



**RADIATED EMISSIONS PORTIONS OF  
FCC CFR47 PART 22 SUBPART H  
FCC CFR47 PART 24 SUBPART E  
INDUSTRY CANADA RSS-132 ISSUE 2  
INDUSTRY CANADA RSS-133 ISSUE 5**

**CERTIFICATION TEST REPORT  
FOR**

**850/900/1800/1900/2100 MHz MULTI-BAND MODULE**

**MODEL NUMBER: SL8080**

**FCC ID: N7NSL8080**

**IC: 2417C-SL8080**

**REPORT NUMBER: 10U13335-1**

**ISSUE DATE: JULY 31, 2010**

*Prepared for*

**SIERRAWIRELESS, INC.  
13811 WIRELESS WAY  
RICHMOND, BC V6V 3A4, CANADA**

*Prepared by*

**COMPLIANCE CERTIFICATION SERVICES  
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**NVLAP LAB CODE 200065-0**

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	07/31/10	Initial Issue	T. Chan



# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SIERRAWIRELESS, INC.  
13811 WIRELESS WAY  
RICHMOND, BC V6V 3A4, CANADA

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

**MODEL:** SL8080

**SERIAL NUMBER:** FAA18100009D3-01

**DATE TESTED:** JULY 31, 2010

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H AND 24E	PASS (Radiated Portion)
IC RSS-132 ISSUE 2 AND RSS-133 ISSUE 5	PASS (Radiated Portion)

Compliance Certification Services, Inc. (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 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.

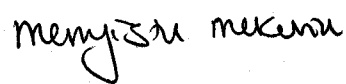
**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions 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  
ENGINEERING MANAGER  
COMPLIANCE CERTIFICATION SERVICES

Tested By:



MENGISTU MEKURIA  
EMC ENGINEER  
COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, FCC CFR Part 24, RSS-132 Issue 2, and RSS-133 Issue 5.

## 3. FACILITIES AND ACCREDITATION

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

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. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\text{Field Strength (dBuV/m)} = \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \text{Cable Loss (dB)} - \text{Preamp Gain (dB)}$$

$$36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} = 28.9 \text{ dBuV/m}$$

### 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

EUT is an 800/900/1800/1900/2100 Multi-Band Radio Module that is manufactured by Sierra Wireless, Inc.

### 5.2. WORST-CASE CONFIGURATION AND MODE

The worst-position was the EUT with highest emissions. To determine the worst-case, the EUT was investigated for X and Z-Antenna Orientations. After the investigations, the worst-orientation was turned out to be an X antenna orientation for all modulations and both bands.

### 5.3. SOFTWARE AND FIRMWARE

#### PROCEDURE USED TO ESTABLISH TEST SIGNAL

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

#### GPRS/EGPRS Mode

- Call Setup > Shift & Preset
- Active Cell > Active Cell (GSM/GPRS/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 > 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 ( GPRS), MCS9 ( EGPRS)
  
- Press "Start Data Connection"

**WCDMA UMTS mode**

**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 Parm:** (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) Parm: 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: 25 dBm  
UL CL Pwr Ctrl Parm: Active bits (Select "All Up bits" after linked to get maximum power)  
DL Channel: 9662 / 9800 / 9938 / 4357 / 4407 / 4458  
UL Channel: 9262 / 9400 / 9538 / 4132 / 4182 / 4233

## 5.4. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number	FCC ID
DC Power Supply	HP	6282A	2410A04939	N/A

### I/O CABLES

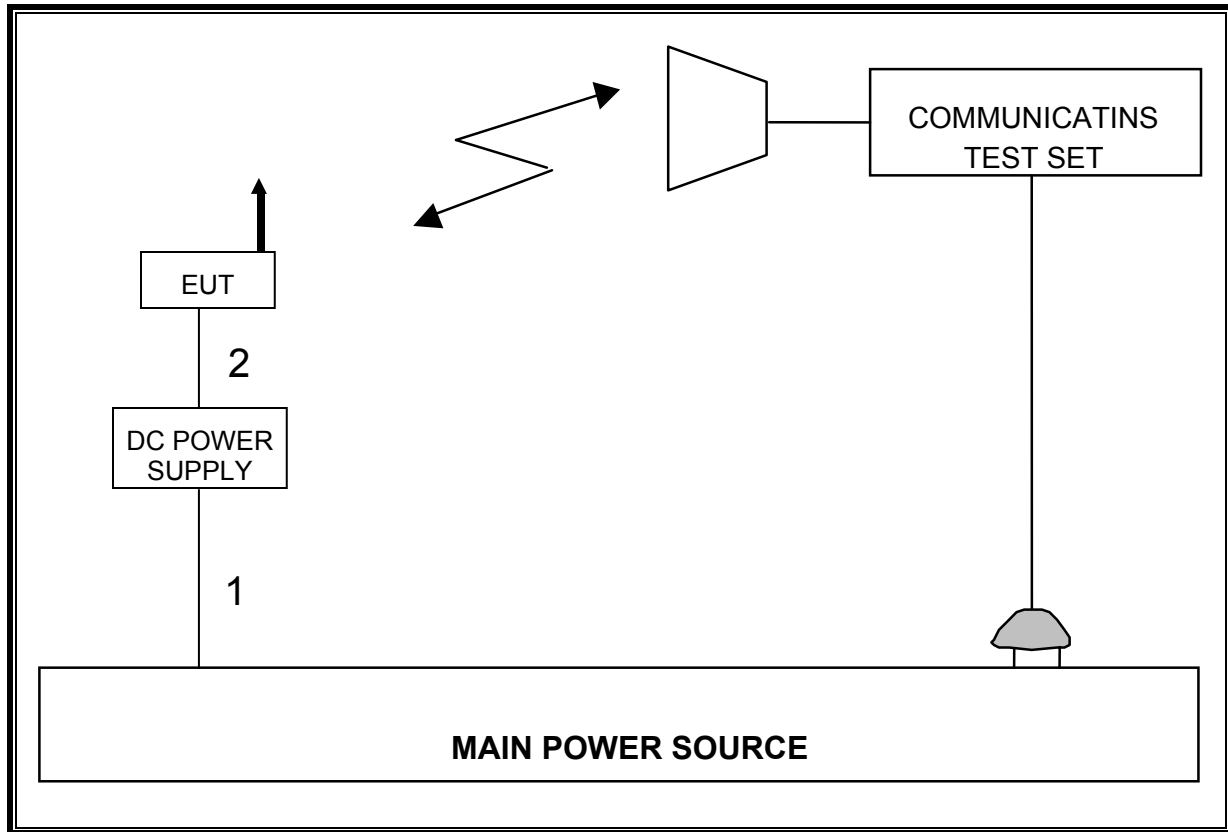
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	AC	Un-shielded	2.0 m	N/A
	DC	1	DC	Un-shielded	0.9 m	N/A

### TEST SETUP

The EUT is a Multi-Band Radio Module, and it is tested as a standalone configuration. Communications Test Set is used to link the device under test.



**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	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	03/05/11
Communications Test Set	Agilent / HP	E5515C	N/A	02/22/11
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	08/04/10
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	08/04/10
Dipole	Speag	D900V2	N/A	11/16/11
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02689	CNR
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Signal Generator	R & S	SMP04	C00953	02/16/11
Antenna, Horn, 18 GHz	EMCO	3115	C00783	07/29/11
Antenna, Horn, 18 GHz	EMCO	3115	C00943	07/29/11
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01016	08/14/10

## **7. LIMITS AND RESULTS**

### **7.1. FIELD STRENGTH OF SPURIOUS RADIATION**

#### **LIMIT**

§22.917 (e) and §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**

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b), and FCC 24.238 (b), (g)(1)(2)(3), RSS-132, and RSS-133.

#### **RESULTS**

**GPRS**

**CELL SPURIOUS & HARMONIC (ERP)**

Compliance Certification Services										
Above 1GHz High Frequency Substitution Measurement										
Company:		SIERRA WIRELESS, INC.								
Project #:		10U13335								
Date:		7/31/2020								
Test Engineer:		MENGISTU MEKURAI								
Configuration:		EUT ALONE								
Mode:		TX, GPRS CELL BAND								
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		FCC PART 22				
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. (824.2 MHz)</b>										
1.648	-38.8	H	3.0	37.2	35.5	1.0	-36.2	-13.0	-23.2	
3.297	-62.0	H	3.0	43.9	35.5	1.0	-52.5	-13.0	-39.5	
4.121	-60.4	H	3.0	46.7	35.2	1.0	-47.9	-13.0	-34.9	
4.945	-59.4	H	3.0	48.8	35.3	1.0	-44.9	-13.0	-31.9	
5.769	-56.7	H	3.0	50.4	35.5	1.0	-40.7	-13.0	-27.7	
6.594	-58.8	H	3.0	51.8	35.6	1.0	-41.6	-13.0	-28.6	
7.418	-67.9	H	3.0	53.0	35.7	1.0	-49.7	-13.0	-36.7	
1.648	-42.2	V	3.0	36.8	35.5	1.0	-39.9	-13.0	-26.9	
2.473	-57.2	V	3.0	41.7	35.4	1.0	-50.0	-13.0	-37.0	
3.297	-59.3	V	3.0	44.1	35.5	1.0	-49.7	-13.0	-36.7	
4.121	-54.3	V	3.0	46.1	35.2	1.0	-42.3	-13.0	-29.3	
4.945	-51.6	V	3.0	48.2	35.3	1.0	-37.8	-13.0	-24.8	
5.769	-52.5	V	3.0	49.4	35.5	1.0	-37.5	-13.0	-24.5	
6.594	-53.8	V	3.0	50.3	35.6	1.0	-38.1	-13.0	-25.1	
7.418	-63.4	V	3.0	51.3	35.7	1.0	-46.8	-13.0	-33.8	
<b>Mid Ch. (836.6 MHz)</b>										
1.673	-41.0	H	3.0	37.5	35.5	1.0	-38.1	-13.0	-25.1	
3.346	-61.6	H	3.0	44.1	35.5	1.0	-52.0	-13.0	-39.0	
4.183	-59.1	H	3.0	46.8	35.2	1.0	-46.5	-13.0	-33.5	
5.020	-55.3	H	3.0	48.9	35.3	1.0	-40.6	-13.0	-27.6	
5.856	-57.0	H	3.0	50.5	35.5	1.0	-40.9	-13.0	-27.9	
6.693	-61.2	H	3.0	52.0	35.7	1.0	-43.9	-13.0	-30.9	
7.529	-68.0	H	3.0	53.1	35.7	1.0	-49.6	-13.0	-36.6	
1.673	-46.1	V	3.0	37.1	35.5	1.0	-43.5	-13.0	-30.5	
3.346	-59.8	V	3.0	44.3	35.5	1.0	-50.1	-13.0	-37.1	
4.183	-56.4	V	3.0	46.3	35.2	1.0	-44.3	-13.0	-31.3	
5.020	-48.2	V	3.0	48.3	35.3	1.0	-34.2	-13.0	-21.2	
5.856	-53.3	V	3.0	49.5	35.5	1.0	-38.2	-13.0	-25.2	
6.693	-57.0	V	3.0	50.5	35.7	1.0	-41.2	-13.0	-28.2	
7.529	-64.5	V	3.0	51.5	35.7	1.0	-47.7	-13.0	-34.7	
<b>Hi Ch. (848.8 MHz)</b>										
1.698	-45.0	H	3.0	37.7	35.5	1.0	-41.8	-13.0	-28.8	
4.244	-59.6	H	3.0	47.0	35.2	1.0	-46.8	-13.0	-33.8	
5.093	-52.6	H	3.0	49.1	35.3	1.0	-37.8	-13.0	-24.8	
5.942	-55.8	H	3.0	50.7	35.5	1.0	-39.6	-13.0	-26.6	
6.790	-58.1	V	3.0	50.6	35.7	1.0	-42.2	-13.0	-29.2	
7.639	-66.3	V	3.0	51.6	35.7	1.0	-49.4	-13.0	-36.4	
1.698	-49.1	V	3.0	37.4	35.5	1.0	-46.1	-13.0	-33.1	
2.546	-57.8	V	3.0	42.0	35.4	1.0	-50.3	-13.0	-37.3	
3.395	-59.5	V	3.0	44.4	35.5	1.0	-49.6	-13.0	-36.6	
4.244	-56.2	V	3.0	46.5	35.2	1.0	-44.0	-13.0	-31.0	
5.093	-45.7	V	3.0	48.5	35.3	1.0	-31.5	-13.0	-18.5	
5.942	-52.6	V	3.0	49.6	35.5	1.0	-37.4	-13.0	-24.4	
6.790	-58.1	V	3.0	50.6	35.7	1.0	-42.2	-13.0	-29.2	
7.639	-66.3	V	3.0	51.6	35.7	1.0	-49.4	-13.0	-36.4	

NOTE: No other emissions were observed within 40dB margin to the limit line.  
 Rev. 03.03.09

**PCS SPURIOUS & HARMONIC (EIRP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		SIERRA WIRELESS, INC.								
Project #:		10U13335								
Date:		7/31/2020								
Test Engineer:		MENGISTU MEKURAI								
Configuration:		EUT ALONE								
Mode:		TX, GPRS PCS BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber B		T145 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch (1850.2 MHz)</b>										
3.700	-52.2	H	3.0	45.3	35.4	1.0	-41.2	-13.0	-28.2	
5.551	-49.1	H	3.0	50.0	35.4	1.0	-33.5	-13.0	-20.5	
7.401	-64.2	H	3.0	53.0	35.7	1.0	-46.0	-13.0	-33.0	
9.251	-64.2	H	3.0	55.1	35.6	1.0	-43.7	-13.0	-30.7	
11.101	-66.0	H	3.0	56.0	34.8	1.0	-43.8	-13.0	-30.8	
12.951	-65.6	H	3.0	57.6	34.0	1.0	-41.0	-13.0	-28.0	
14.802	-59.9	H	3.0	60.3	33.6	1.0	-32.2	-13.0	-19.2	
3.700	-50.2	V	3.0	45.1	35.4	1.0	-39.4	-13.0	-26.4	
5.551	-42.2	V	3.0	49.2	35.4	1.0	-27.4	-13.0	-14.4	
7.401	-54.4	V	3.0	51.3	35.7	1.0	-37.8	-13.0	-24.8	
9.251	-59.5	V	3.0	53.6	35.6	1.0	-40.5	-13.0	-27.5	
11.101	-64.5	V	3.0	55.9	34.8	1.0	-42.5	-13.0	-29.5	
12.951	-63.2	V	3.0	58.0	34.0	1.0	-38.2	-13.0	-25.2	
14.802	-52.0	V	3.0	60.1	33.6	1.0	-24.6	-13.0	-11.6	
<b>Mid Ch. (1880.0 MHz)</b>										
3.760	-55.4	H	3.0	45.5	35.3	1.0	-44.2	-13.0	-31.2	
5.640	-48.4	H	3.0	50.2	35.4	1.0	-32.6	-13.0	-19.6	
7.520	-63.8	H	3.0	53.1	35.7	1.0	-45.4	-13.0	-32.4	
9.400	-65.1	H	3.0	55.2	35.6	1.0	-44.4	-13.0	-31.4	
11.280	-65.8	H	3.0	56.1	34.7	1.0	-43.4	-13.0	-30.4	
13.160	-66.8	H	3.0	57.9	34.0	1.0	-41.9	-13.0	-28.9	
15.040	-58.6	H	3.0	60.5	33.5	1.0	-30.6	-13.0	-17.6	
3.760	-50.7	V	3.0	45.3	35.3	1.0	-39.7	-13.0	-26.7	
5.640	-42.3	V	3.0	49.3	35.4	1.0	-27.4	-13.0	-14.4	
7.520	-57.9	V	3.0	51.4	35.7	1.0	-41.2	-13.0	-28.2	
9.400	-62.2	V	3.0	53.7	35.6	1.0	-43.0	-13.0	-30.0	
11.280	-65.2	V	3.0	56.1	34.7	1.0	-42.8	-13.0	-29.8	
13.160	-61.9	V	3.0	58.3	34.0	1.0	-36.6	-13.0	-23.6	
15.040	-50.3	V	3.0	60.2	33.5	1.0	-22.7	-13.0	-9.7	
<b>Hi Ch. (1909.8 MHz)</b>										
3.820	-58.3	H	3.0	45.7	35.3	1.0	-46.9	-13.0	-33.9	
5.729	-50.4	H	3.0	50.3	35.4	1.0	-34.5	-13.0	-21.5	
7.639	-65.2	H	3.0	53.2	35.7	1.0	-46.6	-13.0	-33.6	
9.549	-67.6	H	3.0	55.4	35.6	1.0	-46.7	-13.0	-33.7	
11.459	-64.2	H	3.0	56.1	34.6	1.0	-41.7	-13.0	-28.7	
13.369	-65.0	H	3.0	58.2	33.9	1.0	-39.8	-13.0	-26.8	
15.278	-56.9	H	3.0	60.0	33.4	1.0	-29.4	-13.0	-16.4	
3.820	-51.7	V	3.0	45.4	35.3	1.0	-40.5	-13.0	-27.5	
5.729	-47.7	V	3.0	49.4	35.4	1.0	-32.7	-13.0	-19.7	
7.639	-58.8	V	3.0	51.6	35.7	1.0	-41.8	-13.0	-28.8	
9.549	-64.9	V	3.0	53.9	35.6	1.0	-45.6	-13.0	-32.6	
11.459	-63.7	V	3.0	56.3	34.6	1.0	-41.0	-13.0	-28.0	
13.369	-60.0	V	3.0	58.5	33.9	1.0	-34.4	-13.0	-21.4	
15.278	-50.3	V	3.0	59.6	33.4	1.0	-23.1	-13.0	-10.1	
NOTE: No other emissions were observed within 40dB margin to the limit line. Rev. 03.03.09										

**EGPRS**

**CELL SPURIOUS & HARMONIC (ERP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		SIERRA WIRELESS, INC.								
Project #:		10U13335								
Date:		7/31/2020								
Test Engineer:		MENGI STU MEKURAI								
Configuration:		EUT ALONE								
Mode:		TX, EGPRS CELL BAND								
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T145 8449B		Filter 1		FCC PART 22				
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. (824.2 MHz)</b>										
1.648	-43.6	H	3.0	37.2	35.5	1.0	-40.9	-13.0	-27.9	
4.121	-58.6	H	3.0	46.7	35.2	1.0	-46.2	-13.0	-33.2	
4.945	-59.7	H	3.0	48.8	35.3	1.0	-45.3	-13.0	-32.3	
5.769	-61.8	H	3.0	50.4	35.5	1.0	-45.9	-13.0	-32.9	
6.594	-60.5	H	3.0	51.8	35.6	1.0	-43.4	-13.0	-30.4	
1.648	-48.0	V	3.0	36.8	35.5	1.0	-45.7	-13.0	-32.7	
2.473	-59.2	V	3.0	41.7	35.4	1.0	-51.9	-13.0	-38.9	
3.297	-60.9	V	3.0	44.1	35.5	1.0	-51.3	-13.0	-38.3	
4.121	-51.9	V	3.0	46.1	35.2	1.0	-40.0	-13.0	-27.0	
4.945	-54.4	V	3.0	48.2	35.3	1.0	-40.5	-13.0	-27.5	
5.769	-59.0	V	3.0	49.4	35.5	1.0	-44.1	-13.0	-31.1	
6.594	-55.9	V	3.0	50.3	35.6	1.0	-40.1	-13.0	-27.1	
<b>Mid Ch. (836.6 MHz)</b>										
1.673	-47.4	H	3.0	37.5	35.5	1.0	-44.5	-13.0	-31.5	
4.183	-59.1	H	3.0	46.8	35.2	1.0	-46.5	-13.0	-33.5	
5.020	-58.2	H	3.0	48.9	35.3	1.0	-43.6	-13.0	-30.6	
5.856	-61.4	H	3.0	50.5	35.5	1.0	-45.3	-13.0	-32.3	
6.693	-62.3	H	3.0	52.0	35.7	1.0	-45.0	-13.0	-32.0	
1.673	-50.2	V	3.0	37.1	35.5	1.0	-47.6	-13.0	-34.6	
2.510	-60.4	V	3.0	41.8	35.4	1.0	-53.0	-13.0	-40.0	
3.346	-61.6	V	3.0	44.3	35.5	1.0	-51.9	-13.0	-38.9	
4.183	-55.1	V	3.0	46.3	35.2	1.0	-43.1	-13.0	-30.1	
5.020	-51.1	V	3.0	48.3	35.3	1.0	-37.0	-13.0	-24.0	
5.856	-60.1	V	3.0	49.5	35.5	1.0	-45.0	-13.0	-32.0	
6.693	-57.0	V	3.0	50.5	35.7	1.0	-41.2	-13.0	-28.2	
<b>Hi Ch. (848.8 MHz)</b>										
1.698	-49.4	H	3.0	37.7	35.5	1.0	-46.2	-13.0	-33.2	
4.244	-58.4	H	3.0	47.0	35.2	1.0	-45.7	-13.0	-32.7	
5.093	-55.3	H	3.0	49.1	35.3	1.0	-40.5	-13.0	-27.5	
5.942	-61.0	H	3.0	50.7	35.5	1.0	-44.8	-13.0	-31.8	
6.790	-64.1	H	3.0	52.1	35.7	1.0	-46.7	-13.0	-33.7	
1.698	-55.9	V	3.0	37.4	35.5	1.0	-53.0	-13.0	-40.0	
2.546	-58.9	V	3.0	42.0	35.4	1.0	-51.4	-13.0	-38.4	
3.395	-59.5	V	3.0	44.4	35.5	1.0	-49.7	-13.0	-36.7	
4.244	-56.0	V	3.0	46.5	35.2	1.0	-43.8	-13.0	-30.8	
5.093	-51.3	V	3.0	48.5	35.3	1.0	-37.1	-13.0	-24.1	
5.942	-60.6	V	3.0	49.6	35.5	1.0	-45.5	-13.0	-32.5	
6.790	-56.9	V	3.0	50.6	35.7	1.0	-41.0	-13.0	-28.0	

**PCS SPURIOUS & HARMONIC (EIRP)**

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:		SIERRA WIRELESS, INC.								
Project #:		10U13335								
Date:		7/31/2020								
Test Engineer:		MENGISTU MEKURAI								
Configuration:		EUT ALONE								
Mode:		TX, EGPRS PCS BAND								
Chamber		Pre-amplifier			Filter			Limit		
5m Chamber B		T145 8449B			Filter 1			FCC PART 24		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. (1850.2 MHz)</b>										
3.700	54.8	H	3.0	45.3	35.4	1.0	-43.8	-13.0	-30.8	
5.551	49.6	H	3.0	50.0	35.4	1.0	-34.0	-13.0	-21.0	
7.401	65.3	H	3.0	53.0	35.7	1.0	-47.1	-13.0	-34.1	
9.251	69.4	H	3.0	55.1	35.6	1.0	-48.9	-13.0	-35.9	
11.101	69.6	H	3.0	56.0	34.8	1.0	-47.3	-13.0	-34.3	
12.951	68.6	V	3.0	58.0	34.0	1.0	-43.6	-13.0	-30.6	
14.802	61.8	V	3.0	60.1	33.6	1.0	-34.4	-13.0	-21.4	
3.700	51.8	V	3.0	45.1	35.4	1.0	-41.0	-13.0	-28.0	
5.551	42.7	V	3.0	49.2	35.4	1.0	-27.9	-13.0	-14.9	
7.401	55.5	V	3.0	51.3	35.7	1.0	-38.9	-13.0	-25.9	
9.251	63.1	H	3.0	55.1	35.6	1.0	-42.6	-13.0	-29.6	
11.101	68.2	H	3.0	56.0	34.8	1.0	-46.0	-13.0	-33.0	
12.951	66.2	H	3.0	57.6	34.0	1.0	-41.6	-13.0	-28.6	
14.802	57.2	H	3.0	60.3	33.6	1.0	-29.5	-13.0	-16.5	
<b>Mid Ch. (1880.0 MHz)</b>										
3.820	57.4	H	3.0	45.7	35.3	1.0	-45.9	-13.0	-32.9	
5.729	50.3	H	3.0	50.3	35.4	1.0	-34.4	-13.0	-21.4	
7.639	68.9	H	3.0	53.2	35.7	1.0	-50.4	-13.0	-37.4	
9.549	69.0	H	3.0	55.4	35.6	1.0	-48.2	-13.0	-35.2	
11.459	69.4	H	3.0	56.1	34.6	1.0	-46.9	-13.0	-33.9	
3.760	53.2	V	3.0	45.3	35.3	1.0	-42.2	-13.0	-29.2	
5.640	44.1	V	3.0	49.3	35.4	1.0	-29.2	-13.0	-16.2	
7.520	58.6	V	3.0	51.4	35.7	1.0	-41.8	-13.0	-28.8	
9.400	67.1	V	3.0	53.7	35.6	1.0	-47.9	-13.0	-34.9	
11.280	68.6	V	3.0	56.1	34.7	1.0	-46.2	-13.0	-33.2	
13.160	63.9	V	3.0	58.3	34.0	1.0	-38.6	-13.0	-25.6	
15.040	54.8	V	3.0	60.2	33.5	1.0	-27.2	-13.0	-14.2	
<b>Hi Ch. (1909.8 MHz)</b>										
3.820	60.2	H	3.0	45.7	35.3	1.0	-48.7	-13.0	-35.7	
5.729	51.1	H	3.0	50.3	35.4	1.0	-35.3	-13.0	-22.3	
7.639	68.5	H	3.0	53.2	35.7	1.0	-49.9	-13.0	-36.9	
9.549	69.1	H	3.0	55.4	35.6	1.0	-48.3	-13.0	-35.3	
11.459	68.8	H	3.0	56.1	34.6	1.0	-46.2	-13.0	-33.2	
13.369	69.4	H	3.0	58.2	33.9	1.0	-44.2	-13.0	-31.2	
15.278	69.7	H	3.0	60.0	33.4	1.0	-42.2	-13.0	-29.2	
3.820	55.4	V	3.0	45.4	35.3	1.0	-44.3	-13.0	-31.3	
5.729	46.7	V	3.0	49.4	35.4	1.0	-31.7	-13.0	-18.7	
7.639	58.9	V	3.0	51.6	35.7	1.0	-42.0	-13.0	-29.0	
9.549	65.3	V	3.0	53.9	35.6	1.0	-45.9	-13.0	-32.9	
11.459	65.6	V	3.0	56.3	34.6	1.0	-42.9	-13.0	-29.9	
13.369	64.7	V	3.0	58.5	33.9	1.0	-39.1	-13.0	-26.1	
15.278	50.8	V	3.0	59.6	33.4	1.0	-23.6	-13.0	-10.6	
NOTE: No other emissions were observed within 40dB margin to the limit line.										
Rev. 03.03.09										

**WCDMA**

**CELL SPURIOUS & HARMONIC (ERP)**

Compliance Certification Services											
Above 1GHz High Frequency Substitution Measurement											
<b>Company:</b>		SIERRA WIRELESS, INC.									
<b>Project #:</b>		10U13335									
<b>Date:</b>		7/31/2020									
<b>Test Engineer:</b>		MENGISTU MEKURAI									
<b>Configuration:</b>		EUT ALONE									
<b>Mode:</b>		TX, WCDMA CELL BAND									
Chamber			Pre-amplifier			Filter			Limit		
5m Chamber B			T145 8449B			Filter 1			FCC PART 22		
f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
<b>Low Ch. (826.4 MHz)</b>											
1.653	-38.9	H	3.0	37.3	35.5	1.0	-36.2	-13.0	-23.2		
2.479	-47.4	H	3.0	39.8	35.4	1.0	-42.0	-13.0	-29.0		
3.306	-53.3	H	3.0	44.0	35.5	1.0	-43.9	-13.0	-30.9		
1.653	-51.3	V	3.0	36.8	35.5	1.0	-49.0	-13.0	-36.0		
2.479	-53.2	V	3.0	41.7	35.4	1.0	-45.9	-13.0	-32.9		
3.306	-57.5	V	3.0	44.2	35.5	1.0	-47.9	-13.0	-34.9		
<b>Mid Ch. (836.4 MHz)</b>											
1.673	-48.6	H	3.0	37.5	35.5	1.0	-45.7	-13.0	-32.7		
2.509	-53.3	H	3.0	39.9	35.4	1.0	-47.8	-13.0	-34.8		
3.346	-58.9	H	3.0	44.1	35.5	1.0	-49.3	-13.0	-36.3		
1.673	-46.2	V	3.0	37.1	35.5	1.0	-43.6	-13.0	-30.6		
2.509	-48.0	V	3.0	41.8	35.4	1.0	-40.6	-13.0	-27.6		
3.346	-58.6	V	3.0	44.3	35.5	1.0	-48.8	-13.0	-35.8		
<b>Hi Ch. (846.6 MHz)</b>											
1.693	-39.3	H	3.0	37.7	35.5	1.0	-36.2	-13.0	-23.2		
2.540	-44.1	H	3.0	40.1	35.4	1.0	-38.4	-13.0	-25.4		
3.386	-58.0	H	3.0	44.3	35.5	1.0	-48.3	-13.0	-35.3		
1.693	-45.3	V	3.0	37.4	35.5	1.0	-42.4	-13.0	-29.4		
2.540	-49.6	V	3.0	41.9	35.4	1.0	-42.1	-13.0	-29.1		
3.386	-53.8	V	3.0	44.4	35.5	1.0	-43.9	-13.0	-30.9		
<p>NOTE: No other emissions were observed within 40dB margin to the limit line.                      Rev. 03.03.09</p>											



**PCS SPURIOUS & HARMONIC (EIRP)**

**Compliance Certification Services**  
**Above 1GHz High Frequency Substitution Measurement**

**Company:** SIERRA WIRELESS, INC.  
**Project #:** 10U13335  
**Date:** 7/31/2020  
**Test Engineer:** MENGISTU MEKURAI  
**Configuration:** EUT ALONE  
**Mode:** TX, WCDMA PCS BAND

Chamber

5m Chamber B

Pre-amplifier

T145 8449B

Filter

Filter 1

Limit

FCC PART 24

f GHz	SA reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Path Loss (dB)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
<b>Low Ch. (1852.4 MHz)</b>										
3.705	-49.4	H	3.0	45.3	35.4	1.0	-38.4	-13.0	-25.4	
5.557	-65.4	H	3.0	50.0	35.4	1.0	-49.8	-13.0	-36.8	
3.705	-47.1	V	3.0	45.1	35.4	1.0	-36.3	-13.0	-23.3	
5.557	-65.0	V	3.0	49.2	35.4	1.0	-50.2	-13.0	-37.2	
<b>Mid Ch. (1880.0 MHz)</b>										
3.760	-55.3	H	3.0	45.5	35.3	1.0	-44.1	-13.0	-31.1	
5.640	-65.0	H	3.0	50.2	35.4	1.0	-49.3	-13.0	-36.3	
3.760	-49.8	V	3.0	45.3	35.3	1.0	-38.9	-13.0	-25.9	
5.640	-65.7	V	3.0	49.3	35.4	1.0	-50.9	-13.0	-37.9	
<b>Hi Ch. (1907.6 MHz)</b>										
3.815	-50.8	H	3.0	45.7	35.3	1.0	-39.4	-13.0	-26.4	
5.723	-64.3	H	3.0	50.3	35.4	1.0	-48.4	-13.0	-35.4	
3.815	-48.6	V	3.0	45.4	35.3	1.0	-37.5	-13.0	-24.5	
5.723	-65.7	V	3.0	49.4	35.4	1.0	-50.7	-13.0	-37.7	

NOTE: No other emissions were observed within 40dB margin to the limit line.  
 Rev. 03.03.09