELL Band WCDMA+HSDPA Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement									
Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW									
Project #: 07U11027									
Date: 05/04/2007									
Test Engineer: Anoop Singh									
Configuration: EUT Only									
Mode: TX, EUT Vertical Cell 850 WCDMA + HSDPA									
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 (826.4MHz)									
1.653	57.2	V	-49.7	0.8	7.7	-42.9	-13.0	-29.9	
2.479	56.1	V	-53.8	1.0	9.4	-45.4	-13.0	-32.4	
3.306	53.1	V	-52.6	1.2	9.7	-44.1	-13.0	-31.1	
1.653	55.9	H	-57.7	0.8	7.7	-50.9	-13.0	-37.9	
2.479	54.2	H	-56.3	1.0	9.4	-48.0	-13.0	-35.0	
3.306	52.2	H	-54.6	1.2	9.7	-46.1	-13.0	-33.1	
Mid Channel (836.4MHz)									
1.673	58.1	V	-47.6	0.8	7.7	-40.7	-13.0	-27.7	
2.509	56.9	V	-52.9	1.0	9.4	-44.5	-13.0	-31.5	
3.346	53.2	V	-53.0	1.2	9.7	-44.5	-13.0	-31.5	
1.673	56.9	H	-48.8	0.8	7.7	-41.9	-13.0	-28.9	
2.509	55.9	H	-53.2	1.0	9.4	-44.8	-13.0	-31.8	
3.346	51.8	H	-54.6	1.2	9.7	-46.1	-13.0	-33.1	
High Channel (846.6MHz)									
1.693	57.6	V	-51.3	0.8	7.8	-44.4	-13.0	-31.4	
2.540	54.3	V	-55.0	1.0	9.4	-46.6	-13.0	-33.6	
3.386	52.6	V	-53.4	1.2	9.7	-44.9	-13.0	-31.9	
1.693	56.1	H	-51.4	0.8	7.8	-44.5	-13.0	-31.5	
2.540	53.2	H	-56.3	1.0	9.4	-47.9	-13.0	-34.9	
3.386	51.7	H	-54.5	1.2	9.7	-46.0	-13.0	-33.0	
No other emission was detected above the system noise floor									

PCS Band GPRS Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW Project #: 07U11027 Date: 05/04/2007 Test Engineer: Anoop Singh Configuration: EUT Only Mode: TX, EUT Horizontal PCS 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	54.9	V	-49.7	0.9	9.7	-40.9	-13.0	-27.9	
5.551	52.1	V	-50.5	1.3	11.0	-40.8	-13.0	-27.8	
3.700	52.3	H	-53.5	0.9	9.7	-44.7	-13.0	-31.7	
5.551	51.5	H	-51.5	1.3	11.0	-41.8	-13.0	-28.8	
Mid Channel (1880MHz)									
3.760	53.2	V	-51.6	0.9	9.7	-42.8	-13.0	-29.8	
5.640	50.8	V	-52.4	1.4	11.2	-42.6	-13.0	-29.6	
3.760	52.2	H	-52.1	0.9	9.7	-43.3	-13.0	-30.3	
5.640	50.7	H	-52.7	1.4	11.2	-42.9	-13.0	-29.9	
High Channel (1909.8MHz)									
3.820	54.1	V	-49.9	0.9	9.7	-41.1	-13.0	-28.1	
5.729	51.4	V	-52.1	1.4	11.3	-42.2	-13.0	-29.2	
3.820	53.1	H	-50.8	0.9	9.7	-42.0	-13.0	-29.0	
5.729	50.2	H	-53.4	1.4	11.3	-43.5	-13.0	-30.5	
No other emission was detected above the system noise floor									

PCS Band EGPRS Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement									
Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW									
Project #: 07U11027									
Date: 05/04/2007									
Test Engineer: Anoop Singh									
Configuration: EUT Only									
Mode: TX, EUT Horizontal PCS 1900 EGprs									
<u>Test Equipment:</u>									
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	53.6	V	-51.0	0.9	9.7	-42.2	-13.0	-29.2	
5.551	53.0	V	-49.6	1.3	11.0	-39.9	-13.0	-26.9	
3.700	51.3	H	-54.5	0.9	9.7	-45.7	-13.0	-32.7	
5.551	51.2	H	-51.8	1.3	11.0	-42.1	-13.0	-29.1	
Mid Channel (1880MHz)									
3.760	54.0	V	-50.8	0.9	9.7	-42.0	-13.0	-29.0	
5.640	53.1	V	-50.1	1.4	11.2	-40.3	-13.0	-27.3	
3.760	51.9	H	-52.4	0.9	9.7	-43.6	-13.0	-30.6	
5.640	51.0	H	-52.4	1.4	11.2	-42.6	-13.0	-29.6	
High Channel (1909.8MHz)									
3.820	54.0	V	-50.0	0.9	9.7	-41.2	-13.0	-28.2	
5.729	52.0	V	-51.5	1.4	11.3	-41.5	-13.0	-28.5	
3.820	52.3	H	-51.6	0.9	9.7	-42.8	-13.0	-29.8	
5.729	51.5	H	-52.1	1.4	11.3	-42.2	-13.0	-29.2	
No other emission was detected above the system noise floor									

PCS Band WCDMA Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement

Compliance Certification Services, Fremont Immunity Chamber

Company: Sierra Wireless INC - YW

Project #: 07U11027

Date: 05/04/2007

Test Engineer: Mengsitu Mekuria

Configuration: EUT Only

Mode: TX, EUT Horizontal PCS 1900 WCDMA

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

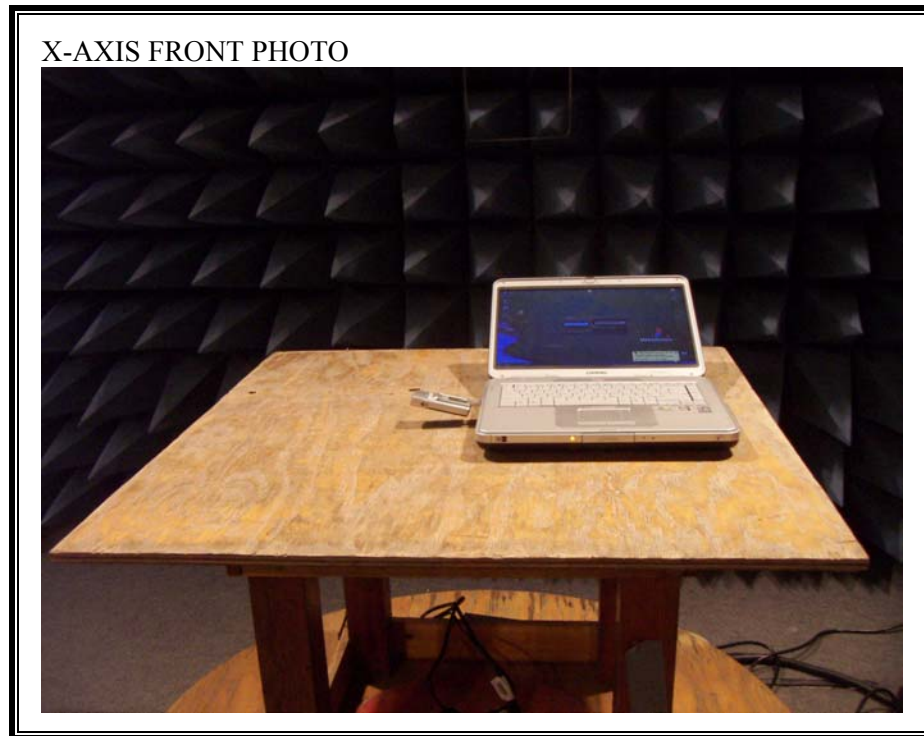
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel (1852.4MHz)									
3.705	45.1	V	-59.5	0.9	9.7	-50.8	-13.0	-37.8	
5.557	42.5	V	-60.2	1.3	11.0	-50.5	-13.0	-37.5	
3.705	45.4	H	-60.4	0.9	9.7	-51.6	-13.0	-38.6	
5.557	42.2	H	-60.8	1.3	11.0	-51.1	-13.0	-38.1	
Mid Channel (1880MHz)									
3.760	51.5	V	-53.3	0.9	9.7	-44.5	-13.0	-31.5	
5.640	44.5	V	-58.7	1.4	11.2	-48.9	-13.0	-35.9	
3.760	52.8	H	-51.5	0.9	9.7	-42.7	-13.0	-29.7	
5.640	43.9	H	-59.5	1.4	11.2	-49.7	-13.0	-36.7	
High Channel (1907.6MHz)									
3.815	60.6	V	-43.4	0.9	9.7	-34.6	-13.0	-21.6	
5.723	44.4	V	-59.2	1.4	11.3	-49.2	-13.0	-36.2	
3.815	63.5	H	-40.5	0.9	9.7	-31.6	-13.0	-18.6	
5.723	44.9	H	-58.7	1.4	11.3	-48.7	-13.0	-35.7	
No other emission was detected above the system noise floor									

PCS Band WCDMA+HSDPA Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement									
Compliance Certification Services, Fremont Immunity Chamber									
Company: Sierra Wireless INC - YW									
Project #: 07U11027									
Date: 05/04/2007									
Test Engineer: Mengsiti Mekuria									
Configuration: EUT Only									
Mode: EUT Horizontal PCS 1900 WCDMA+HSDPA									
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 (1852.4MHz)									
3.705	45.6	V	-59.0	0.9	9.7	-50.3	-13.0	-37.3	
5.557	42.3	V	-60.3	1.3	11.0	-50.6	-13.0	-37.6	
3.705	48.5	H	-57.3	0.9	9.7	-48.5	-13.0	-35.5	
5.557	44.3	H	-58.7	1.3	11.0	-49.0	-13.0	-36.0	
Mid Channel (1880MHz)									
3.760	52.8	V	-52.1	0.9	9.7	-43.3	-13.0	-30.3	
5.640	42.8	V	-60.4	1.4	11.2	-50.6	-13.0	-37.6	
3.760	54.0	H	-50.3	0.9	9.7	-41.5	-13.0	-28.5	
5.640	43.0	H	-60.4	1.4	11.2	-50.6	-13.0	-37.6	
High Channel (1907.6MHz)									
3.815	63.2	V	-40.8	0.9	9.7	-32.0	-13.0	-19.0	
5.723	44.1	V	-59.4	1.4	11.3	-49.5	-13.0	-36.5	
3.815	64.9	H	-39.0	0.9	9.7	-30.2	-13.0	-17.2	
5.723	43.5	H	-60.1	1.4	11.3	-50.2	-13.0	-37.2	
No other emission was detected above the system noise floor									

8. SETUP PHOTOS

RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION



X-AXIS BACK PHOTO



Y-AXIS FRONT PHOTO



Y-AXIS BACK PHOTO



Y-AXIS WITH CRADLE FRONT PHOTO



Y-AXIS BACK WITH CRADLE PHOTO



END OF REPORT