



**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

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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>
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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.

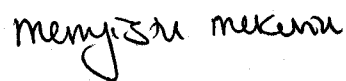
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section.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

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

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

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 Params: (by press CALL SETUP)

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

HSDPA Parameters:

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

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

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

3 of 3
UE Target Power: 25 dBm
UL CL Pwr Ctrl Params: Active bits (Select "All Up bits" after linked to get maximum power)
DL Channel: 9662 / 9800 / 9938 / 4357 / 4407 / 4458
UL Channel: 9262 / 9400 / 9538 / 4132 / 4182 / 4233

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

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

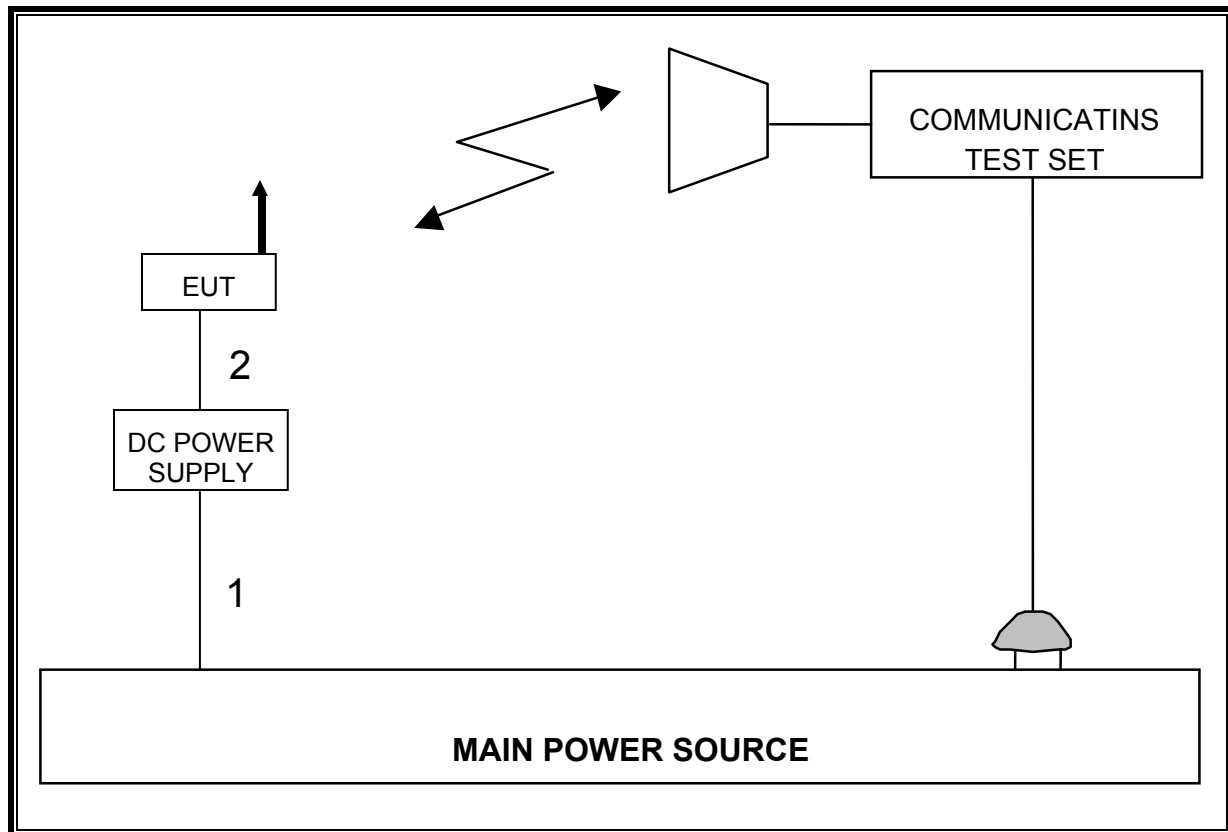
I/O CABLES

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
Low Ch. (824.2 MHz)										
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	
Mid Ch. (836.6 MHz)										
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	
Hi Ch. (848.8 MHz)										
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
Low Ch. (1850.2 MHz)										
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	
Mid Ch. (1880.0 MHz)										
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	
Hi Ch. (1909.8 MHz)										
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:		MENGISTU 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
Low Ch. (824.2 MHz)										
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	
Mid Ch. (836.6 MHz)										
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	
Hi Ch. (848.8 MHz)										
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	
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, 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	
Low Ch. (1850.2 MHz)											
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		
Mid Ch. (1880.0 MHz)											
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		
Hi Ch. (1909.8 MHz)											
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)

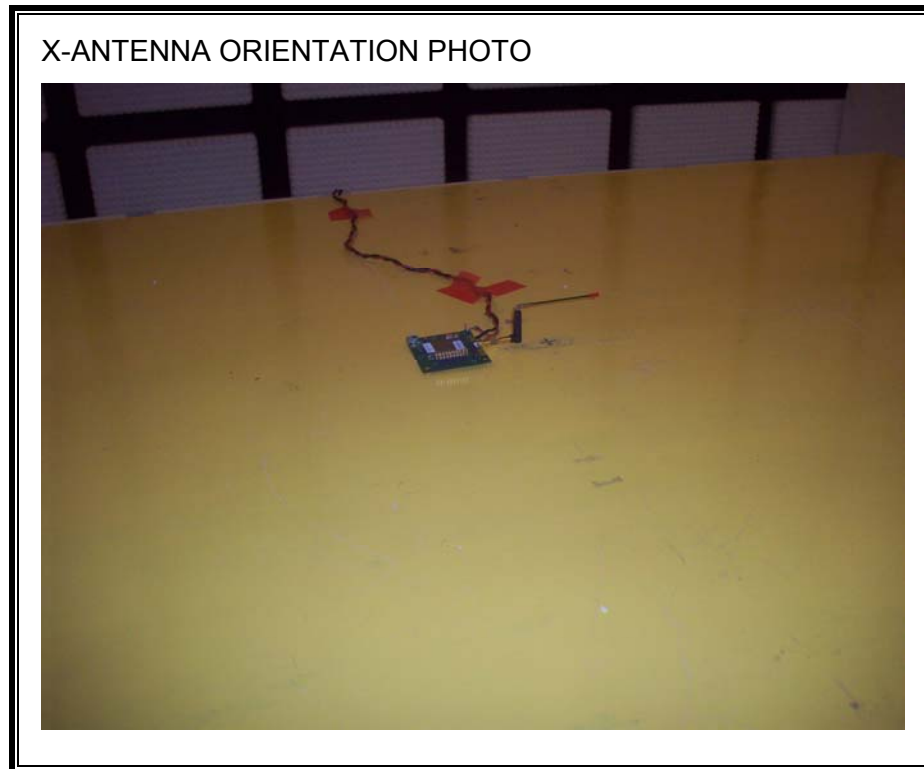
Compliance Certification Services Above 1GHz High Frequency Substitution Measurement											
Company:		SIERRA WIRELESS, INC.									
Project #:		10U13335									
Date:		7/31/2020									
Test Engineer:		MENGISTU MEKURAI									
Configuration:		EUT ALONE									
Mode:		TX, WCDMA CELL BAND									
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	
Low Ch. (826.4 MHz)											
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		
Mid Ch. (836.4 MHz)											
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		
Hi Ch. (846.6 MHz)											
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		
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, WCDMA 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
Low Ch. (1852.4 MHz)										
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	
Mid Ch. (1880.0 MHz)										
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	
Hi Ch. (1907.6 MHz)										
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										

8. SETUP PHOTOS

RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION



Z-ANTENNA ORIENTATION PHOTO



END OF REPORT