

**EMC QUALIFICATION
TEST REPORT
VENSTAR, INC.
RF WIRELESS MODULE, RF WIRELESS MODULE 1**

TESTED TO CONFORM WITH:

EMISSIONS STANDARDS

FOR

INFORMATION TECHNOLOGY EQUIPMENT (ITE)

Test Report Number: 061128-1108A

Date of Issue: April 5, 2007

Date of Test Completion: March 20, 2007

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Approved by:



Laboratory Director

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12/EM02c - BS EN 61000-3-2, ED. 2 (2001); IEC 610003-2, ED. 2 (2000)
12/EM03 - ICE 61000-3-3 (1995); EN 61000-3-3 (1995); AS/NZS 2279.3 (1995)
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12/FCC15b - ANSI C63.4 (2003) with FCC Method 47 CFR Part 15, Subpart B
12/T51 - AS/NZS CISPR 22 (2002) and AS/NZS 3548 (1997)
12/I01 - IEC 61000-4-2, Ed. 2.1 (2001), A1, A2; EN 61000-4-2
12/I02 - IEC 61000-4-3, Ed. 2.0 (2002-03); EN 61000-4-3 (2002)
12/I03 - IEC 61000-4-4 (1995), A1 (2002), A2 (2001); EN 61000-4-4
12/I04 - IEC 61000-4-5, Ed. 1.1 (2001-04); EN 61000-4-5
12/I05 - IEC 61000-4-6, Ed. 2.0 (2003-05); EN 61000-4-6
12/I06 - IEC 61000-4-8, Ed. 1.1 (2001); EN 61000-4-8
12/I07 - IEC 61000-4-11, Ed. 1.1 (2001-03); EN 61000-4-11

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TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY.....	4
1.1	PURPOSE.....	4
1.2	CONFORMITY.....	4
1.3	EQUIPMENT UNDER TEST (EUT).....	4
2.0	EMISSIONS TEST STANDARDS.....	5
2.1	UNINTENTIONAL RADIATED EMISSIONS – 30 MHZ TO 1000 MHZ.....	5
2.2	UNINTENTIONAL RADIATED EMISSIONS ABOVE 1GHZ.....	6
2.3	INTENTIONAL RADIATOR.....	7
2.4	INTENTIONAL RADIATOR.....	8
2.5	INTENTIONAL RADIATOR.....	9
2.6	INTENTIONAL RADIATOR.....	10
2.7	INTENTIONAL RADIATOR.....	11
2.8	INTENTIONAL RADIATED CONDUCTED EMISSIONS.....	12
3.0	APPENDIX A: EUT PHOTOGRAPHS	13
3.1	UNINTENTIONAL RADIATED EMISSIONS	13
3.2	INTENTIONAL RADIATOR.....	14
4.0	APPENDIX B: DATA SHEETS	15
4.1	UNINTENTIONAL RADIATED EMISSIONS PLOT – 30 MHZ TO 1 GHZ	15
4.2	UNINTENTIONAL RADIATED EMISSIONS TABLE – 30 MHZ TO 1 GHZ	16
4.3	UNINTENTIONAL RADIATED EMISSIONS PLOT – ABOVE 1 GHZ	20
4.4	UNINTENTIONAL RADIATED EMISSIONS TABLE – ABOVE 1 GHZ.....	21
4.5	INTENTIONAL RADIATOR PER FCC 24	24
4.6	INTENTIONAL RADIATOR PER FCC 24	25
4.7	INTENTIONAL RADIATOR PER FCC 24	26
4.8	INTENTIONAL RADIATOR - NOISE LEVEL AT LOWER BAND EDGE	27
4.9	INTENTIONAL RADIATOR - HIGHEST SPURIOUS BELOW LOWER BAND EDGE.....	28
4.10	INTENTIONAL RADIATOR - NOISE LEVEL AT UPPER BAND EDGE	29
4.11	INTENTIONAL RADIATOR - HIGHEST SPURIOUS ABOVE UPPER BAND EDGE	30
4.12	INTENTIONAL RADIATED CONDUCTED EMISSIONS.....	31
4.13	INTENTIONAL RADIATED CONDUCTED EMISSIONS.....	32
5.0	APPENDIX C: PRODUCT INFORMATION FORM.....	33
6.0	APPENDIX D: TEST EQUIPMENT AND CALIBRATION STATUS	35
7.0	APPENDIX E: TEST DIRECTIVES, STANDARDS AND METHODS	36

EMC QUALIFICATION TEST REPORT

RF WIRELESS MODULE, RF WIRELESS MODULE 1

1.0 EXECUTIVE SUMMARY

1.1 PURPOSE

The purpose of this report is to present EMC test data and demonstrate conformity to the requirements of the prescribed standards for Emissions and/or Immunity.

1.2 CONFORMITY

The test article was tested to the standards listed in Table I with the indicated conformity status. All test methods were performed in accordance to with the standards listed.

TABLE I. EMISSIONS CONFORMITY SUMMARY

TEST TYPE	COMPLIANCE STANDARD	TESTING TECHNIQUE	TEST DESCRIPTION	PRODUCT CLASSIFICATION	CONFORMITY STATUS
EMISSIONS	<u>FCC Part 15</u>	<input checked="" type="checkbox"/> IEC/EN 55022 (under 1GHz) <input checked="" type="checkbox"/> FCC TITLE 47 PART 15 SECTION 31 (a)(3) (above 1GHz)	Unintentional Radiated Emissions	Class B	PASSED
	<u>FCC Part 15.249</u>	<input checked="" type="checkbox"/> FCC PART 15.249	Intentional Radiated Emissions		PASSED
	<u>FCC Part 15.207</u>	<input checked="" type="checkbox"/> FCC PART 15.207	Intentional Radiated Conducted Emissions		PASSED

1.3 EQUIPMENT UNDER TEST (EUT)

EUT NAME: RF WIRELESS MODULE
 EUT MODEL/PART NUMBER(S): RF WIRELESS MODULE 1
 EUT SERIAL NUMBER(S): 064800001

2.0 EMISSIONS TEST STANDARDS

FCC Part 15, Subpart B

Class B

2.1 UNINTENTIONAL RADIATED EMISSIONS – 30 MHZ TO 1000 MHZ

Measurements for *Radiated Emissions* were performed over the frequency range of 30 MHz to 1000 MHz in the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15, Subpart B

Class B

Testing Conditions

Date of Test: December 10, 2006

Temperature: 19°

Relative Humidity: 20%

Test Voltage: 120 VAC 60 Hz

Test Operator: lws

Test Location

Criterion Technology Open Area Test Site

Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
- Hewlett-Packard Tracking Generator, HP 85645A
- Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
- Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
- Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
- EMCO BiConical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Results of Radiated Emissions

Test Status: **PASSED**

Frequency Range: 30 MHz to 1000 MHz

Minimum Margin to Limit: **-9.54** dB at **65.4559** MHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.2 UNINTENTIONAL RADIATED EMISSIONS ABOVE 1GHZ

Measurements for *Radiated Emissions* were performed over the frequency range of 1 GHz to 10 GHz in the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15 Subpart B

Class B

Testing Conditions

Date of Test: December 8, 2006
Temperature: 21°C
Relative Humidity: 17%
Test Voltage: 120 VAC 60 Hz
Test Operator: w s

Test LocationCriterion Technology Open Area Test SiteTest DistanceAntenna Distance: **3 meter(s)** Final Measurement(s)Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
 Hewlett-Packard Tracking Generator, HP 85645A
 Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
 Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
 Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
 EMCO BiConnical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Results of Radiated EmissionsTest Status: **PASSED**

Frequency Range: 1 GHz to 10 GHz

Minimum Margin to Limit: **-20.18** dB at **1369.7989** MHzRemarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.3 **INTENTIONAL RADIATOR**

Measurements for *Radiated Emissions* were performed over the frequency range of 0.9 GHz to 10 GHz the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15.249Testing Conditions

Date of Test: March 14, 2007
Temperature: 21°C
Relative Humidity: 18%
Test Voltage: +5 VDC
Test Operator: lws

Test Location**Criterion Technology Open Area Test Site**Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
 Hewlett-Packard Tracking Generator, HP 85645A
 Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
 Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
 Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
 EMCO BiConical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Accessories: Laptop

Test Results of Radiated Emissions - Harmonics – lower band edge

Test Status: **PASSED** Frequency Range: 0.9 GHz to 10 GHz

Minimum Margin to Limit: -7.29 dB at 1818.538 GHz

Fundamental

Minimum Margin to Limit: -7.29 dB at 909.269 GHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.4 **INTENTIONAL RADIATOR**

Measurements for *Radiated Emissions* were performed over the frequency range of 1.0 GHz to 10 GHz the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15.249Testing Conditions

Date of Test: March 14, 2007
Temperature: 21°C
Relative Humidity: 18%
Test Voltage: +5 VDC
Test Operator: Iws

Test Location**Criterion Technology Open Area Test Site**Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
 Hewlett-Packard Tracking Generator, HP 85645A
 Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
 Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
 Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
 EMCO BiConnical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Accessories: Laptop

Test Results of Radiated Emissions - Harmonics – middle of band

Test Status: **PASSED** Frequency Range: 1.0 GHz to 10 GHz

Minimum Margin to Limit: -18.74 dB at 1828.138 GHz

Fundamental

Minimum Margin to Limit: -3.31 dB at 914.069 GHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.5 **INTENTIONAL RADIATOR**

Measurements for *Radiated Emissions* were performed over the frequency range of 0.9 GHz to 10 GHz the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15.249Testing Conditions

Date of Test: March 14, 2007
Temperature: 21°C
Relative Humidity: 18%
Test Voltage: +5 VDC
Test Operator: lws

Test Location**Criterion Technology Open Area Test Site**Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
- Hewlett-Packard Tracking Generator, HP 85645A
- Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
- Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
- Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
- EMCO BiConical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Accessories: Laptop

Test Results of Radiated Emissions - Harmonics – upper band edge

Test Status: **PASSED** Frequency Range: 0.9 GHz to 10 GHz

Minimum Margin to Limit: -8.61 dB at 1840.616 GHz

Fundamental

Minimum Margin to Limit: -4.74 dB at 920.308 GHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.6 INTENTIONAL RADIATOR

Measurements for *Radiated Emissions* were performed over the frequency range of 0.9 GHz to 1.0 GHz the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15.249Testing Conditions

Date of Test: March 14, 2007
 Temperature: 21°C
 Relative Humidity: 18%
 Test Voltage: +5 VDC
 Test Operator: Iws

Test Location**Criterion Technology Open Area Test Site**Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
 Hewlett-Packard Tracking Generator, HP 85645A
 Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
 Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
 Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
 EMCO BiConnical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Accessories: Laptop

Test Results of Radiated Emissions - Outside of the frequency band – lower band edge

Test Status: **PASSED** Frequency Range: 0.9 GHz to 1.0 GHz

Noise at lower band edge: -62.3 dB at 902.06 MHz
 Minimum Margin to Limit: -12.3 dB at 902.06 MHz
 Spurious below lower band edge: -55.4 dB at 899.37 MHz
 Minimum Margin to Limit: -4.6 dB at 899.37 MHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.7 INTENTIONAL RADIATOR

Measurements for *Radiated Emissions* were performed over the frequency range of 0.9 GHz to 10 GHz the horizontal and vertical antenna polarities to the requirements of:

FCC Part 15.249Testing Conditions

Date of Test: March 14, 2007
Temperature: 21°C
Relative Humidity: 18%
Test Voltage: +5 VDC
Test Operator: lws

Test Location**Criterion Technology Open Area Test Site**Test Distance

Antenna Distance: **3 meter(s)** **Final Measurement(s)**

Test Equipment

- Hewlett-Packard Spectrum Analyzer, HP 8566B Hewlett-Packard Quasi-Peak Adapter, HP 85650A
 Hewlett-Packard Tracking Generator, HP 85645A
 Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz Receiver, ESVS-30
 Mini Circuits Pre-Amp #2 Veratech Pre-Amp #3
 Chase BiLog Antenna, Model 1121 Antenna Research, Horn Antenna, Model DRG118/A
 EMCO BiConnical Antenna, Model 3108 EMCO Log Periodic Antenna, Model 3146

Test Accessories: Laptop

Test Results of Radiated Emissions - Outside of the frequency band – upper band edge

Test Status: **PASSED** Frequency Range: 0.9 GHz to 1.0 GHz

Noise at upper band edge: -64.90 dB at 927.95 MHz
Minimum Margin to Limit: -14.9 dB at 927.95 MHz

Spurious above upper band edge: -56.3 dB at 930.34 MHz
Minimum Margin to Limit: -3.7 dB at 930.34 MHz

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

2.8 INTENTIONAL RADIATED CONDUCTED EMISSIONS

Measurements for *Conducted Emissions* were performed over the frequency range of 150 kHz to 30 MHz to the requirements of:

FCC PART 15.207**Class B**Testing Conditions

Date of Test: March 20, 2007
Temperature: 19°C
Relative Humidity: 22%
Test Voltage: 120 VAC 60 Hz
Test Operator: lws

Test Location**Criterion Technology Open Area Test Site**Test Equipment

Hewlett-Packard Spectrum Analyzer, HP 8566B
Rohde and Schwarz Receiver, ESHS-30 Rohde and Schwarz LISN, ESH2-Z5

Test Accessories: Laptop

Test Results of Conducted Emissions

Test Status: **PASSED** Frequency Range: 150 KHZ TO 30 MHZ

Minimum Margin to Limit: all emissions are 22dB or more below the limits

Remarks

See: **APPENDIX A** for EUT Photographs **APPENDIX B** for Data Sheets
APPENDIX D for Test Equipment Calibration Status

3.0 APPENDIX A: EUT PHOTOGRAPHS

3.1 UNINTENTIONAL RADIATED EMISSIONS



3.2 INTENTIONAL RADIATOR



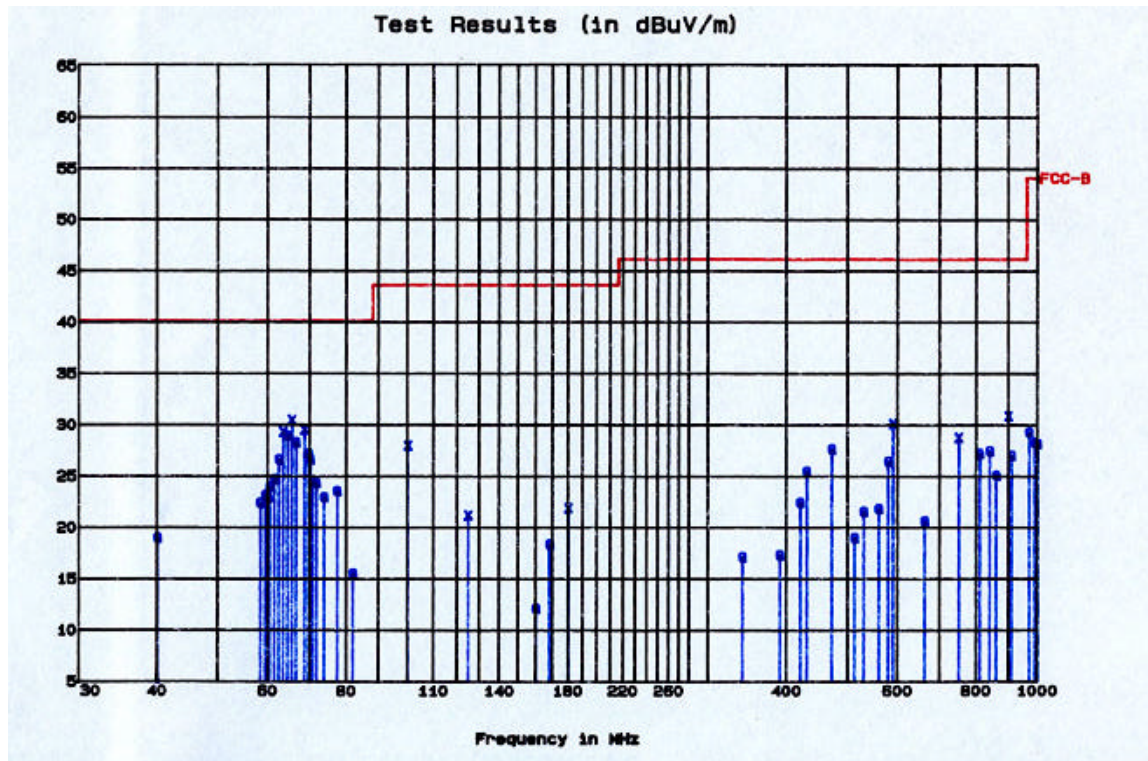
4.0 APPENDIX B: DATA SHEETS

4.1 UNINTENTIONAL RADIATED EMISSIONS PLOT – 30 MHZ TO 1 GHZ

Criterion Technology
EUT: RF Wireless Module, RF Wireless Module 1
Manufacturer: Venstar, Inc.
Tester: lws
EUT Level: as received
EUT Information: tabletop
Test Information: RF transmission and reception at Max Duty Cycle
Test Cond: Temp: 19°C

Date: December 5, 2006
S/N: 064800001
SpiD: 061128-1108A

3m, 120 VAC 60 Hz. FCC Part 15 Class B
Humidity: 20%



4.2 UNINTENTIONAL RADIATED EMISSIONS TABLE – 30 MHZ TO 1 GHZ

Notes:

The third column below contains alpha characters which pertain to the type of measurements made. The following are the definitions for those characters: q = Quasi Peak, m = Maximized (cable, rotation and antenna height), s = scanned but no data taken, and a = average. For the first character in column four, a '-' indicates that value is below the limit while an '*' indicates that value is above the limit

If the list is sorted using "I-sort", then quasi-peak and average levels are weighted higher than peak levels and are moved to the front of the scan list.

The following keys help to better understand the data:

TT: Turntable position in degrees

Hght: Height of antenna in centimeters

Az: Azimuth, V = Vertical, H= Horizontal

Minimum Margin to Limit: **-9.54** dB at **65.4559** MHz

Criterion Technology Sun Dec 10 19:52:14 2006

EUT: RF Wireless Module, RF Wireless Module 1

S/N: 064800001

Manufacturer: Venstar, Inc.

Tester: lws Special ID: 061128-1108A

EUT Level: as received

EUT Information: tabletop

Test information: RF transmission and reception at Max duty cycle, 3m, 120/60, FCC15 Class B

Table 1: Scan List, sorted by margin to limit FCC-B, -25.0dB filter

<u>Freq. MHz</u>	<u>Value dBuV/m</u>	<u>Sts</u>	<u>Margin to FCC-B limits (dB)</u>	<u>TT</u>	<u>Hght</u>	<u>Az</u>	<u>Comment</u>
65.4559	30.46	m	-9.54	0	150	V	nb
68.5287	29.52	m	-10.48	0	150	V	nb
63.4069	29.30	m	-10.70	0	150	V	nb
64.4329	28.95	q	-11.05	0	150	V	nb
66.4809	28.29	q	-11.71	0	150	V	nb
69.5489	27.19	q	-12.81	0	150	V	nb
62.3909	26.65	q	-13.35	0	150	V	nb
70.0000	26.65	q	-13.35	0	150	V	10. ck
899.8474	30.85	m	-15.17	230	118	V	.
61.3669	24.70	q	-15.30	0	150	V	nb
70.5769	24.49	q	-15.51	0	150	V	nb
100.0500	27.97	m	-15.55	124	105	V	NA+50kHz, 10ck
71.5989	24.35	q	-15.65	0	150	V	.
589.9024	30.08	m	-15.94	109	137	H	.
60.3439	23.98	q	-16.02	0	150	V	nb
77.2514	23.57	q	-16.43	91	150	H	.
59.3259	23.18	q	-16.82	0	150	V	nb
73.6369	22.95	q	-17.05	0	150	V	nb
60.0000	22.92	q	-17.08	0	150	V	10. ck
749.8774	28.73	m	-17.29	217	133	V	.
58.2983	22.41	q	-17.59	0	150	V	nb
471.2374	27.64	q	-18.38	0	150	V	.
839.8574	27.45	q	-18.57	91	150	V	.
809.8774	27.19	q	-18.83	270	150	V	.
909.8524	27.04	q	-18.98	91	150	V	.
579.8974	26.45	q	-19.57	91	150	H	.
429.9274	25.48	q	-20.54	270	150	V	.
859.8574	25.07	q	-20.95	0	150	V	.
39.9889	19.02	q	-20.98	181	150	V	10. ck
179.9684	21.91	m	-21.61	238	103	V	.

124.7798	21.20	m	-22.32	0	150	V	nb
419.9174	22.43	q	-23.59	270	150	V	.
559.8974	21.83	q	-24.19	91	150	H	.
81.7634	15.56	q	-24.44	91	150	H	.
529.9024	21.56	q	-24.46	91	150	V	.
969.8600	29.27	q	-24.71	270	150	H	.

Table 2: Scan List for FCC-B, sorted by Frequency, -25.0dB filter

<u>Freq. MHz</u>	<u>Final Value dBuV/m</u>	<u>Sts</u>	<u>Margin to FCC-B limits (dB)</u>	<u>TT</u>	<u>Hght</u>	<u>Az</u>	<u>Comment</u>
39.9889	19.02	q	-20.98	181	150	V	10. ck
58.2983	22.41	q	-17.59	0	150	V	nb
59.3259	23.18	q	-16.82	0	150	V	nb
60.0000	22.92	q	-17.08	0	150	V	10. ck
60.3439	23.98	q	-16.02	0	150	V	nb
61.3669	24.70	q	-15.30	0	150	V	nb
62.3909	26.65	q	-13.35	0	150	V	nb
63.4069	29.30	m	-10.70	0	150	V	nb
64.4329	28.95	q	-11.05	0	150	V	nb
65.4559	30.46	m	-9.54	0	150	V	nb
66.4809	28.29	q	-11.71	0	150	V	nb
68.5287	29.52	m	-10.48	0	150	V	nb
69.5489	27.19	q	-12.81	0	150	V	nb
70.0000	26.65	q	-13.35	0	150	V	10. ck
70.5769	24.49	q	-15.51	0	150	V	nb
71.5989	24.35	q	-15.65	0	150	V	.
73.6369	22.95	q	-17.05	0	150	V	nb
77.2514	23.57	q	-16.43	91	150	H	.
81.7634	15.56	q	-24.44	91	150	H	.
100.0500	27.97	m	-15.55	124	105	V	NA+50kHz, 10ck
124.7798	21.20	m	-22.32	0	150	V	nb
179.9684	21.91	m	-21.61	238	103	V	.
419.9174	22.43	q	-23.59	270	150	V	.
429.9274	25.48	q	-20.54	270	150	V	.
471.2374	27.64	q	-18.38	0	150	V	.
529.9024	21.56	q	-24.46	91	150	V	.
559.8974	21.83	q	-24.19	91	150	H	.
579.8974	26.45	q	-19.57	91	150	H	.
589.9024	30.08	m	-15.94	109	137	H	.
749.8774	28.73	m	-17.29	217	133	V	.
809.8774	27.19	q	-18.83	270	150	V	.
839.8574	27.45	q	-18.57	91	150	V	.
859.8574	25.07	q	-20.95	0	150	V	.
899.8474	30.85	m	-15.17	230	118	V	.
909.8524	27.04	q	-18.98	91	150	V	.
969.8600	29.27	q	-24.71	270	150	H	.

Table 3: Complete Scan List Sorted by Frequency

Freq, MHz	I-val before xduce factors dBuV	Final Value dBuV/m	Sts	TT	Hght	Az	Time	Comment
39.9889	27.71	19.02	q	181	150	V	Sun Dec 10 18:19:48 2006	10. ck
58.2983	38.45	22.41	q	0	150	V	Sun Dec 10 17:49:59 2006	nb
59.3259	39.37	23.18	q	0	150	V	Sun Dec 10 17:50:05 2006	nb
60.0000	39.07	22.92	q	0	150	V	Sun Dec 10 17:50:12 2006	10. ck
60.3439	40.10	23.98	q	0	150	V	Sun Dec 10 17:50:17 2006	nb
61.3669	40.76	24.70	q	0	150	V	Sun Dec 10 17:50:20 2006	nb
62.3909	42.72	26.65	q	0	150	V	Sun Dec 10 17:50:23 2006	nb
63.4069	45.39	29.30	m	0	150	V	Sun Dec 10 17:50:25 2006	nb
64.4329	45.03	28.95	q	0	150	V	Sun Dec 10 17:50:29 2006	nb
65.4559	46.50	30.46	m	0	150	V	Sun Dec 10 17:50:32 2006	nb
66.4809	44.30	28.29	q	0	150	V	Sun Dec 10 17:50:34 2006	nb
68.5287	45.41	29.52	m	0	150	V	Sun Dec 10 17:50:37 2006	nb
69.5489	43.00	27.19	q	0	150	V	Sun Dec 10 17:50:39 2006	nb
70.0000	42.42	26.65	q	0	150	V	Sun Dec 10 17:50:42 2006	10. ck
70.5769	40.21	24.49	q	0	150	V	Sun Dec 10 17:50:44 2006	nb
71.5989	39.94	24.35	q	0	150	V	Sun Dec 10 17:50:47 2006	.
73.6369	38.09	22.95	q	0	150	V	Sun Dec 10 17:50:50 2006	nb
77.2514	38.46	23.57	q	91	150	H	Sun Dec 10 18:02:47 2006	.
81.7634	29.63	15.56	q	91	150	H	Sun Dec 10 18:02:50 2006	.
100.0500	39.50	27.97	m	124	105	V	Sun Dec 10 19:33:16 2006	NA+50kHz, 10
124.7798	30.71	21.20	m	0	150	V	Sun Dec 10 17:51:38 2006	nb
160.0000	23.03	12.16	q	270	150	H	Sun Dec 10 18:29:32 2006	10. ck
167.9761	29.96	18.38	q	181	150	V	Sun Dec 10 18:22:02 2006	nb
179.9684	34.07	21.91	m	238	103	V	Sun Dec 10 19:39:10 2006	.
339.9524	23.40	17.15	q	270	150	V	Sun Dec 10 18:26:10 2006	.
389.9174	22.08	17.36	q	180	150	H	Sun Dec 10 18:38:01 2006	.
419.9174	26.02	22.43	q	270	150	V	Sun Dec 10 18:26:15 2006	.
429.9274	28.98	25.48	q	270	150	V	Sun Dec 10 18:26:17 2006	.
471.2374	30.25	27.64	q	0	150	V	Sun Dec 10 17:55:56 2006	.
512.3074	20.93	19.01	q	270	150	V	Sun Dec 10 18:26:22 2006	.
529.9024	23.01	21.56	q	91	150	V	Sun Dec 10 18:18:21 2006	.
559.8974	22.76	21.83	q	91	150	H	Sun Dec 10 18:40:59 2006	.
579.8974	27.05	26.45	q	91	150	H	Sun Dec 10 18:41:04 2006	.
589.9024	30.81	30.08	m	109	137	H	Sun Dec 10 19:20:28 2006	.
662.2874	19.88	20.65	q	1	150	H	Sun Dec 10 18:44:21 2006	nb
749.8774	27.12	28.73	m	217	133	V	Sun Dec 10 19:27:22 2006	.
809.8774	24.49	27.19	q	270	150	V	Sun Dec 10 18:26:39 2006	.
839.8574	24.16	27.45	q	91	150	V	Sun Dec 10 18:18:38 2006	.
859.8574	22.22	25.07	q	0	150	V	Sun Dec 10 17:56:39 2006	.
899.8474	28.12	30.85	m	230	118	V	Sun Dec 10 19:30:30 2006	.
909.8524	24.38	27.04	q	91	150	V	Sun Dec 10 18:18:45 2006	.
969.8600	24.83	29.27	q	270	150	H	Sun Dec 10 18:30:32 2006	.
989.8445	23.92	28.27	q	180	150	H	Sun Dec 10 18:37:32 2006	.
999.8344	24.02	28.17	q	180	150	H	Sun Dec 10 18:37:25 2006	.

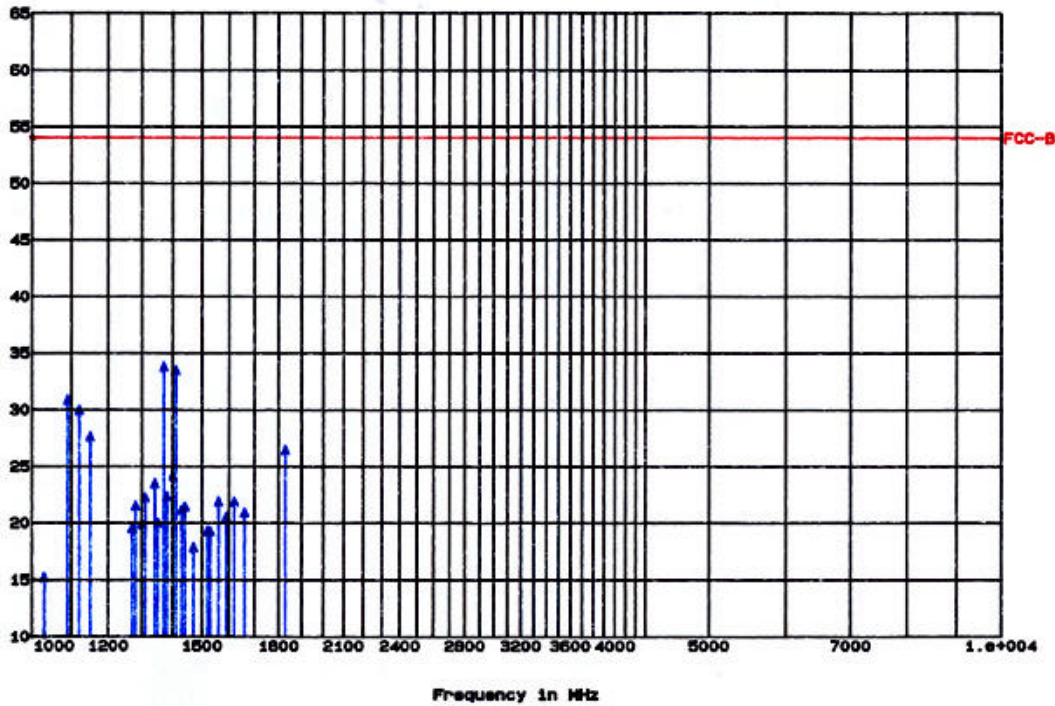
4.3 UNINTENTIONAL RADIATED EMISSIONS PLOT – ABOVE 1 GHZ

Criterion Technology
EUT: RF Wireless Module, RF Wireless Module 1
Manufacturer: Venstar, Inc.
Tester: ws
EUT Level: as received
EUT Information: tabletop
Test Information: RF receive 88.8%, transmit 11.2%
Test Cond: Temp: 21°C

Date: December 8, 2006
S/N: 064800001
SpiD: 061128-1108A

3m, 120 VAC 60 Hz. FCC Part 15 Class B
Humidity: 17%

Test Results (in dBuV/m)



4.4 UNINTENTIONAL RADIATED EMISSIONS TABLE – ABOVE 1 GHz

Notes:

The third column below contains alpha characters which pertain to the type of measurements made. The following are the definitions for those characters: q = Quasi Peak, m = Maximized (cable, rotation and antenna height), s = scanned but no data taken, and a = average. For the first character in column four, a '-' indicates that value is below the limit while an '*' indicates that value is above the limit

If the list is sorted using "I-sort", then quasi-peak and average levels are weighted higher than peak levels and are moved to the front of the scan list.

The following keys help to better understand the data:

TT: Turntable position in degrees

Hght: Height of antenna in centimeters

Az: Azimuth, V = Vertical, H= Horizontal

Minimum Margin to Limit: **-20.18** dB at **1369.7989** MHz

Criterion Technology Fri Dec 08 16:47:19 2006

EUT: RF Wireless Module, RF Wireless Module 1

S/N: 064800001

Manufacturer: Venstar, Inc.

Tester: ws Special ID: 061128-1108A

EUT Level: as received

EUT Information: tabletop

Test information: RF rcv 88.8%, xmit 11.2%, 3m, 120V/60Hz, FCC Part 15 Class B

Table 1: Scan List, sorted by margin to limit FCC-B, -50.0dB filter

<u>Freq. MHz</u>	<u>Value dBuV/m</u>	<u>Sts</u>	<u>Margin to FCC-B limits (dB)</u>	<u>TT</u>	<u>Hght</u>	<u>Az</u>	<u>Comment</u>
1369.7989	33.80	a	-20.18	4	100	H	.
1409.7883	33.47	a	-20.51	360	144	H	.
1089.8400	30.88	a	-23.10	357	100	V	.
1119.8339	29.97	a	-24.01	324	103	H	.
1149.8311	27.65	a	-26.33	41	100	H	.
1828.2850	26.48	a	-27.50	36	106	H	.
1399.7929	24.19	a	-29.79	181	105	H	.
1339.7976	23.53	a	-30.45	6	100	H	.
1379.7980	22.38	a	-31.60	211	108	H	.
1309.8051	22.28	a	-31.70	6	100	H	.
1559.7680	21.93	a	-32.05	182	139	H	.
1619.7590	21.93	a	-32.05	219	131	H	.
1279.8110	21.55	a	-32.43	351	100	H	.
1439.7872	21.47	a	-32.51	199	101	H	.
1429.7866	21.20	a	-32.78	181	104	H	.
1659.7516	20.94	a	-33.04	224	130	H	.
1589.7635	20.56	a	-33.42	180	135	H	.
1349.8001	20.03	a	-33.95	10	100	H	.
1299.8089	19.94	a	-34.04	9	101	H	.
1269.8129	19.55	a	-34.43	5	100	H	.
1519.7740	19.33	a	-34.65	193	100	H	.
1529.7740	19.29	a	-34.69	11	128	H	.
1469.7830	17.87	a	-36.11	169	101	H	.
1029.8464	15.24	a	-38.74	226	100	H	.

Table 2: Scan List for FCC-B, sorted by Frequency, -50.0dB filter

<u>Freq. MHz</u>	<u>Final Value dBuV/m</u>	<u>Sts</u>	<u>Margin to FCC-B limits (dB)</u>	<u>TT</u>	<u>Hght</u>	<u>Az</u>	<u>Comment</u>
1029.8464	15.24	a	-38.74	226	100	H	.
1089.8400	30.88	a	-23.10	357	100	V	.
1119.8339	29.97	a	-24.01	324	103	H	.
1149.8311	27.65	a	-26.33	41	100	H	.
1269.8129	19.55	a	-34.43	5	100	H	.
1279.8110	21.55	a	-32.43	351	100	H	.
1299.8089	19.94	a	-34.04	9	101	H	.
1309.8051	22.28	a	-31.70	6	100	H	.
1339.7976	23.53	a	-30.45	6	100	H	.
1349.8001	20.03	a	-33.95	10	100	H	.
1369.7989	33.80	a	-20.18	4	100	H	.
1379.7980	22.38	a	-31.60	211	108	H	.
1399.7929	24.19	a	-29.79	181	105	H	.
1409.7883	33.47	a	-20.51	360	144	H	.
1429.7866	21.20	a	-32.78	181	104	H	.
1439.7872	21.47	a	-32.51	199	101	H	.
1469.7830	17.87	a	-36.11	169	101	H	.
1519.7740	19.33	a	-34.65	193	100	H	.
1529.7740	19.29	a	-34.69	11	128	H	.
1559.7680	21.93	a	-32.05	182	139	H	.
1589.7635	20.56	a	-33.42	180	135	H	.
1619.7590	21.93	a	-32.05	219	131	H	.
1659.7516	20.94	a	-33.04	224	130	H	.
1828.2850	26.48	a	-27.50	36	106	H	.

Table 3: Complete Scan List Sorted by Frequency

Freq, MHz	I-val before xducer factors dBuV/m	Final Value dBuV/m	Sts	TT	Hght	Az	Time	Comment
1029.8464	31.28	15.24	a	226	100	H	Fri Dec 08 15:14:56 2006	.
1089.8400	46.66	30.88	a	357	100	V	Tue Dec 05 16:35:33 2006	.
1119.8339	45.57	29.97	a	324	103	H	Tue Dec 05 16:46:39 2006	.
1149.8311	43.08	27.65	a	41	100	H	Tue Dec 05 16:38:10 2006	.
1269.8129	34.21	19.55	a	5	100	H	Fri Dec 08 14:33:58 2006	.
1279.8110	36.14	21.55	a	351	100	H	Fri Dec 08 14:37:10 2006	.
1299.8089	34.39	19.94	a	9	101	H	Fri Dec 08 15:17:35 2006	.
1309.8051	36.66	22.28	a	6	100	H	Fri Dec 08 14:40:58 2006	.
1339.7976	37.70	23.53	a	6	100	H	Fri Dec 08 14:44:36 2006	.
1349.8001	34.13	20.03	a	10	100	H	Fri Dec 08 14:47:57 2006	.
1369.7989	47.77	33.80	a	4	100	H	Tue Dec 05 16:32:38 2006	.
1379.7980	36.29	22.38	a	211	108	H	Fri Dec 08 14:51:02 2006	.
1399.7929	37.95	24.19	a	181	105	H	Fri Dec 08 14:58:37 2006	.
1409.7883	47.16	33.47	a	360	144	H	Tue Dec 05 16:29:42 2006	.
1429.7866	34.75	21.20	a	181	104	H	Fri Dec 08 15:01:51 2006	.
1439.7872	34.99	21.47	a	199	101	H	Fri Dec 08 15:07:22 2006	.
1469.7830	31.27	17.87	a	169	101	H	Fri Dec 08 15:10:34 2006	.
1519.7740	32.35	19.33	a	193	100	H	Fri Dec 08 15:42:36 2006	.
1529.7740	32.21	19.29	a	11	128	H	Fri Dec 08 16:11:17 2006	.
1559.7680	34.55	21.93	a	182	139	H	Fri Dec 08 16:08:42 2006	.
1589.7635	32.96	20.56	a	180	135	H	Fri Dec 08 16:04:35 2006	.
1619.7590	34.01	21.93	a	219	131	H	Fri Dec 08 15:50:05 2006	.
1659.7516	32.52	20.94	a	224	130	H	Fri Dec 08 15:46:05 2006	.
1828.2850	36.25	26.48	a	36	106	H	Fri Dec 08 15:39:48 2006	.

4.5 INTENTIONAL RADIATOR PER FCC 24

Fundamental Freq (MHz)	Field Strength before rcvr pads	Rcvr atten pads (db)	Field Strength (dbuv/m) @ 3 meters See Note 1	Field Strength limit (dbuv/m)	Margin to limit
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909.269	74.71	12	86.71	94	7.29
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Harmonic #	Frequency	F val (peak value)	F val-20log D (12.2)	FCC part 24 limit (dbuV/m)	Margin to Limit (db)	Comments
2 Fo	1818.538	56.97	44.77	54	-9.23	
3 Fo	2727.807	41.39	29.19	54	-24.81	
4 Fo	3637.076	38.78	26.58	54	-27.42	
5 Fo	4546.345	36.45	24.25	54	-29.75	Noise Floor
6 Fo	5455.614	35.08	22.88	54	-31.12	Noise Floor
7 Fo	6364.883	43.66	31.46	54	-22.54	Noise Floor
8 Fo	7274.152	45.93	33.73	54	-33.19	Noise Floor
9 Fo	8183.421	47.02	34.82	54	-19.18	Noise Floor
10 Fo	9092.69	46.4	34.20	54	-19.80	Noise Floor

Duty cycle is 24.5 msec. On time and 100 msec is the allowed total cycle time or d = .245

20 log D = 19.2 db

Note: Harmonics taken in peak mode with max hold activated.

Transmitter was tested in three orthogonal planes

Note 1: Field strength indicated is peak power

4.6 INTENTIONAL RADIATOR PER FCC 24

Fundamental Freq (MHz)	Field Strength before rcvr pads	Rcvr atten pads (db)	Field Strength (dbuv/m) @ 3 meters See Note 1	Field Strength limit (dbuv/m)	Margin to limit
914.069	78.69	12	80.69	94	3.31

Harmonic #	Frequency	F val (peak value)	F val- 20log D (12.2)	FCC part 24 limit (dbuV/m)	Margin to Limit (db)	Comments
2 Fo	1828.138	47.46	35.26	54	-18.74	
3 Fo	2742.207	47.06	34.86	54	-19.14	
4 Fo	3656.276	38.06	25.86	54	-28.14	
5 Fo	4570.345	36.6	24.4	54	-29.60	Noise Floor
6 Fo	5484.414	38.33	26.13	54	-27.87	Noise Floor
7 Fo	6398.483	43.84	31.28	54	-22.72	Noise Floor
8 Fo	7312.552	46.18	33.98	54	-20.02	Noise Floor
9 Fo	8226.621	47.19	34.99	54	-19.01	Noise Floor
10 Fo	9140.69	50.23	38.03	54	-15.97	Noise Floor

Note: Harmonics taken in peak mode with max hold activated.

Transmitter was tested in three orthogonal planes

Note 1: Field strength indicated is peak power

4.7 INTENTIONAL RADIATOR PER FCC 24

Fundamental Freq (MHz)	Field Strength before rcvr pads	Rcvr atten pads (db)	Field Strength (dbuv/m) @ 3 meters See Note 1	Field Strength limit (dbuv/m)	Margin to limit
920.308	77.26	12	89.26	94	4.74

Harmonic #	Frequency	F val	F val- 20log D (19.2)	FCC part 24 limit (dbuV/m)	Margin to Limit (db)	Comments	
2 Fo	1840.616		57.59	45.39	54	-8.61	
3 Fo	2760.924		48.05	35.85	54	-18.15	
4 Fo	3681.232		38.73	26.53	54	-27.47	
5 Fo	4601.54		31.25	19.05	54	-34.95	
6 Fo	5521.848		37.93	25.73	54	-28.27	Noise Floor
7 Fo	6442.156		43.71	31.51	54	-22.49	Noise Floor
8 Fo	7362.464		46.06	33.86	54	-20.14	Noise Floor
9 Fo	8282.772		47.24	35.04	54	-18.96	Noise Floor
10 Fo	9203.08		48.44	36.24	54	-17.76	Noise Floor

Duty cycle is 24.5 msec. On time and 100 msec is the allowed total cycle time or $d = .245$

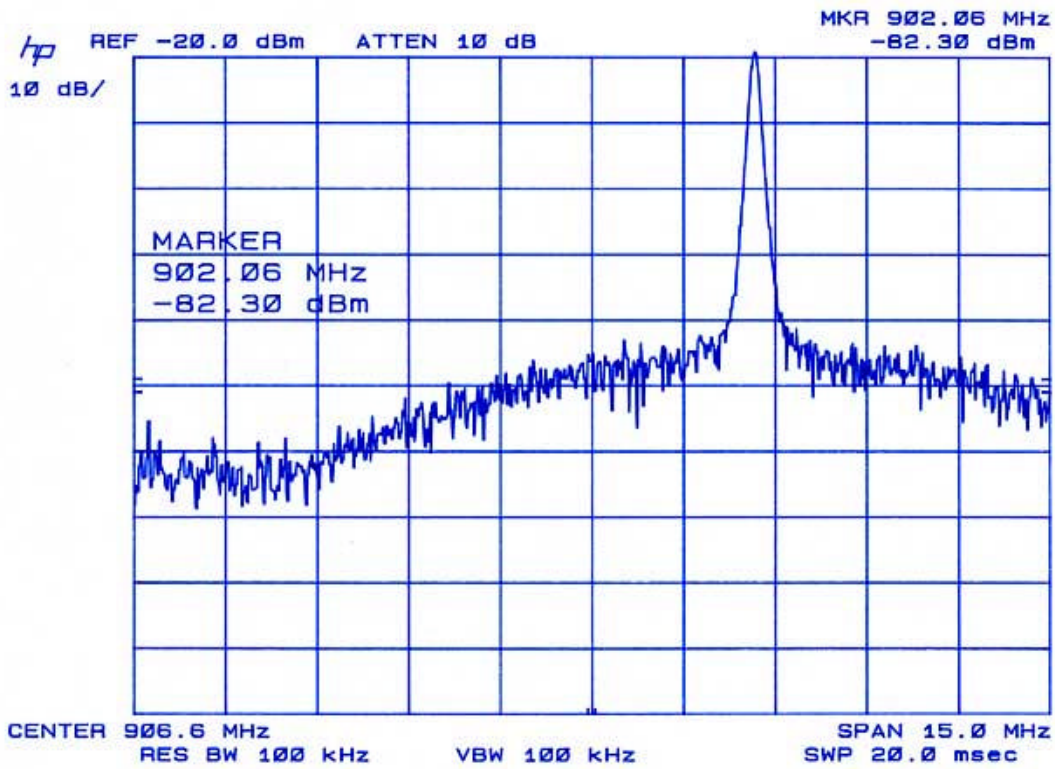
20 log D = 12.2 db

Note: Harmonics taken in peak mode with max hold activated.

Transmitter was tested in three orthogonal planes

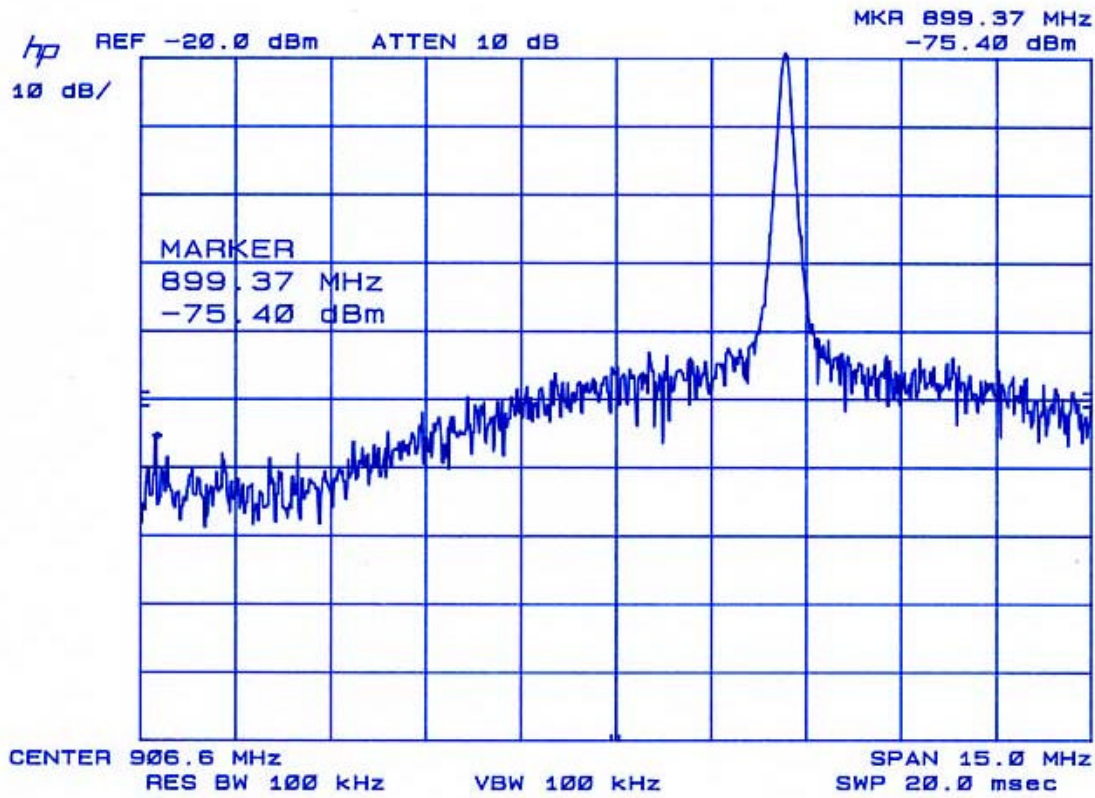
Note 1: Field strength indicated is peak power

4.8 INTENTIONAL RADIATOR - NOISE LEVEL AT LOWER BAND EDGE



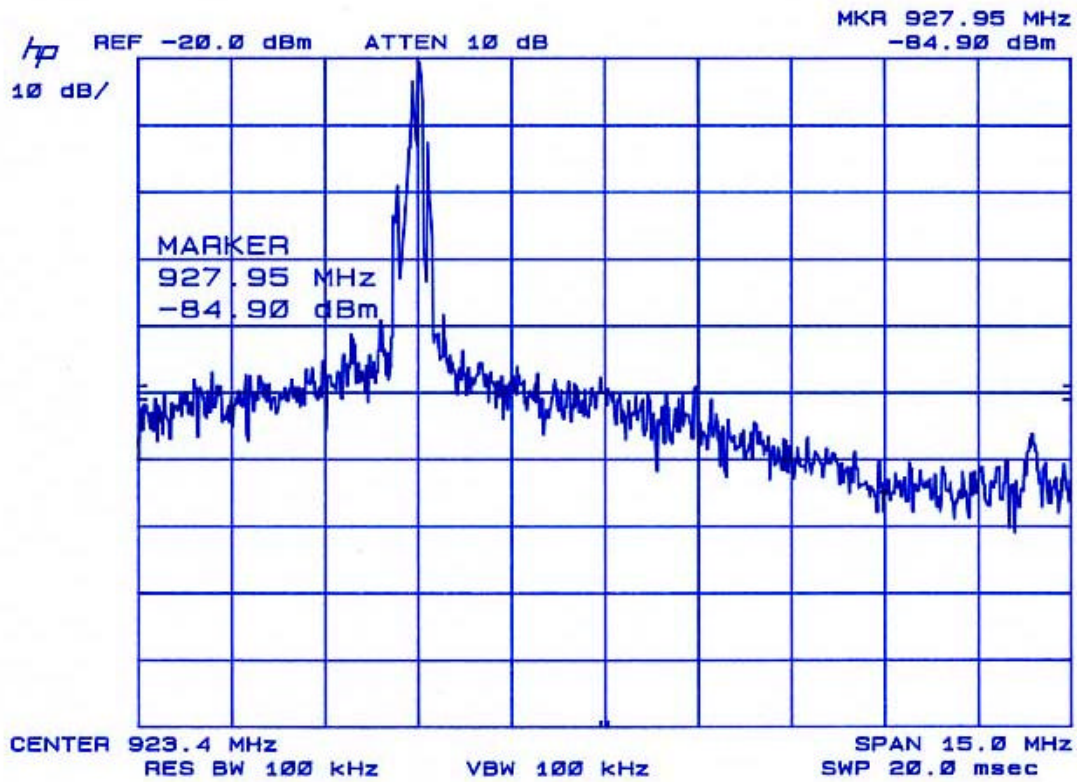
Note: Plot of fundamental taken with quasi peak detector activated.

4.9 INTENTIONAL RADIATOR - HIGHEST SPURIOUS BELOW LOWER BAND EDGE



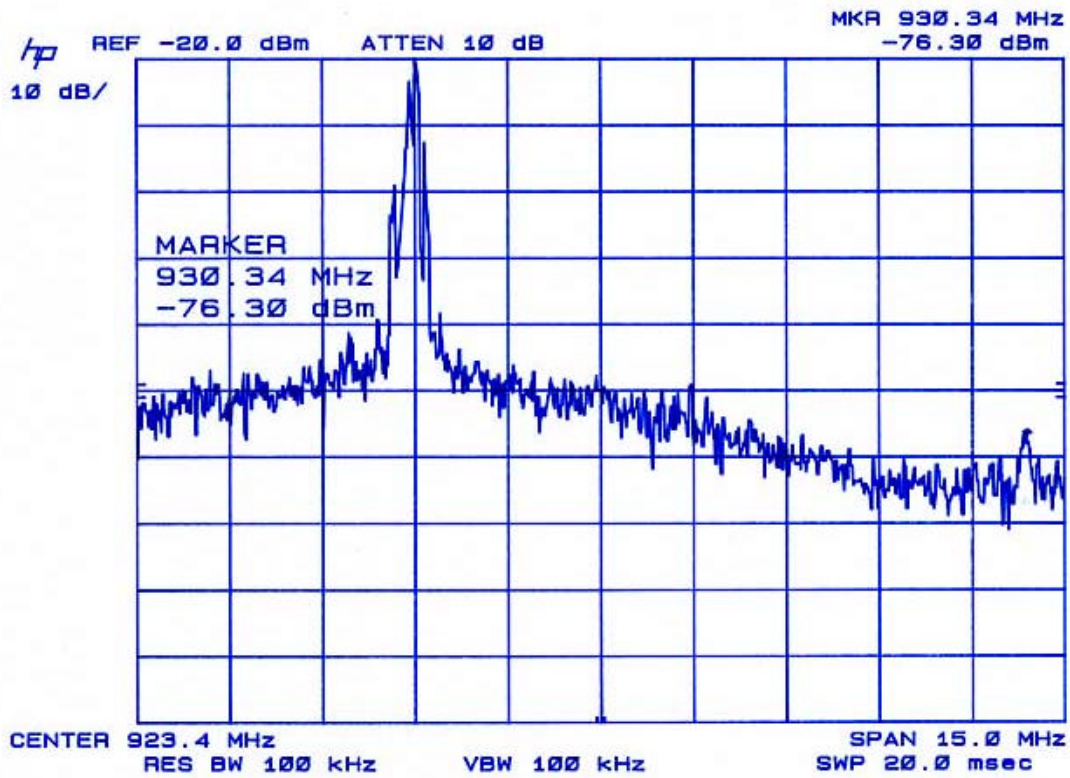
Note: Plot of fundamental taken with quasi peak detector activated.

4.10 INTENTIONAL RADIATOR - NOISE LEVEL AT UPPER BAND EDGE



Note: Plot of fundamental taken with quasi peak detector activated.

4.11 INTENTIONAL RADIATOR - HIGHEST SPURIOUS ABOVE UPPER BAND EDGE



Note: Plot of fundamental taken with quasi peak detector activated.

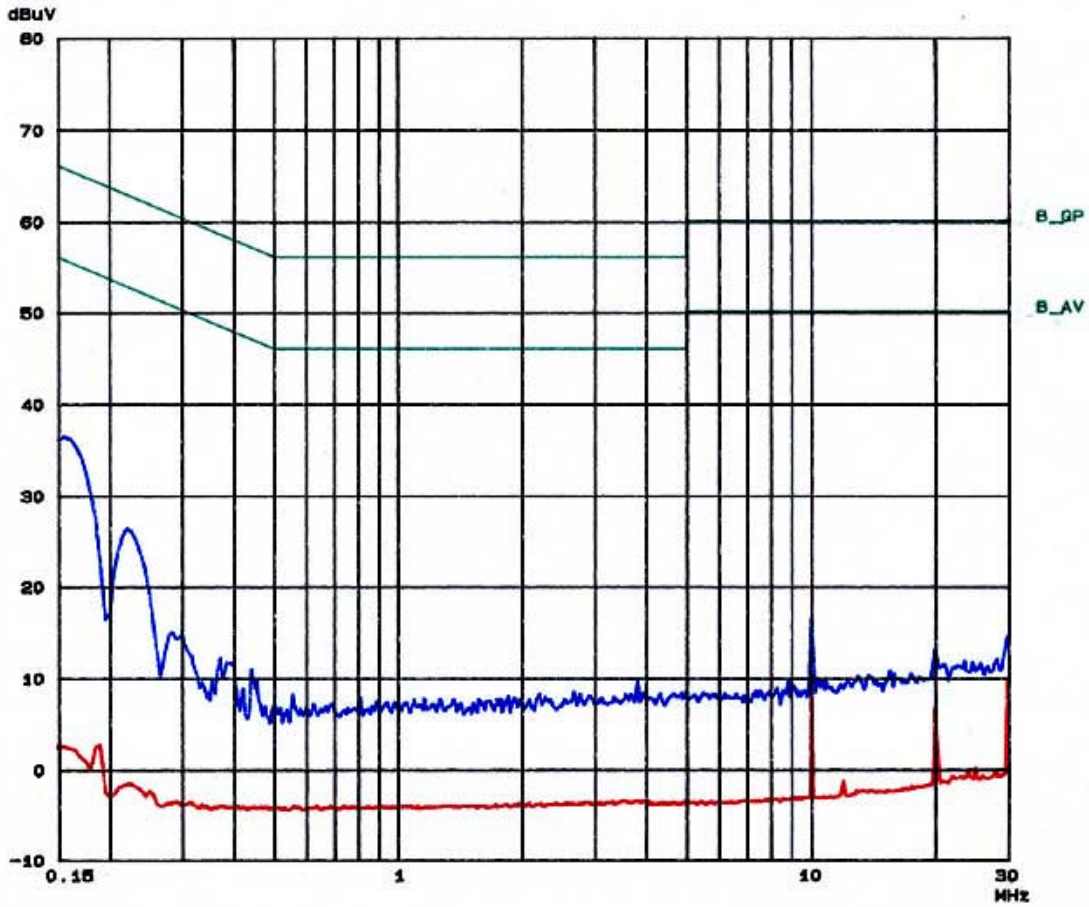
4.12 INTENTIONAL RADIATED CONDUCTED EMISSIONS

Criterion Technology Inc.
Conducted Emissions

EUT: RF Wireless Module, RF Wireless Module 1
Manuf: Venstar, Inc.
Operator: lws 061128-1108A
Test Spec: FCC Part 15.207 Class B
Test Cond: Temp: 19°C Humidity: 22%
Comment: 120 VAC 60 Hz, L on Prescan, L & N on Final

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	If BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	100MS	AUTO LN	OFF	60db



4.13 INTENTIONAL RADIATED CONDUCTED EMISSIONS

Criterion Technology Inc.
Conducted Emissions

EUT: RF Wireless Module, RF Wireless Module 1
Manuf: Venstar, Inc.
Operator: lws
Test Spec: FCC Part 15.207 Class B
Comment: 120 VAC 60Hz, L on Prescan, L & N on Final

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	If BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	100MS	AUTO LN	OFF	60db

Final Measurement Results:

No Results – All emissions are below 22db or more below the limits.

5.0 APPENDIX C: PRODUCT INFORMATION FORM**CRITERION TECHNOLOGY PRODUCT INFORMATION FORM****General Information**Date: 12/4/2006Company Name: Venstar, IncCompany Address: 9250 Owensmouth Avenue
Chatsworth, CA 91311

Contacts:

Compliance Engineer: Stan Zubiell Phone: (719) 488-8535 Email: stan@zubiell.comDesign Engineer: Stan Zubiell Phone: (719) 488-8535 Email: stan@zubiell.com**Test Description**De-Bug _____ Formal (Initial) X Formal (Re-Verification) _____**Market Information (Check all that Apply)**USA X Canada _____ Euro. Union _____ Taiwan _____ Japan _____ New Zealand _____ Australia _____

Other _____

Product InformationName: RF Wireless Module Model Number: RF Wireless Module 1 Serial Number: 064800001Product Dimensions: 2.8" x 2.2" x 0.6" Weight: _____**Product Power Source:****Battery**

Type _____

AC SupplyInput Voltage Range(s) 24 VAC to regulated + 5V

Phases _____ Delta _____ Wye _____

Current 25Frequency 60Hz

Manufacturer _____

Model Number RH41-0900500AV**Topology**Linear X Switching Mode _____ Switching Frequency _____

Operation Software:

Name: Dongle Version Number: 0

Operating Modes: (Please Include Cycle Time)

RF receive 88.8%
RF transmit 11.2%

Time necessary for EUT to be exercised and able to fully respond: 1 seconds .

Test Type – Emissions (Please check all that apply):

Information Technology Equipment

Class A _____
Class B X
Oscillator/Clock Frequencies (MHz) _____

Industrial, Scientific, Medical Equipment

Class A _____
Class B _____
Oscillator/Clock Frequencies (MHz) _____

Unintentional Radiator

Class A _____
Class B X
Oscillator/Clock Frequencies (MHz) 10MHz
Receiver
Type (Regen., Superhet., Direct Conv., Homodyne) Direct conversion
Local Oscillator Frequencies 914.28 MHz
Frequency Range 902 – 928 MHz

Intentional Radiator

Fundamental Frequency Range 902 – 928 MHz
Local Oscillator Frequencies 914.28 MHz
Power Output (to antenna) +5dBm
Integral Antenna (Yes/No) yes
Modulation Type (AM, CM, Pulse, Spread Spectrum) FSK
Control Circuits (Microprocessor/Micro-controller) Micro-controller
Oscillator/Clock Frequencies (MHz) 10MHz

 IEC 61000-3-2, Harmonics
Max. Steady State Power Consumed by Product: Watts

 IEC 61000-3-3, Flicker Meter

EMISSIONS

To be compliant with C63.4-2003 test methodology, for the emissions testing, the equipment must be exercising all of the functionality within the capability of the Equipment under test. In addition, the equipment must be equipped in the configuration of maximum capability which will be offered to customers,. The test software installed in the Equipment Under Test (EUT) must exercise all of the modules in this maximum capability configuration.

Description of the maximum capability configuration: RF transmission and reception at maximum duty cycle

Name and revision # of the test software used for the emissions test: RF test firmware – Wireless Rev 0.

6.0 APPENDIX D: TEST EQUIPMENT AND CALIBRATION STATUS

Manufacturer	Name/Description	Model Number	Serial Number	Cal. Due Date
Veratech	Preamp (AMP3)	unknown	N/A	5/8/2007
Veratech	Preamp (AMP2)	unknown	N/A	5/8/2007
EMCO	Horn	3160-08	1147	5/9/2007
EMCO	biconnical antenna	3108	9103-2441	5/24/2007
EMCO	log periodic antenna	3146	9004-2763	5/25/2007
Chase	Bilog 30 - 1000 MHz	CB6111	1121	5/25/2007
Rohde/ Schwarz	LISN	ESH2-Z5	828739-001	6/4/2007
Rohde/ Schwarz	VHF/UHF Receiver	ESVS-30	863342014	6/16/2007
Rohde/ Schwarz	HF Receiver	ESHS-30	826003/011	7/10/2007
Microwave Technologies	Standard Gain Horn & Harmonic Mixer	12A-18 & HP1197OK	19527JE & 2332A01314	8/1/2007
FCC	CDN	FCC-801-M3-25	9714	8/9/2007
FCC	EM Clamp	F2031	309	8/9/2007
Amplifier Research	Directional Coupler	DC2600	302981	8/9/2007
Solar Electronics	LISN	8012-50-R-24-BNC	892310	8/9/2007
Amplifier Research	Power Amplifier	100W1000M1	20214	9/5/2007
Dickson	Temperature/ RH Recorder	THDX	5300245	9/15/2007
Amplifier Research	Power Amplifier	150A100A	20183	9/20/2007
Tegam	Current Probe	925236-1	12588	9/20/2007
Hewlett Packard	Signal Generator	HP 8648D	3642000145	10/11/2007
Haefely Trench	EFT Tester	PEFT Junior	583-333-51	12/12/2007
Haefely Trench	Surge Coupler	FP-Surge 32.1	083-925-05	12/12/2007
Haefely Trench	Surge Generator	PSURGE 6.1	083-906-07	12/12/2007
Haefely Trench	Interrupter tester	Pline 1610	083-970-07	12/12/2007
Hewlett Packard	Tracking Generator	HP85645A	3210A00124	12/26/2007
Haefely Trench	ESD Gun	PESD 1600	H605100	1/25/2008
Hewlett Packard	Spectrum Analyzer Display	HP 85662A	2403A07322	2/4/2008
Hewlett Packard	Quasi Peak Adapter	85650A	2403A07322	2/4/2008
Hewlett Packard	Spectrum Analyzer	HP 8566B	2421A00527	2/4/2008
Hewlett Packard	Pulse Generator	HP 8116A	2901G09493	2/22/2008

7.0 APPENDIX E: TEST DIRECTIVES, STANDARDS AND METHODS

7.1.1 EUROPEAN DIRECTIVES, STANDARDS AND METHODS

89/336/EEC: Council Directive of 03 May 1989 on the Approximation of the Laws of the Member States Relating to Electromagnetic Compatibility, OJEC No. L 139/19-26, Aug 1993.

BS DD ENV 50204 (CENELEC): Testing and Measurement Techniques; Radiated Electromagnetic Field from Digital Radio Telephones - Immunity Test, 1996.

EN 55011 (CENELEC): ISM Radio-Frequency Equipment Radio Disturbance Characteristics - Limits and Methods of Measurement, with Amendments 1:1999 & A2, 2002.

EN 55014-1 (CENELEC): Part 1. Electromagnetic Compatibility Requirements for Household Appliances, Electric Tools and Similar Apparatus - Part 1. Emission - Product Family Standard, 2006.

EN 55022 (CENELEC): ITE - Radio-Frequency Equipment Radio Disturbance Characteristics - Limits and Methods of Measurement, 2006.

EN 55024 (CENELEC): ITE - Immunity Characteristics - Limits and Methods of Measurement, 2003.

EN 55103-1: Product Family standard for audio, video, audio - visual and entertainment lighting control apparatus for professional use. Part 1: Emissions, April 1997.

EN 55103-2: Product Family standard for audio, video, audio - visual and entertainment lighting control apparatus for professional use. Part 2: Immunity, April 1997.

EN 60601-1-2 (CENELEC): Medical Electrical Equipment. Part 1. General Requirements for Safety - Section 1.2. Collateral Standard: Electromagnetic Compatibility - Requirements and Tests, A1:2006.

EN 61000-6-2: EMC- Part 6-2. Generic Standard-Immunity for Industrial Environments, 2005.

EN 61000-6-3: EMC- Part 6-3. Generic Standard-Emissions for residential, commercial and light-industrial Environments 2007.

EN61000-6-4 (CENELEC): EMC - Generic Emission Standard, Part 6-4: Industrial Environment, 23 October 2001.

EN 61000-3-2 (CENELEC): EMC - Part 2. Limits for Harmonic Current Emissions (Equipment Input Current ≤ 16 A per phase), with Amendment 14, 2006.

EN 61000-3-3 (CENELEC): EMC - Part 3. Limitation of Voltage Fluctuation and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤ 16 A, 1998, A1:2001, A2:2006.

EN 61000-4-7 (CENELEC): EMC – Part 4-7 Testing and measurement techniques – General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto: 2002, incorporating corrigenda Nos. 1:2004 and 2:2005.

EN 61000-4-2 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 2. Electrostatic Discharge Immunity Test, with Amendments 1 & 2, 2001.

EN 61000-4-3 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 3. Radiated, Radio-Frequency, Electromagnetic Field Immunity, 2006.

EN 61000-4-4 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 4. Electrical Fast Transient/Burst Immunity Test, incorporating corrigendum no. 1: January 2007.

EN 61000-4-5 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 5. Surge Immunity Test, 2006.

EN 61000-4-6 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 6. Immunity to Conducted Disturbances, Induced by Radio-Frequency Fields, 2005.

EN 61000-4-8 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 8. Power Frequency Magnetic Field Immunity Test, 1993 with the incorporation of amendment A1:2001.

EN 61000-4-11 (CENELEC): EMC - Part 4. Testing and Measurement Techniques; Section 11. Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests, 2004

EN 61326 (CENELEC): Electrical Equipment for Measurement, Control and Laboratory Use - EMC Requirements, 1997, with the incorporation of amendments A1:1998, A2:2001 and A3:2003.

7.1.2 47 CFR FCC PART 15 RADIO FREQUENCY DEVICES: OCT 2006

Subpart A General.

Subpart B Unintentional Radiators.

Subpart C Intentional Radiators.

Subpart D Unlicensed Personal Communications Service Devices.

7.1.3 47 CFR FCC PART 22 PUBLIC MOBILE SERVICES: OCT 2006

7.1.4 47 CFR FCC PART 24 PERSONAL COMMUNICATIONS SERVICES: OCT 2006

7.1.5 JAPAN

VCCI V-3

7.1.6 CANADA

ICES-001: Interference-Causing Equipment Standard - ISM RF Generators, 2006.

ICES-003: Interference-Causing Equipment Standard - Digital Apparatus, 2004.

7.1.7 AUSTRALIA/NEW ZEALAND

SAA AS/NZ 3548: Limits and Methods of Measurement of Radio Disturbance Characteristics of ITE, 1997.

AS/NZS CISPR22

7.1.8 CHINA

CNS13438, 1997.

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