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

for

REMOTE COMMAND UNIT
P/N: CMD-HHTX-433

Prepared for

LINX TECHNOLOGIES
575 SE ASHLEY PLACE
GRANTS PASS, OREGON 97526

Prepared by:_____

KYLE FUJIMOTO

Approved by:_____

MICHAEL CHRISTENSEN

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

DATE: JULY 27, 2001

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
PAGES	16	2	2	10	14	2	**46**

TABLE OF CONTENTS

LIST OF APPENDICES

APPENDIX	TITLE
A	Modifications to the EUT
B	Additional Models Covered Under This Report
C	Diagrams, Charts and Photos • Test Setup Diagrams • Radiated Emissions Photos • Antenna and Effective Gain Factors
D	Data Sheets
E	Laboratory Recognitions

LIST OF FIGURES

FIGURE	TITLE
1	Plot Map And Layout of Radiated Site

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: Remote Command Unit
P/N: CMD-HHTX-433
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was not modified during the testing.

Manufacturer: Linx Technologies
575 Ashley Place
Grants Pass, Oregon 97526

Test Date: July 27, 2001

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 operates on batteries only and does not connect to the AC public mains.
2	Radiated RF Emissions, 10 kHz - 3200 MHz	Complies with the limits 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 Remote Command Unit P/N: CMD-HHTX-433. 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

Linx Technologies

Paul True President

Compatible Electronics Inc.

Kyle Fujimoto Test Engineer
Michael Christensen Test Engineer

2.4 Date Test Sample was Received

The test sample was received on July 20, 2001

2.5 Disposition of the Test Sample

The test sample has not been returned to Linx Technologies as of July 27, 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 (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

The Remote Command Unit P/N: CMD-HHTX-433 (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 Linx Technologies "Splatch" series permanently attached internal element. The EUT turns immediately after the button is released.

Final radiated data was taken in the mode above.

4.1.1 Cable Construction and Termination

Cable 1 This is a six inch unshielded cable connecting cable #2 with the EUT. It is hard wired at each end.

Cable 2 This is a six inch unshielded cable connecting cable #1 with the EUT. It is hard wired at each end.

Note: The cables mentioned above are only on the EUT so that the EUT may transmit continuously without having to press a button on the EUT. These cables will NOT be on the EUT under normal usage.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	PART NUMBER	SERIAL NUMBER	FCC ID
REMOTE COMMAND UNIT (EUT)	LINX TECHNOLOGIES	CMD-HHTX-433	N/A	OJM-CMDHHTX-433

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
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
Preamplifier	Com Power	PA-102	1017	Jan. 5, 2001	Jan. 5, 2002
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	June 15, 2001	June 15, 2002
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. 9, 2001	Jan. 9, 2002
Horn Antenna	Antenna Research	DRG-118/A	1053	Jan. 15, 2001	Jan. 15, 2002
Loop Antenna	Com-Power	AL-130	25309	May 21, 2001	May 21, 2002
Radiated Emission Manual Test Software	Compatible Electronics, Inc.	N/A	N/A	N/A	N/A

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to section 2.1 and 7.2 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

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

The EUT was not grounded.

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 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 1992. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

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

Test Results:

This test was not performed because the EUT operates on batteries only and cannot be plugged into the AC public mains.

7.2 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 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. 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 3.20 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 by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

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

8. CONCLUSIONS

The Remote Command Unit P/N: CMD-HHTX-433 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

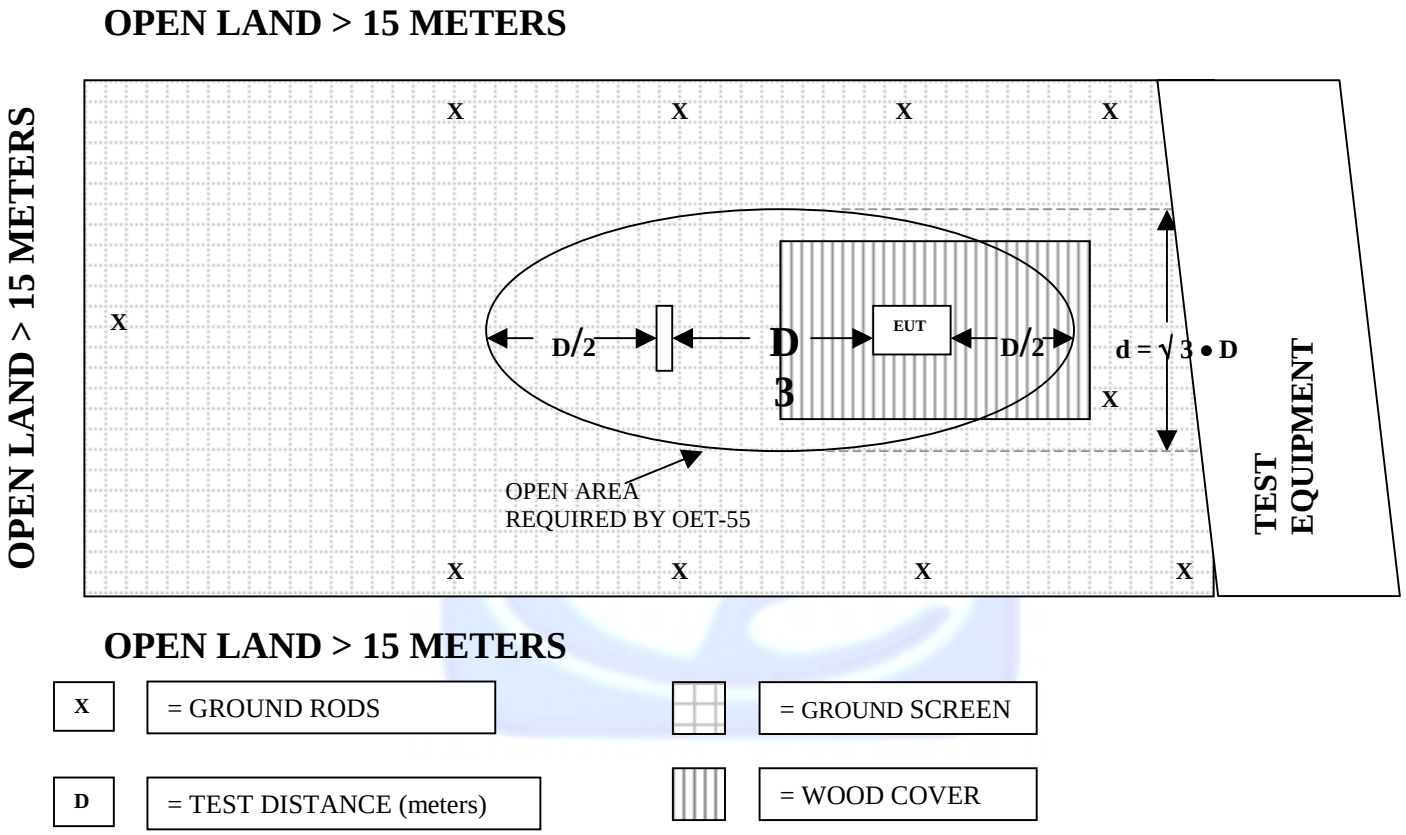
USED FOR THE PRIMARY TEST	Remote Command Unit P/N: CMD-HHTX-433 S/N: N/A

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

LINX TECHNOLOGIES
REMOTE COMMAND UNIT
P/N: CMD-HHTX-433
FCC SUBPART C - RADIATED EMISSIONS – 07-27-01

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

LINX TECHNOLOGIES
REMOTE COMMAND UNIT
P/N: CMD-HHTX-433
FCC SUBPART C - RADIATED EMISSIONS – 07-27-01

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 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:		25309
Calibration Date:	(mm/dd/yy)	05/21/01
Certificate Number:		071014-R

Frequency MHz	Magnetic (dB/m)	Electric dB/m
0.009	-40.2	11.3
0.01	-40.2	11.3
0.02	-40.9	10.6
0.03	-39.3	12.2
0.04	-39.7	11.8
0.05	-41.0	10.5
0.06	-40.6	10.9
0.07	-40.8	10.7
0.08	-41.1	10.4
0.09	-41.2	10.3
0.1	-41.2	10.3
0.2	-43.5	8.0
0.3	-41.1	10.4
0.4	-41.0	10.5
0.5	-41.0	10.5
0.6	-40.9	10.6
0.7	-40.8	10.7
0.8	-40.8	10.7
0.9	-40.8	10.7
1	-40.3	11.2
2	-39.7	11.8
3	-40.0	11.5
4	-40.2	11.3
5	-39.6	11.9
6	-39.6	11.9
7	-40.0	11.5
8	-40.3	11.2
9	-39.8	11.7
10	-40.6	10.9
12	-40.7	10.8
14	-40.6	10.9
15	-40.7	10.8
16	-40.7	10.8
18	-40.8	10.7
20	-41.6	9.9
25	-42.8	8.7
30	-43.3	8.2

Separation Distance:	1 meter

APPENDIX D

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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	63.0	56.7 A	H	1.0	180	X		13.6	2.9	0.0	**73.2**	**-7.6**	**80.8**	
433.9200	46.7	40.4 A	H	1.5	90	Y		13.6	2.9	0.0	**56.9**	**-23.9**	**80.8**	
433.9200	58.4	52.1 A	H	1.0	0	Z		13.6	2.9	0.0	**68.6**	**-12.2**	**80.8**	
433.9200	53.3	47.0 A	V	1.0	90	X		13.6	2.9	0.0	**63.5**	**-17.3**	**80.8**	
433.9200	60.2	53.9 A	V	1.5	270	Y		13.6	2.9	0.0	**70.4**	**-10.4**	**80.8**	
433.9200	57.6	51.3 A	V	1.5	90	Z		13.6	2.9	0.0	**67.8**	**-13.0**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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	56.0	49.7 A	H	1.0	90	X		21.9	4.8	37.9	**38.5**	**-22.3**	**60.8**	
867.8400	54.3	48.0 A	H	1.0	0	Y		21.9	4.8	37.9	**36.8**	**-24.0**	**60.8**	
867.8400	55.6	49.3 A	H	1.0	270	Z		21.9	4.8	37.9	**38.1**	**-22.7**	**60.8**	
867.8400	55.8	49.5 A	V	1.0	180	X		21.9	4.8	37.9	**38.3**	**-22.5**	**60.8**	
867.8400	56.1	49.8 A	V	1.5	90	Y		21.9	4.8	37.9	**38.6**	**-22.2**	**60.8**	
867.8400	57.5	51.2 A	V	1.5	90	Z		21.9	4.8	37.9	**40.0**	**-20.8**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
1301.4000	54.2	47.9 A	H	1.0	90	X		26.2	2.6	33.0	**43.7**	**-10.3**	**54.0**	
1301.4000	59.1	52.8 A	H	1.0	270	Y		26.2	2.6	33.0	**48.6**	**-5.4**	**54.0**	
1301.4000	57.6	51.3 A	H	1.0	0	Z		26.2	2.6	33.0	**47.1**	**-6.9**	**54.0**	
1301.4000	56.2	49.9 A	V	1.0	90	X		26.2	2.6	33.0	**45.7**	**-8.3**	**54.0**	
1301.4000	59.5	53.2 A	V	2.0	270	Y		26.2	2.6	33.0	**49.0**	**-5.0**	**54.0**	
1301.4000	59.4	53.1 A	V	2.0	90	Z		26.2	2.6	33.0	**48.9**	**-5.1**	**54.0**	

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

** DELTA = SPEC LIMIT - CORRECTED READING

RADIATED EMISSIONS (FCC SECTION 15.205 AND 15.231)

COMPANY	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
1735.5000	55.4	49.1 A	H	2.0	0	X	LOW	28.1	3.3	31.9	**48.6**	**-12.2**	**60.8**	
1735.5000	56.0	49.7 A	H	1.5	90	Y	LOW	28.1	3.3	31.9	**49.2**	**-11.6**	**60.8**	
1735.5000	53.1	46.8 A	H	2.0	0	Z	MID	28.1	3.3	31.9	**46.3**	**-14.5**	**60.8**	
1735.5000	52.8	46.5 A	V	1.0	0	X	MID	28.1	3.3	31.9	**46.0**	**-14.8**	**60.8**	
1735.5000	56.5	50.2 A	V	1.0	0	Y	HIGH	28.1	3.3	31.9	**49.7**	**-11.1**	**60.8**	
1735.5000	55.2	48.9 A	V	1.0	90	Z	HIGH	28.1	3.3	31.9	**48.4**	**-12.4**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
2169.3800	58.8	52.5 A	H	2.0	0	X		30.0	3.6	32.4	**53.7**	**-7.1**	**60.8**	
2169.3800	55.9	49.6 A	H	2.0	0	Y		30.0	3.6	32.4	**50.8**	**-10.0**	**60.8**	
2169.3800	57.6	51.3 A	H	2.0	0	Z		30.0	3.6	32.4	**52.5**	**-8.3**	**60.8**	
2169.3800	57.5	51.2 A	V	1.0	270	X		30.0	3.6	32.4	**52.4**	**-8.4**	**60.8**	
2169.3800	60.6	54.3 A	V	2.0	180	Y		30.0	3.6	32.4	**55.5**	**-5.3**	**60.8**	
2169.3800	58.8	52.5 A	V	2.0	90	Z		30.0	3.6	32.4	**53.7**	**-7.1**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
2603.2000	40.4	34.1 A	H	1.0	0	X		30.8	3.8	31.9	**36.8**	**-24.0**	**60.8**	
2603.2000	39.4	33.1 A	H	2.0	0	Y		30.8	3.8	31.9	**35.8**	**-25.0**	**60.8**	
2603.2000	36.8	30.5 A	H	1.0	0	Z		30.8	3.8	31.9	**33.2**	**-27.6**	**60.8**	
2603.2000	39.9	33.6 A	V	1.0	90	X		30.8	3.8	31.9	**36.3**	**-24.5**	**60.8**	
2603.2000	38.9	32.6 A	V	1.0	90	Y		30.8	3.8	31.9	**35.3**	**-25.5**	**60.8**	
2603.2000	39.4	33.1 A	V	1.0	0	Z		30.8	3.8	31.9	**35.8**	**-25.0**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
3037.2000	40.3	34.0 A	H	1.0	90	X		31.3	5.2	31.7	**38.8**	**-15.2**	**54.0**	
3037.2000	41.6	35.3 A	H	1.0	0	Y		31.3	5.2	31.7	**40.1**	**-13.9**	**54.0**	
3037.2000	40.6	34.3 A	H	1.0	0	Z		31.3	5.2	31.7	**39.1**	**-14.9**	**54.0**	
3037.2000	40.6	34.3 A	V	1.0	0	X		31.3	5.2	31.7	**39.1**	**-14.9**	**54.0**	
3037.2000	42.1	35.8 A	V	1.0	90	Y		31.3	5.2	31.7	**40.6**	**-13.4**	**54.0**	
3037.2000	41.3	35.0 A	V	1.0	90	Z		31.3	5.2	31.7	**39.8**	**-14.2**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
3471.1000	40.3	34.0 A	H	1.0	90	X		32.2	5.0	31.7	**39.5**	**-21.3**	**60.8**	
3471.1000	39.0	32.7 A	H	1.0	0	Y		32.2	5.0	31.7	**38.2**	**-22.6**	**60.8**	
3471.1000	40.6	34.3 A	H	1.0	0	Z		32.2	5.0	31.7	**39.8**	**-21.0**	**60.8**	
3471.1000	37.3	31.0 A	V	1.0	90	X		32.2	5.0	31.7	**36.5**	**-24.3**	**60.8**	
3471.1000	38.3	32.0 A	V	1.0	0	Y		32.2	5.0	31.7	**37.5**	**-23.3**	**60.8**	
3471.1000	39.8	33.5 A	V	1.0	180	Z		32.2	5.0	31.7	**39.0**	**-21.8**	**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	**LINX TECHNOLOGIES**	**DATE**	**7/24/01**
EUT	**REMOTE COMMAND UNIT - 433.92 MHz**	**DUTY CYCLE**	**48%**
P/N	**CMD-HHTX-433**	**PEAK TO AVG**	**6.30**
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
3905.0000	40.3	34.0 A	H	1.0	90	X	LOW	33.0	5.3	32.2	**40.2**	**-13.8**	**54.0**	
														NOTE: No Harmonic nor
														Emissions found after
3905.0000	39.3	33.0 A	H	1.0	90	Y	LOW	33.0	5.3	32.2	**39.2**	**-14.8**	**54.0**	**the 9th Harmonic**
3905.0000	36.5	30.2 A	H	1.0	90	Z	LOW	33.0	5.3	32.2	**36.4**	**-17.6**	**54.0**	
3905.0000	40.0	33.7 A	V	1.0	90	X	LOW	33.0	5.3	32.2	**39.9**	**-14.1**	**54.0**	
3905.0000	46.0	39.7 A	V	1.0	90	Y	LOW	33.0	5.3	32.2	**45.9**	**-8.1**	**54.0**	
3905.0000	39.8	33.5 A	V	1.0	90	Z	LOW	33.0	5.3	32.2	**39.7**	**-14.3**	**54.0**	

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

** DELTA = SPEC LIMIT - CORRECTED READING

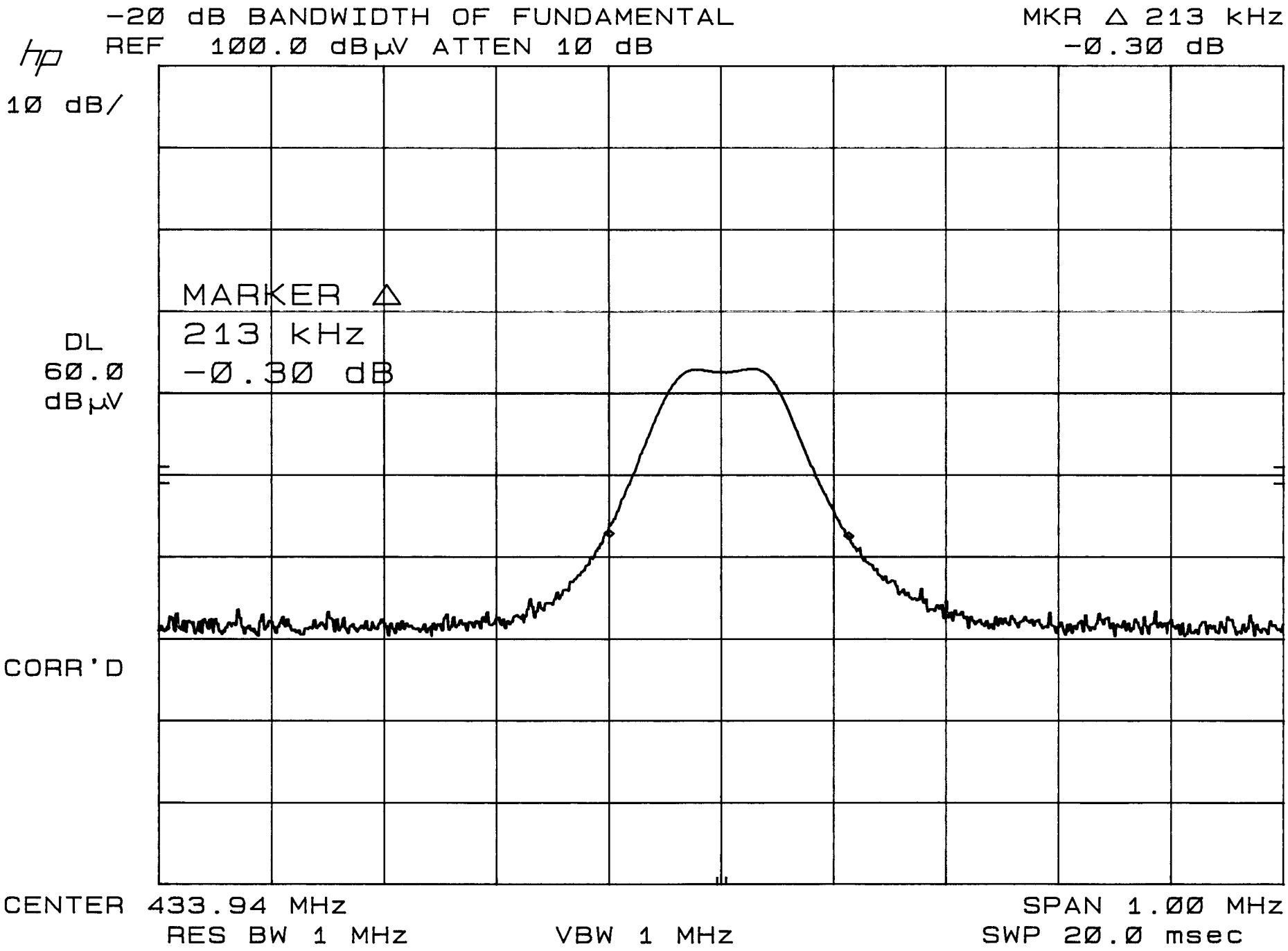
Test location: Compatible Electronics
Customer : LINX TECHNOLOGIES Date : 7/24/2001
Manufacturer : LINX TECHNOLOGIES . Time : 18.45
EUT name : REMOTE COMMAND UNIT – 433.92 MHz P/N: CMD-HHTX-433
Specification: Fcc_B Test distance: 3.0 mtrs Lab: D
Distance correction factor(20*log(test/spec)) : 0.00
Test Mode :
SPURIOUS EMISSIONS OF THE EUT
VERTICAL AND HORIZONTAL POLARIZATION 10 kHz to 30 MHz
TEMPERATURE 73 DEGREES F., RELATIVE HUMIDITY 45%
TESTED BY: KYLE FUJIMOTO

NO EMISSIONS FOUND FROM 10 kHz TO 30 MHz IN BOTH VERTICAL AND HORIZONTAL POLARIZATIONS FOR THE EUT

BANDWIDTH

DATA SHEETS

7-27-01


-20 dB BANDWIDTH OF FUNDAMENTAL
REF 100.0 dBµV ATTEN 10 dB
MKR Δ 213 kHz
-0.30 dB
10 dB/
MARKER Δ
213 kHz
-0.30 dB
DL
60.0
dBµV
CORR'D
CENTER 433.94 MHz
SPAN 1.00 MHz
RES BW 1 MHz
VBW 1 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)