FCC CFR47 PART 22 SUBPART H
AND PART 24 SUBPART E
CERTIFICATION TEST REPORT

FOR

850/900/1800/2100 MHZ 5-BAND MiniCard MODULE

MODEL NUMBER: MC8755

FCC ID: N7NMC8755

REPORT NUMBER: 05U3781-1

ISSUE DATE: DECEMBER 06, 2005

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

Prepared by
COMPLIANCE CERTIFICATION SERVICES
561F MONTEREY ROAD
MORGAN HILL, CA 95037, USA
TEL: (408) 463-0885
FAX: (408) 463-0888

LAB CODE:200065-0

Revision History

Rev.	Date	Revisions	Revised By
A	12/06/05	Initial Issue	Thu

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 4

2. TEST METHODOLOGY 5

3. FACILITIES AND ACCREDITATION 5

4. CALIBRATION AND UNCERTAINTY 5

4.1. MEASURING INSTRUMENT CALIBRATION 5

4.2. MEASUREMENT UNCERTAINTY 5

5. EQUIPMENT UNDER TEST 6

5.1. DESCRIPTION OF EUT 6

5.2. DESCRIPTION OF AVAILABLE ANTENNAS 6

5.3. MAXIMUM OUTPUT POWER 6

5.4. SOFTWARE AND FIRMWARE 7

5.5. WORST-CASE CONFIGURATION AND MODE 7

5.6. DESCRIPTION OF TEST SETUP 8

6. TEST AND MEASUREMENT EQUIPMENT 10

7. LIMITS AND RESULTS 11

7.1. RF POWER OUTPUT 11

7.2. FIELD STRENGTH OF SPURIOUS EMISSION 17

8. SETUP PHOTOS 22

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SIERRA WIRELESS INC. 13811 WIRELESS WAY RICHMOND, BC V6V 3A4, CANADA
EUT DESCRIPTION:	850/900/1900/2100 MHZ 5-BAND MiniCard MODULE
MODEL:	MC8755
SERIAL NUMBER:	ZZ-89588 (Laptop)
DATE TESTED:	NOVEMBER 29-DECEMBER 02, 2005

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:

CHIN PANG
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 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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 850/900/1800/1900/2100 MHz 5-band MiniCard Module.in Lenovo Davinci 14" and 15" laptops.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a Planner Inverted F type antenna with a maximum gain as below:
_For 14" Lenovo Davinci Laptop: 0.12 dBi for GSM band and 1.51 dBi for EDGE band
_For 15" Lenovo Davinci Laptop: 0.31 dBi for GSM band and 2.15 dBi for EDGE band

5.3. MAXIMUM OUTPUT POWER

The transmitter has maximum ERP and EIRP output powers as follows:

Part 22 (824.2 - 849MHz) & Part 24 (1850 - 1910MHz) Authorized Band:

15" Davinci Laptop:

Frequency Range (MHz)	Modulation	ERP Peak Power (dBm)	ERP Peak Power (mW)
824.2 - 848.75	GSM	25.90	389.05
1850.25 - 1909.80	GSM	25.60	363.08

15" Davinci Laptop:

Frequency Range (MHz)	Modulation	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
824.20 - 848.31	EDGE	23.90	245.47
1850.25 - 1909.80	EDGE	25.90	389.05

NOTE: RBW=VBW=3MHz

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was Hyperterminal / ProcommPlus.

5.5. WORST-CASE CONFIGURATION AND MODE

.
The worst-case channel is determined as the channel with the highest output power. For GSM and EDGE modulations, the highest measured output power for 800 MHz band were at high channel, 848.75MHz and for 1900MHz band, the highest output power were at low channel 1850.25MHz with 15 inch Lenovo Davinci Laptop.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Power Adapter	IBM	92P1109	11S92P1109Z1ZACU59X7MV	NA
15" Laptop	IBM	Davinci	ZZ-89588	DoC

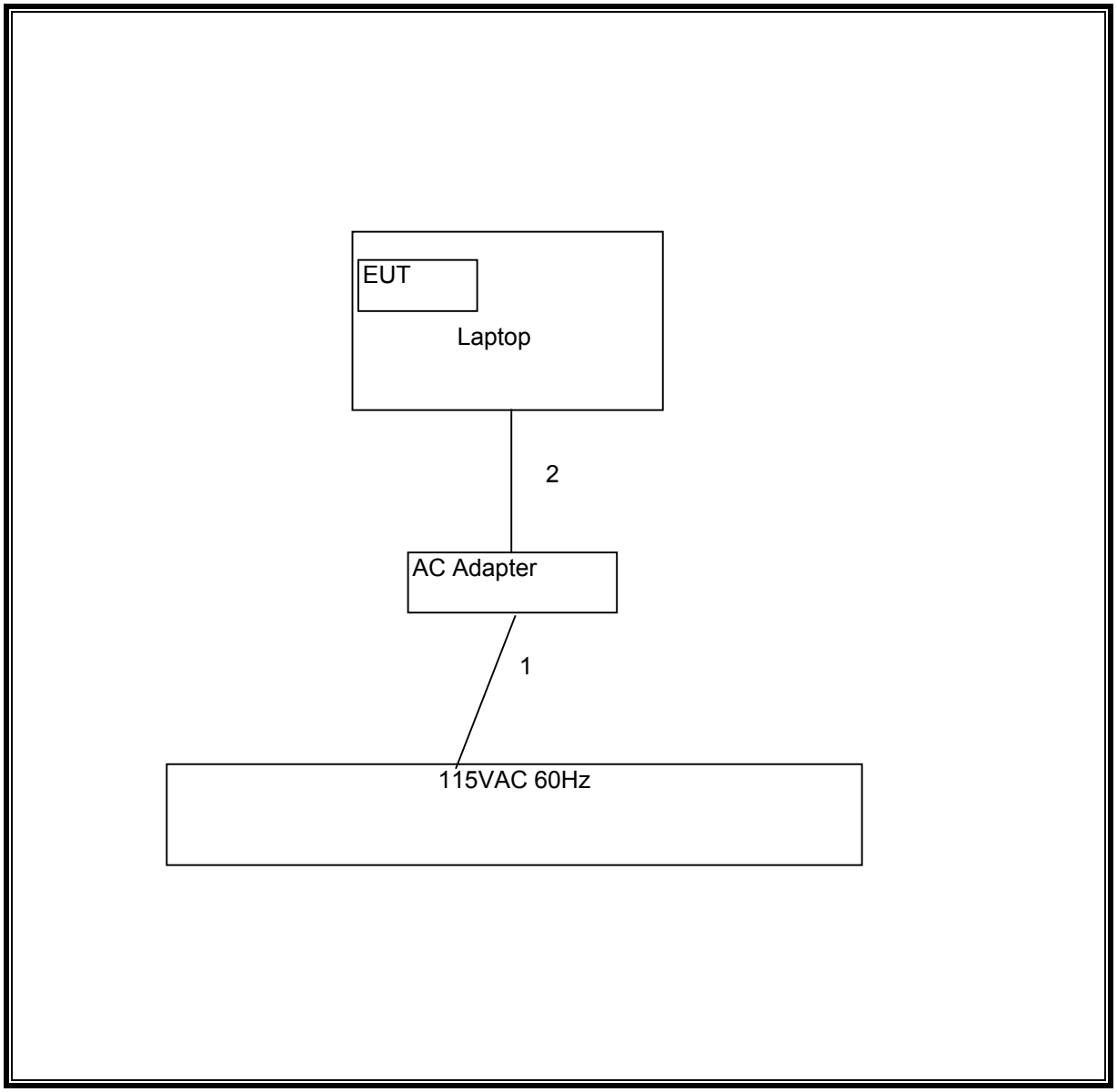
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US 115V	Un-shielded	2m	NA
2	DC	1	DC	Un-shielded	0.5m	NA

TEST SETUP

The EUT was installed inside the laptop during the tests. The test software exercised the EUT.

RADIATED TEST SETUP DIAGRAM



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 30MHz ~ 2Ghz	Solar	JB1	A121003	3/3/06
Preamplifier, 1300MHz	HP	8447D	1937A02062	1/7/06
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	2238	4/22/06
Antenna, Horn 1 ~ 18 GHz	Ertco	3115	6717	4/22/06
Preamplifier, 1 ~ 26.5 GHz	HP	8449B	3008A00369	8/17/06
Signal Generator, 10 MHz ~ 20 GHz	HP	83732B	US34490599	10/5/06
Dipole	EMCO	3121C-DB2	22435	3/25/06
Signal Generator, 1024 MHz	R & S	SMY01	DE 12311	4/11/06
EMI Receiver, 9 kHz ~ 2.9 GHz	HP	8542E	3942A00286	3/29/06
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent	E4446A	MY43360112	3/28/06
RF Filter Section	HP	85420E	3705A00256	3/29/06
Antenna, Bilog 30MHz ~ 2Ghz	Solar	JB1	A121003	03/03/06
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR

7. LIMITS AND RESULTS

7.1. 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.

15 INCH LENOVO DAVINCI LAPTOP

800 MHz GSM Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	23.50	223.87
Middle	837.07	24.60	288.40
High	848.75	25.90	389.05

1900 MHz GSM Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.25	25.60	363.08
Middle	1880.00	23.10	204.17
High	1909.8	21.50	141.25

NOTE: RBW=VBW=3MHz.

15 INCH LENOVO DAVINCI LAPTOP

800 MHz EDGE Modulation

Channel	Frequency (MHz)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	22.40	173.78
Middle	837.07	22.60	181.97
High	848.75	23.90	245.47

1900 MHz EDGE Modulation

Channel	Frequency (MHz)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.25	25.90	389.05
Middle	1880.00	24.60	288.40
High	1909.8	21.90	154.88

NOTE: RBW=VBW=3MHz.

800MHz Band GSM OUTPUT POWER (ERP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Chin Pang
Project #: 05U3781-1
Company: Sierra Wireless
EUT Descrip.: 850/900/1800/1900/2100MHz 5 Band MiniCard Module
EUT M/N: MC8755 with 15 inch Davinci Laptop
Test Target: GSM Part 22
Mode Oper: TX, Fundamental

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	100.9	V	24.0	0.5	0.0	23.5	38.5	-14.9	
824.20	100.0	H	21.7	0.5	0.0	21.2	38.5	-17.3	
837.07	101.2	V	25.2	0.6	0.0	24.6	38.5	-13.9	
837.07	99.1	H	20.9	0.6	0.0	20.3	38.5	-18.1	
848.75	102.0	V	26.6	0.7	0.0	25.9	38.5	-12.6	
848.75	99.4	H	21.3	0.7	0.0	20.6	38.5	-17.8	

NOTE: RBW=VBW=3MHz

1900MHz Band GSM OUTPUT POWER (EIRP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Chin Pang
Project #: 05U3781-1
Company: Sierra Wireless
EUT Descrip.: 850/900/1800/1900/2100MHz 5 Band MiniCard Module
EUT M/N: MC8755 with 15 inch Davinci Laptop
Test Target: GSM Part 24
Mode Oper: TX, Fundamental

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1.850	95.4	H	18.2	0.9	8.3	25.6	33.0	-7.4	
1.850	94.8	V	17.5	0.9	8.3	24.9	33.0	-8.1	
1.880	92.5	H	15.6	0.9	8.3	23.1	33.0	-9.9	
1.880	92.8	V	15.1	0.9	8.3	22.6	33.0	-10.5	
1.910	90.6	H	14.0	0.9	8.4	21.5	33.0	-11.5	
1.910	90.2	V	13.2	0.9	8.4	20.7	33.0	-12.3	

NOTE: RBW=VBW=3MHz

800MHz Band EDGE OURPUT POWER (ERP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Chin Pang
Project #: 05U3781-1
Company: Sierra Wireless
EUT Descrip.: 850/900/1800/1900/2100MHz 5 Band MiniCard Module
EUT M/N: MC8755 with 15 inch Davinci Laptop
Test Target: EDGE Part 22
Mode Oper: TX, Fundamental

Test Equipment:
Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.20	99.1	V	22.2	0.5	0.0	21.7	38.5	-16.8	
824.20	101.2	H	22.9	0.5	0.0	22.4	38.5	-16.0	
837.07	99.2	V	23.2	0.6	0.0	22.6	38.5	-15.8	
837.07	100.1	H	21.9	0.6	0.0	21.3	38.5	-17.1	
848.75	100.0	V	24.6	0.7	0.0	23.9	38.5	-14.5	
848.75	100.4	H	22.3	0.7	0.0	21.6	38.5	-16.8	

NOTE: RBW=VBW=3MHz

1900MHz Band EDGE OUTPUT POWER (EIRP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Chin Pang
Project #: 05U3781-1
Company: Sierra Wireless
EUT Descrip.: 850/900/1800/1900/2100MHz 5 Band MiniCard Module
EUT M/N: MC8755 with 15 inch Davinci Laptop
Test Target: EDGE Part 24
Mode Oper: TX, Fundamental

Test Equipment:
Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
1.850	95.7	H	18.5	0.9	8.3	25.9	33.0	-7.1	
1.850	95.5	V	18.2	0.9	8.3	25.6	33.0	-7.4	
1.880	94.0	H	17.1	0.9	8.3	24.6	33.0	-8.5	
1.880	92.7	V	15.0	0.9	8.3	22.4	33.0	-10.6	
1.910	91.0	H	14.4	0.9	8.4	21.9	33.0	-11.1	
1.910	90.5	V	13.5	0.9	8.4	21.0	33.0	-12.0	

NOTE: RBW=VBW=3MHz

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.

800MHz Band GSM Spurious & Harmonic (ERP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:05U3781-1
Company:Sierra Wireless
EUT Descrip.:850/900/1800/1900/2100MHZ 5 band MiniICard Module
EUT M/N:MC8755 with 15 inch Davinci Laptop
Test Target:Part 22
Mode Oper:TX, GSM

Test Equipment:

EMCO Horn 1-18GHz: T73; 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-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch										
1.648	56.0	H	-55.6	1.6	8.0	5.9	-51.3	-13.0	-38.3	
2.472	61.4	H	-47.9	1.9	9.6	7.4	-42.5	-13.0	-29.5	
3.297	50.6	H	-55.0	2.3	9.5	7.4	-49.9	-13.0	-36.9	
4.121	44.3	H	-57.7	2.6	9.6	7.4	-52.9	-13.0	-39.9	
4.945	46.2	H	-54.7	3.0	10.2	8.1	-49.6	-13.0	-36.6	
1.648	55.1	V	-57.2	1.6	8.0	5.9	-52.9	-13.0	-39.9	
2.472	60.2	V	-49.3	1.9	9.6	7.4	-43.9	-13.0	-30.9	
3.297	53.5	V	-52.2	2.3	9.5	7.4	-47.1	-13.0	-34.1	
4.121	46.0	V	-56.4	2.6	9.6	7.4	-51.6	-13.0	-38.6	
4.945	45.6	V	-55.7	3.0	10.2	8.1	-50.6	-13.0	-37.6	
Mid Ch										
1.674	56.5	H	-55.1	1.6	8.1	6.0	-50.7	-13.0	-37.7	
2.511	59.7	H	-49.4	1.9	9.6	7.4	-44.0	-13.0	-31.0	
3.348	48.0	H	-57.4	2.3	9.5	7.4	-52.3	-13.0	-39.3	
4.185	45.0	H	-56.9	2.6	9.6	7.5	-52.1	-13.0	-39.1	
5.022	43.6	H	-55.3	3.0	10.3	8.1	-50.1	-13.0	-37.1	
1.674	57.7	V	-54.6	1.6	8.1	6.0	-50.2	-13.0	-37.2	
2.511	61.0	V	-48.3	1.9	9.6	7.4	-42.9	-13.0	-29.9	
3.348	56.5	V	-49.0	2.3	9.5	7.4	-43.9	-13.0	-30.9	
4.185	44.4	V	-57.9	2.6	9.6	7.5	-53.1	-13.0	-40.1	
5.022	44.0	V	-55.9	3.0	10.3	8.1	-50.7	-13.0	-37.7	
High Ch										
1.698	57.3	H	-54.2	1.6	8.2	6.0	-49.8	-13.0	-36.8	
2.546	57.2	H	-51.8	2.0	9.6	7.4	-46.3	-13.0	-33.3	
3.395	50.8	H	-54.4	2.3	9.5	7.4	-49.3	-13.0	-36.3	
4.244	51.3	H	-50.6	2.7	9.7	7.5	-45.7	-13.0	-32.7	
5.093	45.0	H	-53.7	3.0	10.3	8.2	-48.5	-13.0	-35.5	
1.698	58.3	V	-53.9	1.6	8.2	6.0	-49.5	-13.0	-36.5	
2.546	59.1	V	-50.1	2.0	9.6	7.4	-44.6	-13.0	-31.6	
3.395	53.7	V	-51.6	2.3	9.5	7.4	-46.5	-13.0	-33.5	
4.244	47.0	V	-55.2	2.7	9.7	7.5	-50.4	-13.0	-37.4	
5.093	43.0	V	-56.7	3.0	10.3	8.2	-51.5	-13.0	-38.5	
Note: No other emissions were detected above the system noise floor.										

1900MHz Band GSM SPURIOUS & HARMONIC (EIRP): WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:05U3781-1
Company:Sierra Wireless
EUT Descrip.:850/900/1800/1900/2100MHZ 5 band MiniICard Module
EUT M/N:MC8755 with 15 inch Davinci Laptop
Test Target:Part 24
Mode Oper:TX, GSM

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-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch, GSM										
3.701	57.0	H	-46.9	2.4	9.5	7.3	-39.8	-13.0	-26.8	
5.551	48.0	H	-50.5	3.2	10.7	8.6	-43.0	-13.0	-30.0	
7.401	43.3	H	-53.5	3.7	12.0	9.8	-45.3	-13.0	-32.3	
3.701	59.4	V	-44.6	2.4	9.5	7.3	-37.5	-13.0	-24.5	
5.551	46.3	V	-53.2	3.2	10.7	8.6	-45.7	-13.0	-32.7	
7.401	44.5	V	-53.1	3.7	12.0	9.8	-44.9	-13.0	-31.9	
Mid Ch, GSM										
3.760	57.4	H	-46.2	2.5	9.5	7.3	-39.2	-13.0	-26.2	
5.640	44.0	H	-54.8	3.3	10.9	8.7	-47.1	-13.0	-34.1	
7.520	44.5	H	-52.1	3.7	11.9	9.8	-43.9	-13.0	-30.9	
3.760	62.5	V	-41.2	2.5	9.5	7.3	-34.2	-13.0	-21.2	
5.640	45.0	V	-54.8	3.3	10.9	8.7	-47.1	-13.0	-34.1	
7.520	44.1	V	-53.3	3.7	11.9	9.8	-45.1	-13.0	-32.1	
High Ch, GSM										
3.820	61.1	H	-42.2	2.5	9.5	7.3	-35.3	-13.0	-22.3	
5.729	43.0	H	-56.0	3.3	11.1	8.9	-48.2	-13.0	-35.2	
7.639	43.4	H	-52.9	3.8	11.9	9.8	-44.7	-13.0	-31.7	
3.820	66.1	V	-37.3	2.5	9.5	7.3	-30.4	-13.0	-17.4	
5.729	43.0	V	-57.0	3.3	11.1	8.9	-49.2	-13.0	-36.2	
7.639	44.6	V	-52.5	3.8	11.9	9.8	-44.3	-13.0	-31.3	
Note: No other emissions were detected above the system noise floor.										

800MHz Band EDGE Spurious & Harmonic (ERP) WITH 15 INCH LENOVO DAVINCI LAPTOP

12/01/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:05U3781-1
Company:Sierra Wireless
EUT Descrip.:850/900/1800/1900/2100MHZ 5 band MiniICard Module
EUT M/N:MC8755 with 15 inch Davinci Laptop
Test Target:Part 22
Mode Oper:TX, EDGE

Test Equipment:

EMCO Horn 1-18GHz: T73; 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-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch, EDGE										
1.648	52.0	H	-59.6	1.6	8.0	5.9	-55.3	-13.0	-42.3	
2.472	53.8	H	-55.5	1.9	9.6	7.4	-50.1	-13.0	-37.1	
3.297	47.7	H	-57.9	2.3	9.5	7.4	-52.8	-13.0	-39.8	
4.121	43.0	H	-59.0	2.6	9.6	7.4	-54.2	-13.0	-41.2	
1.648	55.5	V	-56.8	1.6	8.0	5.9	-52.5	-13.0	-39.5	
2.472	58.7	V	-50.8	1.9	9.6	7.4	-45.4	-13.0	-32.4	
3.297	51.5	V	-54.2	2.3	9.5	7.4	-49.1	-13.0	-36.1	
4.121	45.0	V	-57.4	2.6	9.6	7.4	-52.6	-13.0	-39.6	
Mid Ch, EDGE										
1.674	52.7	H	-58.9	1.6	8.1	6.0	-54.5	-13.0	-41.5	
2.511	56.5	H	-52.6	1.9	9.6	7.4	-47.2	-13.0	-34.2	
3.348	46.0	H	-59.4	2.3	9.5	7.4	-54.3	-13.0	-41.3	
4.185	43.2	H	-58.7	2.6	9.6	7.5	-53.9	-13.0	-40.9	
1.674	53.0	V	-59.3	1.6	8.1	6.0	-54.9	-13.0	-41.9	
2.511	57.5	V	-51.8	1.9	9.6	7.4	-46.4	-13.0	-33.4	
3.348	48.4	V	-57.1	2.3	9.5	7.4	-52.0	-13.0	-39.0	
4.185	44.0	V	-58.3	2.6	9.6	7.5	-53.5	-13.0	-40.5	
High Ch, EDGE										
1.698	52.6	H	-58.9	1.6	8.2	6.0	-54.5	-13.0	-41.5	
2.546	53.3	H	-55.7	2.0	9.6	7.4	-50.2	-13.0	-37.2	
3.395	48.5	H	-56.7	2.3	9.5	7.4	-51.6	-13.0	-38.6	
4.244	43.0	H	-58.9	2.7	9.7	7.5	-54.0	-13.0	-41.0	
1.698	54.4	V	-57.8	1.6	8.2	6.0	-53.4	-13.0	-40.4	
2.546	53.5	V	-55.7	2.0	9.6	7.4	-50.2	-13.0	-37.2	
3.395	48.0	V	-57.3	2.3	9.5	7.4	-52.2	-13.0	-39.2	
4.244	44.3	V	-57.9	2.7	9.7	7.5	-53.1	-13.0	-40.1	
Note: No other emissions were detected above the system noise floor.										

1900MHz Band EDGE SPURIOUS & HARMONIC (EIRP): WITH 15 INCH LENOVO DAVINCI LAPTOP

12/10/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr:Chin Pang
Project #:05U3781-1
Company:Sierra Wireless
EUT Descrip.:850/900/1800/1900/2100MHZ 5 band MiniICard Module
EUT M/N:MC8755 with 15 inch Davinci Laptop
Test Target:Part 24
Mode Oper:TX, EDGE

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-amplifer 1-26GHz: T34 HP 8449B
Pre-amplifer 26-40GHz:

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch, EDGE										
3.701	56.0	H	-47.9	2.4	9.5	7.3	-40.8	-13.0	-27.8	
5.551	43.7	H	-54.8	3.2	10.7	8.6	-47.3	-13.0	-34.3	
7.401	43.0	H	-53.8	3.7	12.0	9.8	-45.6	-13.0	-32.6	
3.701	60.0	V	-44.0	2.4	9.5	7.3	-36.9	-13.0	-23.9	
5.551	45.0	V	-54.5	3.2	10.7	8.6	-47.0	-13.0	-34.0	
7.401	43.0	V	-54.6	3.7	12.0	9.8	-46.4	-13.0	-33.4	
Mid Ch, EDGE										
3.760	56.5	H	-47.1	2.5	9.5	7.3	-40.1	-13.0	-27.1	
5.640	43.5	H	-55.3	3.3	10.9	8.7	-47.6	-13.0	-34.6	
7.520	43.0	H	-53.6	3.7	11.9	9.8	-45.4	-13.0	-32.4	
3.760	61.8	V	-41.9	2.5	9.5	7.3	-34.9	-13.0	-21.9	
5.640	44.0	V	-55.8	3.3	10.9	8.7	-48.1	-13.0	-35.1	
7.520	43.0	V	-54.4	3.7	11.9	9.8	-46.2	-13.0	-33.2	
High Ch, GSM										
3.820	59.5	H	-43.8	2.5	9.5	7.3	-36.9	-13.0	-23.9	
5.729	42.5	H	-56.5	3.3	11.1	8.9	-48.7	-13.0	-35.7	
7.639	43.0	H	-53.3	3.8	11.9	9.8	-45.1	-13.0	-32.1	
3.820	65.4	V	-38.0	2.5	9.5	7.3	-31.1	-13.0	-18.1	
5.729	42.8	V	-57.2	3.3	11.1	8.9	-49.4	-13.0	-36.4	
7.639	43.0	V	-54.1	3.8	11.9	9.8	-45.9	-13.0	-32.9	
Note: No other emissions were detected above the system noise floor.										