

Testing Tomorrow's Technology

Application

For

Part 2, Subpart J, Paragraph 2.907 Equipment Authorization of Certification for an Intentional Radiator per Part 15, Subpart B, paragraph 15.109, Subpart C, paragraphs 15.207, 15.209 and 15.249

And

**Innovation Science and Economic Development Canada
Certification Per
IC RSS-Gen General Requirements for Radio Apparatus (Issue 5)
And
RSS-210, License Exempt Radio Apparatus Category I Equipment (Issue 9)**

For the

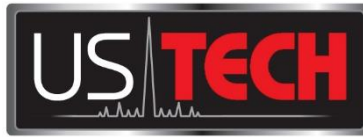
**Hill's Pet Nutrition, Inc
Model: AGL3**

**FCC ID: 2AV2S-CMAS1
IC: 26165-CMAS1**

**UST Project: 20-0128
Issue Date: May 29, 2020**

Total Pages in This Report: 29

**3505 Francis Circle Alpharetta, GA 30004
PH: 770-740-0717 Fax: 770-740-1508
www.ustech-lab.com**

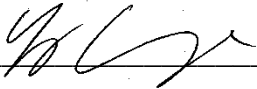


Testing Tomorrow's Technology

I certify that I am authorized to sign for the Test Agency and that all of the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US TECH (Agent Responsible For Test):

By: George Yang

Name: 

Title: Laboratory Manager

Date May 29, 2020



TESTING

NVLAP LAB CODE 200162-0

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Hill's Pet Nutrition, Inc
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MEASUREMENT TECHNICAL REPORT

COMPANY NAME: Hill's Pet Nutrition, Inc

MODEL: AGL3

FCC ID: 2AV2S-CMAS1

IC ID: 26165-CMAS1

DATE: May 29, 2020

This report concerns (check one): ☒Original grant ☐Class II change

Equipment type: Low Power 2.4 GHz BLE transmitter Device

Technical:
BLE Version 4.1
2402 MHz - 2480 MHz (Number of Channels 40)
Data Rates: DH1, DH3 and DH5
Modulation: GFSK
Antenna Gain: +0.5 dBi (Chip Antenna)
Maximum Conducted Output Power: +5.8 dBm

Report prepared by:
US Tech
3505 Francis Circle
Alpharetta, GA30004

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Agency Agreement
Application Forms
Letter of Confidentiality
Equipment Label(s)
Block Diagram(s)
Schematic(s)
Test Configuration Photographs
Internal Photographs
External Photographs
Theory of Operation
User's Manual

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1 General Information

1.1 Purpose of this Report

This report is prepared as a means of conveying test results and information concerning the suitability of this exact product for public distribution according to the FCC Rules and Regulations Part 15, Section 249 and RSS-210 Issue 9.

1.2 Characterization of Test Sample

The sample used for testing was received by US Tech on April 15, 2020 in good operating condition.

1.3 Product Description

The Equipment under Test (EUT) is the Hill's Pet Nutrition, Inc 2.4 GHz e-BLE Module Model: AGL3. The AGL3 sensor is a component of the AGL Vetrax™ medical analytics solution. The AGL3 is a wearable sensor for animals that collects multi-dimensional sensor data – 9 axis data. The AGL Vetrax analytics system derives quantifying animal behaviors such as running, walking, resting, scratching, shaking, etc. from the sensor data. From this data, AGL Vetrax Veterinarians can better track the effectiveness of their medical care programs. Conditions such as geriatric care, obesity, surgical rehabilitation and dermatology issues can all be observed through tracking and monitoring animal behavior.

The EUT incorporates both Bluetooth LE technology and WiFi technology. This report is for the Bluetooth LE radio module.

The Bluetooth radio features the following:

BLE Version 4.1

2402 MHz - 2480 MHz (Number of Channels 40)

Data Rates: DH1, DH3 and DH5

Modulation: GFSK

Antenna Gain: +0.5 dBi (Chip Antenna)

Maximum Conducted Output Power: +5.8 dBm

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1.4 Configuration of Tested System

The Test Sample was tested per *ANSI C63.4:2014, Methods of Measurement of Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (2014)*, and *ANSI C63.10.2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices*.

A list of EUT and Peripherals is found in Table 1 below. A block diagram of the tested system is shown in Figure 1. Test configuration photographs are provided in separate Appendices

1.5 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA 30004. This site has been fully described and registered with the FCC under designation number US5301. Additionally, this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number 9900A-1.

1.6 Related Submittals

The EUT is subject to the following FCC authorizations:

- a) Certification under section 15.249 as a transmitter.

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Table 1. EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC/IC ID	CABLES P/D
EUT Hill's Pet Nutrition, Inc	AGL3	Engineering Sample	2AV2S-CMAS1 (pending) 26165-CMAS1 (pending)	N/A
Antenna See antenna details	--	--	--	--

U= Unshielded
S= Shielded
P= Power
D= Data

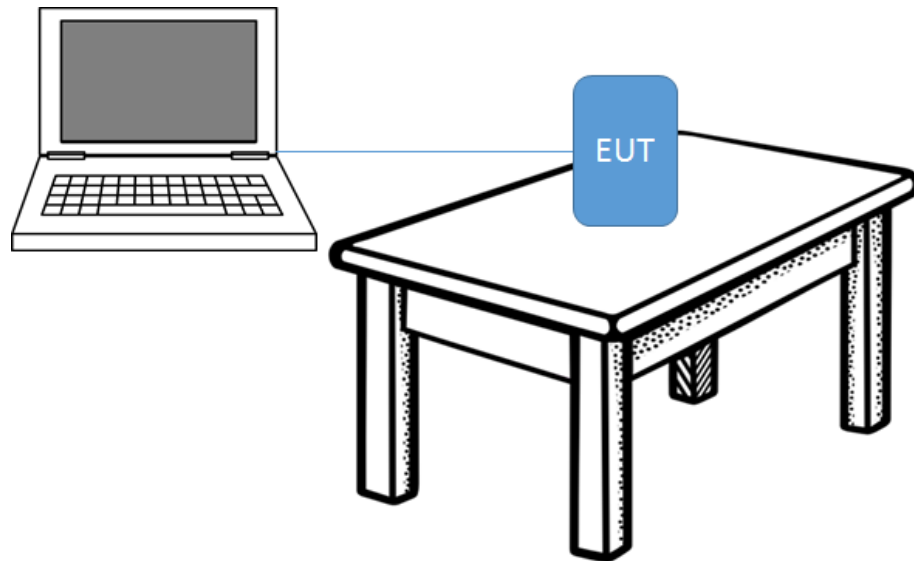


Figure 1. Block Diagram of Test Configuration

Note: The laptop is used for programming the radio module only.

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2 Tests and Measurements

2.1 Test Equipment

The table below lists test equipment used to evaluate this product. Model numbers, serial numbers and their calibration status are indicated.

Table 2. Test Instruments

TEST INSTRUMENT	MODEL NUMBER	MANUFACTURER	SERIAL NUMBER	CALIBRATION DUE DATE
SPECTRUM ANALYZER	E4407B	AGILENT	US41442935	8/17/2020
SPECTRUM ANALYZER	DSA815	RIGOL	DSA8A18030 0138	12/10/2021 2 yr.
RF PREAMP 100 kHz to 1.3 GHz	8447D	HEWLETT- PACKARD	1937A02980	5/07/2020*
PREAMP 1.0 GHz to 26.0 GHz	8449B	HEWLETT- PACKARD	3008A00480	7/08/2020 Extended
LOOP ANTENNA	6502	ETS Lindgren	9810-3246	4/06/2022 2 yr.
BICONICAL ANTENNA	3110B	EMCO	9306-1708	5/27/2021 2 yr
LOG PERIODIC ANTENNA	3146	EMCO	9305-3600	2/01/2021 2 yr
HORN ANTENNA	3115	EMCO	9107-3723	11/28/2020 2 yr (extended)
HIGH PASS FILTER	H3R020G2	MICROWAVE CHIRCUITS	001DC9528	7/02/2020 Extended
LISN x 2	9247-50- TS-50-N	SOLAR ELECTRONICS	955824 and 955825	7/03/2020 Extended

Note: The calibration interval of the above test instruments are 12 months unless stated otherwise and all calibrations are traceable to NIST/USA. * Testing using this instrument was completed prior to calibration due date.

2.2 Modifications to EUT Hardware

No physical modifications were made by US Tech in order to bring the EUT into compliance with FCC Part 15, Subpart C Intentional Radiator Limits for the transmitter portion of the EUT or the Subpart B Unintentional Radiator Limits (Receiver and Digital Device) Requirements.

2.3 Number of Measurements for Intentional Radiators (CFR 15.31(m), RSS-Gen 6.8)

Measurements of intentional radiators or receivers shall be performed and reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in Table 3 below.

Table 3. Number of Test Frequencies for Intentional Radiators

Frequency Range over which the device operates	Number of Frequencies	Location in the Range of Operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near the top 1 near the bottom
Greater than 10 MHz	3	1 near top 1 near middle 1 near bottom

Because the EUT operates at 2402 MHz to 2480 MHz, 3 test frequencies were used.

2.4 Frequency Range of Radiated Measurements (CFR 15.33, RSS-Gen 6.13)

2.4.1 Intentional Radiator

The spectrum was investigated for the intentional radiator from the lowest RF signal generated in the EUT, without going below 9 kHz to the 10th harmonic of the highest fundamental frequency generated or 40 GHz, whichever is the lowest.

2.4.2 Unintentional Radiator

For the digital device, an unintentional radiator, the frequency range tested was 30 MHz to 1000 MHz, or to 5 times the highest internal clock frequency.

2.5 Measurement Detector Function and Bandwidth (CFR 15.35, RSS-Gen 6.9, 6.13)

The radiated and conducted emissions limits shown herein are based on the parameters listed below.

2.5.1 Detector Function and Associated Bandwidth

On frequencies below 1000 MHz, the limits herein are based upon measurement equipment employing a CISPR Quasi-peak detector function and related measurement bandwidths (i.e. 9 kHz from 150 kHz to 30 MHz and 120 kHz from 30 MHz to 1000 MHz). Alternatively, measurements may be made with equipment employing a peak detector function as long as the same bandwidths specified for the Quasi-peak device are used.

2.5.2 Corresponding Peak and Average Requirements

Above 1000 MHz, radiated limits are based on measuring instrumentation employing an average detector function. When average radiated emissions are specified there is also a corresponding Peak requirement, as measured using a peak detector, of 20 dB greater than the average limit. For all measurements above 1000 MHz the Resolution Bandwidth shall be at least 1 MHz.

2.5.3 Pulsed Transmitter Averaging

When the radiated emissions limit is expressed as an average value, and the transmitter is pulsed, the measured field strength shall be determined by applying a Duty Cycle Correction Factor based upon dividing the total ON time during the first 100 ms period by 100 ms (or by the period if less than 100 ms). The duty cycle may be expressed logarithmically in dB.

NOTE: If the transmitter was programmed to transmit at >98% duty cycle, then, wherever applicable (where the detection mode was AVG), the duty cycle factor calculated will be applied.

2.6 Transmitter Duty Cycle (CFR 35 (c))

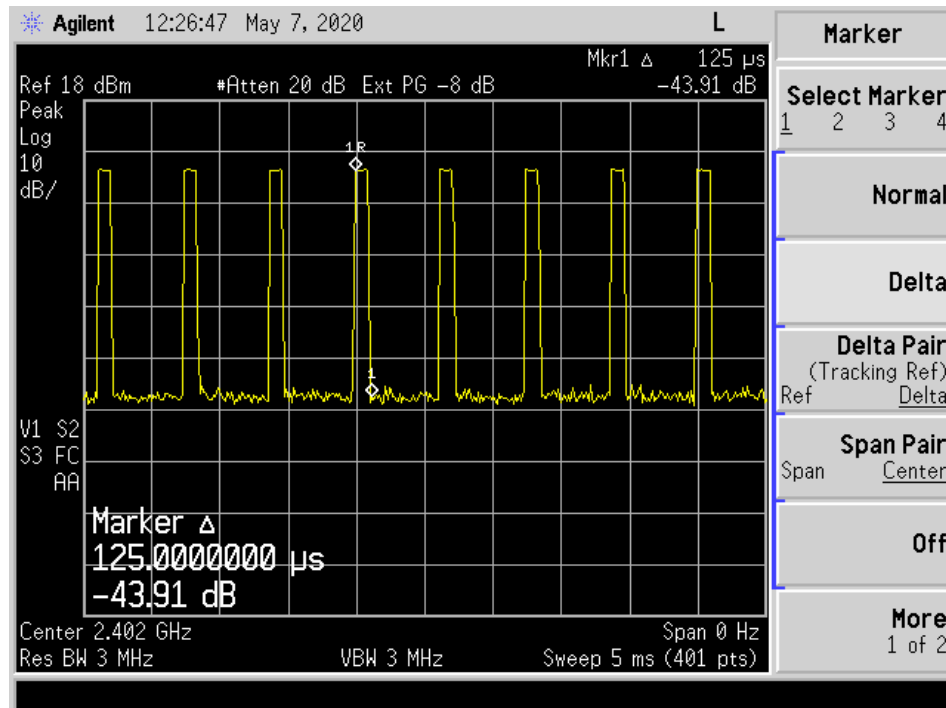


Figure 2. Transmitter Pulse Width

Total Time On from Figure 2 = $0.125 \text{ ms} * 8 = 1.0 \text{ ms}$ (Transmitter Pulse Width)

$((1.0 \text{ ms} * 20) \text{ Total Time On} = 20.0 \text{ ms}) / (100 \text{ ms Total Pulse Train}) = 0.20$
Numeric Duty Cycle

Duty Cycle = $20 \text{ Log } (0.20) = -13.98 \text{ dB}$

NOTE: The transmitter was programmed to transmit at >98% duty cycle, therefore wherever applicable (where the detection mode was AVG), the duty cycle factor calculated above will be applied.

2.7 EUT Antenna Requirements (CFR 15.203, RSS-Gen 6.7)

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. Only the antenna(s) listed in Table 4 will be used with this device.

Table 4. Allowed Antenna(s)

REPORT REFERENCE	MANUFACTURER	TYPE OF ANTENNA	MODEL	GAIN dBi	TYPE OF CONNECTOR
Antenna	Hill's Pet Nutrition, Inc	PCB Trace	Chip	+0.5	solder

2.8 Restricted Bands of Operation (CFR 15.205, RSS-Gen 8.10)

Only spurious emissions can fall in the frequency bands of CFR 15.205. The field strength of these spurious emissions cannot exceed the limits of 15.209. The EUT has been evaluated for compliance to this requirement in the sections below.

2.9 Intentional Radiator, Power Line Conducted Emissions (CFR 15.207, RSS-8.8)

The power line conducted voltage emission measurements have been carried out in accordance with CFR 15.207, per ANSI C63.10:2013, Clause 6.2, with a spectrum analyzer connected to an LISN and the EUT placed into a continuous mode of transmission.

The worst-case results for conducted emissions were determined to be produced when the EUT was operating under continuous transmission. The worst-case measurement was 6.0 dB below the applicable limit. All other emissions were at least 6.2 dB below the limit. Those results are given in the table following

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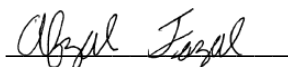
Table 5. Power Line Conducted Emissions Test Data, Part 15.207

CONDUCTED EMISSIONS 150 kHz to 30 MHz						
Tested By: AF	Specification Requirement: FCC Part 15.207		Project No.: 20-0128	Manufacturer: Hill's Pet Nutrition, Inc Model: AGL3		
Frequency (MHz)	Test Data (dBuV)	LISN+CL (dB)	Corrected Results (dBuV)	AVG Limits (dBuV)	Margin (dB)	Detector
Phase @ 120 Vac / 60Hz						
0.3221	40.79	2.67	43.46	49.7	6.2	PK
0.6208	38.64	0.23	38.87	46.0	7.1	PK
1.9730	45.33	0.30	45.63	56.0	10.4	QP
1.9730	34.42	0.30	34.72	46.0	11.3	AVG
6.1160	31.65	0.21	31.86	50.0	18.1	PK
16.3670	29.23	0.83	30.06	50.0	19.9	PK
24.2000	29.08	1.19	30.27	50.0	19.7	PK
Neutral @ 120 Vac / 60Hz						
0.3122	43.92	0.04	43.96	49.9	6.0	PK
0.7358	39.47	0.51	39.98	46.0	6.0	PK
2.1330	45.84	0.24	46.08	56.0	9.9	QP
2.1330	35.02	0.24	35.26	46.0	10.7	AVG
5.3500	31.85	0.31	32.16	50.0	17.8	PK
14.0000	29.33	1.12	30.45	50.0	19.6	PK
22.9160	28.77	1.51	30.28	50.0	19.7	PK

Sample Calculation at: 0.3221 MHz

Magnitude of Measured Frequency	40.79	dBuV
+Antenna Factor + Cable Loss	2.67	dB
Corrected Result	43.46	dBuV/m

Test Date: April 23, 2020

Tested By
 Signature: 

Name: Afzal Fazal

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2.10 Intentional Radiator, Radiated Emissions (CFR 15.209, 15.249(a),(c), RSS 210, A2.9 (a))

Radiated Spurious measurements: the EUT was placed into a continuous transmit mode of operation transmitting at >98% duty cycle and tested per ANSI C63.10:2013. A preliminary scan was performed on the EUT to find signal frequencies that were caused by the transmitter part of the device. To obtain worse case results the EUT was tested in X, Y and Z axes or in the orientation of normal operation if the device is designed to operation in a fixed position.

Radiated measurements were then conducted between the frequency range of 9 KHz (or lowest frequency used/generated by the device) up to the tenth harmonic of the device (no greater than 40 GHz). In the band below 30 MHz a resolution bandwidth (RBW) of 9 kHz was used; emissions below 1 GHz were tested with a RBW of 120 KHz and emissions above 1 GHz were tested with a RBW of 1 MHz. All video bandwidth settings were at least three times the RBW value.

The EUT was investigated to CFR 15.209, General requirements for unwanted spurious emissions.

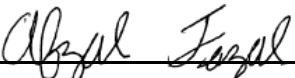
Table 6. Spurious Radiated Emissions below 30 MHz

9 kHz to 30 MHz, 15.209 limits							
Test: Radiated Emissions				Client: Hill's Pet Nutrition, Inc			
Project: 20-0128				Model: AGL3			
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or AVG
No emissions detected more than 20 dB below the applicable limit.							

Sample Calculation: N/A

Test Date: April 28, 2020

Tested By

Signature:  Name: Afzal Fazal

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Table 7. Spurious Radiated Emissions 30 MHz to 25 GHz (other than Fundamental & Harmonics)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					Client: Hill's Pet Nutrition, Inc			
Project: 20-0128					Model: AGL3			
Frequency (MHz)	Test Data (dBuV)	Factor (dB)	AF+CA -AMP (dB/m)	Results (dBuV/m)	Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector Mode
1072.00	54.10	-	-10.93	43.17	54.0	3.0m./VERT	10.8	PK
1600.00	56.57	-	-8.75	47.82	54.0	3.0m./HORZ	6.2	PK
1600.00	52.48	-	-9.01	43.47	54.0	3.0m./VERT	10.5	PK
All other emissions detected were more than 20 dB below the applicable limit.								

Notes:

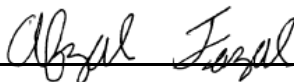
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 1072.00 MHz

Magnitude of Measured Frequency	54.10	dBuV
+Antenna Factor + Cable Loss+ Amplifier Gain	-10.93	dB/m
Duty Cycle Correction Factor	None	dB
Corrected Result	43.17	dBuV/m

Test Date: April 28, 2020

Tested By

Signature:  Name: Afzal Fazal

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Table 8. Fundamental Emissions (Peak & AVG)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					Client: Hill's Pet Nutrition, Inc			
Project: 20-0128					Model: AGL3			
Frequency (MHz)	Test Data (dBuV)	Factor (dB)	AF+CA -AMP (dB/m)	Results (dBuV/m)	AVG Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector Mode
Low - Channel								
2402.00	60.78	-	31.31	92.09	114.0	3.0m./HORZ	21.9	PK
2402.00	38.13	-	31.31	69.44	94.0	3.0m./HORZ	24.6	AVG
Mid - Channel								
2440.00	59.75	-	31.33	91.08	114.0	3.0m./HORZ	22.9	PK
2426.00	37.28	-	31.33	68.61	94.0	3.0m./HORZ	25.4	AVG
High - Channel								
2480.00	59.56	-	31.26	90.82	114.0	3.0m./HORZ	23.2	PK
2480.00	37.31	-	31.26	68.57	94.0	3.0m./HORZ	25.4	AVG

Notes:

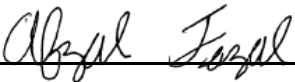
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 2402.00

Magnitude of Measured Frequency	60.78	dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	31.31	dB/m
Corrected Result	92.09	dBuV/m

Test Date: April 24, 2020

Tested By

Signature:  Name: Afzal Fazal

US Tech Test Report:
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Table 9. Harmonics Emissions (Peak & AVG)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					Client: Hill's Pet Nutrition, Inc			
Project: 20-0128					Model: AGL3			
Frequency (MHz)	Test Data (dBuV)	Factor (dB)	AF+CA -AMP (dB/m)	Results (dBuV/m)	Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector Mode
Low - Channel								
4804.00	47.96	-	2.13	50.09	74.0	3.0m./HORZ	23.9	PK
4804.00	33.96	-	2.13	36.09	54.0	3.0m./HORZ	17.9	AVG
7206.00	50.38	-9.50	8.96	49.84	74.0	1.0m./HORZ	24.2	PK
7206.00	37.95	-9.50	8.96	37.41	54.0	1.0m./HORZ	16.6	AVG
Mid - Channel								
4880.00	47.95	-	3.12	51.07	74.0	3.0m./HORZ	22.9	PK
4880.00	33.84	-	3.12	36.96	54.0	3.0m./HORZ	17.0	AVG
7320.00	50.80	-9.50	8.43	49.73	74.0	1.0m./HORZ	24.3	PK
7320.00	38.02	-9.50	8.43	36.95	54.0	1.0m./HORZ	17.1	AVG
High - Channel								
4960.00	46.68	-	2.58	49.26	74.0	3.0m./HORZ	24.7	PK
4960.00	33.72	-	2.58	36.30	54.0	3.0m./HORZ	17.7	AVG
7440.00	50.54	-9.50	9.30	50.34	74.0	1.0m./HORZ	23.7	PK
7440.00	38.25	-9.50	9.30	38.05	54.0	1.0m./HORZ	16.0	AVG

Notes:

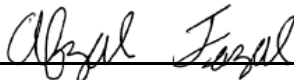
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 4804.00 MHz

Magnitude of Measured Frequency	47.96	dBuV
+Antenna Factor + Cable Loss+ Amplifier Gain – Duty Cycle	2.13	dB/m
Duty Cycle Correction Factor	None	dB
Corrected Result	50.09	dBuV/m

Test Date: April 24, 2020

Tested By

Signature:  Name: Afzal Fazal

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2.11 Band Edge Measurements (CFR 15.249(d), RSS-Gen 8.10)

Band Edge measurements are made following the guidelines in FCC KDB Publication No. 558074 with the EUT initially operating on the Lowest Channel and then operating on the Highest Channel within its band of operation. Conducted measurements are performed to demonstrate compliance with the requirement of 15.249(d) that all emissions outside of the band edges be attenuated by at least 50 dB or 15.209 limits, when compared to its highest in-band value (contained in a 100 kHz band).

To capture the band edge, set the Spectrum Analyzer frequency span wide enough to capture the peak level of the emission operating on the channel closest to the band edge as well as any modulation products falling outside of the authorized band of operation. See figure and calculations following for more detail.

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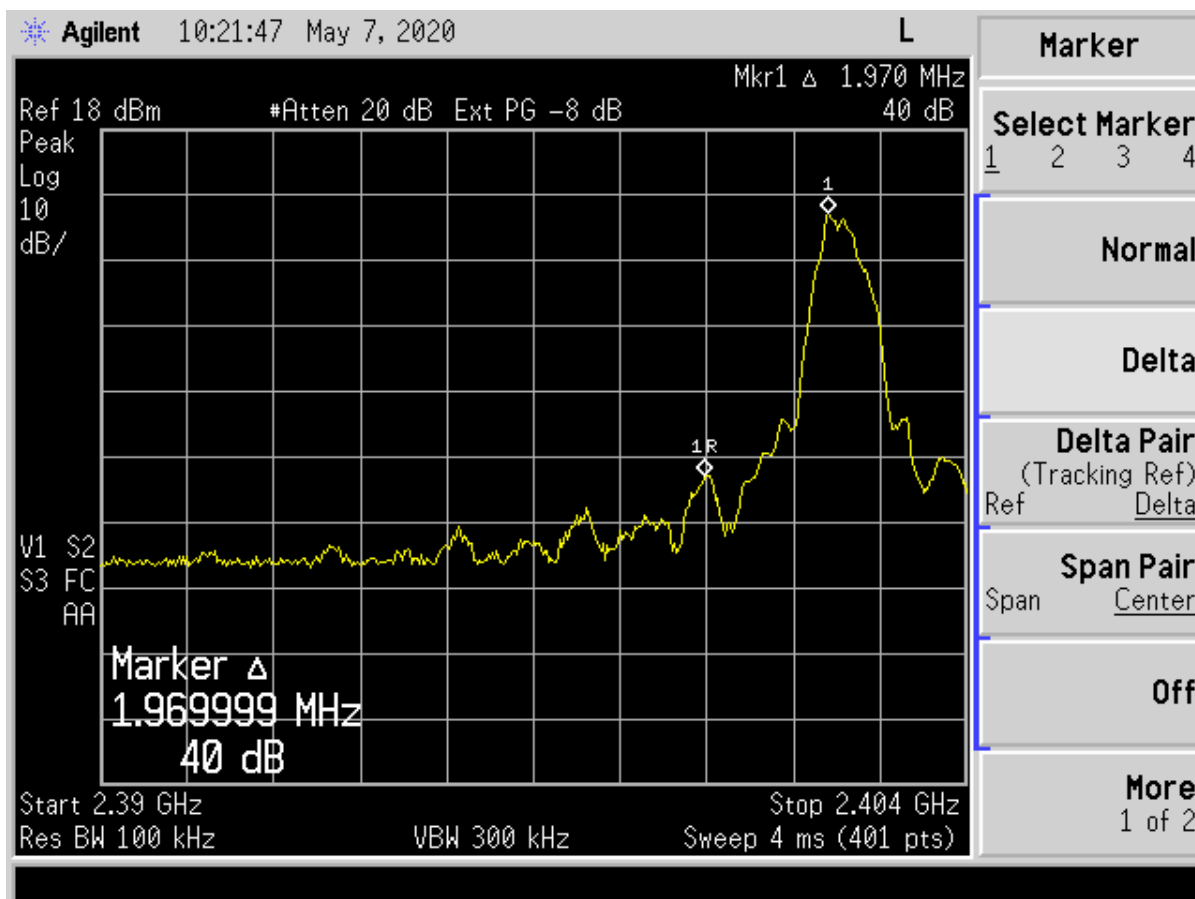


Figure 3. Band Edge Compliance Low Channel Delta - Peak

Low Channel Corrected Measured Value from Table 8	92.09	dBuV
Low Channel Band Edge Delta from Figure 4	-40.00	dB
Calculated Result	52.09	dBuV/m
Band Edge Limit	54.00	dBuV/m
Calculated Result	52.09	dBuV/m
Band Edge Margin	1.91	dBuV/m

Peak value meets AVG limit.

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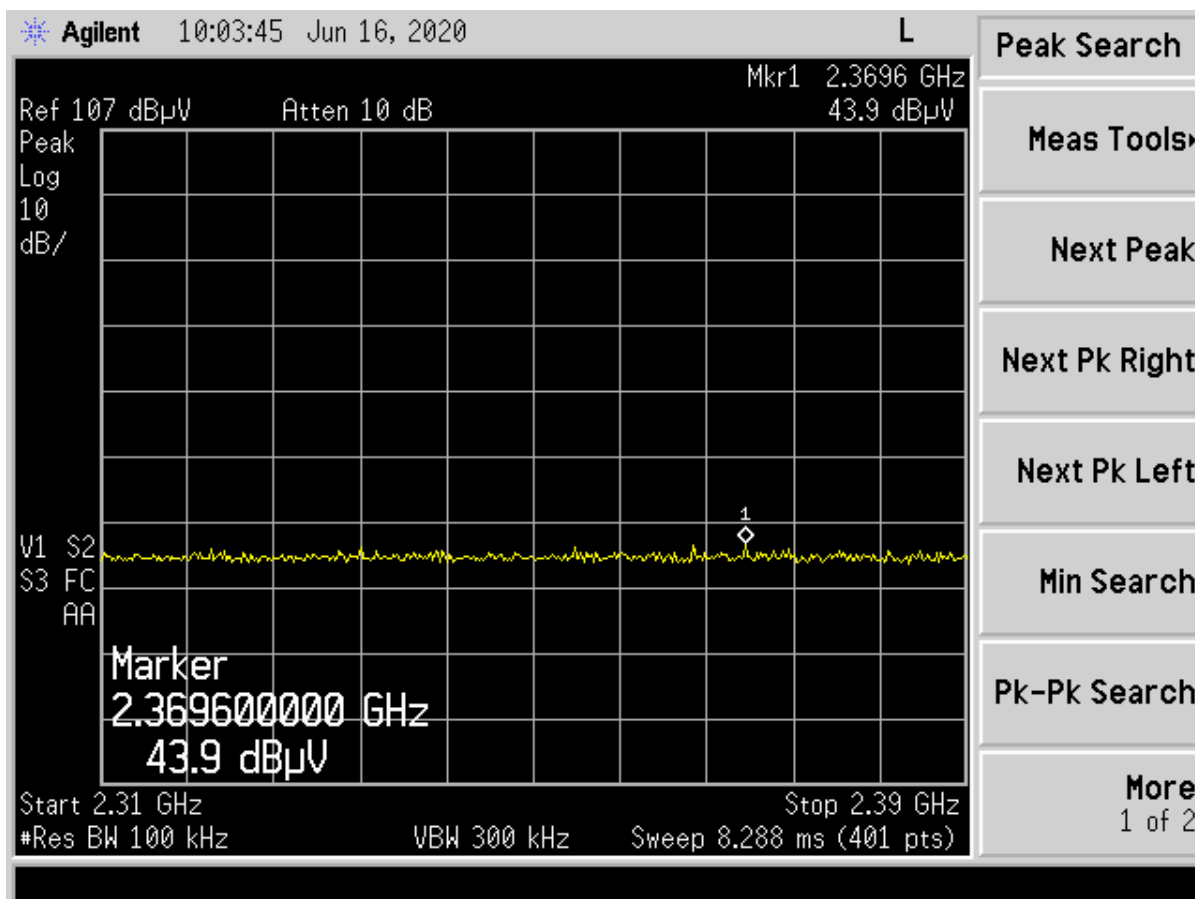


Figure 4. Radiated Restricted Band 2310 MHz to 2390 MHz – Peak

Table 10. Radiated Restricted Band 2310 MHz to 2390 MHz, Peak

2310 MHz to 2390 MHz Restricted Band Peak Measurements							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	PK Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or AVG
2369.60	43.90	-5.93	37.97	54.0	3.0m./HORZ	16.0	PK

Peak value meets AVG limit.

Test Date: June 16, 2020

Tested By

Signature: Afzal Fazal

Name: Afzal Fazal

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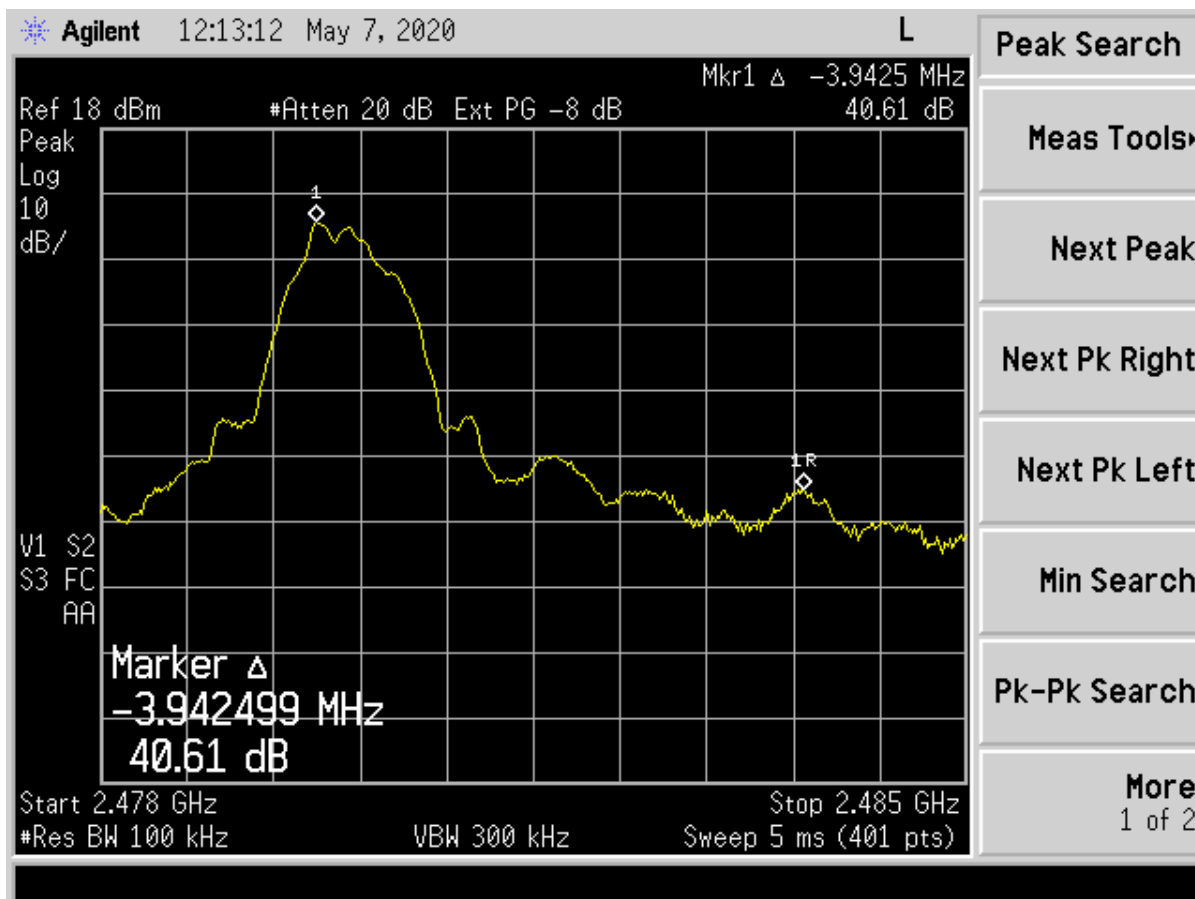


Figure 5. Band Edge Compliance High Channel Delta – Peak

High Channel Corrected Measured Value from Table 8	90.82	dBuV
High Channel Band Edge Delta from Figure 7	-40.61	dB
Calculated Result	50.21	dBuV/m
Band Edge Limit	54.00	dBuV/m
Calculated Result	50.21	dBuV/m
Band Edge Margin	3.79	dBuV/m

Peak value meets AVG limit.

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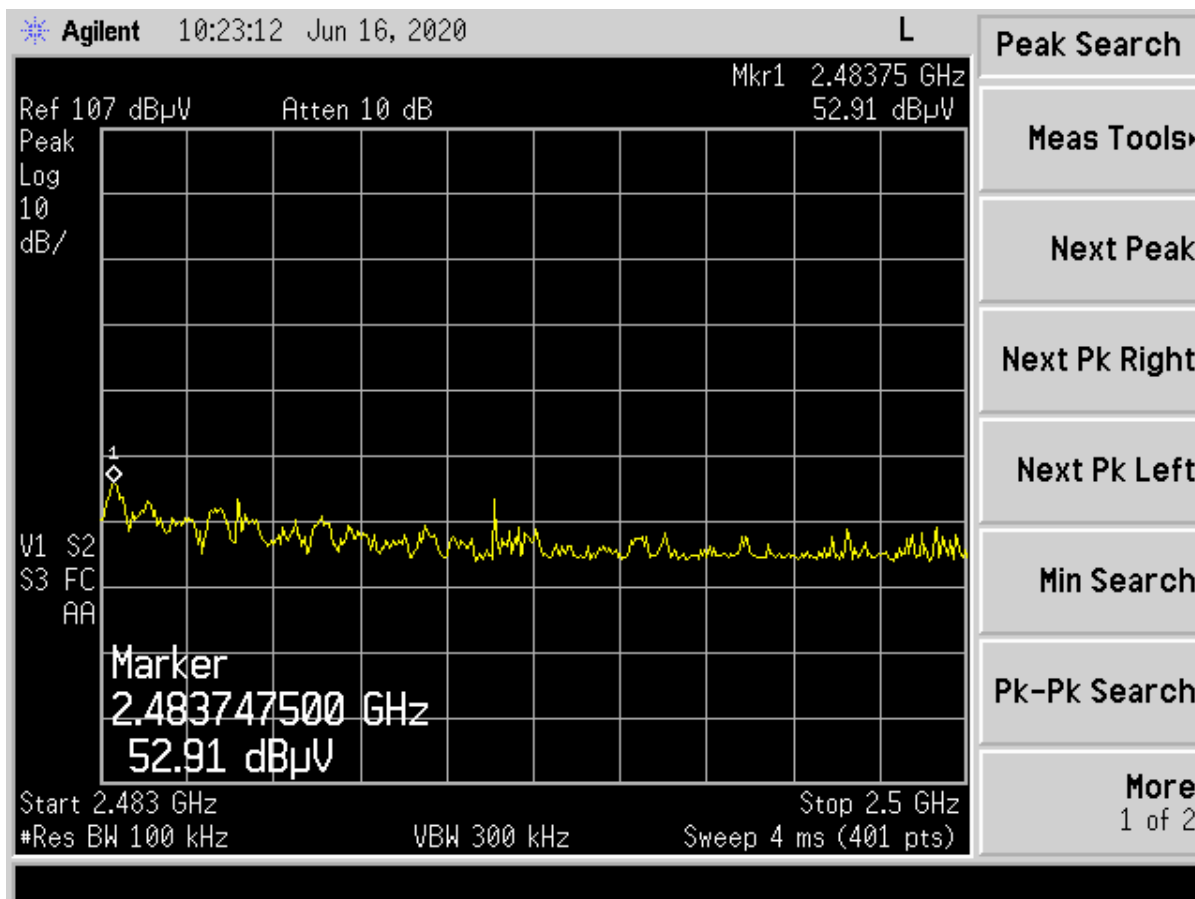


Figure 6. Radiated Restricted Band 2483.5 MHz to 2500 MHz – Peak

Table 11. Radiated Restricted Band 2483.5 MHz to 2500 MHz, Peak

2483.5 MHz to 2500 MHz Restricted Band Peak Measurements							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	AVG Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or AVG
2483.75	52.91	-5.50	47.41	54.0	3.0m./HORZ	6.6	PK

Peak value meets AVG limit.

Test Date: June 16, 2020

Tested By

Signature: Afzal Fazal

Name: Afzal Fazal

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2.12 99% Occupied Bandwidth (CFR 2.1049, RSS-Gen 6.6)

These measurements were performed while the EUT was in a constant transmit mode. A method similar to the marker delta method was used to capture the points. The RBW was set to approximately 1/100 of the manufacturers claimed RBW and with the VBW \geq RBW. The results of this test are given in the tables and figures below.

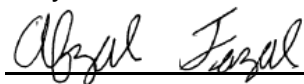
Table 12. 20 dB Bandwidth and 99% Occupied Bandwidth

Frequency (MHz)	20 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
2402	1.094	1.027
2440	1.092	1.029
2480	1.097	1.033

Test Date: May 7, 2020

Tested By

Signature:



Name: Afzal Fazal

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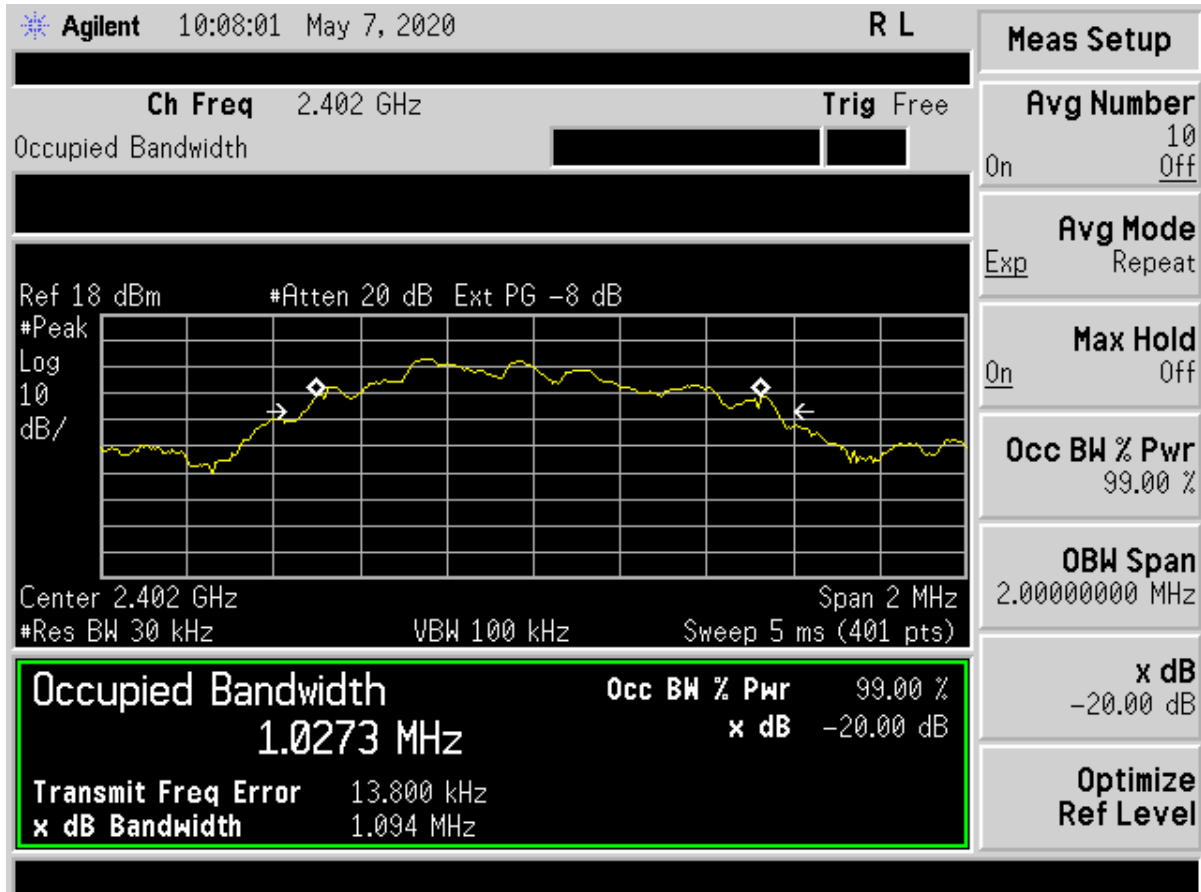


Figure 7. 99% Occupied Bandwidth – Low Channel

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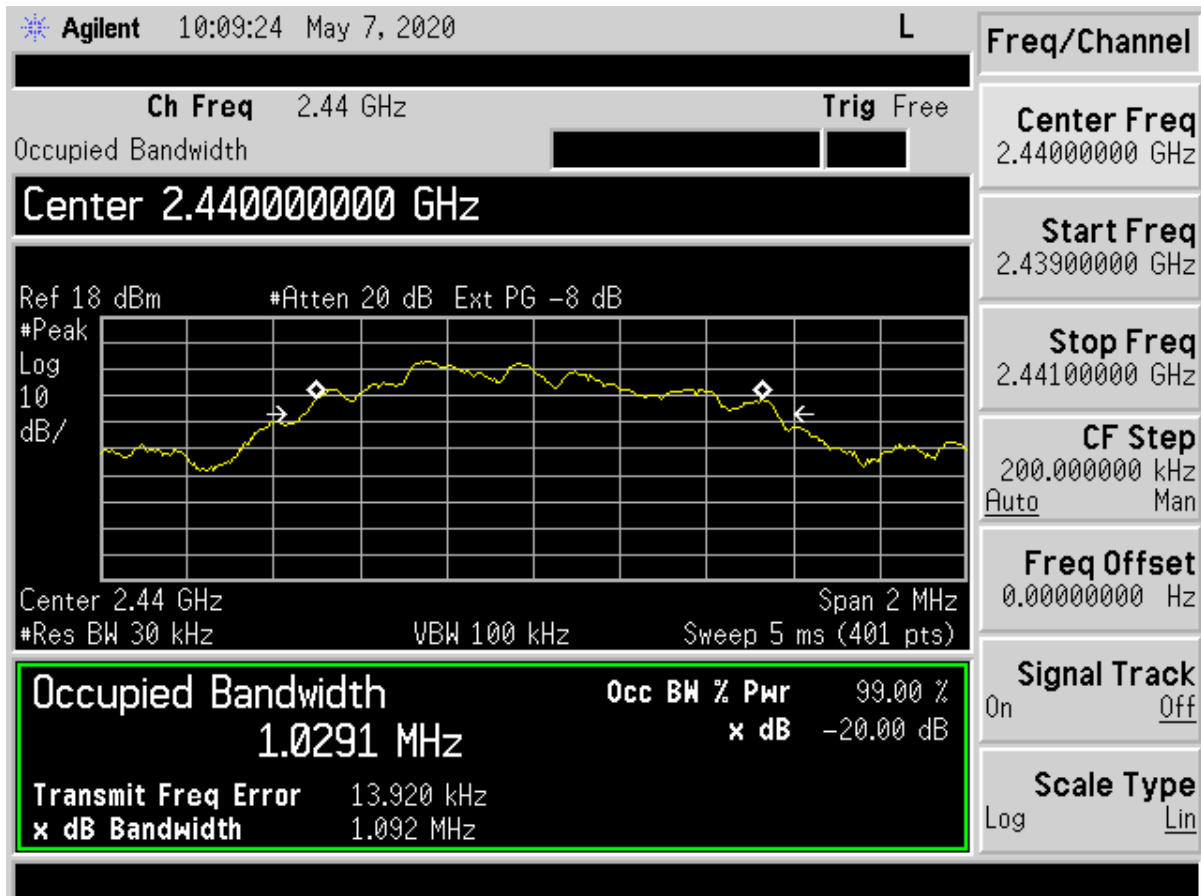


Figure 8. 99% Occupied Bandwidth – Mid Channel

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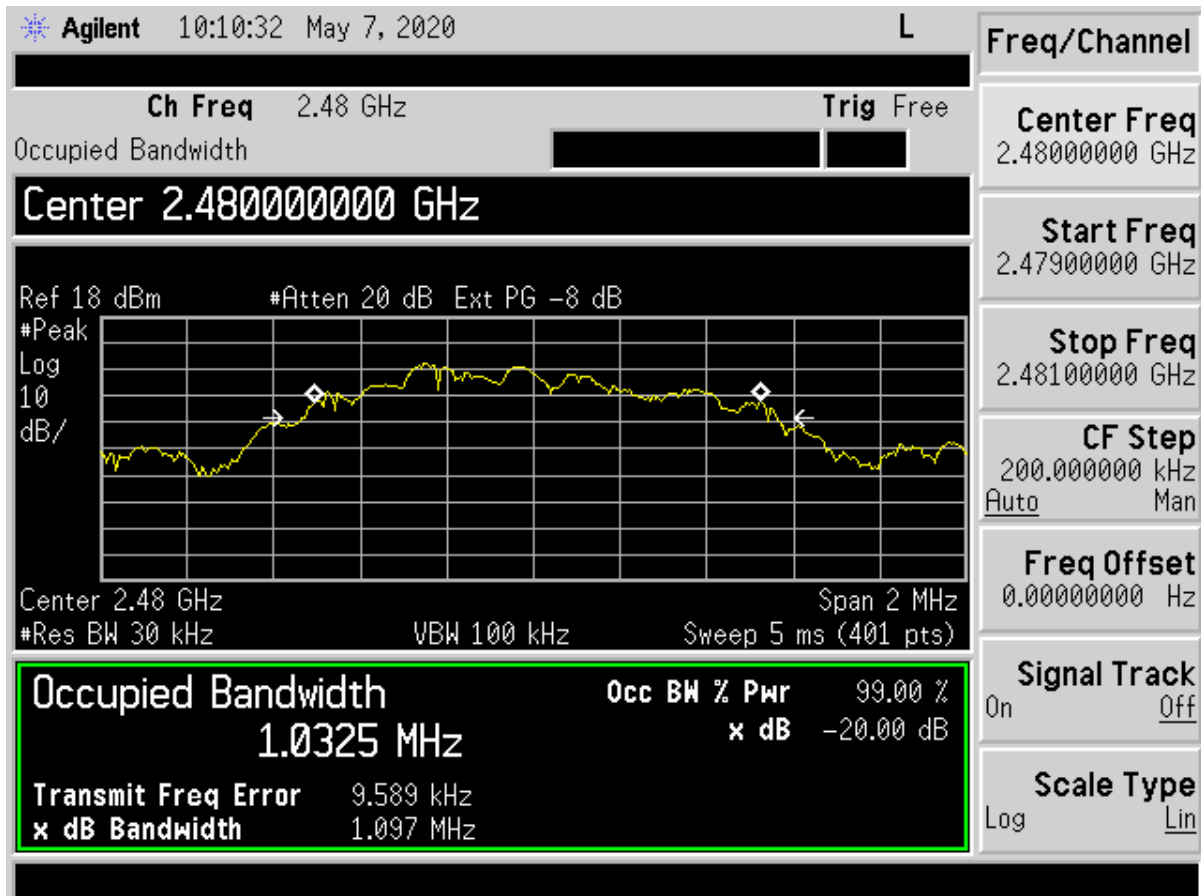


Figure 9. 99% Occupied Bandwidth – High Channel

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2.13 Measurement Uncertainty

The measurement uncertainties given were calculated using the method detailed in CISPR 16-4-2:2011. A coverage factor of $k=2$ was used to give a level of confidence of approximately 95%.

2.13.1 Conducted Emissions Measurement Uncertainty

Measurement Uncertainty (within a 95% confidence level) for this test is ± 2.78 dB.

2.13.2 Radiated Emissions Measurement Uncertainty

For a measurement distance of 3 m the measurement uncertainty (with a 95% confidence level) for this test using a Biconical Antenna (30 MHz to 200 MHz) is ± 5.3 dB. This value includes all elements of measurement.

The measurement uncertainty (with a 95% confidence level) for this test using a Log Periodic Antenna (200 MHz to 1000 MHz) is ± 5.1 dB.

The measurement uncertainty (with a 95% confidence level) for this test using a Horn Antenna is ± 5.1 dB.

3 Conclusions

The EUT is deemed to meet the requirements of the test standards cited herein when tested in the configuration detailed in this test report.