

FCC PART 15, SUBPART B and C
TEST REPORT

for

LONG-RANGE HANDHELD TRANSMITTER

P/N: CMD-HHLR-xxx

Prepared for

LINX TECHNOLOGIES
575 S.E. ASHLEY PLACE
GRANTS PASS, OREGON 97526Prepared by: 

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DATE: APRIL 27, 2005

	REPORT BODY	APPENDICES					TOTAL
		<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	
PAGES	16	2	2	2	12	24	58

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TABLE OF CONTENTS

Section / Title	PAGE
GENERAL REPORT SUMMARY	4
SUMMARY OF TEST RESULTS	4
1. PURPOSE	5
2. ADMINISTRATIVE DATA	6
2.1 Location of Testing	6
2.2 Traceability Statement	6
2.3 Cognizant Personnel	6
2.4 Date Test Sample was Received	6
2.5 Disposition of the Test Sample	6
2.6 Abbreviations and Acronyms	6
3. APPLICABLE DOCUMENTS	7
4. DESCRIPTION OF TEST CONFIGURATION	8
4.1 Description of Test Configuration - EMI	8
4.1.1 Cable Construction and Termination	9
5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT	10
5.1 EUT and Accessory List	10
5.2 EMI Test Equipment	11
6. TEST SITE DESCRIPTION	12
6.1 Test Facility Description	12
6.2 EUT Mounting, Bonding and Grounding	12
7. TEST PROCEDURES	13
7.1 Radiated Emissions (Spurious and Harmonics) Test	13
7.2 Radiated Emissions (Spurious and Harmonics) Test (continued)	14
7.3 Bandwidth of the Fundamental	15
8. CONCLUSIONS	16



LIST OF APPENDICES

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

LIST OF FIGURES

FIGURE	TITLE
1	Plot Map And Layout of Radiated Test 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, NIST or any other agency of the U.S. Government.

Device Tested: Long-Range Handheld Transmitter
P/N: CMD-HHLR-xxx
S/N: N/A

Product Description: See Expository Statement.

Modifications: The EUT was modified during the testing. Please see the list located in Appendix B.

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

Test Dates: April 21, 22, and 25, 2005

Test Specifications: EMI requirements
CFR Title 47, Part 15 Subpart B; and Subpart C, Sections 15.205, 15.209, and 15.231

Test Procedure: ANSI C63.4: 2003

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

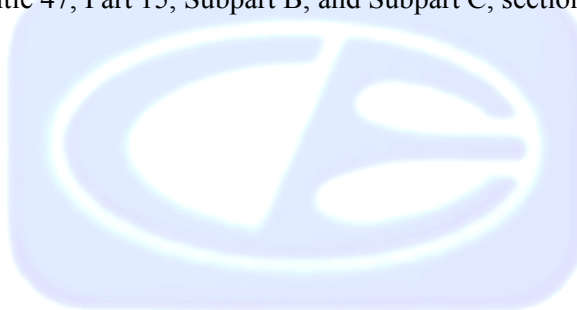
SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz	This test was not performed because the EUT operates on batteries only and cannot be plugged into the AC public mains.
2	Radiated RF Emissions, 10 kHz - 4400 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.
3	-20 dB Bandwidth of the Fundamental	Complies with the limits of Subpart C, sections 15.231 [c].



1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Long-Range Handheld Transmitter P/N: CMD-HHLR-xxx. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2003. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and 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
Justin Hopper	Engineer
Ammon Gomez	Senior Product Engineer

Compatible Electronics, Inc.

Kyle Fujimoto	Test Engineer
Benigno Chavez	Test Engineer
Andre Khan	Test Engineer
Michael Christensen	Lab Manager

2.4 Date Test Sample was Received

The test sample was received prior to its qualification testing on April 20, 2005.

2.5 Disposition of the Test Sample

The test sample has not been returned to Linx Technologies as of April 27, 2005.

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
PCB	Printed Circuit Board
TX	Transmit
RX	Receive



3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.4: 2003	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 Long-Range Handheld Transmitter P/N: CMD-HHLR-xxx (EUT) was tested as a stand alone unit and tested in three orthogonal axis. The EUT was continuously transmitting.

The antenna is an eight inch whip that is permanently attached to the device.

After the transmitter is activated by pressing the button, the transmission will cease operation once the button is released.

The EUT comes in three different versions, the 315 MHz version, the 418 MHz version, and the 433.92 MHz version.

Each version of the transmitter was tested separately.

The final radiated data was taken in the modes described above. Please see Appendix E for the data sheets.



4.1.1 Cable Construction and Termination

There were no external cables connected to the EUT.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
LONG-RANGE HANDHELD TRANSMITTER (EUT)	LINX TECHNOLOGIES	P/N: CMD-HHLR-xxx	N/A	TBD



5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiate Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Emissions Program	Compatible Electronics	2.3 (SR19)	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08784	June 16, 2004	June 16, 2005
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22279	June 16, 2004	June 16, 2005
Quasi-Peak Adapter	Hewlett Packard	85650A	2430A00424	June 16, 2004	June 16, 2005
Preamplifier	Com Power	PA-103	1582	February 5, 2005	Feb. 5, 2006
Biconical Antenna	Com Power	AB-900	15250	March 11, 2005	Mar. 11, 2006
Log Periodic Antenna	Com Power	AL-100	16202	February 17, 2005	Feb. 17, 2006
Computer	Hewlett Packard	D5251A 888	US74458128	N/A	N/A
Monitor	Hewlett Packard	D5258A	DK74889705	N/A	N/A
Loop Antenna	Com-Power	AL-130	17089	September 3, 2004	Sept. 3, 2005
Horn Antenna	Antenna Research	DRG-118/A	1053	January 16, 2004	Jan. 16, 2006
Microwave Preamplifier	Com-Power	PA-122	25195	February 25, 2005	Feb. 25, 2006
EMI Receiver	Rohde & Schwarz	ESIB40	100172	October 28, 2004	Oct. 28, 2005
Antenna Mast	Com-Power	AM-100	N/A	N/A	N/A
Turntable	Com-Power	TT-100	N/A	N/A	N/A
Antenna Mast	EMCO	2090	9609-1176	N/A	N/A



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 and EMI Receiver were 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-103 was used for frequencies from 30 MHz to 1 GHz, and the Com-Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer and EMI Receiver record the highest measured reading over all the sweeps.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 4.40 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: 2003. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results. The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.



7.2 Radiated Emissions (Spurious and Harmonics) Test (continued)

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

Test Results:

The EUT complies with the limits of CFR Title 47, Part 15, Subpart B; and Subpart C, section 15.205, 15.209 and 15.231 for radiated emissions.

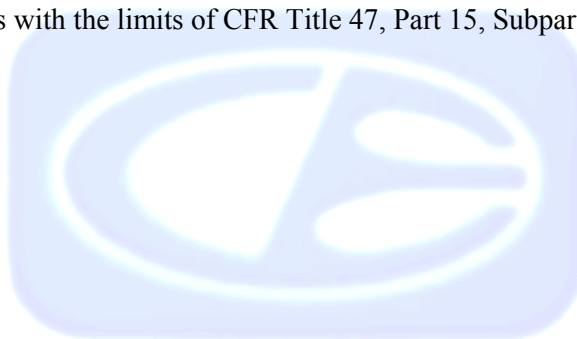


7.3 Bandwidth of the Fundamental

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

Test Results:

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



8. CONCLUSIONS

The Long-Range Handheld Transmitter P/N: CMD-HHLR-xxx meets all of the Class B specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.231.



APPENDIX A

LABORATORY RECOGNITIONS



LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

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

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

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

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)



APPENDIX B

MODIFICATIONS TO THE EUT



MODIFICATIONS TO THE EUT

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

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

- 1) Change R3 to 1800 ohms on the 315 MHz version
- 2) Change R3 to 2700 ohms on the 418 MHz version
- 3) Change R3 to 3600 ohms on the 433.92 MHz version



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***



ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Long-Range Handheld Transmitter
P/N: CMD-HHLR-xxx
S/N: N/A

There were no additional models covered under this report.



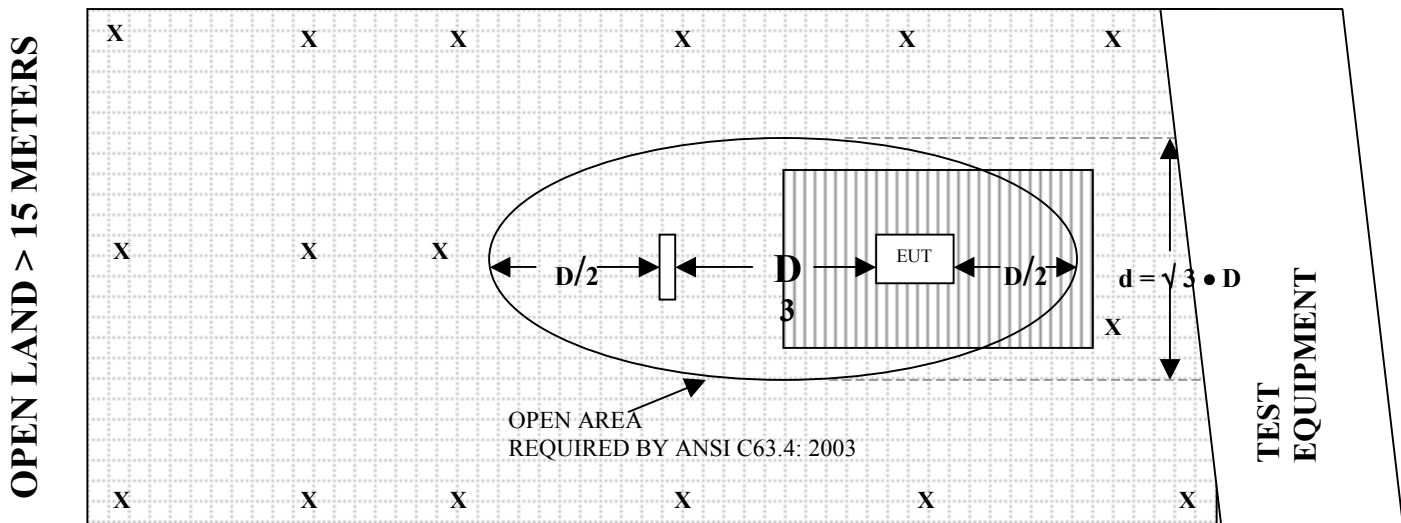
APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

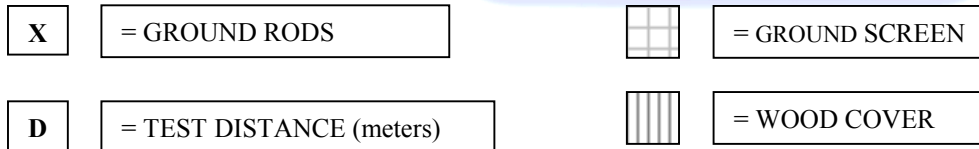


FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED TEST SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS



COM-POWER AB-900

BICONICAL ANTENNA

S/N: 15250

CALIBRATION DATE: MARCH 11, 2005

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	10.90	120	13.10
35	10.90	125	12.40
40	10.90	140	11.90
45	10.30	150	11.80
50	11.40	160	13.30
60	10.40	175	15.40
70	7.40	180	14.60
80	6.20	200	15.70
90	8.20	250	16.50
100	10.10	300	19.20



COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16202

CALIBRATION DATE: FEBRURY 17, 2005

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.70	700	19.20
400	13.70	800	19.40
500	16.00	900	21.50
600	16.50	1000	23.50



COM-POWER PA-103**PREAMPLIFIER****S/N: 1582****CALIBRATION DATE: FEBRUARY 3, 2005**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	33.2	300	33.0
40	33.0	350	32.8
50	33.1	400	32.8
60	33.0	450	32.8
70	33.2	500	32.5
80	33.2	550	32.5
90	33.1	600	32.4
100	33.2	650	32.4
125	33.1	700	32.3
150	33.0	750	32.2
175	33.0	800	32.2
200	33.0	850	32.4
225	33.0	900	31.8
250	33.0	950	32.3
275	32.9	1000	32.0



COM-POWER PA-122**MICROWAVE PREAMPLIFIER**

S/N: 25195

CALIBRATION DATE: FEBRUARY 25, 2005

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	31.45	6.0	31.35
1.1	31.34	6.5	31.10
1.2	31.29	7.0	30.54
1.3	31.28	7.5	29.72
1.4	31.25	8.0	29.22
1.5	31.21	8.5	28.75
1.6	31.14	9.0	28.67
1.7	31.07	9.5	29.14
1.8	31.12	10.0	30.12
1.9	31.04	11.0	29.30
2.0	31.20	12.0	29.86
2.5	31.56	13.0	30.57
3.0	32.17	14.0	29.90
3.5	32.56	15.0	30.14
4.0	32.51	16.0	31.13
4.5	32.52	17.0	29.97
5.0	32.33	18.0	28.77
5.5	31.60		



ANTENNA RESEARCH DRG-118/A**HORN ANTENNA**

S/N: 1053

CALIBRATION DATE: JANUARY 16, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.4	10.0	38.7
1.5	25.2	10.5	39.0
2.0	28.2	11.0	38.9
2.5	28.5	11.5	41.3
3.0	30.1	12.0	40.5
3.5	31.0	12.5	40.0
4.0	31.2	13.0	40.2
4.5	31.9	13.5	40.5
5.0	33.2	14.0	41.6
5.5	33.7	14.5	44.8
6.0	34.3	15.0	41.4
6.5	35.0	15.5	39.2
7.0	36.7	16.0	39.4
7.5	37.3	16.5	40.9
8.0	37.1	17.0	42.6
8.5	37.3	17.5	45.1
9.0	37.7	18.0	41.7
9.5	38.6		



COM-POWER AL-130**LOOP ANTENNA**

S/N: 17089

CALIBRATION DATE: SEPTEMBER 3, 2004

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.8	10.7
0.01	-40.9	10.6
0.02	-41.8	9.7
0.05	-42.0	9.5
0.07	-41.5	10.0
0.1	-41.7	9.8
0.2	-44.1	7.4
0.3	-41.6	9.9
0.5	-41.5	10.0
0.7	-41.4	10.1
1	-41.0	10.5
2	-40.6	10.9
3	-40.8	10.7
4	-41.0	10.5
5	-40.4	11.1
10	-40.7	10.8
15	-41.6	9.9
20	-41.3	10.2
25	-43.0	8.5
30	-42.6	8.9





FRONT VIEW

LINX TECHNOLOGIES
LONG-RANGE HANDHELD TRANSMITTER
P/N: CMD-HHLR-xxx
FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





REAR VIEW

LINX TECHNOLOGIES
LONG-RANGE HANDHELD TRANSMITTER
P/N: CMD-HHLR-xxx
FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





FRONT VIEW

LINX TECHNOLOGIES
LONG-RANGE HANDHELD TRANSMITTER
P/N: CMD-HHLR-xxx
FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**





REAR VIEW

LINX TECHNOLOGIES
LONG-RANGE HANDHELD TRANSMITTER
P/N: CMD-HHLR-xxx
FCC SUBPART B AND C – RADIATED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



APPENDIX E

DATA SHEETS



RADIATED EMISSIONS

DATA SHEETS



FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 4/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - X Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	72	V	95.6	-23.6	Peak	1.3	0	
315	65.4	V	75.6	-10.2	Avg	1.3	0	
630	32.1	V	75.6	-43.5	Peak	1	0	
630	25.5	V	55.6	-30.1	Avg	1	0	
945	30.3	V	75.6	-45.3	Peak	1.3	90	
945	23.7	V	55.6	-31.9	Avg	1.3	90	
1260	37.15	V	75.6	-38.45	Peak	1.07	90	
1260	30.55	V	55.6	-25.05	Avg	1.07	90	
1575	38.34	V	74	-35.66	Peak	2.18	180	
1575	31.74	V	54	-22.26	Avg	2.18	180	
1890	36.27	V	75.6	-39.33	Peak	2.2	135	
1890	29.67	V	55.6	-25.93	Avg	2.2	135	
2205	37.61	V	74	-36.39	Peak	2.22	180	
2205	31.01	V	54	-22.99	Avg	2.22	180	
2520	23.73	V	75.6	-51.87	Peak	1.34	180	
2520	17.13	V	55.6	-38.47	Avg	1.34	180	
2835	40.54	V	74	-33.46	Peak	2.68	135	
2835	33.94	V	54	-20.06	Avg	2.68	135	
3150	39.73	V	75.6	-35.87	Peak	2.03	135	
3150	33.13	V	55.6	-22.47	Avg	2.03	135	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 4/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - X Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	80.7	H	95.6	-14.9	Peak	1	270	
315	74.1	H	75.6	-1.5	Avg	1	270	
630	37	H	75.6	-38.6	Peak	1	270	
630	30.4	H	55.6	-25.2	Avg	1	270	
945	35	H	75.6	-40.6	Peak	1	90	
945	28.4	H	55.6	-27.2	Avg	1	90	
1260	39.06	H	75.6	-36.54	Peak	1.33	90	
1260	32.46	H	55.6	-23.14	Avg	1.33	90	
1575	43.67	H	74	-30.33	Peak	2.05	225	
1575	37.07	H	54	-16.93	Avg	2.05	225	
1890	40.18	H	75.6	-35.42	Peak	2.31	225	
1890	33.58	H	55.6	-22.02	Avg	2.31	225	
2205	37.37	H	74	-36.63	Peak	1.44	270	
2205	30.77	H	54	-23.23	Avg	1.44	270	
2520	33.25	H	75.6	-42.35	Peak	2.16	90	
2520	26.65	H	55.6	-28.95	Avg	2.16	90	
2835	38.95	H	74	-35.05	Peak	1.42	270	
2835	32.35	H	54	-21.65	Avg	1.42	270	
3150	38.25	H	75.6	-37.35	Peak	1.98	225	
3150	31.65	H	55.6	-23.95	Avg	1.98	225	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - Y Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	82	V	95.6	-13.6	Peak	1.8	90	
315	75.4	V	75.6	-0.2	Avg	1.8	90	
630	39.4	V	75.6	-36.2	Peak	1.8	135	
630	32.8	V	55.6	-22.8	Avg	1.8	135	
945	38.9	V	75.6	-36.7	Peak	1.8	135	
945	32.3	V	55.6	-23.3	Avg	1.8	135	
1260	36.23	V	75.6	-39.37	Peak	2.21	180	
1260	29.63	V	55.6	-25.97	Avg	2.21	180	
1575	38.18	V	74	-35.82	Peak	2.12	180	
1575	31.58	V	54	-22.42	Avg	2.12	180	
1890	35.69	V	75.6	-39.91	Peak	2.36	0	
1890	29.09	V	55.6	-26.51	Avg	2.36	0	
2205	36.72	V	74	-37.28	Peak	1.55	270	
2205	30.12	V	54	-23.88	Avg	1.55	270	
2520	37.43	V	75.6	-38.17	Peak	2.53	180	
2520	30.83	V	55.6	-24.77	Avg	2.53	180	
2835	40.02	V	74	-33.98	Peak	2.16	180	
2835	33.42	V	54	-20.58	Avg	2.16	180	
3150	39.76	V	75.6	-35.84	Peak	2.16	225	
3150	33.16	V	55.6	-22.44	Avg	2.16	225	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - Y Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	73.9	H	95.6	-21.7	Peak	1	0	
315	67.3	H	75.6	-8.3	Avg	1	0	
630	27.5	H	75.6	-48.1	Peak	1.3	135	
630	20.9	H	55.6	-34.7	Avg	1.3	135	
945	29.5	H	75.6	-46.1	Peak	2	225	
945	22.9	H	55.6	-32.7	Avg	2	225	
1260	38.07	H	75.6	-37.53	Peak	2.24	270	
1260	31.47	H	55.6	-24.13	Avg	2.24	270	
1575	41.32	H	74	-32.68	Peak	2.11	270	
1575	34.72	H	54	-19.28	Avg	2.11	270	
1890	38.5	H	75.6	-37.1	Peak	2.2	270	
1890	31.9	H	55.6	-23.7	Avg	2.2	270	
2205	35.16	H	74	-38.84	Peak	2.32	180	
2205	28.56	H	54	-25.44	Avg	2.32	180	
2520	35.8	H	75.6	-39.8	Peak	1.64	270	
2520	29.2	H	55.6	-26.4	Avg	1.64	270	
2835	37.2	H	74	-36.8	Peak	2.28	180	
2835	30.6	H	54	-23.4	Avg	2.28	180	
3150	37.43	H	75.6	-38.17	Peak	2.28	45	
3150	30.83	H	55.6	-24.77	Avg	2.28	45	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - Z Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	74.5	V	95.6	-21.1	Peak	1.3	90	
315	67.9	V	75.6	-7.7	Avg	1.3	90	
630	31.3	V	75.6	-44.3	Peak	1.3	90	
630	24.7	V	55.6	-30.9	Avg	1.3	90	
945	30.9	V	75.6	-44.7	Peak	1.3	180	
945	24.3	V	55.6	-31.3	Avg	1.3	180	
1260	37.71	V	75.6	-37.89	Peak	1.78	270	
1260	31.11	V	55.6	-24.49	Avg	1.78	270	
1575	39.91	V	74	-34.09	Peak	2.12	270	
1575	33.31	V	54	-20.69	Avg	2.12	270	
1890	37.6	V	75.6	-38	Peak	1.83	315	
1890	31	V	55.6	-24.6	Avg	1.83	315	
2205	35.41	V	74	-38.59	Peak	1.28	315	
2205	28.81	V	54	-25.19	Avg	1.28	315	
2520	37.17	V	75.6	-38.43	Peak	2.26	225	
2520	30.57	V	55.6	-25.03	Avg	2.26	225	
2835	39.15	V	74	-34.85	Peak	1.77	315	
2835	32.55	V	54	-21.45	Avg	1.77	315	
3150	39.64	V	75.6	-35.96	Peak	2.07	180	
3150	33.04	V	55.6	-22.56	Avg	2.07	180	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

315 MHz Version - Z Axis

Duty Cycle: 46.72%

With 1.8 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
315	81.9	H	95.6	-13.7	Peak	1	0	
315	75.3	H	75.6	-0.3	Avg	1	0	
630	39.7	H	75.6	-35.9	Peak	1	180	
630	33.1	H	55.6	-22.5	Avg	1	180	
945	37.6	H	75.6	-38	Peak	1	180	
945	31	H	55.6	-24.6	Avg	1	180	
1260	36.51	H	75.6	-39.09	Peak	1.35	225	
1260	29.91	H	55.6	-25.69	Avg	1.35	225	
1575	42.47	H	74	-31.53	Peak	2.15	270	
1575	35.87	H	54	-18.13	Avg	2.15	270	
1890	41.25	H	75.6	-34.35	Peak	2.18	270	
1890	34.65	H	55.6	-20.95	Avg	2.18	270	
2205	37.13	H	74	-36.87	Peak	2.18	270	
2205	30.53	H	54	-23.47	Avg	2.18	270	
2520	36.78	H	75.6	-38.82	Peak	2.03	315	
2520	30.18	H	55.6	-25.42	Avg	2.03	315	
2835	38.52	H	74	-35.48	Peak	1.6	315	
2835	31.92	H	54	-22.08	Avg	1.6	315	
3150	38.35	H	75.6	-37.25	Peak	2.09	270	
3150	31.75	H	55.6	-23.85	Avg	2.09	270	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - X Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	85.97	V	100.2	-14.23	Peak	1.3	270	
418	79.3	V	80.2	-0.9	Avg	1.3	270	
836	44.87	V	80.2	-35.33	Peak	1.3	135	
836	38.2	V	60.2	-22	Avg	1.3	135	
1254	37.76	V	80.2	-42.44	Peak	2.25	0	
1254	31.09	V	60.2	-29.11	Avg	2.25	0	
1672	40.57	V	74	-33.43	Peak	2.49	180	
1672	33.9	V	54	-20.1	Avg	2.49	180	
2090	38.68	V	80.2	-41.52	Peak	1.53	225	
2090	32.01	V	60.2	-28.19	Avg	1.53	225	
2508	37.51	V	80.2	-42.69	Peak	2.51	225	
2508	30.84	V	60.2	-29.36	Avg	2.51	225	
2926	39.96	V	80.2	-40.24	Peak	1.84	225	
2926	33.29	V	60.2	-26.91	Avg	1.84	225	
3344	41.02	V	80.2	-39.18	Peak	2.26	315	
3344	34.35	V	60.2	-25.85	Avg	2.26	315	
3762	40.44	V	74	-33.56	Peak	1.57	180	
3762	33.77	V	54	-20.23	Avg	1.57	180	
4180	41.38	V	74	-32.62	Peak	1.98	270	
4180	34.71	V	54	-19.29	Avg	1.98	270	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - X Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	86.07	H	100.2	-14.13	Peak	1	45	
418	79.4	H	80.2	-0.8	Avg	1	45	
836	31.97	H	80.2	-48.23	Peak	1	180	
836	25.3	H	60.2	-34.9	Avg	1	180	
1254	36.99	H	80.2	-43.21	Peak	2.18	270	
1254	30.32	H	60.2	-29.88	Avg	2.18	270	
1672	37.63	H	74	-36.37	Peak	2.26	45	
1672	30.96	H	54	-23.04	Avg	2.26	45	
2090	37.9	H	80.2	-42.3	Peak	2.03	45	
2090	31.23	H	60.2	-28.97	Avg	2.03	45	
2508	37.1	H	80.2	-43.1	Peak	1.68	135	
2508	30.43	H	60.2	-29.77	Avg	1.68	135	
2926	39.04	H	80.2	-41.16	Peak	2.28	315	
2926	32.37	H	60.2	-27.83	Avg	2.28	315	
3344	43.25	H	80.2	-36.95	Peak	1.66	135	
3344	36.58	H	60.2	-23.62	Avg	1.66	135	
3762	40.74	H	74	-33.26	Peak	2	45	
3762	34.07	H	54	-19.93	Avg	2	45	
4180	41.34	H	74	-32.66	Peak	2.06	90	
4180	34.67	H	54	-19.33	Avg	2.06	90	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - Y Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	86.07	V	100.2	-14.13	Peak	2	0	
418	79.4	V	80.2	-0.8	Avg	2	0	
836	34.57	V	80.2	-45.63	Peak	2	180	
836	27.9	V	60.2	-32.3	Avg	2	180	
1254	38.89	V	80.2	-41.31	Peak	1.67	225	
1254	32.22	V	60.2	-27.98	Avg	1.67	225	
1672	38.33	V	74	-35.67	Peak	2.23	315	
1672	31.66	V	54	-22.34	Avg	2.23	315	
2090	39.4	V	80.2	-40.8	Peak	2.14	135	
2090	32.73	V	60.2	-27.47	Avg	2.14	135	
2508	38.85	V	80.2	-41.35	Peak	2	135	
2508	32.18	V	60.2	-28.02	Avg	2	135	
2926	35.71	V	80.2	-44.49	Peak	1.37	135	
2926	29.04	V	60.2	-31.16	Avg	1.37	135	
3344	40.83	V	80.2	-39.37	Peak	1.75	135	
3344	34.16	V	60.2	-26.04	Avg	1.75	135	
3762	41.55	V	74	-32.45	Peak	1.75	315	
3762	34.88	V	54	-19.12	Avg	1.75	315	
4180	38.3	V	74	-35.7	Peak	1.75	225	
4180	31.63	V	54	-22.37	Avg	1.75	225	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - Y Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	76.17	H	100.2	-24.03	Peak	1	90	
418	69.5	H	80.2	-10.7	Avg	1	90	
836	46.77	H	80.2	-33.43	Peak	1	90	
836	40.1	H	60.2	-20.1	Avg	1	90	
1254	32.35	H	80.2	-47.85	Peak	2.52	225	
1254	25.68	H	60.2	-34.52	Avg	2.52	225	
1672	36.58	H	74	-37.42	Peak	2.7	270	
1672	29.91	H	54	-24.09	Avg	2.7	270	
2090	36.74	H	80.2	-43.46	Peak	1.86	225	
2090	30.07	H	60.2	-30.13	Avg	1.86	225	
2508	35.94	H	80.2	-44.26	Peak	2.43	225	
2508	29.27	H	60.2	-30.93	Avg	2.43	225	
2926	41.36	H	80.2	-38.84	Peak	2.48	225	
2926	34.69	H	60.2	-25.51	Avg	2.48	225	
3344	40.31	H	80.2	-39.89	Peak	2.39	225	
3344	33.64	H	60.2	-26.56	Avg	2.39	225	
3762	41.46	H	74	-32.54	Peak	2.28	270	
3762	34.79	H	54	-19.21	Avg	2.28	270	
4180	41.34	H	74	-32.66	Peak	2.19	225	
4180	34.67	H	54	-19.33	Avg	2.19	225	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - Z Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	75.17	V	100.2	-25.03	Peak	2	90	
418	68.5	V	80.2	-11.7	Avg	2	90	
836	32.97	V	80.2	-47.23	Peak	2	90	
836	26.3	V	60.2	-33.9	Avg	2	90	
1254	35.19	V	80.2	-45.01	Peak	2.14	225	
1254	28.52	V	60.2	-31.68	Avg	2.14	225	
1672	39.69	V	74	-34.31	Peak	2.17	315	
1672	33.02	V	54	-20.98	Avg	2.17	315	
2090	39	V	80.2	-41.2	Peak	1.78	225	
2090	32.33	V	60.2	-27.87	Avg	1.78	225	
2508	35.44	V	80.2	-44.76	Peak	1.39	270	
2508	28.77	V	60.2	-31.43	Avg	1.39	270	
2926	38.64	V	80.2	-41.56	Peak	1.2	180	
2926	31.97	V	60.2	-28.23	Avg	1.2	180	
3344	39.07	V	80.2	-41.13	Peak	2.21	180	
3344	32.4	V	60.2	-27.8	Avg	2.21	180	
3762	41.1	V	74	-32.9	Peak	1.41	180	
3762	34.43	V	54	-19.57	Avg	1.41	180	
4180	39.93	V	74	-34.07	Peak	2.27	180	
4180	33.26	V	54	-20.74	Avg	2.27	180	

FCC 15.231

Linx Technologies
 Long Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Date: 04/22/05
 Labs: A and B
 Tested By: Ben C. and Kyle F.

418 MHz Version - Z Axis

Duty Cycle: 46.41 %

With 2.7 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
418	86.67	H	100.2	-13.53	Peak	1	0	
418	80	H	80.2	-0.2	Avg	1	0	
836	47.77	H	80.2	-32.43	Peak	1	0	
836	41.1	H	60.2	-19.1	Avg	1	0	
1254	39.38	H	80.2	-40.82	Peak	1.62	270	
1254	32.71	H	60.2	-27.49	Avg	1.62	270	
1672	37.84	H	74	-36.16	Peak	1.77	270	
1672	31.17	H	54	-22.83	Avg	1.77	270	
2090	38.76	H	80.2	-41.44	Peak	1.81	270	
2090	32.09	H	60.2	-28.11	Avg	1.81	270	
2508	34.94	H	80.2	-45.26	Peak	1.43	135	
2508	28.27	H	60.2	-31.93	Avg	1.43	135	
2926	39.5	H	80.2	-40.7	Peak	2.14	270	
2926	32.83	H	60.2	-27.37	Avg	2.14	270	
3344	40.31	H	80.2	-39.89	Peak	2.25	225	
3344	33.64	H	60.2	-26.56	Avg	2.25	225	
3762	39.88	H	74	-34.12	Peak	1.76	180	
3762	33.21	H	54	-20.79	Avg	1.76	180	
4180	43.16	H	74	-30.84	Peak	2.51	225	
4180	36.49	H	54	-17.51	Avg	2.51	225	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05

Labs: A and B

Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - X Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	73.02	V	100.8	-27.78	Peak	1	260	
433.92	66.4	V	80.8	-14.4	Avg	1	260	
867.84		V	80.8	-80.8	Peak			No Emission
867.84		V	60.8	-60.8	Avg			Detected
1301.76	33.46	V	74	-40.54	Peak	1.88	270	
1301.76	26.84	V	54	-27.16	Avg	1.88	270	
1735.7	38.11	V	80.8	-42.69	Peak	2.09	270	
1735.7	31.49	V	60.8	-29.31	Avg	2.09	270	
2169.6	38.94	V	80.8	-41.86	Peak	2.09	90	
2169.6	32.32	V	60.8	-28.48	Avg	2.09	90	
2603.52	35.2	V	80.8	-45.6	Peak	1.26	180	
2603.52	28.58	V	60.8	-32.22	Avg	1.26	180	
3037.44	39.84	V	80.8	-40.96	Peak	2.32	315	
3037.44	33.22	V	60.8	-27.58	Avg	2.32	315	
3471.36	39.18	V	80.8	-41.62	Peak	1.29	180	
3471.36	32.56	V	60.8	-28.24	Avg	1.29	180	
3905.28	38.19	V	74	-35.81	Peak	2.01	90	
3905.28	31.57	V	54	-22.43	Avg	2.01	90	
4339.2	39.46	V	74	-34.54	Peak	1.42	180	
4339.2	32.84	V	54	-21.16	Avg	1.42	180	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05

Labs: A and B

Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - X Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	84.52	H	100.8	-16.28	Peak	1	270	
433.92	77.9	H	80.8	-2.9	Avg	1	270	
867.84		H	80.8	-80.8	Peak			No Emission
867.84		H	60.8	-60.8	Avg			Detected
1301.76	37.88	H	74	-36.12	Peak	1.46	270	
1301.76	31.26	H	54	-22.74	Avg	1.46	270	
1735.7	36.81	H	80.8	-43.99	Peak	2.28	270	
1735.7	30.19	H	60.8	-30.61	Avg	2.28	270	
2169.6	36.88	H	80.8	-43.92	Peak	2.27	315	
2169.6	30.26	H	60.8	-30.54	Avg	2.27	315	
2603.52	35.75	H	80.8	-45.05	Peak	2.45	180	
2603.52	29.13	H	60.8	-31.67	Avg	2.45	180	
3037.44	39	H	80.8	-41.8	Peak	2.49	45	
3037.44	32.38	H	60.8	-28.42	Avg	2.19	45	
3471.36	39.13	H	80.8	-41.67	Peak	1.42	270	
3471.36	32.51	H	60.8	-28.29	Avg	1.42	270	
3905.28	39	H	74	-35	Peak	1.9	180	
3905.28	32.38	H	54	-21.62	Avg	1.9	180	
4339.2	39.37	H	74	-34.63	Peak	2.36	225	
4339.2	32.75	H	54	-21.25	Avg	2.36	225	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05

Labs: A and B

Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - Y Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	84.42	V	100.8	-16.38	Peak	1.3	175	
433.92	77.8	V	80.8	-3	Avg	1.3	175	
867.84	37.32	V	80.8	-43.48	Peak	1	95	
867.84	30.7	V	60.8	-30.1	Avg	1	95	
1301.76	35.46	V	74	-38.54	Peak	1.59	225	
1301.76	28.84	V	54	-25.16	Avg	1.59	225	
1735.7	37.53	V	80.8	-43.27	Peak	2.85	180	
1735.7	30.91	V	60.8	-29.89	Avg	2.85	180	
2169.6	41.56	V	80.8	-39.24	Peak	1.49	270	
2169.6	34.94	V	60.8	-25.86	Avg	1.49	270	
2603.52	35.08	V	80.8	-45.72	Peak	1.35	270	
2603.52	28.46	V	60.8	-32.34	Avg	1.35	270	
3037.44	39.72	V	80.8	-41.08	Peak	2.42	135	
3037.44	33.1	V	60.8	-27.7	Avg	2.42	135	
3471.36	38.17	V	80.8	-42.63	Peak	1.4	180	
3471.36	31.55	V	60.8	-29.25	Avg	1.4	180	
3905.28	38.89	V	74	-35.11	Peak	2.09	135	
3905.28	32.27	V	54	-21.73	Avg	2.09	135	
4339.2	39.13	V	74	-34.87	Peak	1.25	180	
4339.2	32.51	V	54	-21.49	Avg	1.25	180	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05

Labs: A and B

Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - Y Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	73.72	H	100.8	-27.08	Peak	1	175	
433.92	67.1	H	80.8	-13.7	Avg	1	175	
867.84	42.82	H	80.8	-37.98	Peak	1	270	
867.84	36.2	H	60.8	-24.6	Avg	1	270	
1301.76	34.56	H	74	-39.44	Peak	2.69	225	
1301.76	27.94	H	54	-26.06	Avg	2.69	225	
1735.7	38.65	H	80.8	-42.15	Peak	2.65	0	
1735.7	32.03	H	60.8	-28.77	Avg	2.65	0	
2169.6	39.11	H	80.8	-41.69	Peak	2.55	180	
2169.6	32.49	H	60.8	-28.31	Avg	2.55	180	
2603.52	35.27	H	80.8	-45.53	Peak	1.6	135	
2603.52	28.65	H	60.8	-32.15	Avg	1.6	135	
3037.44	40.4	H	80.8	-40.4	Peak	2.61	180	
3037.44	33.78	H	60.8	-27.02	Avg	2.61	180	
3471.36	41.05	H	80.8	-39.75	Peak	2.37	225	
3471.36	34.43	H	60.8	-26.37	Avg	2.37	225	
3905.28	40.9	H	74	-33.1	Peak	1.73	225	
3905.28	34.28	H	54	-19.72	Avg	1.73	225	
4339.2	39.37	H	74	-34.63	Peak	1.43	225	
4339.2	32.75	H	54	-21.25	Avg	1.43	225	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05

Labs: A and B

Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - Z Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	73.22	V	100.8	-27.58	Peak	2	260	
433.92	66.6	V	80.8	-14.2	Avg	2	260	
867.84		V	80.8	-80.8	Peak			No Emission
867.84		V	60.8	-60.8	Avg			Detected
1301.76	34.52	V	74	-39.48	Peak	2.53	225	
1301.76	27.9	V	54	-26.1	Avg	2.53	225	
1735.7	37.38	V	80.8	-43.42	Peak	2.31	0	
1735.7	30.76	V	60.8	-30.04	Avg	2.31	0	
2169.6	37.71	V	80.8	-43.09	Peak	2.25	180	
2169.6	31.09	V	60.8	-29.71	Avg	2.25	180	
2603.52	36.23	V	80.8	-44.57	Peak	2.26	0	
2603.52	29.61	V	60.8	-31.19	Avg	2.26	0	
3037.44	40.56	V	80.8	-40.24	Peak	2.58	270	
3037.44	33.94	V	60.8	-26.86	Avg	2.58	270	
3471.36	40.23	V	80.8	-40.57	Peak	1.83	180	
3471.36	33.61	V	60.8	-27.19	Avg	1.83	180	
3905.28	38.14	V	74	-35.86	Peak	1.28	180	
3905.28	31.52	V	54	-22.48	Avg	1.28	180	
4339.2	39.51	V	74	-34.49	Peak	1.81	180	
4339.2	32.89	V	54	-21.11	Avg	1.81	180	

FCC 15.231

Linx Technologies
 Long-Range Handheld Transmitter
 P/N: CMD-HHLR-xxx

Dates: 04/21/05 and 04/22/05
 Labs: A and B
 Tested By: Andre Khan and Kyle Fujimoto

433.92 MHz Version - Z Axis

Duty Cycle: 46.65%

With 3.6 kOhm Resistor

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
433.92	86.12	H	100.8	-14.68	Peak	1	270	
433.92	79.5	H	80.8	-1.3	Avg	1	270	
867.84	37.62	H	80.8	-43.18	Peak	1	180	
867.84	31	H	60.8	-29.8	Avg	1	180	
1301.76	35.7	H	74	-38.3	Peak	2.64	180	
1301.76	29.08	H	54	-24.92	Avg	2.64	180	
1735.7	35.89	H	80.8	-44.91	Peak	2.25	225	
1735.7	29.27	H	60.8	-31.53	Avg	2.25	225	
2169.6	39.65	H	80.8	-41.15	Peak	2.35	180	
2169.6	33.03	H	60.8	-27.77	Avg	2.35	180	
2603.52	35.87	H	80.8	-44.93	Peak	1.76	225	
2603.52	29.25	H	60.8	-31.55	Avg	1.76	225	
3037.44	39.43	H	80.8	-41.37	Peak	3.06	225	
3037.44	32.81	H	60.8	-27.99	Avg	3.06	225	
3471.36	40.84	H	80.8	-39.96	Peak	1.59	180	
3471.36	34.22	H	60.8	-26.58	Avg	1.59	180	
3905.28	38.05	H	74	-35.95	Peak	1.97	225	
3905.28	31.43	H	54	-22.57	Avg	1.97	225	
4339.2	39.76	H	74	-34.24	Peak	1.49	225	
4339.2	33.14	H	54	-20.86	Avg	1.49	225	

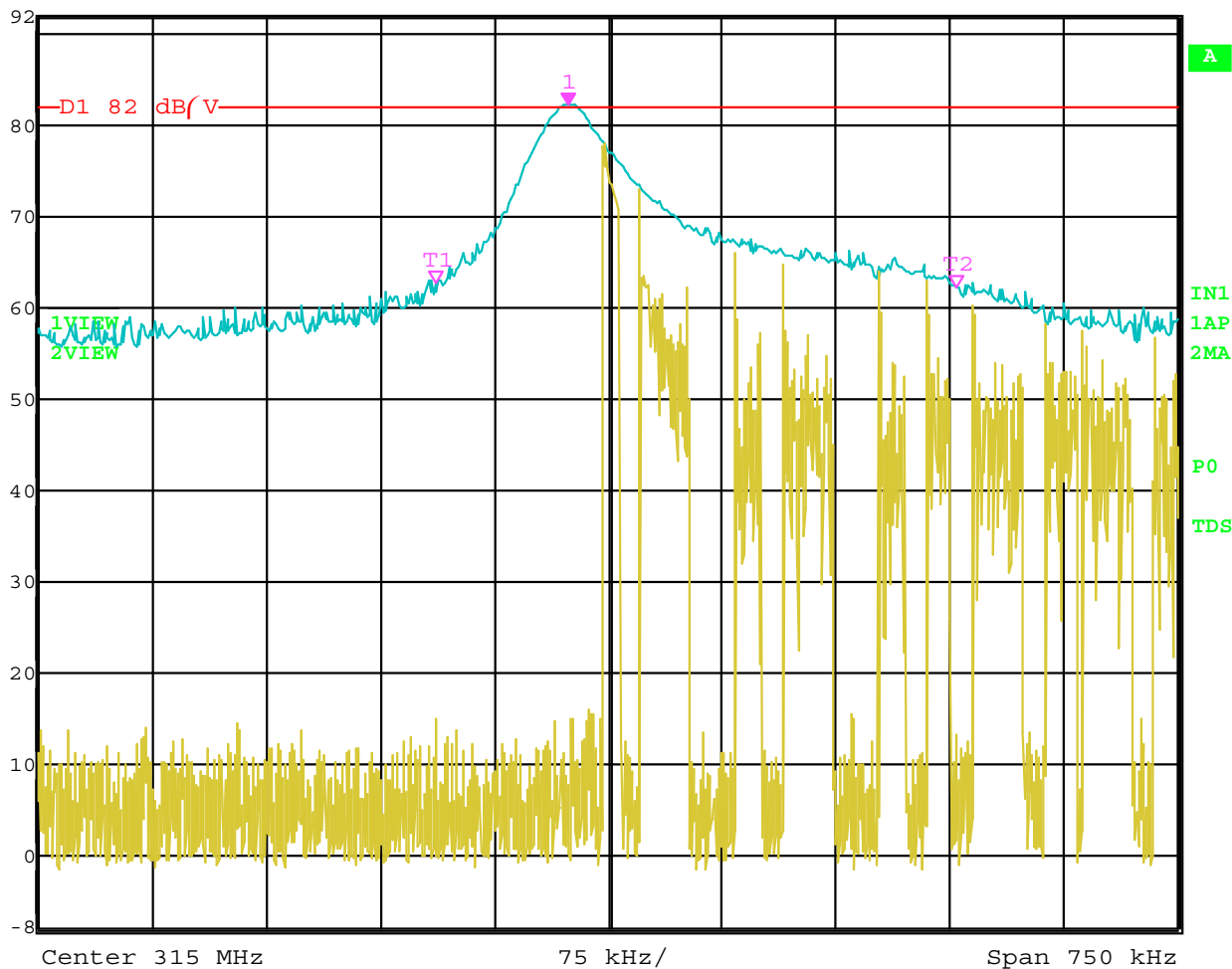
-20 dB BANDWIDTH

DATA SHEETS





Ref Lvl	Marker 1 [T2 ndB]	RBW	50 kHz	RF Att	0 dB
92 dB/V	ndB 20.00 dB	VBW	50 kHz		
	BW 342.68537074 kHz	SWT	5.5 ms	Unit	dB/V

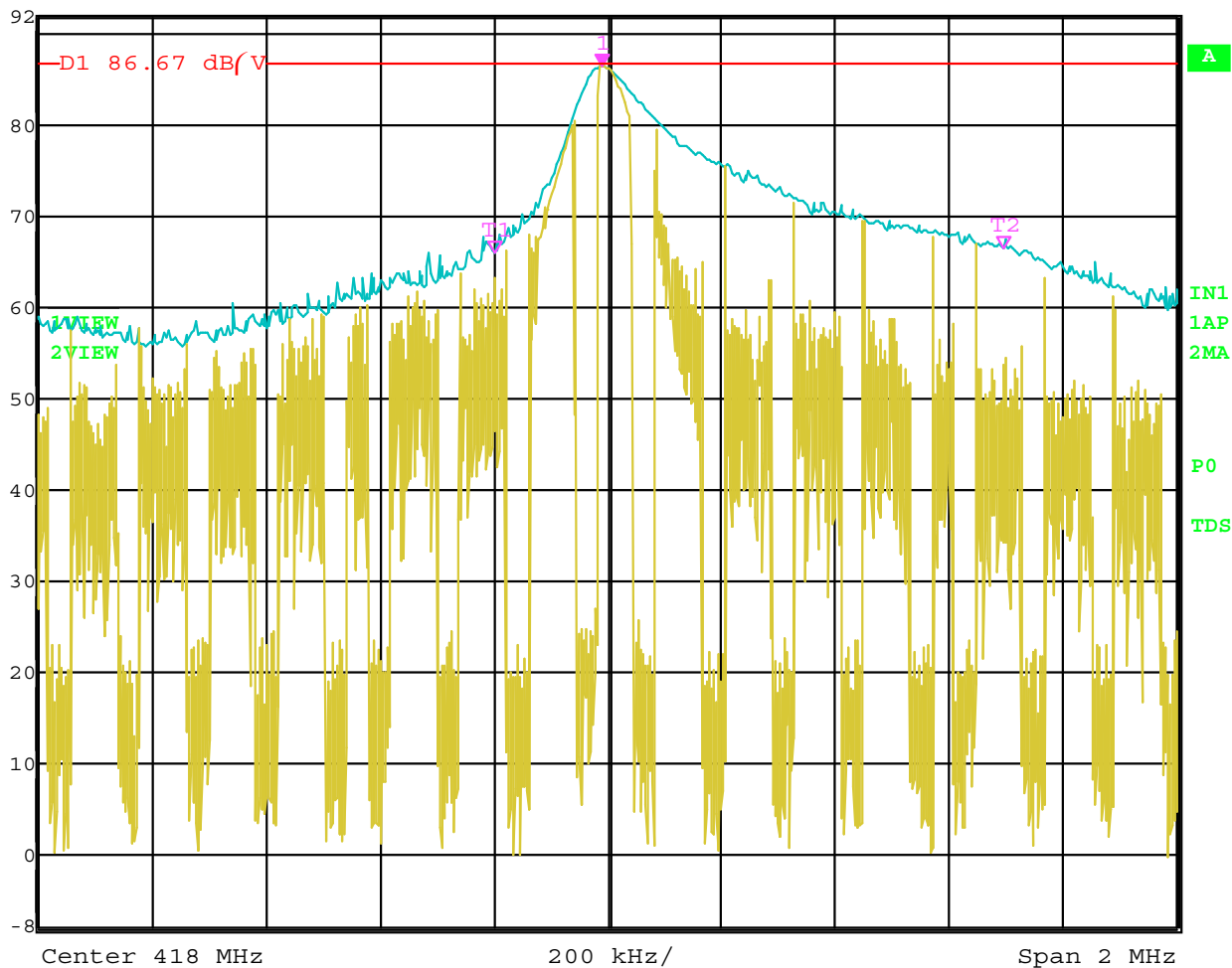


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Bandwidth 20 dB – 315 MHz



Ref Lvl	Marker 1 [T2 ndB]	RBW	100 kHz	RF Att	10 dB
92 dB/V	ndB 20.00 dB	VBW	100 kHz		
	BW 893.78757515 kHz	SWT	5.5 ms	Unit	dB/V

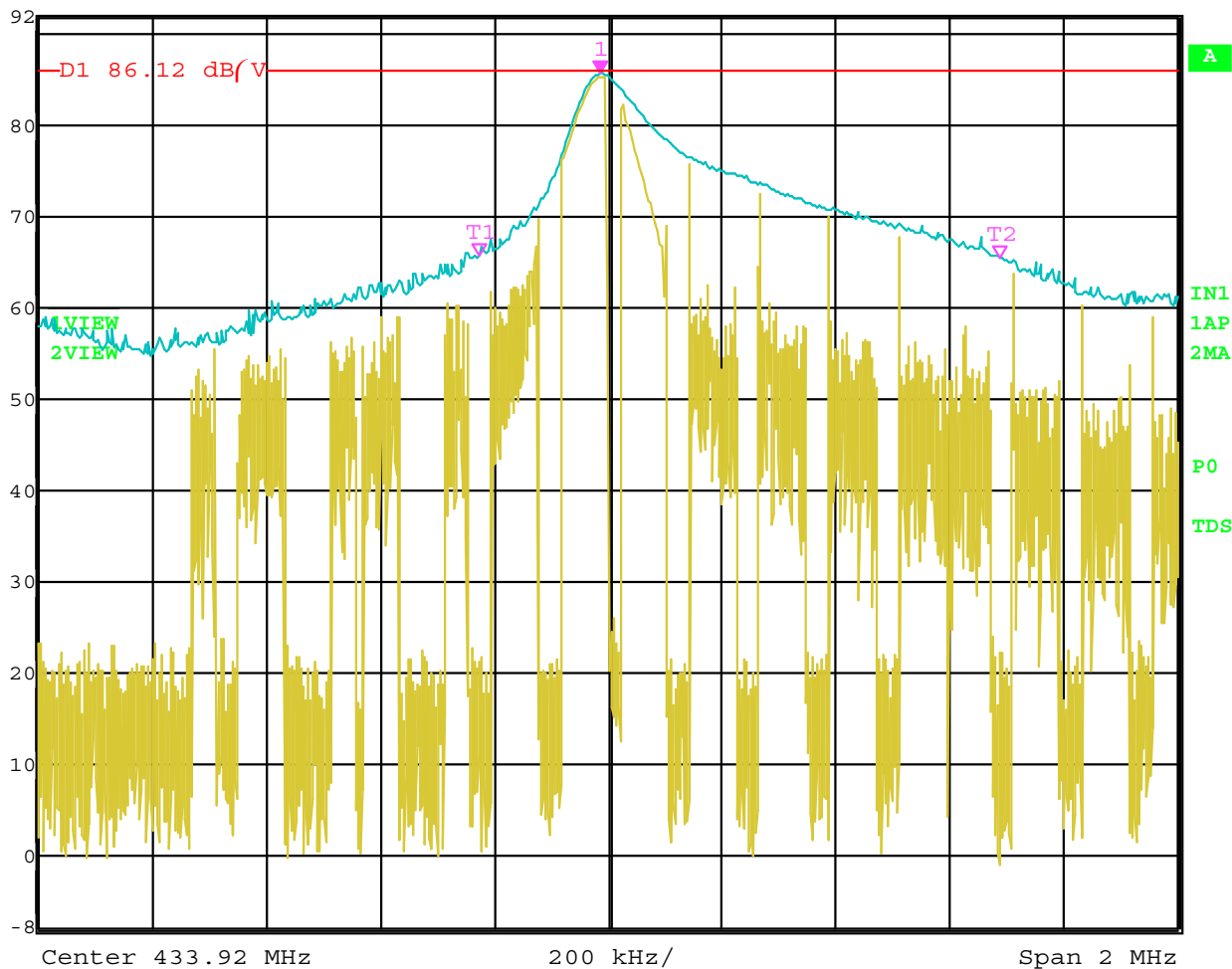


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Bandwidth 20 dB – 418 MHz



Ref Lvl	Marker 1 [T2 ndB]	RBW	100 kHz	RF Att	10 dB
92 dB/V	ndB 20.00 dB	VBW	100 kHz		
	BW 913.82765531 kHz	SWT	5.5 ms	Unit	dB/V



Date: 25.APR.2005 13:54:03

Bandwidth 20 dB – 433.92 MHz