

*FCC PART 15, SUBPART B
TEST REPORT*

for

GAMESENSOR RX

Model: EC0002

Prepared for

ACRYL DESIGN LIMITED
 529 JARVIS AVENUE
 WINNIPEG, MANITOBA, CANADA R2W 3A8

Prepared by: _____

THOMAS SZYNAL

Approved by: _____

MICHAEL CHRISTENSEN

COMPATIBLE ELECTRONICS INC.
 114 OLINDA DRIVE
 BREA, CALIFORNIA 92823
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DATE: JANUARY 23, 2019

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	16	2	2	2	11	18	51

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TABLE OF CONTENTS

Section / Title	PAGE
<i>GENERAL REPORT SUMMARY</i>	4
<i>SUMMARY OF TEST RESULTS</i>	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
5.2 Emissions Test Equipment	11
6. TEST SITE DESCRIPTION	12
6.1 Test Facility Description	12
6.2 EUT Mounting, Bonding and Grounding	12
7. TEST PROCEDURES	13
7.1 RF Emissions	13
7.1.1 Conducted Emissions Test	13
7.1.2 Radiated Emissions Test	14
7.1.3 RF Emissions Test Results	15
8. CONCLUSIONS	16

LIST OF APPENDICES

APPENDIX	TITLE
A	Laboratory Accreditations and Recognitions
B	Modifications to the EUT
C	Additional Models Covered Under This Report
D	Diagrams, Charts, and Photos <ul style="list-style-type: none">• Test Setup Diagrams• Radiated and Conducted Emissions Photos• 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

LIST OF TABLES

TABLE	TITLE
1	Conducted Emissions Results
2	Radiated Emission Test Results

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: Gamesensor Rx
Model: EC0002
S/N: N/A

Product Description: The EUT is a game sensor switch receiver that operates in conjunction with an associated transmitter. The EUT is powered by 12 VDC from an AC adapter.

Modifications: The EUT was not modified during the testing.

Customer: Acryl Design Ltd.
529 Jarvis Avenue
Winnipeg, Manitoba, Canada R2W 3A8

Test Date: January 21 and 22, 2019

Test Specifications covered by accreditation:

Emissions requirements
CFR Title 47, Part 15, Subpart B

Test Procedure: ANSI C63.4



SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions 150 kHz – 30 MHz to Class B Limits	The EUT complies with the Class B limits of CFR Title 47, Part 15, Subpart B. Highest reading in relation to spec limit 28.95 dBuV @ 0.414 MHz (*U = 2.72 dB)
2	Radiated RF Emissions 30 MHz – 9300 MHz to Class B Limits	Complies with the Class B limits of CFR Title 47, Part 15 Subpart B. Highest Reading in Relation to Spec Limit: 36.83 dBuV @ 939.00 MHz (*U = 3.19)

*U = Expanded Uncertainty with a coverage factor of k=2

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Gamesensor Rx, Model: EC0002. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4. 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 the Code of Federal Regulations Title 47, Part 15, as well as the specifications limits defined by ICES-003 Issue 6 for digital apparatus.



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

Acryl Design Ltd.

Troy Denton

Compatible Electronics Inc.

Tom Szynal Test Technician

Michael Christensen Lab Manager

2.4 Date Test Sample was Received

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

2.5 Disposition of the Test Sample

The test has not yet been returned to AcrylDesign as of the date of this report.

2.6 Abbreviations and Acronyms

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

FCC	Federal Communications Commission
RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network
DC	Direct Current
AC	Alternating Current
PC	Personal Computer
Co.	Company
N/A	Not Applicable
PE	Protective Earth
Inc.	Incorporated
Rx	Receiver
Tx	Transmitter

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
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
ICES-003 Issue 6: 2016	Spectrum Management and Telecommunications Policy – Interference-Causing Equipment Standard – Digital Apparatus

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - Emissions

The Gamesensor Rx, Model: EC0002 (EUT) was tested in the X, Y, and Z axis as a 12 VDC powered device from an AC adapter. The X axis was found to be the worst case and final data was taken in that axis. During the tests, while in receiver mode, the EUT was continuously receiving an RF signal from its remotely located transmitter. When in transmitter mode, the EUT was continuously transmitting an RF signal.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final radiated data was taken in the mode of operation described above. All initial investigations were performed with the EMI Receiver in manual mode scanning the frequency range continuously.

4.1.1 Cable Construction and Termination

Cable 1

This is a 150 centimeter two wire cable with a barrel-type connector for the EUT 12 VDC power. The cable has a molded ferrite on the end connected to the AC power adapter. The cable was bundled to a length of 40 centimeters.

Cable 2

This is a 180 centimeter six wire cable connected to the EUT using an in-line six pin terminal connector. The cable was terminated at the accessory computer with a USB connector. This was used for initial test set up only.

Cable 3

This is a 175 centimeter two wire cable connecting the accessory computer to the AC/DC adapter. This was used for initial test set up only.

Cable 4

This is a 90 centimeter two wire cable connecting the AC/DC adapter to the AC wall outlet. This was used for initial test set up only.

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

EQUIPMENT	MANUFACTURER	MODEL NUMBER	S/N	FCC ID
GAMESENSOR RX (EUT)	ACRYL DESIGN	EC0002	N/A	FCC ID: OJM900MCA IC: 5840A-900MCA
AC ADAPTER FOR EUT	CUI INC	SWI12-12-N	N/A	N/A
LAPTOP	LENOVO	THINKPAD	N/A	N/A
TEST SOFTWARE FOR EUT	PYTHON	HUMFCC	N/A	N/A
USB CABLE	ACRYLDESIGN	N/A	N/A	N/A
AC/DC ADAPTER FOR LAPTOP	LENOVO	ADLX45NDC2A	N/A	N/A
AC POWER CABLE FOR LAPTOP	N/A	N/A	N/A	N/A

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
RF RADIATED AND CONDUCTED EMISSIONS TEST EQUIPMENT					
TDK Emissions Lab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Horn Antenna	Com-Power	AH-118	071175	February 22, 2018	2 Year
CombiLog Antenna	Com-Power	AC-220	61060	July 27, 2017	2 Year
EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies	N9038A	MY51210150	July 26, 2018	1 Year
LISN (EUT)	Com-Power	LI-215A	191951	January 10, 2019	1 Year
Attenuator 10dB	SureCall	SC-ATT-10	17100025	November 27, 2018	1 Year
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
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A

6. TEST SITE DESCRIPTION

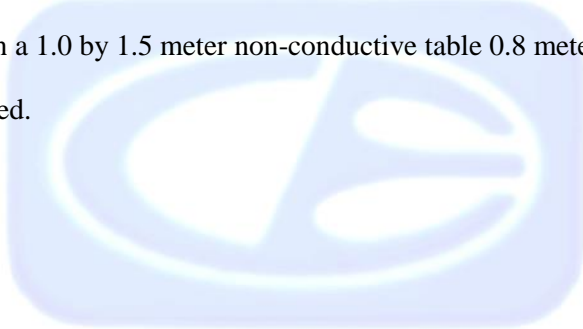
6.1 Test Facility Description

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

6.2 EUT Mounting, Bonding and Grounding

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

The EUT was not grounded.



7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the “Max Hold” feature activated. The quasi-peak was used only where indicated in the data sheets. A 10dB attenuator 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 C63.4. 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 TDK TestLab software in several overlapping sweeps. The final qualification data is located in Appendix E.

The six highest emissions are listed in Table 1.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B for conducted emissions

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 in 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 and antenna factors, so that a true reading is compared to the true limit.

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 double ridge horn antenna to ensure accurate results.

The measurement bandwidth and transducer used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 9.3 GHz	1 MHz	Horn Antenna

The EUT was tested at a 3 meter test distance. The six highest emissions are listed in Table 2.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15 for radiated emissions.

7.1.3 RF Emissions Test Results

Table 1 CONDUCTED EMISSION RESULTS

Gamesensor Rx, Model: EC0002

Frequency (MHz)	Mode	Average Corrected Reading* (dBuV)	Average Specification Limit (dBuV)	Delta (Cor. Reading – Spec. Limit) (dB)
0.414 (BL)	(Tx) (fHop)	28.95	47.30	-18.35
0.154 (BL)	(Tx) (fHop)	36.77	55.44	-18.67
0.222 (BL)	(Tx) (fHop)	32.93	52.64	-19.71
0.186 (BL)	(Rx) (fHop)	34.22	54.03	-19.81
0.202 (BL)	(Rx) (fHop)	32.92	52.80	-19.88
0.222 (BL)	(Rx) (fHop)	32.64	52.58	-19.95

Table 2 RADIATED EMISSION RESULTS

Gamesensor Rx, Model: EC0002

Frequency MHz	Mode	Quasi-Peak Corrected Reading* dBuV	Specification Limit dBuV	Delta (Cor. Reading – Spec. Limit) dB
939.00 (H)	(Tx) (fHop)	36.83	46.00	-9.17
887.90 (H)	(Tx) (fHop)	36.18	46.00	-9.82
877.00 (H)	(Tx) (fHop)	34.85	46.00	-11.15
956.10 (H)	(Tx) (fHop)	34.08	46.00	-11.92
940.10 (H)	(Rx)	34.03	46.00	-11.97
929.80 (H)	(Rx)	33.92	46.00	-12.08

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (H) Horizontal
- (V) Vertical
- (BL) Black Lead
- (WL) White Lead
- (fHop) Frequency Hopping mode
- (Rx) Receiver Mode
- (Tx) Transmitter Mode

8. CONCLUSIONS

The Gamesensor Rx, Model: EC0002 (EUT), as tested, meets the **Class B** specification limits defined by the Code of Federal Regulations Title 47, Part 15, as well as the specification limits defined by ICES-003 Issue 6 for digital apparatus.



APPENDIX A

LABORATORY RECOGNITIONS

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

Newbury Park Division
1050 Lawrence Drive
Newbury Park, CA 91320
(805) 480-4044

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.

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."

APPENDIX B

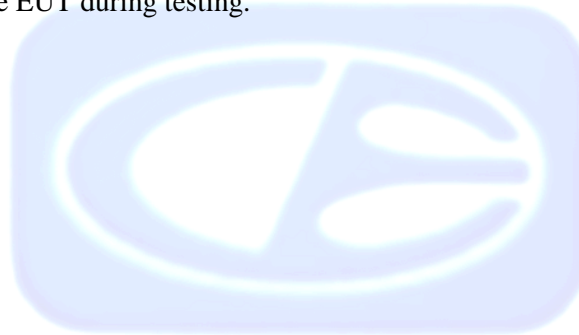
MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

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

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

No modifications were made to the EUT during testing.



APPENDIX C

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

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Gamesensor Rx
Model: EC0002
S/N: N/A

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, and PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

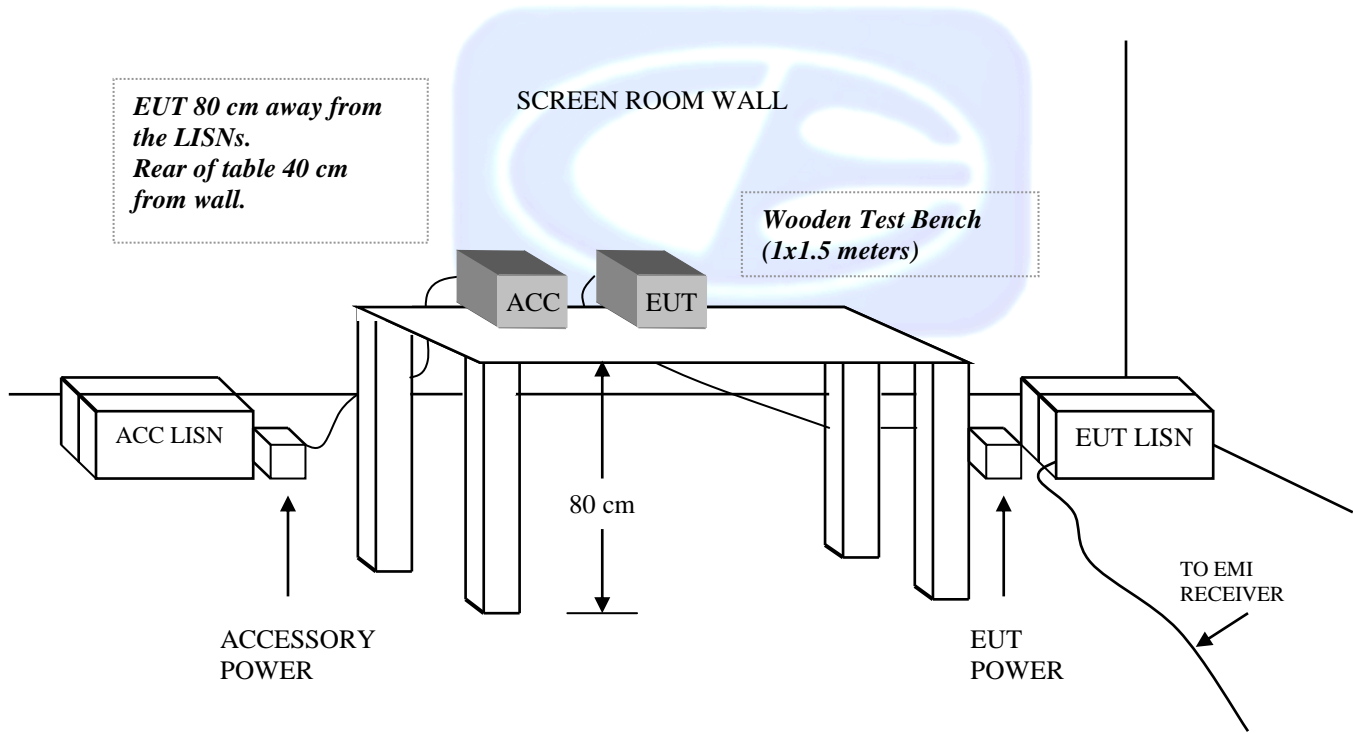
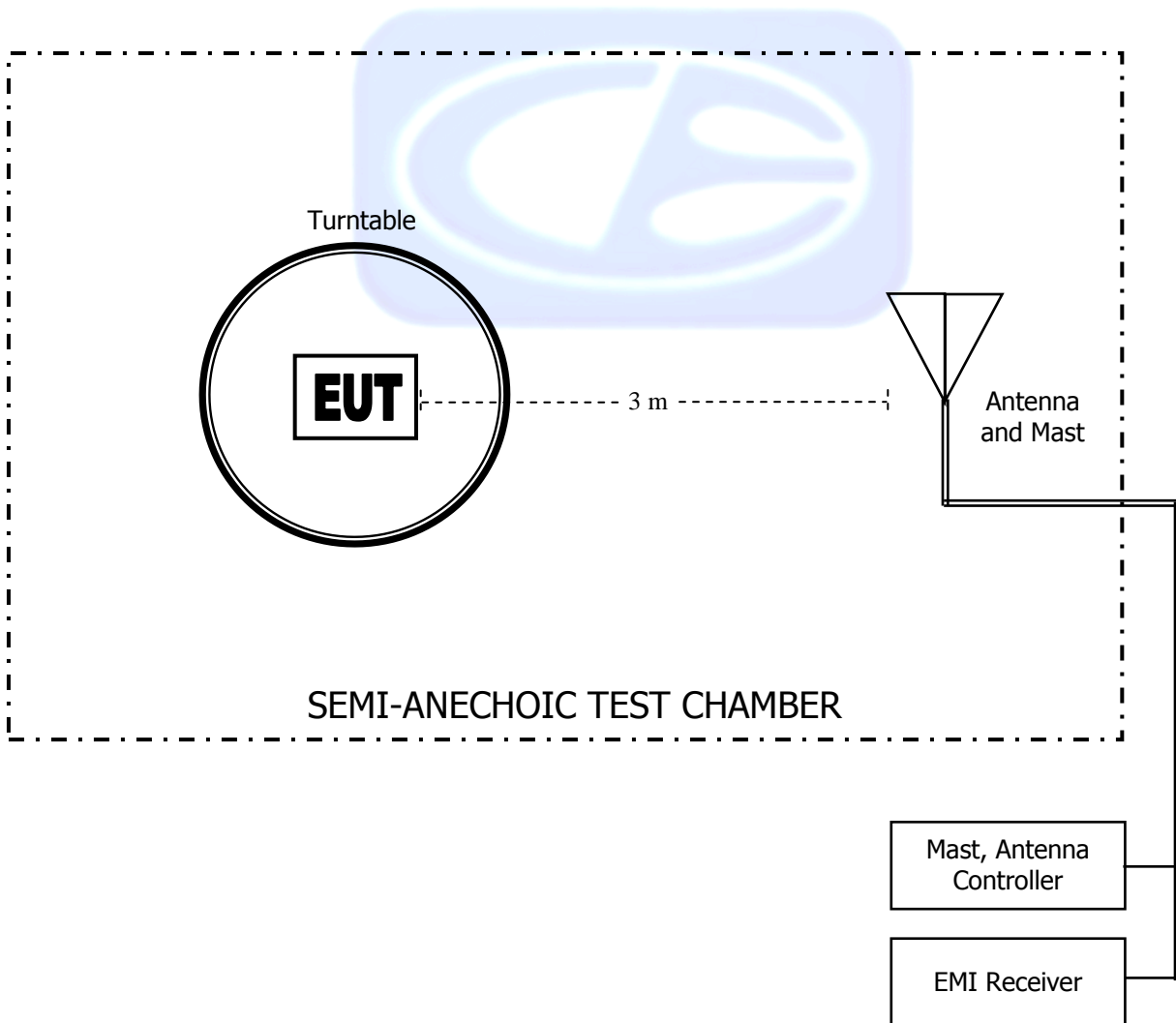


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



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

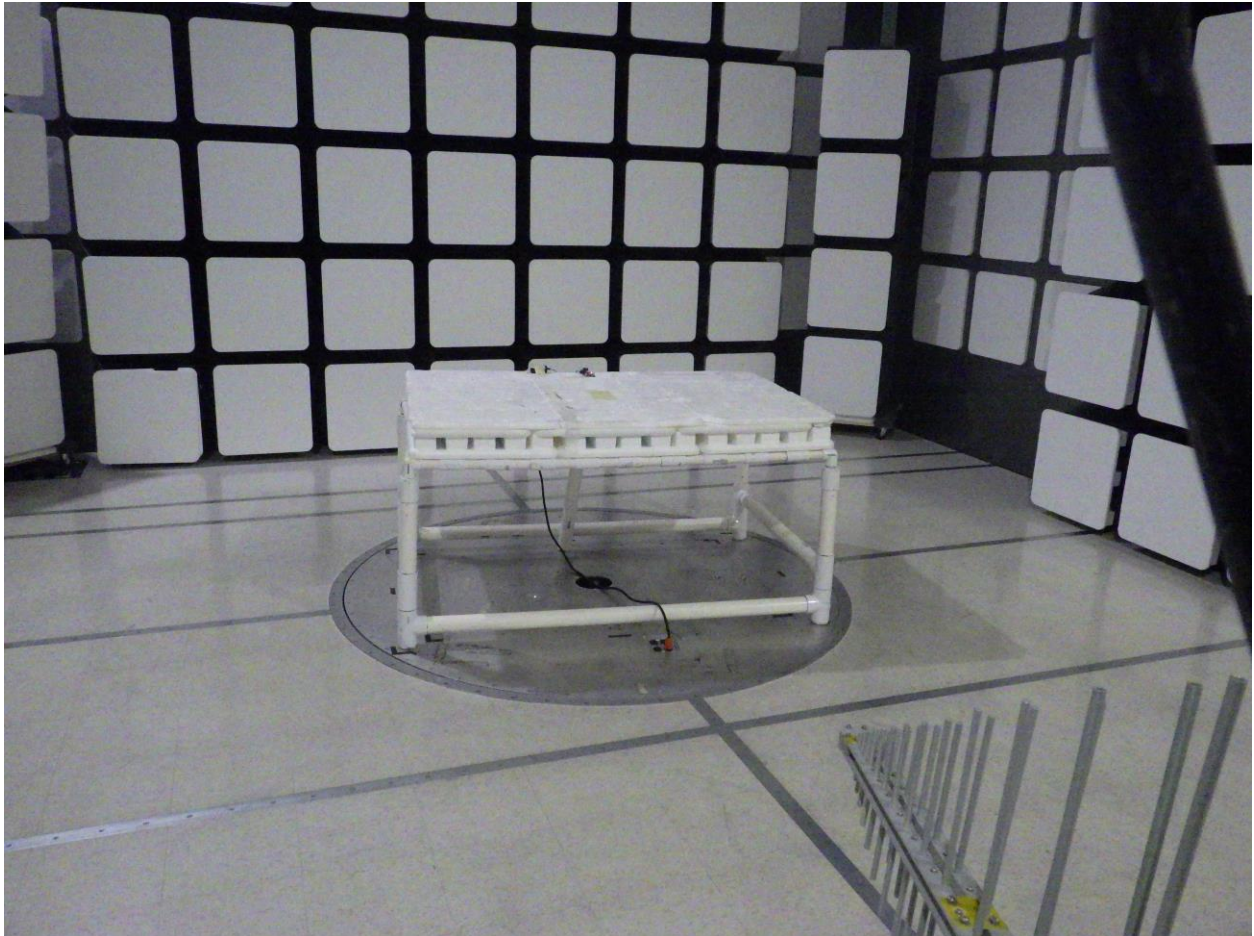
FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	23.80	200	14.10
35	24.00	250	15.30
40	24.70	300	17.70
45	22.90	350	17.70
50	22.10	400	19.00
60	17.60	450	21.30
70	12.70	500	21.00
80	11.20	550	22.30
90	13.10	600	23.40
100	14.40	650	22.90
120	15.30	700	24.60
125	15.00	750	24.50
140	12.80	800	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 22, 2018

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.71	10.0	40.08
1.5	25.46	10.5	40.75
2.0	29.26	11.0	41.78
2.5	27.95	11.5	41.02
3.0	29.03	12.0	40.32
3.5	29.70	12.5	40.96
4.0	30.71	13.0	40.29
4.5	31.62	13.5	39.48
5.0	33.23	14.0	39.89
5.5	35.07	14.5	42.75
6.0	34.43	15.0	40.98
6.5	34.98	15.5	38.54
7.0	36.75	16.0	39.40
7.5	37.10	16.5	39.40
8.0	37.66	17.0	41.74
8.5	39.29	17.5	42.58
9.0	37.75	18.0	44.68
9.5	38.23		

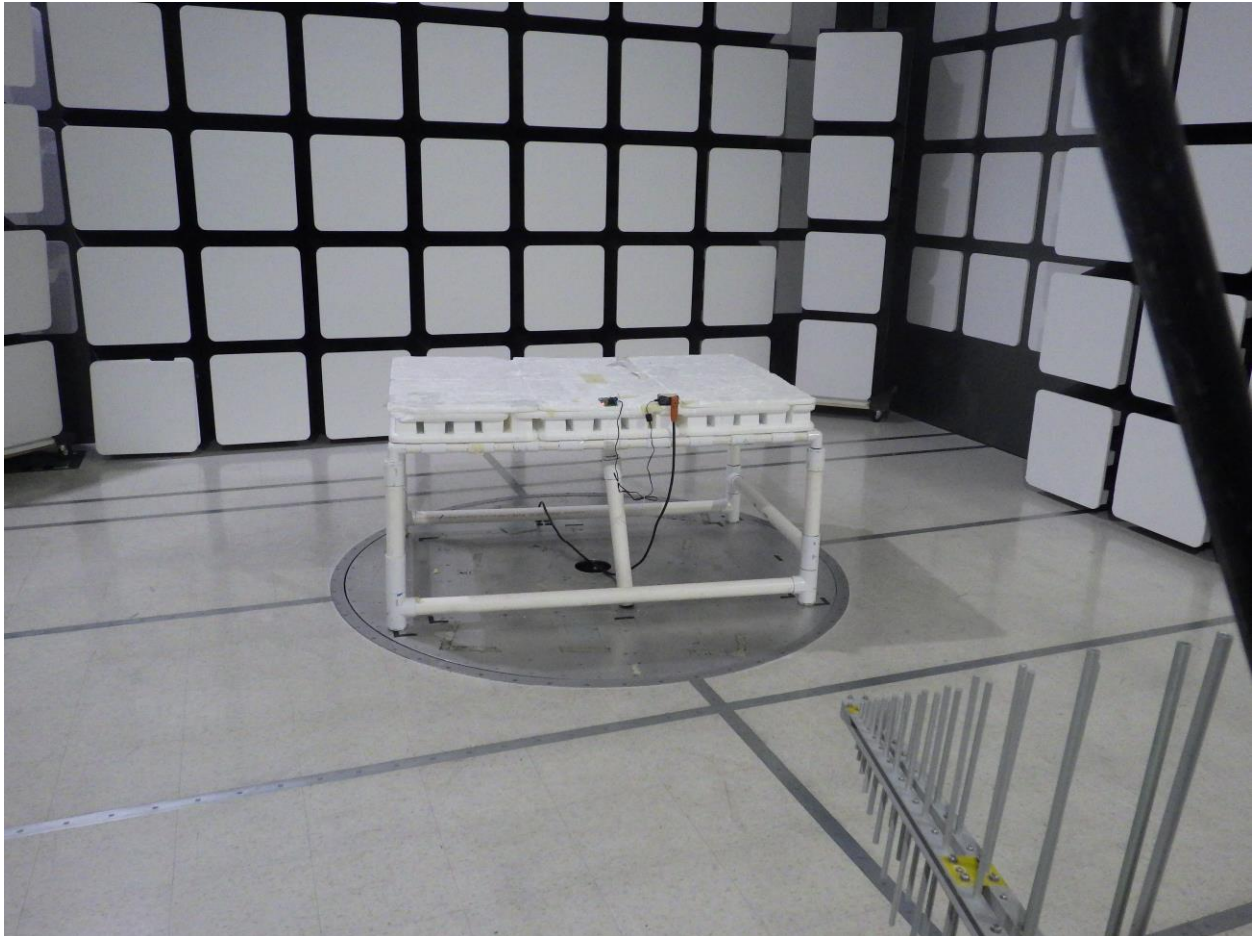


FRONT VIEW

ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002

FCC CLASS B – RADIATED EMISSIONS – BELOW 1 GHz

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

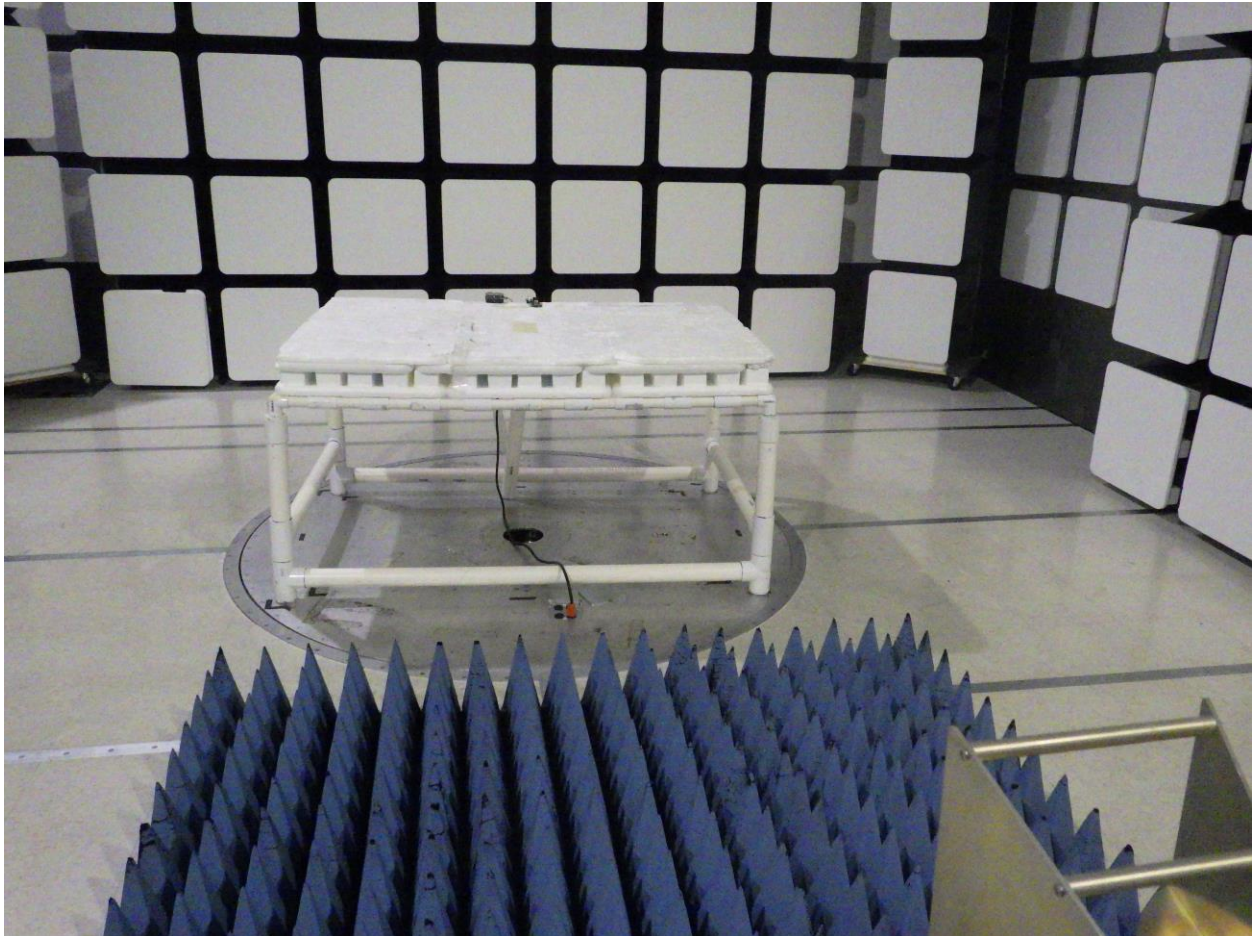


REAR VIEW

ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002

FCC CLASS B – RADIATED EMISSIONS– BELOW 1 GHz

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

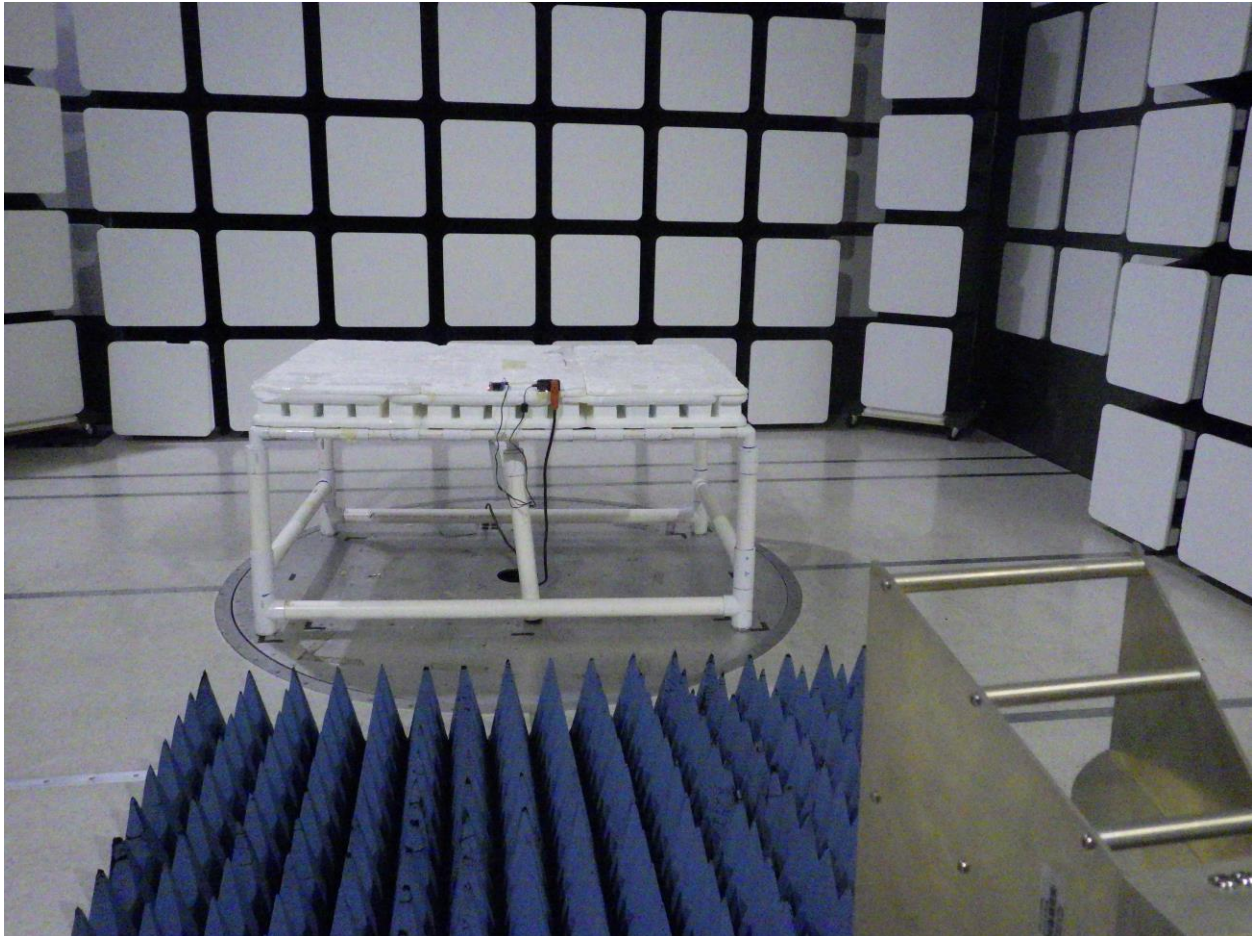


FRONT VIEW

ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002

FCC CLASS B – RADIATED EMISSIONS – ABOVE 1 GHz

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

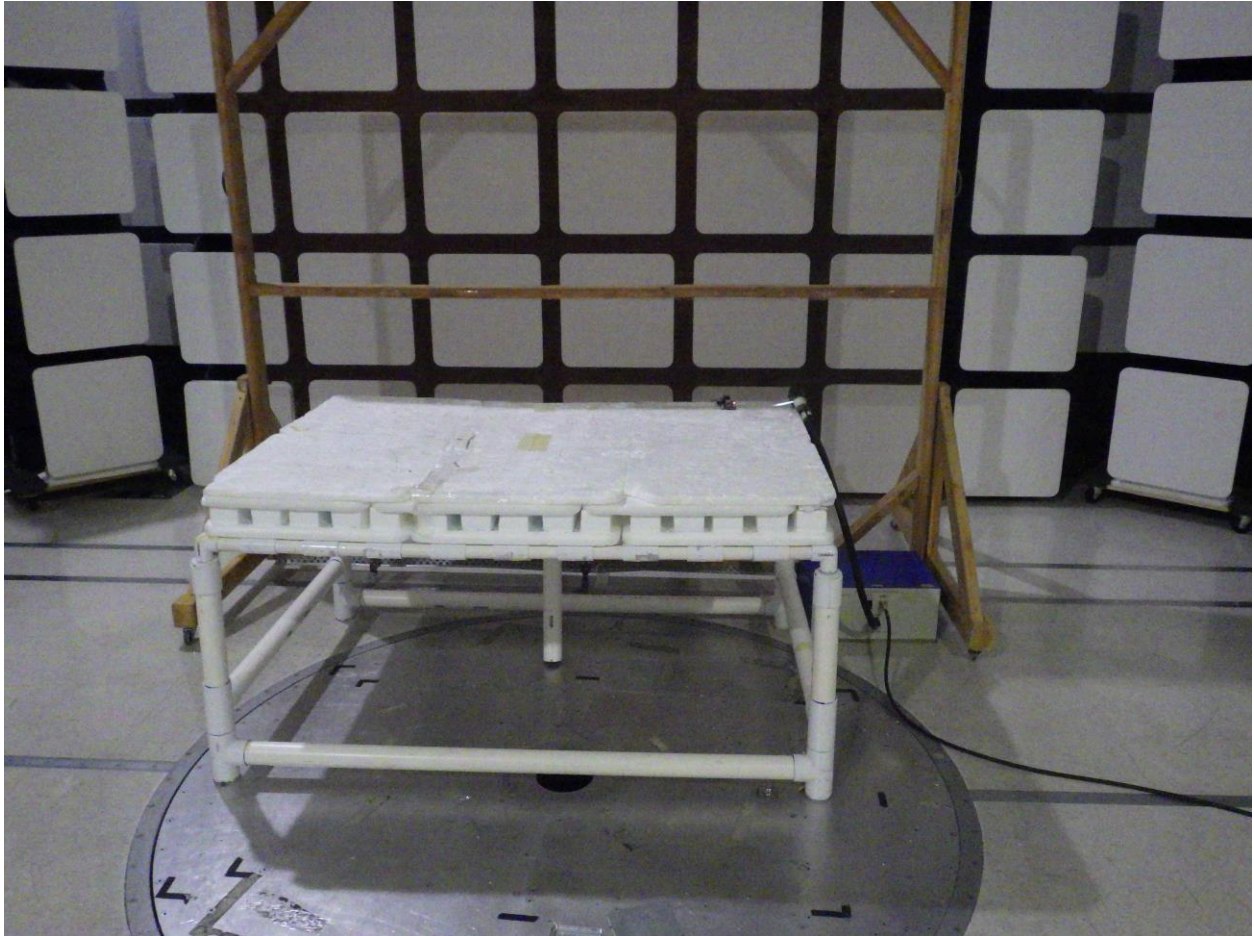


REAR VIEW

ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002

FCC CLASS B – RADIATED EMISSIONS – ABOVE 1 GHz

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



FRONT VIEW

ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002
FCC CLASS B – CONDUCTED EMISSIONS

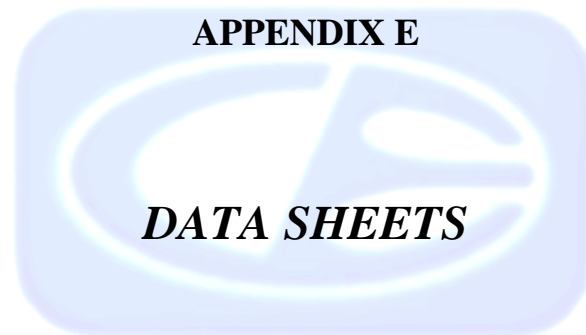
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



REAR VIEW

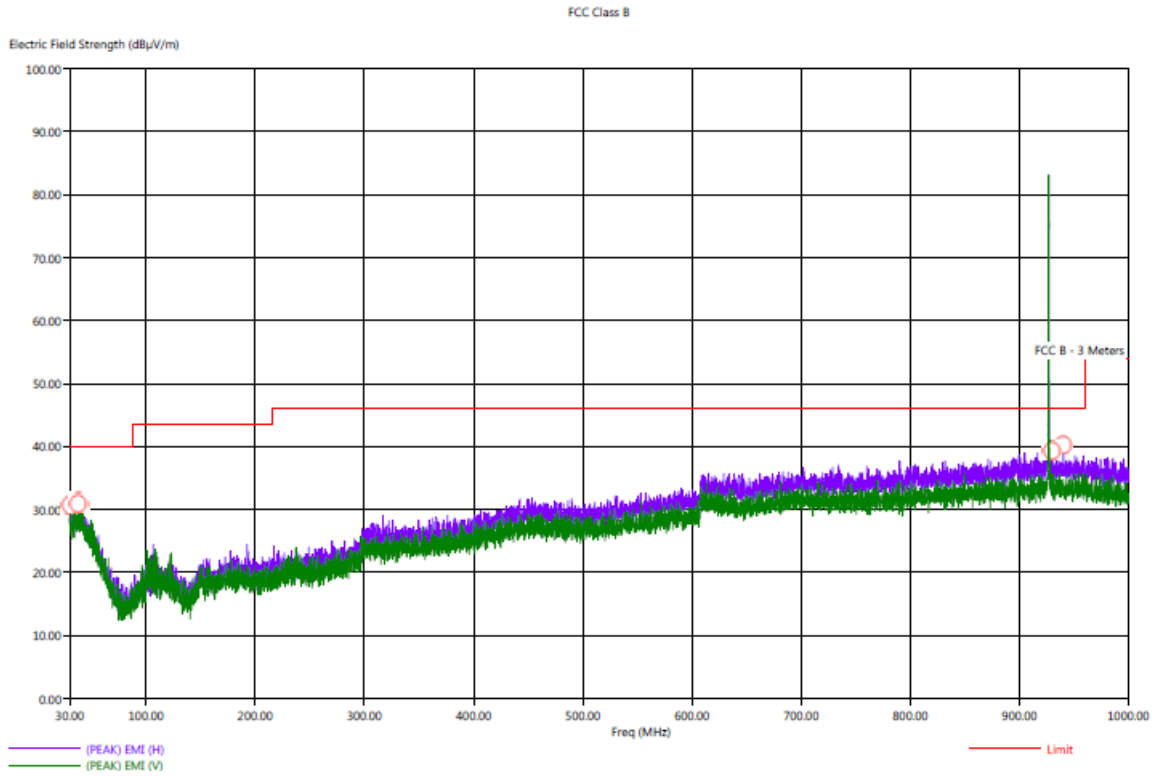
ACRYL DESIGN LTD.
GAMESENSOR RX
MODEL: EC0002
FCC CLASS B – CONDUCTED EMISSIONS

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



Title: Pre-Scan - FCC Class B
File: Gamesensor EC0002 - Pre-Scan - Rx High X-Axis Receive mode.set
Operator: Tom Szynal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously receiving signal from associated transmitter - High Channel X-Axis
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A
Note: The frequency at 926.7 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

1/21/2019 3:42:01 PM
Sequence: Preliminary Scan



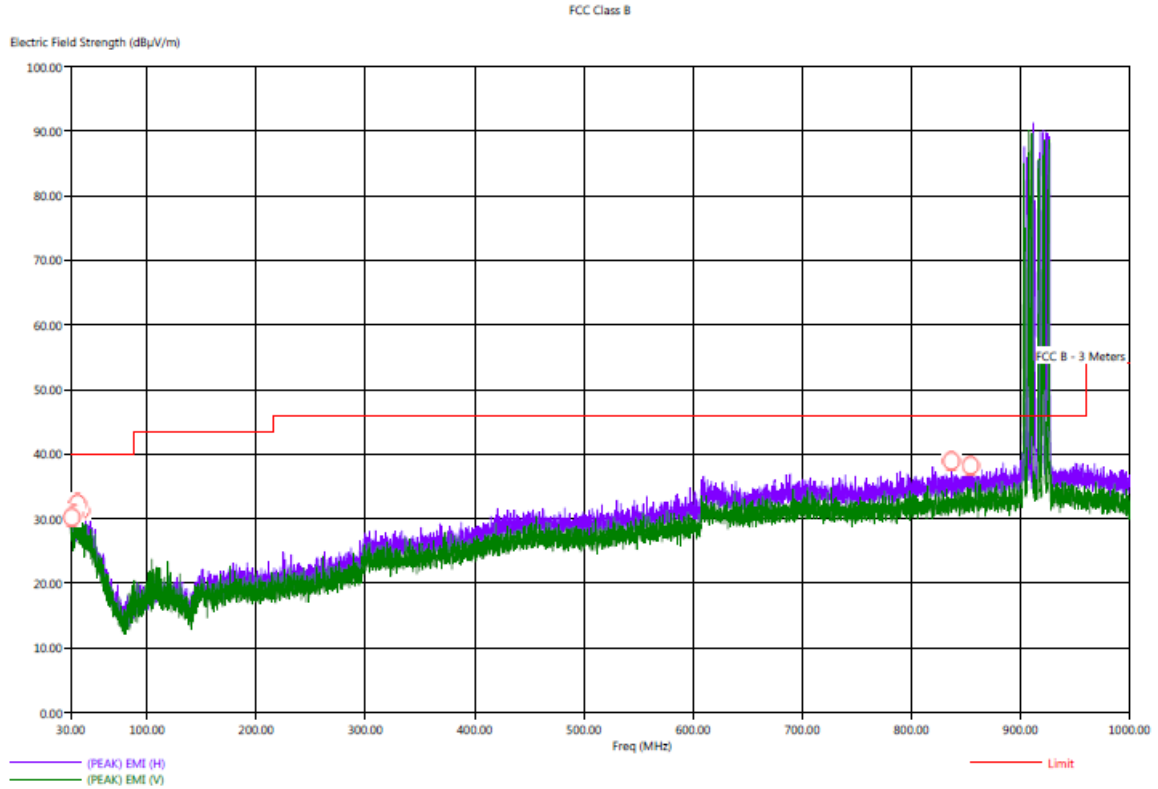
Title: Radiated Final - FCC Class B
 File: Gamesensor EC0002 - Final Scan - Rx High X-Axis Receive mode.set
 Operator: Tom Szytal
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously receiving signal from associated transmitter - High Channel X-Axis
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A
 Note: The frequency at 926.7 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

1/21/2019 4:15:08 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)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)	
30.60	H	32.04	26.73	-7.96	-13.27	40.00	23.83	0.81	78.50	190.97	
37.60	V	32.13	26.89	-7.87	-13.11	40.00	24.38	0.88	128.50	318.91	
38.40	H	32.35	27.22	-7.65	-12.78	40.00	24.50	0.89	290.75	111.50	
39.90	H	31.92	27.25	-8.08	-12.75	40.00	24.67	0.90	299.75	207.14	
929.80	H	39.00	33.92	-7.00	-12.08	46.00	27.56	3.06	74.25	382.55	
940.10	H	38.92	34.03	-7.08	-11.97	46.00	27.68	3.08	104.75	400.10	

Title: Pre-Scan - FCC Class B
File: EC0002 - Pre-Scan - Rx Frequency hopping X-Axis Receive mode.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously receiving signal - Frequency Hopping X-Axis
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A
Note: The frequency range from 902.95 MHz to 927 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

1/22/2019 2:11:36 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
 File: EC0002 - Final Scan - Rx Frequency hopping X-Axis Receive mode.set
 Operator: Tom Szyral
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously receiving signal - Frequency Hopping X-Axis
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 2:24:21 PM
 Sequence: Final Measurements

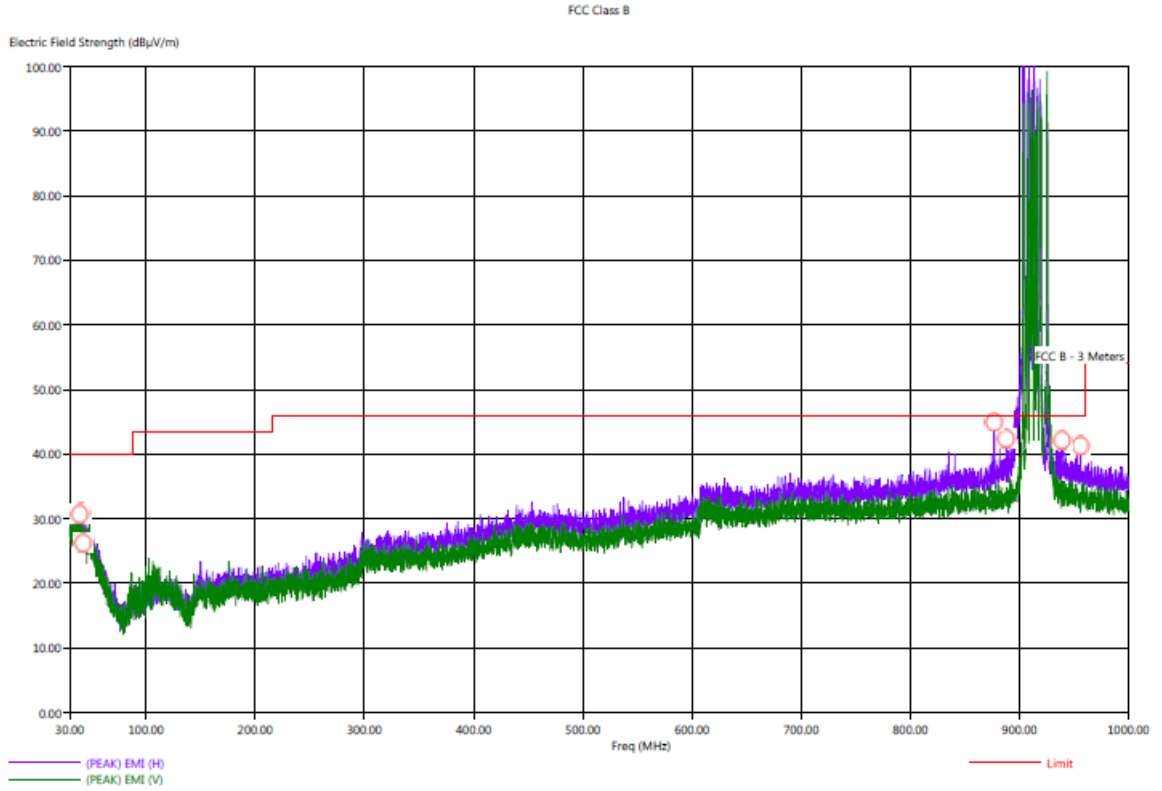
Note: The frequency range from 902.95 MHz to 927 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

FCC Class B

Freq (MHz)	PoI	(PEAK) EMI (dBµV/m)	(OP) EMI (dBµV/m)	(PEAK) Margin (dB)	(OP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
31.10	V	32.01	26.67	-7.99	-13.33	40.00	23.85	0.81	90.25	207.38
32.70	H	32.65	26.70	-7.35	-13.30	40.00	23.91	0.83	225.25	175.14
36.30	H	31.99	26.79	-8.01	-13.21	40.00	24.18	0.87	244.25	111.50
39.00	H	32.40	27.18	-7.60	-12.82	40.00	24.60	0.89	32.50	143.50
836.80	H	37.36	32.74	-8.64	-13.26	46.00	26.14	2.80	151.25	239.26
854.40	H	37.62	32.90	-8.38	-13.10	46.00	26.48	2.82	236.50	399.20

Title: Pre-Scan - FCC Class B
File: EC0002 - Pre-Scan - Rx Frequency hopping X-Axis Transmit mode.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously transmitting signal - Frequency Hopping X-Axis
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A
Note: The frequency range from 902.95 MHz to 927 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

1/22/2019 1:27:03 PM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
 File: EC0002 - Final Scan - Rx Frequency hopping X-Axis Transmit mode.set
 Operator: Tom Szyral
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously transmitting signal - Frequency Hopping X-Axis
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 1:47:37 PM
 Sequence: Final Measurements

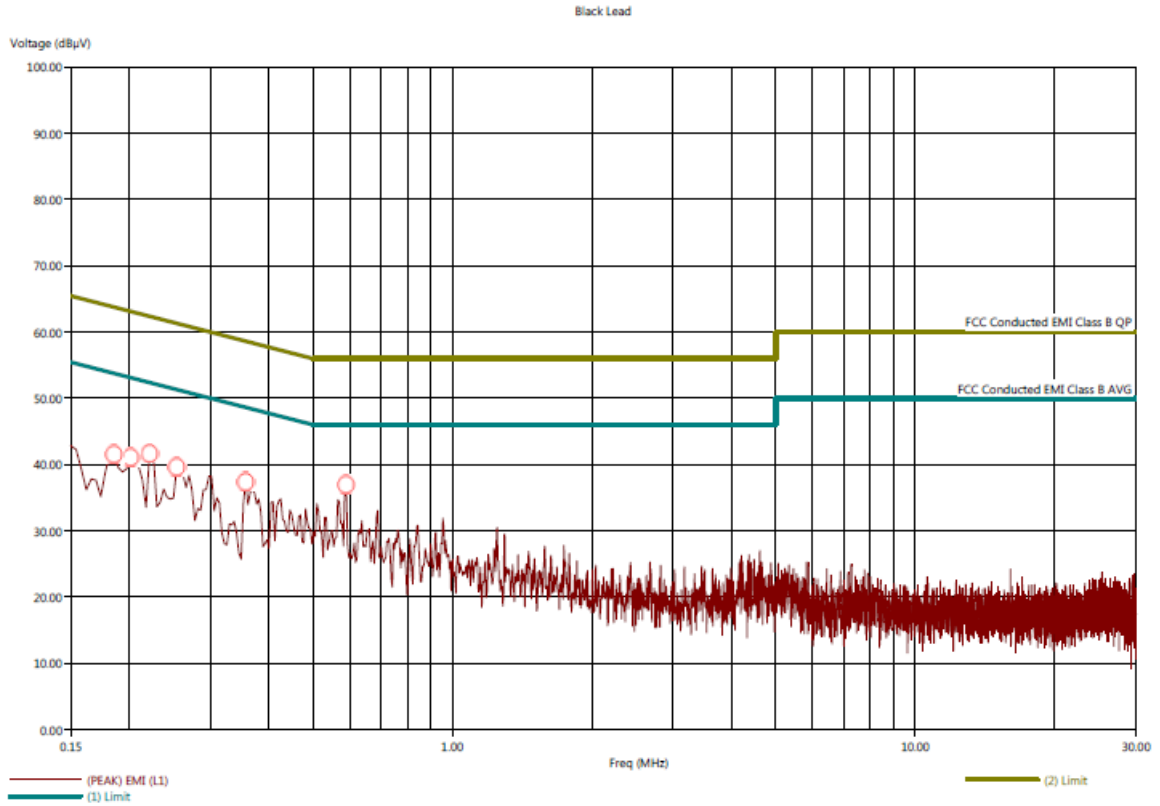
Note: The frequency range from 902.95 MHz to 927 MHz is from the transmitter and is subject to the limits of FCC 15.249 instead.

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(OP) EMI (dBµV/m)	(PEAK) Margin (dB)	(OP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (deg)	Twr Ht (cm)
39.20	V	32.92	27.23	-7.08	-12.77	40.00	24.61	0.89	8.50	350.91
40.70	H	31.98	27.66	-8.02	-12.34	40.00	24.47	0.90	319.25	255.02
42.30	V	31.51	26.36	-8.49	-13.64	40.00	23.92	0.90	264.50	382.79
877.00	H	44.20	34.85	-1.80	-11.15	46.00	26.84	2.91	127.00	159.26
887.90	H	48.17	36.18	2.17	-9.82	46.00	27.01	2.95	111.75	159.26
939.00	H	44.54	36.83	-1.46	-9.17	46.00	27.67	3.08	111.50	270.91
956.10	H	39.31	34.08	-6.69	-11.92	46.00	27.67	3.10	258.75	127.08

Title: FCC Class B - Black Lead
File: EC0002 Frequency Hopping Receive Pre-Scan - Black Lead - FCC Class B.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously receiving signal from associated transmitter - Frequency Hopping
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A

1/22/2019 3:28:04 PM
Sequence: Preliminary Scan



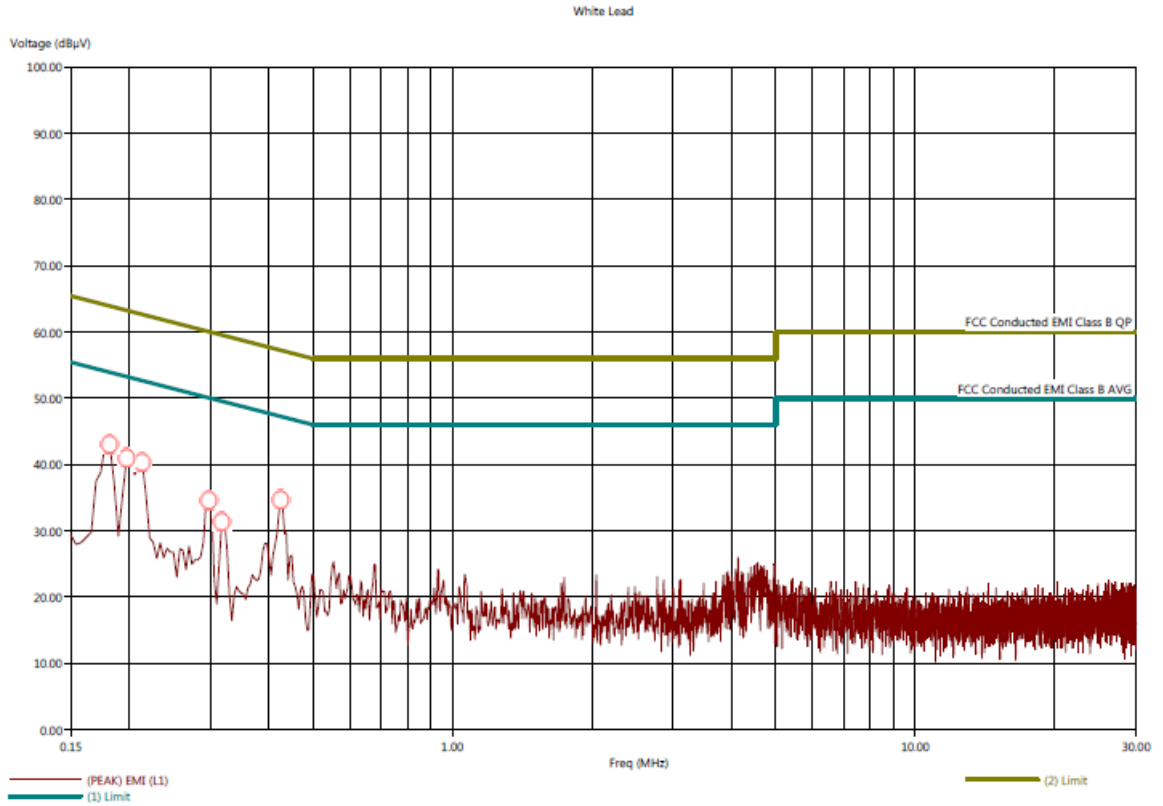
Title: FCC Class B - Black Lead
 File: EC0002 Frequency Hopping Receive Final Scan - Black Lead - FCC Class B.sst
 Operator: Tom Szymal
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously receiving signal from associated transmitter - Frequency Hopping
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 3:34:13 PM
 Sequence: Final Measurements

Freq (MHz)	Black Lead						Cable (dB)	Transducer (dB)	Filter (dB)
	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (Lim AVG) (dB)	(AVG) Margin (Lim AVG) (dB)	(AVG) Limit (dBµV)				
0.186	48.19	34.22	-5.84	-19.81	54.03	0.00	0.40	9.80	
0.202	47.06	32.92	-5.74	-19.88	52.80	0.01	0.33	9.79	
0.222	45.21	32.64	-7.38	-19.95	52.58	0.01	0.32	9.79	
0.254	37.37	22.69	-13.79	-28.47	51.16	0.03	0.24	9.77	
0.358	27.90	15.74	-20.57	-32.73	48.48	0.07	0.11	9.73	
0.590	25.21	14.53	-20.79	-31.47	46.00	0.07	0.11	9.75	

Title: FCC Class B - White Lead
File: EC0002 Frequency Hopping Receive Pre-Scan - White Lead - FCC Class B.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously receiving signal from associated transmitter - Frequency Hopping
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A

1/22/2019 3:40:24 PM
Sequence: Preliminary Scan



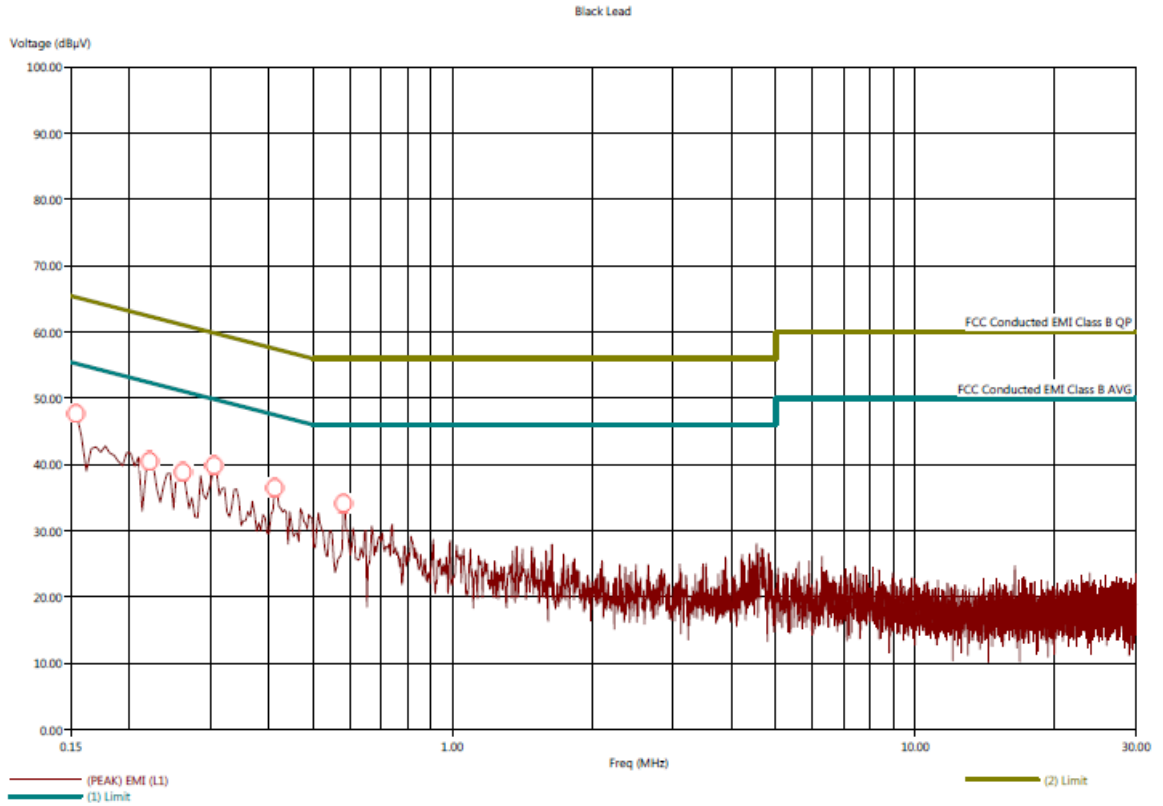
Title: FCC Class B - White Lead
 File: EC0002 Frequency Hopping Receive Final Scan - White Lead - FCC Class B.aat
 Operator: Tom Seynal
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously receiving signal - Frequency Hopping
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 4:47:30 PM
 Sequence: Final Measurements

Freq (MHz)	White Lead						Cable (dB)	Transducer (dB)	Filter (dB)
	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (Lim AVG) (dB)	(AVG) Margin (Lim AVG) (dB)	(AVG) Limit (dBµV)				
0.182	42.99	26.06	-10.67	-27.60	53.66	0.00	0.39	9.80	
0.198	42.03	24.34	-11.15	-28.84	53.18	0.00	0.36	9.80	
0.214	40.93	24.40	-11.94	-28.47	52.87	0.00	0.34	9.80	
0.298	35.93	20.83	-14.38	-29.48	50.31	0.04	0.20	9.76	
0.318	34.46	18.71	-15.32	-31.07	49.78	0.05	0.17	9.75	
0.426	37.16	26.44	-10.19	-20.91	47.35	0.08	0.11	9.72	

Title: FCC Class B - Black Lead
File: EC0002 Frequency Hopping Transmit Pre-Scan - Black Lead - FCC Class B.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously transmitting signal - Frequency Hopping
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A

1/22/2019 3:57:02 PM
Sequence: Preliminary Scan



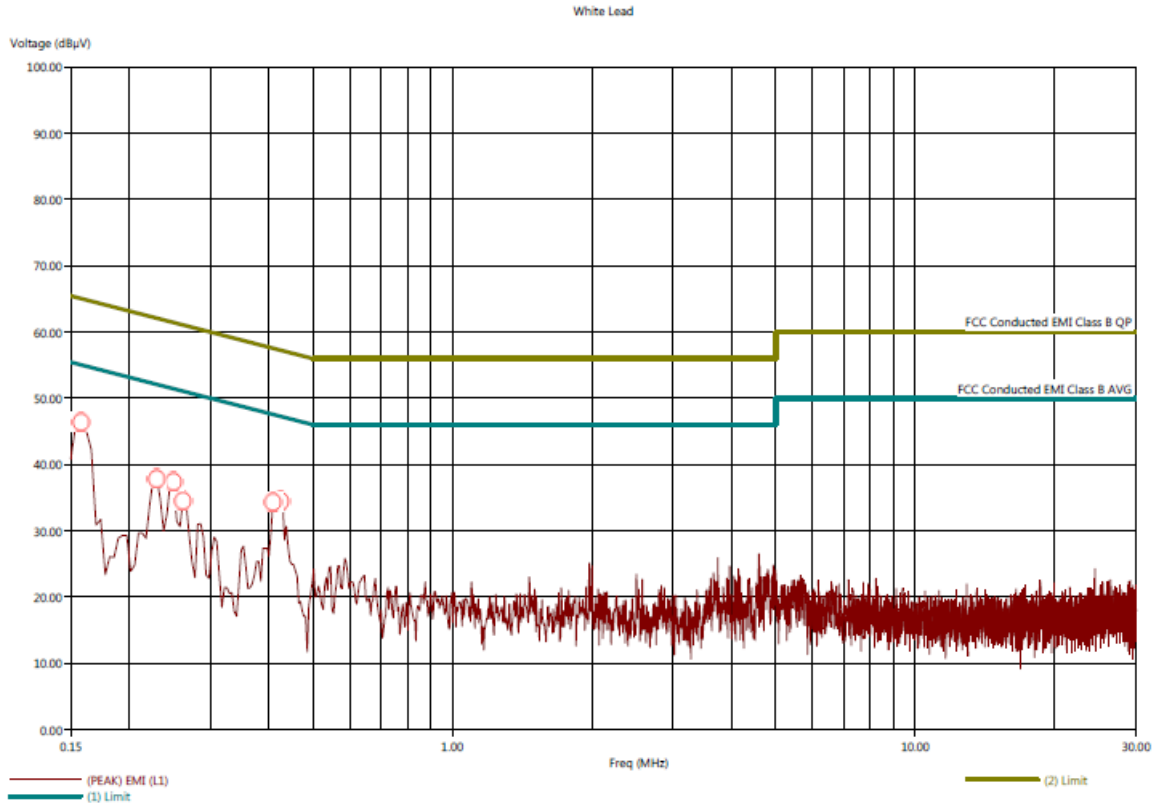
Title: FCC Class B - Black Lead
 File: EC0002 Frequency Hopping Transmit Final Scan - Black Lead - FCC Class B.aat
 Operator: Tom Szymal
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously transmitting signal - Frequency Hopping
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 4:01:24 PM
 Sequence: Final Measurements

Black Lead										
Freq (MHz)	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (Lim AVG) (dB)	(AVG) Margin (Lim AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)		
0.154	48.86	36.77	-6.58	-18.67	55.44	0.00	0.48			9.80
0.222	44.35	32.93	-8.29	-19.71	52.64	0.01	0.32			9.79
0.262	37.91	23.14	-13.27	-28.04	51.18	0.03	0.24			9.77
0.306	35.35	20.64	-14.51	-29.22	49.86	0.05	0.17			9.75
0.414	37.26	28.95	-10.04	-18.35	47.30	0.08	0.11			9.72
0.582	26.77	16.19	-19.23	-29.82	46.00	0.08	0.11			9.75

Title: FCC Class B - White Lead
File: EC0002 Frequency Hopping Transmit Pre-Scan - White Lead - FCC Class B.set
Operator: Tom Szydal
EUT Type: Gamesensor Rx
EUT Condition: EUT is continuously transmitting signal - Frequency Hopping
Company: Acryl Design Ltd.
Model: EC0002
S/N: N/A

1/22/2019 4:05:26 PM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
 File: EC0002 Frequency Hopping Transmit Final Scan - White Lead - FCC Class B test
 Operator: Tom Seynal
 EUT Type: Gamesensor Rx
 EUT Condition: EUT is continuously transmitting signal - Frequency Hopping
 Company: Acryl Design Ltd.
 Model: EC0002
 S/N: N/A

1/22/2019 4:40:18 PM
 Sequence: Final Measurements

Freq (MHz)	White Lead									
	(PEAK) EMI (dBµV)	(AVG) EMI (dBµV)	(PEAK) Margin (Lim AVG) (dB)	(AVG) Margin (Lim AVG) (dB)	(AVG) Limit (dBµV)	Cable (dB)	Transducer (dB)	Filter (dB)		
0.158	48.91	32.22	-6.60	-23.29	55.51	0.00	0.49	9.80		
0.230	38.53	26.25	-13.50	-25.78	52.03	0.02	0.29	9.78		
0.250	38.59	23.39	-12.72	-27.92	51.31	0.03	0.25	9.77		
0.262	37.31	22.76	-14.03	-28.58	51.34	0.03	0.25	9.77		
0.410	36.11	27.30	-11.35	-20.16	47.46	0.08	0.11	9.72		
0.426	34.99	26.78	-12.15	-20.36	47.14	0.08	0.12	9.72		

FCC Class B

 Acryl Design Ltd.
 Gamesensor Rx
 Part Number: EC0002

 Date: 01-22-19
 Lab: D
 Tested By: Tom Szynal

Receive Mode - 1 GHz to 5 GHz - Unit Rx

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 1 GHz to 5 GHz
								for the Receive Mode
								of the Rx EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis
								Investigated when receiving
								at 927 MHz (worst case)

FCC Class B

 Acryl Design Ltd.
 Gamesensor Rx
 Part Number: EC0002

 Date: 01-22-19
 Lab: D
 Tested By: Tom Szyal

Receive Frequency Hopping Mode - 1 GHz to 9.3 GHz - Unit Rx

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 1 GHz to 9.3 GHz
								for the Receive Mode
								of the Rx EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis
								Investigated when receiving
								at frequency hopping mode

FCC Class B

 Acryl Design Ltd.
 Gamesensor Rx
 Part Number: EC0002

 Date: 01-22-19
 Lab: D
 Tested By: Tom Szynal

Transmit Frequency Hopping Mode - 1 GHz to 9.3 GHz - Unit Rx

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 1 GHz to 9.3 GHz
								for the Transmit Mode
								of the Rx EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis
								Investigated when transmitting
								at frequency hopping mode