



**FCC CFR47 PART 22H AND 24E
&
INDUSTRY CANADA RSS-132 AND RSS-133**

CERTIFICATION TEST REPORT

FOR

850/900/1800/1900/2100 MHZ MULTI-BAND MODULE

MODEL NUMBER: EM8781

FCC ID: N7NEM8781

IC: 2417C-EM8781

REPORT NUMBER: 07U10905-1

ISSUE DATE: APRIL 03, 2007

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

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

| <u>Rev.</u> | <u>Issue Date</u> | <u>Revisions</u> | <u>Revised By</u> |
|-------------|-------------------|------------------|-------------------|
| --- | 04/03/07 | Initial Issue | T. Chan |

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1. ATTESTATION OF TEST RESULTS

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

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

MODEL: EM8781

SERIAL NUMBER: S4304570156E2-OH

DATE TESTED: MARCH 26-27, 2007

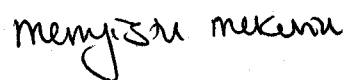
| APPLICABLE STANDARDS | |
|--|---|
| STANDARD | TEST RESULTS |
| FCC PART 22H and 24E | NO NON-COMPLIANCE NOTED (Radiated Portion) |
| IC RSS-132 ISSUE 2 and RSS-133 ISSUE 3 | NO NON-COMPLIANCE NOTED (Radiated Portion) |

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

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

MENGISTU MEKURIA
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15 and FCC CFR 47 Part 22H, 24E, RSS-GEN, RSS132, & RSS133.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

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

| PARAMETER | UNCERTAINTY |
|-------------------------------------|----------------|
| Radiated Emission, 30 to 200 MHz | +/- 3.3 dB |
| Radiated Emission, 200 to 1000 MHz | +4.5 / -2.9 dB |
| Radiated Emission, 1000 to 2000 MHz | +4.5 / -2.9 dB |
| Radiated Emission Above 2000 MHz | +/- 3.4 dB |
| Power Line Conducted Emission | +/- 2.9 dB |

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 850/900/1800/1900/2100 MHz multi-band module and manufactured by Sierra Wireless, Inc.

The module supports GSM, GPRS, EGPRS and UMTS. Device capabilities are documented in the theory of operation

Only the 850/1900 MHz frequency bands were investigated under this project, and the test result documented in this report only applies to EUT operating in the 850/1900 MHz frequency bands. This device contains 900 MHz /1800 MHz/2100 MHz functions but these frequency bands are not operational in the U.S. territories.

5.2. SOFTWARE AND FIRMWARE

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

GPRS Mode

- Call Setup > Shift & Preset
- Active Cell > Active Cell (GPRS)
- Connection Type > ETSI Type A
- BCH Parameters > Cell Band > PCS or GSM850 (US band)
- TCH Parameters > Traffic Band > PCS or GSM850 (US band)
 - > MS TX Level > 3 (33dBm for Cell band); 3 (30dBm for PCS band)
- PDTCH > Multislot Config > 1 Down, 4 Up
 - > MS TX Level > 3 (33dBm Cell band); 3 (30dBm PCS band)
 - > Coding Scheme > CS-4
- Press "Start Data Connection"

EGPRS Mode

- Call Setup > Shift & Preset
- Active Cell > Active Cell (EGPRS)
- Connection Type > ETSI Type A
- BCH Parameters > Cell Band > PCS or GSM850 (US band)
- TCH Parameters > Traffic Band > PCS or GSM850 (US band)
 - > MS TX Level > 6 (27dBm Cell band); 5 (26dBm PCS band)
- PDTCH > Multislot Config > 1 Down, 4 Up
 - > MS TX Level > 6 (27dBm Cell band); 5 (26dBm PCS band)
 - > Modulation Coding Scheme > Downlink > As Uplink
 - > Uplink > MSC-5 (8PSK)
- Press "Start Data Connection" and you will see "Transferring"

UMTS

- Call Setup > Shift & Preset
- Cell Parameters: PS Domain Information > Present
 - ATT (IMSI Attach) Flag State > Set
- Security Parameter - System Operations > None
- Channel Type:
 - RMC: 12.2k, 64k, 144k, or 384k
 - AMC: 12.2 UL / 64/ DL AM RMC, 12.2 UL / 144/ DL AM RMC, or 12.2 UL / 384/ DL AM RMC,

- Paging Service: RB Test Mode
- Channel (UARFCN) Parms:
 - DL Channel:

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

| | | |
|--|---|---|
| | <u>PCS band</u> | <u>Cell band</u> |
| | 9662 / 9800 / 9938 / 4357 / 4407 / 4458 | 9262 / 9400 / 9538 / 4132 / 4182 / 4233 |
- DL DTCH Data: All Ones
- RLC Reestablish: Off
- Call Limit State: Off
- Call Drop Timer: Off
- SRB Config.: 13.6k DCCH
- UE Target Power: 25 dBm
- UL CL Power Ctrl Parameters
 - UL CL Power Ctrl Mode: All Up Bits

HSDPA

- Uplink Parameter:
 - UPLINK DPCH Bc / Bd Control: Manual
 - Manual Uplink DPCH Bc: 9
 - Manual Uplink DPCH Bd: 15

- Channel Type: 12.2k+HSDPA
- HSDPA Parameters:
 - HSDPA RB Test Mode Setup
 - HS-DSCH Configuration Type: FRC
 - FRC Type: **H-Set 3**
 - CN Domain: CS Domain
 - Uplink 64k DTCH for HSDPA Loopback State: On
 - HS-DSCH Data Pattern: All Ones
 - RLC Header on HS-DSCH: Present
 - HSDPA Uplink Parameters
 - DeltaACK: 5
 - DeltaNACK: 5
 - DeltaCQI: 2

5.3. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

| PERIPHERAL SUPPORT EQUIPMENT LIST | | | | |
|-----------------------------------|-----------------|--------|---------------|--------|
| Description | Manufacturer | Model | Serial Number | FCC ID |
| AC Adapter | ELPAC | FW1805 | 46688 | NA |
| Communications Test Set | Agilent | E5515C | 10092 | DoC |
| Test Fixture | Sierra Wireless | NA | 1400298 Rev A | NA |

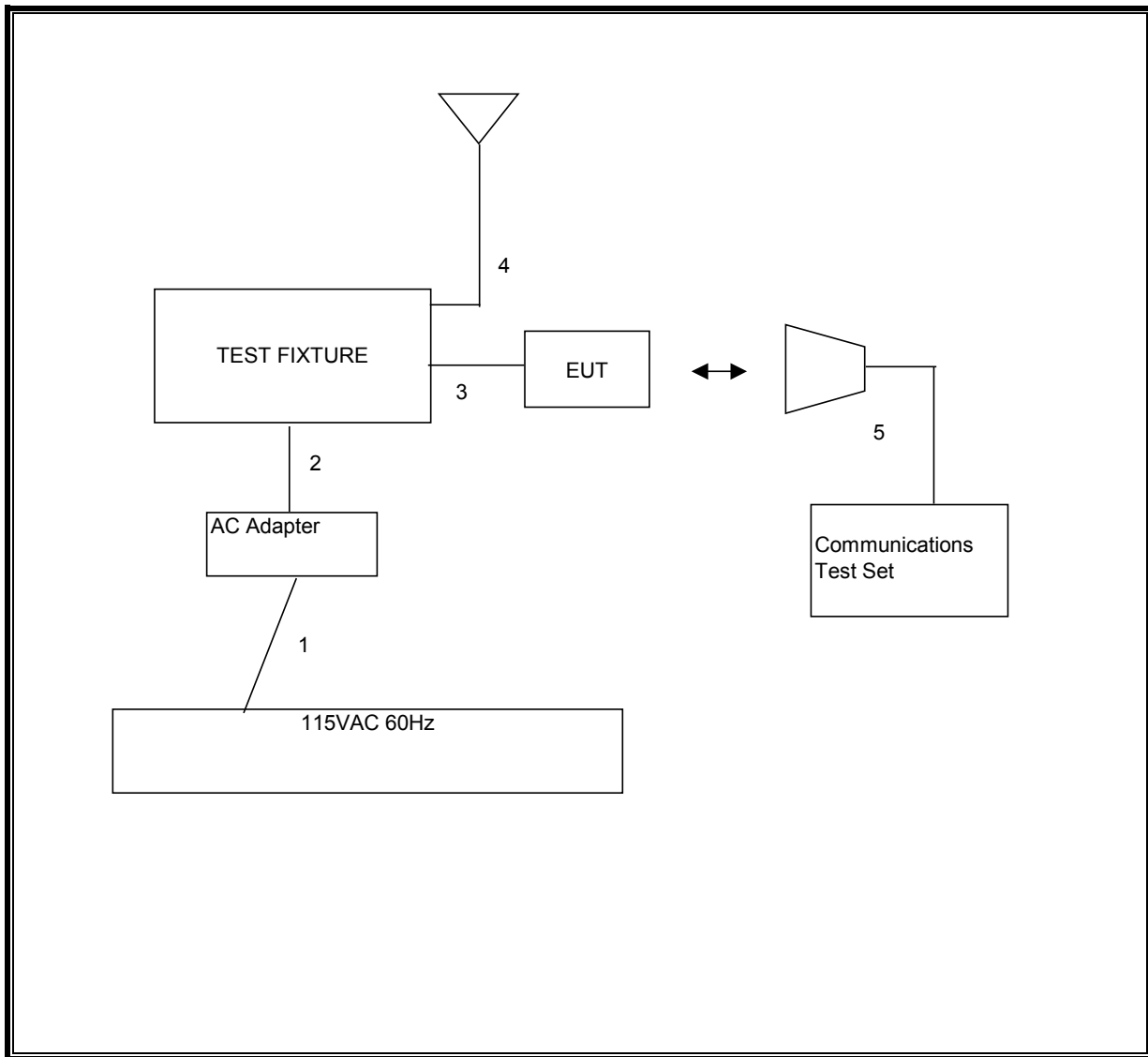
I/O CABLES

| I/O CABLE LIST | | | | | | |
|----------------|--------------|----------------------|------------------|-------------|--------------|---------|
| Cable No. | Port | # of Identical Ports | Connector Type | Cable Type | Cable Length | Remarks |
| 1 | AC | 1 | US 115V | Un-shielded | 2m | NA |
| 2 | DC | 1 | DC | Un-shielded | 2m | NA |
| 3 | RF In/Out | 1 | 8-pins connector | Un-shielded | 0.1m | NA |
| 4 | Antenna Port | 1 | Dipole | NA | None | NA |
| 5 | RF In/Out | 1 | Horn | NA | None | NA |

TEST SETUP

The EUT module is connected to a test fixture during the tests. The Wireless Communication test set exercised the EUT.

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

| TEST EQUIPMENT LIST | | | | |
|----------------------------------|--------------|-----------|---------------|----------|
| Description | Manufacturer | Model | Serial Number | Cal Due |
| Antenna, Horn 1 ~ 18 GHz | ETS | 3117 | 29301 | 04/22/07 |
| Antenna, Horn 1 ~ 18 GHz | EMCO | 3115 | 6717 | 04/22/07 |
| Preamplifier, 1 ~ 26.5 GHz | Agilent / HP | 8449B | 3008A00561 | 10/03/07 |
| Spectrum Analyzer 3 Hz ~ 44 GHz | Agilent / HP | E4446A | MY43360112 | 05/03/07 |
| Wireless Communications Test Set | Agilent | E5515C | 10092 | 10/19/07 |
| 2.7GHz HPF | MicroTronic | HPM13194 | 2 | CNR |
| 1.5GHz HPF | MicroTronic | HPM13195 | 1 | CNR |
| Signal Generator 2 -40 GHz | R & S | SMP04 | DE 34210 | 06/02/07 |
| Signal Generator 1024 MHz | R & S | SMY01 | DE 12311 | 05/11/07 |
| Dipole | EMCO | 3121C-DB2 | 22435 | 06/25/07 |

7. LIMITS AND RESULTS

7.1. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (e), §24.238 (a), RSS-132 § 4.5.1, & RSS-133 § 6.5.1 (a) (i) & (b): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log (P)$ dB.

TEST PROCEDURE

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

RESULTS

No non-compliance noted.

GSM850 GPRS Spurious & Harmonic (ERP)

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: Cell TX, GPRS

Test Equipment:

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

Horn > 18GHz

Limit
FCC 22

High Pass Filter

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

Pre-amplifier 1-26GHz
T145 Agilent 3008A

Pre-amplifier 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|---------------------|-----------------|-----------------|---------|------------|------------|-----------|-------------|-------------|-------|
| Low Ch | | | | | | | | | | |
| 1.64840 | 59.1 | V | -46.9 | 3.8 | 8.0 | 5.8 | -44.9 | -13.0 | -31.9 | |
| 2.47260 | 47.8 | V | -54.6 | 4.9 | 9.5 | 7.4 | -52.1 | -13.0 | -39.1 | |
| 1.64840 | 57.9 | H | -47.4 | 3.8 | 8.0 | 5.8 | -45.4 | -13.0 | -32.4 | |
| 2.47260 | 46.3 | H | -56.0 | 4.9 | 9.5 | 7.4 | -53.5 | -13.0 | -40.5 | |
| Mid Ch | | | | | | | | | | |
| 1.67400 | 58.8 | V | -47.1 | 3.9 | 8.0 | 5.9 | -45.1 | -13.0 | -32.1 | |
| 2.51100 | 47.6 | V | -54.7 | 4.9 | 9.6 | 7.4 | -52.2 | -13.0 | -39.2 | |
| 1.67400 | 58.1 | H | -47.0 | 3.9 | 8.0 | 5.9 | -45.0 | -13.0 | -32.0 | |
| 2.51100 | 44.7 | H | -57.4 | 4.9 | 9.6 | 7.4 | -54.9 | -13.0 | -41.9 | |
| High Ch | | | | | | | | | | |
| 1.69760 | 58.3 | V | -47.5 | 3.9 | 8.1 | 5.9 | -45.4 | -13.0 | -32.4 | |
| 2.54640 | 48.0 | V | -54.2 | 4.9 | 9.6 | 7.4 | -51.7 | -13.0 | -38.7 | |
| 1.69760 | 58.4 | H | -46.6 | 3.9 | 8.1 | 5.9 | -44.6 | -13.0 | -31.6 | |
| 2.54640 | 46.2 | H | -55.7 | 4.9 | 9.6 | 7.4 | -53.2 | -13.0 | -40.2 | |

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GSM850 EGPRS Spurious & Harmonic (ERP)

| High Frequency Substitution Measurement | | | | | | | | | | |
|---|---------------------|-----------------|-----------------|-----------------------|------------|------------------------|-------------------------------------|-------------|-------------|-------|
| Compliance Certification Services, Fremont Chamber B | | | | | | | | | | |
| Company: Sierra Wireless | | | | | | | | | | |
| Project #: 07U10905 | | | | | | | | | | |
| Date: 3/26/2007 | | | | | | | | | | |
| Test Engineer: Mengistu Mekuria | | | | | | | | | | |
| Configuration: EUT Only | | | | | | | | | | |
| Mode: Cell TX, EGPRS | | | | | | | | | | |
| Test Equipment: | | | | | | | | | | |
| EMCO Horn 1-18GHz | | Horn > 18GHz | | | Limit | | High Pass Filter | | | |
| T 73; S/N: 6717 @3m | | | | | FCC 22 | | <input checked="" type="checkbox"/> | | | |
| Hi Frequency Cables | | | | Pre-amplifier 1-26GHz | | Pre-amplifier 26-40GHz | | | | |
| <input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft) | | | | T145 Agilent 3008A | | | | | | |
| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch | | | | | | | | | | |
| 1.64840 | 56.7 | V | -49.3 | 3.8 | 8.0 | 5.8 | -47.3 | -13.0 | -34.3 | |
| 2.47260 | 45.0 | V | -57.5 | 4.9 | 9.5 | 7.4 | -54.9 | -13.0 | -41.9 | |
| 1.64840 | 55.5 | H | -49.8 | 3.8 | 8.0 | 5.8 | -47.8 | -13.0 | -34.8 | |
| 2.47260 | 43.0 | H | -59.3 | 4.9 | 9.5 | 7.4 | -56.8 | -13.0 | -43.8 | |
| Mid Ch | | | | | | | | | | |
| 1.67400 | 57.2 | V | -48.7 | 3.9 | 8.0 | 5.9 | -46.7 | -13.0 | -33.7 | |
| 2.51100 | 45.2 | V | -57.1 | 4.9 | 9.6 | 7.4 | -54.6 | -13.0 | -41.6 | |
| 1.67400 | 55.7 | H | -49.5 | 3.9 | 8.0 | 5.9 | -47.5 | -13.0 | -34.5 | |
| 2.51100 | 43.0 | H | -59.1 | 4.9 | 9.6 | 7.4 | -56.6 | -13.0 | -43.6 | |
| High Ch | | | | | | | | | | |
| 1.69760 | 55.0 | V | -50.8 | 3.9 | 8.1 | 5.9 | -48.7 | -13.0 | -35.7 | |
| 2.54640 | 44.1 | V | -58.1 | 4.9 | 9.6 | 7.4 | -55.6 | -13.0 | -42.6 | |
| 1.69760 | 55.1 | H | -50.0 | 3.9 | 8.1 | 5.9 | -47.9 | -13.0 | -34.9 | |
| 2.54640 | 43.2 | H | -58.8 | 4.9 | 9.6 | 7.4 | -56.3 | -13.0 | -43.3 | |
| Rev. 1.24.7 | | | | | | | | | | |

CELL Band WCDMA Spurious & Harmonic (ERP)

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: Cell TX, WCDMA

Test Equipment:

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

Horn > 18GHz

Limit
FCC 22

✓ High Pass Filter

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

Pre-amplifier 1-26GHz
T145 Agilent 3008A

Pre-amplifier 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|---------------------|-----------------|-----------------|---------|------------|------------|-----------|-------------|-------------|-------|
| Low Ch | | | | | | | | | | |
| 1.65280 | 47.5 | V | -58.5 | 3.8 | 8.0 | 5.8 | -56.5 | -13.0 | -43.5 | |
| 2.47920 | 43.6 | V | -58.9 | 4.9 | 9.6 | 7.4 | -56.4 | -13.0 | -43.4 | |
| 1.65280 | 46.6 | H | -58.6 | 3.8 | 8.0 | 5.8 | -56.7 | -13.0 | -43.7 | |
| 2.47920 | 43.3 | H | -58.9 | 4.9 | 9.6 | 7.4 | -56.4 | -13.0 | -43.4 | |
| Mid Ch | | | | | | | | | | |
| 1.67280 | 47.9 | V | -58.0 | 3.9 | 8.0 | 5.9 | -56.0 | -13.0 | -43.0 | |
| 2.50920 | 42.9 | V | -59.4 | 4.9 | 9.6 | 7.4 | -56.9 | -13.0 | -43.9 | |
| 1.67280 | 46.9 | H | -58.3 | 3.9 | 8.0 | 5.9 | -56.3 | -13.0 | -43.3 | |
| 2.50920 | 43.4 | H | -58.7 | 4.9 | 9.6 | 7.4 | -56.2 | -13.0 | -43.2 | |
| High Ch | | | | | | | | | | |
| 1.69320 | 49.3 | V | -56.5 | 3.9 | 8.1 | 5.9 | -54.4 | -13.0 | -41.4 | |
| 2.53980 | 42.9 | V | -59.3 | 4.9 | 9.6 | 7.4 | -56.8 | -13.0 | -43.8 | |
| 1.69320 | 49.1 | H | -56.0 | 3.9 | 8.1 | 5.9 | -53.9 | -13.0 | -40.9 | |
| 2.53980 | 42.9 | H | -59.1 | 4.9 | 9.6 | 7.4 | -56.6 | -13.0 | -43.6 | |

Rev. 1.24.7

CELL Band WCDMA+HSPDA Spurious & Harmonic (ERP)

High Frequency Substitution Measurement
Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: Cell TX, WCDMA + H

Test Equipment:

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

Horn > 18GHz

Limit
FCC 22

High Pass Filter

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

Pre-amplifier 1-26GHz
T145 Agilent 3008A

Pre-amplifier 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | ERP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|------------------------|--------------------|--------------------|------------|---------------|---------------|--------------|----------------|----------------|-------|
| Low Ch | | | | | | | | | | |
| 1.65280 | 47.5 | V | -58.5 | 3.8 | 8.0 | 5.8 | -56.5 | -13.0 | -43.5 | |
| 2.47920 | 43.0 | V | -59.4 | 4.9 | 9.6 | 7.4 | -56.9 | -13.0 | -43.9 | |
| 1.65280 | 46.4 | H | -58.9 | 3.8 | 8.0 | 5.8 | -56.9 | -13.0 | -43.9 | |
| 2.47920 | 42.5 | H | -59.7 | 4.9 | 9.6 | 7.4 | -57.2 | -13.0 | -44.2 | |
| Mid Ch | | | | | | | | | | |
| 1.67280 | 47.5 | V | -58.3 | 3.9 | 8.0 | 5.9 | -56.3 | -13.0 | -43.3 | |
| 2.50920 | 43.7 | V | -58.6 | 4.9 | 9.6 | 7.4 | -56.1 | -13.0 | -43.1 | |
| 1.67280 | 47.0 | H | -58.2 | 3.9 | 8.0 | 5.9 | -56.2 | -13.0 | -43.2 | |
| 2.50920 | 43.6 | H | -58.5 | 4.9 | 9.6 | 7.4 | -56.0 | -13.0 | -43.0 | |
| High Ch | | | | | | | | | | |
| 1.69320 | 49.4 | V | -56.3 | 3.9 | 8.1 | 5.9 | -54.3 | -13.0 | -41.3 | |
| 2.53980 | 42.8 | V | -59.3 | 4.9 | 9.6 | 7.4 | -56.9 | -13.0 | -43.9 | |
| 1.69320 | 49.8 | H | -55.3 | 3.9 | 8.1 | 5.9 | -53.3 | -13.0 | -40.3 | |
| 2.53980 | 43.1 | H | -58.9 | 4.9 | 9.6 | 7.4 | -56.4 | -13.0 | -43.4 | |

Rev. 1.24.7

GSM1900 Band GPRS Spurious & Harmonic (EIRP)

| High Frequency Substitution Measurement | | | | | | | | | | |
|---|---------------------|-----------------|-----------------|---------|-----------------------|------------|------------------------|--|-------------|-------|
| Compliance Certification Services, Fremont Chamber B | | | | | | | | | | |
| <p>Company: Sierra Wireless Project #: 07U10905 Date: 3/26/2007 Test Engineer: Mengistu Mekuria Configuration: EUT Only Mode: PCS TX, GPRS</p> | | | | | | | | | | |
| Test Equipment: | | | | | | | | | | |
| EMCO Horn 1-18GHz | | Horn > 18GHz | | | | Limit | | <input checked="" type="checkbox"/> High Pass Filter | | |
| T73; S/N: 6717 @3m | | | | | | FCC 24 | | | | |
| Hi Frequency Cables | | | | | Pre-amplifier 1-26GHz | | Pre-amplifier 26-40GHz | | | |
| <input type="checkbox"/> (2 ft) <input type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft) | | | | | T145 Agilent 3008A | | | | | |
| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Notes |
| Low Ch | | | | | | | | | | |
| 3.70040 | 42.5 | V | -54.6 | 5.9 | 9.7 | 7.6 | -50.8 | -13.0 | -37.8 | |
| 3.70040 | 42.4 | H | -54.6 | 5.9 | 9.7 | 7.6 | -50.8 | -13.0 | -37.8 | |
| Mid Ch | | | | | | | | | | |
| 3.76000 | 42.7 | V | -54.1 | 6.0 | 9.7 | 7.6 | -50.4 | -13.0 | -37.4 | |
| 3.76000 | 42.3 | H | -54.4 | 6.0 | 9.7 | 7.6 | -50.7 | -13.0 | -37.7 | |
| High Ch | | | | | | | | | | |
| 3.81960 | 42.6 | V | -53.9 | 6.0 | 9.7 | 7.5 | -50.3 | -13.0 | -37.3 | |
| 3.81960 | 42.4 | H | -54.0 | 6.0 | 9.7 | 7.5 | -50.3 | -13.0 | -37.3 | |
| Rev. 1.24.7 | | | | | | | | | | |
| Note: No other emissions were detected above the system noise floor.. | | | | | | | | | | |

GSM1900 Band EGPRS Spurious & Harmonic (EIRP)

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont Chamber A

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: PCS TX, EGPRS

Test Equipment:

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

Horn > 18GHz

Limit
FCC 24

High Pass Filter

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

Pre-amplifer 1-26GHz
T145 Agilent 3008A

Pre-amplifer 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|---------------------|-----------------|-----------------|---------|------------|------------|------------|-------------|-------------|-------|
| Low Ch | | | | | | | | | | |
| 3.70040 | 42.2 | V | -54.8 | 5.9 | 9.7 | 7.6 | -51.1 | -13.0 | -38.1 | |
| 3.70040 | 42.9 | H | -54.1 | 5.9 | 9.7 | 7.6 | -50.3 | -13.0 | -37.3 | |
| Mid Ch | | | | | | | | | | |
| 3.76000 | 43.2 | V | -53.6 | 6.0 | 9.7 | 7.6 | -49.8 | -13.0 | -36.8 | |
| 3.76000 | 42.0 | H | -54.6 | 6.0 | 9.7 | 7.6 | -50.9 | -13.0 | -37.9 | |
| High Ch | | | | | | | | | | |
| 3.81960 | 42.2 | V | -54.3 | 6.0 | 9.7 | 7.5 | -50.7 | -13.0 | -37.7 | |
| 3.81960 | 42.2 | H | -54.2 | 6.0 | 9.7 | 7.5 | -50.5 | -13.0 | -37.5 | |

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

PCS Band WCDMA Spurious & Harmonic (EIRP)

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont Chamber B

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: PCS TX, WCDMA

Test Equipment:

EMCO Horn 1-18GHz
T73; S/N: 6717 @3m

Horn > 18GHz

Limit
FCC 24

High Pass Filter

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

Pre-amplifier 1-26GHz
T145 Agilent 3008A

Pre-amplifier 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|---------------------|-----------------|-----------------|---------|------------|------------|------------|-------------|-------------|-------|
| Low Ch | | | | | | | | | | |
| 3.70480 | 44.0 | V | -53.1 | 5.9 | 9.7 | 7.6 | -49.3 | -13.0 | -36.3 | |
| 3.70480 | 42.5 | H | -54.4 | 5.9 | 9.7 | 7.6 | -50.7 | -13.0 | -37.7 | |
| Mid Ch | | | | | | | | | | |
| 3.76000 | 43.8 | V | -53.0 | 6.0 | 9.7 | 7.6 | -49.3 | -13.0 | -36.3 | |
| 3.76000 | 42.7 | H | -53.9 | 6.0 | 9.7 | 7.6 | -50.2 | -13.0 | -37.2 | |
| High Ch | | | | | | | | | | |
| 3.81520 | 45.4 | V | -51.1 | 6.0 | 9.7 | 7.5 | -47.5 | -13.0 | -34.5 | |
| 3.81520 | 43.1 | H | -53.3 | 6.0 | 9.7 | 7.5 | -49.6 | -13.0 | -36.6 | |

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

PCS Band WCDMA+HSPDA Spurious & Harmonic (EIRP)

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont Chamber A

Company: Sierra Wireless
 Project #: 07U10905
 Date: 3/26/2007
 Test Engineer: Mengistu Mekuria
 Configuration: EUT Only
 Mode: PCS TX, WCDMA + H

Test Equipment:

EMCO Horn 1-18GHz
T73; S/N: 6717 @3m

Horn >18GHz

Limit
FCC 24

High Pass Filter

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

Pre-amplifier 1-26GHz
T145 Agilent 3008A

Pre-amplifier 26-40GHz

| f GHz | SA reading (dBuV/m) | Ant. Pol. (H/V) | SG reading 75.0 | CL (dB) | Gain (dBi) | Gain (dBd) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Notes |
|----------------|---------------------|-----------------|-----------------|---------|------------|------------|------------|-------------|-------------|-------|
| Low Ch | | | | | | | | | | |
| 3.70480 | 43.4 | V | -53.7 | 5.9 | 9.7 | 7.6 | -49.9 | -13.0 | -36.9 | |
| 3.70480 | 42.8 | H | -54.2 | 5.9 | 9.7 | 7.6 | -50.4 | -13.0 | -37.4 | |
| Mid Ch | | | | | | | | | | |
| 3.76000 | 43.0 | V | -53.7 | 6.0 | 9.7 | 7.6 | -50.0 | -13.0 | -37.0 | |
| 3.76000 | 42.7 | H | -54.0 | 6.0 | 9.7 | 7.6 | -50.3 | -13.0 | -37.3 | |
| High Ch | | | | | | | | | | |
| 3.81520 | 44.8 | V | -51.7 | 6.0 | 9.7 | 7.5 | -48.1 | -13.0 | -35.1 | |
| 3.81520 | 44.5 | H | -51.9 | 6.0 | 9.7 | 7.5 | -48.3 | -13.0 | -35.3 | |

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