FCC PART 15, SUBPART C
TEST METHOD: ANSI C63.4-1992

for

TRANSMITTER

P/N: V-KEYFOB

Prepared for

NAPCO SECURITY SYSTEMS, INC.
333 BAYVIEW AVENUE
AMITYVILLE, NEW YORK 11701

Prepared by: _____

KYLE FUJIMOTO

Approved by: _____

SCOTT McCUTCHAN

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

DATE: DECEMBER 22, 2000

	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 in any form unless done so in full with the written permission of Compatible Electronics.

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

Device Tested:	Transmitter P/N: V-KEYFOB S/N: N/A
Product Description:	See Expository Statement.
Modifications:	The EUT was not modified during the testing.
Customer:	NAPCO Security Systems, Inc. 333 Bayview Avenue Amityville, New York 11701
Manufacturer:	Data Storm, Inc. 8334 Foothill Blvd. Sunland, California 91040
Test Date:	November 2, 2000
Test Specifications:	EMI requirements CFR Title 47, Part 15 Subpart C, Sections 15.205, 15.209, and 15.231
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	This test was not performed because the EUT runs off one 12 V battery only and cannot be powered by any device that runs off of the AC public mains.
2	Radiated RF Emissions, 10 kHz - 4500 MHz	Complies with the of CFR Title 47, Part 15 Subpart C, sections 15.205, 15.209, and 15.231

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Transmitter P/N: V-KEYFOB. 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 15.231.

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 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

NAPCO Security Systems, Inc.

Alan Shaw	Digital Controls VP

Data Storm, Inc.

Timothy Choi	General Manager, Chief Engineer

Compatible Electronics Inc.

Kyle Fujimoto	Test Engineer
Scott McCutchan	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on November 2, 2000.

2.5 Disposition of the Test Sample

The test sample was returned to NAPCO Security Systems, Inc. on November 3, 2000.

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
CFR	Code of Federal Regulations

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 (including digital 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 Transmitter P/N: V-KEYFOB (EUT) was tested as a stand alone unit and tested in three different orthogonal axis. The EUT was continuously transmitting during the test. The antenna is a PCB trace. The EUT turns immediately off after the button is released.

Final radiated data was taken in the mode above.

4.1.1 Cable Construction and Termination

There were no cables attached to the EUT.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	PART NUMBER	SERIAL NUMBER	FCC ID
TRANSMITTER (EUT)	NAPCO SECURITY SYSTEMS, INC.	V-KEYFOB	N/A	**AD8VKEYFOB**

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Spectrum Analyzer	Hewlett Packard	8566B	3701A22262	June 24, 2000	June 24, 2001
Preamplifier	Com Power	PA-102	1017	Jan. 11, 2000	Jan. 11, 2001
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	June 24, 2000	June 24, 2001
RF Attenuator	Weinschel Corp.	2	BJ6394	Aug. 2, 2000	Aug. 2, 2001
LISN	Com Power	LI-215	12075	Nov. 13, 2000	Nov. 13, 2001
LISN	Com Power	LI-215	12078	Nov. 13, 2000	Nov. 13, 2001
Biconical Antenna	Com Power	AB-100	1548	Oct. 16, 2000	Oct. 16, 2001
Log Periodic Antenna	Com Power	AL-100	16101	Oct. 16, 2000	Oct. 16, 2001
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	HP98561A	2522A05178	N/A	N/A
Printer	Hewlett Packard	2225A	2925S33268	N/A	N/A
Plotter	Hewlett Packard	7440A	8726K38417	N/A	N/A
Microwave Preamplifier	Com-Power	PA-122	25195	Jan. 13, 2000	Jan. 13, 2001
Horn Antenna	Antenna Research	DRG-118/A	1053	Dec. 8, 1995	N/A
Loop Antenna	Com-Power	AL-130	25309	May 25, 2000	May 25, 2001

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 PA-122 Microwave Preamplifier 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. The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets. 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 4.5 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 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.

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 transmitter. A plot of the -20 dB bandwidth is in Appendix D.

8. CONCLUSIONS

The Transmitter P/N: V-KEYFOB meets all of the specification limits defined in CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209, and 15.231.

APPENDIX A

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 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.

Modifications:

No modifications were made to the EUT.

APPENDIX B

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

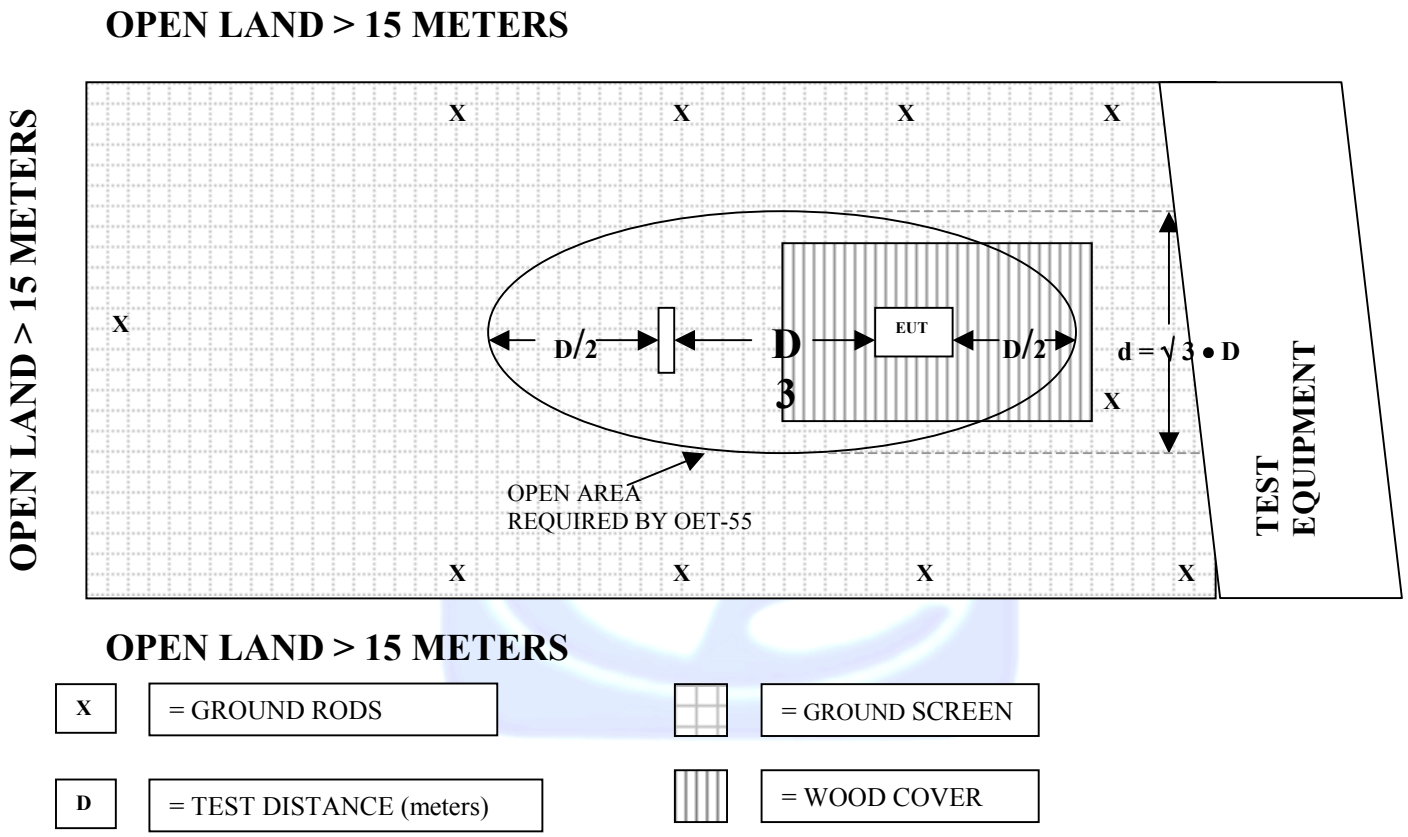
USED FOR THE PRIMARY TEST	Transmitter P/N: V-KEYFOB S/N: N/A

There were no additional models covered under this report.

APPENDIX C

DIAGRAMS, CHARTS AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED SITE



FRONT VIEW

NAPCO SECURITY SYSTEMS, INC.
TRANSMITTER
P/N: V-KEYFOB
FCC SUBPART C - RADIATED EMISSIONS – 11-2-00

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

NAPCO SECURITY SYSTEMS, INC.
TRANSMITTER
P/N: V-KEYFOB
FCC SUBPART C - RADIATED EMISSIONS – 11-2-00

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

COM-POWER AB-100

BICONICAL ANTENNA

S/N: 01548

CALIBRATION DATE: OCTOBER 16, 2000

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	14.01	120	10.33
35	13.63	125	11.61
40	13.26	140	12.70
45	11.62	150	12.95
50	11.03	160	13.58
60	8.52	175	14.82
70	8.94	180	14.84
80	8.17	200	14.80
90	8.08	250	16.42
100	8.64	300	20.26

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16101

CALIBRATION DATE: OCTOBER 16, 2000

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.96	700	19.24
400	16.92	800	21.37
500	16.73	900	22.13
600	16.32	1000	22.19

COM-POWER PA-102

PREAMPLIFIER

S/N: 1017

CALIBRATION DATE: JANUARY 11, 2000

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	38.3	300	38.6
40	38.6	350	38.6
50	38.7	400	38.6
60	38.8	450	38.1
70	38.9	500	37.9
80	38.8	550	39.2
90	38.6	600	38.3
100	38.6	650	38.4
125	38.8	700	38.3
150	38.8	750	38.2
175	38.7	800	37.7
200	38.8	850	37.5
225	38.6	900	37.5
250	38.6	950	37.7
275	38.5	1000	37.3

COM-POWER PA-122

MICROWAVE PREAMPLIFIER

S/N: 25195

CALIBRATION DATE: JANUARY 13, 2000

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	34.4	9.0	30.7
1.1	34.1	9.5	31.5
1.2	34.2	10.0	31.0
1.3	34.1	10.5	31.4
1.4	33.9	11.0	30.7
1.5	33.8	11.5	29.5
1.6	33.0	12.0	27.8
1.7	33.3	12.5	31.4
1.8	33.3	13.0	31.0
1.9	31.9	13.5	31.0
2.0	32.7	14.0	31.5
2.5	31.8	14.5	30.2
3.0	31.7	15.0	29.2
3.5	31.9	15.5	30.1
4.0	31.0	16.0	29.0
4.5	31.4	16.5	27.8
5.0	31.1	17.0	30.8
5.5	31.0	17.5	31.5
6.0	32.0	18.0	30.8
6.5	31.6		
7.0	32.3		
7.5	32.9		
8.0	32.1		
8.5	31.6		

ANTENNA RESEARCH ASSOCIATES, INC.
11317 Frederick Avenue, Beltsville, MD 20705

E-FIELD ANTENNA FACTOR CALIBRATION

E(dB V/m) = Vo(dB V) + AFE(dB/m)

Model number : DRG-118/A

Frequency GHz	AFE dB/m	Gain dBi
1	22.3	8.0
2	26.7	9.5
3	29.7	10.1
4	29.5	12.8
5	32.3	12.0
6	32.4	13.4
7	36.1	11.0
8	37.4	10.9
9	36.8	12.5
10	39.5	10.7
11	39.6	11.5
12	39.8	12.0
13	39.7	12.8
14	41.8	11.3
15	41.9	11.9
16	38.1	16.3
17	41.0	13.9
18	46.5	8.9

Serial number : 1053
Job number : 96-092
Remarks : 3 meter calibration
Standards : LPD-118/A, TE-1000

Temperature : 72° F
Humidity : 56 %
Traceability : A01887
Date : December 08, 1995

Calibrated By

Com-Power Corporation

(949) 587-9800

Antenna Calibration

Antenna Type:	Loop Antenna
Model:	AL-130
Serial Number:	25309
Calibration Date:	05/25/00

Frequency MHz	Magnetic (dB/m)	Electric dB/m
0.009	-41.0	10.5
0.01	-41.0	10.5
0.02	-41.9	9.6
0.05	-41.9	9.6
0.075	-41.8	9.7
0.1	-42.2	9.3
0.15	-42.2	9.3
0.25	-40.7	10.8
0.5	-42.1	9.4
0.75	-40.9	10.6
1	-41.3	10.2
2	-40.8	10.7
3	-41.1	10.4
4	-41.2	10.3
5	-40.7	10.8
10	-40.6	10.9
15	-42.0	9.5
20	-42.0	9.5
25	-42.9	8.6
30	-42.3	9.2

Trans. Antenna Height	2 meter
Receiving Antenna Height	2 meter

APPENDIX D

DATA SHEETS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
433.9200	59.8	48.6 A	H	1.0	90	X	LOW	16.9	2.8	0.0	**68.2**	**-12.6**	**80.8**	
433.9200	49.2	38.0 A	H	1.0	0	Y	LOW	16.9	2.8	0.0	**57.6**	**-23.2**	**80.8**	
433.9200	55.7	44.5 A	H	1.0	0	Z	LOW	16.9	2.8	0.0	**64.1**	**-16.7**	**80.8**	
433.9200	44.9	33.7 A	V	1.5	90	X	LOW	16.9	2.8	0.0	**53.3**	**-27.5**	**80.8**	
433.9200	59.4	48.2 A	V	1.5	90	Y	LOW	16.9	2.8	0.0	**67.8**	**-13.0**	**80.8**	
433.9200	56.9	45.7 A	V	1.0	90	Z	LOW	16.9	2.8	0.0	**65.3**	**-15.5**	**80.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
867.8400	78.2	67.0 A	H	2.0	90	X	LOW	21.9	4.5	37.5	**55.9**	**-4.9**	**60.8**	
867.8400	74.7	63.5 A	H	3.5	90	Y	LOW	21.9	4.5	37.5	**52.4**	**-8.4**	**60.8**	
867.8400	77.5	66.3 A	H	2.5	90	Z	LOW	21.9	4.5	37.5	**55.2**	**-5.6**	**60.8**	
867.8400	78.3	67.1 A	V	2.0	90	X	LOW	21.9	4.5	37.5	**56.0**	**-4.8**	**60.8**	
867.8400	81.2	70.0 A	V	1.0	90	Y	LOW	21.9	4.5	37.5	**58.9**	**-1.9**	**60.8**	
867.8400	76.2	65.0 A	V	3.0	90	Z	LOW	21.9	4.5	37.5	**53.9**	**-6.9**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
1301.7600	66.9	55.7 A	H	1.5	90	X	LOW	22.3	2.7	34.1	**46.6**	**-7.4**	**54.0**	
1301.7600	58.6	47.4 A	H	2.0	90	Y	LOW	22.3	2.7	34.1	**38.3**	**-15.7**	**54.0**	
1301.7600	62.1	50.9 A	H	1.5	90	Z	LOW	22.3	2.7	34.1	**41.8**	**-12.2**	**54.0**	
1301.7600	61.0	49.8 A	V	1.0	90	X	LOW	22.3	2.7	34.1	**40.7**	**-13.3**	**54.0**	
1301.7600	63.3	52.1 A	V	2.0	90	Y	LOW	22.3	2.7	34.1	**43.0**	**-11.0**	**54.0**	
1301.7600	58.0	46.8 A	V	1.0	90	Z	LOW	22.3	2.7	34.1	**37.7**	**-16.3**	**54.0**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
1735.6800	70.7	59.5 A	H	1.0	90	X	LOW	24.5	3.2	33.3	**53.9**	**-6.9**	**60.8**	
1735.6800	53.5	42.3 A	H	1.0	90	Y	LOW	24.5	3.2	33.3	**36.7**	**-24.1**	**60.8**	
1735.6800	54.9	43.7 A	H	1.0	90	Z	LOW	24.5	3.2	33.3	**38.1**	**-22.7**	**60.8**	
1735.6800	61.9	50.7 A	V	1.5	90	Y	LOW	24.5	3.2	33.3	**45.1**	**-15.7**	**60.8**	
1735.6800	73.5	62.3 A	V	1.0	90	Y	LOW	24.5	3.2	33.3	**56.7**	**-4.1**	**60.8**	
1735.6800	59.8	48.6 A	V	1.0	90	Z	LOW	24.5	3.2	33.3	**43.0**	**-17.8**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
1735.6800	70.7	59.5 A	H	1.0	90	X	LOW	24.5	3.2	33.3	**53.9**	**-6.9**	**60.8**	
1735.6800	53.5	42.3 A	H	1.0	90	Y	LOW	24.5	3.2	33.3	**36.7**	**-24.1**	**60.8**	
1735.6800	54.9	43.7 A	H	1.0	90	Z	LOW	24.5	3.2	33.3	**38.1**	**-22.7**	**60.8**	
1735.6800	61.9	50.7 A	V	1.5	90	Y	LOW	24.5	3.2	33.3	**45.1**	**-15.7**	**60.8**	
1735.6800	73.5	62.3 A	V	1.0	90	Y	LOW	24.5	3.2	33.3	**56.7**	**-4.1**	**60.8**	
1735.6800	59.8	48.6 A	V	1.0	90	Z	LOW	24.5	3.2	33.3	**43.0**	**-17.8**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
2169.6000	64.6	53.4 A	H	3.0	90	X	LOW	26.7	3.5	32.7	**50.9**	**-9.9**	**60.8**	
2169.6000	50.5	39.3 A	H	1.0	0	Y	LOW	26.7	3.5	32.7	**36.8**	**-24.0**	**60.8**	
2169.6000	48.8	37.6 A	H	1.5	90	Z	LOW	26.7	3.5	32.7	**35.1**	**-25.7**	**60.8**	
2169.6000	50.9	39.7 A	V	1.5	90	Y	LOW	26.7	3.5	32.7	**37.2**	**-23.6**	**60.8**	
2169.6000	64.7	53.5 A	V	1.0	90	Y	LOW	26.7	3.5	32.7	**51.0**	**-9.8**	**60.8**	
2169.6000	49.1	37.9 A	V	1.0	90	Z	LOW	26.7	3.5	32.7	**35.4**	**-25.4**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
2603.5200	56.5	45.3 A	H	1.0	90	X	LOW	28.2	4.5	31.8	**46.2**	**-14.6**	**60.8**	
2603.5200	50.9	39.7 A	H	2.0	180	Y	LOW	28.2	4.5	31.8	**40.6**	**-20.2**	**60.8**	
2603.5200	51.5	40.3 A	H	1.5	90	Z	LOW	28.2	4.5	31.8	**41.2**	**-19.6**	**60.8**	
2603.5200	48.3	37.1 A	V	1.0	90	X	LOW	28.2	4.5	31.8	**38.0**	**-22.8**	**60.8**	
2603.5200	62.8	51.6 A	V	2.0	180	Y	LOW	28.2	4.5	31.8	**52.5**	**-8.3**	**60.8**	
2603.5200	53.0	41.8 A	V	1.5	90	Z	LOW	28.2	4.5	31.8	**42.7**	**-18.1**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
3037.4400	58.5	47.3 A	H	1.0	90	X	LOW	29.7	4.6	31.7	**49.9**	**-10.9**	**60.8**	
3037.4400	46.1	34.9 A	H	2.0	90	Y	LOW	29.7	4.6	31.7	**37.5**	**-23.3**	**60.8**	
3037.4400	44.7	33.5 A	H	1.0	90	Z	LOW	29.7	4.6	31.7	**36.1**	**-24.7**	**60.8**	
3037.4400	46.5	35.3 A	V	1.5	90	X	LOW	29.7	4.6	31.7	**37.9**	**-22.9**	**60.8**	
3037.4400	62.7	51.5 A	V	3.0	90	Y	LOW	29.7	4.6	31.7	**54.1**	**-6.7**	**60.8**	
3037.4400	46.2	35.0 A	V	3.0	90	Z	LOW	29.7	4.6	31.7	**37.6**	**-23.2**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
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
3471.3600	47.9	36.7 A	H	1.0	90	X	LOW	29.6	5.0	31.9	**39.4**	**-21.4**	**60.8**	
3471.3600	40.8	29.6 A	H	1.0	90	Y	LOW	29.6	5.0	31.9	**32.3**	**-28.5**	**60.8**	
3471.3600	41.9	30.7 A	H	1.0	90	Z	LOW	29.6	5.0	31.9	**33.4**	**-27.4**	**60.8**	
3471.3600	39.3	28.1 A	V	1.0	90	X	LOW	29.6	5.0	31.9	**30.8**	**-30.0**	**60.8**	
3471.3600	48.6	37.4 A	V	1.0	90	Y	LOW	29.6	5.0	31.9	**40.1**	**-20.7**	**60.8**	
3471.3600	41.9	30.7 A	V	1.5	270	Z	LOW	29.6	5.0	31.9	**33.4**	**-27.4**	**60.8**	

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

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

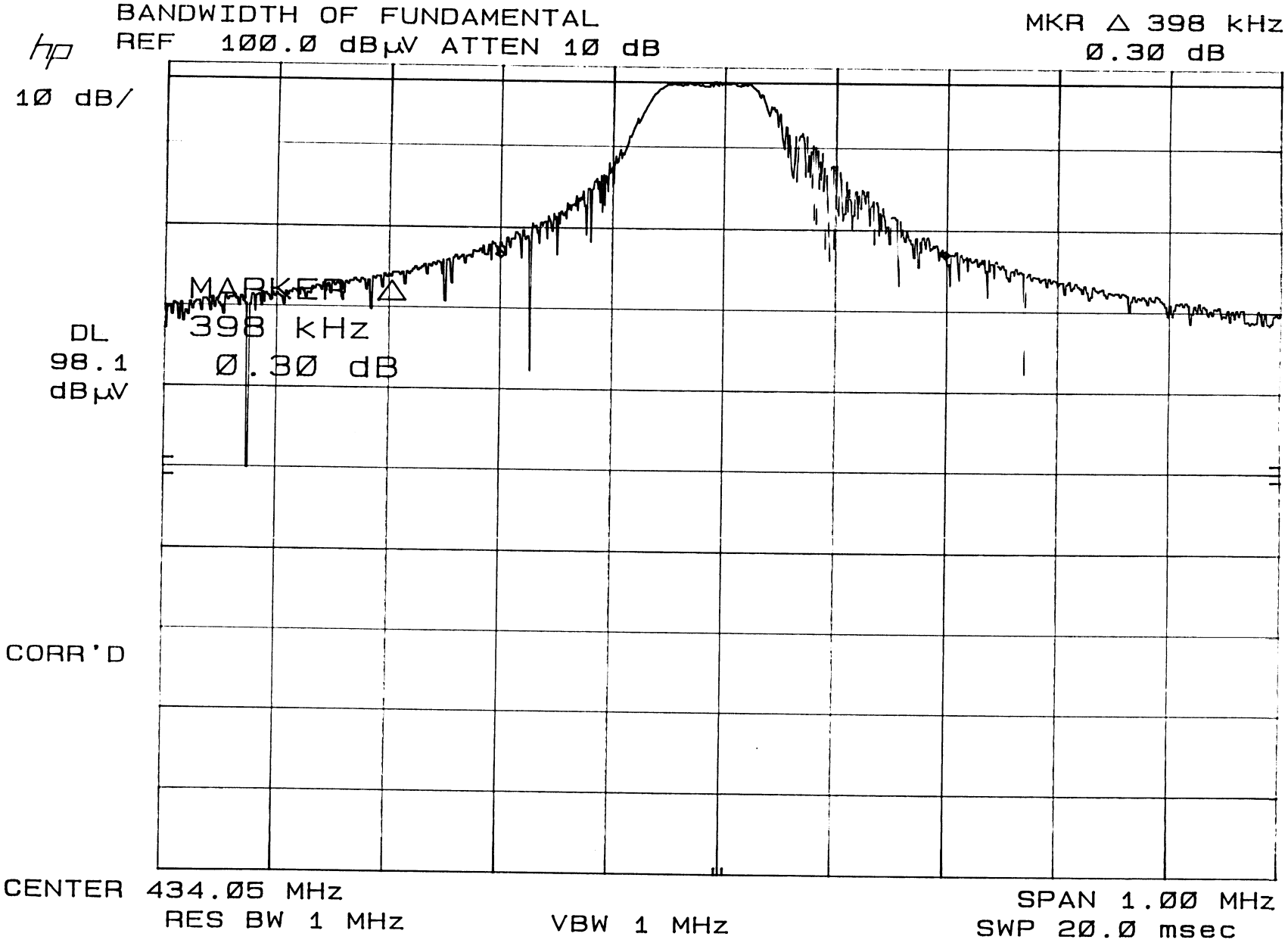
COMPANY	**NAPCO SECURITY SYSTEMS, INC.**	**DATE**	**11/2/00**
EUT	**TRANSMITTER**	**DUTY CYCLE**	**27.60 %**
MODEL	**P/N: VKEYFOB**	**PEAK TO AVG**	**-11.18 dB**
S/N	**N/A**	**TEST DIST.**	**3 METERS**
TEST ENGINEER	**KYLE FUJIMOTO**	**LAB**	**D**

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
3905.2800	50.1	38.9 A	H	3.0	90	X	LOW	29.5	5.1	31.0	**42.5**	**-11.5**	**54.0**	
3905.2800	41.0	29.8 A	H	1.0	90	Y	LOW	29.5	5.1	31.0	**33.4**	**-20.6**	**54.0**	
3905.2800	42.1	30.9 A	H	1.0	90	Z	LOW	29.5	5.1	31.0	**34.5**	**-19.5**	**54.0**	
3905.2800	40.8	29.6 A	V	1.0	90	X	LOW	29.5	5.1	31.0	**33.2**	**-20.8**	**54.0**	
3905.2800	45.8	34.6 A	V	1.0	90	Y	LOW	29.5	5.1	31.0	**38.2**	**-15.8**	**54.0**	
3905.2800	41.5	30.3 A	V	1.0	270	Z	LOW	29.5	5.1	31.0	**33.9**	**-20.1**	**54.0**	

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

Test location: Compatible Electronics
Customer : NAPCO SECURITY SYSTEMS, INC. Date : 11/ 2/2000
Manufacturer : NAPCO SECURITY SYSTEMS, INC. Time : 16.52
EUT name : TRANSMITTER P/N: VKEYFOB
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
VERTICAL AND HORIZONTAL POLARIZATION – 10 kHz to 4500 MHz
TEMPERATURE 70 DEGREES F.
RELATIVE HUMIDITY 25%
TESTED BY: KYLE FUJIMOTO

NO SPURIOUS EMISSIONS FOUND FOR EITHER
POLARIZATION FROM 10 kHz TO 4500 MHz FOR THE EUT


BANDWIDTH OF FUNDAMENTAL
REF 100.0 dBμV ATTEN 10 dB
MKR Δ 398 kHz
0.30 dB
10 dB/
MARKER 1 Δ
398 kHz
0.30 dB
DL
98.1
dBμV
CORR'D
CENTER 434.05 MHz
RES BW 1 MHz
VBW 1 MHz
SPAN 1.00 MHz
SWP 20.0 msec