FCC CFR47 PART 22 SUBPART H
AND PART 24 SUBPART E
CLASS II PERMISSIVE CHANGE
CERTIFICATION TEST REPORT

FOR

850/900/1800/1900 MHZ QUADBAND MODULE

MODEL NUMBER: MC8765

FCC ID: N7NMC8765

REPORT NUMBER: 06U10573-1B

ISSUE DATE: OCTOBER 09, 2006

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

Prepared by
COMPLIANCE CERTIFICATION SERVICES
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LAB CODE:200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	9/20/06	Initial Issue	Thu C.
B	10/09/06	Updated & Revised on Sections 5.3, 5.4 & 5.5	Thu C.

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SIERRA WIRELESS
3811 WIRELESS WAY
RICHMOND, BC V6V 3A4, CANADA

EUT DESCRIPTION: 850/900/1800/1900 MHZ QUADBAND MODULE

MODEL: MC8765

SERIAL NUMBER: YF07361

DATE TESTED: SEPTEMBER 6 - 8, 2006

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:

SUNNY SHIH
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

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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 561F Monterey Road, Morgan Hill, 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%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 850/900/1800/1900 MHz Quad-Band Module and manufactured by Sierra Wireless, Inc.

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 functions but these frequency bands are not operational in the U.S. territories.

5.2. CLASS II PERMISSIVE CHANGE DESCRIPTION

The changes filed under this application are as follows:

Collocate the MC8765 with Bluetooth radio FCC ID: MCLJ07H081 and WLAN FCC ID: PPD-AR5BXB72-L in a new host laptop.

5.3. MAXIMUM OUTPUT POWER

Maximum conducted output power has been verified to be the same as indicated on the original grant.

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 - 848.75	GPRS	27.60	575.44
824.2 - 848.75	EGPRS	26.60	457.09
826.5 - 846.6	WCDMA	24.40	275.42

Frequency Range (MHz)	Modulation	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
1850.25 - 1909.8	GPRS	29.60	912.01
1850.25 - 1909.8	EGPRS	28.80	758.58
1852.4 - 1907.6	WCDMA	27.40	549.54

NOTE: RBW=VBW=8MHz

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5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was ProcommPlus 4.8 @ Copyright 1999 by Symantec Corporation, Build 71 for GSM and EDGE modulations, and the communication test set is used for WCDMA modulation to configure as below:

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 Parms: (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) Parms: 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 Parms: 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

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5.5. WORST-CASE CONFIGURATION AND MODE

Based on previous experiment, GPRS 1 slot has the worst case between GSM & GPRS modulations, and the DSPDA mode for WCDMA modulation, also the worst-case configuration has been evaluated at extended out position has higher more than 2dB of normal closed position by comparing the fundamental ERP / EIRP output power, even though the antenna gain of normal closed position has 0.2dB higher than extended antenna position. So, all radiated emissions tests were performed under antenna extended out position.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Test Peripherals				
Device Type	Manufacturer	Model Number	Serial Number	FCC ID
Laptop PC	IBM	lenovo T60	ZZ9E245	DOC
AC Adaptor	lenovo	92P1113	11S92P1113ZBEL67611C	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 cable

TEST SETUP

The EUT is installed inside the laptop during the tests. The ProcommPlus or Wireless Communication test set exercised the EUT.

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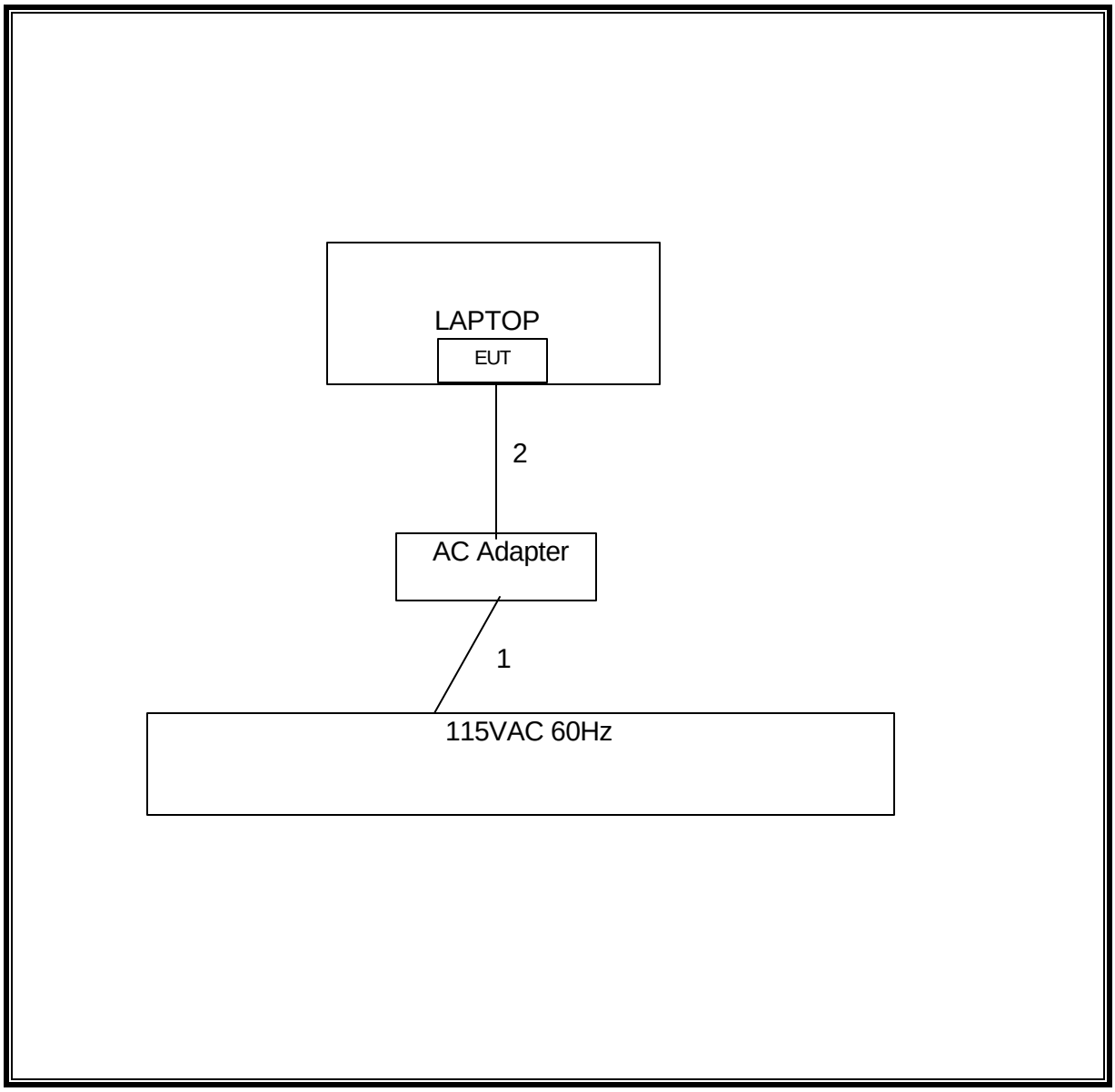
RADIATED TEST SETUP DIAGRAM



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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**	**Serial Number**	**Cal Due**
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	12/3/06
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/07
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	2/4/07
RF Filter Section	Agilent / HP	85420E	3705A00256	2/4/07
Peak Power Meter	Agilent / HP	E4416A	GB41291160	12/2/07
Peak / Average Power Sensor	Agilent	E9327A	US40440755	12/2/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/07
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	6/2/07
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	5/11/07
Dipole	EMCO	3121C-DB2	22435	5/7/07
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR
Communication Test Set	Agilent	E5515C	91936	4/8/07
Power Splitter	HP	11667B	324	CNR

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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	27.10	512.86
Middle	836.5	26.20	416.87
High	848.8	26.40	436.52

1900 MHz GPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	29.30	851.14
Middle	1880.00	27.50	562.34
High	1909.8	26.90	489.78

NOTE: RBW=VBW=8MHz.

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850 MHz EGPRS Mode

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	25.20	331.13
Middle	836.5	24.40	275.42
High	848.8	24.50	281.84

1900 MHz EGPRS Mode

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.2	29.30	851.14
Middle	1880.00	28.50	707.95
High	1909.8	27.00	501.19

850 MHz WCDMA Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.5	22.90	194.98
Middle	836.5	24.40	275.42
High	846.6	24.10	257.04

1900 MHz WCDMA Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.4	27.40	549.54
Middle	1880.00	26.90	489.78
High	1907.6	25.30	338.84

NOTE: RBW=VBW=8MHz

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GSM Output Power (ERP)

Cellular Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extenned
Mode: GSM850 GPRS Mode
RBW=VBW=8MHz, Peak Detection

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 Ch (128) 824.2 MHz									
824.20	102.0	V	27.6	0.5	0.0	27.1	38.5	-11.4	
824.20	98.0	H	23.7	0.5	0.0	23.2	38.5	-15.2	
Mid Ch (192) 837.0 MHz									
837.00	101.4	V	26.8	0.6	0.0	26.2	38.5	-12.2	
837.00	97.8	H	23.3	0.6	0.0	22.7	38.5	-15.7	
High Ch (251) 848.8 MHz									
848.80	101.7	V	27.1	0.7	0.0	26.4	38.5	-12.1	
848.80	98.5	H	23.9	0.7	0.0	23.2	38.5	-15.2	

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EDGE Output Power (ERP)

Cellular Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extenned
Mode: GSM850 EGPRS Mode
RBW=VBW=8MHz, Peak Detection

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 Ch (128) 824.2 MHz									
824.20	100.1	V	25.7	0.5	0.0	25.2	38.5	-13.2	
824.20	96.1	H	21.8	0.5	0.0	21.3	38.5	-17.2	
Mid Ch (192) 837.0 MHz									
837.00	99.5	V	25.0	0.6	0.0	24.4	38.5	-14.1	
837.00	96.0	H	21.5	0.6	0.0	20.9	38.5	-17.5	
High Ch (251) 848.8 MHz									
848.80	99.8	V	25.2	0.7	0.0	24.5	38.5	-13.9	
848.80	96.6	H	22.0	0.7	0.0	21.3	38.5	-17.1	

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WCDMA Output Power (ERP)

Cellular Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extenned
Mode: WCDMA850
RBW=VBW=8MHz, Peak Detection

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 Ch (4132) 826.40 MHz									
826.40	97.8	V	23.4	0.5	0.0	22.9	38.5	-15.5	
826.40	96.0	H	21.7	0.5	0.0	21.2	38.5	-17.3	
Mid Ch (4182) 836.4 MHz									
836.40	99.6	V	25.0	0.6	0.0	24.4	38.5	-14.1	
836.40	97.4	H	22.9	0.6	0.0	22.3	38.5	-16.2	
High Ch (4233) 846.6 MHz									
846.60	99.3	V	24.8	0.7	0.0	24.1	38.5	-14.4	
846.60	96.2	H	21.6	0.7	0.0	20.9	38.5	-17.5	

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GSM Output Power (EIRP)

PCS Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antennna - Extended position
Mode: GSM1900 GPRS Mode
RBW=VBW=8MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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 (512)1850.2 MHz									
1.850	95.9	V	21.9	0.9	8.3	29.3	33.0	-3.7	
1.850	95.8	H	19.8	0.9	8.3	27.2	33.0	-5.8	
Mid Ch (192) 1880 MHz									
1.880	93.2	V	20.1	0.9	8.3	27.5	33.0	-5.5	
1.880	93.4	H	18.6	0.9	8.3	26.0	33.0	-7.0	
High Ch (810) 1909.8 MHz									
1.910	92.7	V	19.4	0.9	8.4	26.9	33.0	-6.2	
1.910	93.9	H	18.8	0.9	8.4	26.3	33.0	-6.7	

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EDGE Output Power (EIRP)

PCS Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antennna - Extended position
Mode: GSM1900 EGPRS Mode
RBW=VBW=8MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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 (512)1850.2 MHz									
1.850	95.9	V	21.9	0.9	8.3	29.3	33.0	-3.7	
1.850	95.9	H	19.8	0.9	8.3	27.2	33.0	-5.8	
Mid Ch (192) 1880 MHz									
1.880	94.2	V	21.1	0.9	8.3	28.5	33.0	-4.5	
1.880	93.5	H	18.8	0.9	8.3	26.2	33.0	-6.8	
High Ch (810) 1909.8 MHz									
1.910	92.8	V	19.5	0.9	8.4	27.0	33.0	-6.0	
1.910	94.0	H	18.9	0.9	8.4	26.4	33.0	-6.6	

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WCDMA Output Power (EIRP)

PCS Fundamental Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless
Project #: 06U10573
Date: 6-Sep-06
Test Engineer: Sunny Shih
Configuration: Antennna - Extended position
Mode: WCDMA1900
RBW=VBW=8MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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 (9262) 1852.4 MHz									
1.852	93.9	V	20.0	0.9	8.3	27.4	33.0	-5.6	
1.852	92.3	H	16.3	0.9	8.3	23.7	33.0	-9.3	
Mid Ch (9400) 1880 MHz									
1.880	92.6	V	19.5	0.9	8.3	26.9	33.0	-6.1	
1.880	91.7	H	16.9	0.9	8.3	24.3	33.0	-8.7	
High Ch (9538) 1907.6 MHz									
1.908	91.1	V	17.9	0.9	8.4	25.3	33.0	-7.7	
1.908	91.5	H	16.4	0.9	8.4	23.9	33.0	-9.1	

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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.

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800MHz Band EDGE Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: 8-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extended
Mode: GSM850 EGPRS Mode
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

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	53.1	V	-60.2	0.8	4.9	-56.1	-13.0	-43.1	
2.472	48.5	V	-61.9	1.0	7.1	-55.7	-13.0	-42.7	
1.648	53.4	H	-52.1	1.3	7.8	-45.6	-13.0	-32.6	
2.472	46.5	H	-57.5	1.5	8.8	-50.2	-13.0	-37.2	
Mid Channel (837.0MHz)									
1.674	55.3	V	-57.8	0.8	5.0	-53.6	-13.0	-40.6	
2.511	49.0	V	-60.4	1.0	7.1	-54.3	-13.0	-41.3	
1.674	54.2	H	-51.3	1.4	7.9	-44.8	-13.0	-31.8	
2.511	48.0	H	-55.5	1.5	8.9	-48.1	-13.0	-35.1	
High Channel (848.8MHz)									
1.697	55.7	V	-57.2	0.8	5.1	-52.9	-13.0	-39.9	
2.546	53.5	V	-55.3	1.0	7.1	-49.1	-13.0	-36.1	
1.697	52.9	H	-53.0	1.4	8.0	-46.4	-13.0	-33.4	
2.546	48.0	H	-54.9	1.5	8.9	-47.6	-13.0	-34.6	

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800MHz Band GSM Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: September 8 2006
Test Engineer: Sunny Shih
Configuration: Antenna - Extended
Mode: GSM850 GPRS Mode
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

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	54.0	V	-59.3	0.8	4.9	-55.2	-13.0	-42.2	
2.472	49.2	V	-61.2	1.0	7.1	-55.0	-13.0	-42.0	
1.648	53.7	H	-51.8	1.3	7.8	-45.3	-13.0	-32.3	
2.472	47.8	H	-56.2	1.5	8.8	-48.9	-13.0	-35.9	
Mid Channel (837.0MHz)									
1.674	56.2	V	-56.9	0.8	5.0	-52.7	-13.0	-39.7	
2.511	50.0	V	-59.4	1.0	7.1	-53.3	-13.0	-40.3	
1.674	55.6	H	-49.9	1.4	7.9	-43.4	-13.0	-30.4	
2.511	49.0	H	-54.5	1.5	8.9	-47.1	-13.0	-34.1	
High Channel (848.8MHz)									
1.697	56.1	V	-56.8	0.8	5.1	-52.5	-13.0	-39.5	
2.546	54.3	V	-54.5	1.0	7.1	-48.3	-13.0	-35.3	
1.697	53.1	H	-52.8	1.4	8.0	-46.2	-13.0	-33.2	
2.546	49.0	H	-53.9	1.5	8.9	-46.6	-13.0	-33.6	

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800MHz Band WCDMA Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: 8-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extenna
Mode: WCDMA850 WCDMA850
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

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)									
1.652	53.0	V	-60.3	0.8	4.9	-56.2	-13.0	-43.2	
2.479	51.5	V	-58.9	1.0	7.1	-52.7	-13.0	-39.7	
1.652	52.1	H	-53.4	1.3	7.8	-46.9	-13.0	-33.9	
2.479	48.0	H	-56.0	1.5	8.8	-48.7	-13.0	-35.7	
Mid Channel (836.4MHz)									
1.672	52.4	V	-60.7	0.8	5.0	-56.5	-13.0	-43.5	
2.509	51.5	V	-57.9	1.0	7.1	-51.8	-13.0	-38.8	
1.672	52.6	H	-52.9	1.4	7.9	-46.4	-13.0	-33.4	
2.509	48.2	H	-55.3	1.5	8.9	-47.9	-13.0	-34.9	
High Channel (846.6MHz)									
1.693	54.4	V	-58.5	0.8	5.1	-54.2	-13.0	-41.2	
2.539	49.5	V	-59.3	1.0	7.1	-53.1	-13.0	-40.1	
1.693	52.8	H	-53.1	1.4	8.0	-46.5	-13.0	-33.5	
2.539	47.6	H	-55.3	1.5	8.9	-48.0	-13.0	-35.0	

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1900MHz Band EDGE Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: 7-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extended
Mode: GSM1900 EGPRS Mode
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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 (1850.2 MHz)									
3.700	59.6	V	-45.4	1.2	9.7	-37.0	-13.0	-24.0	
5.550	56.7	V	-45.8	1.6	11.0	-36.4	-13.0	-23.4	
3.700	63.8	H	-42.7	1.2	9.7	-34.3	-13.0	-21.3	
5.550	49.3	H	-52.7	1.6	11.0	-43.3	-13.0	-30.3	
Mid Channel (1880 MHz)									
3.760	59.3	V	-45.2	1.3	9.7	-36.8	-13.0	-23.8	
5.640	53.2	V	-49.6	1.7	11.2	-40.1	-13.0	-27.1	
3.760	61.4	H	-43.1	1.3	9.7	-34.7	-13.0	-21.7	
5.640	50.1	H	-52.7	1.7	11.2	-43.2	-13.0	-30.2	
High Channel (1909.8 MHz)									
3.819	60.5	V	-43.7	1.3	9.7	-35.3	-13.0	-22.3	
5.729	49.0	V	-53.5	1.7	11.3	-43.9	-13.0	-30.9	
3.819	61.6	H	-34.0	2.1	12.7	-23.4	-13.0	-10.4	
5.729	52.8	H	-42.4	2.4	14.0	-30.8	-13.0	-17.8	

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1900MHz Band GSM Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: 7-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extended
Mode: GSM1900 GPRS Mode
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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 (1850.2 MHz)									
3.700	60.7	V	-44.3	1.2	9.7	-35.9	-13.0	-22.9	
5.550	57.6	V	-44.9	1.6	11.0	-35.5	-13.0	-22.5	
3.700	64.2	H	-42.3	1.2	9.7	-33.9	-13.0	-20.9	
5.550	50.0	H	-52.0	1.6	11.0	-42.6	-13.0	-29.6	
Mid Channel (1880 MHz)									
3.760	60.4	V	-44.1	1.3	9.7	-35.7	-13.0	-22.7	
5.640	54.3	V	-48.5	1.7	11.2	-39.0	-13.0	-26.0	
3.760	62.1	H	-34.4	2.1	12.7	-23.8	-13.0	-10.8	
5.640	51.3	H	-44.5	2.3	13.9	-33.0	-13.0	-20.0	
High Channel (1909.8 MHz)									
3.819	61.6	V	-42.6	1.3	9.7	-34.2	-13.0	-21.2	
5.729	50.0	V	-52.5	1.7	11.3	-42.9	-13.0	-29.9	
3.819	62.8	H	-32.8	2.1	12.7	-22.2	-13.0	-9.2	
5.729	53.2	H	-42.0	2.4	14.0	-30.4	-13.0	-17.4	

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1900MHz Band WCDMA Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: Sierra Wireless, Inc.
Project #: 06U10573
Date: 8-Sep-06
Test Engineer: Sunny Shih
Configuration: Antenna - Extenna
Mode: WCDMA1900
RBW=VBW=1MHz, Peak Detection

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft (Setup this one for testing EUT)
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

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)									
3.704	55.4	V	-49.6	1.2	9.7	-41.2	-13.0	-28.2	
5.557	46.5	V	-56.0	1.6	11.0	-46.6	-13.0	-33.6	
3.704	58.1	H	-39.7	2.1	12.7	-29.1	-13.0	-16.1	
5.557	43.4	H	-53.3	2.3	13.8	-41.8	-13.0	-28.8	
Mid Channel (1880MHz)									
3.760	54.1	V	-50.5	1.3	9.7	-42.0	-13.0	-29.0	
5.640	45.8	V	-57.0	1.7	11.2	-47.5	-13.0	-34.5	
3.760	59.1	H	-37.4	2.1	12.7	-26.8	-13.0	-13.8	
5.640	44.0	H	-51.8	2.3	13.9	-40.3	-13.0	-27.3	
High Channel (1907.6MHz)									
3.815	68.0	V	-36.2	1.3	9.7	-27.8	-13.0	-14.8	
5.722	44.7	V	-57.8	1.7	11.3	-48.2	-13.0	-35.2	
3.815	66.6	H	-29.0	2.1	12.7	-18.4	-13.0	-5.4	
5.722	43.0	H	-52.2	2.4	14.0	-40.6	-13.0	-27.6	

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8. SETUP PHOTOS

RADIATED FRONT PHOTO

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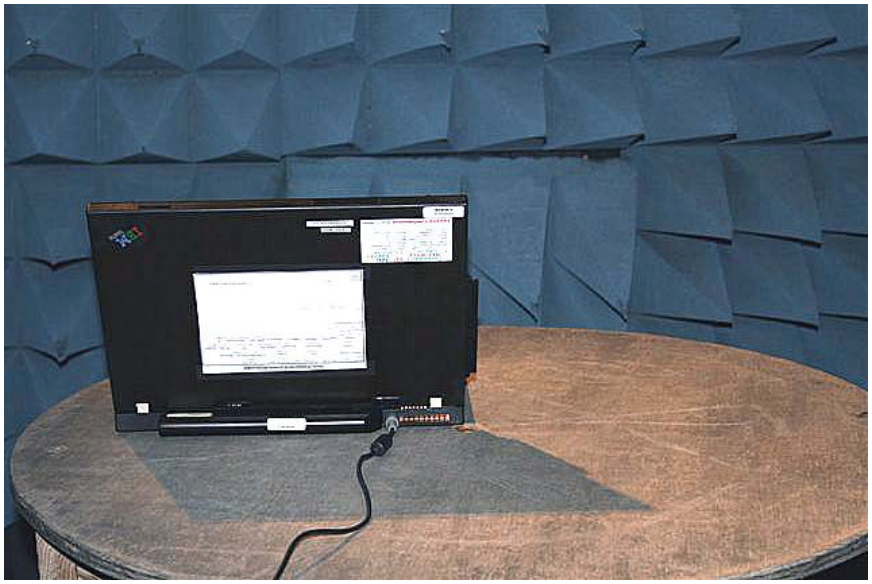
RADIATED BACK PHOTO



END OF REPORT

COMPLIANCE CERTIFICATION SERVICES DOCUMENT NO: CCSUP4031A
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