

**ELECTRO MAGNETIC TEST, INC.**

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

*FCC PART 15.247, SUBPART C
IC RSS-247
TEST REPORT*

*for**the*

Beacon

Model: SBEC1V1

Prepared for

Skydio, Inc.
114 Hazel Ave.
Redwood City, CA 94061

Prepared by: 
Andreas Davidsson

Approved by: 
Kevin Bothmann

Electro Magnetic Test, Inc.
1547 Plymouth Street
Mountain View, California 94043
(650) 965-4000

Date: November 18, 2019

	REPORT BODY	APPENDICES				TOTAL
		A	B	C	D	
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REVISION HISTORY

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2.0	December 11, 2019	Updated following comments from TCB reviewer.	AD
2.1	December 20, 2019	Updated following comments from TCB reviewer.	AD
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A	Radiated and Conducted Data Sheets • Radiated Emissions Test Data (General Requirements, and Restricted Bands) • Emissions in Non-Restricted Frequency Bands Test Data • Occupied Bandwidth Test Data • Maximum Peak Output Power Test Data • Maximum Peak Power Spectral Density Test Data
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2	Plot Map And Layout of Test Site
3	Layout of 5 Meter Semi-Anechoic Chamber


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GENERAL REPORT SUMMARY

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

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

The measurement data and conclusions contained in this test report are deemed satisfactory evidence of compliance with Industry Canada Interference-Causing Equipment Standard ICES-003, Issue 6, January 2016.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "D"	-
	Telecom Conducted Emissions Test Site "D"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

*These agencies do not issue an identifying number to test labs.


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GENERAL REPORT SUMMARY (CONTINUED)

Device Tested: Beacon
 Model: SBEC1V1
 S/N: N/A

Product Description: An accessory for Skydio drone that serves as range extender and positional accuracy with basic control and functionality. The device can connect to an Android or iOS phone for video streaming live content.

Modifications: The EUT was not modified during the testing.

Manufacturer: Skydio, Inc.
 114 Hazel Ave.
 Redwood City, CA 94061

Test Date(s): November 1, 4, 5, 6, 7, 8, 10, 2019

Test Specifications: EMI requirements
 Limits: CISPR 22: 1997 plus A1:2000 & A2:2002 Class B
 FCC Title 47, Part 15 Subpart B, Class B
 Test Procedure: ANSI C63.4: 2014

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	FCC STANDARD	IC STANDARD	RESULTS
7.1	Emissions in Restricted and Non-Restricted Bands	15.209, 15.247, 15.247(d)	RSS-GEN Issue 4, [8.9] RSS 247 Issue 2, [5.5]:	PASS
7.2	Conducted Emissions	15.207(a)	RSS-GEN Issue 4 [8.8]	N/A This device is battery operated
7.3	Occupied Bandwidth	15.247(a)(2)	RSS 247 Issue 2, [5.2.1, 6.2.4.1]	PASS
7.4	Maximum Peak Output Power	15.247 (b)	RSS 247 Issue 2, [5.4.4]	PASS
7.5	Maximum Peak Power Spectral Density	15.247(e)	RSS 247 Issue 2, [5.2.2]	PASS
7.6	Antenna Requirement	15.203, 15.247(b)(4))	N/A	PASS


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TECHNICAL DESCRIPTION OF THE EUT

Manufacturer:	Skydio Inc.				
Manufacturer Address:	114 Hazel Ave.				
EUT Name:	Beacon				
Model No:	Model: SBEC1V1				
Operation frequency:	2412 MHz to 2462 MHz				
Channel Number:	40				
Modulation Technology:	DSSS				
Antenna Type:	PCB Antenna				
Antenna Gain:	1 dBi / 2.2 dBi				
Maximum Output Power:	28.71 dBm / 20.44 dBm				
Description of Channel:					
802.11 b/g/n (High and Low Power @ 20MHz)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

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1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Beacon Model: SBEC1V1. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2014. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined in FCC Title 47, Part 15, Subpart C and IC RSS 247, Issue 2.

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2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Electro Magnetic Test, Inc., 1547 Plymouth Street, Mountain View, California, 94043.

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 measurement results in this report and the calibration of the test equipment are traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Skydio, Inc.

Joe Marcinkowski Engineering Program Manager

Electro Magnetic Test, Inc.

Andreas Davidsson Test Technician

Chinmay Shendurnikar Test Technician

David Vivanco Test Technician

Simeet Gandhi Test Technician

Manan Modi Test Technician

Kevin Bothmann Lab Manager

2.4 Date Test Sample was Received

The test sample was received on November 1, 2019.

2.5 Disposition of the Test Sample

The test sample has not yet been returned to Skydio, Inc.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
CISPR	International Special Committee On Radio Interference
FCC	Federal Communications Commission

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3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
RSS-Gen Issue 5, April 2018	General Requirements for Compliance of Radio Apparatus
RSS 247, Issue 2, February 2017	Digital Transmission Systems (DTSS), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
FCC Title 47, Part 15, Subpart C	FCC Rules - Radio frequency devices (including digital devices).
FCC Publication KDB558074	Guidance for compliance measurements on digital transmission system, frequency hopping spread spectrum system, and hybrid system devices operating under section 15.247 of the fcc rules, August 24, 2018
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The Beacon was connected to the remote laptop through its USB-C Port. During testing the wireless radio was continuously transmitting and the Beacon was testing in its worst case orientation.

The EUT uses two wireless radios for operation, one high powered radio and one low powered radio. The radios were tested together for all radiated tests and individually for all conducted tests.

The EUT was tested in three physical configurations across all modes, flat, vertical with antenna facing upwards, and vertical with antenna facing downwards. The vertical with antenna facing upwards orientation in was found to have the highest intentional and unintentional emissions.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The cables were moved to maximize the emissions. The final conducted as well as radiated data was taken in this mode of operation. All initial investigations were performed with the EMI receiver in manual mode scanning the frequency range continuously.

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4.1.1**Cable Construction and Termination**Cable #1

This is a 10 ft. unshielded USB cable connecting the EUT to the remote laptop. It has a USB Type C connected on the EUT end and a USB Type A connector on the remote laptop end.

Cable #2

This is a 6 ft. unshielded power cable connecting the fan to the AC outlet. It is hardwired on the EUT end and has a NEMA 1-15P connector on the AC Outlet end.


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5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT TYPE	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID
Beacon (EUT)	Skydio, Inc.	SBEC1V1	N/A	2ATQRSB EC1V1
Fan	Sunbeam Products, Inc.	Holmes	HNF0410A	N/A
THE FOLLOWING WERE LOCATED OUTSIDE THE TEST SITE:				
Laptop	Dell	Precision 5510	7W0GNH2	DOC
Laptop AC Adapter	Dell	HA130PM130	CN-0RN7NW- 75661-343-20SJ- A00	DOC


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5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100295	February 15, 2019	1 Year
Radiated EMI Software	Sector Design	N/A	Ver.1.4.6	N/A	N/A
EMI Receiver (Conducted EMI)	Rohde & Schwarz	ESU40	100295	February 15, 2019	1 Year
Conducted EMI Software	ETS-Lindgren	Tile!	Rev. 7.2.10.12	N/A	N/A
RF Attenuator	Com-Power	LIT-153A	531175	December 15, 2018	1 Year
LISN	Solar Electronics	Type 21107-50-TS-50-N	21107150701	January 2, 2019	1 Year
LISN	Solar Electronics	Type 21107-50-TS-50-N	21107150702	January 2, 2019	1 Year
LISN	Solar Electronics	Type 21107-50-TS-50-N	21107150703	January 2, 2019	1 Year
LISN	Solar Electronics	Type 21107-50-TS-50-N	21107150704	January 2, 2019	1 Year
TLISN (CAT5)	Fischer	F-071115-1057-1-09	091407	October 31 2019	1 Year
LCL Adaptor	Fischer	T8ALCL-1	091407.02	October 31 2019	1 Year
Biconical Antenna	Com Power	AB-100	01557	July 20, 2019	1 Year
Log Periodic Antenna	Com Power	AL-100	16001	August 9, 2019	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Preamplifier	Hewlett Packard	8447D	1937A02579	March 5, 2019	1 Year
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39A220ZD	N/A	N/A


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5.2 EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	February 2, 2019	1 Year
EMI Test Software	Rohde & Schwarz	EMC32	V8.54.0	N/A	N/A
BiConiLog Antenna	ETS-Lindgren	3143B	00206757	August 28, 2019	1 Year
Horn Antenna	ETS-Lindgren	3117	00109294	September 18, 2019	1 Year
Preamplifier	Rohde & Schwarz	TS-PR18	100056	December 12, 2018	1 Year
Antenna Mast	ETS-Lindgren	2171B	00150364	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Dell, Inc.	Optiplex 745	4T50WC1	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A

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6. TEST SITE DESCRIPTION

6.1 Test Facility Description

Please refer to the table below and section 7.1 of this report for the details of which sites were used for testing. All sites are located at 1547 Plymouth Street, Mountain View, California 94043.

Site Used For Test	Site Description
	Open Field Test Site "A"
	Mains Conducted Emissions Test Site "D"
	Telecom Conducted Emissions Test Site "D"
X	3 Meter Semi-Anechoic Chamber Site "E"
	Mains Conducted Emissions Test Site "E"
	Telecom Conducted Emissions Test Site "E"

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane for all tests not including radiated measurements above 1GHz.

For radiated measurements above 1GHz the EUT was mounted on a 0.7 meter non-conductive hollow cube that was placed on a 1.0 by 1.5 meter table 0.8 meters above the ground plane with a total height of 1.5 meters.

The EUT was grounded through the cable connected through the USB Port.

6.3 Facility Environmental Characteristics

All tests were performed in a climate controlled building. The temperature was 25° C, humidity 32%, and barometric pressure 101.2 kPa.


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7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests.

7.1 Emissions in Restricted and Non-Restricted Bands

7.1.1 General Requirements Limit (FCC PART 15 Section 15.209(a)(1), IC-RSS-GEN Issue 4, [8.9])

Frequency of Emission (MHz)	Field Strength		Measurement Distance (Meters)
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	
0.009-0.49	2400/F(kHz)		300
0.49-1.705	24000/F(kHz)		30
1.705-30	30		30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

7.1.2 Emissions in Restricted and Non-Restricted Bands Limit (FCC PART 15 Section 15.247(d), IC RSS-GEN Issue 4, [8.10], IC-RSS 247 Issue 1, [5.5])

Emissions in Restricted and Non-Restricted Bands FCC PART 15 Section 15.247(d):

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).


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7.1.2
Emissions in Restricted and Non-Restricted Bands Limit (FCC PART 15 Section 15.247(d), IC-RSS-GEN Issue 4, [8.10], IC-RSS 247 Issue 1, [5.5]) (Continued)
Emissions in Restricted Bands IC-RSS-GEN Issue 4, [8.10]:

Restricted bands, identified in Table 6, are designated primarily for safety-of-life services (distress calling and certain aeronautical bands), certain satellite downlinks, radio astronomy and some government uses. Except where otherwise indicated, the following restrictions apply:

- (a) Fundamental components of modulation of licence-exempt radio apparatus shall not fall within the restricted bands of Table 6 except for apparatus complying under RSS-287
- (b) Unwanted emissions that fall into restricted bands of Table 6 shall comply with the limits specified in RSS-Gen; and
- (c) Unwanted emissions that do not fall within the restricted frequency bands of Table 6 shall comply either with the limits specified in the applicable RSS or with those specified in this RSS-Gen.

Limit (For Restricted Bands)
See General Limits Requirement In Above Chart (Section 7.1.1)

Emissions in Non-Restricted Bands IC-RSS 247 Issue 1, [5.5]:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Limit (For Non Restricted Bands)
20db Below Peak Power Spectral Density
30db Below Average Power Spectral Density

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7.1.3 Test Procedure (Radiated)

The Rohde & Schwarz ESU40 EMI receiver was used as a measuring meter while under software control by the Rohde & Schwarz EMC32 software. To increase the sensitivity of the instrument, the built in preamplifier was used from 9 KHz to 1 GHz and an external preamplifier was used from 1 GHz to 26.5 GHz. The EMI receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI receiver records the highest measured reading over all the sweeps. The built in quasi-peak or average detector was used only for those readings which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was 100 kHz from 9 kHz to to 26.5 GHz.

The Loop Antenna, Broadband BiConiLog and horn antennas were used as transducers during the measurement. The Loop antenna was used from 9 KHz to 30 MHz, the BiConiLog antenna was used from 30 MHz to 1000 MHz and horn antennas were used from 1GHz – 26.5 GHz. The frequency spans were wide (9 kHz to 150 kHz, 150 kHz to 30 MHz, 30 MHz to 88 MHz, 88 MHz to 216 MHz, 216 to 300 MHz, 300 MHz to 1 GHz, 1 GHz to 18 GHz and 18 GHz to 26.5 GHz) during preliminary investigations. The final data was taken with a frequency span of 1 MHz. Furthermore, the frequency span was reduced during the preliminary investigations as deemed necessary.

The 5 meter semi-anechoic chamber of Electro Magnetic Test, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2014. 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. The EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength).

The presence of non EUT signals was verified by turning the EUT off. In case a non EUT signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the other signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance from 9 kHz to 26.5 GHz. to obtain final test data.

The test was run through fully three times with the EUT having its output set to low, middle, and high channels on each test respectively. The data was then combined to provide the worst case of all three tests. This was tested against all applicable modes and bandwidths with the worst case being plotted in each measurement range.

Calculation Of Radiated Emission Test Data:

Amplitude - Gain + Antenna Factor + Cable Loss = Corrected Amplitude

Corrected Amplitude - Limit = Margin

Associated with the radiated emission test data in this report is a ± 5.1 dB measurement uncertainty.



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7.1.4 Test Procedure (Conducted)

This testing was not required; please see the results table for reasoning.

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7.2 Conducted Emissions Test – Mains Ports**7.2.1 Limit (FCC PART 15 Section 15.207(a), IC RSS-GEN Issue 4 [8.8])**

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

*Note: Decreases with the logarithm of the frequency

7.2.2 Test Procedure

This testing was not required; please see the results table for reasoning.

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7.3 Occupied Bandwidth

7.3.1 Limit (FCC PART 15 Section 15.247(a)(2), IC-RSS 247 Issue 1, [5.2.1])

FCC PART 15 Section 15.247(a)(2)

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz

IC-RSS 247 Issue 1 [5.2.1]

DTSS include systems that employ digital modulation techniques resulting in spectral characteristics similar to direct sequence systems. The following applies to the bands 902-928 MHz and 2400-2483.5MHz

Limit
6 dB Bandwidth $\geq$ 500 kHz

7.3.2 Test Procedure

Follow the radiated test procedure but set the Spectrum Analyzer as below:

RBW: 100 kHz

VBW: $\geq 3 \times$ RBW

Detector: Peak

Trace Mode: Max Hold

- (1) Set analyzer center frequency to center of signal
- (2) Turn on occupied bandwidth measurement mode
- (3) Set measurement to 6db bandwidth

Associated with the Occupied Bandwidth test data in this report is a $\pm 2.5\%$ measurement uncertainty.

7.3.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.4 Maximum Peak Output Power

7.4.1 Limit (FCC PART 15 Section 15.247(b)(3), IC-RSS 247 Issue 1, [5.4.4])

FCC PART 15 Section 15.247(b)(3)

For systems using digital modulation in the 902-928 MHz, 2400-2483.5MHz, and 5725-5850 MHz bands: 1 Watt.

IC-RSS 247 Issue 1, [5.4.4]

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5MHz, the maximum peak conducted output power shall not exceed 1W. Except provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

Limit
Maximum Peak Output Power (Digital Modulation) $\leq$ 1Watt or 30 dBm

7.4.2 Test Procedure

Follow the radiated test procedure but set the Spectrum Analyzer as below:

RBW = 1 MHz

VBW $\geq$ 3 x RBW

Span $\geq$ 1.5 DTS Bandwidth

Detector: Peak

Trace Mode: Max Hold

Amplitude Offset: Cable Loss

When the trace is completed use the Channel Power function with the Bandwidth set to the DTS Bandwidth edges.

Calculate the Peak Output Power by using the following equation:

a. $\text{Peak Power} = \text{Conducted Output Power}$

Cable Loss = 3.9 dBm

Associated with the Maximum Peak Output Power test data in this report is a ± 5.1 dB measurement uncertainty.

7.4.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

**ELECTRO MAGNETIC TEST, INC.**1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

7.5 Maximum Peak Power Spectral Density

7.5.1 Limit (FCC PART 15 Section 15.247(e), IC-RSS 247 Issue 1, [5.2.2])

FCC PART 15 Section 15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density

Limit
8 dBm/3 KHz

7.5.2 Test Procedure

Follow the radiated test procedure but set the Spectrum Analyzer as below:

$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$

$\text{VBW} \geq 3 \times \text{RBW}$

$\text{Span} \geq 1.5 \times \text{DTS Bandwidth}$

Amplitude Offset: Cable Loss

Detector: Peak

1.) Connect EUT to Spectrum Analyzer

2.) Record data values and calculate Power Spectral Density by using the following equation:

a. Power Spectral Density = Conducted Output Power

Cable Loss = 3.9 dBm

Associated with the Maximum Peak Power Spectral Density test data in this report is a ± 5.1 dB measurement uncertainty.

7.5.3 Test Result

The EUT meets the requirements. Please see the datasheets in Appendix A for the measurement results.

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7.6 Antenna Requirement

7.6.1 Requirement (FCC PART 15 SECTION 15.203,15.247(b)(4))

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.6.2 Test Result

The antenna is integrated on the main PCB with no consideration for replacement on the Beacon.



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8. CONCLUSIONS / COMPLIANCE STATEMENT

Based upon the results contained in this report, Electro Magnetic Test, Inc. has determined that the Beacon, Model: SBEC1V1 meets all of the specification limits defined in FCC Title 47, Part 15, Subpart C and IC RSS 247, Issue 2.



ELECTRO MAGNETIC TEST, INC.

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APPENDIX A

RADIATED AND CONDUCTED EMISSIONS DATA SHEETS

Radiated Emission Test Report

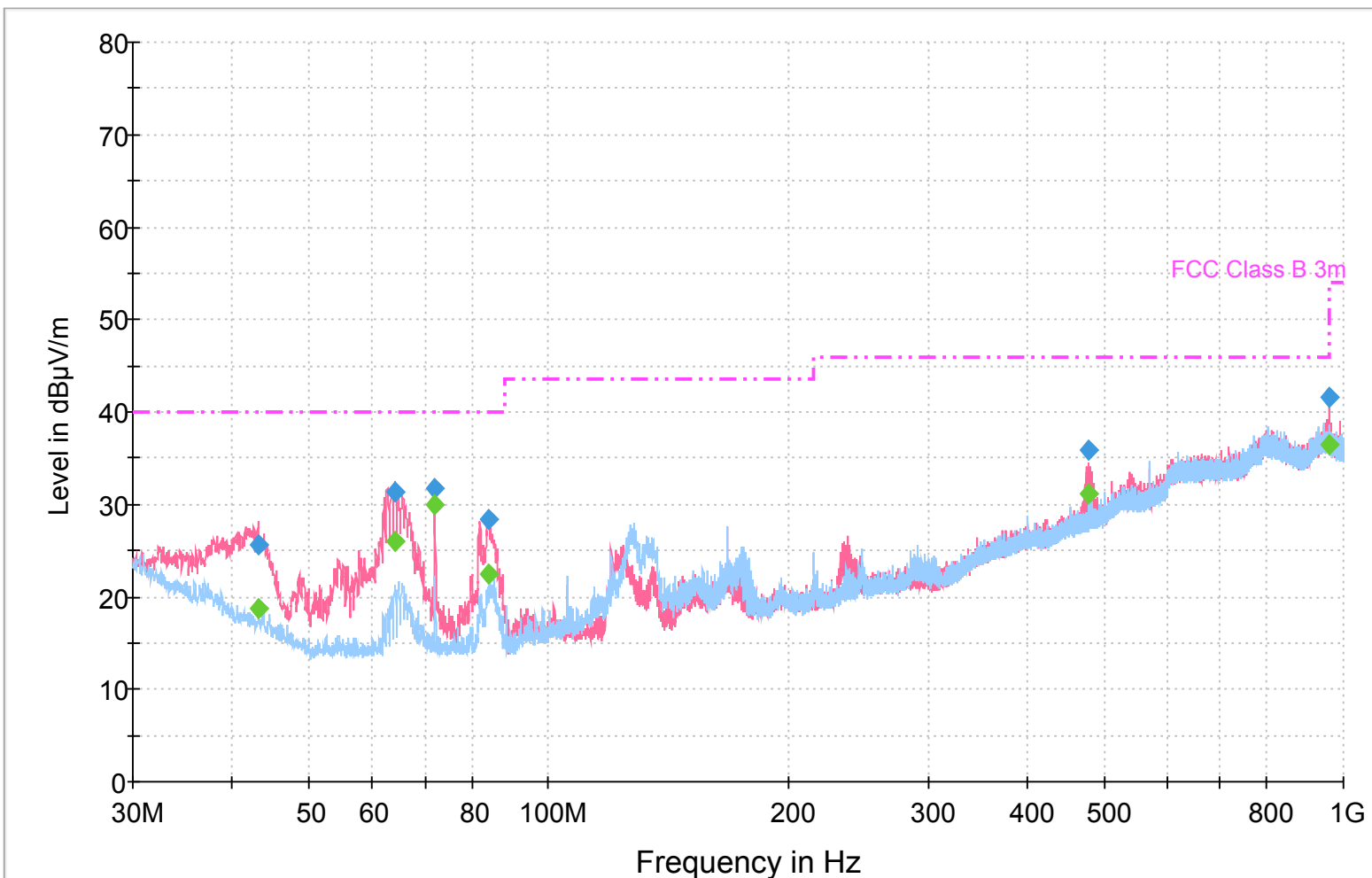
Tested At:**Electro Magnetic Test, Inc.****1547 Plymouth Street****Mountain View, CA 94043****Tel. 650-965-4000****Fax. 650-965-3000****Common Information**

Test Description:	FCC Class B Radiated Emissions
Operating Conditions:	Normal
Test Engineer:	Andreas Davidsson

EUT Information

Company Name:	Skydio
EUT Name	Beacon
Model Number:	SBEC1V1
Serial Number:	N/A
Comment:	Omni-Directional Antenna, Vertical, Facing Up, 20MHz, 22dB, 2412

FCC Class B Radiated Scan 3m PK QP



--- FCC Class B 3m
◆ Final Result 1-PK+

--- Preview Result 1V-PK+
◆ Final Result 2-QPK

--- Preview Result 1H-PK+

Final Result 1 - 2412MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
43.200000	25.6	120.0	V	37.0	14.4	14.40	40.00	
63.990000	31.3	171.0	V	176.0	12.1	8.70	40.00	
72.000000	31.6	120.0	V	359.0	12.3	8.40	40.00	
84.120000	28.3	100.0	V	0.0	12.3	11.70	40.00	
478.020000	35.9	100.0	V	261.0	24.9	10.10	46.00	
959.970000	41.5	165.0	V	303.0	31.8	4.50	46.00	

Final Result 2 - 2412MHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
43.200000	18.8	120.0	V	37.0	14.4	21.20	40.00	
63.990000	26.1	171.0	V	176.0	12.1	13.90	40.00	
72.000000	29.9	120.0	V	359.0	12.3	10.10	40.00	
84.120000	22.4	100.0	V	0.0	12.3	17.60	40.00	
478.020000	31.1	100.0	V	261.0	24.9	14.90	46.00	
959.970000	36.5	165.0	V	303.0	31.8	9.50	46.00	

Final Result 1 - 2437MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
43.170000	30.7	100.0	V	16.0	14.4	9.30	40.00	
64.020000	32.3	114.0	V	9.0	12.1	7.70	40.00	
85.110000	28.7	138.0	V	113.0	12.3	11.30	40.00	
123.930000	32.0	342.0	H	107.0	13.2	11.50	43.50	
477.960000	36.0	100.0	V	260.0	24.9	10.00	46.00	
942.510000	38.1	142.0	V	183.0	32.0	7.90	46.00	

Final Result 2- 2437MHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
43.170000	25.1	100.0	V	16.0	14.4	14.90	40.00	
64.020000	27.2	114.0	V	9.0	12.1	12.80	40.00	
85.110000	22.6	138.0	V	113.0	12.3	17.40	40.00	
123.930000	23.8	342.0	H	107.0	13.2	19.70	43.50	
477.960000	31.2	100.0	V	260.0	24.9	14.80	46.00	
942.510000	31.6	142.0	V	183.0	32.0	14.40	46.00	

Final Result 1 - 2462MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
37.260000	28.5	100.0	V	325.0	16.8	11.50	40.00	
64.020000	33.0	100.0	V	323.0	12.1	7.00	40.00	
85.620000	31.1	114.0	V	129.0	12.3	8.90	40.00	
127.620000	35.2	199.0	H	285.0	13.3	8.30	43.50	
479.970000	33.9	100.0	V	94.0	24.9	12.10	46.00	
960.000000	40.7	100.0	V	263.0	31.8	13.30	54.00	

Final Result 2 - 2462MHz

Frequency (MHz)	QuasiPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
37.260000	22.4	100.0	V	325.0	16.8	17.60	40.00	
64.020000	29.4	100.0	V	323.0	12.1	10.60	40.00	
85.620000	25.7	114.0	V	129.0	12.3	14.30	40.00	
127.620000	27.4	199.0	H	285.0	13.3	16.10	43.50	
479.970000	29.4	100.0	V	94.0	24.9	16.60	46.00	
960.000000	35.8	100.0	V	263.0	31.8	18.20	54.00	



ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000



FRONT VIEW

Skydio, Inc.

Beacon

Model: SBEC1V1

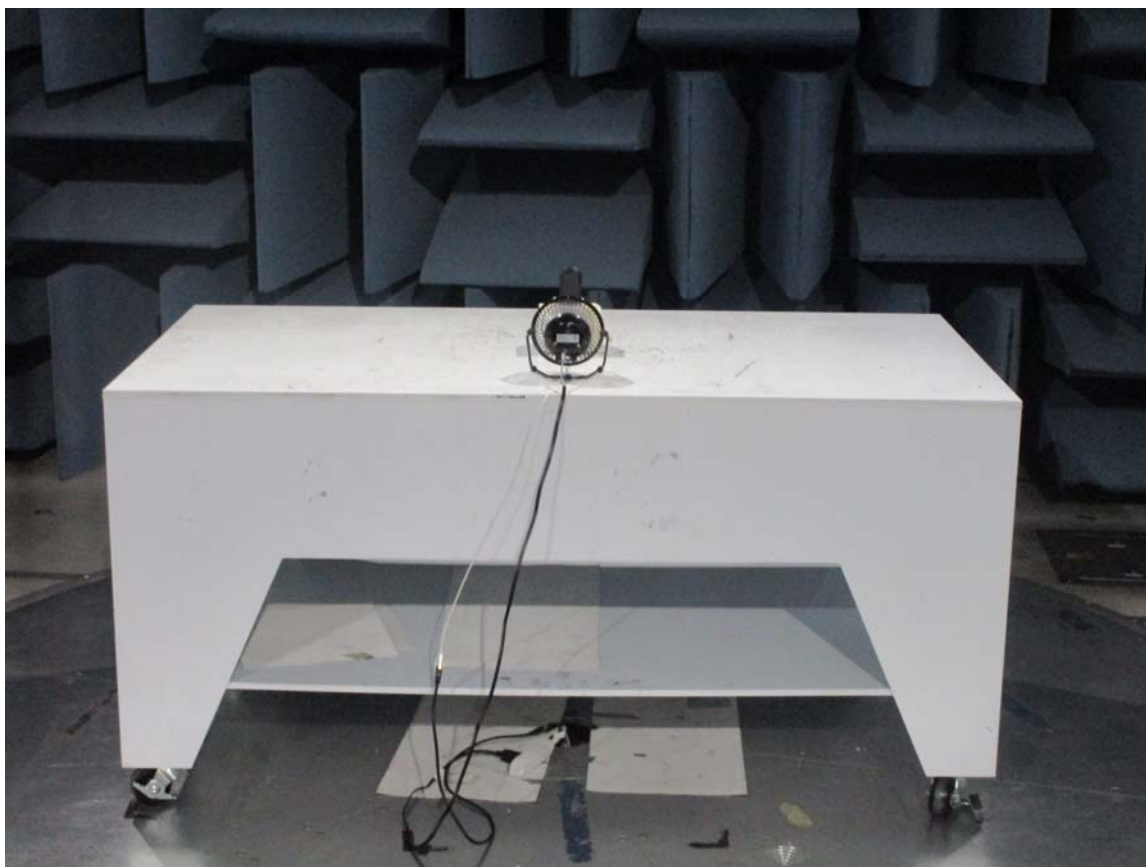
CISPR 22/FCC Class B – Radiated Emissions

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



ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000



REAR VIEW

Skydio, Inc.

Beacon

Model: SBEC1V1

CISPR 22/FCC Class B – Radiated Emissions

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

Radiated Emission Test Report

Tested At:
Electro Magnetic Test, Inc.
1547 Plymouth Street
Mountain View, CA 94043
Tel. 650-965-4000
Fax. 650-965-3000

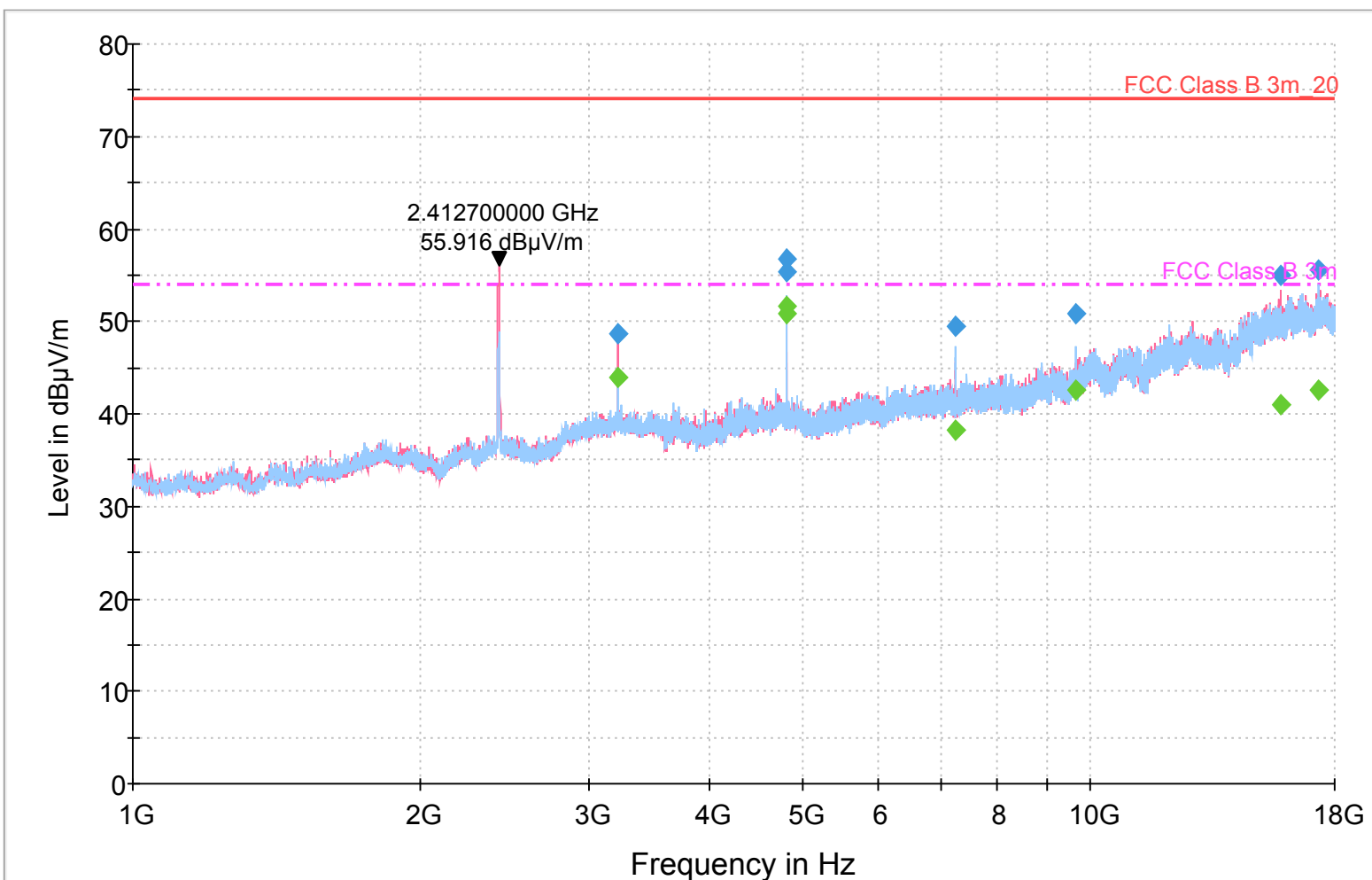
Common Information

Test Description:	FCC Class B Radiated Emissions
Operating Conditions:	Normal
Test Engineer:	Andreas Davidsson

EUT Information

Company Name:	Skydio
EUT Name	Beacon
Model Number:	SBEC1V1
Serial Number:	N/A
Comment:	Omni-Directional Antenna, Vertical, Facing Up, 20MHz, 21dB, 2412

FCC Class B Radiated Sweep 1GHz-18GHz 3m PK AVG



— FCC Class B 3m_20 - - - - - FCC Class B 3m — Preview Result 1V-PK+
— Preview Result 1H-PK+ ◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Final Result 1 - 2412MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
3215.666667	48.7	317.0	V	259.0	3.2	25.30	74.00	
4823.866667	56.7	266.0	H	62.0	5.6	17.30	74.00	
4823.866667	55.3	365.0	V	95.0	5.6	18.70	74.00	
7236.733333	49.5	393.0	H	227.0	9.7	24.50	74.00	
9647.900000	50.8	363.0	H	272.0	13.5	23.20	74.00	
15821.733333	54.9	154.0	V	133.0	21.8	19.10	74.00	
17278.066667	55.6	348.0	H	34.0	23.4	18.40	74.00	

Final Result 2 - 2412MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
3215.666667	44.0	317.0	V	259.0	3.2	10.00	54.00	
4823.866667	51.6	266.0	H	62.0	5.6	2.40	54.00	
4823.866667	50.8	365.0	V	95.0	5.6	3.20	54.00	
7236.733333	38.2	393.0	H	227.0	9.7	15.80	54.00	
9647.900000	42.6	363.0	H	272.0	13.5	11.40	54.00	
15821.733333	41.0	154.0	V	133.0	21.8	13.00	54.00	
17278.066667	42.5	348.0	H	34.0	23.4	11.50	54.00	

Final Result 1 - 2437MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
3249.100000	40.3	205.0	V	87.0	3.2	33.70	74.00	
4873.733333	54.4	299.0	H	135.0	5.7	19.60	74.00	
4873.733333	42.5	332.0	V	216.0	5.7	31.50	74.00	
7312.100000	54.8	400.0	H	293.0	9.9	19.20	74.00	
9748.200000	52.3	337.0	H	250.0	13.8	21.70	74.00	
14622.100000	52.8	165.0	V	176.0	20.3	21.20	74.00	
17531.366667	55.3	234.0	V	63.0	22.9	18.70	74.00	

Final Result 2 - 2437MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
3249.100000	26.8	205.0	V	87.0	3.2	27.20	54.00	
4873.733333	48.7	299.0	H	135.0	5.7	5.30	54.00	
4873.733333	29.2	332.0	V	216.0	5.7	24.80	54.00	
7312.100000	41.1	400.0	H	293.0	9.9	12.90	54.00	
9748.200000	44.6	337.0	H	250.0	13.8	9.40	54.00	
14622.100000	39.7	165.0	V	176.0	20.3	14.30	54.00	
17531.366667	42.1	234.0	V	63.0	22.9	11.90	54.00	

Final Result 1 - 2462MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
4923.600000	61.6	306.0	H	216.0	5.8	12.40	74.00	
4924.166667	61.7	100.0	V	133.0	5.8	12.30	74.00	
7386.900000	56.5	365.0	H	76.0	10.2	17.50	74.00	
16189.500000	56.0	213.0	V	133.0	22.6	18.00	74.00	
17285.433333	56.2	256.0	H	156.0	23.4	17.80	74.00	

Final Result 2 - 2462MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
4923.600000	51.9	306.0	H	216.0	5.8	2.10	54.00	
4924.166667	52.8	100.0	V	133.0	5.8	1.2	54.00	
7386.900000	46.1	365.0	H	76.0	10.2	7.90	54.00	
16189.500000	41.8	213.0	V	133.0	22.6	12.20	54.00	
17285.433333	42.6	256.0	H	156.0	23.4	11.40	54.00	

Radiated Emission Test Report

Tested At:
Electro Magnetic Test, Inc.
1547 Plymouth Street
Mountain View, CA 94043
Tel. 650-965-4000
Fax. 650-965-3000

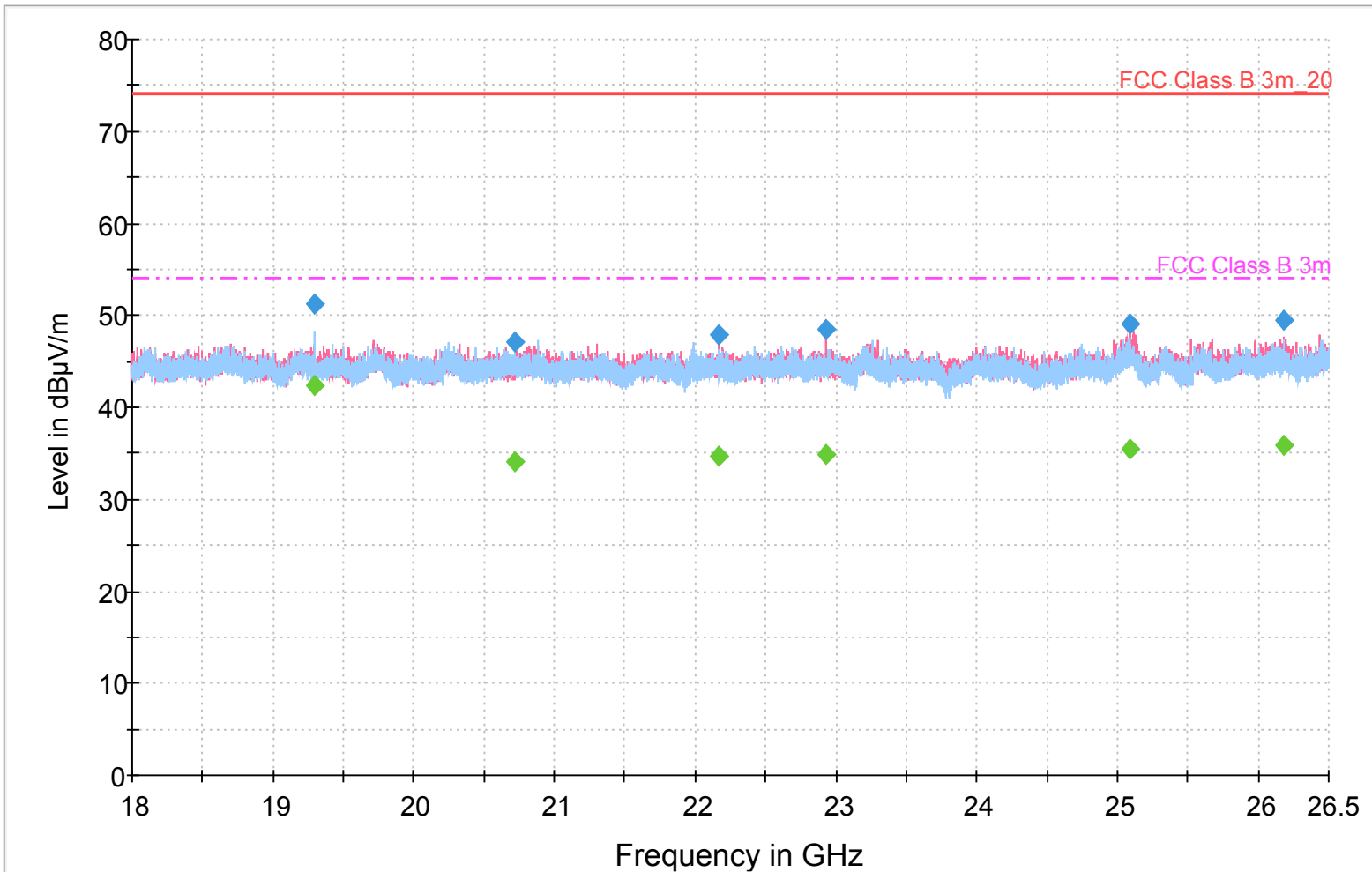
Common Information

Test Description:	FCC Class B Radiated Emissions
Operating Conditions:	Normal
Test Engineer:	Andreas Davidsson

EUT Information

Company Name:	Skydio
EUT Name	Beacon
Model Number:	SBEC1V1
Serial Number:	N/A
Comment:	Omni-Directional Antenna, Vertical, Facing Up, 20MHz, 21dB, 2412

FCC Class B Radiated Sweep 18GHz-26.5GHz 3m PK AVG



— FCC Class B 3m_20 - - - FCC Class B 3m — Preview Result 1V-PK+
— Preview Result 1H-PK+ ◆ Final Result 1-PK+ ◆ Final Result 2-AVG

Final Result 1 - 2412MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
19295.825000	51.3	181.0	H	122.0	10.6	22.70	74.00	
20724.675000	47.1	300.0	H	224.0	11.1	26.90	74.00	
22173.500000	47.9	144.0	V	254.0	11.2	26.10	74.00	
22935.100000	48.6	291.0	V	169.0	11.6	25.40	74.00	
25090.275000	49.1	185.0	V	34.0	11.8	24.90	74.00	
26187.625000	49.5	225.0	V	202.0	12.4	24.50	74.00	

Final Result 2 - 2412MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
19295.825000	42.3	181.0	H	122.0	10.6	11.70	54.00	
20724.675000	34.1	300.0	H	224.0	11.1	19.90	54.00	
22173.500000	34.6	144.0	V	254.0	11.2	19.40	54.00	
22935.100000	34.8	291.0	V	169.0	11.6	19.20	54.00	
25090.275000	35.6	185.0	V	34.0	11.8	18.40	54.00	
26187.625000	35.9	225.0	V	202.0	12.4	18.10	54.00	

Final Result 1 - 2437MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
18896.750000	46.8	114.0	H	38.0	10.5	27.20	74.00	
20232.100000	47.3	196.0	V	193.0	10.9	26.70	74.00	
20652.425000	47.1	217.0	V	183.0	11.1	26.90	74.00	
22672.450000	47.7	280.0	H	1.0	11.7	26.30	74.00	
24003.550000	47.7	182.0	V	34.0	11.4	26.30	74.00	
25324.875000	48.4	110.0	V	175.0	12.0	25.60	74.00	

Final Result 2 - 2437MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
18896.750000	33.9	114.0	H	38.0	10.5	20.10	54.00	
20232.100000	34.2	196.0	V	193.0	10.9	19.80	54.00	
20652.425000	34.0	217.0	V	183.0	11.1	20.00	54.00	
22672.450000	34.6	280.0	H	1.0	11.7	19.40	54.00	
24003.550000	34.5	182.0	V	34.0	11.4	19.50	54.00	
25324.875000	34.9	110.0	V	175.0	12.0	19.10	54.00	

Final Result 1 - 2462MHz

Frequency (MHz)	MaxPeak (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
19735.700000	50.6	178.0	H	43.0	10.8	23.40	74.00	
20464.150000	47.2	300.0	V	165.0	10.9	26.80	74.00	
21844.975000	47.8	119.0	V	104.0	11.2	26.20	74.00	
23346.925000	47.7	232.0	V	29.0	11.7	26.30	74.00	
25323.600000	48.9	125.0	V	316.0	12.0	25.10	74.00	
26097.950000	49.1	255.0	V	271.0	11.9	24.90	74.00	

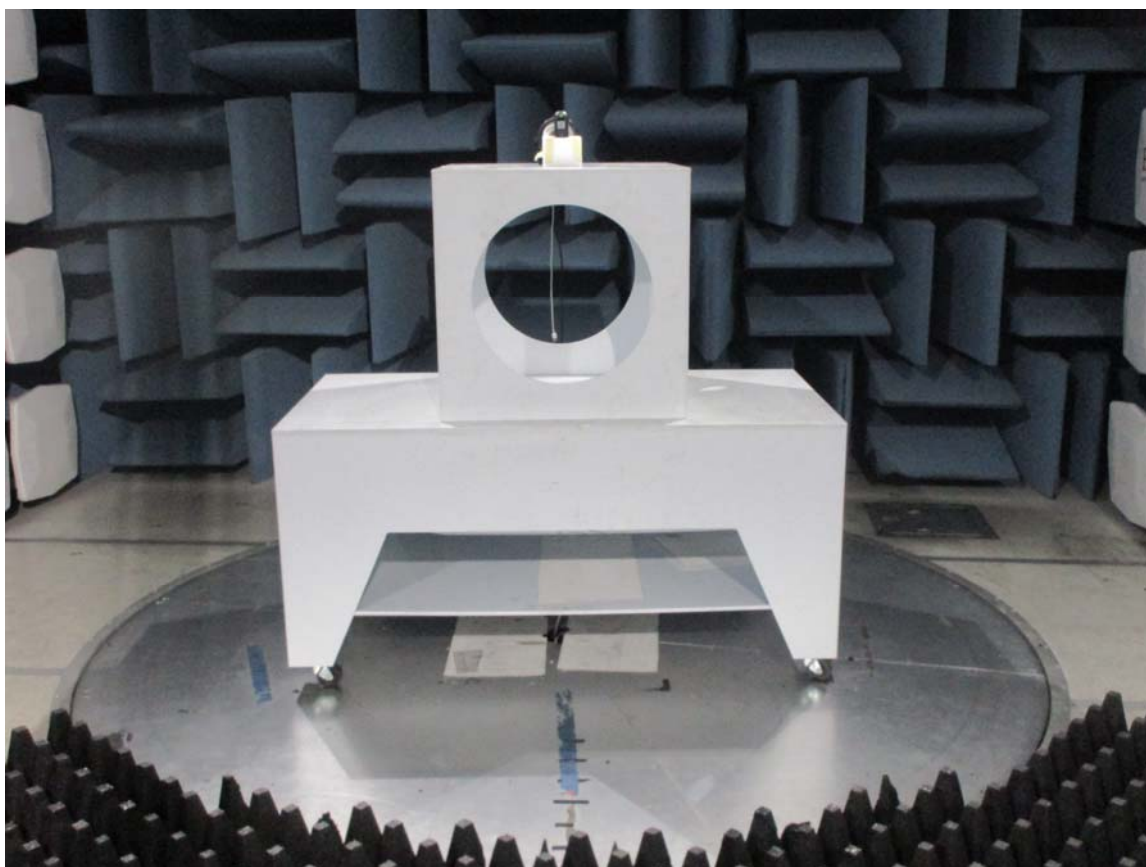
Final Result 2 - 2462MHz

Frequency (MHz)	Average (dBμV/m)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)	Comment
19735.700000	40.6	178.0	H	43.0	10.8	13.40	54.00	
20464.150000	34.1	300.0	V	165.0	10.9	19.90	54.00	
21844.975000	34.2	119.0	V	104.0	11.2	19.80	54.00	
23346.925000	34.6	232.0	V	29.0	11.7	19.40	54.00	
25323.600000	34.9	125.0	V	316.0	12.0	19.10	54.00	
26097.950000	35.1	255.0	V	271.0	11.9	18.90	54.00	



ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000



FRONT VIEW

Skydio, Inc.

Beacon

Model: SBEC1V1

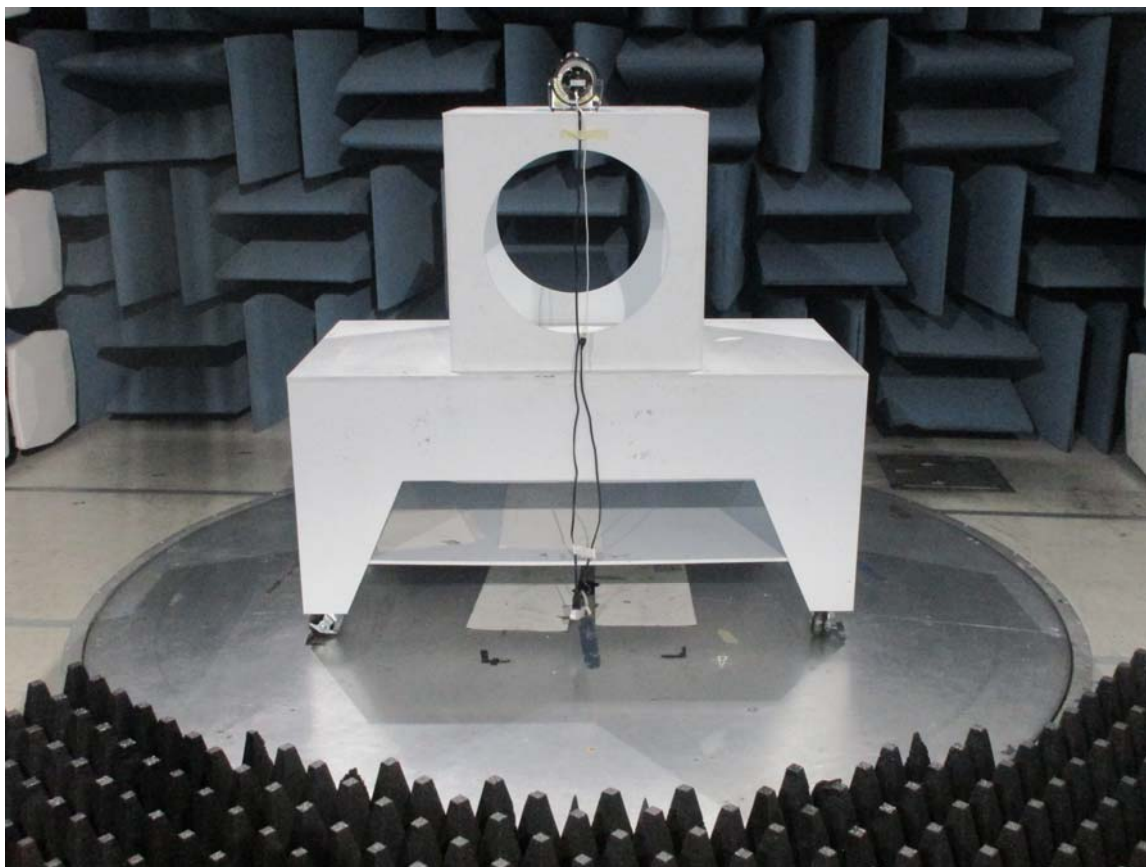
CISPR 22/FCC Class B – Radiated Emissions (>1GHz)

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



ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000



REAR VIEW

Skydio, Inc.

Beacon

Model: SBEC1V1

CISPR 22/FCC Class B – Radiated Emissions (>1GHz)

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


ELECTRO MAGNETIC TEST, INC.

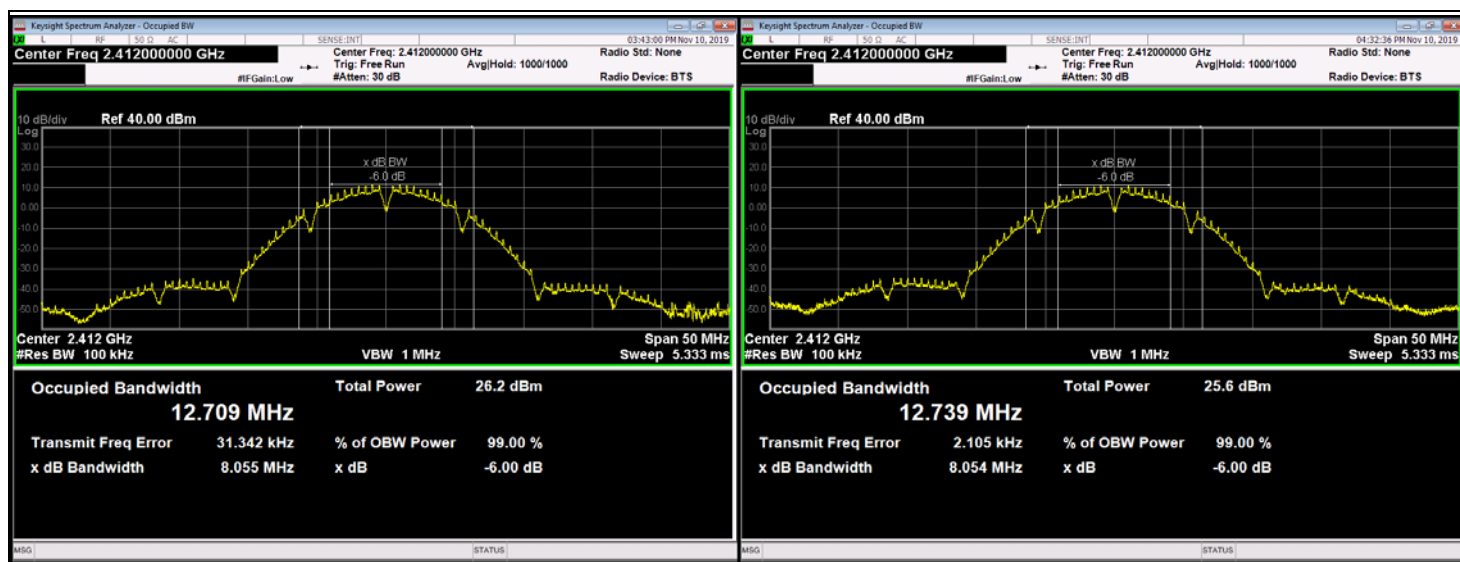
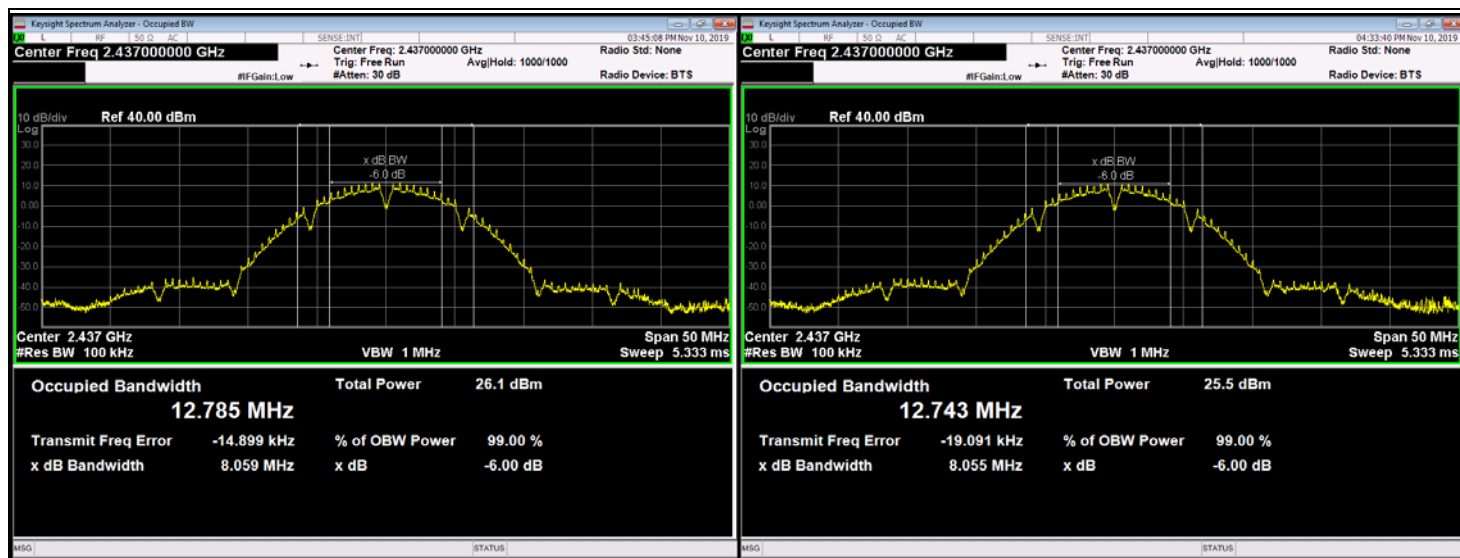
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6dB Bandwidth and Occupied Bandwidth Test

Company:	Skydio Inc.			Test Date:	11/10/2019		
EUT Name:	Beacon			Test Engineer:	Andreas Davidsson		
Model:	SBEC1V1			Test Result:	PASS		
Operating Mode:	TX Mode						
Mode	Antenna	Test CH	Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	6 dB Bandwidth Limit (KHz)	Conclusion
802.11 b (20MHz High Power)	1	1	2412	8.055	12.709	≥ 0.5	PASS
	2	1	2412	8.054	12.739	≥ 0.5	PASS
	1	6	2437	8.059	12.785	≥ 0.5	PASS
	2	6	2437	8.055	12.743	≥ 0.5	PASS
	1	11	2462	8.059	12.846	≥ 0.5	PASS
	2	11	2462	8.056	12.744	≥ 0.5	PASS
802.11 g (20MHz High Power)	1	1	2412	8.045	12.482	≥ 0.5	PASS
	2	1	2412	8.003	12.179	≥ 0.5	PASS
	1	6	2437	8.055	12.684	≥ 0.5	PASS
	2	6	2437	8.031	12.095	≥ 0.5	PASS
	1	11	2462	8.024	12.153	≥ 0.5	PASS
	2	11	2462	8.019	12.408	≥ 0.5	PASS
802.11 n (20MHz High Power)	1	1	2412	8.036	12.368	≥ 0.5	PASS
	2	1	2412	8.027	12.557	≥ 0.5	PASS
	1	6	2437	8.030	12.608	≥ 0.5	PASS
	2	6	2437	8.011	12.103	≥ 0.5	PASS
	1	11	2462	8.009	12.669	≥ 0.5	PASS
	2	11	2462	8.048	12.297	≥ 0.5	PASS
802.11 b (20MHz Low Power)	1	1	2412	9.020	13.638	≥ 0.5	PASS
	1	6	2437	8.532	13.558	≥ 0.5	PASS
	1	11	2462	9.026	13.694	≥ 0.5	PASS
802.11 g (20MHz Low Power)	1	1	2412	9.012	13.270	≥ 0.5	PASS
	1	6	2437	9.003	13.008	≥ 0.5	PASS
	1	11	2462	8.473	13.228	≥ 0.5	PASS
802.11 n (20MHz Low Power)	1	1	2412	9.013	13.391	≥ 0.5	PASS
	1	6	2437	8.333	13.176	≥ 0.5	PASS
	1	11	2462	8.160	13.322	≥ 0.5	PASS

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**Antenna 1 + 2 (20MHz High Power)
Channel 0 (2412 MHz)****Antenna 1 + 2 (20MHz High Power)
Channel 6 (2437 MHz)**

**ELECTRO MAGNETIC TEST, INC.**

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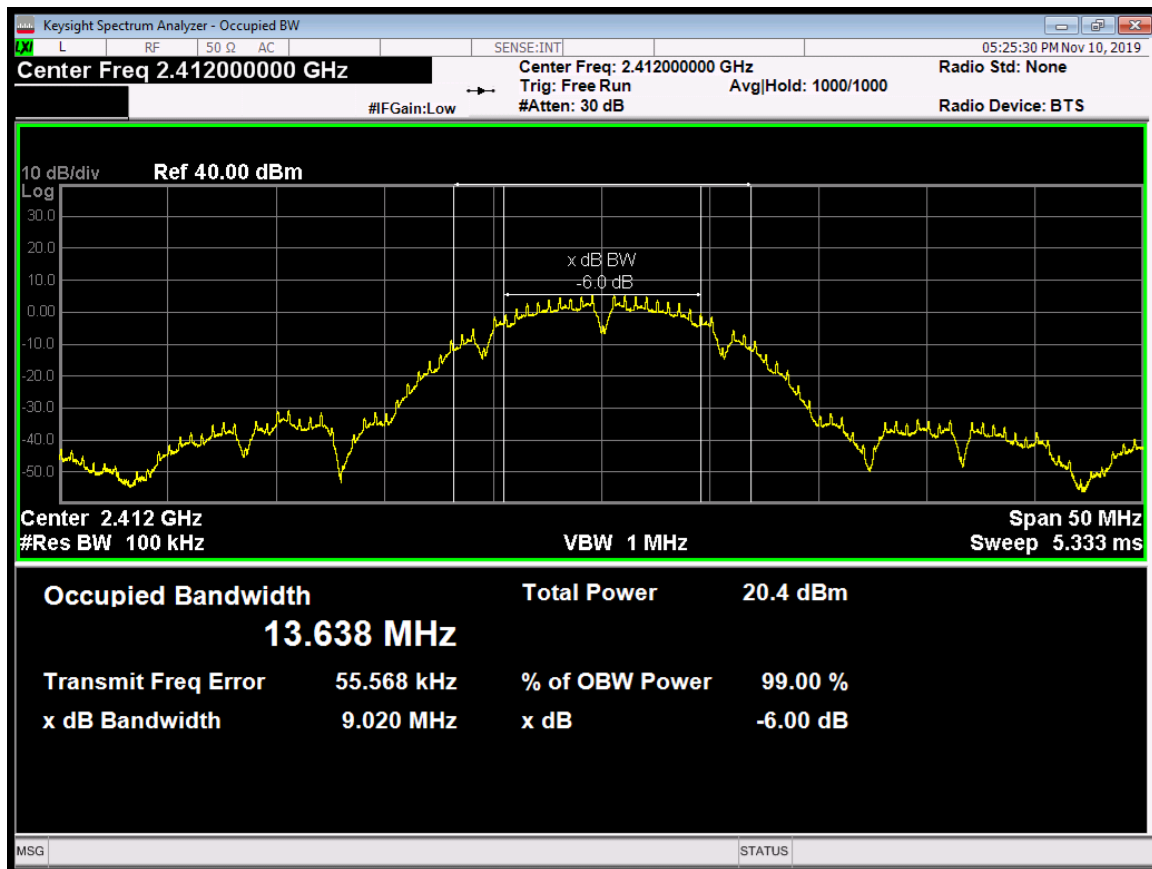
Antenna 1 + 2 (20MHz High Power) Channel 11 (2462 MHz)



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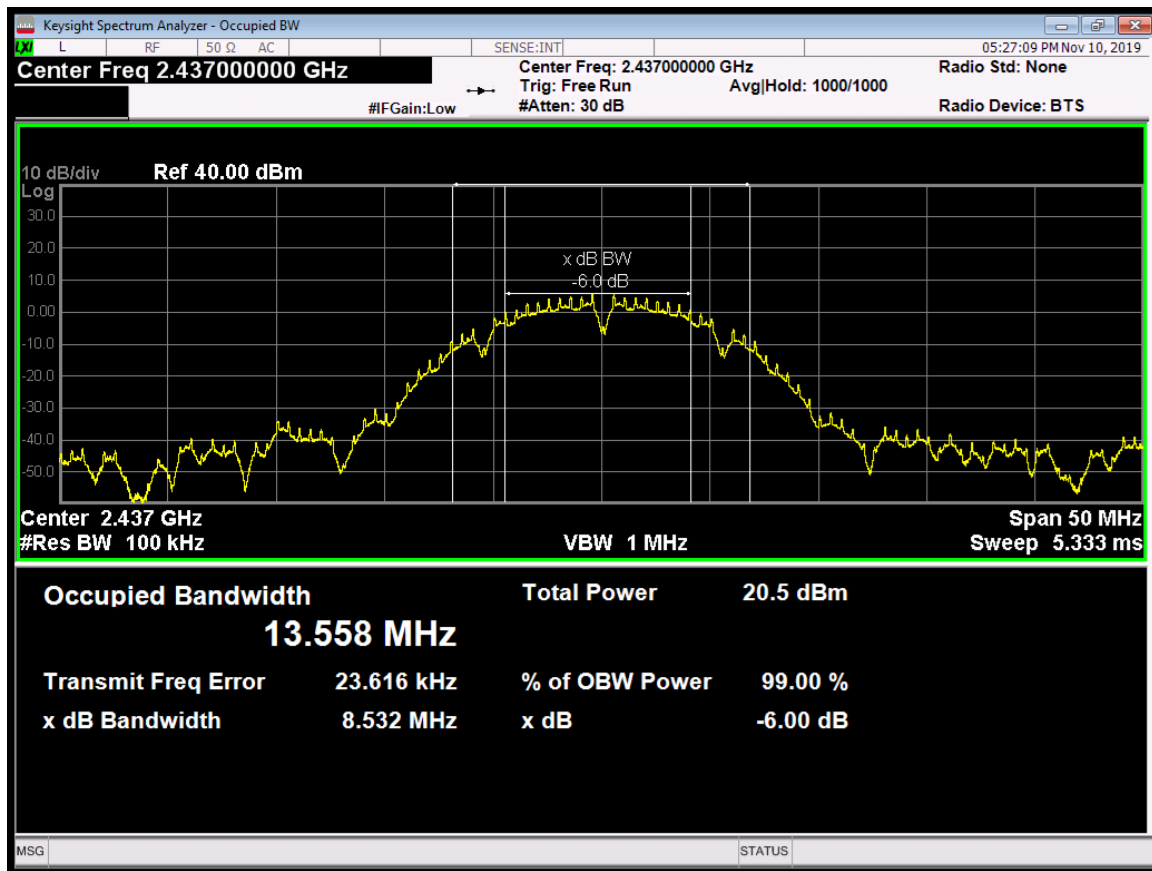
Antenna 1 (20MHz Low Power) Channel 0 (2412 MHz)



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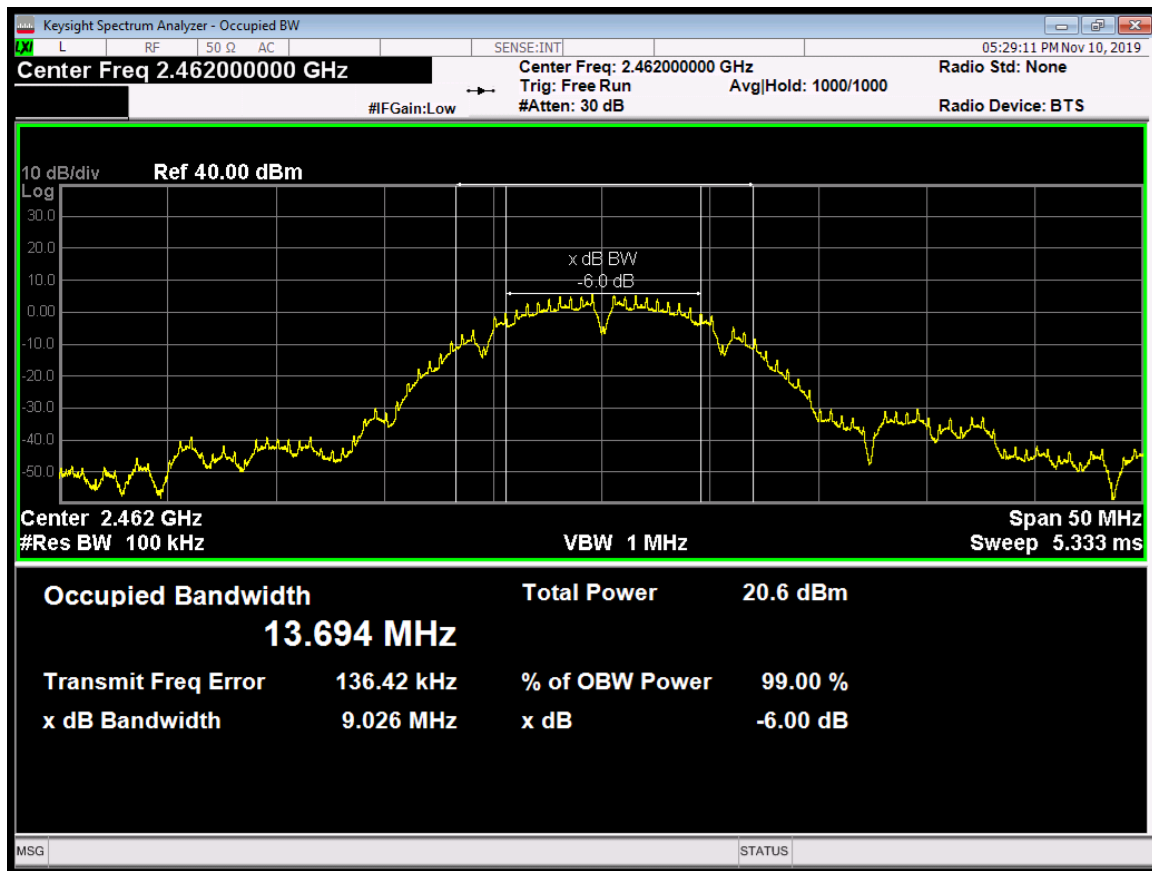
Antenna 1 (20MHz Low Power) Channel 6 (2437 MHz)



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**Antenna 1 (20MHz Low Power)
Channel 11 (2462 MHz)**




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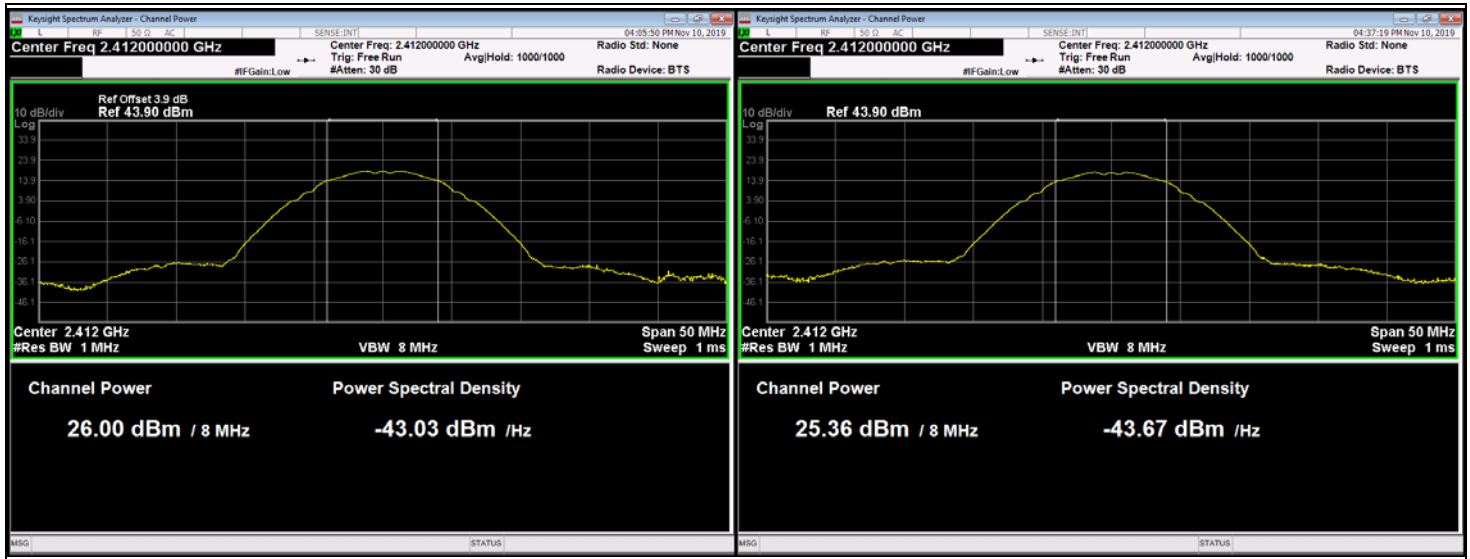
Maximum Peak Output Power Test Data

Company:	Skydio Inc.		Test Date:	11/10/2019			
EUT Name	Beacon		Test Engineer:	Andreas Davidsson			
Model:	SBEC1V1		Test Result:	PASS			
Operating Mode	TX Mode						
Mode	Antenna	Test CH	Frequency (MHz)	Raw Data (dBm)	Peak Output Power (dBm)	Limit (dBm)	Conclusion
802.11 b (20MHz High Power)	1	1	2412	26.00	28.70	≤ 30	Pass
	2	1	2412	25.36			
	1	6	2437	25.97	28.71	≤ 30	Pass
	2	6	2437	25.42			
	1	11	2462	25.78	28.69	≤ 30	Pass
	2	11	2462	25.57			
802.11 g (20MHz High Power)	1	1	2412	25.02	28.15	≤ 30	Pass
	2	1	2412	25.26			
	1	6	2437	25.09	28.17	≤ 30	Pass
	2	6	2437	25.23			
	1	11	2462	25.11	28.12	≤ 30	Pass
	2	11	2462	25.10			
802.11 n (20MHz High Power)	1	1	2412	25.26	28.30	≤ 30	Pass
	2	1	2412	25.31			
	1	6	2437	25.22	28.28	≤ 30	Pass
	2	6	2437	25.31			
	1	11	2462	25.35	28.21	≤ 30	Pass
	2	11	2462	25.05			
802.11 b (20MHz Low Power)	1	1	2412	20.24	20.24	≤ 30	Pass
	1	6	2437	20.33	20.33	≤ 30	Pass
	1	11	2462	20.44	20.44	≤ 30	Pass
802.11 g (20MHz Low Power)	1	1	2412	20.04	20.04	≤ 30	Pass
	1	6	2437	20.28	20.28	≤ 30	Pass
	1	11	2462	20.27	20.27	≤ 30	Pass
802.11 n (20MHz Low Power)	1	1	2412	20.19	20.19	≤ 30	Pass
	1	6	2437	20.22	20.22	≤ 30	Pass
	1	11	2462	20.25	20.25	≤ 30	Pass

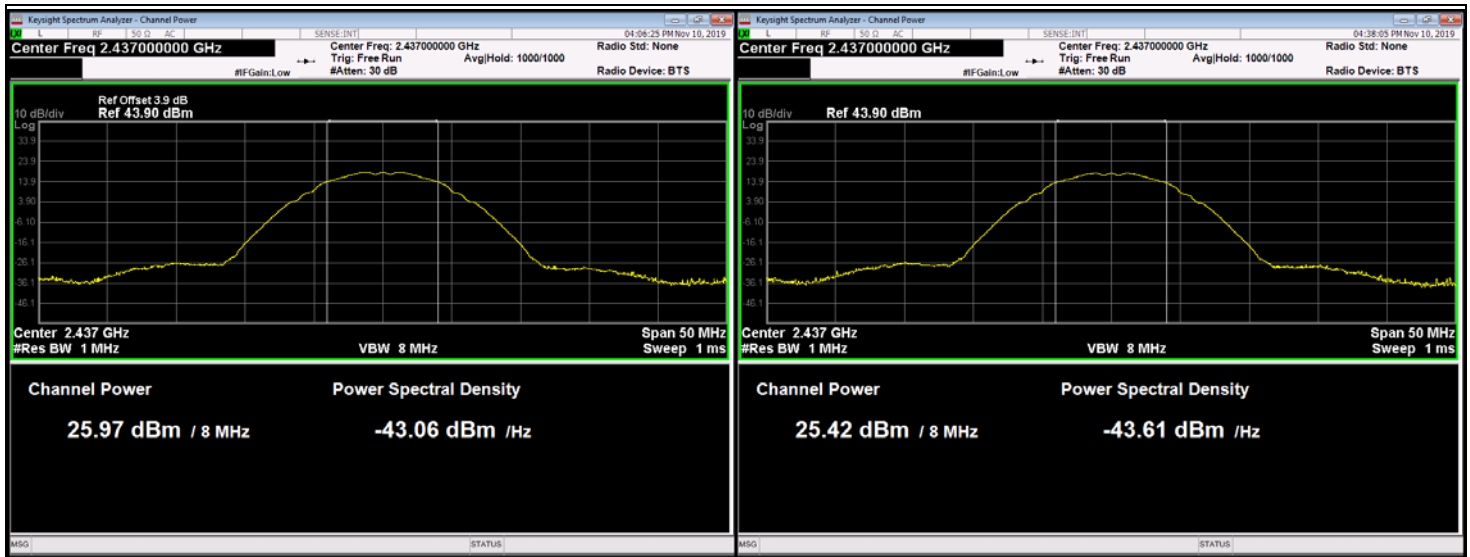
**ELECTRO MAGNETIC TEST, INC.**

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Antenna 1 + 2 (High Power) Channel 0 (2412 MHz)



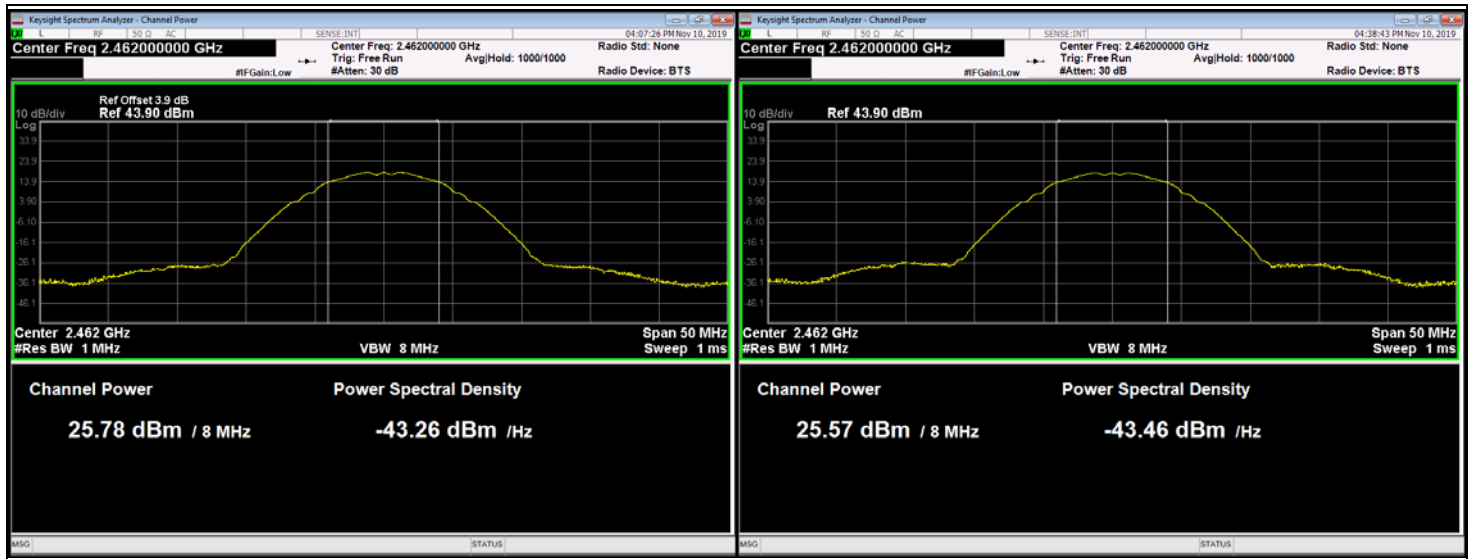
Antenna 1 + 2 (High Power) Channel 6 (2437 MHz)



**ELECTRO MAGNETIC TEST, INC.**

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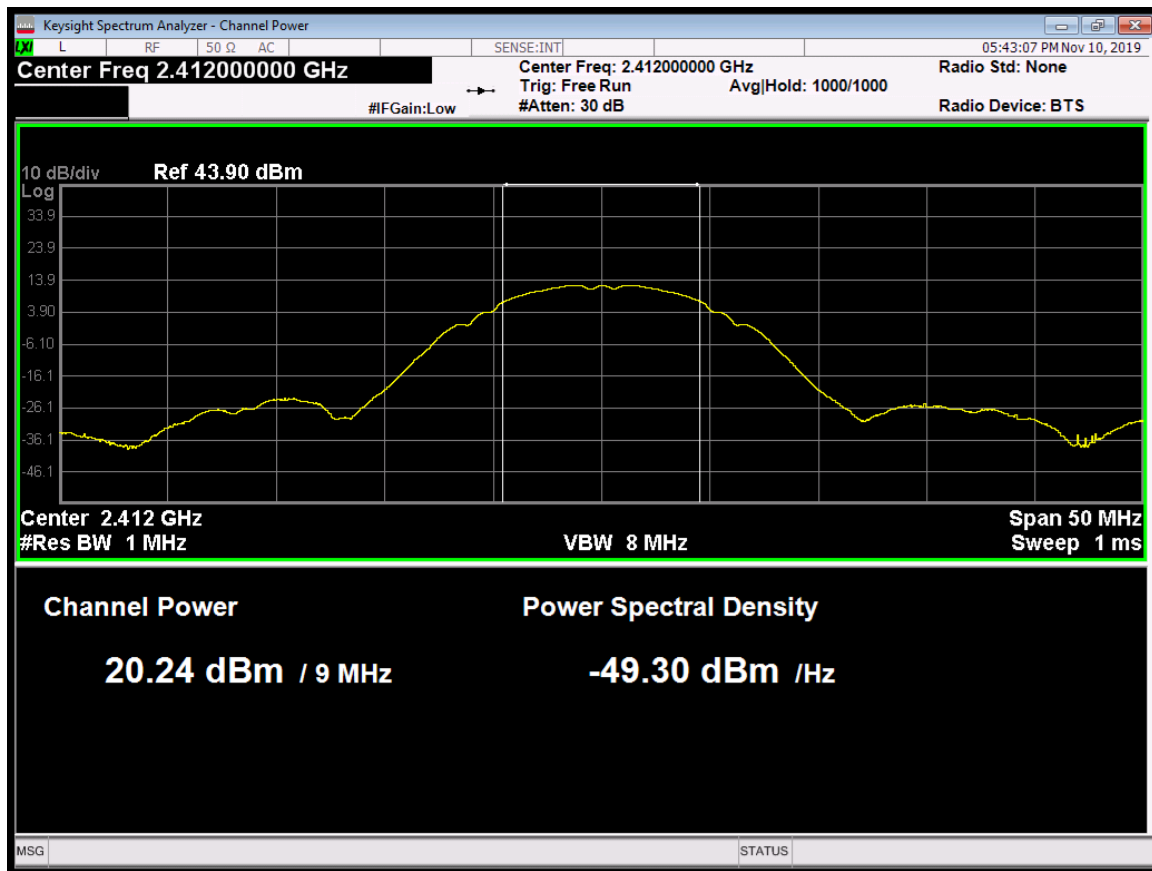
Antenna 1 + 2 (High Power) Channel 11 (2462 MHz)



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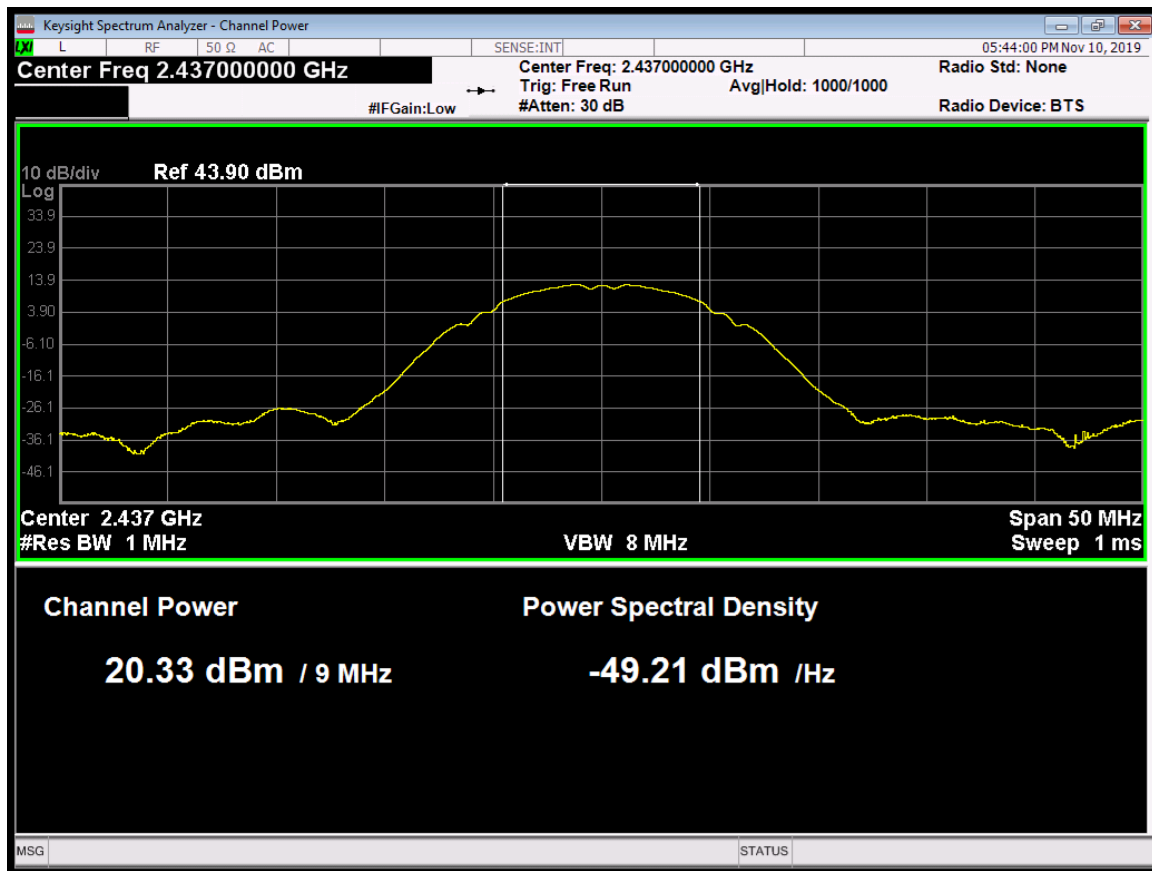
Antenna 1 (Low Power) Channel 0 (2412 MHz)



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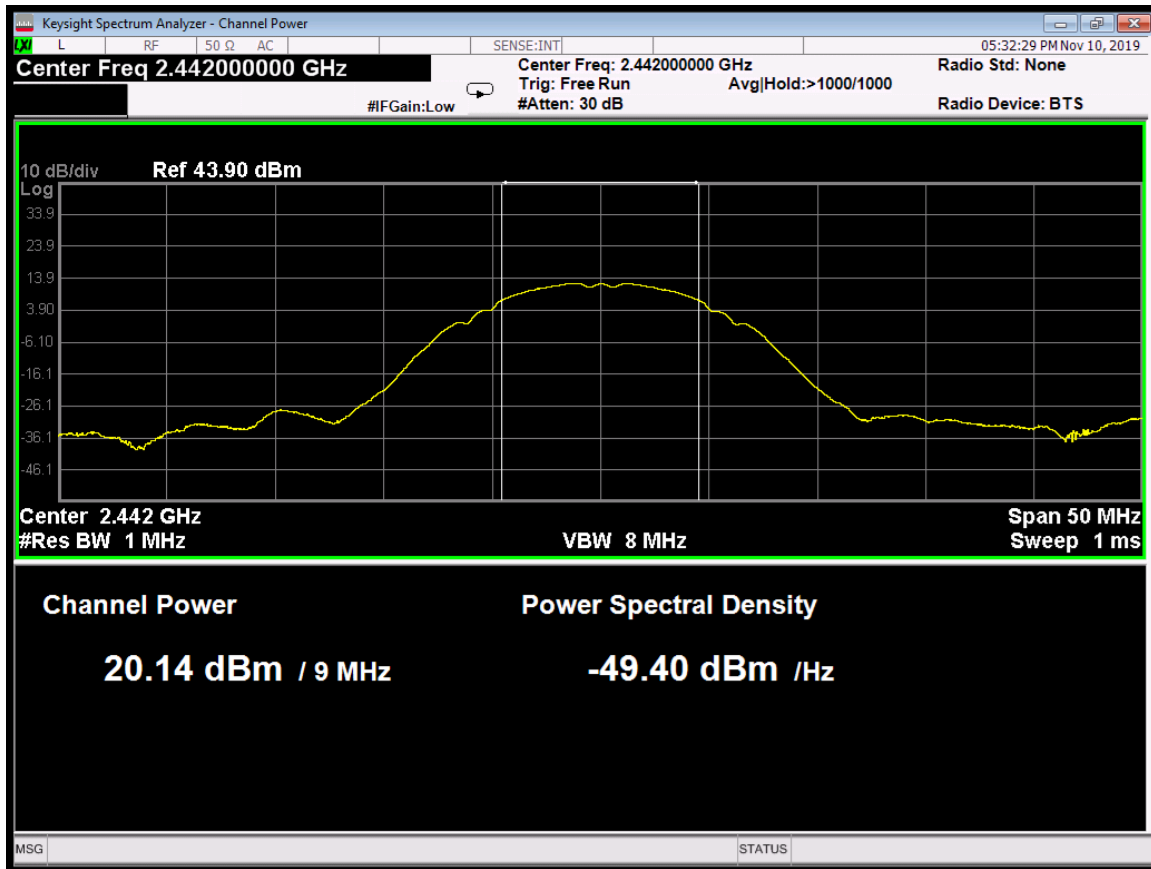
Antenna 1 (Low Power) Channel 6 (2437 MHz)



**ELECTRO MAGNETIC TEST, INC.**

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Antenna 1 (Low Power) Channel 11 (2462 MHz)




ELECTRO MAGNETIC TEST, INC.

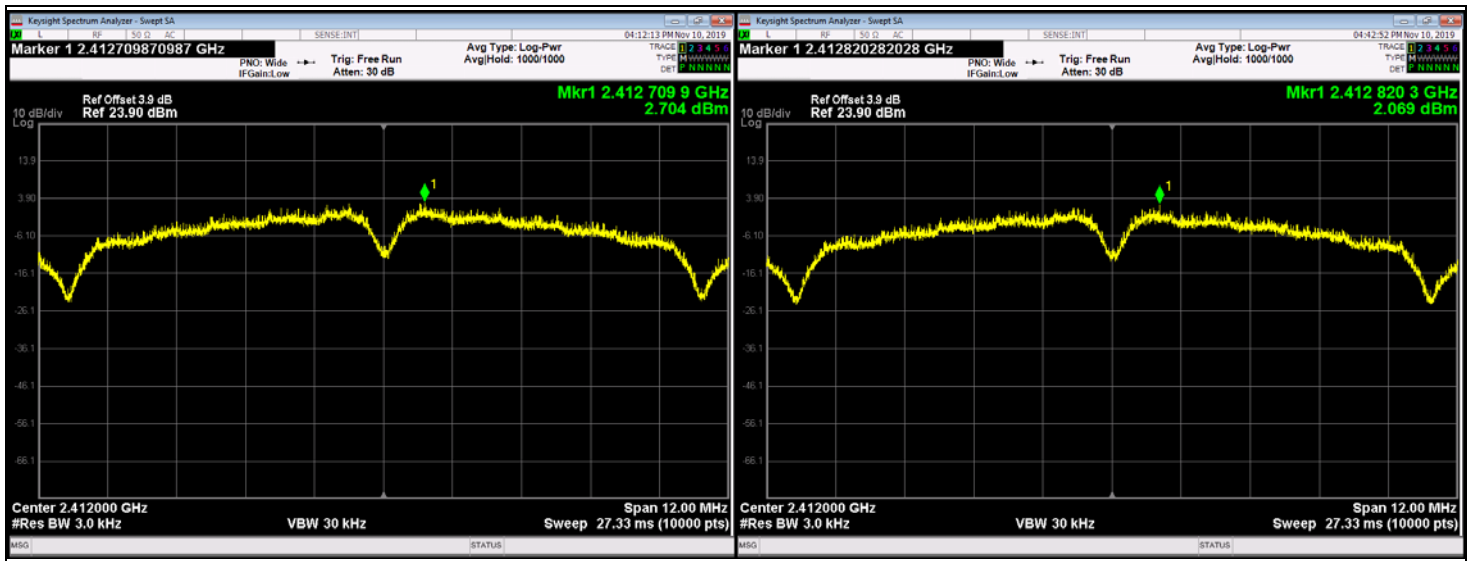
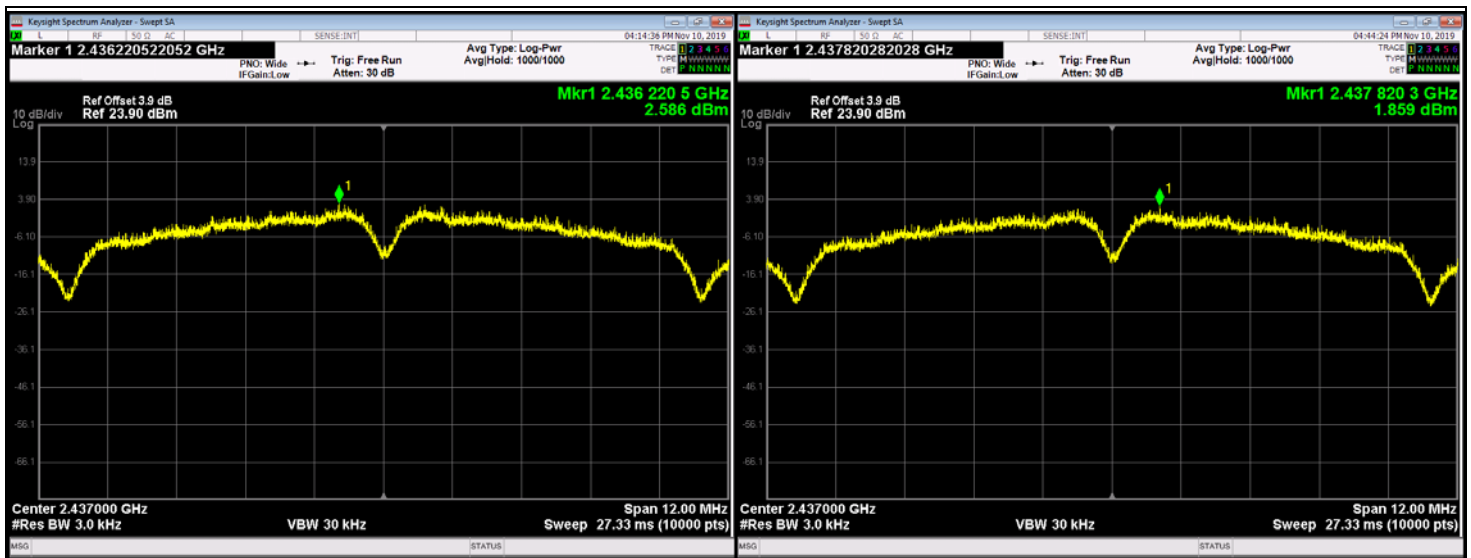
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Maximum Power Spectral Density Test Data

Company:	Skydio Inc.		Test Date		11/10/2019		
EUT Name	Beacon		Test Engineer		Andreas Davidsson		
Model:	SBEC1V1		Test Result		PASS		
Operating Mode	TX Mode						
Mode	Antenna	Test CH	Frequency (MHz)	Raw Peak (dBm)	Corrected PSD (dBm)	Limit (dBm)	Conclusion
802.11 b (20MHz High Power)	1	1	2412	2.704	5.41	≤ 8	Pass
	2	1	2412	2.069			
	1	6	2437	2.586	5.25	≤ 8	Pass
	2	6	2437	1.859			
	1	11	2462	1.842	4.96	≤ 8	Pass
	2	11	2462	2.058			
802.11 g (20MHz High Power)	1	1	2412	1.933	4.97	≤ 8	Pass
	2	1	2412	1.988			
	1	6	2437	1.749	4.75	≤ 8	Pass
	2	6	2437	1.740			
	1	11	2462	1.929	4.99	≤ 8	Pass
	2	11	2462	2.027			
802.11 n (20MHz High Power)	1	1	2412	1.845	4.95	≤ 8	Pass
	2	1	2412	2.033			
	1	6	2437	2.064	4.99	≤ 8	Pass
	2	6	2437	1.894			
	1	11	2462	2.014	5.02	≤ 8	Pass
	2	11	2462	2.007			
802.11 b (20MHz Low Power)	1	1	2412	-3.233	-3.23	≤ 8	Pass
	1	6	2437	-3.576	-3.58	≤ 8	Pass
	1	11	2462	-3.714	-3.71	≤ 8	Pass
802.11 g (20MHz Low Power)	1	1	2412	-3.020	-3.02	≤ 8	Pass
	1	6	2437	-3.233	-3.23	≤ 8	Pass
	1	11	2462	-3.061	-3.06	≤ 8	Pass
802.11 n (20MHz Low Power)	1	1	2412	-3.113	-3.11	≤ 8	Pass
	1	6	2437	-3.167	-3.17	≤ 8	Pass
	1	11	2462	-3.105	-3.11	≤ 8	Pass

**ELECTRO MAGNETIC TEST, INC.**

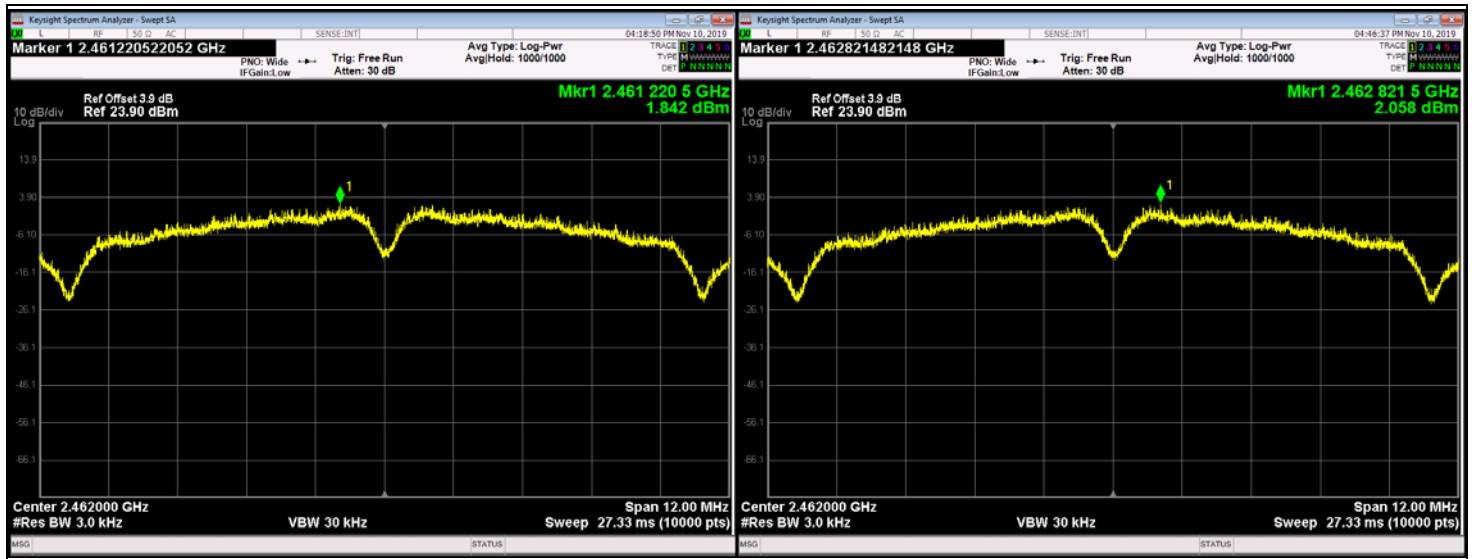
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**Antenna 1 + 2 (High Power)
Channel 0 (2412 MHz)****Antenna 1 + 2 (High Power)
Channel 6 (2437 MHz)**

**ELECTRO MAGNETIC TEST, INC.**

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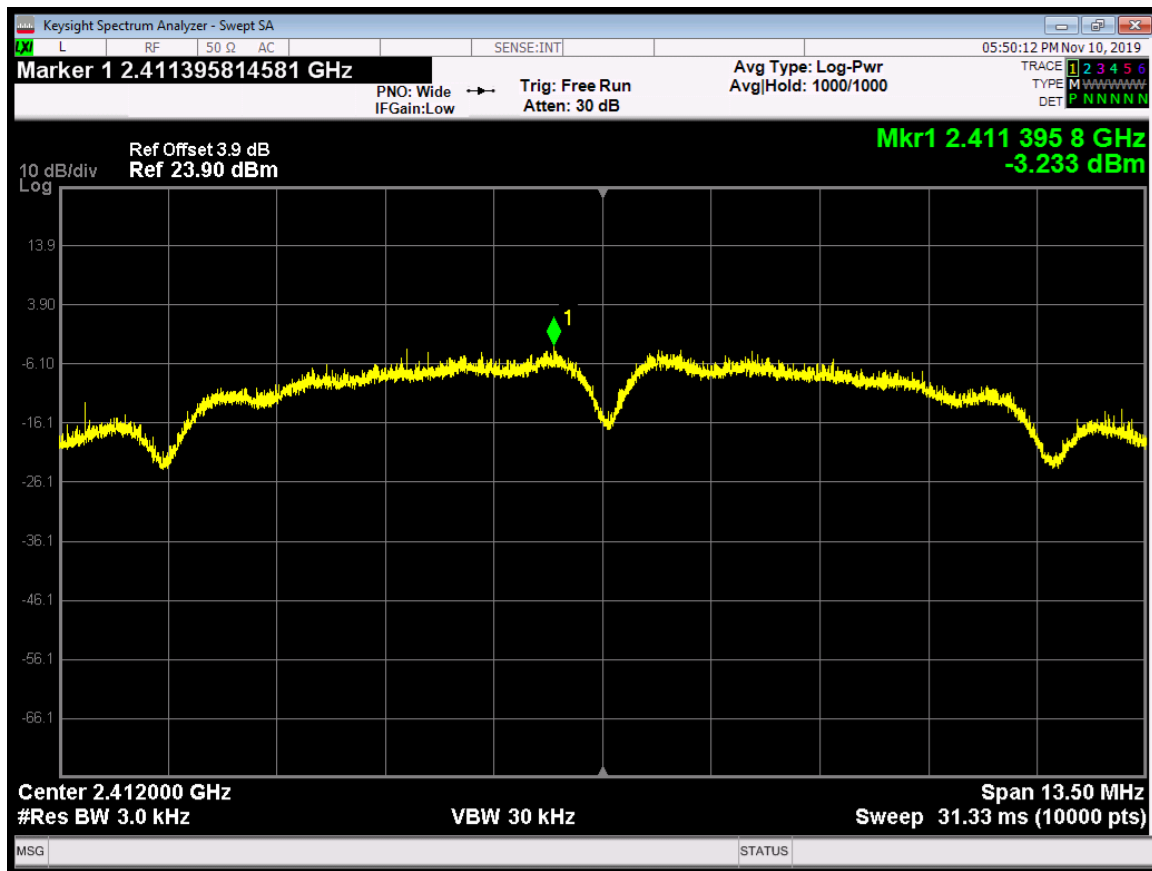
Antenna 1 + 2 (High Power) Channel 11 (2462 MHz)



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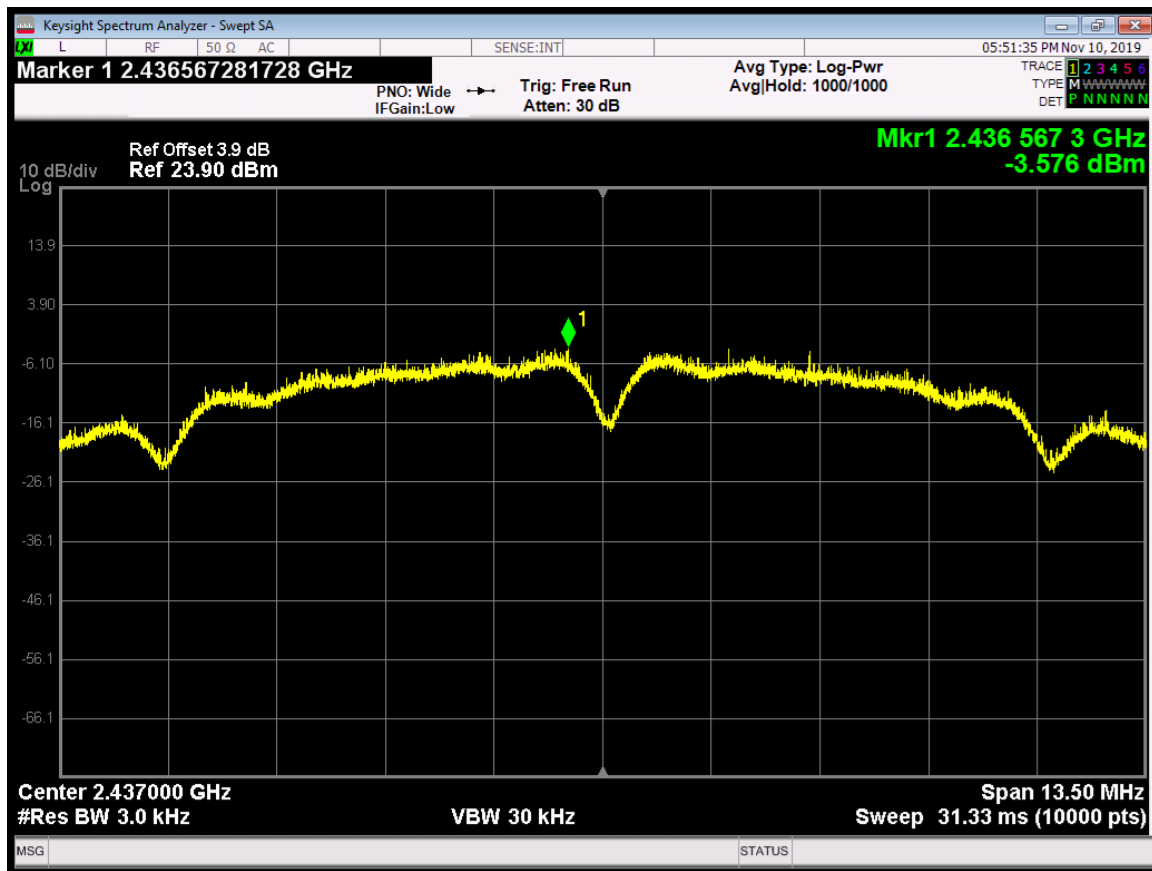
Antenna 1 (Low Power) Channel 0 (2412 MHz)



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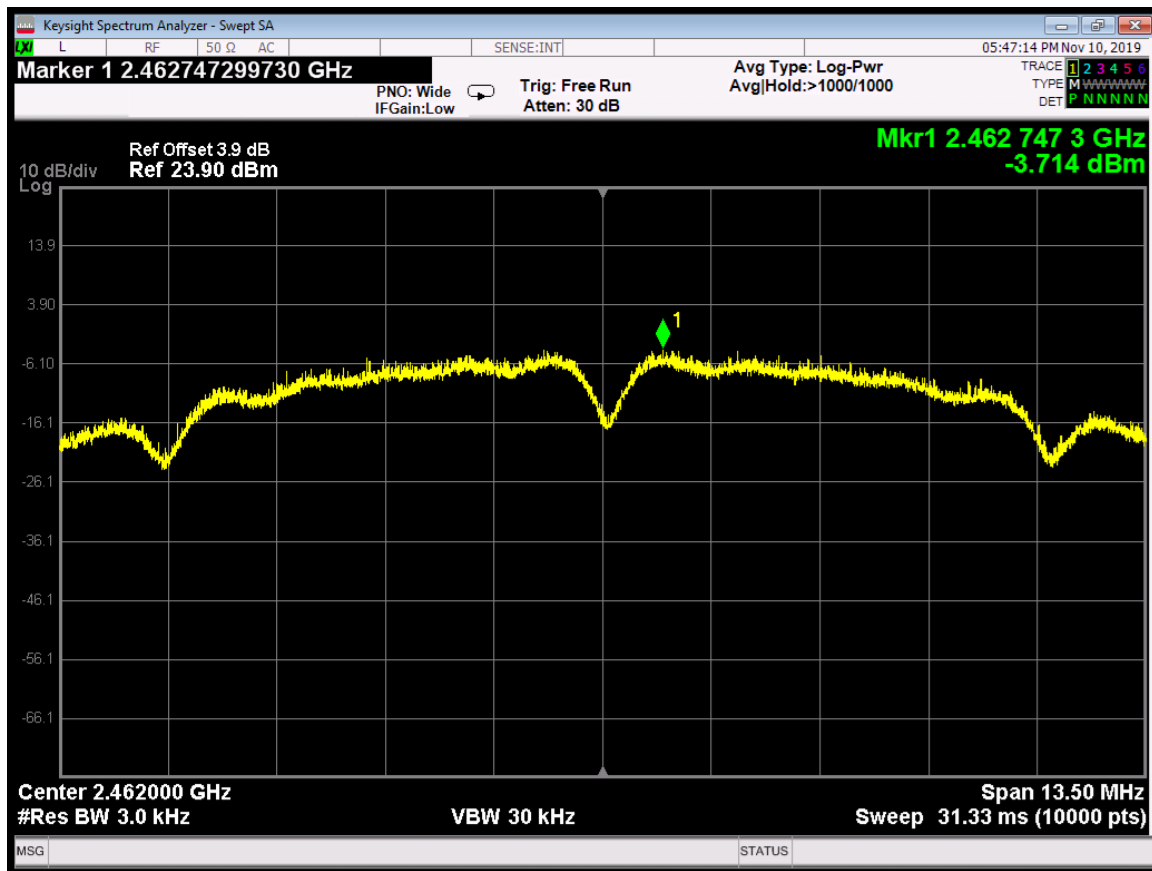
Antenna 1 (Low Power) Channel 6 (2437 MHz)



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Antenna 1 (Low Power) Channel 11 (2462 MHz)





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APPENDIX B

TEST SETUP DIAGRAMS



ELECTRO MAGNETIC TEST, INC.

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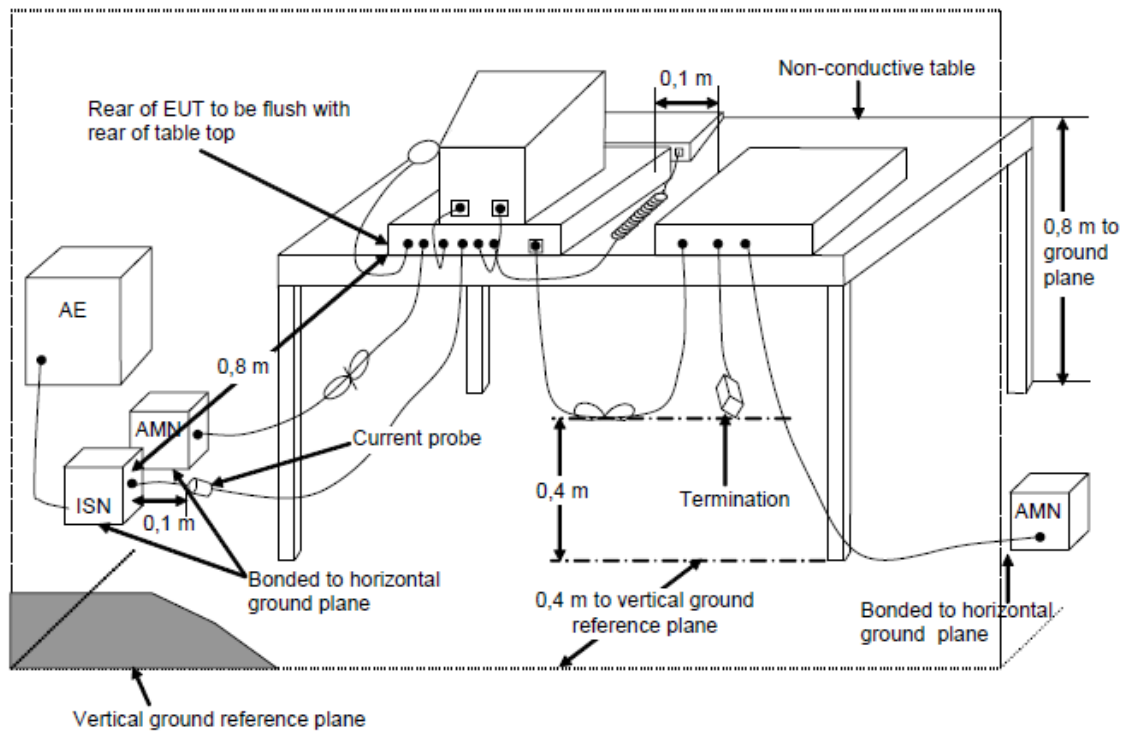


FIGURE 1 – TABLETOP CONDUCTED EMISSIONS TEST SETUP – SITE “D”

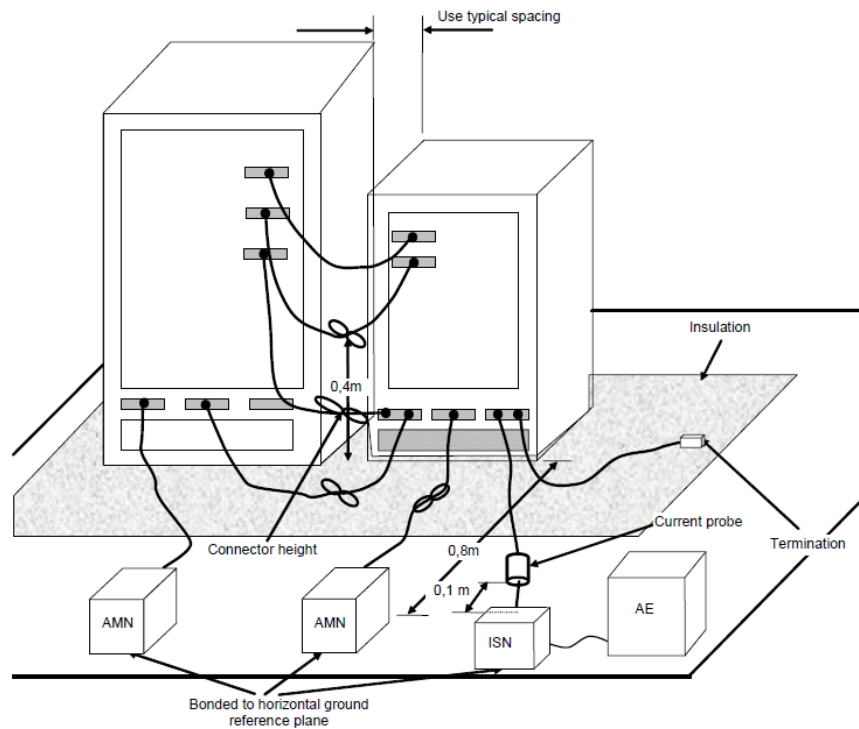


FIGURE 1a – FLOORSTANDING CONDUCTED EMISSIONS TEST SETUP – SITE “D”



ELECTRO MAGNETIC TEST, INC.

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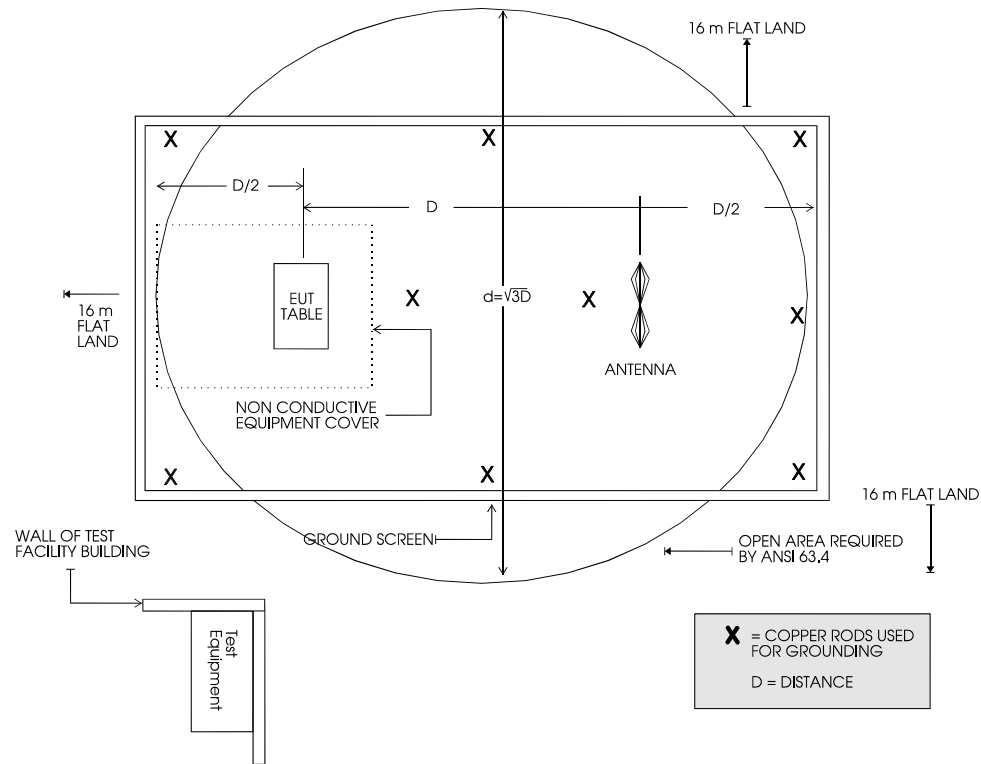


FIGURE 2 - PLOT MAP AND LAYOUT OF TEST SITE "A"

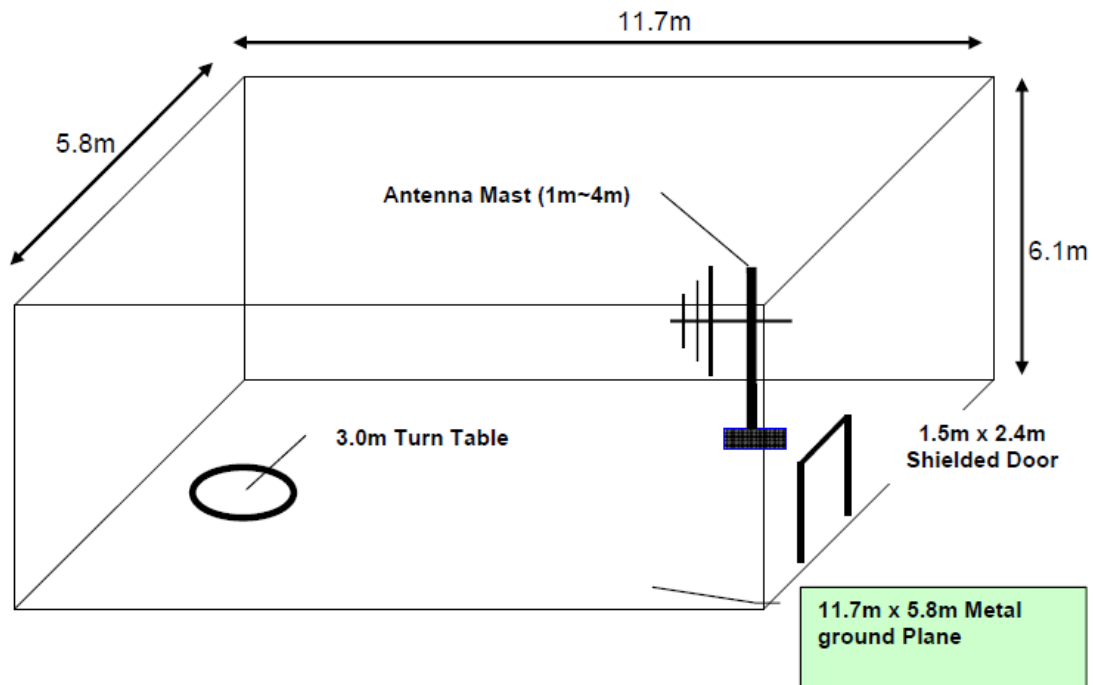


FIGURE 3 - LAYOUT OF 5 METER SEMI-ANECHOIC CHAMBER



ELECTRO MAGNETIC TEST, INC.

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APPENDIX C

MODIFICATIONS TO THE EUT

***ELECTRO MAGNETIC TEST, INC.***1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC + IC Class B radiated emission specifications.

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

Modifications:

- 1) Added a ferrite bead (Fair-Rite Products Corporation P/N: 0431164281) with one turn to the Ethernet cable at the EUT end.

OR

No modifications were made to the EUT by Electro Magnetic Test, Inc. personnel during the testing.



ELECTRO MAGNETIC TEST, INC.

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APPENDIX D

ADDITIONAL MODELS COVERED UNDER THIS REPORT



ELECTRO MAGNETIC TEST, INC.

1547 Plymouth Street, Mountain View, CA 94043 Tel: (650) 965-4000 Fax: (650) 965-3000

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Equip. Beacon
Model: SBEC1V1
S/N: N/A

ALSO APPROVED UNDER THIS REPORT:

Model: Xx02

The only difference between the two model numbers is that the antenna orientation on the PCB is different.

OR

There are no additional models to be covered under this report.



ELECTRO MAGNETIC TEST, INC.

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End of Report

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