

Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

FCC ID: 2BOWH-FDGEN2

Page: 1 / 83
Rev.: 00

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

Test Standard	FCC Part 15.247
Product name	Fusion Domain
Brand Name	Foxtron
Model No.	Fusion Domain; Fusion Domain D31H NA; Fusion Domain D31H AWD NA; Fusion Domain D31F AWD; Fusion Domain D21 TWN; Fusion Domain D21 TWN AWD; Fusion Domain P71; Fusion Domain P71 AWD
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc.(Wugu Laboratory)

Approved by:

Sehni, Hu

Sehni Hu
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
除非另有說明，此報告結果僅對測試之樣品負責，同時此樣品僅保留90天。本報告未經本公司書面許可，不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com.tw/Terms-and-Conditions> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com.tw/Terms-and-Conditions>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 2 / 83
Rev.: 00

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 23, 2025	Initial Issue	ALL	Peggy Tsai

Table of contents

1.	GENERAL INFORMATION	4
1.1	EUT INFORMATION	4
1.2	EUT CHANNEL INFORMATION	5
1.3	ANTENNA INFORMATION	5
1.4	MEASUREMENT UNCERTAINTY.....	6
1.5	FACILITIES AND TEST LOCATION	6
1.6	INSTRUMENT CALIBRATION	7
1.7	SUPPORT AND EUT ACCESSORIES EQUIPMENT	8
1.8	TEST SETUP DIAGRAM.....	9
1.9	TEST PROGRAM.....	9
1.10	TEST METHODOLOGY AND APPLIED STANDARDS	9
2.	TEST SUMMARY	10
3.	DESCRIPTION OF TEST MODES.....	11
3.1	THE WORST MODE OF OPERATING CONDITION	11
3.2	THE WORST MODE OF MEASUREMENT	12
3.3	EUT DUTY CYCLE.....	13
4.	TEST RESULT	15
4.1	AC POWER LINE CONDUCTED EMISSION	15
4.2	6DB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)	16
4.3	OUTPUT POWER MEASUREMENT	23
4.4	POWER SPECTRAL DENSITY.....	26
4.5	CONDUCTED BAND EDGE AND SPURIOUS EMISSION	31
4.6	RADIATION BANDEDGE AND SPURIOUS EMISSION	38
APPENDIX 1 - PHOTOGRAPHS OF EUT		



Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 4 / 83
Rev.: 00

1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	Foxtron Vehicle Technologies Co., Ltd. 6F, No. 26, Baogao Rd., Xindian Dist., New Taipei City 231029, Taiwan (R.O.C.)
Manufacturer	FUCHI ELECTRONICS CO., LTD. No. 355, Sec. 2, Nankan Rd., Luzhu Dist., Taoyuan City 338 , Taiwan (R.O.C.)
Equipment	Fusion Domain
Brand Name	Foxtron
Model No.	Fusion Domain; Fusion Domain D31H NA; Fusion Domain D31H AWD NA; Fusion Domain D31F AWD; Fusion Domain D21 TWN; Fusion Domain D21 TWN AWD; Fusion Domain P71; Fusion Domain P71 AWD
Model Discrepancy	Difference of the those model number (list on this report) are just for marketing purpose only.
Received Date	March 3, 2025
Date of Test	March 24 ~ 25, 2025
EUT Power Rating	Power from DC 12V.
H.W Version	XD
S.W Version	V0.1.2
Serial Number	FTF62A178801B253400036XD1

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. Disclaimer: Variant information between/among model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.

1.2 EUT CHANNEL INFORMATION

Frequency Range	2402MHz-2480MHz
Modulation Type	GFSK for BLE 125 Kbps GFSK for BLE 500 Kbps GFSK for BLE 1 Mbps GFSK for BLE 2 Mbps
Number of channel	40 Channels

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☒ Monopole ☐ PCB ☐ Dipole ☐ Coils
Antenna Gain	Gain: 2.53 dBi

Notes:

1.The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	+/- 2.21 dB
Channel Bandwidth	+/- 2.79 dB
RF output power (Power Meter + Power sensor)	+/- 0.24 dB
Power Spectral density	+/- 2.74 dB
Conducted Bandedge	+/- 2.74 dB
Conducted Spurious Emission	+/- 2.74 dB
Radiated Emission_9kHz-30MHz	+/- 3.492 dB
Radiated Emission_30MHz-200MHz	+/- 3.62 dB
Radiated Emission_200MHz-1GHz	+/- 3.899 dB
Radiated Emission_1GHz-6GHz	+/- 5.063 dB
Radiated Emission_6GHz-18GHz	+/- 5.122 dB
Radiated Emission_18GHz-26GHz	+/- 3.032 dB
Radiated Emission_26GHz-40GHz	+/- 3.271 dB

Remark:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

☒ No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	-	Not applicable, because EUT not connect to AC Main Source direct.
Radiation	Tony Chao	-
RF Conducted	David Li	-

Remark: The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC pubic Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EXA Signal Analyzer	Keysight	N9010A	MY53400256	2024-11-19	2025-11-18
Power Sensor	Anritsu	MA2411B	1911387	2024-08-30	2025-08-29
Power Sensor	Anritsu	MA2411B	1911386	2024-07-19	2025-07-18
Power Meter	Anritsu	ML2496A	2136002	2024-07-19	2025-07-18
DC Blocks	Marvelous Microwave	MVE6411	MVE-001	2024-08-08	2025-08-07
Software	Radio Test Software Ver. 21				

966A_Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2025-03-05	2026-03-04
Active Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2024-12-11	2025-12-10
Thermo-Hygro Meter	WISEWIND	1206	D07	2024-11-26	2025-11-25
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2024-07-12	2025-07-11
Preamplifier	EMEC	EM330	060609	2025-02-20	2026-02-19
Cable	Huber+Suhner	104PEA	20995+21000+182330	2024-08-07	2025-08-06
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2024-12-20	2025-12-19
Preamplifier	HP	8449B	3008A00965	2024-12-18	2025-12-17
Cable	EMCI	EMC101G	221012+230205+250204	2025-03-03	2026-03-02
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09-966A-01	2025-02-06	2026-02-05
Site Validation	CCS	966A	N/A	2024-08-03	2025-08-02
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2024-06-12	2025-06-11
Pre-Amplifier	EMCI	EMC184045SE	980860	2024-12-02	2025-12-01
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2024-12-06	2025-12-05
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Software	e3 V9-210616c				

Remark:

- Each piece of equipment is scheduled for calibration once a year.
- N.C.R. = No Calibration Required.

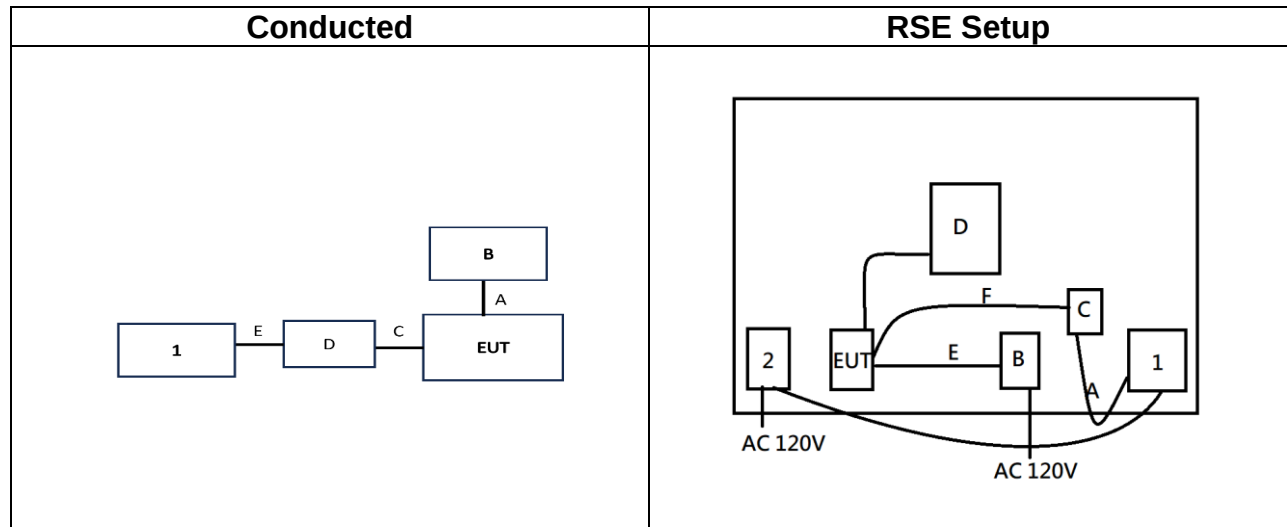
1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
	N/A					

Support Unit List (Conducted)						
No.	Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
1	NB(I)	Lenovo	L480	N/A	N/A	N/A
A	32pin Red Power Cable	N/A	N/A	N/A	N/A	N/A
B	Adapter	DEE VAN ENTERPRISE CO LTD	DSA-24PFS-12 FUS 120200	N/A	N/A	N/A
C	48pin to 10pin Green Cable	N/A	N/A	N/A	N/A	N/A
D	UART-TypeC XB	N/A	N/A	N/A	N/A	N/A
E	Type-C to USB Cable	UGREEN	60408	N/A	N/A	N/A

Support Unit List (RSE)						
No.	Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A	N/A
A	Type-C to USB Cable	UGREEN	60408	N/A	N/A	N/A
B	Adapter	DEE VAN ENTERPRISE CO LTD	DSA-24PFS-12 FUS 120200	N/A	N/A	N/A
C	UART-TypeC XB	N/A	N/A	N/A	N/A	N/A
D	Antenna	N/A	N/A	N/A	N/A	N/A
E	32pin Red Power Cable	N/A	N/A	N/A	N/A	N/A
F	48pin to 10pin Green Cable	N/A	N/A	N/A	N/A	N/A
	NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A

1.8 TEST SETUP DIAGRAM



1.9 TEST PROGRAM

This EUT uses "Tera Term" software and setup command to set the frequency, modulation, and power to allow the sample to continuously transmit.

1.10 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074 D01.

2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	N/A
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Emission	Pass
15.247(d) 15.205 15.209	4.6	Radiation Band Edge	Pass
15.247(d) 15.205 15.209	4.6	Radiation Spurious Emission	Pass



Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 11 / 83
Rev.: 00

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	BLE Mode (125Kbps) BLE Mode (500Kbps) BLE Mode (1Mbps) BLE Mode (2Mbps)
Test Channel Frequencies	BLE Mode (125Kbps) 1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz BLE Mode (500Kbps) 1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz BLE Mode (1Mbps) 1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz BLE Mode (2Mbps) 1.Lowest Channel : 2402MHz 2.Middle Channel : 2442MHz 3.Highest Channel : 2480MHz

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.



Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 12 / 83
Rev.: 00

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by DC 12V
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4
Worst Position	☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☒ Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by DC 12V
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report



Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

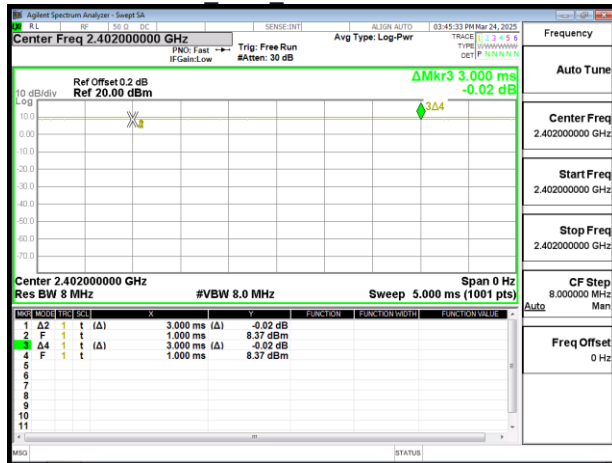
Page: 13 / 83
Rev.: 00

3.3 EUT DUTY CYCLE

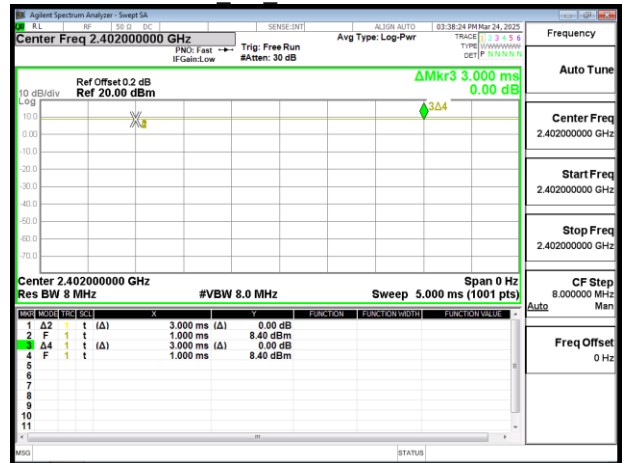
Temperature: 21.5°C Test date: March 24, 2025
Humidity: 51% RH Tested by: David Li

Mode	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
BLE 125k	100.00	0.00	0.00	0.01
BLE 500k	100.00	0.00	0.00	0.01
BLE 1M	100.00	0.00	0.00	0.01
BLE 2M	100.00	0.00	0.00	0.01

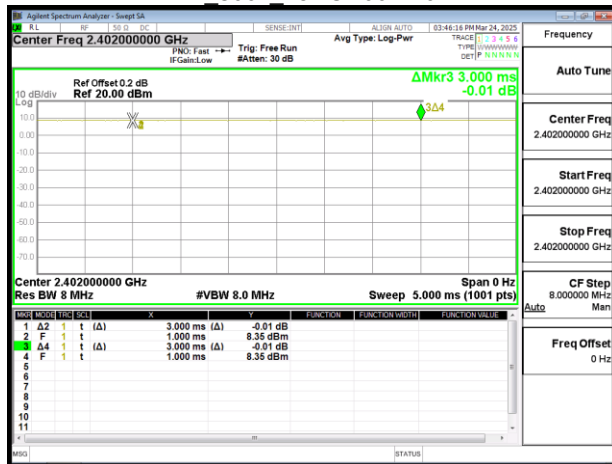
BLE 125k LowCH00-2402



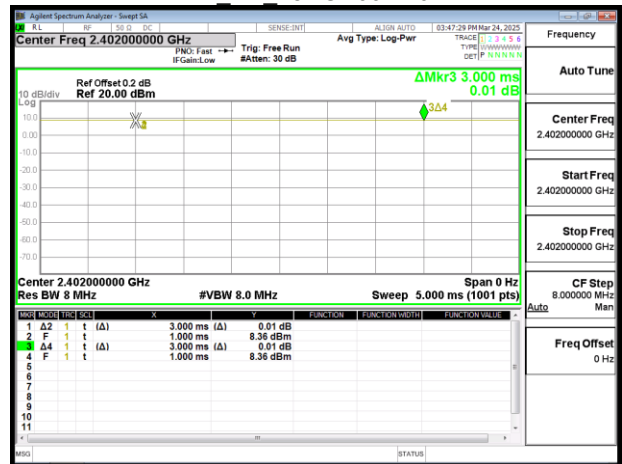
BLE 1M LowCH00-2402



BLE 500k LowCH00-2402



BLE 2M LowCH00-2402



4. TEST RESULT

4.1 AC POWER LINE CONDUCTED EMISSION

4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

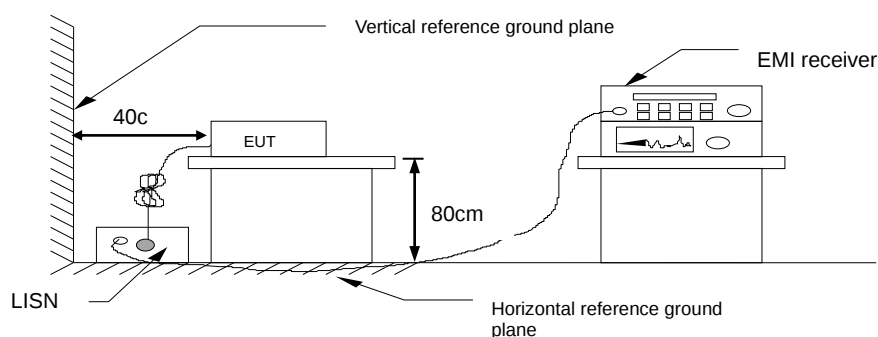
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

4.1.3 Test Setup



4.1.4 Test Result

Not applicable, because EUT not connect to AC Main Source direct.

4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

Occupied Bandwidth(99%) : For reporting purposes only.

4.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2.

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

4.2.3 Test Setup

Refer to section 1.8.

4.2.4 Test Result

Temperature: 21.5°C Test date: March 24, 2025
Humidity: 51% RH Tested by: David Li

6dB BANDWIDTH

BLE 125k mode(Payload S=8)

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.6758	≥ 0.5	PASS
2442	0.6836	≥ 0.5	PASS
2480	0.6785	≥ 0.5	PASS

BLE 500k mode(Payload S=2)

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.6808	≥ 0.5	PASS
2442	0.6809	≥ 0.5	PASS
2480	0.6777	≥ 0.5	PASS

BLE 1M mode

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	0.6756	≥ 0.5	PASS
2442	0.6643	≥ 0.5	PASS
2480	0.6836	≥ 0.5	PASS

BLE 2M mode

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2402	1.408	≥ 0.5	PASS
2442	1.413	≥ 0.5	PASS
2480	1.406	≥ 0.5	PASS

BANDWIDTH 99%

BLE 125k mode(Payload S=8)

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.0128
2442	1.0193
2480	1.0197

BLE 500k mode(Payload S=2)

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.0256
2442	1.0176
2480	1.0216

BLE 1M mode

Frequency (MHz)	99%Bandwidth (MHz)
2402	1.0178
2442	1.0021
2480	1.0204

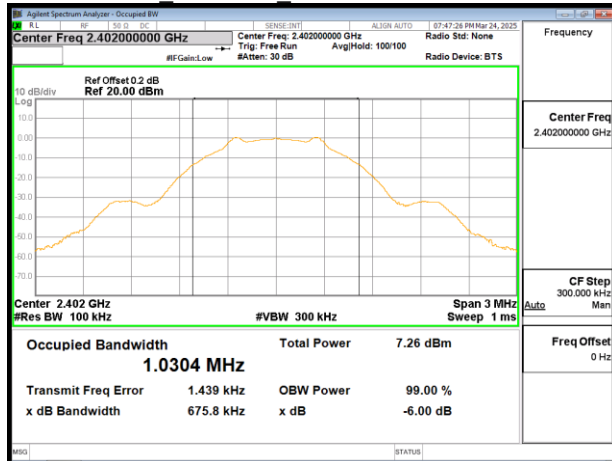
BLE 2M mode

Frequency (MHz)	99%Bandwidth (MHz)
2402	2.0134
2442	2.0217
2480	2.0166

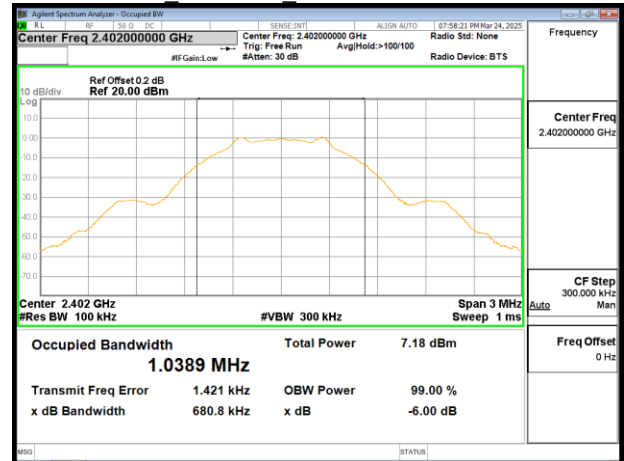
Test Data

6dB BANDWIDTH

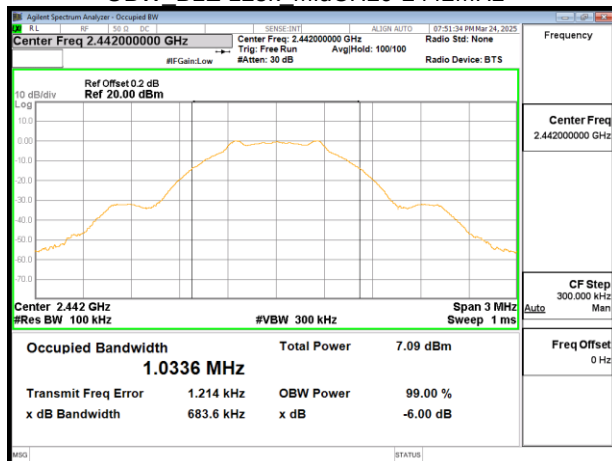
OBW BLE 125k LowCH00-2402MHz



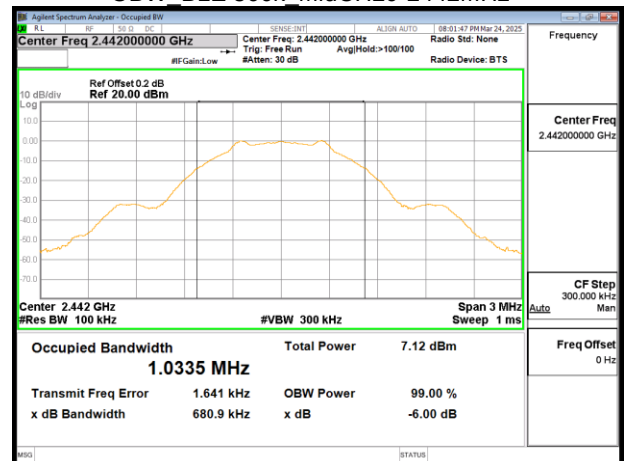
OBW BLE 500k LowCH00-2402MHz



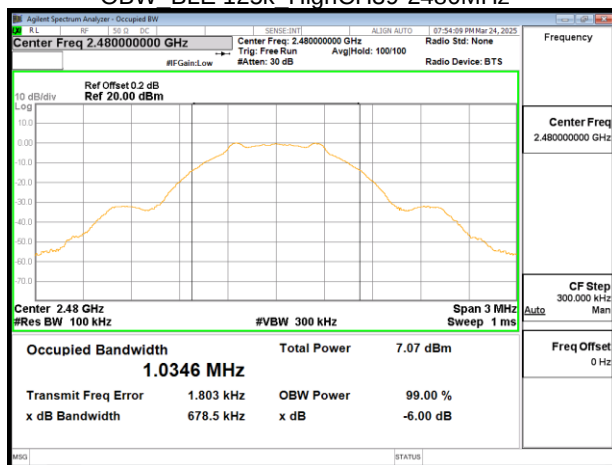
OBW BLE 125k MidCH20-2442MHz



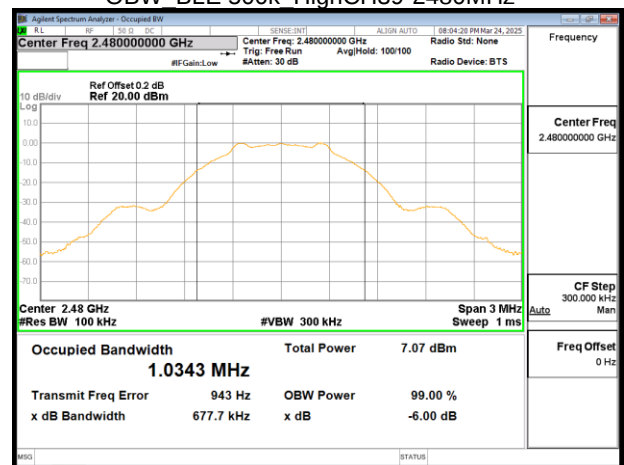
OBW BLE 500k MidCH20-2442MHz



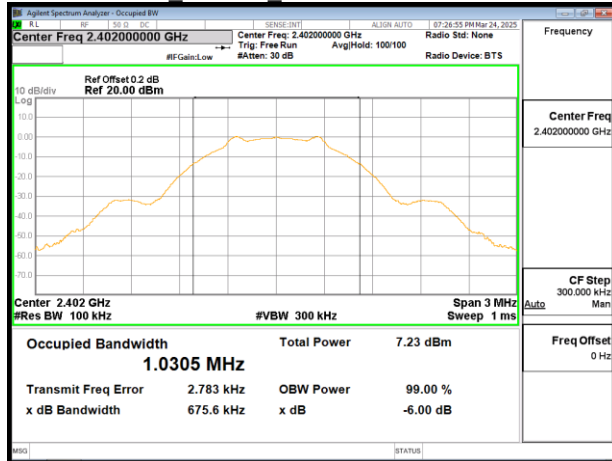
OBW BLE 125k HighCH39-2480MHz



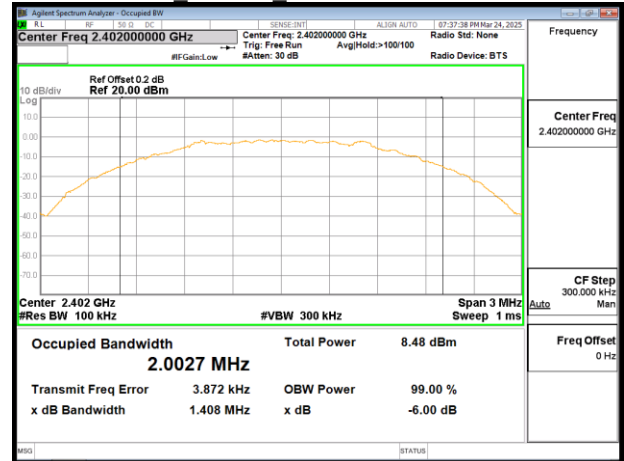
OBW BLE 500k HighCH39-2480MHz



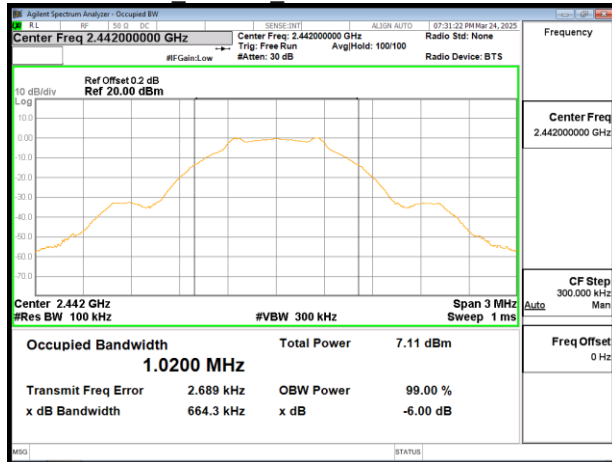
OBW BLE 1M LowCH00-2402MHz



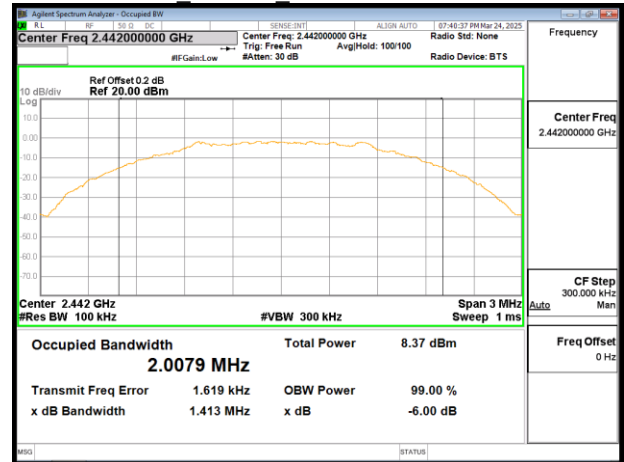
OBW BLE 2M LowCH00-2402MHz



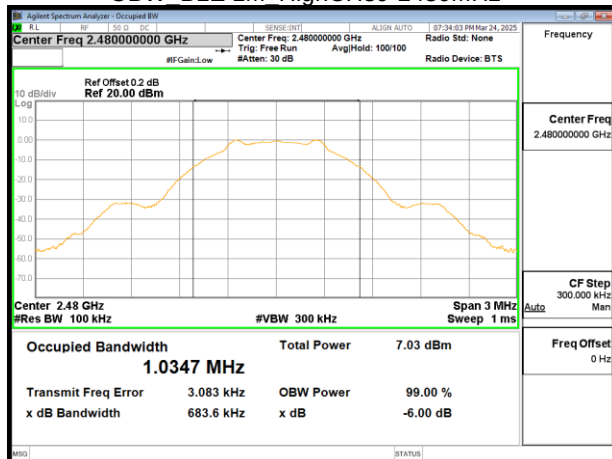
OBW BLE 1M MidCH20-2442MHz



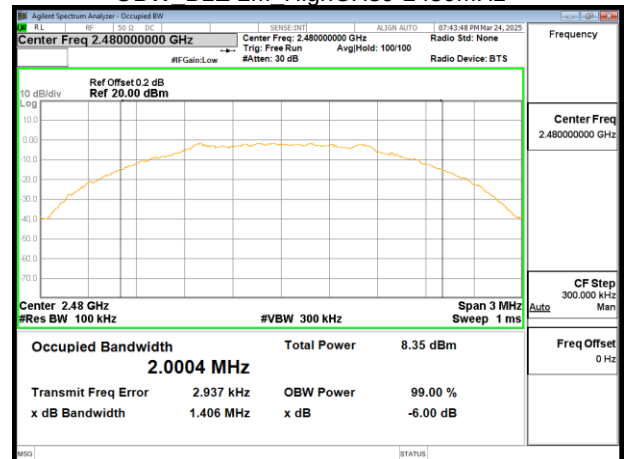
OBW BLE 2M MidCH20-2442MHz



OBW BLE 1M HighCH39-2480MHz

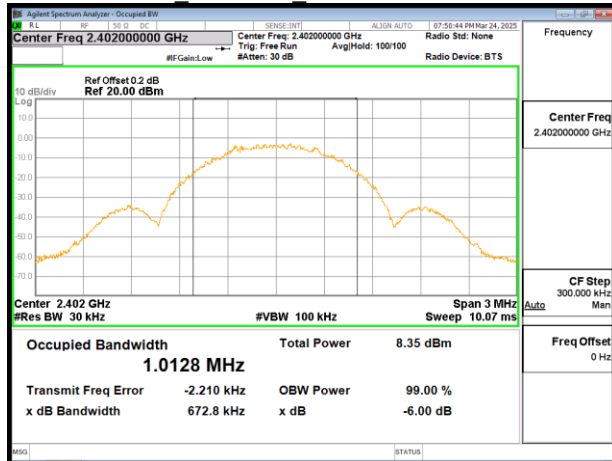


OBW BLE 2M HighCH39-2480MHz

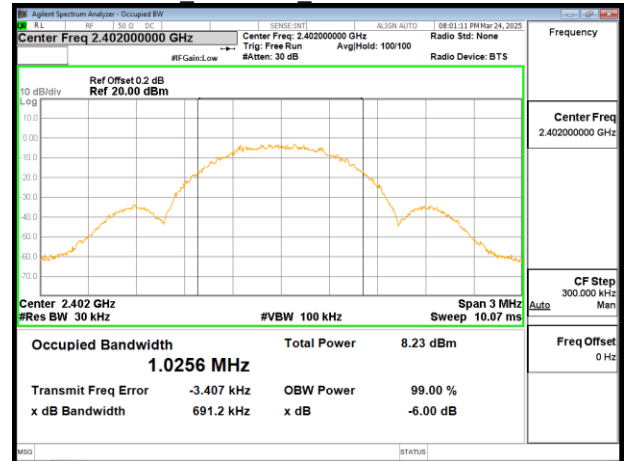


BANDWIDTH 99%

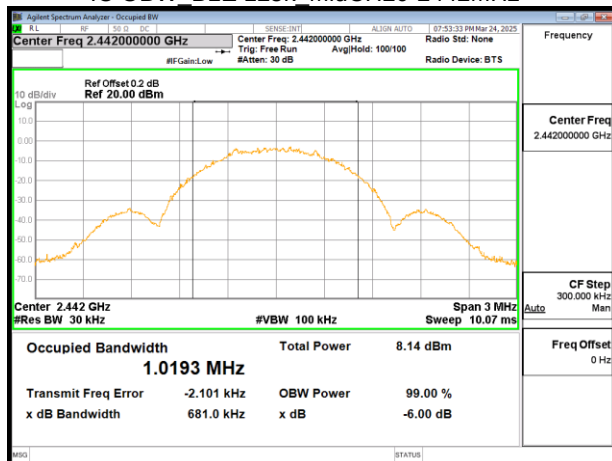
IC OBW BLE 125k LowCH00-2402MHz



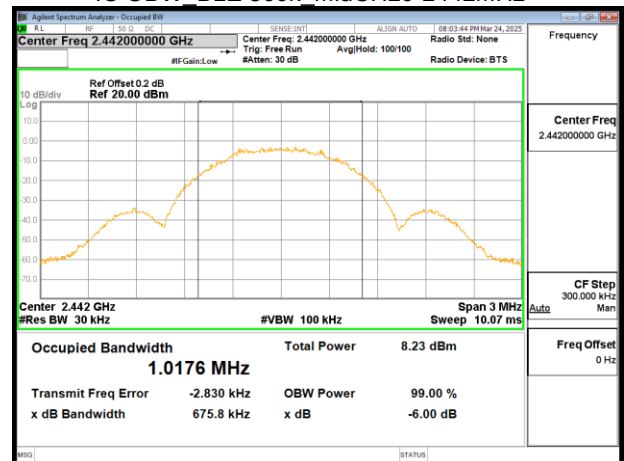
IC OBW BLE 500k LowCH00-2402MHz



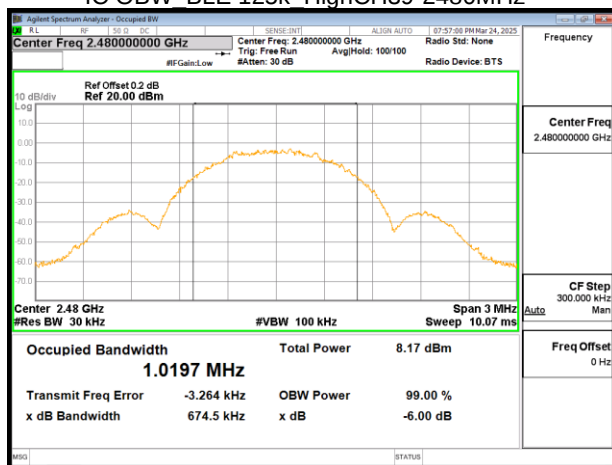
IC OBW BLE 125k MidCH20-2442MHz



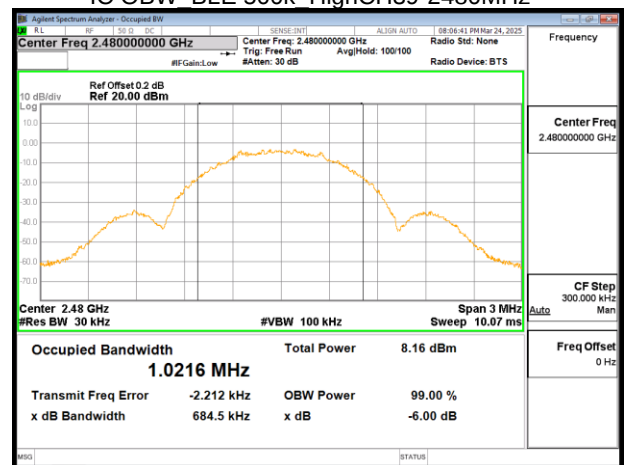
IC OBW BLE 500k MidCH20-2442MHz



IC OBW BLE 125k HighCH39-2480MHz



IC OBW BLE 500k HighCH39-2480MHz

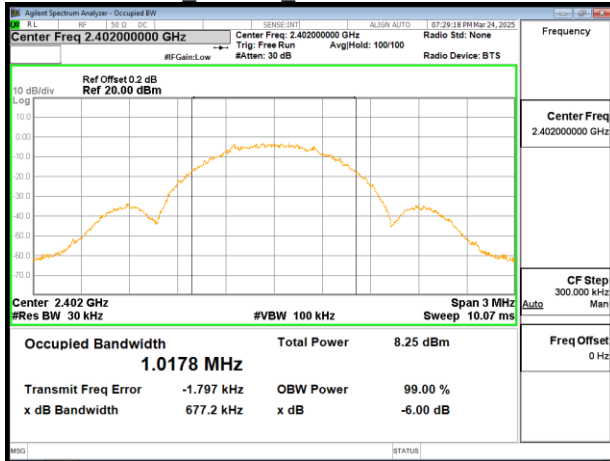




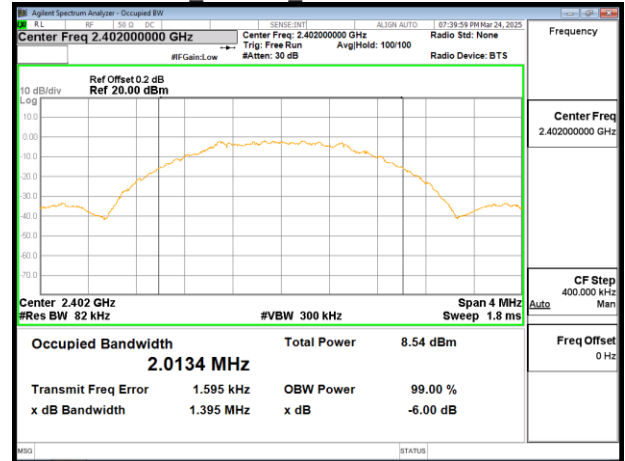
Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 22 / 83
Rev.: 00

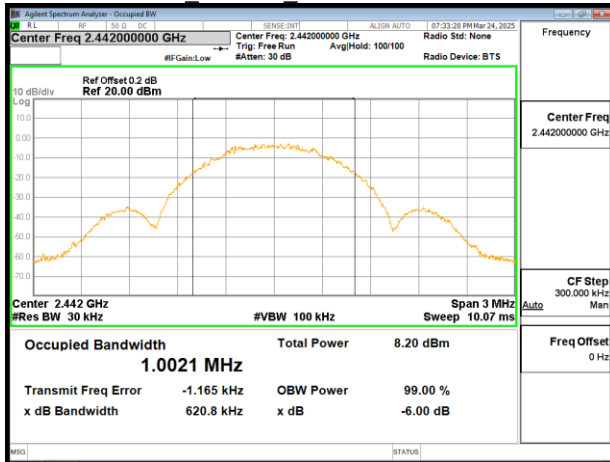
IC OBW BLE 1M LowCH00-2402MHz



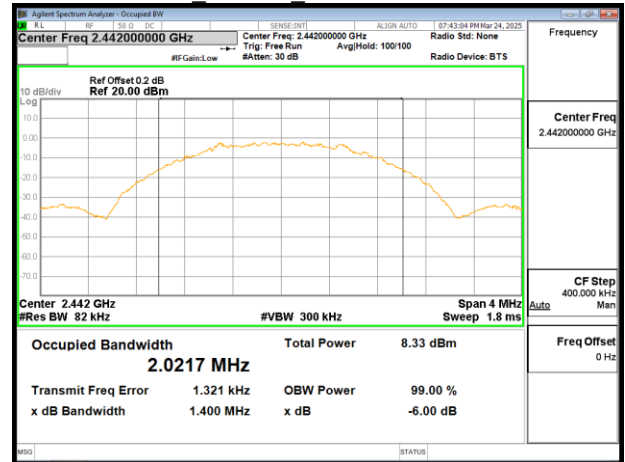
IC OBW BLE 2M LowCH00-2402MHz



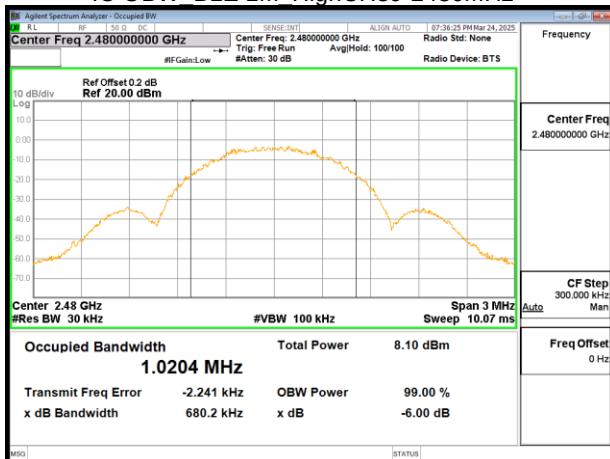
IC OBW BLE 1M MidCH20-2442MHz



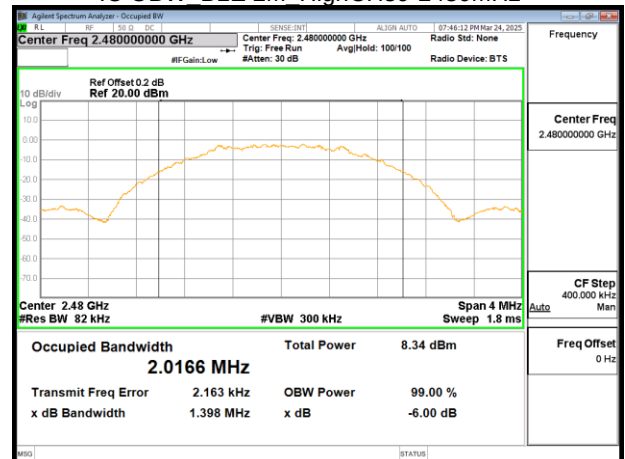
IC OBW BLE 2M MidCH20-2442MHz



IC OBW BLE 1M HighCH39-2480MHz



IC OBW BLE 2M HighCH39-2480MHz



4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)(3)

Peak output power :

FCC

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Average output power : For reporting purposes only.

4.3.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.3.3 Test Setup

Refer to section 1.8

4.3.4 Test Result

Temperature: 21.5°C Test date: March 24, 2025
Humidity: 51% RH Tested by: David Li

Peak & Average output power :

BLE 125k mode(Payload S=8):

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.71	30
20	2442	9	0.58	30
39	2480	9	0.70	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.65	30
20	2442	9	0.54	30
39	2480	9	0.64	30

***Note:**

1.Measured by power meter, cable loss 0.2 dB + Duty cycle factor has been offseted to the power meter for Avg. power and cable loss has been offseted for Peak power measurement.

BLE 500k mode(Payload S=2):

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.69	30
20	2442	9	0.59	30
39	2480	9	0.69	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.64	30
20	2442	9	0.53	30
39	2480	9	0.65	30

***Note:**

1.Measured by power meter, cable loss 0.2 dB + Duty cycle factor has been offseted to the power meter for Avg. power and cable loss has been offseted for Peak power measurement.

BLE 1M mode:

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.74	30
20	2442	9	0.62	30
39	2480	9	0.72	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.68	30
20	2442	9	0.57	30
39	2480	9	0.66	30

***Note:**

1. Measured by power meter, cable loss 0.2 dB + Duty cycle factor has been offseted to the power meter for Avg. power and cable loss has been offseted for Peak power measurement.

BLE 2M mode:

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.71	30
20	2442	9	0.60	30
39	2480	9	0.70	30
CH	Frequency (MHz)	Power Setting	Avg. Output Power (dBm)	Required Limit (dBm)
0	2402	9	0.66	30
20	2442	9	0.55	30
39	2480	9	0.65	30

***Note:**

1. Measured by power meter, cable loss 0.2 dB + Duty cycle factor has been offseted to the power meter for Avg. power and cable loss has been offseted for Peak power measurement.

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e)

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

Limit	☒ Antenna not exceed 6 dBi : 8dBm ☐ Antenna with DG greater than 6 dBi [Limit = 8 – (DG – 6)] ☐ Point-to-point operation :
-------	---

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss was compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

4.4.3 Test Setup

Refer to section 1.8.

4.4.4 Test Result

Temperature: 21.5°C Test date: March 24, 2025
Humidity: 51% RH Tested by: David Li

BLE 125k mode(Payload S=8)

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-12.59	8	PASS
2442	-12.82	8	PASS
2480	-12.77	8	PASS

***Note:**

1.cable loss as 0.2dB that offsets in the spectrum

BLE 500k mode(Payload S=2)

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-12.82	8	PASS
2442	-12.82	8	PASS
2480	-13.06	8	PASS

***Note:**

1.cable loss as 0.2dB that offsets in the spectrum

BLE 1M mode

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-12.81	8	PASS
2442	-12.67	8	PASS
2480	-12.84	8	PASS

***Note:**

1.cable loss as 0.2dB that offsets in the spectrum

BLE 2M mode

Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2402	-15.51	8	PASS
2442	-15.66	8	PASS
2480	-15.60	8	PASS

***Note:**

1.cable loss as 0.2dB that offsets in the spectrum

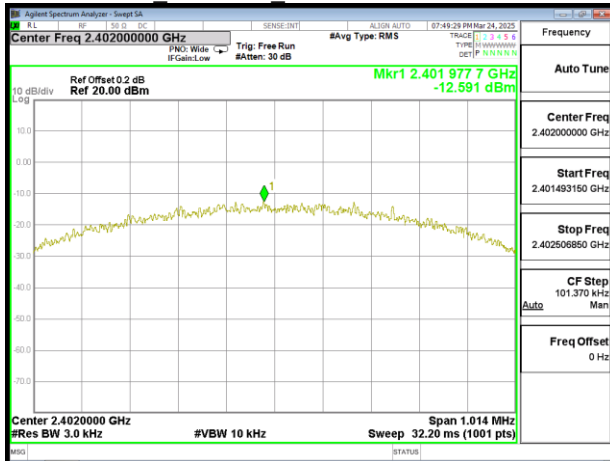


Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

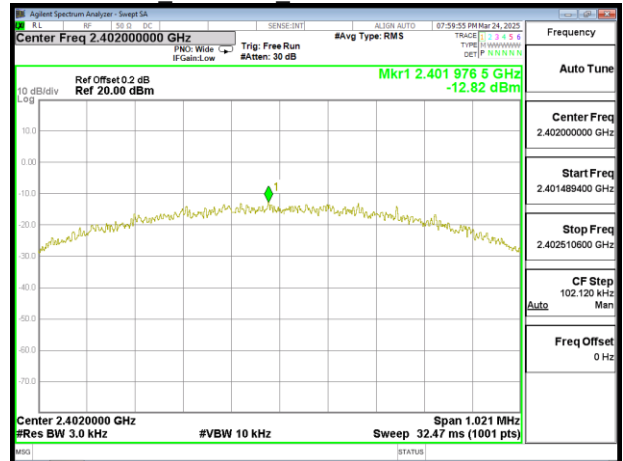
Page: 29 / 83
Rev.: 00

Test Data Power Density

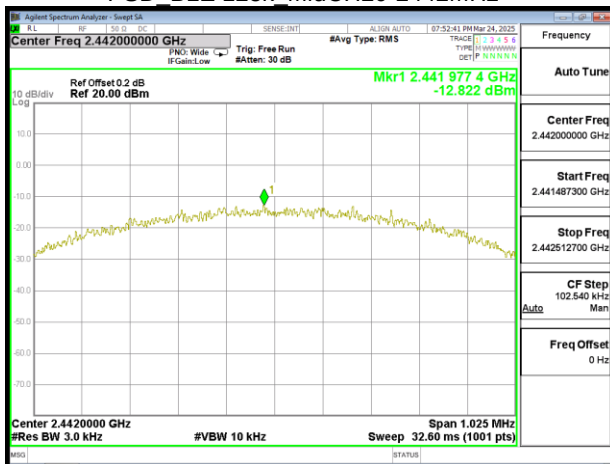
PSD BLE 125k LowCH00-2402MHz



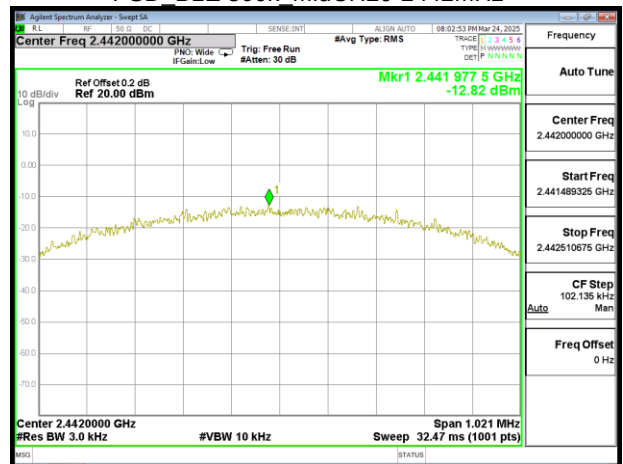
PSD BLE 500k LowCH00-2402MHz



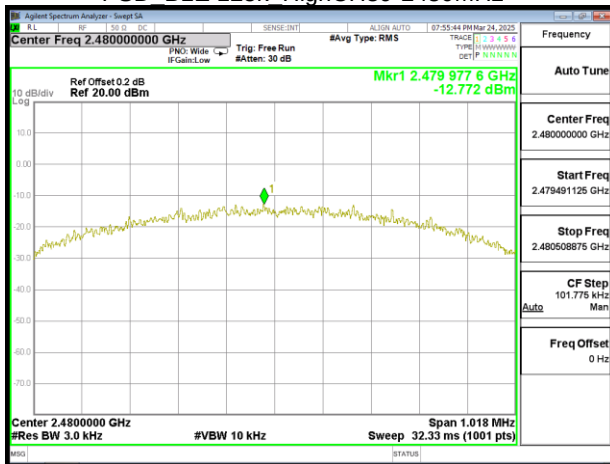
PSD BLE 125k MidCH20-2442MHz



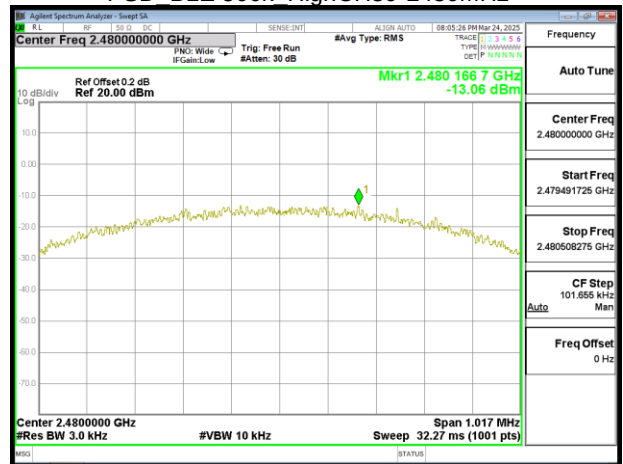
PSD BLE 500k MidCH20-2442MHz



PSD BLE 125k HighCH39-2480MHz



PSD BLE 500k HighCH39-2480MHz

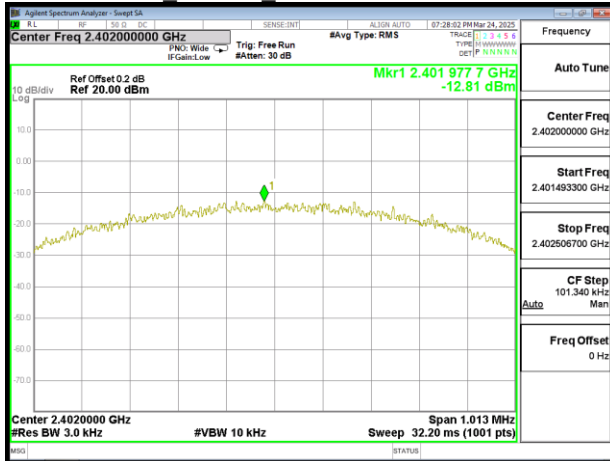




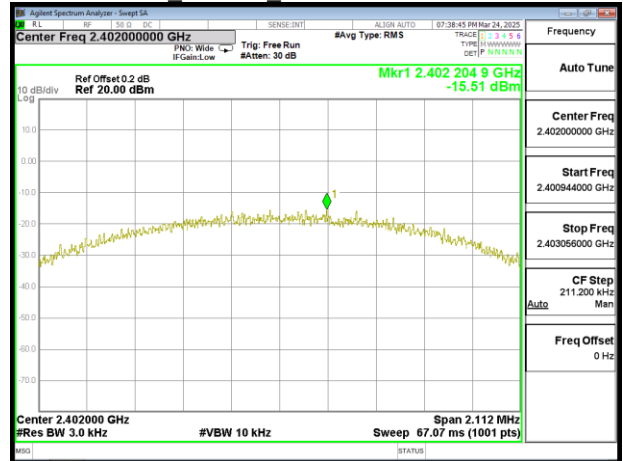
Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 30 / 83
Rev.: 00

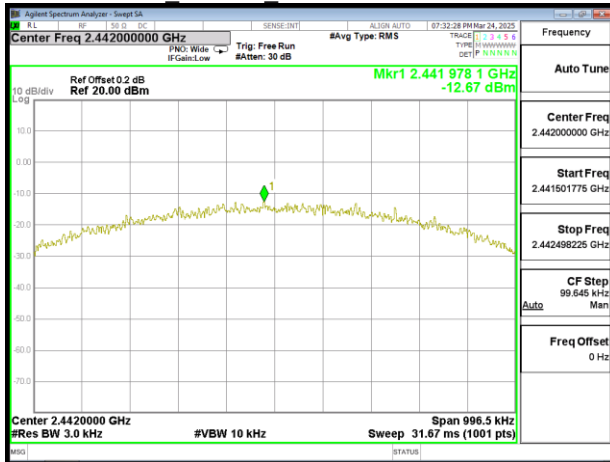
PSD BLE 1M LowCH00-2402MHz



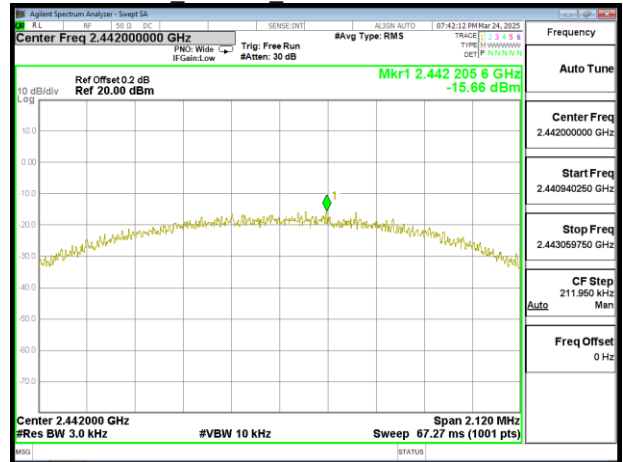
PSD BLE 2M LowCH00-2402MHz



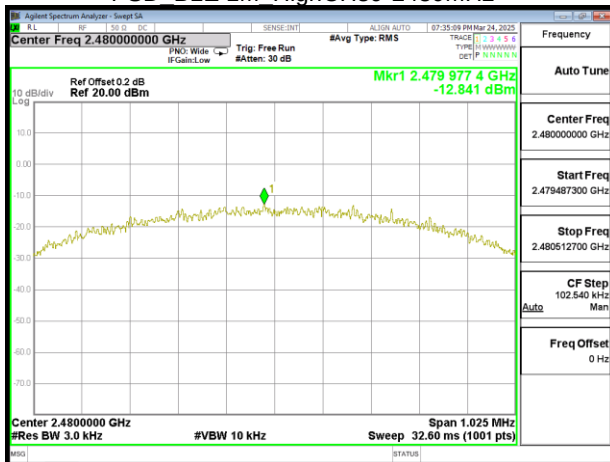
PSD BLE 1M MidCH20-2442MHz



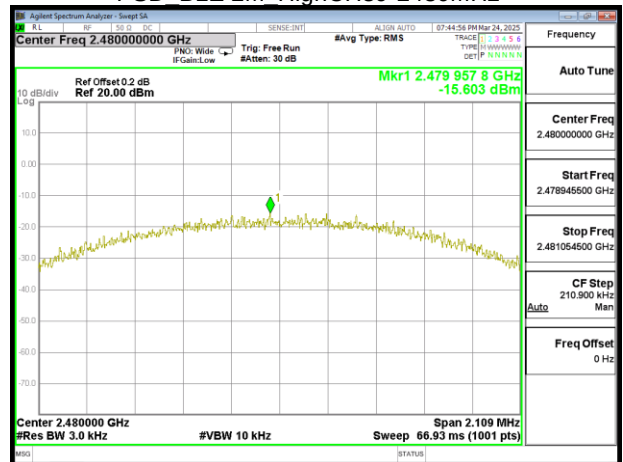
PSD BLE 2M MidCH20-2442MHz



PSD BLE 1M HighCH39-2480MHz



PSD BLE 2M HighCH39-2480MHz



4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d)

FCC: In any 100 kHz bandwidth outside the authorized frequency band,

Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

4.5.2 Test Procedure

Test method Refer as KDB 558074 D01

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

4.5.3 Test Setup

Refer to section 1.8.

4.5.4 Test Result

Temperature: 21.5°C

Test date: March 24, 2025

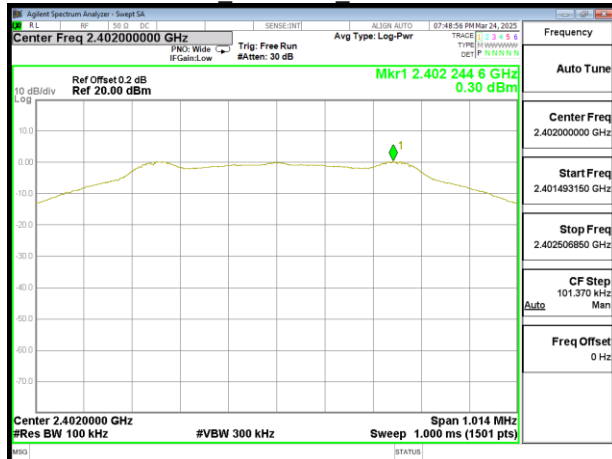
Humidity: 51% RH

Tested by: David Li

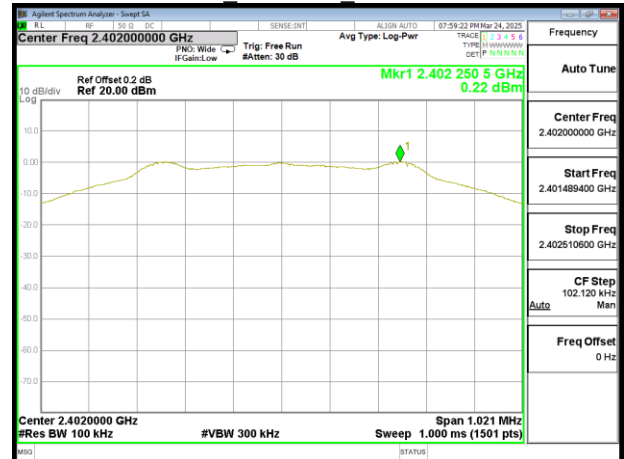
Test Data

Reference Level

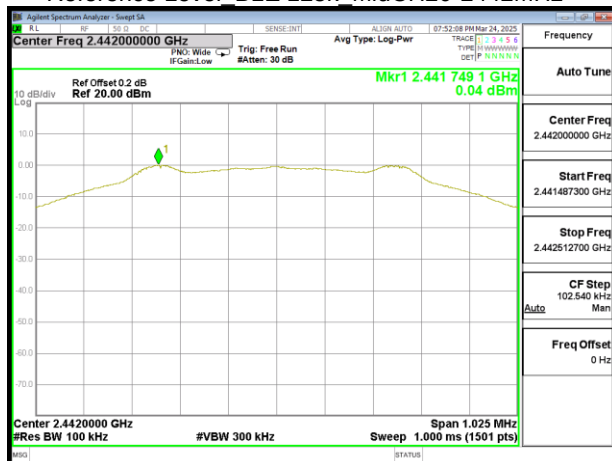
Reference Level BLE 125k LowCH00-2402MHz



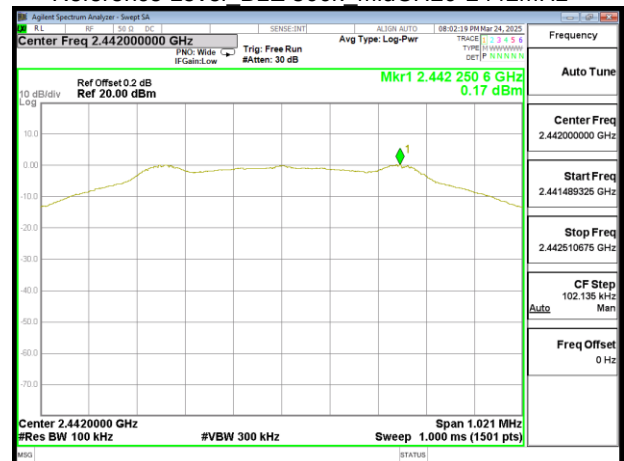
Reference Level BLE 500k LowCH00-2402MHz



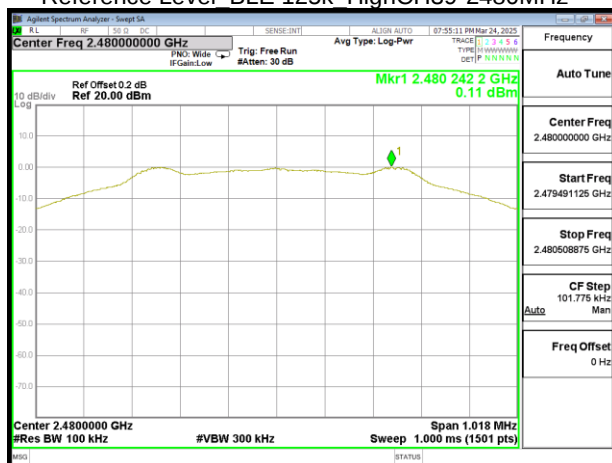
Reference Level BLE 125k MidCH20-2442MHz



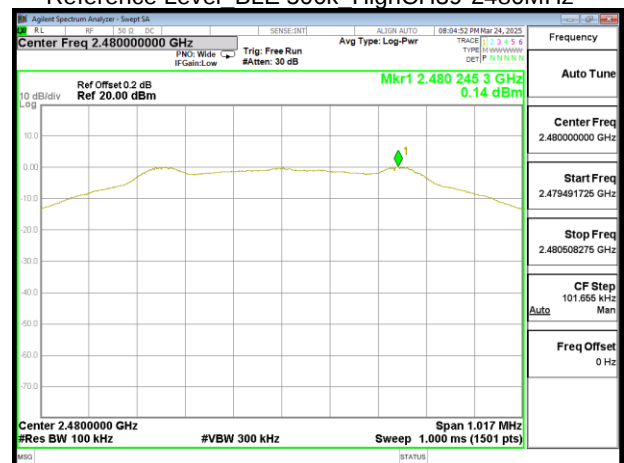
Reference Level BLE 500k MidCH20-2442MHz



Reference Level BLE 125k HighCH39-2480MHz



Reference Level BLE 500k HighCH39-2480MHz

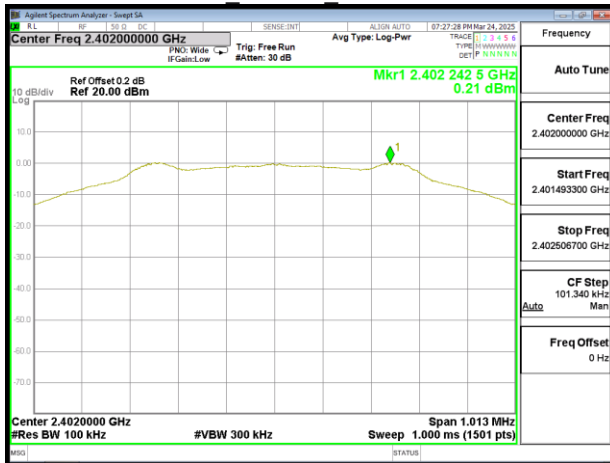




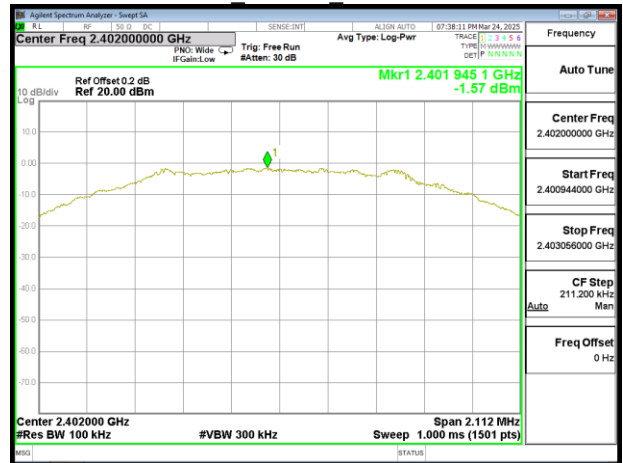
Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

Page: 33 / 83
Rev.: 00

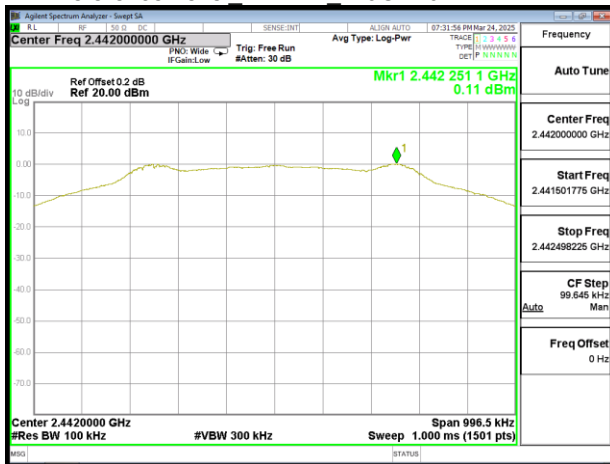
Reference Level BLE 1M LowCH00-2402MHz



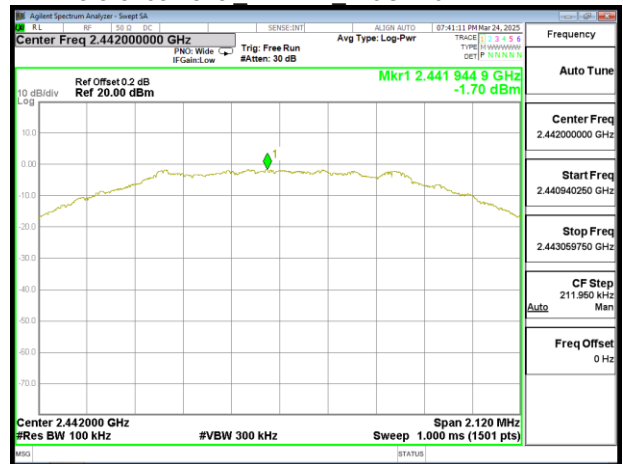
Reference Level BLE 2M LowCH00-2402MHz



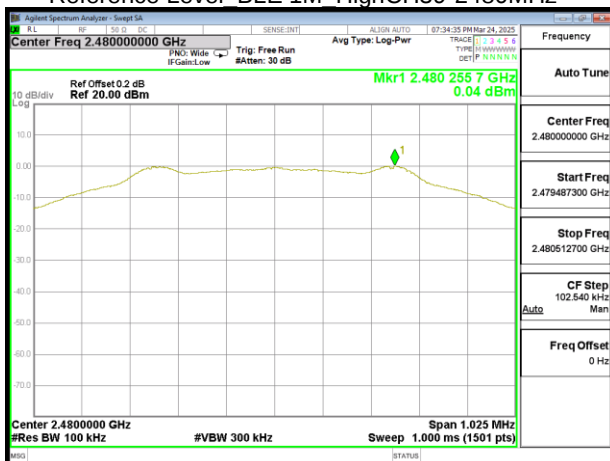
Reference Level BLE 1M MidCH20-2442MHz



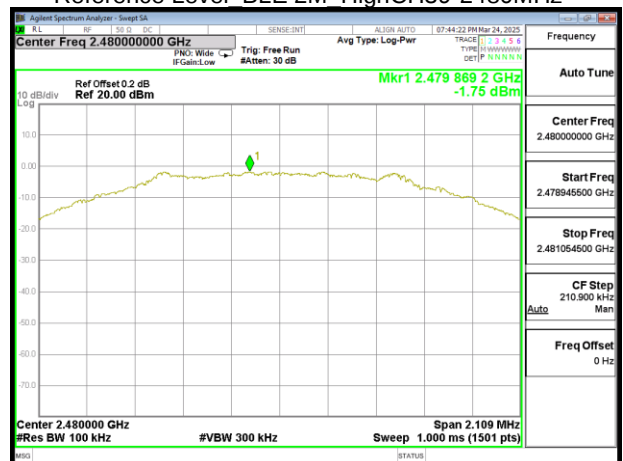
Reference Level BLE 2M MidCH20-2442MHz



Reference Level BLE 1M HighCH39-2480MHz



Reference Level BLE 2M HighCH39-2480MHz



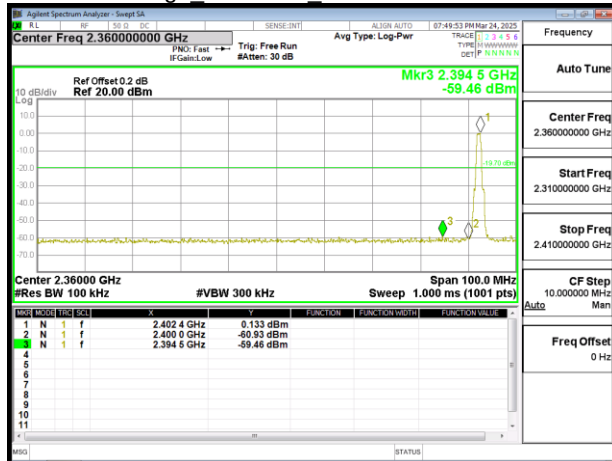


Project No.: TM-2503000019P
Report No.: TMWK2503001004KR

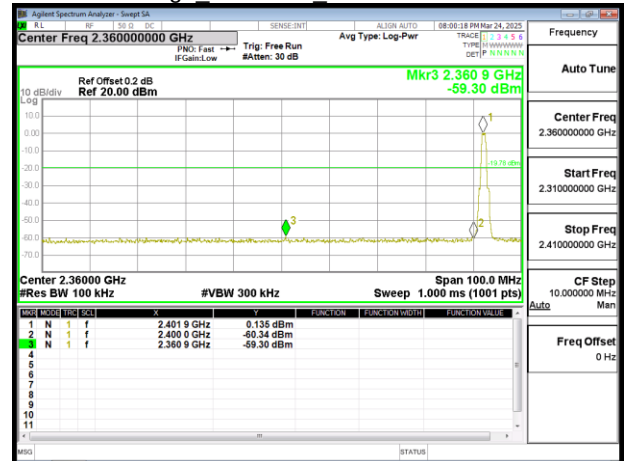
Page: 34 / 83
Rev.: 00

BandEdge

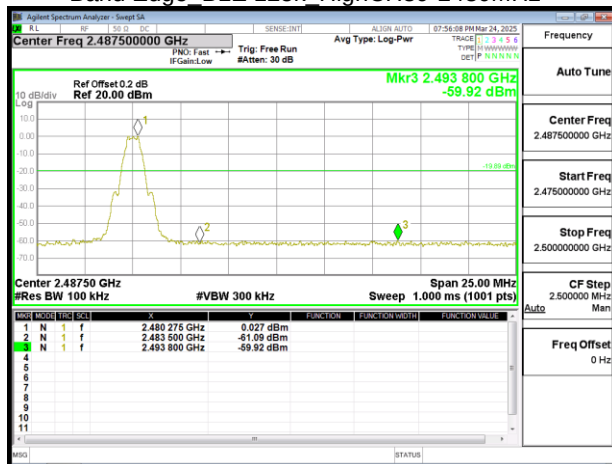
Band Edge BLE 125k LowCH00-2402MHz



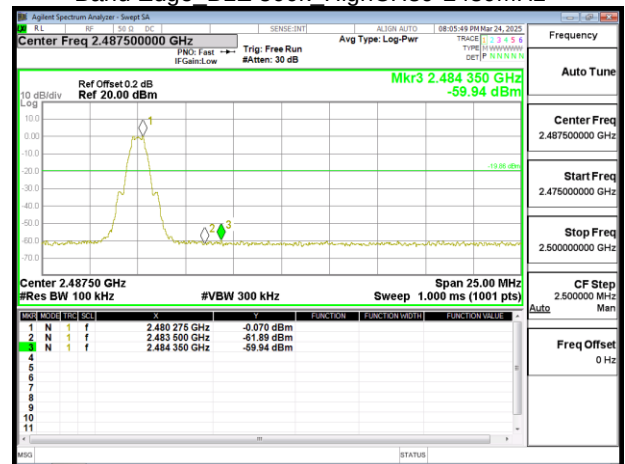
Band Edge BLE 500k LowCH00-2402MHz



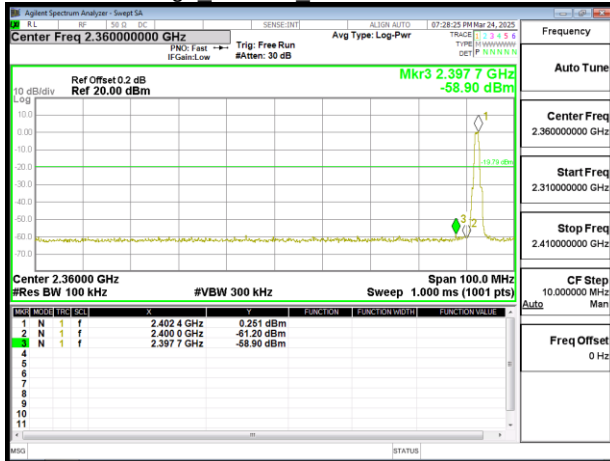
Band Edge BLE 125k HighCH39-2480MHz



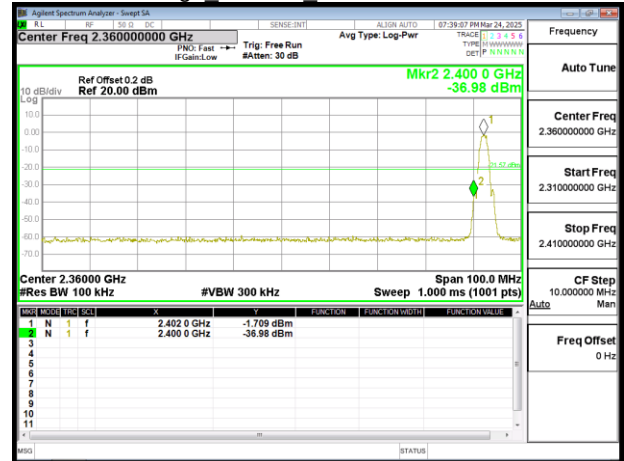
Band Edge BLE 500k HighCH39-2480MHz



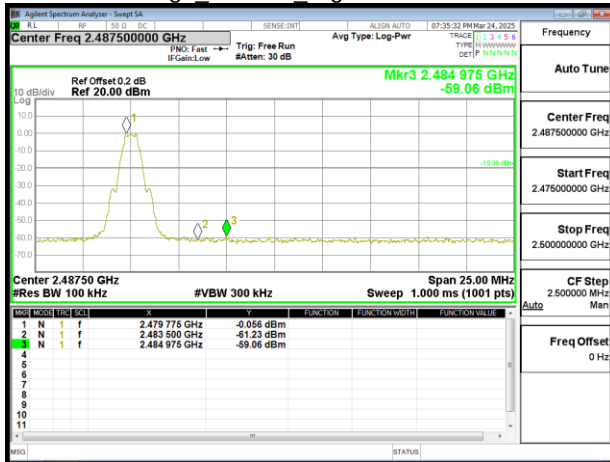
Band Edge BLE 1M LowCH00-2402MHz



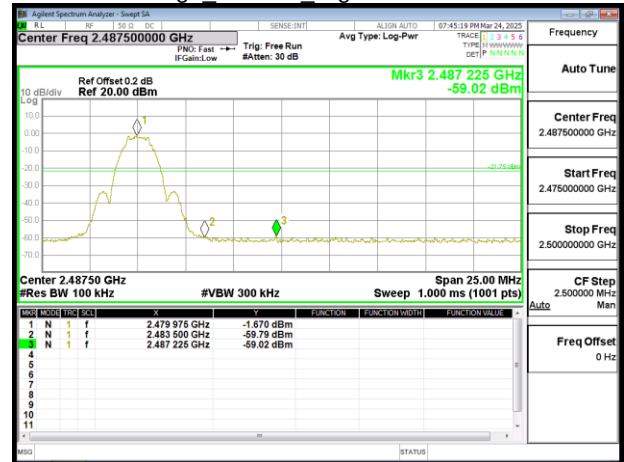
Band Edge BLE 2M LowCH00-2402MHz



Band Edge BLE 1M HighCH39-2480MHz

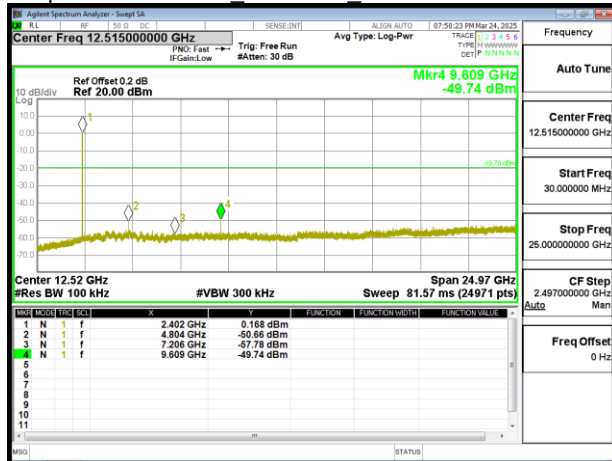


Band Edge BLE 2M HighCH39-2480MHz

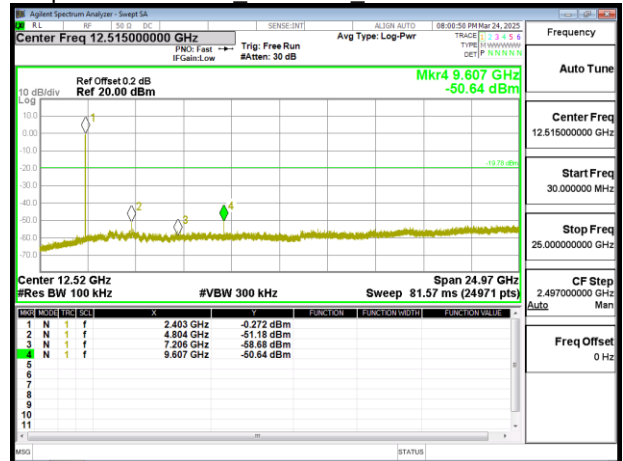


Spurious Emission

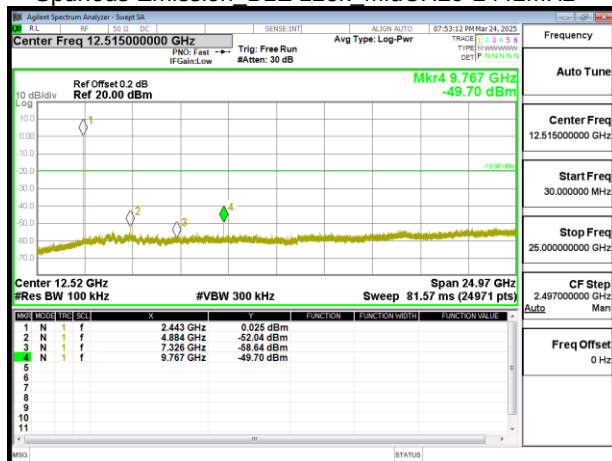
Spurious Emission BLE 125k LowCH00-2402MHz



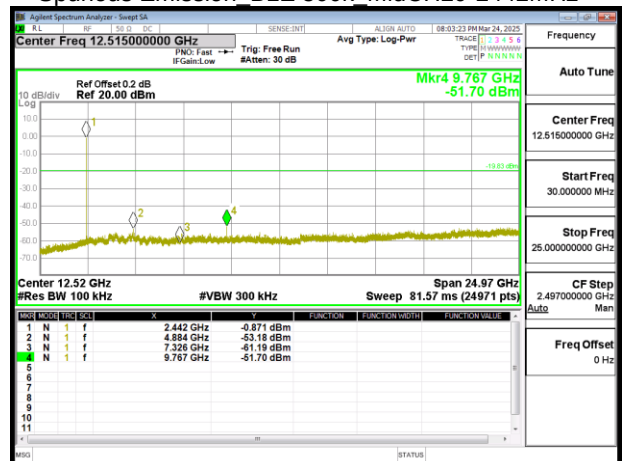
Spurious Emission BLE 500k LowCH00-2402MHz



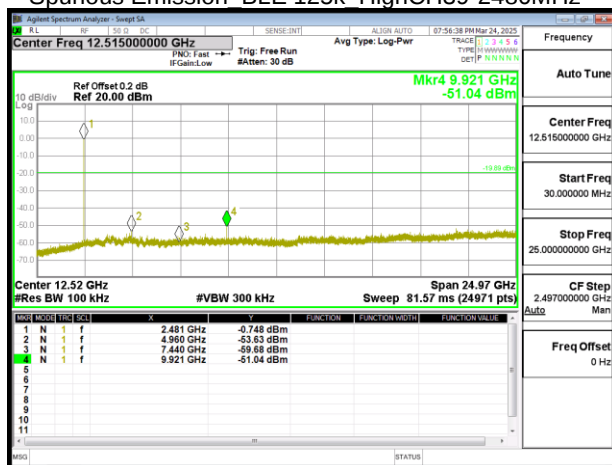
Spurious Emission BLE 125k MidCH20-2442MHz



Spurious Emission BLE 500k MidCH20-2442MHz



Spurious Emission BLE 125k HighCH39-2480MHz



Spurious Emission BLE 500k HighCH39-2480MHz

