FCC PART 15, SUBPART B and C; and FCC SECTION 15.247; RSS-247 and RSS-GEN
TEST REPORT

for

Handheld Remote

Part Number: 70ICG32001WR

Prepared for

AMERICAN NATIONAL MFG.
252 MARIAH CIRCLE
CORONA, CALIFORNIA 92879-1751

Prepared by: _____

JAMES ROSS

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DATE: APRIL 6, 2022

	REPORT	APPENDICES					TOTAL
	BODY	*A*	*B*	*C*	*D*	*E*	
PAGES	21	2	2	2	13	42	**82**

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TABLE OF CONTENTS

LIST OF APPENDICES

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

LIST OF FIGURES

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

LIST OF TABLES

TABLE	TITLE
1.0	Radiated Emission 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 by the client to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the U.S. government.

Device Tested:	Handheld Remote P/N: 70ICG32001WR S/N: N/A
Product Description:	The EUT is wireless remote using standard 2.4 GHz Zigbee protocol and a CC2530 Micro at 32 MHz. (Dimensions: 40 mm x 46 mm x 133 mm)
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	American National Mfg. 252 Mariah Circle Corona, California 92879-1751
Test Dates:	March 10 and 11, 2022

Test Specification covered by accreditation:

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Test Specifications:	Emissions requirements CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247; RSS-247 and RSS-GEN
Test Procedures:	ANSI C63.4 and ANSI C63.10
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz - 30 MHz	This test was not performed because the EUT operates on internal battery power only and cannot be connect to the AC public mains
2	Radiated RF Emissions, 9 kHz – 25000 MHz	Complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15 Subpart C, 15.205, 15.209 and 15.247 (d); RSS-247 and RSS-GEN Highest reading in relation to spec limit 47.72 (Avg) dBuV/m @ 7440 MHz (*U = 4.06 dB)
3	DTS Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (a)(2); RSS-247
4	Peak Output Power	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (b)(3); RSS-247
5	RF Band Edges	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (d); RSS-247
6	Spectral Density	Complies with the relevant requirements of FCC Title 47, Part 15, Subpart C, section 15.247 (e); RSS-247

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the Handheld Remote, P/N: 70ICG32001WR (EUT). The emissions measurements were performed according to the measurement procedure described in ANSI C 63.4 and ANSI C 63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247; RSS-247 and RSS-Gen.

1.1 DECISION RULE & RISK

If a measured value exceeds a specification limit it implies non-compliance. If the value is below a specification limit it implies compliance. Measurement uncertainty of the laboratory is reported with all measurement results but generally not taken into consideration unless a standard, rule or law requires it to be considered.

Qualification test reports are only produced for products that are in compliance with the test requirements, therefore results are always in conformity. Otherwise, an engineering report or just the data is provided to the customer.

When performing a measurement and making a statement of conformity, in or out-of-specification to manufacturer's specifications or Pass/Fail against a requirement, there are two possible outcomes:

- The result is reported as conforming with the specification
- The result is reported as not conforming with the specification

The decision rule is defined below.

When the test result is found to be below the limit but within our measurement uncertainty of the limit, it is our policy that the final acceptance decision is left to the customer, after discussing the implications and potential risks of the decision.

When the test result is found to be exactly on the specification, it is our policy, in the case of unwanted emissions measurements to consider the result non-compliant; however, the final decision is left to the customer, after discussing the implications and potential risks of the decision.

When the test result is found to be over the specification limit under any condition, it is our policy to consider the result non-compliant.

In terms of uncertainty of measurement, the laboratory is a calibrated and tightly controlled environment and generally exceptionally stable, the measurement uncertainties are evaluated without the consideration of the test sample. When it comes to the test sample however, as most testing is performed on a single sample rather than a sample population, and that sample is often a pre-production representation of the final product that test sample represents a significantly higher source of measurement uncertainty. We advise our customers of this and that when in doubt (small test to limit margins), they may wish to perform statistical sampling on a population to gain a higher confidence in the results. All lab reported results are that of a single sample in any event.

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

American National Mfg.

Dave Driscoll Director of Product Development and Innovation – Sizewize

Compatible Electronics Inc.

James Ross Test Engineer
Ruby A. Hall Lab Manager, Newbury Park Division

2.4 Date Test Sample was Received

The test sample was received prior to March 10, 2022. Received as described in product description.

2.5 Disposition of the Test Sample

The test sample has not been returned to American National Mfg. as of the date of this test report.

2.6 Abbreviations and Acronyms

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

EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
ITE	Information Technology Equipment
DoC	Declaration of Conformity
FCC	Federal Communications Commission
RSS	Radio Standards Specification
N/A	Not Applicable
Tx	Transmit
Rx	Receive
Inc.	Incorporated
RF	Radio Frequency
R&D	Research & Development
GND	Ground
BLE	Bluetooth Low Energy
Mfg.	Manufacturing

3. APPLICABLE DOCUMENTS

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

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules – Radio frequency devices (including digital devices) – Intentional Radiators
FCC Title 47, Part 15 Subpart B	FCC Rules – Radio frequency devices (including digital devices) – Unintentional Radiators
558074 D01 DTS Meas Guidance v05r02	Guidance for Performing Compliance Measurements on Digital Transmissions Systems (DTS) Operating Under Section 15.247
EN 50147-2: 1997	Anechoic chambers. Alternative test site suitability with respect to site attenuation
ANSI C63.4 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices
RSS-Gen Issue 5 April 2019 Amendment 1	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue 2 February 2017	Digital Transmissions Systems (DTSs), Frequency Hopping Systems (FHSs) and License-Exempt Local Area Network (LE-LAN) Devices

4. DESCRIPTION OF TEST CONFIGURATION

The Handheld Remote, P/N: 70ICG32001WR (EUT) was tested as a stand-alone, internal battery powered device. The EUT was set respectively to its low, middle, and high channels by using its up and down arrow buttons. Further, the EUT was tested in its X, Y, and Z axis; with the low-channel, Z-axis being its worse case. During testing, the EUT was continuously transmitting.

Statement of Rationale: Based on previous testing, we've provided code to run at the ends and center of the channel spectrum.

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

4.1.1 Cable Construction and Termination

The EUT contained 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
HANDHELD REMOTE (EUT)	AMERICAN NATIONAL MFG.	70ICG32001WR	N/A	2AEM2GR01WR

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
RF RADIATED AND CONDUCED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
MXE EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies, Inc.	N9038A	MY51210150	September 17, 2021	2 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
Loop Antenna	Com-Power	AL-130R	121090	February 10 2022	3 Year
CombiLog Antenna	Com-Power	AC-220	61093	December 14, 2021	2 Year
Horn Antenna	Com-Power	AH-118	10050113	December 16, 2021	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Preamplifier	Com-Power	PAM-118	181653	March 7, 2022	1 Year
Preamplifier	Com-Power	PA-840	711013	April 9, 2020	2 Year
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 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

"Compatible Electronics" U_{lab} value is less than U_{cispr}, thus based on this – compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

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

$$u_c(y) = \sqrt{\sum_i c_i^2 u^2(x_i)}$$

Measurement		U_{cispr}	U_{lab} = 2uc(y)
Conducted disturbance (mains port)	(150 kHz – 30 MHz)	3.4 dB	2.72 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(30 MHz – 1,000 MHz)	6.3 dB	3.32 dB (Vertical) 3.30 dB (Horizontal)
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(1 GHz – 6 GHz)	5.2 dB	4.06 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(6 GHz – 18 GHz)	5.5 dB	4.06 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(18 GHz – 26 GHz)	N/A	4.43 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(26.5 GHz – 40 GHz)	N/A	4.51 dB

7. CHARACTERISTICS OF THE TRANSMITTER

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

7.1 Channel Number and Frequencies

The EUT uses a total of 16 channels which are spaced 5 MHz apart.

The lowest channel is 2405 MHz
The highest channel is 2480 MHz

7.2 Antenna

The EUT has a 5.3 dBi gain PCB trace antenna.

8. TEST PROCEDURES

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

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A 10 dB attenuator used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. The output of the second LISN was terminated by a 50-ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding, and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI 63:4. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by computer software. The final qualification data is located in Appendix E.

The six highest emissions are listed in Table 1.0.

Test Results:

This test was not performed because the EUT operates on battery power only and cannot be connected to the AC public mains.

8.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. Preamplifiers were 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.

The frequencies below 1 GHz were quasi-peaked using the quasi-peak detector of the EMI Receiver.

The frequencies above 1 GHz were averaged using the RMS detector average 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 2.0.

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 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; the limits of CFR Title 47, Part 15, Subpart C sections 15.205, 15.209 and 15.247; and the limits of RSS-247 and RSS-Gen for radiated emissions.

8.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
Handheld Remote
P/N: 70ICG32001WR

Frequency (MHz)	Average EMI Reading (dBuV/m)	Average Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
7440.00 (V) (Y-Axis)	47.72	53.97	-6.25
7320.00 (V) (Y-Axis)	47.68	53.97	-6.29
7320.00 (V) (Z-Axis)	47.04	53.97	-6.93
7320.00 (H) (X-Axis)	46.98	53.97	-6.99
7440.00 (V) (Z-Axis)	46.92	53.97	-7.05
7320.00 (H) (Y-Axis)	46.48	53.97	-7.49

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

8.1.4 Sample Calculations

A correction factor for the antenna, cable and a distance factor (if any) must be applied to the meter reading before a true field strength reading can be obtained. This Corrected Meter Reading is then compared to the specification limit in order to determine compliance with the limits.

Conversion to logarithmic terms: Specification limit (μV/m) log x 20 = Specification Limit in dBuV/m

To correct for distance when measuring at a distance other than the specification

For measurements below 30 MHz: (Specification distance / test distance) log x 40 = distance factor

For measurements above 30 MHz: (Specification distance / test distance) log x 20 = distance factor

Note: When using an Active Antenna, the Antenna factor shall be subtracted due to the combination of the internal amplification and antenna loss.

Corrected Meter Reading = meter reading + F – A + C

where: F = antenna factor

A= amplifier gain

C = cable loss

The correction factors for the antenna and the amplifier gain are attached in Appendix D of this report. The data sheets are attached in Appendix E.

The distance factor D is 0 when the test is performed at the required specification distance.

8.2 DTS Bandwidth

The DTS Bandwidth was measured using the EMI Receiver. The following steps were performed for measuring the DTS Bandwidth.

1. Set RBW = 100 kHz
2. Set the video bandwidth (VBW) to equal or greater than 3 times the RBW
3. Detector = Peak
4. Trace Mode = Max Hold
5. Sweep = Auto Couple
6. Allow the trace to stabilize
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (a) (2); and RSS-247.

8.3 Peak Output Power

The Peak Output Power was measured using radiated emissions method described in section 8.1.2 of this test report. The peak power was calculated by the following equation:

P = [(E*D)^2] / (30 G)
P = Power in Watts for which you are solving
E = the measured maximum field strength in V/m utilizing the widest available RBW.
G = the numeric gain of the transmitting antenna over an isotropic radiator.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (b) (3); and RSS-247. The maximum peak output power is less than 1 Watt. Please see the data sheets located in Appendix E.

8.4 Emissions in Non-restricted Frequency Bands

The procedure described in section 8.1.2 of this test report was used to maximize the emissions. The procedure of section 11.11.2 of ANSI C63.10 was then used to determine that the highest reference level was the lower channel, which was 71.66 dBuV/m.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d); and RSS-247. The emissions in the non-restricted frequency bands are at least attenuated by 20 dB below the highest reference level established by section 11.11.2 of ANSI C63.10. Please see the data sheets located in Appendix E.

8.5 RF Band Edges

The RF band edges were taken at 2390 MHz when the EUT was on the low channel and 2483.5 MHz when the EUT was on the high channel using the EMI Receiver. A preamplifier was used to boost the signal level, with the plots being taken at a 3 meter test distance. The radiated emissions test procedure as describe in section 8.1.2 of this test report was used to maximize the emission.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (d); and RSS-247. The RF power at the restricted bands closest to the band edges at 2390 MHz and 2483.5 MHz also meet the limits of section 15.209. Please see the data sheets located in Appendix E.

8.6 Spectral Density Test

The spectrum density output was measured using radiated emissions method described in section 8.1.2 of this test report. The spectral density was calculated by the following equation.

P = [(E*D)^2] / (30 G)
P = Power in Watts for which you are solving
E = the measured maximum field strength in V/m utilizing the an RBW of 3 kHz.
G = the numeric gain of the transmitting antenna over an isotropic radiator.

The EMI Receiver was setup as follows:

1. Set analyzer center frequency to DTS channel center frequency
2. Set the span to at least 1.5 times the OBW.
3. Set the RBW to 3 kHz
4. Set the VBW >= 3 X RBW
5. Detector = Peak
6. Ensure that the number of measurement points in the sweep >= 2 x span/RBW
7. Sweep time = auto couple
8. Use the peak marker function to determine the maximum amplitude level

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (e); and RSS-247.

8.7 99 % Bandwidth

The 99 % bandwidth was measured using an EMI Receiver.

The following steps were performed for measuring the 99 % bandwidth per RSS-GEN, Issue 5, clause 6.7:

1. Set RBW to 1 % to 5 % of the actual occupied bandwidth.
2. Set VBW to greater than 3 times the RBW.
3. Set the EMI Receiver to the occupied bandwidth Function set at 99 %
4. Set the peak detector to max hold.
5. Set the sweep time to auto
6. Allow the trace to stabilize.

Please note that this was only used to determine the emission bandwidth and that there are no limits or pass/fail criteria for this test. Please see the data sheets located in Appendix E.

9. CONCLUSIONS

The Handheld Remote, P/N: 70ICG32001WR (EUT), as tested, meets all of the specification limits defined in CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247; RSS-GEN and RSS-247.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP TESTING
NVLAP LAB CODE 200528-0

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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 the Management Systems Requirements of ISO/IEC 17025, General Requirements for the competence of testing and calibration laboratories:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025 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 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001"

ISED Test Site Registration Number: 2154A

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247; RSS-GEN and RSS-210 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

MODELS COVERED UNDER THIS REPORT

MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	Handheld Remote P/N: 70ICG32001WR S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

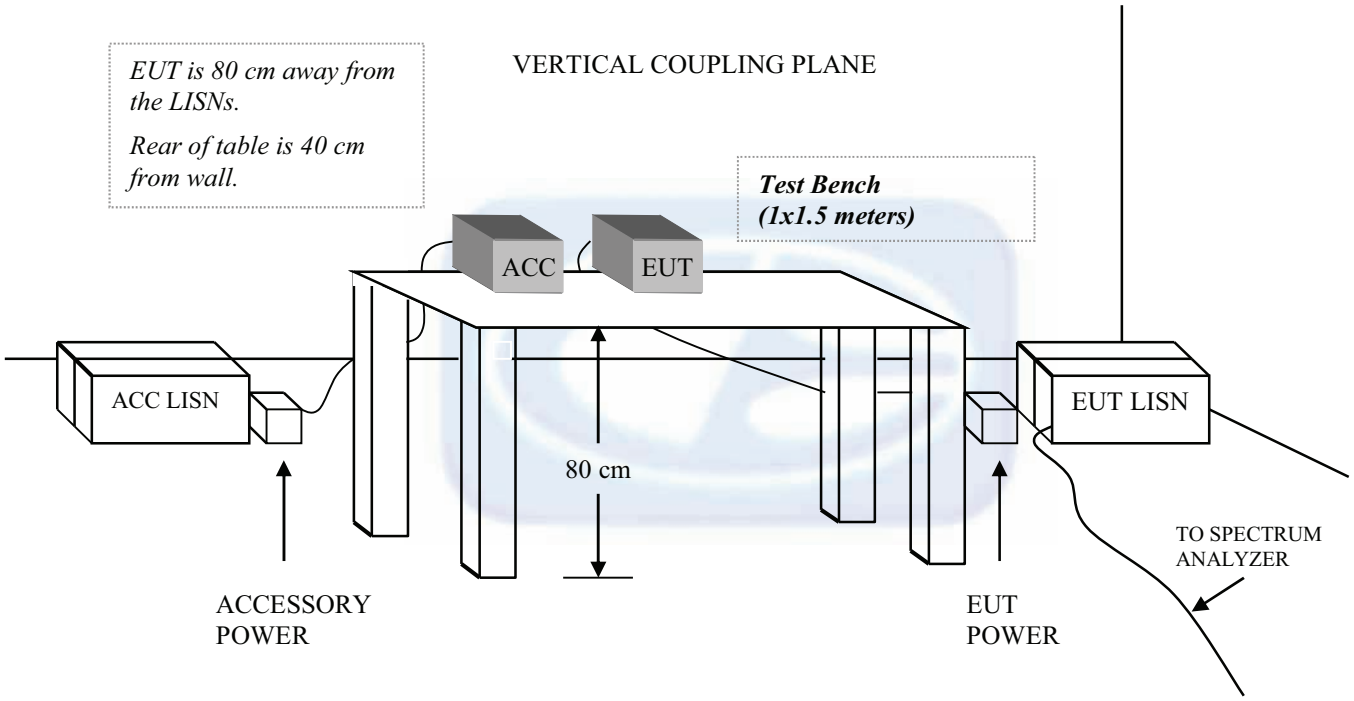
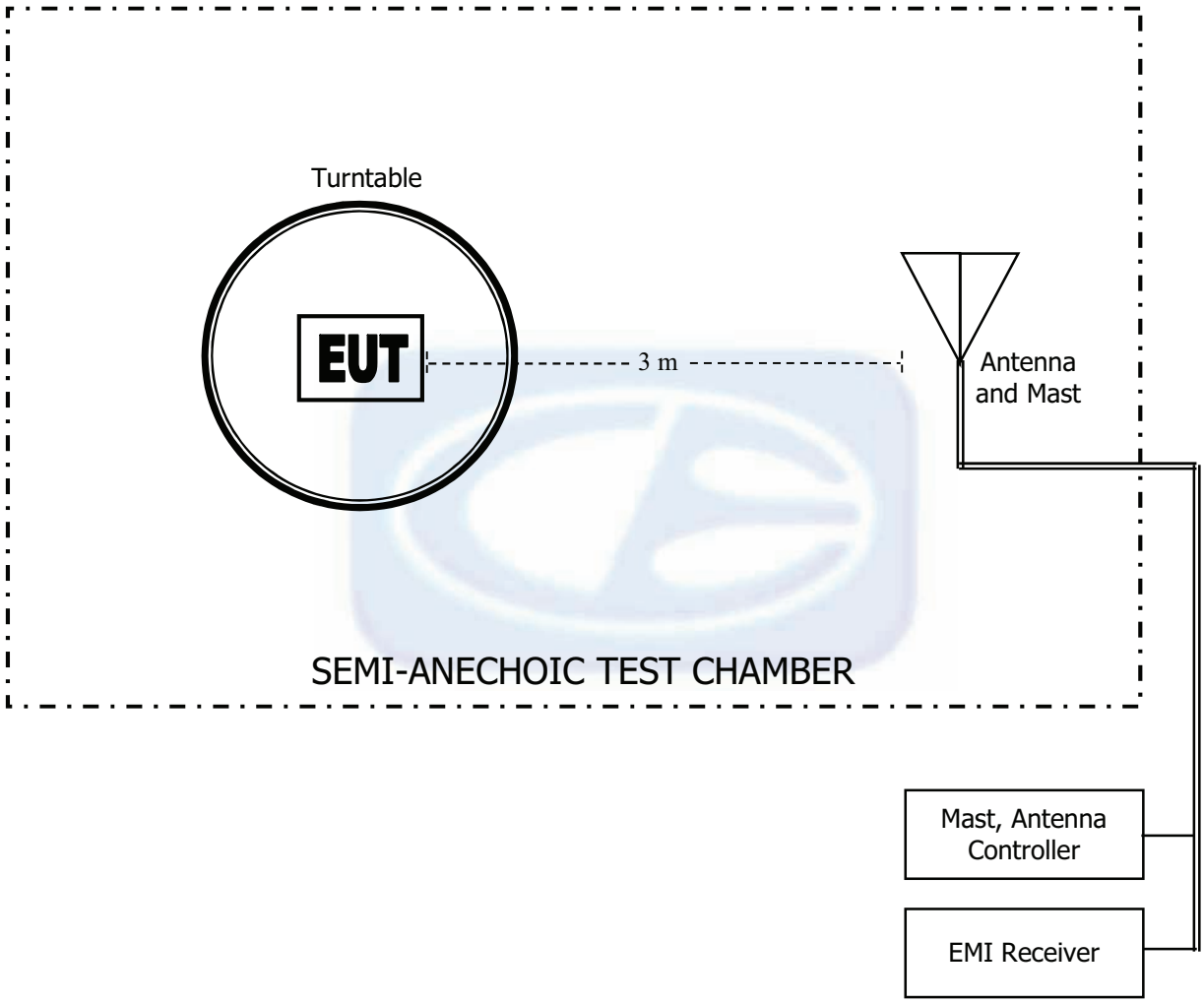


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COMPATIBLE ELECTRONICS

COM-POWER AL-130R

LOOP ANTENNA

S/N: 121090

CALIBRATION DATE: FEBRUARY 10, 2022

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	15.6	-35.8
0.01	15.8	-35.6
0.02	14.8	-36.6
0.03	15.6	-35.9
0.04	15.0	-36.5
0.05	14.4	-37.1
0.06	14.6	-36.9
0.07	14.3	-37.2
0.08	14.3	-37.2
0.09	14.4	-37.0
0.10	14.1	-37.4
0.20	14.1	-37.4
0.30	14.0	-37.5
0.40	13.9	-37.6
0.50	14.1	-37.3
0.60	14.1	-37.3
0.70	14.2	-37.3
0.80	14.2	-37.3
0.90	14.2	-37.2
1.00	14.4	-37.0
2.00	14.6	-36.9
3.00	14.6	-36.8
4.00	14.9	-36.6
5.00	14.9	-36.7
6.00	14.8	-36.7
7.00	14.6	-36.8
8.00	14.5	-37.0
9.00	14.3	-37.2
10.00	14.5	-37.0
11.00	14.6	-36.9
12.00	14.7	-36.7
13.00	14.9	-36.6
14.00	15.0	-36.5
15.00	14.9	-36.6
16.00	14.9	-36.6
17.00	14.6	-36.8
18.00	14.4	-37.1
19.00	14.5	-37.0
20.00	14.5	-37.0
21.00	14.2	-37.3
22.00	13.9	-37.5
23.00	13.9	-37.5
24.00	13.8	-37.7
25.00	13.4	-38.0
26.00	13.2	-38.2
27.00	13.2	-38.3
28.00	12.7	-38.7
29.00	12.7	-38.8
30.00	12.4	-39.0

COMPATIBLE ELECTRONICS

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61093

CALIBRATION DATE: DECEMBER 14, 2021

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	22.50	200	16.00
35	21.40	250	17.40
40	21.00	300	19.70
45	20.60	350	20.00
50	19.70	400	22.20
60	16.10	450	22.40
70	12.80	500	23.10
80	12.50	550	23.40
90	14.20	600	24.90
100	15.40	650	25.30
120	16.50	700	25.40
125	16.80	750	26.40
140	15.90	800	26.70
150	16.60	850	27.10
160	18.50	900	27.90
175	15.90	950	28.00
180	15.50	1000	28.00

COM POWER AH-118

HORN ANTENNA

S/N: 10050113

CALIBRATION DATE: DECEMBER 16, 2021

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	23.86	10.0	38.91
1.5	25.67	10.5	39.94
2.0	28.25	11.0	39.10
2.5	29.17	11.5	39.70
3.0	29.78	12.0	40.29
3.5	30.88	12.5	41.93
4.0	31.21	13.0	41.34
4.5	32.96	13.5	40.57
5.0	33.30	14.0	40.23
5.5	34.24	14.5	42.25
6.0	34.57	15.0	43.63
6.5	35.61	15.5	39.96
7.0	36.60	16.0	40.38
7.5	37.49	16.5	40.56
8.0	37.44	17.0	40.93
8.5	37.98	17.5	42.27
9.0	38.01	18.0	43.77
9.5	38.53		

COM-POWER AH-826

HORN ANTENNA

S/N: 71957

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

COM-POWER PAM-118

PREAMPLIFIER

S/N: 181653

CALIBRATION DATE: MARCH 7, 2022

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.02	6.0	38.84
1.1	39.72	6.5	39.20
1.2	39.93	7.0	39.46
1.3	39.98	7.5	39.67
1.4	39.99	8.0	39.28
1.5	40.20	8.5	38.63
1.6	40.05	9.0	38.96
1.7	40.15	9.5	39.33
1.8	40.20	10.0	39.58
1.9	40.33	11.0	38.25
2.0	40.33	12.0	40.03
2.5	40.60	13.0	40.55
3.0	40.76	14.0	40.36
3.5	40.87	15.0	39.34
4.0	40.39	16.0	37.34
4.5	39.55	17.0	42.14
5.0	40.34	18.0	42.54
5.5	39.45		

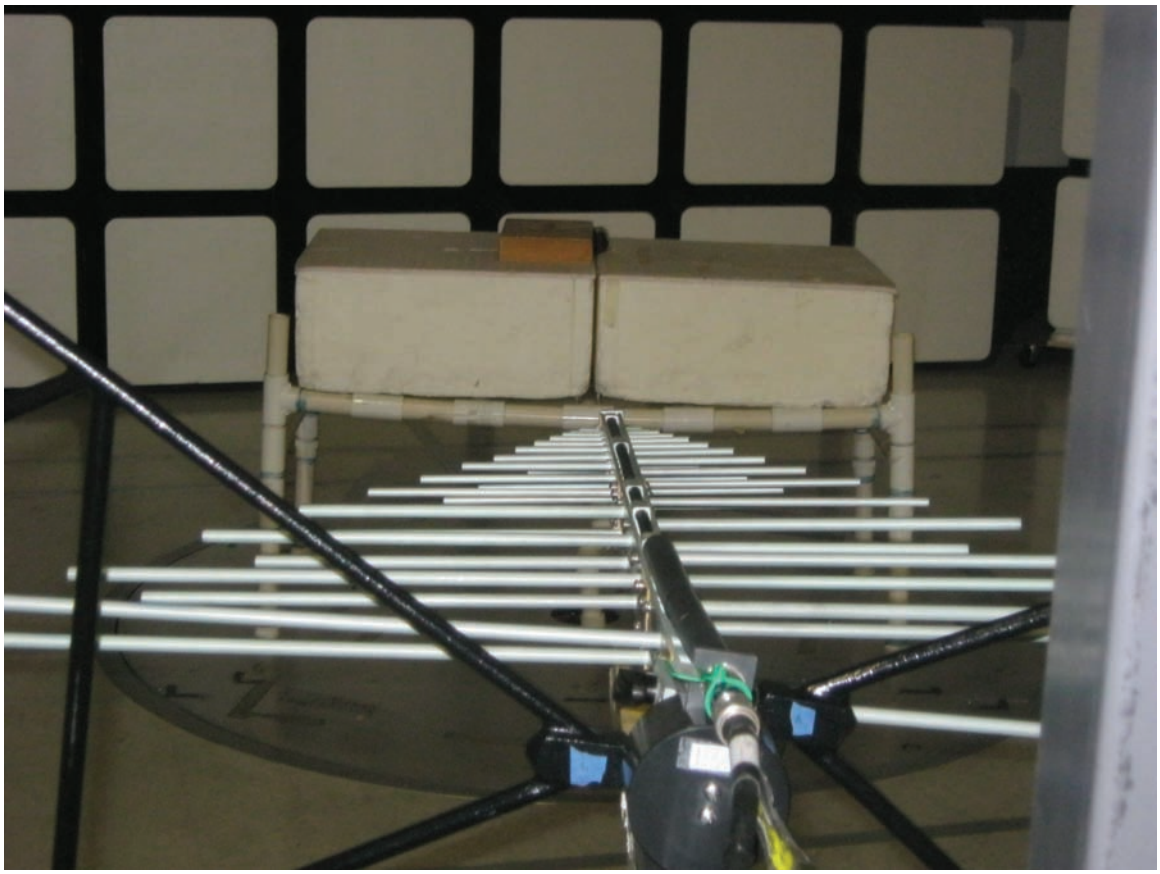
COM-POWER PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: APRIL 9, 2020

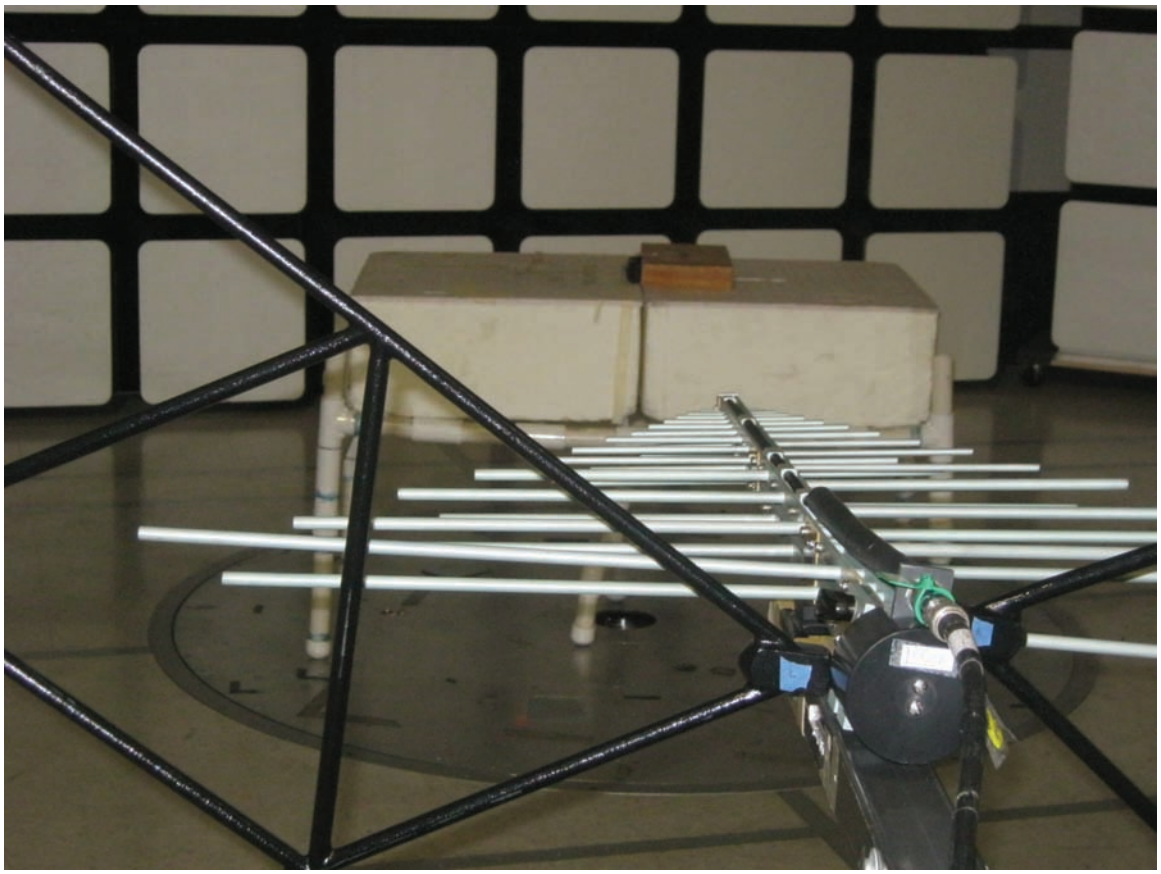
FREQUENCY (GHz)	FACTOR (dB)
18.0	26.88
19.0	25.52
20.0	26.26
21.0	24.96
22.0	24.74
23.0	25.45
24.0	26.65
25.0	26.02
26.0	27.16
26.5	28.08



FRONT VIEW

AMERICAN NATIONAL MFG.
HANDHELD REMOTE
P/N: 70ICG32001WR
FCC SUBPART B AND C; RSS-GEN and RSS-247 – RADIATED EMISSIONS – BELOW 1 GHz

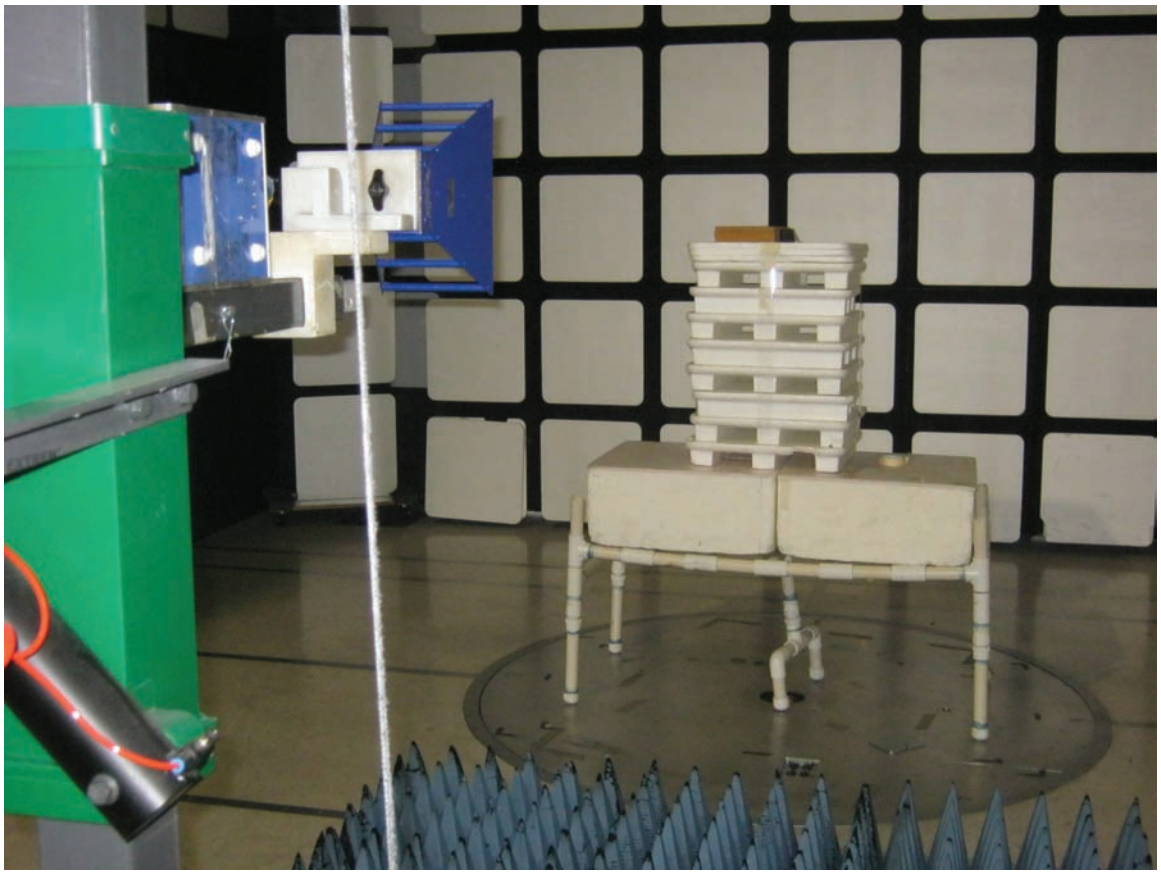
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

AMERICAN NATIONAL MFG.
HANDHELD REMOTE
P/N: 70ICG32001WR
FCC SUBPART B AND C; RSS-GEN and RSS-247 – RADIATED EMISSIONS – BELOW 1 GHz

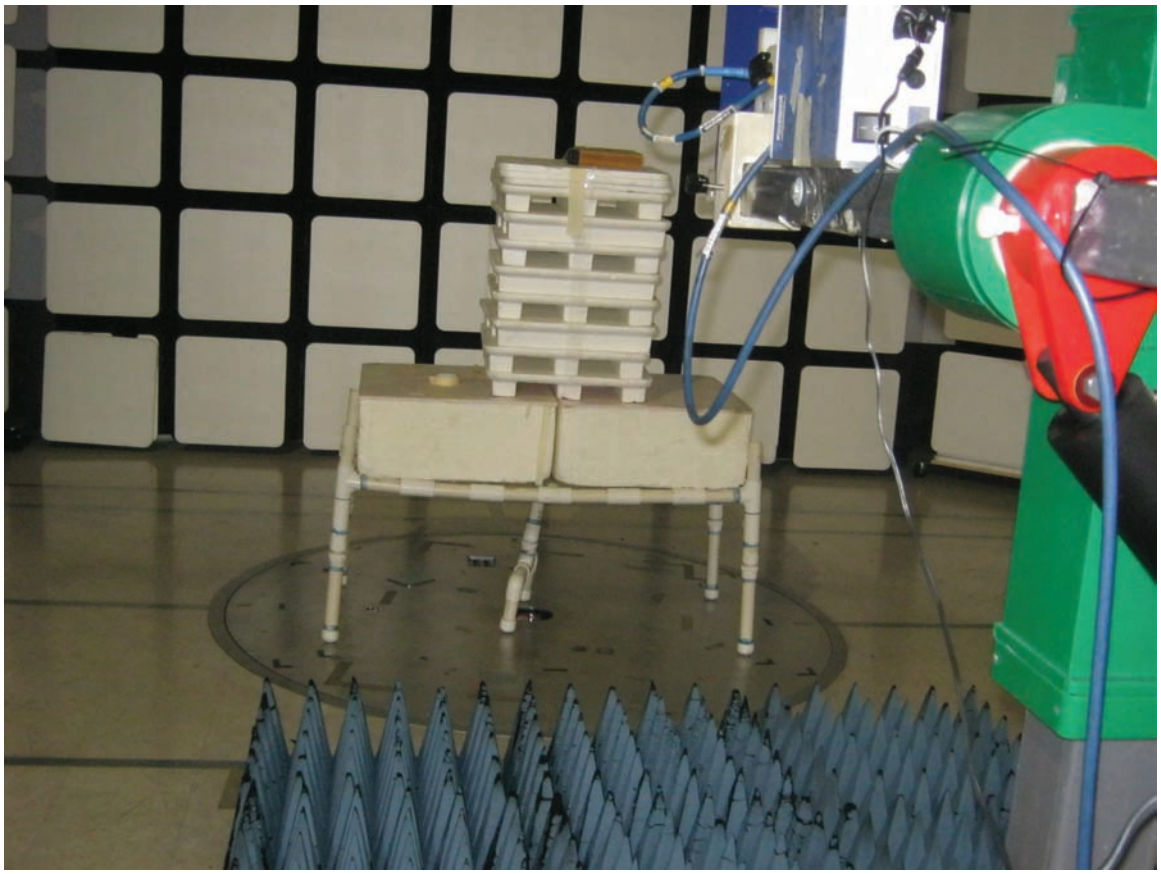
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

AMERICAN NATIONAL MFG.
HANDHELD REMOTE
P/N: 70ICG32001WR
FCC SUBPART B AND C; RSS-GEN and RSS-247 – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

AMERICAN NATIONAL MFG.
HANDHELD REMOTE
P/N: 70ICG32001WR
FCC SUBPART B AND C; RSS-GEN and RSS-247 – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS DATA SHEETS

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	50.20	V	73.97	-23.77	Peak	169.00	147.00	
4810.00	44.21	V	53.97	-9.77	Avg	169.00	147.00	
7215.00	52.02	V	73.97	-21.95	Peak	150.00	100.00	
7215.00	44.74	V	53.97	-9.23	Avg	150.00	100.00	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	48.70	V	73.97	-25.27	Peak	309.25	100.00	
4810.00	42.41	V	53.97	-11.56	Avg	309.25	100.00	
7215.00	51.81	V	73.97	-22.16	Peak	295.00	100.00	
7215.00	45.17	V	53.97	-8.80	Avg	295.00	100.00	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	48.16	V	73.97	-25.81	Peak	199.75	100.00	
4810.00	41.64	V	53.97	-12.33	Avg	199.75	100.00	
7215.00	53.03	V	73.97	-20.94	Peak	185.00	100.00	
7215.00	46.27	V	53.97	-7.71	Avg	185.00	100.00	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	51.81	H	73.97	-22.16	Peak	135.25	121.23	
4810.00	44.80	H	53.97	-9.17	Avg	135.25	121.23	
7215.00	53.12	H	73.97	-20.85	Peak	175.00	101.24	
7215.00	46.26	H	53.97	-7.71	Avg	175.00	101.24	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	48.56	H	73.97	-25.41	Peak	211.00	170.10	
4810.00	42.07	H	53.97	-11.90	Avg	211.00	170.10	
7215.00	50.55	H	73.97	-23.42	Peak	317.00	100.00	
7215.00	42.82	H	53.97	-11.15	Avg	317.00	100.00	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4810.00	51.30	H	73.97	-22.68	Peak	268.00	140.13	
4810.00	45.09	H	53.97	-8.88	Avg	268.00	140.13	
7215.00	50.14	H	73.97	-23.83	Peak	258.00	100.00	
7215.00	42.15	H	53.97	-11.82	Avg	258.00	100.00	
9620.00								**No Emissions Detected**
9620.00								
12025.00								**No Emissions Detected**
12025.00								
14430.00								**No Emissions Detected**
14430.00								
16835.00								**No Emissions Detected**
16835.00								
19240.00								**No Emissions Detected**
19240.00								
21645.00								**No Emissions Detected**
21645.00								
24050.00								**No Emissions Detected**
24050.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	49.07	V	73.97	-24.90	Peak	162.00	110.54	
4880.00	42.97	V	53.97	-11.00	Avg	162.00	110.54	
7320.00	52.72	V	73.97	-21.25	Peak	141.75	100.00	
7320.00	45.45	V	53.97	-8.52	Avg	141.75	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	50.16	V	73.97	-23.81	Peak	150.00	225.08	
4880.00	44.14	V	53.97	-9.83	Avg	150.00	225.08	
7320.00	53.86	V	73.97	-20.11	Peak	290.00	100.00	
7320.00	47.68	V	53.97	-6.29	Avg	290.00	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	49.50	V	73.97	-24.48	Peak	245.00	158.00	
4880.00	43.70	V	53.97	-10.27	Avg	245.00	158.00	
7320.00	54.13	V	73.97	-19.84	Peak	188.00	100.00	
7320.00	47.04	V	53.97	-6.93	Avg	188.00	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Manufacturing
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	49.15	H	73.97	-24.82	Peak	263.00	121.98	
4880.00	43.03	H	53.97	-10.94	Avg	263.00	121.98	
7320.00	53.89	H	73.97	-20.08	Peak	141.00	100.00	
7320.00	46.98	H	53.97	-6.99	Avg	141.00	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	47.85	H	73.97	-26.12	Peak	200.00	200.07	
4880.00	41.65	H	53.97	-12.32	Avg	200.00	200.07	
7320.00	53.57	H	73.97	-20.40	Peak	30.00	100.00	
7320.00	46.48	H	53.97	-7.49	Avg	30.00	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4880.00	50.00	H	73.97	-23.97	Peak	266.00	140.07	
4880.00	44.10	H	53.97	-9.87	Avg	266.00	140.07	
7320.00	50.63	H	73.97	-23.34	Peak	245.00	100.00	
7320.00	43.30	H	53.97	-10.67	Avg	245.00	100.00	
9760.00								**No Emissions Detected**
9760.00								
12200.00								**No Emissions Detected**
12200.00								
14640.00								**No Emissions Detected**
14640.00								
17080.00								**No Emissions Detected**
17080.00								
19520.00								**No Emissions Detected**
19520.00								
21960.00								**No Emissions Detected**
21960.00								
24400.00								**No Emissions Detected**
24400.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	48.47	V	73.97	-25.50	Peak	140.00	100.00	
4960.00	43.00	V	53.97	-10.97	Avg	140.00	100.00	
7440.00	51.56	V	73.97	-22.41	Peak	181.00	111.89	
7440.00	44.52	V	53.97	-9.45	Avg	181.00	111.89	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	51.00	V	73.97	-22.97	Peak	149.50	210.04	
4960.00	45.33	V	53.97	-8.64	Avg	149.50	210.04	
7440.00	54.58	V	73.97	-19.39	Peak	182.00	199.00	
7440.00	47.72	V	53.97	-6.25	Avg	182.00	199.00	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	48.09	V	73.97	-25.88	Peak	180.00	142.00	
4960.00	42.34	V	53.97	-11.63	Avg	180.00	142.00	
7440.00	53.94	V	73.97	-20.03	Peak	305.25	100.00	
7440.00	46.92	V	53.97	-7.05	Avg	305.25	100.00	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	50.13	H	73.97	-23.84	Peak	259.00	100.00	
4960.00	44.47	H	53.97	-9.50	Avg	259.00	100.00	
7440.00	53.36	H	73.97	-20.61	Peak	0.00	100.00	
7440.00	46.18	H	53.97	-7.79	Avg	0.00	100.00	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	45.63	H	73.97	-28.34	Peak	218.00	170.00	
4960.00	39.03	H	53.97	-14.94	Avg	218.00	170.00	
7440.00	49.89	H	73.97	-24.08	Peak	10.00	100.00	
7440.00	42.57	H	53.97	-11.40	Avg	10.00	100.00	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

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
4960.00	48.89	H	73.97	-25.08	Peak	238.00	133.80	
4960.00	43.09	H	53.97	-10.88	Avg	238.00	133.80	
7440.00	50.25	H	73.97	-23.72	Peak	119.00	100.00	
7440.00	42.55	H	53.97	-11.42	Avg	119.00	100.00	
9920.00								**No Emissions Detected**
9920.00								
12400.00								**No Emissions Detected**
12400.00								
14880.00								**No Emissions Detected**
14880.00								
17360.00								**No Emissions Detected**
17360.00								
19840.00								**No Emissions Detected**
19840.00								
22320.00								**No Emissions Detected**
22320.00								
24800.00								**No Emissions Detected**
24800.00								

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

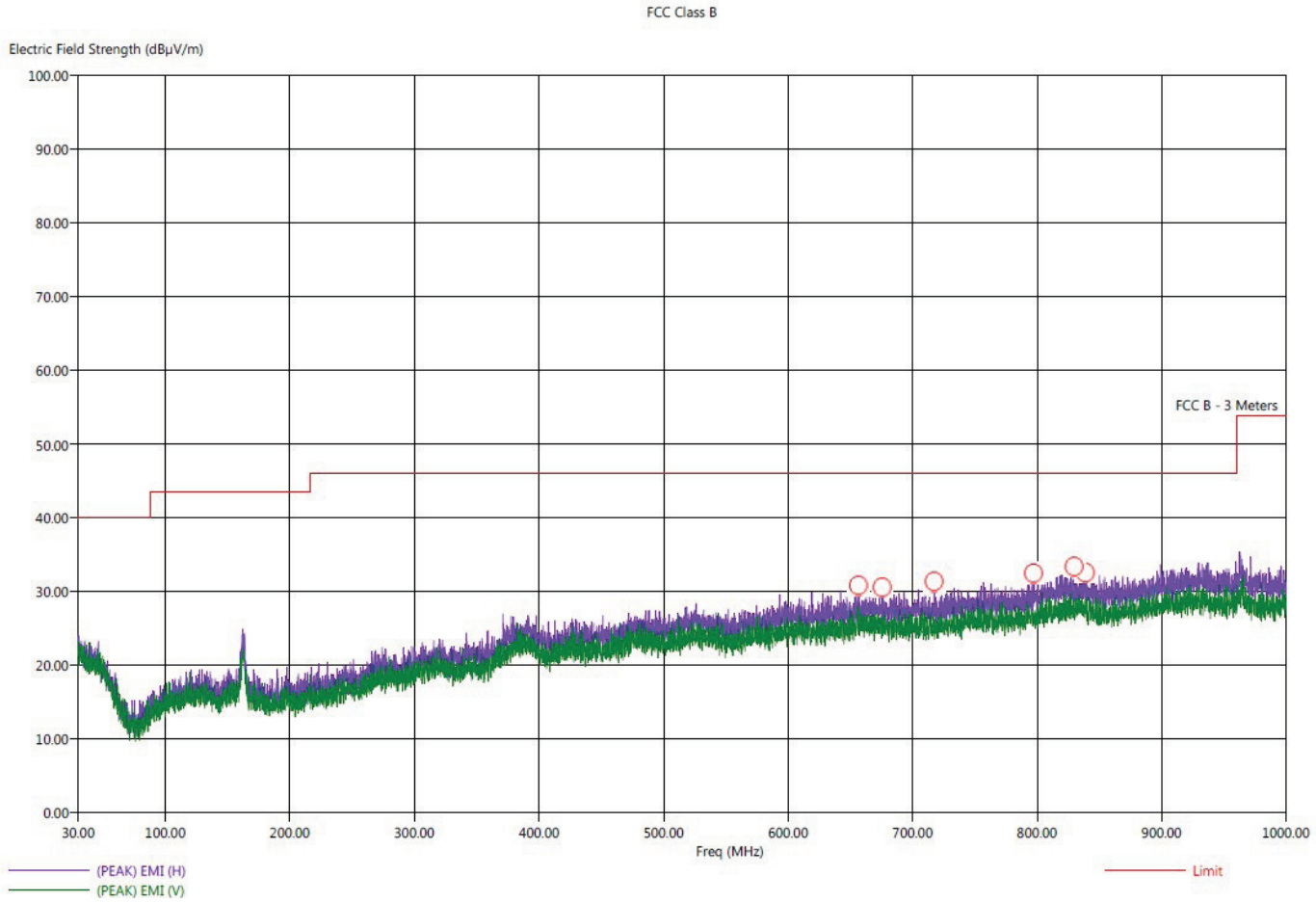
Date: 03/10/2022
Lab: D
Tested By: James Ross

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 9 kHz to 30 MHz
								for the Non-Harmonic Emissions
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the digital portion
								of the EUT
								No Emissions Detected
								from 1 GHz to 25 GHz
								for the Non-Harmonic Emissions
								of the Transmitter for the EUT
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

Title: Pre-Scan - FCC Class B
File: Keysight - Pre-Scan - FCC Class B - 30 MHz to 1000 MHz - 3-11-2022.set
Operator: James Ross
EUT Type: Handheld Remote
EUT Condition: The EUT was transmitting in it's worst case mode (Low Channel & Z-Axis)
Company: American National Mfg.
P/N: 70ICG32001WR
S/N: N/A

3/11/2022 10:16:09 AM
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
File: Keysight - Final Scan - FCC Class B - 30 MHz to 1000 MHz - 3-11-2022.set
Operator: James Ross
EUT Type: Handheld Remote
EUT Condition: The EUT was transmitting in it's worst case mode (Low Channel & Z-Axis)
Company: American National Mfg.
P/N: 70ICG32001WR
S/N: N/A

3/11/2022 10:26:46 AM
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)
656.70	H	30.10	25.06	-15.90	-20.94	46.00	25.60	2.14	286.50	366.40
675.80	H	30.00	25.19	-16.00	-20.81	46.00	25.62	2.17	185.75	238.76
717.40	H	30.19	25.11	-15.81	-20.89	46.00	25.60	2.26	107.00	398.28
797.30	H	32.03	26.58	-13.97	-19.42	46.00	26.60	2.52	109.00	318.46
829.80	H	34.04	27.77	-11.96	-18.23	46.00	27.67	2.55	282.75	143.00
838.90	H	32.95	27.64	-13.05	-18.36	46.00	27.60	2.56	193.50	158.88

BAND EDGES DATA SHEETS

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 03/10/2022
Lab: D
Tested By: James Ross

Band Edges

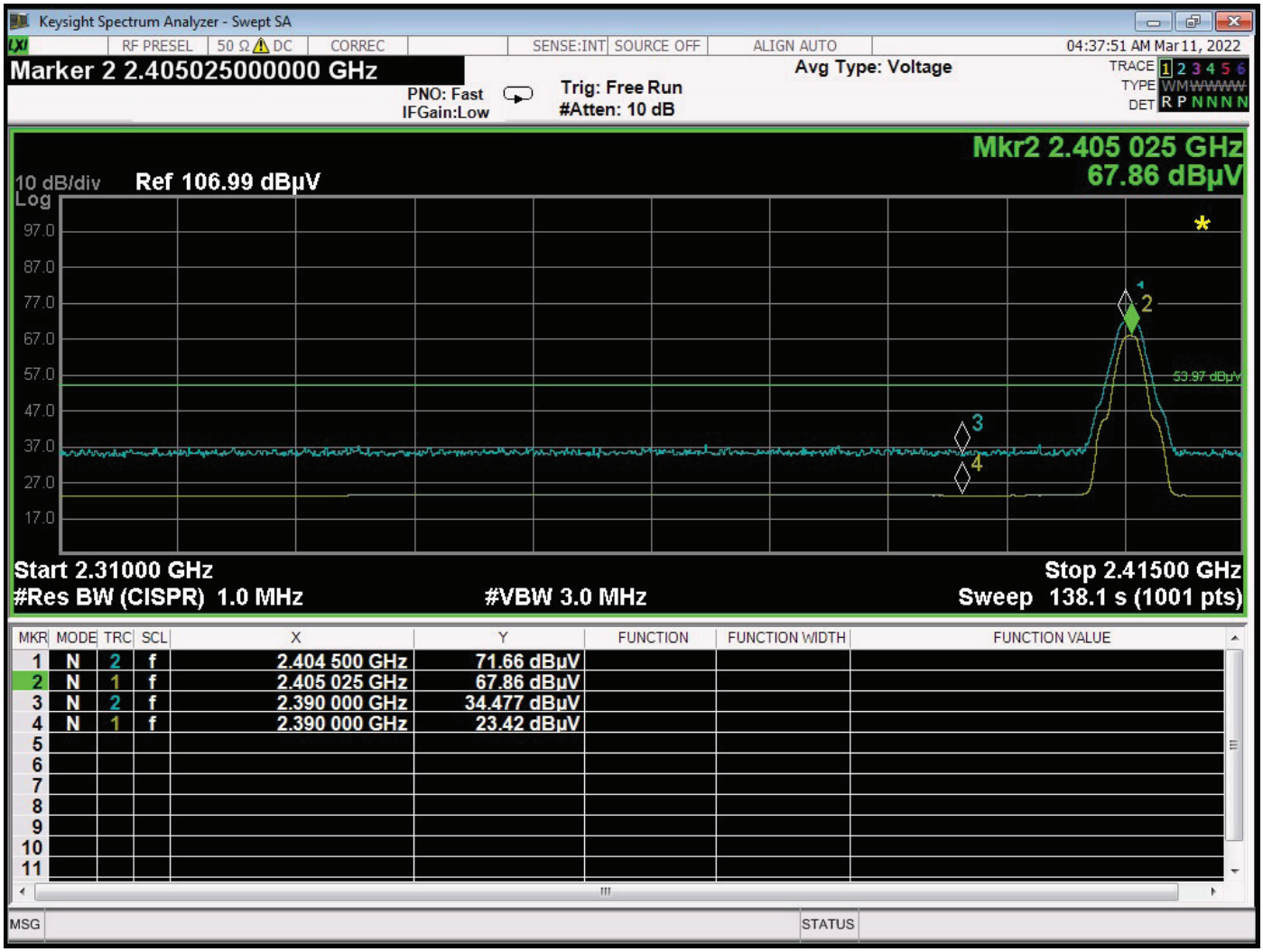
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2405.00	71.66	H	--	--	Peak	50.00	143.05	**Fundamental - Low Ch.**
2405.00	67.86	H	--	--	Avg	50.00	143.05	**Z-Axis Worst Case**
2390.00	34.48	H	73.97	-39.49	Peak	50.00	143.05	**Band Edge**
2390.00	23.42	H	53.97	-30.55	Avg	50.00	143.05	**Z-Axis Worst Case**
2405.00	67.50	V	--	--	Peak	128.00	175.00	**Fundamental - Low Ch.**
2405.00	63.73	V	--	--	Avg	128.00	175.00	**Y-Axis - Worst Case**
2390.00	34.45	V	73.97	-39.52	Peak	128.00	175.00	**Band Edge**
2390.00	23.64	V	53.97	-30.33	Avg	128.00	175.00	**Y-Axis - Worst Case**

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

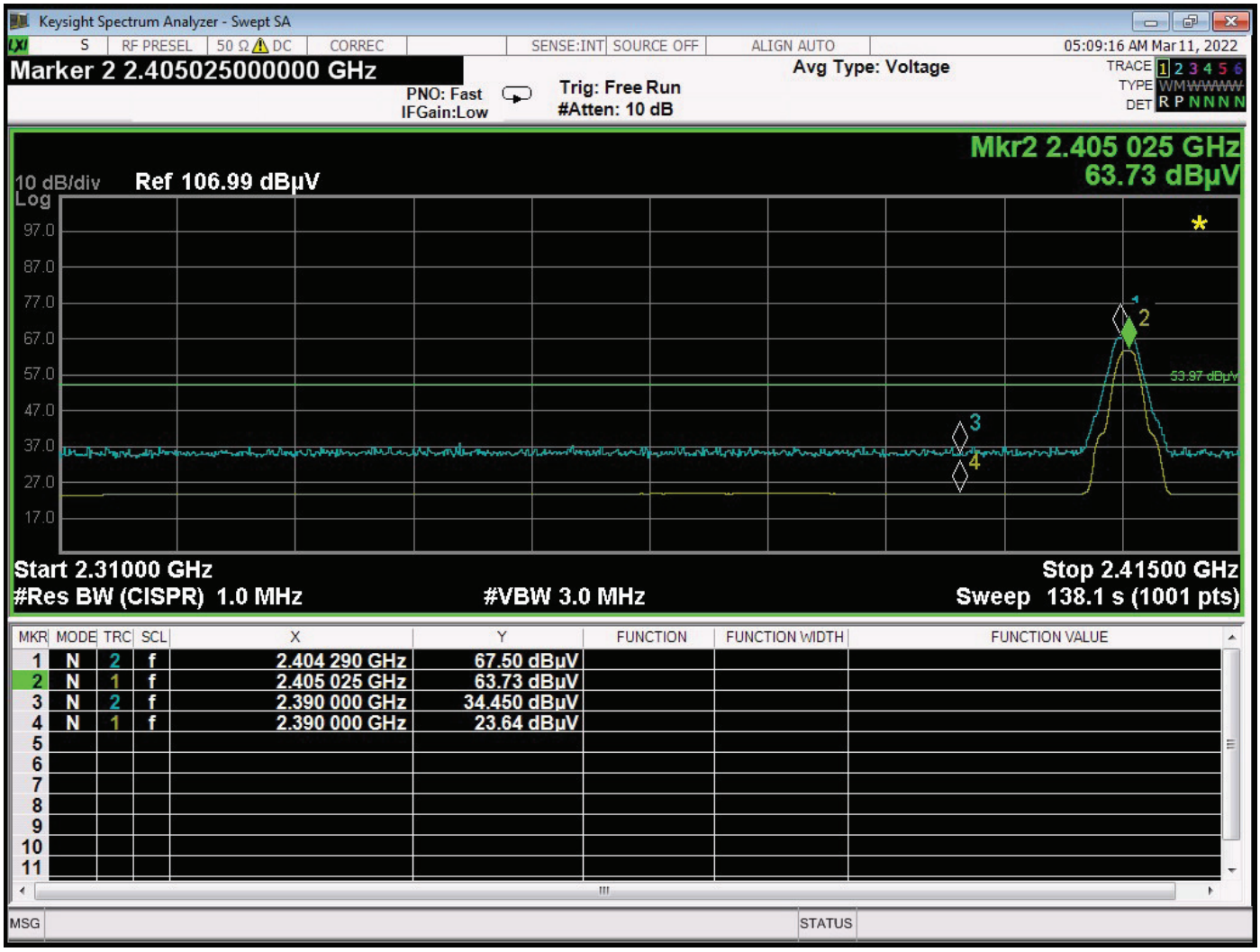
Date: 03/10/2022
Lab: D
Tested By: James Ross

Band Edges

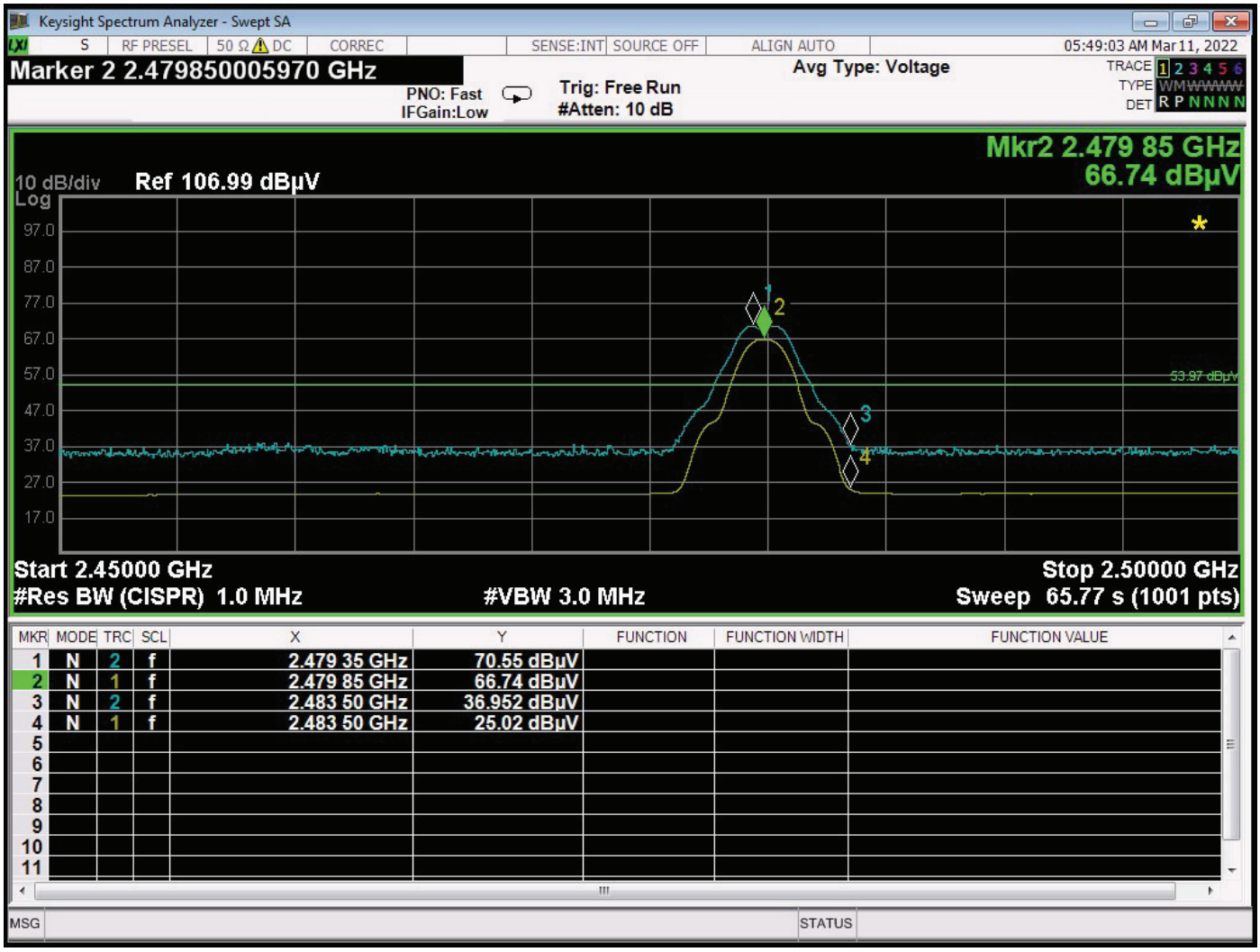
Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	70.55	H	--	--	Peak	51.75	159.95	**Fundamental - High Ch.**
2480.00	66.74	H	--	--	Avg	51.75	159.95	**Z-Axis Worst Case**
2483.50	36.95	H	73.97	-37.02	Peak	51.75	159.95	**Band Edge**
2483.50	25.02	H	53.97	-28.95	Avg	51.75	159.95	**Z-Axis Worst Case**
2480.00	66.80	V	--	--	Peak	150.75	180.73	**Fundamental - High Ch.**
2480.00	62.95	V	--	--	Avg	150.75	180.73	**Y-Axis - Worst Case**
2483.50	36.00	V	73.97	-37.97	Peak	150.75	180.73	**Band Edge**
2483.50	24.19	V	53.97	-29.78	Avg	150.75	180.73	**Y-Axis - Worst Case**



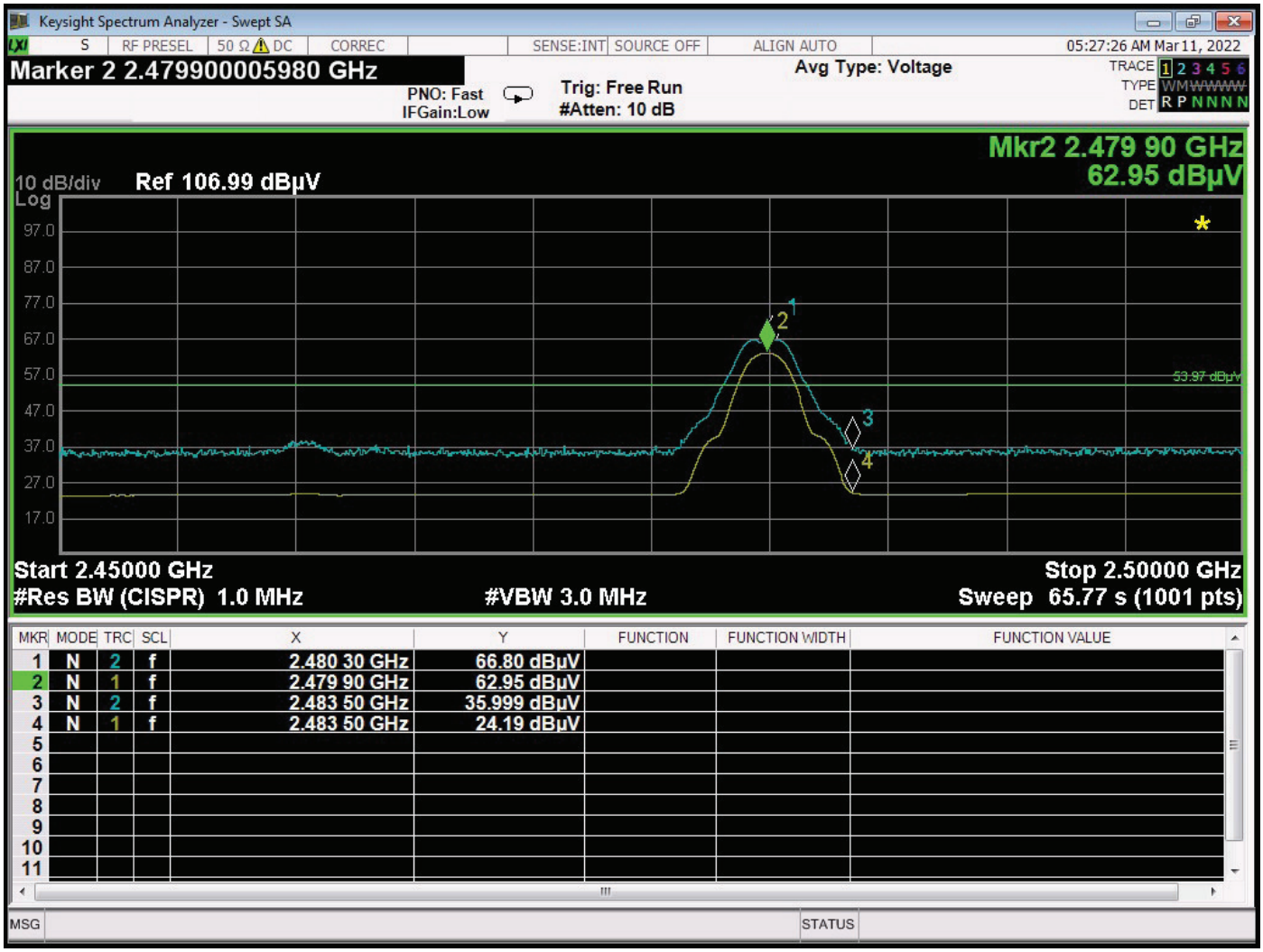
BE - 2405 MHz - Horizontal - Z-Axis Worst Case



BE - 2405 MHz - Vertical - Y-Axis Worst Case

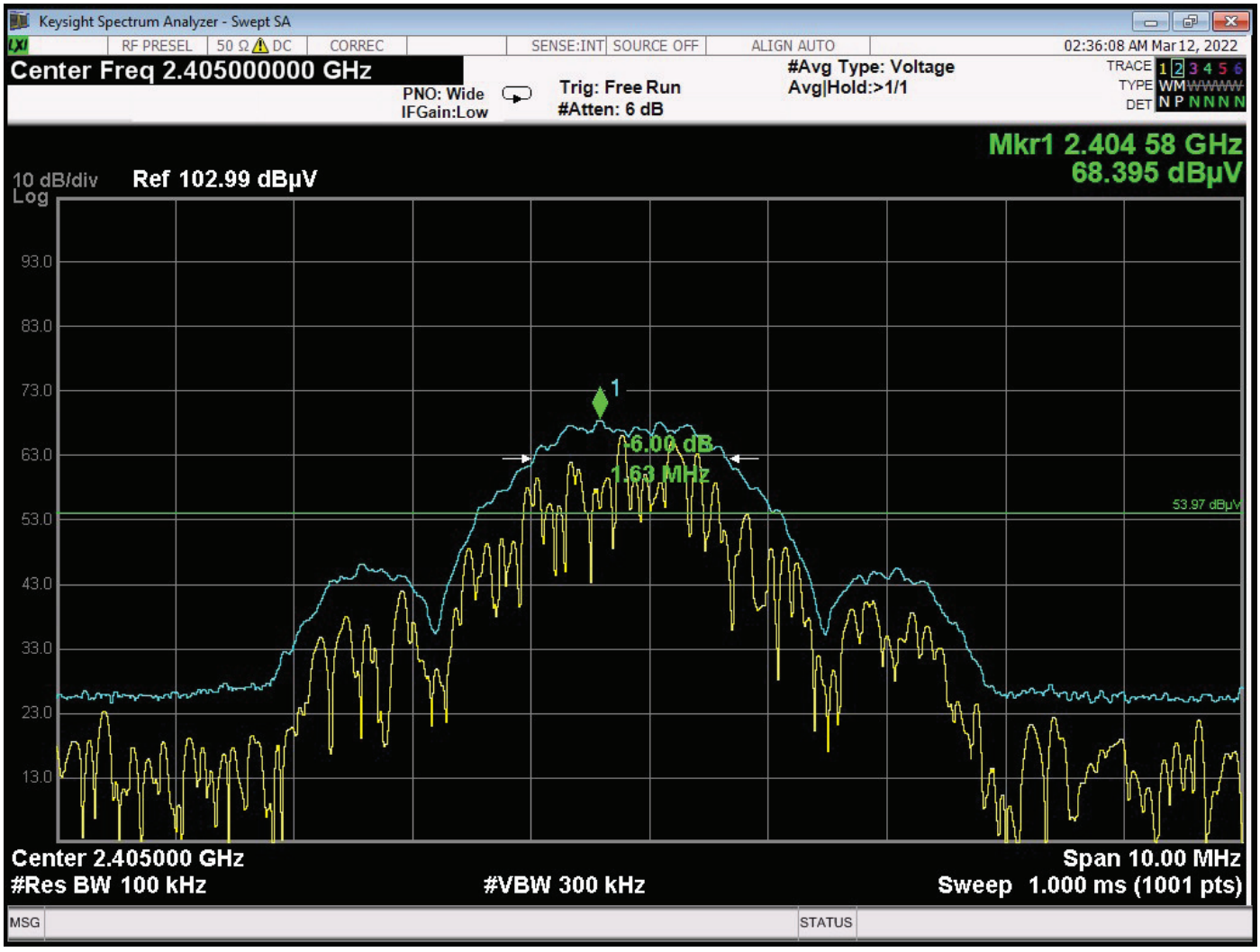


BE - 2480 MHz - Horizontal - Z-Axis Worst Case

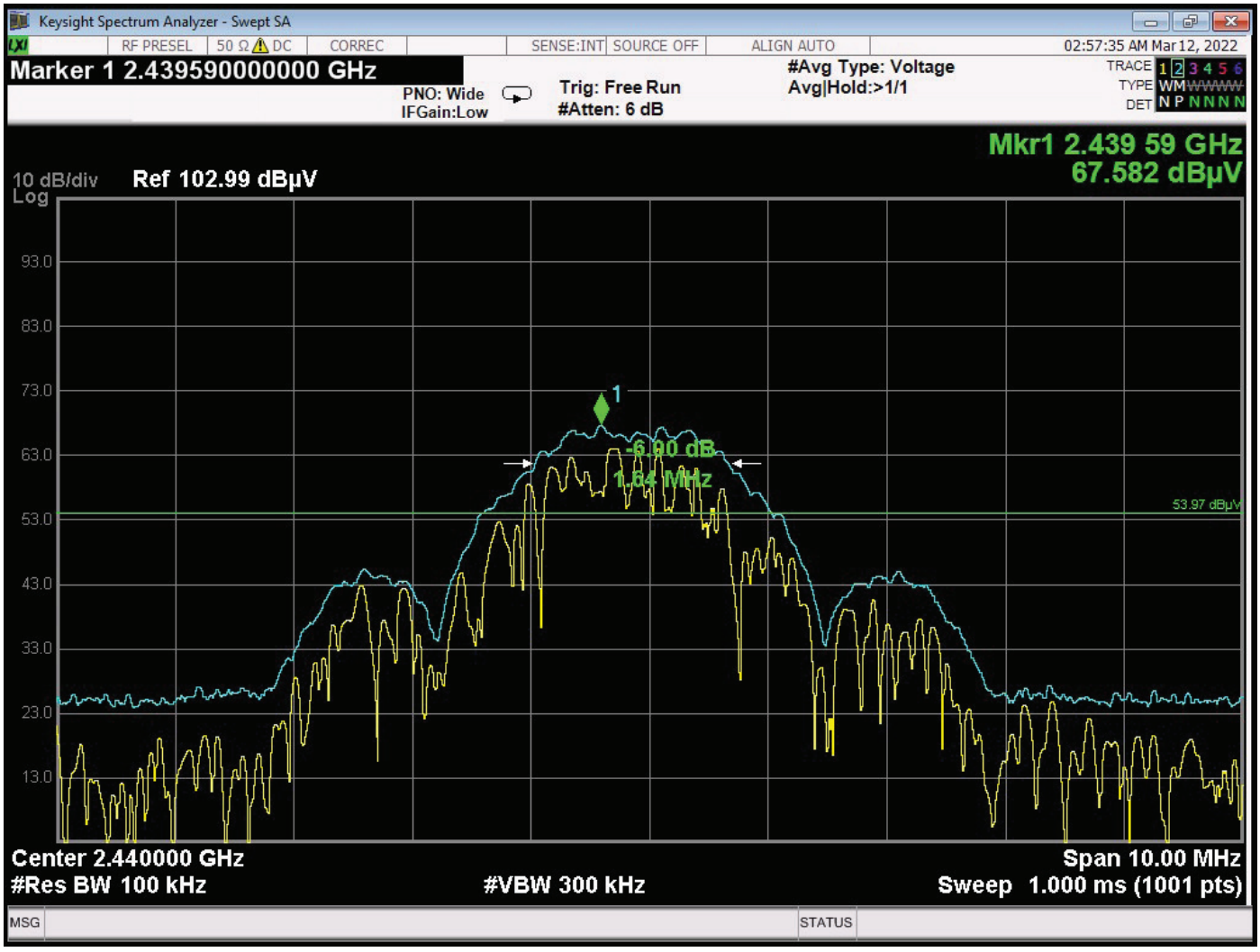


BE - 2480 MHz - Vertical - Y-Axis Worst Case

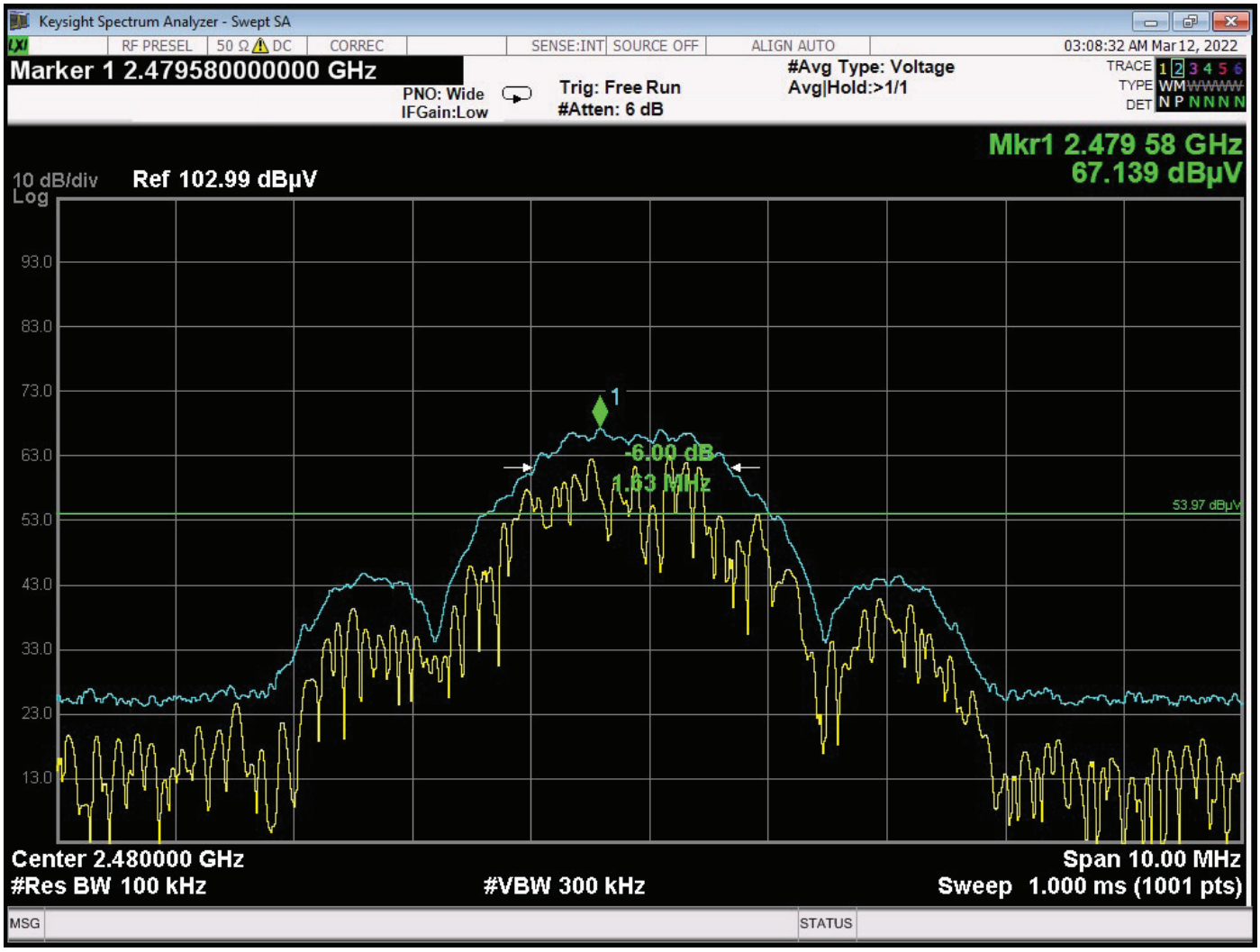
DTS BANDWIDTH DATA SHEETS



Bandwidth 6 dB - 2405 MHz



Bandwidth 6 dB - 2440 MHz



Bandwidth 6 dB - 2480 MHz

PEAK OUTPUT POWER DATA SHEETS

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

Date: 3/10/2022
Lab: D
Tested By: James Ross

Peak Output Power

Freq. (MHz)	Level (dBuV/m)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	Power Output (Watts)	Power Output (mW)	Power Output (dBm)	Limit (dBm)	Margin (dB)	Comments
2405.00	66.69	0.00216	5.3	3.388442	0.00	0.00	-33.84	30.00	-63.84	Vert. X-Axis
2440.00	64.56	0.00169	5.3	3.388442	0.00	0.00	-35.97	30.00	-65.97	Vert. X-Axis
2480.00	63.89	0.00156	5.3	3.388442	0.00	0.00	-36.64	30.00	-66.64	Vert. X-Axis
2405.00	69.86	0.00311	5.3	3.388442	0.00	0.00	-30.67	30.00	-60.67	Vert. Y-Axis
2440.00	67.57	0.00239	5.3	3.388442	0.00	0.00	-32.96	30.00	-62.96	Vert. Y-Axis
2480.00	69.61	0.00302	5.3	3.388442	0.00	0.00	-30.92	30.00	-60.92	Vert. Y-Axis
2405.00	69.00	0.00282	5.3	3.388442	0.00	0.00	-31.53	30.00	-61.53	Vert. Z-Axis
2440.00	68.16	0.00256	5.3	3.388442	0.00	0.00	-32.37	30.00	-62.37	Vert. Z-Axis
2480.00	67.01	0.00224	5.3	3.388442	0.00	0.00	-33.52	30.00	-63.52	Vert. Z-Axis
2405.00	70.77	0.00346	5.3	3.388442	0.00	0.00	-29.76	30.00	-59.76	Horiz. X-Axis
2440.00	69.62	0.00303	5.3	3.388442	0.00	0.00	-30.91	30.00	-60.91	Horiz. X-Axis
2480.00	69.14	0.00286	5.3	3.388442	0.00	0.00	-31.39	30.00	-61.39	Horiz. X-Axis
2405.00	66.96	0.00223	5.3	3.388442	0.00	0.00	-33.57	30.00	-63.57	Horiz. Y-Axis
2440.00	65.21	0.00182	5.3	3.388442	0.00	0.00	-35.32	30.00	-65.32	Horiz. Y-Axis
2480.00	61.80	0.00123	5.3	3.388442	0.00	0.00	-38.73	30.00	-68.73	Horiz. Y-Axis
2405.00	71.82	0.0039	5.3	3.388442	0.00	0.00	-28.71	30.00	-58.71	Horiz. Z-Axis
2440.00	71.17	0.00362	5.3	3.388442	0.00	0.00	-29.36	30.00	-59.36	Horiz. Z-Axis
2480.00	70.35	0.00329	5.3	3.388442	0.00	0.00	-30.18	30.00	-60.18	Horiz. Z-Axis

RBW = 8 MHz, VBW = 50 MHz, Sweep Time = Auto
P = [(E*D)^2 / (30*G)]
P = Power in Watts
E = The Measured Maximum Field Strength in V/m
D = Test Distance in Meters
G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator

SPECTRAL DENSITY OUTPUT DATA SHEETS

FCC 15.247
American National Mfg.
Handheld Remote
P/N: 70ICG32001WR

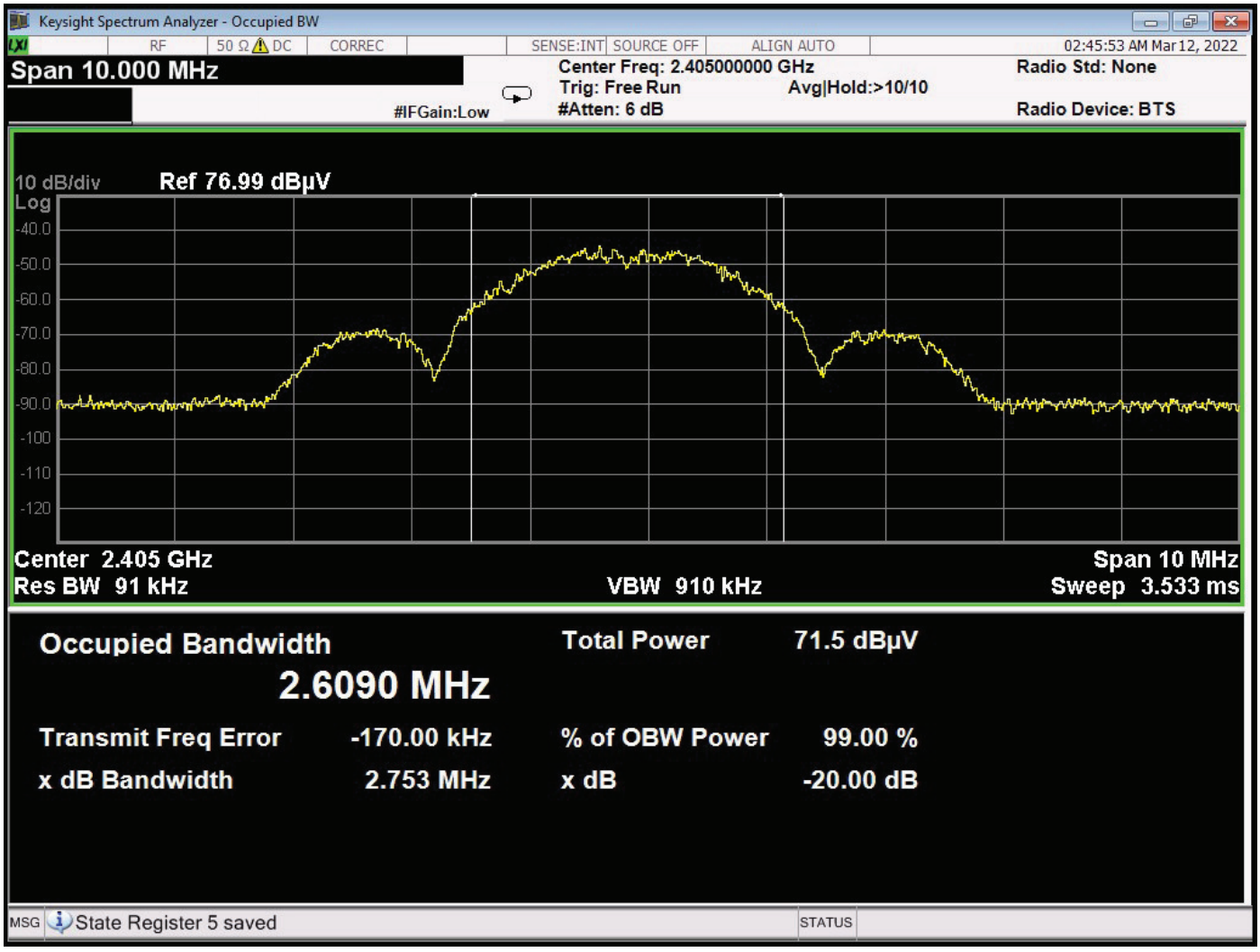
Date: 03/10/2022
Lab: D
Tested By: James Ross

Spectral Density Output

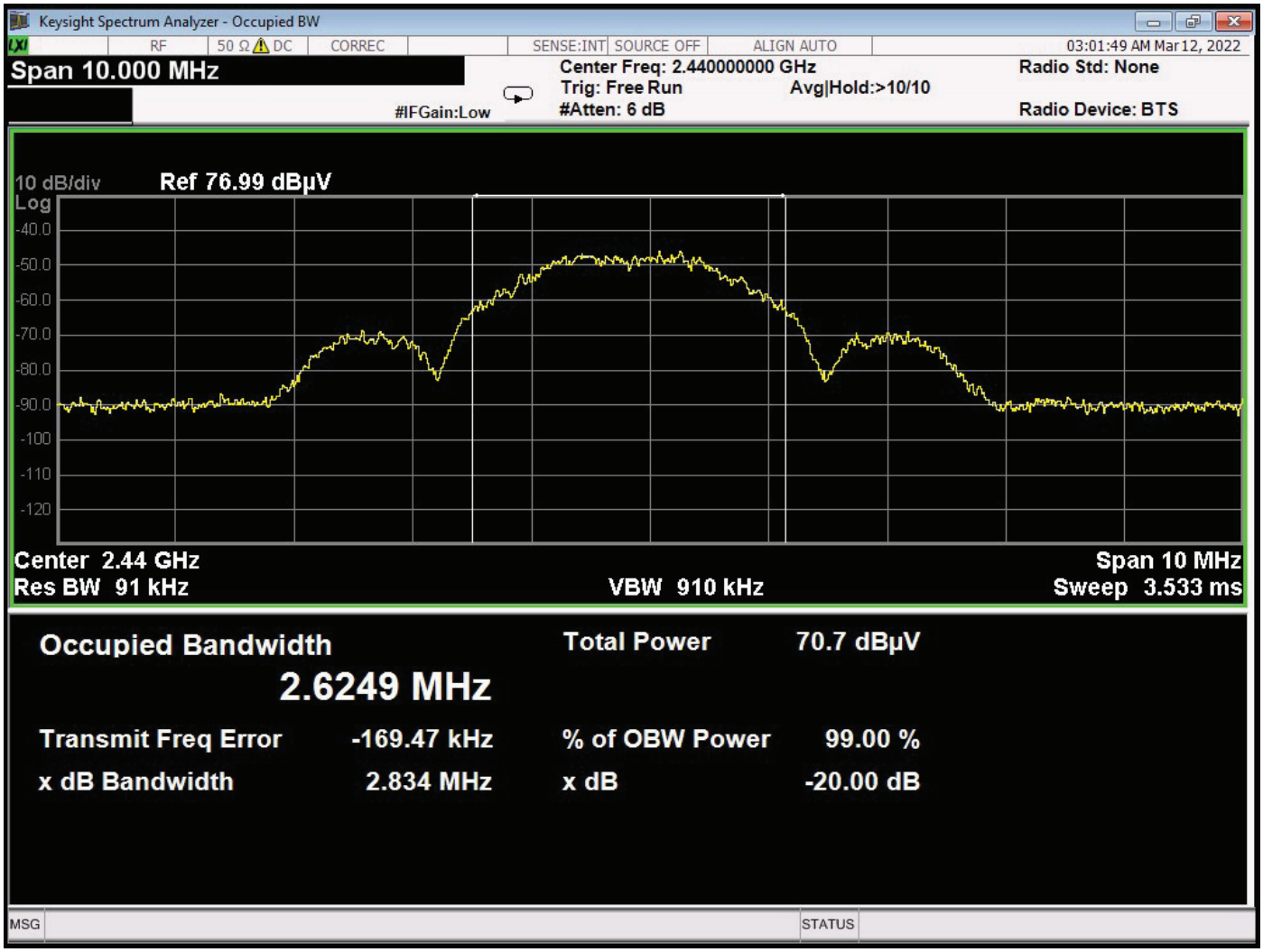
Freq. (MHz)	Level (dBuV/m)	Level (V/m)	Antenna Gain (dBi)	Numeric Gain	PPSD Output (Watts)	PPSD Output (mW)	PPSD Output (dBm)	Limit (dBm)	Margin (dB)	Comments
2405.00	51.93	0.00039	5.3	3.38844	0.00	0.00	-48.60	8.00	-56.60	Vert. X-Axis
2440.00	47.95	0.00025	5.3	3.38844	0.00	0.00	-52.58	8.00	-60.58	Vert. X-Axis
2480.00	47.39	0.00023	5.3	3.38844	0.00	0.00	-53.14	8.00	-61.14	Vert. X-Axis
2405.00	53.43	0.00047	5.3	3.38844	0.00	0.00	-47.10	8.00	-55.10	Vert. Y-Axis
2440.00	53.01	0.00045	5.3	3.38844	0.00	0.00	-47.52	8.00	-55.52	Vert. Y-Axis
2480.00	52.05	0.0004	5.3	3.38844	0.00	0.00	-48.48	8.00	-56.48	Vert. Y-Axis
2405.00	53.39	0.00047	5.3	3.38844	0.00	0.00	-47.14	8.00	-55.14	Vert. Z-Axis
2440.00	51.16	0.00036	5.3	3.38844	0.00	0.00	-49.37	8.00	-57.37	Vert. Z-Axis
2480.00	50.63	0.00034	5.3	3.38844	0.00	0.00	-49.90	8.00	-57.90	Vert. Z-Axis
2405.00	53.99	0.0005	5.3	3.38844	0.00	0.00	-46.54	8.00	-54.54	Horiz. X-Axis
2440.00	53.13	0.00045	5.3	3.38844	0.00	0.00	-47.40	8.00	-55.40	Horiz. X-Axis
2480.00	52.77	0.00044	5.3	3.38844	0.00	0.00	-47.76	8.00	-55.76	Horiz. X-Axis
2405.00	49.81	0.00031	5.3	3.38844	0.00	0.00	-50.72	8.00	-58.72	Horiz. Y-Axis
2440.00	49.01	0.00028	5.3	3.38844	0.00	0.00	-51.52	8.00	-59.52	Horiz. Y-Axis
2480.00	43.52	0.00015	5.3	3.38844	0.00	0.00	-57.01	8.00	-65.01	Horiz. Y-Axis
2405.00	55.13	0.00057	5.3	3.38844	0.00	0.00	-45.40	8.00	-53.40	Horiz. Z-Axis
2440.00	54.99	0.00056	5.3	3.38844	0.00	0.00	-45.54	8.00	-53.54	Horiz. Z-Axis
2480.00	54.73	0.00055	5.3	3.38844	0.00	0.00	-45.80	8.00	-53.80	Horiz. Z-Axis

RBW = 3 kHz, VBW = 10 kHz, Sweep Time = Auto
P = [(E*D)^2 / (30*G)]
P = Power in Watts
E = The Measured Maximum Field Strength in V/m
D = Test Distance in Meters
G = The Numeric Gain of the Transmitting Antenna over an Isotropic Radiator
Limit = +8 dBm

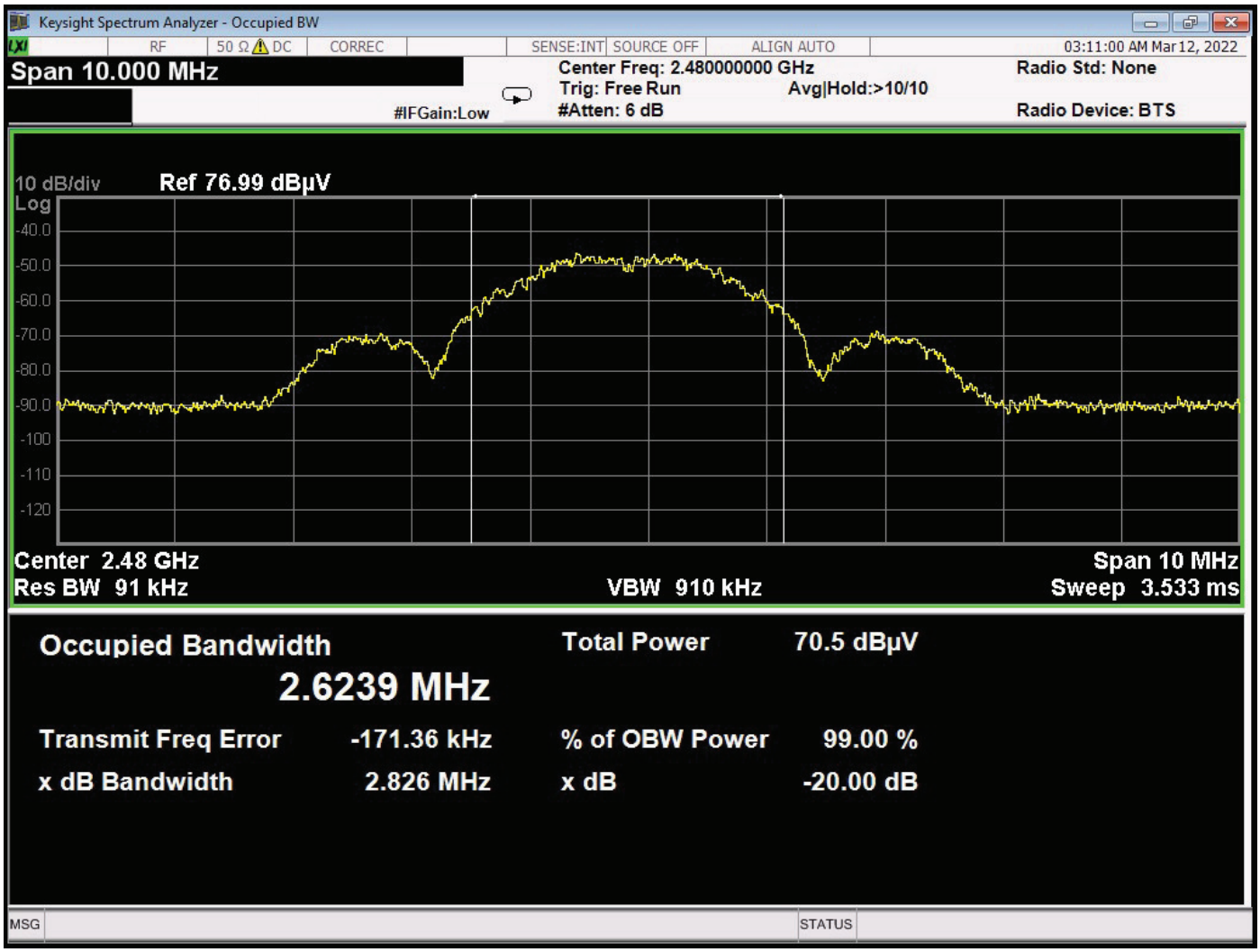
99% BANDWIDTH DATA SHEET


Keysight Spectrum Analyzer - Occupied BW
RF
50 Ω DC
CORREC
SENSE:INT
SOURCE OFF
ALIGN AUTO
02:45:53 AM Mar 12, 2022
Span 10.000 MHz
Center Freq: 2.405000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 6 dB
Radio Std: None
Radio Device: BTS
10 dB/div
Ref 76.99 dBµV
Log
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
Center 2.405 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 3.533 ms
Occupied Bandwidth
2.6090 MHz
Total Power
71.5 dBµV
Transmit Freq Error
-170.00 kHz
% of OBW Power
99.00 %
x dB Bandwidth
2.753 MHz
x dB
-20.00 dB
MSG
State Register 5 saved
STATUS

Low Channel


Keysight Spectrum Analyzer - Occupied BW
RF
50 Ω DC
CORREC
SENSE:INT
SOURCE OFF
ALIGN AUTO
03:01:49 AM Mar 12, 2022
Span 10.000 MHz
Center Freq: 2.440000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 6 dB
Radio Std: None
Radio Device: BTS
10 dB/div
Log
Ref 76.99 dBµV
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
-100
-110
-120
Center 2.44 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 3.533 ms
Occupied Bandwidth
2.6249 MHz
Total Power
70.7 dBµV
Transmit Freq Error
-169.47 kHz
% of OBW Power
99.00 %
x dB Bandwidth
2.834 MHz
x dB
-20.00 dB
MSG
STATUS

Mid Channel



High Channel