

*FCC PART 15, SUBPART B and C
TEST REPORT**for*

HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER

MODEL: HUM-A-900-PRO-CAS

Prepared for

LINX TECHNOLOGIES
159 ORT LANE
MERLIN, OREGON 97532Prepared by: 

KYLE FUJIMOTO

Approved by: 

JAMES ROSS

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

DATE: FEBRUARY 1, 2017

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	19	2	2	2	19	175	219

This report shall not be reproduced except in full, without the written approval of Compatible Electronics.


TESTING
NVLAP LAB CODE 200528-0

TABLE OF CONTENTS

Section / Title	PAGE
GENERAL REPORT SUMMARY	4
SUMMARY OF TEST RESULTS	5
1. PURPOSE	6
2. ADMINISTRATIVE DATA	7
2.1 Location of Testing	7
2.2 Traceability Statement	7
2.3 Cognizant Personnel	7
2.4 Date Test Sample was Received	7
2.5 Disposition of the Test Sample	7
2.6 Abbreviations and Acronyms	7
3. APPLICABLE DOCUMENTS	8
4. DESCRIPTION OF TEST CONFIGURATION	9
4.1 Description of Test Configuration – Emissions	9
4.1.1 Cable Construction and Termination	9
5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT	10
5.1 EUT and Accessory List	10
6. TEST SITE DESCRIPTION	12
6.1 Test Facility Description	12
6.2 EUT Mounting, Bonding and Grounding	12
7. CHARACTERISTICS OF THE TRANSMITTER	13
7.1 Channel Number and Frequencies	13
7.2 Antenna	13
8. TEST PROCEDURES	14
8.1 RF Emissions	14
8.1.1 Conducted Emissions Test	14
8.1.2 Radiated Emissions Test	15
8.1.3 RF Emissions Test Results	16
8.2 20 dB Bandwidth	17
8.3 Peak Output Power	17
8.4 RF Antenna Conducted Test	17
8.5 RF Band Edges	18
8.6 Carrier Frequency Separation	18
8.7 Number of Hopping Frequencies	18
8.8 Average Time of Occupancy Test	18
9. CONCLUSIONS	19

LIST OF APPENDICES

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

LIST OF FIGURES

FIGURE	TITLE
1	Conducted Emissions Test Setup
2	Layout of the Semi-Anechoic Test Chamber

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 certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS
S/N: N/A

Product Description: The EUT is an RF Module.

Modifications: The EUT was modified in order to meet the specifications. Please see Appendix B of the test report.

Customer: Linx Technologies
159 Ort Lane
Merlin, California 97532

Test Dates: January 19, 20, 25, 26, and 28, 2017



Test Specifications covered by accreditation:

Test Specifications: ANSI C63.4: 2014 and ANSI C63.10: 2013

Emissions requirements:

CFR Title 47, Part 15, Subpart B; and
Subpart C, sections 15.205, 15.207, 15.209, and 15.247

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207. Highest reading in relation to spec limit: 24.44 dBuV @ 0.290 MHz (*U = 2.86 dB)
2	Radiated RF Emissions, 10 kHz – 9300 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15 Subpart C, 15.205, 15.209 and 15.247 (d) Highest reading in relation to spec limit: 44.94 dBuV @ 2706.75 MHz (*U = 3.70 dB)
3	20 dB Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)(i)
4	Peak Power Output	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(2)
5	RF Conducted Antenna Test	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (d)
6	Carrier Frequency Separation	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)
7	Average Time of Occupancy	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(1)(i)
8	Peak Power Spectral Density from the International Radiator to the Antenna	This test was not performed because the EUT is a frequency hopper.

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the HumPRO-A Series High Power Data Transceiver, Model: HUM-A-900-PRO-CAS. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. 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, 15.207, 15.209, and 15.247.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions 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

Joel Krawczyk
Chris Murphy

Electrical Engineer
Engineering Manager

Compatible Electronics Inc.

Kyle Fujimoto
James Ross

Test Engineer
Test Engineer

2.4 Date Test Sample was Received

The test sample was received on January 11, 2017.

2.5 Disposition of the Test Sample

The test sample has not been returned to Linx Technologies as of the date of this test report.

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
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receive

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
EN 50147-2: 1997	Anechoic chambers. Alternative test site suitability with respect to site attenuation
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

Radiated Emissions: The HumPRO-A Series High Power Data Transceiver, Model: HUM-A-900-PRO-CAS (EUT) was directly connected to a host board. The host board was also connected to a DC Power supply. The EUT was checked in all three orthogonal axis and tested at the low, middle and high channels. The EUT was continuously transmitting or receiving depending on the test performed.

Conducted Emissions: The HumPRO-A Series High Power Data Transceiver, Model: HUM-A-900-PRO-CAS (EUT) was directly connected to a host board. The host board was also connected to an AC Adapter. The EUT was checked in all three orthogonal axis. The EUT was continuously transmitting or receiving depending on the test performed.

A laptop with a special UART cable was temporarily connected to the host board to program the EUT using the Linx Technologies PRORW.PY program to be able to change channels so that the low, middle, and high, channels could be tested; frequency hop; and select the low and high data rates.

The Edge mount and Vertical mount configuration were tested. The Edge mount was tested at both the low and high data rates. The Vertical mount was only tested in the low data rate.

The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The input voltage was varied $\pm 15\%$; the transmitting signal amplitude and frequency did not vary.

The final radiated as well as the conducted data for the EUT as was taken in the mode described above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

Cable 1 All tests except for Conducted Emissions

This is a 1-meter, unshielded cable connecting the host board to the DC power supply. The cable has (2) banana connectors at the DC power supply end and an SMA connector at the other end.

Cable 2 Conducted Emissions Only

This is a 2-meter, unshielded, cable connecting the host board to the AC adapter to cable #3. The cable is hard wired into the AC Adapter and has alligator clips at the other end.

Cable 3 Conducted Emissions Only

This is a 1-meter, unshielded cable connecting the host board to cable #2. The cable is connected to the alligator clips of cable #2 at the cable #2 end and has an SMA connector at the other end.

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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER	LINX TECHNOLOGIES	HUM-A-900-PRO-CAS	N/A	OJM-HUMA-900
TEST SOFTWARE	LINX TECHNOLOGIES	PRORW.PY	BASE HPRO VERSION	N/A
DC POWER SUPPLY	HQ POWER	PS 603 U	N/A	N/A
AC ADAPTER*	LINKSYS	AD 3.3/2C	N/A	N/A
ANTENNA	LINX TECHNOLOGIES	ANT-916-CW-HWR-RPS	N/A	N/A

*Only used to Conducted Emissions

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51210150	December 29, 2015	2 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	2 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	1 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
RF CONDUCTED EMISSIONS TEST EQUIPMENT					
LISN	Com-Power	LI-215A	191951	June 9, 2015	2 Year
Transient Limiter	Com-Power	252A910	1	October 16, 2016	1 Year

6. TEST SITE DESCRIPTION**6.1 Test Facility Description**

Please refer to section 2.1 and 7.1 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

For frequencies 1 GHz and below: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

For frequencies above 1 GHz: The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

7. CHARACTERISTICS OF THE TRANSMITTER

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 Channel Number and Frequencies

The FHSS uses 50 channels at the low data rate and 26 channels at the high data rate. It uses GFSK modulation. The channels are separated by approximately 375 kHz at the low data rate and 750 kHz at the high data rate.

Low Data Rate – Channel 0 = 902.97 MHz – Channel 63 = 926.65 MHz

High Data Rate – Channel 0 = 902.97 MHz – Channel 62 = 926.27 MHz

7.2 Antenna

The antenna is a $\frac{1}{2}$ wave dipole with a gain of 1.2 dBi.

8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A transient limiter was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. 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 63:4. 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 computer software. The final qualification data is located in Appendix E.

The EUT was tested at 120 VAC. The six highest emissions are listed in Table 1.0.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Section 15.207 for conducted emissions. Please see Appendix E for the data sheets.

8.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 10 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 9.3 GHz).

The frequencies above 1 GHz were averaged by using the RMS detector function on the EMI Receiver.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4 and EN 50147-2. 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 EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 2.0.

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	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 9.3 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209, and 15.247 (d) for radiated emissions.

8.1.3 RF Emissions Test Results

Table 1.0 CONDUCTED EMISSION RESULTS
HumPRO-A Series High Power Data Transceiver
Models: HUM-A-900-PRO-CAS

Frequency MHz	Average Corrected Reading* dBuV	Average Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
0.150**	45.82	55.86	-10.04
0.190***	43.88	54.11	-10.24
0.194***	43.74	54.12	-10.38
0.198***	43.63	54.20	-10.57
0.194****	43.53	54.34	-10.81
0.178****	43.49	54.34	-10.85

Table 2.0 RADIATED EMISSION RESULTS
HumPRO-A Series High Power Data Transceiver
Models: HUM-A-900-PRO-CAS

Frequency MHz	EMI Reading* (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB
3611.18 (H) (Z-Axis) ##	53.51 (Average)	53.97	-0.46
2779.96 (V) (Z-Axis) #	53.18 (Average)	53.97	-0.79
3611.88 (H) (X-Axis) #	52.98 (Average)	53.97	-0.99
2779.96 (V) (Z-Axis) ##	52.85 (Average)	53.97	-1.12
2708.91 (H) (Z-Axis) ##	52.81 (Average)	53.97	-1.16
2708.91 (V) (Z-Axis) #	52.75 (Average)	53.97	-1.22

Notes:

- * The complete emissions data is given in Appendix E of this report.
- ** Black Lead – Transmit Mode – Edge Mount – High Data Rate
- *** Black Lead – Transmit Mode – Vertical Mount – Low Data Rate
- **** Black Lead – Transmit Mode – Edge Mount – Low Data Rate
- (V) Vertical
- (H) Horizontal
- # Edge Mount – Low Data Rate
- ## Vertical Mount – High Data Rate

8.2 20 dB Bandwidth

The 20 dB Bandwidth was measured using the EMI Receiver. The bandwidth was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was $\geq 1\%$ of the bandwidth and the video bandwidth was $\geq$ RBW.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1)(i). The 20 dB bandwidth is less than the separation between channels. Please see the data sheets located in Appendix E.

8.3 Peak Output Power

The Peak Output Power was measured using the EMI Receiver. The peak output power was measured using a direct connection from the RF output of the EUT. The resolution bandwidth was greater than 20 dB bandwidth and the video bandwidth was $\geq$ RBW. The cable loss was also added back into the reading using the reference level offset.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b)(2). The maximum peak output power is less than 1 watt for the low data rate and less than 250 mW for the high data rate. Please see the data sheets located in Appendix E.

8.4 RF Antenna Conducted Test

The RF antenna conducted test was performed using the EMI Receiver. The RF antenna conducted test measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth was 100 kHz, and the video bandwidth was 300 kHz. The spans were wide enough to include all the harmonics and emissions that were produced by the intentional radiator.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power that is produced by the intentional radiator is at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of desired power. Please see the radiated emission data sheets located in Appendix E.

8.5 RF Band Edges

The RF band edges were taken at the edges of the ISM spectrum (902 MHz when the EUT was on the low channel and 928 MHz when the EUT was on the high channel) using the EMI Receiver. The RBW was set to 100 kHz and the VBW was set to 300 kHz. Plots of the fundamental were taken to ensure the amplitude at the band edges were at least 20 dB down from the peak of the fundamental emission. The plots were taken in both frequency hopping mode and single channel mode.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). The RF power at the band edges at 902 MHz and 928 MHz meet the requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d). Please see the data sheets located in Appendix E.

8.6 Carrier Frequency Separation

The Channel Hopping Separation Test was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was less than 30% of the channel spacing, and the video bandwidth $\geq$ RBW. The frequency span was wide enough to include the peaks of two adjacent channels.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1). The Channel Hopping Separation is greater than the 20 dB bandwidth. Please see the data sheets located in Appendix E.

8.7 Number of Hopping Frequencies

The Number of Hopping Frequencies was measured using the EMI Receiver. The EUT was operating in its normal operating mode. The resolution bandwidth was less than 30% of the channel spacing, and the video bandwidth was $\geq$ RBW. The frequency span was wide enough to include all of the peaks in the frequency band of operation.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1) and 15.247 (a)(1)(i). Please see the data sheets located in Appendix E.

8.8 Average Time of Occupancy Test

The Average Time of Occupancy Test was measured using the EMI Receiver. The EUT was operating in normal operating mode. The frequency span was taken to 0 Hz to determine the time for each transmission and the number of transmissions over a 20 second period for the low data rate and over a 10 second period for the high data rate. The RBW was set to be less than the channel spacing. The plots were done for both the low and high data rates.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a)(1)(i). Please see the data sheets located in Appendix E.

9. CONCLUSIONS

The HumPRO-A Series High Power Data Transceiver, Models: HUM-A-900-PRO-CAS, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS



For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

NVLAP listing links

[Agoura Division](#) / [Brea Division](#) / [Silverado/Lake Forest Division](#)

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."



ANSI listing [CETCB](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).

US/EU MRA list [NIST MRA site](#)



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).

APEC MRA list [NIST MRA site](#)

We are also listed for IT products by the following country/agency:



VCCI Support member: Please visit http://www.vcci.jp/vcci_e/



FCC Listing, from FCC OET site

[FCC test lab search](#) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>



Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247 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. An additional soldered ground connection has been made at the top middle post of the RF shield.



APPENDIX C

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

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

HumPRO-A Series High Power Data Transceiver
Models: HUM-A-900-PRO-CAS
S/N: N/A

There are no additional models covered under this report.



APPENDIX D

DIAGRAMS AND CHARTS

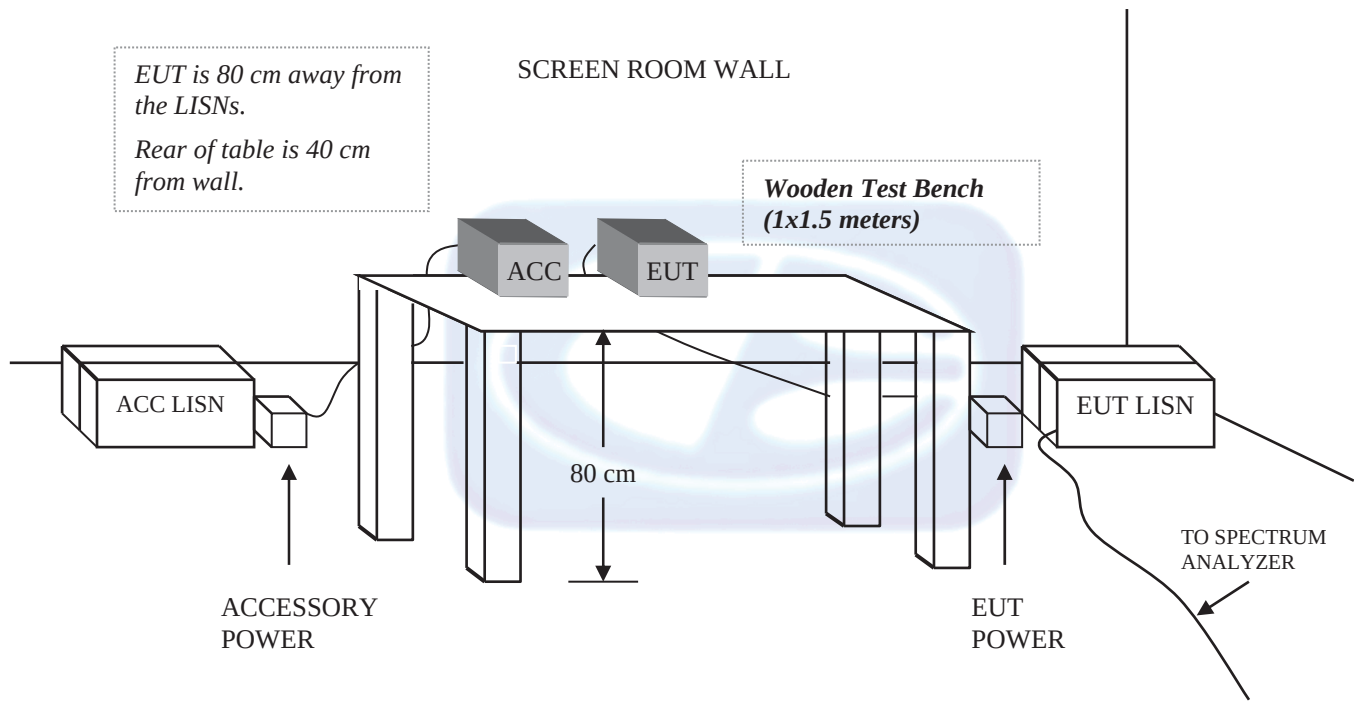
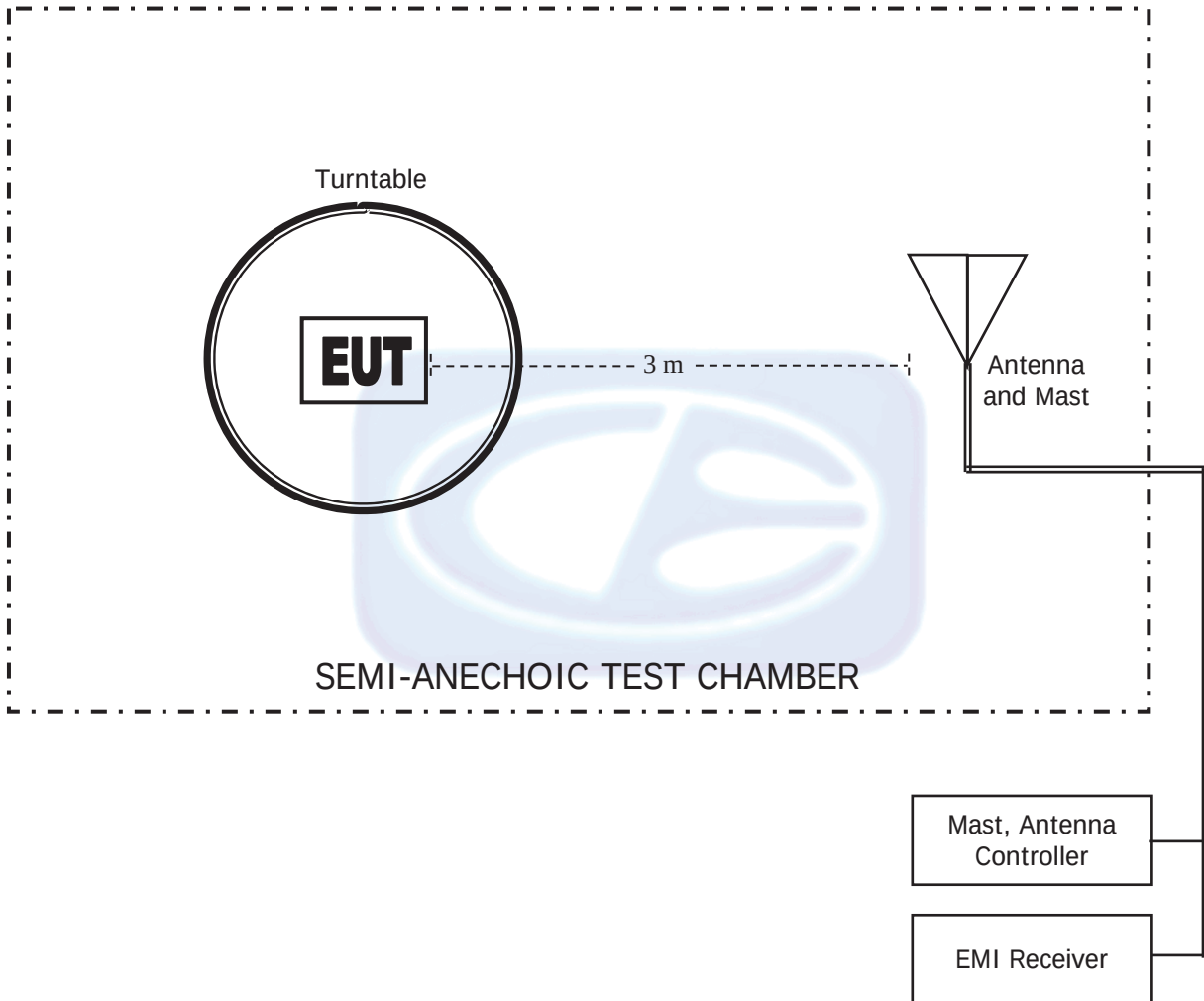
FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

FIGURE 2: LAYOUT OF THE SEMI MI-ANECHOIC TEST CHAMBER



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

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-33.18	18.32
0.01	-34.10	17.40
0.02	-38.65	12.85
0.03	-39.28	12.22
0.04	-40.09	11.41
0.05	-40.85	10.65
0.06	-40.88	10.62
0.07	-41.07	10.43
0.08	-41.04	10.46
0.09	-41.19	10.31
0.1	-41.20	10.30
0.2	-41.52	9.98
0.3	-41.53	9.97
0.4	-41.42	10.08
0.5	-41.53	9.97
0.6	-41.53	9.97
0.7	-41.43	10.07
0.8	-41.23	10.27
0.9	-41.13	10.37
1	-41.14	10.36
2	-40.80	10.70
3	-40.66	10.84
4	-40.61	10.89
5	-40.33	11.17
6	-40.53	10.97
7	-40.47	11.03
8	-40.48	11.02
9	-39.93	11.57
10	-39.81	11.69
15	-43.35	8.15
20	-39.16	12.34
25	-40.24	11.26
30	-43.18	8.32

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: SEPTEMBER 3, 2015**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	24.00	200	13.00
35	24.30	250	15.30
40	25.40	300	18.20
45	21.50	350	17.90
50	22.50	400	18.60
60	15.40	450	19.80
70	12.70	500	21.60
80	11.10	550	22.40
90	13.40	600	23.70
100	13.80	650	24.30
120	15.40	700	24.00
125	15.40	750	24.50
140	13.10	800	24.30
150	17.20	850	26.30
160	13.20	900	26.90
175	14.20	950	26.00
180	14.30	1000	25.60

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2016

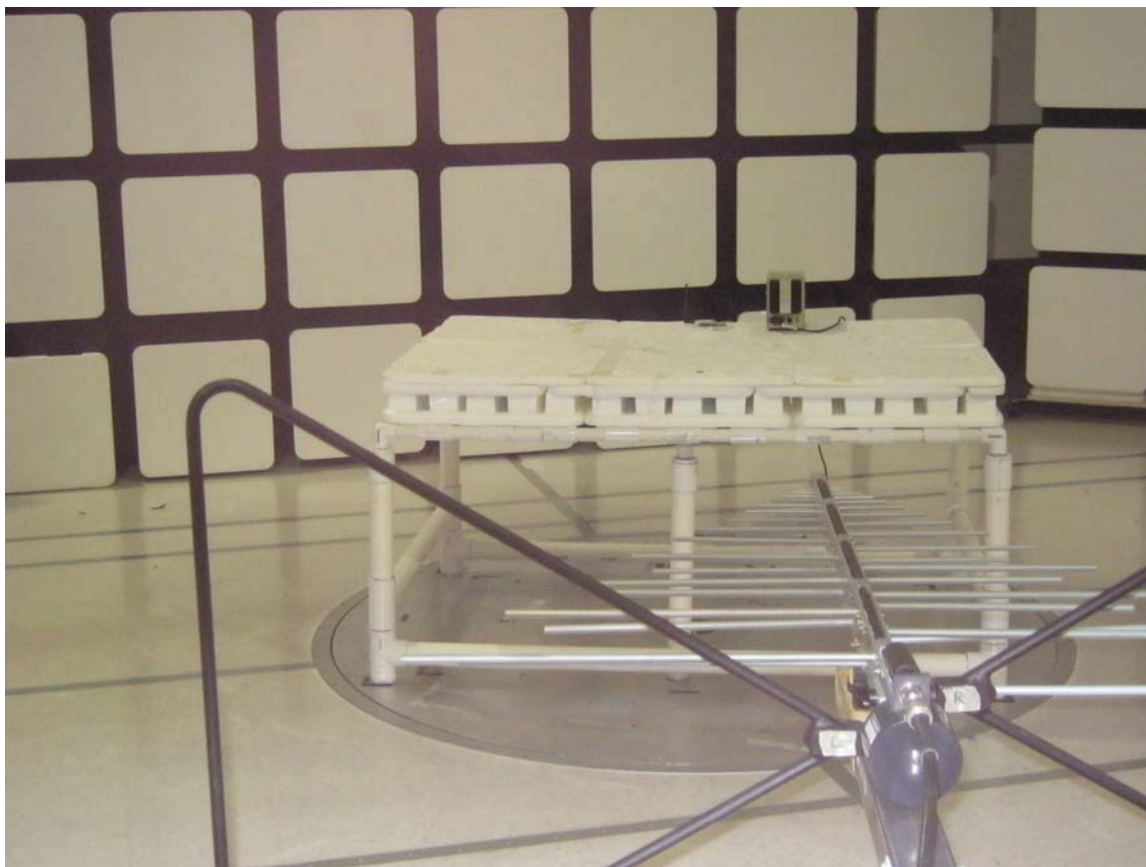
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	39.03
7.0	36.33	16.0	39.07
7.5	37.03	16.5	41.40
8.0	37.56	17.0	43.18
8.5	40.07	17.5	47.01
9.0	38.92	18.0	46.48
9.5	38.21		

COM-POWER PA-118**PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MAY 12, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	39.84	6.0	39.05
1.1	39.40	6.5	38.94
1.2	39.58	7.0	39.25
1.3	39.68	7.5	39.09
1.4	39.91	8.0	39.01
1.5	39.78	8.5	38.60
1.6	39.50	9.0	38.64
1.7	39.81	9.5	39.67
1.8	39.89	10.0	39.30
1.9	39.94	11.0	39.15
2.0	39.57	12.0	39.24
2.5	40.39	13.0	39.49
3.0	40.63	14.0	39.44
3.5	40.80	15.0	39.94
4.0	40.86	16.0	40.09
4.5	39.94	17.0	40.06
5.0	34.47	18.0	39.76
5.5	39.32		



FRONT VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – EDGE MOUNT – BELOW 1 GHz

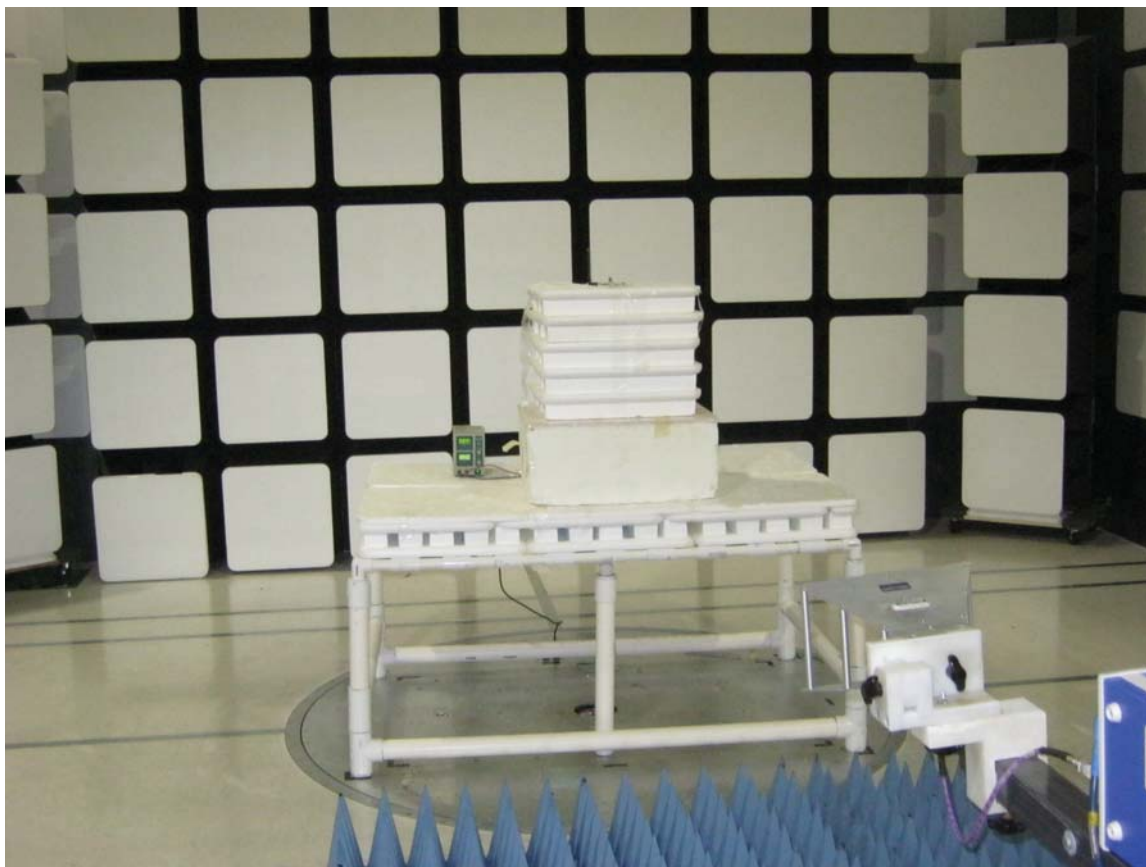
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – EDGE MOUNT – BELOW 1 GHz

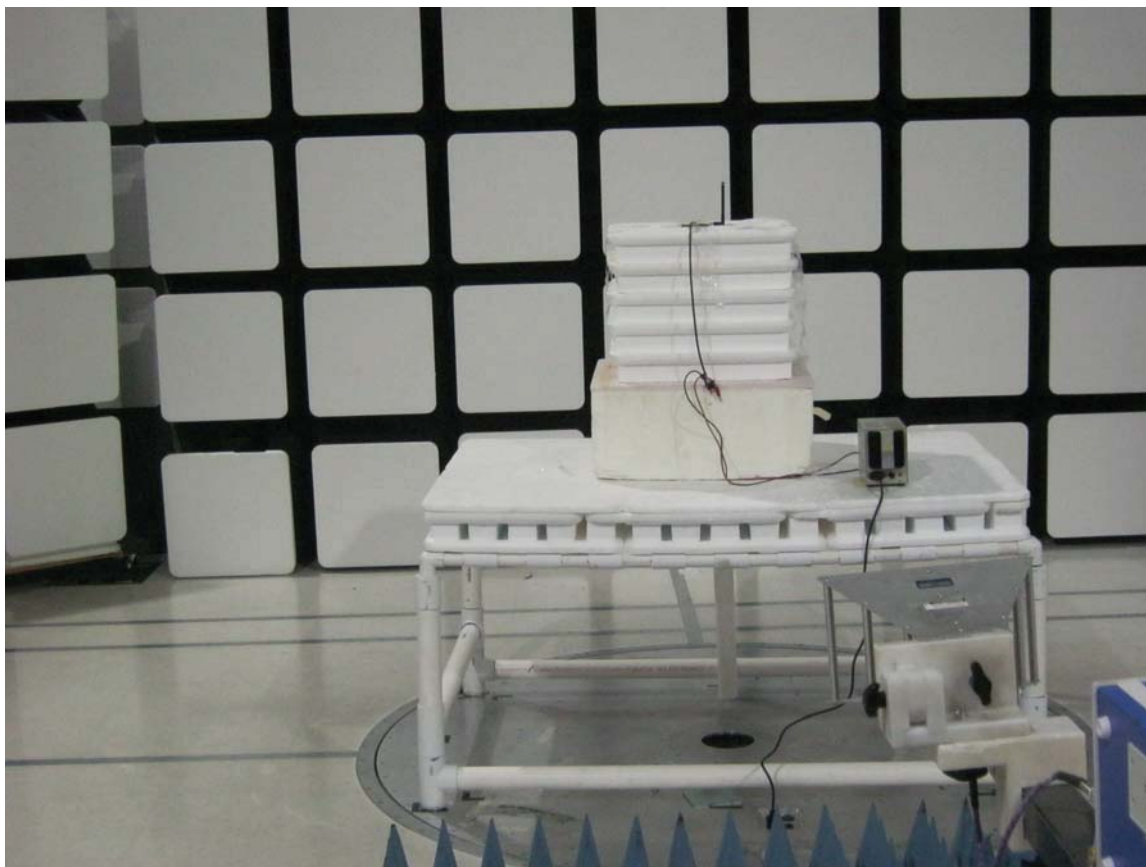
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – EDGE MOUNT – ABOVE 1 GHz

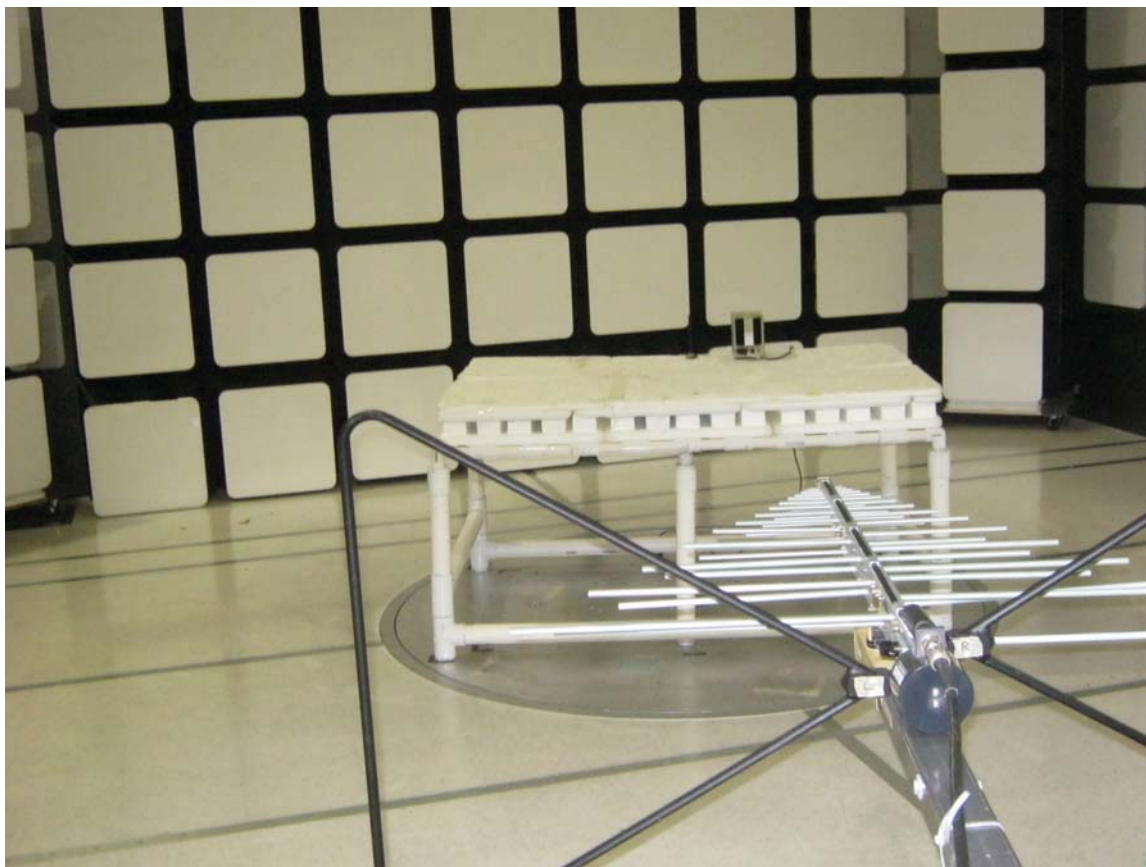
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – EDGE MOUNT – ABOVE 1 GHz

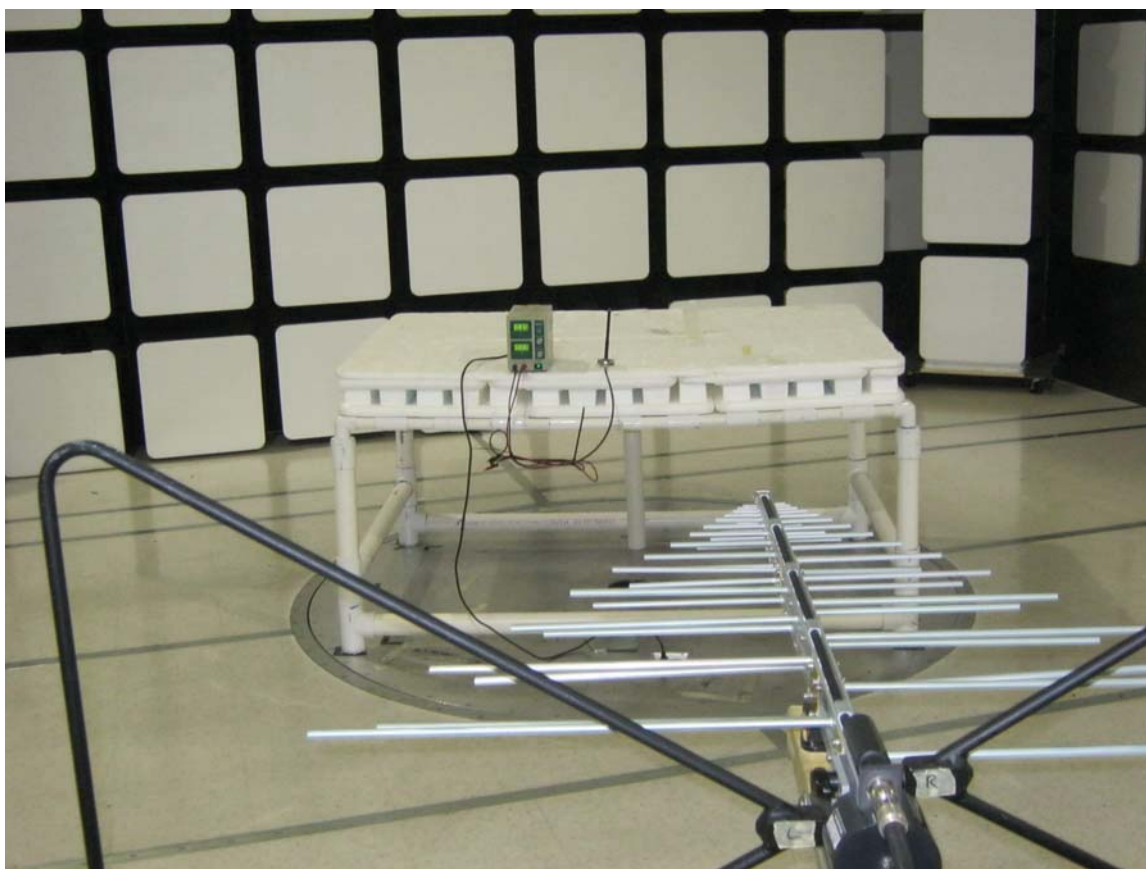
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

LINK TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – VERTICAL MOUNT – BELOW 1 GHz

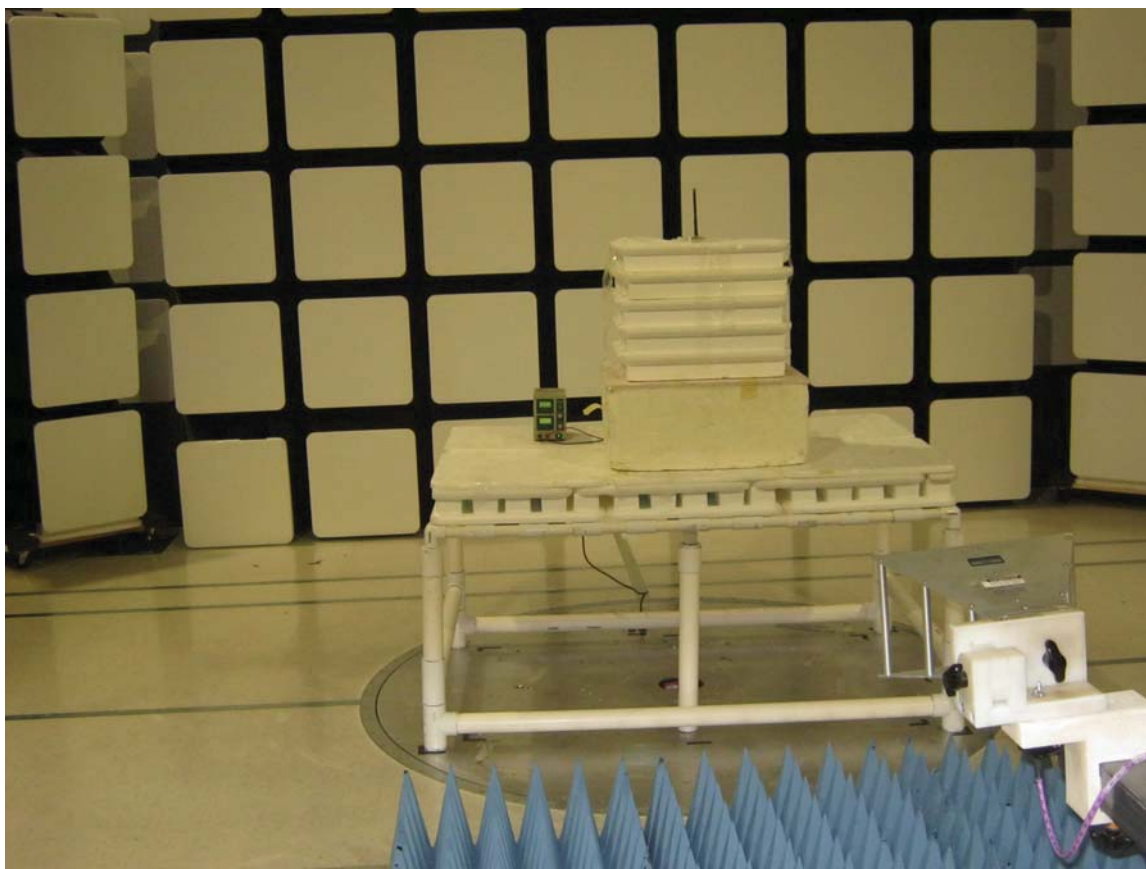
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – VERTICAL MOUNT – BELOW 1 GHz

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



FRONT VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – VERTICAL MOUNT – ABOVE 1 GHz

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



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – RADIATED EMISSIONS – VERTICAL MOUNT – ABOVE 1 GHz

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



FRONT VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – CONDUCTED EMISSIONS – EDGE MOUNT

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



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – CONDUCTED EMISSIONS – EDGE MOUNT

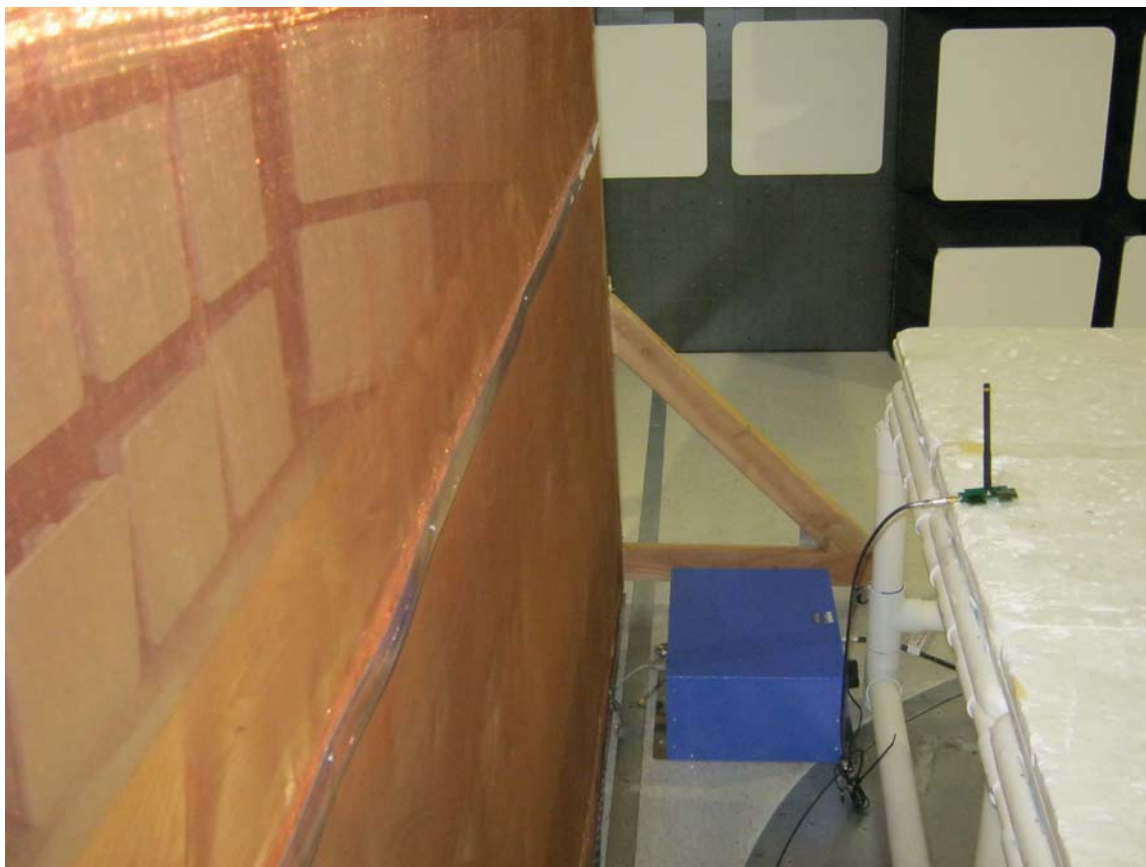
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



FRONT VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – CONDUCTED EMISSIONS – VERTICAL MOUNT

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



REAR VIEW

LINX TECHNOLOGIES
HUMPRO-A SERIES HIGH POWER DATA TRANSCEIVER
MODEL: HUM-A-900-PRO-CAS
FCC SUBPART B AND C – CONDUCTED EMISSIONS – VERTICAL MOUNT

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

APPENDIX E

DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	49.17	V	73.97	-24.80	Peak	93.50	249.65	
2708.91	47.10	V	53.97	-6.87	Avg	93.50	249.65	
3611.88	53.07	V	73.97	-20.90	Peak	16.25	225.46	
3611.88	51.44	V	53.97	-2.53	Avg	16.25	225.46	
4514.86	50.68	V	73.97	-23.29	Peak	286.00	225.82	
4514.86	48.07	V	53.97	-5.90	Avg	286.00	225.82	
5417.83	48.13	V	73.97	-25.84	Peak	4.00	224.38	
5417.83	42.42	V	53.97	-11.55	Avg	4.00	224.38	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	44.94	V	73.97	-29.03	Peak	75.25	249.16	
8126.74	34.23	V	53.97	-19.74	Avg	75.25	249.16	
9029.71	47.12	V	73.97	-26.85	Peak	279.75	251.19	
9029.71	39.36	V	53.97	-14.61	Avg	279.75	251.19	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	48.97	V	73.97	-25.00	Peak	71.75	111.25	
2708.91	46.93	V	53.97	-7.04	Avg	71.75	111.25	
3611.88	53.52	V	73.97	-20.45	Peak	321.00	111.37	
3611.88	52.02	V	53.97	-1.95	Avg	321.00	111.37	
4514.86	46.39	V	73.97	-27.58	Peak	326.00	142.95	
4514.86	41.71	V	53.97	-12.26	Avg	326.00	142.95	
5417.83	45.98	V	73.97	-27.99	Peak	0.00	223.49	
5417.83	39.16	V	53.97	-14.81	Avg	0.00	223.49	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	51.69	V	73.97	-22.28	Peak	347.75	127.37	
8126.74	47.15	V	53.97	-6.82	Avg	347.75	127.37	
9029.71	51.99	V	73.97	-21.98	Peak	332.50	175.61	
9029.71	47.89	V	53.97	-6.08	Avg	332.50	175.61	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	53.86	V	73.97	-20.11	Peak	8.75	111.55	
2708.91	52.75	V	53.97	-1.22	Avg	8.75	111.55	
3611.88	53.58	V	73.97	-20.39	Peak	358.25	111.43	
3611.88	52.06	V	53.97	-1.91	Avg	358.25	111.43	
4514.86	50.60	V	73.97	-23.37	Peak	0.50	127.43	
4514.86	47.87	V	53.97	-6.10	Avg	0.50	127.43	
5417.83	49.69	V	73.97	-24.28	Peak	348.50	111.19	
5417.83	45.76	V	53.97	-8.21	Avg	348.50	111.19	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	53.30	V	73.97	-20.67	Peak	0.00	111.43	
8126.74	49.81	V	53.97	-4.16	Avg	0.00	111.43	
9029.71	51.19	V	73.97	-22.78	Peak	317.00	143.49	
9029.71	46.64	V	53.97	-7.33	Avg	317.00	143.49	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	50.84	H	73.97	-23.13	Peak	49.75	126.95	
2708.91	49.20	H	53.97	-4.77	Avg	49.75	126.95	
3611.88	54.02	H	73.97	-19.95	Peak	93.25	143.61	
3611.88	52.98	H	53.97	-0.99	Avg	93.25	143.61	
4514.86	47.36	H	73.97	-26.61	Peak	33.75	126.83	
4514.86	43.20	H	53.97	-10.77	Avg	33.75	126.83	
5417.83	42.48	H	73.97	-31.49	Peak	119.50	112.14	
5417.83	31.51	H	53.97	-22.46	Avg	119.50	112.14	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	45.09	H	73.97	-28.88	Peak	100.75	143.13	
8126.74	34.43	H	53.97	-19.54	Avg	100.75	143.13	
9029.71	47.55	H	73.97	-26.42	Peak	40.50	112.20	
9029.71	40.72	H	53.97	-13.25	Avg	40.50	112.20	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	51.80	H	73.97	-22.17	Peak	333.25	208.56	
2708.91	50.23	H	53.97	-3.74	Avg	333.25	208.56	
3611.88	51.76	H	73.97	-22.21	Peak	50.75	224.56	
3611.88	49.33	H	53.97	-4.64	Avg	50.75	224.56	
4514.86	49.83	H	73.97	-24.14	Peak	316.50	207.91	
4514.86	46.98	H	53.97	-6.99	Avg	316.50	207.91	
5417.83	50.05	H	73.97	-23.92	Peak	33.25	144.38	
5417.83	46.13	H	53.97	-7.84	Avg	33.25	144.38	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	53.96	H	73.97	-20.01	Peak	334.75	177.46	
8126.74	50.58	H	53.97	-3.39	Avg	334.75	177.46	
9029.71	49.03	H	73.97	-24.94	Peak	318.50	192.26	
9029.71	43.42	H	53.97	-10.55	Avg	318.50	192.26	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	50.48	H	73.97	-23.49	Peak	331.00	249.70	
2708.91	48.51	H	53.97	-5.46	Avg	331.00	249.70	
3611.88	44.37	H	73.97	-29.60	Peak	332.50	177.94	
3611.88	38.66	H	53.97	-15.31	Avg	332.50	177.94	
4514.86	45.40	H	73.97	-28.57	Peak	326.00	223.31	
4514.86	40.28	H	53.97	-13.69	Avg	326.00	223.31	
5417.83	43.87	H	73.97	-30.10	Peak	6.50	127.43	
5417.83	34.38	H	53.97	-19.59	Avg	6.50	127.43	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	49.98	H	73.97	-23.99	Peak	333.00	143.67	
8126.74	44.86	H	53.97	-9.11	Avg	333.00	143.67	
9029.71	50.02	H	73.97	-23.95	Peak	323.25	192.38	
9029.71	44.86	H	53.97	-9.11	Avg	323.25	192.38	

FCC 15.247

Linx Technologies
 HumPro-A Series High Power Data Transceiver
 Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
 Lab: D
 Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	47.84	V	73.97	-26.13	Peak	277.75	127.67	
2743.86	44.90	V	53.97	-9.07	Avg	277.75	127.67	
3658.48	46.88	V	73.97	-27.09	Peak	93.00	127.97	
3658.48	43.02	V	53.97	-10.95	Avg	93.00	127.97	
4573.10	48.05	V	73.97	-25.92	Peak	288.25	128.05	
4573.10	44.30	V	53.97	-9.67	Avg	288.25	128.05	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	43.30	V	73.97	-30.67	Peak	143.25	158.26	
7316.96	32.77	V	53.97	-21.20	Avg	143.25	158.26	
8231.58	45.06	V	73.97	-28.91	Peak	75.25	190.38	
8231.58	33.76	V	53.97	-20.21	Avg	75.25	190.38	
9146.20	48.19	V	73.97	-25.78	Peak	43.00	127.40	
9146.20	41.05	V	53.97	-12.92	Avg	43.00	127.40	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	49.70	V	73.97	-24.27	Peak	171.50	127.37	
2743.86	47.63	V	53.97	-6.34	Avg	171.50	127.37	
3658.48	49.18	V	73.97	-24.79	Peak	340.50	144.98	
3658.48	46.20	V	53.97	-7.77	Avg	340.50	144.98	
4573.10	46.34	V	73.97	-27.63	Peak	333.00	112.62	
4573.10	41.86	V	53.97	-12.11	Avg	333.00	112.62	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	43.38	V	73.97	-30.59	Peak	21.25	100.80	
7316.96	32.70	V	53.97	-21.27	Avg	21.25	100.80	
8231.58	50.73	V	73.97	-23.24	Peak	350.75	128.44	
8231.58	46.04	V	53.97	-7.93	Avg	350.75	128.44	
9146.20	53.20	V	73.97	-20.77	Peak	332.50	161.46	
9146.20	49.33	V	53.97	-4.64	Avg	332.50	161.46	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	53.95	V	73.97	-20.02	Peak	0.25	159.97	
2743.86	52.55	V	53.97	-1.42	Avg	0.25	159.97	
3658.48	49.16	V	73.97	-24.81	Peak	356.25	192.20	
3658.48	45.72	V	53.97	-8.25	Avg	356.25	192.20	
4573.10	48.81	V	73.97	-25.16	Peak	331.25	192.20	
4573.10	45.28	V	53.97	-8.69	Avg	331.25	192.20	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	43.90	V	73.97	-30.07	Peak	225.00	249.11	
7316.96	32.68	V	53.97	-21.29	Avg	225.00	249.11	
8231.58	45.18	V	73.97	-28.79	Peak	1.00	143.73	
8231.58	33.69	V	53.97	-20.28	Avg	1.00	143.73	
9146.20	47.28	V	73.97	-26.69	Peak	0.00	249.05	
9146.20	39.11	V	53.97	-14.86	Avg	0.00	249.05	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	50.39	H	73.97	-23.58	Peak	55.25	192.02	
2743.86	48.37	H	53.97	-5.60	Avg	55.25	192.02	
3658.48	49.05	H	73.97	-24.92	Peak	13.75	143.91	
3658.48	45.87	H	53.97	-8.10	Avg	13.75	143.91	
4573.10	39.97	H	73.97	-34.00	Peak	292.00	127.91	
4573.10	29.71	H	53.97	-24.26	Avg	292.00	127.91	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	43.54	H	73.97	-30.43	Peak	88.75	129.04	
7316.96	32.84	H	53.97	-21.13	Avg	88.75	129.04	
8231.58	47.05	H	73.97	-26.92	Peak	107.00	128.98	
8231.58	38.38	H	53.97	-15.59	Avg	107.00	128.98	
9146.20	45.01	H	73.97	-28.96	Peak	38.50	111.64	
9146.20	34.07	H	53.97	-19.90	Avg	38.50	111.64	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	51.91	H	73.97	-22.06	Peak	325.75	143.85	
2743.86	50.39	H	53.97	-3.58	Avg	325.75	143.85	
3658.48	48.08	H	73.97	-25.89	Peak	13.00	144.14	
3658.48	44.81	H	53.97	-9.16	Avg	13.00	144.14	
4573.10	47.45	H	73.97	-26.52	Peak	301.75	127.31	
4573.10	43.65	H	53.97	-10.32	Avg	301.75	127.31	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	44.41	H	73.97	-29.56	Peak	124.25	128.92	
7316.96	33.08	H	53.97	-20.89	Avg	124.25	128.92	
8231.58	44.57	H	73.97	-29.40	Peak	325.75	176.08	
8231.58	33.91	H	53.97	-20.06	Avg	325.75	176.08	
9146.20	44.88	H	73.97	-29.09	Peak	1.25	111.85	
9146.20	33.99	H	53.97	-19.98	Avg	1.25	111.85	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	50.76	H	73.97	-23.21	Peak	325.75	249.88	
2743.86	48.80	H	53.97	-5.17	Avg	325.75	249.88	
3658.48	45.88	H	73.97	-28.09	Peak	326.50	127.37	
3658.48	41.10	H	53.97	-12.87	Avg	326.50	127.37	
4573.10	46.53	H	73.97	-27.44	Peak	328.75	249.28	
4573.10	40.35	H	53.97	-13.62	Avg	328.75	249.28	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	44.25	H	73.97	-29.72	Peak	152.00	127.48	
7316.96	32.91	H	53.97	-21.06	Avg	152.00	127.49	
8231.58	44.24	H	73.97	-29.73	Peak	335.00	112.50	
8231.58	33.79	H	53.97	-20.18	Avg	335.00	112.50	
9146.20	53.91	H	73.97	-20.06	Peak	332.50	249.88	
9146.20	50.44	H	53.97	-3.53	Avg	332.50	249.88	

FCC 15.247

Linx Technologies
HumPro-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/19/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount
Harmonic Emissions - Power Level 9
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	49.15	V	73.97	-24.82	Peak	237.25	111.49	
2779.96	46.73	V	53.97	-7.24	Avg	237.25	111.49	
3706.61	45.38	V	73.97	-28.59	Peak	86.75	143.73	
3706.61	40.75	V	53.97	-13.22	Avg	86.75	143.73	
4633.27	47.81	V	73.97	-26.16	Peak	276.75	143.49	
4633.27	42.88	V	53.97	-11.09	Avg	276.75	143.49	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	46.45	V	73.97	-27.52	Peak	182.25	249.65	
7413.22	38.70	V	53.97	-15.27	Avg	182.25	249.65	
8339.88	47.89	V	73.97	-26.08	Peak	81.25	101.25	
8339.88	40.74	V	53.97	-13.23	Avg	81.25	101.25	
9266.53		V	--	--	Peak			Not in Restricted
9266.53		V	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPro-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/19/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount

Harmonic Emissions - Power Level 9

High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	50.33	V	73.97	-23.64	Peak	177.25	144.44	
2779.96	48.28	V	53.97	-5.69	Avg	177.25	144.44	
3706.61	39.23	V	73.97	-34.74	Peak	359.50	128.44	
3706.61	28.51	V	53.97	-25.46	Avg	359.50	128.44	
4633.27	47.34	V	73.97	-26.63	Peak	316.00	111.13	
4633.27	42.84	V	53.97	-11.13	Avg	316.00	111.13	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	45.60	V	73.97	-28.37	Peak	18.50	240.02	
7413.22	36.63	V	53.97	-17.34	Avg	18.50	240.02	
8339.88	50.46	V	73.97	-23.51	Peak	354.75	175.55	
8339.88	45.68	V	53.97	-8.29	Avg	354.75	175.55	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPro-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/19/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount

Harmonic Emissions - Power Level 9

High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	55.05	V	73.97	-18.92	Peak	0.00	130.53	
2779.96	53.18	V	53.97	-0.79	Avg	0.00	130.53	
3706.61	50.14	V	73.97	-23.83	Peak	347.75	145.40	
3706.61	47.64	V	53.97	-6.33	Avg	347.75	145.40	
4633.27	52.24	V	73.97	-21.73	Peak	336.75	111.25	
4633.27	49.83	V	53.97	-4.14	Avg	336.75	111.25	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	49.99	V	73.97	-23.98	Peak	327.50	111.31	
7413.22	45.23	V	53.97	-8.74	Avg	327.50	111.31	
8339.88	51.65	V	73.97	-22.32	Peak	328.75	111.07	
8339.88	46.92	V	53.97	-7.05	Avg	328.75	111.07	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPro-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/19/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount

Harmonic Emissions - Power Level 9

High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	53.76	H	73.97	-20.21	Peak	67.75	160.98	
2779.96	52.43	H	53.97	-1.54	Avg	67.75	160.98	
3706.61	46.58	H	73.97	-27.39	Peak	71.00	161.34	
3706.61	42.35	H	53.97	-11.62	Avg	71.00	161.34	
4633.27	47.20	H	73.97	-26.77	Peak	288.25	112.86	
4633.27	41.63	H	53.97	-12.34	Avg	288.25	112.86	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	44.47	H	73.97	-29.50	Peak	197.00	113.10	
7413.22	33.13	H	53.97	-20.84	Avg	197.00	113.10	
8339.88	44.77	H	73.97	-29.20	Peak	107.50	128.98	
8339.88	34.19	H	53.97	-19.78	Avg	107.50	128.98	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPro-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/19/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount

Harmonic Emissions - Power Level 9

High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	51.93	H	73.97	-22.04	Peak	31.50	127.07	
2779.96	50.07	H	53.97	-3.90	Avg	31.50	127.07	
3706.61	48.06	H	73.97	-25.91	Peak	352.00	126.89	
3706.61	44.38	H	53.97	-9.59	Avg	352.00	126.89	
4633.27	49.93	H	73.97	-24.04	Peak	314.50	113.28	
4633.27	46.90	H	53.97	-7.07	Avg	314.50	113.28	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	49.10	H	73.97	-24.87	Peak	328.50	173.88	
7413.22	43.61	H	53.97	-10.36	Avg	328.50	173.88	
8339.88	52.84	H	73.97	-21.13	Peak	322.25	174.17	
8339.88	49.04	H	53.97	-4.93	Avg	322.25	174.17	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPro-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/19/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Edge Mount

Harmonic Emissions - Power Level 9

High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	47.79	H	73.97	-26.18	Peak	255.25	126.59	
2779.96	44.66	H	53.97	-9.31	Avg	255.25	126.59	
3706.61	46.64	H	73.97	-27.33	Peak	327.25	207.31	
3706.61	42.40	H	53.97	-11.57	Avg	327.25	207.31	
4633.27	48.81	H	73.97	-25.16	Peak	215.25	127.91	
4633.27	45.10	H	53.97	-8.87	Avg	215.25	127.91	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	49.46	H	73.97	-24.51	Peak	317.50	127.91	
7413.22	44.14	H	53.97	-9.83	Avg	317.50	127.91	
8339.88	51.37	H	73.97	-22.60	Peak	328.50	111.31	
8339.88	46.83	H	53.97	-7.14	Avg	328.50	111.31	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

Report Number: **B70127D1**
FCC Part 15 Subpart B and FCC Section 15.247 Test Report
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	44.60	V	73.97	-29.37	Peak	217.00	159.76	
2708.91	40.42	V	53.97	-13.55	Avg	217.00	159.76	
3611.88	50.09	V	73.97	-23.88	Peak	14.00	128.29	
3611.88	47.45	V	53.97	-6.52	Avg	14.00	128.29	
4514.86	41.27	V	73.97	-32.70	Peak	281.00	127.34	
4514.86	29.98	V	53.97	-23.99	Avg	281.00	127.34	
5417.83	48.40	V	73.97	-25.57	Peak	94.25	128.23	
5417.83	43.05	V	53.97	-10.92	Avg	94.25	128.23	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	45.37	V	73.97	-28.60	Peak	292.50	111.52	
8126.74	34.97	V	53.97	-19.00	Avg	292.50	111.52	
9029.71	47.58	V	73.97	-26.39	Peak	5.50	222.44	
9029.71	39.27	V	53.97	-14.70	Avg	5.50	222.44	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	45.69	V	73.97	-28.28	Peak	81.75	112.17	
2708.91	41.85	V	53.97	-12.12	Avg	81.75	112.17	
3611.88	52.25	V	73.97	-21.72	Peak	316.00	127.46	
3611.88	49.47	V	53.97	-4.50	Avg	316.00	127.46	
4514.86	42.51	V	73.97	-31.46	Peak	4.75	128.29	
4514.86	32.89	V	53.97	-21.08	Avg	4.75	128.29	
5417.83	47.19	V	73.97	-26.78	Peak	349.00	207.40	
5417.83	39.91	V	53.97	-14.06	Avg	349.00	207.40	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	45.83	V	73.97	-28.14	Peak	341.25	227.64	
8126.74	32.69	V	53.97	-21.28	Avg	341.25	227.64	
9029.71	50.57	V	73.97	-23.40	Peak	310.00	120.71	
9029.71	42.61	V	53.97	-11.36	Avg	310.00	120.71	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	44.21	V	73.97	-29.76	Peak	188.00	191.64	
2708.91	39.25	V	53.97	-14.72	Avg	188.00	191.64	
3611.88	49.61	V	73.97	-24.36	Peak	128.25	127.46	
3611.88	46.35	V	53.97	-7.62	Avg	128.25	127.46	
4514.86	46.61	V	73.97	-27.36	Peak	158.25	127.22	
4514.86	40.88	V	53.97	-13.09	Avg	158.25	127.22	
5417.83	46.74	V	73.97	-27.23	Peak	163.25	175.40	
5417.83	40.10	V	53.97	-13.87	Avg	163.25	175.40	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	47.45	V	73.97	-26.52	Peak	157.50	112.50	
8126.74	36.05	V	53.97	-17.92	Avg	157.50	112.50	
9029.71	51.57	V	73.97	-22.40	Peak	155.25	223.82	
9029.71	46.87	V	53.97	-7.10	Avg	155.25	223.82	

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/20/2017

Lab: D

Tested By: Kyle Fujimoto

High Data Rate - Edge Mount

Harmonic Emissions - Power Level 7

Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	48.41	H	73.97	-25.56	Peak	44.50	191.82	
2708.91	46.48	H	53.97	-7.49	Avg	44.50	191.82	
3611.88	54.76	H	73.97	-19.21	Peak	97.50	175.64	
3611.88	52.70	H	53.97	-1.27	Avg	97.50	175.64	
4514.86	42.63	H	73.97	-31.34	Peak	41.25	110.56	
4514.86	34.27	H	53.97	-19.70	Avg	41.25	110.56	
5417.83	46.06	H	73.97	-27.91	Peak	119.75	160.29	
5417.83	39.35	H	53.97	-14.62	Avg	119.75	160.29	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	44.98	H	73.97	-28.99	Peak	144.50	128.35	
8126.74	34.31	H	53.97	-19.66	Avg	144.50	128.35	
9029.71	45.31	H	73.97	-28.66	Peak	171.00	239.40	
9029.71	33.81	H	53.97	-20.16	Avg	171.00	239.40	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	46.51	H	73.97	-27.46	Peak	314.00	126.80	
2708.91	43.42	H	53.97	-10.55	Avg	314.00	126.80	
3611.88	51.10	H	73.97	-22.87	Peak	8.00	159.10	
3611.88	48.15	H	53.97	-5.82	Avg	8.00	159.10	
4514.86	44.88	H	73.97	-29.09	Peak	305.00	143.04	
4514.86	38.38	H	53.97	-15.59	Avg	305.00	143.04	
5417.83	49.41	H	73.97	-24.56	Peak	18.00	142.80	
5417.83	44.84	H	53.97	-9.13	Avg	18.00	142.80	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	44.66	H	73.97	-29.31	Peak	331.25	191.28	
8126.74	34.16	H	53.97	-19.81	Avg	331.25	191.28	
9029.71	44.36	H	73.97	-29.61	Peak	262.75	223.58	
9029.71	33.76	H	53.97	-20.21	Avg	262.75	223.58	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	44.21	H	73.97	-29.76	Peak	188.00	191.64	
2708.91	39.25	H	53.97	-14.72	Avg	188.00	191.64	
3611.88	49.61	H	73.97	-24.36	Peak	128.25	127.46	
3611.88	46.35	H	53.97	-7.62	Avg	128.25	127.46	
4514.86	46.61	H	73.97	-27.36	Peak	158.25	127.22	
4514.86	40.88	H	53.97	-13.09	Avg	158.25	127.22	
5417.83	46.74	H	73.97	-27.23	Peak	163.25	175.40	
5417.83	40.10	H	53.97	-13.87	Avg	163.25	175.40	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	49.15	H	73.97	-24.82	Peak	175.75	128.41	
8126.74	41.89	H	53.97	-12.08	Avg	175.75	128.41	
9029.71	47.97	H	73.97	-26.00	Peak	162.50	128.41	
9029.71	40.67	H	53.97	-13.30	Avg	162.50	128.41	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		V	--	--	Peak			Not in Restricted
1830		V	--	--	Avg			Band - Done via Conducted
2745	46.55	V	73.97	-27.42	Peak	0.00	142.80	
2745	43.15	V	53.97	-10.82	Avg	0.00	142.80	
3660	50.10	V	73.97	-23.87	Peak	359.75	126.92	
3660	46.94	V	53.97	-7.03	Avg	359.75	126.92	
4575	44.27	V	73.97	-29.70	Peak	146.75	158.44	
4575	37.77	V	53.97	-16.20	Avg	146.75	158.44	
5490		V	--	--	Peak			Not in Restricted
5490		V	--	--	Avg			Band - Done via Conducted
6405		V	--	--	Peak			Not in Restricted
6405		V	--	--	Avg			Band - Done via Conducted
7320	46.01	V	73.97	-27.96	Peak	100.25	173.91	
7320	36.82	V	53.97	-17.15	Avg	100.25	173.91	
8235	44.73	V	73.97	-29.24	Peak	344.00	221.37	
8235	33.63	V	53.97	-20.34	Avg	344.00	221.37	
9150	50.27	V	73.97	-23.70	Peak	202.00	189.85	
9150	43.23	V	53.97	-10.74	Avg	202.00	189.85	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		V	--	--	Peak			Not in Restricted
1830		V	--	--	Avg			Band - Done via Conducted
2745	47.72	V	73.97	-26.25	Peak	306.00	126.92	
2745	44.91	V	53.97	-9.06	Avg	306.00	126.92	
3660	47.84	V	73.97	-26.13	Peak	329.00	142.62	
3660	44.05	V	53.97	-9.92	Avg	329.00	142.62	
4575	42.77	V	73.97	-31.20	Peak	325.00	190.08	
4575	35.15	V	53.97	-18.82	Avg	325.00	190.08	
5490		V	--	--	Peak			Not in Restricted
5490		V	--	--	Avg			Band - Done via Conducted
6405		V	--	--	Peak			Not in Restricted
6405		V	--	--	Avg			Band - Done via Conducted
7320	47.53	V	73.97	-26.44	Peak	303.75	220.83	
7320	40.20	V	53.97	-13.77	Avg	303.75	220.83	
8235	46.96	V	73.97	-27.01	Peak	0.00	104.83	
8235	41.26	V	53.97	-12.71	Avg	0.00	104.83	
9150	49.60	V	73.97	-24.37	Peak	277.25	157.91	
9150	39.78	V	53.97	-14.19	Avg	277.25	157.91	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		V	--	--	Peak			Not in Restricted
1830		V	--	--	Avg			Band - Done via Conducted
2745	47.09	V	73.97	-26.88	Peak	339.75	175.88	
2745	43.87	V	53.97	-10.10	Avg	339.75	175.88	
3660	48.59	V	73.97	-25.38	Peak	319.50	127.34	
3660	45.61	V	53.97	-8.36	Avg	319.50	127.34	
4575	43.79	V	73.97	-30.18	Peak	332.50	112.53	
4575	36.18	V	53.97	-17.79	Avg	332.50	112.53	
5490		V	--	--	Peak			Not in Restricted
5490		V	--	--	Avg			Band - Done via Conducted
6405		V	--	--	Peak			Not in Restricted
6405		V	--	--	Avg			Band - Done via Conducted
7320	48.67	V	73.97	-25.30	Peak	343.50	224.00	
7320	42.44	V	53.97	-11.53	Avg	343.50	224.00	
8235	48.82	V	73.97	-25.15	Peak	332.50	112.29	
8235	42.51	V	53.97	-11.46	Avg	332.50	112.29	
9150	45.05	V	73.97	-28.92	Peak	28.25	158.32	
9150	34.40	V	53.97	-19.57	Avg	28.25	158.32	

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/20/2017

Lab: D

Tested By: Kyle Fujimoto

High Data Rate - Edge Mount

Harmonic Emissions - Power Level 7

Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		H	--	--	Peak			Not in Restricted
1830		H	--	--	Avg			Band - Done via Conducted
2745	37.97	H	73.97	-36.00	Peak	354.75	126.56	
2745	26.99	H	53.97	-26.98	Avg	354.75	126.56	
3660	52.42	H	73.97	-21.55	Peak	350.25	176.00	
3660	49.83	H	53.97	-4.14	Avg	350.25	176.00	
4575	42.57	H	73.97	-31.40	Peak	87.50	142.86	
4575	32.61	H	53.97	-21.36	Avg	87.50	142.86	
5490		H	--	--	Peak			Not in Restricted
5490		H	--	--	Avg			Band - Done via Conducted
6405		H	--	--	Peak			Not in Restricted
6405		H	--	--	Avg			Band - Done via Conducted
7320	44.66	H	73.97	-29.31	Peak	163.00	127.10	
7320	33.53	H	53.97	-20.44	Avg	163.00	127.10	
8235	45.00	H	73.97	-28.97	Peak	101.75	249.97	
8235	34.07	H	53.97	-19.90	Avg	101.75	249.97	
9150	48.42	H	73.97	-25.55	Peak	0.00	221.67	
9150	39.20	H	53.97	-14.77	Avg	0.00	221.67	

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/20/2017

Lab: D

Tested By: Kyle Fujimoto

High Data Rate - Edge Mount

Harmonic Emissions - Power Level 7

Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		H	--	--	Peak			Not in Restricted
1830		H	--	--	Avg			Band - Done via Conducted
2745	45.86	H	73.97	-28.11	Peak	28.50	128.05	
2745	42.66	H	53.97	-11.31	Avg	28.50	125.05	
3660	47.95	H	73.97	-26.02	Peak	0.00	157.73	
3660	44.16	H	53.97	-9.81	Avg	0.00	157.73	
4575	40.29	H	73.97	-33.68	Peak	290.50	126.68	
4575	29.04	H	53.97	-24.93	Avg	290.50	126.68	
5490		H	--	--	Peak			Not in Restricted
5490		H	--	--	Avg			Band - Done via Conducted
6405		H	--	--	Peak			Not in Restricted
6405		H	--	--	Avg			Band - Done via Conducted
7320	47.82	H	73.97	-26.15	Peak	341.00	175.22	
7320	40.37	H	53.97	-13.60	Avg	341.00	175.22	
8235	48.88	H	73.97	-25.09	Peak	296.00	176.78	
8235	42.05	H	53.97	-11.92	Avg	296.00	176.77	
9150	48.60	H	73.97	-25.37	Peak	262.50	192.83	
9150	40.45	H	53.97	-13.52	Avg	262.50	192.83	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1830		H	--	--	Peak			Not in Restricted
1830		H	--	--	Avg			Band - Done via Conducted
2745	48.58	H	73.97	-25.39	Peak	128.75	112.71	
2745	46.12	H	53.97	-7.85	Avg	128.75	112.71	
3660	38.24	H	73.97	-35.73	Peak	340.25	192.71	
3660	27.49	H	53.97	-26.48	Avg	340.25	192.71	
4575	43.53	H	73.97	-30.44	Peak	15.25	128.89	
4575	36.55	H	53.97	-17.42	Avg	15.25	128.89	
5490		H	--	--	Peak			Not in Restricted
5490		H	--	--	Avg			Band - Done via Conducted
6405		H	--	--	Peak			Not in Restricted
6405		H	--	--	Avg			Band - Done via Conducted
7320	47.84	H	73.97	-26.13	Peak	315.00	112.59	
7320	40.71	H	53.97	-13.26	Avg	315.00	112.59	
8235	46.74	H	73.97	-27.23	Peak	328.75	176.59	
8235	36.72	H	53.97	-17.25	Avg	328.75	176.59	
9150	49.26	H	73.97	-24.71	Peak	333.50	178.24	
9150	41.28	H	53.97	-12.69	Avg	333.50	178.24	

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/20/2017

Lab: D

Tested By: Kyle Fujimoto

High Data Rate - Edge Mount

Harmonic Emissions - Power Level 7

High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		V	--	--	Peak			Not in Restricted
1852.55		V	--	--	Avg			Band - Done via Conducted
2778.83	44.67	V	73.97	-29.30	Peak	273.25	192.89	
2778.83	40.47	V	53.97	-13.50	Avg	273.25	192.89	
3705.11	38.73	V	73.97	-35.24	Peak	84.50	128.29	
3705.11	27.57	V	53.97	-26.40	Avg	84.50	128.29	
4631.39	44.79	V	73.97	-29.18	Peak	282.75	249.92	
4631.39	37.62	V	53.97	-16.35	Avg	282.75	249.92	
5557.66		V	--	--	Peak			Not in Restricted
5557.66		V	--	--	Avg			Band - Done via Conducted
6483.94		V	--	--	Peak			Not in Restricted
6483.94		V	--	--	Avg			Band - Done via Conducted
7410.22	43.98	V	73.97	-29.99	Peak	81.50	175.04	
7410.22	33.16	V	53.97	-20.81	Avg	81.50	175.04	
8336.49	44.89	V	73.97	-29.08	Peak	356.25	208.47	
8336.49	34.22	V	53.97	-19.75	Avg	356.25	208.47	
9262.77		V	--	--	Peak			Not in Restricted
9262.77		V	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		V	--	--	Peak			Not in Restricted
1852.55		V	--	--	Avg			Band - Done via Conducted
2778.83	47.80	V	73.97	-26.17	Peak	134.00	127.40	
2778.83	45.06	V	53.97	-8.91	Avg	134.00	127.40	
3705.11	44.94	V	73.97	-29.03	Peak	303.00	127.28	
3705.11	40.07	V	53.97	-13.90	Avg	303.00	127.28	
4631.39	44.06	V	73.97	-29.91	Peak	321.75	208.53	
4631.39	36.41	V	53.97	-17.56	Avg	321.75	208.53	
5557.66		V	--	--	Peak			Not in Restricted
5557.66		V	--	--	Avg			Band - Done via Conducted
6483.94		V	--	--	Peak			Not in Restricted
6483.94		V	--	--	Avg			Band - Done via Conducted
7410.22	46.88	V	73.97	-27.09	Peak	310.50	205.73	
7410.22	38.58	V	53.97	-15.39	Avg	310.50	205.73	
8336.49	48.94	V	73.97	-25.03	Peak	301.00	126.92	
8336.49	40.41	V	53.97	-13.56	Avg	301.00	126.92	
9262.77		V	--	--	Peak			Not in Restricted
9262.77		V	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		V	--	--	Peak			Not in Restricted
1852.55		V	--	--	Avg			Band - Done via Conducted
2778.83	46.51	V	73.97	-27.46	Peak	342.75	112.23	
2778.83	42.34	V	53.97	-11.63	Avg	342.75	112.23	
3705.11	48.66	V	73.97	-25.31	Peak	347.50	142.92	
3705.11	45.18	V	53.97	-8.79	Avg	347.50	142.92	
4631.39	49.05	V	73.97	-24.92	Peak	341.00	112.35	
4631.39	42.67	V	53.97	-11.30	Avg	341.00	112.35	
5557.66		V	--	--	Peak			Not in Restricted
5557.66		V	--	--	Avg			Band - Done via Conducted
6483.94		V	--	--	Peak			Not in Restricted
6483.94		V	--	--	Avg			Band - Done via Conducted
7410.22	49.05	V	73.97	-24.92	Peak	341.00	112.35	
7410.22	42.67	V	53.97	-11.30	Avg	341.00	112.35	
8336.49	49.43	V	73.97	-24.54	Peak	331.25	175.46	
8336.49	42.20	V	53.97	-11.77	Avg	331.25	175.46	
9262.77		V	--	--	Peak			Not in Restricted
9262.77		V	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		H	--	--	Peak			Not in Restricted
1852.55		H	--	--	Avg			Band - Done via Conducted
2778.83	48.59	H	73.97	-25.38	Peak	49.25	147.10	
2778.83	45.98	H	53.97	-7.99	Avg	49.25	147.10	
3705.11	46.37	H	73.97	-27.60	Peak	70.25	110.50	
3705.11	42.01	H	53.97	-11.96	Avg	70.25	110.50	
4631.39	45.33	H	73.97	-28.64	Peak	283.75	127.94	
4631.39	38.15	H	53.97	-15.82	Avg	283.75	127.94	
5557.66		H	--	--	Peak			Not in Restricted
5557.66		H	--	--	Avg			Band - Done via Conducted
6483.94		H	--	--	Peak			Not in Restricted
6483.94		H	--	--	Avg			Band - Done via Conducted
7410.22	43.58	H	73.97	-30.39	Peak	279.25	128.29	
7410.22	33.15	H	53.97	-20.82	Avg	279.25	128.29	
8336.49	49.26	H	73.97	-24.71	Peak	332.00	101.25	
8336.49	42.58	H	53.97	-11.39	Avg	332.00	101.25	
9262.77		H	--	--	Peak			Not in Restricted
9262.77		H	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 01/20/2017
Lab: D
Tested By: Kyle Fujimoto

High Data Rate - Edge Mount
Harmonic Emissions - Power Level 7
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		H	--	--	Peak			Not in Restricted
1852.55		H	--	--	Avg			Band - Done via Conducted
2778.83	46.68	H	73.97	-27.29	Peak	311.25	143.04	
2778.83	43.27	H	53.97	-10.70	Avg	311.25	143.04	
3705.11	45.62	H	73.97	-28.35	Peak	318.50	144.29	
3705.11	39.89	H	53.97	-14.08	Avg	318.50	144.29	
4631.39	45.76	H	73.97	-28.21	Peak	217.00	110.92	
4631.39	39.70	H	53.97	-14.27	Avg	217.00	110.92	
5557.66		H	--	--	Peak			Not in Restricted
5557.66		H	--	--	Avg			Band - Done via Conducted
6483.94		H	--	--	Peak			Not in Restricted
6483.94		H	--	--	Avg			Band - Done via Conducted
7410.22	48.65	H	73.97	-25.32	Peak	320.25	159.52	
7410.22	41.85	H	53.97	-12.12	Avg	320.25	159.52	
8336.49	49.53	H	73.97	-24.44	Peak	289.25	175.52	
8336.49	41.71	H	53.97	-12.26	Avg	289.25	175.52	
9262.77		H	--	--	Peak			Not in Restricted
9262.77		H	--	--	Avg			Band - Done via Conducted

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 01/20/2017

Lab: D

Tested By: Kyle Fujimoto

High Data Rate - Edge Mount

Harmonic Emissions - Power Level 7

High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1852.55		H	--	--	Peak			Not in Restricted
1852.55		H	--	--	Avg			Band - Done via Conducted
2778.83	50.18	H	73.97	-23.79	Peak	350.75	143.52	
2778.83	47.93	H	53.97	-6.04	Avg	350.75	143.52	
3705.11	44.38	H	73.97	-29.59	Peak	318.50	111.52	
3705.11	38.58	H	53.97	-15.39	Avg	318.50	111.52	
4631.39	40.83	H	73.97	-33.14	Peak	9.00	223.82	
4631.39	29.93	H	53.97	-24.04	Avg	9.00	223.82	
5557.66		H	--	--	Peak			Not in Restricted
5557.66		H	--	--	Avg			Band - Done via Conducted
6483.94		H	--	--	Peak			Not in Restricted
6483.94		H	--	--	Avg			Band - Done via Conducted
7410.22	44.79	H	73.97	-29.18	Peak	213.50	238.02	
7410.22	33.63	H	53.97	-20.34	Avg	213.50	238.02	
8336.49	44.84	H	73.97	-29.13	Peak	31.75	159.40	
8336.49	34.33	H	53.97	-19.64	Avg	31.75	159.40	
9262.77		H	--	--	Peak			Not in Restricted
9262.77		H	--	--	Avg			Band - Done via Conducted

Report Number: **B70127D1**
FCC Part 15 Subpart B and **FCC Section 15.247** Test Report
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

FCC 15.247

Linx Technologies

HumPRO-A Series High Power Data Transceiver

Model: HUM-A-900-PRO-CAS

Date: 1/25/2017

Lab: D

Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount

Harmonic Emissions - Power Level 9

Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	52.73	V	73.97	-21.24	Peak	96.00	127.10	
2708.91	51.58	V	53.97	-2.39	Avg	96.00	127.10	
3611.88	53.67	V	73.97	-20.30	Peak	103.50	92.05	
3611.88	52.29	V	53.97	-1.68	Avg	103.50	92.05	
4514.86	45.25	V	73.97	-28.72	Peak	66.25	126.68	
4514.86	38.93	V	53.97	-15.04	Avg	66.25	126.68	
5417.83	54.43	V	73.97	-19.54	Peak	54.25	142.44	
5417.83	52.59	V	53.97	-1.38	Avg	54.25	142.44	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	48.83	V	73.97	-25.14	Peak	57.50	111.04	
8126.74	42.17	V	53.97	-11.80	Avg	57.50	111.04	
9029.71	44.23	V	73.97	-29.74	Peak	120.00	221.55	
9029.71	33.88	V	53.97	-20.09	Avg	120.00	221.55	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	48.46	V	73.97	-25.51	Peak	79.25	144.47	
2708.91	46.45	V	53.97	-7.52	Avg	79.25	144.47	
3611.88	51.27	V	73.97	-22.70	Peak	298.75	127.70	
3611.88	49.31	V	53.97	-4.66	Avg	298.75	127.70	
4514.86	44.28	V	73.97	-29.69	Peak	298.50	143.52	
4514.86	38.90	V	53.97	-15.07	Avg	298.50	143.52	
5417.83	42.78	V	73.97	-31.19	Peak	302.75	127.76	
5417.83	32.74	V	53.97	-21.23	Avg	302.75	127.76	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	52.10	V	73.97	-21.87	Peak	330.25	127.64	
8126.74	48.10	V	53.97	-5.87	Avg	330.25	127.64	
9029.71	49.84	V	73.97	-24.13	Peak	329.75	127.64	
9029.71	44.76	V	53.97	-9.21	Avg	329.75	127.64	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		V	--	--	Peak			Not in Restricted
1805.94		V	--	--	Avg			Band - Done via Conducted
2708.91	51.66	V	73.97	-22.31	Peak	49.50	110.98	
2708.91	50.38	V	53.97	-3.59	Avg	49.50	110.98	
3611.88	49.67	V	73.97	-24.30	Peak	40.25	126.26	
3611.88	47.20	V	53.97	-6.77	Avg	40.25	126.26	
4514.86	45.17	V	73.97	-28.80	Peak	46.25	111.40	
4514.86	39.93	V	53.97	-14.04	Avg	46.25	111.40	
5417.83	49.39	V	73.97	-24.58	Peak	124.00	143.04	
5417.83	45.51	V	53.97	-8.46	Avg	124.00	143.04	
6320.80		V	--	--	Peak			Not in Restricted
6320.80		V	--	--	Avg			Band - Done via Conducted
7223.77		V	--	--	Peak			Not in Restricted
7223.77		V	--	--	Avg			Band - Done via Conducted
8126.74	51.31	V	73.97	-22.66	Peak	325.25	127.16	
8126.74	47.11	V	53.97	-6.86	Avg	325.25	127.16	
9029.71	49.47	V	73.97	-24.50	Peak	328.50	143.16	
9029.71	43.51	V	53.97	-10.46	Avg	328.50	143.16	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Low Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	52.97	H	73.97	-21.00	Peak	94.50	177.67	
2708.91	51.86	H	53.97	-2.11	Avg	94.50	177.67	
3611.88	52.41	H	73.97	-21.56	Peak	85.75	127.70	
3611.88	50.75	H	53.97	-3.22	Avg	85.75	127.70	
4514.86	43.25	H	73.97	-30.72	Peak	109.50	143.46	
4514.86	36.79	H	53.97	-17.18	Avg	109.50	143.46	
5417.83	51.81	H	73.97	-22.16	Peak	111.00	127.52	
5417.83	49.27	H	53.97	-4.70	Avg	111.00	127.52	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	44.37	H	73.97	-29.60	Peak	177.75	111.34	
8126.74	34.03	H	53.97	-19.94	Avg	177.75	111.34	
9029.71	45.66	H	73.97	-28.31	Peak	61.00	239.40	
9029.71	34.07	H	53.97	-19.90	Avg	61.00	239.40	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Low Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	47.30	H	73.97	-26.67	Peak	98.25	112.35	
2708.91	44.88	H	53.97	-9.09	Avg	98.25	112.35	
3611.88	49.99	H	73.97	-23.98	Peak	97.50	143.64	
3611.88	47.34	H	53.97	-6.63	Avg	97.50	143.64	
4514.86	42.47	H	73.97	-31.50	Peak	103.75	142.32	
4514.86	32.32	H	53.97	-21.65	Avg	103.75	142.32	
5417.83	52.74	H	73.97	-21.23	Peak	102.75	110.32	
5417.83	49.24	H	53.97	-4.73	Avg	102.75	110.32	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	45.85	H	73.97	-28.12	Peak	337.25	158.74	
8126.74	35.50	H	53.97	-18.47	Avg	337.25	158.74	
9029.71	50.70	H	73.97	-23.27	Peak	42.50	111.34	
9029.71	41.27	H	53.97	-12.70	Avg	42.50	111.34	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Low Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1805.94		H	--	--	Peak			Not in Restricted
1805.94		H	--	--	Avg			Band - Done via Conducted
2708.91	53.83	H	73.97	-20.14	Peak	47.25	127.46	
2708.91	52.81	H	53.97	-1.16	Avg	47.25	127.46	
3611.88	54.74	H	73.97	-19.23	Peak	51.50	143.16	
3611.88	53.51	H	53.97	-0.46	Avg	51.50	143.16	
4514.86	46.75	H	73.97	-27.22	Peak	48.00	126.92	
4514.86	42.76	H	53.97	-11.21	Avg	48.00	126.92	
5417.83	54.68	H	73.97	-19.29	Peak	41.25	112.95	
5417.83	52.74	H	53.97	-1.23	Avg	41.25	112.95	
6320.80		H	--	--	Peak			Not in Restricted
6320.80		H	--	--	Avg			Band - Done via Conducted
7223.77		H	--	--	Peak			Not in Restricted
7223.77		H	--	--	Avg			Band - Done via Conducted
8126.74	50.14	H	73.97	-23.83	Peak	303.75	112.11	
8126.74	44.73	H	53.97	-9.24	Avg	303.75	112.11	
9029.71	44.97	H	73.97	-29.00	Peak	0.50	112.05	
9029.71	33.89	H	53.97	-20.08	Avg	0.50	112.05	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	48.00	V	73.97	-25.97	Peak	111.50	144.23	
2743.86	45.50	V	53.97	-8.47	Avg	111.50	144.23	
3658.48	46.74	V	73.97	-27.23	Peak	112.25	128.00	
3658.48	43.28	V	53.97	-10.69	Avg	112.25	128.00	
4573.10	46.81	V	73.97	-27.16	Peak	285.00	128.00	
4573.10	42.87	V	53.97	-11.10	Avg	285.00	128.00	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	44.42	V	73.97	-29.55	Peak	136.25	143.64	
7316.96	33.33	V	53.97	-20.64	Avg	136.25	143.64	
8231.58	45.67	V	73.97	-28.30	Peak	191.00	222.56	
8231.58	35.87	V	53.97	-18.10	Avg	191.00	222.56	
9146.20	45.85	V	73.97	-28.12	Peak	302.50	207.82	
9146.20	34.67	V	53.97	-19.30	Avg	302.50	207.82	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	49.54	V	73.97	-24.43	Peak	96.25	223.76	
2743.86	47.43	V	53.97	-6.54	Avg	96.25	223.76	
3658.48	45.30	V	73.97	-28.67	Peak	311.00	143.46	
3658.48	41.08	V	53.97	-12.89	Avg	311.00	143.46	
4573.10	43.83	V	73.97	-30.14	Peak	16.50	111.46	
4573.10	37.45	V	53.97	-16.52	Avg	16.50	111.46	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	44.11	V	73.97	-29.86	Peak	140.50	223.88	
7316.96	33.70	V	53.97	-20.27	Avg	140.50	223.88	
8231.58	44.84	V	73.97	-29.13	Peak	326.50	127.76	
8231.58	33.92	V	53.97	-20.05	Avg	326.50	127.76	
9146.20	53.19	V	73.97	-20.78	Peak	339.25	159.46	
9146.20	49.60	V	53.97	-4.37	Avg	339.25	159.46	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		V	--	--	Peak			Not in Restricted
1829.24		V	--	--	Avg			Band - Done via Conducted
2743.86	50.01	V	73.97	-23.96	Peak	315.75	143.40	
2743.86	48.20	V	53.97	-5.77	Avg	315.75	143.40	
3658.48	46.91	V	73.97	-27.06	Peak	346.25	176.59	
3658.48	43.96	V	53.97	-10.01	Avg	346.25	176.59	
4573.10	46.37	V	73.97	-27.60	Peak	339.50	128.29	
4573.10	41.97	V	53.97	-12.00	Avg	339.50	128.29	
5487.72		V	--	--	Peak			Not in Restricted
5487.72		V	--	--	Avg			Band - Done via Conducted
6402.34		V	--	--	Peak			Not in Restricted
6402.34		V	--	--	Avg			Band - Done via Conducted
7316.96	45.67	V	73.97	-28.30	Peak	306.50	112.29	
7316.96	36.84	V	53.97	-17.13	Avg	306.50	112.29	
8231.58	51.29	V	73.97	-22.68	Peak	332.50	128.53	
8231.58	45.84	V	53.97	-8.13	Avg	332.50	128.53	
9146.20	49.37	V	73.97	-24.60	Peak	2.00	191.82	
9146.20	42.76	V	53.97	-11.21	Avg	2.00	191.82	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	46.91	H	73.97	-27.06	Peak	249.75	128.17	
2743.86	44.01	H	53.97	-9.96	Avg	249.75	128.17	
3658.48	48.59	H	73.97	-25.38	Peak	95.50	175.16	
3658.48	45.91	H	53.97	-8.06	Avg	95.50	175.16	
4573.10	45.69	H	73.97	-28.28	Peak	287.75	128.11	
4573.10	40.78	H	53.97	-13.19	Avg	287.75	128.11	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	43.97	H	73.97	-30.00	Peak	151.50	143.70	
7316.96	33.15	H	53.97	-20.82	Avg	151.50	143.70	
8231.58	45.40	H	73.97	-28.57	Peak	260.00	110.50	
8231.58	34.30	H	53.97	-19.67	Avg	260.00	110.50	
9146.20	45.19	H	73.97	-28.78	Peak	266.75	239.82	
9146.20	34.37	H	53.97	-19.60	Avg	266.75	239.82	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	49.92	H	73.97	-24.05	Peak	327.25	191.40	
2743.86	48.17	H	53.97	-5.80	Avg	327.25	191.40	
3658.48	46.78	H	73.97	-27.19	Peak	9.50	127.34	
3658.48	43.47	H	53.97	-10.50	Avg	9.50	127.34	
4573.10	48.45	H	73.97	-25.52	Peak	323.50	128.77	
4573.10	45.08	H	53.97	-8.89	Avg	323.50	128.77	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	44.12	H	73.97	-29.85	Peak	158.75	239.88	
7316.96	33.38	H	53.97	-20.59	Avg	158.75	239.88	
8231.58	45.30	H	73.97	-28.67	Peak	329.00	159.52	
8231.58	33.96	H	53.97	-20.01	Avg	329.00	159.52	
9146.20	48.24	H	73.97	-25.73	Peak	52.25	223.82	
9146.20	41.41	H	53.97	-12.56	Avg	52.25	223.82	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
Middle Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1829.24		H	--	--	Peak			Not in Restricted
1829.24		H	--	--	Avg			Band - Done via Conducted
2743.86	53.32	H	73.97	-20.65	Peak	142.00	191.76	
2743.86	52.07	H	53.97	-1.90	Avg	142.00	191.76	
3658.48	45.08	H	73.97	-28.89	Peak	348.50	127.34	
3658.48	40.92	H	53.97	-13.05	Avg	348.50	127.34	
4573.10	44.11	H	73.97	-29.86	Peak	347.50	160.05	
4573.10	38.48	H	53.97	-15.49	Avg	347.50	160.05	
5487.72		H	--	--	Peak			Not in Restricted
5487.72		H	--	--	Avg			Band - Done via Conducted
6402.34		H	--	--	Peak			Not in Restricted
6402.34		H	--	--	Avg			Band - Done via Conducted
7316.96	44.38	H	73.97	-29.59	Peak	177.75	114.92	
7316.96	34.02	H	53.97	-19.95	Avg	177.75	114.92	
8231.58	44.88	H	73.97	-29.09	Peak	338.50	111.58	
8231.58	33.87	H	53.97	-20.10	Avg	338.50	111.58	
9146.20	53.10	H	73.97	-20.87	Peak	332.75	127.40	
9146.20	48.98	H	53.97	-4.99	Avg	332.75	127.40	

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	49.17	V	73.97	-24.80	Peak	107.75	143.28	
2779.96	46.80	V	53.97	-7.17	Avg	107.75	143.28	
3706.61	45.34	V	73.97	-28.63	Peak	108.50	143.04	
3706.61	41.30	V	53.97	-12.67	Avg	108.50	143.04	
4633.27	47.67	V	73.97	-26.30	Peak	290.50	159.28	
4633.27	43.55	V	53.97	-10.42	Avg	290.50	159.28	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	47.66	V	73.97	-26.31	Peak	290.75	161.07	
7413.22	43.12	V	53.97	-10.85	Avg	290.75	161.07	
8339.88	44.79	V	73.97	-29.18	Peak	61.50	223.94	
8339.88	34.37	V	53.97	-19.60	Avg	61.50	223.94	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	52.47	V	73.97	-21.50	Peak	126.00	143.64	
2779.96	51.05	V	53.97	-2.92	Avg	126.00	143.64	
3706.61	45.13	V	73.97	-28.84	Peak	332.50	174.14	
3706.61	40.84	V	53.97	-13.13	Avg	332.50	174.14	
4633.27	46.02	V	73.97	-27.95	Peak	247.50	127.04	
4633.27	40.24	V	53.97	-13.73	Avg	247.50	127.04	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	43.67	V	73.97	-30.30	Peak	48.25	221.49	
7413.22	33.27	V	53.97	-20.70	Avg	48.25	221.49	
8339.88	47.21	V	73.97	-26.76	Peak	41.25	141.85	
8339.88	38.20	V	53.97	-15.77	Avg	41.25	141.85	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		V	--	--	Peak			Not in Restricted
1853.31		V	--	--	Avg			Band - Done via Conducted
2779.96	53.61	V	73.97	-20.36	Peak	346.75	112.17	
2779.96	52.85	V	53.97	-1.12	Avg	346.75	112.17	
3706.61	49.57	V	73.97	-24.40	Peak	330.00	111.22	
3706.61	46.56	V	53.97	-7.41	Avg	330.00	111.22	
4633.27	49.62	V	73.97	-24.35	Peak	320.00	112.23	
4633.27	46.36	V	53.97	-7.61	Avg	320.00	112.23	
5559.92		V	--	--	Peak			Not in Restricted
5559.92		V	--	--	Avg			Band - Done via Conducted
6486.57		V	--	--	Peak			Not in Restricted
6486.57		V	--	--	Avg			Band - Done via Conducted
7413.22	47.33	V	73.97	-26.64	Peak	328.50	174.08	
7413.22	39.66	V	53.97	-14.31	Avg	328.50	174.08	
8339.88	51.73	V	73.97	-22.24	Peak	325.00	112.05	
8339.88	47.18	V	53.97	-6.79	Avg	325.00	112.05	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	50.57	H	73.97	-23.40	Peak	257.50	126.92	
2779.96	48.84	H	53.97	-5.13	Avg	257.50	126.92	
3706.61	44.94	H	73.97	-29.03	Peak	102.00	175.94	
3706.61	40.58	H	53.97	-13.39	Avg	102.00	175.94	
4633.27	46.75	H	73.97	-27.22	Peak	34.50	191.76	
4633.27	41.89	H	53.97	-12.08	Avg	34.50	191.76	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	43.64	H	73.97	-30.33	Peak	122.75	158.38	
7413.22	33.16	H	53.97	-20.81	Avg	122.75	158.38	
8339.88	47.56	H	73.97	-26.41	Peak	110.25	221.61	
8339.88	39.38	H	53.97	-14.59	Avg	110.25	221.61	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	51.90	H	73.97	-22.07	Peak	42.75	159.76	
2779.96	50.29	H	53.97	-3.68	Avg	42.75	159.76	
3706.61	46.00	H	73.97	-27.97	Peak	95.50	159.34	
3706.61	42.40	H	53.97	-11.57	Avg	95.50	159.34	
4633.27	46.10	H	73.97	-27.87	Peak	282.75	112.41	
4633.27	41.26	H	53.97	-12.71	Avg	282.75	112.41	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	44.13	H	73.97	-29.84	Peak	268.50	110.98	
7413.22	33.17	H	53.97	-20.80	Avg	268.50	110.98	
8339.88	45.51	H	73.97	-28.46	Peak	102.75	144.41	
8339.88	32.24	H	53.97	-21.73	Avg	102.75	144.41	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

FCC 15.247

Linx Technologies
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Date: 1/25/2017
Lab: D
Tested By: Kyle Fujimoto

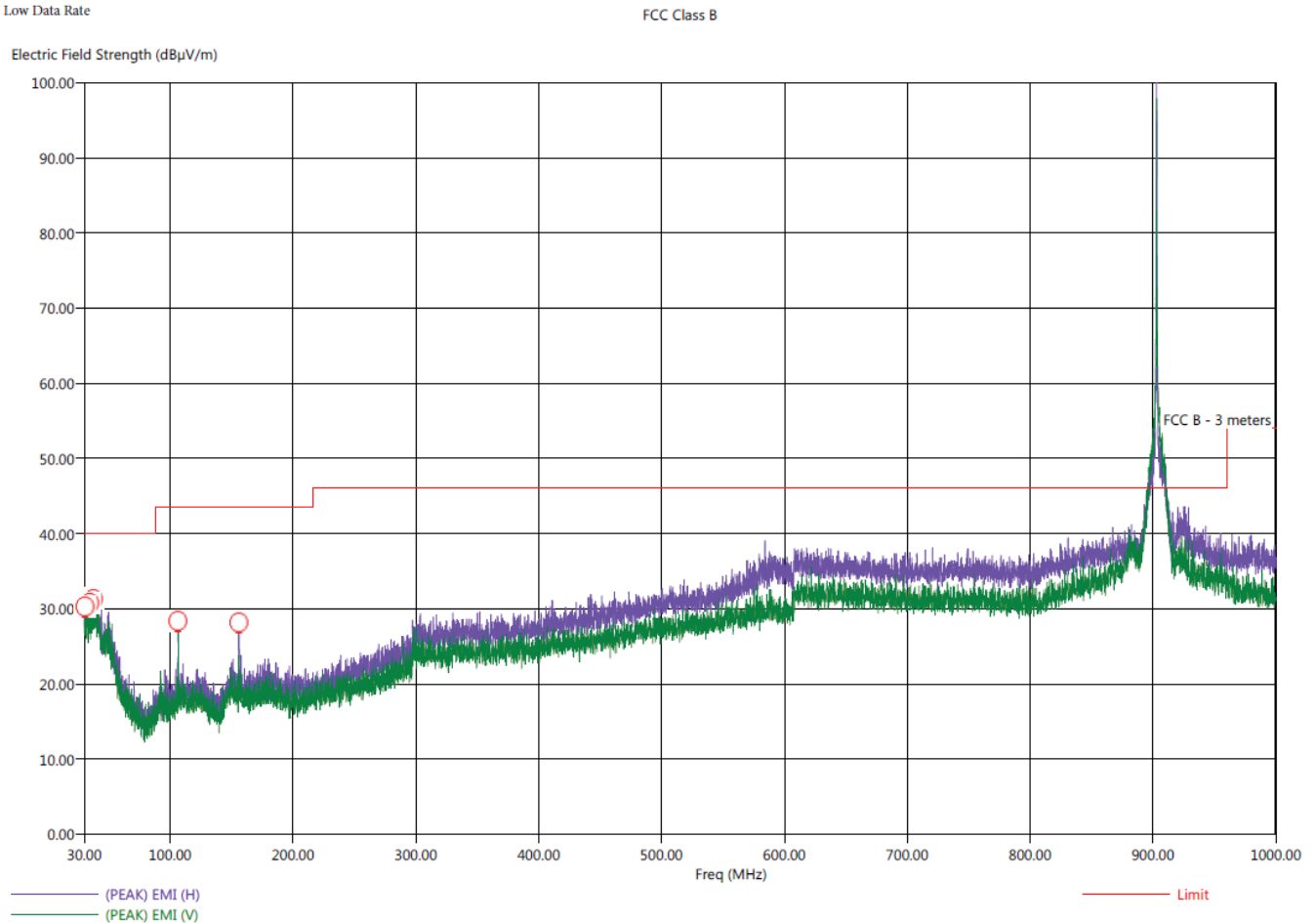
Low Data Rate - Vertical Mount
Harmonic Emissions - Power Level 9
High Channel - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1853.31		H	--	--	Peak			Not in Restricted
1853.31		H	--	--	Avg			Band - Done via Conducted
2779.96	49.06	H	73.97	-24.91	Peak	338.00	142.32	
2779.96	46.92	H	53.97	-7.05	Avg	338.00	142.32	
3706.61	44.93	H	73.97	-29.04	Peak	332.50	126.02	
3706.61	40.37	H	53.97	-13.60	Avg	332.50	126.02	
4633.27	49.62	H	73.97	-24.35	Peak	320.00	112.23	
4633.27	46.36	H	53.97	-7.61	Avg	320.00	112.23	
5559.92		H	--	--	Peak			Not in Restricted
5559.92		H	--	--	Avg			Band - Done via Conducted
6486.57		H	--	--	Peak			Not in Restricted
6486.57		H	--	--	Avg			Band - Done via Conducted
7413.22	47.09	H	73.97	-26.88	Peak	325.25	127.22	
7413.22	39.94	H	53.97	-14.03	Avg	325.25	127.22	
8339.88	51.76	H	73.97	-22.21	Peak	321.00	111.28	
8339.88	47.26	H	53.97	-6.71	Avg	321.00	111.28	
9266.53								Not in Restricted
9266.53								Band - Done via Conducted

Report Number: **B70127D1**
FCC Part 15 Subpart B and FCC Section 15.247 Test Report
HumPRO-A Series High Power Data Transceiver
Model: HUM-A-900-PRO-CAS

Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Tx Mode - CAS - FCC Class B - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical Mount
Low Data Rate

1/25/2017 6:48:17 PM
Sequence: Preliminary Scan



Note: The emission above the limit line is from the transmitter and subject to the limits of FCC 15.247.

Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - Tx Mode - CAS - FCC Class B - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical Mount
Low Data Rate

1/25/2017 7:09:41 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(OP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Twr Ht (cm)	Ttbl Aql (dea)
30.70	V	27.32	22.64	-12.68	-17.36	40.00	256.83	359.75
33.90	H	28.18	22.90	-11.82	-17.10	40.00	402.08	307.25
34.50	V	27.97	22.91	-12.03	-17.09	40.00	302.92	242.75
37.60	V	27.54	23.43	-12.46	-16.57	40.00	351.16	2.50
106.40	V	29.36	27.57	-14.14	-15.93	43.50	143.22	335.25
156.00	H	29.02	27.41	-14.48	-16.09	43.50	258.62	28.00

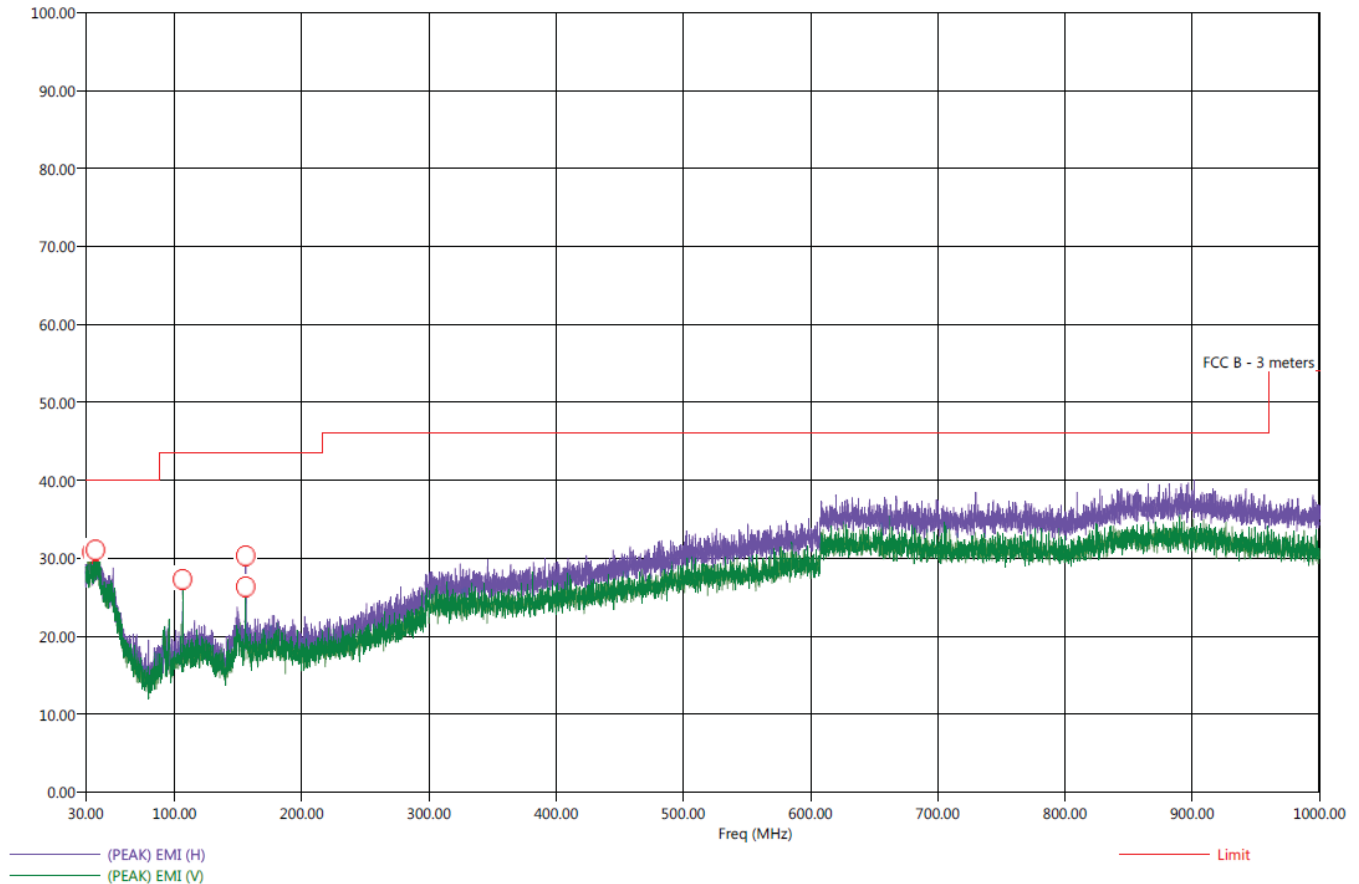


Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Rx Mode - CAS - FCC Class B - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously Receiving at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical Mount

1/25/2017 6:06:35 PM
Sequence: Preliminary Scan

Low Data Rate

FCC Class B

Electric Field Strength (dB μ V/m)

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - FCC Class B - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical Mount
Low Data Rate

1/25/2017 6:17:08 PM
Sequence: Final Measurements

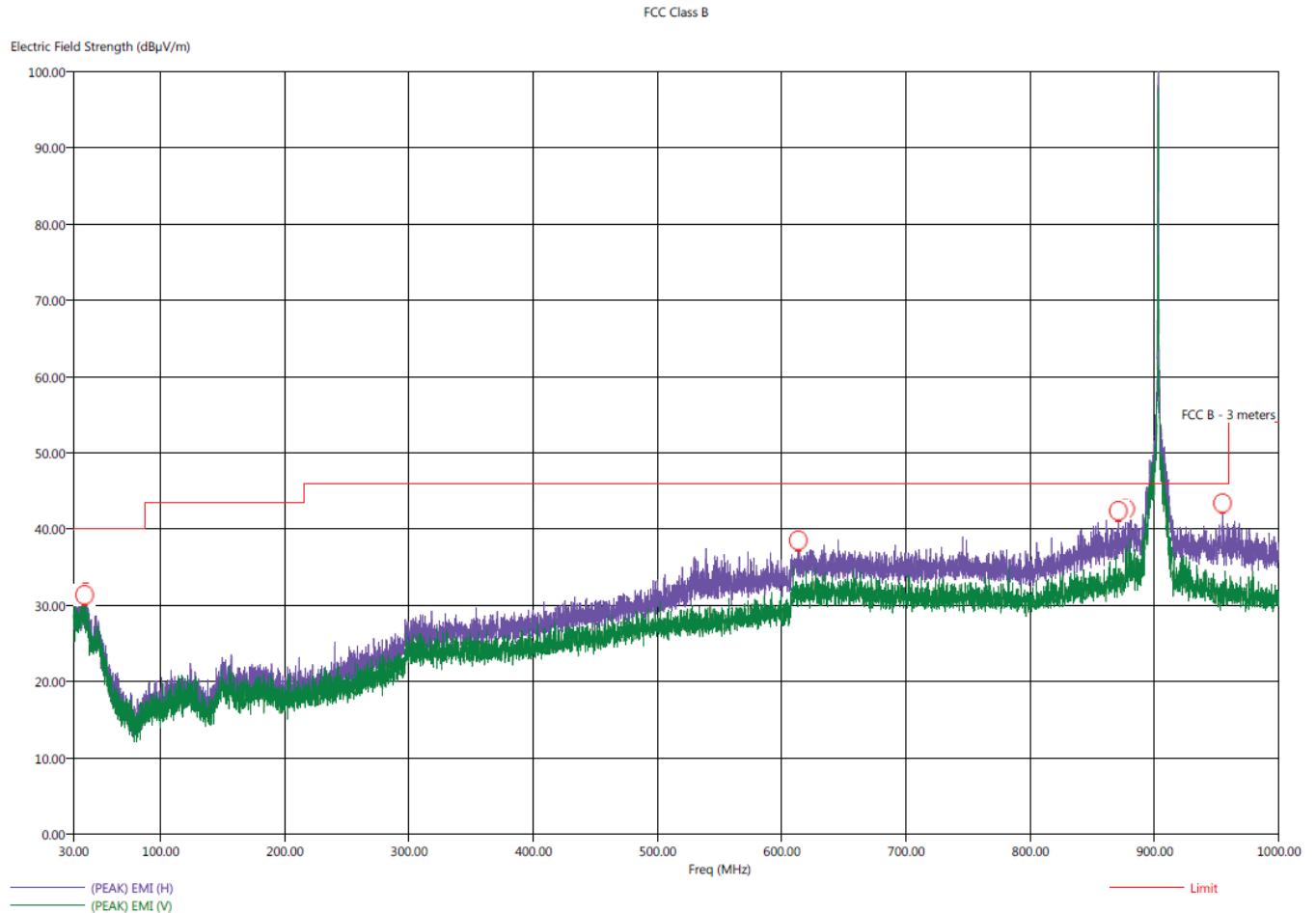
FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Twr Ht (cm)	Ttbl Aql (deg)
35.10	H	27.29	22.78	-12.71	-17.22	40.00	143.88	172.25
37.90	V	27.41	23.38	-12.59	-16.62	40.00	400.00	33.00
106.40	H	28.26	27.44	-15.24	-16.06	43.50	208.95	312.75
106.40	V	30.87	29.44	-12.63	-14.06	43.50	386.62	241.50
156.00	H	30.71	29.18	-12.79	-14.32	43.50	160.41	8.50
156.00	V	26.42	24.10	-17.08	-19.40	43.50	160.35	297.50



Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Tx Mode - CAS - FCC Class B - Edge Mount - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - Low Data Rate

1/27/2017 1:12:42 PM
Sequence: Preliminary Scan



Note: The emission above the limit line is from the transmitter and subject of FCC 15.247 limits.

Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - Tx Mode - CAS - Edge Mount - FCC Class B - 30 MHz to 1000 MHz - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - Low Data Rate

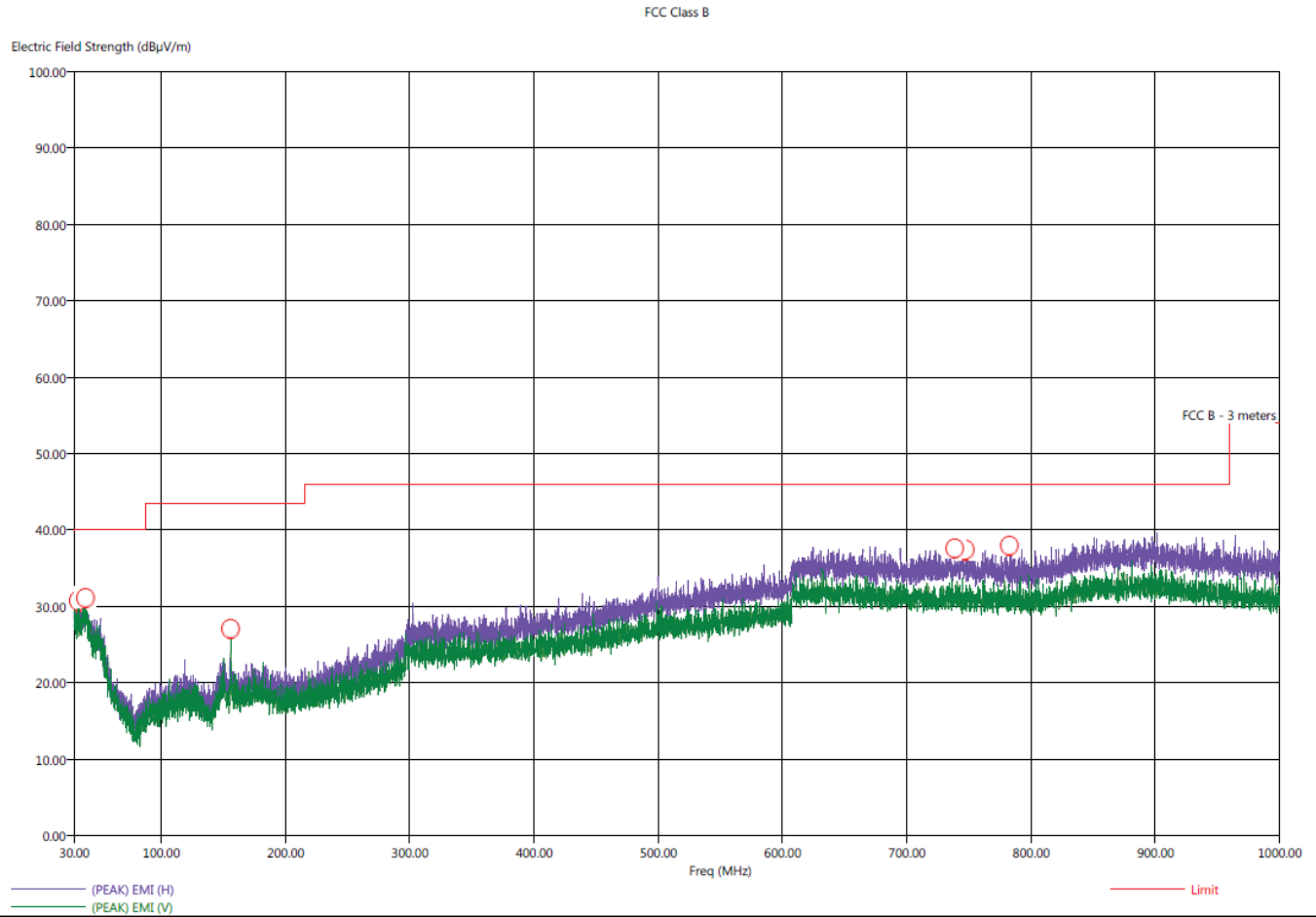
1/27/2017 1:24:20 PM
Sequence: Final Measurements

FCC Class B								
Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Twr Ht (cm)	Ttbl Agl (deg)
39.00	V	28.76	23.84	-11.24	-16.16	40.00	175.58	254.75
39.90	H	27.88	24.05	-12.12	-15.95	40.00	191.70	25.75
613.40	H	30.69	25.14	-15.31	-20.86	46.00	191.64	315.75
871.10	H	32.83	28.81	-13.17	-17.19	46.00	400.11	111.75
876.90	H	33.43	28.93	-12.57	-17.07	46.00	320.00	149.50
955.00	H	32.99	28.66	-13.01	-17.34	46.00	256.17	178.50



Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Rx Mode - CAS - FCC Class B - Edge Mount - Low Data - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - Low Data Rate

1/27/2017 3:06:17 PM
Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - Rx Mode - CAS - Edge Mount - FCC Class B - LowData - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - Low Data Rate

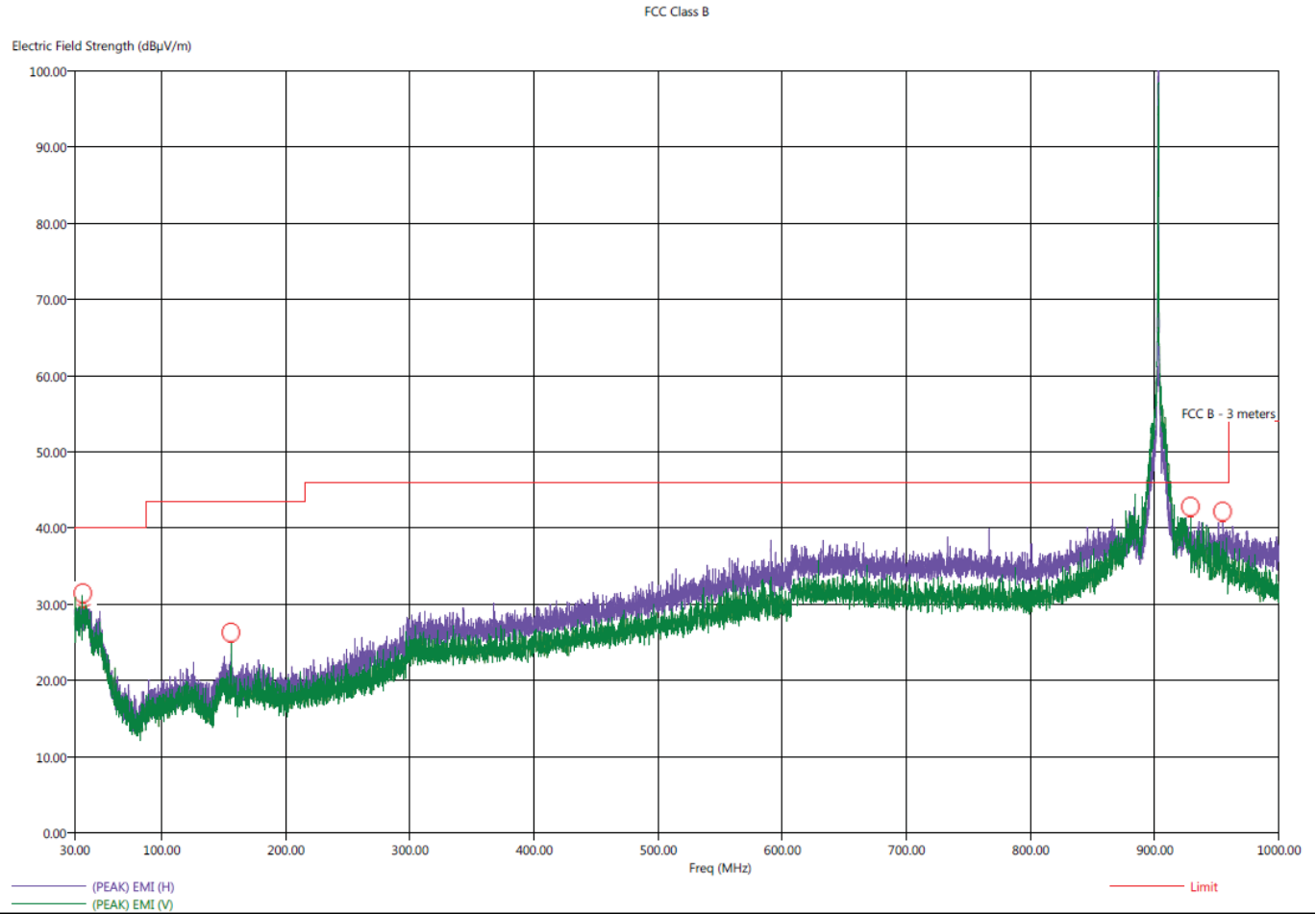
1/27/2017 3:15:43 PM
Sequence: Final Measurements

FCC Class B								
Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Twr Ht (cm)	Ttbt Agl (deg)
33.40	H	27.59	23.06	-12.41	-16.94	40.00	127.64	138.75
39.20	V	28.11	23.94	-11.89	-16.06	40.00	336.00	52.00
156.00	V	29.94	28.63	-13.56	-14.87	43.50	111.52	262.25
738.70	H	30.77	26.21	-15.23	-19.79	46.00	320.11	65.75
747.40	H	30.68	26.32	-15.32	-19.68	46.00	207.70	352.75
782.90	H	30.60	26.32	-15.40	-19.68	46.00	368.53	195.00



Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Tx Mode - CAS - FCC Class B - Edge Mount - High Data - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - High Data Rate

1/27/2017 1:56:06 PM
Sequence: Preliminary Scan



Note: The emission above the limit line is from the transmitter and subject of FCC 15.247 limits.

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - Tx Mode - CAS - Edge Mount - FCC Class B - High Data - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - High Data Rate

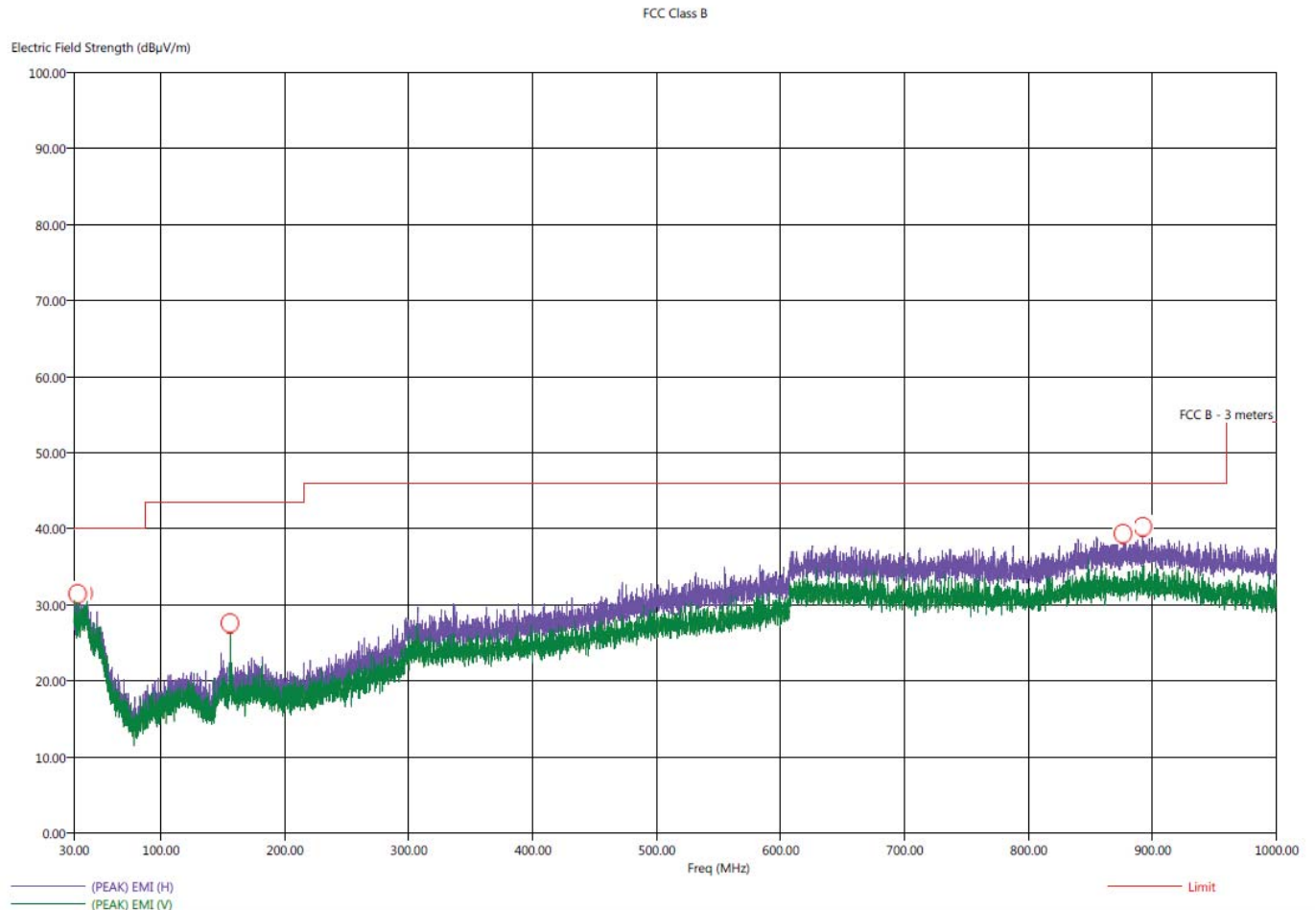
1/27/2017 2:05:48 PM
Sequence: Final Measurements

FCC Class B								
Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Twr Ht (cm)	Ttbt Agl (deg)
36.60	H	27.19	23.08	-12.81	-16.92	40.00	304.00	124.25
37.60	H	27.50	23.29	-12.50	-16.71	40.00	145.07	158.50
38.80	H	28.16	23.83	-11.84	-16.17	40.00	368.53	81.25
156.00	V	29.07	27.22	-14.43	-16.28	43.50	111.64	261.50
929.00	V	43.65	41.88	-2.35	-4.12	46.00	111.64	55.75
954.90	H	40.54	36.96	-5.46	-9.04	46.00	223.46	328.50



Title: Pre-Scan - FCC Class B
File: Agilent - Radiated Pre-Scan - Rx Mode - CAS - FCC Class B - Edge Mount - High Data - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at the low channel - X-Axis
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - High Data Rate

1/27/2017 2:29:13 PM
Sequence: Preliminary Scan



Title: Radiated Final - 30-1000 MHz - FCC Class B
File: Agilent - Radiated Final Scan - Rx Mode - CAS - Edge Mount - FCC Class B - High Data - 01-25-2017.set
Operator: Kyle Fujimoto
EUT Type: HumPro-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at the low channel - X-Axis Worst Case
Comments: Company: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount - High Data Rate

1/27/2017 2:43:24 PM
Sequence: Final Measurements

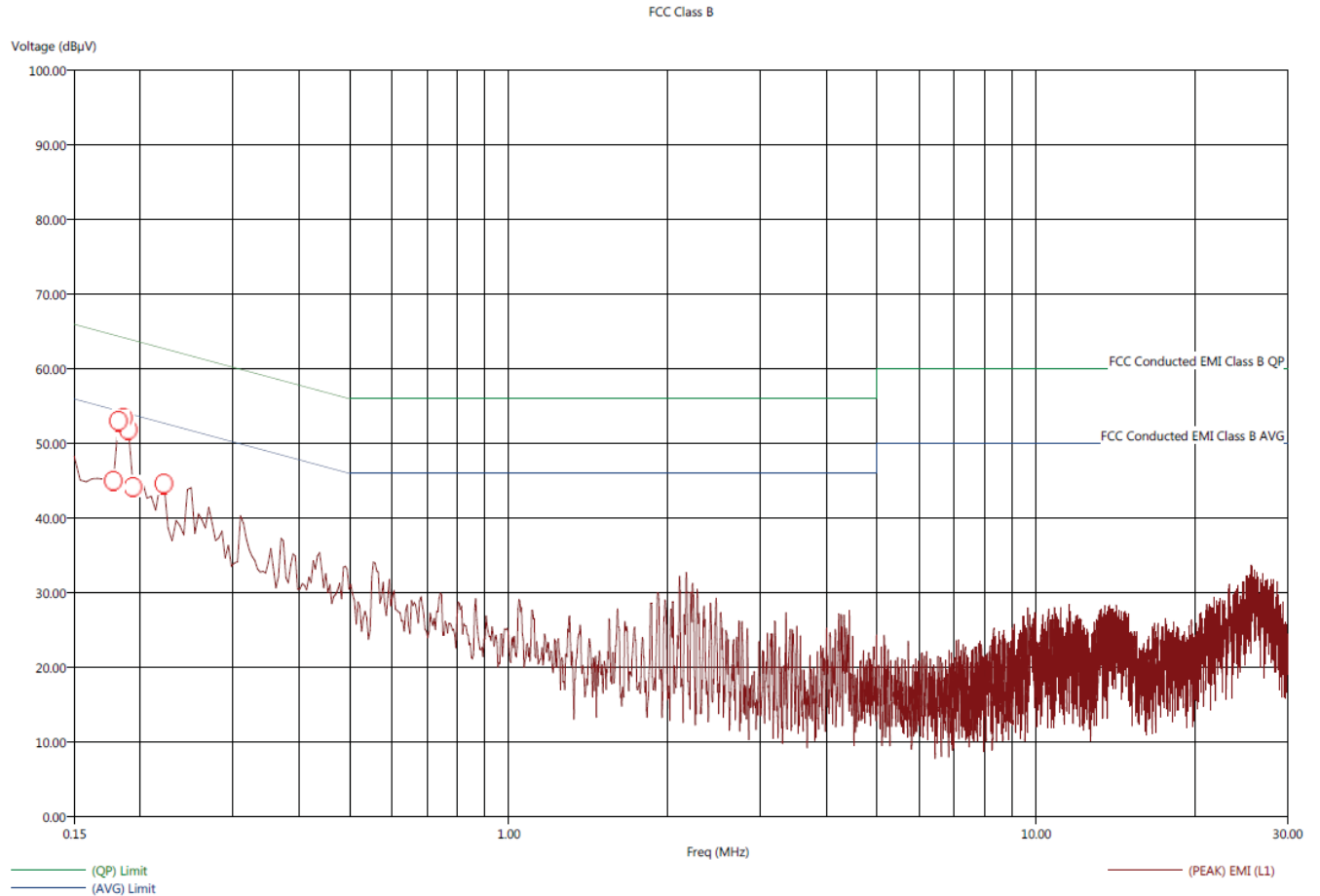
FCC Class B								
Freq (MHz)	Pol	(PEAK) EMI (dBμV/m)	(QP) EMI (dBμV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBμV/m)	Twr Ht (cm)	Ttbi Agl (deg)
33.00	H	27.80	23.03	-12.20	-16.97	40.00	143.28	54.50
34.30	H	26.98	23.05	-13.02	-16.95	40.00	191.82	213.00
37.90	H	27.40	23.54	-12.60	-16.46	40.00	129.13	7.25
156.00	V	30.03	28.68	-13.47	-14.82	43.50	111.64	250.25
876.50	H	33.54	28.93	-12.46	-17.07	46.00	367.94	188.50
892.30	H	33.24	29.17	-12.76	-16.83	46.00	111.58	128.25



**CONDUCTED EMISSIONS
DATA SHEETS**

Title: FCC Class B - Black Lead
File: Agilent - CE - Pre-Scan - Black Lead - Tx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 2:26:40 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - Black Lead
File: 1 - CE - Final Scan - Black Lead - Tx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:13:00 PM
Sequence: Final Measurements

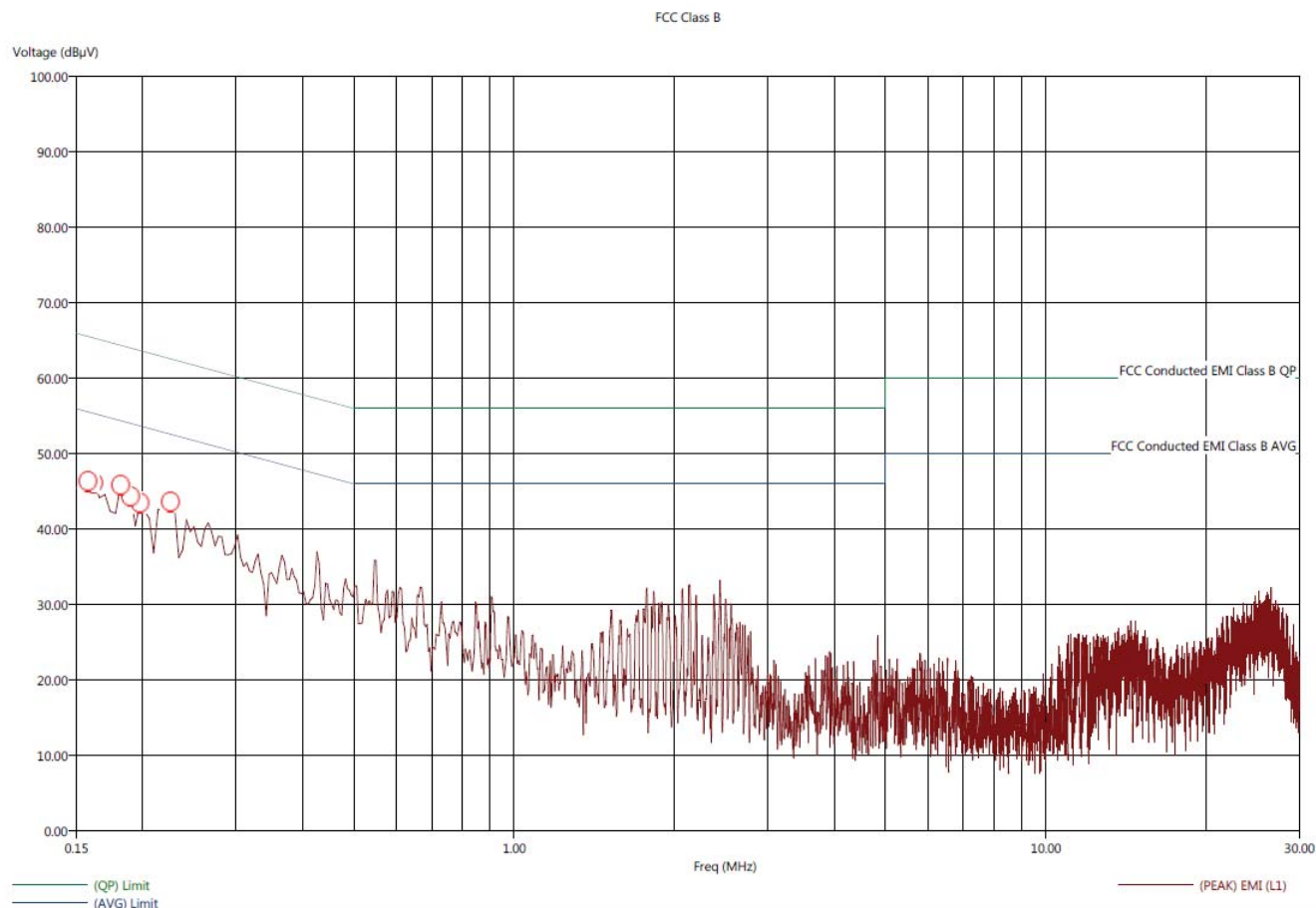
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.178	52.63	43.49	-1.71	-10.85	54.34	0.09	0.40	9.61
0.182	52.37	42.43	-1.90	-11.84	54.27	0.09	0.40	9.61
0.186	52.48	42.12	-1.99	-12.35	54.47	0.08	0.41	9.62
0.190	52.72	42.80	-1.57	-11.49	54.29	0.09	0.40	9.61
0.194	52.62	43.53	-1.72	-10.81	54.34	0.09	0.40	9.61
0.222	34.16	18.28	-18.83	-34.71	52.98	0.10	0.31	9.61



Title: FCC Class B - White Lead
 File: 2 - CE - Pre-Scan - White Lead - Tx Mode - Low Data - Edge-Mount.set
 Operator: Kyle Fujimoto
 EUT Type: HumPRO-A Series High Power Data Transceiver
 EUT Condition: The EUT is continuously transmitting at low channel
 Comments: Customer: Linx Technologies
 Model: HUM-A-900-PRO-CAS
 Edge Mount
 Low Data Rate

1/26/2017 3:14:32 PM
 Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - White Lead
File: 2 - CE - Final Scan - White Lead - Tx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:15:59 PM
Sequence: Final Measurements

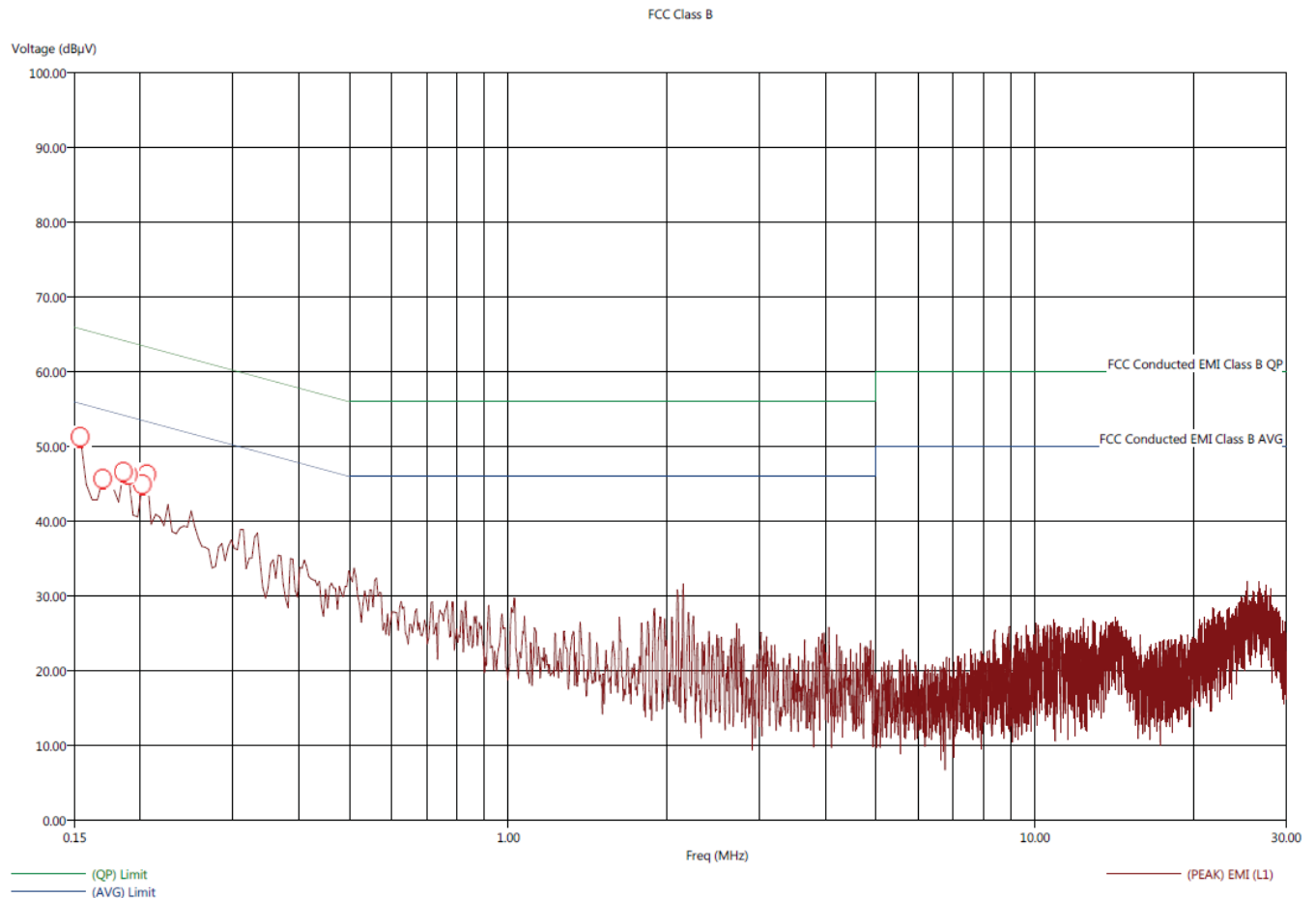
FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.158	39.96	21.81	-15.71	-33.86	55.67	0.06	0.48	9.64
0.162	38.98	21.80	-16.58	-33.76	55.56	0.07	0.47	9.63
0.182	50.77	40.85	-3.63	-13.55	54.40	0.09	0.39	9.61
0.190	50.48	39.85	-3.80	-14.43	54.29	0.09	0.38	9.61
0.198	43.31	26.73	-10.73	-27.31	54.04	0.09	0.37	9.61
0.226	40.61	28.25	-11.54	-23.90	52.15	0.10	0.24	9.62



Title: FCC Class B - Black Lead
File: 3 - CE - Pre-Scan - Black Lead - Tx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:22:59 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - Black Lead
File: 3 - CE - Final Scan - Black Lead - Tx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:24:30 PM
Sequence: Final Measurements

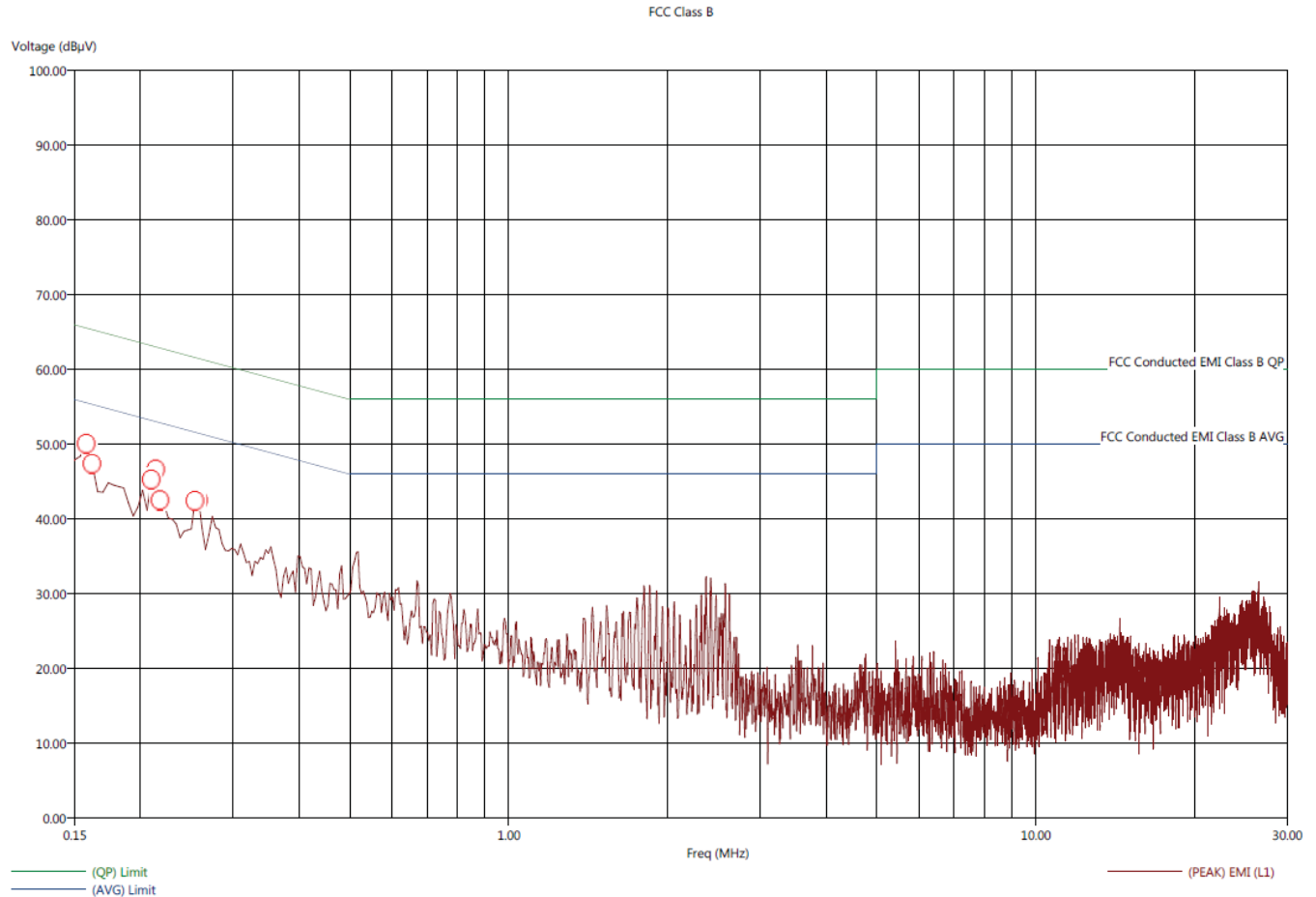
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.15	55.32	45.82	-0.54	-10.04	55.86	0.06	0.50	9.64
0.17	39.26	20.82	-15.58	-34.02	54.84	0.08	0.43	9.62
0.19	35.64	19.71	-18.33	-34.26	53.97	0.09	0.38	9.61
0.19	35.86	19.71	-18.20	-34.35	54.06	0.09	0.38	9.61
0.20	48.28	39.16	-5.15	-14.27	53.43	0.10	0.34	9.60
0.21	48.48	38.92	-4.99	-14.55	53.47	0.10	0.34	9.60



Title: FCC Class B - White Lead
File: 4 - CE - Pre-Scan - White Lead - Tx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:20:21 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - White Lead
File: 4 - CE - Final Scan - White Lead - Tx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:21:50 PM
Sequence: Final Measurements

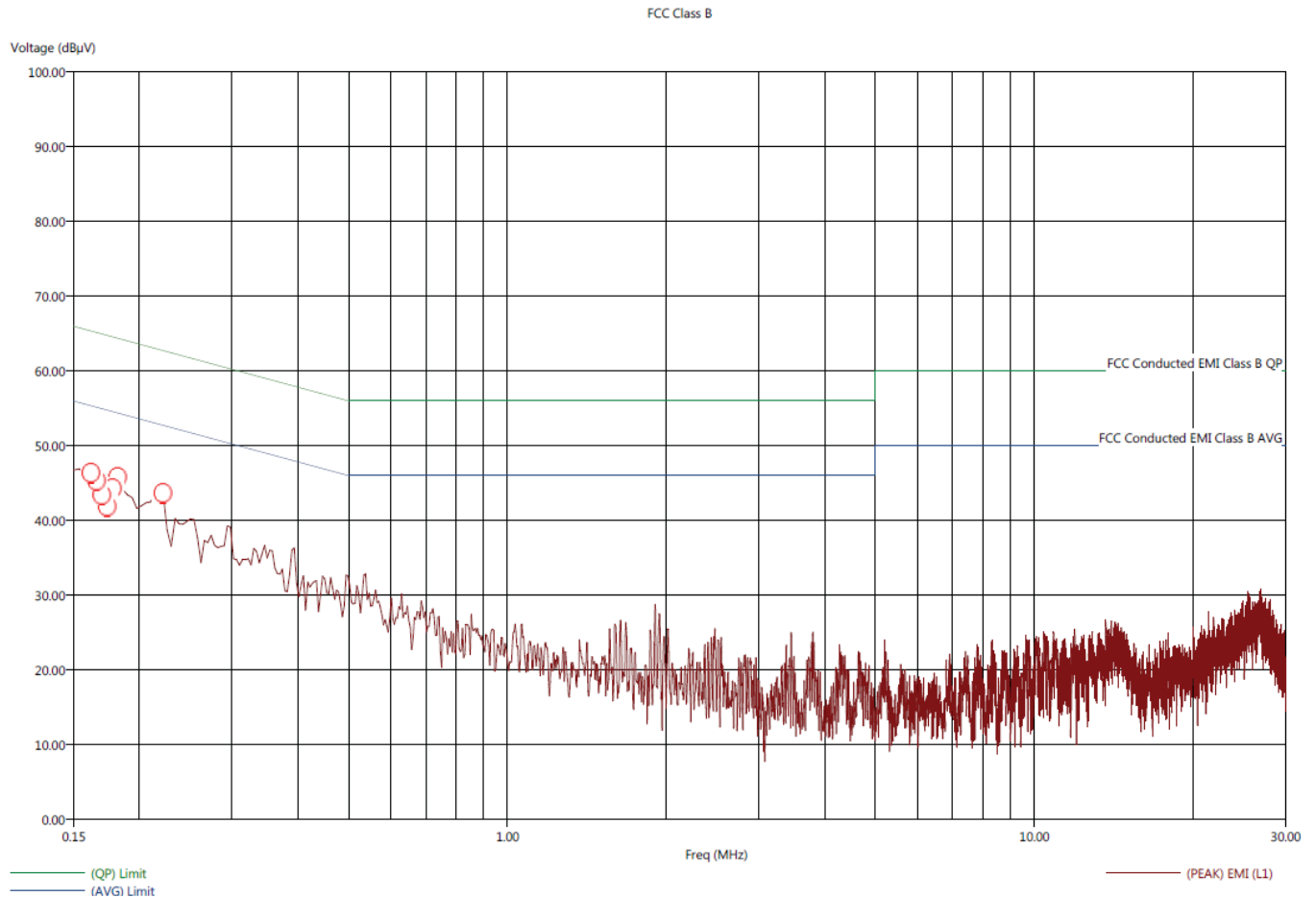
FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.158	52.89	42.32	-2.83	-13.40	55.72	0.06	0.48	9.64
0.162	53.09	42.69	-2.66	-13.06	55.75	0.06	0.48	9.64
0.210	46.33	36.41	-7.07	-16.99	53.39	0.10	0.33	9.60
0.214	46.39	36.33	-7.00	-17.06	53.39	0.10	0.32	9.60
0.218	46.33	35.77	-7.03	-17.59	53.36	0.10	0.32	9.60
0.254	41.61	30.96	-9.92	-20.57	51.53	0.10	0.20	9.63
0.258	42.09	31.44	-9.48	-20.13	51.57	0.10	0.20	9.63



Title: FCC Class B - Black Lead
File: 5 - CE - Pre-Scan - Black Lead - Rx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:27:19 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - Black Lead
File: 5 - CE - Final Scan - Black Lead - Rx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:28:18 PM
Sequence: Final Measurements

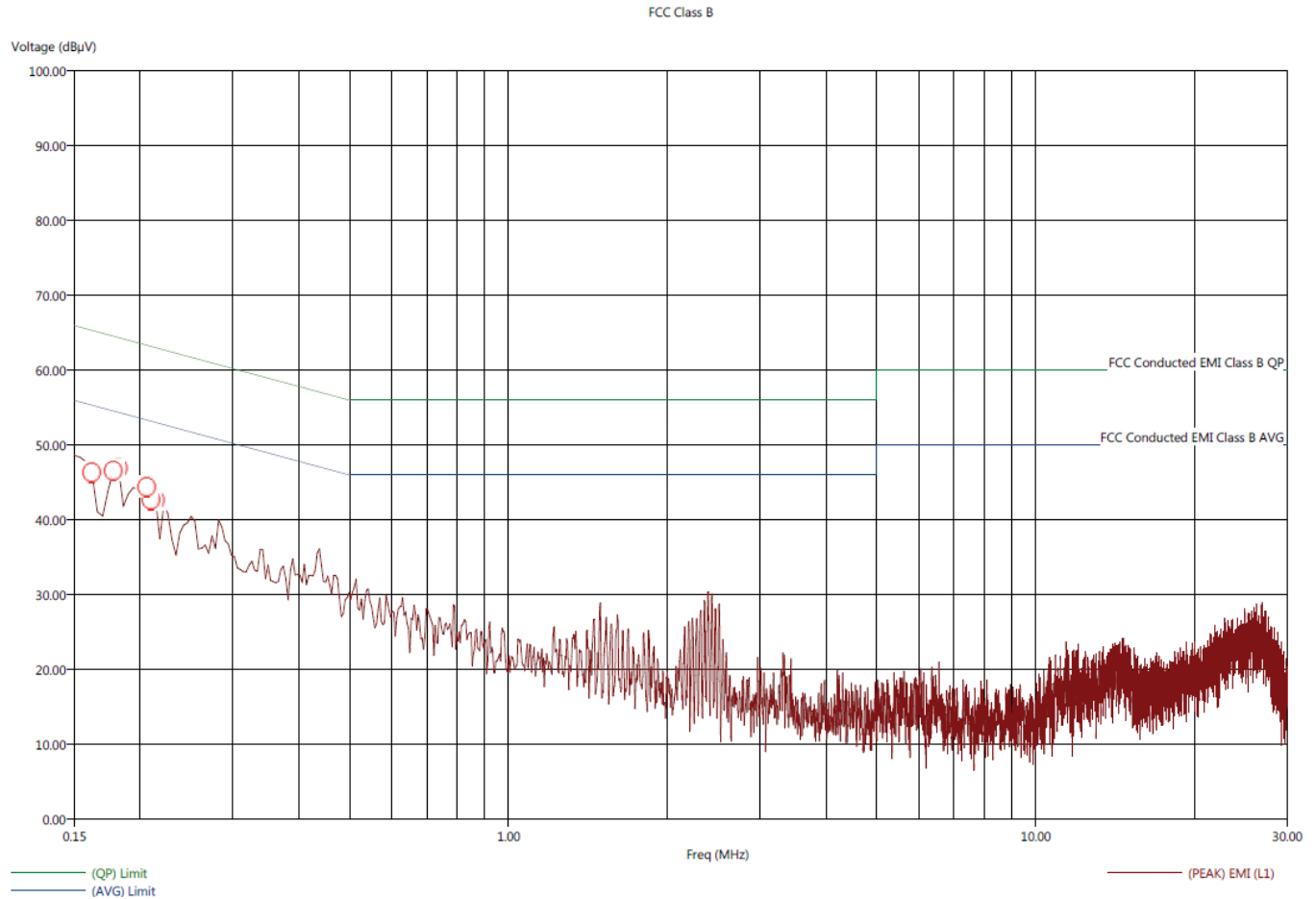
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.16	50.72	40.27	-4.90	-15.35	55.61	0.07	0.49	9.63
0.17	43.02	23.35	-12.27	-31.94	55.30	0.07	0.46	9.63
0.17	43.65	25.37	-11.70	-29.98	55.34	0.07	0.47	9.63
0.17	36.90	19.98	-17.87	-34.79	54.77	0.08	0.43	9.62
0.18	37.05	19.84	-17.32	-34.53	54.38	0.09	0.40	9.61
0.18	41.01	28.78	-13.14	-25.37	54.15	0.09	0.39	9.61
0.22	41.21	30.43	-11.29	-22.07	52.50	0.10	0.28	9.61



Title: FCC Class B - White Lead
File: 6 - CE - Pre-Scan - White Lead - Rx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:31:35 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - White Lead
File: 6 - CE - Final Scan - White Lead - Rx Mode - Low Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
Low Data Rate

1/26/2017 3:32:38 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

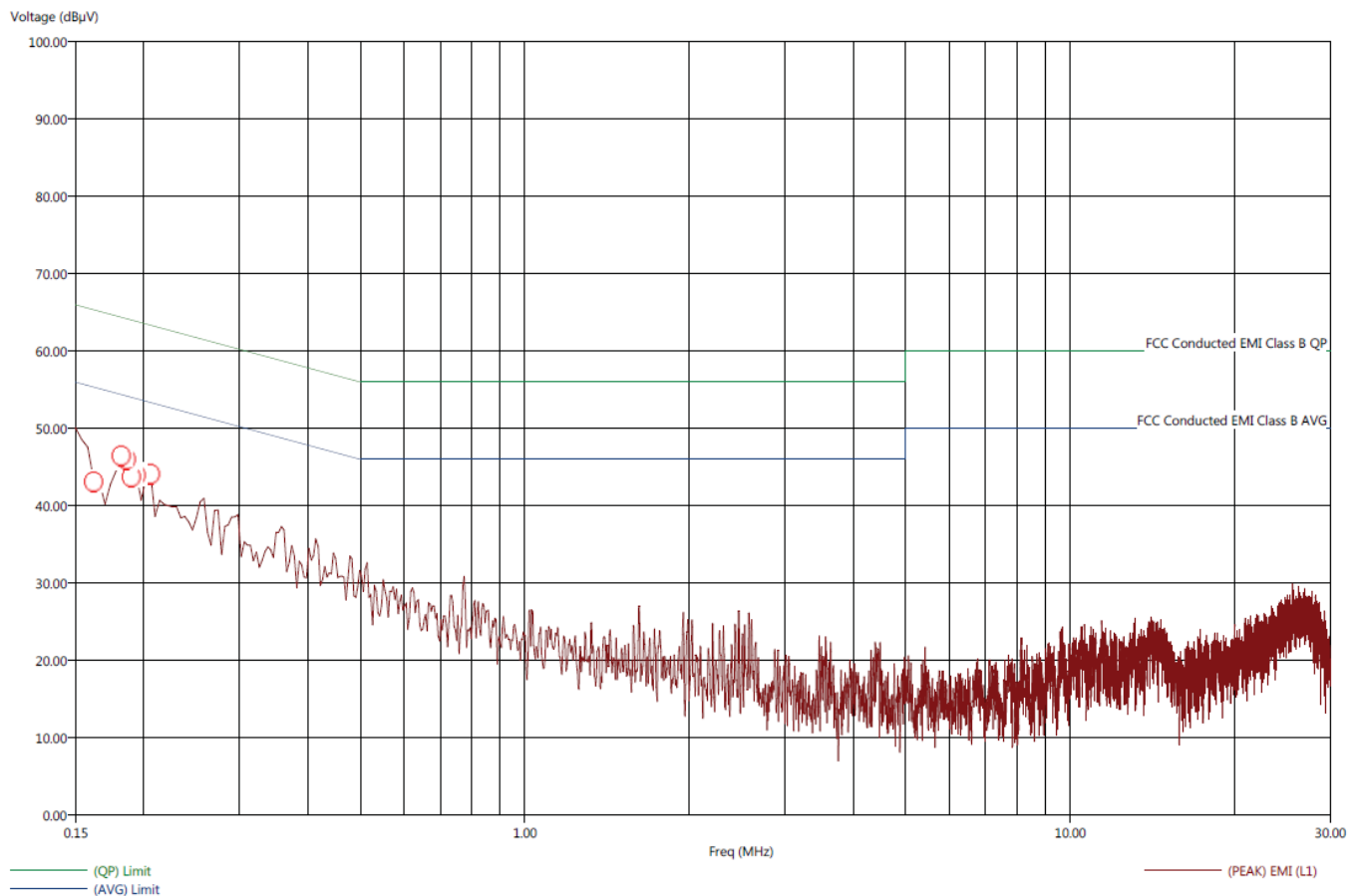
Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.162	50.32	39.79	-5.26	-15.79	55.58	0.07	0.47	9.63
0.178	37.03	19.72	-17.61	-34.92	54.63	0.08	0.41	9.62
0.182	42.69	30.67	-11.23	-23.25	53.92	0.09	0.36	9.61
0.206	45.31	35.02	-8.45	-18.74	53.76	0.10	0.35	9.60
0.210	45.37	34.71	-8.34	-19.00	53.71	0.10	0.35	9.60
0.214	39.94	23.90	-13.54	-29.58	53.49	0.10	0.33	9.60



Title: FCC Class B - Black Lead
File: 7 - CE - Pre-Scan - Black Lead - Rx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:38:27 PM
Sequence: Preliminary Scan

FCC Class B



Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

Title: FCC Class B - Conducted Emissions - Black Lead
File: 7 - CE - Final Scan - Black Lead - Rx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:41:19 PM
Sequence: Final Measurements

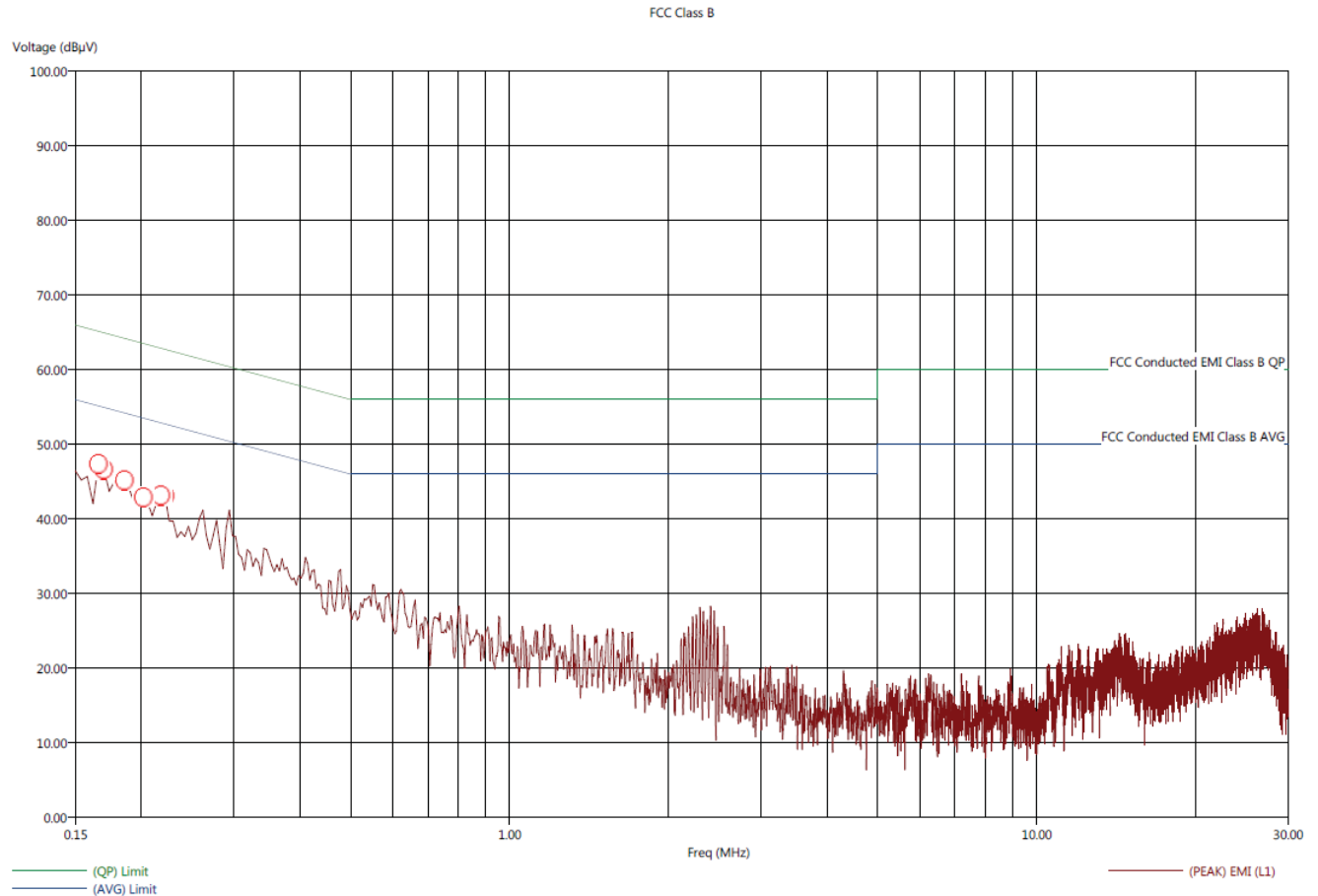
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.16	41.96	22.05	-13.53	-33.44	55.49	0.07	0.48	9.63
0.18	48.37	39.23	-5.88	-15.02	54.26	0.09	0.39	9.61
0.19	48.30	39.29	-5.97	-14.98	54.26	0.09	0.40	9.61
0.19	48.24	39.30	-6.00	-14.94	54.24	0.09	0.39	9.61
0.19	48.22	38.92	-6.09	-15.39	54.31	0.09	0.40	9.61
0.21	40.64	28.91	-12.27	-24.00	52.91	0.10	0.30	9.61



Title: FCC Class B - White Lead
File: 8 - CE - Pre-Scan - White Lead - Rx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:35:10 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - White Lead
File: 8 - CE - Final Scan - White Lead - Rx Mode - High Data - Edge-Mount.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Edge Mount
High Data Rate

1/26/2017 3:36:48 PM
Sequence: Final Measurements

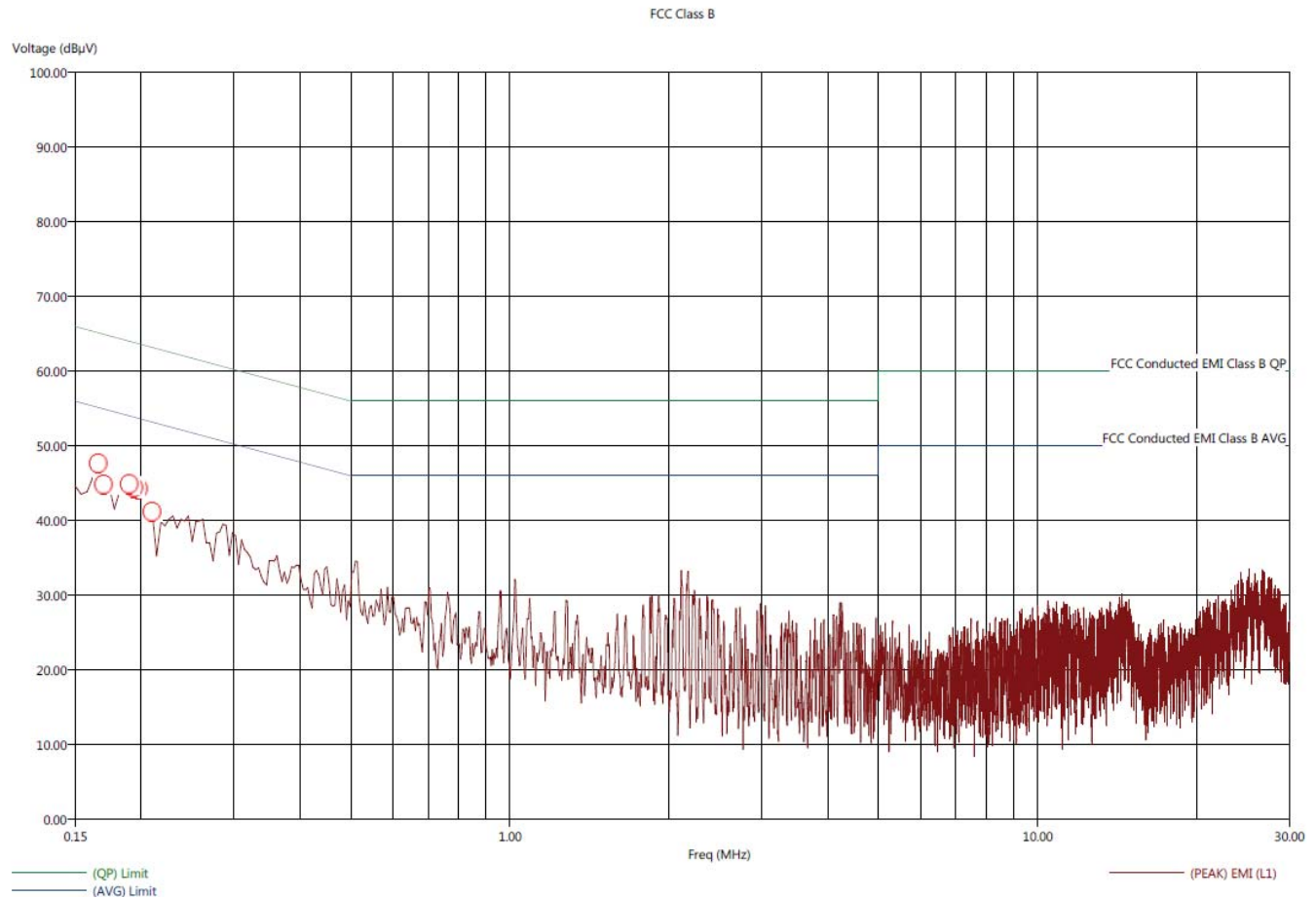
FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.166	37.76	20.20	-17.20	-34.76	54.96	0.08	0.43	9.62
0.170	37.67	19.93	-17.27	-35.01	54.94	0.08	0.43	9.62
0.186	45.47	34.19	-8.96	-20.24	54.43	0.09	0.39	9.61
0.202	35.08	18.43	-18.49	-35.14	53.57	0.10	0.34	9.60
0.218	42.26	31.70	-10.57	-21.13	52.83	0.10	0.29	9.61
0.222	41.93	31.64	-10.86	-21.15	52.79	0.10	0.28	9.61



Title: FCC Class B - Black Lead
File: 9 - CE - Pre-Scan - Black Lead - Tx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical
Low Data Rate

1/26/2017 3:59:22 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - Black Lead
 File: 9 - CE - Final Scan - Black Lead - Tx Mode - Low Data - Vertical.set
 Operator: Kyle Fujimoto
 EUT Type: HumPRO-A Series High Power Data Transceiver
 EUT Condition: The EUT is continuously transmitting at low channel
 Comments: Customer: Linx Technologies
 Model: HUM-A-900-PRO-CAS
 Vertical
 Low Data Rate

1/26/2017 4:01:42 PM
 Sequence: Final Measurements

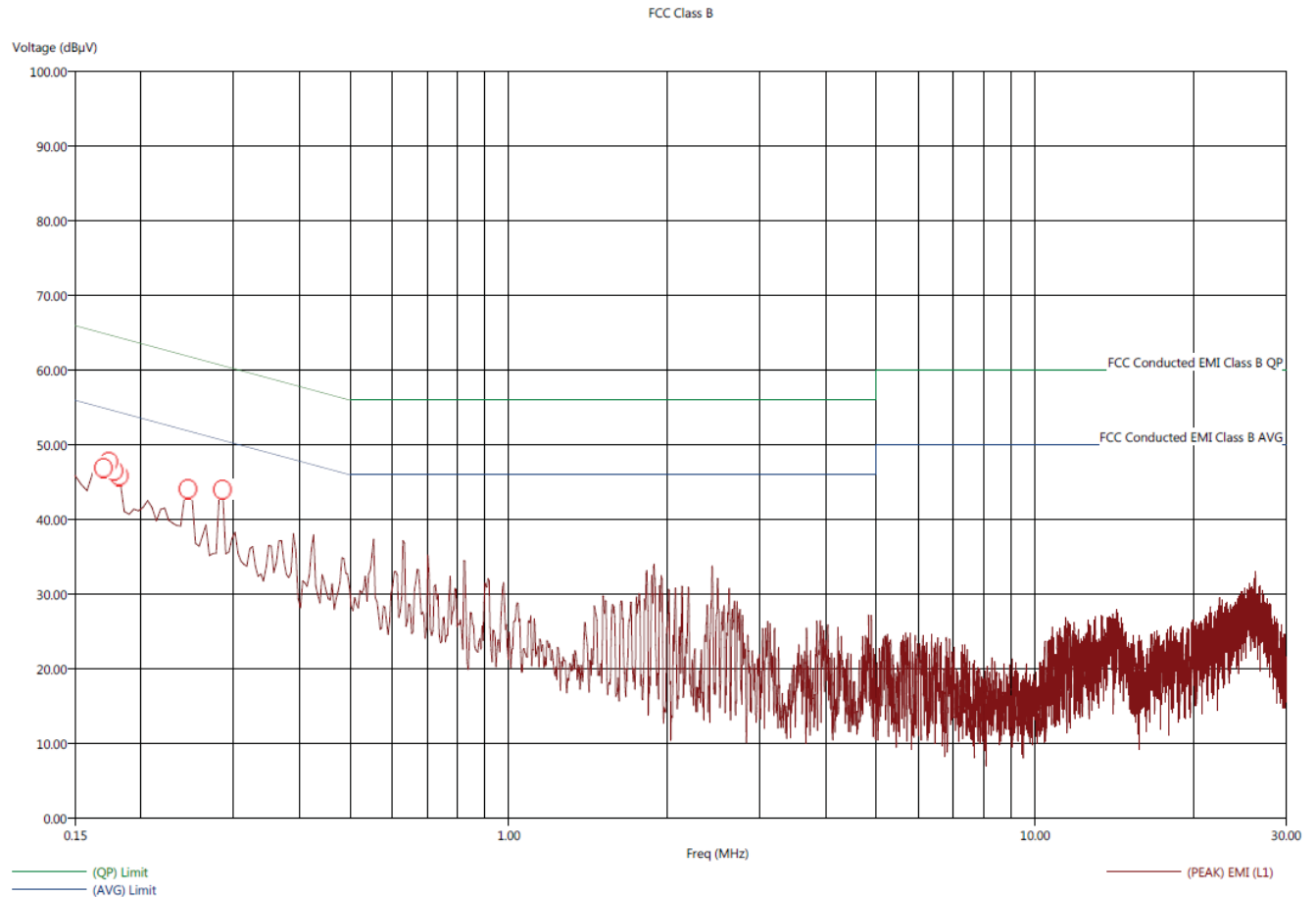
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.166	38.98	21.69	-16.05	-33.34	55.03	0.08	0.45	9.62
0.170	39.50	21.40	-15.52	-33.62	55.02	0.08	0.45	9.62
0.190	53.06	43.88	-1.06	-10.24	54.11	0.09	0.39	9.61
0.194	52.97	43.74	-1.15	-10.38	54.12	0.09	0.39	9.61
0.198	53.16	43.63	-1.04	-10.57	54.20	0.09	0.39	9.61
0.210	36.06	18.71	-16.99	-34.34	53.05	0.10	0.31	9.61



Title: FCC Class B - White Lead
File: 10 - CE - Pre-Scan - White Lead - Tx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical
Low Data Rate

1/26/2017 4:12:16 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - White Lead
File: 10 - CE - Final Scan - White Lead - Tx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously transmitting at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical
Low Data Rate

1/26/2017 4:13:03 PM
Sequence: Final Measurements

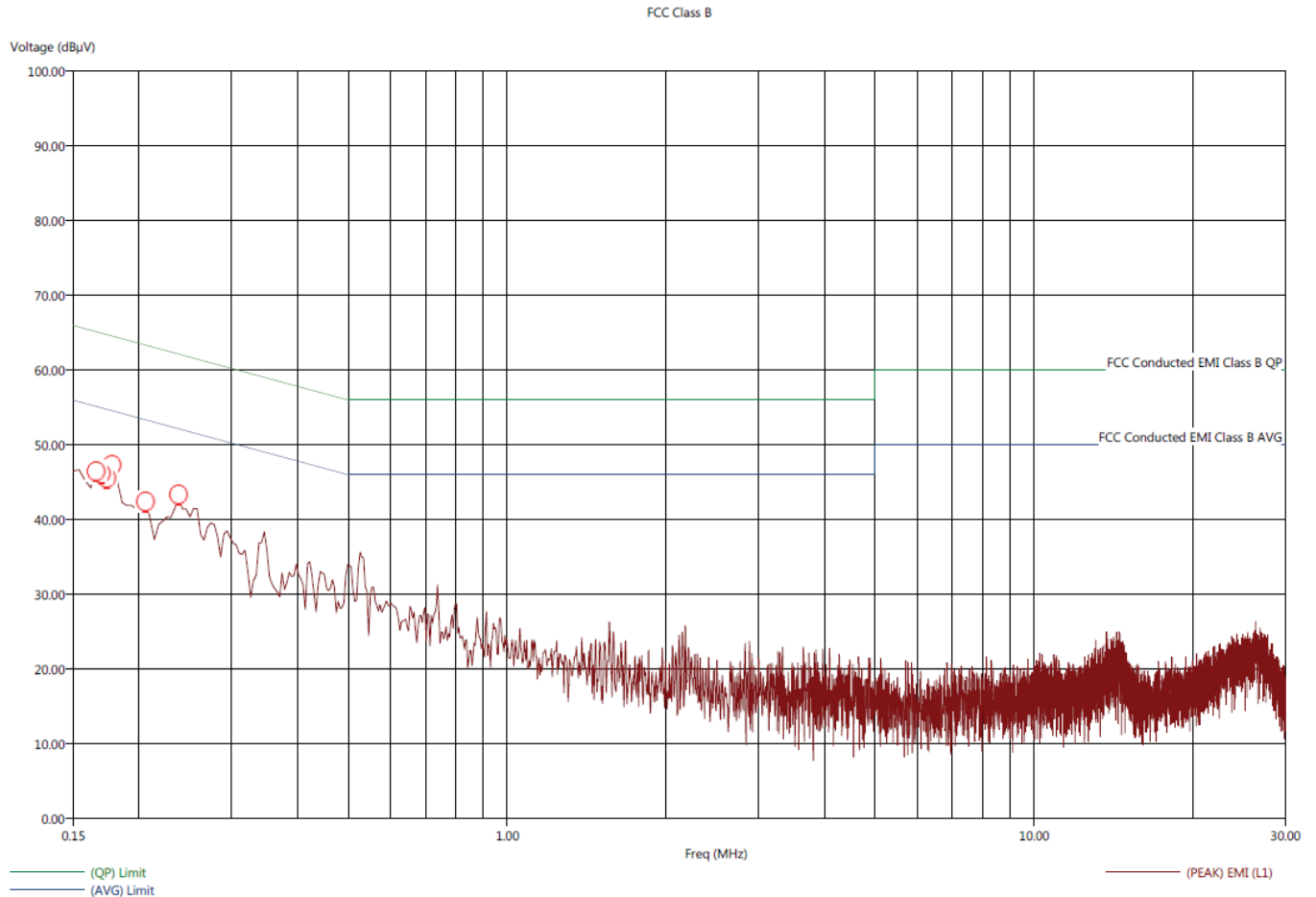
FCC Class B - Conducted Emissions - White Lead

Freq (MHz)	(PEAK) EMI (dBμV)	(AVG) EMI (dBμV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBμV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.170	51.16	31.44	-3.57	-23.29	54.73	0.08	0.41	9.62
0.174	53.21	39.78	-1.32	-14.75	54.53	0.08	0.40	9.62
0.178	54.10	42.16	-0.30	-12.24	54.40	0.09	0.39	9.61
0.182	52.44	37.53	-1.77	-16.68	54.21	0.09	0.38	9.61
0.246	57.53	35.48	5.51	-16.54	52.03	0.10	0.23	9.62
0.286	46.21	25.54	-4.48	-25.15	50.69	0.10	0.14	9.64



Title: FCC Class B - Black Lead
File: 11 - CE - Pre-Scan - Black Lead - Rx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Low Data Rate
Vertical

1/26/2017 4:16:13 PM
Sequence: Preliminary Scan



Title: FCC Class B - Conducted Emissions - Black Lead
File: 11 - CE - Final Scan - Black Lead - Rx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Low Data Rate
Vertical

1/26/2017 4:17:17 PM
Sequence: Final Measurements

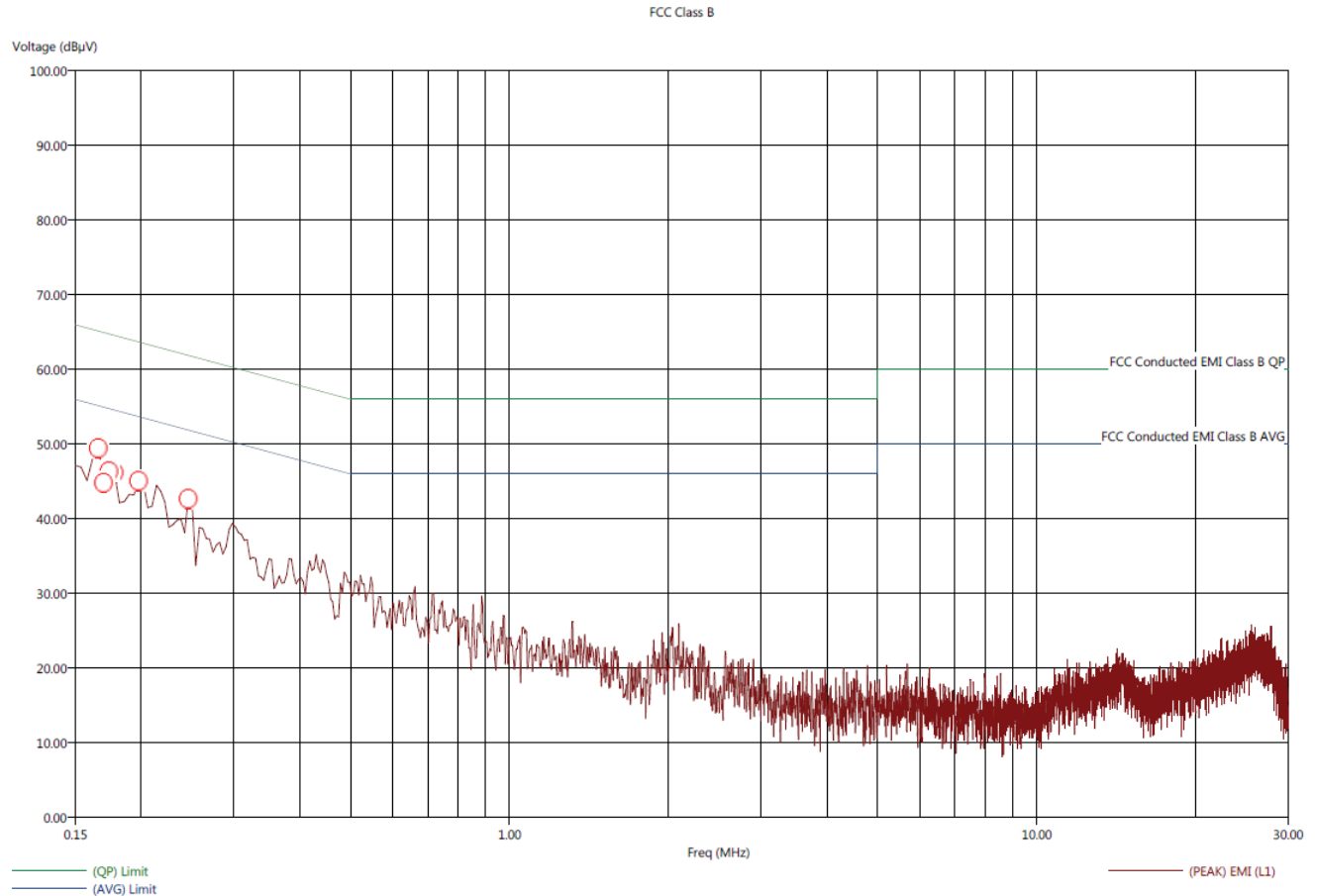
FCC Class B - Conducted Emissions - Black Lead

Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.17	45.03	36.42	-9.68	-18.29	54.71	0.08	0.43	9.62
0.17	45.40	36.69	-9.18	-17.89	54.58	0.08	0.42	9.62
0.17	45.61	36.79	-8.99	-17.81	54.59	0.08	0.42	9.62
0.18	45.88	37.02	-8.73	-17.59	54.60	0.08	0.42	9.62
0.21	41.11	32.45	-12.34	-21.00	53.46	0.10	0.34	9.60
0.24	39.79	31.40	-12.46	-20.85	52.25	0.10	0.26	9.62



Title: FCC Class B - White Lead
File: 12 - CE - Pre-Scan - White Lead - Rx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical
Low Data Rate

1/26/2017 4:23:11 PM
Sequence: Preliminary Scan



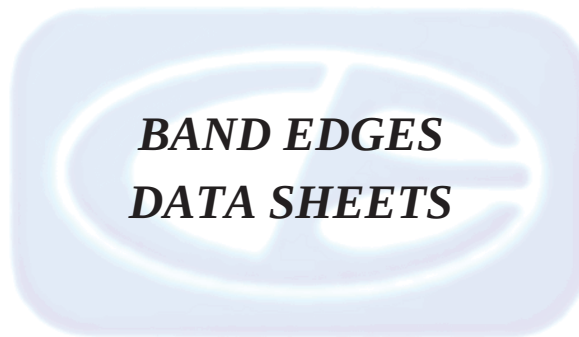
Title: FCC Class B - Conducted Emissions - White Lead
File: 12 - CE - Final Scan - White Lead - Rx Mode - Low Data - Vertical.set
Operator: Kyle Fujimoto
EUT Type: HumPRO-A Series High Power Data Transceiver
EUT Condition: The EUT is continuously receiving at low channel
Comments: Customer: Linx Technologies
Model: HUM-A-900-PRO-CAS
Vertical
Low Data Rate

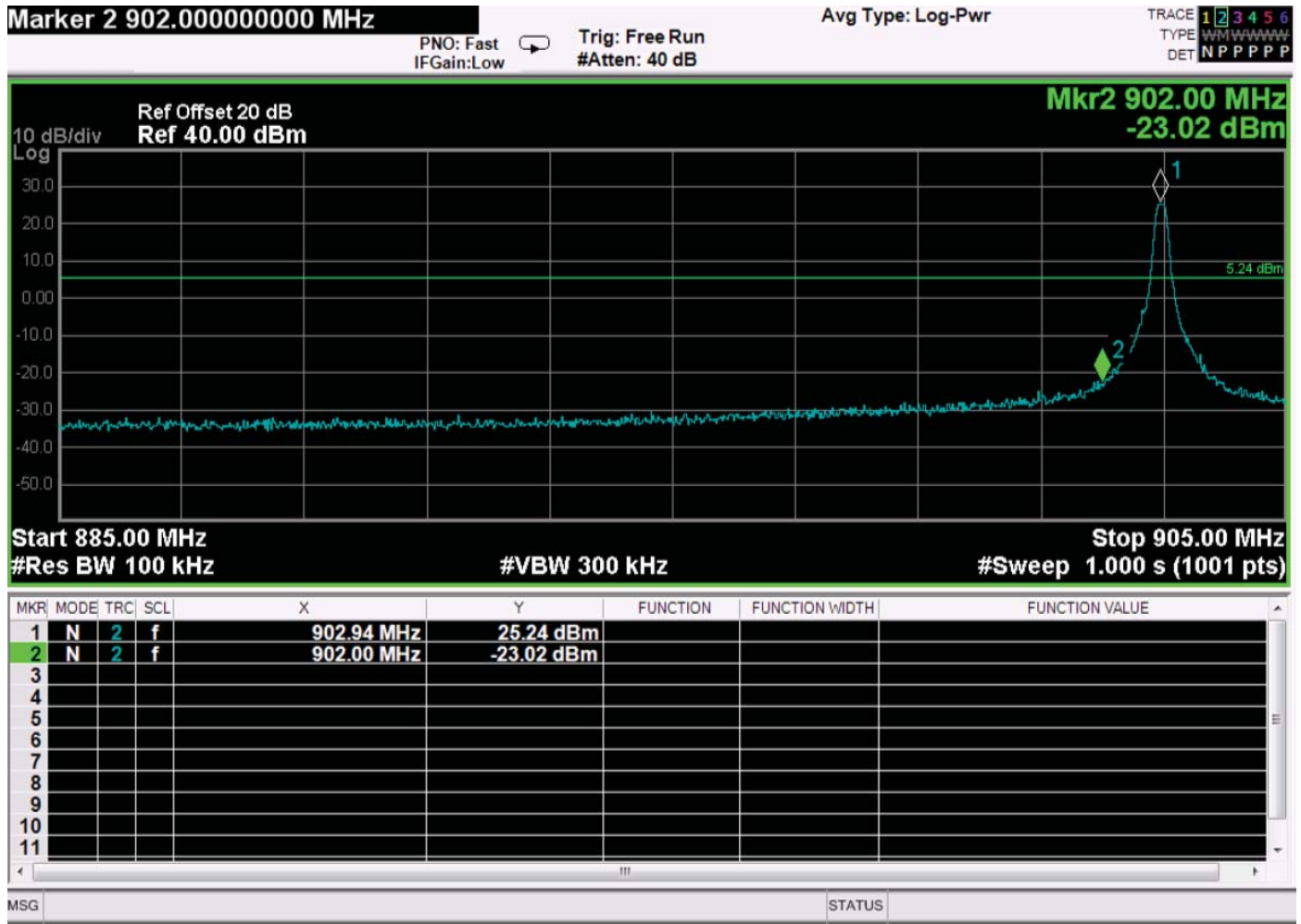
1/26/2017 4:25:14 PM
Sequence: Final Measurements

FCC Class B - Conducted Emissions - White Lead

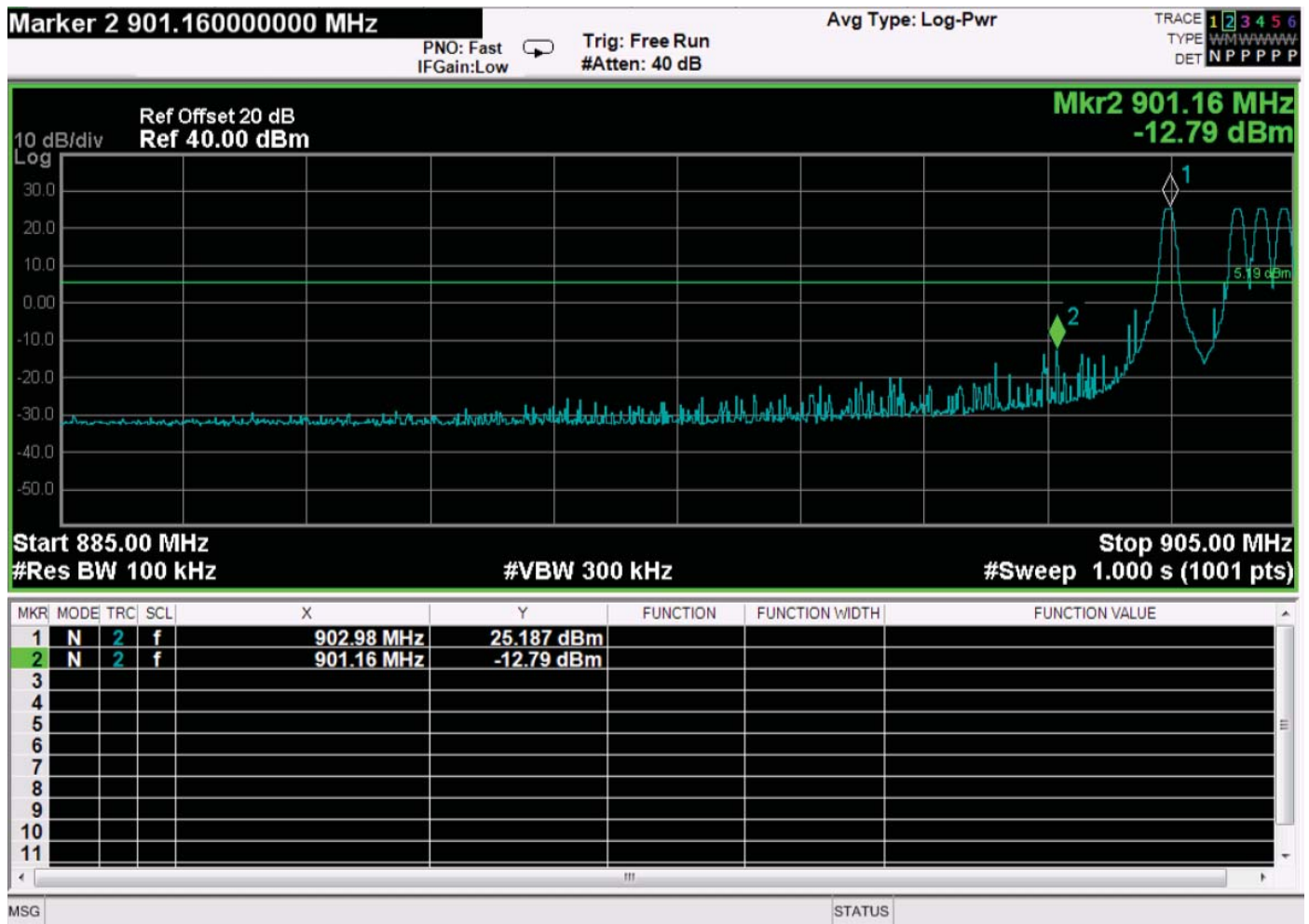
Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin AVL (dB)	(AVG) Margin AVL (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)
0.166	37.32	19.75	-17.76	-35.33	55.08	0.07	0.44	9.63
0.170	41.38	28.33	-13.34	-26.39	54.72	0.08	0.41	9.62
0.174	43.27	31.56	-11.25	-22.96	54.52	0.08	0.40	9.62
0.178	42.98	31.43	-11.59	-23.14	54.57	0.08	0.40	9.62
0.198	35.85	19.28	-17.76	-34.33	53.61	0.10	0.34	9.60
0.246	37.29	25.47	-14.76	-26.58	52.04	0.10	0.24	9.62







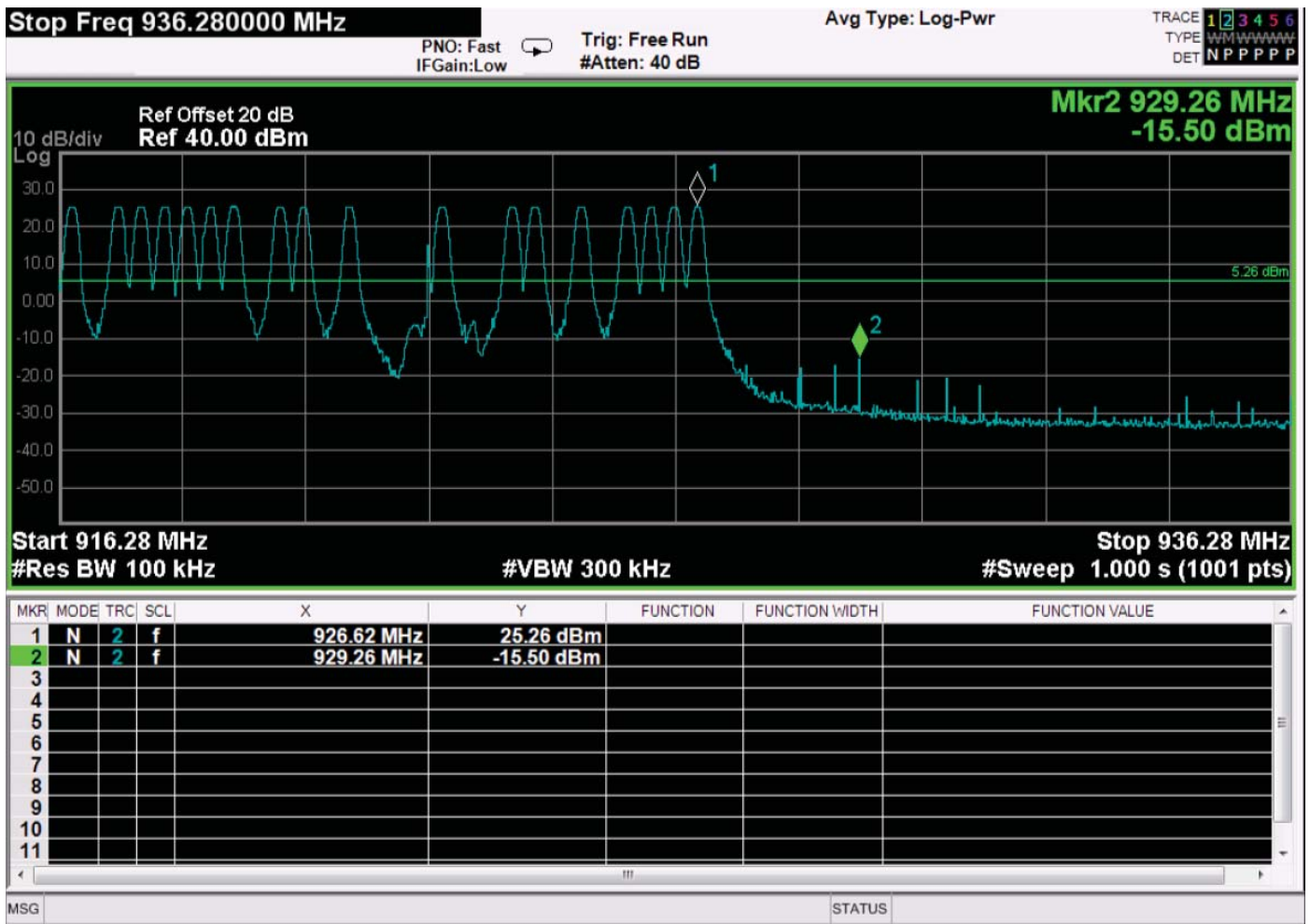
Band Edge – Low Channel – Edge Mount – Low Data Rate - CW



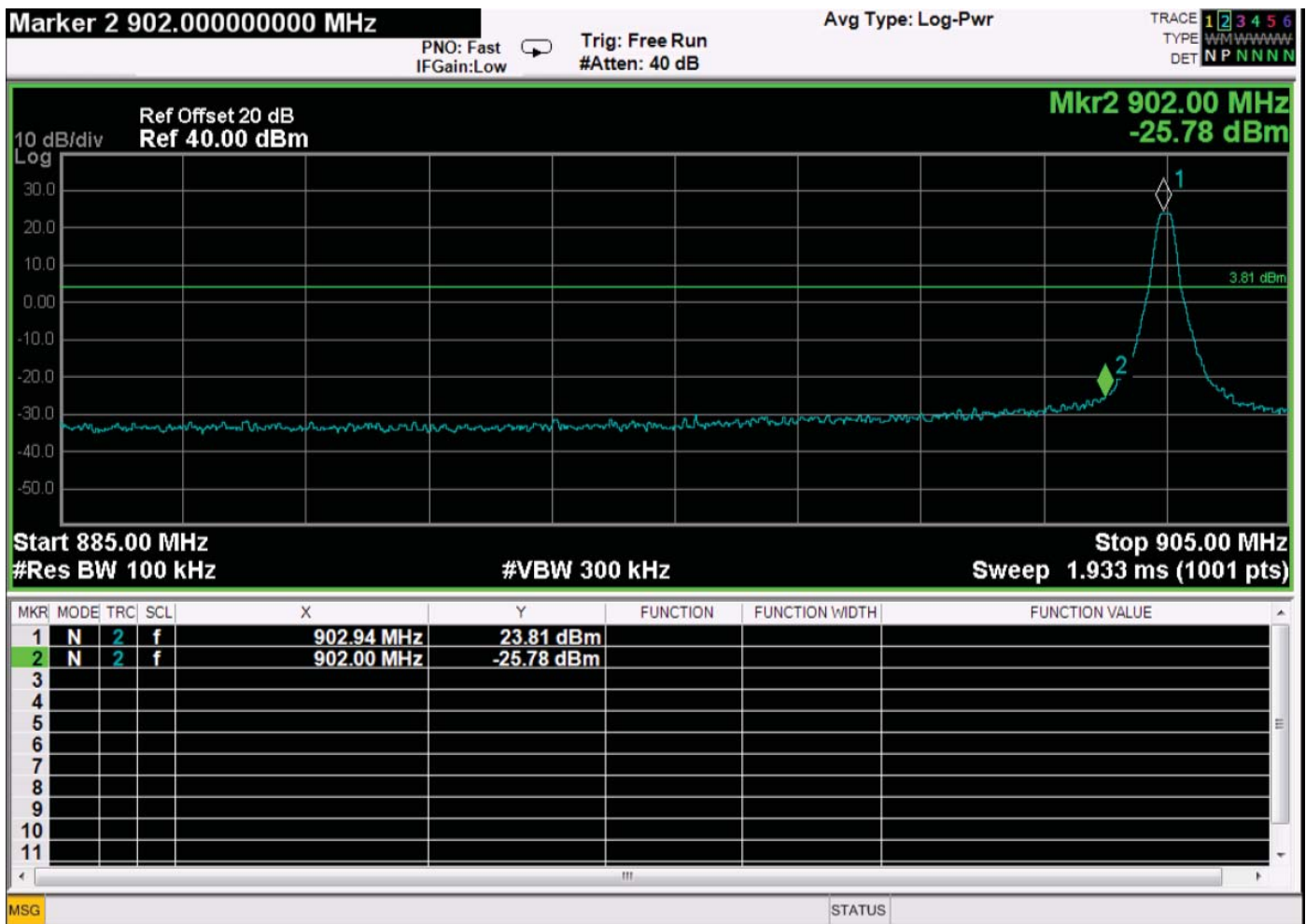
Band Edge – Low Channel – Edge Mount – Low Data Rate - Hopping



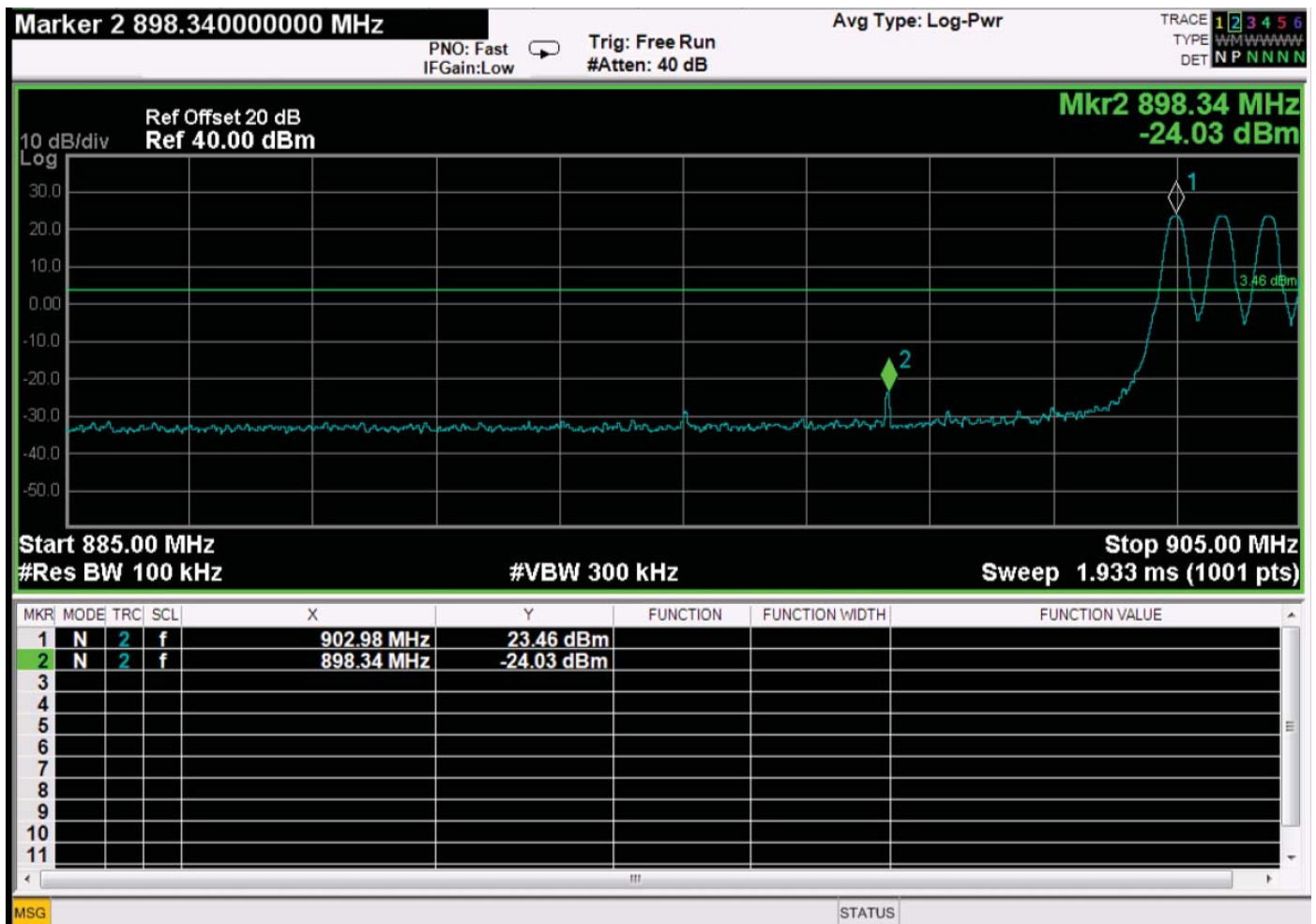
Band Edge – High Channel – Edge Mount – Low Data Rate - CW



Band Edge – High Channel – Edge Mount – Low Data Rate - Hopping



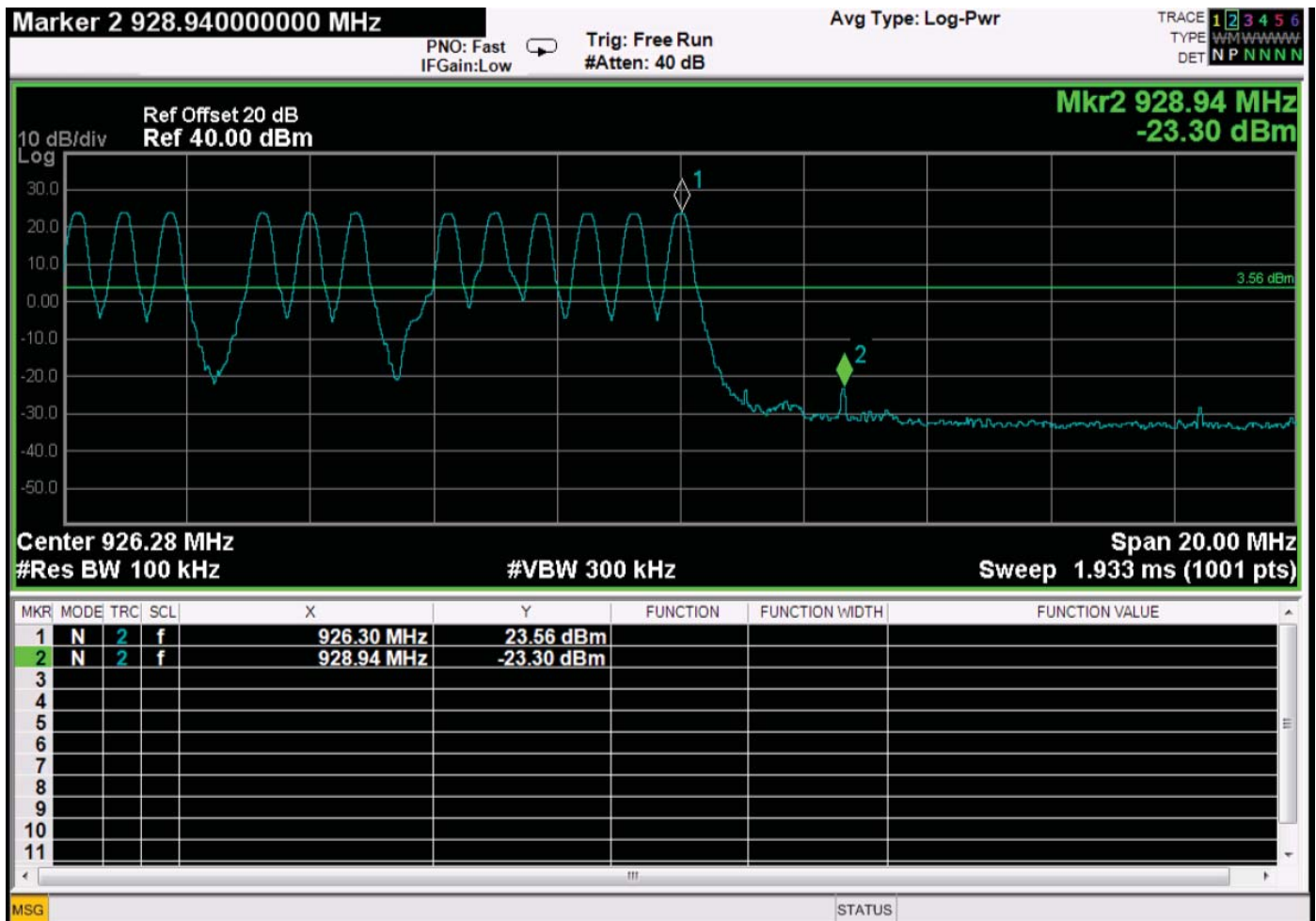
Band Edge – Low Channel – Edge Mount – High Data Rate - CW



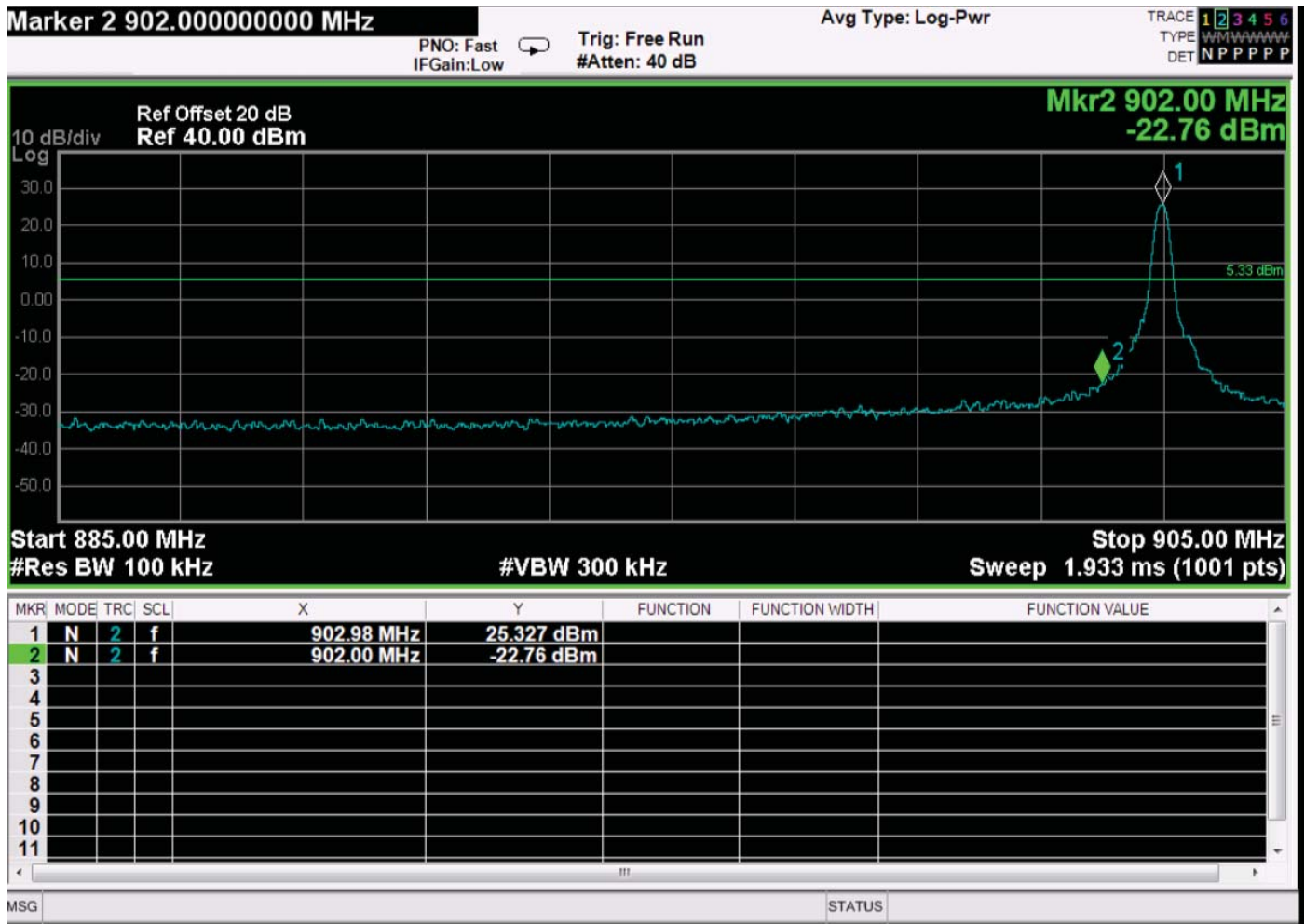
Band Edge – Low Channel – Edge Mount – High Data Rate - Hopping



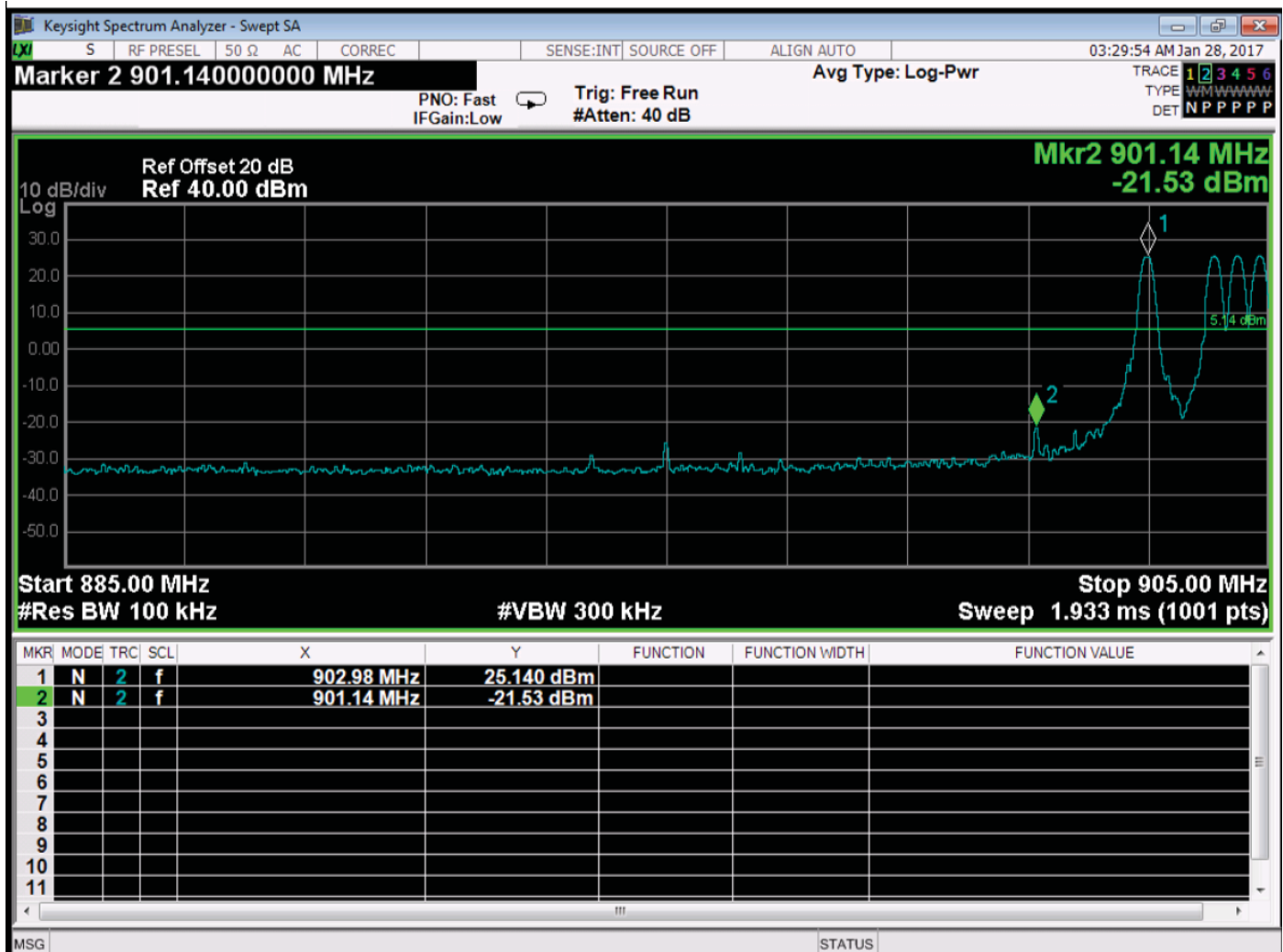
Band Edge – High Channel – Edge Mount – High Data Rate - CW



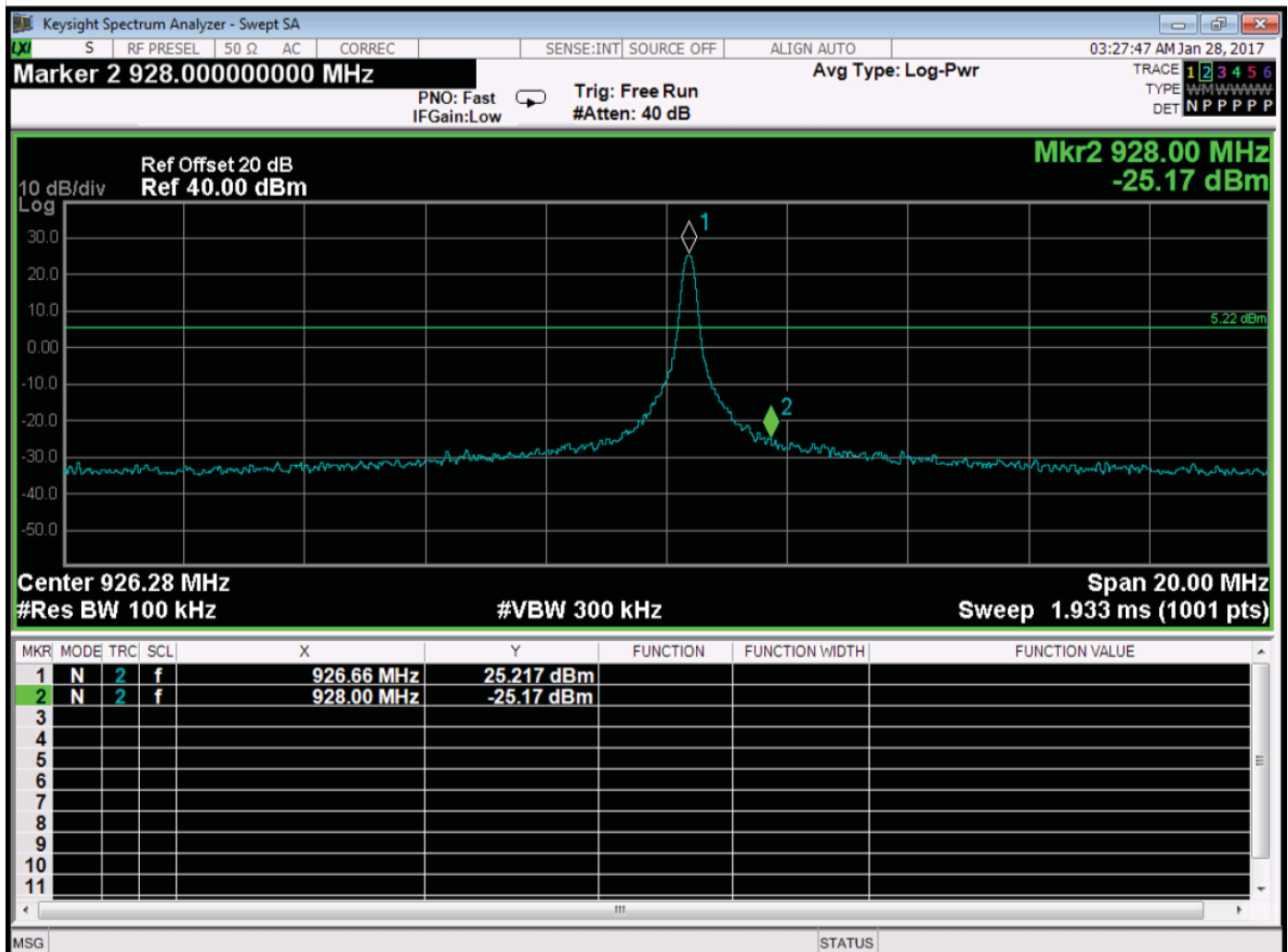
Band Edge – High Channel – Edge Mount – High Data Rate - Hopping



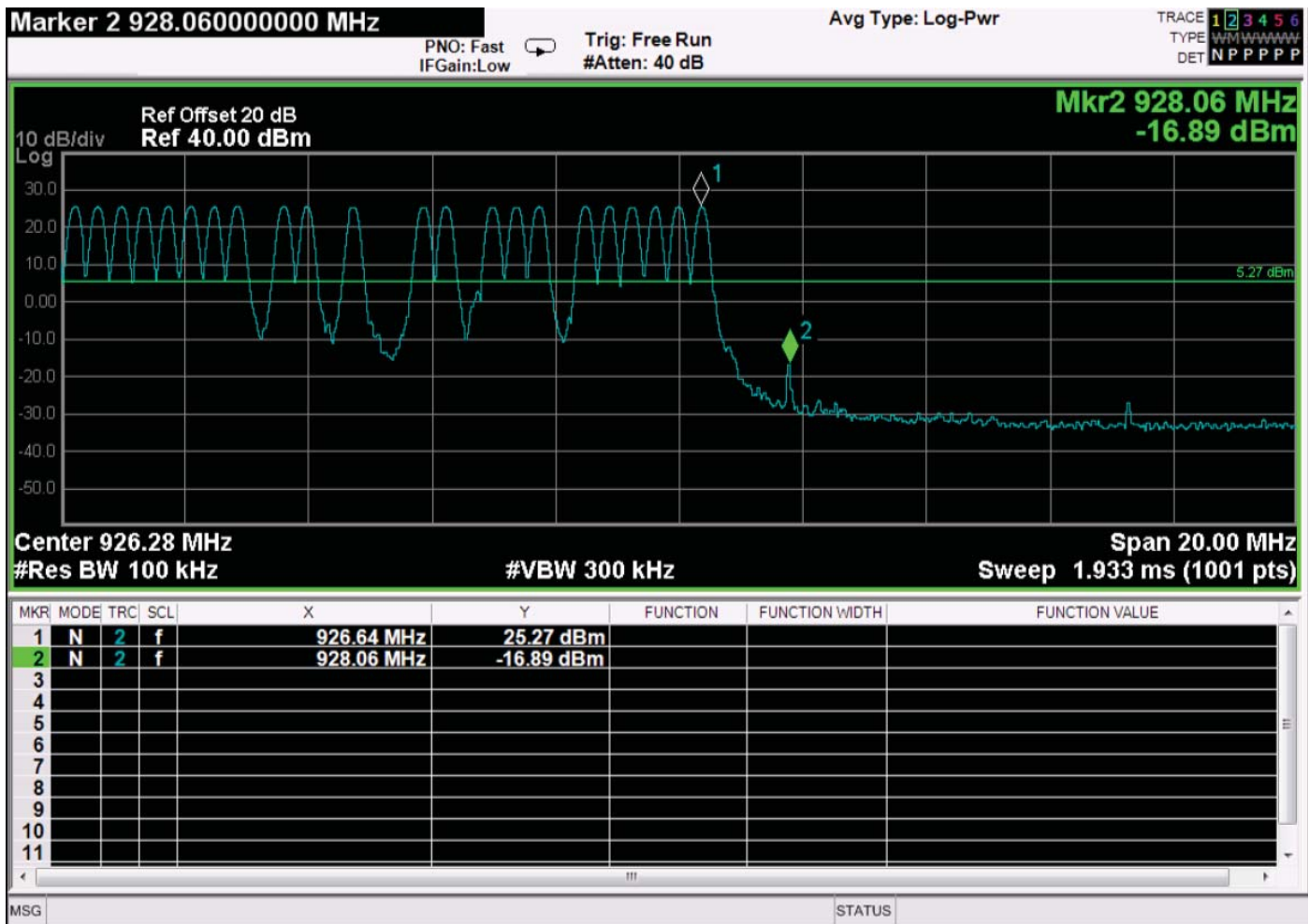
Band Edge – Low Channel – Vertical Mount – Low Data Rate - CW



Band Edge – Low Channel – Vertical Mount – Low Data Rate - Hopping



Band Edge – High Channel – Vertical Mount – Low Data Rate - CW



Band Edge – High Channel – Vertical Mount – Low Data Rate - Hopping