FCC PART 15, SUBPART C
TEST REPORT

for

VERSA REMOTE TRANSMITTER

Model: VRTX

Prepared for

KAR-TECH, INC.
111 ENTERPRISE ROAD
DELAFIELD, WISCONSIN 53018

Prepared by:_____

KYLE FUJIMOTO

Approved by:_____

MICHAEL CHRISTENSEN

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

DATE: DECEMBER 14, 2001

	REPORT BODY	APPENDICES					TOTAL
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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., 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 or any other agency of the U.S. Government.

Device Tested: Versa Remote Transmitter
Model: VRTX
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified during the testing.

Manufacturer: Kar-Tech, Inc.
111 Enterprise Road
Delafield, Wisconsin 53018

Test Date: December 11, 2001

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart C, Sections 15.205 and 15.249

Test Procedure: ANSI C63.4: 1992

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 450 kHz - 30 MHz	The EUT runs off a 9 volt battery only and cannot be plugged into the AC public mains. Therefore, this test was not performed.
2	Radiated RF Emissions, 10 kHz - 9300 MHz	Complies with the limits of CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Versa Remote Transmitter Model: VRTX. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 1992. 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 specification limits defined by CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.

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 92823.

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

Kar-Tech, Inc.

Aaron Oestreich	Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Michael Christensen	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on December 11, 2001.

2.5 Disposition of the Test Sample

The test sample has not been returned to Kar-Tech, Inc. as of December 14, 2001.

2.6 Abbreviations and Acronyms

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

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Subpart C.	FCC Rules – Radio frequency devices – Intentional Radiators
ANSI C63.4 1992	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

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Versa Remote Transmitter Model: VRTX (EUT) was tested as a stand alone unit. The EUT was transmitting on a continuous basis. The antenna connector on the EUT is inside the EUT and is mounted using a screw. The EUT was tested in all three orthogonal axis.

The final radiated data was taken in the mode above. Please see Appendix D for the data sheets.

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
VERSA REMOTE TRANSMITTER (EUT)	KAR-TECH, INC.	VRTX	N/A	**O4O-VRTX-2**

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiated Emissions Manual Test – Radiated	Compatible Electronics	N/A	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	June 15, 2001	June 15, 2002
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22262	June 15, 2001	June 15, 2002
Spectrum Analyzer – Quasi-Peak Adapter	Hewlett Packard	85662A	2811A01363	June 15, 2001	June 15, 2002
Biconical Antenna	Com Power	AB-100	1548	Oct. 11, 2001	Oct. 11, 2002
Log Periodic Antenna	Com Power	AL-100	16089	Oct. 11, 2001	Oct. 11, 2002
Computer	Hewlett Packard	D5251A 888	US74458128	N/A	N/A
Printer	Hewlett Packard	C5886A	SG7CM1P090	N/A	N/A
Monitor	Hewlett Packard	D5258A	DK74889705	N/A	N/A
Loop Antenna	Com-Power	AL-130	17070	May 21, 2001	May 21, 2002
Horn Antenna	Antenna Research	DRG-118/A	1053	Dec. 8, 1995	N/A
Loop Antenna	Com-Power	AL-130	17070	May 21, 2001	May 21, 2002
Horn Antenna	Antenna Research	DRG-118/A	1053	Jan. 15, 2001	Jan. 15, 2002
Microwave Preamplifier	Com-Power	PA-122	25195	Jan. 9, 2001	Jan. 9, 2002

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.1 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.

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 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer 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-122 was used for frequencies above 1 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

For the peak readings below 1000 MHz that were within 3 dB of the spec limit or higher, the quasi-peak adapter was used.

For the peak readings above 1000 MHz that were within 3dB of the spec limit or higher, the readings were averaged manually by narrowing the video filter down to 10 Hz and slowing the sweep time to keep the amplitude reading calibrated.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 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 9.3 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: 1992. 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. 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 (con't)

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 final test data. The final qualification data sheets are located in Appendix D.

7.2 Band Edge Plots of the Low and High Channels

Spectral plots of both the low and high channels were taken of the EUT to show that the emissions at the band edges (902 and 928 MHz) were attenuated by at least 50 dB below the level of the fundamental or to the general radiated emissions limits in FCC Title 47, Subpart C, section 15.209, whichever is the lesser attenuation. Please see Appendix D for the spectral plots and data sheets.

The spectral plots were taken at a distance of 3 meters, using the PA-102 Preamplifier to boost the signal level of any potential emissions outside the band edges.

8. CONCLUSIONS

The Versa Remote Transmitter Model: VRTX meets all of the specification limits defined in CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.249.

APPENDIX A

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.249 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 modifications were made to the EUT during the testing.

APPENDIX B

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Versa Remote Transmitter Model: VRTX S/N: N/A

There were no additional models covered under this report.

APPENDIX C

DIAGRAMS, CHARTS AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

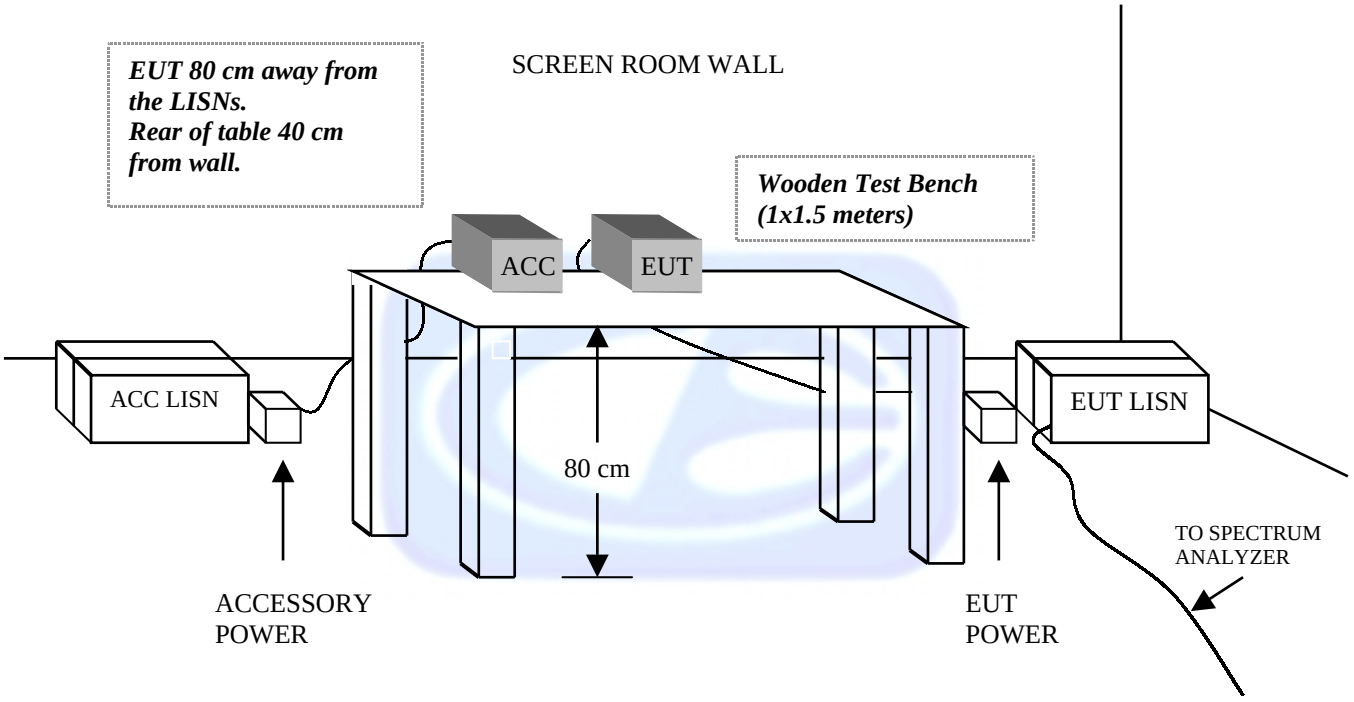
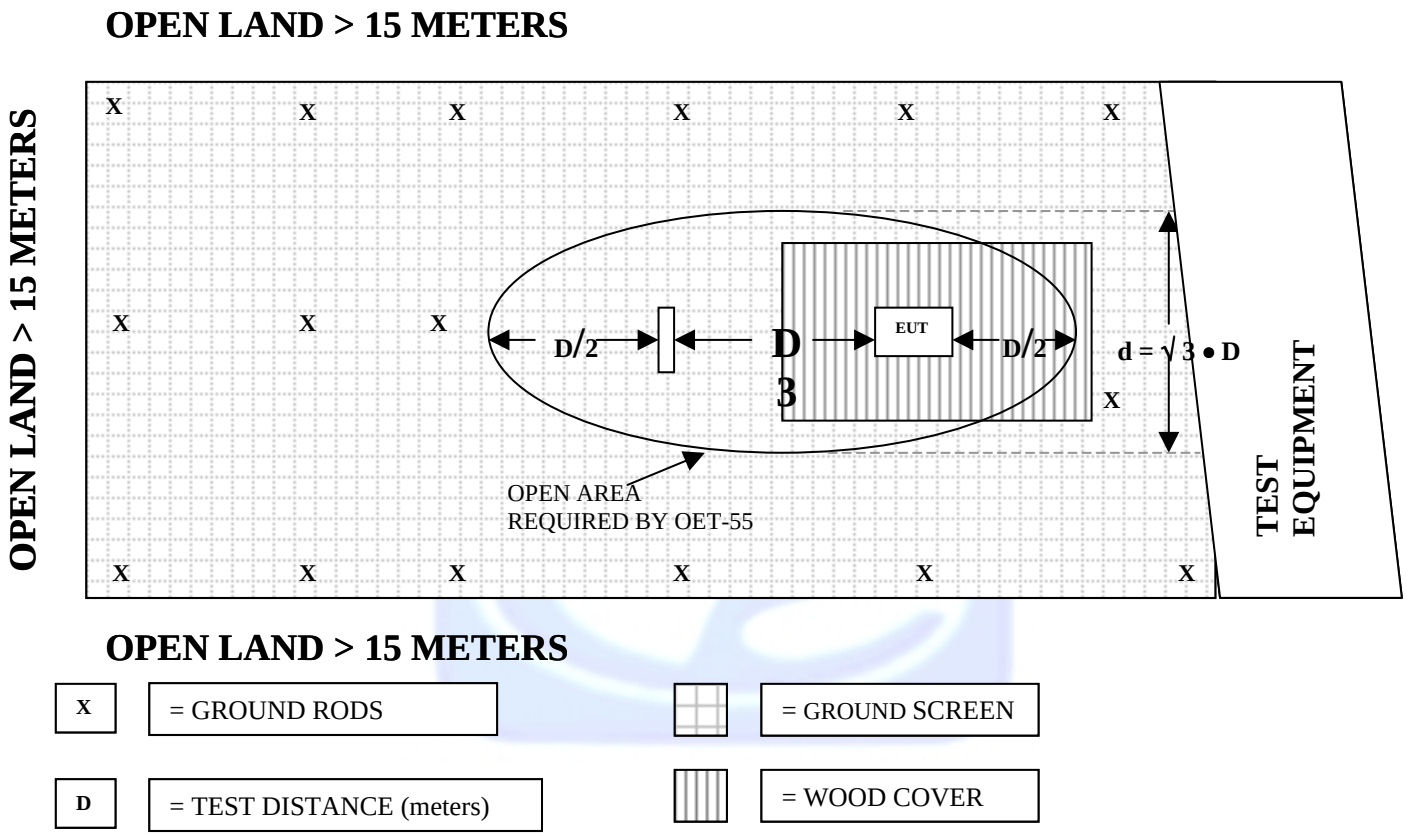


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE



FRONT VIEW

KAR-TECH, INC.
VERSA REMOTE TRANSMITTER
MODEL: VRTX
FCC SUBPART C - RADIATED EMISSIONS – 12-11-01

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

KAR-TECH, INC.
VERSA REMOTE TRANSMITTER
MODEL: VRTX
FCC SUBPART C - RADIATED EMISSIONS – 12-11-01

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

COM-POWER AB-100

BICONICAL ANTENNA

S/N: 01548

CALIBRATION DATE: OCTOBER 11, 2001

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	13.70	120	11.00
35	13.70	125	11.20
40	11.80	140	12.50
45	12.30	150	13.20
50	11.00	160	13.50
60	10.40	175	14.60
70	8.60	180	14.40
80	8.30	200	15.90
90	8.30	250	17.60
100	8.80	300	19.90

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16089

CALIBRATION DATE: OCTOBER 11, 2001

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	14.10	700	20.60
400	15.10	800	22.40
500	16.60	900	22.70
600	19.90	1000	26.50

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 5, 2001

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	39.0	300	38.9
40	39.2	350	38.9
50	39.2	400	38.6
60	39.2	450	38.5
70	38.8	500	38.7
80	38.6	550	38.4
90	38.5	600	38.8
100	38.7	650	38.5
125	39.2	700	38.6
150	38.8	750	38.1
175	38.8	800	37.9
200	39.0	850	38.0
225	38.8	900	37.8
250	38.8	950	36.9
275	39.0	1000	38.2

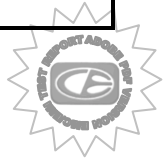
COM-POWER PA-122

MICROWAVE PREAMPLIFIER

S/N: 25195

CALIBRATION DATE: JANUARY 9, 2001

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	33.1	9.5	30.7
1.1	33.0	10.0	31.6
1.2	33.2	11.0	30.6
1.3	33.0	12.0	28.5
1.4	32.4	13.0	31.5
1.5	32.3	14.0	33.2
1.6	32.1	15.0	31.5
1.7	32.0	16.0	30.2
1.8	31.8	17.0	31.6
1.9	32.2	18.0	31.7
2.0	32.6		
2.5	31.9		
3.0	31.7		
3.5	31.7		
4.0	32.3		
4.5	31.5		
5.0	32.3		
5.5	34.2		
6.0	30.9		
6.5	32.0		
7.0	32.1		
7.5	33.0		
8.0	31.9		
8.5	31.9		
9.0	31.3		



ANTENNA RESEARCH DRG-118/A

HORN ANTENNA

S/N: 1053

CALIBRATION DATE: JANUARY 15, 2001

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	25.4	9.5	39.6
1.5	26.7	10.0	39.7
2.0	29.6	10.5	40.8
2.5	30.7	11.0	40.4
3.0	31.2	11.5	42.2
3.5	32.3	12.0	43.0
4.0	33.2	12.5	42.6
4.5	33.2	13.0	41.3
5.0	34.8	13.5	40.3
5.5	35.4	14.0	40.9
6.0	36.6	14.5	44.0
6.5	36.6	15.0	43.3
7.0	38.7	15.5	42.7
7.5	38.6	16.0	42.6
8.0	37.9	16.5	42.8
8.5	37.9	17.0	43.5
9.0	39.9	17.5	44.6
		18.0	42.2

Com-Power Corporation

(949) 587-9800

Antenna Calibration

Antenna Type:	Active Loop Antenna
Model:	AL-130
Serial Number:	17030
Calibration Date:	05/21/01
Certificate Number:	071016

Frequency MHz	Magnetic (dB/m)	Electric (dB/m)
0.009	-40.5	11.0
0.01	-40.4	11.1
0.02	-41.4	10.1
0.03	-40.0	11.5
0.04	-40.4	11.1
0.05	-41.7	9.8
0.06	-41.2	10.3
0.07	-41.5	10.0
0.08	-41.8	9.7
0.09	-41.8	9.7
0.1	-41.8	9.7
0.2	-44.0	7.5
0.3	-41.6	9.9
0.4	-41.6	9.9
0.5	-41.6	9.9
0.6	-41.5	10.0
0.7	-41.4	10.1
0.8	-41.3	10.2
0.9	-41.3	10.2
1	-40.9	10.6
2	-40.3	11.2
3	-40.5	11.0
4	-40.8	10.7
5	-40.2	11.3
6	-40.0	11.5
7	-40.4	11.1
8	-40.5	11.0
9	-40.0	11.5
10	-40.7	10.8
12	-41.2	10.3
14	-41.3	10.2
15	-41.3	10.2
16	-41.4	10.1
18	-41.4	10.1
20	-41.4	10.1
25	-41.7	9.8
30	-43.1	8.4

Separation Distance: 1 meter

APPENDIX D

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
921.3000	60.9	A	H	1.0	0	X		23.5	5.1	0.0	**89.5**	**-4.5**	**94.0**	
921.3000	59.1	A	H	1.0	0	Y		23.5	5.1	0.0	**87.7**	**-6.3**	**94.0**	
921.3000	56.2	A	H	1.0	180	Z		23.5	5.1	0.0	**84.8**	**-9.2**	**94.0**	
921.3000	49.5	A	V	1.0	90	X		23.5	5.1	0.0	**78.1**	**-15.9**	**94.0**	
921.3000	61.1	A	V	1.0	0	Y		23.5	5.1	0.0	**89.7**	**-4.3**	**94.0**	
921.3000	59.3	A	V	1.0	0	Z		23.5	5.1	0.0	**87.9**	**-6.1**	**94.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
1842.6000	51.3	48.6 A	H	1.0	0	X		28.7	3.4	32.0	**48.7**	**-5.3**	**54.0**	
1842.6000	53.0	52.1 A	H	1.0	180	Y		28.7	3.4	32.0	**52.2**	**-1.8**	**54.0**	
1842.6000	50.1	48.6 A	H	1.0	0	Z		28.7	3.4	32.0	**48.7**	**-5.3**	**54.0**	
1842.6000	53.2	52.3 A	V	1.0	90	X		28.7	3.4	32.0	**52.4**	**-1.6**	**54.0**	
1842.6000	53.5	52.0 A	V	1.0	90	Y		28.7	3.4	32.0	**52.1**	**-1.9**	**54.0**	
1842.6000	52.4	50.8 A	V	1.0	90	Z		28.7	3.4	32.0	**50.9**	**-3.1**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2763.9000	44.1	A	H	1.0	90	X	HIGH	31.0	4.4	31.8	**47.6**	**-6.4**	**54.0**	
2763.9000	46.6	A	H	1.0	90	Y	HIGH	31.0	4.4	31.8	**50.1**	**-3.9**	**54.0**	
2763.9000	45.1	A	H	1.0	90	Z	HIGH	31.0	4.4	31.8	**48.6**	**-5.4**	**54.0**	
2763.9000	45.5	A	V	1.0	90	X	HIGH	31.0	4.4	31.8	**49.0**	**-5.0**	**54.0**	
2763.9000	45.2	A	V	1.0	90	Y	HIGH	31.0	4.4	31.8	**48.7**	**-5.3**	**54.0**	
2763.9000	47.9	43.9 A	V	1.0	90	Z	HIGH	31.0	4.4	31.8	**47.4**	**-6.6**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
2763.9000	44.1	A	H	1.0	90	X	HIGH	31.0	4.4	31.8	**47.6**	**-6.4**	**54.0**	
2763.9000	46.6	A	H	1.0	90	Y	HIGH	31.0	4.4	31.8	**50.1**	**-3.9**	**54.0**	
2763.9000	45.1	A	H	1.0	90	Z	HIGH	31.0	4.4	31.8	**48.6**	**-5.4**	**54.0**	
2763.9000	45.5	A	V	1.0	90	X	HIGH	31.0	4.4	31.8	**49.0**	**-5.0**	**54.0**	
2763.9000	45.2	A	V	1.0	90	Y	HIGH	31.0	4.4	31.8	**48.7**	**-5.3**	**54.0**	
2763.9000	47.9	43.9 A	V	1.0	90	Z	HIGH	31.0	4.4	31.8	**47.4**	**-6.6**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
4606.5000	45.5	42.0 A	H	1.5	90	X	HIGH	33.5	5.9	31.7	**49.8**	**-4.2**	**54.0**	
4606.5000	46.7	40.4 A	H	1.0	90	Y	HIGH	33.5	5.9	31.7	**48.2**	**-5.8**	**54.0**	
4606.5000	46.1	41.2 A	H	2.0	0	Z	HIGH	33.5	5.9	31.7	**48.9**	**-5.1**	**54.0**	
4606.5000	45.4	41.1 A	V	1.0	90	X	HIGH	33.5	5.9	31.7	**48.8**	**-5.2**	**54.0**	
4606.5000	46.7	43.6 A	V	1.0	90	Y	HIGH	33.5	5.9	31.7	**51.3**	**-2.7**	**54.0**	
4606.5000	45.7	41.7 A	V	1.5	90	Z	HIGH	33.5	5.9	31.7	**49.5**	**-4.5**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
5527.8000	38.1	A	H	1.0	90	X	HIGH	35.5	6.3	34.0	**45.8**	**-8.2**	**54.0**	
5527.8000	39.2	A	H	1.0	90	Y	HIGH	35.5	6.3	34.0	**46.9**	**-7.1**	**54.0**	
5527.8000	38.2	A	H	1.0	90	Z	HIGH	35.5	6.3	34.0	**45.9**	**-8.1**	**54.0**	
5527.8000	39.3	A	V	1.0	0	X	HIGH	35.5	6.3	34.0	**47.0**	**-7.0**	**54.0**	
5527.8000	35.2	A	V	1.0	90	Y	HIGH	35.5	6.3	34.0	**42.9**	**-11.1**	**54.0**	
5527.8000	38.4	A	V	1.0	90	Z	HIGH	35.5	6.3	34.0	**46.1**	**-7.9**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.249)

COMPANY	**KAR-TECH, INC.**	**DATE**	**12/11/01**
EUT	**VERSA REMOTE TRANSMITTER**	**DUTY CYCLE**	**N/A**
MODEL	**VRTX**	**PEAK TO AVG**	**N/A**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

Frequency MHz	Peak Reading (dBuV)	Average (A) or Quasi-Peak (QP)	Antenna Polar. (V or H)	Antenna Height (meters)	EUT Azimuth (degrees)	EUT Axis (X,Y,Z)	EUT Tx Channel	Antenna Factor (dB)	Cable Loss (dB)	Amplifier Gain (dB)	*Corrected Reading (dBuV/m)	Delta ** (dB)	Spec Limit (dBuV/m)	Comments
6449.1000	40.3	30.1 A	H	1.0	0	X	HIGH	36.6	7.3	31.9	**42.1**	**-11.9**	**54.0**	
6449.1000	39.1	30.0 A	H	1.0	90	Y	HIGH	36.6	7.3	31.9	**42.0**	**-12.0**	**54.0**	
6449.1000	40.4	31.0 A	H	1.0	90	Z	HIGH	36.6	7.3	31.9	**43.0**	**-11.0**	**54.0**	
6449.1000	41.7	30.2 A	V	1.0	90	X	HIGH	36.6	7.3	31.9	**42.2**	**-11.8**	**54.0**	
6449.1000	41.3	31.0 A	V	1.0	90	Y	HIGH	36.6	7.3	31.9	**42.9**	**-11.1**	**54.0**	
6449.1000	40.8	30.1 A	V	1.0	90	Z	HIGH	36.6	7.3	31.9	**42.1**	**-11.9**	**54.0**	

* CORRECTED READING = METER READING + ANTENNA FACTOR + CABLE LOSS - AMPLIFIER GAIN
** DELTA = SPEC LIMIT - CORRECTED READING

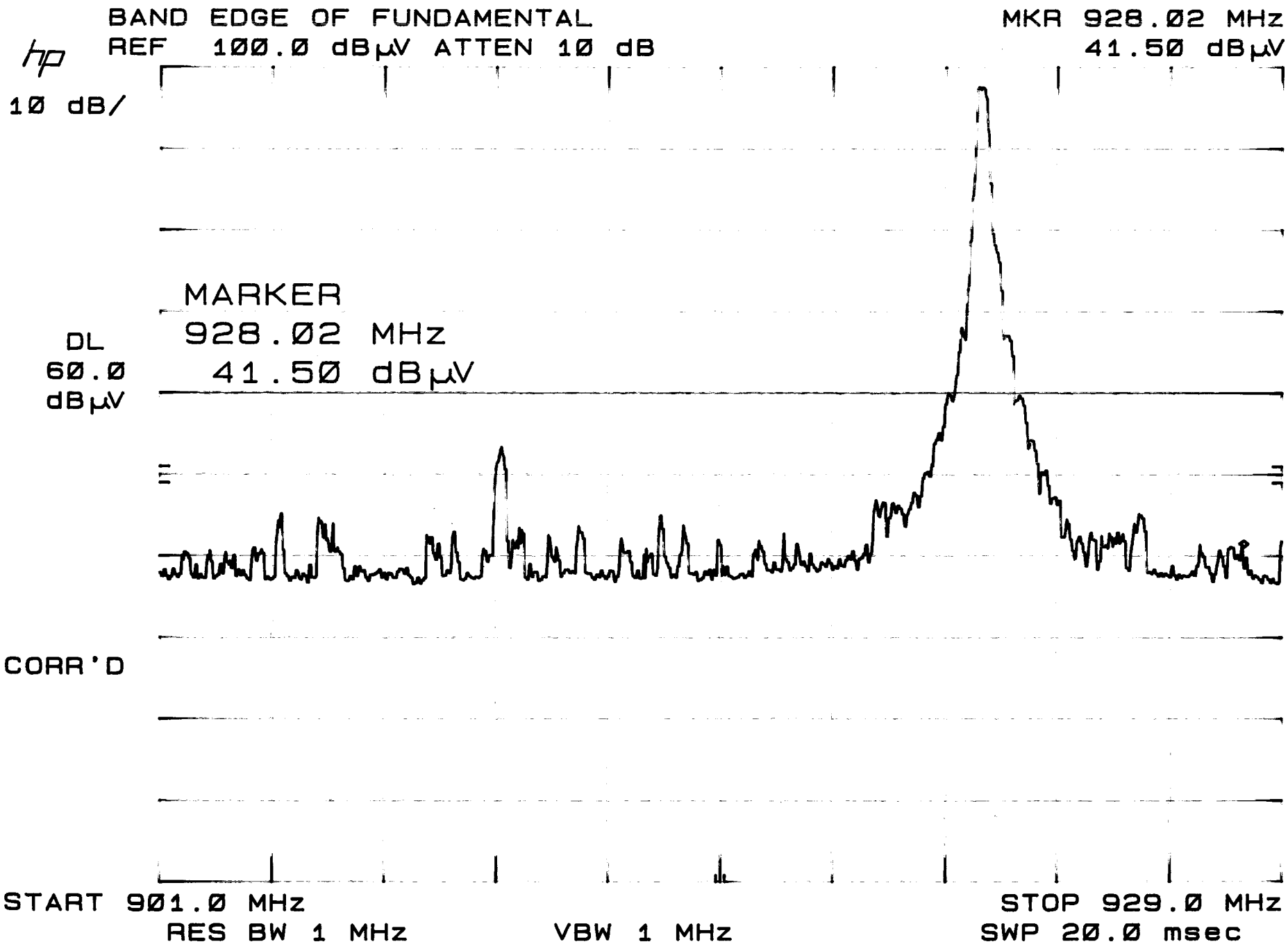
NO HARMOINCS NOR EMISSIONS FOUND AFTER THE 7 TH HARMONIC

Test location: Compatible Electronics
Customer : KAR-TECH, INC. Date : 12/11/2001
Manufacturer : KAR-TECH, INC. Time : 12.32
EUT name : VERSA REMOTE TRANSMITTER Model: VRTX
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode : SPURIOUS EMISSIONS FROM THE EUT
TEMPERATURE: 70 DEGREES F.
RELATIVE HUMIDITY: 40%
TESTED BY: KYLE FUJIMOTO

NO SPURIOUS EMISSIONS FOUND FROM 10 kHz TO 9300 MHz FOR THE EUT
FOR BOTH THE VERTICAL AND HORIZONTAL POLARIZATIONS

BAND EDGE

DATA SHEETS


BAND EDGE OF FUNDAMENTAL
REF 100.0 dBµV ATTEN 10 dB
MKR 928.02 MHz
41.50 dBµV
10 dB/
MARKER
928.02 MHz
41.50 dBµV
DL
60.0
dBµV
CORR'D
START 901.0 MHz
RES BW 1 MHz
VBW 1 MHz
STOP 929.0 MHz
SWP 20.0 msec

APPENDIX E

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200063-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)

Technology International (Europe) Ltd.