FCC PART 15, SUBPART B and C
TEST REPORT

for

BLE/ANT/NFC ULTRA LOW POWER MODULE

MODEL: SRU563

Prepared for

DELPHIAN SYSTEMS, LLC.
975 WEILAND RD, SUITE 150
BUFFALO GROVE, IL 60089

Prepared by:_____

EDGAR VALENCIA

Approved by:_____

KYLE FUJIMOTO

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DATE: OCTOBER 5, 2016

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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NVLAP® TESTING
NVLAP LAB CODE 200528-0

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GENERAL REPORT SUMMARY

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

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested:	BLE/ANT/NFC Ultra Low Power Module Model: SRU563
Serial Number:	N/A
Product Description:	The EUT is an AC powered transceiver module.
Modifications:	The EUT was not modified in order to meet the specifications.
Customer:	Delphian Systems, LLC. 975 Weiland Road, Suite 150 Buffalo Grove, IL 60089
Test Dates:	August 26 and 30, 2016; September 1, 2, and 6, 2016; and October 25, 2016

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 15.249.
Test Procedure:	ANSI C63.4, ANSI C63.10
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 10 kHz – 25000 MHz (Transmitter, Receiver, and Digital portion)	Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.249. Highest reading in relation to spec limit: 39.69 dBuV/m @ 4960 MHz (*U = 4.54 dB)
2	Conducted RF Emissions, AC Lines, 150 kHz – 30 MHz	Complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Section 15.207. Highest reading in relation to spec limit: 48.42 dBuV @ 0.162 MHz (*U = 2.88 dB)

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the BLE/ANT/NFC Ultra Low Power Module, Model: SRU563. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Delphian Systems, LLC.

Gary Myers	Director of Technology

Compatible Electronics Inc.

Edgar Valencia	Lab Technician
Kyle Fujimoto	Test Engineer
James Ross	Test Engineer

2.4 Date Test Sample was Received

The test sample was received on August 26, 2016.

2.5 Disposition of the Test Sample

The test sample has not been returned to Delphian Systems, LLC as of the date of this test report.

2.6 Abbreviations and Acronyms

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

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
LISN	Line Impedance Stabilization Network
N/A	Not Applicable
Tx	Transmit
Rx	Receive

3. APPLICABLE DOCUMENTS

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

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

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The BLE/ANT/NFC Ultra Low Power Module, Model: SRU563 (EUT) was mounted on a host PCB and tested as a stand alone device. The host PCB was connected to a 5-volt power supply via its power port. The NFC and peripheral interconnect were terminated via traces to the host board the EUT was mounted on. The NFC and periperal interconnect were active during the tesing.

The EUT was tested in both BLE and ANT modes.

For configurating the EUT for the intentional radiator portion of the test: The EUT was connected to a laptop that had a program that locked one channel at a time so that the low, middle, and high channels could be tested in both BLE and ANT modes. The EUT was tested in three orthogonal axis. The carrier was modulated in the same way it would be when the EUT was in its normal operating mode.

For configurating the EUT for the unintentional radiator and conducted emission portion of the test: The EUT was connected to a laptop that allowed the EUT to function as per typical normal usage.

Note: The laptop was only connected to the EUT to program the correct configuration and then was removed during the testing.

Note #2: The EUT was tested at the highest setting of +4 dBm.

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

4.1.1 Cable Construction and Termination

Cable 1 This is a 2-meter unshielded cable connecting the host PCB to the 5-volt power supply. The cable was a 1/8 inch power connector at the power supply end and is hard wired into the host PCB.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
BLE/ANT/NFC ULTRA LOW POWER MODULE	DELPHIAN SYSTEMS, LLC.	SRU563	N/A	2AEHJSRU563
HOST PCB	DELPHIAN SYSTEMS, INC.	202_200193_SRH563FCC_01.01.01	N/A	N/A
LAPTOP*	HEWLETT PACKARD	G60-441US	2CE927RF3Q	N/A
POWER SUPPLY	D-LINK	AMS1-0J01200FC	N/A	N/A
TEST SOFTWARE	NORDIC SEMICONDUCTOR	nRFgo STUDIO	V1.21.2.10	N/A

*Only used to program the EUT, the laptop was removed prior to testing.

5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CAL. CYCLE
GENERAL TEST EQUIPMENT USED IN LAB D					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
Computer	Hewlett Packard	p6716f	MXX1030PX0	N/A	N/A
LCD Monitor	Hewlett Packard	52031a	3CQ046N3MG	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Agilent Technologies	N9038A	MY51210150	December 29, 2015	1 Year
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombiLog Antenna	Com-Power	AC-220	61060	September 3, 2015	1 Year
Preamplifier	Com-Power	PAM-118A	551024	May 12, 2016	1 Year
Loop Antenna	Com-Power	AL-130	17089	February 6, 2015	2 Year
Preamplifier	Com-Power	PA-840	711013	May 13, 2016	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Horn Antenna	Com-Power	AH-118	071175	February 26, 2016	2 Year
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
RF CONDUCTED EMISSIONS TEST EQUIPMENT					
LISN	Com-Power	LI-215A	191951	June 9, 2015	2 Year
Transient Limiter	Com-Power	252A910	N/A	October 14, 2015	1 Year
VARIATION OF THE INPUT POWER TEST EQUIPMENT					
Variable Auto Transformer	Staco Energy Products	3PN1010	N/A	N/A	N/A
Multimeter	Fluke	87	58450372	March 17, 2016	1 Year

6. TEST SITE DESCRIPTION

6.1 Test Facility Description

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

6.2 EUT Mounting, Bonding and Grounding

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

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

The EUT was not grounded.

7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

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

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

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

Test Results:

The EUT complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and Subpart C section 15.207 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 with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 10 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 25 GHz).

For frequencies above 1 GHz, the readings were averaged by a "duty cycle correction factor", derived from 20 Log (dwell time /100ms). This duty cycle correction factor was then subtracted from the peak reading.

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, EN 50147-2 and CISPR 22. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 2.0.

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

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Loop Antenna
150 kHz to 30 MHz	9 kHz	Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

Test Results:

The EUT complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209 and 15.249 for radiated emissions.

7.1.3 RF Emissions Test Results

Table 1.0 RADIATED EMISSION RESULTS
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Frequency MHz	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) dB)
2400 (ANT) (H)(X-Axis)	44.66 (AVG)	53.97	-9.31
2400 (BLE) (H) (X-Axis)	44.07 (AVG)	53.97	-9.90
2400 (BLE) (V) (Z-Axis)	43.80 (AVG)	53.97	-10.17
2483.5 (BLE) (V) (Z-Axis)	41.92 (AVG)	53.97	-12.05
2400 (ANT) (H) (X-Axis)	40.46 (AVG)	53.97	-13.51
2483.5 (BLE) (V) (Z-Axis)	40.24 (AVG)	53.97	-13.73

Table 2.0 CONDUCTED EMISSION RESULTS
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Frequency MHz	Average Emission Level* dBuV	Average Specification Limit dBuV	Delta (Spec limit-Emission) dB
0.162 (Neutral)	48.42 (AVG)	65.36	-6.94
0.170 (Line)	47.87 (AVG)	64.96	-7.09
0.194 (Neutral)	46.19 (AVG)	63.36	-7.67
0.198 (Line)	44.99 (AVG)	63.69	-8.71
0.210 (Neutral)	44.37 (AVG)	63.21	-8.83
0.254 (Line)	42.51 (AVG)	61.63	-9.12

Notes:
* The complete emissions data is given in Appendix E of this report.
(V) Vertical
(H) Horizontal
(QP) Quasi-Peak
(AVG) Average
(ANT) ANT Mode
(BLE) BLE Mode

7.2 Fundamental Field Strength (Duty Cycle Calculations)

The Peak Transmit Radiated Field Strength was measured at a 3-meter test distance. The EMI Receiver was used to obtain the duty cycle. The data sheets are located in Appendix E.

Where

$$\delta(\mathrm{dB}) = 20\log\left[\sum\left(nt_1 + mt_2 + \ldots + \xi t_x\right)/T\right]$$

n is the number of pulses of duration *t*1
m is the number of pulses of duration *t*2
ξ is the number of pulses of duration *tx*
T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

The EUT was investigated in both ANT and BLE modes. Also, for the BLE mode, the advertising and data mode was both investigated. See Appendix E for more details and the calculations.

All of the configurations and modes were less than 10%, thus the maximum -20 dB peak to average ratio could be utilized.

7.3 Variation of the Input Power

The variation of the input power test was performed using the EMI Receiver. The EUT input power was varied between 85% and 115% of the nominal rated supply voltage. The carrier frequency was monitored for any change in amplitude.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.31(e).

8. CONCLUSIONS

The BLE/ANT/NFC Ultra Low Power Module, Model: SRU563, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.

APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

LABORATORY ACCREDITATIONS AND RECOGNITIONS

NVLAP TESTING
NVLAP LAB CODE 200528-0

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

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

ANSI listing CETCB

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

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

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

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

FCC Listing, from FCC OET site
FCC test lab search https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.249 specifications.

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

No modifications were made to the EUT during the testing.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
S/N: N/A

There are no additional models covered under this report.

APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

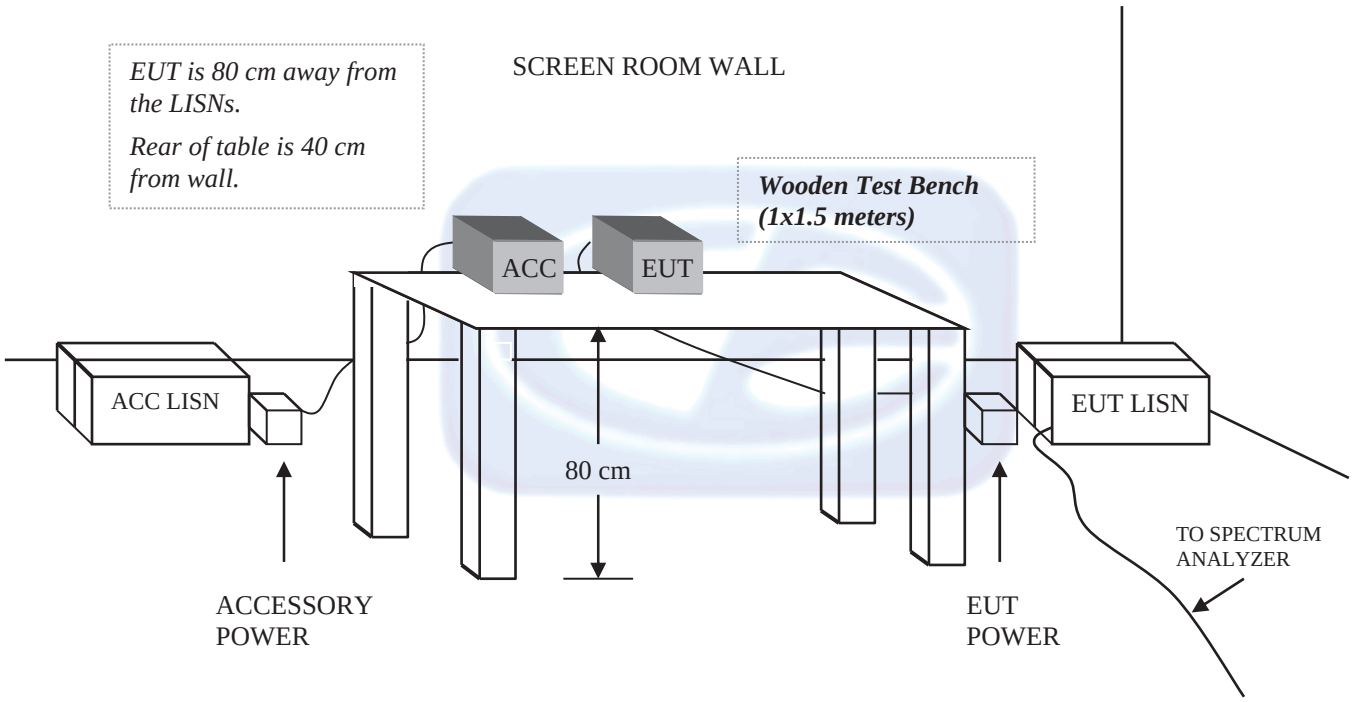
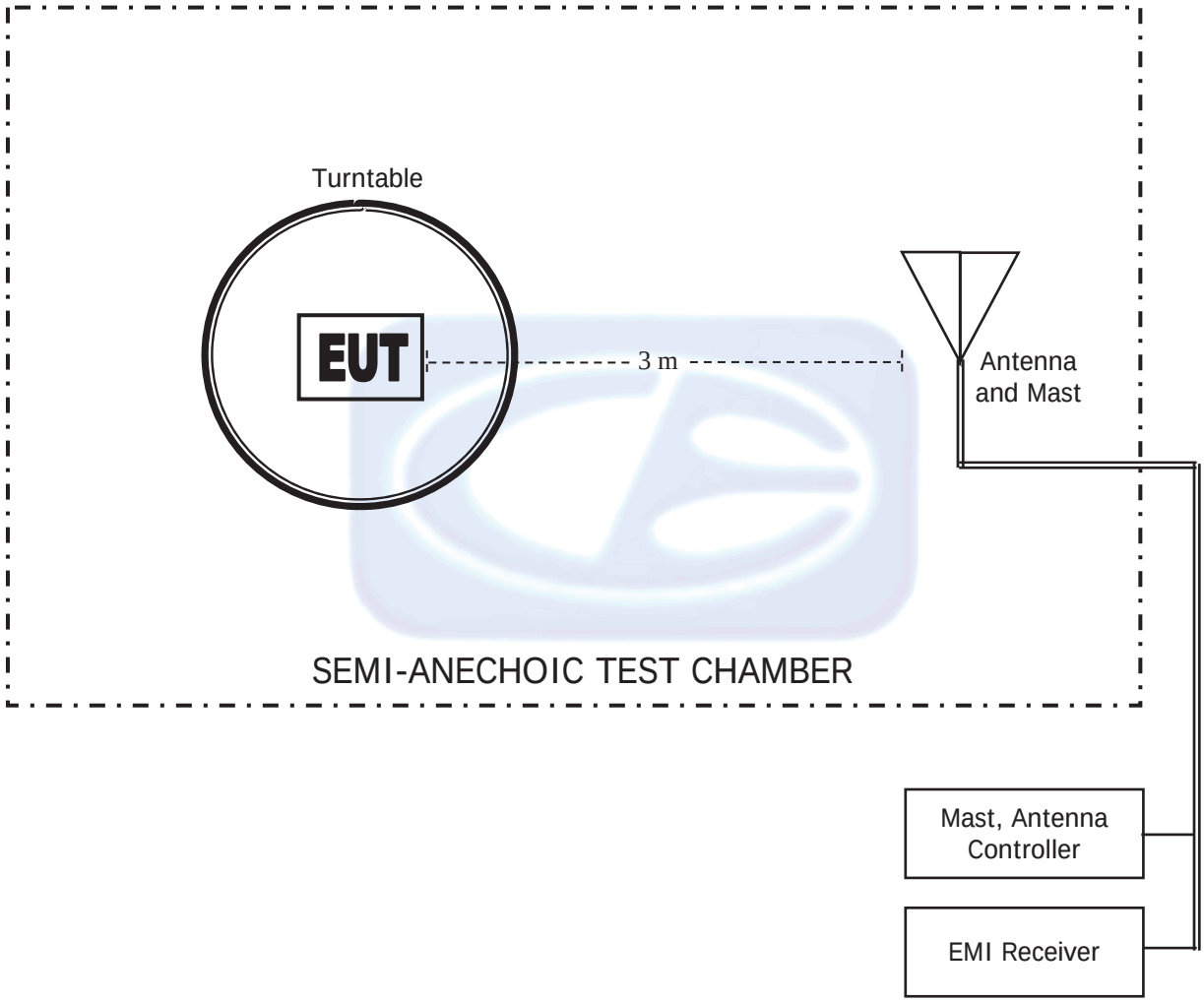


FIGURE 2: LAYOUT OF THE SEMI-ANECHOIC TEST CHAMBER



COM-POWER AL-130

LOOP ANTENNA

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

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

COM-POWER AC-220

COMBILOG ANTENNA

S/N: 61060

CALIBRATION DATE: SEPTEMBER 3, 2015

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

COM POWER AH-118

HORN ANTENNA

S/N: 071175

CALIBRATION DATE: FEBRUARY 26, 2016

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

COM-POWER PA-118

PREAMPLIFIER

S/N: 551024

CALIBRATION DATE: MAY 12, 2016

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

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 PA-840

MICROWAVE PREAMPLIFIER

S/N: 711013

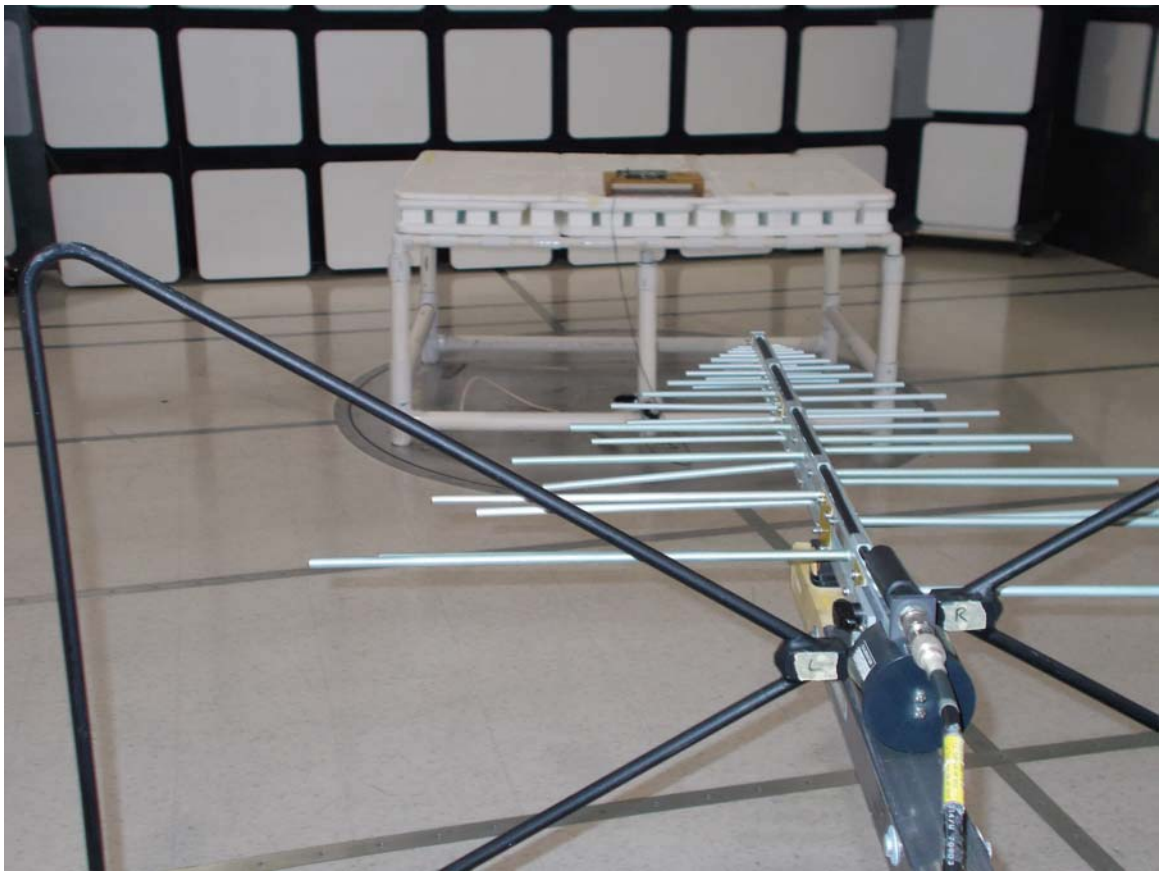
CALIBRATION DATE: MAY 13, 2016

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	25.19	31.0	25.69
19.0	24.48	31.5	25.74
20.0	24.39	32.0	26.35
21.0	24.73	32.5	26.64
22.0	23.49	33.0	25.98
23.0	24.23	33.5	24.68
24.0	24.59	34.0	24.61
25.0	25.32	34.5	23.78
26.0	25.66	35.0	24.74
26.5	25.99	35.5	24.39
27.0	26.26	36.0	23.46
27.5	25.33	36.5	23.71
28.0	24.49	37.0	26.35
28.5	24.74	37.5	23.49
29.0	25.93	38.0	25.42
29.5	26.28	38.5	24.87
30.0	26.17	39.0	22.60
30.5	26.11	39.5	20.57
		40.0	19.15

FRONT VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

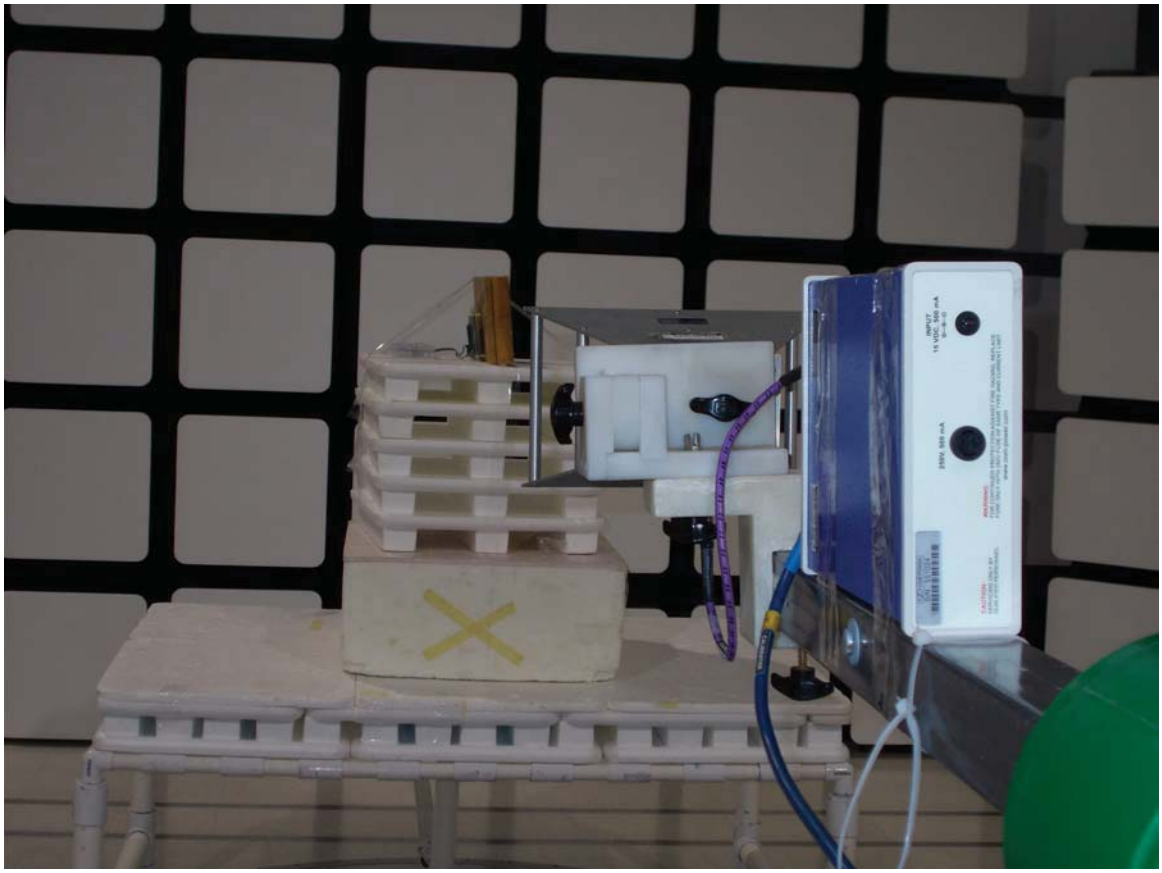
PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



REAR VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS



FRONT VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

FRONT VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

DELPHIAN SYSTEMS, LLC.
BLE/ANT/NFC ULTRA LOW POWER MODULE
MODEL: SRU563
FCC SUBPART B AND C – CONDUCTED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS DATA SHEETS

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	86.71	V	113.97	-27.26	Peak	135.75	226.83	**X-Axis**
2402.00	66.71	V	93.97	-27.26	Avg	135.75	226.83	**Vertical Polarization**
2402.00	94.96	H	113.97	-19.01	Peak	347.00	129.94	**X-Axis**
2402.00	74.96	H	93.97	-19.01	Avg	347.00	129.94	**Horizontal Polarization**
2402.00	88.19	V	113.97	-25.78	Peak	355.00	180.14	**Y-Axis**
2402.00	68.19	V	93.97	-25.78	Avg	355.00	180.14	**Vertical Polarization**
2402.00	94.22	H	113.97	-19.75	Peak	70.50	136.80	**Y-Axis**
2402.00	74.22	H	93.97	-19.75	Avg	70.50	136.80	**Horizontal Polarization**
2402.00	95.05	V	113.97	-18.92	Peak	354.50	186.23	**Z-Axis**
2402.00	75.05	V	93.97	-18.92	Avg	354.50	186.23	**Vertical Polarization**
2402.00	82.55	H	113.97	-31.42	Peak	100.00	124.02	**Z-Axis**
2402.00	62.55	H	93.97	-31.42	Avg	100.00	124.02	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel

Date: 08/26/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2440.00	72.03	V	113.97	-41.94	Peak	124.00	222.89	**X-Axis**
2440.00	52.03	V	93.97	-41.94	Avg	124.00	222.89	**Vertical Polarization**
2440.00	92.47	H	113.97	-21.50	Peak	359.50	206.95	**X-Axis**
2440.00	72.47	H	93.97	-21.50	Avg	359.50	206.95	**Horizontal Polarization**
2440.00	93.28	V	113.97	-20.69	Peak	50.25	174.11	**Y-Axis**
2440.00	73.28	V	93.97	-20.69	Avg	50.25	174.11	**Vertical Polarization**
2440.00	94.14	H	113.97	-19.83	Peak	347.00	206.89	**Y-Axis**
2440.00	74.14	H	93.97	-19.83	Avg	347.00	206.89	**Horizontal Polarization**
2440.00	97.13	V	113.97	-16.84	Peak	270.50	175.25	**Z-Axis**
2440.00	77.13	V	93.97	-16.84	Avg	270.50	175.25	**Vertical Polarization**
2440.00	76.63	H	113.97	-37.34	Peak	7.75	223.67	**Z-Axis**
2440.00	56.63	H	93.97	-37.34	Avg	7.75	223.67	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel

Date: 08/26/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	87.80	V	113.97	-26.18	Peak	33.25	233.40	**X-Axis**
2480.00	67.80	V	93.97	-26.18	Avg	33.25	233.40	**Vertical Polarization**
2480.00	97.18	H	113.97	-16.79	Peak	8.00	148.56	**X-Axis**
2480.00	77.18	H	93.97	-16.79	Avg	8.00	148.56	**Horizontal Polarization**
2480.00	94.54	V	113.97	-19.43	Peak	238.00	152.98	**Y-Axis**
2480.00	74.54	V	93.97	-19.43	Avg	238.00	152.98	**Vertical Polarization**
2480.00	96.88	H	113.97	-17.09	Peak	325.00	172.14	**Y-Axis**
2480.00	76.88	H	93.97	-17.09	Avg	325.00	172.14	**Horizontal Polarization**
2480.00	98.76	V	113.97	-15.21	Peak	204.75	132.98	**Z-Axis**
2480.00	78.76	V	93.97	-15.21	Avg	204.75	132.98	**Vertical Polarization**
2480.00	86.74	H	113.97	-27.23	Peak	240.00	140.08	**Z-Axis**
2480.00	66.74	H	93.97	-27.23	Avg	240.00	140.08	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - X-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	50.50	V	73.97	-23.47	Peak	58.50	143.19	
4804.00	30.50	V	53.97	-23.47	Avg	58.50	143.19	
7206.00	48.24	V	73.97	-25.73	Peak	353.00	249.90	
7206.00	28.24	V	53.97	-25.73	Avg	353.00	249.90	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - Y-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	51.88	V	73.97	-22.09	Peak	166.00	110.35	
4804.00	31.88	V	53.97	-22.09	Avg	166.00	110.35	
7206.00	48.36	V	73.97	-25.61	Peak	318.50	223.13	
7206.00	28.36	V	53.97	-25.61	Avg	318.50	223.13	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - Z-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	51.72	V	73.97	-22.25	Peak	219.00	143.19	
4804.00	31.72	V	53.97	-22.25	Avg	219.00	143.19	
7206.00	47.76	V	73.97	-26.21	Peak	17.75	175.07	
7206.00	27.76	V	53.97	-26.21	Avg	17.75	175.07	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - X-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	50.46	H	73.97	-23.51	Peak	286.00	111.13	
4804.00	30.46	H	53.97	-23.51	Avg	286.00	111.13	
7206.00	48.08	H	73.97	-25.89	Peak	281.50	192.14	
7206.00	28.08	H	53.97	-25.89	Avg	281.50	192.14	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - Y-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	51.01	H	73.97	-22.96	Peak	122.50	223.55	
4804.00	31.01	H	53.97	-22.96	Avg	122.50	223.55	
7206.00	47.96	H	73.97	-26.01	Peak	144.25	127.37	
7206.00	27.96	H	53.97	-26.01	Avg	144.25	127.37	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Low Channel
Transmit Mode - Z-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	52.26	H	73.97	-21.71	Peak	221.50	111.49	
4804.00	32.26	H	53.97	-21.71	Avg	221.50	111.49	
7206.00	48.92	H	73.97	-25.05	Peak	102.50	175.25	
7206.00	28.92	H	53.97	-25.05	Avg	102.50	175.25	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - X-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	51.54	V	73.97	-22.43	Peak	37.50	111.25	
4880.00	31.54	V	53.97	-22.43	Avg	37.50	111.25	
7320.00	48.46	V	73.97	-25.51	Peak	329.50	249.95	
7320.00	28.46	V	53.97	-25.51	Avg	329.50	249.95	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - Y-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.81	V	73.97	-19.16	Peak	146.25	111.31	
4880.00	34.81	V	53.97	-19.16	Avg	146.23	111.31	
7320.00	47.62	V	73.97	-26.35	Peak	263.25	249.58	
7320.00	27.62	V	53.97	-26.35	Avg	263.25	249.58	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - Z-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	52.35	V	73.97	-21.62	Peak	186.00	159.37	
4880.00	32.35	V	53.97	-21.62	Avg	186.00	159.37	
7320.00	47.77	V	73.97	-26.20	Peak	122.75	111.19	
7320.00	27.77	V	53.97	-26.20	Avg	122.75	111.19	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - X-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	51.24	H	73.97	-22.73	Peak	292.00	111.31	
4880.00	31.24	H	53.97	-22.73	Avg	292.00	111.31	
7320.00	47.97	H	73.97	-26.00	Peak	174.75	157.28	
7320.00	27.97	H	53.97	-26.00	Avg	174.75	157.28	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - Y-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.75	H	73.97	-19.22	Peak	203.00	126.00	
4880.00	34.75	H	53.97	-19.22	Avg	203.00	126.00	
7320.00	47.61	H	73.97	-26.36	Peak	165.25	207.07	
7320.00	27.61	H	53.97	-26.36	Avg	165.25	207.07	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Middle Channel
Transmit Mode - Z-Axis

Date: 08/30/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.59	H	73.97	-19.38	Peak	112.00	190.05	
4880.00	34.59	H	53.97	-19.38	Avg	112.00	190.05	
7320.00	49.63	H	73.97	-24.34	Peak	134.00	175.19	
7320.00	29.63	H	53.97	-24.34	Avg	134.00	175.19	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - X-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.65	V	73.97	-16.32	Peak	145.00	168.98	
4960.00	37.65	V	53.97	-16.32	Avg	145.00	168.98	
7440.00	48.79	V	73.97	-25.18	Peak	355.00	225.00	
7440.00	28.79	V	53.97	-25.18	Avg	355.00	225.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - Y-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	55.62	V	73.97	-18.35	Peak	242.00	116.08	
4960.00	35.62	V	53.97	-18.35	Avg	242.00	116.08	
7440.00	50.58	V	73.97	-23.39	Peak	240.00	202.00	
7440.00	30.58	V	53.97	-23.39	Avg	240.00	202.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - Z-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	55.96	V	73.97	-18.01	Peak	239.50	122.00	
4960.00	35.96	V	53.97	-18.01	Avg	239.50	122.00	
7440.00	48.48	V	73.97	-25.49	Peak	229.00	232.26	
7440.00	28.48	V	53.97	-25.49	Avg	229.00	232.26	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - X-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	50.40	H	73.97	-23.57	Peak	223.00	100.00	
4960.00	30.43	H	53.97	-23.54	Avg	223.00	100.00	
7440.00	47.27	H	73.97	-26.71	Peak	312.00	191.91	
7440.00	27.27	H	53.97	-26.71	Avg	312.00	191.91	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - Y-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	59.02	H	73.97	-14.95	Peak	311.00	100.00	
4960.00	39.02	H	53.97	-14.95	Avg	311.00	100.00	
7440.00	47.96	H	73.97	-26.01	Peak	190.00	205.00	
7440.00	27.96	H	53.97	-26.01	Avg	190.00	205.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode - Z-Axis

Date: 09/01/2016
Lab: D
Tested By: Kyle Fujimoto

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.67	H	73.97	-16.30	Peak	235.00	175.13	
4960.00	37.67	H	53.97	-16.30	Avg	235.00	175.13	
7440.00	49.64	H	73.97	-24.33	Peak	277.00	144.00	
7440.00	29.64	H	53.97	-24.33	Avg	277.00	144.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
High Channel
Transmit Mode

Date: 09/02/2016
Lab: D
Tested By: James Ross

Non Harmonic Emissions from the Tx and Digital Portion -- 10 kHz to 25000 MHz
Vertical and Horizontal Polarizations

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
								No Emissions Found for the
								Digital Portion
								from 10 kHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 10 kHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Low Channel

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	85.11	V	113.97	-28.86	Peak	130.00	229.82	**X-Axis**
2402.00	65.11	V	93.97	-28.86	Avg	130.00	229.82	**Vertical Polarization**
2402.00	94.86	H	113.97	-19.11	Peak	349.00	118.89	**X-Axis**
2402.00	74.86	H	93.97	-19.11	Avg	349.00	118.89	**Horizontal Polarization**
2402.00	87.12	V	113.97	-26.85	Peak	149.00	213.88	**Y-Axis**
2402.00	67.12	V	93.97	-26.85	Avg	149.00	213.88	**Vertical Polarization**
2402.00	93.47	H	113.97	-20.50	Peak	75.00	121.76	**Y-Axis**
2402.00	73.47	H	93.97	-20.50	Avg	75.00	121.76	**Horizontal Polarization**
2402.00	94.27	V	113.97	-19.70	Peak	80.25	184.8	**Z-Axis**
2402.00	74.27	V	93.97	-19.70	Avg	80.25	184.8	**Vertical Polarization**
2402.00	85.49	H	113.97	-28.48	Peak	206.25	242.71	**Z-Axis**
2402.00	65.49	H	93.97	-28.48	Avg	206.25	242.71	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Middle Channel

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2440.00	88.66	V	113.97	-25.32	Peak	120.00	242.00	**X-Axis**
2440.00	68.66	V	93.97	-25.32	Avg	120.00	242.00	**Vertical Polarization**
2440.00	96.88	H	113.97	-17.09	Peak	359.50	128.14	**X-Axis**
2440.00	76.88	H	93.97	-17.09	Avg	359.50	128.14	**Horizontal Polarization**
2440.00	92.62	V	113.97	-21.35	Peak	355.00	146.29	**Y-Axis**
2440.00	72.62	V	93.97	-21.35	Avg	355.00	146.29	**Vertical Polarization**
2440.00	96.07	H	113.97	-17.90	Peak	81.00	130.00	**Y-Axis**
2440.00	76.07	H	93.97	-17.90	Avg	81.00	130.00	**Horizontal Polarization**
2440.00	96.41	V	113.97	-17.56	Peak	90.00	155.00	**Z-Axis**
2440.00	76.41	V	93.97	-17.56	Avg	90.00	155.00	**Vertical Polarization**
2440.00	86.53	H	113.97	-27.44	Peak	110.00	241.70	**Z-Axis**
2440.00	66.53	H	93.97	-27.44	Avg	110.00	241.70	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
High Channel

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	88.23	V	113.97	-25.74	Peak	97.50	231.49	**X-Axis**
2480.00	68.23	V	93.97	-25.74	Avg	97.50	231.49	**Vertical Polarization**
2480.00	97.13	H	113.97	-16.84	Peak	5.00	128.02	**X-Axis**
2480.00	77.13	H	93.97	-16.84	Avg	5.00	128.02	**Horizontal Polarization**
2480.00	93.59	V	113.97	-20.38	Peak	359.00	154.65	**Y-Axis**
2480.00	73.59	V	93.97	-20.38	Avg	359.00	154.65	**Vertical Polarization**
2480.00	97.11	H	113.97	-16.86	Peak	84.75	104.56	**Y-Axis**
2480.00	77.11	H	93.97	-16.86	Avg	84.75	104.56	**Horizontal Polarization**
2480.00	99.03	V	113.97	-14.94	Peak	5.00	199.91	**Z-Axis**
2480.00	79.03	V	93.97	-14.94	Avg	5.00	199.91	**Vertical Polarization**
2480.00	86.88	H	113.97	-27.09	Peak	99.91	100.38	**Z-Axis**
2480.00	66.88	H	93.97	-27.09	Avg	99.91	100.38	**Horizontal Polarization**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Low Channel
Transmit Mode - X-Axis

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.80	V	73.97	-20.18	Peak	114.50	162.00	
4804.00	33.80	V	53.97	-20.18	Avg	114.50	162.00	
7206.00	48.40	V	73.97	-25.57	Peak	179.75	202.11	
7206.00	28.40	V	53.97	-25.57	Avg	179.75	202.11	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Low Channel
Transmit Mode - Y-Axis

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	53.80	V	73.97	-20.17	Peak	229.75	100.00	
4804.00	33.80	V	53.97	-20.17	Avg	229.75	100.00	
7206.00	49.37	V	73.97	-24.60	Peak	250.25	123.85	
7206.00	29.37	V	53.97	-24.60	Avg	250.25	123.85	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Low Channel
Transmit Mode - Z-Axis

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	49.87	V	73.97	-24.10	Peak	291.00	144.80	
4804.00	29.87	V	53.97	-24.10	Avg	291.00	144.80	
7206.00	48.74	V	73.97	-25.23	Peak	225.25	134.23	
7206.00	28.74	V	53.97	-25.23	Avg	225.25	134.23	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Low Channel
Transmit Mode - X-Axis

Date: 09/02/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	50.32	H	73.97	-23.65	Peak	298.75	143.91	
4804.00	30.32	H	53.97	-23.65	Avg	298.75	143.91	
7206.00	48.17	H	73.97	-25.80	Peak	117.00	113.58	
7206.00	28.17	H	53.97	-25.80	Avg	117.00	113.58	
9608.00								**No Emissions**
9608.00								**Detected**
12010.00								**No Emissions**
12010.00								**Detected**
14412.00								**No Emissions**
14412.00								**Detected**
16814.00								**No Emissions**
16814.00								**Detected**
19216.00								**No Emissions**
19216.00								**Detected**
21618.00								**No Emissions**
21618.00								**Detected**
24020.00								**No Emissions**
24020.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 08/30/2016
Lab: D
Tested By: James Ross

BLE Mode
Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	54.92	V	73.97	-19.05	Peak	221.00	155.00	
4880.00	34.92	V	53.97	-19.05	Avg	221.00	155.00	
7320.00	48.70	V	73.97	-25.27	Peak	353.00	100.00	
7320.00	28.70	V	53.97	-25.27	Avg	353.00	100.00	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 08/30/2016
Lab: D
Tested By: James Ross

BLE Mode
Middle Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	53.55	V	73.97	-20.42	Peak	225.00	170.00	
4880.00	33.55	V	53.97	-20.42	Avg	225.00	170.00	
7320.00	47.12	V	73.97	-26.85	Peak	90.00	110.00	
7320.00	27.12	V	53.97	-26.85	Avg	90.00	110.00	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 08/30/2016
Lab: D
Tested By: James Ross

BLE Mode
Middle Channel
Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	52.66	H	73.97	-21.31	Peak	291.00	111.00	
4880.00	32.66	H	53.97	-21.31	Avg	291.00	111.00	
7320.00	47.47	H	73.97	-26.50	Peak	185.00	157.00	
7320.00	27.47	H	53.97	-26.50	Avg	175.00	157.00	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 08/30/2016
Lab: D
Tested By: James Ross

BLE Mode
Middle Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	55.33	H	73.97	-18.64	Peak	280.00	164.80	
4880.00	35.33	H	53.97	-18.64	Avg	280.00	164.80	
7320.00	47.01	H	73.97	-26.96	Peak	69.00	100.00	
7320.00	27.01	H	53.97	-26.96	Avg	69.00	100.00	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
Middle Channel
Transmit Mode - Z-Axis

Date: 08/30/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4880.00	53.99	H	73.97	-19.98	Peak	210.00	168.00	
4880.00	33.99	H	53.97	-19.98	Avg	210.00	168.00	
7320.00	49.12	H	73.97	-24.85	Peak	145.00	220.00	
7320.00	29.12	H	53.97	-24.85	Avg	145.00	220.00	
9760.00								**No Emissions**
9760.00								**Detected**
12200.00								**No Emissions**
12200.00								**Detected**
14640.00								**No Emissions**
14640.00								**Detected**
17080.00								**No Emissions**
17080.00								**Detected**
19520.00								**No Emissions**
19520.00								**Detected**
21960.00								**No Emissions**
21960.00								**Detected**
24400.00								**No Emissions**
24400.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
High Channel
Transmit Mode - X-Axis

Date: 09/06/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.27	V	73.97	-16.70	Peak	234.00	168.08	
4960.00	37.27	V	53.97	-16.70	Avg	234.00	168.08	
7440.00	49.58	V	73.97	-24.39	Peak	300.00	250.00	
7440.00	29.58	V	53.97	-24.39	Avg	300.00	250.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 09/06/2016
Lab: D
Tested By: James Ross

BLE Mode
High Channel
Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.57	V	73.97	-16.40	Peak	210.00	122.00	
4960.00	37.57	V	53.97	-16.40	Avg	210.00	122.00	
7440.00	50.75	V	73.97	-23.22	Peak	256.00	119.79	
7440.00	30.75	V	53.97	-23.22	Avg	256.00	119.79	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 09/06/2016
Lab: D
Tested By: James Ross

BLE Mode
High Channel
Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.23	V	73.97	-16.74	Peak	278.00	164.80	
4960.00	37.23	V	53.97	-16.74	Avg	278.00	164.80	
7440.00	47.56	V	73.97	-26.41	Peak	65.00	100.00	
7440.00	27.56	V	53.97	-26.41	Avg	65.00	100.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249
Delphian Systems, LLC
BLE/ANT Module
Model: SRU563
BLE Mode
High Channel
Transmit Mode - X-Axis

Date: 09/06/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	53.09	H	73.97	-20.89	Peak	256.50	100.86	
4960.00	33.09	H	53.97	-20.89	Avg	256.50	100.86	
7440.00	47.95	H	73.97	-26.02	Peak	130.00	194.89	
7440.00	27.95	H	53.97	-26.02	Avg	130.00	194.89	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
High Channel
Transmit Mode - Y-Axis

Date: 09/06/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	59.69	H	73.97	-14.28	Peak	316.00	100.00	
4960.00	39.69	H	53.97	-14.28	Avg	316.00	100.00	
7440.00	48.40	H	73.97	-25.57	Peak	192.75	100.00	
7440.00	28.40	H	53.97	-25.57	Avg	192.75	100.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
BLE Mode
High Channel
Transmit Mode - Z-Axis

Date: 09/06/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4960.00	57.14	H	73.97	-16.83	Peak	233.00	100.00	
4960.00	37.14	H	53.97	-16.83	Avg	233.00	100.00	
7440.00	50.88	H	73.97	-23.10	Peak	283.00	201.00	
7440.00	30.88	H	53.97	-23.10	Avg	283.00	201.00	
9920.00								**No Emissions**
9920.00								**Detected**
12400.00								**No Emissions**
12400.00								**Detected**
14880.00								**No Emissions**
14880.00								**Detected**
17360.00								**No Emissions**
17360.00								**Detected**
19840.00								**No Emissions**
19840.00								**Detected**
22320.00								**No Emissions**
22320.00								**Detected**
24800.00								**No Emissions**
24800.00								**Detected**

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 09/06/2016
Lab: D
Tested By: James Ross

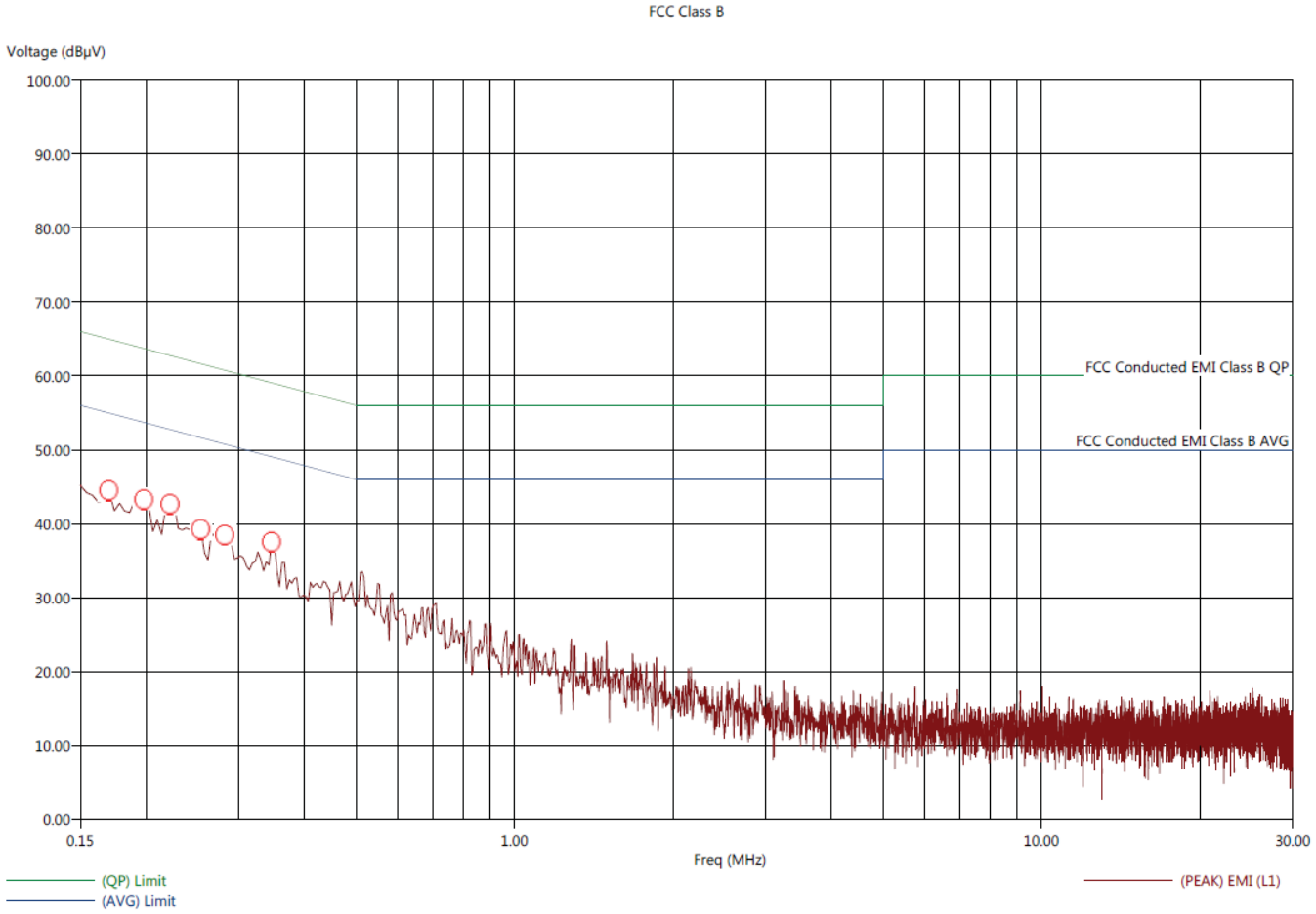
BLE Mode
Non Harmonic Emissions from the Tx and Digital Portion -- 10 kHz to 25000 MHz
Vertical and Horizontal Polarizations

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
								No Emissions Found for the
								Digital Portion
								from 10 kHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								No Non Harmonic Emissions Found
								for the Tx Mode
								from 10 kHz to 25000 MHz
								for both Vertical and Horizontal
								Polarizations
								Investigated in the X-Axis,
								Y-Axis, and Z-Axis

CONDUCTED EMISSIONS DATA SHEETS

Title: FCC Class B - Black Lead
File: Agilent - Conducted Pre-Scan Line - 0.15-30 MHz - FCC-B - 9-7-16.set
Operator: James Ross
EUT Type: BLE/ANT/NFC Ultra Low Power Module
EUT Condition: The EUT is continously transmitting at the low channel frequency
Comments: Company: Delphian Systems, LLC
Model: SRU563
Worst Case: Low Channel - ANT Mode

9/7/2016 3:03:25 PM
Sequence: Preliminary Scan



Title: FCC Class B - Black Lead
File: Agilent - Conducted Final Scan Line - 0.15-30 MHz - FCC-B - 9-7-16.set
Operator: James Ross
EUT Type: BLE/ANT/NFC Ultra Low Power Module
EUT Condition: The EUT is continously transmitting at the low channel frequency
Comments: Company: Delphian Systems, LLC
Model: SRU563
Worst Case: Low Channel - ANT Mode

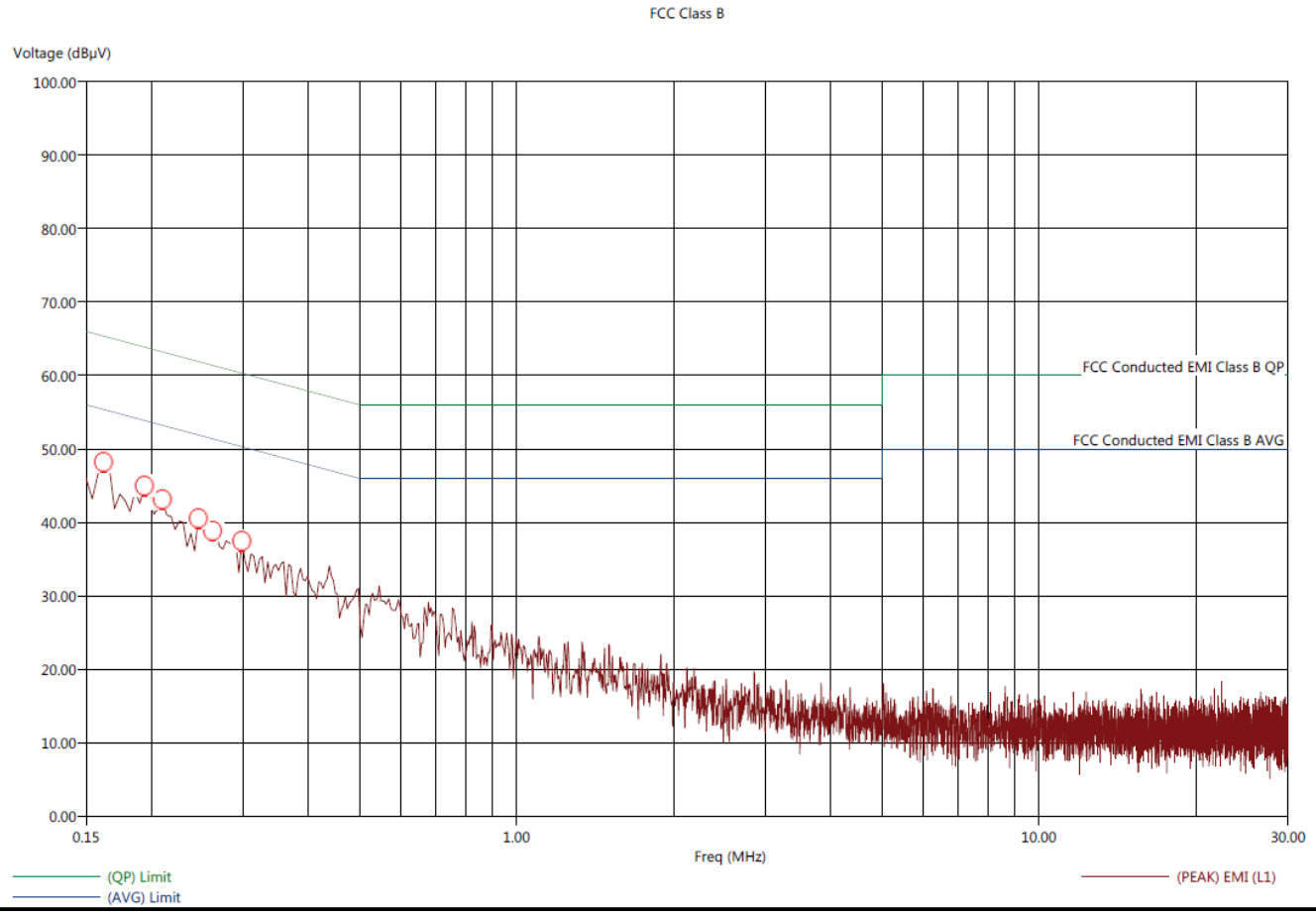
9/7/2016 3:10:39 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	(PEAK) EMI (dBµV)	(QP) EMI (dBµV)	(AVG) EMI (dBµV)	(QP) Margin QPL (dB)	(AVG) Margin AVL (dB)	(QP) Limit (dBµV)	(AVG) Limit (dBµV)	Cable (dB)
0.170	49.22	45.69	47.87	-19.27	-7.09	64.96	54.96	0.07
0.198	46.70	43.40	44.99	-20.29	-8.71	63.69	53.69	0.08
0.222	45.76	41.46	42.38	-21.29	-10.37	62.74	52.74	0.08
0.254	44.51	39.40	42.51	-22.23	-9.12	61.63	51.63	0.08
0.282	41.94	37.85	39.29	-22.91	-11.46	60.76	50.76	0.08
0.346	38.14	34.72	36.05	-24.34	-13.01	59.06	49.06	0.08

Title: FCC Class B - White Lead
File: Agilent - Conducted Pre-Scan Neutral - 0.15-30 MHz - FCC-B - 9-7-16.set
Operator: James Ross
EUT Type: BLE/ANT/NFC Ultra Low Power Module
EUT Condition: The EUT is continously transmitting at the low channel frequency
Comments: Company: Delphian Systems, LLC
Model: SRU563
Worst Case: Low Channel - ANT Mode

9/7/2016 3:15:20 PM
Sequence: Preliminary Scan



Title: FCC Class B - White Lead
File: Agilent - Conducted Final Scan Neutral 0.15-30 MHz - FCC-B - 9-7-16.set
Operator: James Ross
EUT Type: 2.4 GHz BLE/ANT Transceiver Module
EUT Condition: The EUT is continously transmitting at the low channel frequency
Comments: Company: Delphian Systems, LLC
Model: SRU563
Worst Case: Low Channel - ANT Mode

9/7/2016 3:17:43 PM
Sequence: Final Measurements

FCC Class B

Freq (MHz)	(PEAK) EMI (dBµV)	(QP) EMI (dBµV)	(AVG) EMI (dBµV)	(QP) Margin QPL (dB)	(AVG) Margin AVL (dB)	(QP) Limit (dBµV)	(AVG) Limit (dBµV)	Cable (dB)
0.162	50.85	46.50	48.42	-18.86	-6.94	65.36	55.36	0.06
0.194	47.48	43.50	46.19	-20.37	-7.67	63.86	53.86	0.08
0.210	45.49	42.38	44.37	-20.82	-8.83	63.21	53.21	0.08
0.246	43.48	39.71	41.36	-22.18	-10.54	61.89	51.89	0.08
0.262	42.97	38.94	40.71	-22.43	-10.66	61.37	51.37	0.08
0.298	40.58	37.02	39.13	-23.28	-11.17	60.30	50.30	0.08

BAND EDGES DATA SHEETS

FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Band Edges
Low Channel - See Comments for Worst Case Axis

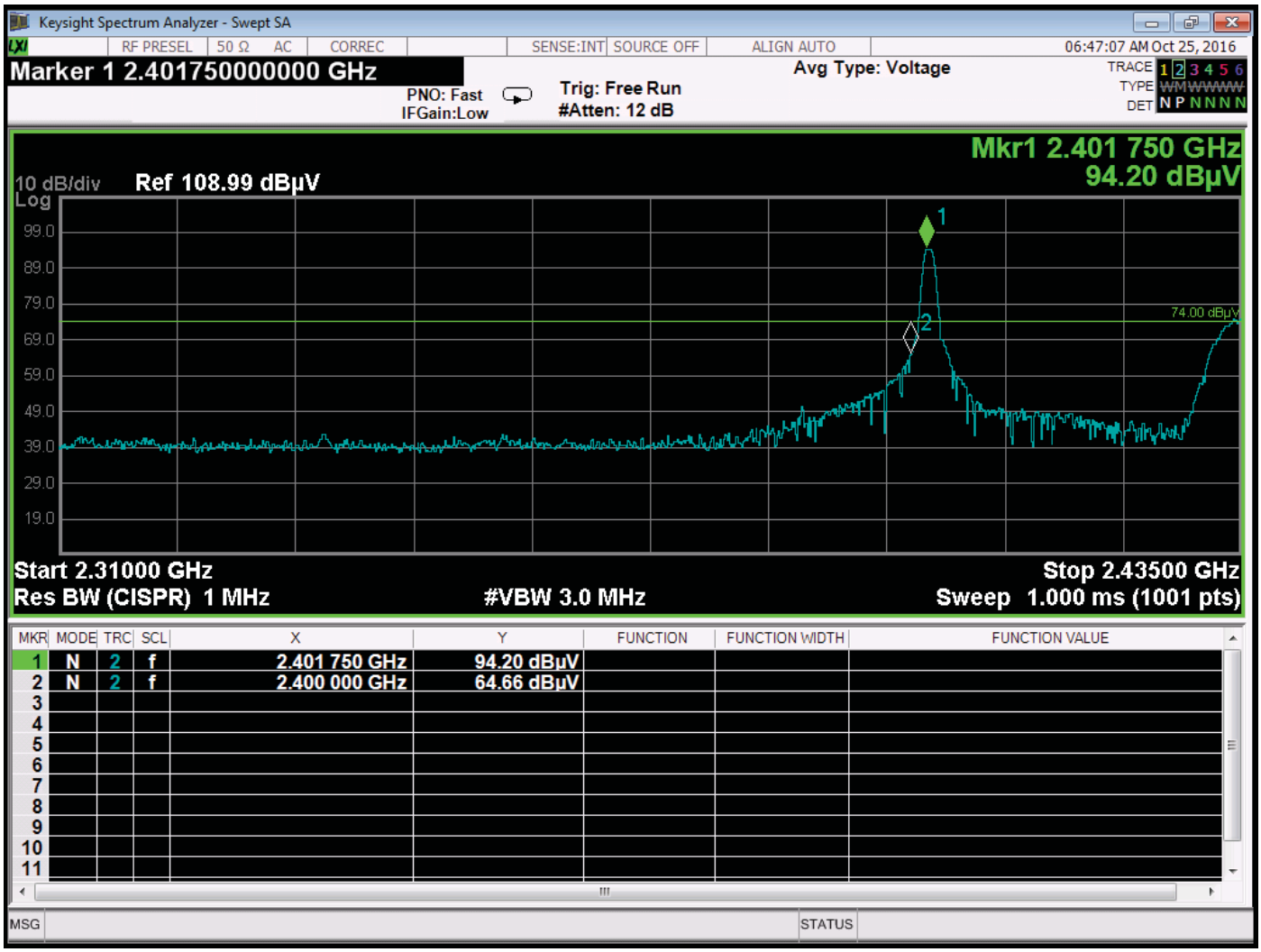
Dates: 09/02/2016 and 10/25/2016
Lab: D
Tested By: James Ross

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402	95.14	H	113.97	-18.83	Peak	347.00	129.94	Fundamental
2402	75.14	H	93.97	-18.83	Avg	347.00	129.94	of Low Channel
2400	60.46	H	73.97	-13.51	Peak	347.00	129.94	**Band Edge of Low Channel**
2400	40.46	H	53.97	-13.51	Avg	347.00	129.94	**X-Axis Worst Case**
2402	94.20	V	113.97	-19.77	Peak	83.00	183.97	Fundamental of
2402	74.20	V	93.97	-19.77	Avg	83.00	183.97	Low Channel
2400	64.66	V	73.97	-9.31	Peak	83.00	183.97	**Band Edge of Low Channel**
2400	44.66	V	53.97	-9.31	Avg	83.00	183.97	**Z-Axis Worst Case**

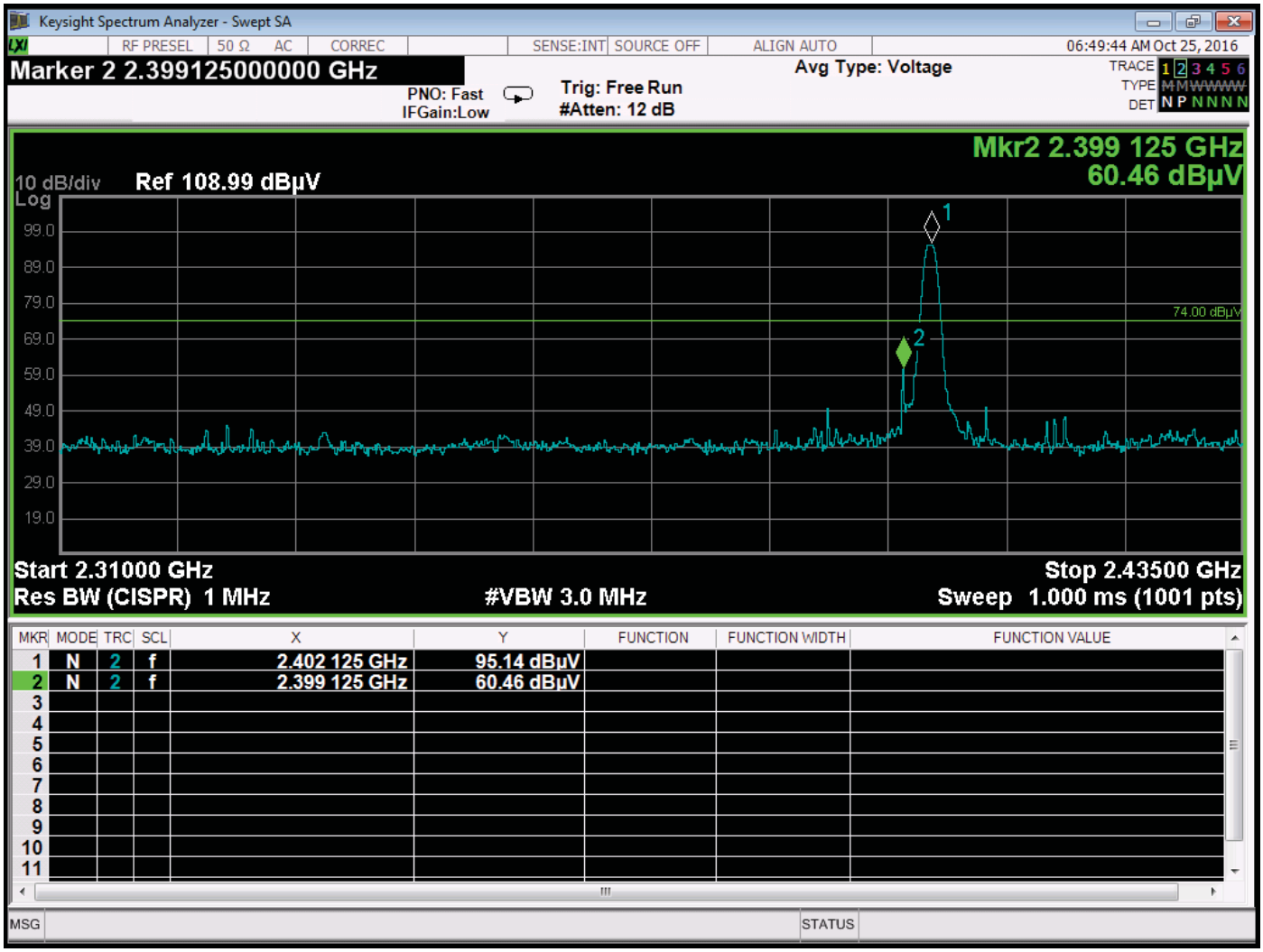
FCC 15.249
Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563
ANT Mode
Band Edges
High Channel - See Comments for Worst Case Axis

Date: 09/01/2016
Lab: D
Tested By: James Ross

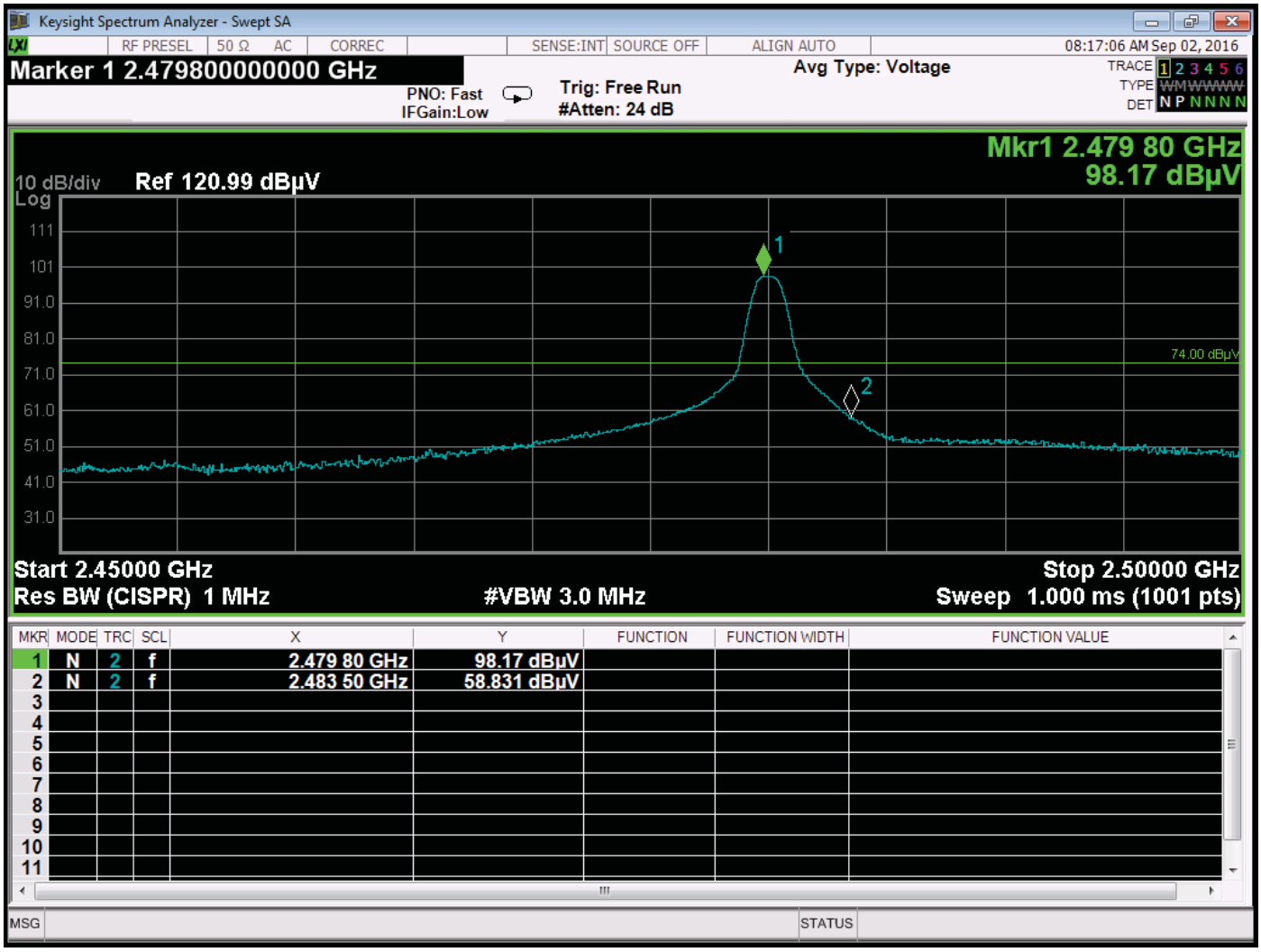
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480	98.17	H	113.97	-15.8	Peak	355.00	150.00	Fundamental
2480	78.17	H	93.97	-15.8	Avg	355.00	150.00	of High Channel
2483.5	58.83	H	73.97	-15.14	Peak	355.00	150.00	**Band Edge of High Channel**
2483.5	38.83	H	53.97	-15.14	Avg	355.00	150.00	**X-Axis Worst Case**
2480	99.16	V	113.97	-14.81	Peak	355.00	160.14	Fundamental of
2480	79.16	V	93.97	-14.81	Avg	355.00	160.14	High Channel
2483.5	60.24	V	73.97	-13.73	Peak	355.00	160.14	**Band Edge of High Channel**
2483.5	40.24	V	53.97	-13.73	Avg	355.00	160.14	**Z-Axis Worst Case**



Band Edge – Vertical Polarization – Low Channel – Z-Axis Worst Case – ANT Mode



Band Edge – Horizontal Polarization – Low Channel – X-Axis Worst Case – ANT Mode



Band Edge – Horizontal Polarization – High Channel – X-Axis Worst Case–ANT Mode

FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

Date: 09/02/2016
Lab: D
Tested By: James Ross

Band Edges **BLE Mode**
Low Channel - See Comments for Worst Case Axis

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402	94.87	H	113.97	-19.10	Peak	349.00	118.89	Fundamental
2402	74.87	H	93.97	-19.10	Avg	349.00	118.89	of Low Channel
2400	64.07	H	73.97	-9.90	Peak	349.00	118.89	**Band Edge of Low Channel**
2400	44.07	H	53.97	-9.90	Avg	349.00	118.89	**X-Axis Worst Case**
2402	94.27	V	113.97	-19.70	Peak	80.25	184.80	Fundamental of
2402	74.27	V	93.97	-19.70	Avg	80.25	184.80	Low Channel
2400	63.80	V	73.97	-10.17	Peak	80.25	184.80	**Band Edge of Low Channel**
2400	43.80	V	53.97	-10.17	Avg	80.25	184.80	**Z-Axis Worst Case**

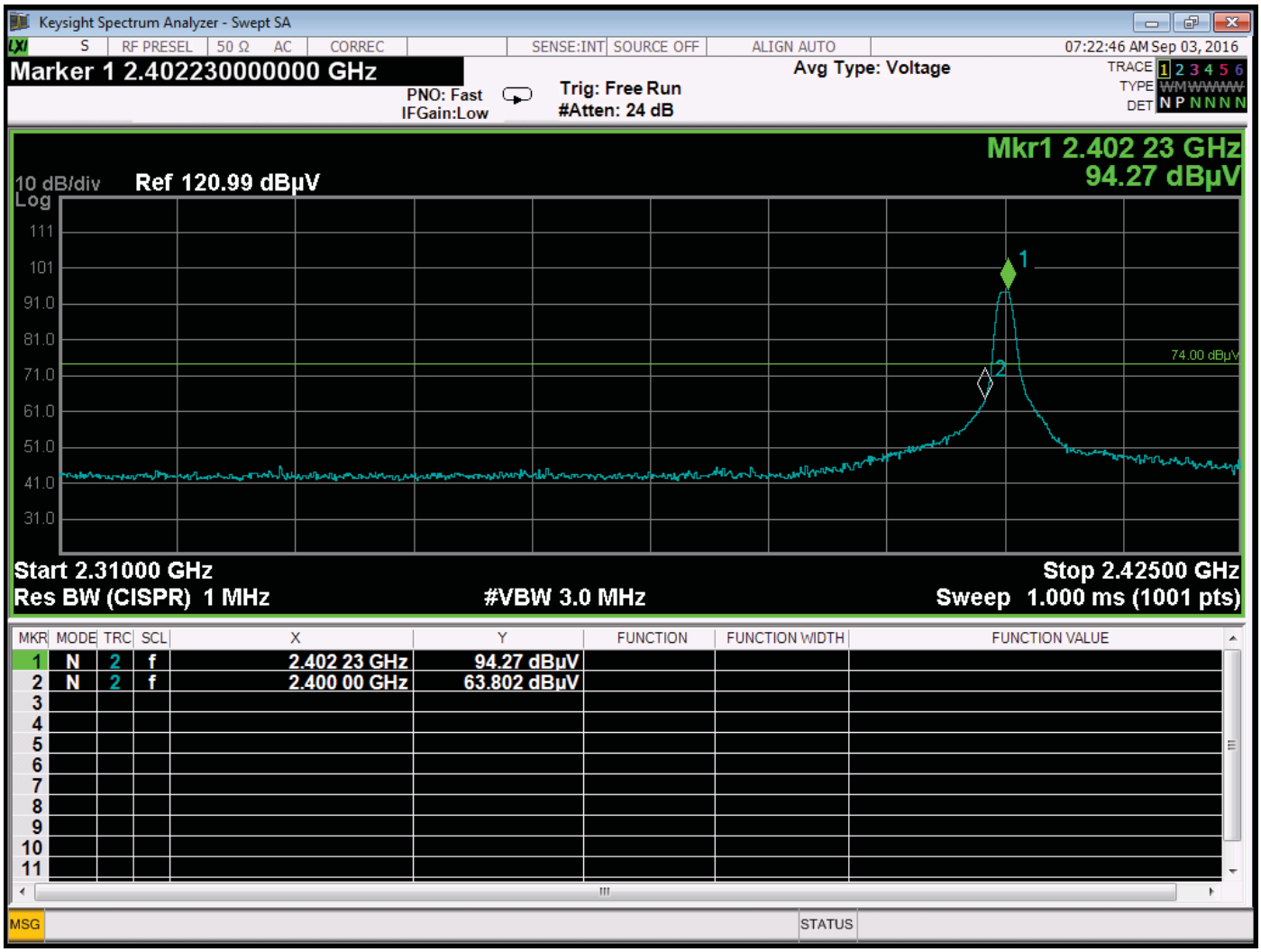
FCC 15.249

Delphian Systems, LLC
BLE/ANT/NFC Ultra Low Power Module
Model: SRU563

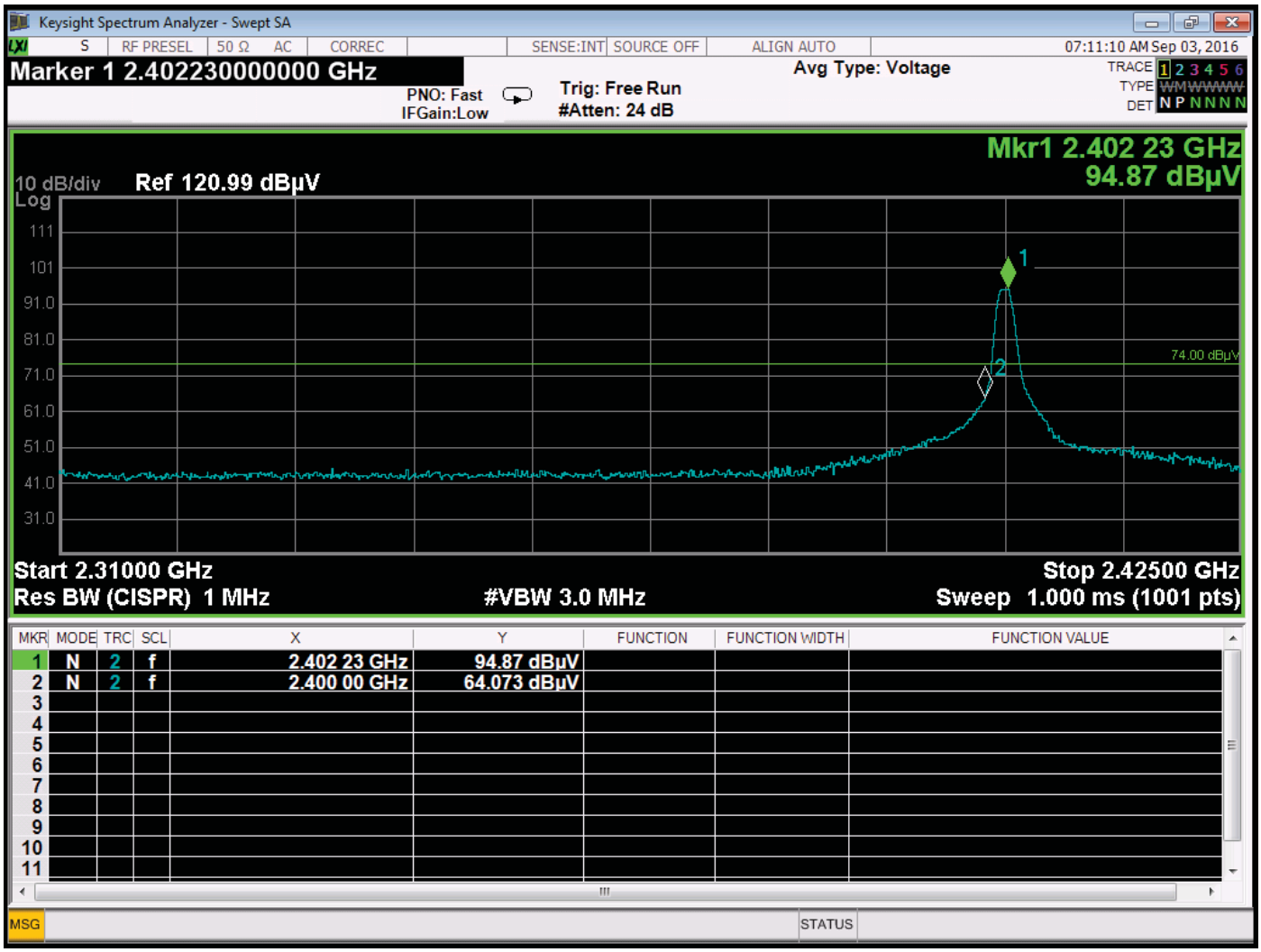
Date: 09/01/2016
Lab: D
Tested By: James Ross

Band Edges **BLE Mode**
High Channel - See Comments for Worst Case Axis

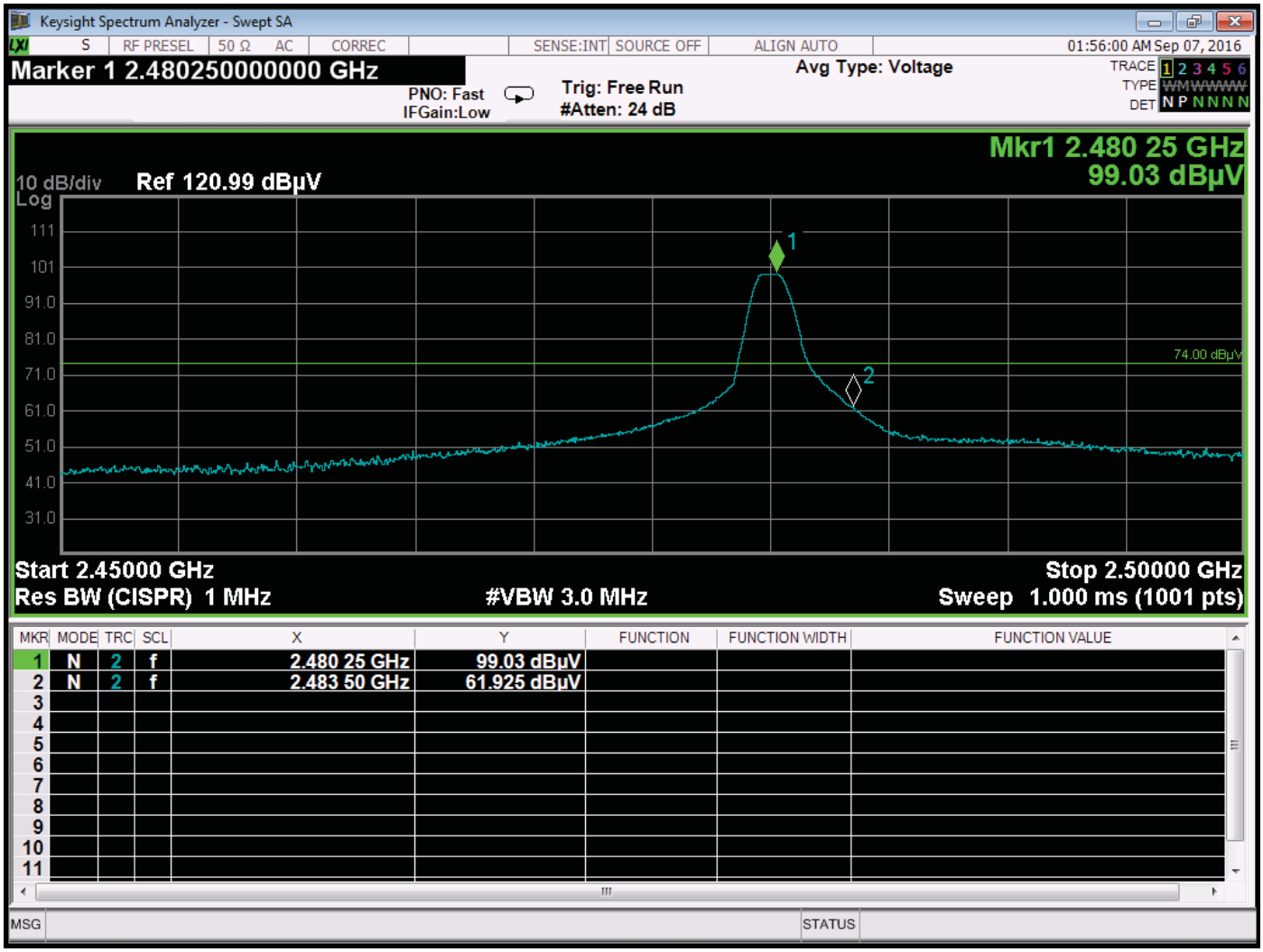
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480	97.13	H	113.97	-16.84	Peak	5.00	128.02	Fundamental
2480	77.13	H	93.97	-16.84	Avg	5.00	128.02	of High Channel
2483.5	59.62	H	73.97	-14.35	Peak	5.00	128.02	**Band Edge of High Channel**
2483.5	39.62	H	53.97	-14.35	Avg	5.00	128.02	**X-Axis Worst Case**
2480	99.03	V	113.97	-14.94	Peak	5.00	199.91	Fundamental of
2480	79.03	V	93.97	-14.94	Avg	5.00	199.91	High Channel
2483.5	61.92	V	73.97	-12.05	Peak	5.00	199.91	**Band Edge of High Channel**
2483.5	41.92	V	53.97	-12.05	Avg	5.00	199.91	**Z-Axis Worst Case**



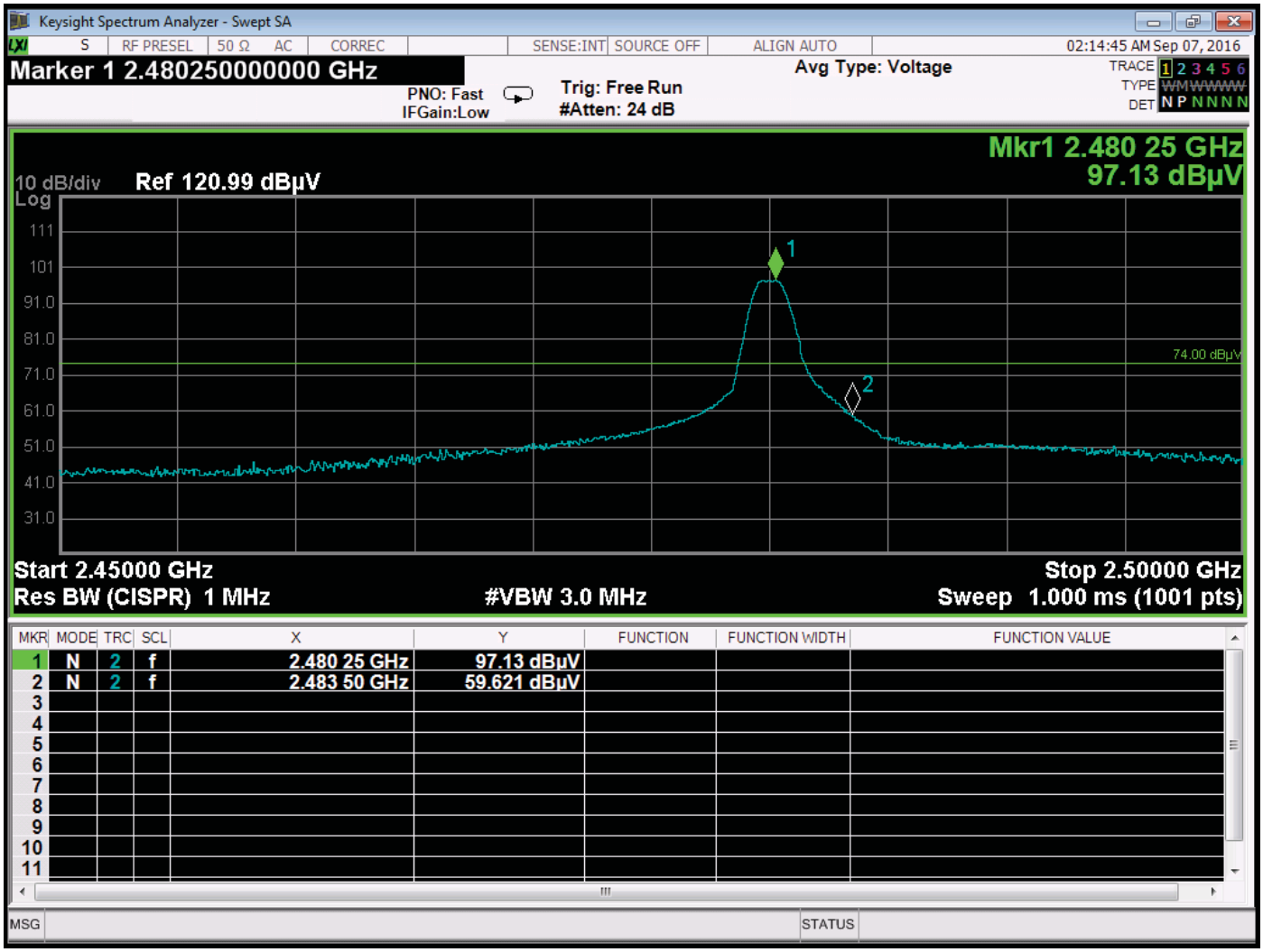
Band Edge – Vertical Polarization – Low Channel – BLE Mode – Z-Axis Worst Case



Band Edge – Horizontal Polarization – Low Channel – BLE Mode – X-Axis Worst Case

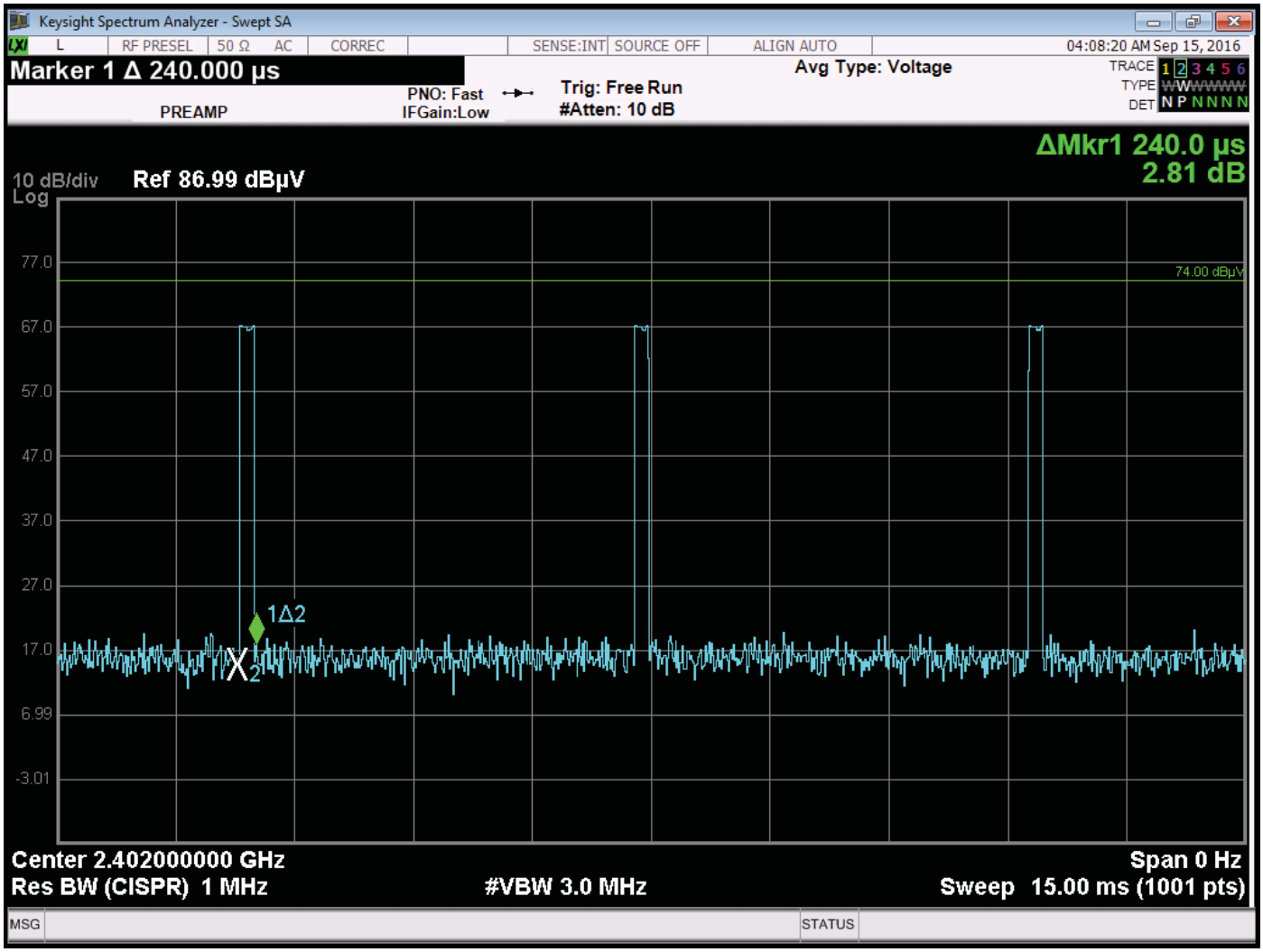


Band Edge – Vertical Polarization – High Channel – BLE Mode – Z-Axis Worst Case

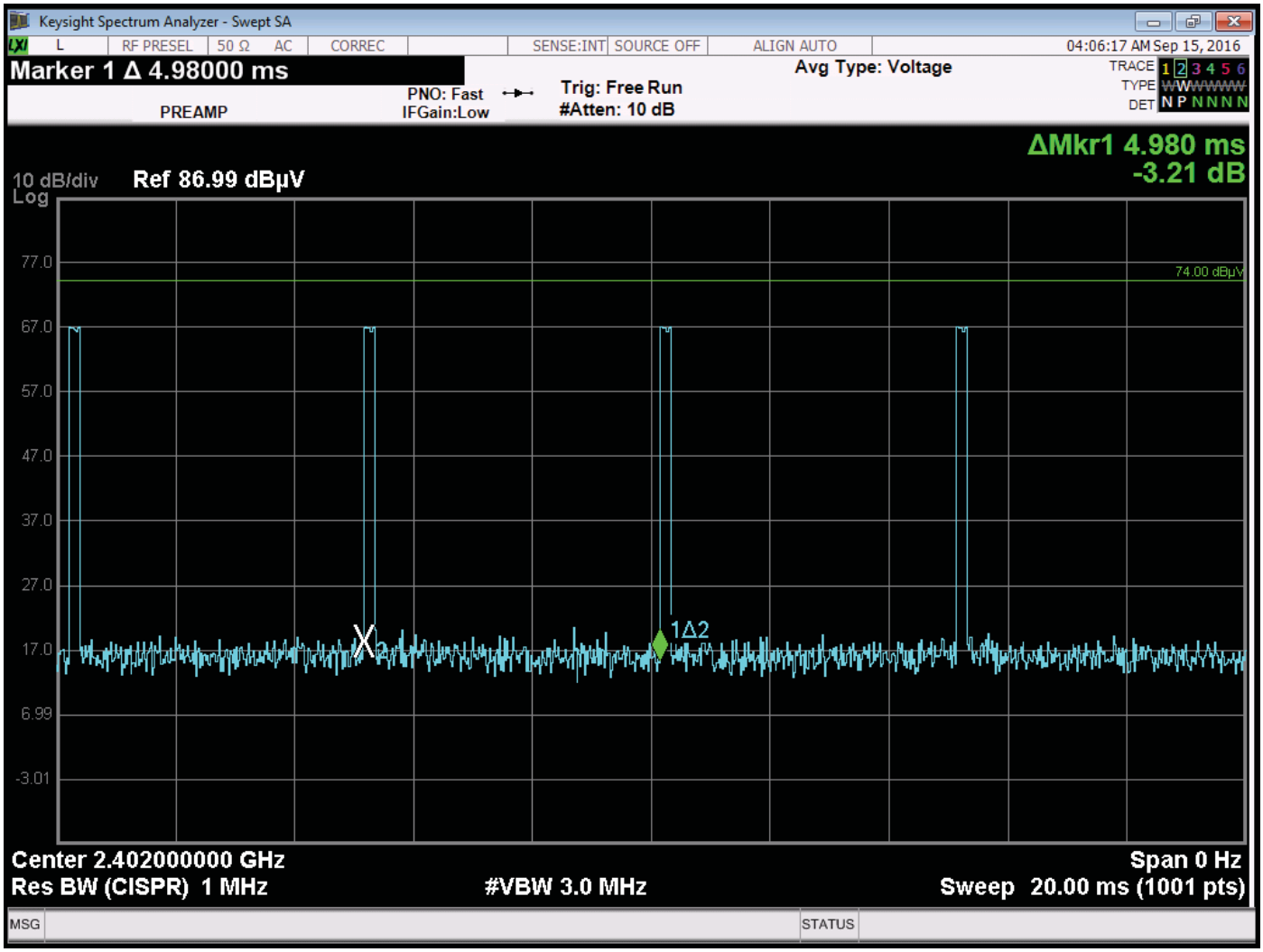


Band Edge – Horizontal Polarization – High Channel – BLE Mode – X-Axis Worst Case

DUTY CYCLE DATA SHEETS



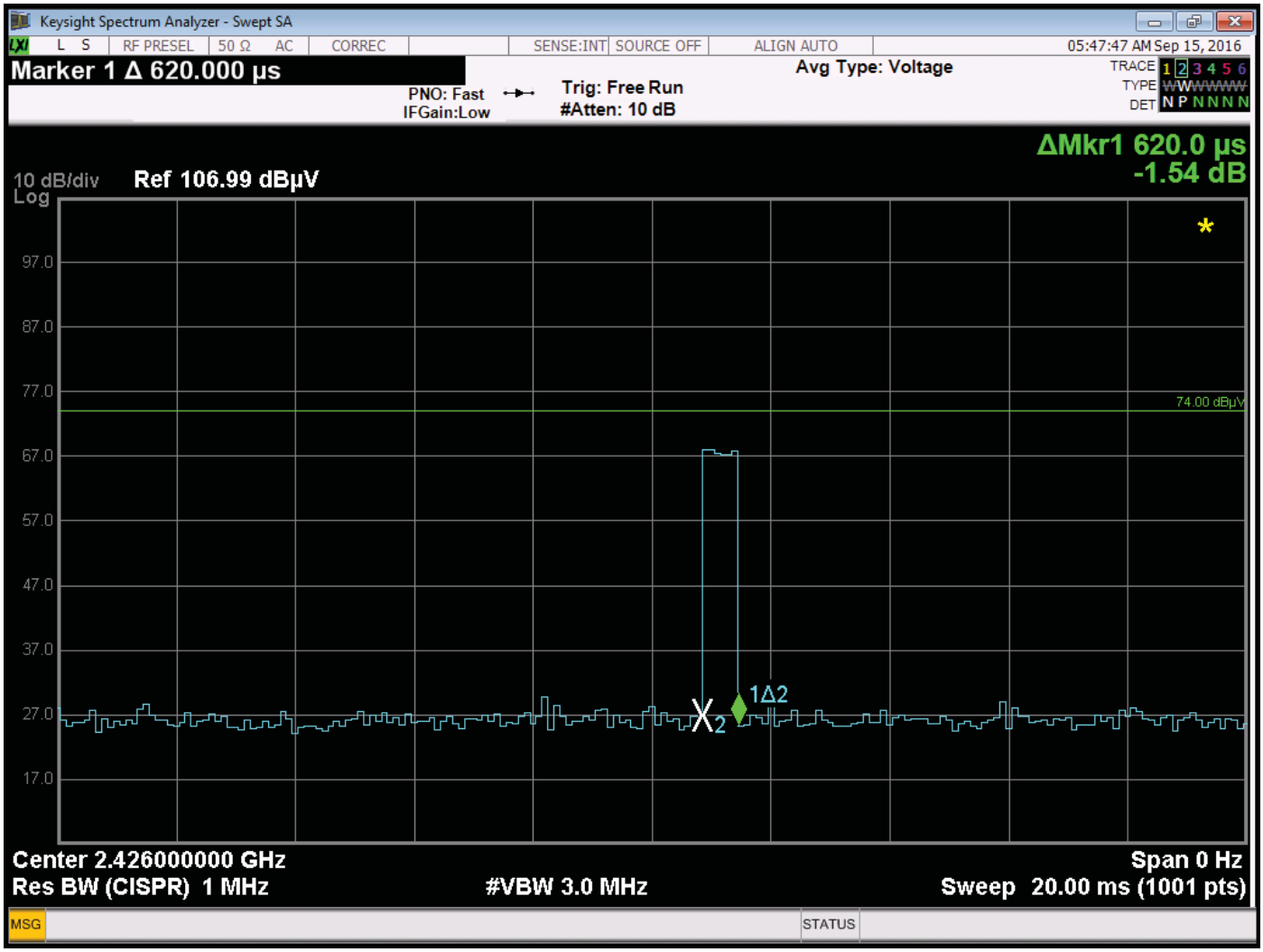
Time of One Pulse = 240 us – ANT Mode



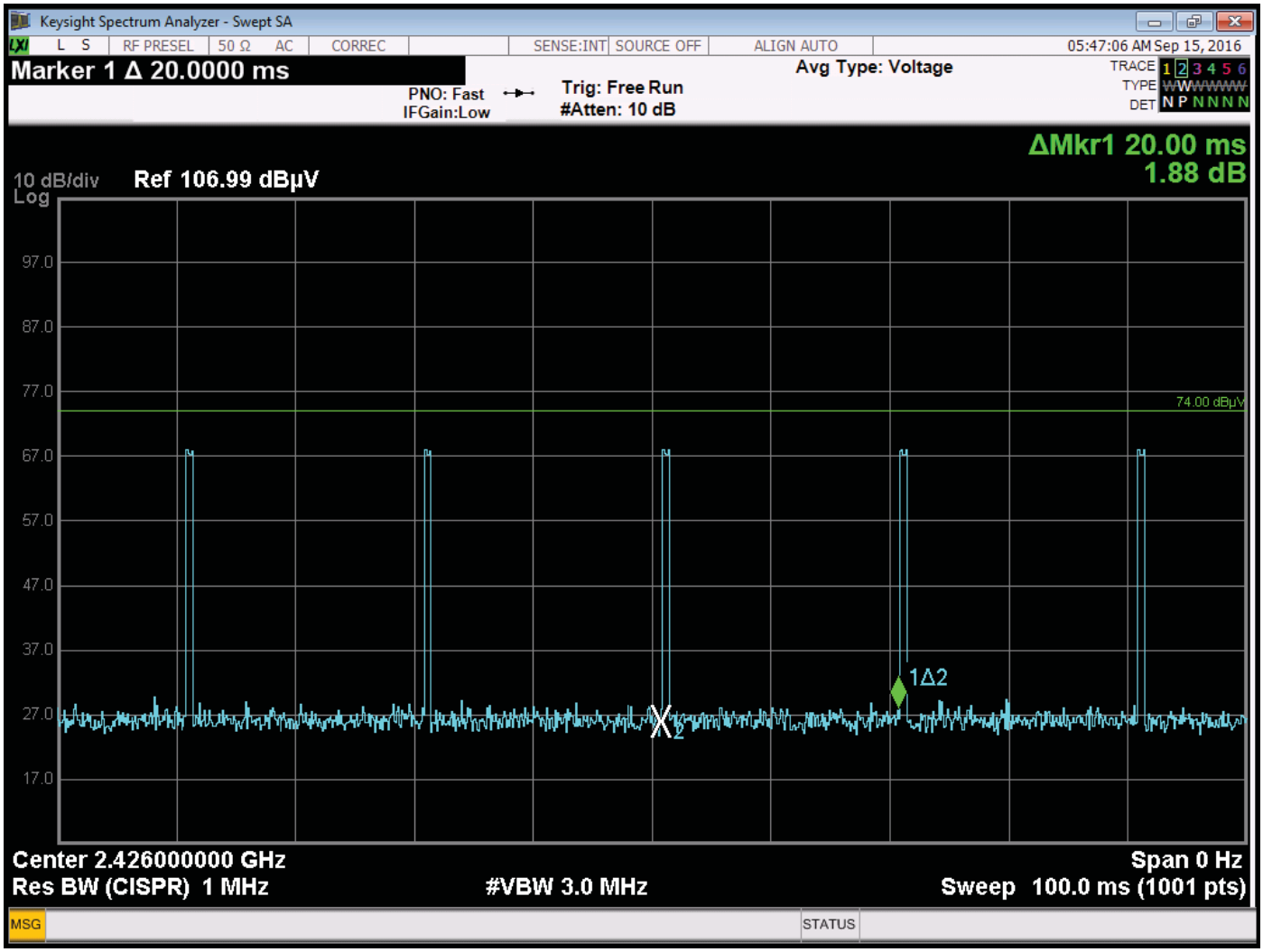
Time between Pulses = 4.98 ms – ANT Mode

Duty Cycle = 240 us / 4.98 ms = 4.82%

The full -20 dB peak to average ratio can be utilized.



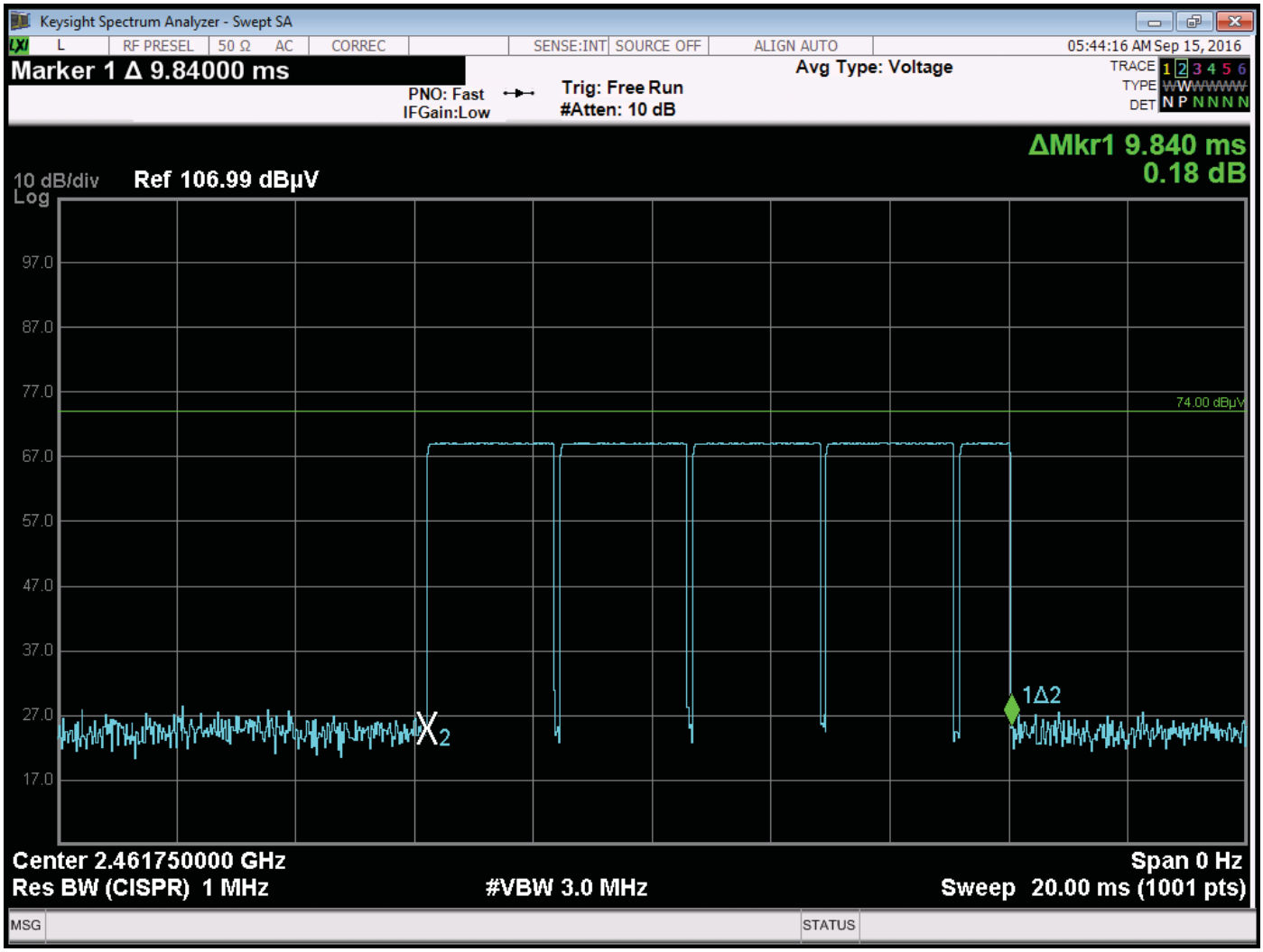
Time of one Pulse = 620 us – BLE Mode – Advertising Mode



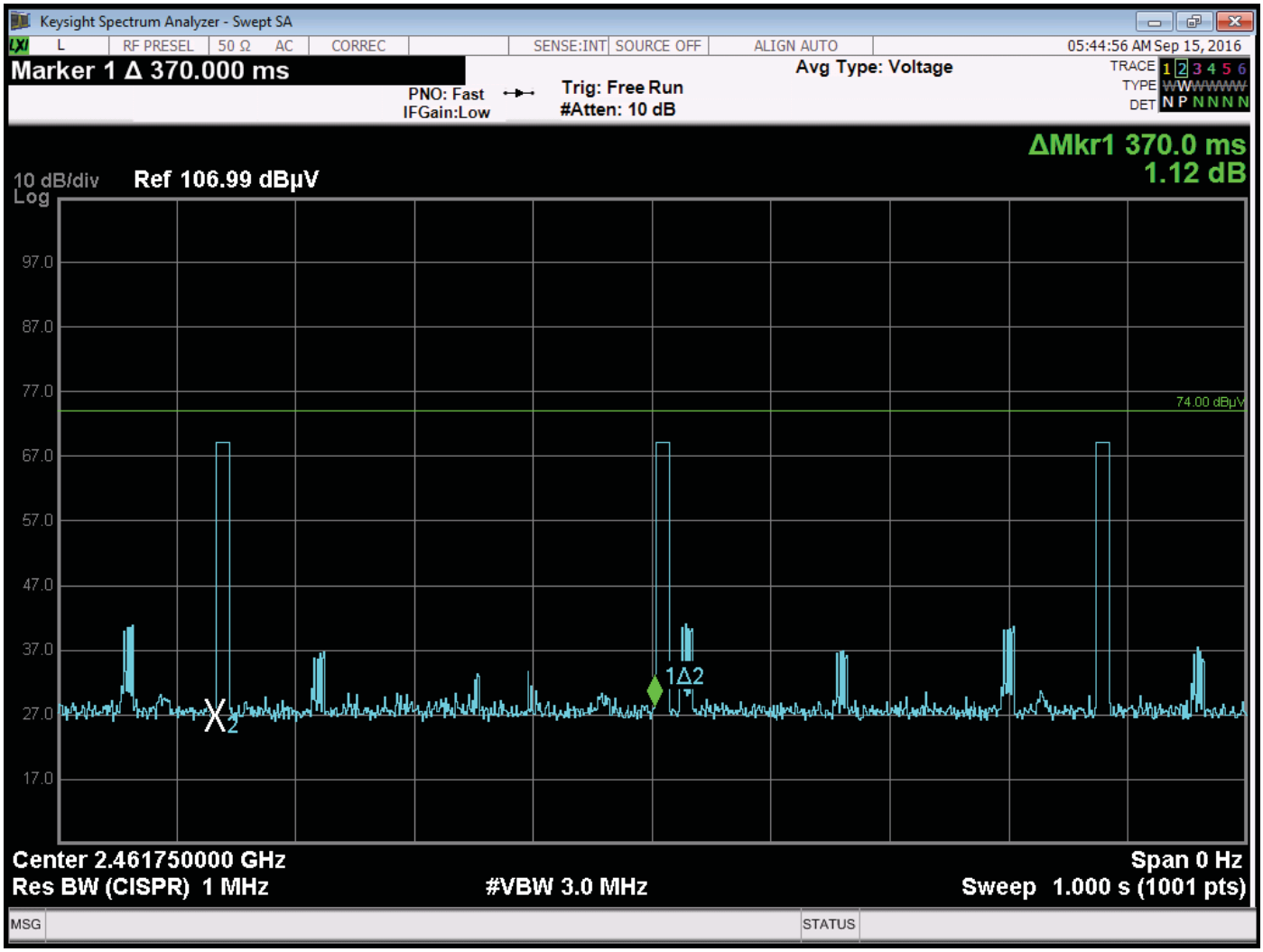
Time Between Pulses = 20 ms – BLE Mode – Advertising Mode

Total duty cycle = 620 us / 20 ms = 3.1%

The full -20 dB peak to average ratio can be utilized.



Time of one Pulse = 9.84 ms – BLE Mode – Data Mode



Time Between Pulses = 370 ms – BLE Mode – Data Mode

The full 100 ms period can be utilized in the duty cycle calculation.

Total duty cycle = 9.84 ms / 100 ms = 9.84%

The full -20 dB peak to average ratio can be utilized.