

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

for

PROJECT Z-SERIES – TRANSMITTER

Model: 600-855-Z

Prepared for

KANGAROO PRODUCTS COMPANY
111 KANGAROO DRIVE
COLUMBUS, NORTH CAROLINA 28722

Prepared by: James Ross

JAMES ROSS

Approved by: Kyle Fujimoto

KYLE FUJIMOTO

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DATE: MARCH 9, 2018

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	16	2	2	2	11	33	65

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced 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: Project Z-series – Transmitter
Model: 600-855-Z
S/N: N/A

Product Description: The EUT is the handheld transmitter used in the remote guidance system of Kangaroo Products Company remote control golf motorcaddies.

Modifications: The EUT was not modified in order to meet the specifications.

Customer: Kangaroo Products Company
111 Kangaroo Drive
Columbus, North Carolina 28722

Test Date: February 21, 2018

Test Specifications covered by accreditation:

CFR Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209, and 15.249



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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 9 kHz – 9300 MHz (Transmitter and Digital portion)	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 15.205, 15.209 and 15.249 Highest reading in relation to spec limit 93.77 dBuV/m @ 903.37 MHz (*U = 4.54 dB)
2	Conducted RF Emissions, 150 kHz to 30 MHz	This test was not performed because the EUT does not connect to the AC mains

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Project Z-series – Transmitter, Model: 600-855-Z. 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, 15.209, and 15.249.



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

Kangaroo Products Company

Karen Blackburn Senior Purchasing Officer

Compatible Electronics Inc.

James Ross Test Engineer

Kyle Fujimoto Test Engineer

2.4 Date Test Sample was Received

The test sample was received on prior to the initial date of testing.

2.5 Disposition of the Test Sample

The test sample has not been returned to Kangaroo Products Company as of the date of this 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
ASK	Amplitude Shift Key
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receive
Inc.	Incorporated
RMS	Root Mean Square

3. APPLICABLE DOCUMENTS

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

	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
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 of procedure for compliance testing of unlicensed wireless devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The Project Z-series – Transmitter, Model: 600-855-Z (EUT) was setup in a stand-alone configuration. The EUT was investigated in all three orthogonal axis. During the testing, the EUT was continuously transmitting at the low channel of 903.37 MHz, middle channel of 912.37 MHz, and high channel of 921.37 MHz.

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 EUT had firmware that allowed the EUT to be able to continuously transmit at the low, middle, or high channels. Fresh batteries were installed inside the EUT prior to the testing. The EUT was preset via internal firmware to continuously transmit at the low, middle, or high, respectively.

The firmware is located at the company's servers.

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

4.1.1 Cable Construction and Termination

The EUT had no external cables.

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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
PROJECT Z-SERIES – TRANSMITTER (EUT)	KANGAROO PRODUCTS COMPANY	600-855-Z	N/A	OVP600-855-Z
FIRMWARE	LINX TECHNOLOGIES	V01	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
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	Keysight Technologies	N9038A	MY5120150	December 6, 2017	1 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	2 Year
Loop Antenna	Com-Power	AL-130R	121090	February 9, 2017	2 Year
CombiLog Antenna	Com-Power	AC-220	61060	July 27, 2017	1 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

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.

6.3 Measurement Uncertainty

The uncertainty values are in the table below.

The uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level, using a coverage factor of k=2

MEASUREMENT TYPE	PARTICULAR CONFIGURATION	UNCERTAINTY VALUES
RADIATED EMISSIONS	3-METER CHAMBER, COMBILOG ANTENNA	4.54 dB
RADIATED EMISSIONS	3-METER CHAMBER, HORN ANTENNA	3.70 dB

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 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.

Test Results:

This device is battery powered, handheld device and does not connect to the AC public mains, thus this test was not performed.

7.1.2 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. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 9 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 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. 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 1.0.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	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 15.249 for radiated emissions.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Project Z-series – Transmitter
Model: 600-855-Z

Frequency MHz	Quasi-Peak EMI Reading (dBuV/m)	Quasi-Peak Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB
903.37 (H) (X-Axis) (Low Channel)	93.77	93.97	-0.20
903.37 (H) (Z-Axis) (Low Channel)	93.69	93.97	-0.28
912.37 (H) (X-Axis) (Middle Channel)	93.64	93.97	-0.33
903.37 (V) (Y-Axis) (Low Channel)	93.23	93.97	-0.74
921.37 (H) (X-Axis) (High Channel)	92.61	93.97	-1.36
921.37 (V) (Y-Axis) (High Channel)	92.24	93.97	-1.73

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (V) Vertical
- (H) Horizontal

8. CONCLUSIONS

The Project Z-series – Transmitter, Model: 600-855-Z, as tested, meets all of the **Class B** specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.249.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS



NVLAP LAB CODE 200528-0

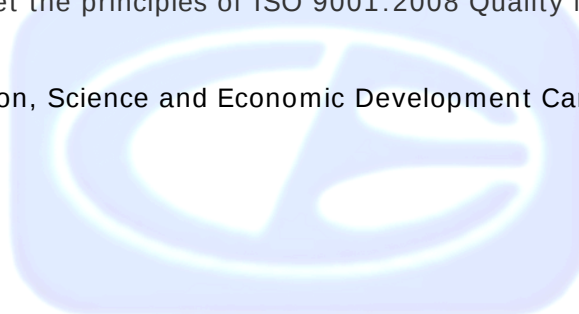


For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. For the most up-to-date version of our scopes and certificates please visit <http://celectronics.com/quality/scope/>

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."

Test Site Number for Innovation, Science and Economic Development Canada: 2154A-3



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 15.249 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.

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODEL COVERED
UNDER THIS REPORT***

ADDITIONAL MODEL COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Project Z-series – Transmitter
Model: 600-855-Z
S/N: N/A

There are no additional Models covered under this report.



APPENDIX D

DIAGRAMS AND CHARTS

COM-POWER AL-130R**LOOP ANTENNA****S/N: 121090****CALIBRATION DATE: FEBRUARY 9, 2017**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-36.17	15.33
0.01	-35.86	15.64
0.02	-37.30	14.20
0.03	-36.58	14.92
0.04	-36.99	14.51
0.05	-37.66	13.84
0.06	-37.53	13.97
0.07	-37.64	13.86
0.08	-37.52	13.98
0.09	-37.62	13.88
0.1	-37.59	13.91
0.2	-37.79	13.71
0.3	-37.80	13.70
0.4	-37.70	13.80
0.5	-37.79	13.71
0.6	-37.79	13.71
0.7	-37.69	13.81
0.8	-37.49	14.01
0.9	-37.39	14.11
1	-37.39	14.11
2	-37.09	14.41
3	-37.09	14.41
4	-37.19	14.31
5	-36.98	14.52
6	-37.17	14.33
7	-37.05	14.45
8	-36.85	14.65
9	-36.84	14.66
10	-36.75	14.75
15	-37.16	14.34
20	-36.44	15.06
25	-37.88	13.62
30	-39.14	12.36

COM-POWER AC-220**COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: JULY 27, 2017**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.80	200	14.10
35	24.00	250	15.30
40	24.70	300	17.70
45	22.90	350	17.70
50	22.10	400	19.00
60	17.60	450	21.30
70	12.70	500	21.00
80	11.20	550	22.30
90	13.10	600	23.40
100	14.40	650	22.90
120	15.30	700	24.60
125	15.00	750	24.50
140	12.80	800	25.40
150	16.50	850	26.40
160	12.90	900	27.20
175	14.30	950	27.80
180	14.50	1000	26.80

COM POWER AH-118**HORN ANTENNA****S/N: 071175****CALIBRATION DATE: FEBRUARY 26, 2016**

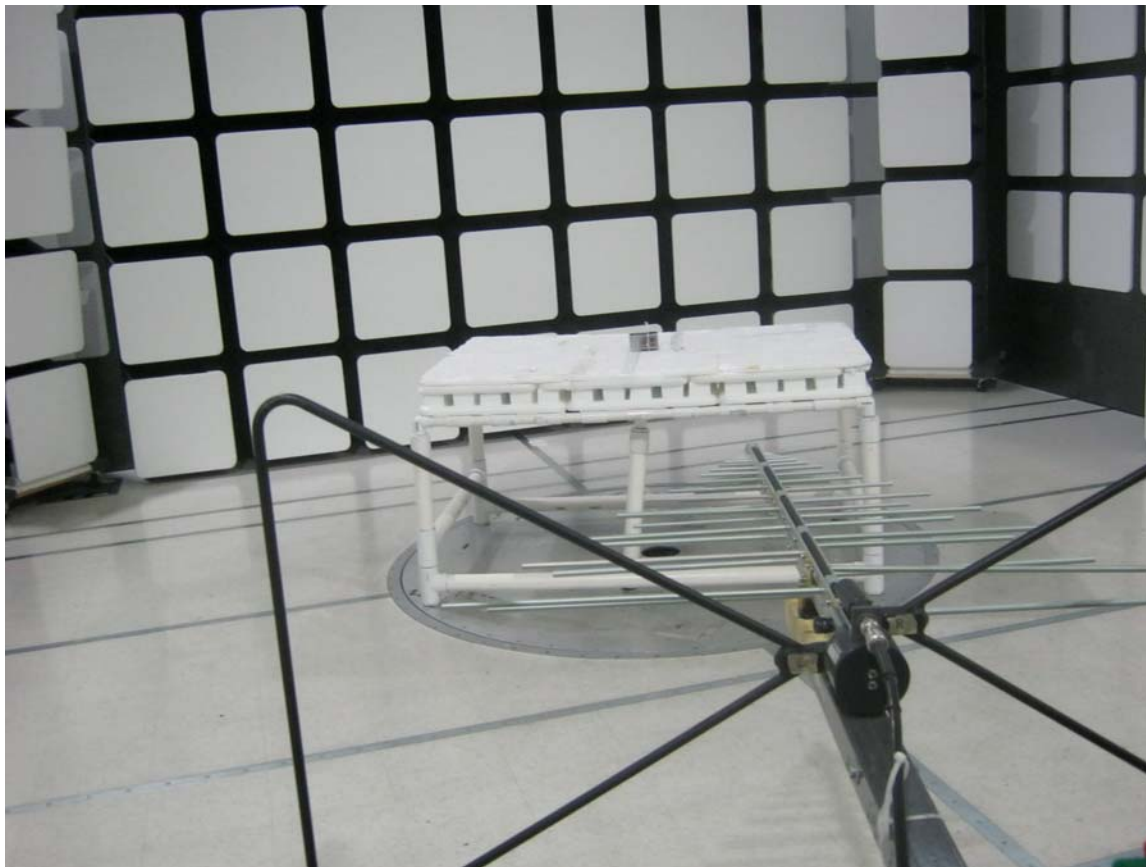
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.93	10.0	39.33
1.5	25.54	10.5	39.64
2.0	28.09	11.0	41.04
2.5	30.21	11.5	44.29
3.0	30.15	12.0	41.22
3.5	30.17	12.5	41.50
4.0	31.90	13.0	41.62
4.5	33.51	13.5	40.63
5.0	33.87	14.0	39.94
5.5	35.08	14.5	41.84
6.0	34.81	15.0	42.69
6.5	34.26	15.5	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 PAM-118A**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		

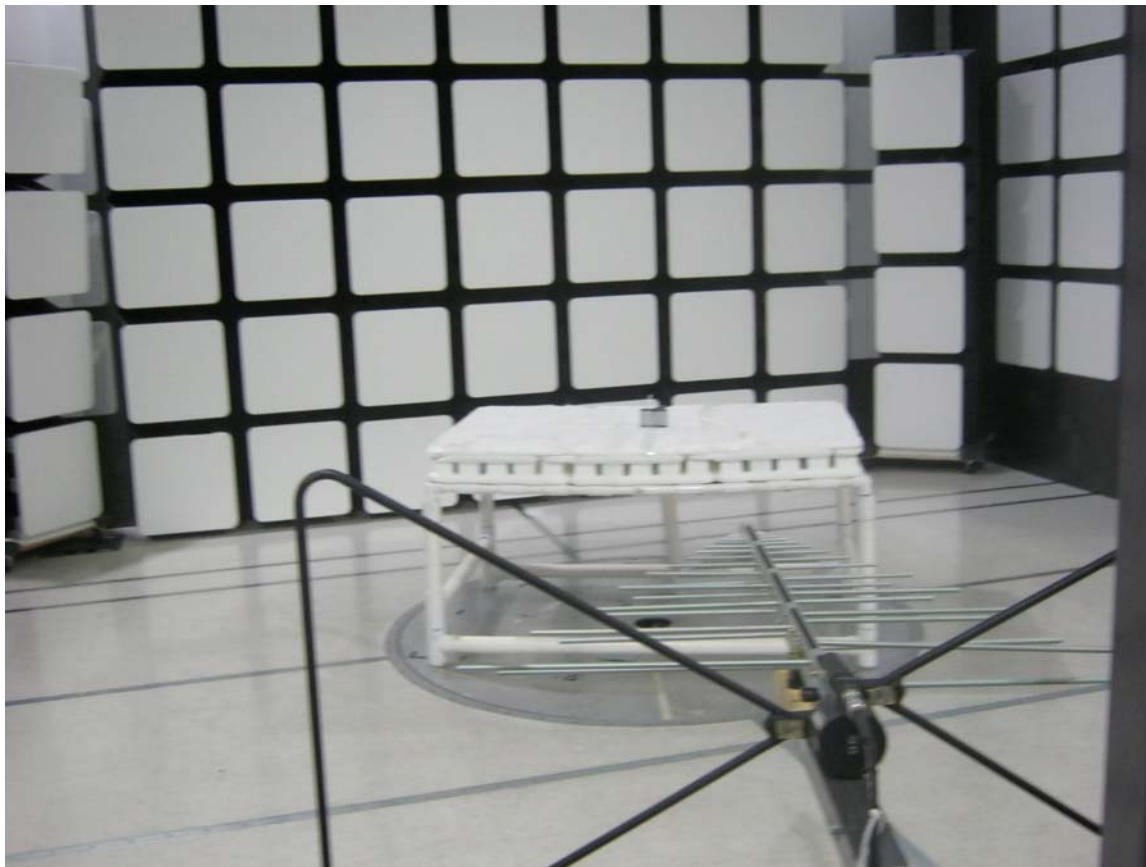


FRONT VIEW

KANGAROO PRODUCTS COMPANY
PROJECT Z-SERIES – TRANSMITTER
MODEL: 600-855-Z

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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

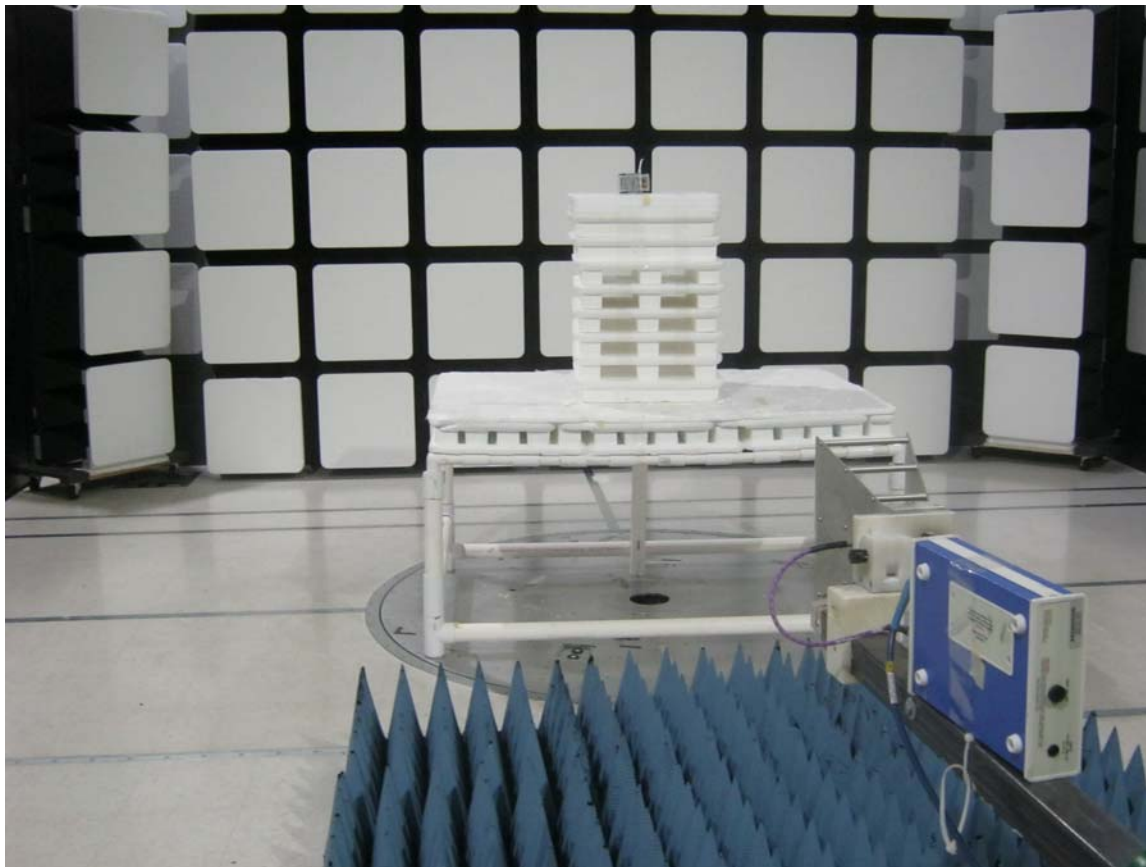


REAR VIEW

KANGAROO PRODUCTS COMPANY
PROJECT Z-SERIES – TRANSMITTER
MODEL: 600-855-Z

FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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

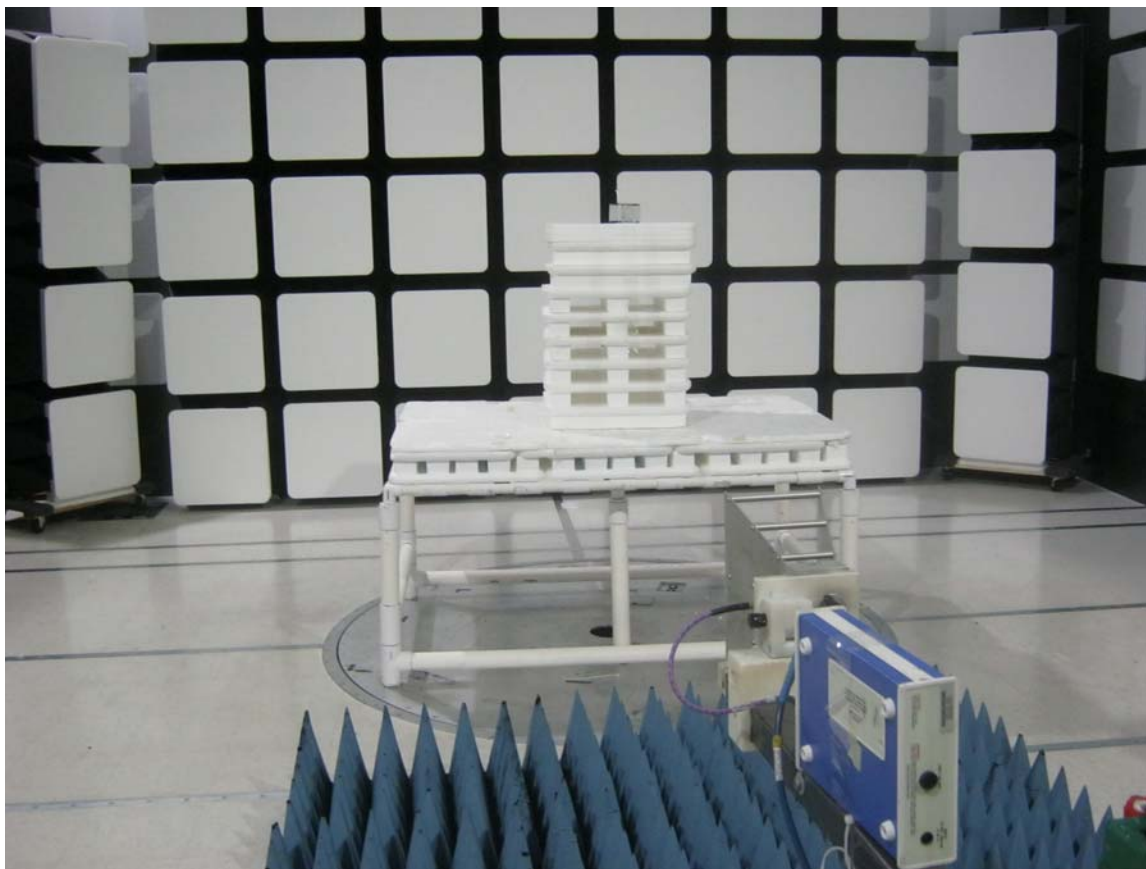


FRONT VIEW

KANGAROO PRODUCTS COMPANY
PROJECT Z-SERIES – TRANSMITTER
MODEL: 600-855-Z

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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



REAR VIEW

KANGAROO PRODUCTS COMPANY
PROJECT Z-SERIES – TRANSMITTER
MODEL: 600-855-Z

FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

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

APPENDIX E

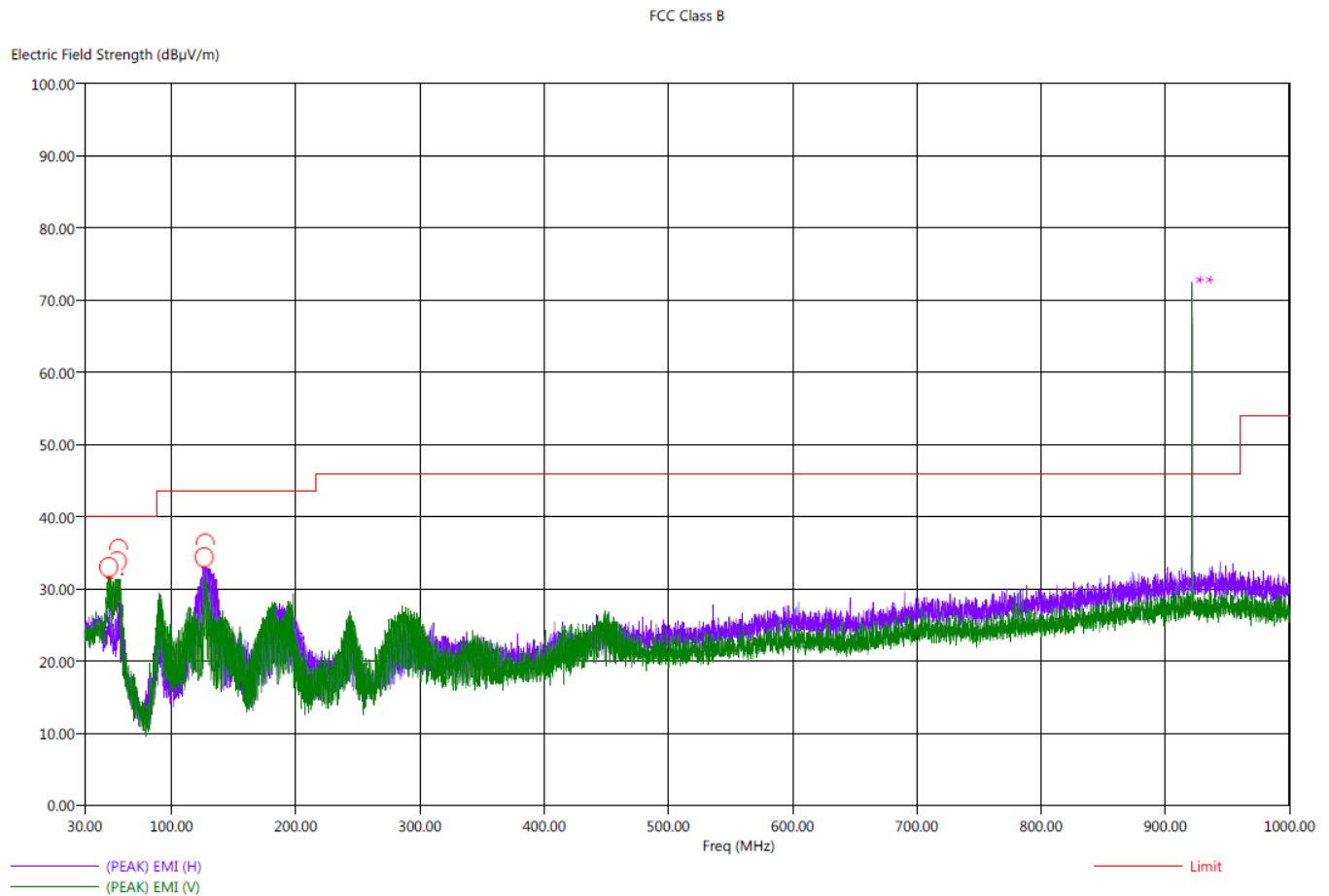
DATA SHEETS

***RADIATED EMISSIONS
DATA SHEETS***

Title: Pre-Scan - FCC Class B
File: Agilent - Pre-Scan - Tx - FCC Class B.set
Operator: Kyle Fujimoto
EUT Type: Project Z-series - Transmitter
EUT Condition: The EUT is continuously transmitting at 921.37 MHz - Worst Case
Customer: Kangaroo Products Company
Model: 600-855-Z
S/N: N/A

2/20/2018 4:27:38 PM
Sequence: Preliminary Scan

** Note: The Frequency at 921.37 MHz is from the EUT and is subject to the limits of FCC 15.249 instead



Title: Radiated Emissions - FCC Class B
File: Agilent - Final Scan - FCC Class B –Tx – Spurious Emissions.set
Operator: Kyle Fujimoto
EUT Type: Project Z-series - Transmitter
EUT Condition: The EUT is continuously transmitting at 921.37 MHz
Company: Kangaroo Products, Inc.
Model: 600-855-Z
S/N: N/A

2/20/2018 4:57:59 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)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
49.50	V	33.09	32.89	-6.91	-7.11	40.00	22.18	0.90	236.00	175.31
50.40	V	33.05	32.67	-6.95	-7.33	40.00	21.92	0.90	284.75	158.95
56.40	V	33.88	33.45	-6.12	-6.55	40.00	19.23	0.90	189.75	127.55
57.40	V	35.63	35.21	-4.37	-4.79	40.00	18.78	0.90	300.25	175.01
58.40	V	33.58	33.42	-6.42	-6.58	40.00	18.32	0.90	257.00	143.25
126.30	H	34.47	34.21	-9.03	-9.29	43.50	14.81	1.25	303.25	154.35
127.20	H	36.63	36.25	-6.87	-7.25	43.50	14.68	1.26	259.25	144.12
128.20	H	35.28	35.21	-8.22	-8.29	43.50	14.45	1.27	12.50	222.50



FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	34.28	V	73.97	-39.69	Peak	239.00	135.26	
1806.74	22.61	V	53.97	-31.36	Avg	239.00	135.26	
2710.11	43.28	V	73.97	-30.69	Peak	10.50	114.91	
2710.11	28.59	V	53.97	-25.39	Avg	10.50	114.91	
3613.48	42.88	V	73.97	-31.09	Peak	273.75	130.19	
3613.48	29.67	V	53.97	-24.30	Avg	273.75	130.19	
4516.85	45.28	V	73.97	-28.69	Peak	152.25	168.94	
4516.85	30.50	V	53.97	-23.47	Avg	152.25	168.94	
5420.22	44.51	V	73.97	-29.46	Peak	113.25	123.62	
5420.22	31.10	V	53.97	-22.87	Avg	113.25	123.62	
6323.59	40.38	V	73.97	-33.59	Peak	94.50	112.28	
6323.59	29.05	V	53.97	-24.92	Avg	94.50	112.28	
7226.96	52.56	V	73.97	-21.41	Peak	279.75	100.25	
7226.96	36.09	V	53.97	-17.88	Avg	279.75	100.25	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	46.58	V	73.97	-27.40	Peak	139.25	152.22	
1806.74	30.14	V	53.97	-23.84	Avg	139.25	152.22	
2710.11	46.42	V	73.97	-27.55	Peak	7.25	120.22	
2710.11	31.15	V	53.97	-22.83	Avg	7.25	120.22	
3613.48	42.94	V	73.97	-31.03	Peak	168.50	149.89	
3613.48	29.55	V	53.97	-24.42	Avg	168.50	149.89	
4516.85	44.57	V	73.97	-29.40	Peak	12.00	192.88	
4516.85	31.17	V	53.97	-22.80	Avg	12.00	192.88	
5420.22	42.43	V	73.97	-31.54	Peak	137.25	248.22	
5420.22	30.70	V	53.97	-23.27	Avg	137.25	248.22	
6323.59	41.12	V	73.97	-32.85	Peak	27.75	205.23	
6323.59	29.01	V	53.97	-24.96	Avg	27.75	205.23	
7226.96	55.79	V	73.97	-18.18	Peak	313.25	188.28	
7226.96	39.96	V	53.97	-14.01	Avg	313.25	188.28	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249
Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	35.58	V	73.97	-38.39	Peak	228.75	124.28	
1806.74	23.39	V	53.97	-30.59	Avg	228.75	124.28	
2710.11	38.58	V	73.97	-35.39	Peak	129.50	100.00	
2710.11	26.12	V	53.97	-27.85	Avg	129.50	100.00	
3613.48	44.55	V	73.97	-29.42	Peak	149.50	134.43	
3613.48	29.44	V	53.97	-24.53	Avg	149.50	134.43	
4516.85	45.18	V	73.97	-28.79	Peak	172.00	105.47	
4516.85	31.12	V	53.97	-22.85	Avg	172.00	105.47	
5420.22	43.26	V	73.97	-30.71	Peak	69.25	108.34	
5420.22	31.61	V	53.97	-22.36	Avg	69.25	108.34	
6323.59	42.30	V	73.97	-31.67	Peak	25.50	110.55	
6323.59	30.79	V	53.97	-23.18	Avg	25.50	110.55	
7226.96	48.13	V	73.97	-25.84	Peak	10.00	117.47	
7226.96	34.80	V	53.97	-19.17	Avg	10.00	117.47	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	47.92	H	73.97	-26.06	Peak	68.00	168.62	
1806.74	32.63	H	53.97	-21.34	Avg	68.00	168.62	
2710.11	48.13	H	73.97	-25.84	Peak	57.25	119.44	
2710.11	33.32	H	53.97	-20.65	Avg	57.25	119.44	
3613.48	42.04	H	73.97	-31.93	Peak	352.25	149.41	
3613.48	26.97	H	53.97	-27.00	Avg	352.25	149.41	
4516.85	46.64	H	73.97	-27.33	Peak	114.75	150.61	
4516.85	32.11	H	53.97	-21.86	Avg	114.75	150.61	
5420.22	41.87	H	73.97	-32.10	Peak	233.00	120.04	
5420.22	30.37	H	53.97	-23.60	Avg	233.00	120.04	
6323.59	40.52	H	73.97	-33.45	Peak	91.50	120.05	
6323.59	28.74	H	53.97	-25.23	Avg	91.50	120.05	
7226.96	50.41	H	73.97	-23.56	Peak	81.25	165.23	
7226.96	33.90	H	53.97	-20.07	Avg	81.25	165.23	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - Low Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	34.80	H	73.97	-39.17	Peak	164.75	103.74	
1806.74	22.71	H	53.97	-31.26	Avg	164.75	103.74	
2710.11	39.26	H	73.97	-34.71	Peak	153.75	100.94	
2710.11	25.42	H	53.97	-28.55	Avg	153.75	100.94	
3613.48	44.09	H	73.97	-29.88	Peak	351.25	147.26	
3613.48	30.35	H	53.97	-23.62	Avg	351.25	147.26	
4516.85	43.98	H	73.97	-29.99	Peak	208.25	118.31	
4516.85	29.46	H	53.97	-24.51	Avg	208.25	118.31	
5420.22	42.91	H	73.97	-31.06	Peak	11.00	102.13	
5420.22	30.83	H	53.97	-23.14	Avg	11.00	102.13	
6323.59	41.24	H	73.97	-32.73	Peak	341.00	113.77	
6323.59	29.02	H	53.97	-24.95	Avg	341.00	113.77	
7226.96	46.65	H	73.97	-27.32	Peak	88.25	122.61	
7226.96	33.44	H	53.97	-20.53	Avg	88.25	122.61	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

**Harmonics - Low Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1806.74	50.47	H	73.97	-23.50	Peak	234.50	173.89	
1806.74	34.72	H	53.97	-19.25	Avg	234.50	173.89	
2710.11	48.55	H	73.97	-25.43	Peak	43.75	244.76	
2710.11	32.14	H	53.97	-21.83	Avg	43.75	244.76	
3613.48	43.98	H	73.97	-30.00	Peak	235.50	213.95	
3613.48	30.16	H	53.97	-23.81	Avg	235.50	213.95	
4516.85	45.55	H	73.97	-28.42	Peak	117.75	153.83	
4516.85	32.64	H	53.97	-21.33	Avg	117.75	153.83	
5420.22	44.63	H	73.97	-29.34	Peak	226.25	143.92	
5420.22	32.07	H	53.97	-21.90	Avg	226.25	143.92	
6323.59	43.38	H	73.97	-30.59	Peak	339.00	143.92	
6323.59	31.48	H	53.97	-22.49	Avg	339.00	143.92	
7226.96	56.03	H	73.97	-17.94	Peak	56.25	145.35	
7226.96	41.06	H	53.97	-12.91	Avg	56.25	145.35	
8130.33								No Emission
8130.33								Detected
9033.70								No Emission
9033.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	35.86	V	73.97	-38.12	Peak	15.75	102.19	
1824.74	23.28	V	53.97	-30.69	Avg	15.75	102.19	
2737.11	43.90	V	73.97	-30.07	Peak	286.75	174.07	
2737.11	29.85	V	53.97	-24.12	Avg	286.75	174.07	
3649.48	45.65	V	73.97	-28.32	Peak	32.25	172.10	
3649.48	29.69	V	53.97	-24.28	Avg	32.25	172.10	
4561.85	44.88	V	73.97	-29.09	Peak	280.50	113.83	
4561.85	32.02	V	53.97	-21.95	Avg	280.50	113.83	
5474.22	45.23	V	73.97	-28.74	Peak	69.50	118.97	
5474.22	33.25	V	53.97	-20.72	Avg	69.50	118.97	
6386.59	43.00	V	73.97	-30.97	Peak	164.50	121.25	
6386.59	31.04	V	53.97	-22.93	Avg	164.50	121.25	
7298.96	50.84	V	73.97	-23.13	Peak	251.75	148.82	
7298.96	37.49	V	53.97	-16.48	Avg	251.75	148.82	
8211.33								No Emission
8211.33								Detected
9123.70								No Emission
9123.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	50.27	V	73.97	-23.70	Peak	73.75	138.73	
1824.74	34.64	V	53.97	-19.33	Avg	73.75	138.73	
2737.11	47.36	V	73.97	-26.61	Peak	124.25	123.74	
2737.11	32.79	V	53.97	-21.18	Avg	124.25	123.74	
3649.48	46.25	V	73.97	-27.72	Peak	321.50	182.91	
3649.48	31.74	V	53.97	-22.23	Avg	321.50	182.91	
4561.85	44.71	V	73.97	-29.26	Peak	86.50	121.77	
4561.85	30.81	V	53.97	-23.16	Avg	86.50	121.77	
5474.22	43.63	V	73.97	-30.34	Peak	22.25	105.83	
5474.22	32.22	V	53.97	-21.75	Avg	22.25	105.83	
6386.59	43.15	V	73.97	-30.83	Peak	329.75	110.79	
6386.59	31.36	V	53.97	-22.61	Avg	329.75	110.79	
7298.96	56.67	V	73.97	-17.30	Peak	147.50	147.14	
7298.96	41.32	V	53.97	-12.65	Avg	147.50	147.14	
8211.33								No Emission
8211.33								Detected
9123.70								No Emission
9123.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	35.77	V	73.97	-38.20	Peak	202.75	104.70	
1824.74	23.76	V	53.97	-30.21	Avg	202.75	104.70	
2737.11	40.66	V	73.97	-33.31	Peak	130.75	132.28	
2737.11	27.06	V	53.97	-26.92	Avg	130.75	132.28	
3649.48	45.97	V	73.97	-28.00	Peak	26.50	135.92	
3649.48	31.87	V	53.97	-22.10	Avg	26.50	135.92	
4561.85	45.50	V	73.97	-28.48	Peak	279.25	117.29	
4561.85	30.52	V	53.97	-23.45	Avg	279.25	117.29	
5474.22	43.88	V	73.97	-30.09	Peak	31.75	128.52	
5474.22	32.19	V	53.97	-21.78	Avg	31.75	128.52	
6386.59	43.17	V	73.97	-30.80	Peak	261.00	131.56	
6386.59	31.31	V	53.97	-22.66	Avg	261.00	131.56	
7298.96	48.62	V	73.97	-25.35	Peak	59.75	114.55	
7298.96	34.60	V	53.97	-19.37	Avg	59.75	114.55	
8211.33								No Emission Detected
9123.70								No Emission Detected
9123.70								

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	50.58	H	73.97	-23.39	Peak	351.25	119.32	
1824.74	34.97	H	53.97	-19.00	Avg	351.25	119.32	
2737.11	47.80	H	73.97	-26.17	Peak	328.25	156.58	
2737.11	32.64	H	53.97	-21.33	Avg	328.25	156.58	
3649.48	43.46	H	73.97	-30.51	Peak	23.75	134.13	
3649.48	30.17	H	53.97	-23.80	Avg	23.75	134.13	
4561.85	46.46	H	73.97	-27.51	Peak	61.50	140.58	
4561.85	33.47	H	53.97	-20.50	Avg	61.50	140.58	
5474.22	44.75	H	73.97	-29.22	Peak	308.00	133.00	
5474.22	32.58	H	53.97	-21.40	Avg	308.00	133.00	
6386.59	42.96	H	73.97	-31.01	Peak	102.25	126.01	
6386.59	31.13	H	53.97	-22.84	Avg	102.25	126.01	
7298.96	52.31	H	73.97	-21.66	Peak	326.75	153.05	
7298.96	36.68	H	53.97	-17.29	Avg	326.75	153.05	
8211.33								No Emission
8211.33								Detected
9123.70								No Emission
9123.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Y-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	35.24	H	73.97	-38.73	Peak	23.50	143.38	
1824.74	23.36	H	53.97	-30.61	Avg	23.50	143.38	
2737.11	42.04	H	73.97	-31.93	Peak	299.75	133.65	
2737.11	27.65	H	53.97	-26.32	Avg	299.75	133.65	
3649.48	46.82	H	73.97	-27.15	Peak	142.50	106.19	
3649.48	32.57	H	53.97	-21.40	Avg	142.50	106.19	
4561.85	44.72	H	73.97	-29.25	Peak	214.50	131.08	
4561.85	31.24	H	53.97	-22.73	Avg	214.50	131.08	
5474.22	44.80	h	73.97	-29.17	Peak	34.25	119.08	
5474.22	32.68	H	53.97	-21.29	Avg	34.25	119.08	
6386.59	42.62	H	73.97	-31.35	Peak	216.00	112.22	
6386.59	31.17	H	53.97	-22.80	Avg	216.00	112.22	
7298.96	49.16	H	73.97	-24.81	Peak	142.75	124.52	
7298.96	35.37	H	53.97	-18.60	Avg	142.75	124.52	
8211.33								No Emission Detected
9123.70								No Emission Detected
9123.70								

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

**Harmonics - Middle Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1824.74	48.98	H	73.97	-24.99	Peak	229.75	177.05	
1824.74	33.04	H	53.97	-20.93	Avg	229.75	177.05	
2737.11	46.11	H	73.97	-27.86	Peak	355.50	152.10	
2737.11	30.93	H	53.97	-23.05	Avg	355.50	152.10	
3649.48	46.49	H	73.97	-27.48	Peak	186.50	123.50	
3649.48	31.36	H	53.97	-22.61	Avg	186.50	123.50	
4561.85	45.25	H	73.97	-28.72	Peak	0.25	148.28	
4561.85	32.43	H	53.97	-21.54	Avg	0.25	148.28	
5474.22	44.18	H	73.97	-29.80	Peak	209.50	118.73	
5474.22	32.26	H	53.97	-21.71	Avg	209.50	118.73	
6386.59	43.43	H	73.97	-30.54	Peak	116.25	114.97	
6386.59	31.66	H	53.97	-22.31	Avg	116.25	114.97	
7298.96	53.92	H	73.97	-20.05	Peak	123.25	100.04	
7298.96	38.95	H	53.97	-15.02	Avg	123.25	100.04	
8211.33								No Emission
8211.33								Detected
9123.70								No Emission
9123.70								Detected

FCC 15.249
Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	38.70	V	73.97	-35.27	Peak	224.50	107.32	
1842.74	23.75	V	53.97	-30.22	Avg	224.50	107.32	
2764.11	47.08	V	73.97	-26.89	Peak	114.75	122.85	
2764.11	31.88	V	53.97	-22.10	Avg	114.75	122.85	
3685.48	46.68	V	73.97	-27.30	Peak	76.25	193.89	
3685.48	31.90	V	53.97	-22.07	Avg	76.25	193.89	
4606.85	47.65	V	73.97	-26.32	Peak	76.00	178.79	
4606.85	34.13	V	53.97	-19.84	Avg	76.00	178.79	
5528.22	45.29	V	73.97	-28.68	Peak	325.75	175.68	
5528.22	32.78	V	53.97	-21.19	Avg	325.75	175.68	
6449.59	44.08	V	73.97	-29.89	Peak	167.75	149.17	
6449.59	31.46	V	53.97	-22.51	Avg	167.75	149.17	
7370.96	49.55	V	73.97	-24.42	Peak	151.75	136.10	
7370.96	34.10	V	53.97	-19.87	Avg	151.75	136.10	
8292.33								No Emission
8292.33								Detected
9213.70								No Emission
9213.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	47.15	V	73.97	-26.82	Peak	212.50	176.04	
1842.74	31.67	V	53.97	-22.30	Avg	212.50	176.04	
2764.11	46.79	V	73.97	-27.18	Peak	90.75	217.65	
2764.11	30.95	V	53.97	-23.02	Avg	90.75	217.65	
3685.48	46.26	V	73.97	-27.71	Peak	61.25	192.88	
3685.48	32.26	V	53.97	-21.71	Avg	61.25	192.88	
4606.85	42.54	V	73.97	-31.43	Peak	271.75	210.97	
4606.85	29.68	V	53.97	-24.29	Avg	271.75	210.97	
5528.22	42.14	V	73.97	-31.83	Peak	248.00	183.44	
5528.22	30.34	V	53.97	-23.63	Avg	248.00	183.44	
6449.59	43.04	V	73.97	-30.93	Peak	70.50	146.43	
6449.59	30.32	V	53.97	-23.65	Avg	70.50	146.43	
7370.96	57.53	V	73.97	-16.45	Peak	84.50	159.08	
7370.96	40.75	V	53.97	-13.22	Avg	84.50	159.08	
8292.33	48.50	V	73.97	-25.47	Peak	111.50	145.00	
8292.33	34.47	V	53.97	-19.50	Avg	111.50	145.00	
9213.70								No Emission
9213.70								Detected

FCC 15.249

Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

**Harmonics - High Channel
Transmit Mode - Z-Axis**

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	34.35	V	73.97	-39.63	Peak	87.00	122.19	
1842.74	22.09	V	53.97	-31.88	Avg	87.00	122.19	
2764.11	40.30	V	73.97	-33.67	Peak	141.75	139.68	
2764.11	27.47	V	53.97	-26.50	Avg	141.75	139.68	
3685.48	46.11	V	73.97	-27.86	Peak	144.25	121.77	
3685.48	30.74	V	53.97	-23.23	Avg	144.25	121.77	
4606.85	46.26	V	73.97	-27.71	Peak	149.25	150.91	
4606.85	33.10	V	53.97	-20.87	Avg	149.25	150.91	
5528.22	42.19	V	73.97	-31.78	Peak	204.25	190.91	
5528.22	30.35	V	53.97	-23.62	Avg	204.25	190.91	
6449.59	42.36	V	73.97	-31.61	Peak	195.25	107.50	
6449.59	29.36	V	53.97	-24.61	Avg	195.25	107.50	
7370.96	47.39	V	73.97	-26.58	Peak	252.50	117.35	
7370.96	33.19	V	53.97	-20.78	Avg	252.50	117.35	
8292.33								No Emission Detected
9213.70								No Emission Detected
9213.70								

FCC 15.249
Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

Harmonics - High Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	49.74	H	73.97	-24.23	Peak	130.75	160.16	
1842.74	34.02	H	53.97	-19.95	Avg	130.75	160.16	
2764.11	42.29	H	73.97	-31.68	Peak	256.00	127.20	
2764.11	26.98	H	53.97	-26.99	Avg	256.00	127.20	
3685.48	43.51	H	73.97	-30.46	Peak	206.00	160.64	
3685.48	29.47	H	53.97	-24.50	Avg	206.00	160.64	
4606.85	44.14	H	73.97	-29.83	Peak	187.00	138.97	
4606.85	30.84	H	53.97	-23.14	Avg	187.00	138.97	
5528.22	41.91	H	73.97	-32.06	Peak	252.50	128.46	
5528.22	30.83	H	53.97	-23.15	Avg	252.50	128.46	
6449.59	41.47	H	73.97	-32.50	Peak	190.75	128.46	
6449.59	29.53	H	53.97	-24.44	Avg	190.75	128.46	
7370.96	50.32	H	73.97	-23.65	Peak	175.25	128.58	
7370.96	36.62	H	53.97	-17.35	Avg	175.25	128.58	
8292.33								No Emission
8292.33								Detected
9213.70								No Emission
9213.70								Detected

FCC 15.249

Kangaroo Products Company
 Project Z-series - Transmitter
 Model: 600-855-Z

Date: 02/21/2018

Lab: D

Tested By: Kyle Fujimoto

Harmonics - High Channel
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	40.78	H	73.97	-33.19	Peak	192.00	157.35	
1842.74	27.47	H	53.97	-26.50	Avg	192.00	157.35	
2764.11	46.33	H	73.97	-27.65	Peak	97.00	156.25	
2764.11	31.06	H	53.97	-22.91	Avg	97.00	156.25	
3685.48	44.77	H	73.97	-29.20	Peak	198.00	184.10	
3685.48	31.05	H	53.97	-22.92	Avg	198.00	184.10	
4606.85	44.05	H	73.97	-29.92	Peak	114.25	133.53	
4606.85	30.56	H	53.97	-23.41	Avg	114.25	133.53	
5528.22	42.82	H	73.97	-31.15	Peak	204.25	122.37	
5528.22	30.38	H	53.97	-23.59	Avg	204.25	122.37	
6449.59	40.91	H	73.97	-33.06	Peak	29.00	155.58	
6449.59	29.45	H	53.97	-24.52	Avg	29.00	155.58	
7370.96	49.12	H	73.97	-24.85	Peak	140.25	152.88	
7370.96	33.69	H	53.97	-20.28	Avg	140.25	152.88	
8292.33								No Emission
8292.33								Detected
9213.70								No Emission
9213.70								Detected

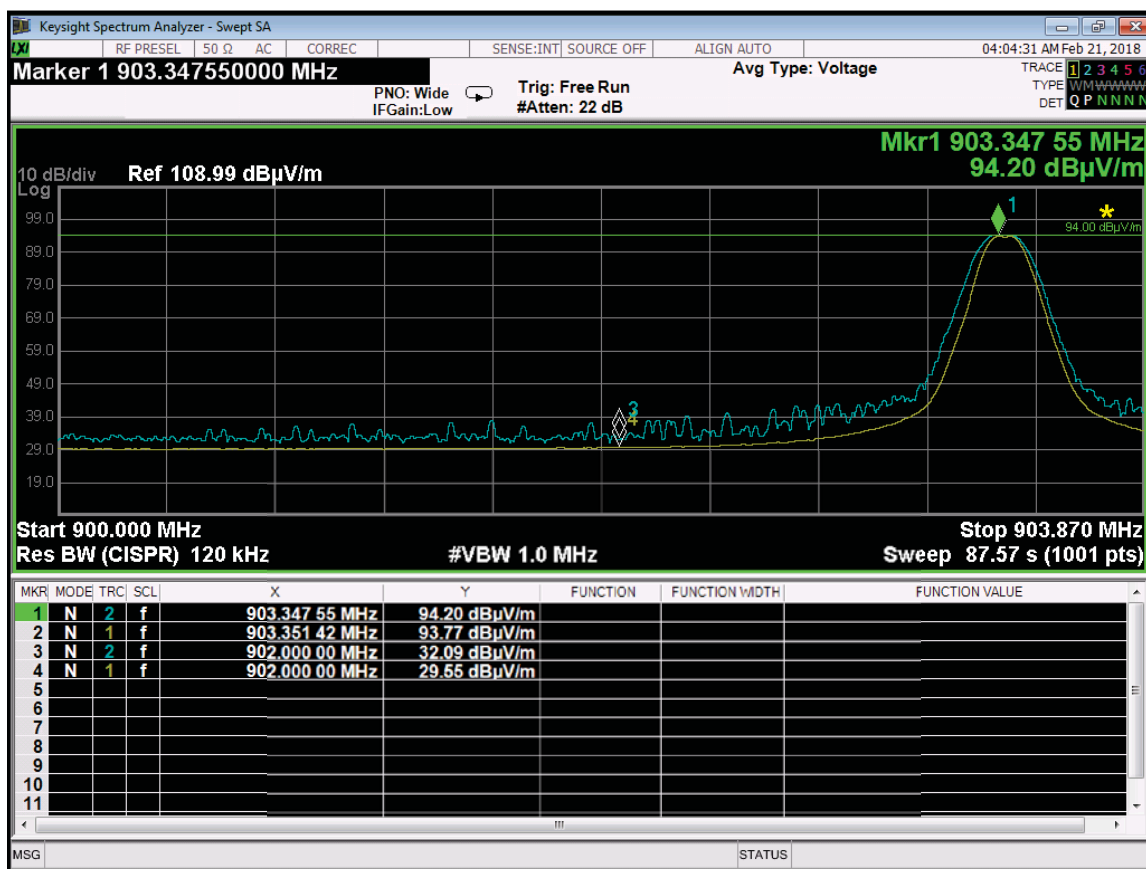
FCC 15.249
Kangaroo Products Company
Project Z-series - Transmitter
Model: 600-855-Z

Date: 02/21/2018
Lab: D
Tested By: Kyle Fujimoto

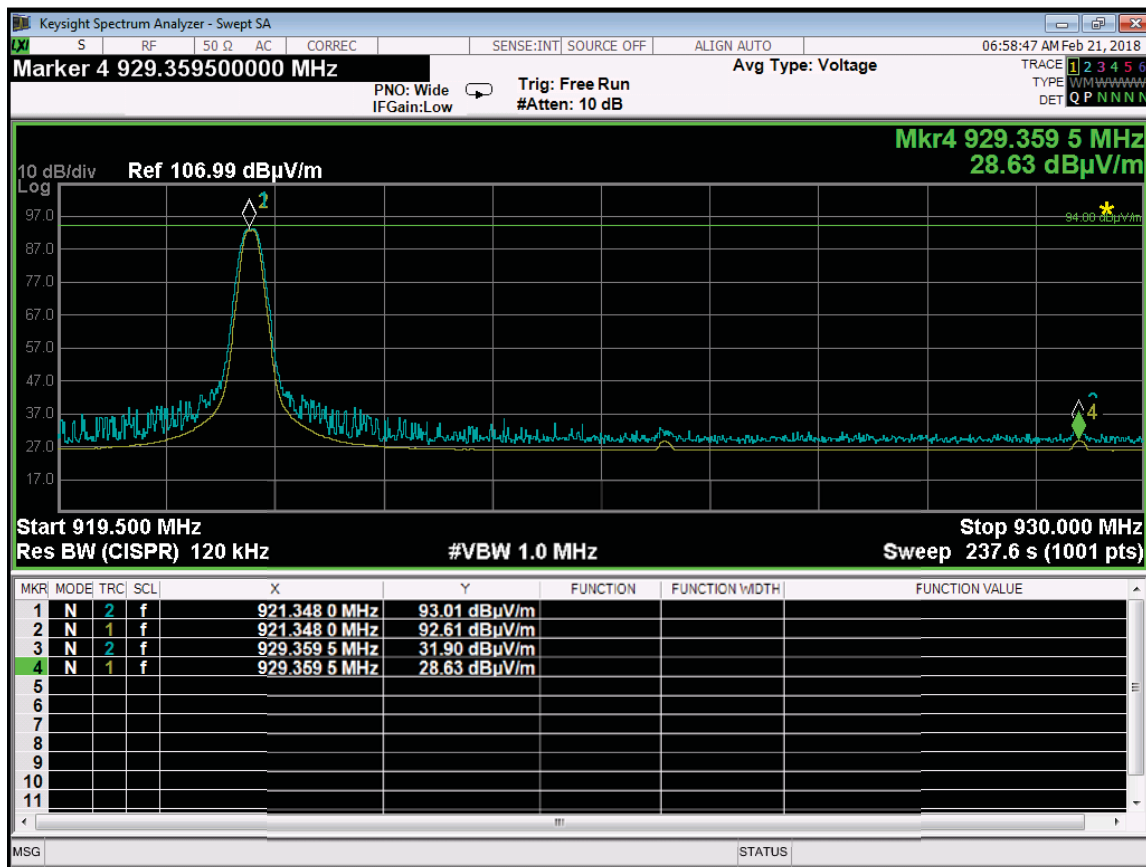
Harmonics - High Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
1842.74	46.18	H	73.97	-27.79	Peak	234.25	164.34	
1842.74	31.11	H	53.97	-22.86	Avg	234.25	164.34	
2764.11	45.25	H	73.97	-28.72	Peak	54.50	162.13	
2764.11	30.91	H	53.97	-23.06	Avg	54.50	162.13	
3685.48	46.34	H	73.97	-27.63	Peak	308.50	155.02	
3685.48	31.93	H	53.97	-22.04	Avg	308.50	155.02	
4606.85	47.18	H	73.97	-26.79	Peak	123.00	165.47	
4606.85	33.95	H	53.97	-20.02	Avg	123.00	165.47	
5528.22	44.04	H	73.97	-29.93	Peak	227.25	109.95	
5528.22	30.86	H	53.97	-23.11	Avg	227.25	109.95	
6449.59	41.06	H	73.97	-32.91	Peak	264.50	105.53	
6449.59	29.39	H	53.97	-24.58	Avg	264.50	105.53	
7370.96	56.65	H	73.97	-17.32	Peak	90.50	125.59	
7370.96	40.92	H	53.97	-13.05	Avg	90.50	125.59	
8292.33								No Emission
8292.33								Detected
9213.70								No Emission
9213.70								Detected

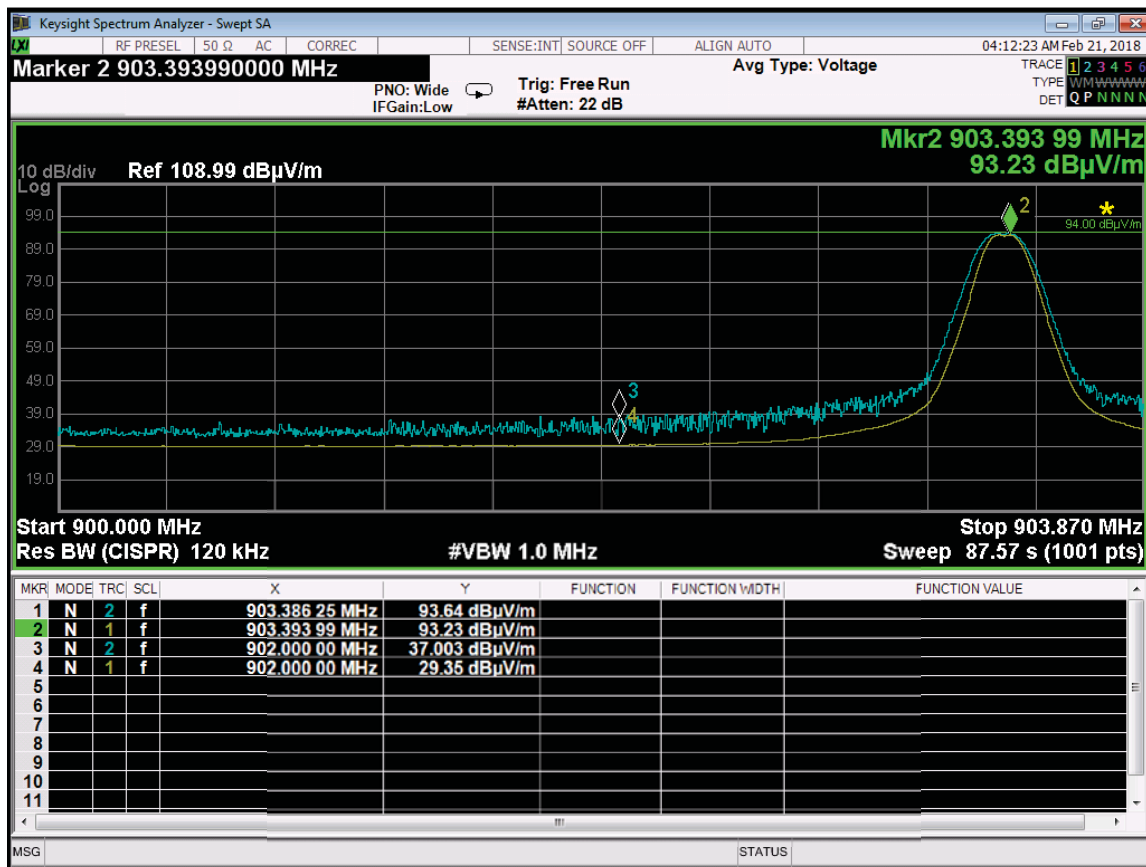
***BAND EDGES
DATA SHEETS***



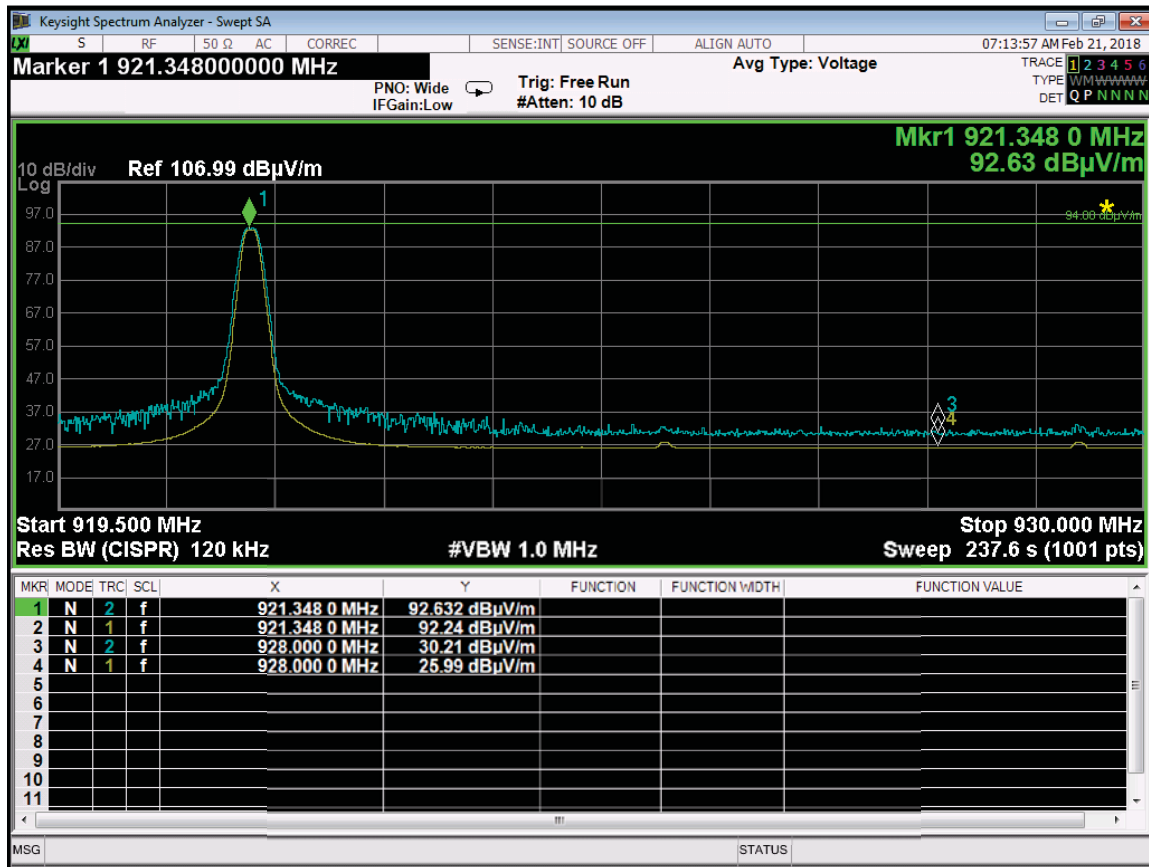
Band Edge - 903.37 MHz - Horizontal- X-Axis - Worst Case



Band Edge – 921.37 MHz - Horizontal - X-Axis - Worst Case



Band Edge – 903.27 MHz - Vertical - Y-Axis - Worst Case



Band Edge – 921.27 MHz - Vertical- Y-Axis - Worst Case