Spectrum Research & Testing Lab., Inc. No.167,Ln. 780, Shan-Tong Rd.,Ling 8, Shan-Tong Li, Chung-Li Dist., Taoyuan City 320, Taiwan (R.O.C.)	**TEST REPORT**	Reference No.: A23080102 Report No.: FCCA23080102-E0 FCC ID: 2AZ3ICC180W Page: 1 of 67 Date: Aug. 21, 2023

Product Name:	Projector
Brand Name:	HP
Model No.:	CC180W
Series Model:	---
Applicant:	GT Technology Chongqing Limited 3-1,No,20 Qixin Road Yanjia Street Changshou District Chongqing
Date of Receipt:	Aug. 01, 2023
Finished date of Test:	Aug. 18, 2023
Applicable Standards:	47 CFR Part 15, Subpart C, 15.247 ANSI C63.10: 2013 FCC publication KDB 558074 D01 15.247 Meas Guidance v05r02 Apr 02, 2019

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Tested By: Jimmy Ho (Authy) , Date: 8/21/2023
(Jimmy Tseng)

Approved By: , Date: 8/21/2023
(Johnson Ho, Director)

Revisions History

Report No.	Issue Date	Revisions
FCCA23080102-E0	Aug. 21, 2023	Initial Issue.

Table of Contents

1. DOCUMENT POLICY AND TEST STATEMENT 5
1.1 DOCUMENT POLICY 5
1.2 TEST STATEMENT 5
1.3 EUT MODIFICATION 5
1.4 DECISION RULE 5
1.5 REPORTING STATEMENTS OF CONFORMITY 5
2. DESCRIPTION OF EUT AND TEST MODE 6
2.1 GENERAL DESCRIPTION OF EUT 6
2.3 DESCRIPTION OF TEST MODE 7
2.4 EUT OPERATING CONDITION 7
2.5 DESCRIPTION OF SUPPORT UNIT 8
2.6 CHANNEL AND FREQUENCY TABLE 8
3. DESCRIPTION OF APPLIED STANDARDS 9
3.1 SUMMARY OF TEST RESULTS 9
4. CONDUCTED EMISSION TEST 10
4.1 LIMIT 10
4.2 TEST EQUIPMENT 10
4.3 TEST SETUP 11
4.4 TEST PROCEDURE 11
4.5 TEST RESULT 12
5. RADIATED EMISSION TEST 14
5.1 LIMIT 14
5.2 TEST EQUIPMENT 15
5.3 TEST SET-UP 17
5.4 TEST PROCEDURE 18
5.5 TEST RESULT 19
6. BANDWIDTH TEST 41
6.1 LIMIT 41
6.2 TEST EQUIPMENT 41
6.3 TEST SET-UP 41
6.4 TEST PROCEDURE 41
6.5 EUT OPERATING CONDITION 41
6.6 TEST RESULT 42
7. PEAK CONDUCTED OUTPUT POWER TEST 50

7.1 LIMIT 50
7.2 TEST EQUIPMENT 50
7.3 TEST SET-UP 50
7.4 TEST PROCEDURE 50
7.5 EUT OPERATING CONDITION 50
7.6 TEST RESULT 51
8. BAND EDGE TEST 55
8.1 LIMIT 55
8.2 TEST EQUIPMENT 55
8.3 TEST SET-UP 55
8.4 TEST PROCEDURE 56
8.5 EUT OPERATING CONDITION 56
8.6 TEST RESULT 57
9. POWER SPECTRAL DENSITY TEST 61
9.1 LIMIT 61
9.2 TEST EQUIPMENT 61
9.3 TEST SET-UP 61
9.4 TEST PROCEDURE 61
9.5 EUT OPERATING CONDITION 61
9.6 TEST RESULT 62
10. ANTENNA APPLICATION 66
10.1 ANTENNA REQUIREMENT 66
10.2 RESULT 66
11. DESCRIPTION OF RF EXPOSURE 66
12. TERMS OF ABBREVIATION 67

1. DOCUMENT POLICY AND TEST STATEMENT

1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.
- FCC Registered Test Site Number：TW1016

1.2 TEST STATEMENT

- This random test report is for FCC's market spot check action by FCC ID: **2AZ3ICC180W** project, applied only to the specific samples tested under conditions.
- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- DC power source from DC adapter: 15.0V ⎓ 3.0A, 45.0W or 12.0V ⎓ 3.0A or 9.0V ⎓ 3.0A or 5.0V ⎓ 3.0A, 15.0W.

1.3 EUT MODIFICATION

- No modification in SRT Lab.

1.4 DECISION RULE

- To make sure the testing report(s) meet the requirement of ISO/IEC 17025:2017 standard and meet chapter 7.1 (Review of Requests, Tenders and Contracts), chapter 7.4 (Handling of Test or Calibration Items), chapter 7.8.2 (Reporting of Results – Common Requirement for Reports (Test, Calibration or Sampling)), This decision rule will be the base of adjustment (include the disclaimer scope) from SRT LAB.
- After communicate between SRT LAB. and clients /applicants and get the agreement, SRT LAB. will do the adjustment. According to this decision rule, SRT LAB. Manager(s) will do the Pass or Fail adjustment. (But one thing need to be concerned is, not every assessing rule suits all declaration of conformity assessing actions, it should be ruled depends on product's feature, test standard, technical regulation, test results, and also acceptance of risk of both sides.)
- This report according to the "description of applied standards and statements of conformity" on the report, as the decision rule.

1.5 REPORTING STATEMENTS OF CONFORMITY

Base on ISO/IEC 17025, the statements of conformity requirement of testing results.

□ It does not need to provide the statements of conformity.

■ It need to provide the statements of conformity and

  ■ Use CISPR 16-4,ISO/IEC Guide 98-3, IEC Guide 115,etsi ETR 028 speciation and it does not need to provide additional uncertainty of the testing results or data on the report(s).

  □ It need to provide additional uncertainty of the testing results or data on the report(s).

2. DESCRIPTION OF EUT AND TEST MODE

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Projector
MODEL NO.	CC180W
BRAND NAME	HP
POWER SUPPLY	15.0V ⎓ 3.0A, 45.0W or 12.0V ⎓ 3.0A or 9.0V ⎓ 3.0A or 5.0V ⎓ 3.0A, 15.0W
CABLE	N/A
FREQUENCY BAND	2400 ~ 2483.5 MHz
CARRIER FREQUENCY	2402 ~ 2480 MHz
NUMBER OF CHANNEL	40
RATED RF OUTPUT POWER	2 Mbps: 4.97 dBm (3.141 mW)
MODULATION TYPE	GFSK
BIT RATE OF TRANSMITTER	1 Mbps, 2 Mbps
ANTENNA TYPE	Integrated Antenna
ANTENNA GAIN	1.87 dBi

Brief description of the function/specification of the DUT

For more detailed information, please refer to the EUT's specification or user's manual provided by manufacturer.

2.3 DESCRIPTION OF TEST MODE

The EUT in BLE mode has 40 channels and the modulations are GFSK, π/4 DQPSK, and 8DPSK.

Use the software in TX test mode is “SecureCRTPortable”.

After pre-test in chamber and evaluate:

1. GFSK was the worst modulation, so use of GFSK for the final test mode.
2. Choose lowest, middle and highest channels for final test.
3. Three axix (X, Y and Z axis) are evaluated in chamber, the X axis is the worst in test.

Test Mode		Frequency	Radiated Emission
1	TX1	2402 MHz	✓
2	TX2	2440 MHz	✓
3	TX3	2480 MHz	✓
4	Standby	N/A	✓
5	Link	N/A	✓

NOTE:

1. Below 1 GHz were pre-tested in chamber and chosen the worst case for conducted and radiated emission test.
2. Above 1 GHz were tested individually.

2.4 EUT OPERATING CONDITION

1. Setup the EUT and all peripheral devices.
2. Turn on the power of all equipment and EUT.
3. Transfer board between PC and EUT. Into engineering & Standby mode.

2.5 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.10:2013. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	MANUFACTURER/ BRAND	MODEL #	FCC ID/DOC	CABLE
1	PC	ASUS	M32AA1	DoC	1.8m unshielded power cable.
2	LCD Monitor	DELL	U2311Hb	DoC	1.8m unshielded power cable. 1.5m shielded data cable.
3	Mouse	ASUS	MOBTUO	DoC	1.5m unshielded data cable.
4	Keyboard	ASUS	AW211	DoC	1.5m unshielded data cable
5	Printer	HP	C8995A	DoC	1.5m unshielded power cable. 1.5m shielded data cable.
6	USB 2.0 HDD	Terasys	F-12U	DoC	1.5m shielded data cable.
7	USB Transfer board	NA	USB TO TTL	NA	NA
8	RF cable	NA	HLW 6154-013011	NA	NA
9	Integrated Antenna	Shenzhen Stellamore Techmology Co.,L.td	N/A	NA	NA
10	Bandpass Filter	NA	NF2400-2500MHz	NA	NA

NOTE: For the actual test configuration, please refer to the photos of testing.

2.6 CHANNEL AND FREQUENCY TABLE

Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)
00	2402	10	2422	20	2442	30	2462
01	2404	11	2424	21	2444	31	2464
02	2406	12	2426	22	2446	32	2466
03	2408	13	2428	23	2448	33	2468
04	2410	14	2430	24	2450	34	2470
05	2412	15	2432	25	2452	35	2472
06	2414	16	2434	26	2454	36	2474
07	2416	17	2436	27	2456	37	2476
08	2418	18	2438	28	2458	38	2478
09	2420	19	2440	29	2460	39	2480

3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a wireless product. According to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C, 15.247

ANSI C63.10: 2013

FCC publication KDB 558074 D01 15.247 Meas Guidance v05r02 Apr 02, 2019

All tests have been performed and recorded as the above standards.

3.1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION	TEST TYPE AND LIMIT RESULTS	RESULTS
15.207	AC Power Line Conducted Emission	PASS
15.247(d) 15.205(a) 15.209(a)	Transmitter Radiated Emissions Limit: Table 15.209	PASS
15.247(a)(2)	6 dB Bandwidth	PASS
15.247(b)	Maximum Peak Conducted Output Power	PASS
15.247(d)	Band Edge Measurement:	PASS
15.247(e)	Power Density	PASS

4. CONDUCTED EMISSION TEST

4.1 LIMIT

Frequency (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

NOTE:
1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

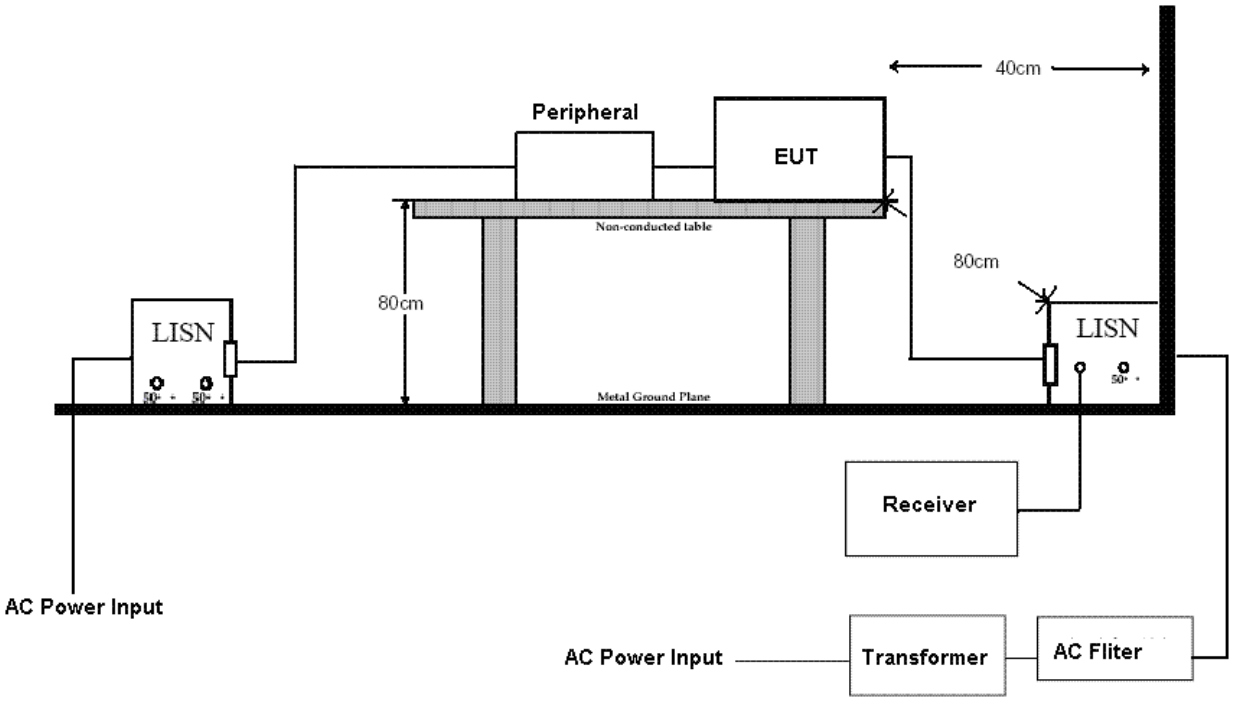
4.2 TEST EQUIPMENT

The following test equipment was used for the test:

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EMI TEST RECEIVER	9 kHz ~ 2.75 GHz	ROHDE & SCHWARZ	ESCS30 / 100376	APR. 26, 2024 ETC	■
LISN	50 μH, 50 ohm	SOLAR	9252-50-R-24-BNC / 951315	FEB. 22, 2024 ETC	■
LISN	50 μH, 50 ohm	SCHWARZBECK	NSLK 8127/ 8127-808	MAR. 08, 2024 ETC	■
50Ω BNC TYPE TERMINATOR	50 ohm	N/A	11593A/ L1TEQU005	FEB. 14, 2024 ETC	■
50Ω BNC TYPE TERMINATOR	50 ohm	N/A	B00-CD-357 / L1TEQU009	JUL. 14, 2024 ETC	■
COAXIAL CABLE	5 m	HUBER+ SUHNER	RG214/U(5m) / L1TCAB013	JUN. 23, 2024 ETC	■
FILTER	2 LINE, 30 A	FIL.COIL	FC-943 / 771	NCR	■
GROUND PLANE	2 m (H) x 3 m (W)	SRT	N/A	NCR	■
GROUND PLANE	2.5 m (H) x 3 m (W)	SRT	N/A	NCR	■
PULSE LIMITER	9 kHz ~ 30 MHz Insertion Loss= 10dB±0.3dB	ROHDE & SCHWARZ	ESH3-Z2 / L1TTES010	FEB. 16, 2024 ETC	■
THERMO-HYGRO	15 – 40 °C,	TOP	20-A / 6644	MAR. 01, 2024 ETC	■
MEASUREMENT SOFTEARE	N/A	EZ-EMC	SRT-03A1	NCR	■

NOTE:
The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

4.3 TEST SETUP



NOTE:
1. The EUT was put on a wooden table with 0.8m heights above ground plane, and 0.4m away from reference ground plane (> 2mx2m).
2. For the actual test configuration, please refer to the photos of testing.

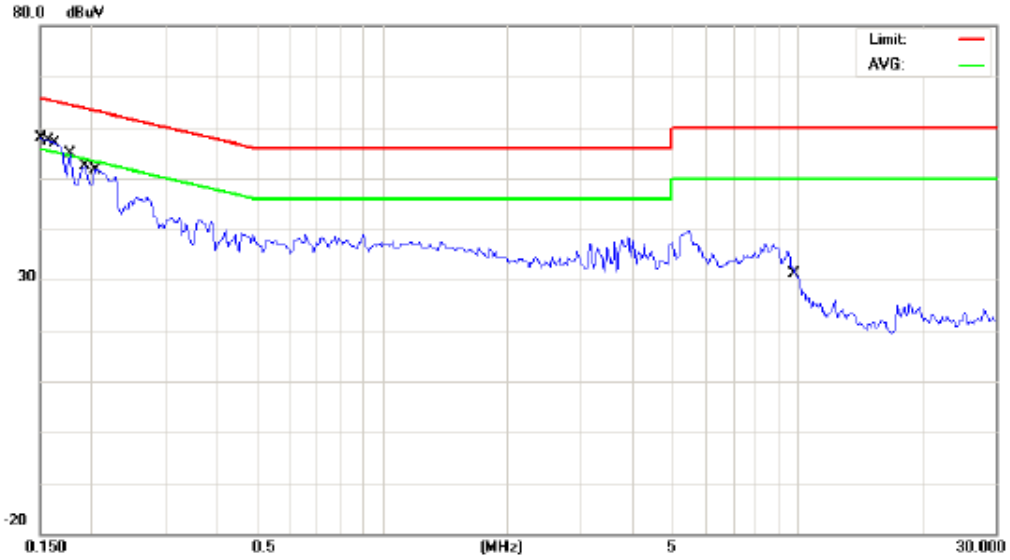
4.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.10:2013 and EN 55022. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm/50μH as specified. All readings were quasi-peak and average values with 10 kHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. Both lines of the power mains of EUT were measured and the cables connected to EUT and support units were moved to find the maximum emission levels for each frequency. First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

4.5 TEST RESULT

Temperature:	28 °C	Humidity:	81%RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	Link
Receiver Detector:	Q.P. and AV.	Tested Date:	Aug. 10, 2023

Power Line Measured：Line

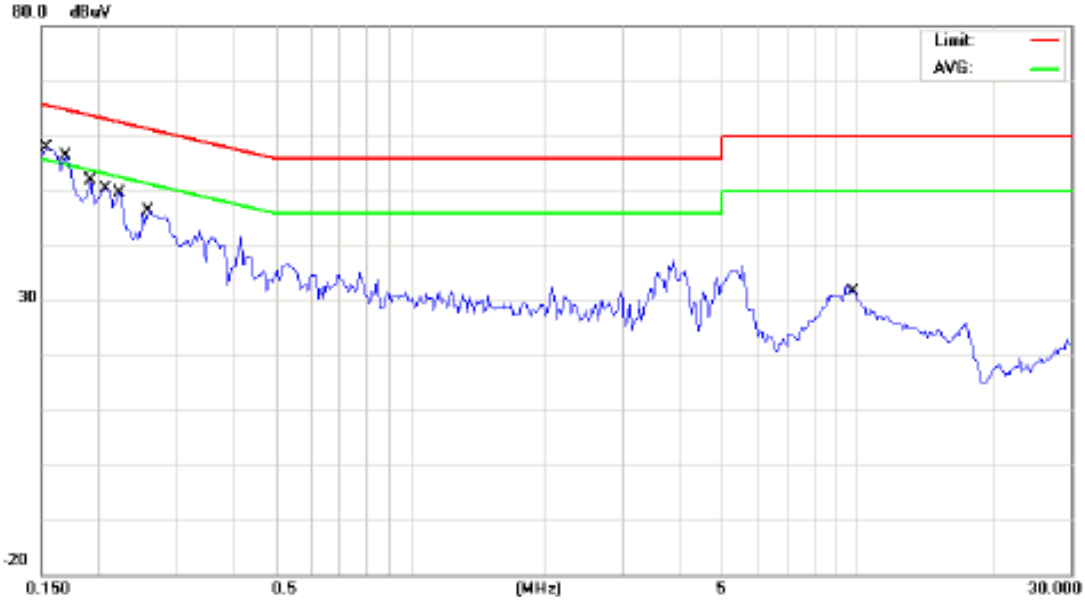


Mk.	No.	Frequency (MHz)	Reading (dBuV)	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Comment
	1	0.1500	54.89	-0.05	54.84	66.00	-11.16	QP	
	2	0.1500	39.99	-0.05	39.94	56.00	-16.06	AVG	
*	3	0.1582	54.67	-0.04	54.63	65.56	-10.93	QP	
	4	0.1582	40.84	-0.04	40.80	55.56	-14.76	AVG	
	5	0.1656	52.73	-0.04	52.69	65.18	-12.49	QP	
	6	0.1656	36.65	-0.04	36.61	55.18	-18.57	AVG	
	7	0.1773	46.98	-0.04	46.94	64.61	-17.67	QP	
	8	0.1773	29.44	-0.04	29.40	54.61	-25.21	AVG	
	9	0.1930	44.88	-0.04	44.84	63.91	-19.07	QP	
	10	0.1930	29.59	-0.04	29.55	53.91	-24.36	AVG	
	11	0.2047	48.32	-0.04	48.28	63.42	-15.14	QP	
	12	0.2047	33.60	-0.04	33.56	53.42	-19.86	AVG	
	13	10.0000	26.12	0.28	26.40	60.00	-33.60	QP	
	14	10.0000	20.93	0.28	21.21	50.00	-28.79	AVG	

NOTE: 1. Measurement uncertainty is 2.92 dB
2. Emission level = Reading valus + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

Temperature:	28 °C	Humidity:	81%RH
Frequency Range:	0.15 – 30 MHz	Tested Mode:	Link
Receiver Detector:	Q.P. and AV.	Tested Date:	Aug. 10, 2023

Power Line Measured：Neutral



Mk.	No.	Frequency (MHz)	Reading (dBuV)	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Comment
	1	0.1539	55.05	-0.08	54.97	65.79	-10.82	QP	
	2	0.1539	40.66	-0.08	40.58	55.79	-15.21	AVG	
*	3	0.1557	55.15	-0.08	55.07	65.69	-10.62	QP	
	4	0.1557	40.75	-0.08	40.67	55.69	-15.02	AVG	
	5	0.1695	50.70	-0.08	50.62	64.98	-14.36	QP	
	6	0.1695	34.32	-0.08	34.24	54.98	-20.74	AVG	
	7	0.1930	44.84	-0.08	44.76	63.91	-19.15	QP	
	8	0.1930	28.69	-0.08	28.61	53.91	-25.30	AVG	
	9	0.2086	48.34	-0.08	48.26	63.26	-15.00	QP	
	10	0.2086	35.07	-0.08	34.99	53.26	-18.27	AVG	
	11	0.2242	44.40	-0.08	44.32	62.66	-18.34	QP	
	12	0.2242	32.76	-0.08	32.68	52.66	-19.98	AVG	
	13	0.2594	44.02	-0.08	43.94	61.45	-17.51	QP	
	14	0.2594	31.29	-0.08	31.21	51.45	-20.24	AVG	
	15	10.0000	26.75	0.25	27.00	60.00	-33.00	QP	
	16	10.0000	21.71	0.25	21.96	50.00	-28.04	AVG	

NOTE: 1. Measurement uncertainty is 2.92 dB
2. Emission level = Reading valus + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
Difference of Pulse Limiter Factor between EMI Test Receiver corrected 10dB insertion loss.
4. Margin value = Emission level - Limit
5. The emission of other frequencies was very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

5. RADIATED EMISSION TEST

5.1 LIMIT

FCC Part15, Subpart C Section 15.209 limit of radiated emission for frequency below1000MHz. The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY (MHz)	FIELD STRENGTH (microvolts/meter)	DISTANCE (m)	FIELD STRENGTH (dBμV/m)
0.009 - 0.490	2400/F(kHz)	300	67.6-20log(kHz)
0.490 - 1.705	24000/F(kHz)	30	87.6-20log(kHz)
1.705 - 30	30	30	30
30 - 88	100	3	40.0
88 - 216	150	3	43.5
216 - 960	200	3	46.0
≥ 960	500	3	54.0

NOTE:
1. 30 dBuV (in 30m) = 70 dBuV (in 3m).
2. In the emission tables above , the tighter limit applies at the band edges.
3. Distance refers to the distance between measuring instrument, antemma, and the closest point of any part of the device or system.

FCC Part 15, Section15.35(b) limit of radiated emission for frequency above 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

5.2 TEST EQUIPMENT

Below 1 GHz The following test equipment was used during the radiated emission test:

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EMI Test Receiver	9 kHz ~ 2.75 GHz	ROHDE & SCHWARZ	ESCS30 / 100376	APR. 26, 2024 ETC	■
Biconical Antenna	30 MHz ~ 200 MHz	EMCO	3108 / 2380	MAY. 01, 2024 ETC	■
Log Periodic Antenna	200 MHz ~ 1 GHz	EMCO	3146 / 9002-2686	MAY. 01, 2024 ETC	■
Open Area Test Site	3 ~ 10 M Measurement	SRT	A02 / SRT002	MAR. 07, 2024 SRT	■
Coaxial Cable	9 kHz ~ 1 GHz	TIMES	LMR-400(30m) / L1TCAB014	SEP. 08, 2023 ETC	■
Coaxial Cable	9 kHz ~ 1 GHz	Time	LMR-400 (#2m) / L1TCAB012	MAR. 20, 2024 ETC	■
Filter	2 LINE, 30 A	FIL.COIL	FC-943 / 869	NCR	■
CDN	0.15 MHz ~ 300 MHz	LUTHI	CDN L-801 M2/M3 / 2790	JUN. 10, 2024 ETC	□
Pre-Amplifier	0.1 MHz ~ 1.3 GHz	HP	8447D / 2944A06746	APR. 19, 2024 ETC	■
Thermo-Hygro	15 ~ 40°C, 0 ~ 100% RH	TOP	20-A / 9326	MAR. 26, 2024 ETC	■

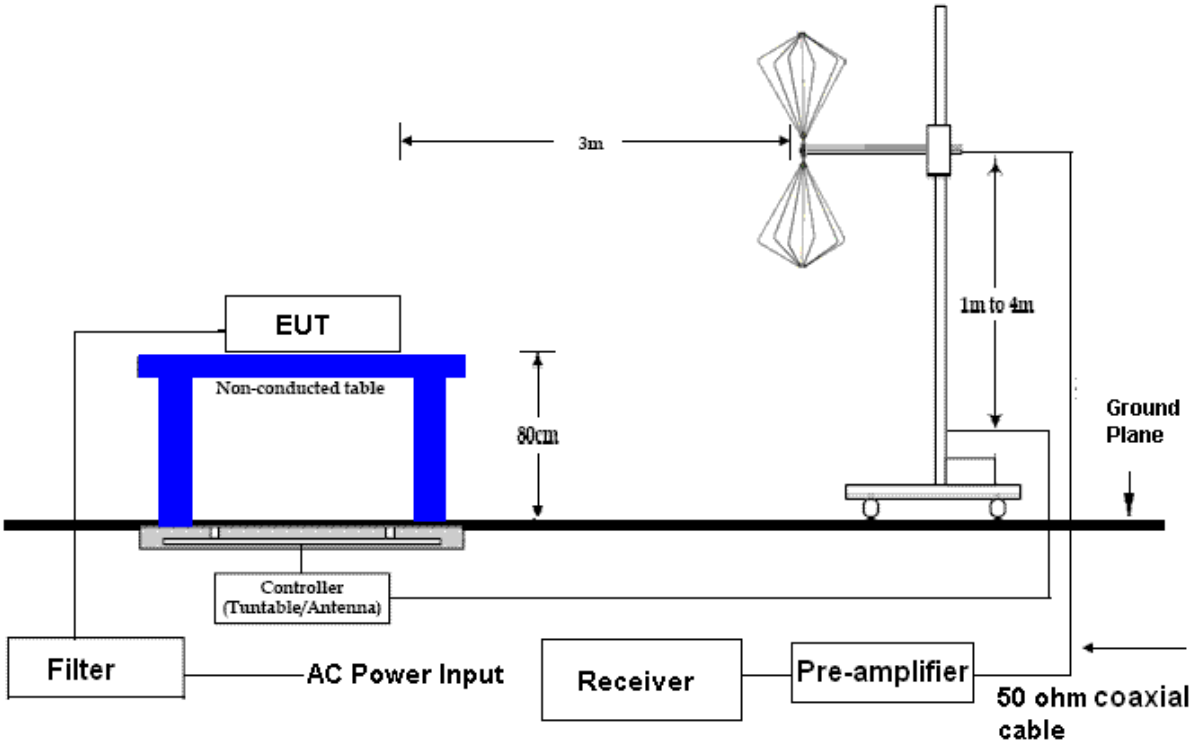
NOTE: The Open Area Test Site (SRT-1) is registered by FCC with No. 90957

Above 1 GHz The following test equipment was used during the radiated emission test:

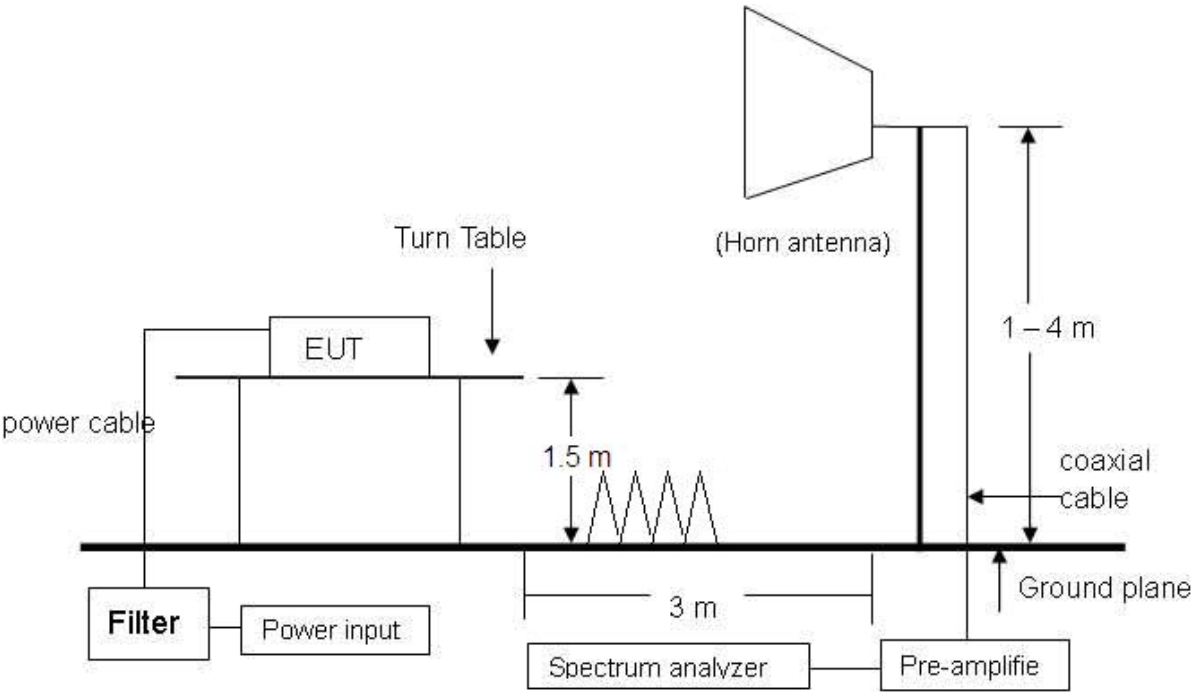
Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EXA Signal Analyzer	10Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC	■
Pre-Amplifier	1 GHz ~ 26.5 GHz	AGILENT	8449B / 3008A01995	MAR. 06, 2024 ETC	■
Horn Antenna	1 GHz ~ 18 GHz	EMCO	3115 / 9602-4681	FEB. 23, 2024 ETC	■
Horn Antenna	18 ~ 40 GHZ	ETS-LINDGREN	3116 / 2567	MAY.13, 2024 ETC	■
Anechoic Chamber	3 M Measurement	SRT	A01 / SRT001	JUN. 22, 2024 SRT	■
RF Cable	Up to 18 GHz 6 m*2	EMCI	EMC107-SM-6000 / 230726	JUN. 14, 2024 ETC	■
RF Cable	Up to 18 GHz 1.5 m	JYEBAO	A30A30-L 142 / EQF-0035(001)	FEB. 16, 2024 ETC	■
K-Type Cable	Up tp 40 GHz 3 m	HUBER+ SUHNER	SF102-46/2*11SK252 / MY2611/2	APR. 24, 2024 ETC	■
K-Type Cable	Up to 40 GHz, 1 m	HUBER+ SUHNER	SF102/2*11SK252 / MY3331/2	FEB. 13, 2024 ETC	■
Filter	2 Line, 30 A	FIL.COIL	FC-943 / 869	NCR	■
Thermo-Hygro	15 ~ 40 ℃, 0 ~ 100% RH	TOP	20-A / 6644	MAR. 01,2024 ETC	■
Measurement Software	N/A	EZ-EMC	SRT-03A1	NCR	■

5.3 TEST SET-UP

30 MHz ~ 1 GHz



Above 1 GHz



NOTE: The EUT system was put on a wooden table with 1.5m heights above a ground plane. For the actual test configuration, please refer to the photos of testing.

5.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.10:2013 and EN 55022. When the frequency spectrum measured started from 9 kHz to 30 MHz, then use antenna is a loop antenna. The measurements were made at an open area test site with 3 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 9kHz to 30MHz and 30 MHz to 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency. First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

5.5 TEST RESULT

Temperature:	27 °C	Humidity:	80 %RH
Frequency Range:	30 MHz ~ 1 GHz	Tested Mode:	Link
Detector Type:	Quasi-peak	IF Bandwidth:	120 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 11, 2023

Antenna Polarization：Horizontal

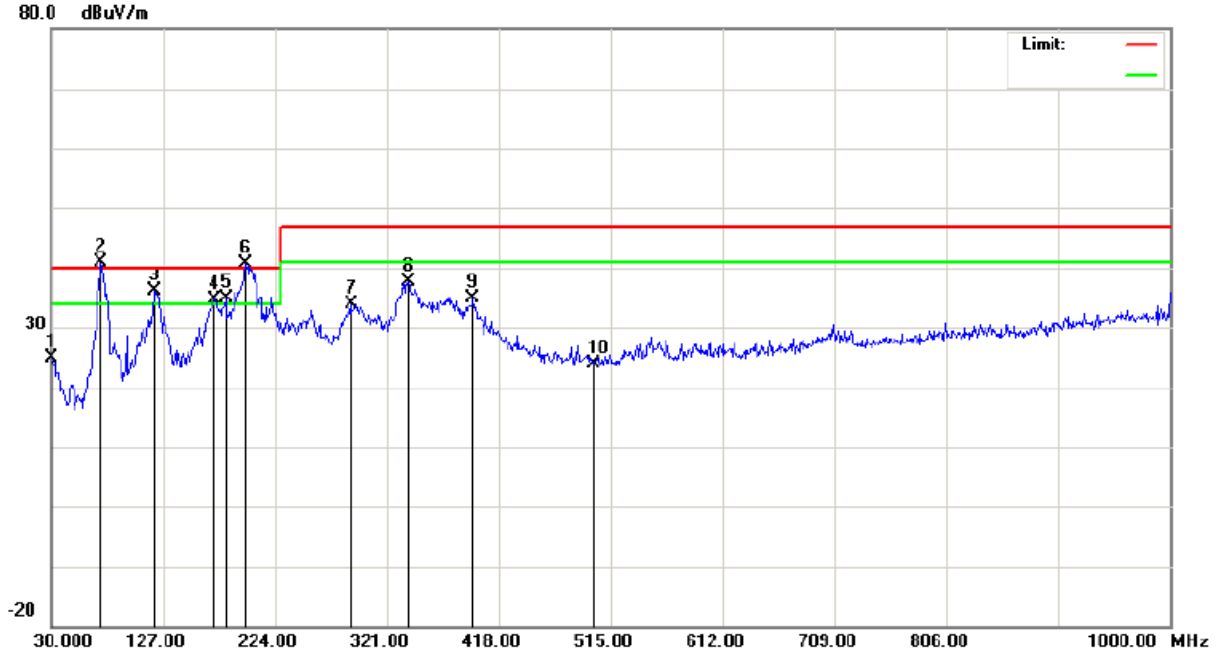
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Pre-Amp (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ (°)	EL (m)
73.78	2.28	8.70	28.16	51.36	34.19	40.0	-5.81	340	3.86
119.86	2.90	11.40	27.98	44.16	30.48	43.5	-13.02	334	3.72
171.48	3.27	12.50	27.72	42.76	30.81	43.5	-12.69	321	3.56
180.51	3.36	12.90	27.68	42.29	30.87	43.5	-12.63	87	3.53
199.34	3.61	14.40	27.58	47.39	37.81	43.5	-5.69	223	3.48
339.19	5.13	15.28	27.55	40.83	33.69	46.0	-12.31	318	3.04

Antenna Polarization：Vertical

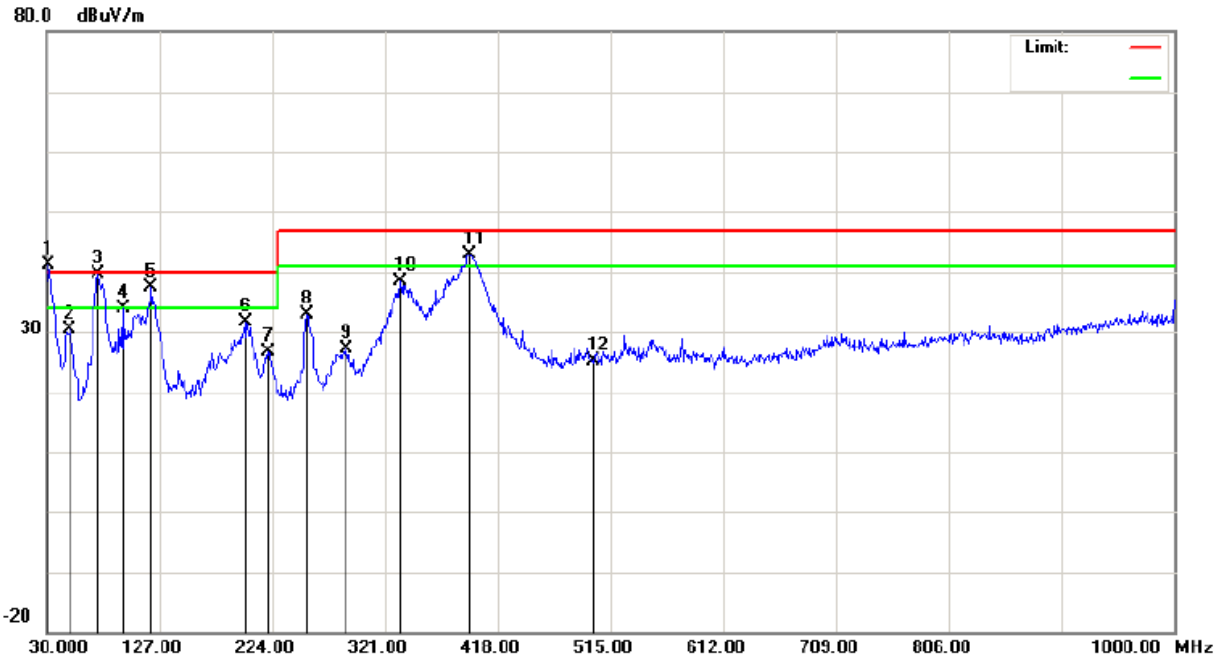
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Pre-Amp (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ (°)	EL (m)
31.43	1.73	14.20	28.30	48.22	35.85	40.0	-4.15	302	1.00
75.06	2.32	8.60	28.15	51.36	34.13	40.0	-5.88	323	1.14
96.13	2.66	8.70	28.08	46.92	30.20	43.5	-13.30	74	1.20
120.93	2.91	11.50	27.97	48.62	35.06	43.5	-8.44	84	1.28
333.76	5.07	15.16	27.51	45.85	38.57	46.0	-7.43	44	1.94
393.25	5.62	16.16	27.91	45.22	39.09	46.0	-6.91	118	2.12

NOTE:
1. Measurement uncertainty is 4.20 dB.
2. "*": Measurement does not apply for this frequency.
3. Emissiom Level = Reading Value + Ant. Factor + Cable Loss – Pre-Amplifier.
4. The field strength of other emission frequencies were very low against the limit.

Antenna Polarization：Horizontal

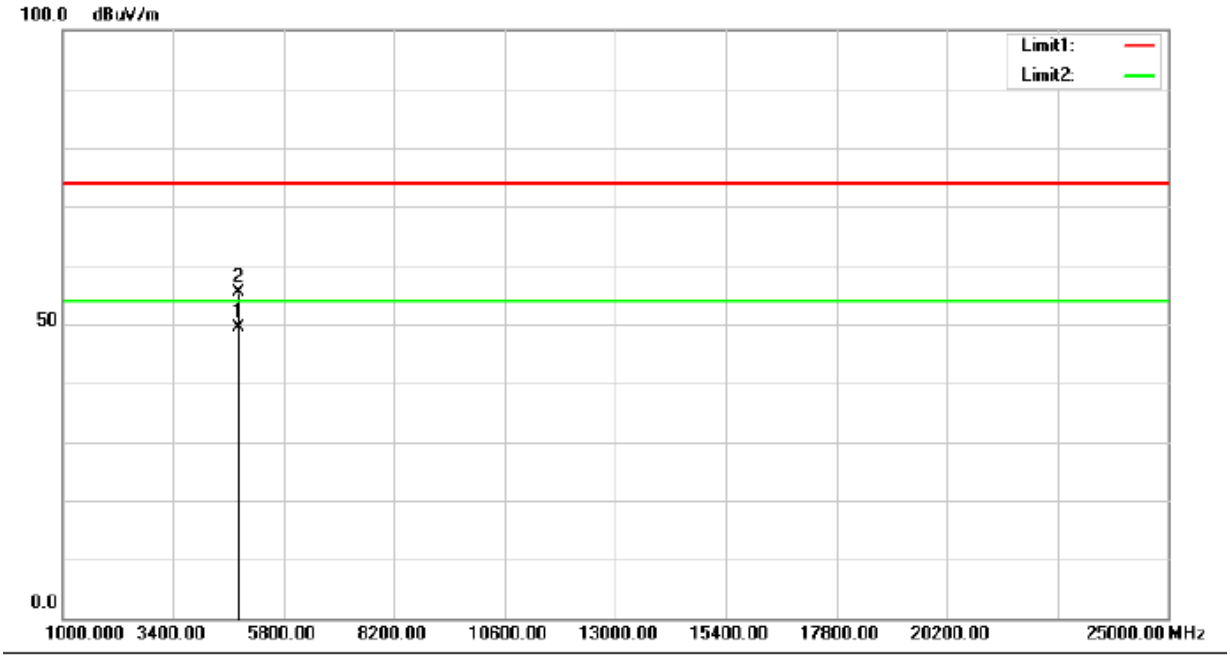


Antenna Polarization：Vertical



Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

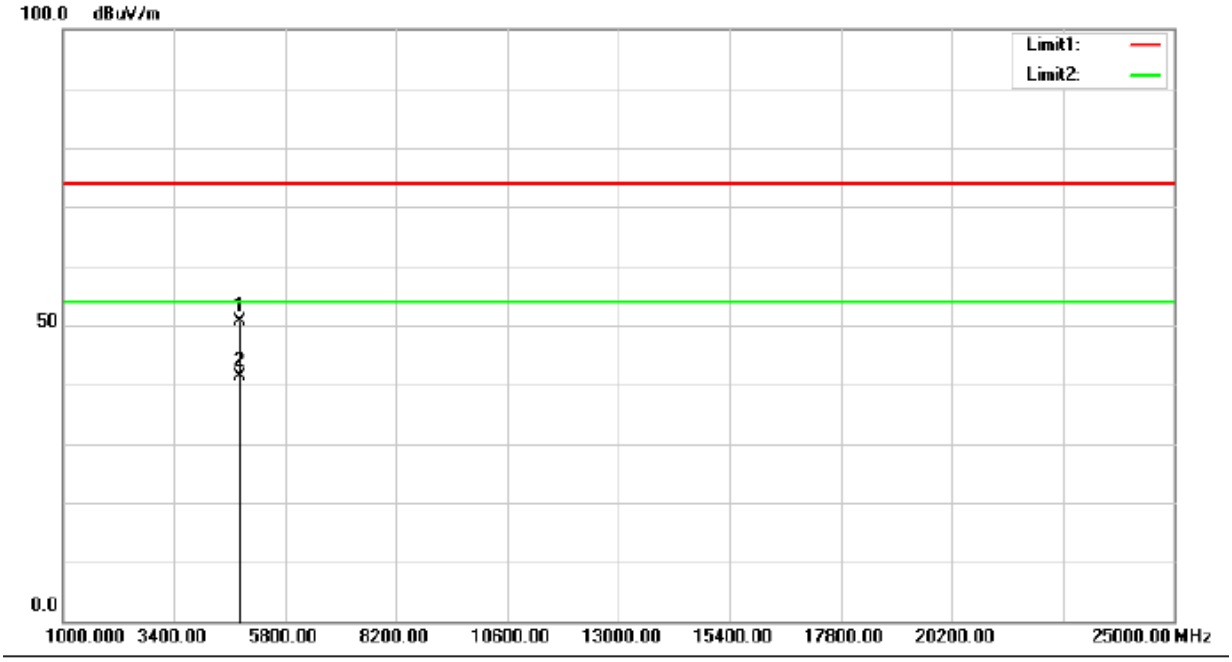


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4803.855	43.19	6.07	49.26	54.00	-4.74	AVG	
	2	4804.350	49.21	6.08	55.29	74.00	-18.71	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

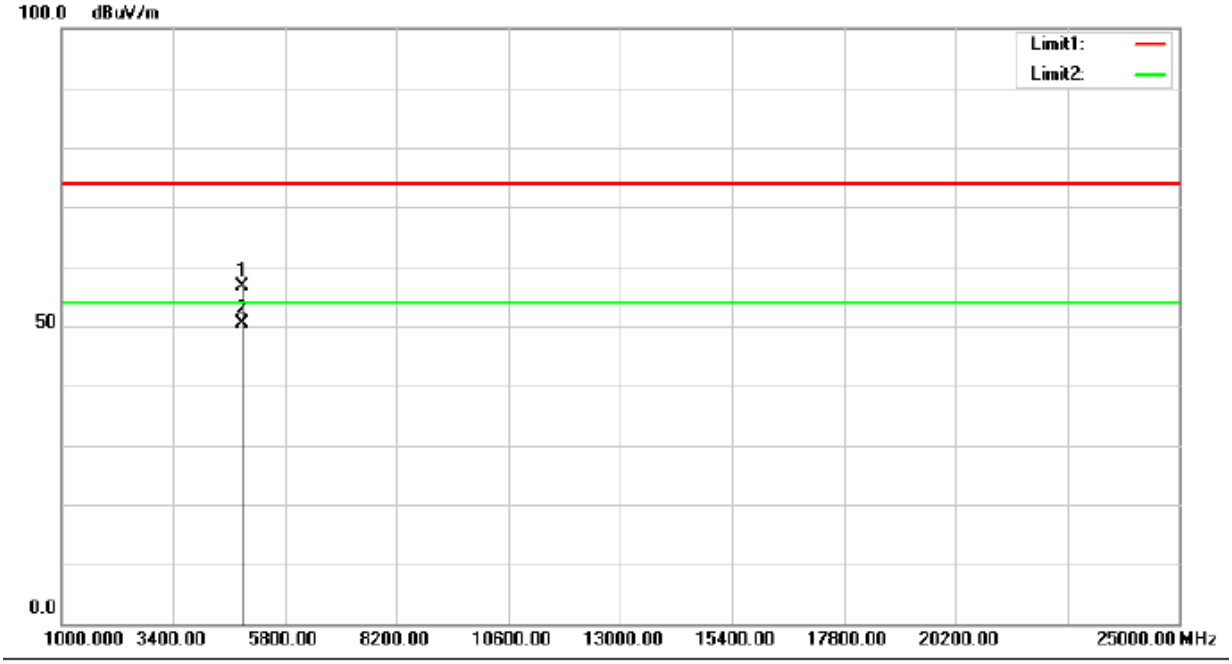


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4803.935	44.46	6.07	50.53	74.00	-23.47	peak	
*	2	4804.035	35.39	6.07	41.46	54.00	-12.54	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX2_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

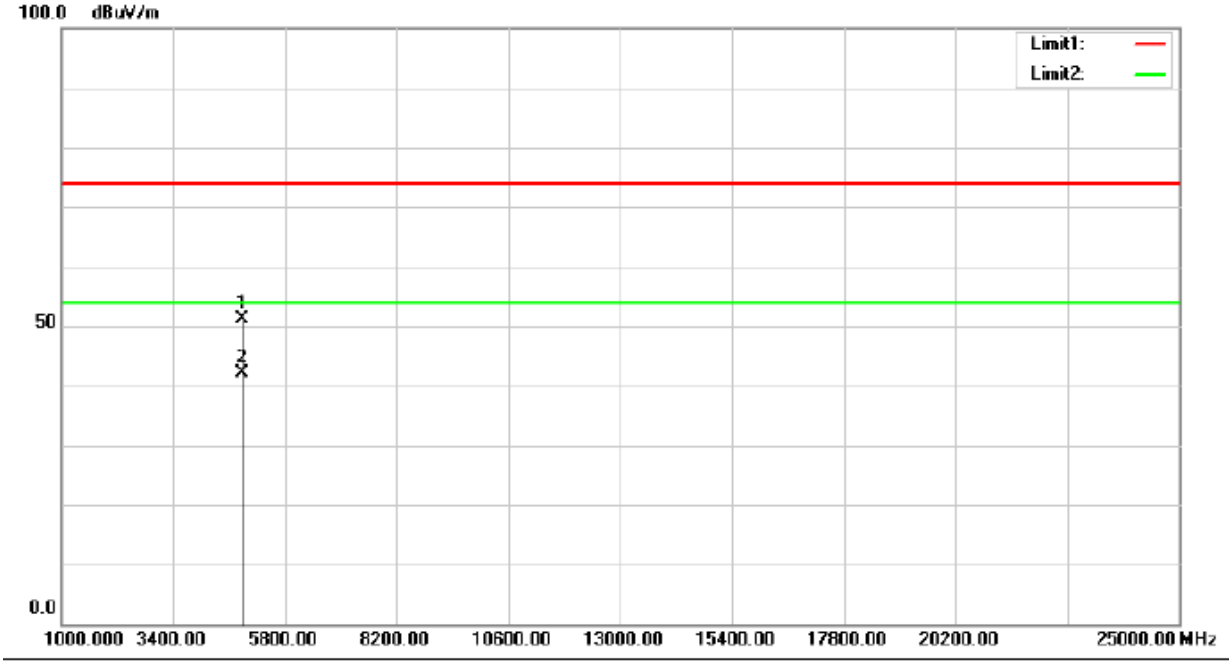


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4879.780	50.20	6.53	56.73	74.00	-17.27	peak	
*	2	4879.880	43.81	6.53	50.34	54.00	-3.66	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX2_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

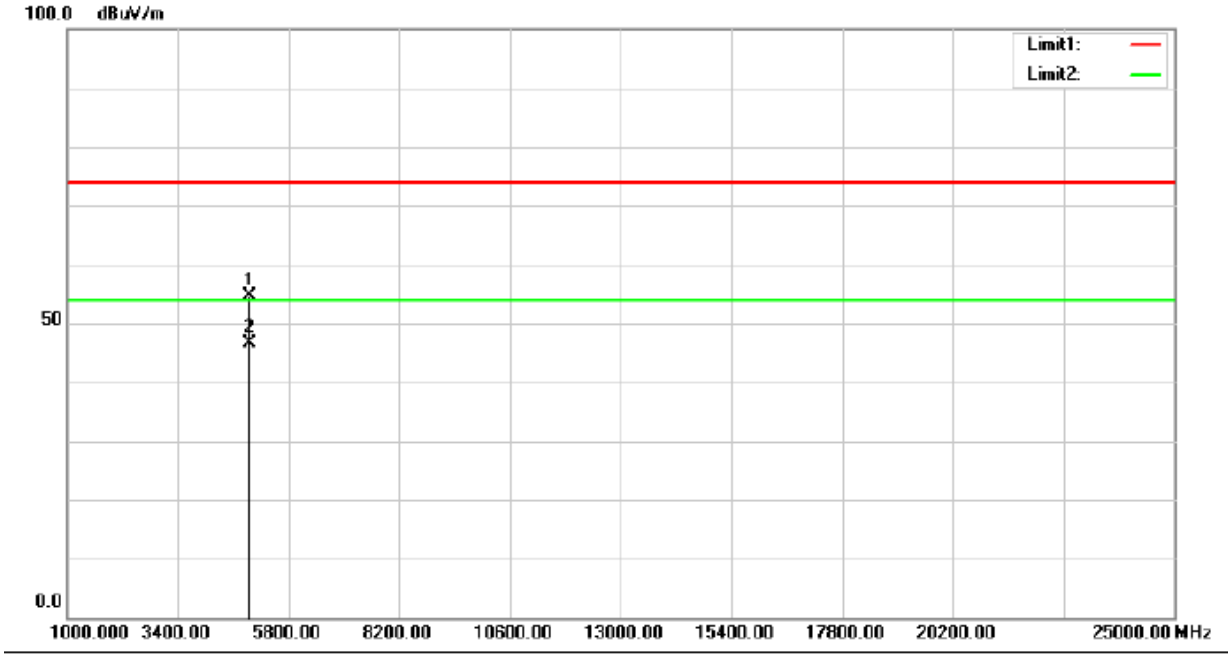


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4879.750	44.53	6.53	51.06	74.00	-22.94	peak	
*	2	4879.870	35.72	6.53	42.25	54.00	-11.75	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

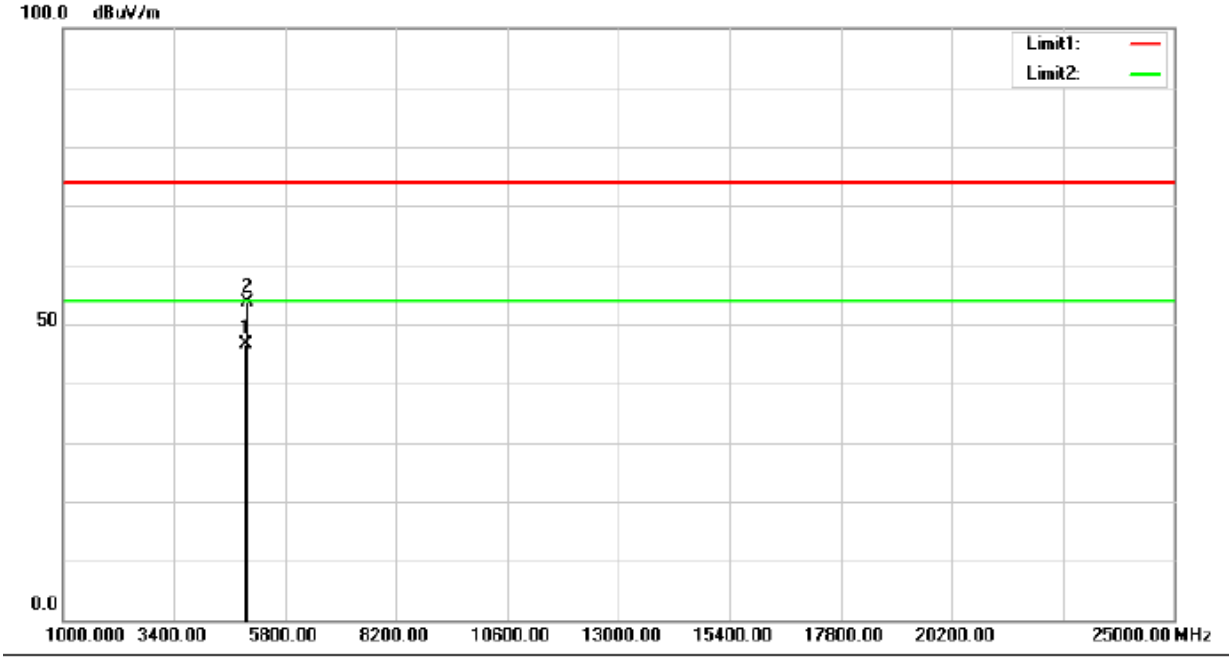


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4959.645	47.73	6.85	54.58	74.00	-19.42	peak	
*	2	4959.880	39.66	6.85	46.51	54.00	-7.49	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

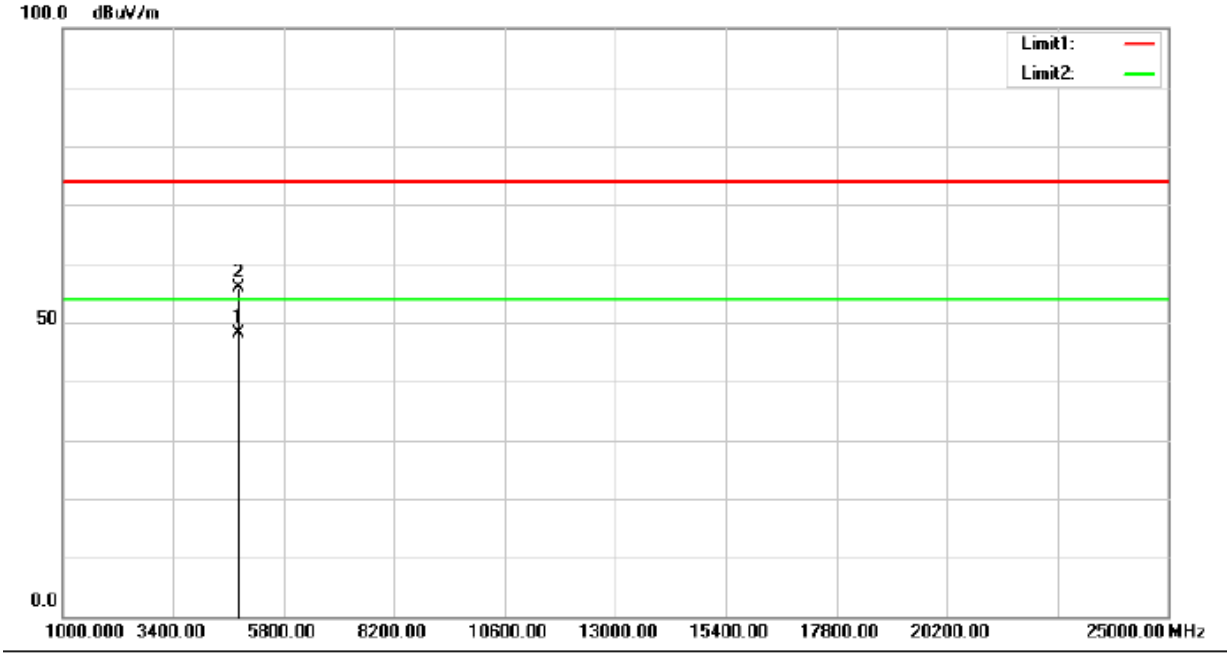


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4959.975	39.66	6.85	46.51	54.00	-7.49	AVG	
	2	4960.680	46.84	6.85	53.69	74.00	-20.31	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

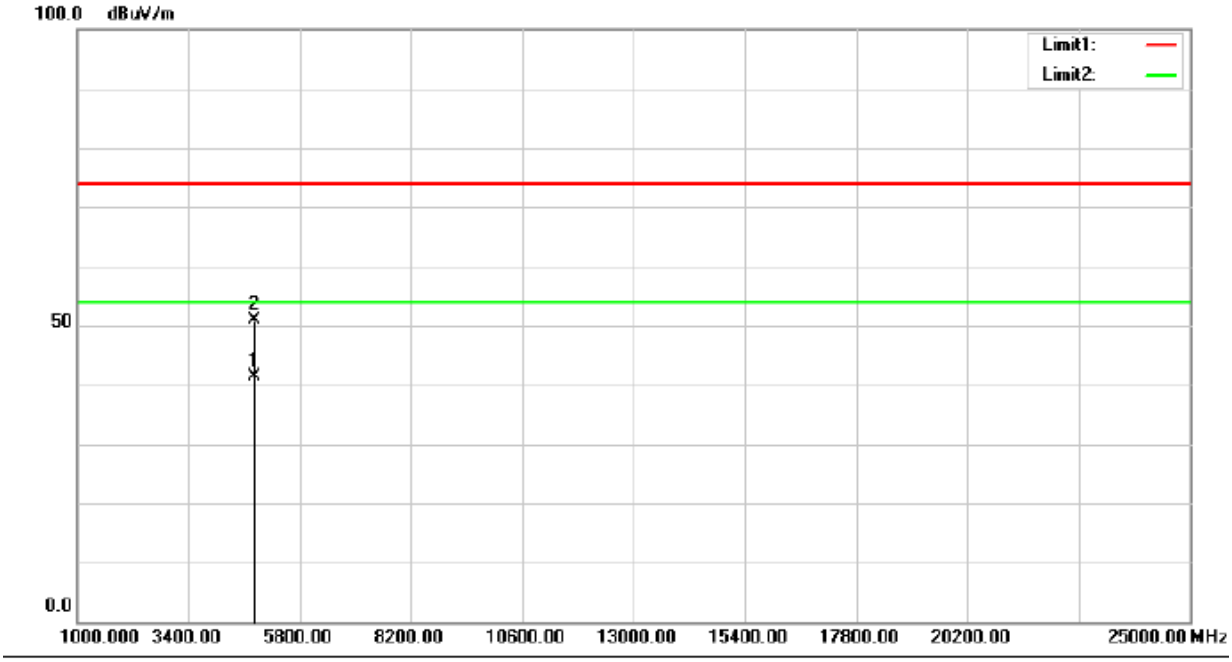


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4803.890	42.16	6.07	48.23	54.00	-5.77	AVG	
	2	4803.985	49.84	6.07	55.91	74.00	-18.09	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

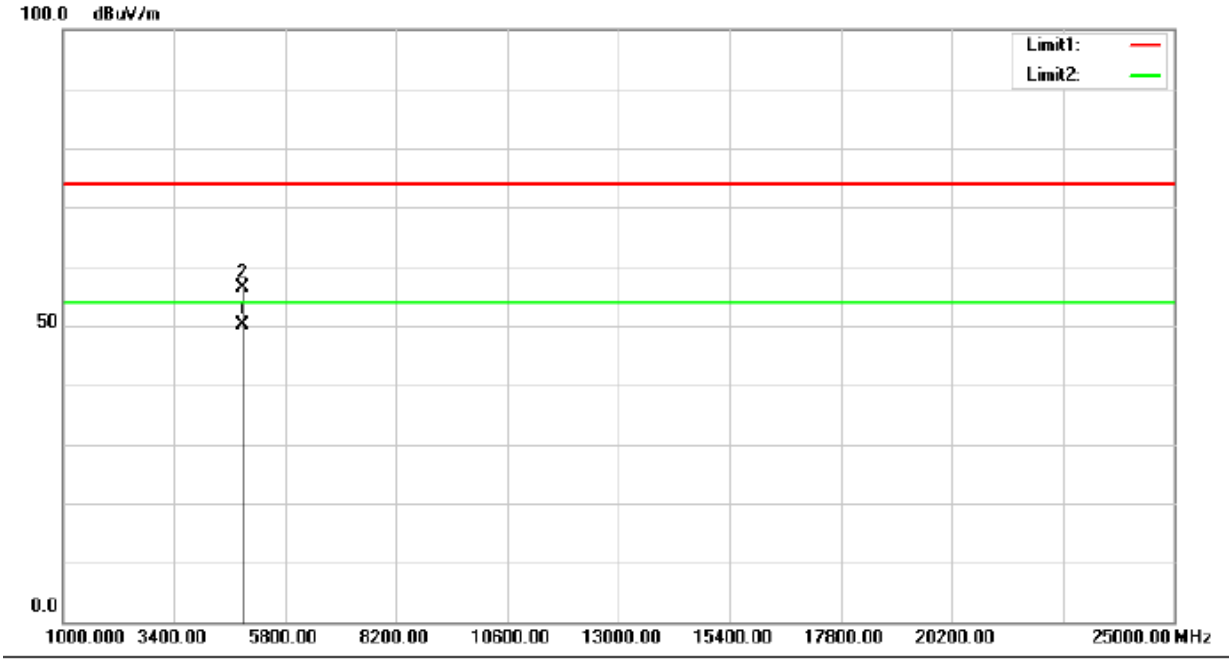


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4804.120	35.36	6.07	41.43	54.00	-12.57	AVG	
	2	4804.355	44.78	6.08	50.86	74.00	-23.14	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX2_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

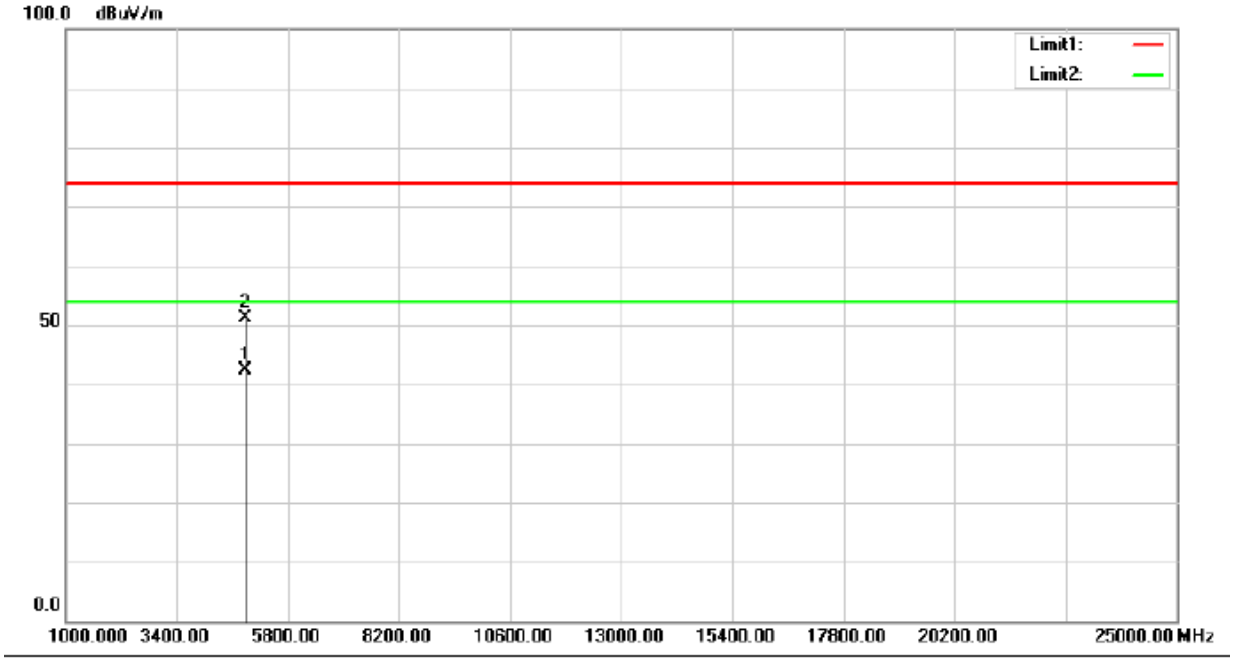


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4879.825	43.71	6.53	50.24	54.00	-3.76	AVG	
	2	4879.955	49.89	6.53	56.42	74.00	-17.58	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX2_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

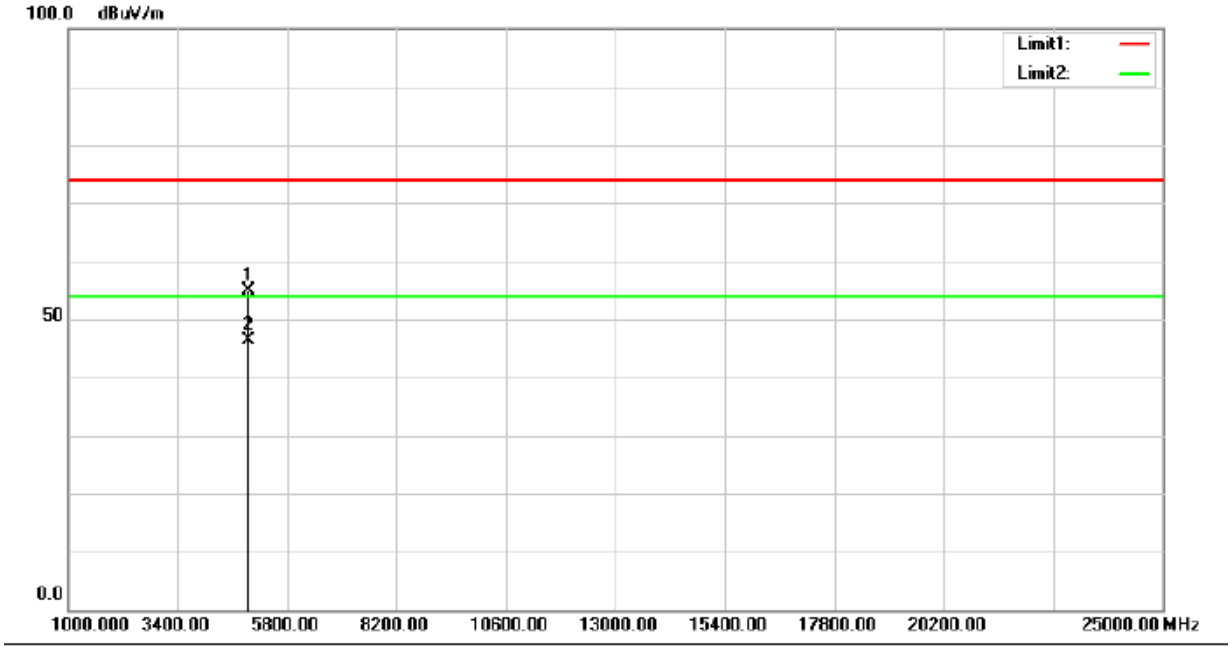


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4879.720	35.89	6.53	42.42	54.00	-11.58	AVG	
	2	4879.830	44.49	6.53	51.02	74.00	-22.98	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

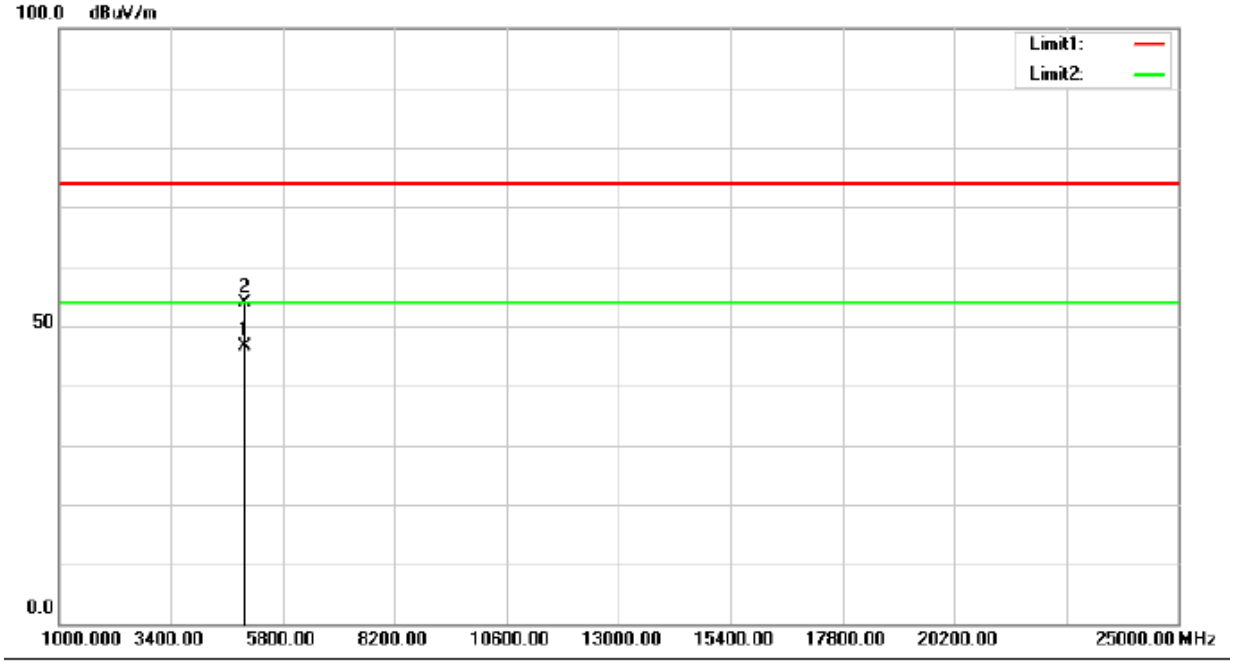


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4959.800	48.06	6.85	54.91	74.00	-19.09	peak	
*	2	4959.870	39.59	6.85	46.44	54.00	-7.56	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

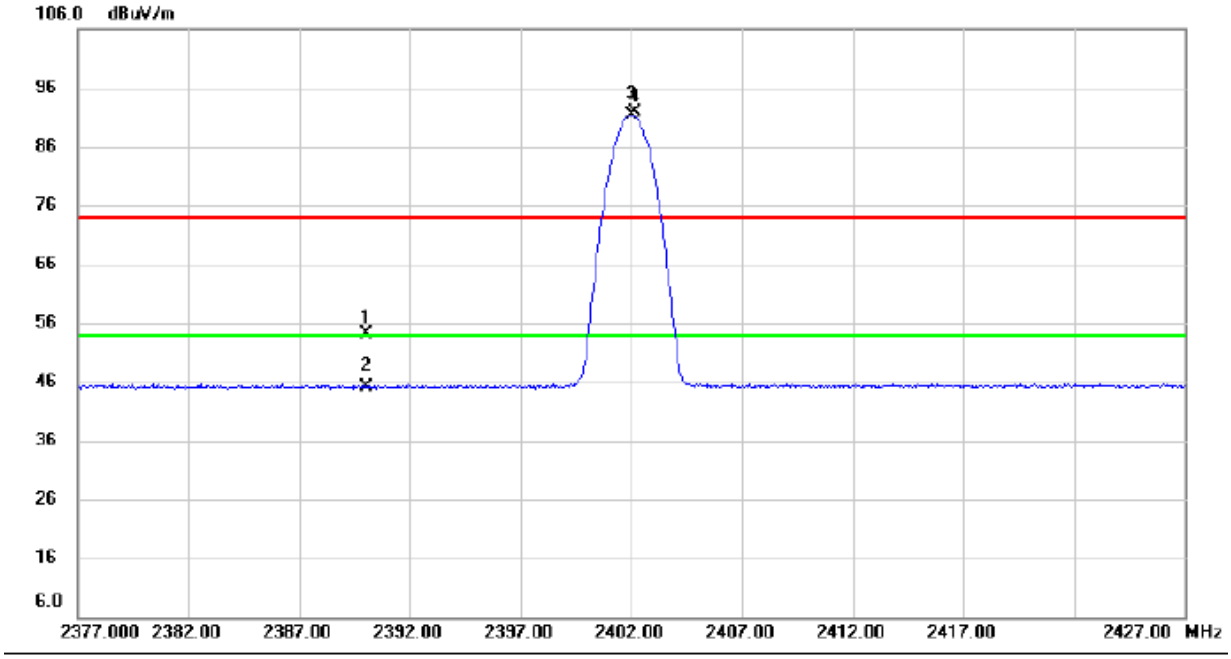


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4960.070	39.75	6.85	46.60	54.00	-7.40	AVG	
	2	4960.580	47.14	6.85	53.99	74.00	-20.01	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

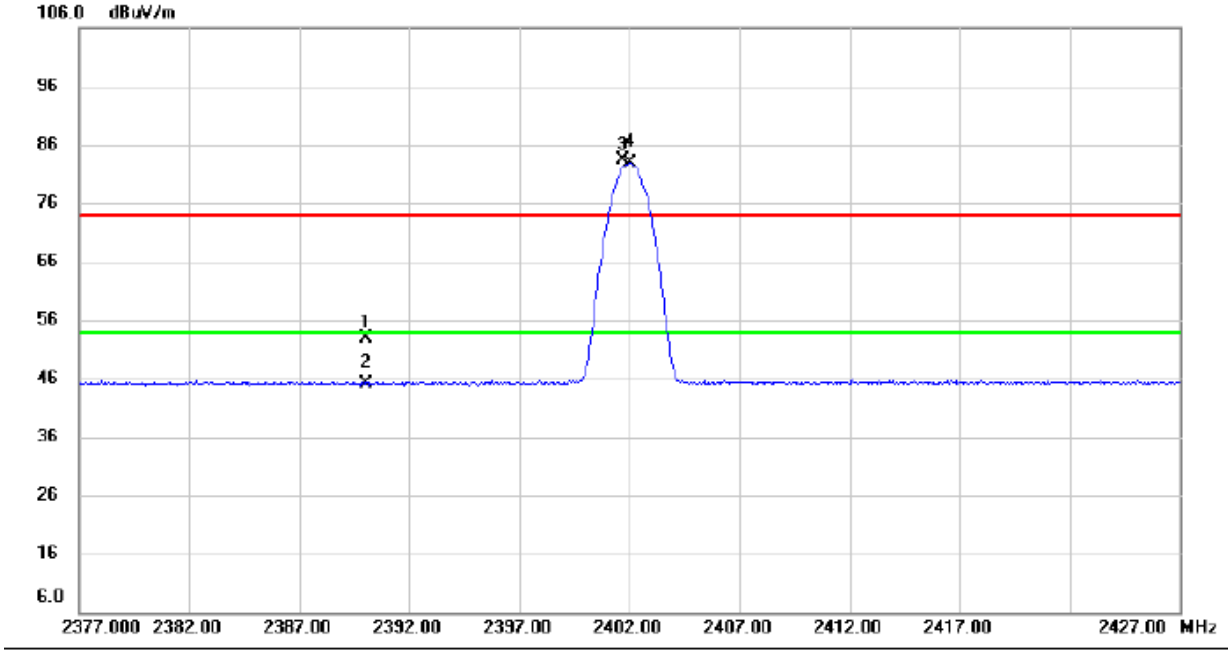


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	43.78	10.28	54.06	74.00	-19.94	peak	
2		2390.000	34.86	10.28	45.14	54.00	-8.86	AVG	
3	*	2402.000	81.18	10.30	91.48	54.00	37.48	AVG	
4	X	2402.150	81.67	10.30	91.97	74.00	17.97	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

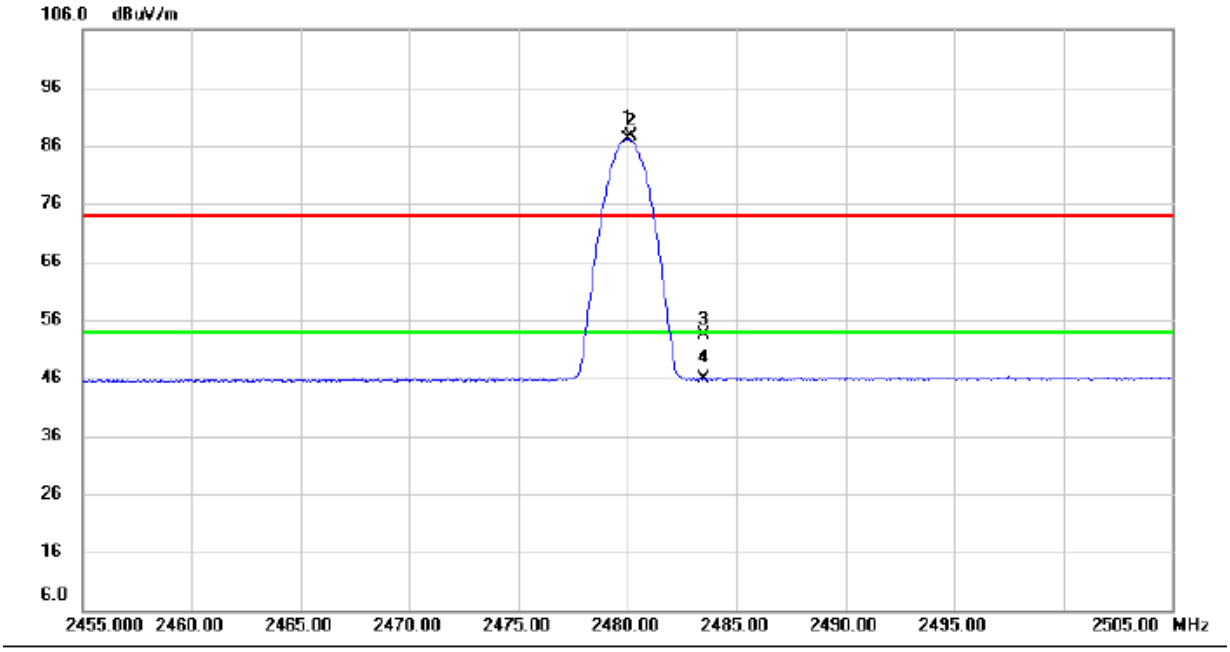


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	42.48	10.28	52.76	74.00	-21.24	peak	
2		2390.000	34.97	10.28	45.25	54.00	-8.75	AVG	
3	X	2401.700	73.20	10.30	83.50	74.00	9.50	peak	
4	*	2402.000	72.66	10.30	82.96	54.00	28.96	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

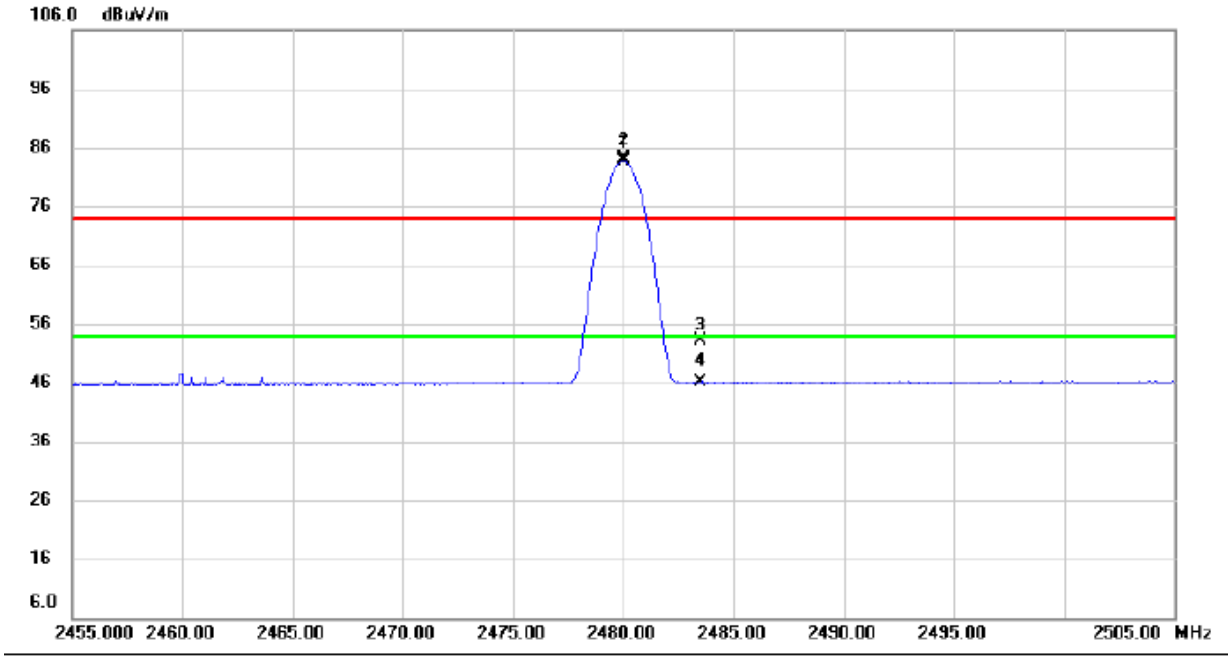


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2480.050	76.49	10.70	87.19	54.00	33.19	AVG	
2	X	2480.150	77.05	10.70	87.75	74.00	13.75	peak	
3		2483.500	42.57	10.72	53.29	74.00	-20.71	peak	
4		2483.500	35.27	10.72	45.99	54.00	-8.01	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_1Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

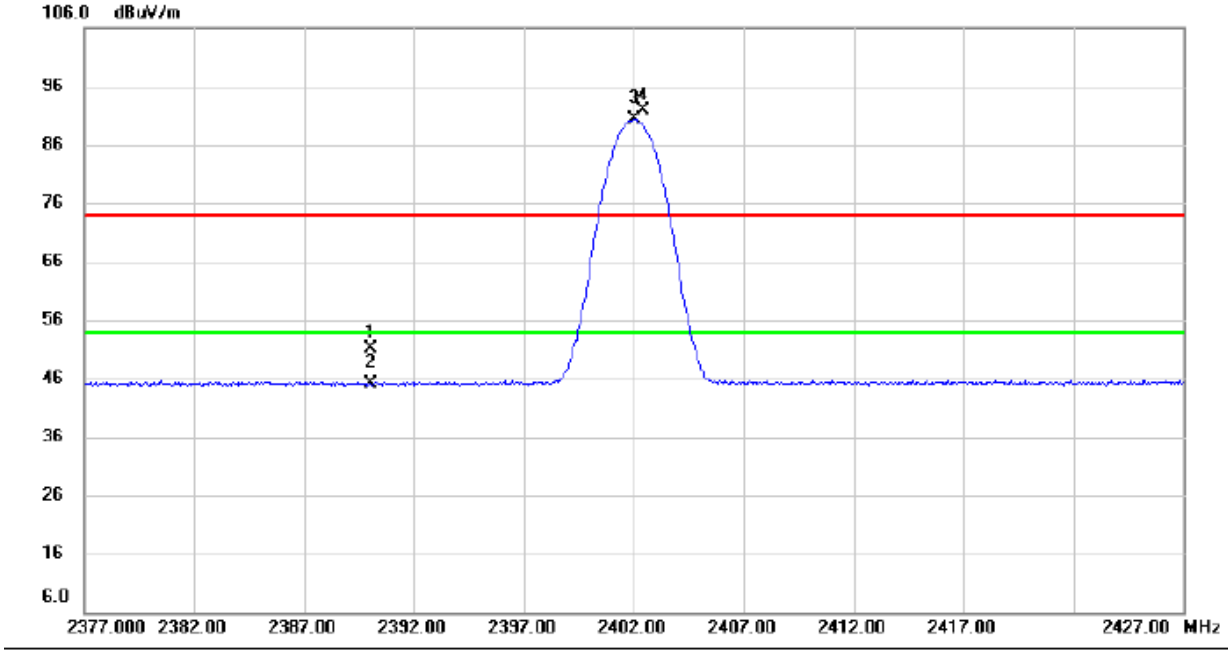


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	2480.000	73.54	10.70	84.24	74.00	10.24	peak	
2	*	2480.050	72.98	10.70	83.68	54.00	29.68	AVG	
3		2483.500	42.50	10.72	53.22	74.00	-20.78	peak	
4		2483.500	35.30	10.72	46.02	54.00	-7.98	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

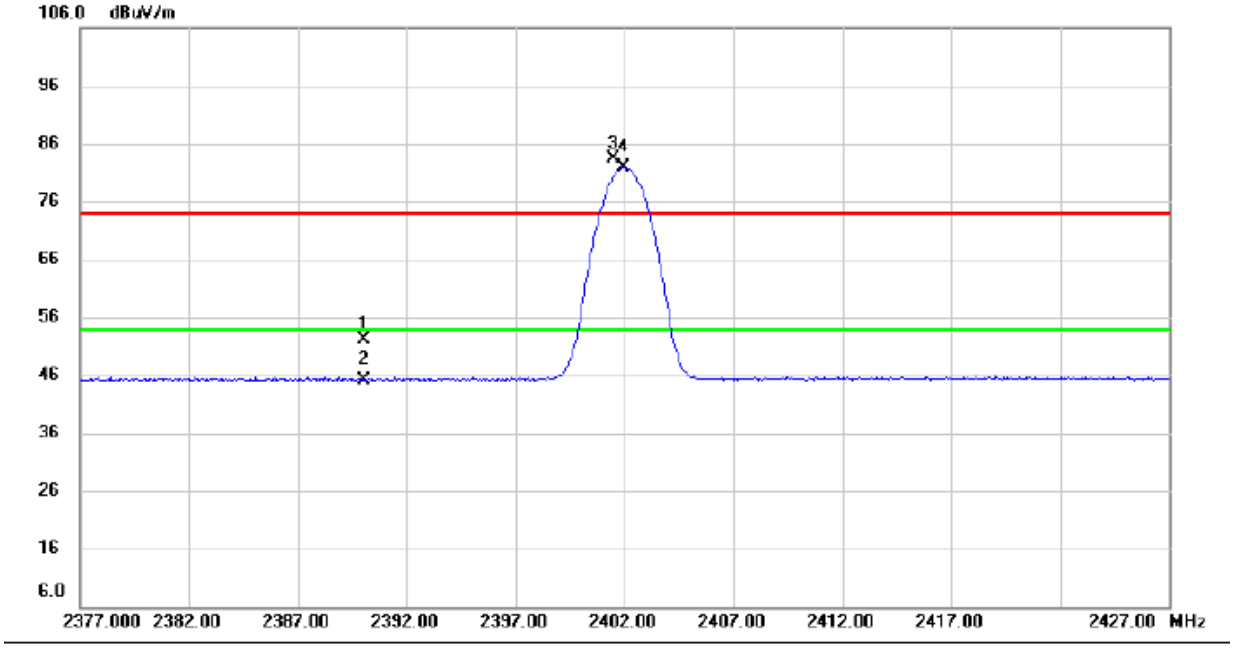


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	40.87	10.28	51.15	74.00	-22.85	peak	
2		2390.000	34.95	10.28	45.23	54.00	-8.77	AVG	
3	*	2402.050	80.13	10.30	90.43	54.00	36.43	AVG	
4	X	2402.450	81.61	10.30	91.91	74.00	17.91	peak	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX1_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

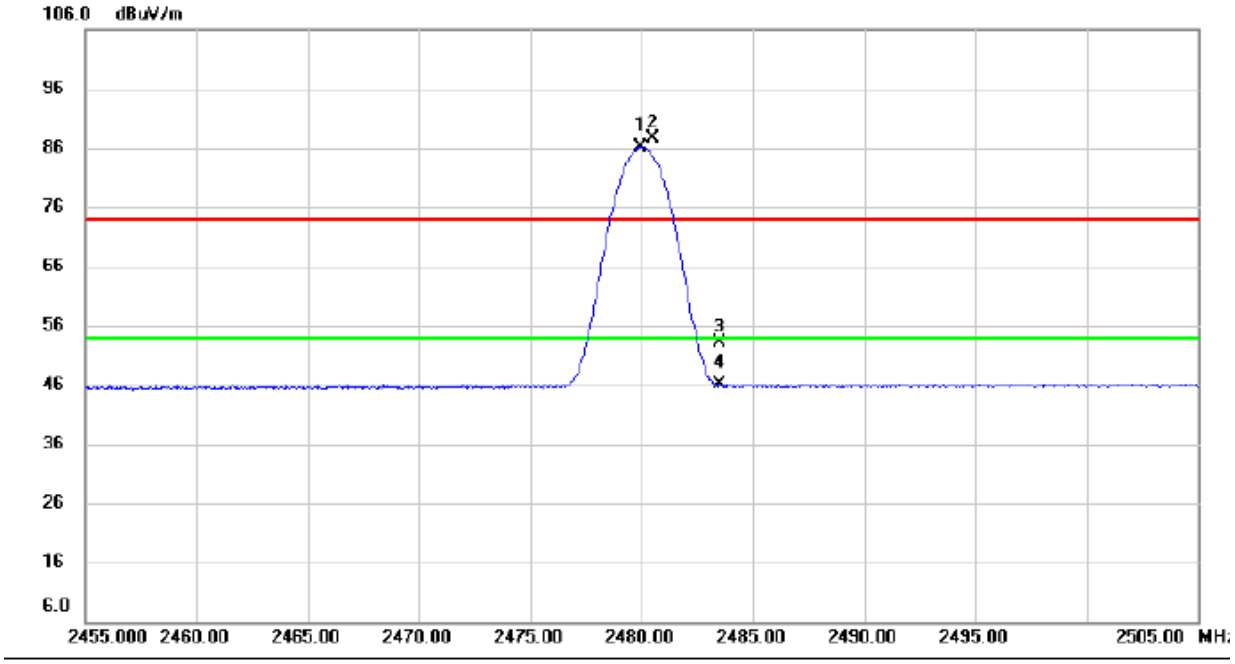


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2390.000	41.89	10.28	52.17	74.00	-21.83	peak	
2		2390.000	34.95	10.28	45.23	54.00	-8.77	AVG	
3	X	2401.500	73.04	10.30	83.34	74.00	9.34	peak	
4	*	2401.950	71.58	10.30	81.88	54.00	27.88	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

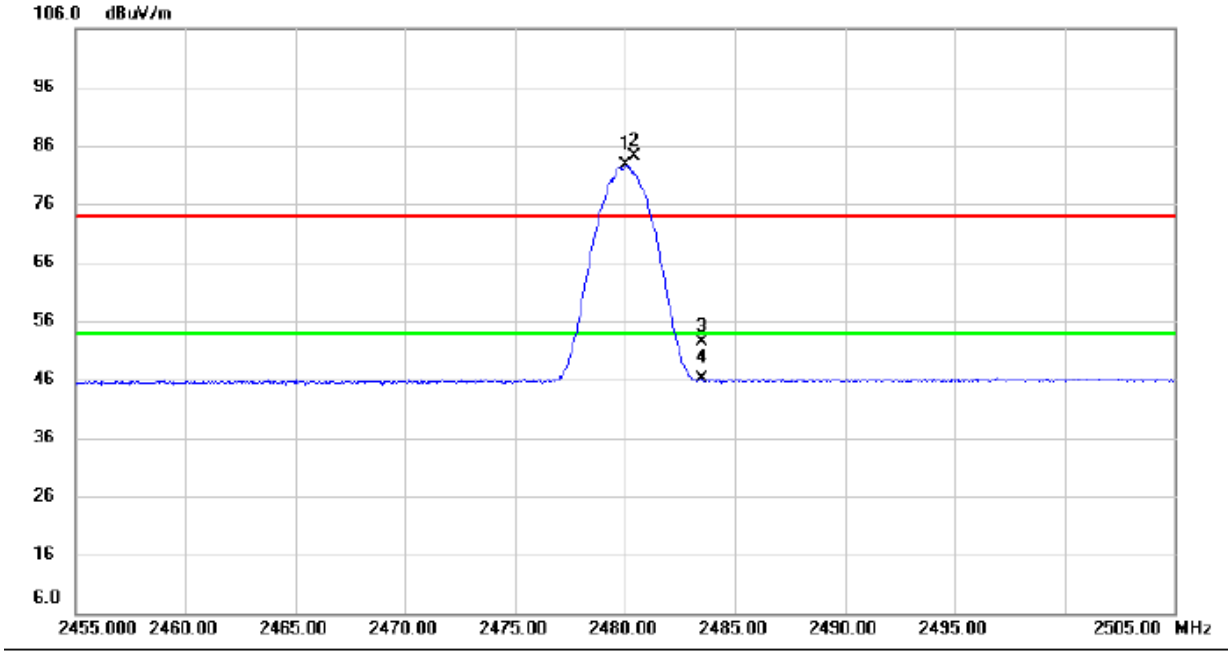


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2479.950	75.50	10.70	86.20	54.00	32.20	AVG	
2	X	2480.500	77.02	10.70	87.72	74.00	13.72	peak	
3		2483.500	42.31	10.72	53.03	74.00	-20.97	peak	
4		2483.500	35.31	10.72	46.03	54.00	-7.97	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	BLE_TX3_2Mbps
Detector Type:	PK. and AV.	IF Bandwidth:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	2480.050	71.95	10.70	82.65	54.00	28.65	AVG	
2	X	2480.450	73.50	10.70	84.20	74.00	10.20	peak	
3		2483.500	41.58	10.72	52.30	74.00	-21.70	peak	
4		2483.500	35.30	10.72	46.02	54.00	-7.98	AVG	

NOTE:
1. Measurement uncertainty is 4.04 dB.
2. Emissiom Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
3. The field strength of other emission frequencies were very low against the limit.
4. (F):The field stregth of fundamental frequency.

6. BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C Section 15.247(a)(2).

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

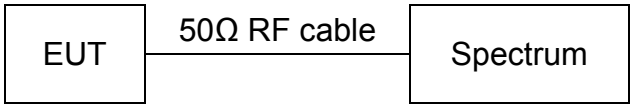
6.2 TEST EQUIPMENT

The following test equipment was used during the test：

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center
EXA Signal Analyzer	10 Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC

NOTE：The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

6.3 TEST SET-UP



6.4 TEST PROCEDURE

The EUT was operating in continuous transmission mode or could control its channel. Printed out the test result from the spectrum by hard copy function.

6.5 EUT OPERATING CONDITION

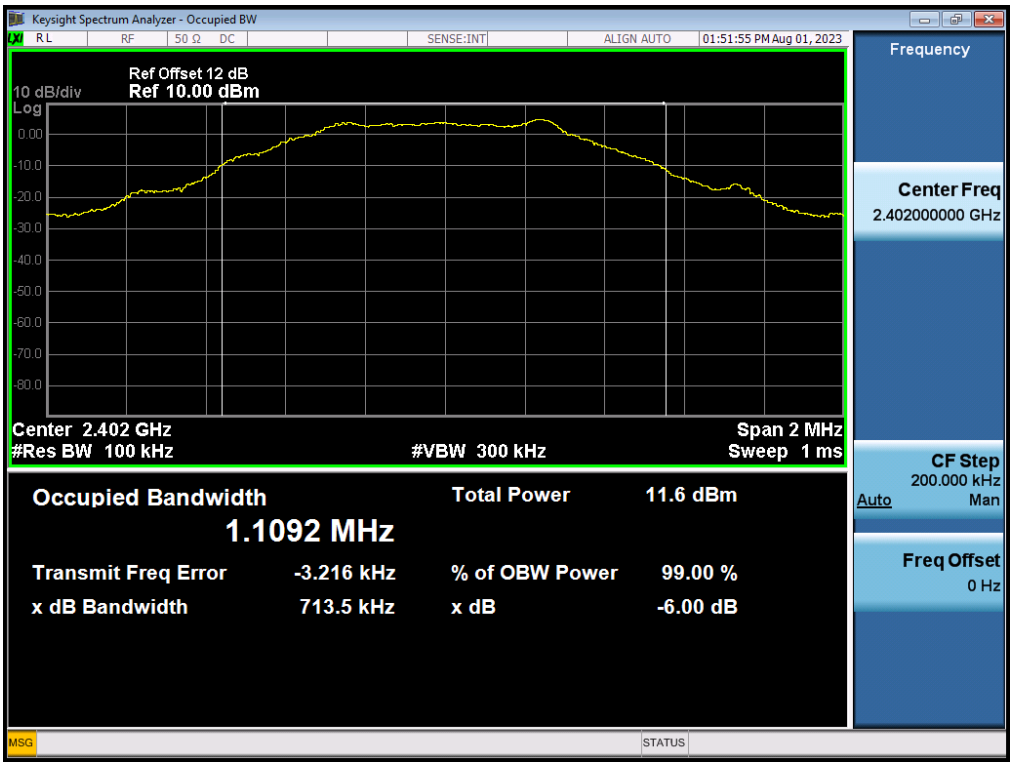
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

6.6 TEST RESULT

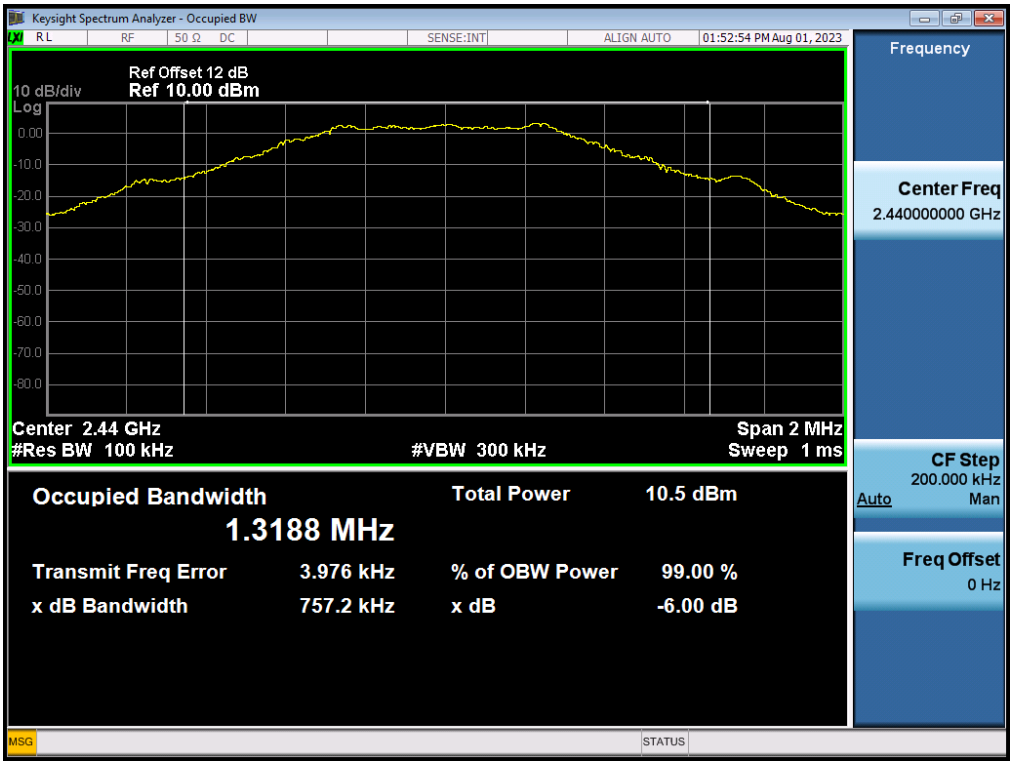
Temperature:	28 °C	Humidity:	74 %RH
RBW:	30 kHz	Modulation:	GFSK__1Mbps
Detector:	Peak	VBW:	100 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	BW > 500 kHz
CH00	2402	713.5	PASS
CH19	2440	757.2	PASS
CH39	2480	757.5	PASS

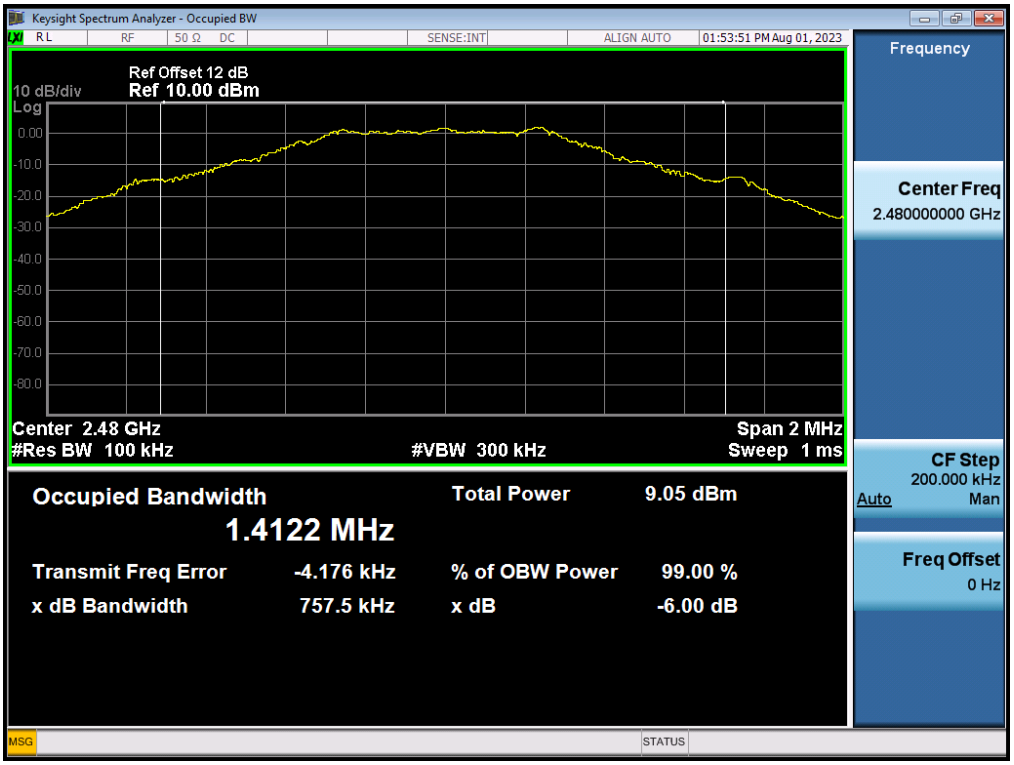
CH00：



CH19：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:52:54 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 2 MHz
Sweep 1 ms
Occupied Bandwidth
1.3188 MHz
Total Power 10.5 dBm
Transmit Freq Error 3.976 kHz
% of OBW Power 99.00 %
x dB Bandwidth 757.2 kHz
x dB -6.00 dB
Center Freq
2.440000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

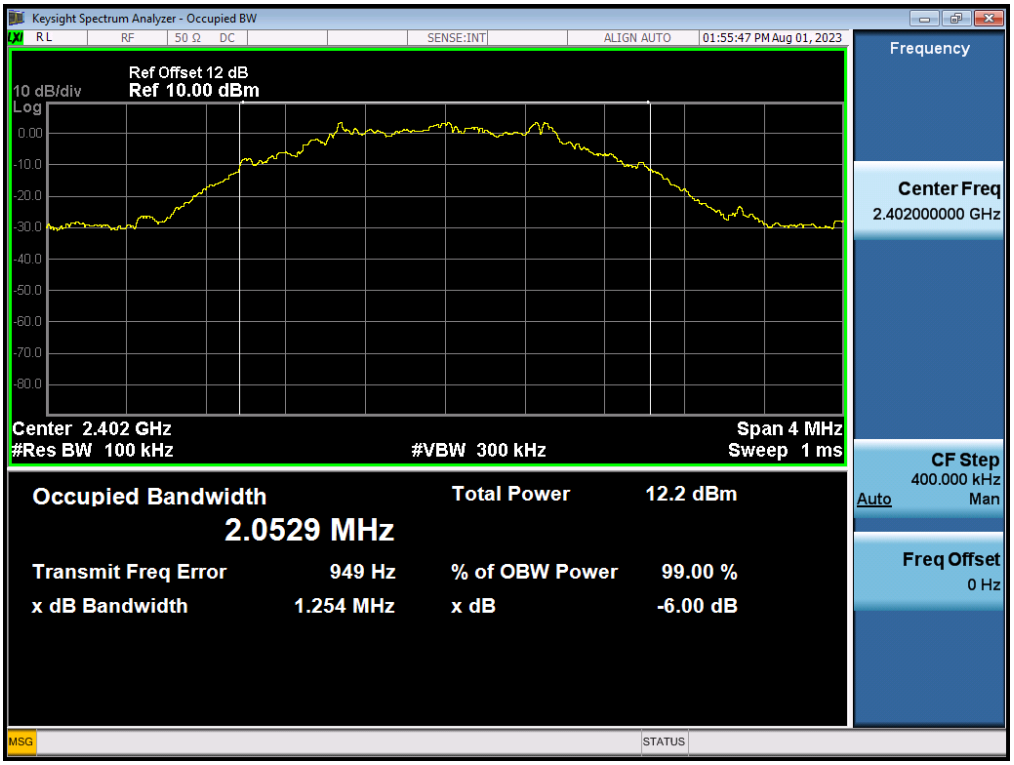
CH39：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:53:51 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 2 MHz
Sweep 1 ms
Occupied Bandwidth
1.4122 MHz
Total Power 9.05 dBm
Transmit Freq Error -4.176 kHz
% of OBW Power 99.00 %
x dB Bandwidth 757.5 kHz
x dB -6.00 dB
Center Freq
2.480000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

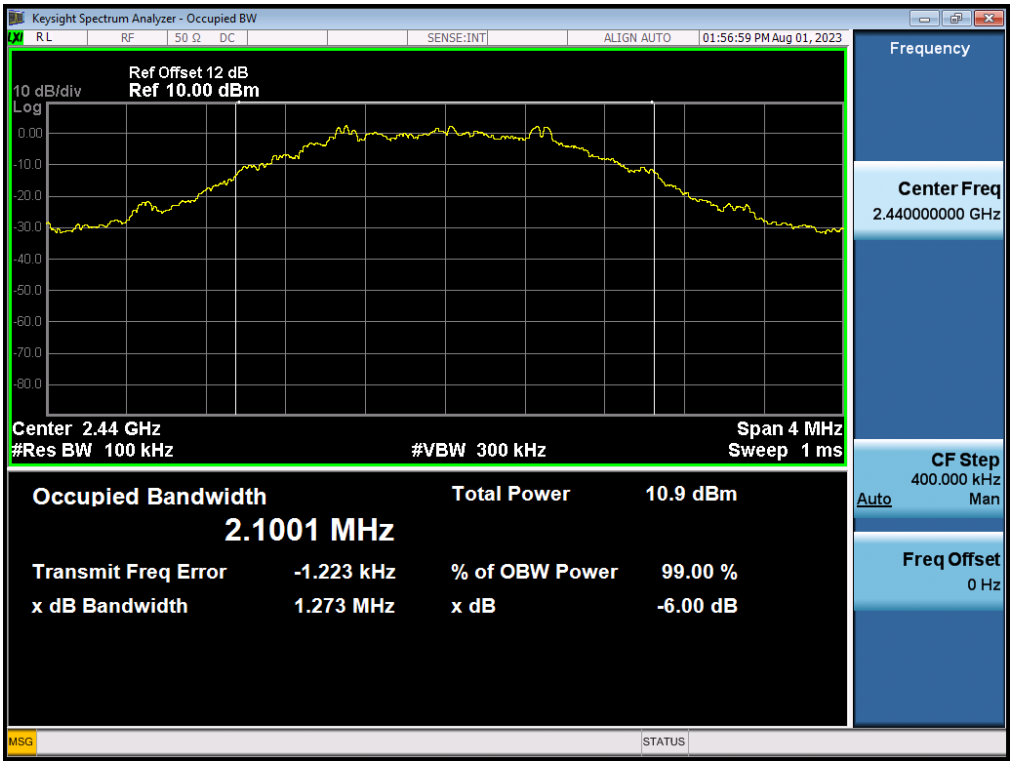
Temperature:	28 °C	Humidity:	74 %RH
RBW:	30 kHz	Modulation:	GFSK__2Mbps
Detector:	Peak	VBW:	100 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	BW > 500 kHz
CH00	2402	1254.0	PASS
CH19	2440	1273.0	PASS
CH39	2480	1154.0	PASS

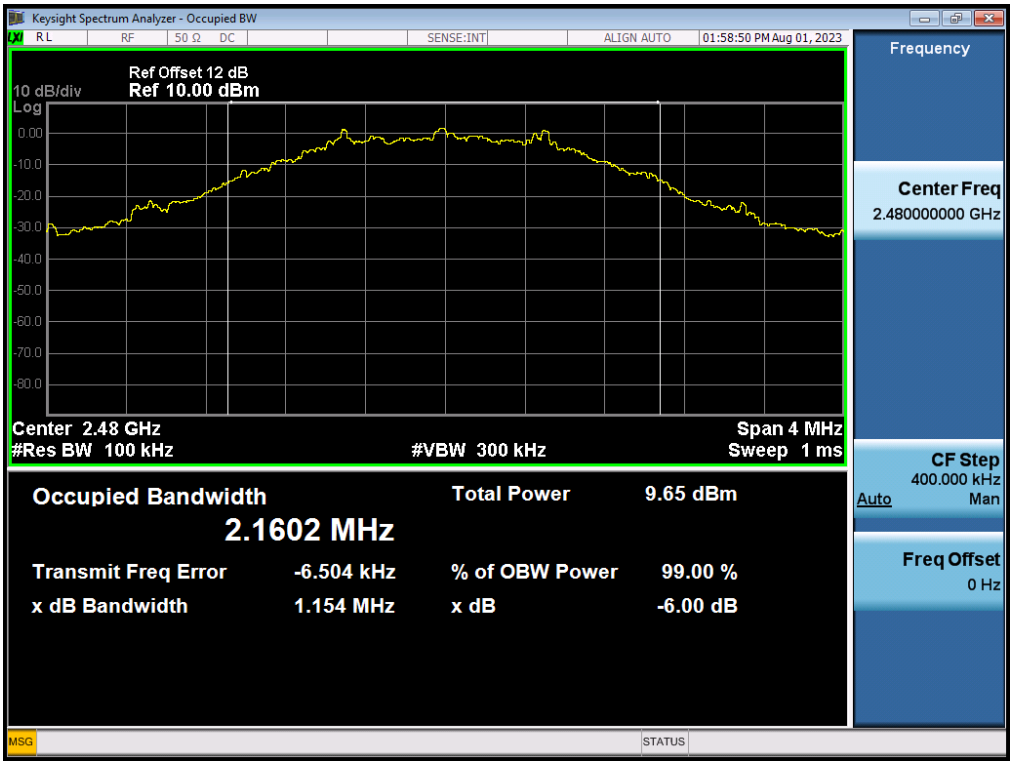
CH00：



CH19：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:56:59 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4 MHz
Sweep 1 ms
Occupied Bandwidth
2.1001 MHz
Total Power 10.9 dBm
Transmit Freq Error -1.223 kHz
% of OBW Power 99.00 %
x dB Bandwidth 1.273 MHz
x dB -6.00 dB
Center Freq
2.440000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

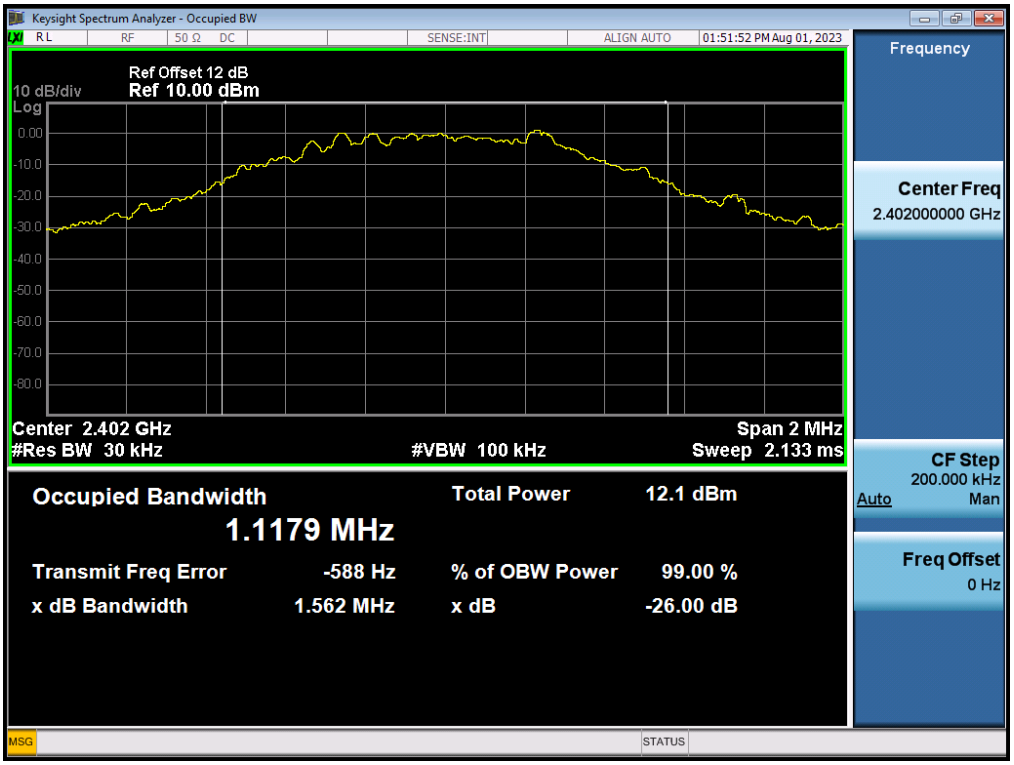
CH39：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:58:50 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 4 MHz
Sweep 1 ms
Occupied Bandwidth
2.1602 MHz
Total Power 9.65 dBm
Transmit Freq Error -6.504 kHz
% of OBW Power 99.00 %
x dB Bandwidth 1.154 MHz
x dB -6.00 dB
Center Freq
2.480000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

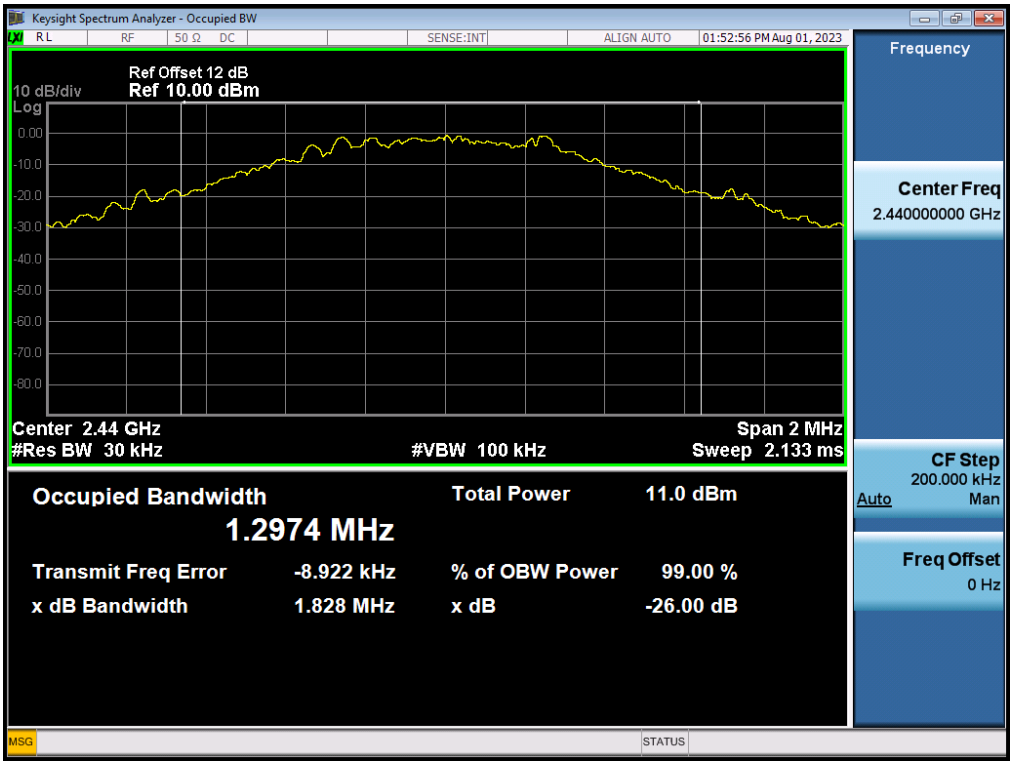
Temperature:	28 °C	Humidity:	74 %RH
RBW:	30 kHz	Modulation:	GFSK__1Mbps
Detector:	Peak	VBW:	100 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Test Mode	Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	BW > 500 kHz
1 Mbps	CH00	2402	1.1179	PASS
1 Mbps	CH19	2440	1.2974	PASS
1 Mbps	CH39	2480	1.4016	PASS

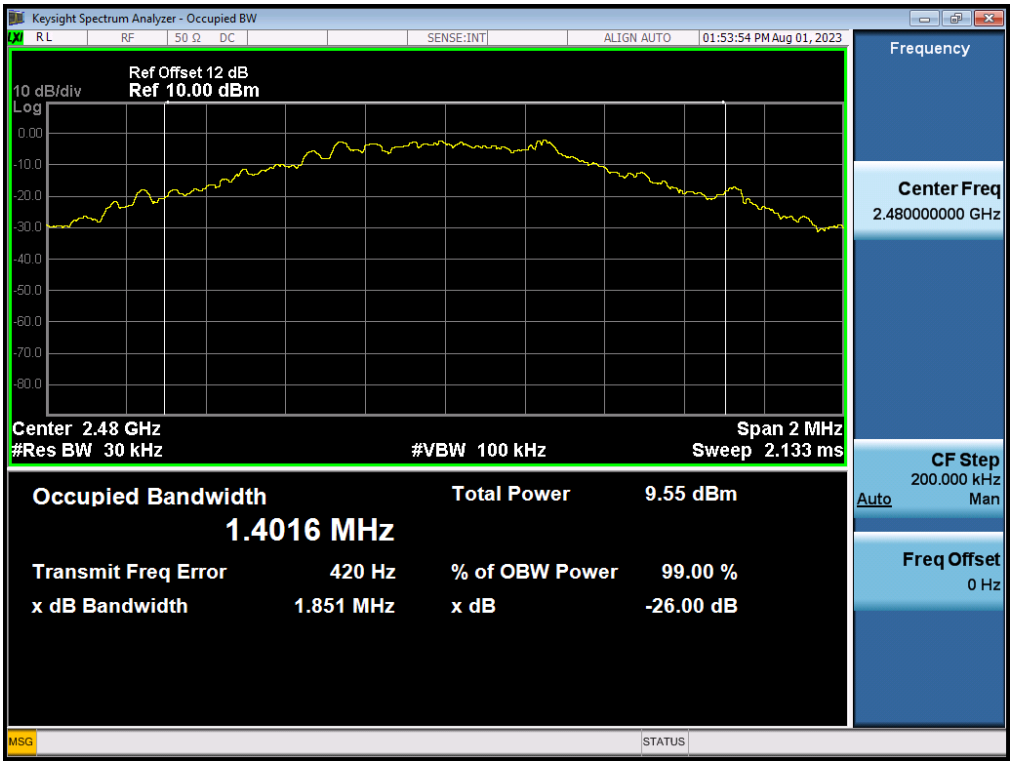
CH00：



CH19：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:52:56 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 2 MHz
Sweep 2.133 ms
Occupied Bandwidth
1.2974 MHz
Total Power 11.0 dBm
Transmit Freq Error -8.922 kHz
% of OBW Power 99.00 %
x dB Bandwidth 1.828 MHz
x dB -26.00 dB
Center Freq
2.440000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

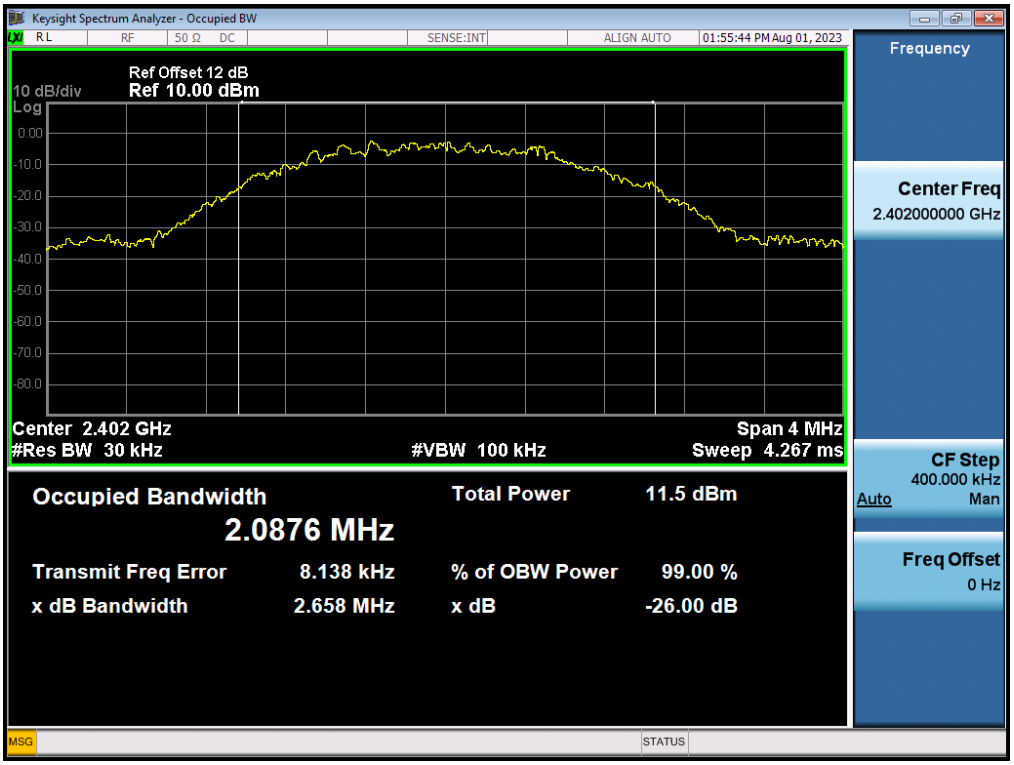
CH39：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:53:54 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 2 MHz
Sweep 2.133 ms
Occupied Bandwidth
1.4016 MHz
Total Power 9.55 dBm
Transmit Freq Error 420 Hz
% of OBW Power 99.00 %
x dB Bandwidth 1.851 MHz
x dB -26.00 dB
Center Freq
2.480000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

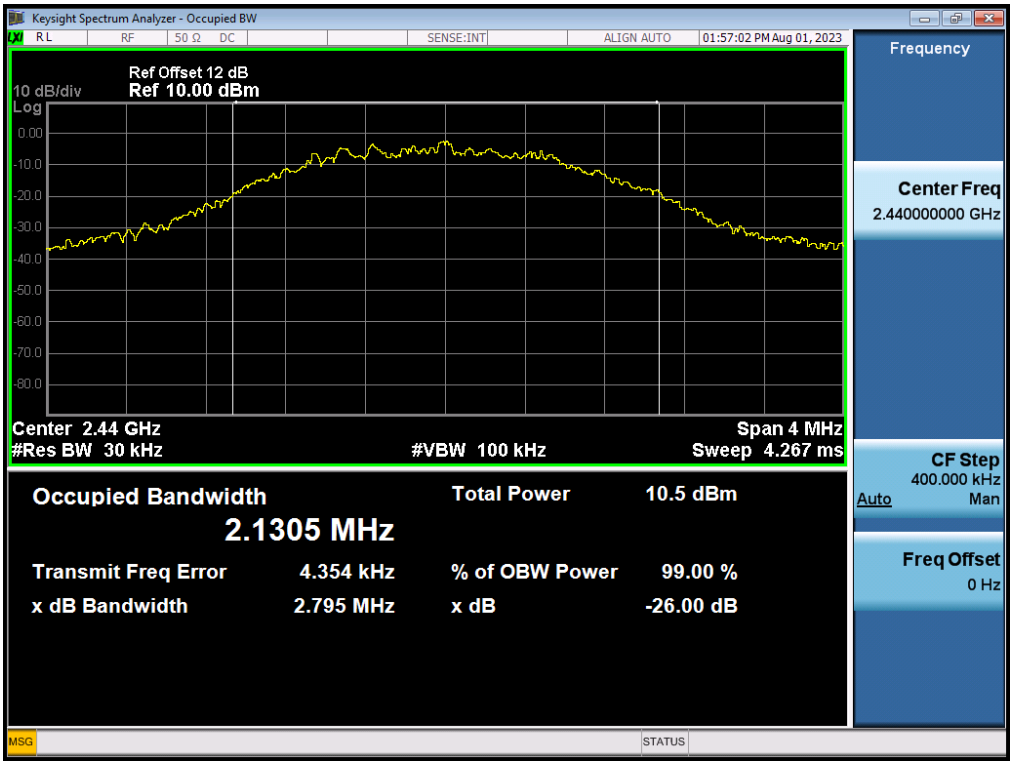
Temperature:	28 °C	Humidity:	74 %RH
RBW:	30 kHz	Modulation:	GFSK__2Mbps
Detector:	Peak	VBW:	100 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Test Mode	Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)	BW > 500 kHz
1 Mbps	CH00	2402	2.0876	PASS
1 Mbps	CH19	2440	2.1305	PASS
1 Mbps	CH39	2480	2.1653	PASS

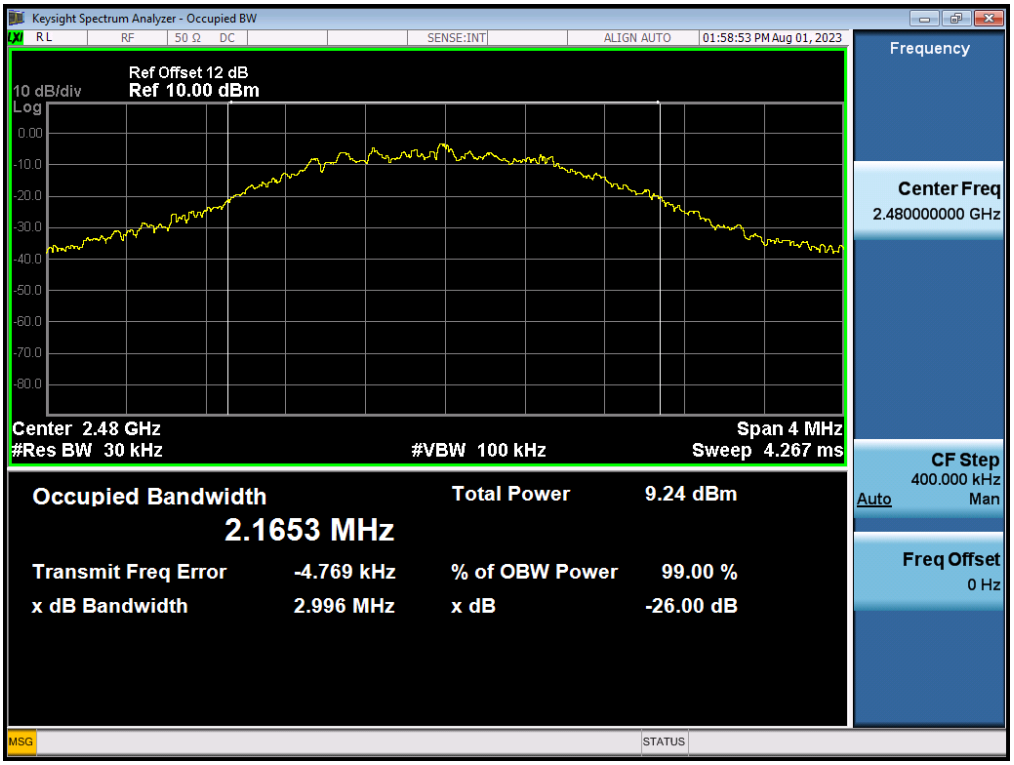
CH00：



CH19：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:57:02 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 4 MHz
Sweep 4.267 ms
Occupied Bandwidth
2.1305 MHz
Total Power 10.5 dBm
Transmit Freq Error 4.354 kHz
% of OBW Power 99.00 %
x dB Bandwidth 2.795 MHz
x dB -26.00 dB
Center Freq
2.440000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

CH39：


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:58:53 PM Aug 01, 2023
Frequency
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 4 MHz
Sweep 4.267 ms
Occupied Bandwidth
2.1653 MHz
Total Power 9.24 dBm
Transmit Freq Error -4.769 kHz
% of OBW Power 99.00 %
x dB Bandwidth 2.996 MHz
x dB -26.00 dB
Center Freq
2.480000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

7. PEAK CONDUCTED OUTPUT POWER TEST

7.1 LIMIT

FCC Part15, Subpart C Section 15.247(b).

The maximum peak conducted output power of the intentional radiator shall not exceed the following:

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

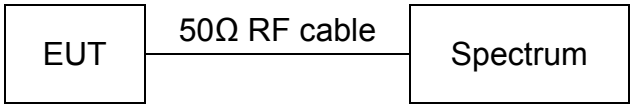
7.2 TEST EQUIPMENT

The following test equipment was used during the test：

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center
EXA Signal Analyzer	10 Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC

NOTE：The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

7.3 TEST SET-UP



7.4 TEST PROCEDURE

The EUT was operating in continuous transmission mode or could control its channel.

Printed out the test result from the spectrum by hard copy function.

7.5 EUT OPERATING CONDITION

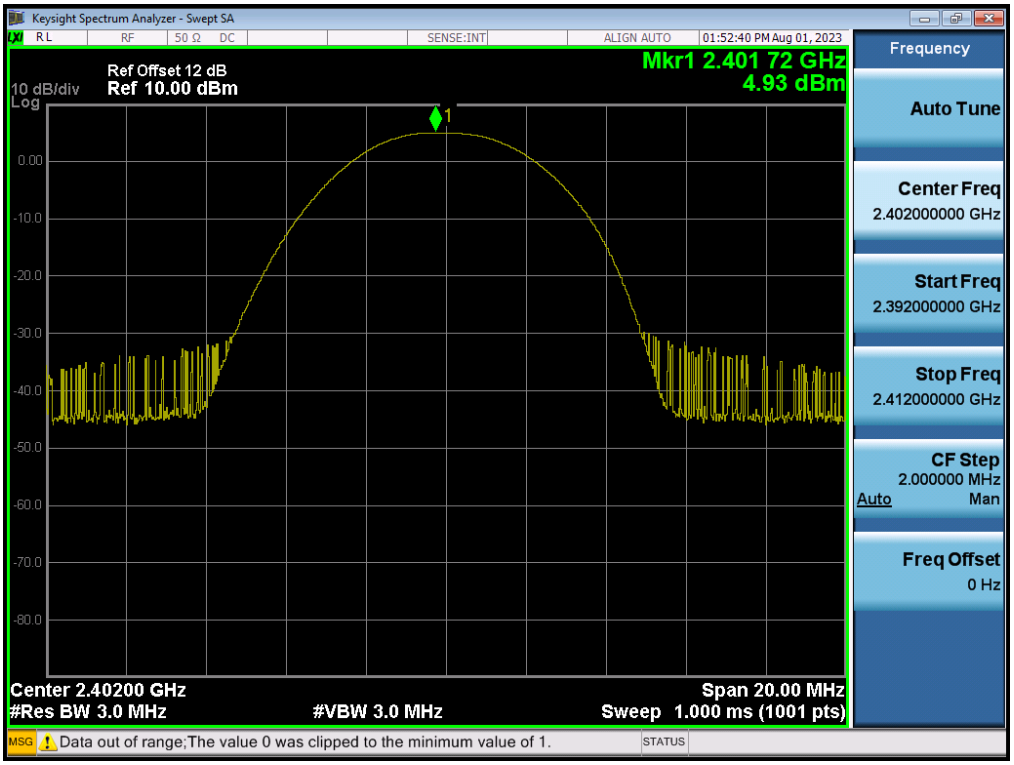
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

7.6 TEST RESULT

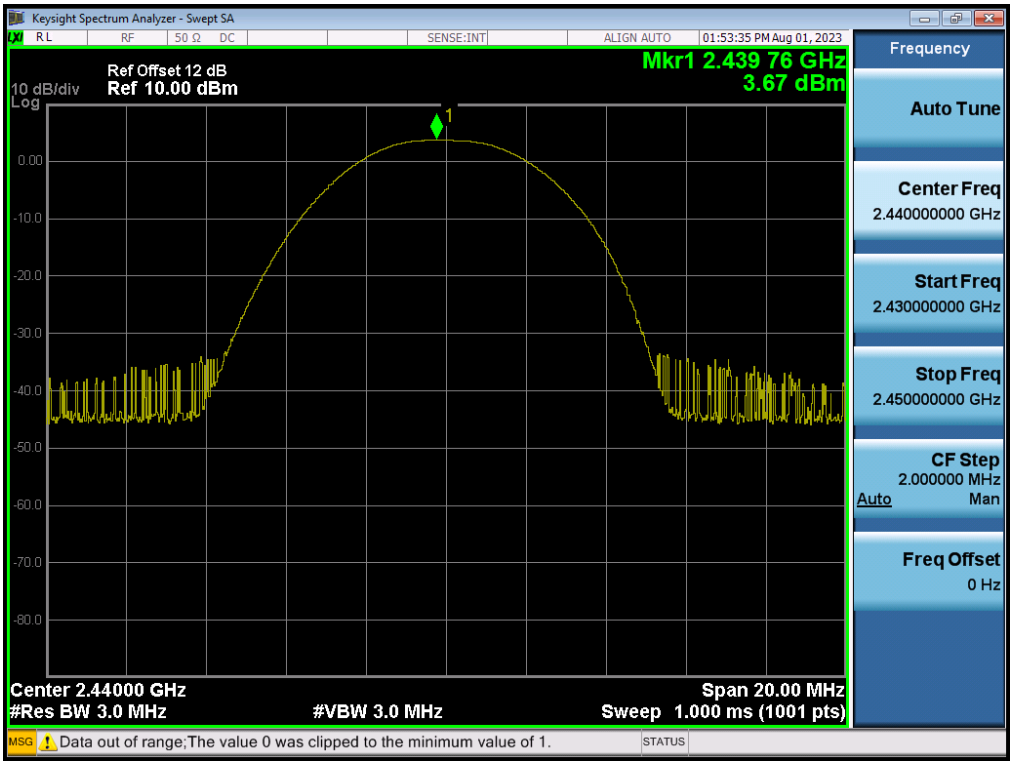
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Modulation:	GFSK__1Mbps
RBW:	3 MHz	VBW:	3 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel	Frequency (MHz)	Peak Conducted Output Power		Limit (dBm)
		(dBm)	(mW)	
CH00	2402	4.93	3.1117	30
CH19	2440	3.67	2.3281	30
CH39	2480	2.39	1.7338	30

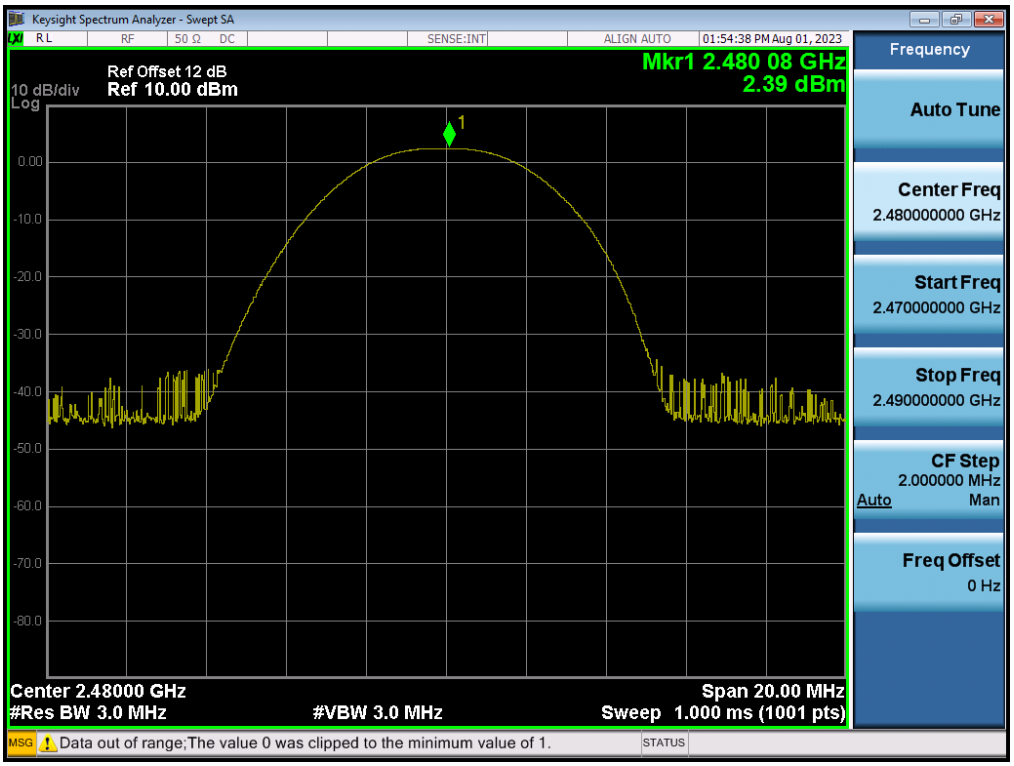
CH00：



CH19：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:53:35 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.439 76 GHz
3.67 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44000 GHz
#Res BW 3.0 MHz
#VBW 3.0 MHz
Span 20.00 MHz
Sweep 1.000 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.430000000 GHz
Stop Freq
2.450000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

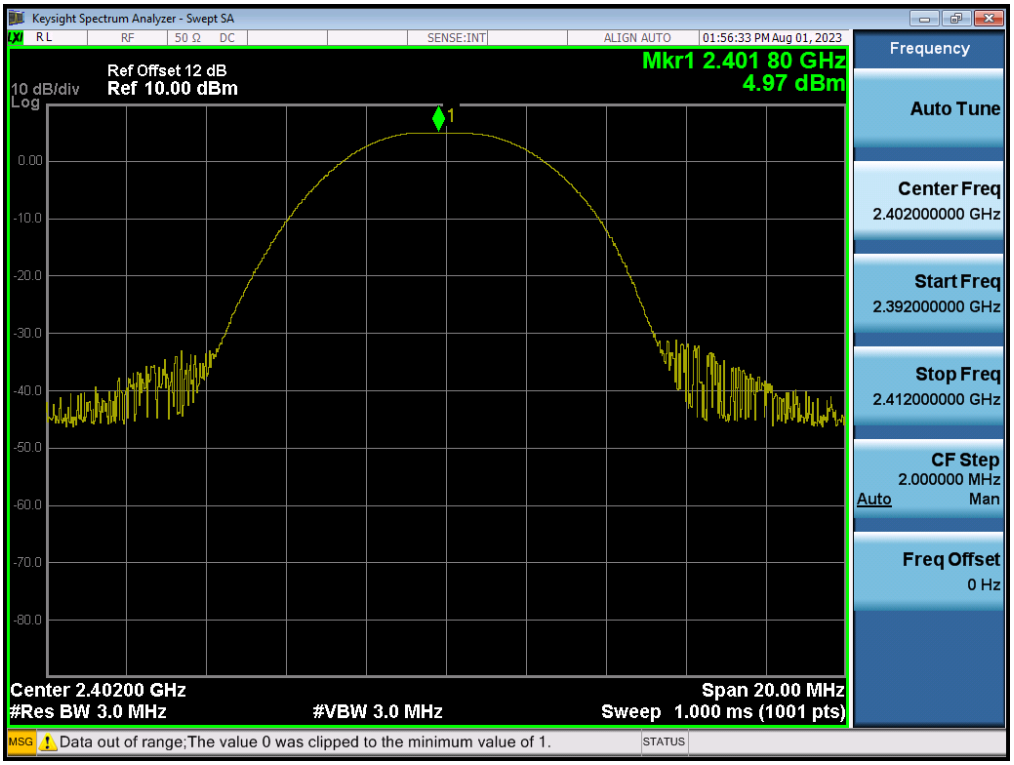
CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:54:38 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.480 08 GHz
2.39 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48000 GHz
#Res BW 3.0 MHz
#VBW 3.0 MHz
Span 20.00 MHz
Sweep 1.000 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.470000000 GHz
Stop Freq
2.490000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

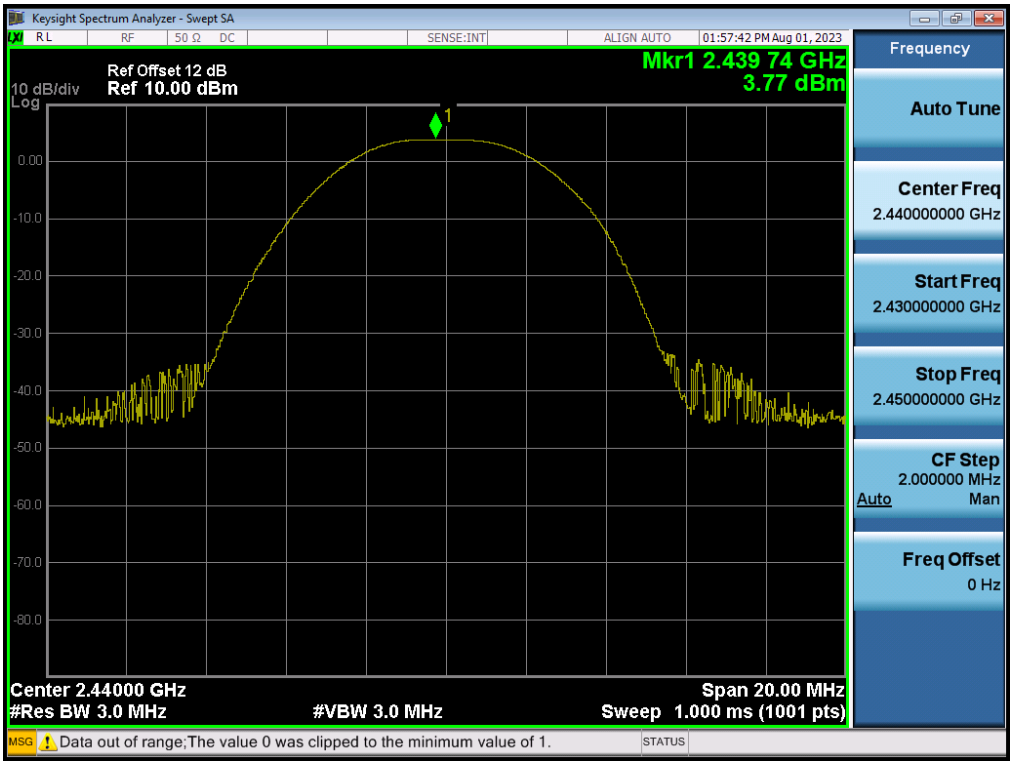
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Modulation:	GFSK__2Mbps
RBW:	3 MHz	VBW:	3 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel	Frequency (MHz)	Peak Conducted Output Power		Limit (dBm)
		(dBm)	(mW)	
CH00	2402	4.97	3.1405	30
CH19	2440	3.77	2.3823	30
CH39	2480	2.52	1.7865	30

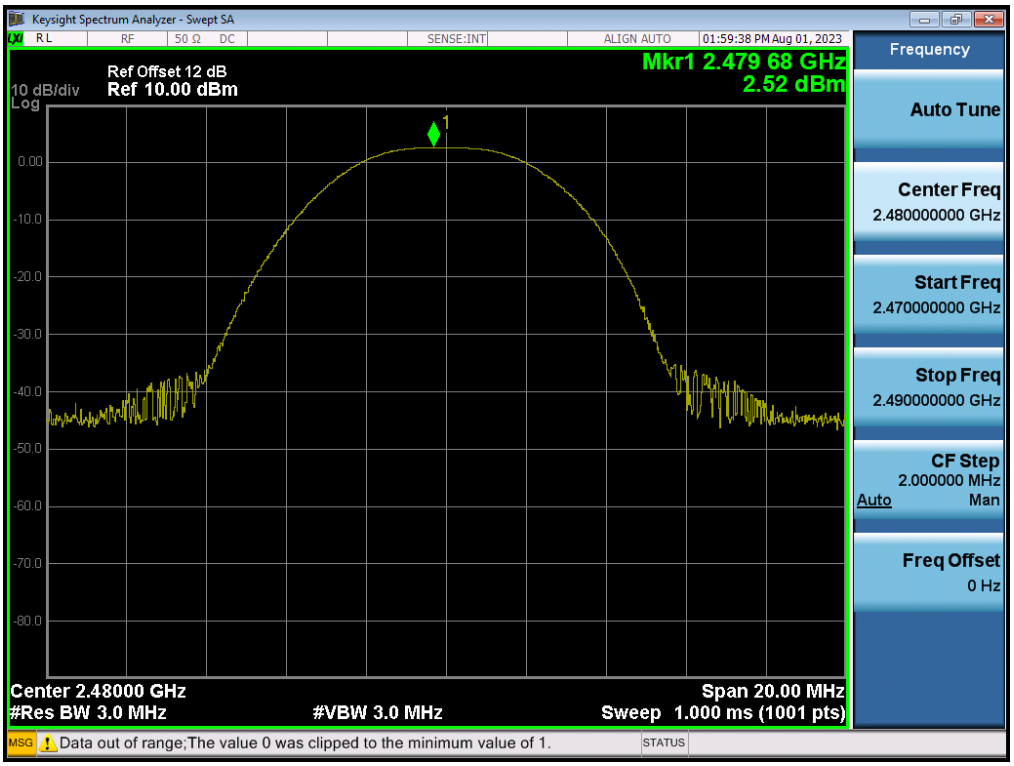
CH00：



CH19：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:57:42 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.439 74 GHz
3.77 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.44000 GHz
#Res BW 3.0 MHz
#VBW 3.0 MHz
Span 20.00 MHz
Sweep 1.000 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.430000000 GHz
Stop Freq
2.450000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:59:38 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr1 2.479 68 GHz
2.52 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48000 GHz
#Res BW 3.0 MHz
#VBW 3.0 MHz
Span 20.00 MHz
Sweep 1.000 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.470000000 GHz
Stop Freq
2.490000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

8. BAND EDGE TEST

8.1 LIMIT

FCC Part15, Subpart C Section 15.247(d).

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. In addition, radiated emissions 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) (see § 15.205(c)).

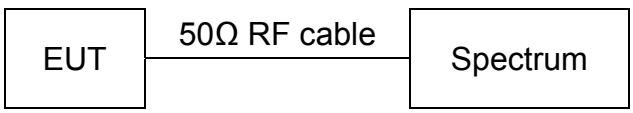
8.2 TEST EQUIPMENT

The following test equipment was used during the test：

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center
EXA Signal Analyzer	10 Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC

NOTE：The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

8.3 TEST SET-UP



8.4 TEST PROCEDURE

The EUT was operating in continuous transmission mode or could control its channel. Printed out the test result from the spectrum by hard copy function.

8.5 EUT OPERATING CONDITION

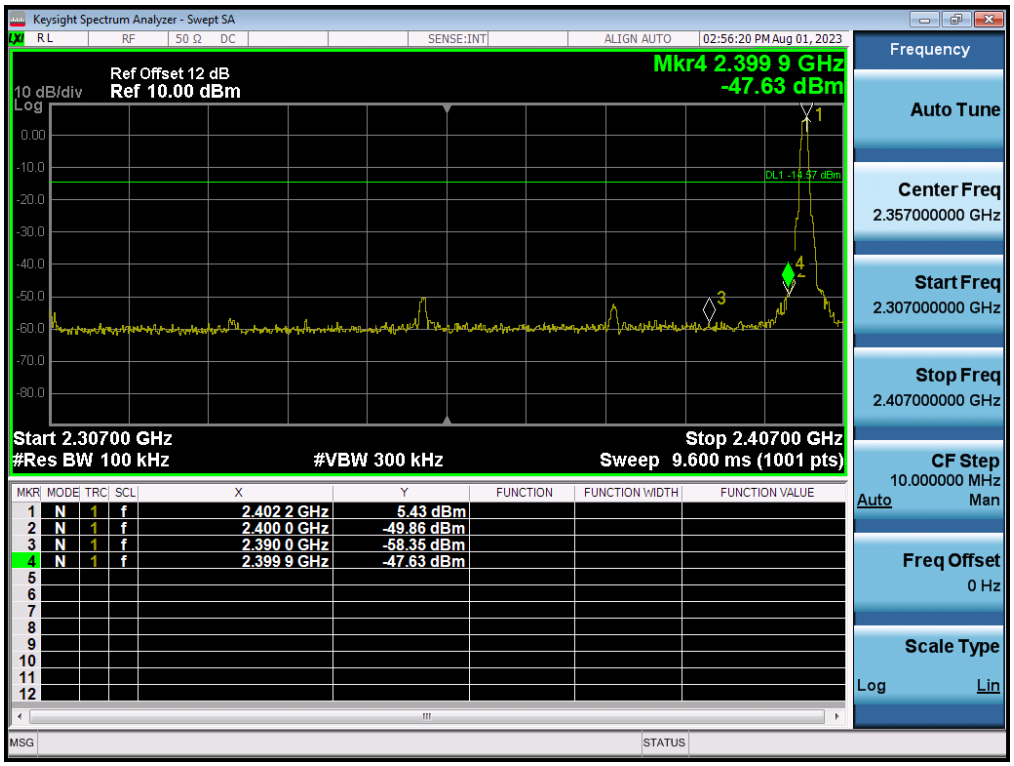
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

8.6 TEST RESULT

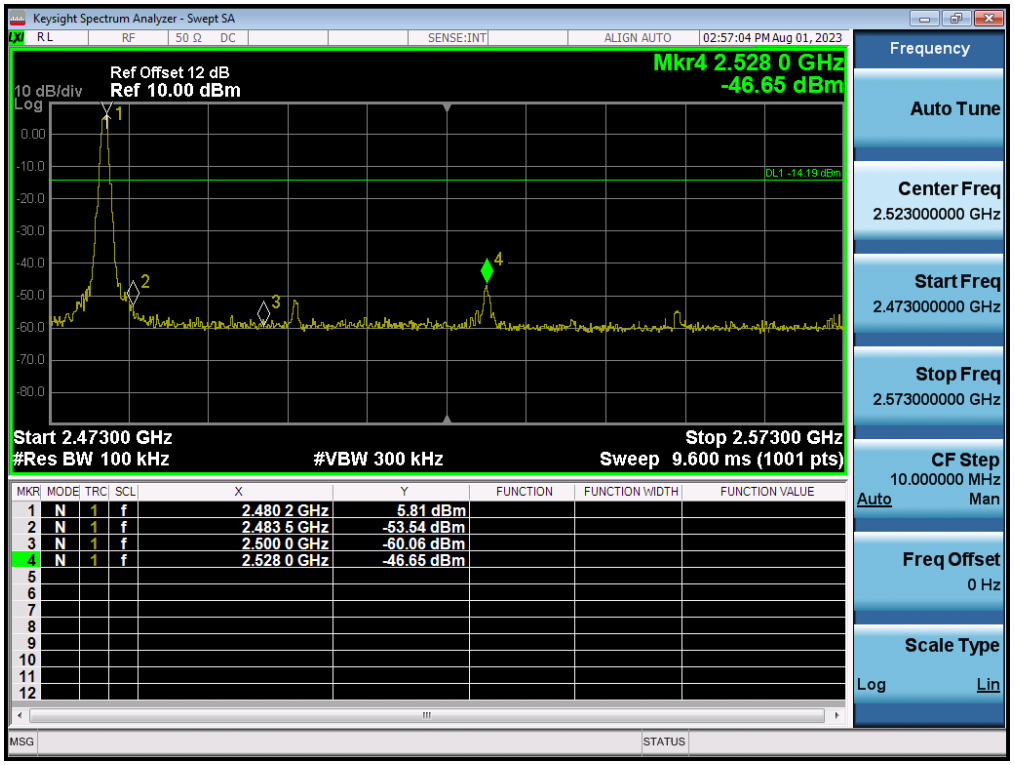
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	Hopping_1Mbps
RBW:	100 kHz	VBW:	300 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Frequency (MHz)	Peak Power Output (dBm)	Emission Read Value(dBm)	Result of Band Edge (dBc)	Band Edge Limit (dBc)	Resule
2402	5.43	-58.35	63.78	20	PASS
2480	5.81	-60.06	65.87	20	PASS

CH00：



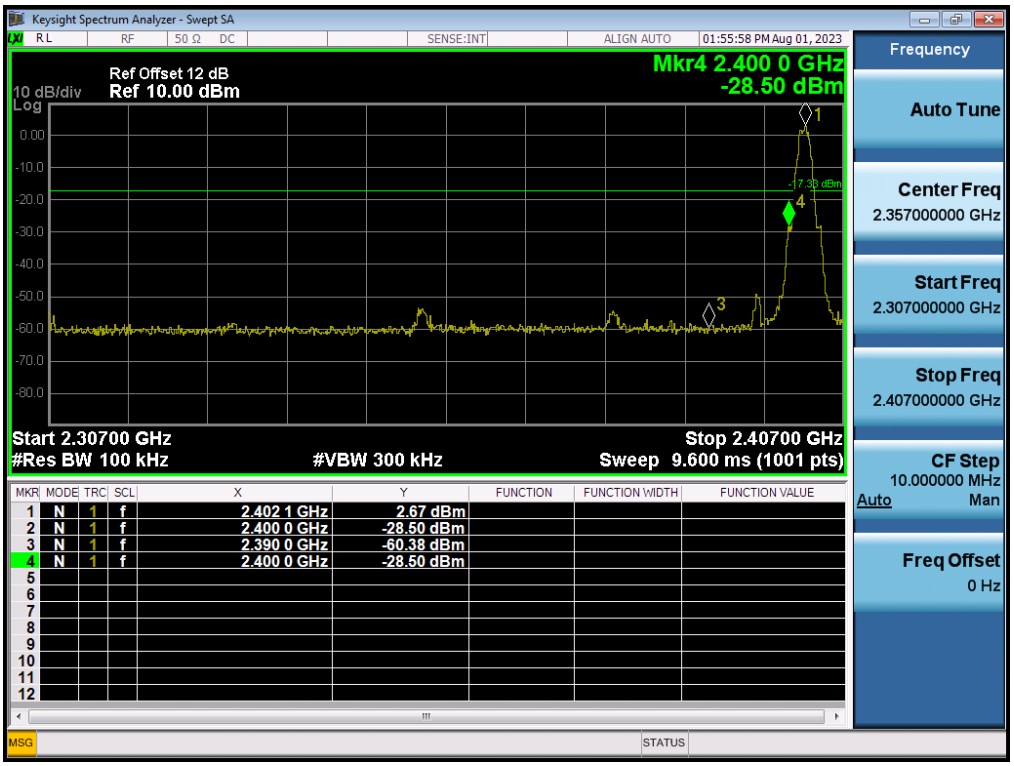
CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
02:57:04 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr4 2.528 0 GHz
-46.65 dBm
DL1 -14.19 dBm
Start 2.47300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.57300 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.480 2 GHz 5.81 dBm
2 N 1 f 2.483 5 GHz -53.54 dBm
3 N 1 f 2.500 0 GHz -60.06 dBm
4 N 1 f 2.528 0 GHz -46.65 dBm
Frequency
Auto Tune
Center Freq
2.523000000 GHz
Start Freq
2.473000000 GHz
Stop Freq
2.573000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
Scale Type
Log
Lin
MSG
STATUS

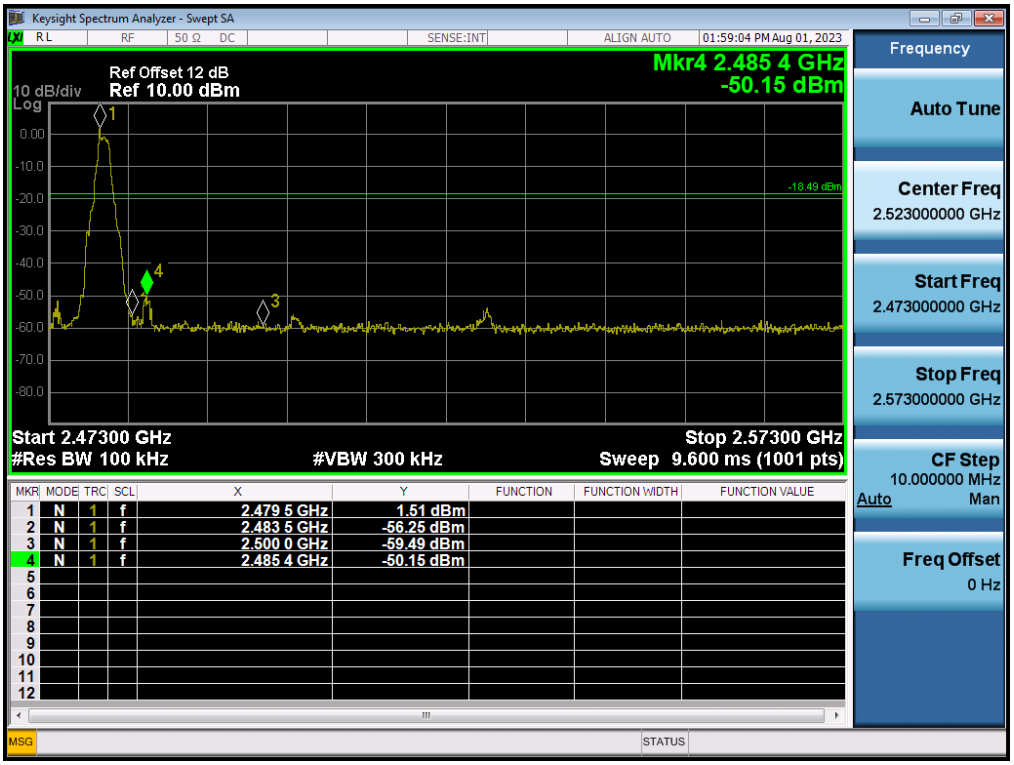
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	Hopping_2Mbps
RBW:	100 kHz	VBW:	300 kHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Frequency (MHz)	Peak Power Output (dBm)	Emission Read Value(dBm)	Result of Band Edge (dBc)	Band Edge Limit (dBc)	Resule
2402	2.67	-60.38	63.05	20	PASS
2480	1.51	-59.49	61.00	20	PASS

CH00：



CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:59:04 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Ref 10.00 dBm
Log
Mkr4 2.485 4 GHz
-50.15 dBm
-18.49 dBm
Start 2.47300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.57300 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.479 5 GHz 1.51 dBm
2 N 1 f 2.483 5 GHz -56.25 dBm
3 N 1 f 2.500 0 GHz -59.49 dBm
4 N 1 f 2.485 4 GHz -50.15 dBm
Frequency
Auto Tune
Center Freq
2.523000000 GHz
Start Freq
2.473000000 GHz
Stop Freq
2.573000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

9. POWER SPECTRAL DENSITY TEST

9.1 LIMIT

FCC Part15, Subpart C Section 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.

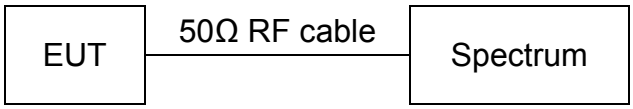
9.2 TEST EQUIPMENT

The following test equipment was used during the test：

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center
EXA Signal Analyzer	10 Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC

NOTE：The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.

9.3 TEST SET-UP



9.4 TEST PROCEDURE

The EUT was operating in continuous transmission mode or could control its channel. Printed out the test result from the spectrum by hard copy function.

9.5 EUT OPERATING CONDITION

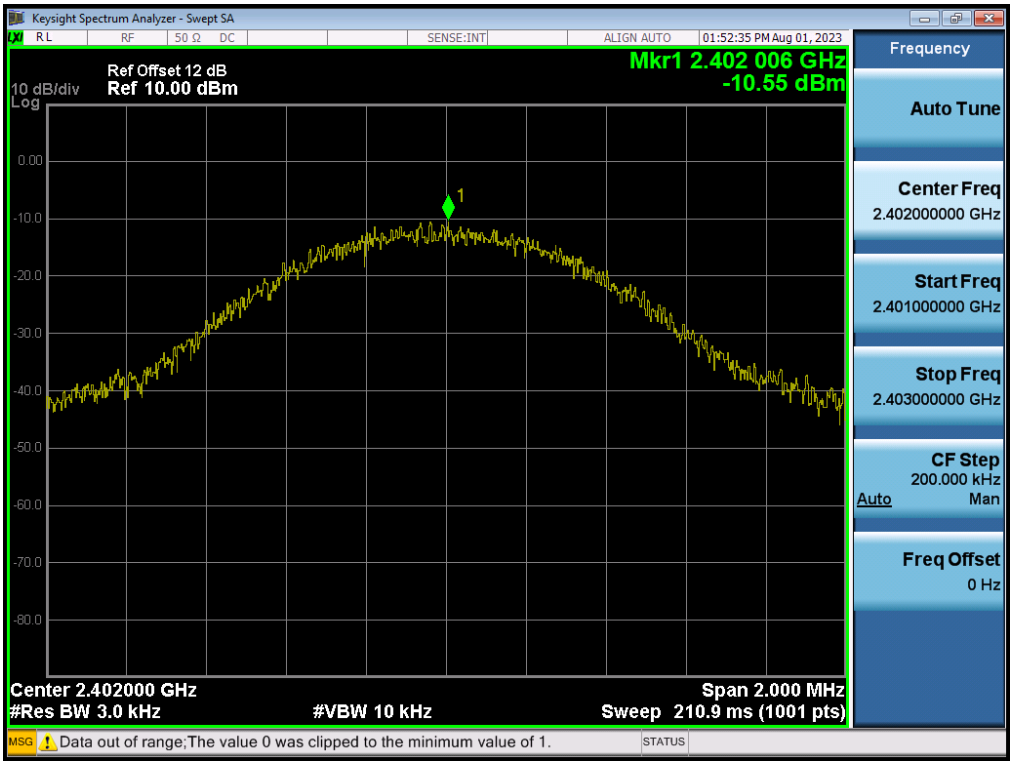
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

9.6 TEST RESULT

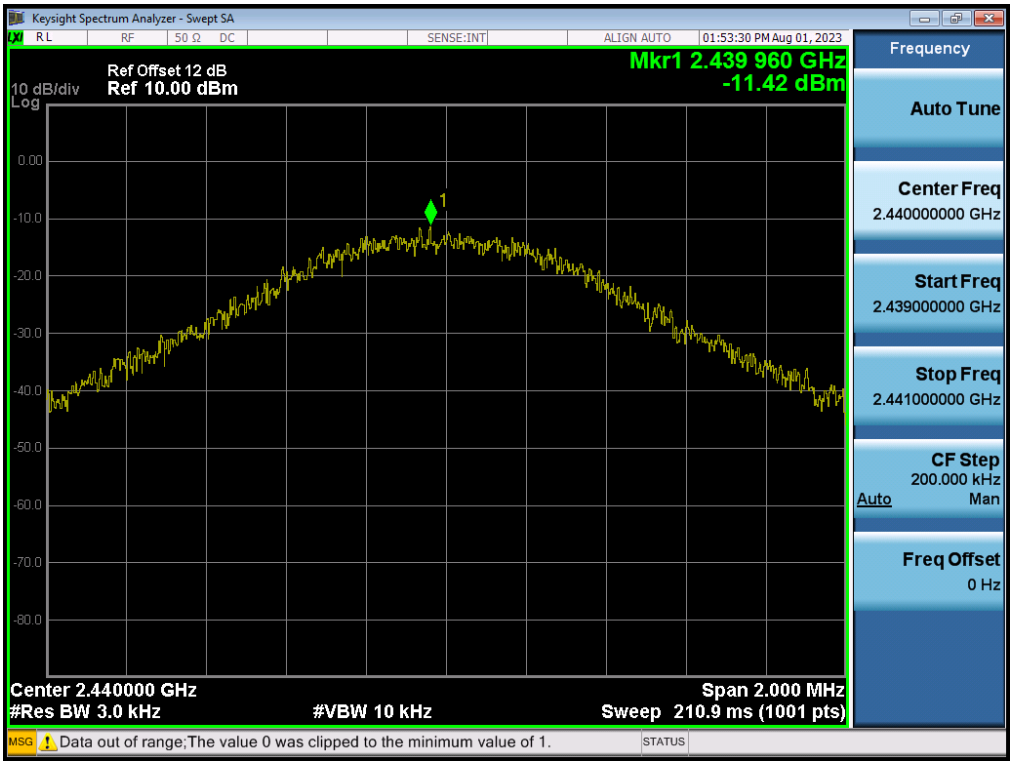
Temperature:	28 °C	Humidity:	74 %RH
Spectrum Detector:	PK.	Modulation:	GFSK_1Mbps
RBW:	1 MHz	VBW:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH00	2402	-10.55	8
CH19	2440	-11.42	8
CH39	2480	-13.05	8

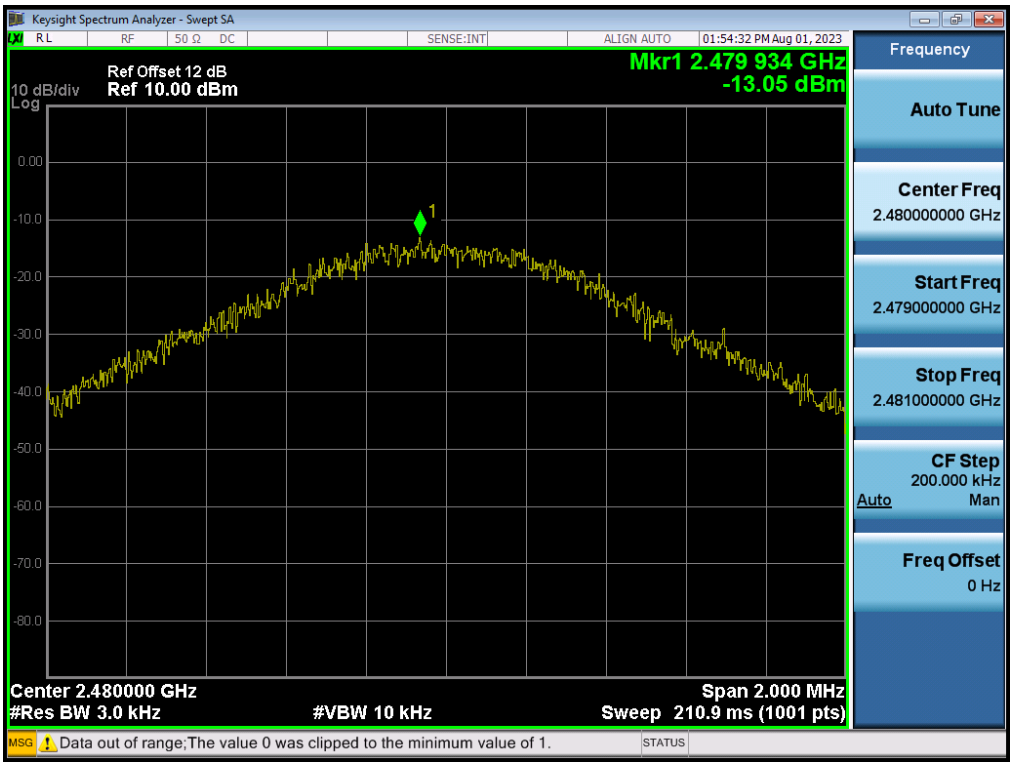
CH00：



CH19：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:53:30 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.439 960 GHz
-11.42 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.440000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 2.000 MHz
Sweep 210.9 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.439000000 GHz
Stop Freq
2.441000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

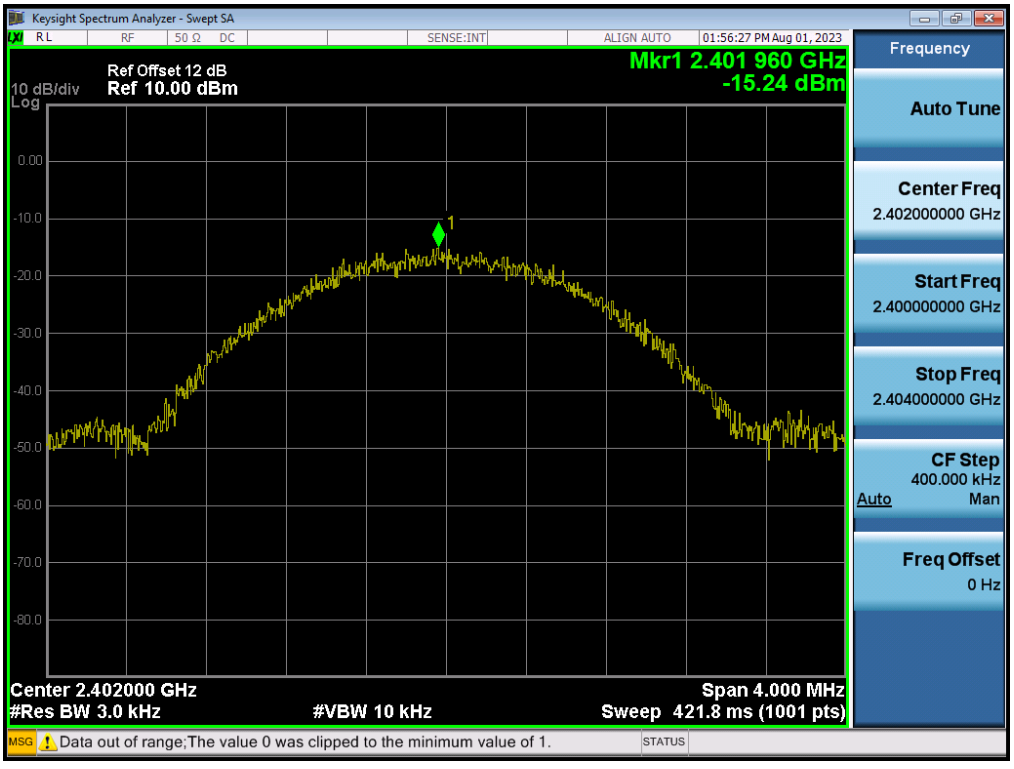
CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:54:32 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.479 934 GHz
-13.05 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 2.000 MHz
Sweep 210.9 ms (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.479000000 GHz
Stop Freq
2.481000000 GHz
CF Step
200.000 kHz
Auto
Man
Freq Offset
0 Hz

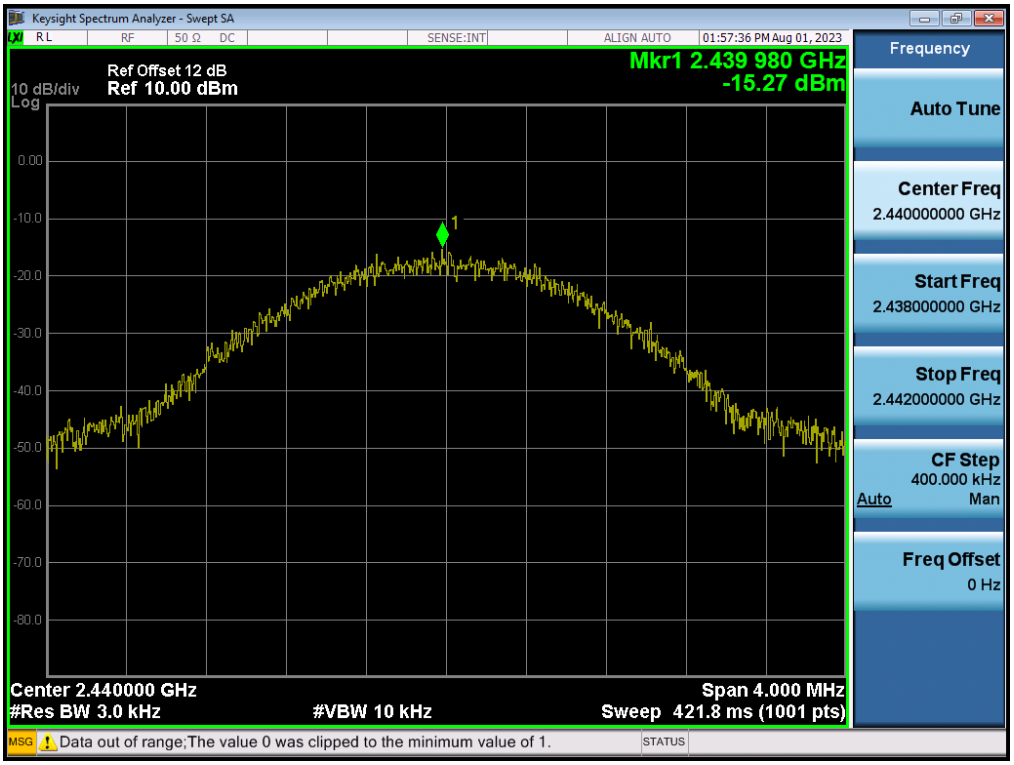
Temperature:	28 °C	Humidity:	74 %RH
Spectrum Detector:	PK.	Modulation:	GFSK_2Mbps
RBW:	1 MHz	VBW:	1 MHz
Tested By:	JImmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH00	2402	-15.24	8
CH19	2440	-15.27	8
CH39	2480	-16.33	8

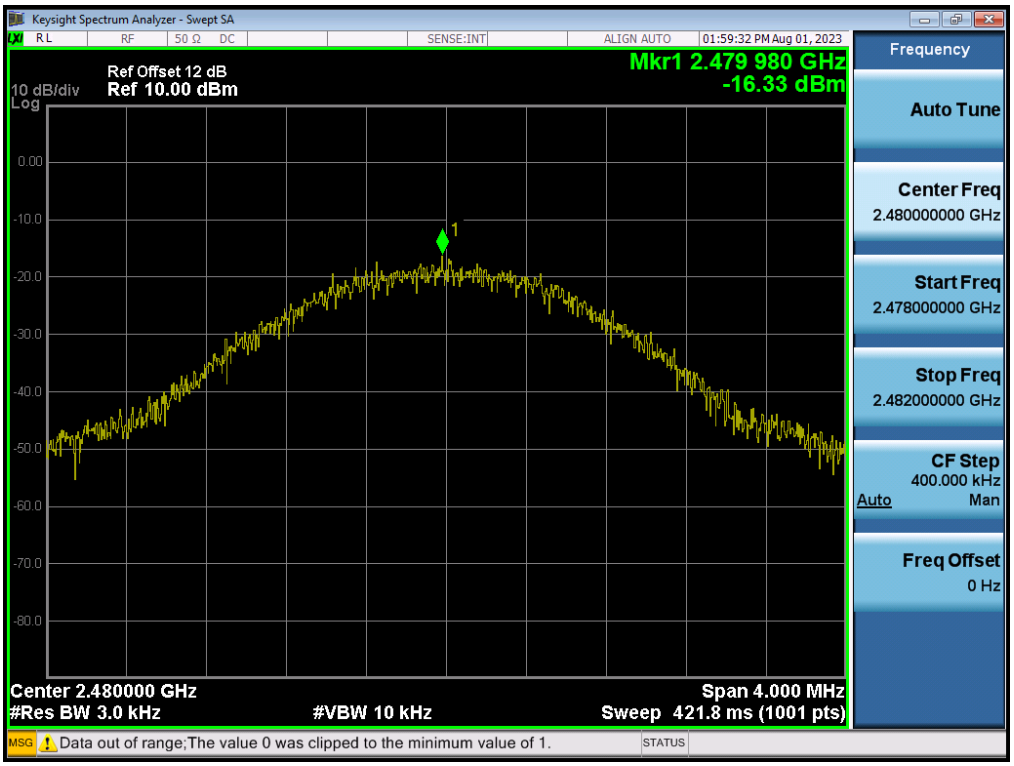
CH00：



CH19：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:57:36 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.439 980 GHz
-15.27 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.440000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 4.000 MHz
Sweep 421.8 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.440000000 GHz
Start Freq
2.438000000 GHz
Stop Freq
2.442000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

CH39：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
01:59:32 PM Aug 01, 2023
Ref Offset 12 dB
10 dB/div
Log
Ref 10.00 dBm
Mkr1 2.479 980 GHz
-16.33 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.480000 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 4.000 MHz
Sweep 421.8 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.480000000 GHz
Start Freq
2.478000000 GHz
Stop Freq
2.482000000 GHz
CF Step
400.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

10. Antenna application

10.1 Antenna requirement

FCC Part 15E section 15.407 requirement:

For the band 5.725-5.85 GHz, If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

10.2 Result

The EUT's antenna used a FPC Antenna . Gain of 5.1G & 5.8G antenna types is 2.99 dBi that meet the requirement.

11. Description of RF Exposure

SAR compliance has been evaluated in the product(s), and con be used in host product(s) with substantially similar physical dimensions, construction, and electrical and RF characteristics. End-users must be provided with specific information required to satisfy RF exposure compliance for all final host devices. Compliance of this device in all final host configurations is the responsibility of the Grantee.

- The separation distance -20 cm must be clearly stated in the operating and/or installation manual that is supplied to the User.
- This application is being made on behalf of the "Grantee".

12. TERMS OF ABBREVIATION

AV.	Average detection
AZ(º)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction