FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E

C2PC CERTIFICATION TEST REPORT

FOR

WALKIE-TALKIE ACCESSORY

MODEL NAME: GVC200WTH

MODEL NUMBER: LG-VC200, LGVC200, VC200, LG-VC200B, LGVC200B, VC200B

FCC ID: ZNFVC200

REPORT NUMBER: 16I22629-E1V2

ISSUE DATE: 2/15/2016

Prepared for
LG ELECTRONICS MOBILECOMM U.S.A., INC
1000 SYLVAN AVENUE
ENGLEWOOD CLIFFS,
NEW JERSEY, 07632, U.S.A

Prepared by
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	1/26/2016	Initial Issue	D. CORONIA
V2	2/15/16	Updated EUT Description	D. CORONIA

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	LG ELECTRONICS MOBILECOMM U.S.A., INC.
EUT DESCRIPTION:	WALKIE-TALKIE ACCESSORY
MODEL NAME:	GVC200WTH
MODEL #:	LG-VC200, LGVC200, VC200, LG-VC200B, LGVC200B, VC200B
SERIAL NUMBER:	A1000411E9C62
DATE TESTED:	JANUARY 12, 2016

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H and 24E	PASS

UL Verification Services Inc. 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 UL Verification Services Inc. 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 UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

DAN CORONIA
CONSUMER TECHNOLOGY DIVISION
WiSE PROJECT LEAD
UL VERIFICATION SERVICES INC

Tested By:

KIYA KEDIDA
CONSUMER TECHNOLOGY DIVISION
WiSE LAB ENGINEER
UL VERIFICATION SERVICES INC

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-D FCC CFR 47 Part 22, and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☐ Chamber B	☐ Chamber E
☒ Chamber C	☐ Chamber F
	☐ Chamber G
	☐ Chamber H

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers A through H are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-8, respectively.

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:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)
ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)
(Path loss = Signal generator output – PSA reading with substitution antenna)

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, 9KHz to 30 MHz	2.14 dB
Radiated Disturbance, 30 to 1000 MHz	4.98 dB
Radiated Disturbance,1000 to 6000 MHz	3.86 dB
Radiated Disturbance,6000 to 18000 MHz	4.23 dB
Radiated Disturbance,18000 to 26000 MHz	5.30 dB
Radiated Disturbance,26000 to 40000 MHz	5.23 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a WALKIE-TALKIE ACCESSORY.

5.2. MAXIMUM OUTPUT POWER (CDMA)

The transmitter has a maximum peak conducted and radiated ERP / EIRP output powers as follows:

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
BC0	824~849	1xRTT	24.2	263.03	21.37	137.09
BC1	1850~1910	1xRTT	21.7	147.91	22.60	181.97

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
BC0, 824~849MHz	-3.58
BC1, 1850~1910MHz	-1.50

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	LG	MCS-02WD	DZ480000582	N/A

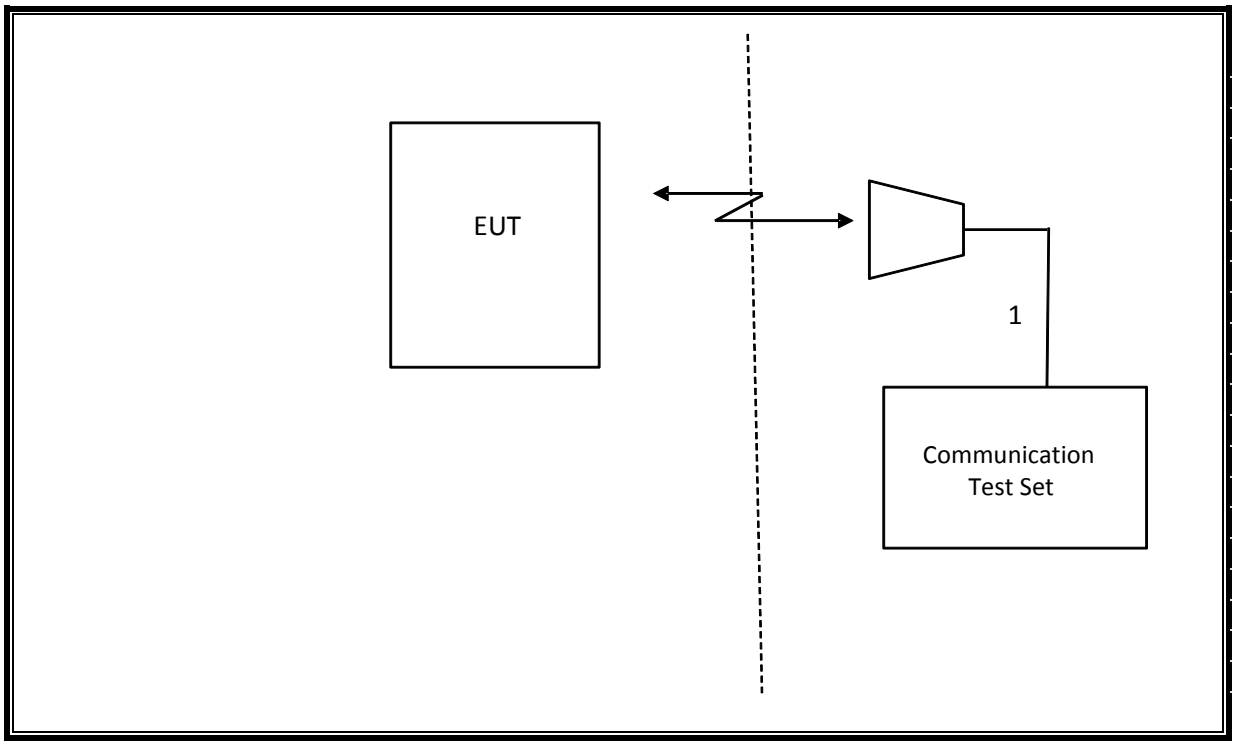
I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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	T Number	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	123	10/22/16
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	130	06/10/16
Antenna, Horn, 18 GHz	EMCO	3115	59	11/18/16
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	151	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	153	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	80	05/15/16
Communications Test Set	R&S	CMW500	159	07/10/16
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	06/16/16
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	273	05/05/16
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	447	05/18/16

Test Software List			
Description	Manufacturer	Model	Version
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.5.5, Nov 9, 2015
Antenna Port Software	UL	UL RF	Ver 3.9.1, Dec 28, 2015

7. SUMMARY TABLE

2PC Reason: Please see LG-VC200 FCC Class II change description for details.

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Refer to Original
22.917(a) 24.238(a)	RSS-132(4.5.1) RSS-133(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Refer to Original
2.1046	N/A	Conducted output power	N/A		Pass
22.355 24.235	RSS-132(4.3) RSS-133(6.3)	Frequency Stability	2.5PPM		Refer to Original
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass
24.232(c)	RSS-133(6.4)	Equivalent Isotropic Radiated Power	33dBm		Pass
22.917(a) 24.238(a)	RSS-132(4.5.1) RSS-133(6.5.1)	Radiated Spurious Emission	-13dBm		Pass

8. RF POWER OUTPUT VERIFICATION

8.1. CDMA2000

8.1.1. 1xRTT

TEST PROCEDURE

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

Application	Rev, License
CDMA2000 Mobile Test	B.13.08, L

- Call Setup > Shift & Preset
- Cell Info > Cell Parameters > System ID (SID) > 7
  > Network ID (NID) > 1
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > Please see following table or details
- FCH Service Option (SO) Setup > Please see following table or details
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Rvs Power Ctrl > Active bits
  - Rvs Power Ctrl > All Up bits (Maximum TxPout)

8.1.2. CDMA2000 OUTPUT POWER RESULT

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC0	RC1, SO55 (Loopback)	1013	824.70	24.0
		384	836.52	24.2
		777	848.31	24.0
	RC3, SO55 (Loopback)	1013	824.70	24.0
		384	836.52	24.2
		777	848.31	23.9
	RC3, SO32 (+F-SCH)	1013	824.70	24.0
		384	836.52	24.2
		777	848.31	23.9

Band	Mode	Ch	Freq. (MHz)	Avg Pwr (dBm)
BC1	RC1, SO55 (Loopback)	25	1851.25	21.7
		600	1880.00	21.7
		1175	1908.75	21.7
	RC3, SO55 (Loopback)	25	1851.25	21.7
		600	1880.00	21.7
		1175	1908.75	21.7
	RC3, SO32 (+F-SCH)	25	1851.25	21.7
		600	1880.00	21.7
		1175	1908.75	21.7

9. RADIATED TEST RESULTS

9.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2. 1046, §22. 913, §24. 232

LIMITS

22.913 (a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232 (c) - 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.

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603D Clause 2.2.17; PSA setting reference to 971168 D01 v02r02

For peak power measurement with a PSA:

a) Set the RBW ≥ OBW; b) Set VBW ≥ 3 × RBW; c) Set span ≥ 2 x RBW; d) Sweep time = auto couple; e) Detector = peak; f) Ensure that the number of measurement points ≥ span/RBW; g) Trace mode = max hold;

For average power measurement with a PSA:

a) Set span to at least 1.5 times the OBW; b) Set RBW = 1-5% of the OBW, not to exceed 1 MHz; c) Set VBW ≥ 3 x RBW; d) Set number of points in sweep ≥ 2 × span / RBW; e) Sweep time = auto-couple; f) Detector = RMS (power averaging); g) Use free run trigger If burst duty cycle ≥ 98; h) Use trigger to capture bursts If burst duty cycle < 98; i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode. j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function.

9.1.1. ERP/EIRP RESULTS AND TABLE

CDMA

Band	Mode	Channel	f(MHz)	ERP/EIRP	
				dBm	mW
BC0	1xRTT	1013	824.7	21.37	137.09
		384	836.52	21.05	127.35
		777	848.31	20.04	100.93
BC1	1xRTT	25	1851.25	20.05	101.16
		600	1880.0	21.42	138.68
		1175	1908.75	22.60	181.97

BC0 1xRTT

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 16I22629
Date: 1/12/2016
Test Engineer: RZ
Configuration: X-pos EUT Only
Location: Chamber C
Mode: RTT BC0 Fundamentals

Test Equpment:
Receiving: Hybrid T185, and Chamber C SMA Cables
Substitution: Dipole T416, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
824.70	18.60	V	0.9	0.0	17.70	38.5	-20.8	
824.70	22.27	H	0.9	0.0	21.37	38.5	-17.1	
Mid Ch								
836.52	17.76	V	0.9	0.0	16.86	38.5	-21.6	
836.52	21.95	H	0.9	0.0	21.05	38.5	-17.5	
High Ch								
848.31	16.14	V	0.9	0.0	15.24	38.5	-23.3	
848.31	20.94	H	0.9	0.0	20.04	38.5	-18.5	

BC1 1xRTT

High Frequency Substitution Measurement
UL Verification Services, Inc.

Company: LG Electronics
Project #: 16I22629
Date: 1/12/2016
Test Engineer: RZ
Configuration: Y-pos EUT Only
Location: Chamber C
Mode: RTT BC1 Fundamentals

Test Equpment:
Receiving: Horn T119, and Chamber C SMA Cables
Substitution: Horn T72, Xft SMA Cable (SN # SERIALNUMBER) Warehouse

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch								
1851.25	10.40	V	0.9	9.2	18.75	33.0	-14.3	
1851.25	11.70	H	0.9	9.2	20.05	33.0	-13.0	
Mid Ch								
1880.00	9.85	V	0.9	9.2	18.10	33.0	-14.9	
1880.00	13.17	H	0.9	9.2	21.42	33.0	-11.6	
High Ch								
1908.75	10.90	V	0.9	9.0	19.04	33.0	-14.0	
1908.75	14.46	H	0.9	9.0	22.60	33.0	-10.4	

9.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238

LIMIT

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

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

9.2.1. SPURIOUS RADIATION PLOTS

CDMA

BC0 1xRTT

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 16I22629
Date: 1/12/2016
Test Engineer: RZ
Configuration: X-pos EUT Only
Location: Chamber C
Mode: RTT BC0 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7									
1649.40	-8.5	V	3.0	36.4	1.0	-43.9	-13.0	-30.9	
2474.10	-14.7	V	3.0	35.0	1.0	-48.7	-13.0	-35.7	
3298.80	-18.7	V	3.0	34.3	1.0	-52.0	-13.0	-39.0	
1649.40	-14.8	H	3.0	36.4	1.0	-50.1	-13.0	-37.1	
2474.10	-13.4	H	3.0	35.0	1.0	-47.3	-13.0	-34.3	
3298.80	-15.4	H	3.0	34.3	1.0	-48.6	-13.0	-35.6	
Mid Ch, 836.52									
1673.04	-11.0	V	3.0	36.3	1.0	-46.4	-13.0	-33.4	
2509.56	-14.0	V	3.0	34.9	1.0	-48.0	-13.0	-35.0	
3346.08	-15.6	V	3.0	34.2	1.0	-48.9	-13.0	-35.9	
1673.04	-20.5	H	3.0	36.3	1.0	-55.8	-13.0	-42.8	
2509.56	-11.2	H	3.0	34.9	1.0	-45.1	-13.0	-32.1	
3346.08	-16.3	H	3.0	34.2	1.0	-49.6	-13.0	-36.6	
High Ch, 848.31									
1696.62	-12.2	V	3.0	36.3	1.0	-47.5	-13.0	-34.5	
2544.93	-8.4	V	3.0	34.9	1.0	-42.3	-13.0	-29.3	
3393.24	-22.6	V	3.0	34.2	1.0	-55.8	-13.0	-42.8	
1696.62	-26.6	H	3.0	36.3	1.0	-61.8	-13.0	-48.8	
2544.93	-8.0	H	3.0	34.9	1.0	-41.9	-13.0	-28.9	
3393.24	-20.1	H	3.0	34.2	1.0	-53.3	-13.0	-40.3	

BC1 1xRTT

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: LG Electronics
Project #: 16I22629
Date: 1/12/2016
Test Engineer: RZ
Configuration: Y-pos EUT Only
Location: Chamber C
Mode: RTT BC1 Harmonics

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25									
3702.50	-14.3	V	3.0	33.9	1.0	-47.2	-13.0	-34.2	
5553.75	-8.9	V	3.0	33.1	1.0	-41.1	-13.0	-28.1	
7405.00	-10.0	V	3.0	32.9	1.0	-41.8	-13.0	-28.8	
3702.50	-18.9	H	3.0	33.9	1.0	-51.8	-13.0	-38.8	
5553.75	-14.1	H	3.0	33.1	1.0	-46.2	-13.0	-33.2	
7405.00	-11.2	H	3.0	32.9	1.0	-43.0	-13.0	-30.0	
Mid Ch, 1880									
3760.00	-21.3	V	3.0	33.8	1.0	-54.1	-13.0	-41.1	
5640.00	-18.4	V	3.0	33.1	1.0	-50.5	-13.0	-37.5	
7520.00	-19.4	V	3.0	32.8	1.0	-51.2	-13.0	-38.2	
3760.00	-22.8	H	3.0	33.8	1.0	-55.6	-13.0	-42.6	
5640.00	-21.2	H	3.0	33.1	1.0	-53.3	-13.0	-40.3	
7520.00	-20.0	H	3.0	32.8	1.0	-51.8	-13.0	-38.8	
High Ch, 1908.75									
3817.50	-20.0	V	3.0	33.7	1.0	-52.7	-13.0	-39.7	
5726.25	-13.3	V	3.0	33.1	1.0	-45.3	-13.0	-32.3	
7635.00	-18.0	V	3.0	32.8	1.0	-49.9	-13.0	-36.9	
3817.50	-21.8	H	3.0	33.7	1.0	-54.5	-13.0	-41.5	
5726.25	-14.3	H	3.0	33.1	1.0	-46.3	-13.0	-33.3	
7635.00	-17.4	H	3.0	32.8	1.0	-49.2	-13.0	-36.2	