

FCC CFR47 PART 24E CERTIFICATION TEST REPORT FOR

CDMA, LTE, WIMAX, AND WIFI MOBILE HOT SPOT

MODEL NUMBER: AC803S

FCC ID: N7NAC803S

REPORT NUMBER: 11U14068-1

ISSUE DATE: MARCH 05, 2012

Prepared for SIERRA WIRELESS INC. 2200 FARADAY AVE. SUITE 150 CARLSBAD, CA 92008, U.S.A.

Prepared by

COMPLIANCE CERTIFICATION SERVICES (UL CCS) 47173 BENICIA STREET FREMONT, CA 94538, U.S.A. TEL: (510) 771-1000 FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

	Issue		
Rev.	Date	Revisions	Revised By
	03/05/12	Initial Issue	T. Chan

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SIERRA WIRELESS INC 2200 FARADAY AVE. SL CARLSBAD, CA 92008, I	JITE 150 U.S.A.
EUT DESCRIPTION:	CDMA, LTE, WIMAX, AN	ND WIFI MOBILE HOT SPOT
MODEL:	AC803S	
SERIAL NUMBER:	N7NAC803	
DATE TESTED:	DECEMBER 5 TO 21, 20	111
	APPLICABLE STAND	ARDS
	STANDARD	TEST RESULTS
	FCC PART 24E	Pass

Compliance Certification Services (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. 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 UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

Tested By:

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

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

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

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. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Mobile hotspot that features with CDMA, LTE, WIMAX, and WIFI transceiver that is manufacture by Sierra Wireless Inc.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average conducted and EIRP output powers as follows:

Frequency range	Modulation	Conducted		EIRP (EUT Only)		EIRP (EUT WITH CRADLE)	
(MHz)	Wooddiation	dBm	mW	dBm	mW	dBm	mW
1951 25 1000 75	1xRTT	24.14	259.4	28.55	716.1	27.77	598.4
1651.25-1906.75	EVDO REV. A	24.30	269.2	28.33	680.8	27.22	527.2

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent 8960 Communication Test Set.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case is EUT on the highest power. Based on Peak Power measurement investigations, the following modes should be considered as worst-case scenario for all other measurements.

Worst-case modes:

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

Since the EUT is a portable device, for the fundamental tests the X, Y and Z orientations have been investigated on, and after the investigations the X position turned out to be the worst case.

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5.5. DESCRIPTION OF TEST SETUP

RADIATED TESTS SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST							
Description	Description Manufacturer Model Serial Number						
AC ADAPTER	Sierra Wireless	SSW-2013	201034				
CRADLE Sierra Wireless N/A 1145-0003							

I/O CABLES (RF Conducted Test)

I/O CABLE LIST						
Cable	Port	# of	Connector	Cable	Cable	Remarks
No.		Identic	Туре	Туре	Length	
		Ports				
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A
2	RF	1	RF	SHELDED	0.1m	N/A
3	RF	1	SMA	SHELDED	0.6 m	N/A

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CONFIGURATION 1: I/O CABLES (RF Radiated Test)

	I/O CABLE LIST							
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks		
1	DC	1	MINI USB	UN-SHELDED	1.0m	N/A		

CONFIGURATION 2: I/O CABLES (RF Radiated Test)

I/O CABLE LIST							
Cable No.	Port	# of Identica Ports	Connector Type	Cable Type	Cable Length	Remarks	
1	DC	1	Built-in	UN-SHELDED	2.0m	Ferrite core at one end (Cradle Unit)	

TEST SETUP

Configuration 1: The EUT is a stand-alone device and was tested with AC/USB Adapter. Configuration 2: The EUT sat on the cradle unit that was connected with DC Adapter

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CONDUCTED SETUP DIAGRAM FOR TESTS



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CONFIGURATION 1: RADIATED SETUP DIAGRAM FOR TESTS



CONFIGURATION 2: RADIATED SETUP DIAGRAM FOR TESTS



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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 Due		
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	04/07/12		
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/30/12		
Antenna, Horn, 18 GHz	EMCO	3115	C00783	06/29/12		
Antenna, Horn, 18 GHz	EMCO	3115	C00945	06/29/12		
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	07/16/12		
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	07/12/12		
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	01/27/12		
Communications Test Set	Agilent / HP	E5515C	C01086	06/17/12		
Radio Communication Analizer	Anritsu	MT8820C	N/A	05/17/12		
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	10/20/12		
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR		
Directional Coupler	RF-Lambda	RFDC5M06G15	N/A	CNR		
Signal Generator, 20 GHz	Agilent / HP	83732B	C00774	07/14/12		
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	C00993	07/10/12		

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7. RF POWER OUTPUT VERIFICATION

Maximum output power is verified on the Low, Middle and High channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E for 1xRTT, section 3.1.2.3.4 of 3GPP2 C.S0033-0/TIA-866 for Rel. 0 and section 4.3.4 of 3GPP2 C.S0033-A for Rev. A

CDMA2000 1xRTT

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

Application Rev, License

CDMA2000 Mobile Test B.15.18, L

- Protocol Rev > 6 (IS-2000-0)
- System ID: 8; NID: 65535, Reg. Ch. #. 600 for PCS
- Radio Config (RC) > RC1 or RC3
- Service Option (SO) Setup > SO02 or SO55
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

RF Output Power for PCS Band						
Dedia		RF Pwr (dBm)				
Radio	Service Option	Ch. 25/1851.25	Ch.600/1880	Ch.1175/1908.75		
(RC)	(SO)	MHz	MHz	MHz		
(1(0)		Peak	Peak	Peak		
RC1	2 (Loopback)	24.00	23.95	23.65		
	55 (Loopback)	24.03	23.96	23.83		
RC2	9 (Loopback)	24.05	23.90	23.68		
	55 (Loopback)	24.04	23.92	23.73		
RC3	2 (Loopback)	24.14	23.98	23.68		
	55 (Loopback)	24.11	24.00	23.80		
	32 (+F-SCH)	24.08	23.90	23.69		
	32 (+SCH)	24.04	23.90	23.69		
RC4	2 (Loopback)	24.11	23.98	23.68		
	55 (Loopback)	24.13	23.99	23.68		
	32 (+F-SCH)	24.04	23.89	23.67		
	32 (+SCH)	24.07	23.92	23.67		
RC5	9 (Loopback)	24.04	23.90	23.66		
	55 (Loopback)	24.07	23.89	23.65		

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1xEv-Do - Release 0 (Rel. 0)

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

EVDO Release 0 - RTAP

- Call Setup > Shift & Preset
- Call Control:

 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots
- Call Parms:
 - \circ Cell Power > -105.5 dBm/1.23 MHz
 - Channel > (Enter channel number)
 - Application Config > Enhanced Test Application Protocol > RTAP
 - RTAP Rate > 153.6 kbps
 - Rvs Power Ctrl > Active bits
 - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

EVDO Release 0 - FTAP

- Call Setup > Shift & Preset
- Call Control:

 - Generator Info > Termination Parameters > Max Forward Packet Duration > 16 Slots Call Parms:
 - Cell Power > -105.5 dBm/1.23 MHz
 - Cell Band > (Select US Cellular or US PCS)
 - Channel > (Enter channel number)
 - Application Config > Enhanced Test Application Protocol > FTAP (default)
 - FTAP Rate > 307.2 kbps (2 Slot, QPSK)
 - Rvs Power Ctrl > Active bits
 - Protocol Rel > 0 (1xEV-DO)
- Press "Start Data Connection" when "Session Open" appear in "Active Cell"
- Rvs Power Ctrl > All Up bits (Maximum TxPout)

PCS Band

ETAD Data	PTAP Pato	Channol	f (MH7)	RF Pwr (dBm)
FTAF Rale	RTAF Rale	Channel	1 (IVII 12)	Average
307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	24.12
		600	1880.00	23.94
		1175	1908.75	23.86

1xEv-Do - Revision A (Rev. A)

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

Application	Rev, License
1xEV-DO Terminal Test	A.09.13

EVDO Rev. A – RETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > RETAP
- R-Data Pkt Size > 4096
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

> Subnet Mask > 0

- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots
 > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

EVDO Rev. A - FETAP

- Call Setup > Shift & Preset
- Cell Power > -60 dBm/1.23 MHz
- Protocol Rev > A (1xEV-DO-A)
- Application Config > Enhanced Test Application Protocol > FETAP
- F-Traffic Format > 4 (1024, 2,128) Canonical (307.2k, QPSK)
- Protocol Subtype Config > Release A Physical Layer Subtype > Subtype 2
- > PL Subtype 2 Access Channel MAC Subtype > Default (Subtype 0)

> Subnet Mask > 0

- Generator Info > Termination Parameters > Max Forward Packet Duration >16 Slots > ACK R-Data After > Subpacket 0 (All ACK)
- Rvs Power Ctrl > All Up bits (to get the maximum power)

PCS Band

FETAP	RETAP	Channel	f (MHz)	RF Pwr (dBm)
Traffic Format	Data Payload Size	yload Size		Average
307.2k, QPSK/ ACK channel is transmitted at all the slots		25	1851.25	24.30
	4096	600	1880.00	24.14
		1175	1908.75	23.91

PEAK TO AVERAGE RATIO 1xRTT 1900 BAND





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EVDO REV A 1900 BAND





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PEAK-TO-AVERAGE RATIO 1xRTT 1900 BAND:

			Couducted	Power (dBm)	Peak-to-Average
Mode	Ch. No.	f (MHz)	*Peak	Average	Ratio (PARA)
	25	1851.25	28.99	24.33	4.66
			Couducted	Power (dBm)	Peak-to-Average
	Ch. No.	f (MHz)	*Peak	Average	Ratio (PAR)
CDMA2000 1xRTT	600	1880	29.16	24.2	4.96
			Couducted	Power (dBm)	Peak-to-Average
	Ch. No.	f (MHz)	*Peak	Average	Ratio (PAR)
	1175	1908.75	28.77	24.14	4.63
*Peak Reading = Average Reading + Peak-to-Average Ratio					

PEAK-TO-AVERAGE RATIO EVDO A 1900 BAND:

			Couducted	Power (dBm)	Peak-to-Average
Mode	Ch. No.	f (MHz)	*Peak	Average	Ratio (PARA)
	25	1851.25	29.37	24.42	4.95
			Couducted	Power (dBm)	Peak-to-Average
	Ch. No.	f (MHz)	*Peak	Average	Ratio (PAR)
CDMA2000 EVDO REV A	600	1880	29.78	24.30	5.48
			Couducted	Power (dBm)	Peak-to-Average
	Ch. No.	f (MHz)	*Peak	Average	Ratio (PAR)
	1175	1908.75	28.94	24.05	4.89
*Peak Reading = Average Reading + Peak-to-Average Ratio					

8. CONDUCTED TEST RESULTS

8.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

RESULTS

Mode	Band	Channel	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
00044 0000		25	1851.25	1.2815	1.406
1xRTT	DCS	600	1880.00	1.2369	1.402
		1175	1908.75	1.2895	1.401
CDMA 2000	F03	25	1851.25	1.2547	1.403
		600	1880.00	1.2777	1.402
LVDO REV.A		1175	1908.75	1.3053	1.416

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99% BANDWIDTH and 26dB

1xRTT 1900 BAND

LOW CH	вт	Freq/Channel
Ch Freq 1.85125 GHz	Trig Free	Center Freq 1.85125000 GHz
		Start Freq 1.84975000 GHz
Ref 20 dBm Atten 20 dB #Samp		Stop Freq 1.85275000 GHz CF Step
Offst 15.5 dB		1.90875000 GHz Auto <u>Man</u> Freq Offset
Center 1.851 250 GHz #Res BW 30 kHz #VBW 100 I	Span 3 MHz (Hz Sweep 10.07 ms (1001 pts)	O.00000000 Hz
Occupied Bandwidth 1.2815 MHz	Occ BW % Pwr 99.00 % (x dB -26.00 dB	Signai Irack On <u>Off</u>
Transmit Freq Error -6.134 kHz x dB Bandwidth 1.406 MHz*		
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HIGH CH	R T Frea/Channel
Ch Freq 1.90875 GHz	Trig Free Center Freq 1.90875000 GHz
	Start Freq 1.90725000 GHz
Ref 20 dBm Atten 20 dB #Samp	Stop Freq 1.91025000 GHz CF Step 1.90875000 GHz Auto Man Freq Offset
Center 1.908 750 GHz #Res BW 30 kHz #VBW 100 kHz	Span 3 MHz 0.0000000 Hz Sweep 10.07 ms (1001 pts)
Occupied Bandwidth 1.2895 MHz	Occ BW % Pwr 99.00 % On <u>Off</u> x dB -26.00 dB
Transmit Freq Error 5.193 kHz x dB Bandwidth 1.401 MHz*	
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EVDO REV A 1900 BAND



MID CH				
🔆 Agilent 15:06:55 Dec 9, 2011			RТ	Freq/Channel
Ch Freq 1.88 GHz Occupied Bandwidth	Г		Trig Free	Center Freq 1.88000000 GHz
				Start Freq 1.87850000 GHz
Ref 20 dBm Atten 20 dB #Samp Log	han the			Stop Freq 1.88150000 GHz
dB/ Offst 15.5				CF Step 300.000000 kHz <u>Auto Man</u>
dB			Span 3 MHz	Freq Offset 0.00000000 Hz
#Res BW 30 kHz #VBW 10	00 kHz	Sweep 10.07 m	s (1001 pts)	
Occupied Bandwidth 1.2777 MHz		Occ BW % Pwr x dB	99.00 % -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error 6.582 kHz x dB Bandwidth 1.402 MHz*				
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HIGH CH	Freq/Channel
Ch Freq 1.90875 GHz Trig Free Occupied Bandwidth	Center Freq 1.90875000 GHz
	Start Freq 1.90725000 GHz
Ref 20 dBm Atten 20 dB #Samp	Stop Freq 1.91025000 GHz 300.000000 kHz <u>Auto Man</u> Freq Offset 0.00000000 Hz
Occupied Bandwidth Occ BW % Pwr 99.00 % 1.3053 MHz x dB -26.00 dB	Signal Track On <u>Off</u>
Transmit Freq Error 3.995 kHz x dB Bandwidth 1.416 MHz*	
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8.2. BAND EDGE

RULE PART(S)

FCC: §24.238

LIMITS

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

The transmitter output was connected to a Agilent 8960 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

For each band edge measurement:

- Set the spectrum analyzer span to include the block edge frequency (1850 and 1910MHz)
- Set a marker to point the corresponding band edge frequency in each test case.
- Set display line at -13 dBm
- Set resolution bandwidth to at least 1% of emission bandwidth.

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

RESULTS

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1xRTT 1900 BAND





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EVDO REV A 1900 BAND





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8.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §24.238

LIMITS

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

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

For each out of band emissions measurement:

- Set display line at -13 dBm
- Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

RESULTS

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1xRTT 1900 BAND





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8.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §24.235.

<u>LIMITS</u>

RSS-133 6.3 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

TEST PROCEDURE

Use Agilent 8960 and CMW 500 with Frequency Error measurement capability.

- Temp. = −30° to +50°C
- Voltage = 4.2Vdc (85% 115%)

Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

<u>RESULTS</u>

See the following pages.

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PCS, 1xRTT - MID CHANNEL

Reference Frequency: PCS Mid Channel 1880.999999MHz @ 20°C								
Limit: within	Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse				
(Vdc)	Temperature (*C)	(MHz)	Delta (ppm)	Limit (ppm)				
4.20	50	1879.999998	0.001	2.5				
4.20	40	1879.999998	0.001	2.5				
4.20	30	1879.999999	0.000	2.5				
4.2	20	1879.999999	0	2.5				
4.20	10	1880.000000	-0.001	2.5				
4.20	0	1880.000002	-0.002	2.5				
4.20	-10	1880.000000	-0.001	2.5				
4.20	-20	1879.999999	0.000	2.5				
4.20	-30	1879.999998	0.001	2.5				

Reference Frequency: PCS Mid Channel 1880.999999MHz @ 20°C							
Limit: within	Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz						
Power Supply	Power Supply Environment Frequency Deviation Measureed with Time Elapse						
(Vdc)	Temperature (*C) (MHz) Delta (ppm) Limit (ppm						
4.20	20	1879.999999	0	2.5			
3.57	20	1879.999998	0.001	2.5			
4.83	20	1879.999999	0.000	2.5			

PCS, EVDO REV. A - MID CHANNEL

Reference Frequency: PCS Mid Channel 1880.000003MHz @ 20°C								
Limit: within	Limit: within the authorized block or +- 2.5 ppm = 4700.000 Hz							
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse				
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)				
4.20	50	1880.000004	-0.001	2.5				
4.20	40	1880.000002	0.001	2.5				
4.20	30	1880.000002	0.001	2.5				
4.2	20	1880.000003	0	2.5				
4.20	10	1880.000003	0.000	2.5				
4.20	0	1879.999997	0.003	2.5				
4.20	-10	1880.000000	0.002	2.5				
4.20	-20	1880.000001	0.001	2.5				
4.20	-30	1880.000002	0.001	2.5				

Ref	erence Frequency:	PCS Mid Channel 1	880.000003MHz @ 20	0°C					
Limit: within	n the authorized blo	ck or +- 2.5 ppm =	4700.000	Hz					
Power Supply	Environment	Frequency Dev	viation Measureed wi	th Time Elapse					
(Vdc)	Temperature (°C)	(MHz)	Delta (ppm)	Limit (ppm)					
4.20	20	1880.000003	0	2.5					
3.57	20	20 1880.00002 0.001 2.5							
4.83	20	1880.000003	0.000	2.5					

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9. RADIATED TEST RESULTS

9.1. RADIATED POWER (EIRP)

RULE PART(S)

FCC: §2.1046, §24.232.

LIMITS

24.232(c) - 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.

1. Power is given in terms of effective radiated power (ERP).

2. Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

3. Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

KDB 971168 D01 Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems.

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

RESULTS

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PCS BAND (EIRP)

			EIRP	(EUT)	EIRP (EUT W	ITH CRADLE)
Mode	Channel	f (MHz)	dBm	mW	dBm	mW
	25	1851.25	28.55	716.14	25.02	317.69
1xRTT	600	1880.00	28.35	683.91	25.44	349.95
	1175	1908.75	28.33	680.77	27.77	598.41
	25	1851.25	27.62	578.10	24.51	282.49
EVDO REV. A	600	1880.00	28.17	656.15	25.24	334.20
	1175	1908.75	28.33	680.77	27.22	527.23

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EUT ALONE

EIRP 1xRTT 1900 BAND

		High Frequ Compliance	ency Fundame Certification S	ental Measuremen services Chamber	t B			
Company	:	SIERRA WIREL	ESS					
Project #	:	11U14068						
Date:		12/21/11						
Test Eng	ineer:	MENGISTU MEKURIA						
Configur	ation:	EUT ALONE						
Node:		TX, PCS BAND	CDMA 2000, 1xRT	т				
Test Equ Receivin Substitut	ipment: g: Horn T59, an ion: Horn T217 SG reading	d Camber B Substitution, Ant. Pol.	SMA Cables 4ft SMA Cable Cable Loss	244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes
<u>Fest Equ</u> Receivin Substitut f GHz	ip <u>ment:</u> g: Horn T59, an ion: Horn T217 SG reading (dBm)	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<u>Fest Equ</u> Receivin Substitut f GHz .850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.2	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53	244639001) Wareho Antenna Gain (dBi) 8.10	EIRP (dBm)	Limit (dBm) 33.0	Delta (dB)	Notes
Fest Equ Receivin Substitut f GHz .850 .850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.2 20.9	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14	EIRP (dBm) 21.73 28.55	Limit (dBm) 33.0 33.0	Delta (dB) -11.3 -4.5	Notes
Test Equ Receivin Substitut f GHz .850 .880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.2 20.9 14.0	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10	EIRP (dBm) 21.73 28.55 21.55	Limit (dBm) 33.0 33.0 33.0	Delta (dB) -11.3 -4.5 -11.4	Notes
Fest Equiparts and the second	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.2 20.9 14.0 20.7	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14	EIRP (dBm) 21.73 28.55 21.55 28.35	Limit (dBm) 33.0 33.0 33.0 33.0 33.0	Delta (dB) -11.3 4.5 -11.4 4.7	Notes
Fest Equ Receivin Substitut f GHz .850 .850 .880 .880 .910	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.2 20.9 14.0 20.7 13.9	d Camber B Substitution, Ant. Pol. (H/V) V H V H V V	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14 8.10 8.14 8.10	EIRP (dBm) 21.73 28.55 21.55 28.35 21.45	Limit (dBm) 33.0 33.0 33.0 33.0 33.0 33.0	Delta (dB) -11.3 -4.5 -11.4 -11.4 -11.5	Notes

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EIRP EVDO REV A 1900 BAND

		High Frequ Compliance	ency Fundam	ental Measuremen Services Chamber	t B						
ompany	:	SIERRA WIREL	ESS								
roject #	:	11U14068									
)ate:	te: 12/21/11										
Test Engineer: MENGISTU MEKURIA											
onfigur	ation:	EUT ALONE									
lode:		TX. PCS BAND	CDMA 2000, EVD	O REV A. MODE							
<u>st Equ</u> ceivin bstitut	ipment: g: Horn T59, an ion: Horn T217 SG reading	d Camber B Substitution, Ant. Pol.	SMA Cables 4ft SMA Cable Cable Loss	(244639001) Wareho Antenna Gain	use EIRP	Limit	Delta	Notes			
est Equ eceivin ubstitut f GHz	i <u>pment:</u> g: Horn T59, an ion: Horn T217 SG reading (dBm)	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes			
est Equ eceivin ubstitut f GHz 850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	(244639001) Wareho Antenna Gain (dBi) 8.10	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes			
est Equ eceivin ubstitut f GHz 850 850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7 20.0	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14	EIRP (dBm) 22.26 27.62	Limit (dBm) 33.0 33.0	Delta (dB) -10.7 -5.4	Notes			
est Equ eceivin ubstitut f GHz 850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7 20.0	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14	EIRP (dBm) 22.26 27.62	Limit (dBm) 33.0 33.0	Delta (dB) -10.7 -5.4	Notes			
est Equ leceivin ubstitut f GHz 850 850 880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7 20.0	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10	EIRP (dBm) 22.26 27.62 21.13	Limit (dBm) 33.0 33.0 33.0	Delta (dB) -10.7 -10.7 -11.9	Notes			
est Equ eceivin ubstitut f GHz .850 .850 .880 .880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7 20.0 13.6 20.6	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14	EIRP (dBm) 22.26 27.62 21.13 28.17	Limit (dBm) 33.0 33.0 33.0 33.0	Delta (dB) -10.7 -5.4 -11.9 -4.8	Notes			
rest Equ Receivin Substitut f GHz .850 .850 .880 .880 .880 .910	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 14.7 20.0 13.6 20.6	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14 8.10 8.10	EIRP (dBm) 22.26 27.62 21.13 28.17 22.57	Limit (dBm) 33.0 33.0 33.0 33.0 33.0	Delta (dB) -10.7 -5.4 -11.9 -4.8	Notes			

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EUT WITH CRADLE

EIRP 1xRTT 1900 BAND

		High Frequ Compliance	ency Fundam Certification S	ental Measuremen Services Chamber	t B					
Company	:	SIERRA WIREI	ESS							
Project #	:	11U14068								
Date:		01/05/11								
Test Eng	ineer:	MENGISTU ME	KURIA							
Configura	ation:	EUT WITH CRA	DLE AND AC ADA	PTER						
Mode:		TX, PCS BAND	CDMA 2000, 1xRT	TX PCS BAND CDMA 2000 1xRTT MODE						
Test Equ Receiving Substitut	ipment: g: Horn T59, an ion: Horn T217 SG reading	d Camber B Substitution, Ant. Pol.	SMA Cables 4ft SMA Cable Cable Loss	244639001) Wareho Antenna Gain	EIRP	Limit	Delta	Notes		
Test Equ Receivin Substitut f GHz	i <u>pment:</u> g: Horn T59, an ion: Horn T217 SG reading (dBm)	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Test Equ Receivin Substitut f GHz 1.850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.8	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	244639001) Wareho Antenna Gain (dBi) 8.10	EIRP (dBm)	Limit (dBm) 33.0	Delta (dB)	Notes		
Test Equ Receiving Substitut f GHz 1.850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.8 17.4	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14	EIRP (dBm) 18.32 25.02	Limit (dBm) 33.0 33.0	Delta (dB) -14.7 -8.0	Notes		
Test Equ Receiving Substitut f GHz 1.850 1.880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.8 17.4 10.5	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.10 8.10	EIRP (dBm) 18.32 25.02 18.11	Limit (dBm) 33.0 33.0 33.0	Delta (dB) -14.7 -8.0	Notes		
Test Equ Receivin Substitut f GHz 1.850 1.850 1.880 1.880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.8 17.4 10.5 17.8	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.10 8.10 8.14	EIRP (dBm) 18.32 25.02 18.11 25.44	Limit (dBm) 33.0 33.0 33.0 33.0	Delta (dB) -14.7 -8.0 -14.9 -7.6	Notes		
Test Equ Receiving Substitut f GHz 1.850 1.850 1.880 1.880 1.910	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.8 17.4 10.5 17.8 12.3	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53 0.53 0.53	244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14 8.10	EIRP (dBm) 18.32 25.02 18.11 25.44 19.82	Limit (dBm) 33.0 33.0 33.0 33.0 33.0 33.0	Delta (dB) -14.7 -8.0 -14.9 -7.6 -13.2	Notes		

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EIRP EVDO REV A 1900 BAND

		High Frequ Compliance	ency Fundam	ental Measuremen Services Chamber	t B						
company	:	SIERRA WIREL	ESS								
roject #	:	11U14068									
Date: 01/05/11											
est Eng	ineer:	MENGISTU ME	KURIA								
onfigura	ation:	EUT WITH CRA	DLE AND AC ADA	PTER							
ode:		TX, PCS BAND	CDMA 2000, EVD	O REV. A. MODE							
est Equ eceiving Ibstitut	i <u>pment:</u> g: Horn T59, an ion: Horn T217 SG reading	d Camber B Substitution, Ant. Pol.	SMA Cables 4ft SMA Cable Cable Loss	(244639001) Wareho Antenna Gain	use EIRP	Limit	Delta	Notes			
est Equ eceiving ubstitut f GHz	i <u>pment:</u> g: Horn T59, an ion: Horn T217 SG reading (dBm)	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	(244639001) Wareho Antenna Gain (dBi)	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes			
est Equ eceivin ubstitut f GHz 850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5	d Camber B Substitution, Ant. Pol. (H/V)	SMA Cables 4ft SMA Cable Cable Loss (dB)	(244639001) Wareho Antenna Gain (dBi) 8.10	use EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes			
est Equ eceivin ubstitut f GHz 850 850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5 16.9	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14	use EIRP (dBm) 18.04 24.51	Limit (dBm) 33.0 33.0	Delta (dB) -15.0 -8.5	Notes			
est Equ Receiving Substitut f GHz .850 .850	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5 16.9	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB)	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14	use EIRP (dBm) 18.04 24.51	Limit (dBm) 33.0 33.0	Delta (dB)	Notes			
est Equ eceivin ubstitut f GHz 850 850 880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5 16.9 10.4 17.6	d Camber B Substitution, Ant. Pol. (H/V) V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 9.44	use EIRP (dBm) 18.04 24.51 17.97 26.24	Limit (dBm) 33.0 33.0 33.0	Delta (dB) -15.0 -8.5 -15.0 -7.9	Notes			
eceivin eubstitut f GHz 850 850 880 880	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5 16.9 10.4 17.6	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14	use EIRP (dBm) 18.04 24.51 17.97 25.24	Limit (dBm) 33.0 33.0 33.0 33.0	Delta (dB) -15.0 -8.5 -15.0 -7.8	Notes			
eceivin eubstitut f GHz 850 880 880 910	ipment: g: Horn T59, an ion: Horn T217 SG reading (dBm) 10.5 16.9 10.4 17.6 12.1	d Camber B Substitution, Ant. Pol. (H/V) V H V H	SMA Cables 4ft SMA Cable Cable Loss (dB) 0.53 0.53 0.53 0.53 0.53	(244639001) Wareho Antenna Gain (dBi) 8.10 8.14 8.10 8.14 8.10 8.10	use EIRP (dBm) 18.04 24.51 17.97 25.24 19.68	Limit (dBm) 33.0 33.0 33.0 33.0 33.0 33.0	Delta (dB) -15.0 -15.0 -7.8 -13.3	Notes			

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9.1. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §24.238

<u>LIMIT</u>

§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

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

- CDMA 2000 1xRTT
- CDMA 2000 EVDO REV. A

RESULTS

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EUT ALONE

EIRP 1xRTT 1900 BAND

			Cor Above 1GH	npliance Co z High Fred	ertificatio quency S	n Service: ubstitutio	s n Measur	ement	
Company	:	SIERRA WIRE	LESS						
Project #		11U14068							
)ate:		12/21/11							
Jace. Toet Eng	ineer	MENCISTU							
Configure	nieer.		ILKUKIA						
Jonfigur	ation:	EUT ALONE							
	Chambe	r	Pre-an	nplifer		Filter		Lir	nit
5r	n Chamber A	· ·	T144 8449E	3 🗸	Fil	ter 1	-	Part 24	•
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
ow Ch 1	851 25MHz	()	()	()	(42)	(42.11)	(,	(42)	
703	.79	V	30	36.8	10	_43.8	-13.0	-30.8	
554	3.2	v	3.0	36.3	1.0	-32.1	-13.0	-50.0	
.405	-6.8	v	3.0	36.6	1.0	-42.4	-13.0	-29.4	
.703	-3.3	H	3.0	36.8	1.0	-39.1	-13.0	-26.1	
.554	4.4	Н	3.0	36.3	1.0	-30.9	-13.0	-17.9	
.405	-6.8	Н	3.0	36.6	1.0	-42.4	-13.0	-29.4	
lid Ch, 1	880.00MHz			20.0	4.0		42.0	24.2	
.760	-8.5	<u>v</u>	3.0	36.8	1.0	-44.3	-13.0	-31.3	
.040 520	4./	V	3.0	30.3 26.6	1.0	-30.0	-13.0	-11.0	
760	-10.8	V	3.0	30.0 26.9	1.0	-40.4	-13.0	-55.4	
640	-11.3	<u>п</u> Ц	3.0	30.0 26.2	1.0	-41.3	-13.0	-34.3	
520	.0.2	<u>п</u> Н	3.0	36.6	1.0	-23.1	-13.0	-10.1	
JEU	-3.3		J.V	JU.U	1.0	-44.3	-13.0	-31.3	
	908.75MHz								
iah Ch. 1	· · ·	V	3.0	36.7	1.0	-41.1	-13.0	-28.1	
igh Ch, 1 818	-5.4	v	3.0	36.3	1.0	-28.5	-13.0	-15.5	
igh Ch, 1 818 726	-5.4	v			1.0	-49.5	-13.0	-36.5	
igh Ch, 1 818 726 635	-5.4 6.8 -13.9	V	3.0	36.6				20.7	
igh Ch, 1 818 726 635 818	-5.4 6.8 -13.9 -7.0	V V H	3.0 3.0	36.6 36.7	1.0	-42.7	-13.0	-29.1	
ligh Ch, 1 .818 .726 .635 .818 .726	-5.4 6.8 -13.9 -7.0 7.5	V H H	3.0 3.0 3.0	36.6 36.7 36.3	1.0 1.0	-42.7 -27.8	-13.0 -13.0	-29.7 -14.8	
igh Ch, 1 .818 .726 .635 .818 .726 .635	-5.4 6.8 -13.9 -7.0 7.5 -12.4	V H H H	3.0 3.0 3.0 3.0	36.6 36.7 36.3 36.6	1.0 1.0 1.0	-42.7 -27.8 -48.1	-13.0 -13.0 -13.0	-29.7 -14.8 -35.1	

COMPLIANCE CERTIFICATION SERVICES (UL CCS)FORM NO: CCSUP4031B47173 BENICIA STREET, FREMONT, CA 94538, USATEL: (510) 771-1000FAX: (510) 661-0888This report shall not be reproduced except in full, without the written approval of UL.CCS.

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EIRP EVDO REV. A 1900 BAND

			Co Above 1GH	mpliance Co Iz High Fred	ertificatio Juency S	n Service: ubstitutio	s n Measur	ement	
Company	r:	SIERRA WIRE	LESS						
Project #		11U14068							
ate:		12/21/11							
lest Enc	ineer:	MENGISTU M							
Configur	ation:								
lode:		TX, PCS BANI	CDMA EVDO	Rev A. Mode	:				
	Chambe	r	Pre-ar	nplifer		Filter		Lin	nit
5	m Chamber B		T145 8449	B	Fil	ter 1	•	Part 24	•
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
ow Ch. 1	851.25MHz	(0.0.0)		()	(/	(()		
.703	-8.4	V	3.0	35.4	1.0	-42.7	-13.0	-29.7	
554	4.0	V	3.0	35.4	1.0	-30.4	-13.0	-17.4	
405	-7.5	V	3.0	35.7	1.0	-42.2	-13.0	-29.2	
.703	-6.1	Н	3.0	35.4	1.0	-40.4	-13.0	-27.4	
.554	4.9	Н	3.0	35.4	1.0	-29.6	-13.0	-16.6	
.405	-8.2	H	3.0	35.7	1.0	-43.0	-13.0	-30.0	
lid Ch. 1	880.00MHz								
.760	-13.3	V	3.0	35.3	1.0	-47.7	-13.0	-34.7	
.640	7.2	V	3.0	35.4	1.0	-27.2	-13.0	-14.2	
.520	-11.3	V	3.0	35.7	1.0	-46.0	-13.0	-33.0	
.760	-4.5	Н	3.0	35.3	1.0	-38.9	-13.0	-25.9	
.640	12.6	H	3.0	35.4	1.0	-21.9	-13.0	-8.9	
.520	-6.6	Н	3.0	35.7	1.0	-41.3	-13.0	-28.3	
	908.75MHz								
IOD (D)	-3.9	v	3.0	35.3	1.0	-38.2	-13.0	-25.2	
ign Cn, 1 .818	7.0	v	3.0	35.4	1.0	-26.6	-13.0	-13.6	
ign Ch, 1 .818 .726	1.3	v	3.0	35.7	1.0	-50.9	-13.0	-37.9	
ign Ch, 818 726 635	-16.2	-		7 25 2	1.0	-30.2	-13.0	-17.2	
ign Cn, 818 726 635 818	-16.2 4.1	H	3.0	33.3			· · · · · · · · · · · · · · · · · · ·	*****	
.818 .726 .635 .818 .726	-16.2 4.1 14.1	H	3.0 3.0	35.3 35.4	1.0	-20.4	-13.0	-7.4	
.818 .726 .635 .818 .726 .635	-16.2 4.1 14.1 -12.5	H H H	3.0 3.0 3.0	35.3 35.4 35.7	1.0 1.0	-20.4 -47.2	-13.0 -13.0	-7.4 -34.2	

COMPLIANCE CERTIFICATION SERVICES (UL CCS)FORM NO: CCSUP4031B47173 BENICIA STREET, FREMONT, CA 94538, USATEL: (510) 771-1000FAX: (510) 661-0888This report shall not be reproduced except in full, without the written approval of UL.CCS.

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EUT WITH CRADLE

EIRP 1xRTT 1900 BAND

			Co Above 1GH	mpliance Co Iz High Free	ertificatio	n Service: ubstitutio	s n Measur	ement	
Compony				j					
Company		SIERKA WIRE	LESS						
Project #		11014068							
Date:		01/09/11							
lest Eng	ineer:	MENGISTU N							
Configura	ation:	EUT WITH CR	ADLE AND AC	ADAPTER					
noue.		IX, PCS DAN	D CDIMA TXRTT.	MODE					
	Chambe	r 📔	Pre-ar	nplifer		Filter		Li	mit
5r	n Chamber A	-	T144 8449	в 🗸	Fil	lter 1	-	Part 24	-
-						·			
f CU-	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Notes
GHZ		(H/V)	(m)	(ab)	(aB)	(авт)	(abm)	(ab)	
3.703	5.0	v	3.0	36.8	1.0	-30.8	-13.0	-17.8	
5.554	1.8	V	3.0	36.3	1.0	-33.5	-13.0	-20.5	
7.405	-10.1	V	3.0	36.6	1.0	-45.7	-13.0	-32.7	
3.703	8.0	Η	3.0	36.8	1.0	-27.8	-13.0	-14.8	
5.554	3.3	Н	3.0	36.3	1.0	-32.0	-13.0	-19.0	
7.405	-6.6	H	3.0	36.6	1.0	-42.2	-13.0	-29.2	
Mid Ch. 1	880.00MHz								
3.760	-5.1	V	3.0	36.8	1.0	-40.9	-13.0	-27.9	
5.640	8.7	V	3.0	36.3	1.0	-26.6	-13.0	-13.6	
7.520	-13.5	V	3.0	36.6	1.0	-49.1	-13.0	-36.1	
3.760	-0.1	Н	3.0	36.8	1.0	-35.9	-13.0	-22.9	
5.640	9.6	H	3.0	36.3	1.0	-25.7	-13.0	-12.7	
7.520	-10.5	H	3.0	36.6	1.0	-46.1	-13.0	-33.1	
liah Ch 1	908.75MHz								
3.818	6.4	V	3.0	36.7	1.0	-29.3	-13.0	-16.3	
5.726	10.0	v	3.0	36.3	1.0	-25.3	-13.0	-12.3	
7.635	-15.3	V	3.0	36.6	1.0	-51.0	-13.0	-38.0	
	11.7	H	3.0	36.7	1.0	-24.0	-13.0	-11.0	
3.818	10.6	Н	3.0	36.3	1.0	-24.7	-13.0	-11.7	
3.818 5.726	7 10 5	Н	3.0	36.6	1.0	-49.1	-13.0	-36.1	
3.818 5.726 7.635	-13.5	••	· •		-	-			
3.818 5.726 7.635	-13.5		<u> </u>						

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EIRP EVDO REV. A 1900 BAND

			Cor Above 1GH	mpliance Co z High Free	ertification quency Si	n Services ubstitution	s n Measur	ement	
Compan	y:	SIERRA WIRE	LESS						
Project #	t :	11U14068							
Date:		01/09/11							
Test Eng	gineer:	MENGISTU M	IEKURIA						
Configui	ration:	EUT WITH CR.	ADLE AND AC	ADAPTER					
Mode:		TX, PCS BANE	CDMA EVDO	REV A. MODE	5				
	Chambe	r	Pre-an	nplifer		Filter		Li	mit
5	m Chamber A	-	T144 8449I	B	Fil	ter 1	•	Part 24	
f	SG reading	Ant. Pol.	Distance	Preamp	Filter	EIRP	Limit	Delta	Note
GHz	(dBm)	(H/V)	(m)	(dB)	(dB)	(dBm)	(dBm)	(dB)	
Low Ch, 1	1851.25MHz								
3.703	5.7	V	3.0	36.8	1.0	30.1	-13.0	-17.1	
5.554	5.9	V	3.0	36.3	1.0	-29.4	-13.0	-16.4	
7.405		V	3.0	36.6	1.0	_44.7	-13.0	-31.7	
3.703	8.2	H	3.0	36.8	1.0	-27.6	-13.0	-14.6	
5.554 7.405	6.5	H	3.0	36.3	1.0	-28.8	-13.0	-15.8	
1.403	-0.0	п	3.0	30.0	1.0	-41.0	-13.0	-20.0	
Mid Ch. 1	1880.00MHz								
3.760	0.6	V	3.0	36.8	1.0	-35.1	-13.0	-22.1	
5.640	13.1	V	3.0	36.3	1.0	-22.2	-13.0	-9.2	
7.520	-11.0	V	3.0	36.6	1.0	-46.6	-13.0	-33.6	
3.760	0.8	Н	3.0	36.8	1.0	-35.0	-13.0	-22.0	
5.640	10.8	Н	3.0	36.3	1.0	-24.5	-13.0	-11.5	
7.520	-11.5	Н	3.0	36.6	1.0	_47.1	-13.0	-34.1	
High Ch,	1908./5MHz		2.0	207	4.0	7 27 0	42.0	11.0	
5.818	8./	V	3.0	36./	1.0	-21.0	-13.0	-14.0	
0.120	13.2	V	J.U 2.0	30.3 26.6	1.0	-22.1	-13.0	-9.1	
7 625	-13.7	<u>v</u> Н	3.0	36.7	1.0	-43.3	-13.0	00.2	
7.635	12.0	H	3.0	36.3	1.0	-22.0	-13.0	-5.0	
7.635 3.818 5.726			2.0	36.6	1.0	-47.5	-13.0	-34.5	
7.635 3.818 5.726 7.635	-11.8	н	3.0	; JU.U					
7.635 3.818 5.726 7.635	-11.8	H	3.0						

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