FCC PART 15 SUBPART C
TEST REPORT

for

DIGITAL VACUUM GAUGE

MODEL: VG640T

Prepared for

SEALED UNIT PARTS CO., INC.
2230 LANDMARK PLACE
ALLENWOOD, NEW JERSEY 08720

Prepared by:_____

ALEX BENITEZ

Approved by:_____

KYLE FUJIMOTO

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: FEBRUARY 28, 2010

	REPORT BODY	APPENDICES						TOTAL
		A	***B***	***C***	***D***	***E***	***F***	
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GENERAL REPORT SUMMARY

Compatible Electronics Inc. generates this electromagnetic emission test report, which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested:	Digital Vacuum Gauge Model: VG640T S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Sealed Unit Parts Co., Inc. 2230 Landmark Place Allenwood, New Jersey 08720
Test Date(s):	February 28, 2011
Test Specifications:	EMI requirements CFR Title 47, Part 15, Subpart C
Test Procedure:	ANSI C63.4
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz to 30 MHz	The EUT does not directly or indirectly connect to the AC mains, thus this test was not performed.
2	Radiated RF Emissions 10 kHz – 4180 MHz	Complies with the limits of CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.231. Highest reading in relation to spec limit: 80.19 (Avg) dBuV/m @ 418 MHz (*U = 3.59 dB)

*U = Expanded Uncertainty with a coverage factor of k=2

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Digital Vacuum Gauge, Model: VG640T (EUT). The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.231.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Sealed Unit Parts Co., Inc.

Alexander Brodetsky	Senior Vice President, Engineering

Compatible Electronics Inc.

Alex Benitez	Test Technician
Kyle Fujimoto	Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the date of testing.

2.5 Disposition of the Test Sample

The test sample has not been returned to Sealed Unit Parts Co., Inc. as of the date of this report.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
NVLAP	National Voluntary Laboratory Accreditation Program
CFR	Code of Federal Regulations
N/A	Not Applicable
Ltd.	Limited
Inc.	Incorporated
IR	Infrared

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4: 2003	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – EMI

The Digital Vacuum Gauge, Model: VG640T (EUT) was tested as a stand alone unit and tested in three orthogonal axis. The EUT was continuously transmitting.

The EUT's antenna was soldered directly to the PCB.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and any cables were maximized. All initial investigations were performed with the measurement receiver in manual mode scanning the frequency range continuously. Photographs of the test setup are in Appendix D of this report.

4.1.1 Cable Construction and Termination

There are no external cables connected to the EUT.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
DIGITAL VACUUM GAUGE (EUT)	SEALED UNIT PARTS CO., INC.	VG640T	N/A	X74VG640T418

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100194	November 19, 2010	November 19, 2012
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
Biconical Antenna	Com Power	AB-900	15250	June 18, 2010	June 18, 2011
Log Periodic Antenna	Com Power	AL-100	16252	June 9, 2010	June 9, 2011
Preamplifier	Com-Power	PA-102	1017	January 11, 2011	January 11, 2012
Loop Antenna	Com-Power	AL-130	17089	January 21, 2011	January 21, 2012
Horn Antenna	Com-Power	AH-118	071175	March 18, 2010	March 18, 2012
Microwave Preamplifier	Com-Power	PA-118	181656	December 22, 2010	December 22, 2011
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1.2 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.

6.3 Facility Environmental Characteristics

When applicable refer to the data sheets in Appendix E for the relative humidity, air temperature, and barometric pressure.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The measurement receiver was used as a measuring meter. The data was collected with the measurement receiver in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the measurement receiver's input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the measurement receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT does not directly or indirectly connect to the AC mains, thus this test was not performed.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz and the Com Power Microwave Preamplifier Model: PA-118 was used for frequencies above 1 GHz. The EMI Receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The readings were averaged by a "duty cycle correction factor," derived from 20 log (total on time in worst case 100 mS / 100 mS).

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 4.18 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (continued)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3-meter test distance to obtain the final test data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart C, Sections 15.205, 15.209 and 15.231.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Digital Vacuum Gauge, Model: VG640T

Frequency MHz	Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
418	80.19 **(A)**	80.28	-0.09
410.01	36.83	46.00	-9.17
3762	41.21 **(A)**	54.00	-12.79
1672	37.61 **(A)**	54.00	-16.39
4180	37.26 **(A)**	54.00	-16.74
2090	43.33 **(A)**	60.28	-16.95

Notes:

* The complete emissions data is given in Appendix E of this report.
A Average Reading

7.2 Bandwidth of the Fundamental

The -20 dB bandwidth was checked to see that it was within 0.25% of the fundamental frequency for the EUT. A plot of the -20 dB bandwidth are located in Appendix E.

Test Results:

The EUT complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.231(c).

8. CONCLUSIONS

The Digital Vacuum Gauge, Model: VG640T (EUT), as tested, meets all of the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.231.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP LAB CODES 200063-0, 200528-0, 200527-0

For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links
Agoura Division / **Brea Division** / **Silverado/Lake Forest Division**

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."

ANSI listing CETCB

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).
US/EU MRA list NIST MRA site

Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).
APEC MRA list NIST MRA site

We are also listed for IT products by the following country/agency:

VCCI Support member: Please visit http://www.vcci.jp/vcci_e/

FCC Listing, from FCC OET site
FCC test lab search https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm

Industry Canada Industrie Canada
Compatible Electronics IC listing can be found at:
http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 and/or FCC **Class B** specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modification were made to the EUT during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST Digital Vacuum Gauge
Model: VG640T

ALSO APPROVED UNDER THIS REPORT:

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

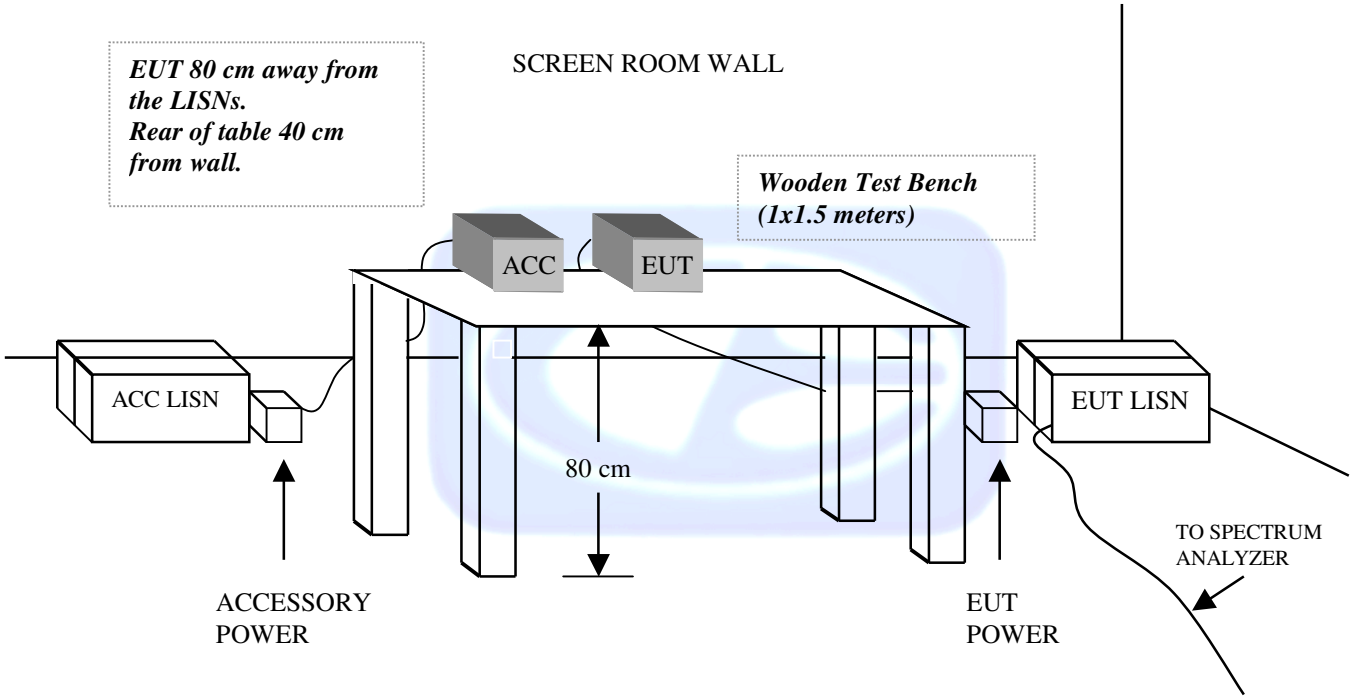
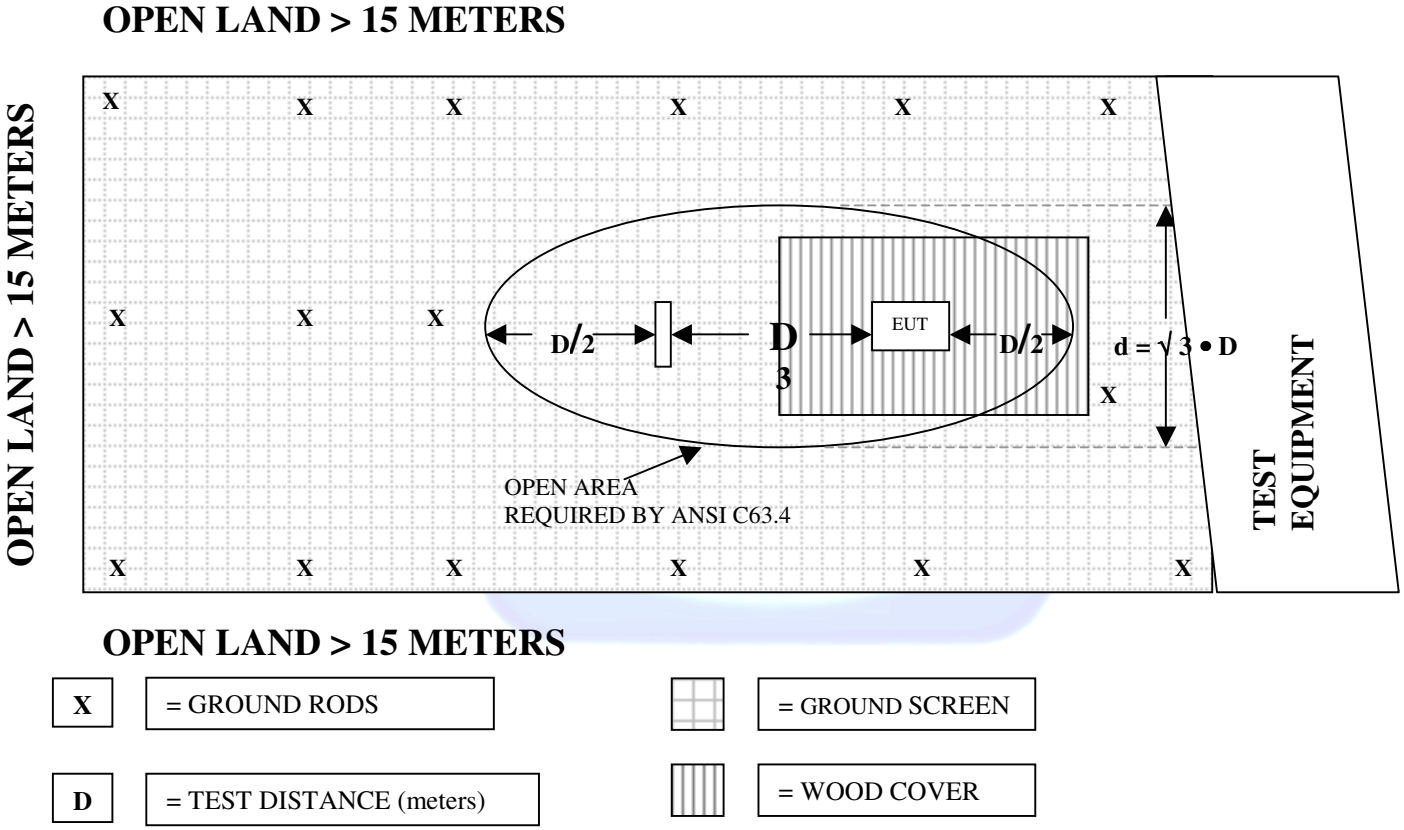


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS



COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15250

CALIBRATION DATE: JUNE 18, 2010

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	12.8	100	11.5
35	11.3	120	13.6
40	10.8	140	12.5
45	10.1	160	13.2
50	11.0	180	15.5
60	11.1	200	16.9
70	7.3	250	16.4
80	7.5	275	18.7
90	8.3	300	19.5

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16252

CALIBRATION DATE: JUNE 9, 2010

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.7	700	19.5
400	16.1	800	20.9
500	16.9	900	20.8
600	20.1	1000	21.5

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: MARCH 18, 2010

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	22.2	10.0	39.8
1.5	24.2	10.5	40.2
2.0	27.2	11.0	39.7
2.5	27.8	11.5	39.9
3.0	30.5	12.0	41.7
3.5	30.9	12.5	42.7
4.0	31.9	13.0	42.3
4.5	33.2	13.5	40.3
5.0	33.6	14.0	42.6
5.5	36.2	14.5	43.4
6.0	35.8	15.0	41.9
6.5	36.1	15.5	40.8
7.0	37.9	16.0	41.0
7.5	37.4	16.5	41.5
8.0	38.0	17.0	44.5
8.5	38.8	17.5	47.6
9.0	38.0	18.0	50.8
9.5	39.2		

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2011

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
20	38.2	300	38.1
30	38.1	350	38.0
40	38.2	400	37.9
50	38.2	450	37.7
60	38.2	500	37.6
70	38.2	550	37.9
80	38.2	600	37.9
90	38.2	650	37.7
100	38.1	700	37.9
125	38.2	750	37.5
150	38.2	800	37.6
175	38.2	850	37.6
200	38.2	900	37.0
225	38.2	950	37.2
250	38.2	1000	36.8
275	38.2		

COM-POWER PA-118

PREAMPLIFIER

S/N: 181656

CALIBRATION DATE: DECEMBER 22, 2010

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.90	10.0	26.07
1.5	26.50	10.5	24.97
2.0	26.79	11.0	24.79
2.5	26.90	11.5	24.33
3.0	27.03	12.0	24.24
3.5	26.94	12.5	24.92
4.0	27.18	13.0	24.52
4.5	26.79	13.5	24.33
5.0	26.25	14.0	24.56
5.5	26.16	14.5	24.99
6.0	25.52	15.0	26.06
6.5	25.29	15.5	26.87
7.0	24.45	16.0	25.95
7.5	24.18	16.5	24.69
8.0	24.02	17.0	24.20
8.5	24.54	17.5	25.12
9.0	24.91	18.0	26.03
9.5	25.42		

COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: JANUARY 21, 2011

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.9	9.6
0.01	-41.79	9.71
0.02	-41.43	10.07
0.05	-41.53	9.97
0.07	-41.47	10.03
0.1	-41.44	10.06
0.2	-41.61	9.89
0.3	-41.62	9.88
0.5	-41.66	9.84
0.7	-41.48	10.02
1	-41.13	10.37
2	-40.89	10.61
3	-41.00	10.50
4	-41.14	10.36
5	-41.02	10.48
10	-40.69	10.82
15	-40.41	11.09
20	-41.07	10.43
25	-42.10	9.40
30	-41.15	10.35

FRONT VIEW

SEALED UNIT PARTS CO., INC.
DIGITAL VACUUM GAUGE
MODEL: VG640T
FCC SUBPART C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

SEALED UNIT PARTS CO., INC.
DIGITAL VACUUM GAUGE
MODEL: VG640T
FCC SUBPART C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	76.09	V	100.28	-24.19	Peak	1.25	165	
418	68.78	V	80.28	-11.5	Peak	1.25	165	
836	28.11	V	80.28	-52.17	Peak	1.35	175	
836	20.8	V	60.28	-39.48	Avg	1.35	175	
1254	35.06	V	74	-38.94	Peak	1	90	
1254	27.75	V	54	-26.25	Avg	1	90	
1672	39.11	V	74	-34.89	Peak	1.25	155	
1672	31.8	V	54	-22.2	Avg	1.25	155	
2090	47.17	V	80.28	-33.11	Peak	1.25	135	
2090	39.86	V	60.28	-20.42	Avg	1.25	135	
2508	41.07	V	80.28	-39.21	Peak	1.25	135	
2508	33.76	V	60.28	-26.52	Avg	1.25	135	
2926	44.47	V	80.28	-35.81	Peak	1.25	135	
2926	37.16	V	60.28	-23.12	Avg	1.25	135	
3344	42.21	V	80.28	-38.07	Peak	1.25	165	
3344	34.9	V	60.28	-25.38	Avg	1.25	165	
3762	42.64	V	74	-31.36	Peak	1.25	270	
3762	35.33	V	54	-18.67	Avg	1.25	270	
4180	43.59	V	74	-30.41	Peak	1.25	135	
4180	36.28	V	54	-17.72	Avg	1.25	135	

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	87.5	H	100.28	-12.78	Peak	1	90	
418	80.19	H	80.28	-0.09	Peak	1	90	
836	44.74	H	80.28	-35.54	Peak	1.25	135	
836	37.43	H	60.28	-22.85	Avg	1.25	135	
1254	33.44	H	74	-40.56	Peak	1.25	165	
1254	26.13	H	54	-27.87	Avg	1.25	165	
1672	41.98	H	74	-32.02	Peak	1.25	135	
1672	34.67	H	54	-19.33	Avg	1.25	135	
2090	46.67	H	80.28	-33.61	Peak	1.25	165	
2090	39.36	H	60.28	-20.92	Avg	1.25	165	
2508	44.22	H	80.28	-36.06	Peak	1.25	135	
2508	36.91	H	60.28	-23.37	Avg	1.25	135	
2926	43.99	H	80.28	-36.29	Peak	1.35	145	
2926	36.68	H	60.28	-23.6	Avg	1.35	145	
3344	45.06	H	80.28	-35.22	Peak	1.25	155	
3344	37.75	H	60.28	-22.53	Avg	1.25	155	
3762	45.45	H	74	-28.55	Peak	1.35	165	
3762	38.14	H	54	-15.86	Avg	1.35	165	
4180	44.57	H	74	-29.43	Peak	1.25	155	
4180	37.26	H	54	-16.74	Avg	1.25	155	

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	84.76	V	100.28	-15.52	Peak	2	135	
418	77.45	V	80.28	-2.83	Peak	2	135	
836	42.77	V	80.28	-37.51	Peak	1	180	
836	35.46	V	60.28	-24.82	Avg	1	180	
1254	38.01	V	74	-35.99	Peak	1.25	155	
1254	30.7	V	54	-23.3	Avg	1.25	155	
1672	43.27	V	74	-30.73	Peak	1.35	165	
1672	35.96	V	54	-18.04	Avg	1.35	165	
2090	48.99	V	80.28	-31.29	Peak	1.15	90	
2090	41.68	V	60.28	-18.6	Avg	1.15	90	
2508	45.43	V	80.28	-34.85	Peak	1.25	135	
2508	38.12	V	60.28	-22.16	Avg	1.25	135	
2926	44.15	V	80.28	-36.13	Peak	1.35	145	
2926	36.84	V	60.28	-23.44	Avg	1.35	145	
3344	46.15	V	80.28	-34.13	Peak	1.25	175	
3344	38.84	V	60.28	-21.44	Avg	1.25	175	
3762	48.52	V	74	-25.48	Peak	1.15	185	
3762	41.21	V	54	-12.79	Avg	1.15	185	
4180	44.34	V	74	-29.66	Peak	1.25	135	
4180	37.07	V	54	-16.93	Avg	1.25	135	

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

Y-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	73.02	H	100.28	-27.26	Peak	1.25	135	
418	65.71	H	80.28	-14.57	Peak	1.25	135	
836	29.87	H	80.28	-50.41	Peak	1.25	145	
836	22.56	H	60.28	-37.72	Avg	1.25	145	
1254	33.53	H	74	-40.47	Peak	1.35	155	
1254	26.22	H	54	-27.78	Avg	1.35	155	
1672	38.97	H	74	-35.03	Peak	1.25	115	
1672	31.66	H	54	-22.34	Avg	1.25	115	
2090	50.64	H	80.28	-29.64	Peak	1.35	125	
2090	43.33	H	60.28	-16.95	Avg	1.35	125	
2508	47.81	H	80.28	-32.47	Peak	1.25	155	
2508	40.5	H	60.28	-19.78	Avg	1.25	155	
2926	43.98	H	80.28	-36.3	Peak	1.35	135	
2926	36.67	H	60.28	-23.61	Avg	1.35	135	
3344	49.06	H	80.28	-31.22	Peak	1.25	165	
3344	41.75	H	60.28	-18.53	Avg	1.25	165	
3762	46.34	H	74	-27.66	Peak	1.35	175	
3762	39.03	H	54	-14.97	Avg	1.35	175	
4180	43.22	H	74	-30.78	Peak	1.25	185	
4180	35.91	H	54	-18.09	Avg	1.25	185	

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	75.72	V	100.28	-24.56	Peak	1.25	135	
418	68.41	V	80.28	-11.87	Peak	1.25	135	
836	34.36	V	80.28	-45.92	Peak	1.25	155	
836	27.05	V	60.28	-33.23	Avg	1.25	155	
1254	33.63	V	74	-40.37	Peak	1.25	165	
1254	26.32	V	54	-27.68	Avg	1.25	165	
1672	44.92	V	74	-29.08	Peak	1	180	
1672	37.61	V	54	-16.39	Avg	1	180	
2090	48.46	V	80.28	-31.82	Peak	1	0	
2090	41.15	V	60.28	-19.13	Avg	1	0	
2508	42.41	V	80.28	-37.87	Peak	1.25	155	
2508	35.1	V	60.28	-25.18	Avg	1.25	155	
2926	43.45	V	80.28	-36.83	Peak	1.25	175	
2926	36.14	V	60.28	-24.14	Avg	1.25	175	
3344	45.53	V	80.28	-34.75	Peak	1.35	185	
3344	38.22	V	60.28	-22.06	Avg	1.35	185	
3762	43.72	V	74	-30.28	Peak	1.35	195	
3762	36.41	V	54	-17.59	Avg	1.35	195	
4180	43.59	V	74	-30.41	Peak	1.25	155	
4180	36.28	V	54	-17.72	Avg	1.25	155	

FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

Z-Axis
Duty Cycle: 43.08%

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	87.16	H	100.28	-13.12	Peak	1	90	
418	79.85	H	80.28	-0.43	Peak	1	90	
836	46.15	H	80.28	-34.13	Peak	1.25	135	
836	38.84	H	60.28	-21.44	Avg	1.25	135	
1254	35.06	H	74	-38.94	Peak	1.35	165	
1254	27.75	H	54	-26.25	Avg	1.35	165	
1672	41.98	H	74	-32.02	Peak	2.25	165	
1672	34.67	H	54	-19.33	Avg	2.25	165	
2090	48.07	H	80.28	-32.21	Peak	1.25	175	
2090	40.76	H	60.28	-19.52	Avg	1.25	175	
2508	44.12	H	80.28	-36.16	Peak	1.35	185	
2508	36.81	H	60.28	-23.47	Avg	1.35	185	
2926	43.58	H	80.28	-36.7	Peak	1.25	165	
2926	36.27	H	60.28	-24.01	Avg	1.25	165	
3344	48.66	H	80.28	-31.62	Peak	1.15	165	
3344	41.35	H	60.28	-18.93	Avg	1.15	165	
3762	46.75	H	74	-27.25	Peak	1.25	175	
3762	39.44	H	54	-14.56	Avg	1.25	175	
4180	43.56	H	74	-30.44	Peak	1.35	195	
4180	36.25	H	54	-17.75	Avg	1.35	195	

FCC Class B and FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis (Worst Case)
Duty Cycle: 43.08%
Vertical and Horizontal Polarizations

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
410.01	36.83	H	46	-9.17	Peak	1	90	
410.01	36.15	V	46	-9.85	Peak	1	90	No Other Emissions Detected
								from 10 kHz to 1000 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Other Emissions Detected
								from 10 kHz to 1000 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.

FCC Class B and FCC 15.231
Sealed Unit Parts Co., Inc.
Digital Vacuum Gauge
Model: VG640T

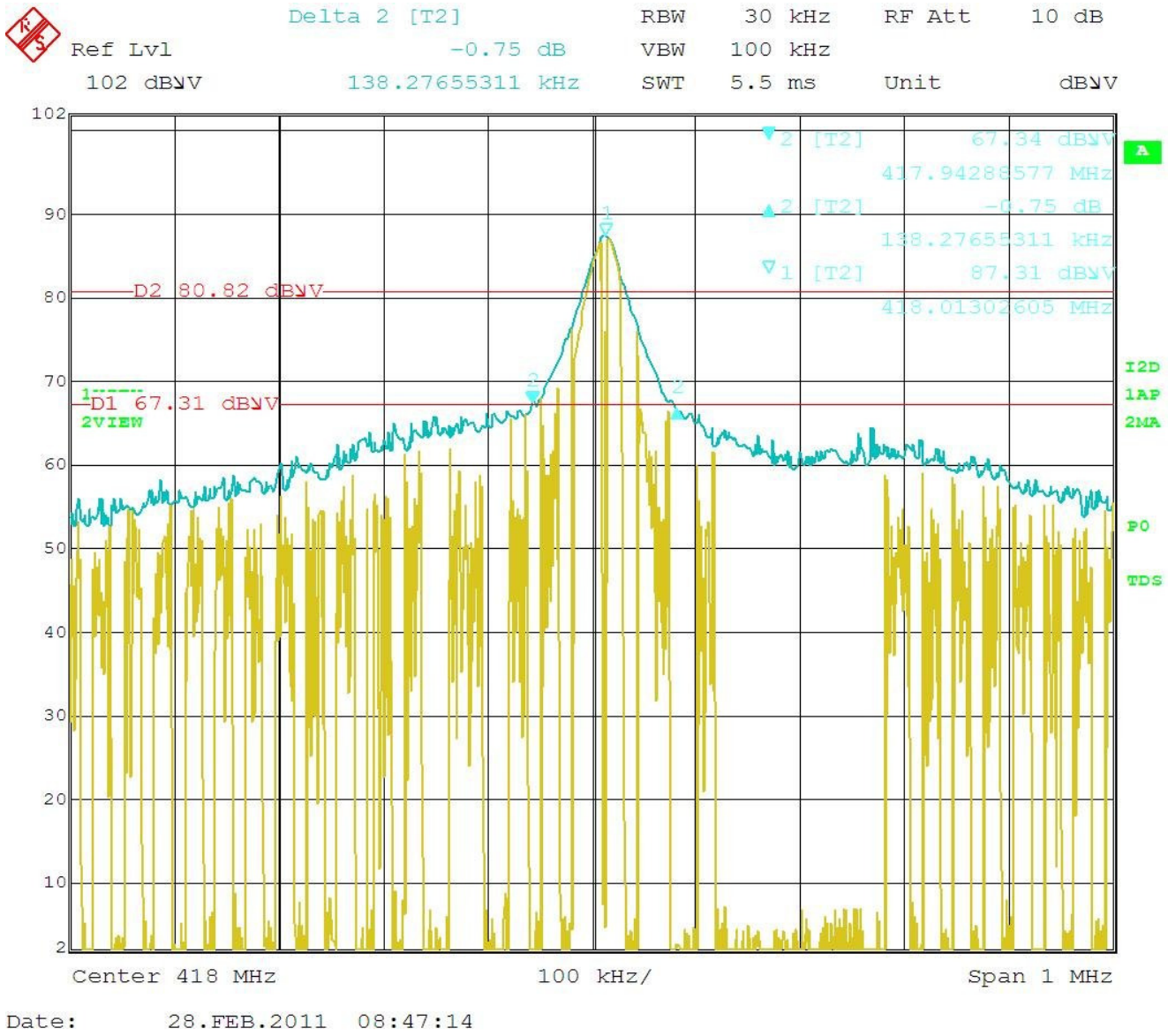
Date: 02/28/2011
Labs: B and D
Tested By: Kyle Fujimoto

X-Axis (Worst Case)
Duty Cycle: 43.08%
Vertical and Horizontal Polarizations

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Detected
								from 1000 MHz to 4180 MHz
								for the Digital Portion
								for both the Vertical and
								Horizontal Polarizations.
								No Emissions Detected
								from 1000 MHz to 4180 MHz
								for the Non-Harmonic
								Emissions from the Tx for the
								EUT for both the Vertical and
								Horizontal Polarizations.

-20 dB BANDWIDTH

DATA SHEETS


Delta 2 [T2]
RBW 30 kHz
RF Att 10 dB
Ref Lvl
-0.75 dB
VBW 100 kHz
102 dBµV
138.27655311 kHz
SWT 5.5 ms
Unit dBµV
D2 80.82 dBµV
D1 67.31 dBµV
2 [T2] 67.34 dBµV
417.94288577 MHz
2 [T2] -0.75 dB
138.27655311 kHz
1 [T2] 87.31 dBµV
418.01302605 MHz
Center 418 MHz
100 kHz/
Span 1 MHz
Date: 28.FEB.2011 08:47:14