

**FCC PART 15, SUBPART B and C
TEST REPORT***for***NB S****Model: F0210008**

Prepared for

COMODULE OÜ
DUNKRI 9
TALLINN, ESTONIA 10123Prepared by: Thomas Szynal

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DATE: MARCH 22, 2019

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
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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: NB S
Model: F0210008
S/N: N/A

Product Description: The equipment under test is designed to be connected wirelessly into existing network infrastructure to gather and transmit data and to be controlled remotely. It thus creates opportunities for the physical world to be digitalized, which results in improved efficiency, accuracy and economic benefits.

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

Customer: COMODULE OÜ
Dunkri 9
Tallinn, Estonia 10123

Test Dates: February 21 and 22, 2019

Test Specifications covered by accreditation:

Test Specifications: Emissions requirements
CFR Title 47, Part 15, Subpart B; and Subpart C, Sections 15.205, 15.209, and 15.249



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

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

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Spurious Radiated RF Emissions, 9 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 <small>Highest reading in relation to spec limit 87.91 dBuV/m (Avg) @ 2480.00 MHz (*U = 3.67 dB)</small>

1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the NB S, Model: F0210008. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. The tests were performed 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 Code of Federal Regulations Title 47, Part 15 Subpart B sections 15.107, 15.109, & Part 15 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

COMODULE OÜ

Kristjan Maruste	CEO
Eva Raigo	Research & Development Manager

Compatible Electronics Inc.

Thomas Szynal	Test Technician
Kyle Fujimoto	Test Engineer

2.4 Date Test Sample was Received

The test sample was received prior to the date of this report.

2.5 Disposition of the Test Sample

The test sample has not been returned to COMODULE OÜ 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
N/A	Not Applicable
Tx	Transmit
Rx	Receive
Inc.	Incorporated
RF	Radio Frequency
BLE	Bluetooth Low Energy
IoT	Internet of Things
CEO	Chief Executive Officer
N/A	Not Applicable
DC	Direct Current

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this emission 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
ANSI C63.4: 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI C63.10: 2013	American National Standard of procedure for compliance testing of unlicensed wireless devices

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration – Emissions

The V9, Model: F0410003 (EUT) was setup in a stand-alone configuration. The EUT was investigated in all three orthogonal axis (X, Y, & Z) at its low, middle, and high channels (2402 MHz, 2440 MHz, and 2480 MHz), respectively. During the testing, the EUT was continuously and simultaneously transmitting in its BLE and cellular modes while also receiving in GPS mode.

The EUT was tested in two different setup modes: External DC Mode and Internal Battery Mode.

For external DC mode, the EUT was connected to an external DC power supply at 36 volts and an accessory laptop computer during testing, while the laptop was connected to a remotely located Ethernet router. Lastly, the remotely located Ethernet router was connected to its own AC/DC adapter.

For internal battery mode, the EUT was tested as a stand-alone device (with no attached accessories).

The final radiated emissions data for the EUT was taken in the X-axis (worse case). Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

The below cables were used for external DC mode only:

Cable 1

This is a 2-meter, braid shielded, split cable connecting the EUT to the external DC power supply and the accessory laptop computer. The cable contains a 5-pin LEMO connector at the EUT end, a metallic USB Type A connector at the accessory laptop computer end, and is hard wired at the external DC power supply \pm output banana jacks port. The cable was bundled to the length of 1 meter during testing.

Cable 2

This is a 17-meter unshielded Ethernet cable connecting the accessory laptop computer to the remotely located Ethernet router. The cable contains an RJ-45 connector at each end.

Cable 3

This is a 2.2-meter unshielded power cable connecting the laptop computer to its own AC adapter. The cable contains a metallic barrel power connector at the laptop computer end and is hard wired at the AC adapter end.

Cable 4

This is a 2-meter unshielded power cable connecting the remotely located Ethernet router to its own AC/DC adapter. The cable contains a metallic barrel power connector at the remotely located Ethernet router end and is hard wired at the AC/DC adapter end.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
NB S (EUT)	COMODULE OÜ	F0210008	N/A	2AQHSF0210008 (Also contains FCC ID: XPY1CGM5NNN)
DC POWER SUPPLY (TO EXTERNALLY POWER EUT)	KEPCO	JQE 75-8M	H197373	N/A
LAPTOP COMPUTER	HEWLETT PACKARD	HSTNN-C82C	N/A	DoC
AC ADAPTER (LAPTOP)	HEWLETT PACKARD	HSTNN-DA40	N/A	N/A
ETHERNET ROUTER	NETGEAR	WNR1000 v3	2J1334A100D	PY309300117
AC/DC ADAPTER (ROUTER)	NETGEAR	AD810F10	N/A	N/A



5.2 Emissions Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
RF RADIATED EMISSIONS TEST EQUIPMENT					
TDK TestLab	TDK RF Solutions, Inc.	9.22	700145	N/A	N/A
EMI Receiver, 20 Hz – 26.5 GHz	Keysight Technologies	N9038A	MY51210150	July 26, 2018	1 Year
System Controller	Sunol Sciences Corporation	SC110V	112213-1	N/A	N/A
Turntable	Sunol Sciences Corporation	2011VS	N/A	N/A	N/A
Antenna-Mast	Sunol Sciences Corporation	TWR95-4	112213-3	N/A	N/A
Loop Antenna	Com-Power	AL-130R	121090	February 5, 2019	2 Year
CombiLog Antenna	Com-Power	AC-220	61060	July 27, 2017	2 Year
Horn Antenna	Com-Power	AH-118	071175	February 22, 2018	2 Year
Horn Antenna	Com-Power	AH-826	71957	N/A	N/A
Preamplifier	Com-Power	PAM-118A	551024	May 10, 2018	1 Year
Preamplifier	Com-Power	PA-840	711013	May 10, 2018	1 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 of this report for emissions test location.

6.2 EUT Mounting, Bonding and Grounding

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

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

The EUT was not grounded.

6.3 Measurement Uncertainty

The uncertainty values are in the table below.

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

MEASUREMENT TYPE	PARTICULAR CONFIGURATION	UNCERTAINTY VALUES
RADIATED EMISSIONS	3-METER CHAMBER, COMBILOG ANTENNA	3.26 dB (Vertical) 3.19 dB (Horizontal)
RADIATED EMISSIONS	3-METER CHAMBER, HORN ANTENNA	3.67 dB (Both Vertical and Horizontal)
AC LINE CONDUCTED EMISSIONS	3-METER CHAMBER, COM-POWER LISN	2.72 dB



7. TEST PROCEDURES

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

7.1 RF Emissions

7.1.1 Conducted Emissions Test

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

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

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

Test Results:

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

7.1.2 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.

All frequencies above 1 GHz were averaged using the average detector of 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 EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 1.

Radiated Emissions Test (Continued)

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; and Subpart C sections 15.205, 15.209 and 15.249 for radiated emissions.



7.1.3 RF Emissions Test Results

Table 1 RADIATED EMISSION RESULTS
NB S
Model: F0210008

Frequency (MHz)	EMI Reading (dBuV/m)	Specification Limit (dBuV/m)	Delta (Cor. Reading – Spec. Limit) (dB)
2480.00 (H) (X-Axis) (High Channel, Battery Mode)	87.91 (AV)	93.97	-6.06
7320.00 (V) (X-Axis) (Middle Channel, Battery Mode)	47.71 (AV)	53.97	-6.26
2480.00 (H) (X-Axis) (High Channel, DC Mode)	87.10 (AV)	93.97	-6.87
2440.00 (H) (X-Axis) (Middle Channel, DC Mode)	85.81 (AV)	93.97	-8.16
2402.00 (H) (X-Axis) (Low Channel, DC Mode)	85.63 (AV)	93.97	-8.33
2440.00 (H) (Z-Axis) (Middle Channel, DC Mode)	85.40 (AV)	93.97	-8.58

Notes:

- * The complete emissions data is given in Appendix E of this report.
- (V) Vertical Polarization
- (H) Horizontal Polarization
- (AV) Average Reading
- (QP) Quasi-Peak Reading



8. CONCLUSIONS

The NB S, Model: F0210008 (EUT), as tested, meets all of the specification limits defined in the **Class B** specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209 and 15.249.



APPENDIX A

LABORATORY ACCREDITATIONS AND RECOGNITIONS

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

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

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS

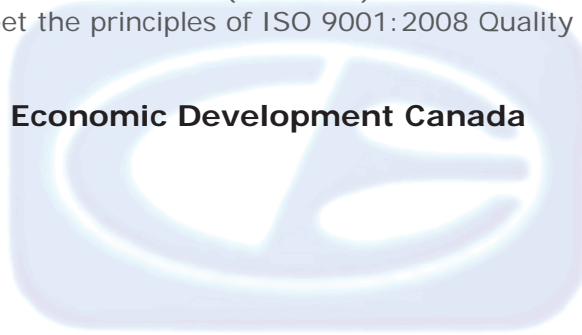


For US, Canada, Australia/New Zealand, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. **For the most up-to-date version of our scopes and certificates please visit <http://celectronics.com/quality/scope/>**

Quote from ISO-ILAC-IAF Communiqué on 17025:

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

**Innovation, Science and Economic Development Canada
Lab Code 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 15.249 specifications.

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

No modifications were made to the EUT during the testing.



APPENDIX C

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

ADDITIONAL MODEL COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

NB S
Model: F0210008
S/N: N/A

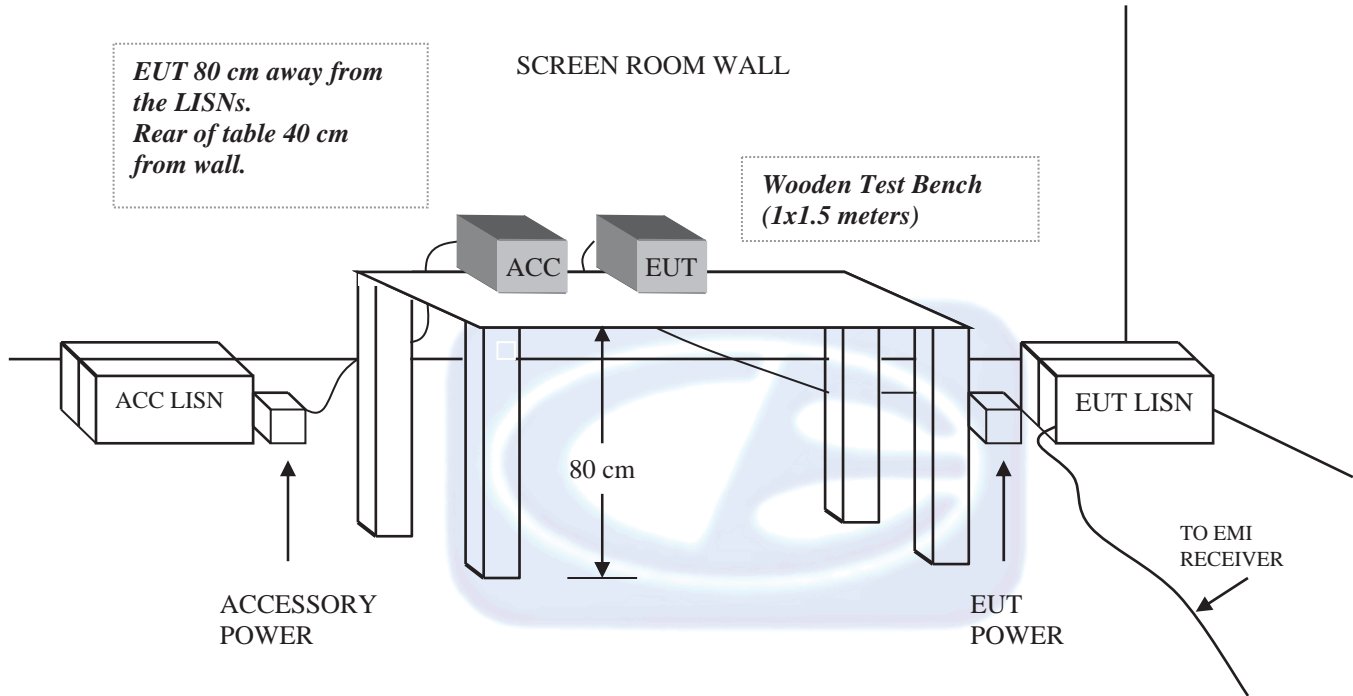
There are no additional models covered under this report.



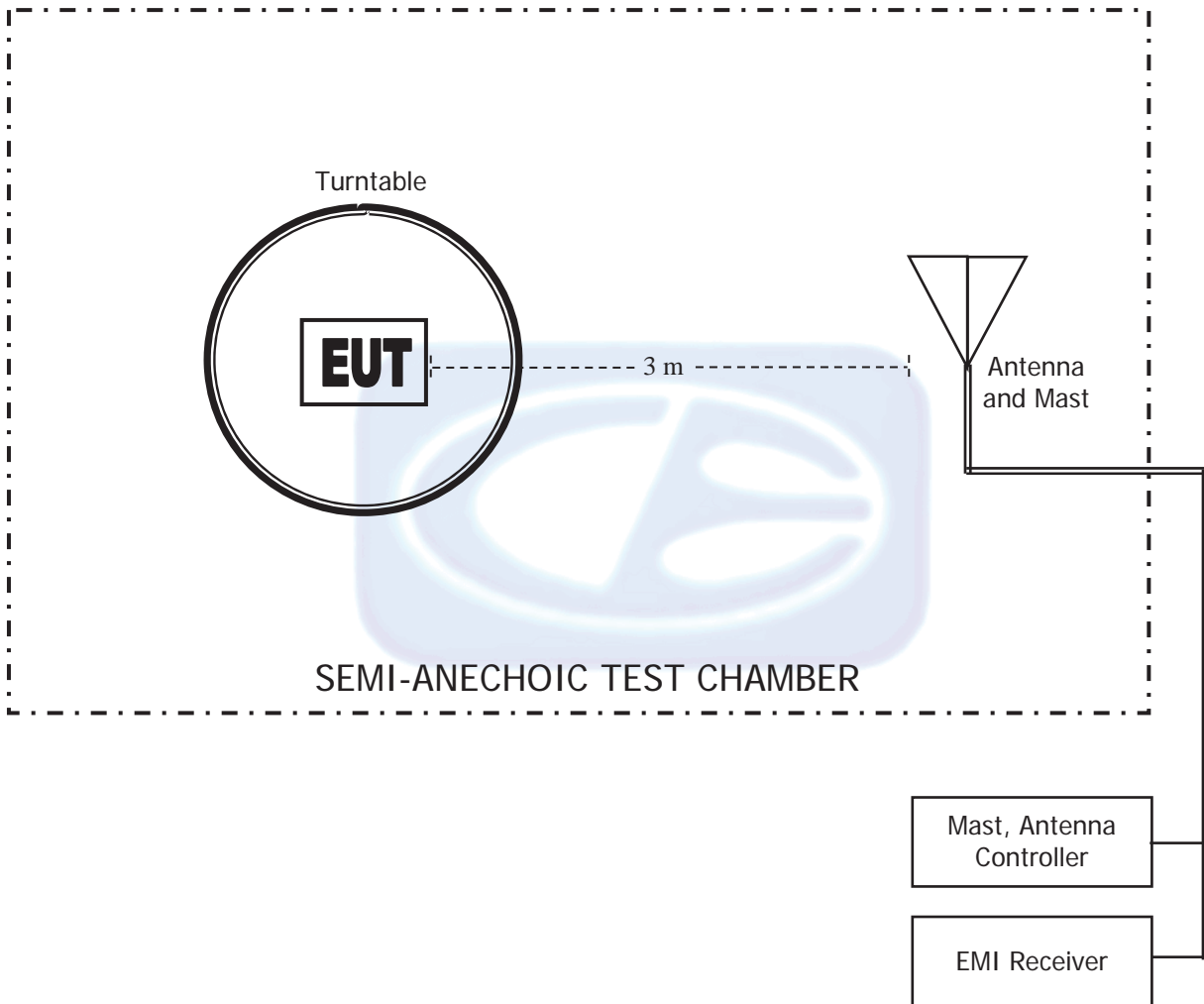
APPENDIX D

DIAGRAMS AND CHARTS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP



**FIGURE 1: LAYOUT OF THE SEMI -ANECHOIC
TEST CHAMBER**



COM-POWER AL-130R**LOOP ANTENNA**

S/N: 121090

CALIBRATION DATE: FEBRUARY 5, 2019

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.01	15.6	-35.9
0.02	14.8	-36.7
0.03	15.6	-35.9
0.04	15.1	-36.4
0.05	14.4	-37.0
0.06	14.6	-36.9
0.07	14.4	-37.1
0.08	14.3	-37.1
0.09	14.5	-36.9
0.10	14.1	-37.3
0.20	14.1	-37.3
0.30	14.0	-37.4
0.40	14.0	-37.4
0.50	14.2	-37.2
0.60	14.2	-37.2
0.70	14.2	-37.2
0.80	14.2	-37.3
0.90	14.3	-37.2
1.00	14.5	-37.0
2.00	14.5	-36.9
3.00	14.5	-36.9
4.00	14.7	-36.8
5.00	14.6	-36.9
6.00	14.6	-36.9
7.00	14.6	-36.9
8.00	14.6	-36.9
9.00	14.6	-36.9
10.00	14.8	-36.6
11.00	14.9	-36.6
12.00	14.8	-36.6
13.00	14.8	-36.7
14.00	14.6	-36.8
15.00	14.5	-36.9
16.00	14.5	-37.0
17.00	14.6	-36.9
18.00	14.7	-36.7
19.00	14.8	-36.6
20.00	14.9	-36.6
21.00	14.6	-36.8
22.00	14.2	-37.2
23.00	13.7	-37.7
24.00	13.3	-38.2
25.00	13.0	-38.5
26.00	12.9	-38.6
27.00	13.0	-38.5
28.00	13.1	-38.4
29.00	13.1	-38.4
30.00	12.9	-38.5

COM-POWER AC-220
COMBILOG ANTENNA
S/N: 61060

CALIBRATION DATE: JULY 27, 2017

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

COM POWER AH-118**HORN ANTENNA**

S/N: 071175

CALIBRATION DATE: FEBRUARY 22, 2018

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

COM-POWER PAM-118A**PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MAY 10, 2018

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	40.99	6.0	39.01
1.1	39.77	6.5	39.00
1.2	39.02	7.0	39.69
1.3	39.44	7.5	38.96
1.4	39.64	8.0	38.57
1.5	40.23	8.5	39.17
1.6	40.17	9.0	38.82
1.7	40.23	9.5	39.30
1.8	39.48	10.0	38.90
1.9	39.85	11.0	38.86
2.0	39.99	12.0	39.87
2.5	40.38	13.0	39.55
3.0	40.64	14.0	38.92
3.5	40.68	15.0	39.33
4.0	40.87	16.0	39.60
4.5	40.04	17.0	40.28
5.0	39.54	18.0	39.58
5.5	39.58		

COM-POWER AH-826**HORN ANTENNA**

S/N: 71957

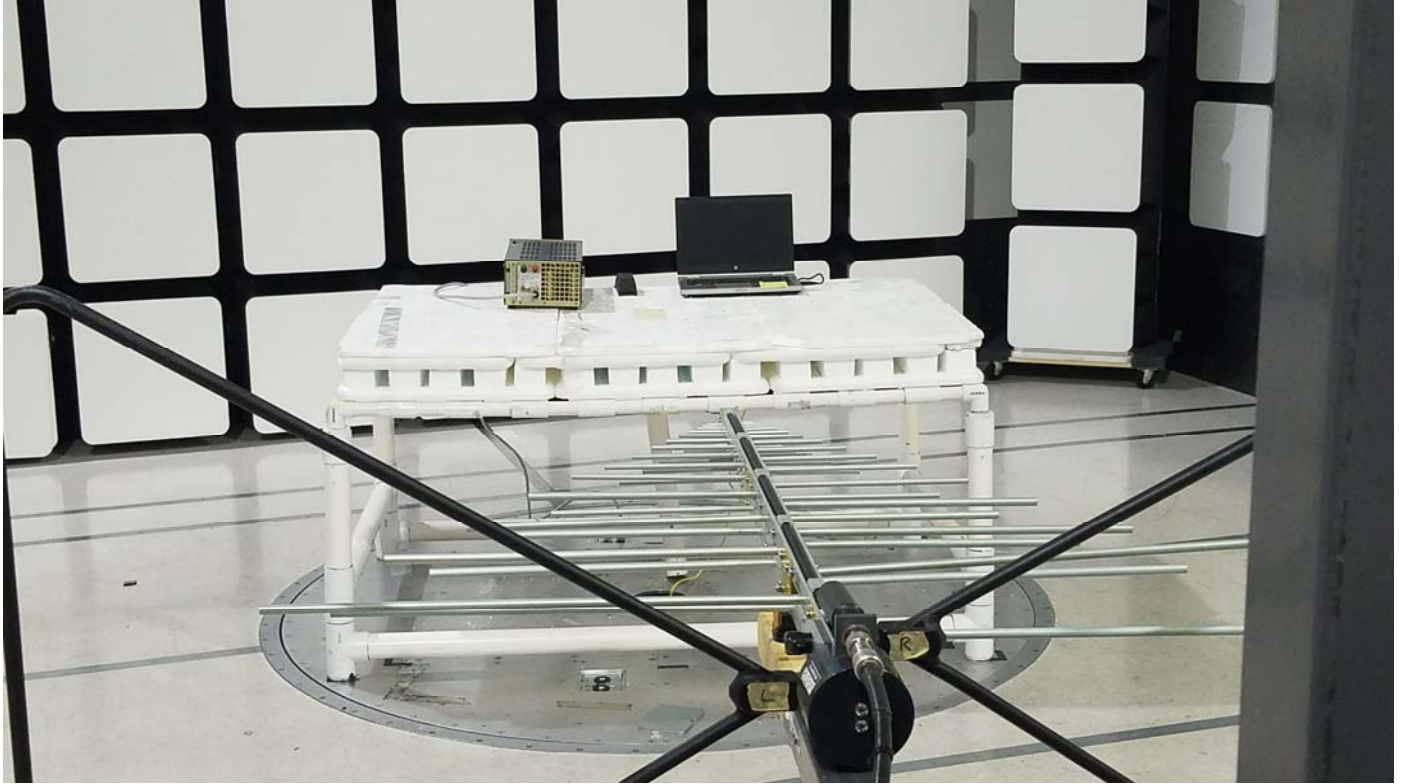
FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.5	22.5	35.5
18.5	33.5	23.0	35.9
19.0	34.0	23.5	35.7
19.5	34.0	24.0	35.6
20.0	34.3	24.5	36.0
20.5	34.9	25.0	36.2
21.0	34.7	25.5	36.1
21.5	35.0	26.0	36.2
22.0	35.0	26.5	35.7

COM-POWER PA-840
MICROWAVE PREAMPLIFIER

S/N: 711013

CALIBRATION DATE: MAY 10, 2018

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	26.90	31.0	24.56
19.0	24.65	31.5	25.84
20.0	25.74	32.0	26.93
21.0	24.78	32.5	27.76
22.0	24.83	33.0	25.76
23.0	24.81	33.5	26.76
24.0	25.52	34.0	26.51
25.0	24.90	34.5	27.49
26.0	25.92	35.0	27.64
26.5	26.53	35.5	27.45
27.0	26.41	36.0	25.08
27.5	24.78	36.5	25.61
28.0	25.13	37.0	24.69
28.5	29.29	37.5	24.10
29.0	28.44	38.0	24.83
29.5	27.51	38.5	24.41
30.0	27.12	39.0	24.44
30.5	26.42	39.5	22.96
		40.0	22.29



FRONT VIEW

EXTERNAL DC MODE

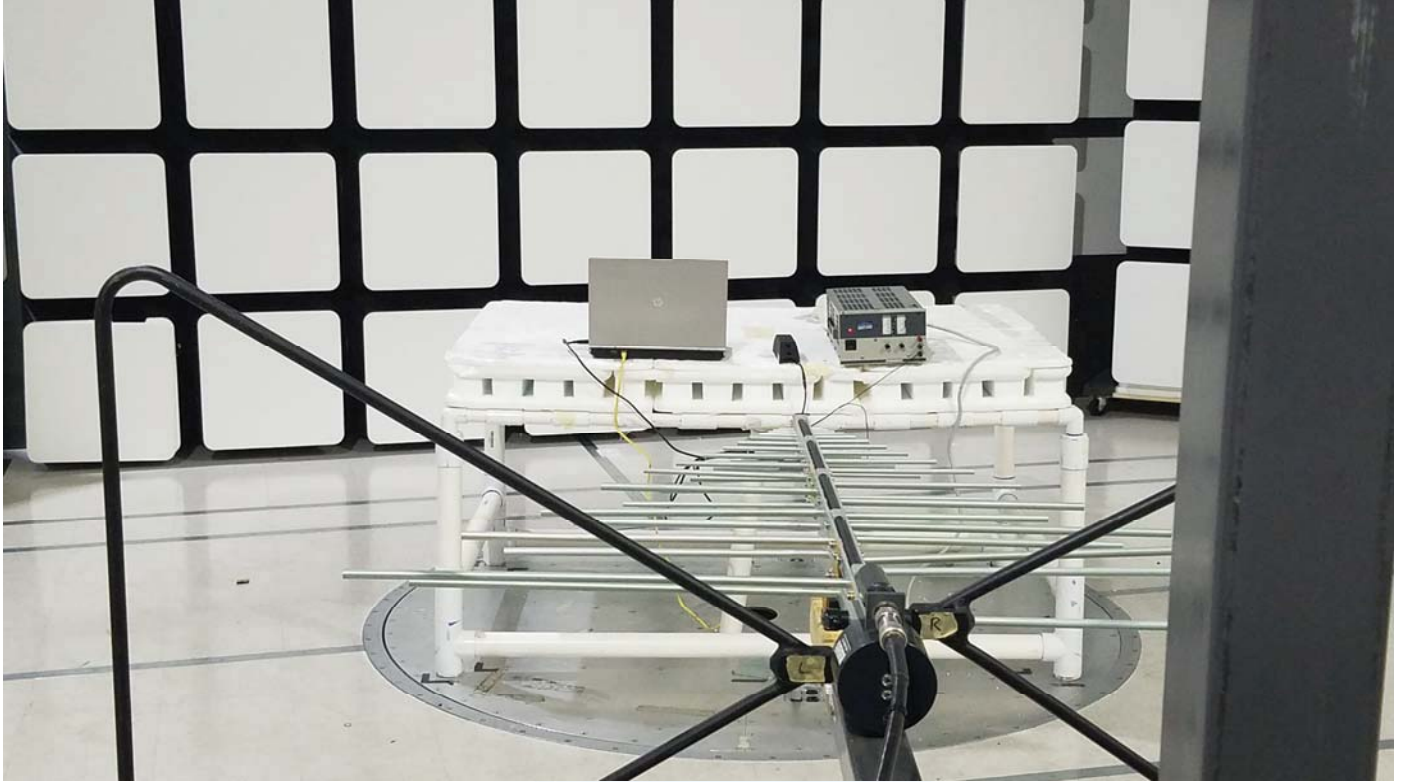
COMODULE OÜ

NB S

MODEL: F0210008

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

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



REAR VIEW

EXTERNAL DC MODE

COMODULE OÜ

NB S

MODEL: F0210008

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

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



FRONT VIEW

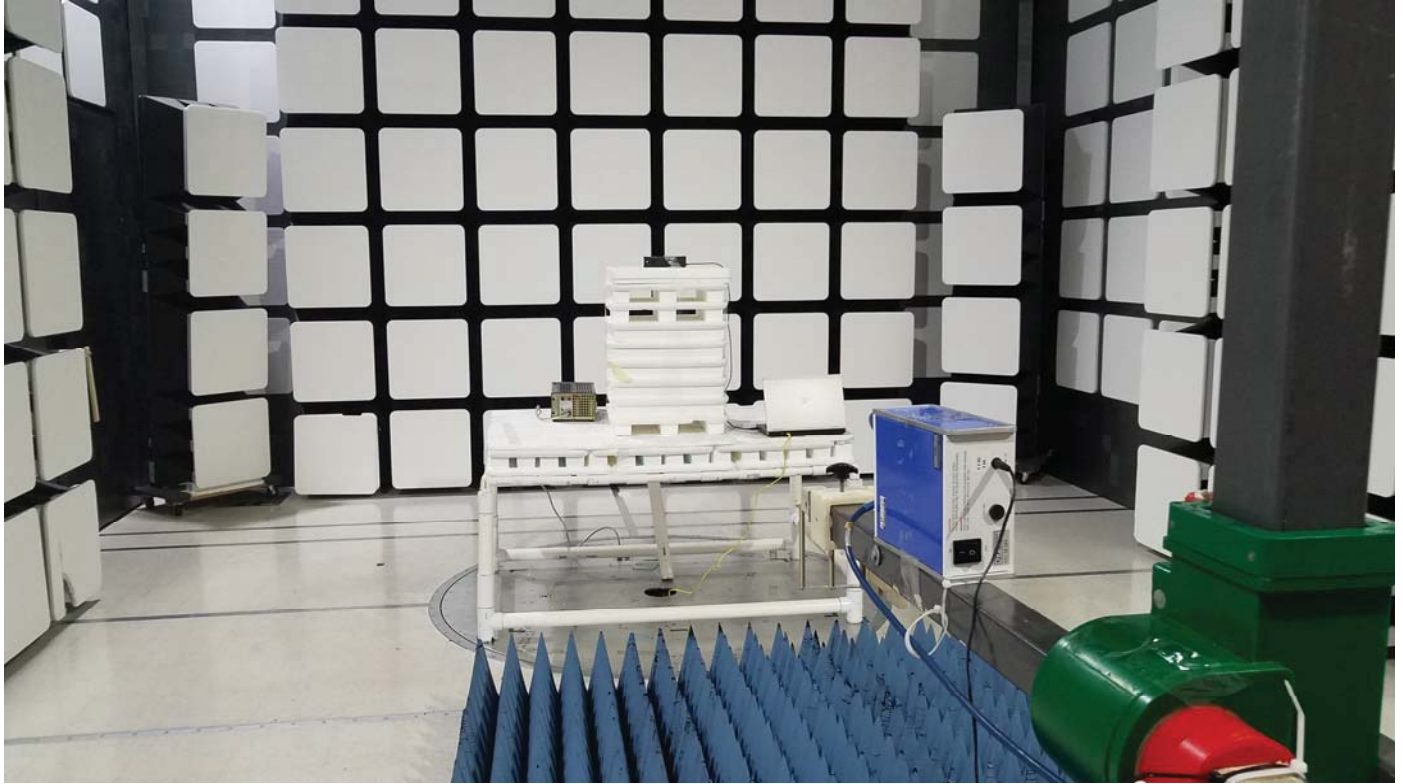
EXTERNAL DC MODE

COMODULE OÜ
NB S

MODEL: F0210008

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

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



REAR VIEW

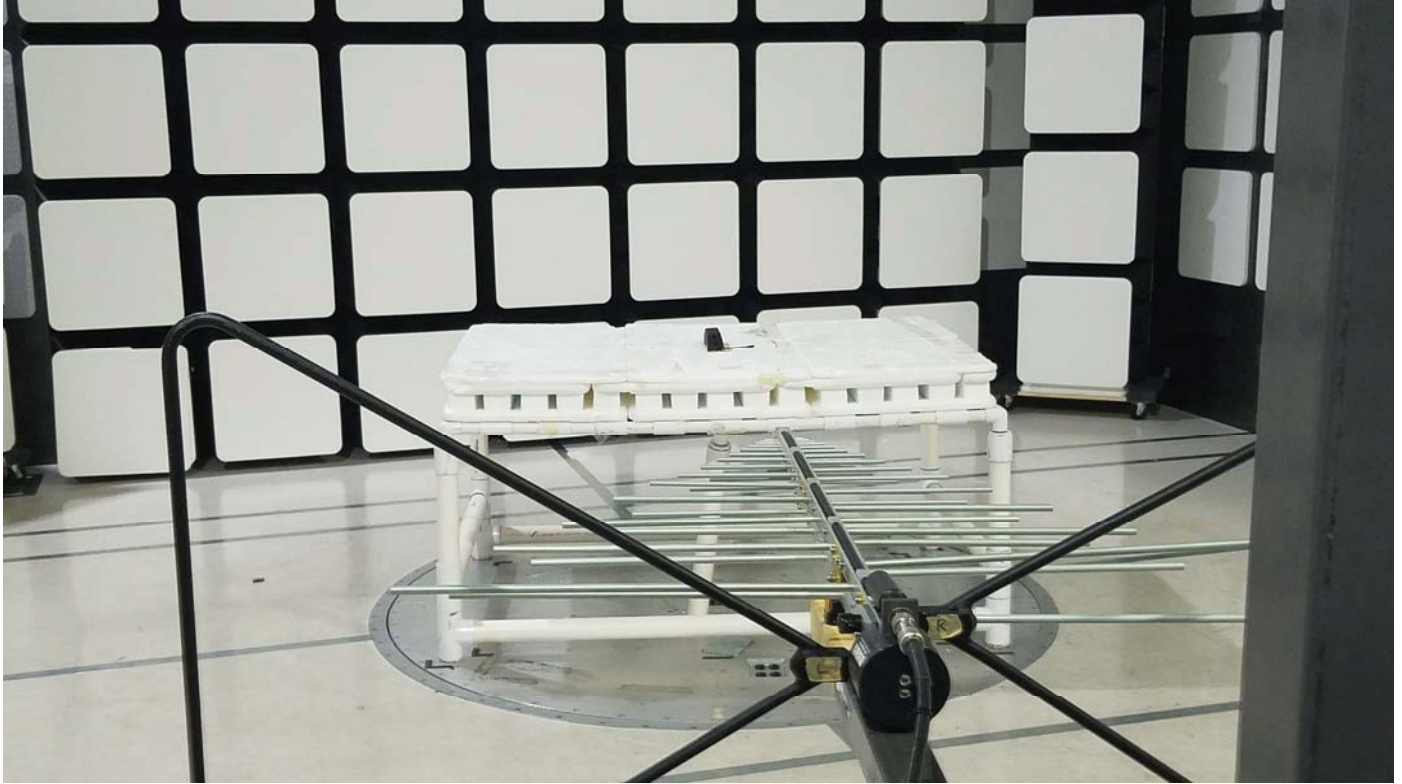
EXTERNAL DC MODE

**COMODULE OÜ
NB S**

MODEL: F0210008

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

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



FRONT VIEW

INTERNAL BATTERY MODE

COMODULE OÜ

NB S

MODEL: F0210008

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

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



REAR VIEW

INTERNAL BATTERY MODE

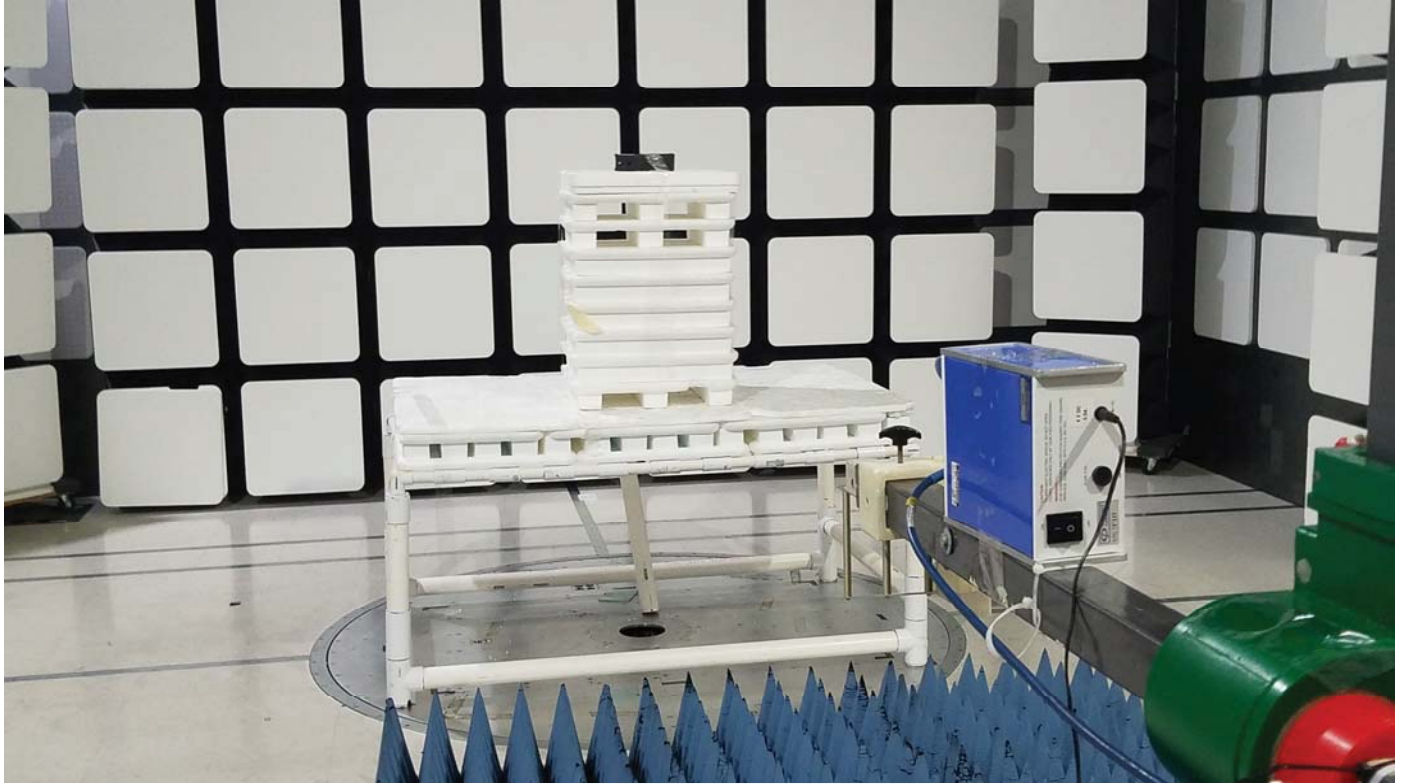
COMODULE OÜ

NB S

MODEL: F0210008

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

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

**FRONT VIEW****INTERNAL BATTERY MODE**

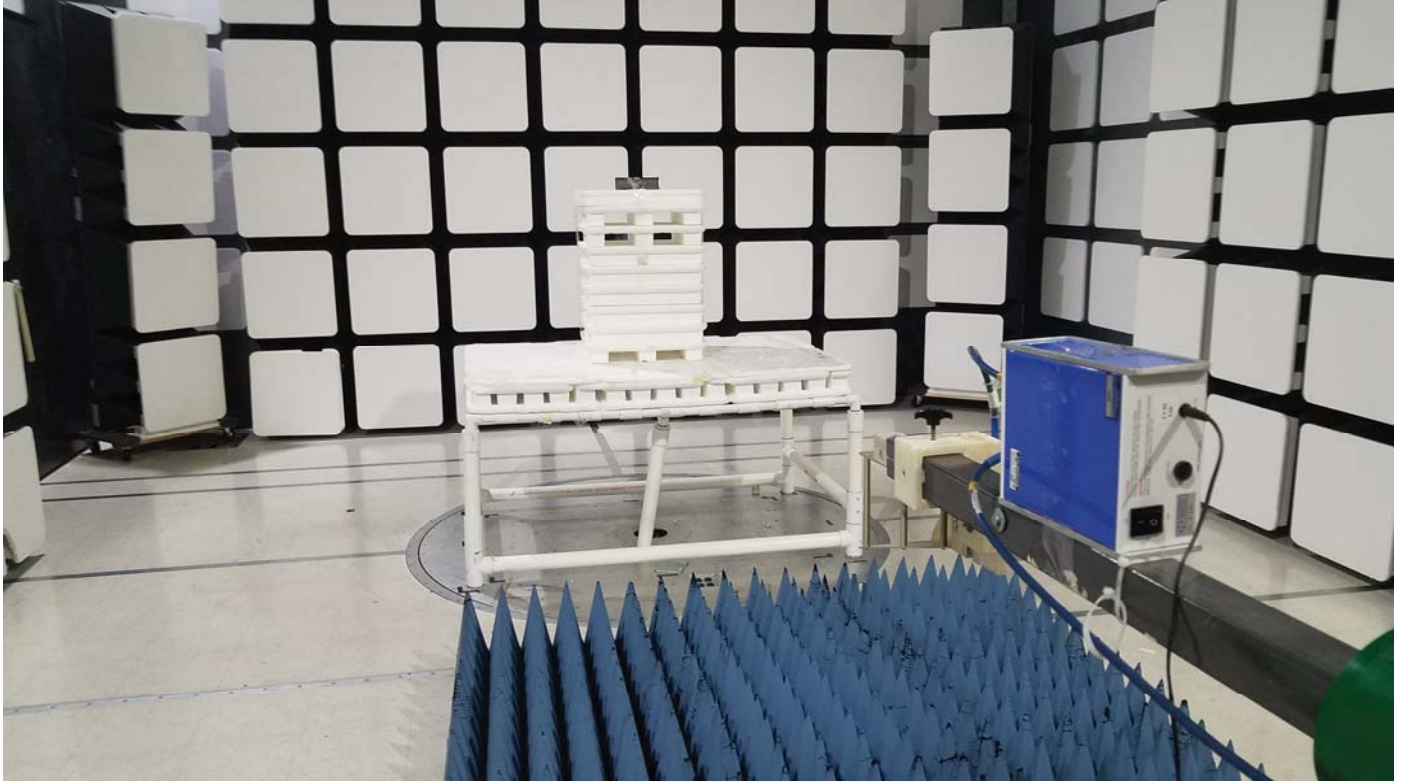
COMODULE OÜ

NB S

MODEL: F0210008

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

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



REAR VIEW

INTERNAL BATTERY MODE

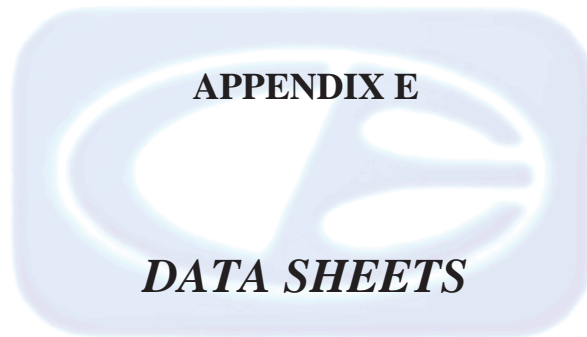
COMODULE OÜ

NB S

MODEL: F0210008

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

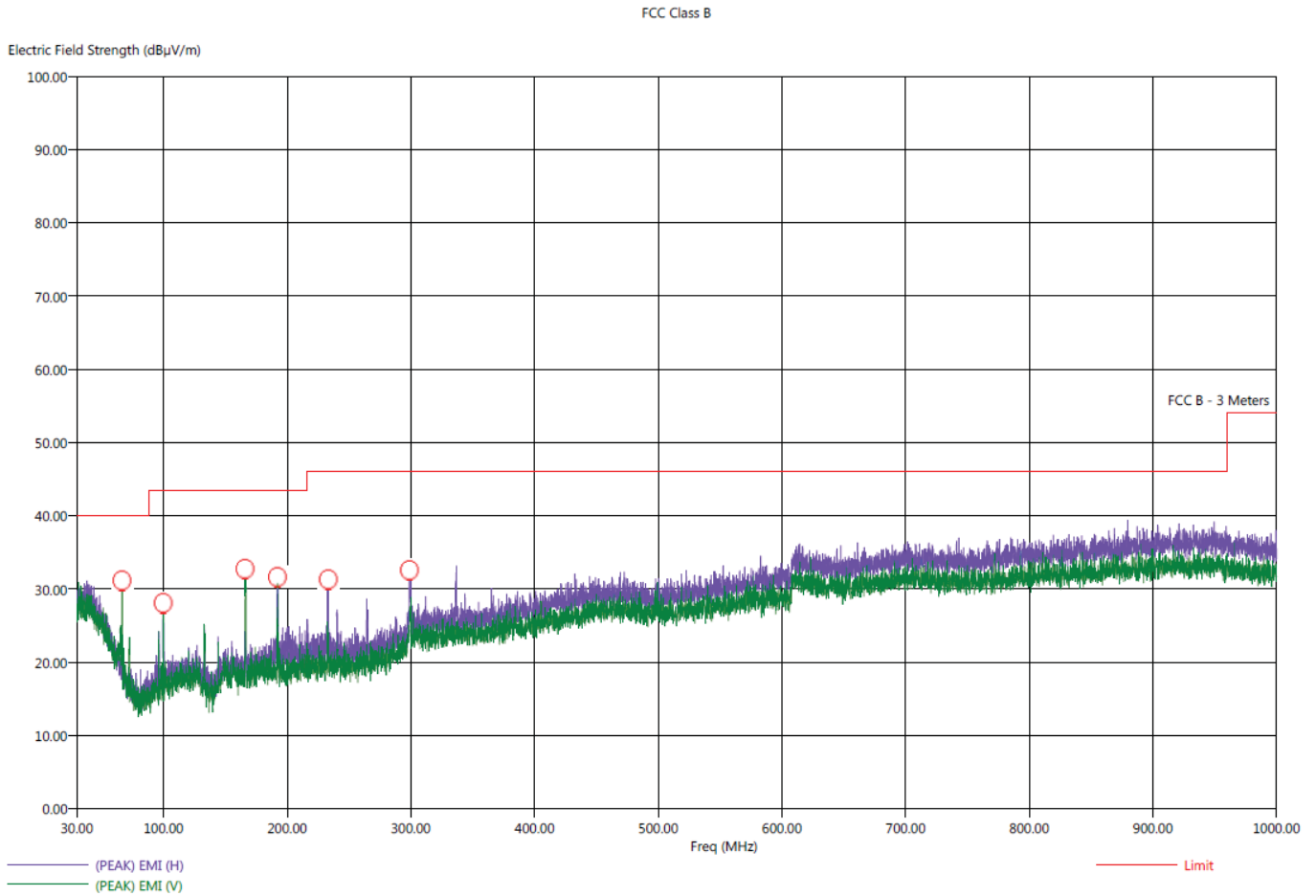
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



RADIATED EMISSIONS
DATA SHEETS

Title: Pre-Scan - FCC Class B
 File: Agilent - Pre-Scan #1 - DC Mode - FCC Class B - 30 MHz to 1000 MHz - 2-18-19.set
 Operator: Kyle Fujimoto
 EUT Type: NB S
 EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
 Company: COMODULE O'D
 Model: F0210008
 S/N: N/A
 External DC Mode

2/21/2019 4:52:47 PM
 Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B
 File: Agilent - Final Scan #1 - DC Mode - FCC Class B - 30 MHz to 1000 MHz - 2-18-19.set
 Operator: Kyle Fujimoto
 EUT Type: NB S
 EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
 Company: COMODULE
 Model: F0210008
 S/N: N/A
 DC Mode

2/21/2019 5:16:08 PM
 Sequence: Final Measurements

FCC Class B										
Freq (MHz)	Pol	(PEAK) EMI (dBuV/m)	(QP) EMI (dBuV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBuV/m)	Transducer (dB)	Cable (dB)	Ttbl Agl (deg)	Twr Ht (cm)
66.50	V	32.27	27.52	-7.73	-12.48	40.00	14.42	0.84	142.25	109.25
99.70	V	33.52	29.09	-9.98	-14.41	43.50	14.37	1.10	173.75	111.24
166.00	V	34.06	29.01	-9.44	-14.49	43.50	13.46	1.30	289.75	102.35
192.10	H	37.09	27.96	-6.41	-15.54	43.50	24.60	1.47	8.50	354.73
233.20	H	36.59	32.01	-9.41	-13.99	46.00	14.90	1.60	115.75	351.91
298.80	H	36.89	32.21	-9.11	-13.79	46.00	17.67	1.70	67.50	335.02

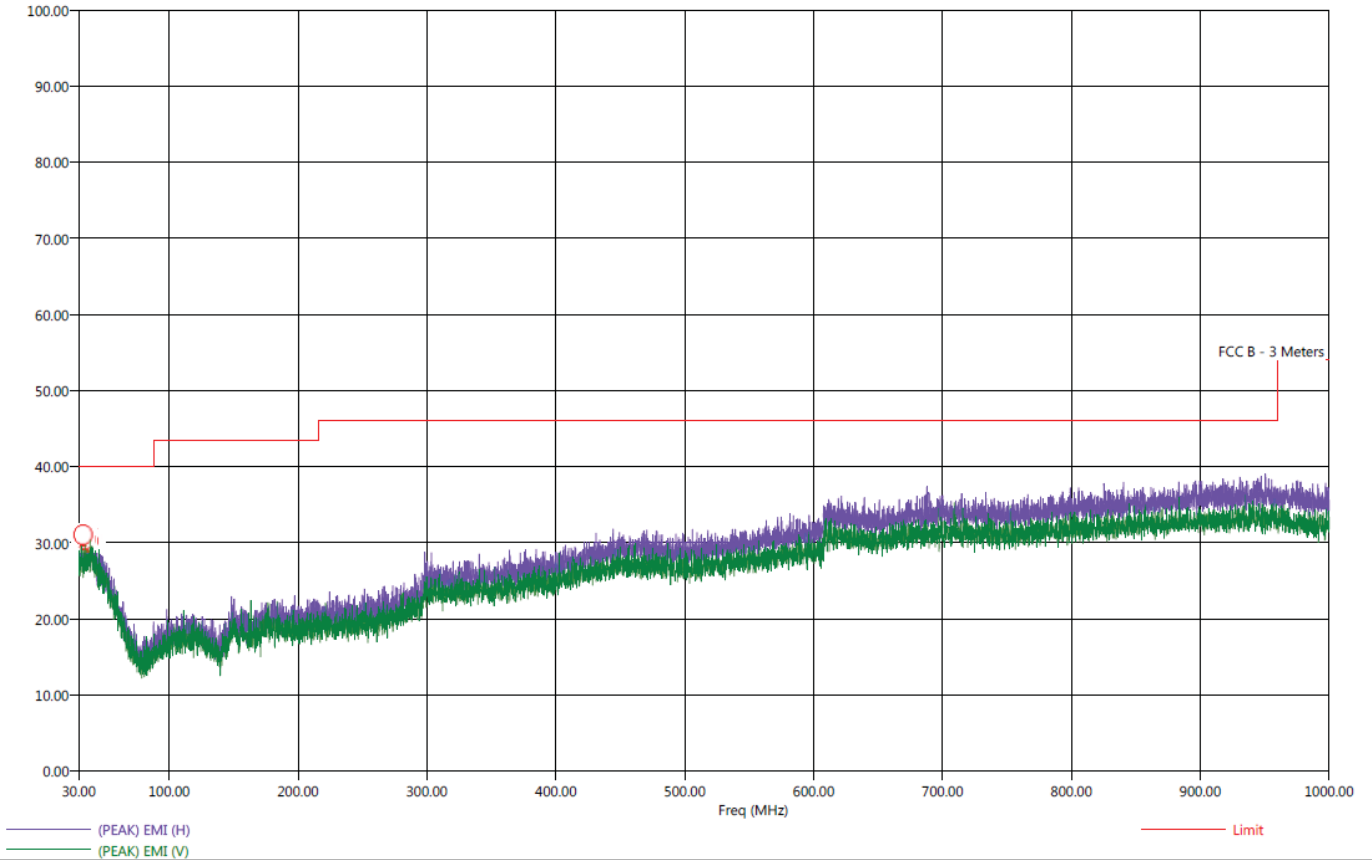


Title: Pre-Scan - FCC Class B
File: Agilent - Pre-Scan #1 - Battery Mode - FCC Class B - 30 MHz to 1000 MHz - 2-18-19.set
Operator: Kyle Fujimoto
EUT Type: NB S
EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
Company: COMODULE OU
Model: F0210008
S/N: N/A
Battery Mode

2/21/2019 4:11:56 PM
Sequence: Preliminary Scan

FCC Class B

Electric Field Strength (dBuV/m)



Title: Radiated Final - FCC Class B
 File: Agilent - Final Scan #1 - Battery Mode - FCC Class B - 30 MHz to 1000 MHz - 2-18-19.set
 Operator: Kyle Fujimoto
 EUT Type: NB S
 EUT Condition: The EUT is continuously transmitting at the low channel - X-Axis
 Company: COMODULE OÜ
 Model: F0210008
 S/N: N/A
 Internal Battery Mode

2/21/2019 4:28:43 PM
 Sequence: Final Measurements

FCC Class B

Freq (MHz)	Pol	(PEAK) EMI (dBµV/m)	(QP) EMI (dBµV/m)	(PEAK) Margin (dB)	(QP) Margin (dB)	Limit (dBµV/m)	Transducer (dB)	Cable (dB)	Ttbl Aql (dea)	Twr Ht (cm)
33.30	H	31.83	26.62	-8.17	-13.38	40.00	23.93	0.83	246.25	239.20
35.10	H	31.79	26.61	-8.21	-13.39	40.00	24.02	0.85	115.75	334.79
37.50	H	32.92	26.83	-7.08	-13.17	40.00	24.34	0.88	303.25	143.26
39.40	H	32.62	27.10	-7.38	-12.90	40.00	24.63	0.90	268.75	222.49
41.30	H	32.28	26.70	-7.72	-13.30	40.00	24.16	0.90	242.25	270.67
41.90	H	31.78	26.32	-8.22	-13.68	40.00	23.94	0.90	98.75	302.55





FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Fundamental - External DC Mode
 Low Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	74.32	V	113.97	-39.65	Peak	350.25	154.61	X-Axis
2402.00	71.88	V	93.97	-22.09	Avg	350.25	154.61	Vertical Polarization
2402.00	89.29	V	113.97	-24.68	Peak	354.25	149.05	Y-Axis
2402.00	82.29	V	93.97	-11.68	Avg	354.25	149.05	Vertical Polarization
2402.00	88.86	V	113.97	-25.11	Peak	275.50	156.34	Z-Axis
2402.00	81.09	V	93.97	-12.88	Avg	275.50	156.34	Vertical Polarization
2402.00	88.22	H	113.97	-25.75	Peak	230.00	158.97	X-Axis
2402.00	85.64	H	93.97	-8.33	Avg	230.00	158.97	Horizontal Polarization
2402.00	84.87	H	113.97	-29.10	Peak	176.50	159.38	Y-Axis
2402.00	82.71	H	93.97	-11.26	Avg	176.50	159.38	Horizontal Polarization
2402.00	87.11	H	113.97	-26.86	Peak	131.25	183.44	Z-Axis
2402.00	83.25	H	93.97	-10.72	Avg	131.25	183.44	Horizontal Polarization

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

 Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

 Fundamental - External DC Mode
 Middle Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2440.00	73.19	V	113.97	-40.78	Peak	234.75	125.29	X-Axis
2440.00	71.69	V	93.97	-22.29	Avg	234.75	125.29	Vertical Polarization
2440.00	84.00	V	113.97	-29.97	Peak	187.50	170.55	Y-Axis
2440.00	82.69	V	93.97	-11.28	Avg	187.50	170.55	Vertical Polarization
2440.00	84.28	V	113.97	-29.69	Peak	71.50	175.08	Z-Axis
2440.00	82.97	V	93.97	-11.00	Avg	71.50	175.08	Vertical Polarization
2440.00	87.19	H	113.97	-26.78	Peak	68.75	164.88	X-Axis
2440.00	85.81	H	93.97	-8.16	Avg	68.75	164.88	Horizontal Polarization
2440.00	82.67	H	113.97	-31.30	Peak	194.50	100.70	Y-Axis
2440.00	81.41	H	93.97	-12.56	Avg	194.50	100.70	Horizontal Polarization
2440.00	88.66	H	113.97	-27.31	Peak	162.00	115.20	Z-Axis
2440.00	85.40	H	93.97	-8.58	Avg	162.00	115.20	Horizontal Polarization

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Fundamental - External DC Mode
High Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	77.86	V	113.97	-36.11	Peak	238.00	145.65	X-Axis
2480.00	75.79	V	93.97	-18.18	Avg	238.00	145.65	Vertical Polarization
2480.00	85.20	V	113.97	-28.77	Peak	307.75	258.91	Y-Axis
2480.00	83.88	V	93.97	-10.09	Avg	307.75	258.91	Vertical Polarization
2480.00	84.62	V	113.97	-29.35	Peak	74.50	184.28	Z-Axis
2480.00	82.86	V	93.97	-11.11	Avg	74.50	184.28	Vertical Polarization
2480.00	88.74	H	113.97	-25.23	Peak	53.50	179.20	X-Axis
2480.00	87.10	H	93.97	-6.87	Avg	53.50	179.20	Horizontal Polarization
2480.00	84.97	H	113.97	-29.00	Peak	166.50	133.11	Y-Axis
2480.00	82.11	H	93.97	-11.86	Avg	166.50	133.11	Horizontal Polarization
2480.00	87.17	H	113.97	-26.80	Peak	357.00	188.46	Z-Axis
2480.00	84.09	H	93.97	-9.88	Avg	357.00	188.46	Horizontal Polarization



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.42	V	73.97	-33.56	Peak	87.25	157.83	
4804.00	28.23	V	53.97	-25.74	Avg	87.25	157.83	
7206.00	45.54	V	73.97	-28.43	Peak	197.00	150.19	
7206.00	34.23	V	53.97	-19.74	Avg	197.00	150.19	
9608.00	46.11	V	73.97	-27.86	Peak	254.50	152.04	
9608.00	35.09	V	53.97	-18.89	Avg	254.50	152.04	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.83	V	73.97	-32.14	Peak	218.75	153.00	
4804.00	28.68	V	53.97	-25.30	Avg	218.75	153.00	
7206.00	45.86	V	73.97	-28.11	Peak	44.75	107.20	
7206.00	35.67	V	53.97	-18.31	Avg	44.75	107.20	
9608.00	47.41	V	73.97	-26.56	Peak	146.50	150.79	
9608.00	35.34	V	53.97	-18.63	Avg	146.50	150.79	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.70	V	73.97	-32.27	Peak	128.50	145.17	
4804.00	28.31	V	53.97	-25.66	Avg	128.50	145.17	
7206.00	44.99	V	73.97	-28.98	Peak	355.50	155.14	
7206.00	32.95	V	53.97	-21.02	Avg	355.50	155.14	
9608.00	46.46	V	73.97	-27.52	Peak	192.25	162.67	
9608.00	35.11	V	53.97	-18.86	Avg	192.25	162.67	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.46	H	73.97	-33.51	Peak	249.50	141.47	
4804.00	30.10	H	53.97	-23.87	Avg	249.50	141.47	
7206.00	45.48	H	73.97	-28.49	Peak	278.00	145.25	
7206.00	33.56	H	53.97	-20.41	Avg	278.00	145.25	
9608.00	47.83	H	73.97	-26.14	Peak	177.75	137.65	
9608.00	35.82	H	53.97	-18.16	Avg	177.75	137.65	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	40.57	H	73.97	-33.40	Peak	137.50	159.68	
4804.00	29.45	H	53.97	-24.52	Avg	137.50	159.68	
7206.00	47.66	H	73.97	-26.31	Peak	212.75	183.20	
7206.00	39.20	H	53.97	-14.78	Avg	212.75	183.20	
9608.00	46.97	H	73.97	-27.00	Peak	355.25	183.20	
9608.00	35.27	H	53.97	-18.71	Avg	355.25	183.20	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - External DC Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	39.96	H	73.97	-34.01	Peak	218.75	158.85	
4804.00	28.36	H	53.97	-25.61	Avg	218.75	158.85	
7206.00	44.77	H	73.97	-29.20	Peak	93.25	117.05	
7206.00	33.62	H	53.97	-20.35	Avg	93.25	117.05	
9608.00	46.25	H	73.97	-27.73	Peak	158.00	162.31	
9608.00	35.20	H	53.97	-18.77	Avg	158.00	162.31	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

 Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

 Harmonics - Mid Channel - External DC Mode
 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	44.24	V	73.97	-29.73	Peak	44.75	144.52	
4880.00	36.81	V	53.97	-17.16	Avg	44.75	144.52	
7320.00	45.28	V	73.97	-28.69	Peak	251.50	133.65	
7320.00	33.31	V	53.97	-20.66	Avg	251.50	133.65	
9760.00	47.52	V	73.97	-26.46	Peak	341.25	134.25	
9760.00	36.45	V	53.97	-17.52	Avg	341.25	134.25	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Mid Channel - External DC Mode
 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	42.69	V	73.97	-31.28	Peak	344.00	165.24	
4880.00	31.29	V	53.97	-22.68	Avg	344.00	165.24	
7320.00	47.21	V	73.97	-26.76	Peak	142.50	146.58	
7320.00	35.69	V	53.97	-18.28	Avg	142.50	146.58	
9760.00	48.36	V	73.97	-25.61	Peak	12.25	132.41	
9760.00	36.29	V	53.97	-17.68	Avg	12.25	132.41	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Mid Channel - External DC Mode
 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	40.36	V	73.97	-33.61	Peak	205.50	111.92	
4880.00	28.51	V	53.97	-25.46	Avg	205.50	111.92	
7320.00	48.13	V	73.97	-25.84	Peak	136.25	101.25	
7320.00	39.64	V	53.97	-14.33	Avg	136.25	101.25	
9760.00	48.55	V	73.97	-25.42	Peak	10.75	102.25	
9760.00	36.16	V	53.97	-17.81	Avg	10.75	102.25	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Mid Channel - External DC Mode
 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	43.41	H	73.97	-30.56	Peak	78.75	104.64	
4880.00	34.24	H	53.97	-19.73	Avg	78.75	104.64	
7320.00	49.45	H	73.97	-24.52	Peak	157.50	105.25	
7320.00	33.13	H	53.97	-20.84	Avg	157.50	105.25	
9760.00	48.55	H	73.97	-25.42	Peak	358.25	102.25	
9760.00	37.02	H	53.97	-16.95	Avg	358.25	102.25	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Mid Channel - External DC Mode
 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	40.28	H	73.97	-33.69	Peak	154.75	105.41	
4880.00	28.55	H	53.97	-25.43	Avg	154.75	105.41	
7320.00	46.26	H	73.97	-27.71	Peak	147.00	139.80	
7320.00	37.20	H	53.97	-16.77	Avg	147.00	139.80	
9760.00	47.89	H	73.97	-26.08	Peak	257.25	139.80	
9760.00	36.47	H	53.97	-17.50	Avg	257.25	139.80	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Mid Channel - External DC Mode
 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	41.15	H	73.97	-32.82	Peak	219.25	140.88	
4880.00	28.97	H	53.97	-25.01	Avg	219.25	140.88	
7320.00	46.78	H	73.97	-27.19	Peak	10.00	140.88	
7320.00	35.17	H	53.97	-18.80	Avg	10.00	140.88	
9760.00	49.70	H	73.97	-24.27	Peak	350.00	140.88	
9760.00	38.18	H	53.97	-15.79	Avg	350.00	140.88	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

 Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

 Harmonics - High Channel - External DC Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	43.63	V	73.97	-30.34	Peak	72.75	141.00	
4980.00	29.78	V	53.97	-24.19	Avg	72.75	141.00	
7440.00	46.13	V	73.97	-27.85	Peak	217.00	155.92	
7440.00	34.97	V	53.97	-19.00	Avg	217.00	155.92	
9920.00	47.11	V	73.97	-26.86	Peak	98.25	155.92	
9920.00	35.21	V	53.97	-18.76	Avg	98.25	155.92	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
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 Tested By: Kyle Fujimoto

Harmonics - High Channel - External DC Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	41.75	V	73.97	-32.22	Peak	350.00	155.92	
4980.00	29.92	V	53.97	-24.06	Avg	350.00	155.92	
7440.00	45.20	V	73.97	-28.77	Peak	141.50	144.52	
7440.00	33.25	V	53.97	-20.72	Avg	141.50	144.52	
9920.00	47.30	V	73.97	-26.67	Peak	23.50	129.77	
9920.00	35.56	V	53.97	-18.41	Avg	23.50	129.77	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

 Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

 Harmonics - High Channel - External DC Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	41.31	V	73.97	-32.67	Peak	162.75	129.77	
4980.00	30.26	V	53.97	-23.71	Avg	162.75	129.77	
7440.00	45.70	V	73.97	-28.27	Peak	74.75	100.25	
7440.00	35.14	V	53.97	-18.83	Avg	74.75	100.25	
9920.00	48.15	V	73.97	-25.82	Peak	338.00	100.25	
9920.00	35.68	V	53.97	-18.29	Avg	338.00	100.25	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected

FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

 Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

 Harmonics - High Channel - External DC Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	43.74	H	73.97	-30.23	Peak	283.25	115.38	
4980.00	30.51	H	53.97	-23.46	Avg	283.25	115.38	
7440.00	45.34	H	73.97	-28.63	Peak	26.25	125.95	
7440.00	34.52	H	53.97	-19.45	Avg	26.25	125.95	
9920.00	48.07	H	73.97	-25.90	Peak	351.50	125.95	
9920.00	36.27	H	53.97	-17.70	Avg	351.50	125.95	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



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 COMODULE OU
 NB S
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Date: 02/21/2019
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 Tested By: Kyle Fujimoto

Harmonics - High Channel - External DC Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	42.04	H	73.97	-31.93	Peak	186.75	113.29	
4980.00	30.62	H	53.97	-23.35	Avg	186.75	113.29	
7440.00	46.98	H	73.97	-27.00	Peak	233.75	113.05	
7440.00	36.75	H	53.97	-17.22	Avg	233.75	113.05	
9920.00	46.95	H	73.97	-27.02	Peak	21.75	109.59	
9920.00	35.51	H	53.97	-18.46	Avg	21.75	109.59	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



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 COMODULE OU
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Date: 02/21/2019
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 Tested By: Kyle Fujimoto

Harmonics - High Channel - External DC Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	44.67	H	73.97	-29.30	Peak	230.00	102.85	
4980.00	34.68	H	53.97	-19.29	Avg	230.00	102.85	
7440.00	46.03	H	73.97	-27.94	Peak	83.50	114.19	
7440.00	33.61	H	53.97	-20.36	Avg	83.50	114.19	
9920.00	48.19	H	73.97	-25.78	Peak	317.50	111.02	
9920.00	35.29	H	53.97	-18.68	Avg	317.50	111.02	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
COMODULE OU
NB S
Model: F0210008

Date: 02/21/2019
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz - External DC Mode
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz - External DC Mode

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 of the Transmitter for the EUT
								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



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Dates: 02/21/2019 and 02/22/2019
 Lab: D
 Tested By: Kyle Fujimoto

Fundamental - Internal Battery Mode
 Low Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	79.36	V	113.97	-34.61	Peak	103.25	154.28	X-Axis
2402.00	77.29	V	93.97	-16.68	Avg	103.25	154.28	Vertical Polarization
2402.00	85.19	V	113.97	-28.78	Peak	325.25	188.64	Y-Axis
2402.00	84.41	V	93.97	-9.56	Avg	325.25	188.64	Vertical Polarization
2402.00	84.02	V	113.97	-29.95	Peak	103.25	148.25	Z-Axis
2402.00	82.15	V	93.97	-11.82	Avg	103.25	148.25	Vertical Polarization
2402.00	88.00	H	113.97	-25.97	Peak	222.25	177.00	X-Axis
2402.00	83.04	H	93.97	-10.93	Avg	222.25	177.00	Horizontal Polarization
2402.00	78.28	H	113.97	-35.71	Peak	354.25	156.02	Y-Axis
2402.00	76.98	H	93.97	-16.99	Avg	354.25	156.02	Horizontal Polarization
2402.00	84.86	H	113.97	-29.11	Peak	350.25	131.24	Z-Axis
2402.00	82.59	H	93.97	-11.38	Avg	350.25	131.24	Horizontal Polarization



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Fundamental - Internal Battery Mode
Middle Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2440.00	74.99	V	113.97	-38.98	Peak	212.00	106.41	X-Axis
2440.00	73.58	V	93.97	-20.39	Avg	212.00	106.41	Vertical Polarization
2440.00	83.11	V	113.97	-30.86	Peak	315.25	137.21	Y-Axis
2440.00	81.02	V	93.97	-12.95	Avg	315.25	137.21	Vertical Polarization
2440.00	85.98	V	113.97	-27.99	Peak	212.50	147.25	Z-Axis
2440.00	83.75	V	93.97	-10.22	Avg	212.50	147.25	Vertical Polarization
2440.00	85.29	H	113.97	-28.68	Peak	180.25	204.29	X-Axis
2440.00	83.57	H	93.97	-10.40	Avg	180.25	204.29	Horizontal Polarization
2440.00	83.01	H	113.97	-30.96	Peak	144.25	146.21	Y-Axis
2440.00	81.21	H	93.97	-12.76	Avg	144.25	146.21	Horizontal Polarization
2440.00	84.06	H	113.97	-29.91	Peak	9.50	105.24	Z-Axis
2440.00	82.12	H	93.97	-11.85	Avg	9.50	105.24	Horizontal Polarization



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Fundamental - Internal Battery Mode
High Channel

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	78.98	V	113.97	-34.99	Peak	102.25	154.42	X-Axis
2480.00	76.86	V	93.97	-17.11	Avg	102.25	154.42	Vertical Polarization
2480.00	85.69	V	113.97	-28.28	Peak	146.50	215.62	Y-Axis
2480.00	84.84	V	93.97	-9.13	Avg	146.50	215.62	Vertical Polarization
2480.00	85.02	V	113.97	-28.95	Peak	90.50	144.16	Z-Axis
2480.00	83.59	V	93.97	-10.38	Avg	90.50	144.16	Vertical Polarization
2480.00	89.36	H	113.97	-24.61	Peak	49.00	179.14	X-Axis
2480.00	87.91	H	93.97	-6.06	Avg	49.00	179.14	Horizontal Polarization
2480.00	79.91	H	113.97	-34.06	Peak	272.25	101.15	Y-Axis
2480.00	78.69	H	93.97	-15.28	Avg	272.25	101.15	Horizontal Polarization
2480.00	86.69	H	113.97	-27.28	Peak	340.25	169.64	Z-Axis
2480.00	83.81	H	93.97	-10.16	Avg	340.25	169.64	Horizontal Polarization



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Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	43.24	V	73.97	-30.73	Peak	282.25	175.20	
4804.00	34.58	V	53.97	-19.39	Avg	28.25	14.00	
7206.00	44.15	V	73.97	-29.82	Peak	302.25	199.21	
7206.00	34.10	V	53.97	-19.87	Avg	302.25	199.21	
9608.00	48.59	V	73.97	-25.38	Peak	13.50	241.26	
9608.00	38.16	V	53.97	-15.81	Avg	13.50	241.26	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



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Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	45.23	V	73.97	-28.74	Peak	281.25	175.20	
4804.00	36.78	V	53.97	-17.19	Avg	281.25	175.20	
7206.00	46.71	V	73.97	-27.26	Peak	290.00	207.14	
7206.00	36.74	V	53.97	-17.23	Avg	290.00	207.14	
9608.00	50.49	V	73.97	-23.48	Peak	10.50	249.89	
9608.00	40.95	V	53.97	-13.02	Avg	10.50	249.89	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



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 COMODULE OU
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 Tested By: Kyle Fujimoto

Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	45.59	V	73.97	-28.38	Peak	104.50	247.25	
4804.00	36.45	V	53.97	-17.52	Avg	104.50	247.25	
7206.00	47.26	V	73.97	-26.71	Peak	144.25	164.13	
7206.00	37.54	V	53.97	-16.43	Avg	144.25	164.13	
9608.00	48.29	V	73.97	-25.68	Peak	146.25	210.21	
9608.00	37.26	V	53.97	-16.71	Avg	146.25	210.21	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



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 COMODULE OU
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Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.05	H	73.97	-32.92	Peak	237.50	207.38	
4804.00	30.00	H	53.97	-23.97	Avg	237.50	207.38	
7206.00	45.05	H	73.97	-28.92	Peak	3.50	223.14	
7206.00	34.62	H	53.97	-19.35	Avg	3.50	223.14	
9608.00	48.00	H	73.97	-25.97	Peak	357.25	175.26	
9608.00	37.28	H	53.97	-16.69	Avg	357.25	175.26	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	41.08	H	73.97	-32.89	Peak	219.75	190.91	
4804.00	29.99	H	53.97	-23.98	Avg	219.75	190.91	
7206.00	49.60	H	73.97	-24.37	Peak	128.50	143.28	
7206.00	40.38	H	53.97	-13.59	Avg	128.50	143.28	
9608.00	47.67	H	73.97	-26.30	Peak	354.25	159.02	
9608.00	36.94	H	53.97	-17.03	Avg	354.25	159.02	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Low Channel - Internal Battery Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4804.00	43.09	H	73.97	-30.88	Peak	357.50	191.14	
4804.00	33.98	H	53.97	-19.99	Avg	357.50	191.14	
7206.00	48.22	H	73.97	-25.75	Peak	18.00	223.14	
7206.00	38.70	H	53.97	-15.27	Avg	18.00	223.14	
9608.00	49.14	H	73.97	-24.83	Peak	306.00	159.20	
9608.00	38.27	H	53.97	-15.70	Avg	306.00	159.20	
12010.00								No Emission Detected
12010.00								Detected
14412.00								No Emission Detected
14412.00								Detected
16814.00								No Emission Detected
16814.00								Detected
19216.00								No Emission Detected
19216.00								Detected
21618.00								No Emission Detected
21618.00								Detected
24020.00								No Emission Detected
24020.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	40.89	V	73.97	-33.08	Peak	110.50	127.32	
4880.00	29.89	V	53.97	-24.08	Avg	110.50	127.32	
7320.00	49.00	V	73.97	-24.97	Peak	359.75	111.50	
7320.00	47.71	V	53.97	-8.26	Avg	359.75	111.50	
9760.00	48.59	V	73.97	-25.38	Peak	0.00	111.56	
9760.00	37.87	V	53.97	-16.10	Avg	0.00	111.56	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	44.28	V	73.97	-29.69	Peak	311.25	248.25	
4880.00	36.24	V	53.97	-17.73	Avg	311.25	248.25	
7320.00	44.87	V	73.97	-29.10	Peak	29.25	124.21	
7320.00	34.29	V	53.97	-19.68	Avg	29.25	124.21	
9760.00	51.28	V	73.97	-22.69	Peak	341.25	248.63	
9760.00	41.29	V	53.97	-12.68	Avg	341.25	248.63	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	43.29	V	73.97	-30.68	Peak	102.50	247.19	
4880.00	34.06	V	53.97	-19.91	Avg	102.50	247.19	
7320.00	49.02	V	73.97	-24.95	Peak	180.25	170.21	
7320.00	39.69	V	53.97	-14.28	Avg	180.25	170.21	
9760.00	51.03	V	73.97	-22.94	Peak	141.25	248.68	
9760.00	40.26	V	53.97	-13.71	Avg	141.25	248.68	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	45.19	H	73.97	-28.78	Peak	202.00	102.25	
4880.00	36.29	H	53.97	-17.68	Avg	202.00	102.25	
7320.00	47.06	H	73.97	-26.91	Peak	142.00	1523.37	
7320.00	36.54	H	53.97	-17.43	Avg	142.00	152.37	
9760.00	50.15	H	73.97	-23.82	Peak	75.25	184.26	
9760.00	40.29	H	53.97	-13.68	Avg	75.25	184.26	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	43.29	H	73.97	-30.68	Peak	350.25	158.18	
4880.00	31.29	H	53.97	-22.68	Avg	350.25	158.18	
7320.00	44.12	H	73.97	-29.85	Peak	102.25	102.29	
7320.00	33.25	H	53.97	-20.72	Avg	102.25	102.29	
9760.00	47.29	H	73.97	-26.68	Peak	312.00	192.05	
9760.00	36.25	H	53.97	-17.72	Avg	312.00	192.05	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - Middle Channel - Internal Battery Mode
 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	43.02	H	73.97	-30.95	Peak	353.25	184.21	
4880.00	32.69	H	53.97	-21.28	Avg	353.25	184.21	
7320.00	49.09	H	73.97	-24.88	Peak	3.25	221.25	
7320.00	40.21	H	53.97	-13.76	Avg	3.25	221.25	
9760.00	50.16	H	73.97	-23.81	Peak	6.25	155.28	
9760.00	38.67	H	53.97	-15.30	Avg	6.25	155.28	
12200.00								No Emission Detected
12200.00								Detected
14640.00								No Emission Detected
14640.00								Detected
17080.00								No Emission Detected
17080.00								Detected
19520.00								No Emission Detected
19520.00								Detected
21960.00								No Emission Detected
21960.00								Detected
24400.00								No Emission Detected
24400.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	43.89	V	73.97	-30.08	Peak	108.50	127.44	
4980.00	34.42	V	53.97	-19.55	Avg	108.50	127.44	
7440.00	46.05	V	73.97	-27.92	Peak	0.00	175.32	
7440.00	34.72	V	53.97	-19.25	Avg	0.00	175.32	
9920.00	47.41	V	73.97	-26.56	Peak	229.25	111.44	
9920.00	36.83	V	53.97	-17.14	Avg	229.25	111.44	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	46.36	V	73.97	-27.61	Peak	112.25	207.02	
4980.00	38.16	V	53.97	-15.81	Avg	112.25	207.02	
7440.00	45.19	V	73.97	-28.78	Peak	180.00	111.38	
7440.00	34.63	V	53.97	-19.34	Avg	180.00	111.38	
9920.00	47.81	V	73.97	-26.16	Peak	0.00	222.97	
9920.00	36.63	V	53.97	-17.34	Avg	0.00	222.97	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	43.52	V	73.97	-30.45	Peak	100.50	111.44	
4980.00	32.54	V	53.97	-21.43	Avg	100.50	111.44	
7440.00	45.66	V	73.97	-28.31	Peak	299.25	249.99	
7440.00	34.58	V	53.97	-19.39	Avg	299.25	249.99	
9920.00	47.18	V	73.97	-26.79	Peak	56.50	143.20	
9920.00	36.81	V	53.97	-17.16	Avg	56.50	143.20	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - X-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	48.40	H	73.97	-25.58	Peak	64.00	122.61	
4980.00	39.75	H	53.97	-14.22	Avg	64.00	122.61	
7440.00	45.70	H	73.97	-28.27	Peak	167.00	152.70	
7440.00	35.91	H	53.97	-18.06	Avg	167.00	152.70	
9920.00	49.39	H	73.97	-24.58	Peak	97.50	144.88	
9920.00	37.68	H	53.97	-16.29	Avg	97.50	144.88	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - Y-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	42.56	H	73.97	-31.41	Peak	163.75	167.50	
4980.00	32.27	H	53.97	-21.70	Avg	163.75	167.50	
7440.00	47.94	H	73.97	-26.03	Peak	19.00	126.07	
7440.00	38.67	H	53.97	-15.30	Avg	19.00	126.07	
9920.00	47.84	H	73.97	-26.13	Peak	10.25	125.25	
9920.00	35.38	H	53.97	-18.59	Avg	10.25	125.25	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected



FCC 15.249
 COMODULE OU
 NB S
 Model: F0210008

Date: 02/21/2019
 Lab: D
 Tested By: Kyle Fujimoto

Harmonics - High Channel - Internal Battery Mode
 Transmit Mode - Z-Axis

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
4980.00	48.07	H	73.97	-25.91	Peak	29.25	150.49	
4980.00	38.01	H	53.97	-15.96	Avg	29.25	150.49	
7440.00	53.71	H	73.97	-20.26	Peak	203.50	145.23	
7440.00	42.43	H	53.97	-11.54	Avg	203.50	145.23	
9920.00	46.36	H	73.97	-27.61	Peak	134.25	140.88	
9920.00	35.25	H	53.97	-18.72	Avg	134.25	140.88	
12400.00								No Emission Detected
12400.00								Detected
14880.00								No Emission Detected
14880.00								Detected
17360.00								No Emission Detected
17360.00								Detected
19840.00								No Emission Detected
19840.00								Detected
22320.00								No Emission Detected
22320.00								Detected
24800.00								No Emission Detected
24800.00								Detected

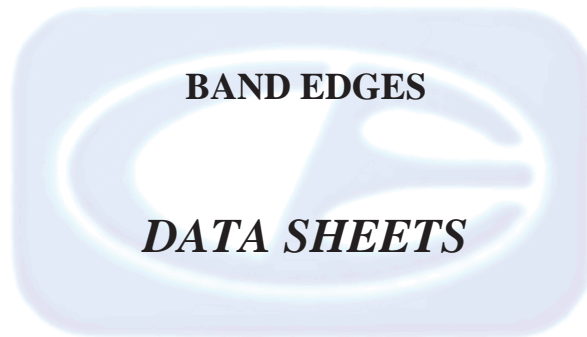


FCC 15.249
COMODULE OU
NB S
Model: F0210008

Date: 02/21/2019
Lab: D
Tested By: Kyle Fujimoto

Non Harmonic Emissions from the Tx and Digital Portion - 9 kHz to 30 MHz - Internal Battery Mode
Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 25 GHz - Internal Battery Mode

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
								of the Transmitter for the EUT
								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





FCC 15.249
COMODULE OU
NB S
Model: F0210008

Date: 02/21/2019
Lab: D
Tested By: Kyle Fujimoto

Band Edges - External DC Mode

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	88.22	H	113.97	-25.75	Peak	230.00	158.97	Fundamental - Low Ch.
2402.00	85.64	H	93.97	-8.33	Avg	230.00	158.97	X-Axis - Worst Case
2400.00	51.89	H	73.97	-22.08	Peak	230.00	158.97	Band Edge
2400.00	40.68	H	53.97	-13.29	Avg	230.00	158.97	X-Axis - Worst Case
2402.00	89.29	V	113.97	-24.68	Peak	354.25	149.05	Fundamental - Low Ch.
2402.00	82.29	V	93.97	-11.68	Avg	354.25	149.05	Y-Axis - Worst Case
2400.00	52.34	V	73.97	-21.63	Peak	354.25	149.05	Band Edge
2400.00	37.73	V	53.97	-16.24	Avg	354.25	149.05	Y-Axis - Worst Case



FCC 15.249
COMODULE OU
NB S
Model: F0210008

Date: 02/21/2019
Lab: D
Tested By: Kyle Fujimoto

Band Edges - External DC Mode

Freq. (MHz)	Level (dBuV/m)	Poi (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	88.74	H	113.97	-25.23	Peak	53.50	179.20	Fundamental - High Ch.
2480.00	87.10	H	93.97	-6.87	Avg	53.50	179.20	X-Axis - Worst Case
2483.50	42.26	H	73.97	-31.71	Peak	53.50	179.20	Band Edge
2483.50	33.14	H	53.97	-20.83	Avg	53.50	179.20	X-Axis - Worst Case
2480.00	85.20	V	113.97	-28.77	Peak	307.75	258.91	Fundamental - High Ch.
2480.00	83.88	V	93.97	-10.09	Avg	307.75	258.91	Y-Axis - Worst Case
2483.50	35.95	V	73.97	-38.02	Peak	307.75	258.91	Band Edge
2483.50	26.88	V	53.97	-27.09	Avg	307.75	258.91	Y-Axis - Worst Case



FCC 15.249
COMODULE OU
NB S
Model: F0210008

Dates: 02/21/2019 and 02/22/2019
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Internal Battery Mode

Freq. (MHz)	Level (dBuV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2402.00	88.00	H	113.97	-25.97	Peak	222.25	177.00	Fundamental - Low Ch.
2402.00	83.04	H	93.97	-10.93	Avg	222.25	177.00	X-Axis - Worst Case
2400.00	47.61	H	73.97	-26.36	Peak	222.25	177.00	Band Edge
2400.00	38.71	H	53.97	-15.26	Avg	222.25	177.00	X-Axis - Worst Case
2402.00	85.19	V	113.97	-28.78	Peak	325.25	188.64	Fundamental - Low Ch.
2402.00	84.41	V	93.97	-9.56	Avg	325.25	188.64	Y-Axis - Worst Case
2400.00	48.68	V	73.97	-25.29	Peak	325.25	188.64	Band Edge
2400.00	40.09	V	53.97	-13.88	Avg	325.25	188.64	Y-Axis - Worst Case

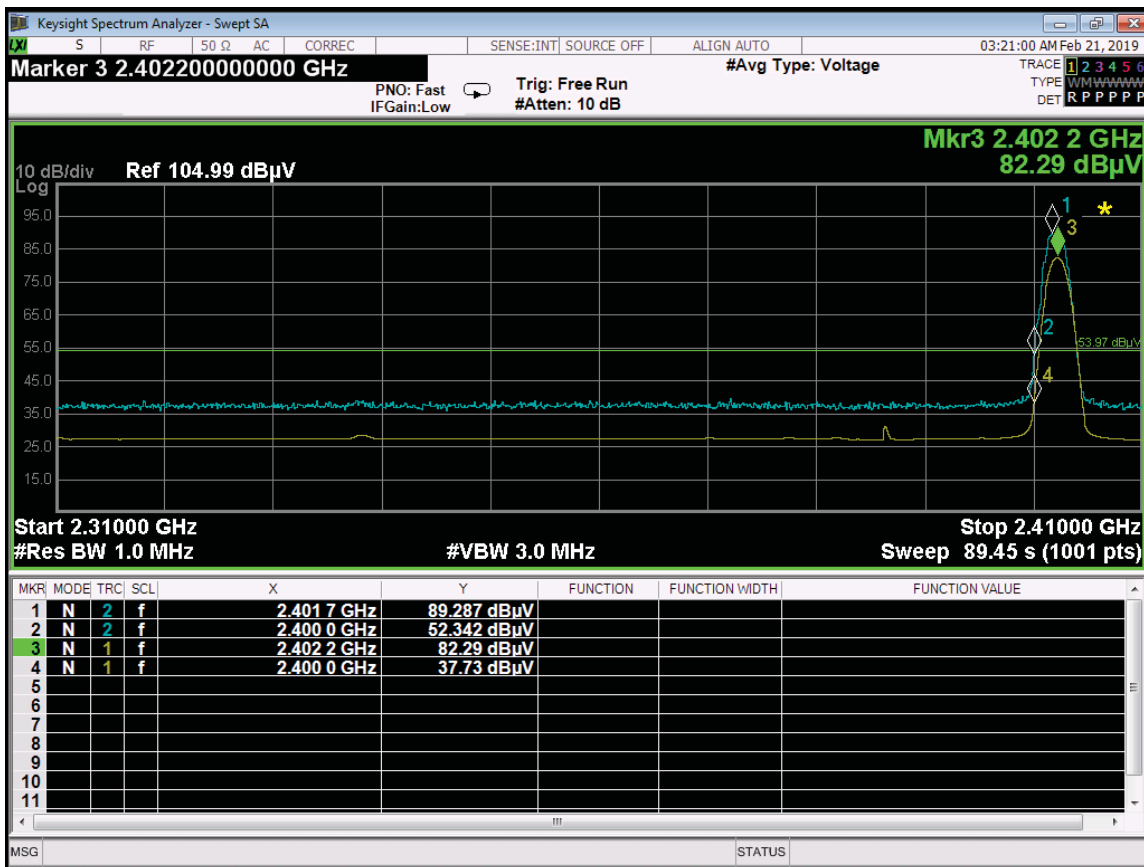


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NB S
Model: F0210008

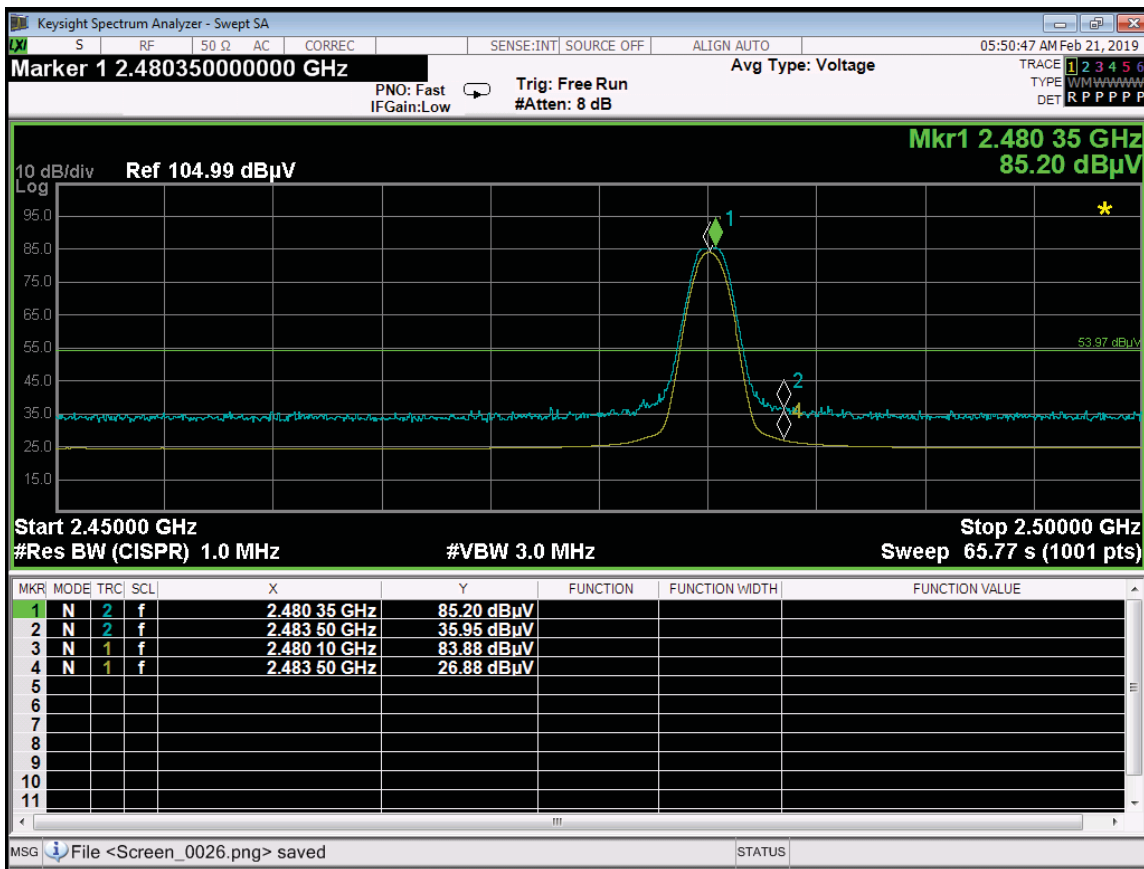
Dates: 02/21/2019 and 02/22/2019
Lab: D
Tested By: Kyle Fujimoto

Band Edges - Internal Battery Mode

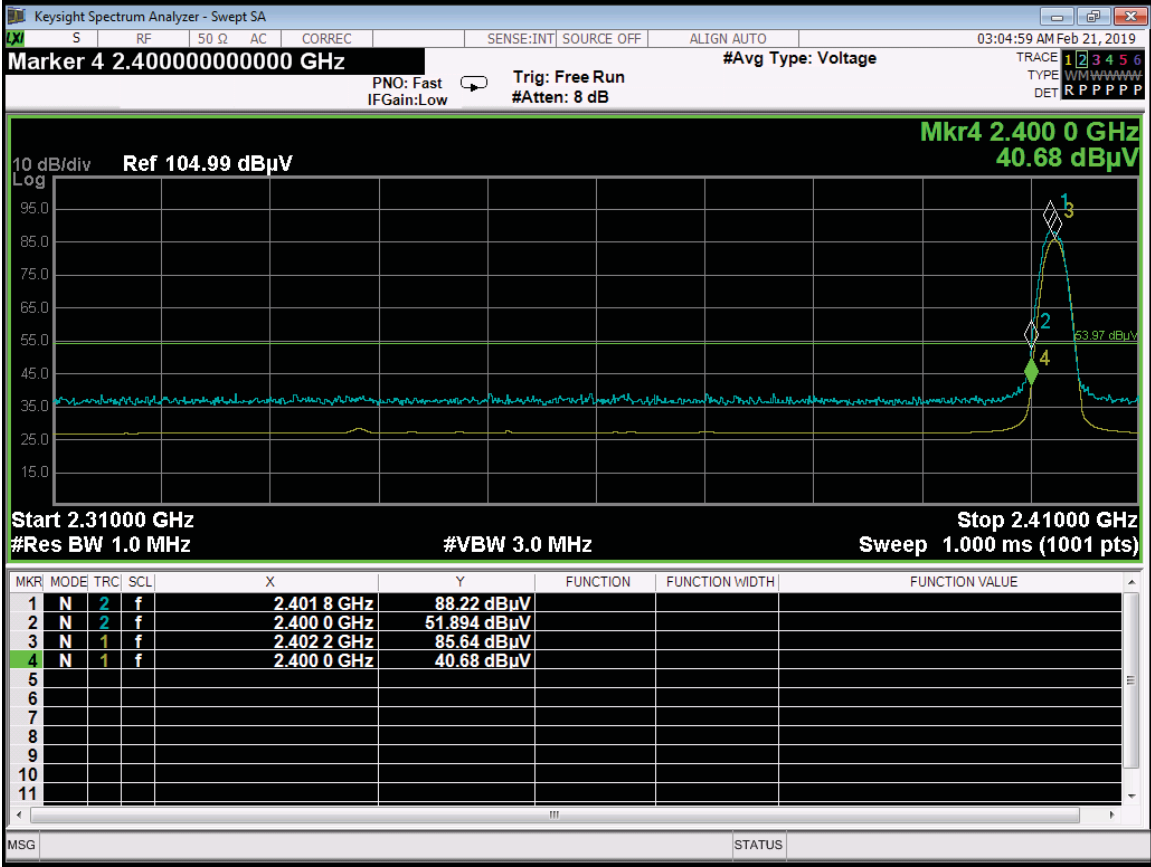
Freq. (MHz)	Level (dBUV/m)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Table Angle (deg)	Ant. Height (cm)	Comments
2480.00	89.36	H	113.97	-24.61	Peak	49.00	179.14	Fundamental - High Ch.
2480.00	87.91	H	93.97	-6.06	Avg	49.00	179.14	X-Axis - Worst Case
2484.85	38.59	H	73.97	-35.38	Peak	49.00	179.14	Band Edge
2484.85	31.28	H	53.97	-22.69	Avg	49.00	179.14	X-Axis - Worst Case
2480.00	85.69	V	113.97	-28.28	Peak	146.50	215.62	Fundamental - High Ch.
2480.00	84.84	V	93.97	-9.13	Avg	146.50	215.62	Y-Axis - Worst Case
2483.50	38.36	V	73.97	-35.61	Peak	146.50	215.62	Band Edge
2483.50	28.77	V	53.97	-25.20	Avg	146.50	215.62	Y-Axis - Worst Case



Band Edge – External DC Mode – Vertical - 2402 MHz - Y-Axis



Band Edge – External DC Mode – Vertical - 2480 MHz - Y-Axis

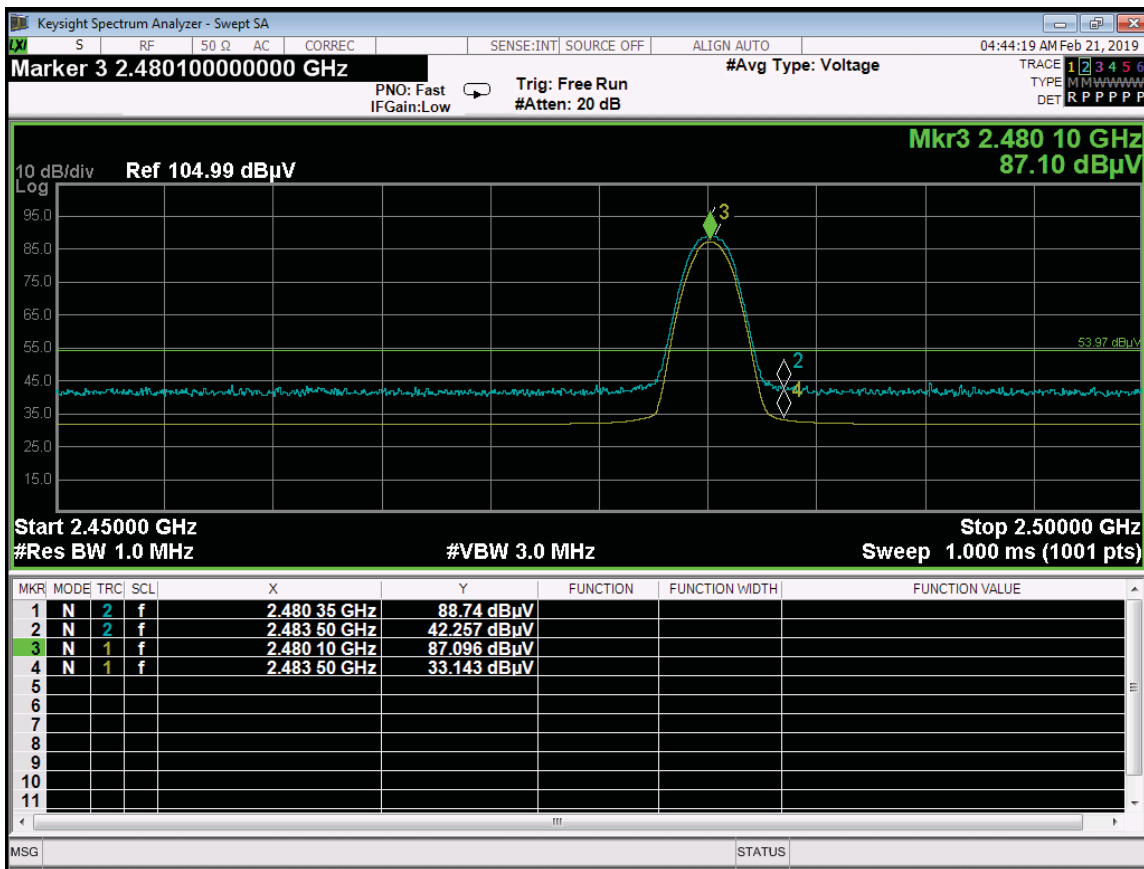


Band Edge – Horizontal – External DC Mode - 2402 MHz - X-Axis

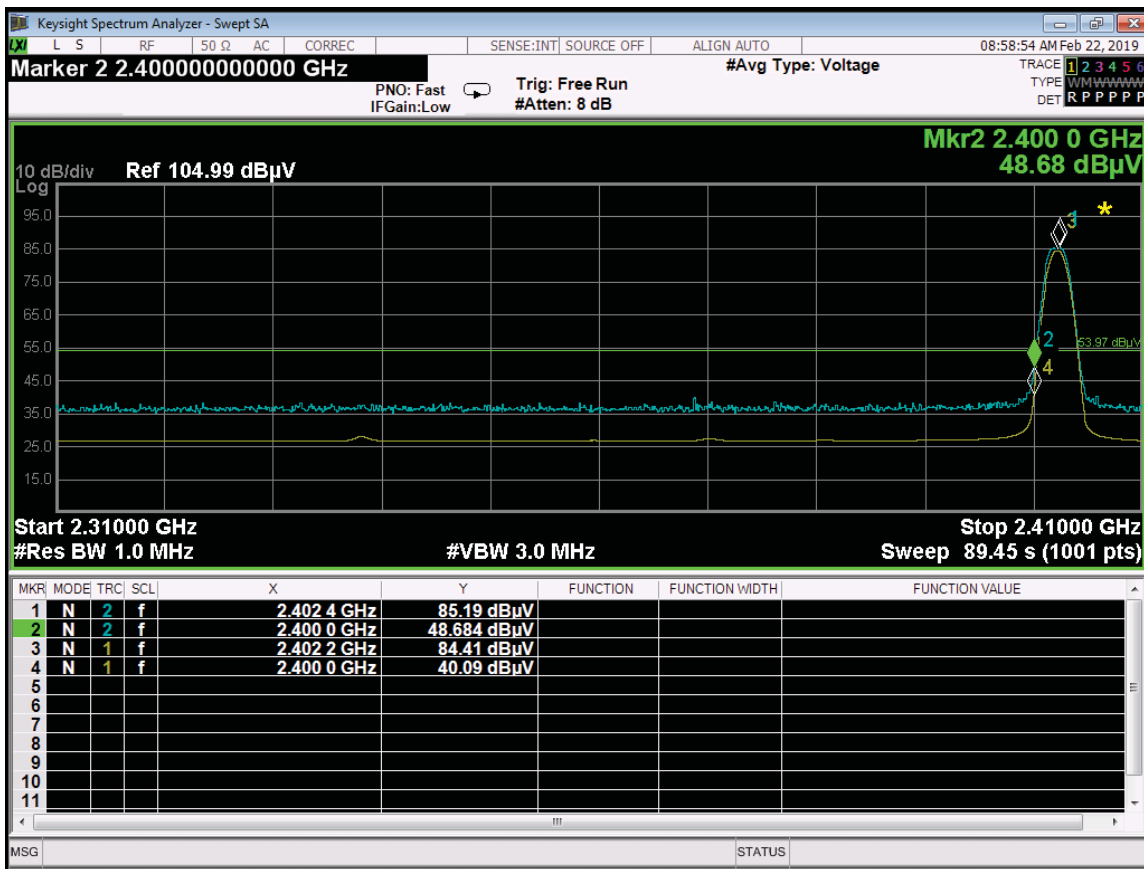
Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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

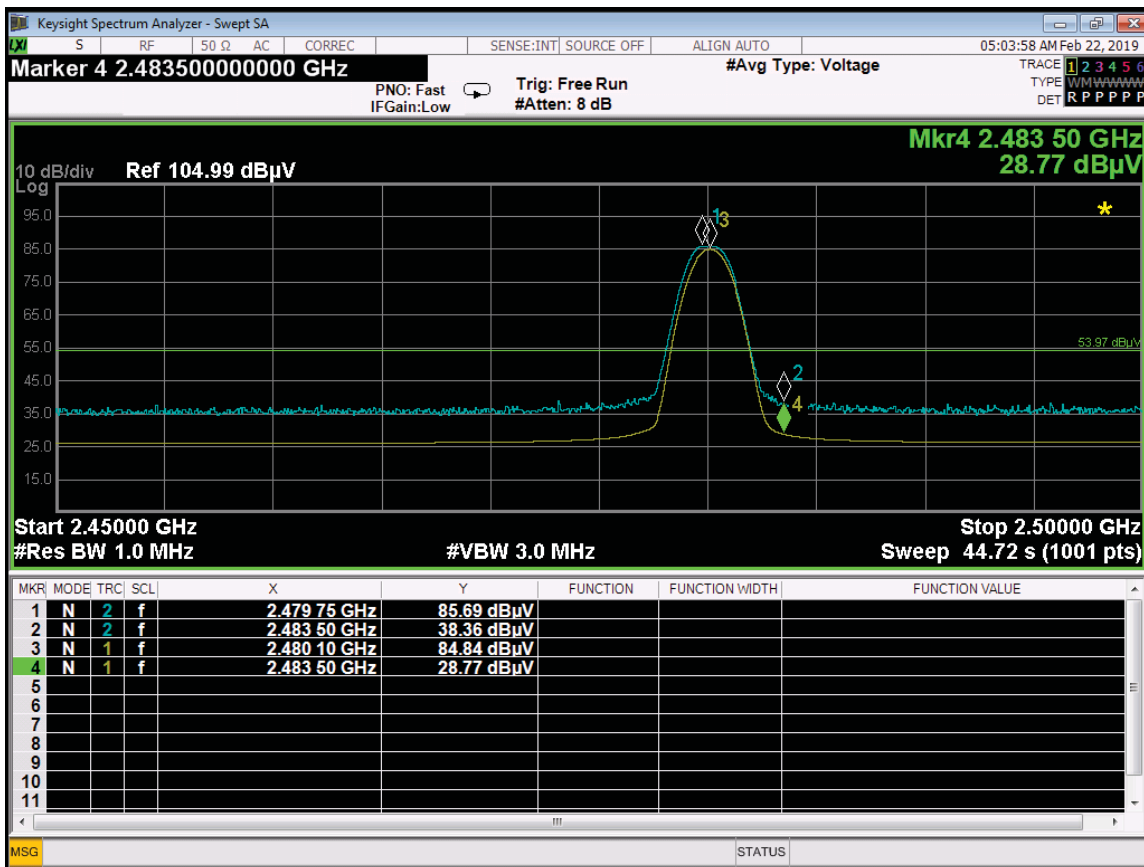
Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



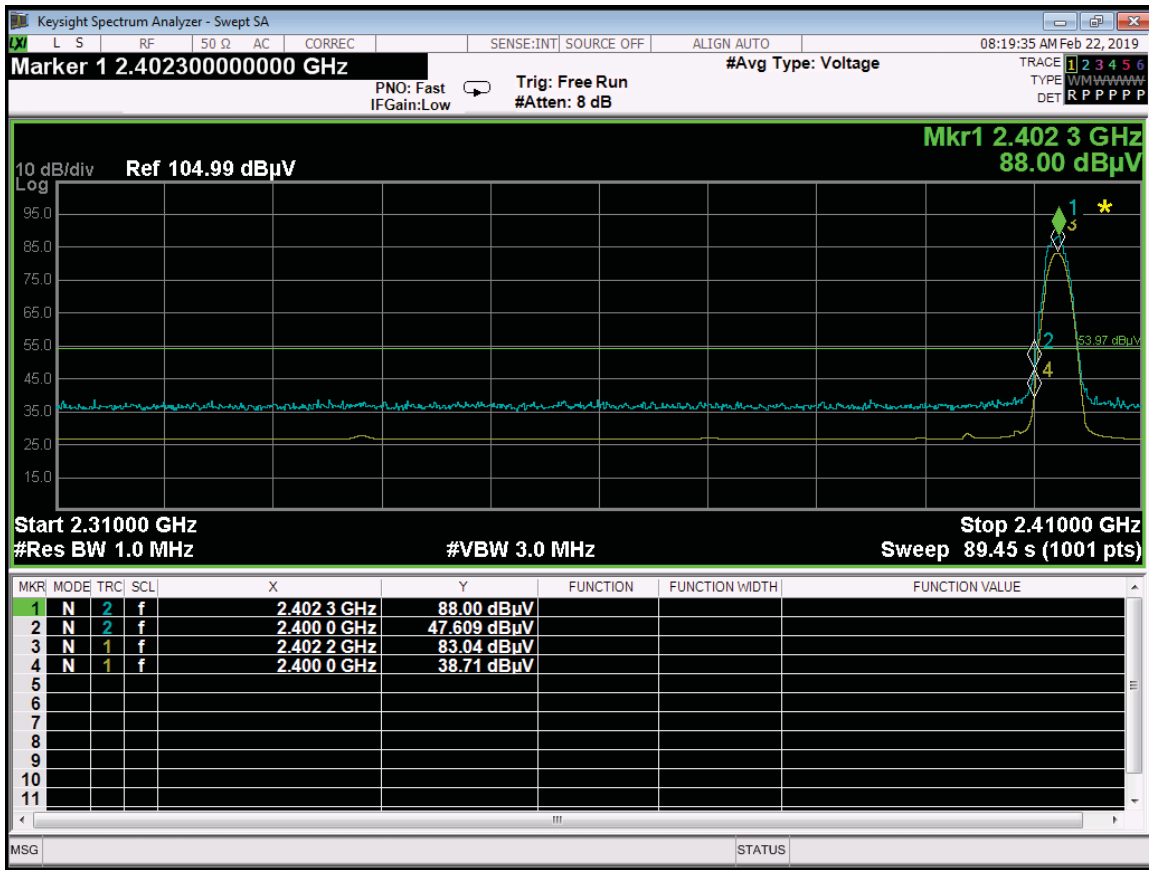
Band Edge – Horizontal – External DC Mode - 2480 MHz - X-Axis



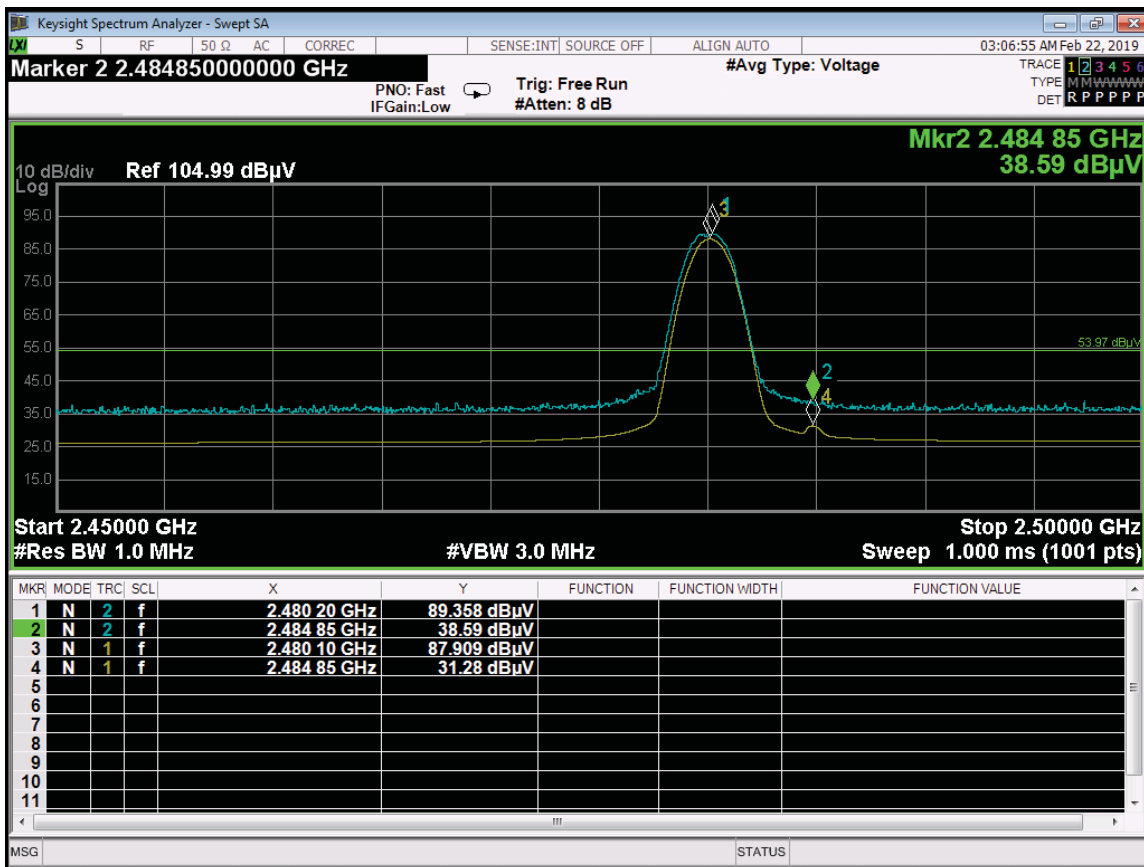
Band Edge – Vertical – Internal Battery Mode - 2402 MHz - Y-Axis



Band Edge – Vertical – Internal Battery Mode - 2480 MHz - Y-Axis



Band Edge – Horizontal – Internal Battery Mode - 2402 MHz - X-Axis



Band Edge – Horizontal – Internal Battery Mode - 2480 MHz - X-Axis