



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

FOR

850/900/1800/1900/2100MHZ 5-BAND MiniCard MODULE

MODEL NUMBER: MC8755

FCC ID: N7NMC8755

REPORT NUMBER: 05U3779-1

ISSUE DATE: NOVEMBER 28, 2005

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

Prepared by
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Revision History

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1. ATTESTATION OF TEST RESULTS

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

EUT DESCRIPTION: 850/900/1800/1900/2100MHz 5-BAND MiniCard MODULE

MODEL: MC8755

SERIAL NUMBER: S2128751117E2

DATE TESTED: NOVEMBER 09, 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:

Tested By:



THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

FRANK IBRAHIM
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603A (2001), 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 850/900/1800/1900/2100MHz 5-band MiniCard module and manufactured by Sierra Wireless, Inc.

5.2. MAXIMUM OUTPUT POWER

Please refer to the RF conducted report.

5.3. SOFTWARE AND FIRMWARE

The test utility software used during testing was ProcommPlus for GSM and EDGE modulations.

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power. Please refer to the RF conducted report.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adpter	Compaq	PPP005L	15039466LA	DoC
Laptop	Compaq	PP2060	3J14JFB3R80S	DoC

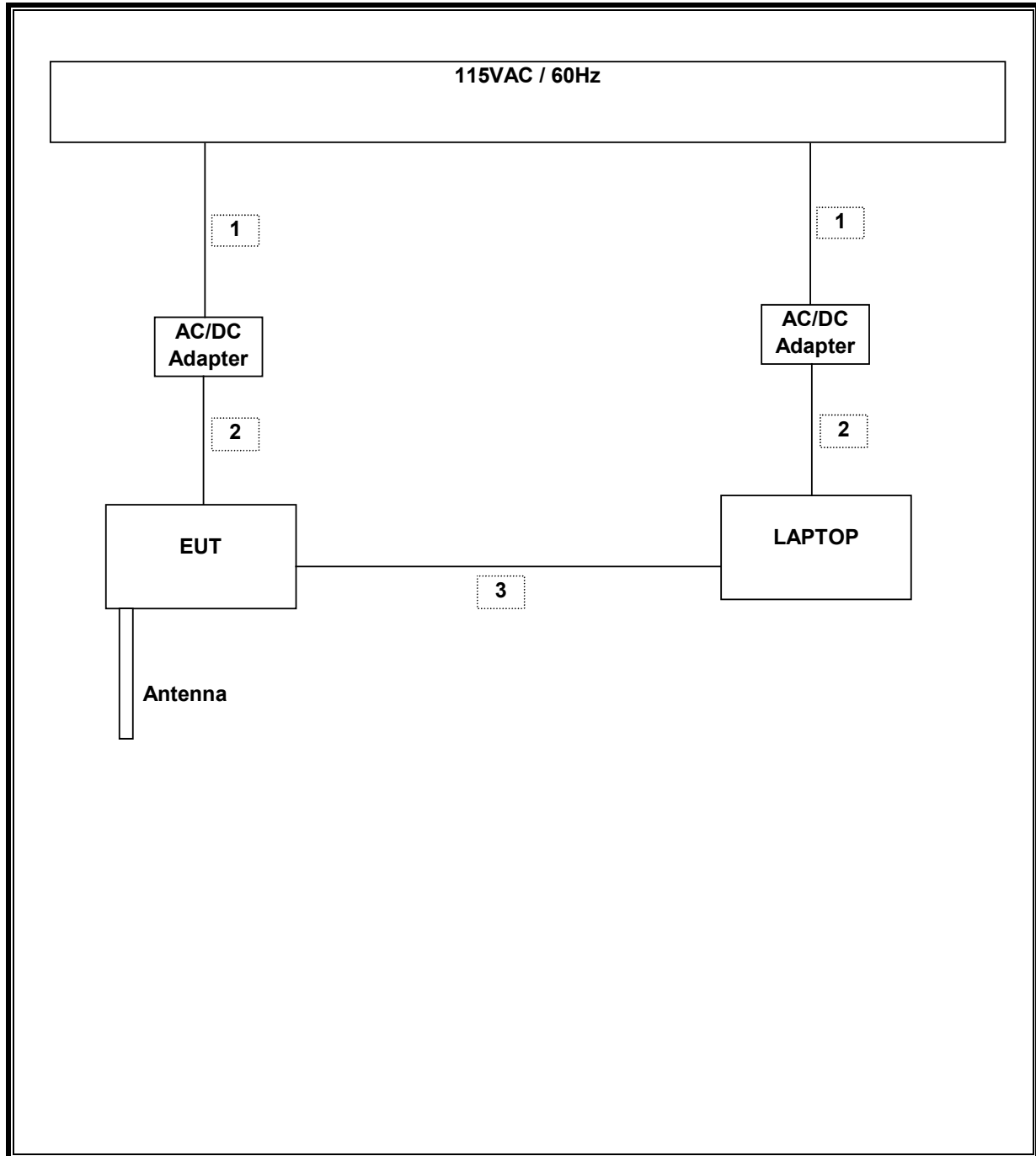
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Un-shielded	2m	NA
2	DC	2	DC	Un-shielded	2m	NA
3	USB	1	USB	Un-shielded	2m	Connected to EUT from Laptop

TEST SETUP

The EUT is connected to Laptop via a USB cable during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR GSM AND EDGE 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	4/22/06
Preamplifier, 1 ~ 26 GHz	Miteq	NSP2600-SP	924342	9/2/06
Spectrum Analyzer, 26.5 GHz	HP	8593EM	3710A00205	1/6/06
Dipole	EMCO	3121C-DB2	22435	3/25/06
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	5/2/06

7. LIMITS AND RESULTS

7.1. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (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.

§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 (b)

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 24.238 (b)

RESULTS

No non-compliance noted.

GSM 850 Harmonics (ERP)

11/21/05 High Frequency Substitution Measurement											
Compliance Certification Services, Morgan Hill 5m Chamber Site											
Test Engr:		Frank Ibrahim									
Project #:		05U3779									
Company:		Sierra Wireless									
EUT Descr.:		UMTS Module									
EUT M/N:		MC8755									
Test Target:		FCC Part 22									
Mode Oper:		TX ON, GSM 850 MHz									
Test Equipment:											
EMCO Horn 1-18GHz			Horn > 18GHz				Limit				
T119; S/N: 29301 @3m			T87; ARA 18-26GHz; S/N:1049				FCC 22				
Hi Frequency Cables											
<input type="checkbox"/> (2 ft)			<input checked="" type="checkbox"/> (2 ~ 3 ft)			<input type="checkbox"/> (4 ~ 6 ft)			<input checked="" type="checkbox"/> (12 ft)		
Pre-amplifier 1-26GHz						Pre-amplifier 26-40GHz					
T87 Miteq924342											
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 Channel											
1.648	66.7	H	-44.4	1.6	4.0	1.9	-44.1	-13.0	-31.1		
2.472	65.8	H	-45.1	1.9	6.1	4.0	-43.1	-13.0	-30.1		
Mid Channel											
1.673	67.9	H	-43.1	1.6	4.1	1.9	-42.8	-13.0	-29.8		
2.510	66.5	H	-44.4	1.9	6.2	4.0	-42.3	-13.0	-29.3		
High Channel											
1.697	66.8	H	-44.2	1.6	4.1	2.0	-43.8	-13.0	-30.8		
2.546	65.2	H	-45.6	2.0	6.2	4.1	-43.4	-13.0	-30.4		
Low Channel											
1.648	63.9	V	-47.9	1.6	4.0	1.9	-47.6	-13.0	-34.6		
2.472	63.6	V	-47.5	1.9	6.1	4.0	-45.5	-13.0	-32.5		
3.296	61.4	V	-49.0	2.3	7.5	5.3	-45.9	-13.0	-32.9		
5.769	56.6	V	-53.1	3.3	10.7	8.5	-47.8	-13.0	-34.8		
Mid Channel											
1.673	61.2	V	-50.6	1.6	4.1	1.9	-50.2	-13.0	-37.2		
2.510	56.9	V	-54.2	1.9	6.2	4.0	-52.1	-13.0	-39.1		
3.347	57.5	V	-53.0	2.3	7.6	5.4	-49.8	-13.0	-36.8		
4.184	56.5	V	-54.7	2.6	9.0	6.9	-50.4	-13.0	-37.4		
High Channel											
1.697	61.8	V	-49.9	1.6	4.1	2.0	-49.5	-13.0	-36.5		
2.546	56.7	V	-54.3	2.0	6.2	4.1	-52.1	-13.0	-39.1		
3.395	60.7	V	-49.8	2.3	7.7	5.5	-46.6	-13.0	-33.6		
4.244	57.4	V	-53.8	2.7	9.1	7.0	-49.5	-13.0	-36.5		
5.092	55.0	V	-55.2	3.0	10.1	8.0	-50.3	-13.0	-37.3		

EDGE 850 Harmonics (ERP)

11/21/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Frank Ibrahim
Project #: 05U3779
Company: Sierra Wireless
EUT Descr.: UMTS Module
EUT M/N: MC8755
Test Target: FCC Part 22
Mode Oper: TX ON, EDGE 850 MHz

Test Equipment:

EMCO Horn 1-18GHz: T119; S/N: 29301 @3m
 Horn > 18GHz: T87; ARA 18-26GHz; S/N:1049
 Limit: FCC 22

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

Pre-amplifier 1-26GHz: T87 Miteq924342
 Pre-amplifier 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 Channel										
1.648	65.8	H	-45.3	1.6	4.0	1.9	-45.0	-13.0	-32.0	
2.472	64.2	H	-46.7	1.9	6.1	4.0	-44.7	-13.0	-31.7	
Mid Channel										
1.673	66.6	H	-44.4	1.6	4.1	1.9	-44.1	-13.0	-31.1	
2.510	65.5	H	-45.4	1.9	6.2	4.0	-43.3	-13.0	-30.3	
High Channel										
1.697	65.4	H	-45.6	1.6	4.1	2.0	-45.2	-13.0	-32.2	
2.546	64.7	H	-46.1	2.0	6.2	4.1	-43.9	-13.0	-30.9	
Low Channel										
1.648	64.3	V	-47.5	1.6	4.0	1.9	-47.2	-13.0	-34.2	
2.472	62.6	V	-48.5	1.9	6.1	4.0	-46.5	-13.0	-33.5	
3.296	60.9	V	-49.5	2.3	7.5	5.3	-46.4	-13.0	-33.4	
5.769	56.3	V	-53.3	3.3	10.7	8.5	-48.1	-13.0	-35.1	
Mid Channel										
1.673	61.0	V	-50.7	1.6	4.1	1.9	-50.4	-13.0	-37.4	
2.510	56.7	V	-54.4	1.9	6.2	4.0	-52.3	-13.0	-39.3	
3.347	56.4	V	-54.1	2.3	7.6	5.4	-50.9	-13.0	-37.9	
4.184	55.8	V	-55.4	2.6	9.0	6.9	-51.1	-13.0	-38.1	
High Channel										
1.697	61.0	V	-50.7	1.6	4.1	2.0	-50.3	-13.0	-37.3	
2.546	56.9	V	-54.1	2.0	6.2	4.1	-51.9	-13.0	-38.9	
3.395	59.6	V	-50.9	2.3	7.7	5.5	-47.7	-13.0	-34.7	
4.244	55.8	V	-55.4	2.7	9.1	7.0	-51.1	-13.0	-38.1	
5.092	54.9	V	-55.3	3.0	10.1	8.0	-50.4	-13.0	-37.4	

GSM 1900 Harmonics (EIRP)

11/21/05 **High Frequency Substitution Measurement**
Compliance Certification Services, Morgan Hill 5m Chamber Site

Test Engr: Frank Ibrahim
 Project #: 05U3779
 Company: Sierra Wireless
 EUT Descrip.: UMTS Module
 EUT M/N: MC8755
 Test Target: FCC Part 24
 Mode Oper: TX ON, GSM 1900 MHz

Test Equipment:

EMCO Horn 1-18GHz: T119; S/N: 29301 @ 3m
 Horn > 18GHz: T87; ARA 18-26GHz; S/N:1049
 Limit: FCC 24

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

Pre-amplifier 1-26GHz: T87 Miteq 924342
 Pre-amplifier 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 Channel										
3.700	65.4	H	-45.4	2.4	8.3	6.1	-39.6	-13.0	-26.6	
11.101	50.6	H	-49.8	4.7	13.5	11.3	-41.1	-13.0	-28.1	
12.951	55.0	H	-45.3	5.2	13.7	11.6	-36.8	-13.0	-23.8	
Mid Channel										
3.760	66.3	H	-44.6	2.5	8.4	6.2	-38.7	-13.0	-25.7	
5.640	52.5	H	-56.5	3.3	10.7	8.5	-49.1	-13.0	-36.1	
High Channel										
3.819	65.4	H	-45.5	2.5	8.5	6.3	-39.6	-13.0	-26.6	
5.729	55.2	H	-53.6	3.3	10.7	8.5	-46.2	-13.0	-33.2	
13.368	55.8	H	-42.5	5.2	13.8	11.7	-33.9	-13.0	-20.9	
Low Channel										
3.700	69.6	V	-41.3	2.4	8.3	6.1	-35.5	-13.0	-22.5	
5.550	54.5	V	-55.8	3.2	10.7	8.5	-48.3	-13.0	-35.3	
7.400	57.2	V	-49.4	3.7	11.9	9.8	-41.2	-13.0	-28.2	
12.951	57.3	V	-41.9	5.2	13.7	11.6	-33.4	-13.0	-20.4	
Mid Channel										
3.760	70.8	V	-40.2	2.5	8.4	6.2	-34.3	-13.0	-21.3	
5.640	55.6	V	-54.4	3.3	10.7	8.5	-47.0	-13.0	-34.0	
7.520	53.7	V	-52.7	3.7	12.0	9.9	-44.4	-13.0	-31.4	
9.400	55.5	V	-48.3	4.2	12.9	10.8	-39.6	-13.0	-26.6	
11.280	51.3	V	-49.5	4.8	13.5	11.3	-40.8	-13.0	-27.8	
13.160	56.3	V	-42.8	5.2	13.8	11.6	-34.2	-13.0	-21.2	
High Channel										
3.819	70.4	V	-40.6	2.5	8.5	6.3	-34.7	-13.0	-21.7	
5.729	55.7	V	-54.1	3.3	10.7	8.5	-46.7	-13.0	-33.7	
7.639	56.4	V	-49.8	3.8	12.1	10.0	-41.4	-13.0	-28.4	
9.548	54.7	V	-48.3	4.3	12.8	10.7	-39.8	-13.0	-26.8	
13.368	58.9	V	-40.3	5.2	13.8	11.7	-31.6	-13.0	-18.6	

EDGE 1900 Harmonics (EIRP)

11/21/05 High Frequency Substitution Measurement											
Compliance Certification Services, Morgan Hill 5m Chamber Site											
Test Engr:		Frank Ibrahim									
Project #:		05U3779									
Company:		Sierra Wireless									
EUT Descrip.:		UMTS Module									
EUT M/N:		MC8755									
Test Target:		FCC Part 24									
Mode Oper:		TX ON, EDGE 1900 MHz									
Test Equipment:											
EMCO Horn 1-18GHz			Horn > 18GHz				Limit				
T119; S/N: 29301 @3m			T87; ARA 18-26GHz; S/N:1049				FCC 24				
Hi Frequency Cables											
<input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)											
Pre-amplifier 1-26GHz						Pre-amplifier 26-40GHz					
T87 Miteq 924342											
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 Channel											
3.700	63.8	H	-47.0	2.4	8.3	6.1	-41.2	-13.0	-28.2		
7.400	55.6	H	-50.2	3.7	11.9	9.8	-42.0	-13.0	-29.0		
Mid Channel											
3.760	65.7	H	-45.2	2.5	8.4	6.2	-39.3	-13.0	-26.3		
7.520	56.7	H	-48.9	3.7	12.0	9.9	-40.6	-13.0	-27.6		
High Channel											
3.819	65.0	H	-46.0	2.5	8.5	6.3	-40.0	-13.0	-27.0		
7.639	57.1	H	-48.3	3.8	12.1	10.0	-39.9	-13.0	-26.9		
Low Channel											
3.700	67.2	V	-43.7	2.4	8.3	6.1	-37.9	-13.0	-24.9		
5.550	52.6	V	-57.7	3.2	10.7	8.5	-50.2	-13.0	-37.2		
7.400	55.6	V	-51.0	3.7	11.9	9.8	-42.8	-13.0	-29.8		
Mid Channel											
3.760	69.4	V	-41.6	2.5	8.4	6.2	-35.7	-13.0	-22.7		
7.520	53.4	V	-53.0	3.7	12.0	9.9	-44.7	-13.0	-31.7		
9.400	56.7	V	-47.1	4.2	12.9	10.8	-38.4	-13.0	-25.4		
13.160	57.9	V	-41.2	5.2	13.8	11.6	-32.6	-13.0	-19.6		
High Channel											
3.819	69.9	V	-41.1	2.5	8.5	6.3	-35.2	-13.0	-22.2		
7.639	56.9	V	-49.3	3.8	12.1	10.0	-40.9	-13.0	-27.9		
13.368	57.8	V	-41.3	5.2	13.8	11.7	-32.7	-13.0	-19.7		