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

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 (Auth) , Date: 8/21/2023

(Jimmy Tseng)

Approved By : , Date: 8/21/2023

(Johnson Ho, Director)

Revisions History

Report No.	Issue Date	Revisions
FCCA23080102-W0	Aug. 21, 2023	Initial issue

Table of Contents

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: **QCI-SKIWB800D3** 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	2412 ~ 2462 MHz
NUMBER OF CHANNEL	11
RATED RF OUTPUT POWER	IEEE 802.11b：21.29 dBm IEEE 802.11g：21.61 dBm IEEE 802.11n - HT20：20.02 dBm IEEE 802.11n - HT40：18.20 dBm
MODULATION TYPE	IEEE 802.11b：DSSS IEEE 802.11g：OFDM IEEE 802.11n - HT20/HT40：OFDM
BIT RATE OF TRANSMITTER	IEEE 802.11b: 11 / 5.5 / 2 / 1 Mbps IEEE 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps IEEE 802.11n: up to 150 Mbps
ANTENNA TYPE	FPC Antenna
ANTENNA GAIN	4.25 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.

2.2 DESCRIPTION OF TEST MODE

The EUT in Wi-Fi 2.4G mode has 11 channels and the modulations are below:

IEEE 802.11b：DSSS

IEEE 802.11g：OFDM

IEEE 802.11n - HT20/HT40：OFDM

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		Channel	Frequence (MHz)
1	802.11b	CH01	2412
2		CH06	2437
3		CH11	2462
4	802.11g	CH01	2412
5		CH06	2437
6		CH11	2462
7	802.11n - HT20	CH01	2412
8		CH06	2437
9		CH11	2462
10	802.11n – HT40	CH03	2422
11		CH06	2437
12		CH09	2452
19	Standby	---	---
20	Link	---	---

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.

2.3 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.

2.4 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	FPC Antenna	Shenzhen HamyWe 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.

2.5 CHANNEL AND FREQUENCY TABLE

Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)	Channel (CH)	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452	---	---

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

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

3.1 DESCRIPTION OF APPLIED KDB

Related KDB used in the test:

FCC publication KDB 558074 D01 15.247 Meas Guidance v05r02 Measurement on Digital Transmission Systems (DTS) Operating under Section 15.247 Apr. 02, 2019

3.2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

STANDARD SECTION	TEST TYPE AND LIMIT RESULTS	RESULTS
15.203 15.247(c)(1)(i)	Antenna requirement	PASS
15.207	AC Power Line Conducted Emission	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(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS
15.247(e)	Power Density: Limit: 8dBm/3kHz	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.

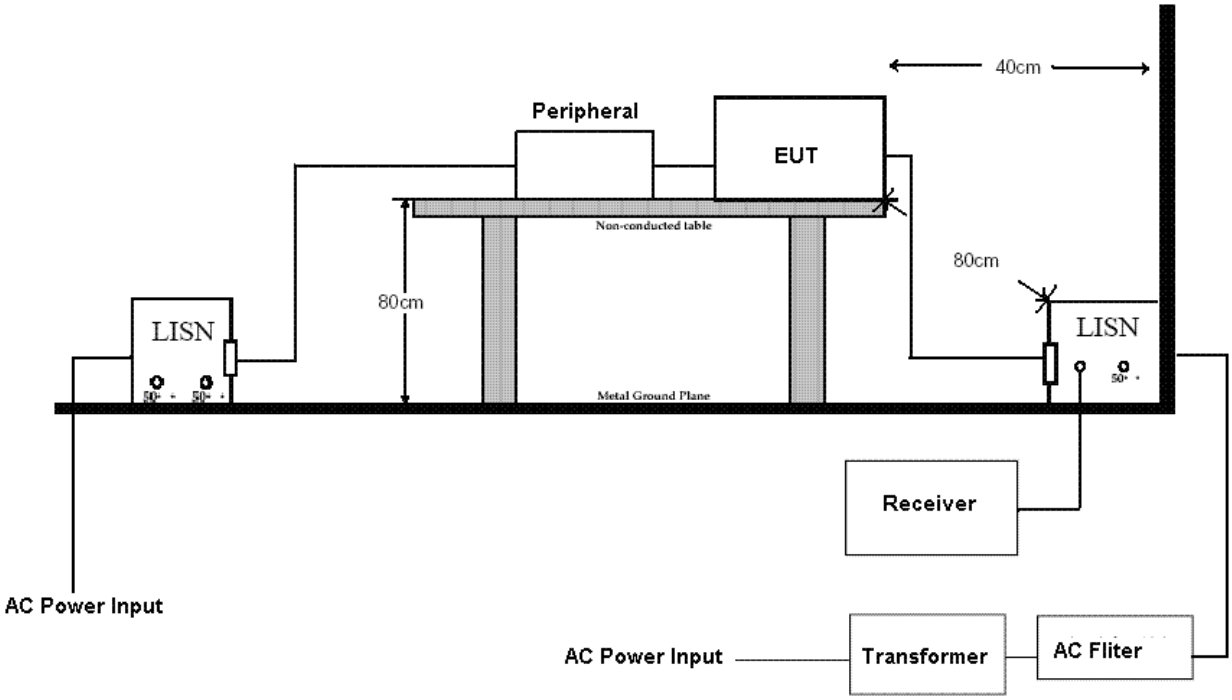
4.2 TEST EQUIPMENT

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.

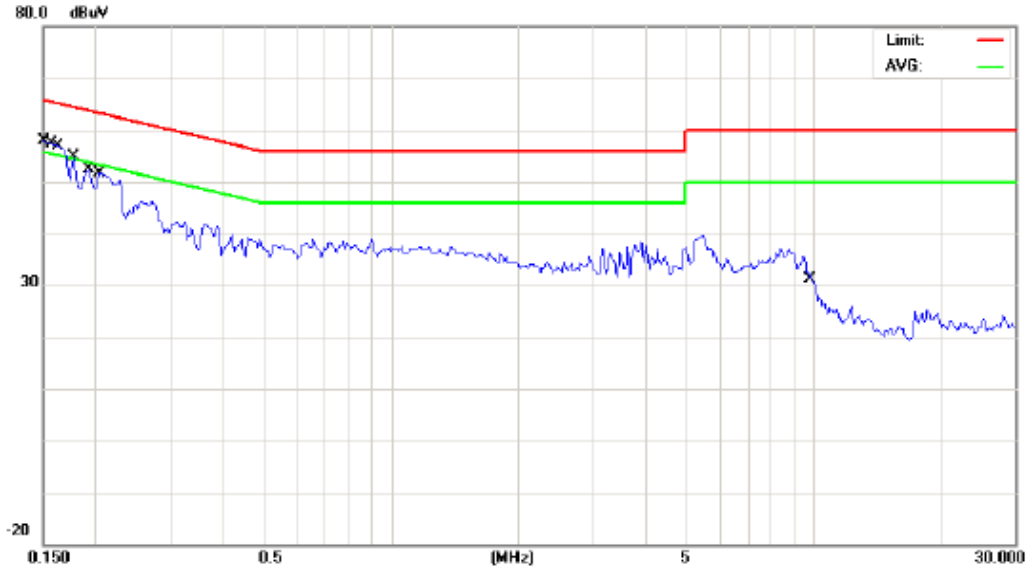
4.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.10:2013 and CISPR22:2003. 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

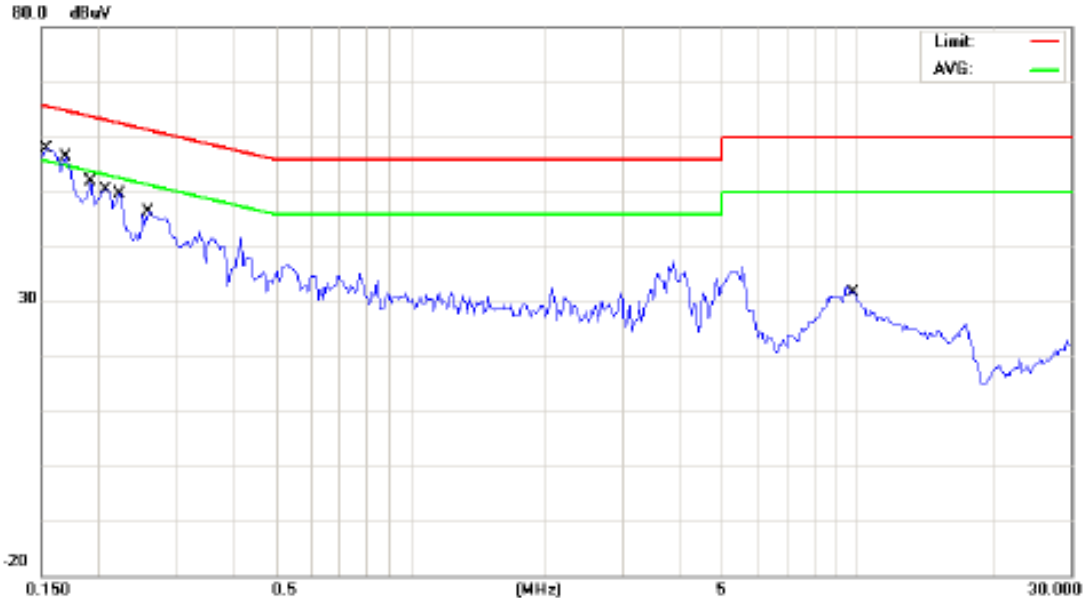


Mk.	No.	Frequency (MHz)	Reading (dBuV)	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Comment
	1	0.1500	54.89	-0.05	54.84	66.00	-11.16	QP	
	2	0.1500	39.99	-0.05	39.94	56.00	-16.06	AVG	
*	3	0.1582	54.67	-0.04	54.63	65.56	-10.93	QP	
	4	0.1582	40.84	-0.04	40.80	55.56	-14.76	AVG	
	5	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
Above 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, Section 15.35(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:

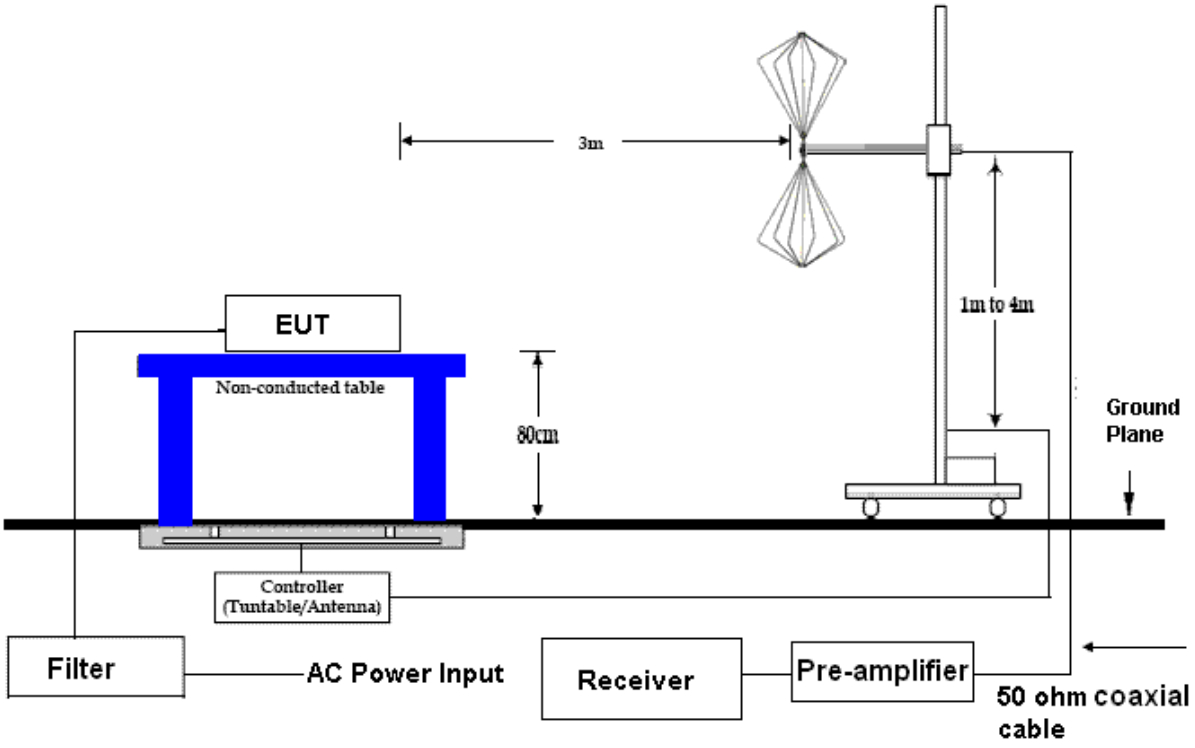
Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EMI Test Receiver	9 kHz ~ 2.75 GHz	ROHDE & SCHWARZ	ESCS30 / 100376	APR. 26, 2024 ETC	■
Biconical Antenna	30 MHz ~ 200 MHz	EMCO	3108 / 2380	MAY. 01, 2024 ETC	■
Log Periodic Antenna	200 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	■

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

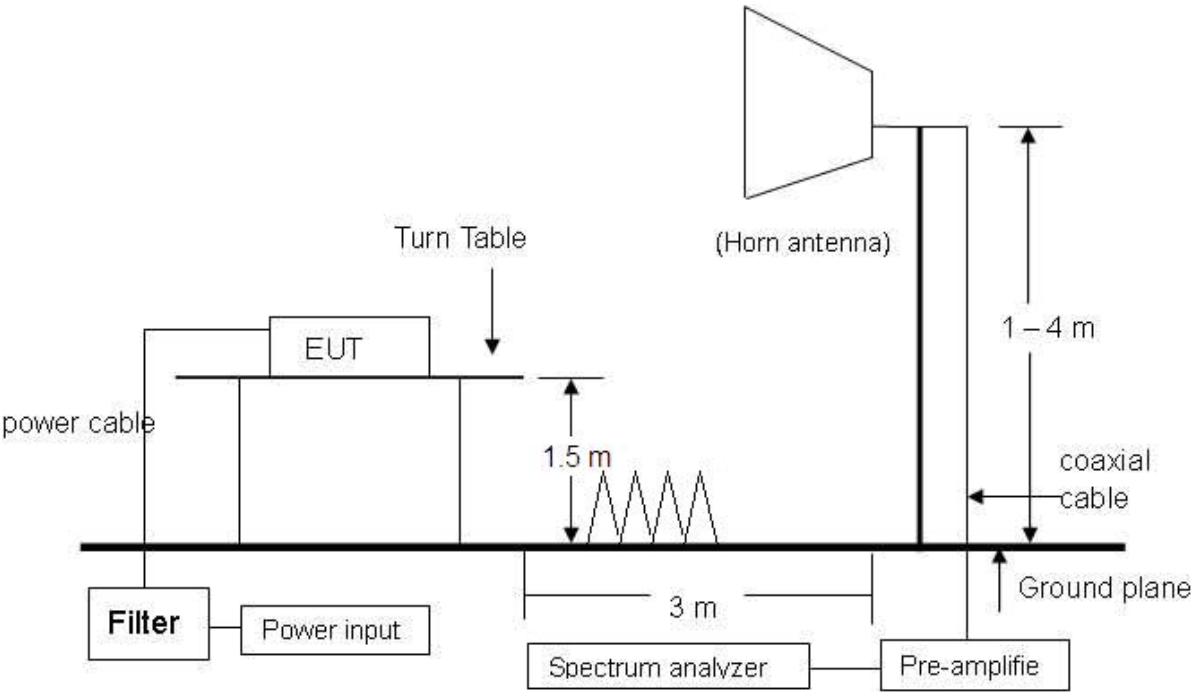
Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EXA Signal Analyzer	10Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC	■
Pre-Amplifier	1 GHz ~ 26.5 GHz	AGILENT	8449B / 3008A01995	MAR. 06, 2024 ETC	■
Horn Antenna	1 GHz ~ 18 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 CISPR 22:2003. When the frequency spectrum measured started from 30 MHz to 1 GHz, then use antenna is a BICONICAL ANTENNA & LOG PERIODIC 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 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

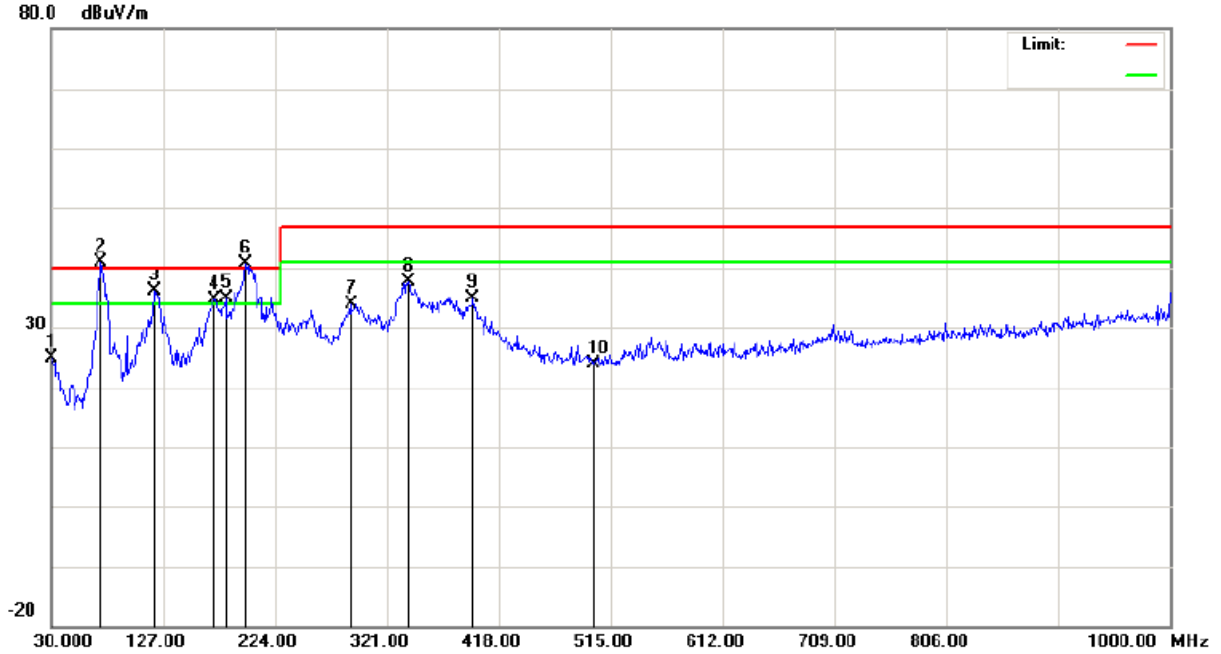
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Pre-Amp (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ (°)	EL (m)
73.78	2.28	8.70	28.16	51.36	34.19	40.0	-5.81	340	3.86
119.86	2.90	11.40	27.98	44.16	30.48	43.5	-13.02	334	3.72
171.48	3.27	12.50	27.72	42.76	30.81	43.5	-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

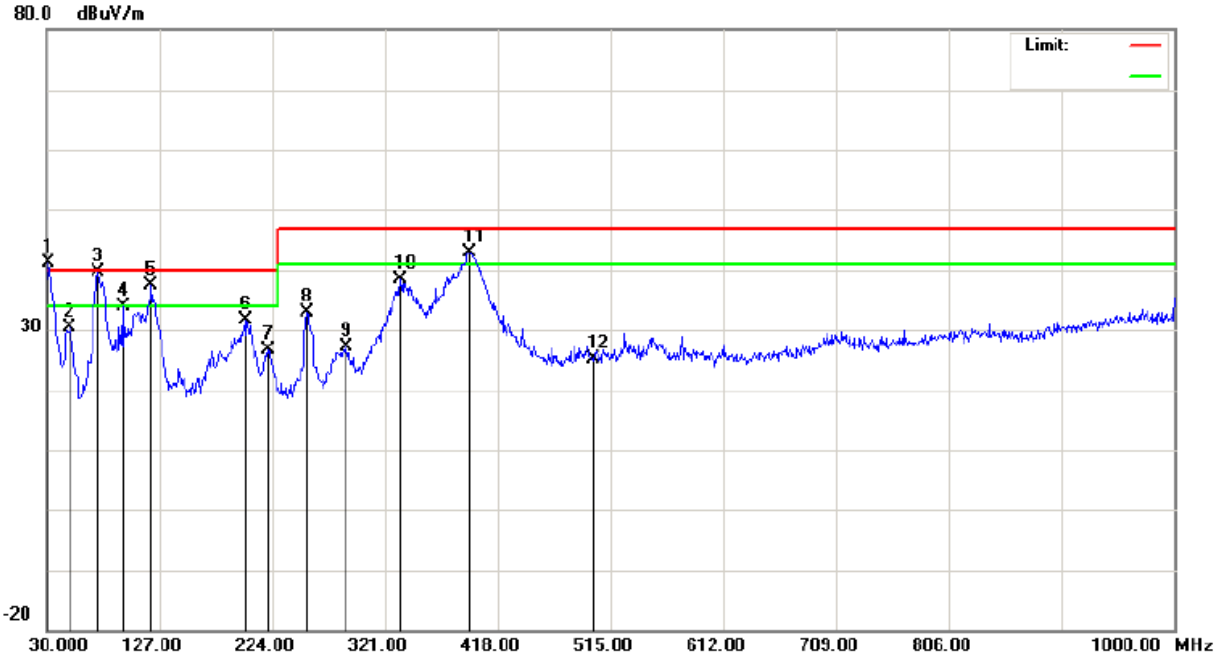
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Pre-Amp (dB)	Reading Data (dBμV)	Emission Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	AZ (°)	EL (m)
31.43	1.73	14.20	28.30	48.22	35.85	40.0	-4.15	302	1.00
75.06	2.32	8.60	28.15	51.36	34.13	40.0	-5.88	323	1.14
96.13	2.66	8.70	28.08	46.92	30.20	43.5	-13.30	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

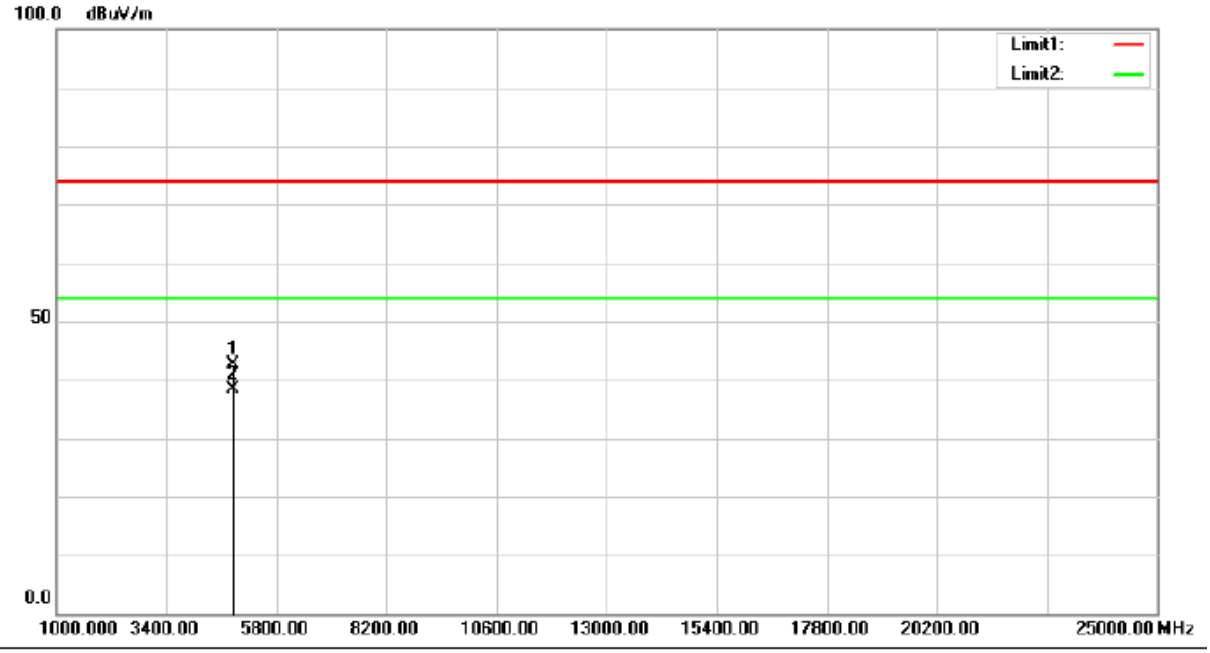


Antenna Polarization：Vertical



Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	1 ~ 25 GHz	Tested Mode:	802.11b CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

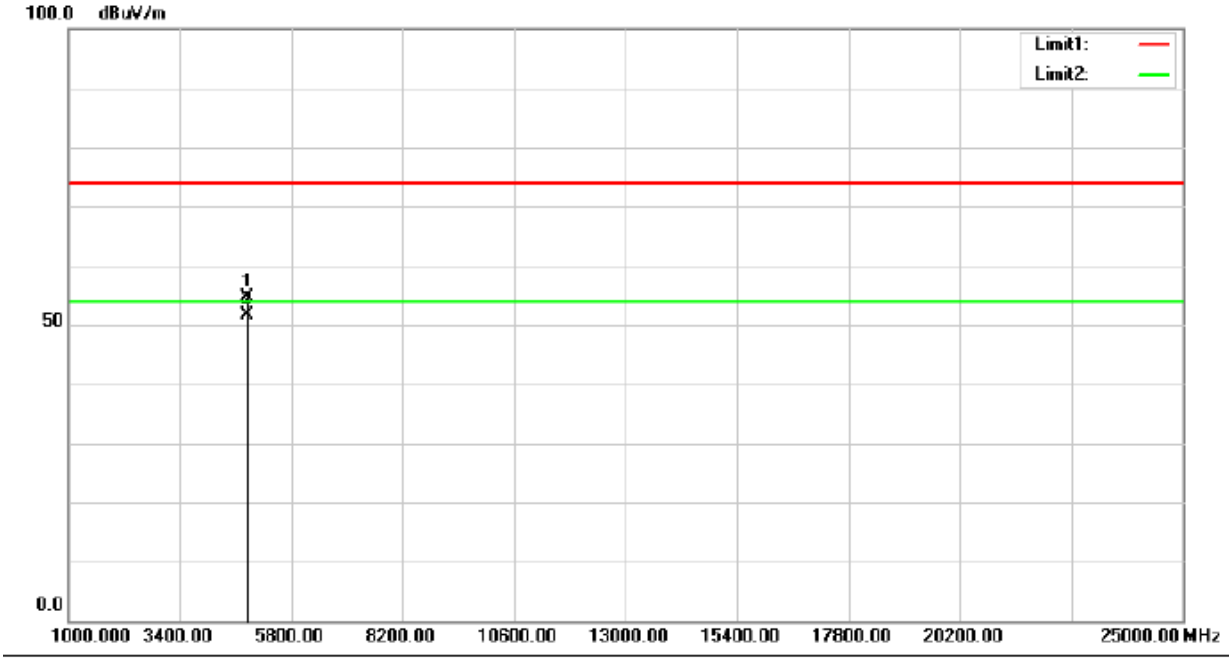


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4824.000	36.47	6.22	42.69	74.00	-31.31	peak	
*	2	4824.000	32.09	6.22	38.31	54.00	-15.69	AVG	

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:	802.11b CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

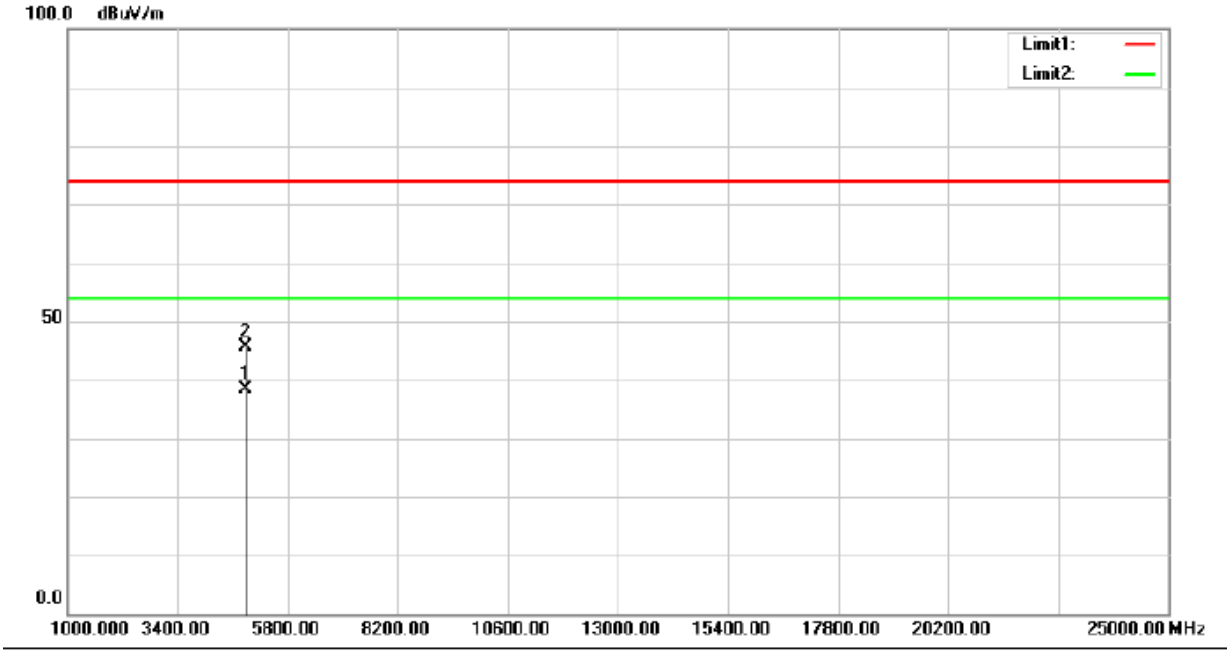


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4824.000	48.39	6.22	54.61	74.00	-19.39	peak	
*	2	4824.020	45.43	6.22	51.65	54.00	-2.35	AVG	

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:	802.11b CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

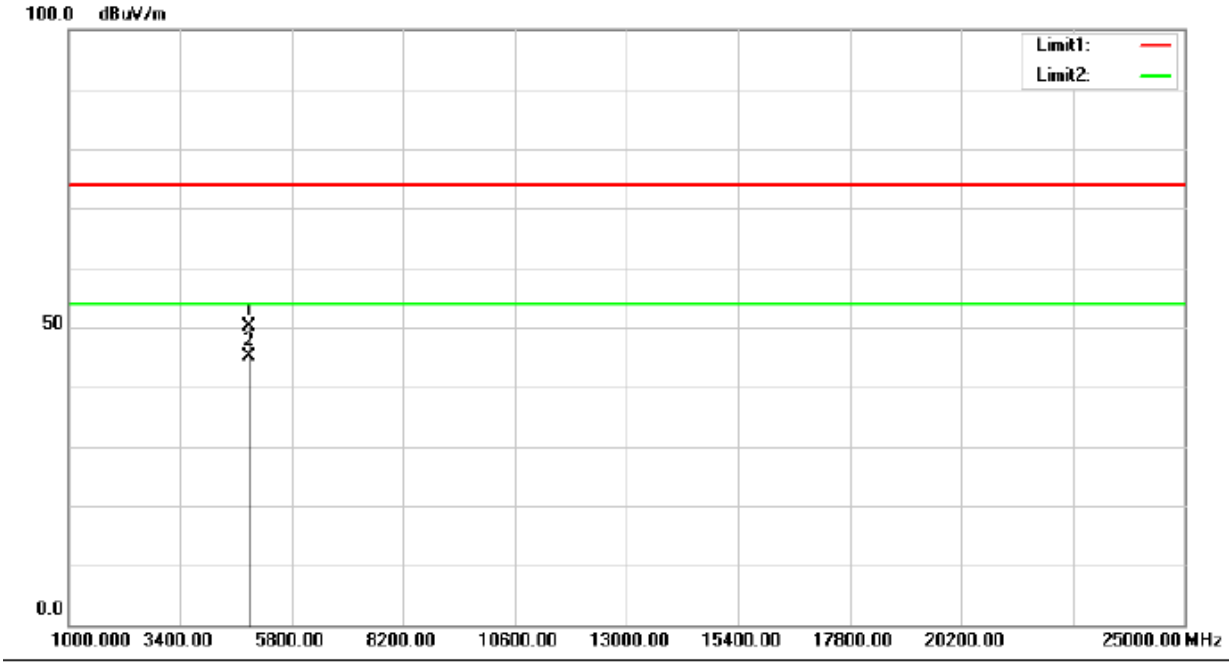


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4872.170	31.95	6.49	38.44	54.00	-15.56	AVG	
	2	4874.760	39.08	6.51	45.59	74.00	-28.41	peak	

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:	802.11b CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

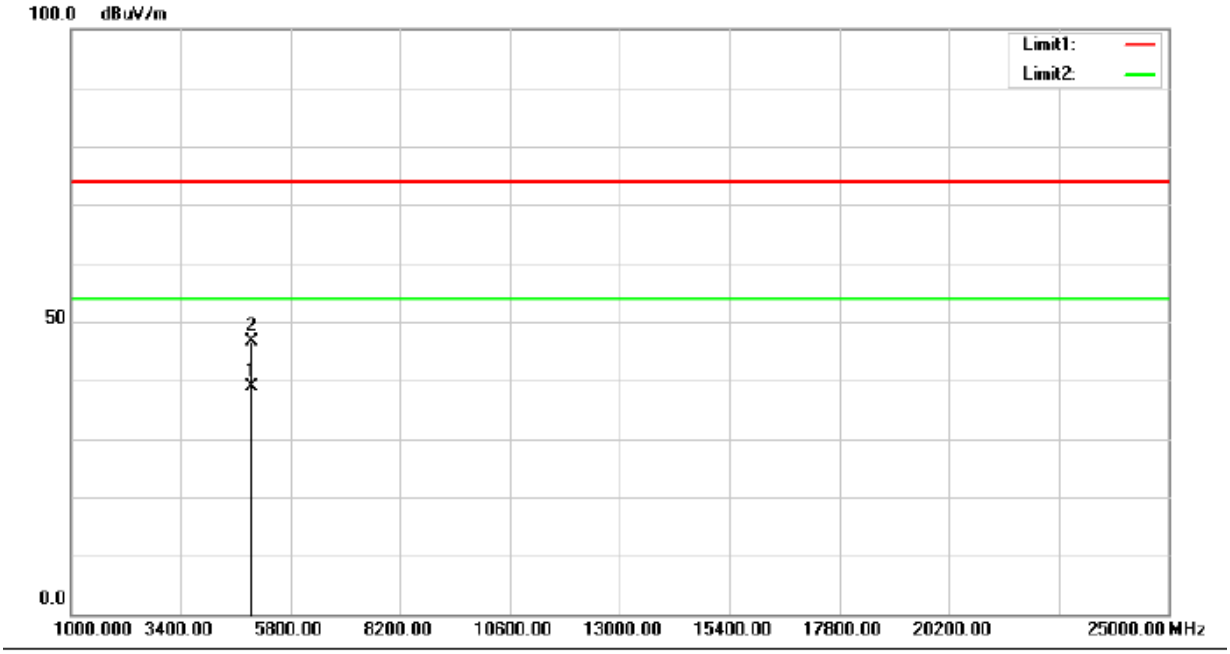


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4873.810	43.70	6.51	50.21	74.00	-23.79	peak	
*	2	4873.940	38.55	6.51	45.06	54.00	-8.94	AVG	

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:	802.11b CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

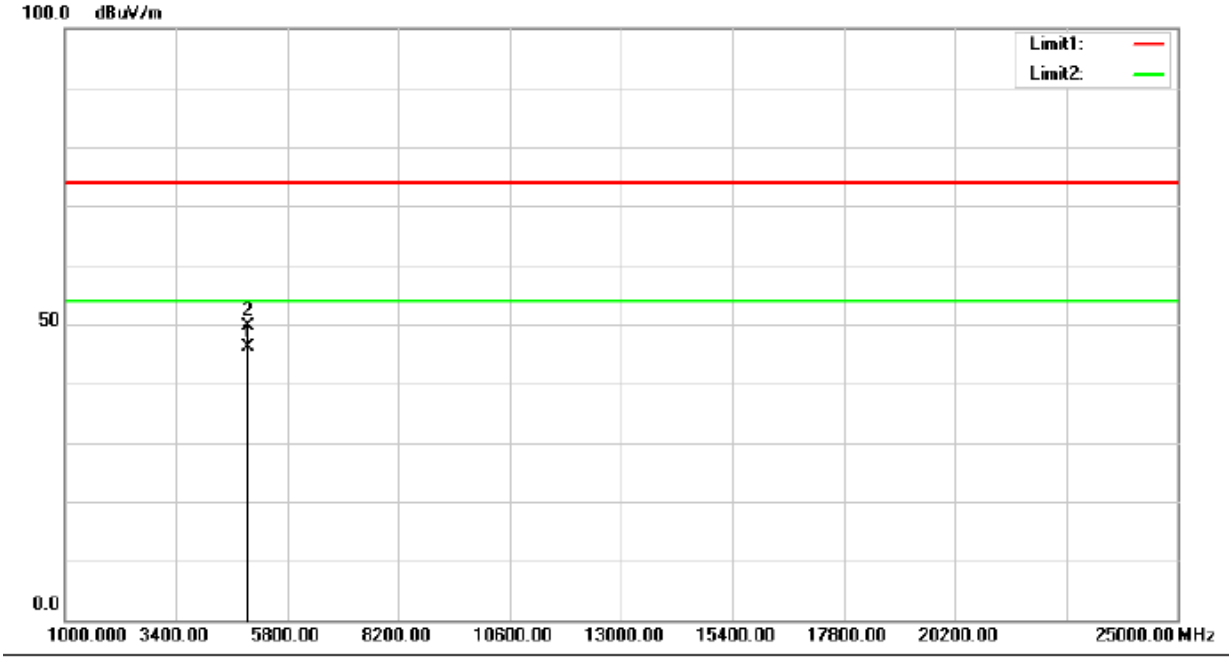


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4925.890	32.16	6.69	38.85	54.00	-15.15	AVG	
	2	4928.580	39.97	6.71	46.68	74.00	-27.32	peak	

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:	802.11b CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

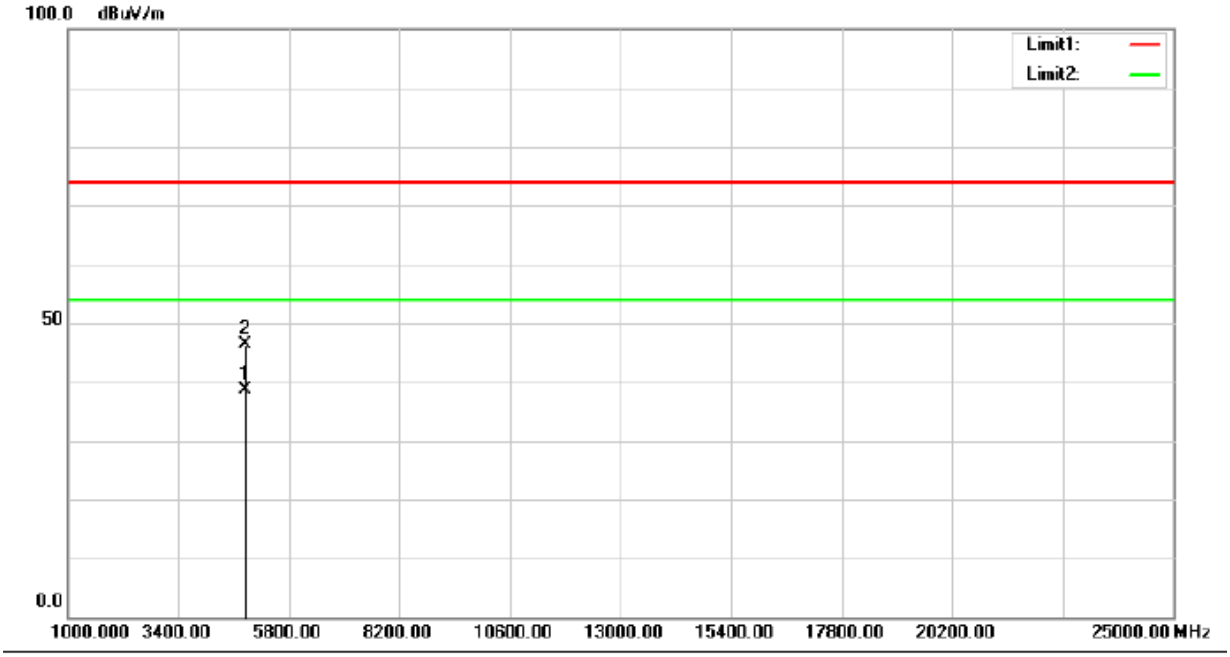


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4923.925	39.33	6.69	46.02	54.00	-7.98	AVG	
	2	4923.995	43.04	6.69	49.73	74.00	-24.27	peak	

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:	802.11g CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

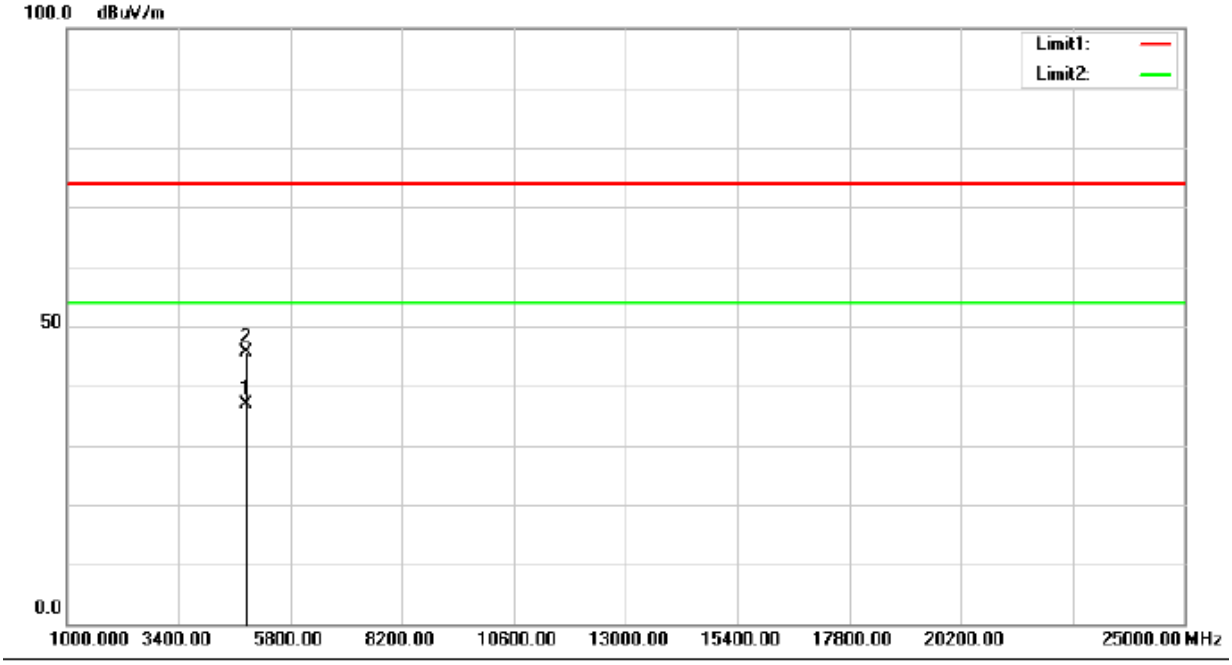


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4823.730	32.42	6.22	38.64	54.00	-15.36	AVG	
	2	4828.970	40.12	6.26	46.38	74.00	-27.62	peak	

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:	802.11g CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

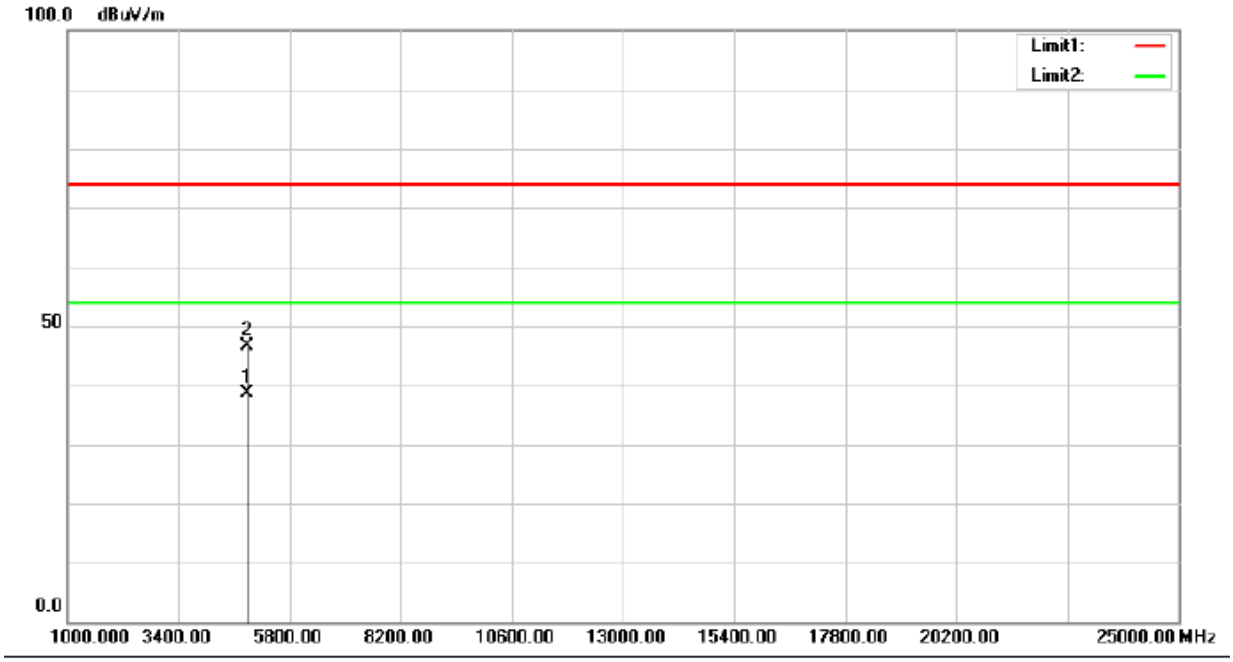


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4823.770	30.74	6.22	36.96	54.00	-17.04	AVG	
	2	4824.455	39.45	6.23	45.68	74.00	-28.32	peak	

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:	802.11g CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

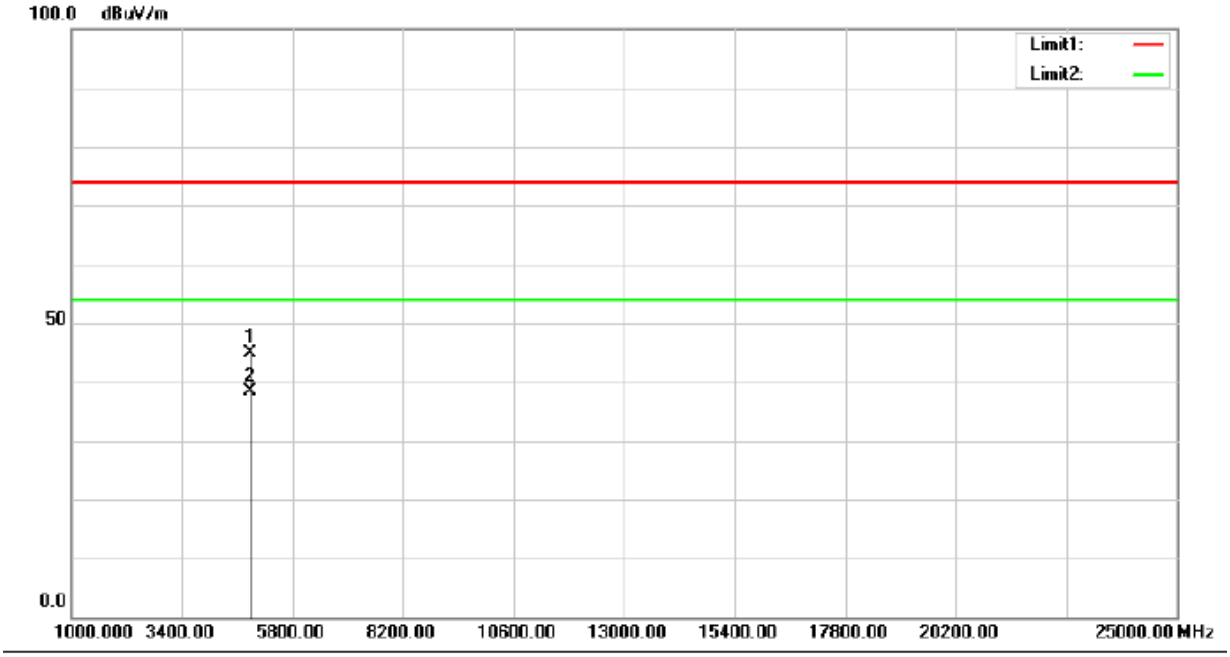


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4871.200	32.03	6.49	38.52	54.00	-15.48	AVG	
	2	4872.550	40.21	6.50	46.71	74.00	-27.29	peak	

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:	802.11g CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

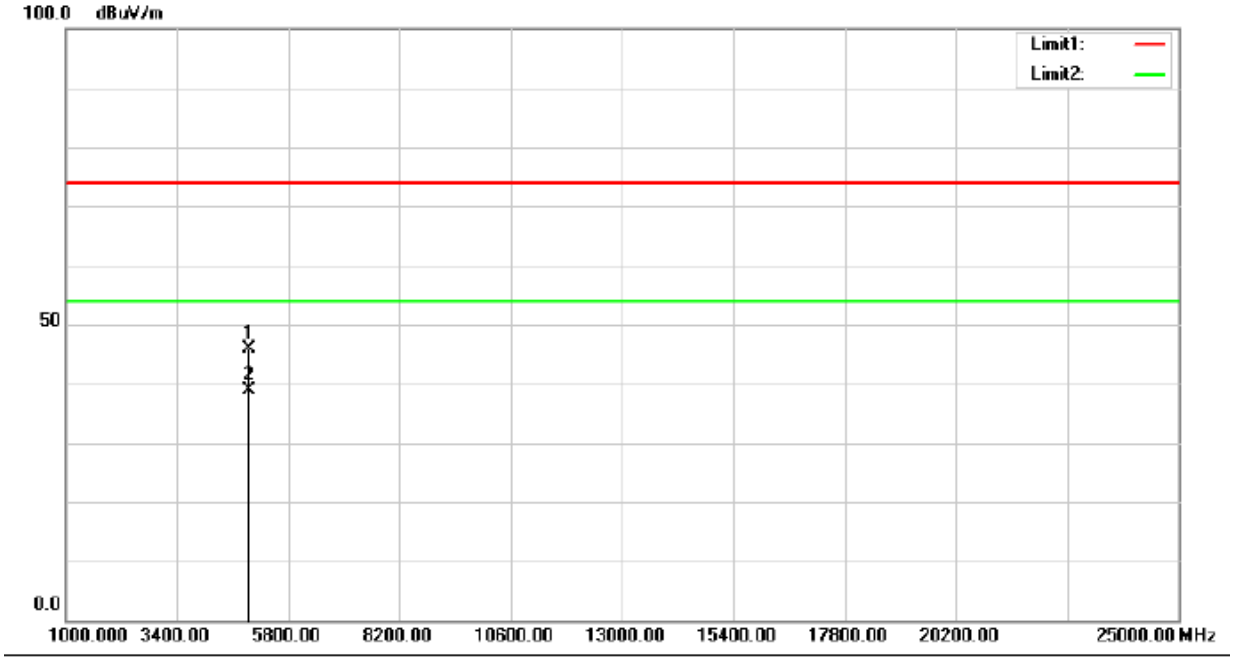


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4874.880	38.41	6.51	44.92	74.00	-29.08	peak	
*	2	4875.905	31.85	6.52	38.37	54.00	-15.63	AVG	

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:	802.11g CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

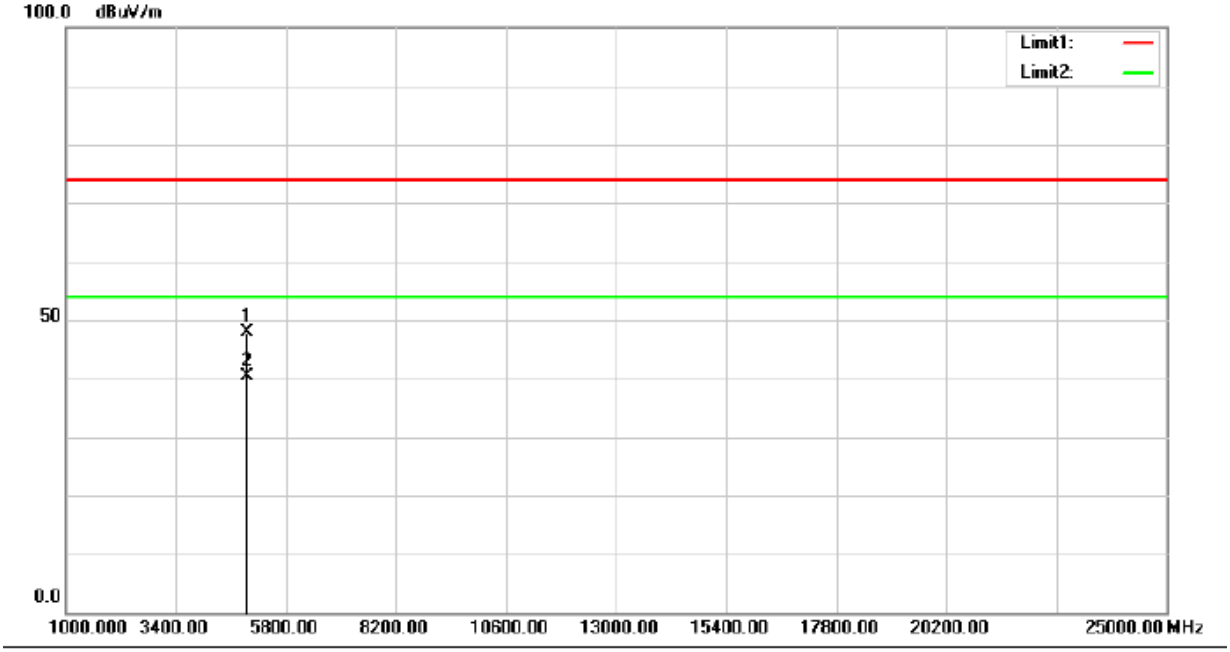


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4923.690	39.24	6.69	45.93	74.00	-28.07	peak	
*	2	4928.840	32.22	6.71	38.93	54.00	-15.07	AVG	

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:	802.11g CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

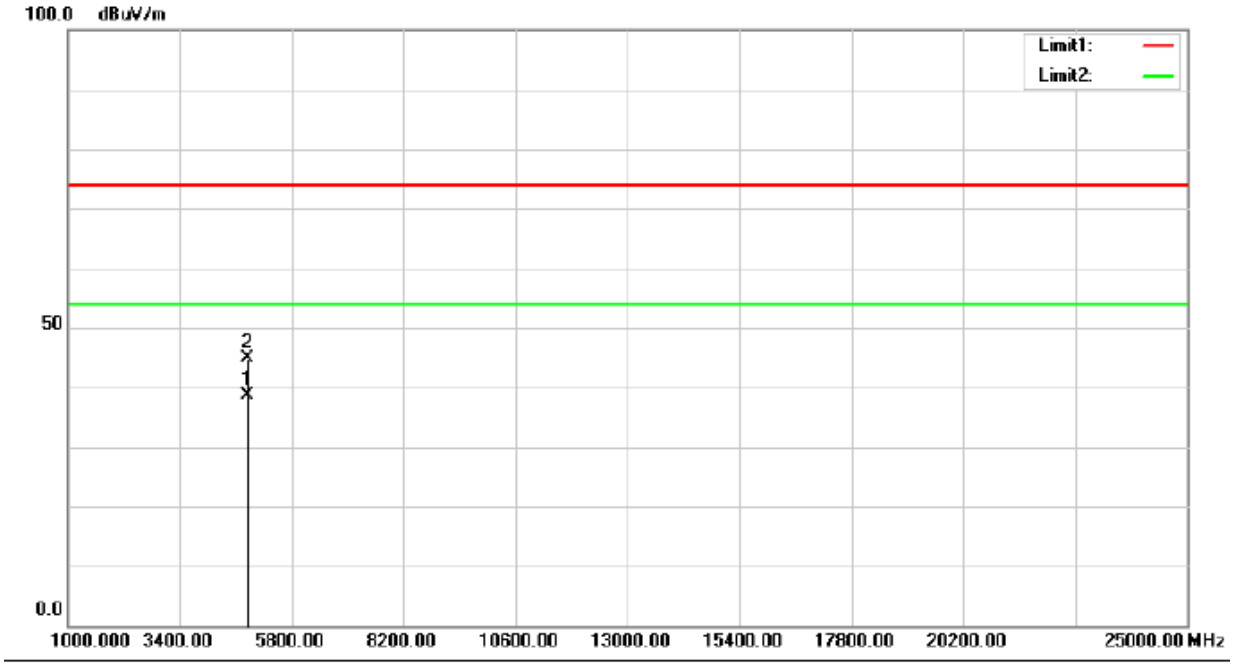


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4922.865	41.22	6.69	47.91	74.00	-26.09	peak	
*	2	4924.145	33.73	6.69	40.42	54.00	-13.58	AVG	

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:	802.11n – HT20 CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

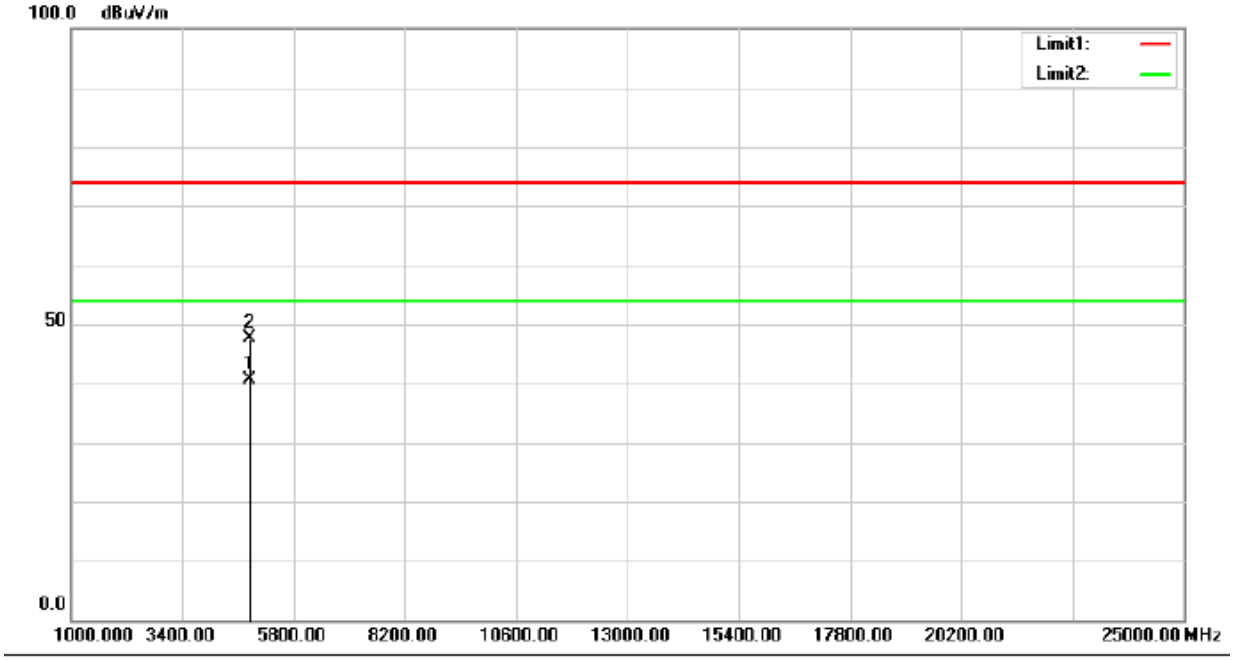


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4823.930	32.41	6.22	38.63	54.00	-15.37	AVG	
	2	4824.980	38.60	6.23	44.83	74.00	-29.17	peak	

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:	802.11n – HT20 CH01
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

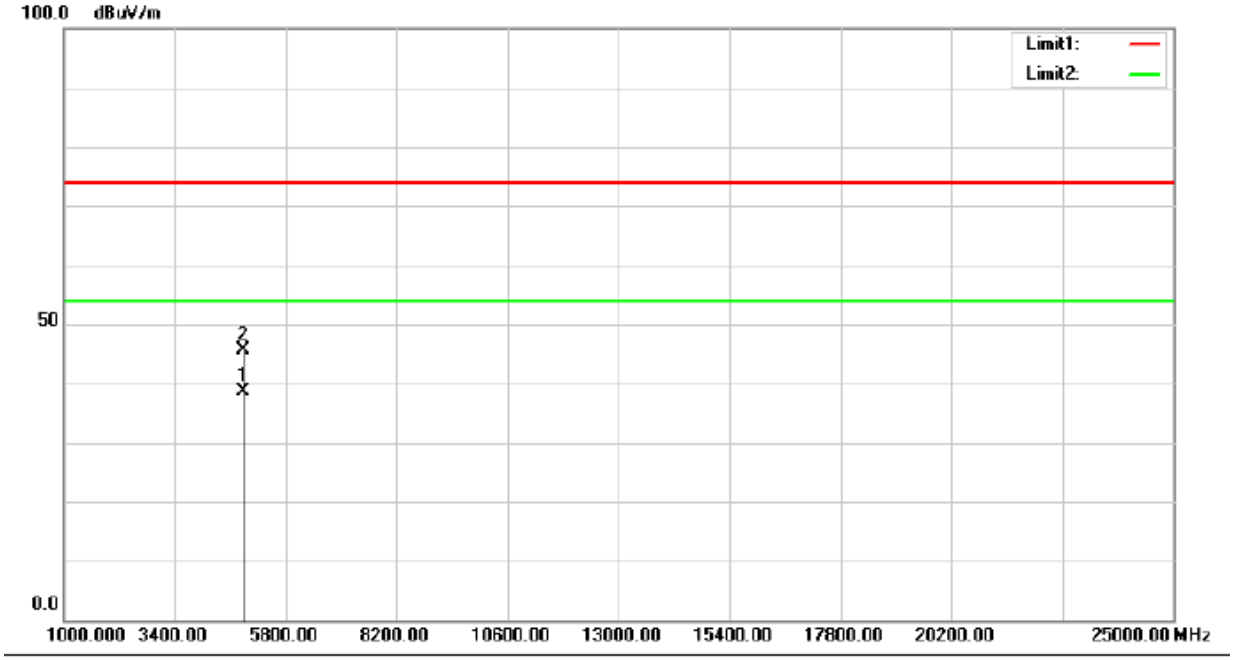


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4822.620	34.43	6.22	40.65	54.00	-13.35	AVG	
	2	4825.180	41.30	6.23	47.53	74.00	-26.47	peak	

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:	802.11n – HT20 CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

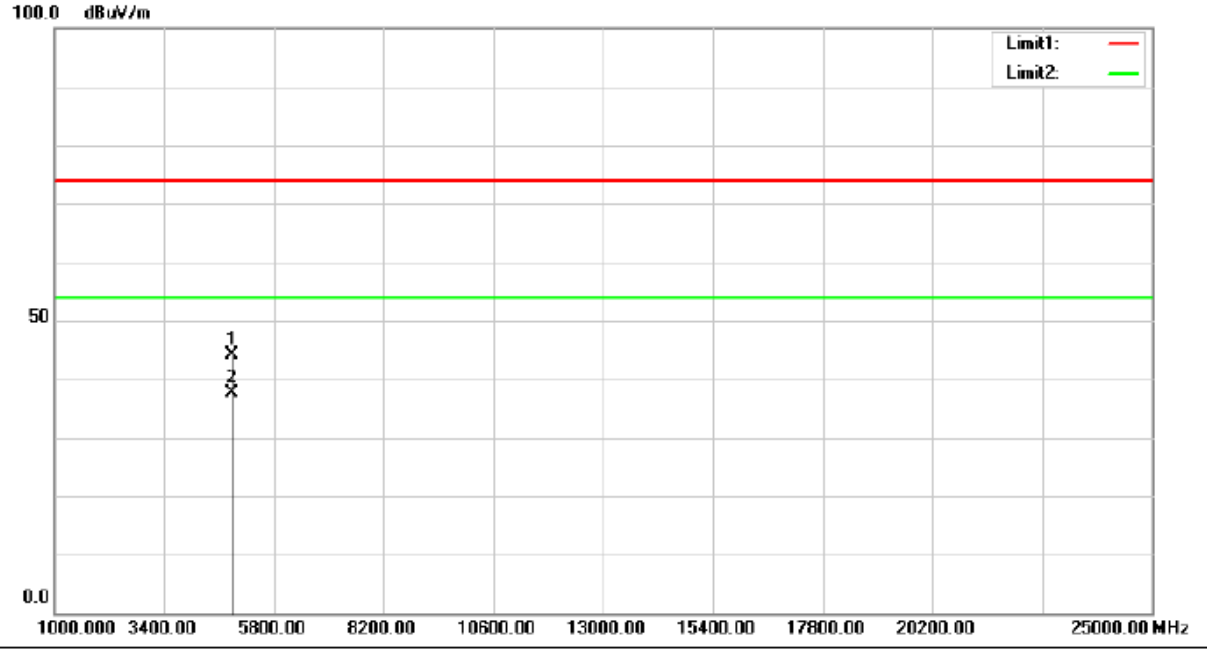


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4872.630	32.01	6.50	38.51	54.00	-15.49	AVG	
	2	4877.420	39.10	6.52	45.62	74.00	-28.38	peak	

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:	802.11n – HT20 CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

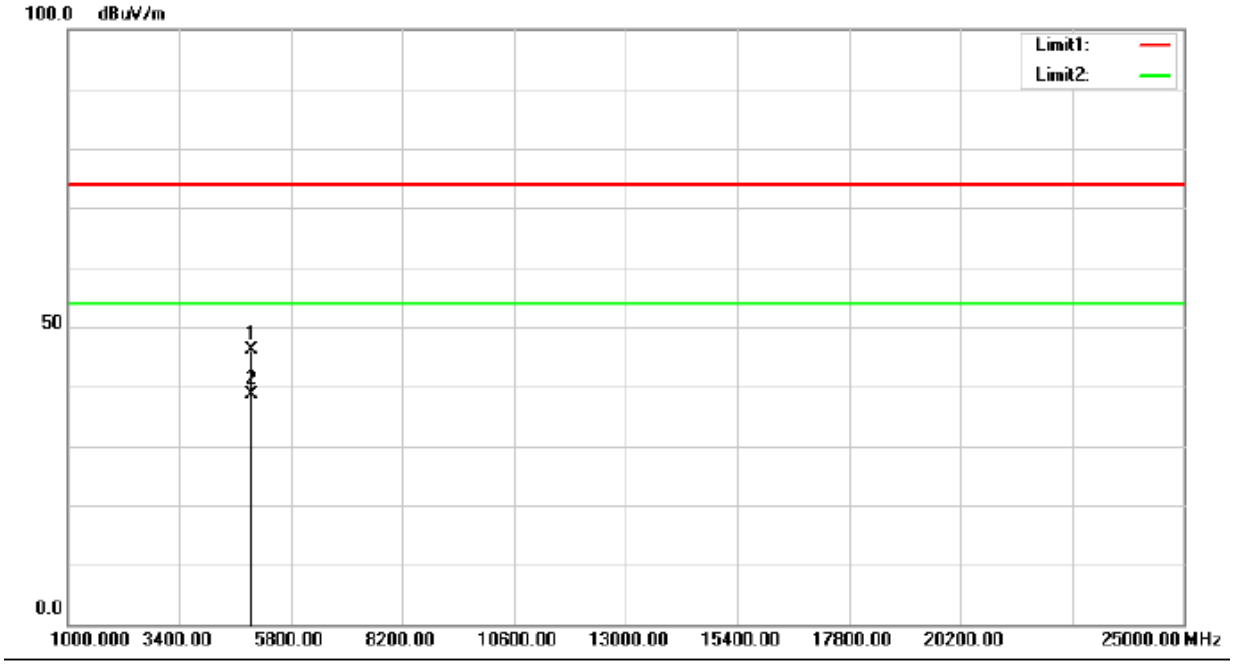


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4874.205	37.52	6.51	44.03	74.00	-29.97	peak	
*	2	4874.705	31.17	6.51	37.68	54.00	-16.32	AVG	

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:	802.11n – HT20 CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

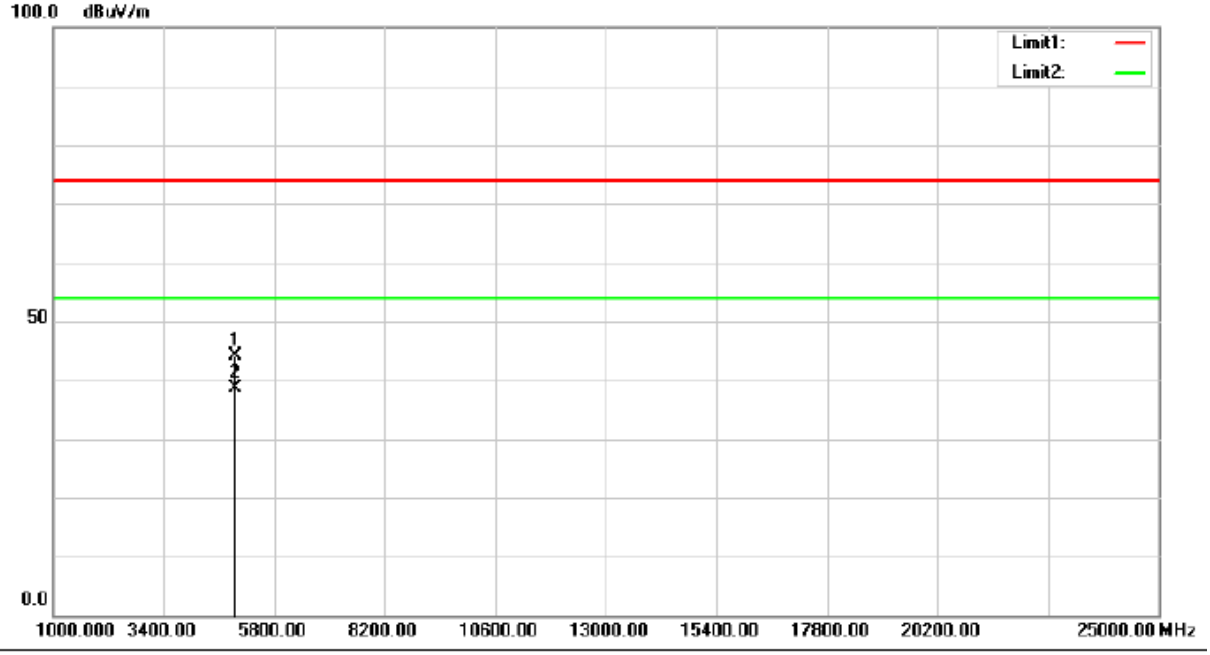


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4924.480	39.45	6.69	46.14	74.00	-27.86	peak	
*	2	4928.100	32.02	6.71	38.73	54.00	-15.27	AVG	

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:	802.11n – HT20 CH11
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

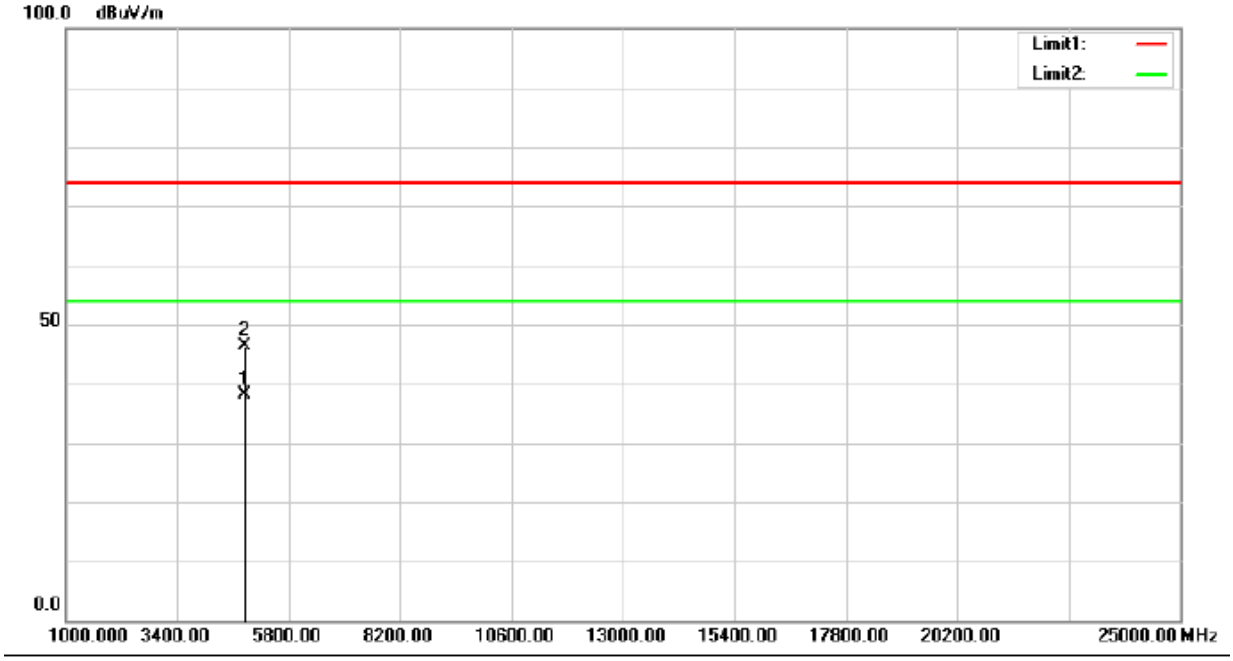


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4921.810	37.48	6.68	44.16	74.00	-29.84	peak	
*	2	4925.730	31.93	6.69	38.62	54.00	-15.38	AVG	

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:	802.11n – HT40 CH03
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	*	4841.595	32.60	6.35	38.95	54.00	-15.05	AVG	
2		4843.020	41.02	6.37	47.39	74.00	-26.61	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:	802.11n – HT40 CH03
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

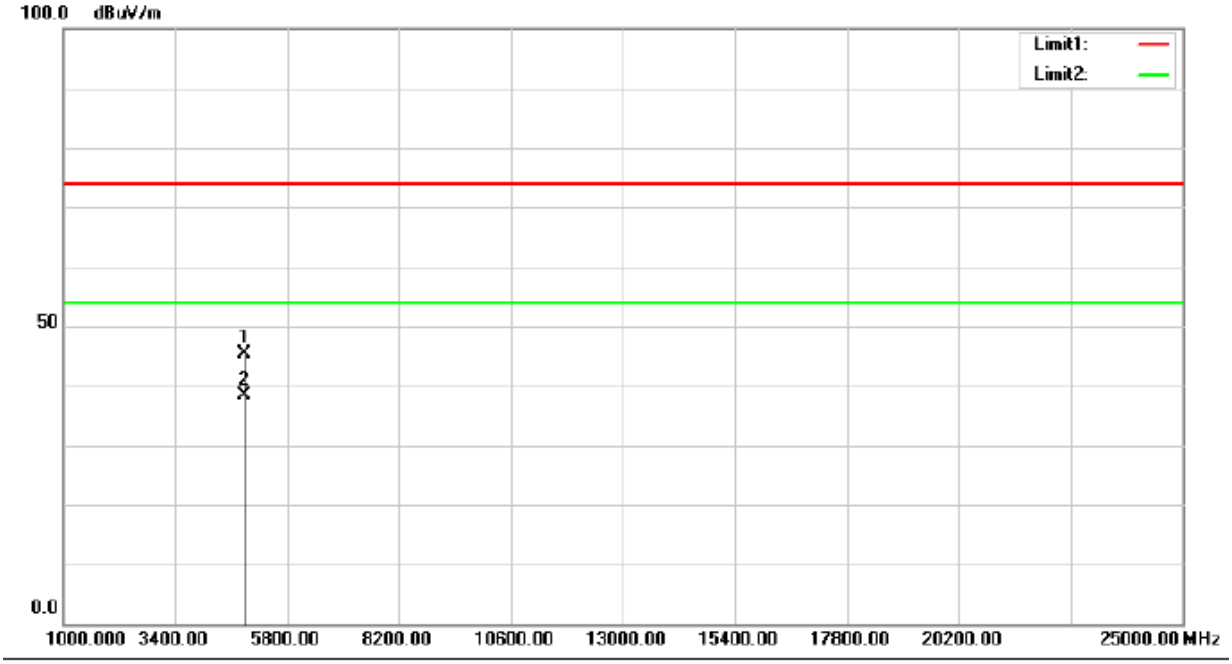
Antenna Polarization：Vertical

Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4841.910	31.36	6.35	37.71	54.00	-16.29	AVG	
	2	4844.250	38.18	6.38	44.56	74.00	-29.44	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:	802.11n – HT40 CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

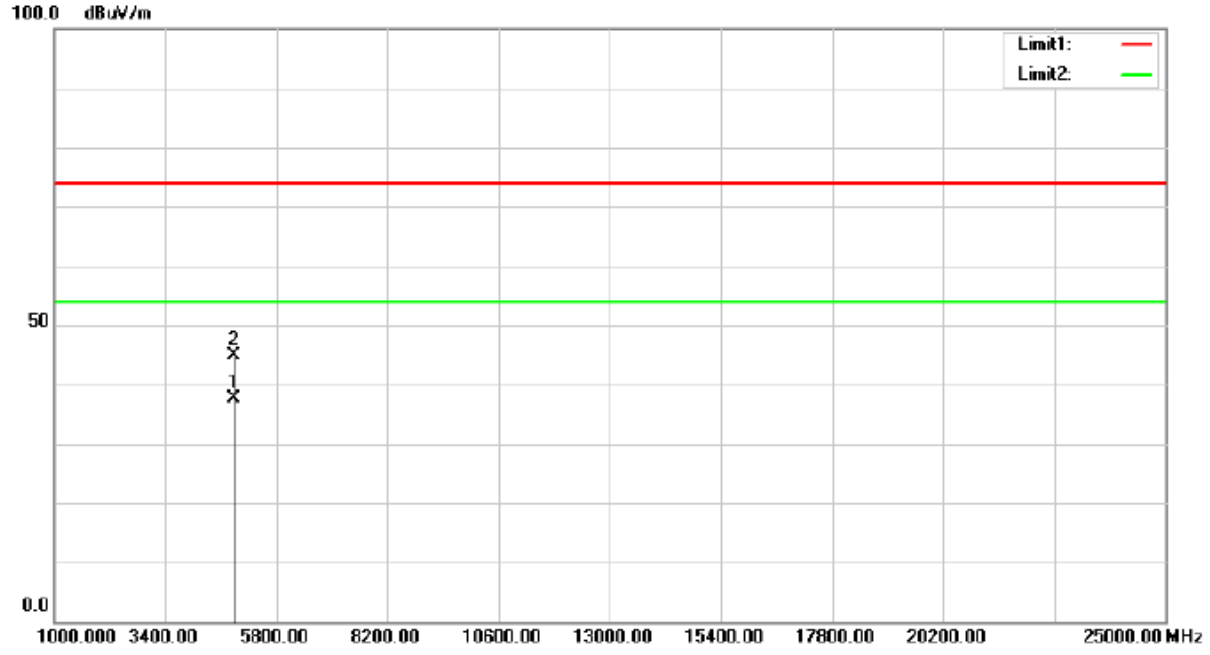


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4870.330	38.90	6.49	45.39	74.00	-28.61	peak	
*	2	4872.290	31.99	6.49	38.48	54.00	-15.52	AVG	

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:	802.11n – HT40 CH06
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Vertical

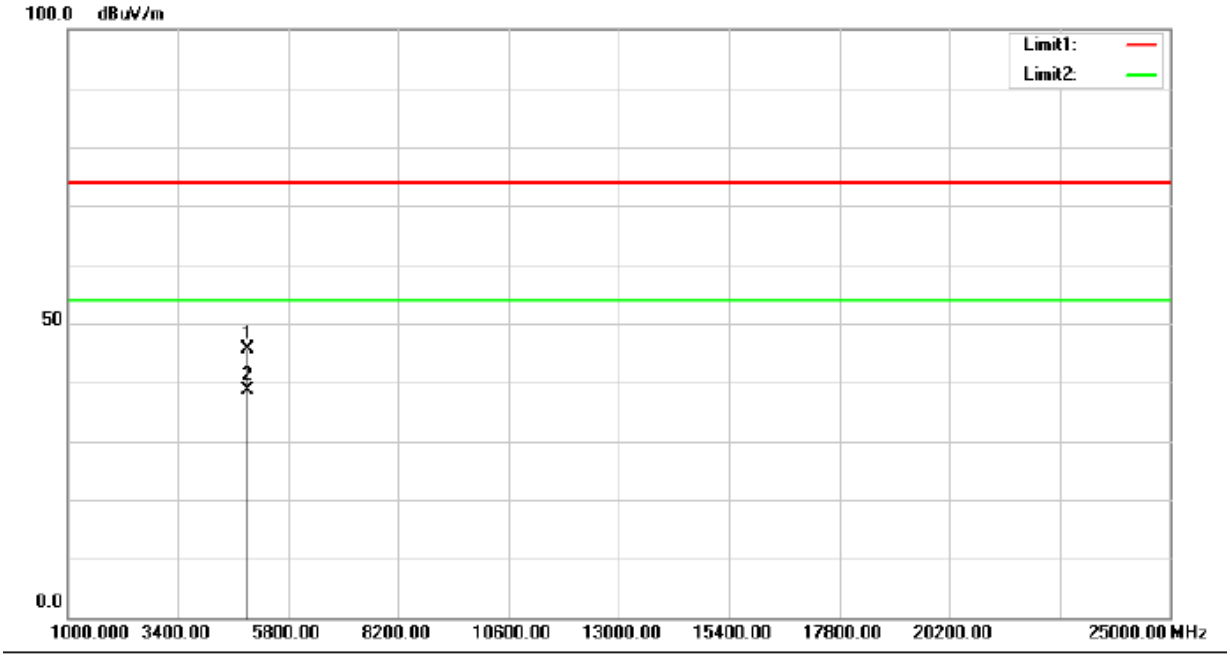


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	4873.130	31.17	6.51	37.68	54.00	-16.32	AVG	
	2	4875.255	38.28	6.52	44.80	74.00	-29.20	peak	

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:	802.11n – HT40 CH09
Detector Type:	PK. And AV.	IF Bandwidth:	1 MHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 07, 2023

Antenna Polarization：Horizontal

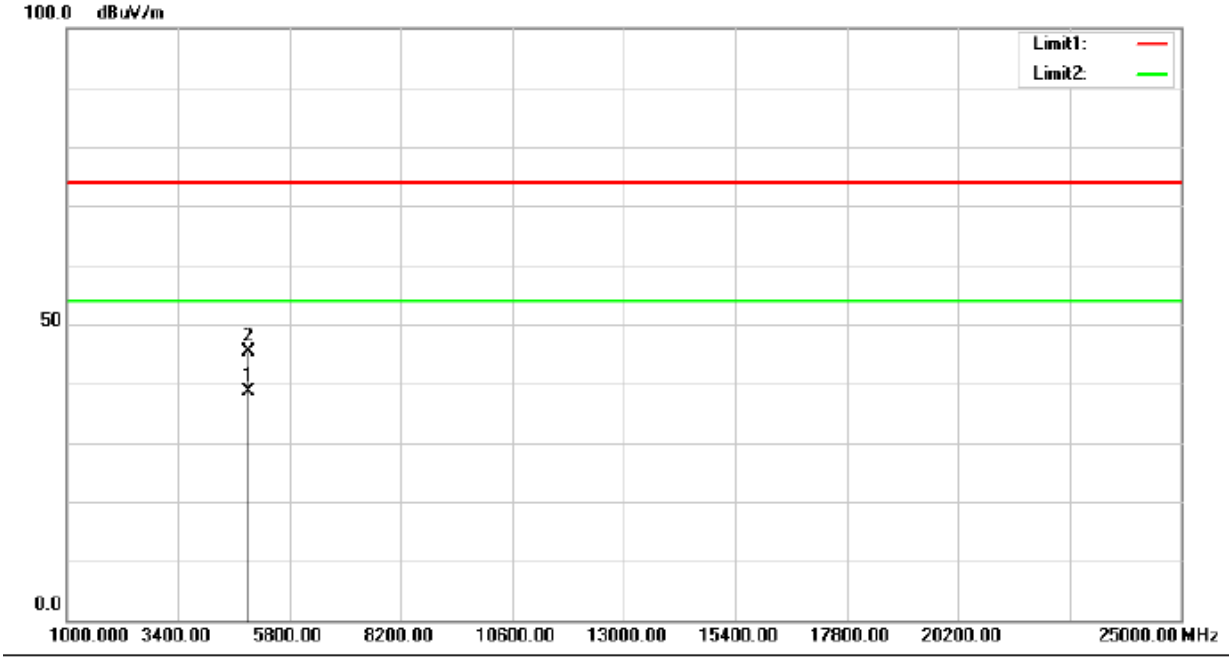


Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	4903.670	39.11	6.62	45.73	74.00	-28.27	peak	
*	2	4903.910	32.07	6.63	38.70	54.00	-15.30	AVG	

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:	802.11n – HT40 CH09
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	4905.380	32.10	6.63	38.73	54.00	-15.27	AVG	
	2	4906.495	38.75	6.63	45.38	74.00	-28.62	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.

6 BANDWIDTH TEST

6.1 LIMIT

FCC Part15, Subpart C Section 15.247 (a)(2). The minimum 6dB bandwidth shall be at least 500 kHz.

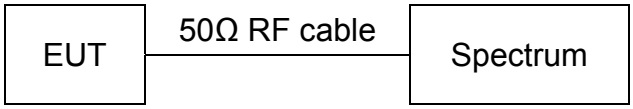
6.2 TEST EQUIPMENT

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 operated in continuous transmission mode or any specific channel.

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

6.5 EUT OPERATING CONDITION

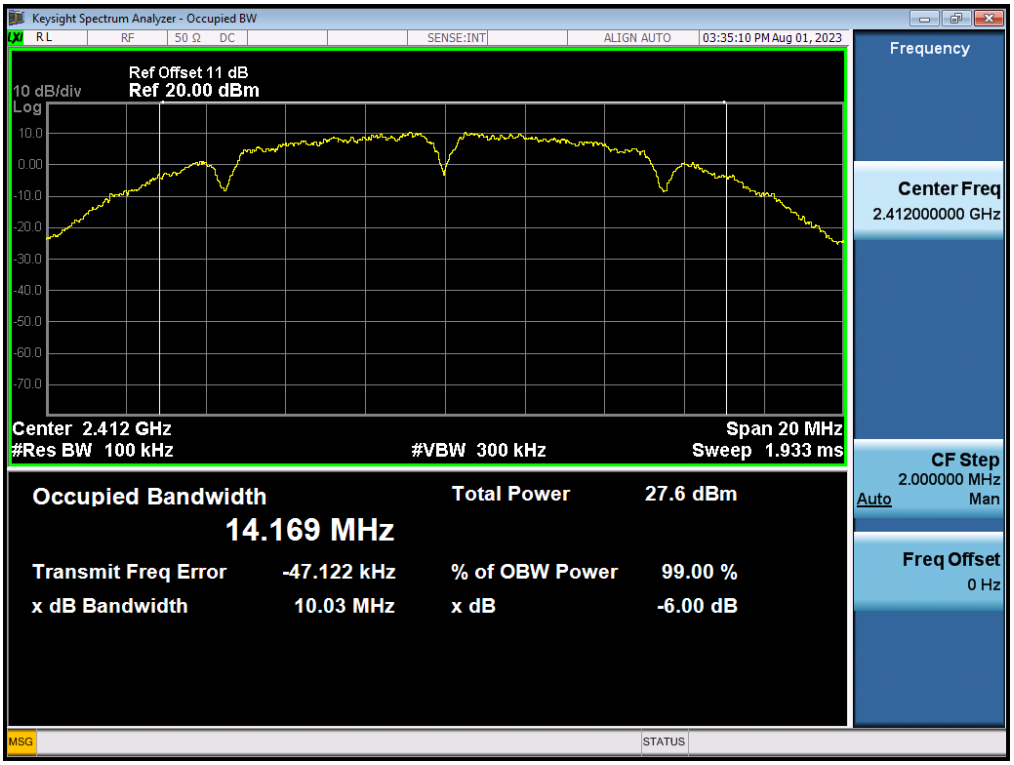
1. Set the EUT under continuous transmission condition.
2. The EUT was set to the highest available power level.

6.6 TEST RESULT

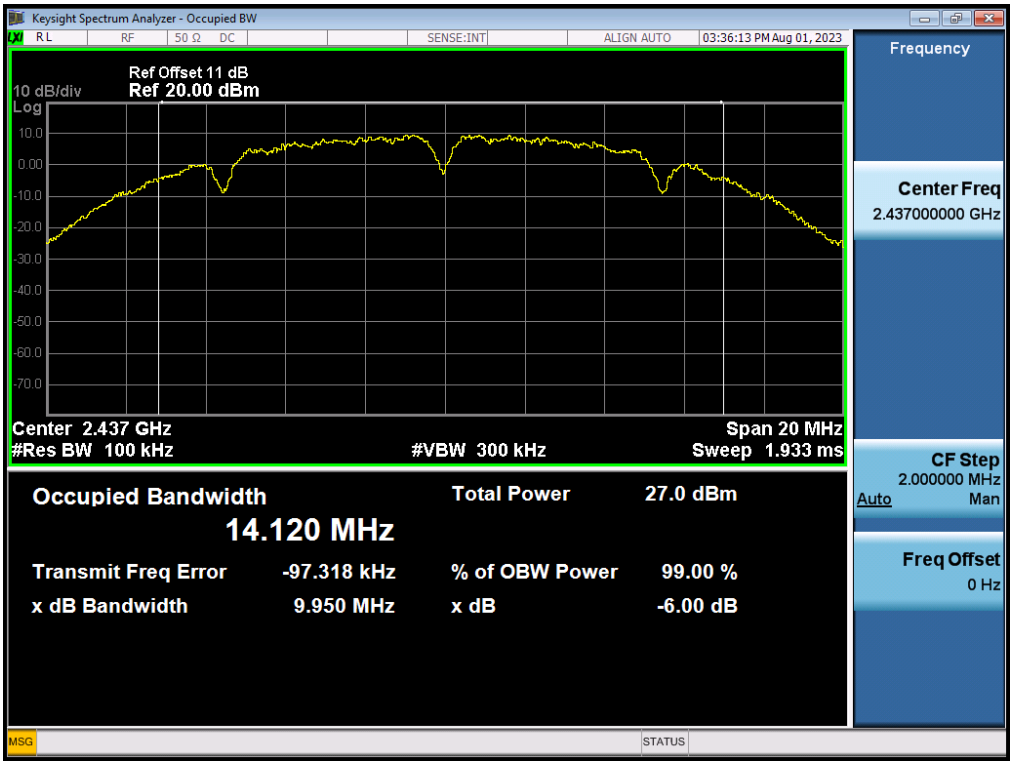
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11b
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	10.030	0.5
CH06	2437	9.950	0.5
CH11	2462	9.927	0.5

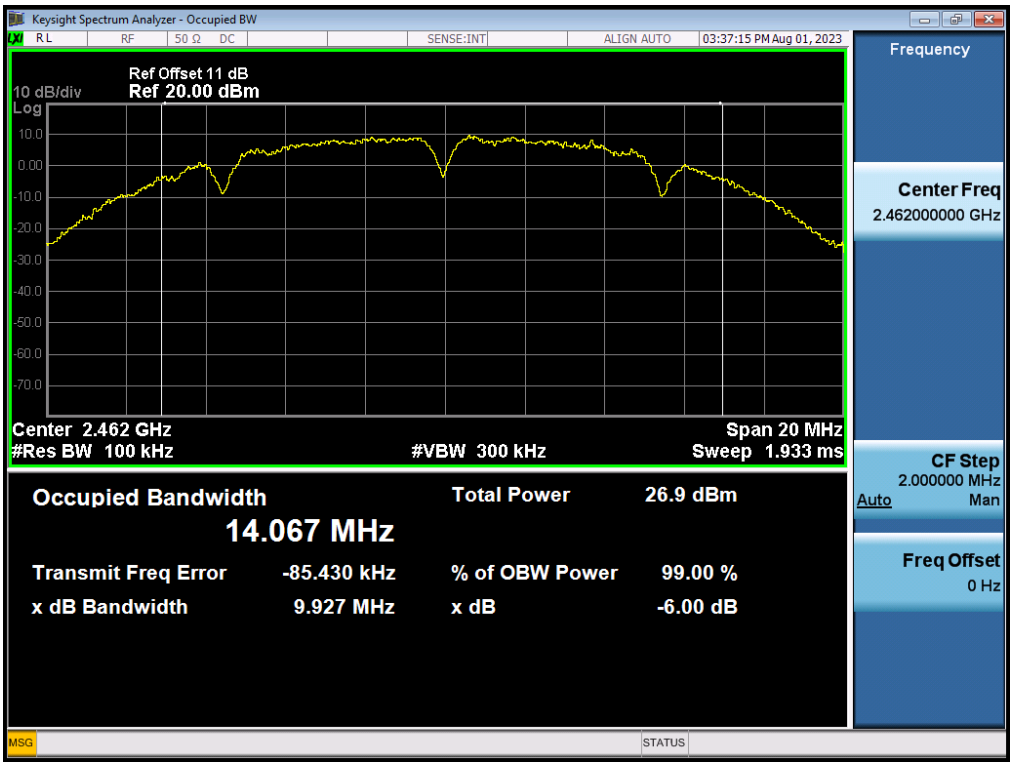
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:36:13 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
14.120 MHz
Total Power 27.0 dBm
Transmit Freq Error -97.318 kHz
% of OBW Power 99.00 %
x dB Bandwidth 9.950 MHz
x dB -6.00 dB
Center Freq
2.437000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

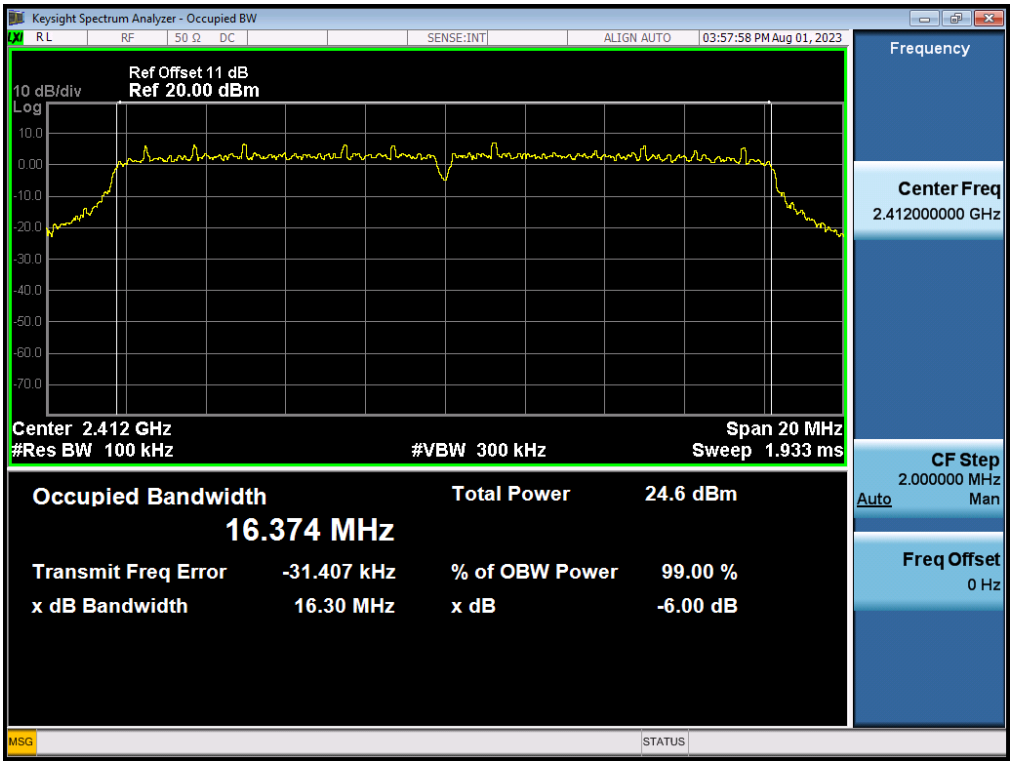
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:37:15 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
14.067 MHz
Total Power 26.9 dBm
Transmit Freq Error -85.430 kHz
% of OBW Power 99.00 %
x dB Bandwidth 9.927 MHz
x dB -6.00 dB
Center Freq
2.462000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

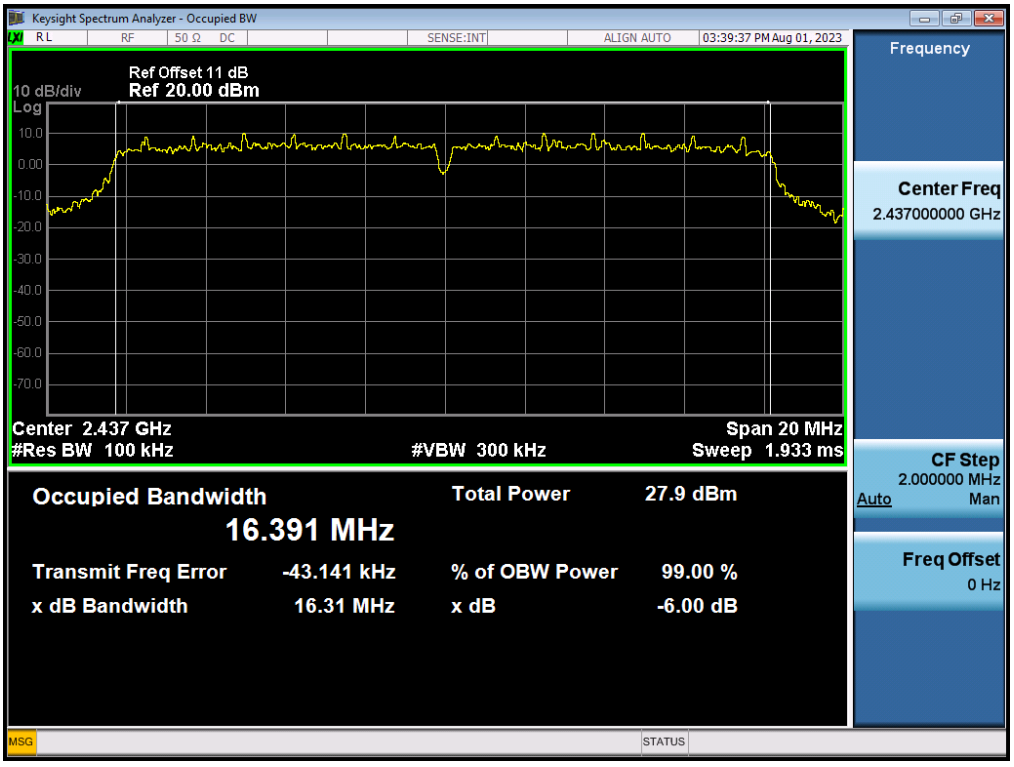
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11g
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	16.300	0.5
CH06	2437	16.310	0.5
CH11	2462	16.050	0.5

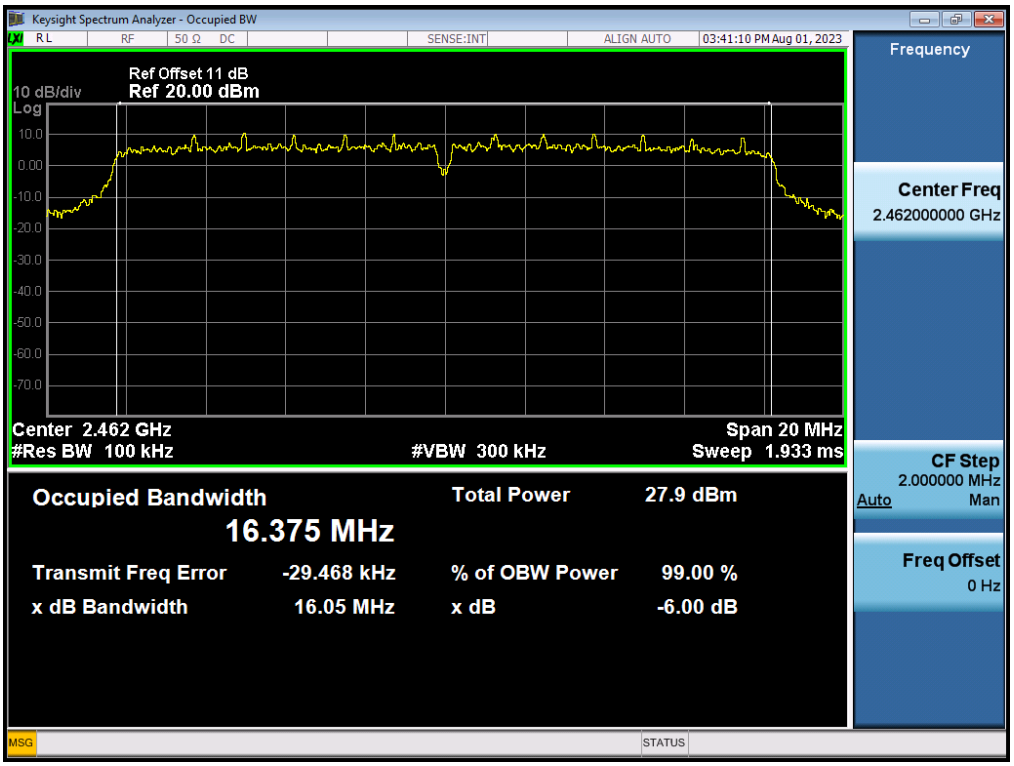
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:39:37 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
16.391 MHz
Total Power 27.9 dBm
Transmit Freq Error -43.141 kHz
% of OBW Power 99.00 %
x dB Bandwidth 16.31 MHz
x dB -6.00 dB
Center Freq
2.437000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

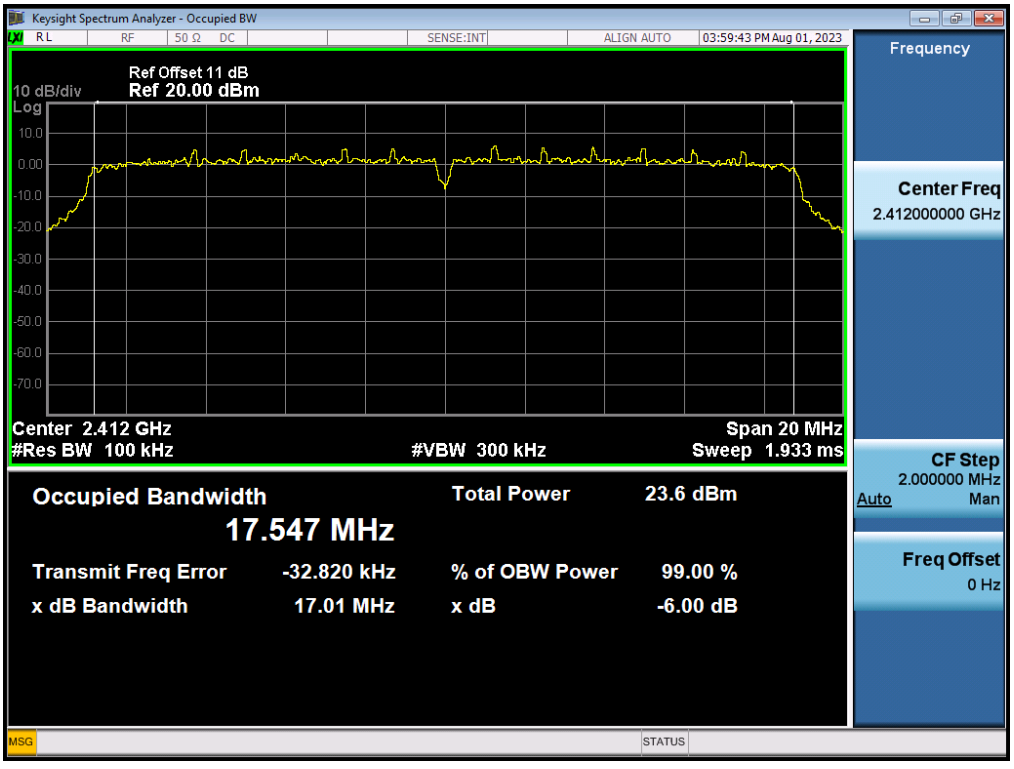
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:41:10 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
16.375 MHz
Total Power 27.9 dBm
Transmit Freq Error -29.468 kHz
% of OBW Power 99.00 %
x dB Bandwidth 16.05 MHz
x dB -6.00 dB
Center Freq
2.462000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

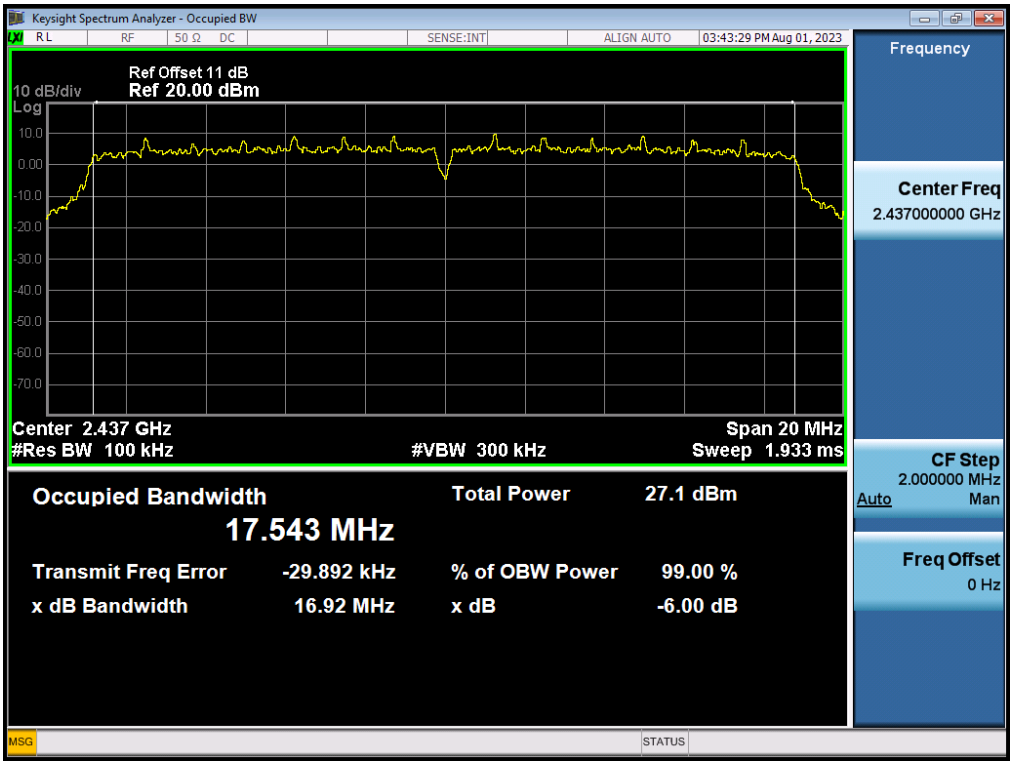
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11n – HT20
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	17.010	0.5
CH06	2437	16.920	0.5
CH11	2462	16.500	0.5

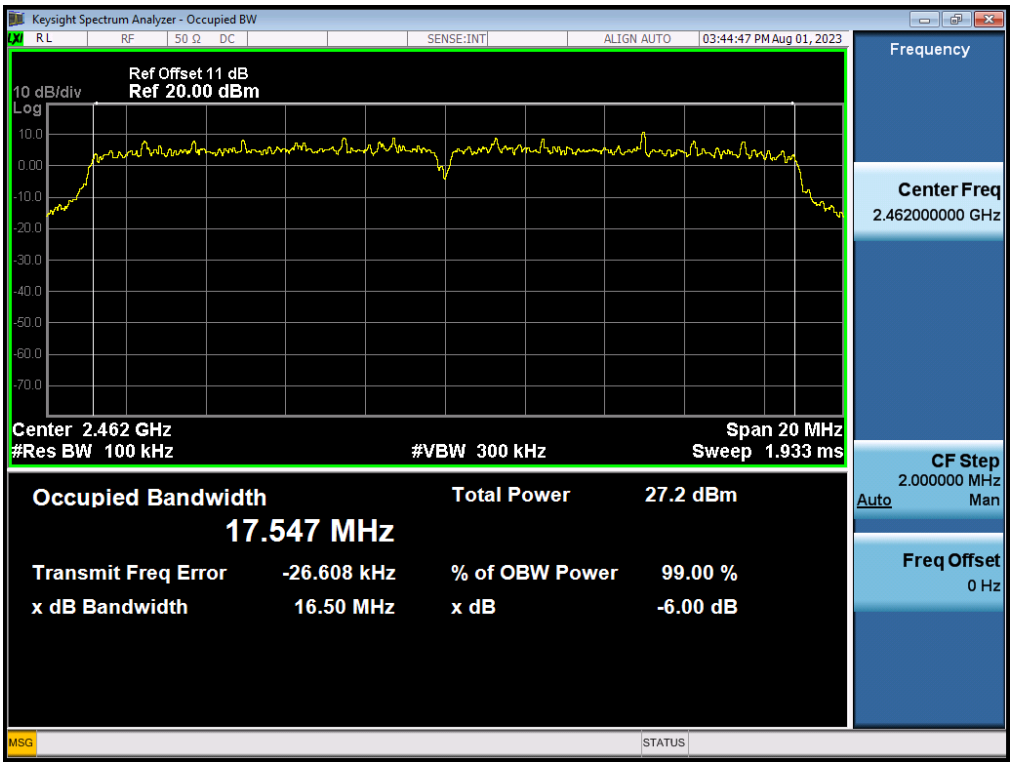
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:43:29 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
17.543 MHz
Total Power 27.1 dBm
Transmit Freq Error -29.892 kHz
% of OBW Power 99.00 %
x dB Bandwidth 16.92 MHz
x dB -6.00 dB
Center Freq
2.437000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

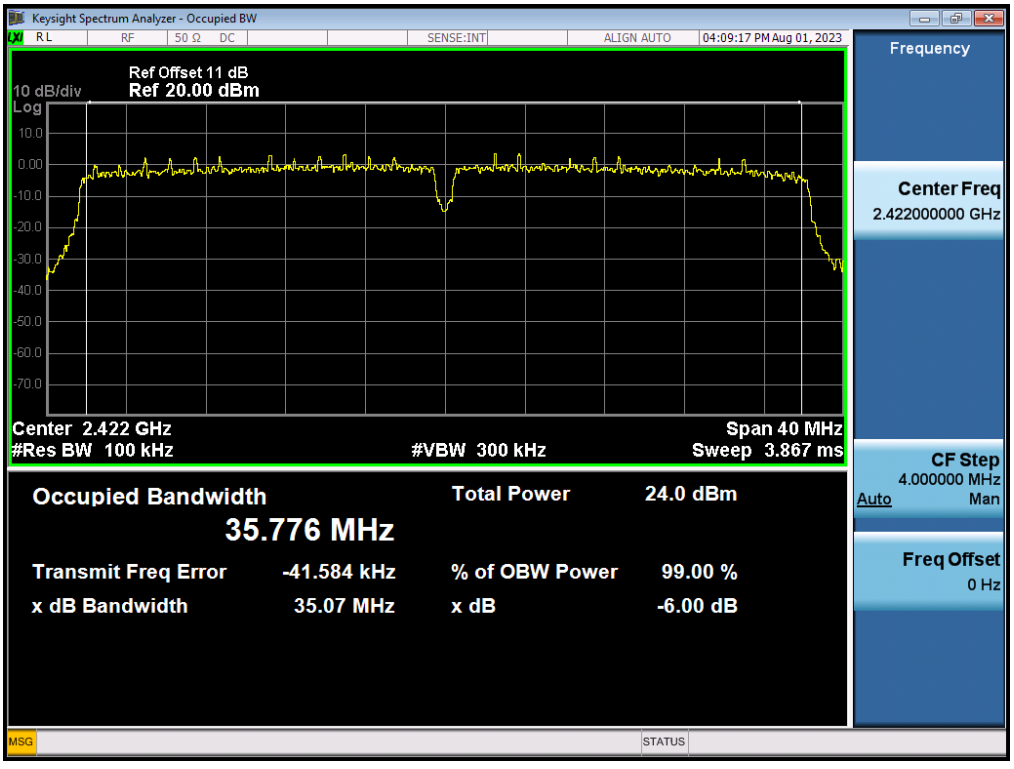
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:44:47 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 20 MHz
Sweep 1.933 ms
Occupied Bandwidth
17.547 MHz
Total Power 27.2 dBm
Transmit Freq Error -26.608 kHz
% of OBW Power 99.00 %
x dB Bandwidth 16.50 MHz
x dB -6.00 dB
Center Freq
2.462000000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

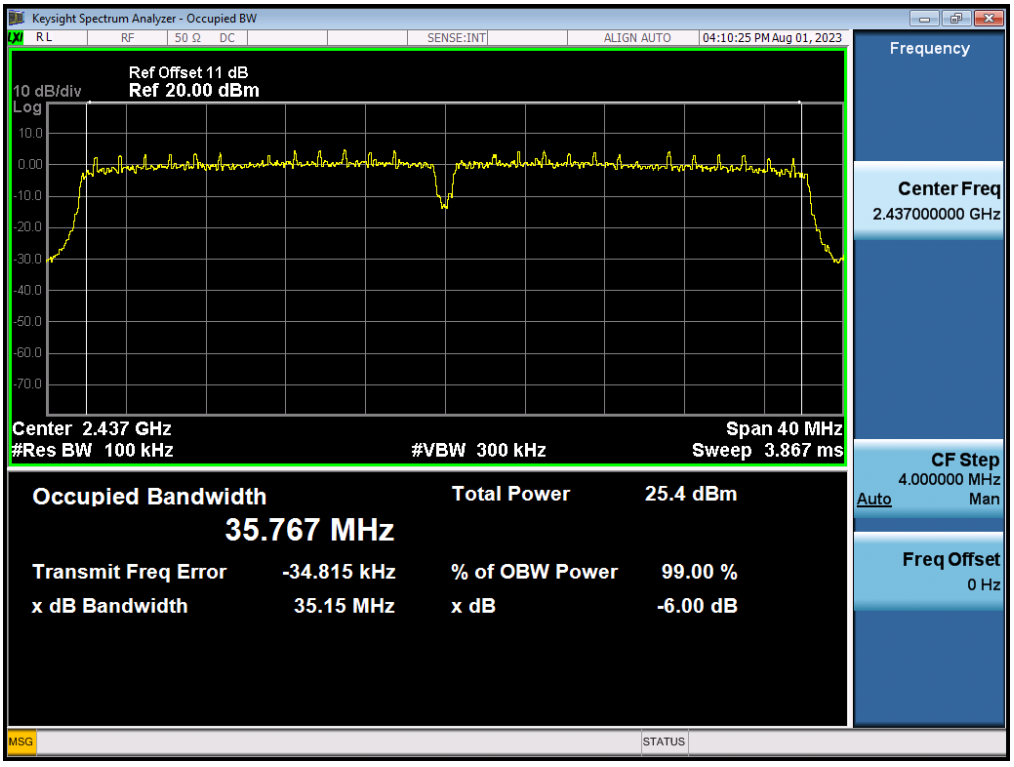
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11n – HT40
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)
CH03	2422	35.070	0.5
CH06	2437	35.150	0.5
CH09	2452	35.170	0.5

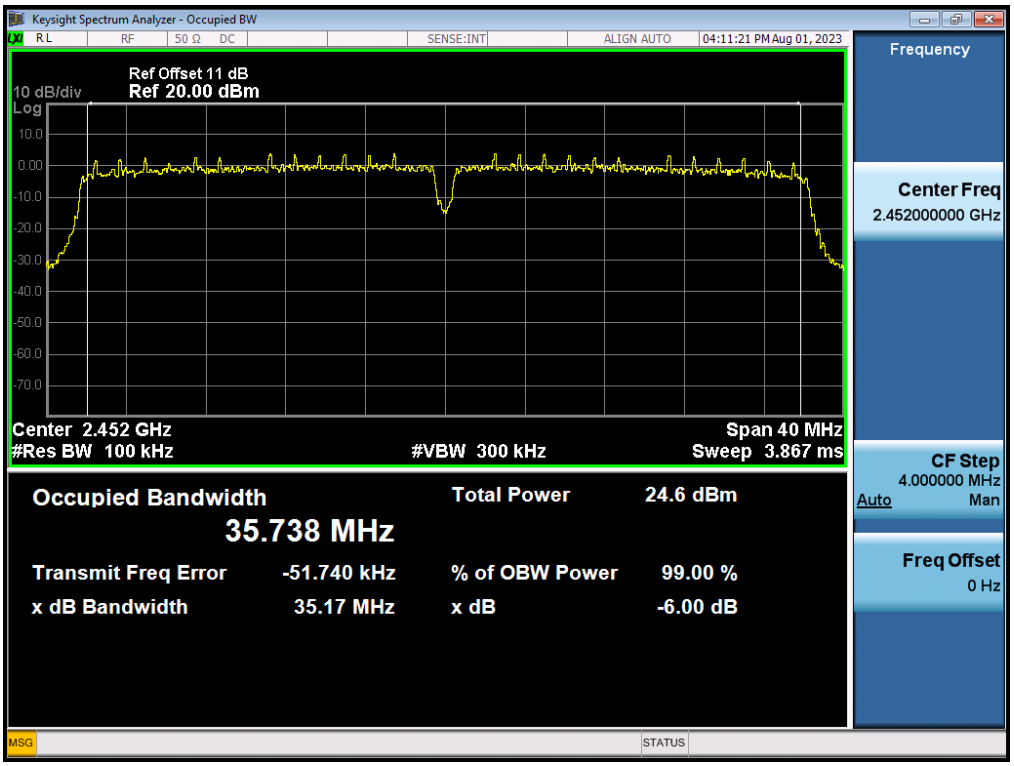
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:10:25 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms
Occupied Bandwidth
35.767 MHz
Total Power 25.4 dBm
Transmit Freq Error -34.815 kHz
% of OBW Power 99.00 %
x dB Bandwidth 35.15 MHz
x dB -6.00 dB
Center Freq
2.437000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

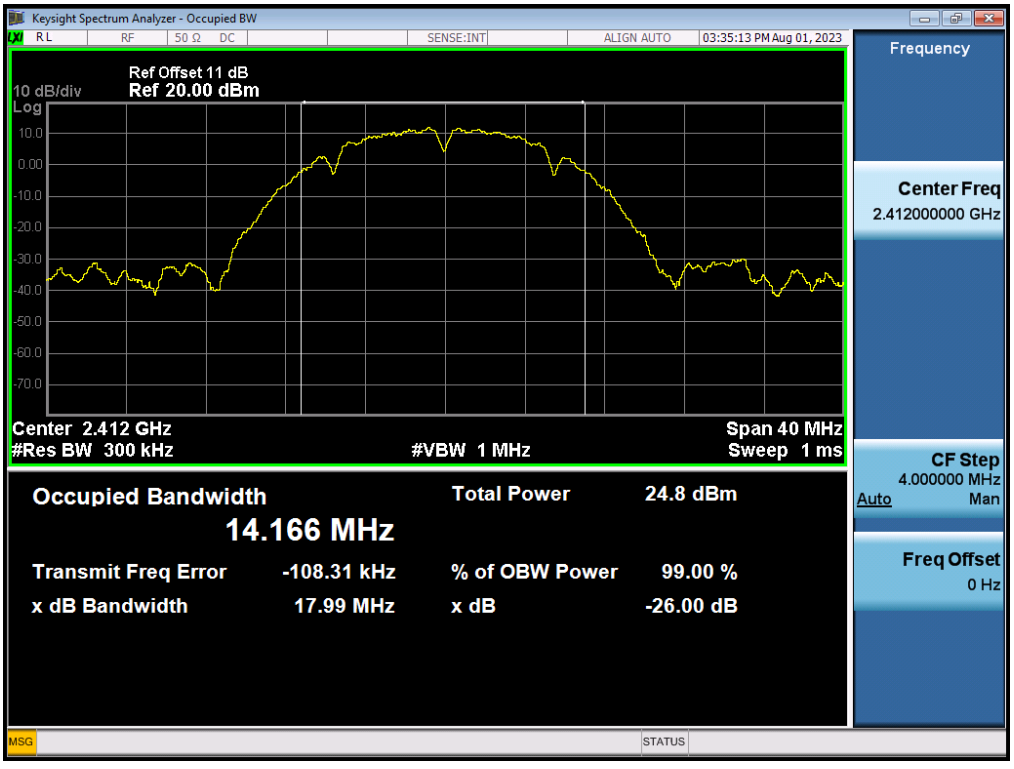
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:11:21 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.452 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 40 MHz
Sweep 3.867 ms
Occupied Bandwidth
35.738 MHz
Total Power 24.6 dBm
Transmit Freq Error -51.740 kHz
% of OBW Power 99.00 %
x dB Bandwidth 35.17 MHz
x dB -6.00 dB
Center Freq
2.452000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

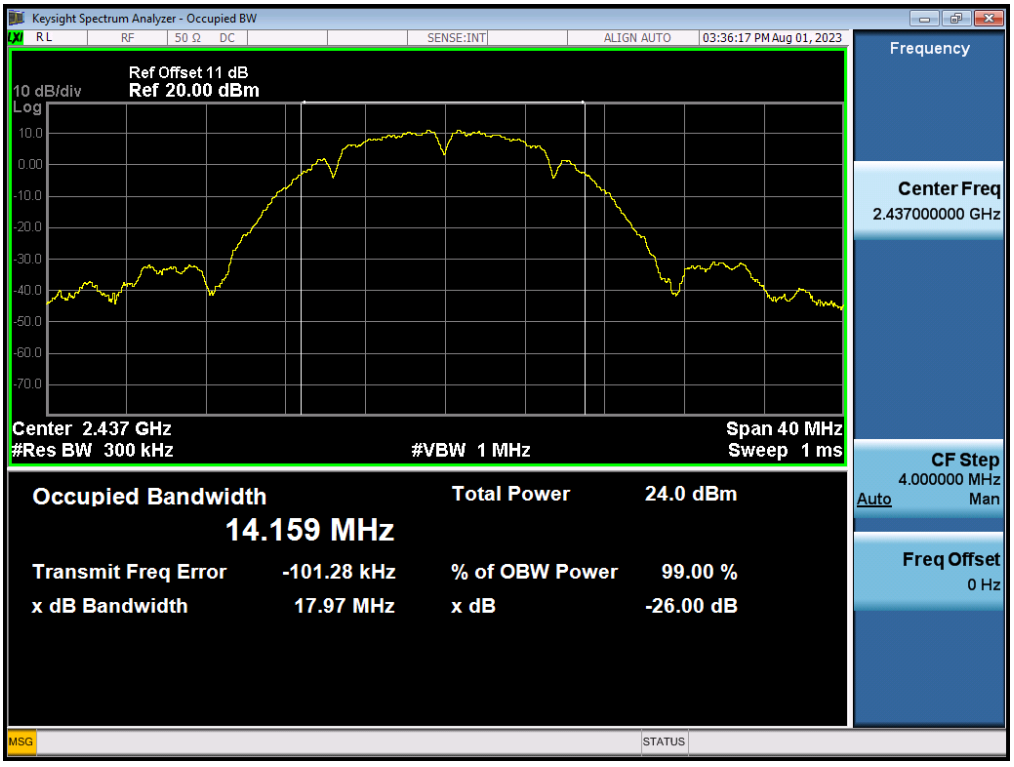
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11b
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	99 % Occupied Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	14.166	0.5
CH06	2437	14.159	0.5
CH11	2462	14.135	0.5

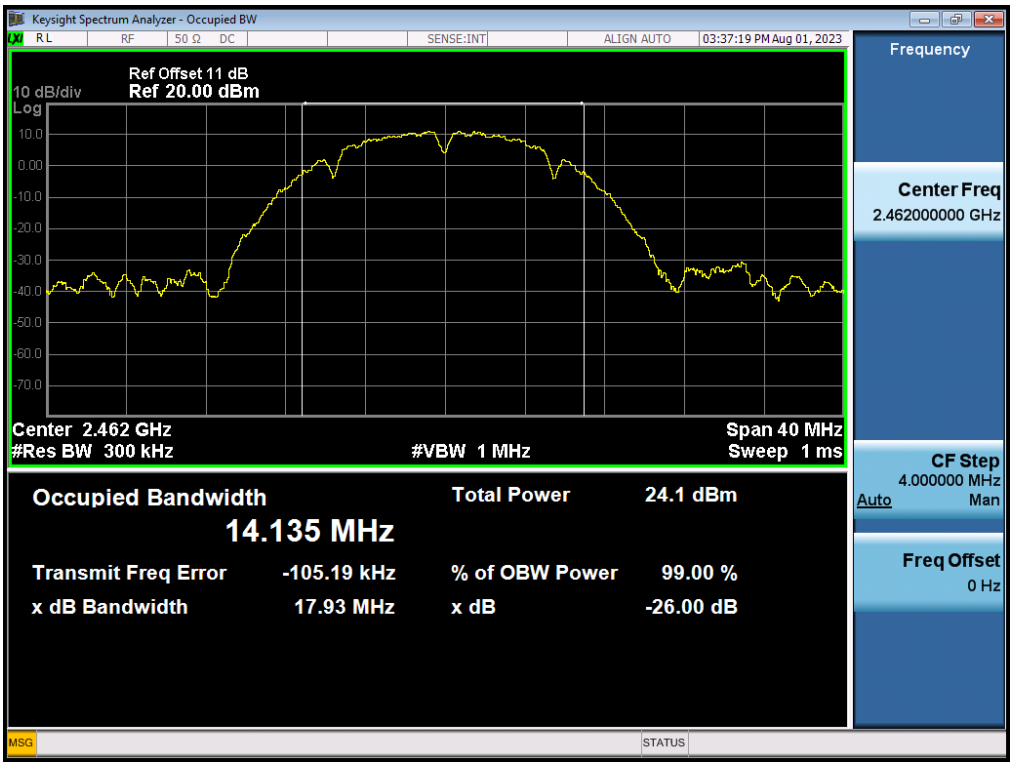
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:36:17 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
14.159 MHz
Total Power 24.0 dBm
Transmit Freq Error -101.28 kHz
% of OBW Power 99.00 %
x dB Bandwidth 17.97 MHz
x dB -26.00 dB
Center Freq
2.437000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

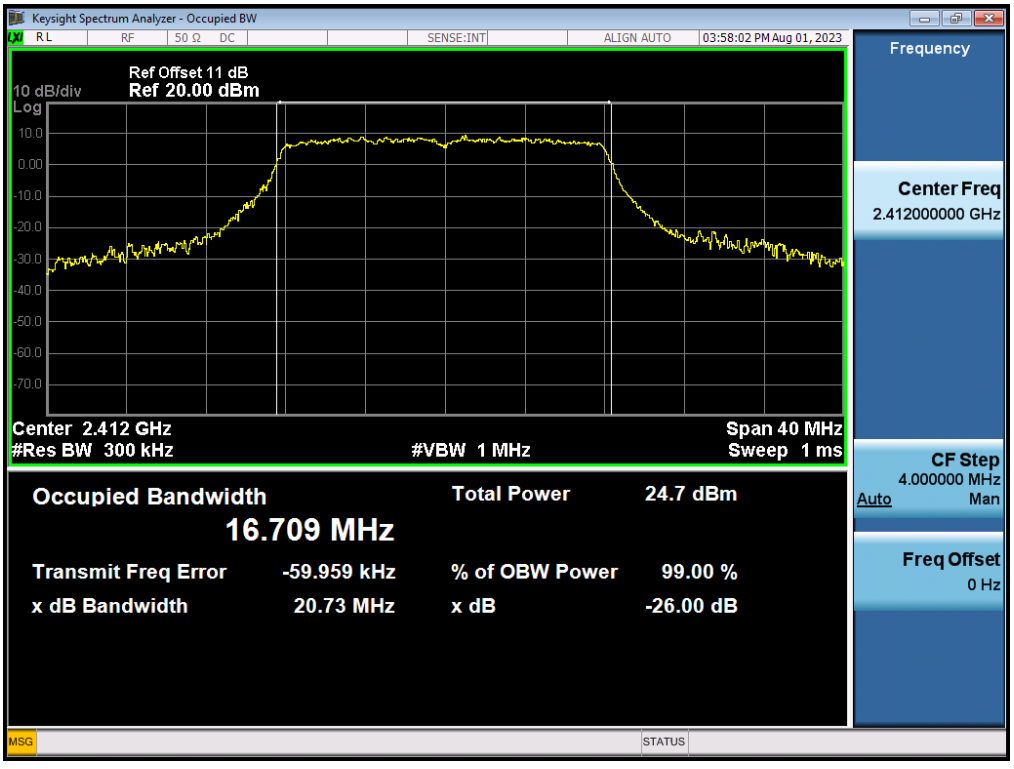
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:37:19 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
14.135 MHz
Total Power 24.1 dBm
Transmit Freq Error -105.19 kHz
% of OBW Power 99.00 %
x dB Bandwidth 17.93 MHz
x dB -26.00 dB
Center Freq
2.462000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

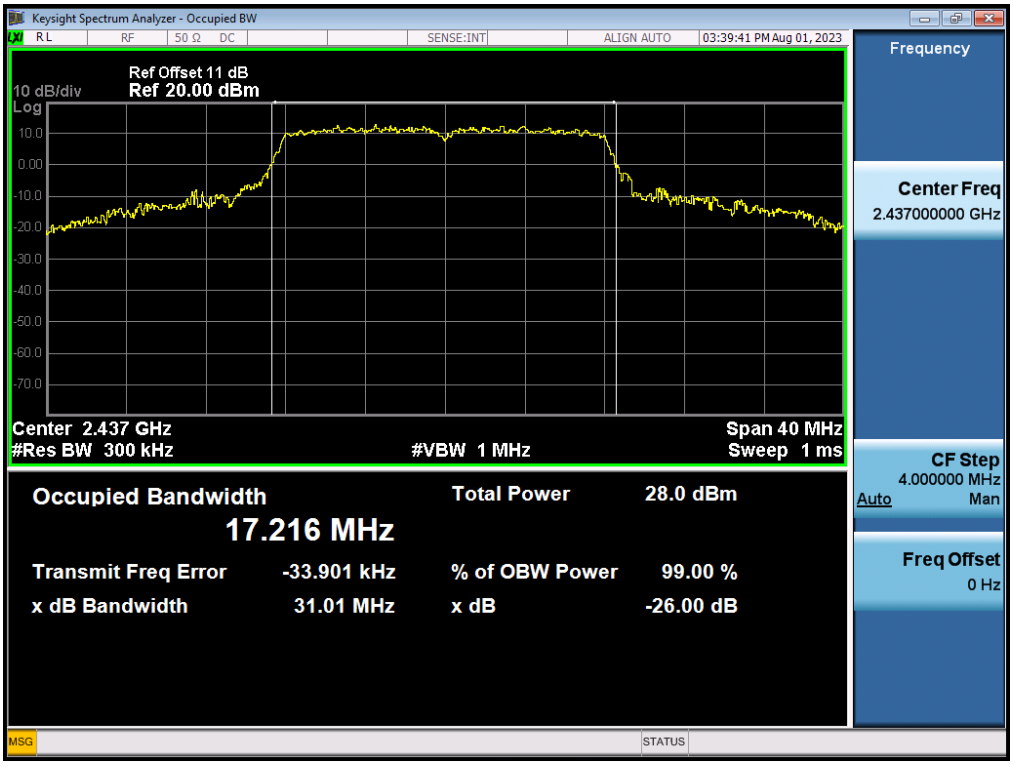
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11g
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	99 % Occupied Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	16.709	0.5
CH06	2437	17.216	0.5
CH11	2462	16.959	0.5

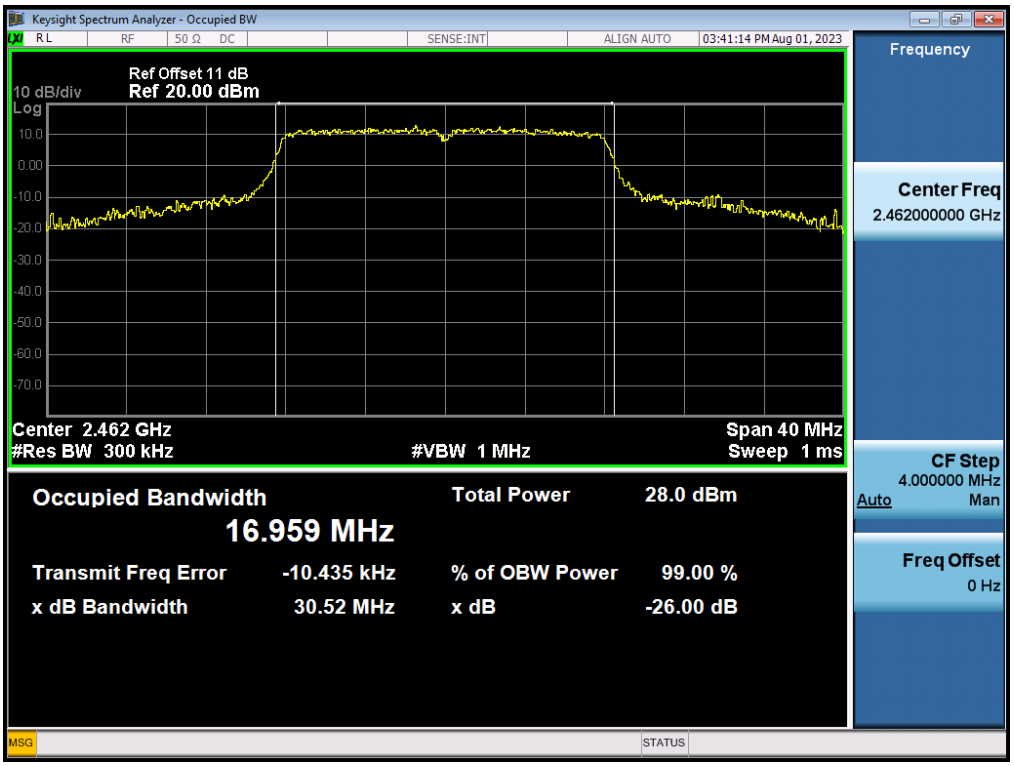
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:39:41 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.216 MHz
Total Power 28.0 dBm
Transmit Freq Error -33.901 kHz
% of OBW Power 99.00 %
x dB Bandwidth 31.01 MHz
x dB -26.00 dB
Center Freq
2.437000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

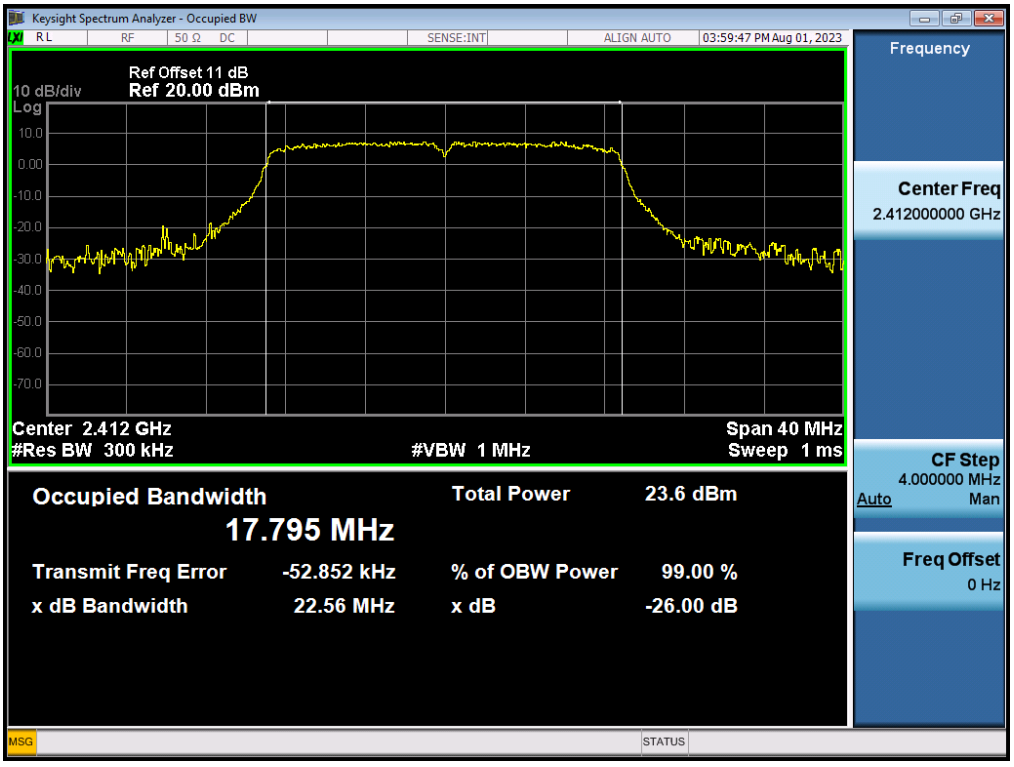
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:41:14 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
16.959 MHz
Total Power 28.0 dBm
Transmit Freq Error -10.435 kHz
% of OBW Power 99.00 %
x dB Bandwidth 30.52 MHz
x dB -26.00 dB
Center Freq
2.462000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

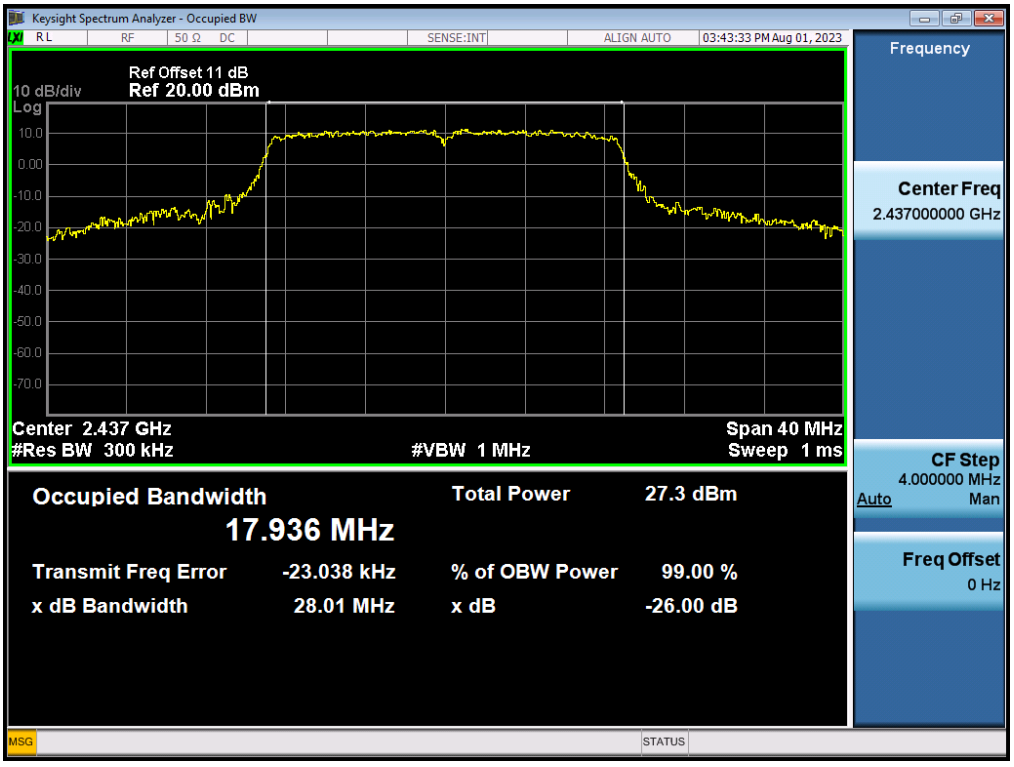
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11n – HT20
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	99 % Occupied Bandwidth (MHz)	Minimum Limit (MHz)
CH01	2412	17.795	0.5
CH06	2437	17.936	0.5
CH11	2462	18.223	0.5

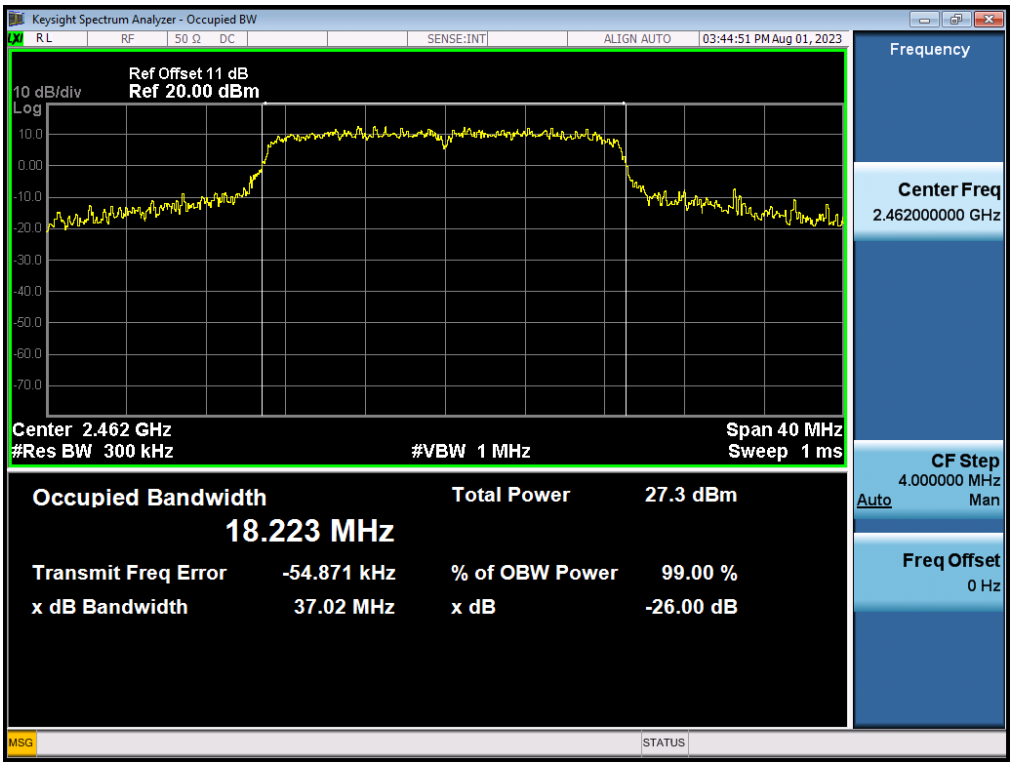
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:43:33 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
17.936 MHz
Total Power 27.3 dBm
Transmit Freq Error -23.038 kHz
% of OBW Power 99.00 %
x dB Bandwidth 28.01 MHz
x dB -26.00 dB
Center Freq
2.437000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

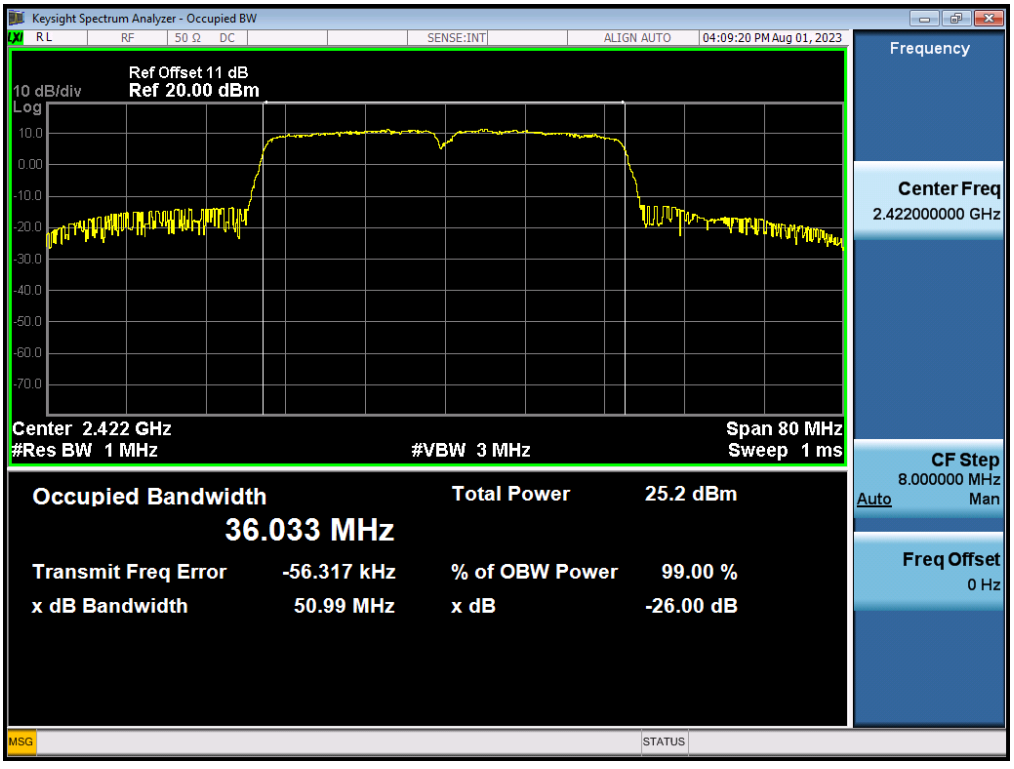
CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:44:51 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.462 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 40 MHz
Sweep 1 ms
Occupied Bandwidth
18.223 MHz
Total Power 27.3 dBm
Transmit Freq Error -54.871 kHz
% of OBW Power 99.00 %
x dB Bandwidth 37.02 MHz
x dB -26.00 dB
Center Freq
2.462000000 GHz
CF Step
4.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

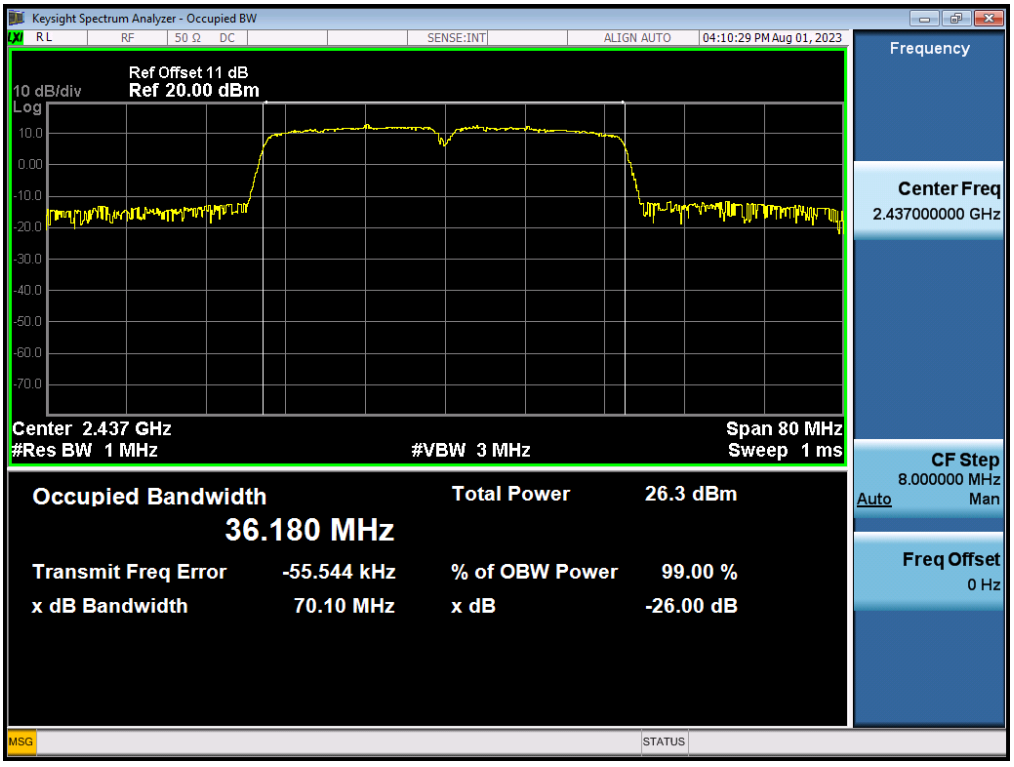
Temperature:	28 °C	Humidity:	74 %RH
RBW:	100 kHz	Modulation:	802.11n – HT40
Detector:	Peak	VBW:	300 kHz
Tested By:	Jimmy Tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	99 % Occupied Bandwidth (MHz)	Minimum Limit (MHz)
CH03	2422	36.033	0.5
CH06	2437	36.180	0.5
CH09	2452	35.996	0.5

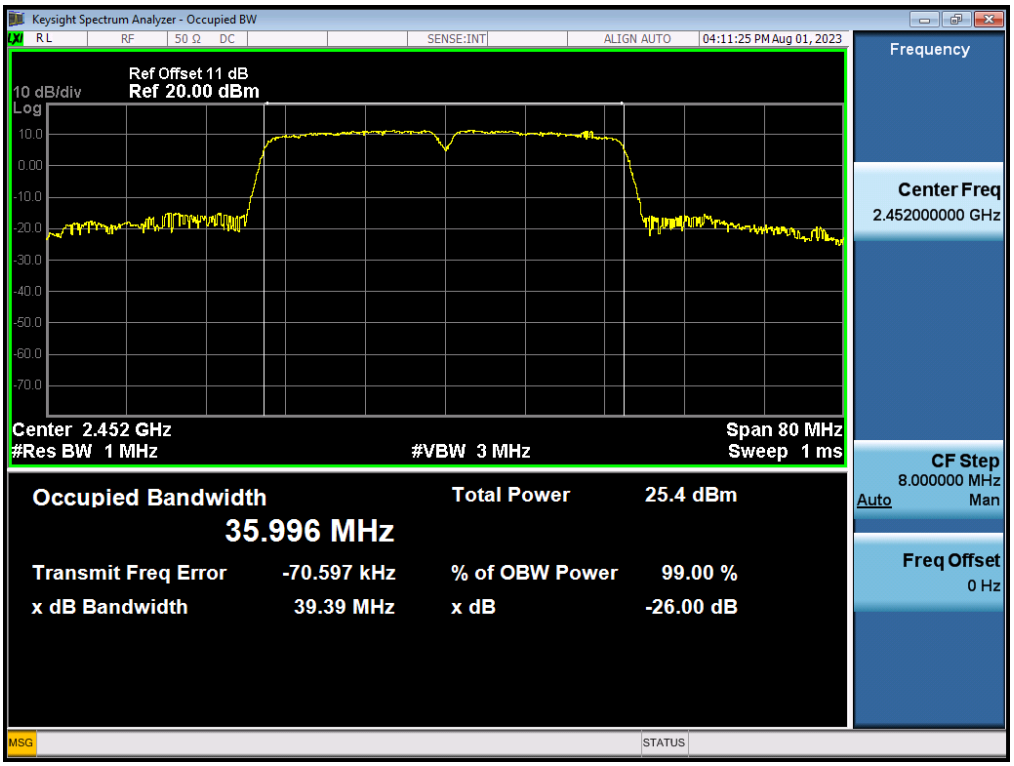
CH01



CH06


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:10:29 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
36.180 MHz
Total Power 26.3 dBm
Transmit Freq Error -55.544 kHz
% of OBW Power 99.00 %
x dB Bandwidth 70.10 MHz
x dB -26.00 dB
Center Freq
2.437000000 GHz
CF Step
8.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

CH11


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:11:25 PM Aug 01, 2023
Frequency
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 80 MHz
Sweep 1 ms
Occupied Bandwidth
35.996 MHz
Total Power 25.4 dBm
Transmit Freq Error -70.597 kHz
% of OBW Power 99.00 %
x dB Bandwidth 39.39 MHz
x dB -26.00 dB
Center Freq
2.452000000 GHz
CF Step
8.000000 MHz
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.

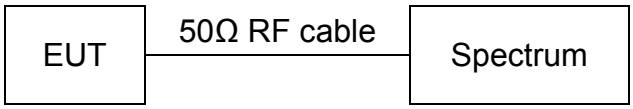
7.2 TEST EQUIPMENT

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:	RMS	Test Mode:	All
RBW:	300 kHz	VBW:	1 MHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 01, 2023

Mode	Frequency (MHz)	Total Power	Limit		Power setting
		Average	Average	Result	
		dBm	dBm		
802.11b	2412	21.05	30.00	PASS	11
	2437	21.29	30.00	PASS	11
	2462	21.08	30.00	PASS	11
802.11g	2412	15.76	30.00	PASS	10
	2437	21.61	30.00	PASS	11
	2462	16.11	30.00	PASS	11
802.11n20	2412	15.59	30.00	PASS	11
	2437	20.02	30.00	PASS	11
	2462	15.80	30.00	PASS	11
802.11n40	2422	15.39	30.00	PASS	10
	2437	18.20	30.00	PASS	10
	2452	16.24	30.00	PASS	11

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 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. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Operating Frequency Range (MHz)	Spurious Emission Frequency (MHz)	LIMIT	
		Peak power ration to emission (dBc)	Emission level (dBuV/m)
2400 - 2483.5	< 2400	> 20	N/A
	> 2483.5-2500	N/A	54

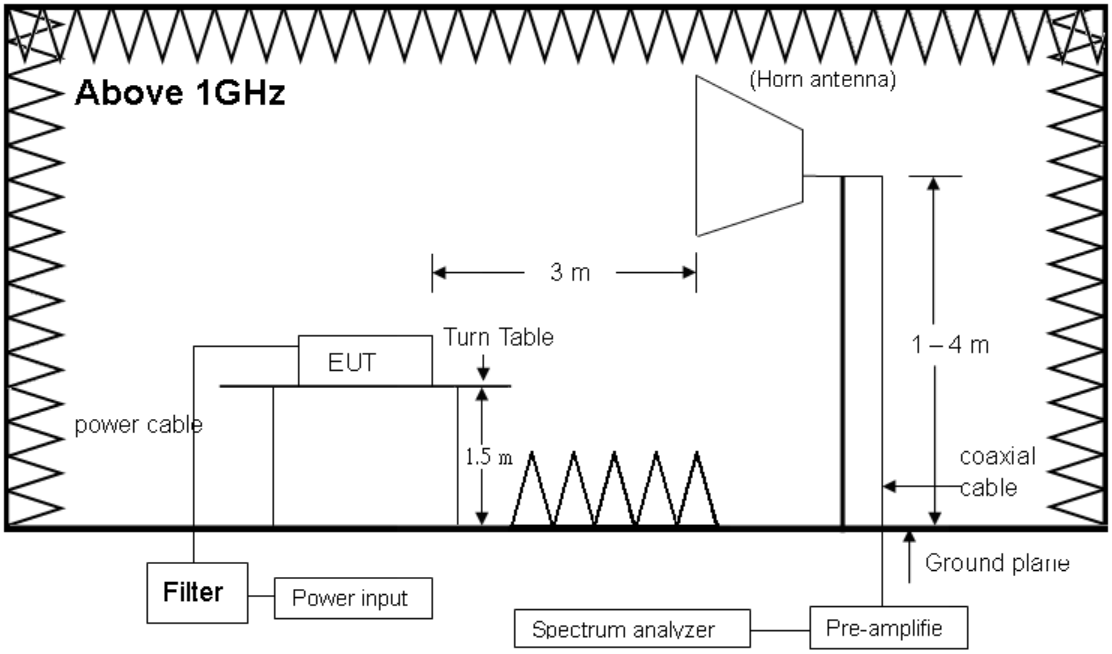
8.2 TEST EQUIPMENT

The following test equipment was used during the test:

Equipment/ Facilities	Specifications	Manufacturer	Model #/ Serial #	Due Date of Cal. & Cal. Center	Final Test be Used
EXA Signal Analyzer	10 Hz ~ 44 GHz	KEYSIGHT	N9010A / MY56480554	AUG. 24, 2023 ETC	■
EMI Test Receiver (Include Spectrum Analyzer)	9 KHz ~ 6 GHz	ROHDE & SCHWARZ	ESL 6 / 100176	SEP. 06, 2023 ETC	■
Spectrum Analyzer	9 kHz ~ 40GHz	ROHDE & SCHWARZ	FSP40 / 100093	FEB. 16, 2024 ETC	■
Pre-Amplifier	1 ~ 26.5 GHz	AGILENT	8449B / 3008A01995	FEB. 16, 2024 ETC	■
Horn Antenna	1 ~ 18 GHz	EMCO	3115 / 9602-4681	MAR. 09, 2024 ETC	■
Horn Antenna	18 ~ 40 GHZ	ETS-LINDGREN	3116 / 00032255	MAY 13, 2024 ETC	■
Anechoic Chamber	3 M Measurement	SRT	A01 / SRT001	MAR. 24, 2024 SRT	■
RF Cable	Up to 18 GHz 1.5 m	JYEBAO	A30A30-L 142 / EQF-0035(001)	JAN. 24, 2024 ETC	■
RF Cable	Up to 26.5 GHz 3.5 m	EMCI	EMC104-SM-SM-3500 / 150601	SEP. 19, 2023 ETC	■
K-Type Cable	Up to 40 GHz 3 m	HUBER+ SUHNER	SF102-46/2* 11SK252 / MY2611/2	APR. 06, 2024 ETC	■
K-Type Cable	Up to 40 GHz, 1 m	HUBER+ SUHNER	SF102/2*11SK252 / MY3331/2	FEB. 15, 2024 ETC	■
Filter	2 Line, 30 A	FIL.COIL	FC-943 / 869	NCR	■

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 SETUP



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.

8.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.10:2013 and CISPR 22:2003. When the frequency spectrum measured started from 30 MHz to 1 GHz, then use antenna is a BICONICAL ANTENNA & LOG PERIODIC 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 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.

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

Conducted Test

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11b
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

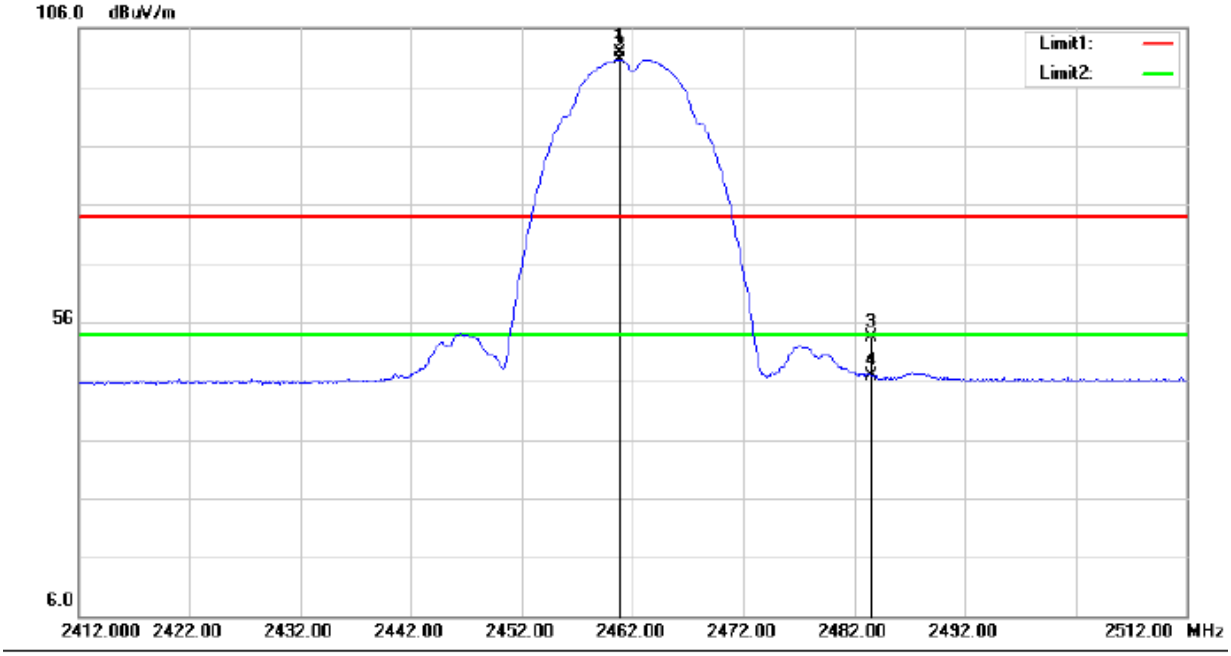
頻帶範圍內之最大射頻功率			
上邊緣帶		下邊緣帶	
Frequency (MHz)	Power (dBm)	Frequency (MHz)	Power (dBm)
2412	14.66	2462	13.74

Frequency	頻帶範圍外之任意 100 kHz 內最大射頻功率	測試振幅差 (dBc)	Limit in 4.10.1.5	Result
< 2.4 GHz	-34.14	48.80	20 dB	Pass
> 2.4835 GHz	-46.31	60.05	20 dB	Pass

Radiated Test

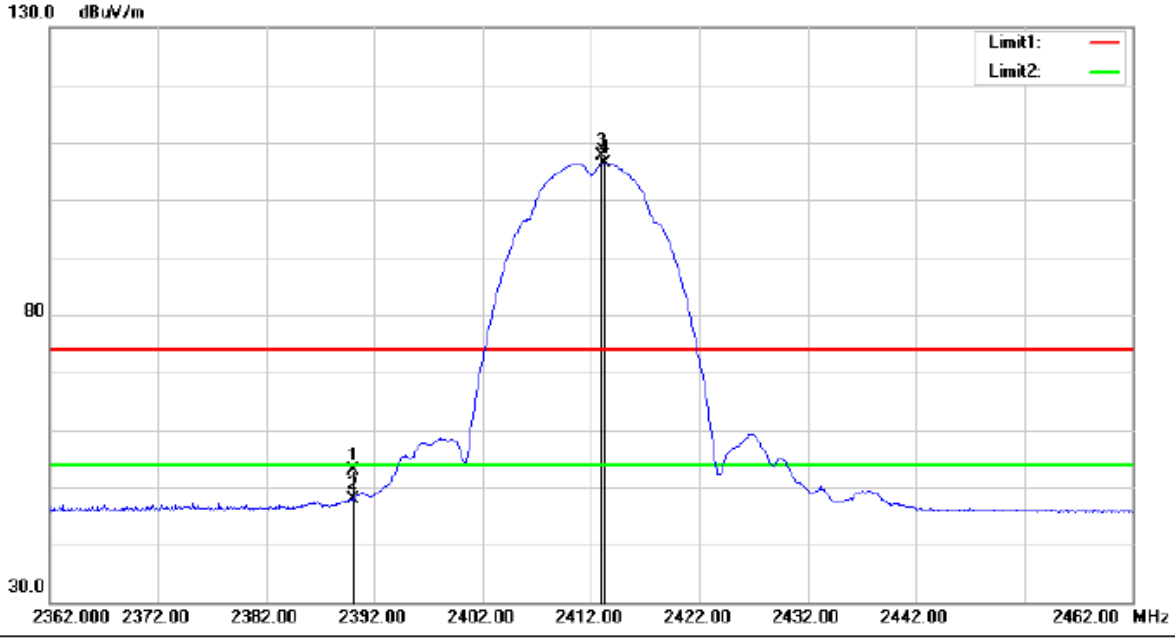
Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11b
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

CH01_Horizontal



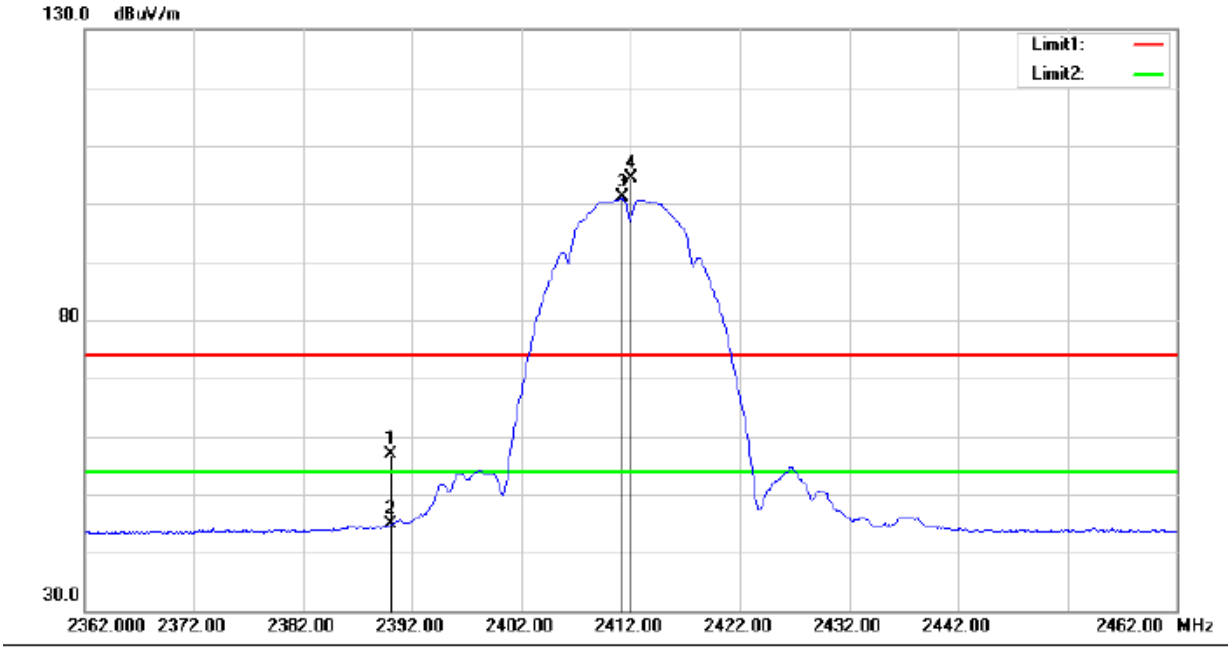
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
X	1	2460.900	91.34	10.61	101.95	74.00	27.95	peak	
*	2	2460.900	90.12	10.61	100.73	54.00	46.73	AVG	
	3	2483.500	42.55	10.72	53.27	74.00	-20.73	peak	
	4	2483.500	36.26	10.72	46.98	54.00	-7.02	AVG	

CH01_Vertical



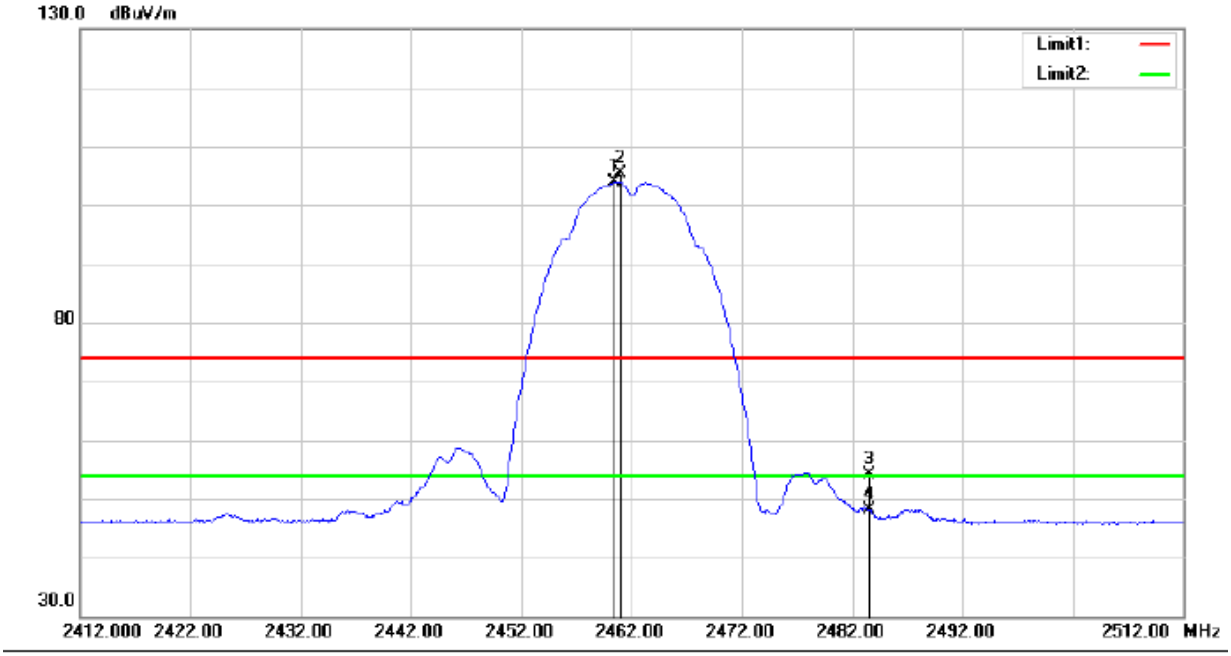
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	42.66	10.28	52.94	74.00	-21.06	peak	
	2	2390.000	37.60	10.28	47.88	54.00	-6.12	AVG	
X	3	2413.000	97.30	10.36	107.66	74.00	33.66	peak	
*	4	2413.200	96.03	10.36	106.39	54.00	52.39	AVG	

CH11_Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	46.52	10.28	56.80	74.00	-17.20	peak	
	2	2390.000	34.55	10.28	44.83	54.00	-9.17	AVG	
*	3	2411.200	90.66	10.35	101.01	54.00	47.01	AVG	
X	4	2412.100	94.13	10.36	104.49	74.00	30.49	peak	

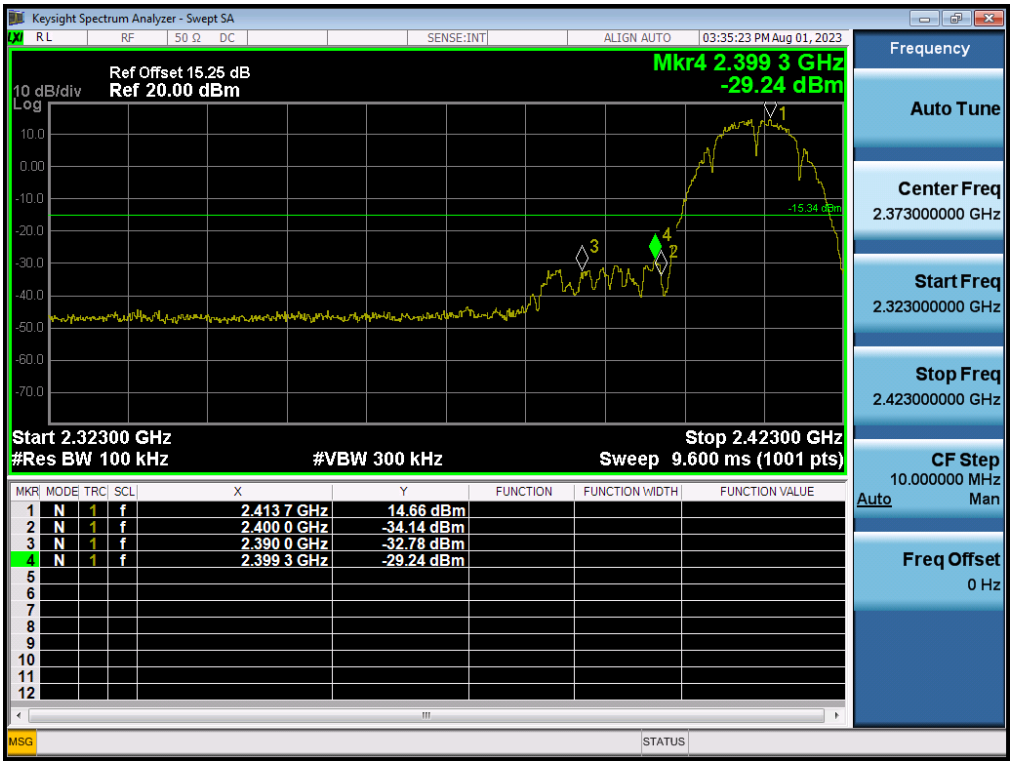
CH11_Vertical



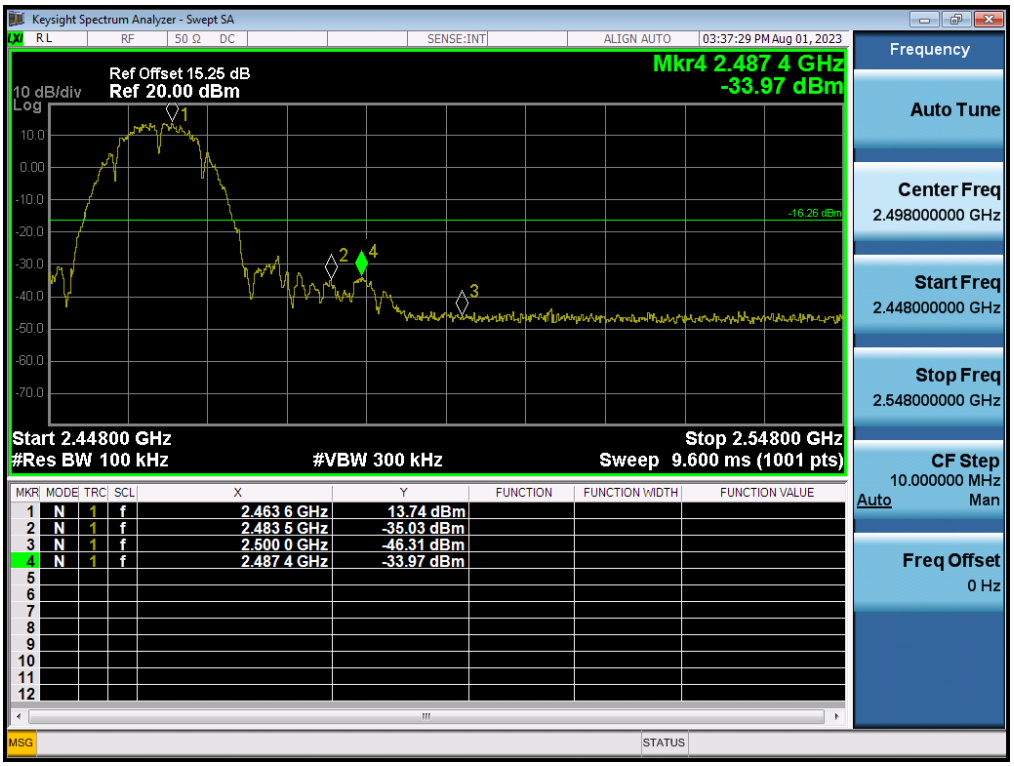
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	2460.500	93.25	10.60	103.85	54.00	49.85	AVG	
X	2	2461.000	94.73	10.61	105.34	74.00	31.34	peak	
	3	2483.500	43.47	10.72	54.19	74.00	-19.81	peak	
	4	2483.500	37.35	10.72	48.07	54.00	-5.93	AVG	

Note: Measurement uncertainty is 3.85 dB.

CH01：


Keysight Spectrum Analyzer - Swept SA
RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:35:23 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div Ref 20.00 dBm
Log
Mkr4 2.399 3 GHz
-29.24 dBm
-15.34 dBm
Start 2.32300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.42300 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.413 7 GHz 14.66 dBm
2 N 1 f 2.400 0 GHz -34.14 dBm
3 N 1 f 2.390 0 GHz -32.78 dBm
4 N 1 f 2.399 3 GHz -29.24 dBm
Frequency
Auto Tune
Center Freq
2.373000000 GHz
Start Freq
2.323000000 GHz
Stop Freq
2.423000000 GHz
CF Step
10.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

CH11：


Keysight Spectrum Analyzer - Swept SA
RL RF 50 Ω DC SENSE:INT ALIGN AUTO 03:37:29 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div Ref 20.00 dBm
Log
Mkr4 2.487 4 GHz
-33.97 dBm
-16.26 dBm
Start 2.44800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.54800 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.463 6 GHz 13.74 dBm
2 N 1 f 2.483 5 GHz -35.03 dBm
3 N 1 f 2.500 0 GHz -46.31 dBm
4 N 1 f 2.487 4 GHz -33.97 dBm
Frequency
Auto Tune
Center Freq
2.498000000 GHz
Start Freq
2.448000000 GHz
Stop Freq
2.548000000 GHz
CF Step
10.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

Conducted Test

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11g
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

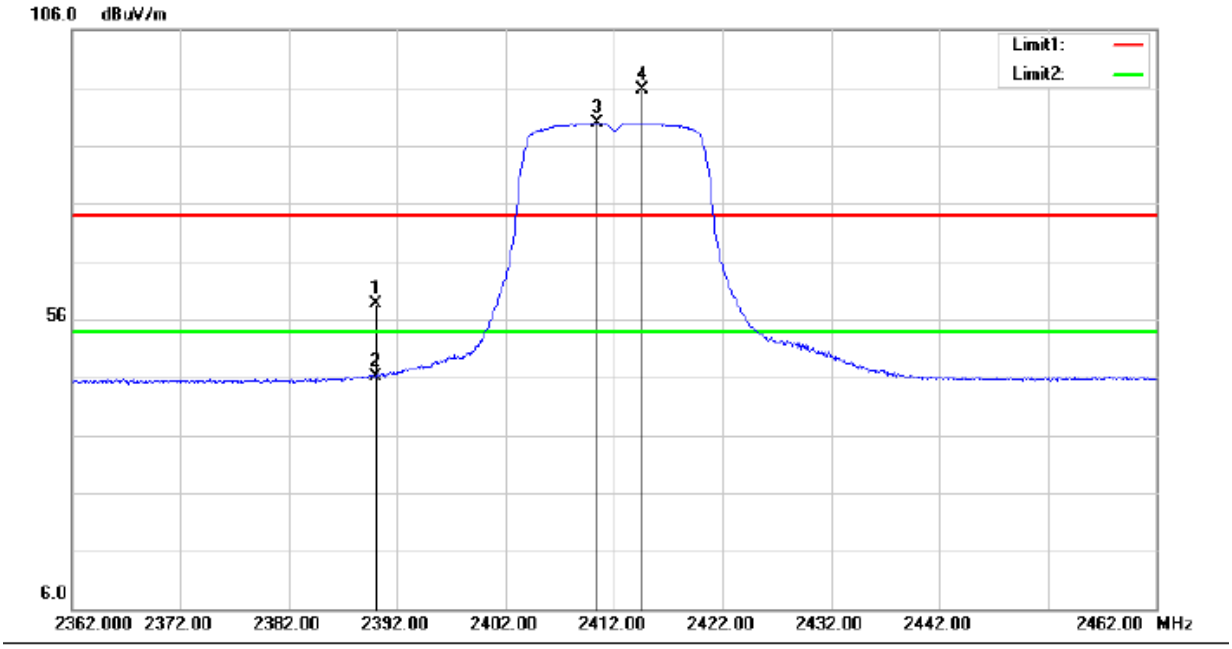
頻帶範圍內之最大射頻功率			
上邊緣帶		下邊緣帶	
Frequency (MHz)	Power (dBm)	Frequency (MHz)	Power (dBm)
2412	10.73	2462	14.43

Frequency	頻帶範圍外之任意 100 kHz 內最大射頻功率	測試振幅差 (dBc)	Limit in 4.10.1.5	Result
< 2.4 GHz	-35.03	45.76	20 dB	Pass
> 2.4835 GHz	-38.46	52.89	20 dB	Pass

Radiated Test

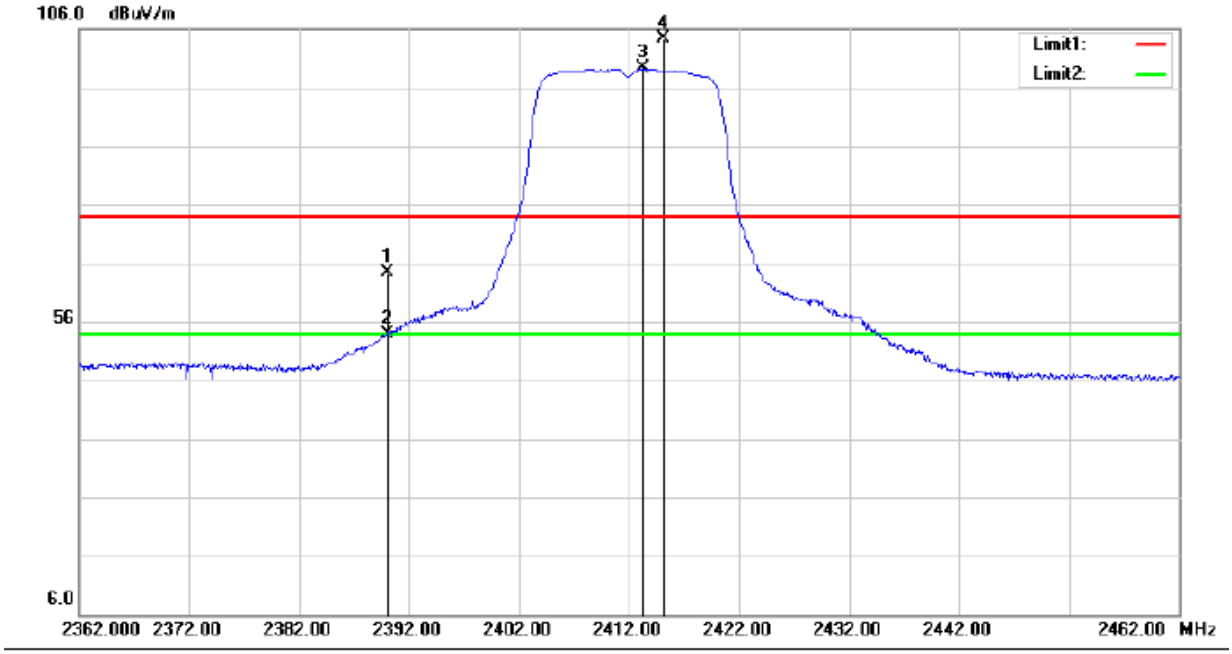
Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11g
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

CH01_Horizontal



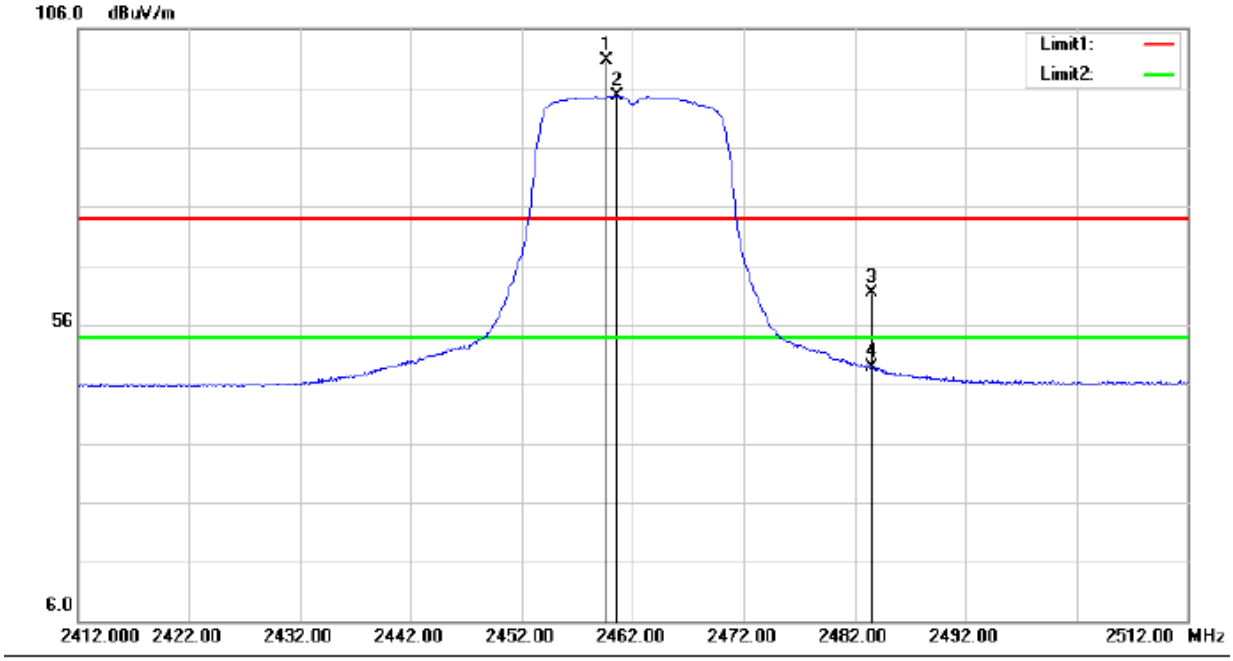
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	48.31	10.28	58.59	74.00	-15.41	peak	
	2	2390.000	35.83	10.28	46.11	54.00	-7.89	AVG	
*	3	2410.500	79.59	10.34	89.93	54.00	35.93	AVG	
X	4	2414.600	85.20	10.37	95.57	74.00	21.57	peak	

CH01_Vertical



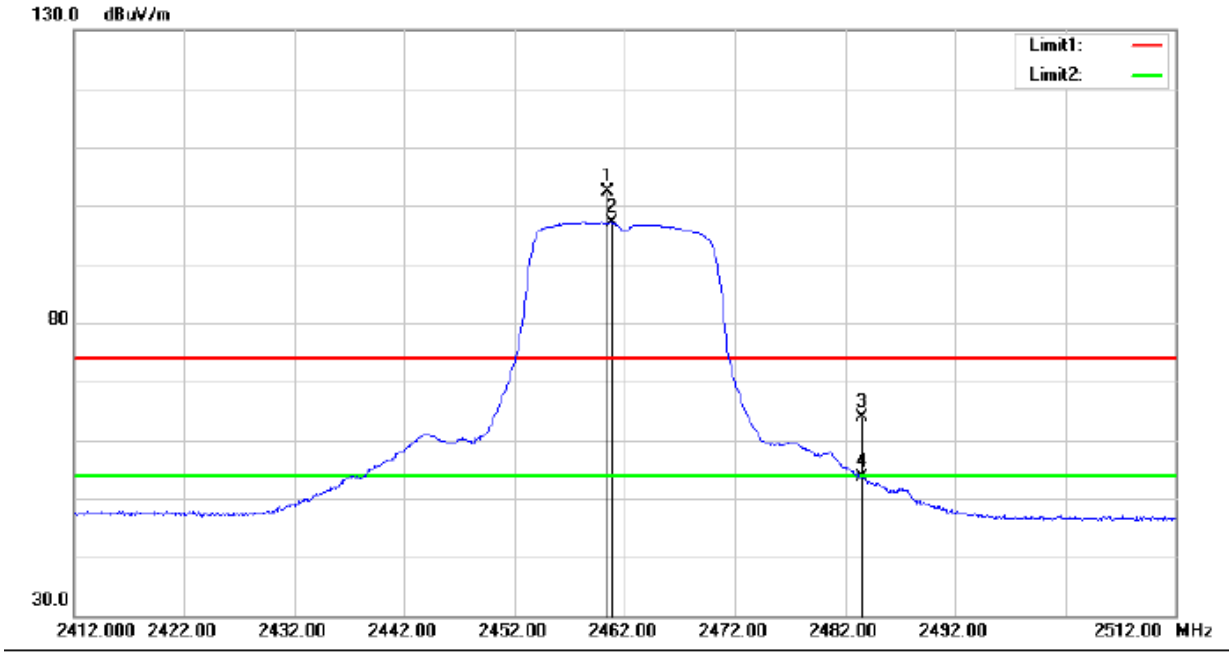
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	54.05	10.28	64.33	74.00	-9.67	peak	
	2	2390.000	43.68	10.28	53.96	54.00	-0.04	AVG	
*	3	2413.200	88.90	10.36	99.26	54.00	45.26	AVG	
X	4	2415.100	94.09	10.37	104.46	74.00	30.46	peak	

CH11_Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
X	1	2459.600	90.14	10.60	100.74	74.00	26.74	peak	
*	2	2460.600	83.99	10.61	94.60	54.00	40.60	AVG	
	3	2483.500	50.77	10.72	61.49	74.00	-12.51	peak	
	4	2483.500	38.13	10.72	48.85	54.00	-5.15	AVG	

CH11_Vertical



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
X	1	2460.500	91.84	10.60	102.44	74.00	28.44	peak	
*	2	2460.900	86.43	10.61	97.04	54.00	43.04	AVG	
	3	2483.500	53.18	10.72	63.90	74.00	-10.10	peak	
	4	2483.500	42.80	10.72	53.52	54.00	-0.48	AVG	

Note: Measurement uncertainty is 3.85 dB.

CH01：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:58:11 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.400 0 GHz
-24.51 dBm
-19.27 dBm
Start 2.32300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.42300 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.410 7 GHz 10.73 dBm
2 N 1 f 2.400 0 GHz -24.51 dBm
3 N 1 f 2.390 0 GHz -35.03 dBm
4 N 1 f 2.400 0 GHz -24.51 dBm
Frequency
Auto Tune
Center Freq
2.373000000 GHz
Start Freq
2.323000000 GHz
Stop Freq
2.423000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

CH11：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:41:23 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.484 1 GHz
-24.44 dBm
-15.57 dBm
Start 2.44800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.54800 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.465 7 GHz 14.43 dBm
2 N 1 f 2.483 5 GHz -24.46 dBm
3 N 1 f 2.500 0 GHz -38.46 dBm
4 N 1 f 2.484 1 GHz -24.44 dBm
Frequency
Auto Tune
Center Freq
2.498000000 GHz
Start Freq
2.448000000 GHz
Stop Freq
2.548000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Conducted Test

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11n - HT20
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

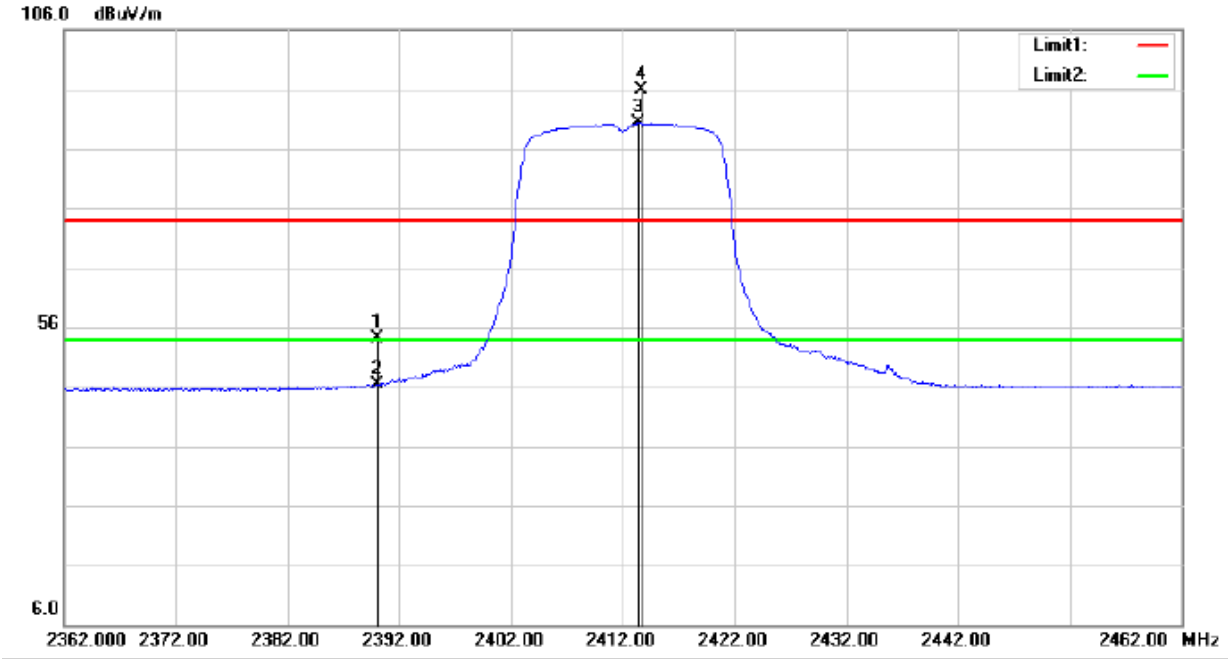
頻帶範圍內之最大射頻功率			
上邊緣帶		下邊緣帶	
Frequency (MHz)	Power (dBm)	Frequency (MHz)	Power (dBm)
2412	9.68	2462	13.13

Frequency	頻帶範圍外之任意 100 kHz 內最大射頻功率	測試振幅差 (dBc)	Limit in 4.10.1.5	Result
< 2.4 GHz	-38.31	47.99	20 dB	Pass
> 2.4835 GHz	-39.01	49.14	20 dB	Pass

Radiated Test

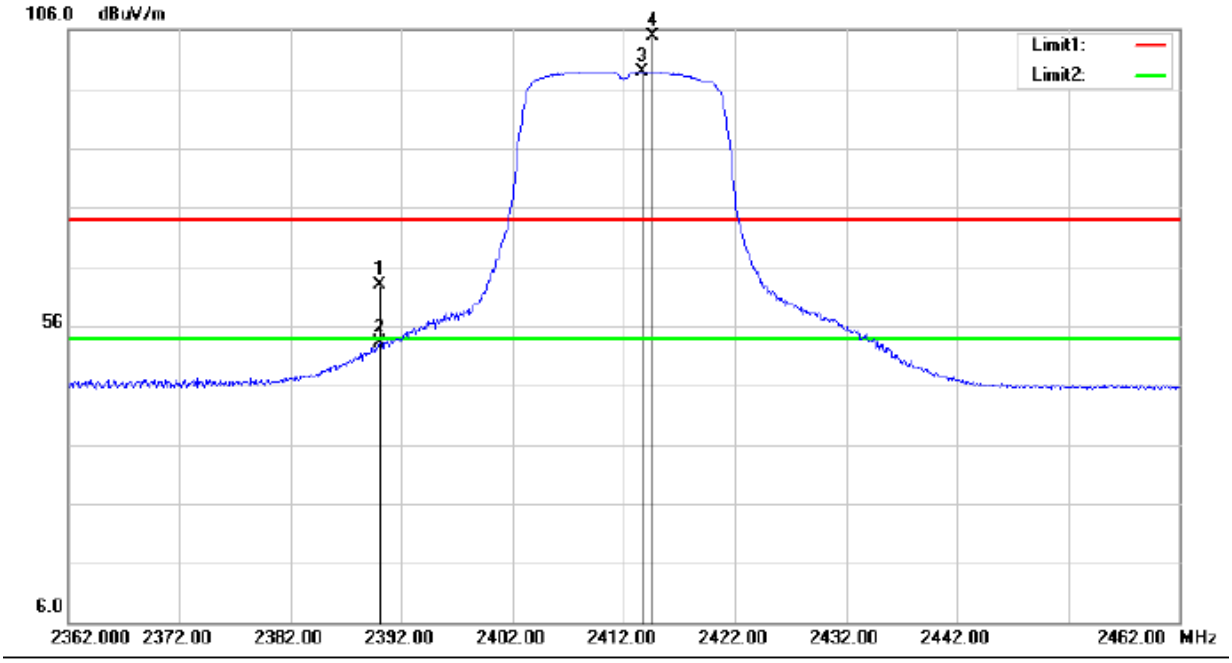
Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11n - HT20
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

CH01_Horizontal



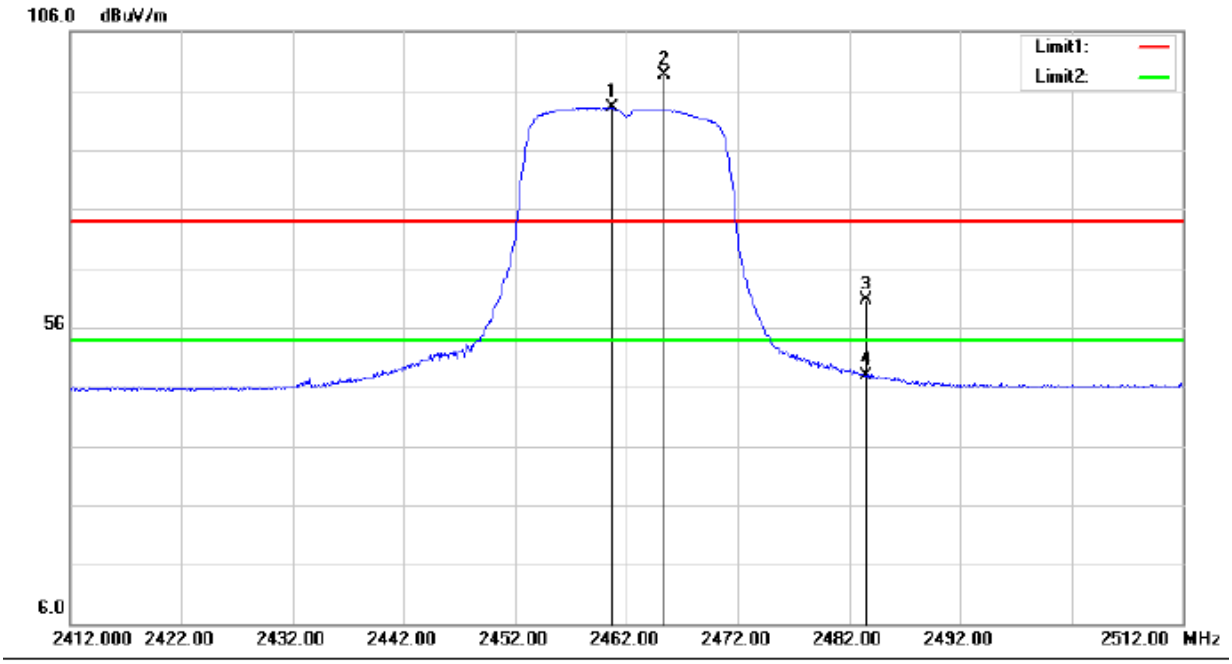
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	43.94	10.28	54.22	74.00	-19.78	peak	
	2	2390.000	36.16	10.28	46.44	54.00	-7.56	AVG	
*	3	2413.400	79.94	10.36	90.30	54.00	36.30	AVG	
X	4	2413.700	85.44	10.36	95.80	74.00	21.80	peak	

CH01_Vertical



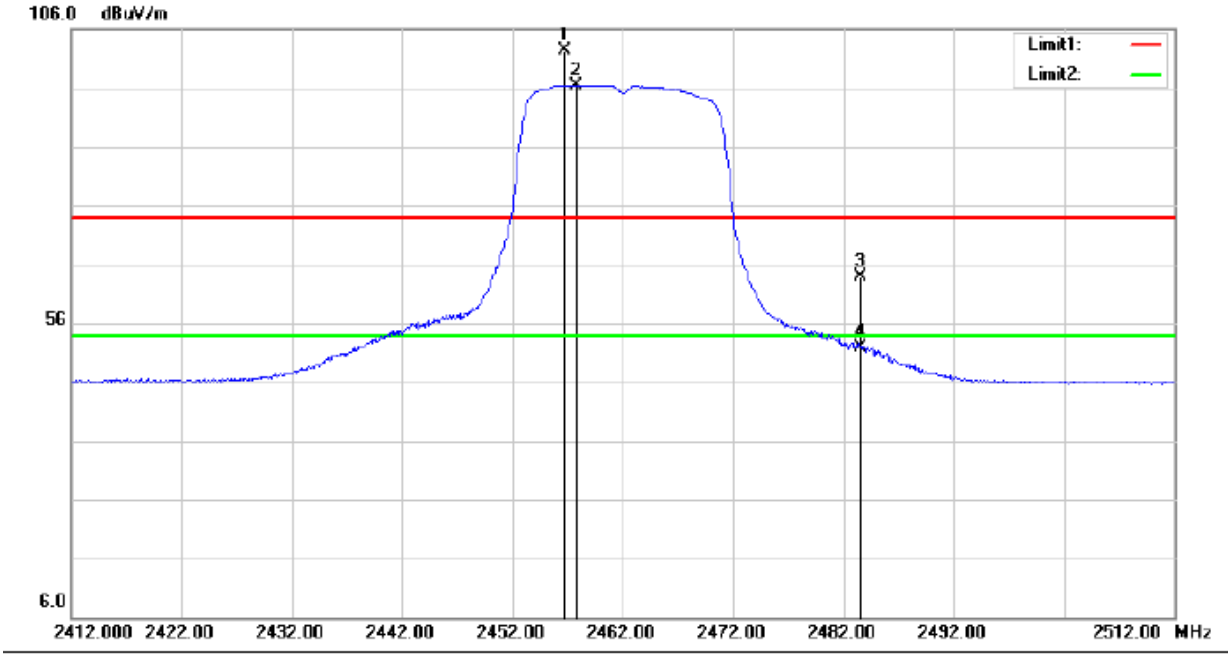
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	52.72	10.28	63.00	74.00	-11.00	peak	
	2	2390.000	42.88	10.28	53.16	54.00	-0.84	AVG	
*	3	2413.600	88.63	10.36	98.99	54.00	44.99	AVG	
X	4	2414.600	94.48	10.37	104.85	74.00	30.85	peak	

CH11_Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	2460.700	82.55	10.61	93.16	54.00	39.16	AVG	
X	2	2465.400	88.00	10.63	98.63	74.00	24.63	peak	
	3	2483.500	49.97	10.72	60.69	74.00	-13.31	peak	
	4	2483.500	37.28	10.72	48.00	54.00	-6.00	AVG	

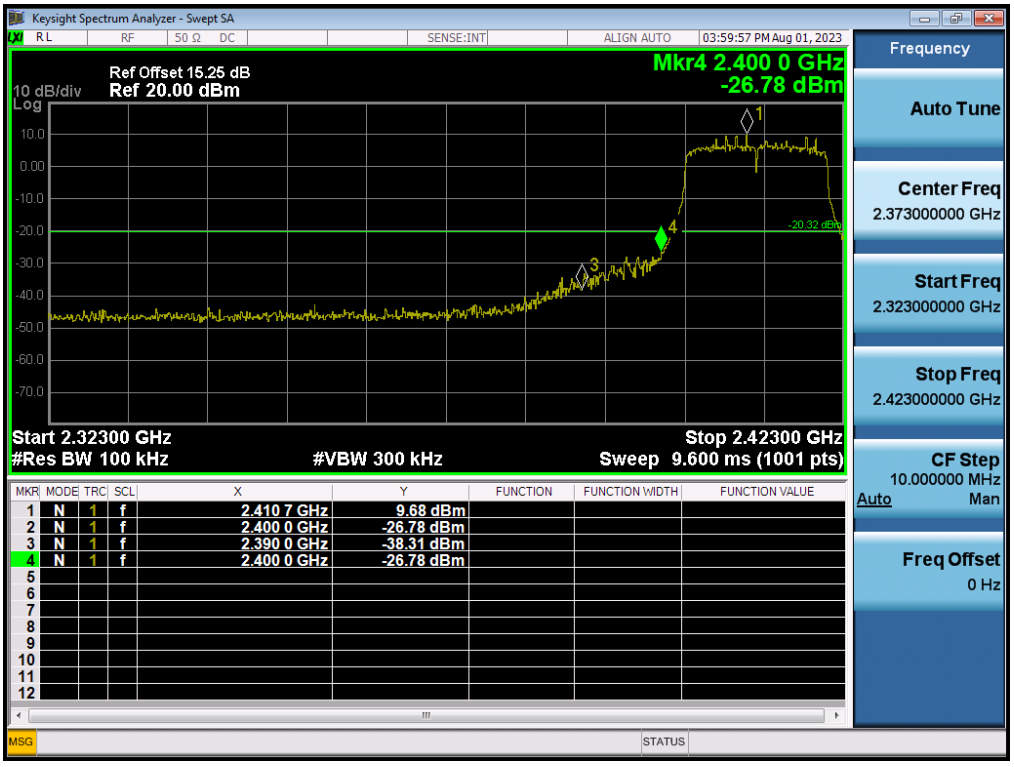
CH11_Vertical



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
X	1	2456.700	91.70	10.58	102.28	74.00	28.28	peak	
*	2	2457.800	85.90	10.58	96.48	54.00	42.48	AVG	
	3	2483.500	53.12	10.72	63.84	74.00	-10.16	peak	
	4	2483.500	41.28	10.72	52.00	54.00	-2.00	AVG	

Note: Measurement uncertainty is 3.85 dB.

CH01：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:59:57 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.400 0 GHz
-26.78 dBm
-20.32 dBm
Start 2.32300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.42300 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.410 7 GHz 9.68 dBm
2 N 1 f 2.400 0 GHz -26.78 dBm
3 N 1 f 2.390 0 GHz -38.31 dBm
4 N 1 f 2.400 0 GHz -26.78 dBm
Frequency
Auto Tune
Center Freq
2.373000000 GHz
Start Freq
2.323000000 GHz
Stop Freq
2.423000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

CH11：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:44:59 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr4 2.484 3 GHz
-21.69 dBm
-16.87 dBm
Start 2.44800 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.54800 GHz
Sweep 9.600 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.464 5 GHz 13.13 dBm
2 N 1 f 2.483 5 GHz -23.22 dBm
3 N 1 f 2.500 0 GHz -39.01 dBm
4 N 1 f 2.484 3 GHz -21.69 dBm
Frequency
Auto Tune
Center Freq
2.498000000 GHz
Start Freq
2.448000000 GHz
Stop Freq
2.548000000 GHz
CF Step
10.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Conducted Test

Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11n - HT40
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

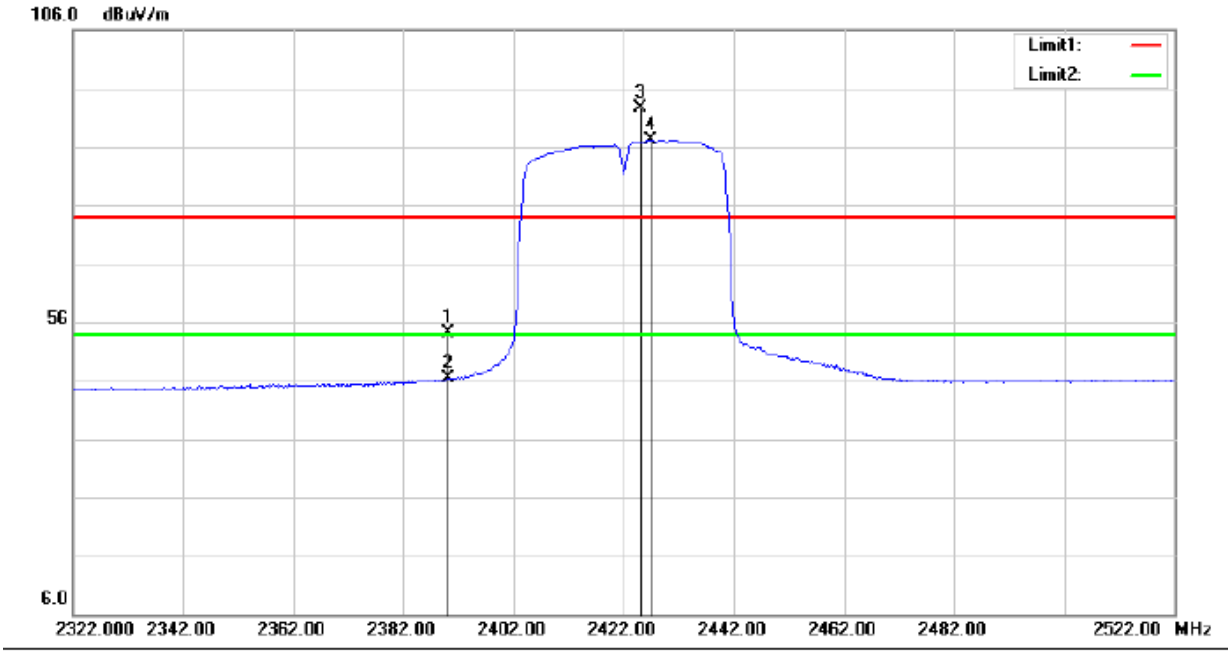
頻帶範圍內之最大射頻功率			
上邊緣帶		下邊緣帶	
Frequency (MHz)	Power (dBm)	Frequency (MHz)	Power (dBm)
2422	7.86	2452	7.82

Frequency	頻帶範圍外之任意 100 kHz 內最大射頻功率	測試振幅差 (dBc)	Limit in 4.10.1.5	Result
< 2.4 GHz	-30.04	37.90	20 dB	Pass
> 2.4835 GHz	-36.82	44.64	20 dB	Pass

Radiated Test

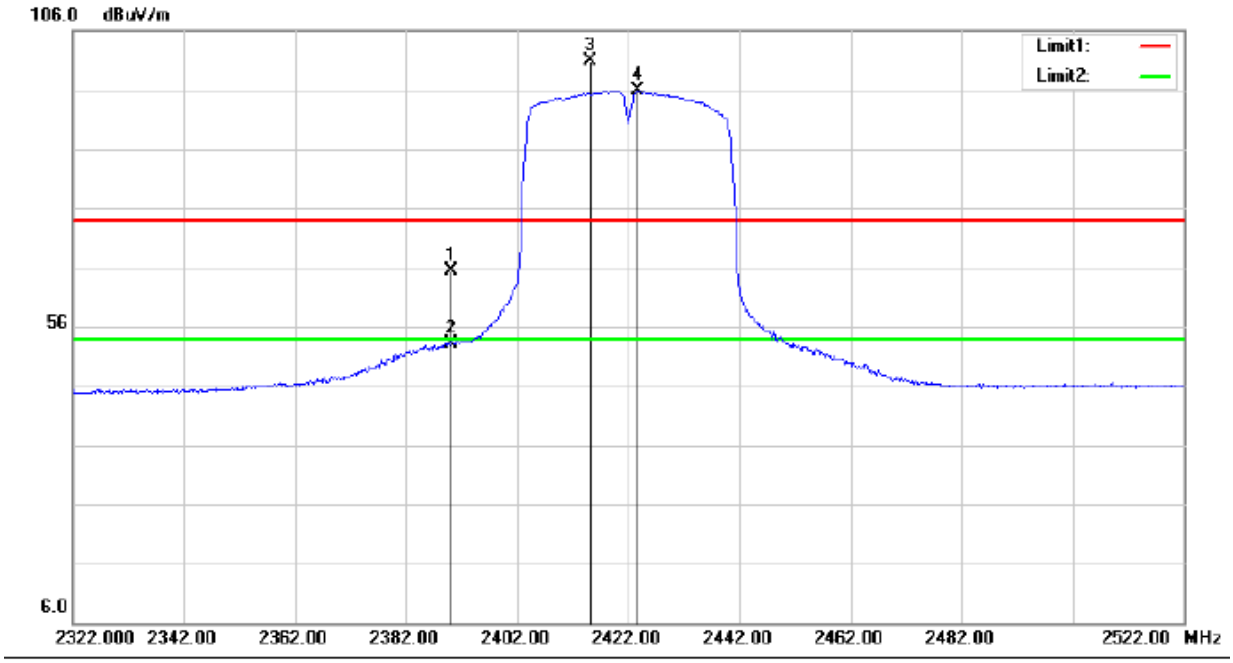
Temperature:	28 °C	Humidity:	74 %RH
Frequency Range:	2.3 ~ 2.6 GHz	Tested Mode:	802.11n - HT40
Detector Type:	PK. And AV.	IF Bandwidth:	100 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 07, 2023

CH03_Horizontal



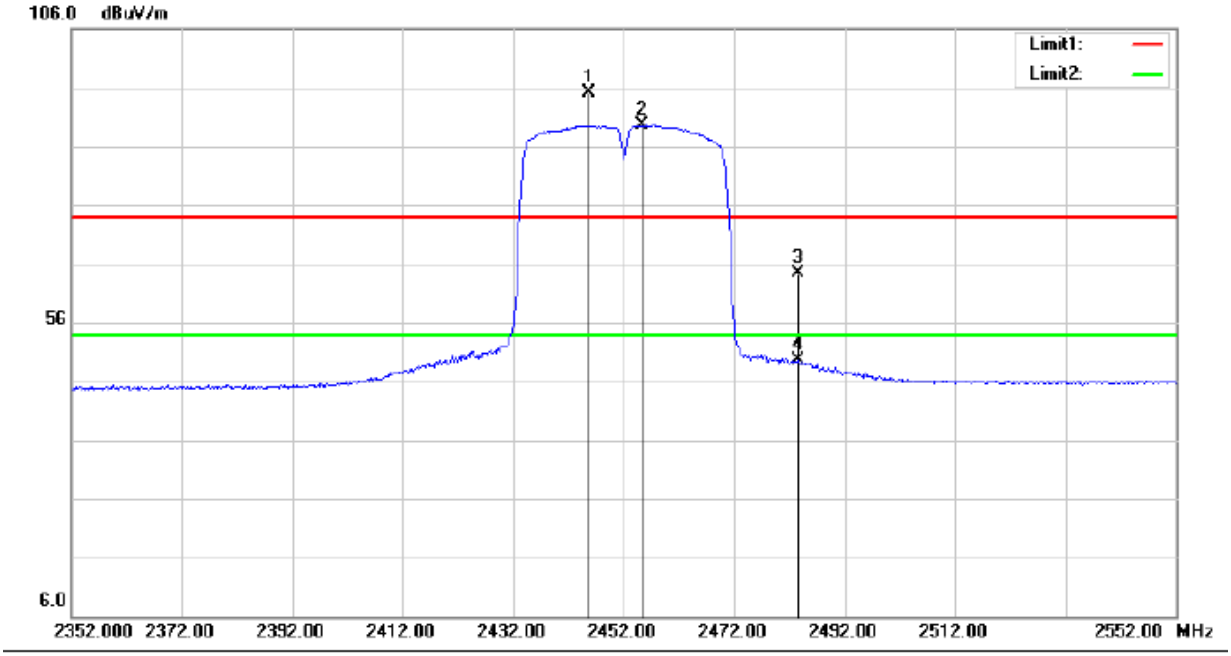
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	43.81	10.28	54.09	74.00	-19.91	peak	
	2	2390.000	36.01	10.28	46.29	54.00	-7.71	AVG	
X	3	2425.000	82.12	10.42	92.54	74.00	18.54	peak	
*	4	2426.800	76.75	10.43	87.18	54.00	33.18	AVG	

CH03_Vertical



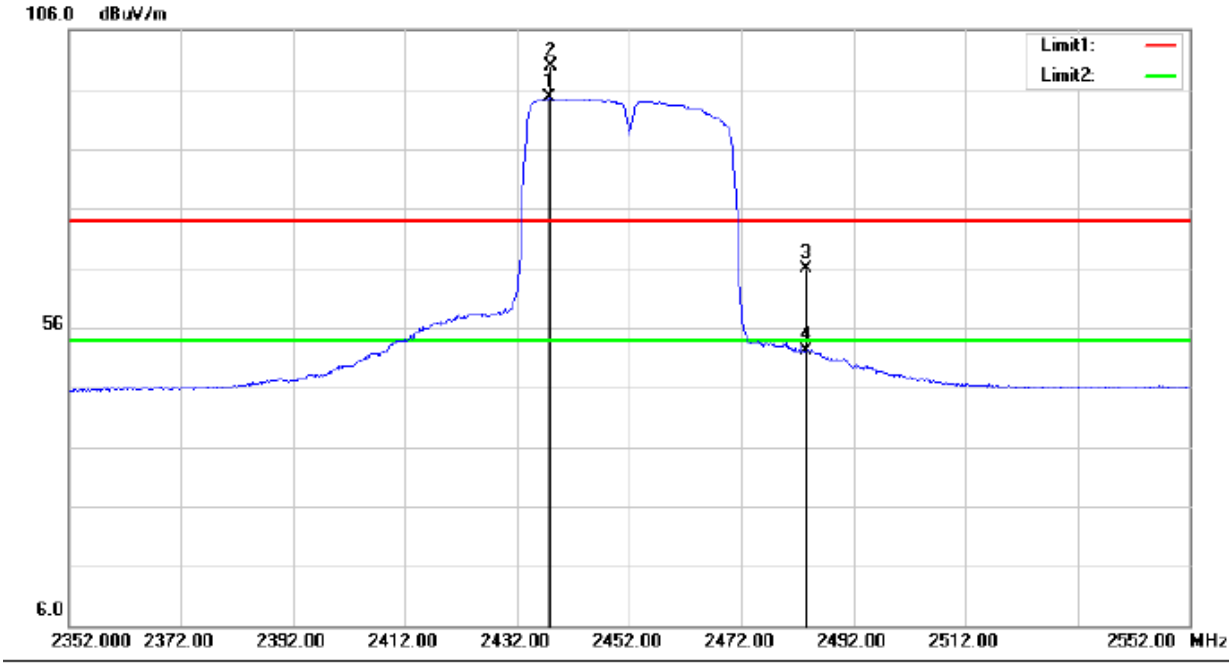
Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
	1	2390.000	55.13	10.28	65.41	74.00	-8.59	peak	
	2	2390.000	42.93	10.28	53.21	54.00	-0.79	AVG	
X	3	2415.200	90.40	10.37	100.77	74.00	26.77	peak	
*	4	2423.800	85.35	10.42	95.77	54.00	41.77	AVG	

CH09_Horizontal



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
X	1	2445.800	84.66	10.52	95.18	74.00	21.18	peak	
*	2	2455.400	79.01	10.57	89.58	54.00	35.58	AVG	
	3	2483.500	53.68	10.72	64.40	74.00	-9.60	peak	
	4	2483.500	38.93	10.72	49.65	54.00	-4.35	AVG	

CH09_Vertical



Mk.	No.	Frequency (MHz)	Reading (dBuV/m)	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Comment
*	1	2437.800	84.04	10.49	94.53	54.00	40.53	AVG	
X	2	2438.000	89.27	10.49	99.76	74.00	25.76	peak	
	3	2483.500	55.26	10.72	65.98	74.00	-8.02	peak	
	4	2483.500	41.44	10.72	52.16	54.00	-1.84	AVG	

Note: Measurement uncertainty is 3.85 dB.

CH03


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:09:33 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div Ref 20.00 dBm
Log
Mkr4 2.396 6 GHz
-27.69 dBm
-22.14 dBm
Start 2.2450 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.4450 GHz
Sweep 19.13 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.424 4 GHz 7.86 dBm
2 N 1 f 2.400 0 GHz -28.23 dBm
3 N 1 f 2.390 0 GHz -30.04 dBm
4 N 1 f 2.396 6 GHz -27.69 dBm
Frequency
Auto Tune
Center Freq
2.345000000 GHz
Start Freq
2.245000000 GHz
Stop Freq
2.445000000 GHz
CF Step
20.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

CH09


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:11:37 PM Aug 01, 2023
Ref Offset 15.25 dB
10 dB/div Ref 20.00 dBm
Log
Mkr4 2.483 5 GHz
-26.05 dBm
-22.18 dBm
Start 2.4300 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.6300 GHz
Sweep 19.13 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.443 2 GHz 7.82 dBm
2 N 1 f 2.483 5 GHz -26.05 dBm
3 N 1 f 2.500 0 GHz -36.82 dBm
4 N 1 f 2.483 5 GHz -26.05 dBm
Frequency
Auto Tune
Center Freq
2.530000000 GHz
Start Freq
2.430000000 GHz
Stop Freq
2.630000000 GHz
CF Step
20.000000 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.

FREQUENCY RANGE	Limit
2.40 - 2.4835 GHz	8 dBm / 3 kHz

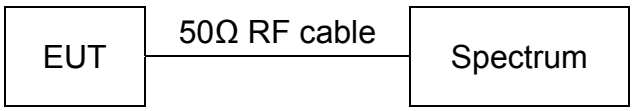
9.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission 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 transmitter mode and could be controlled 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.

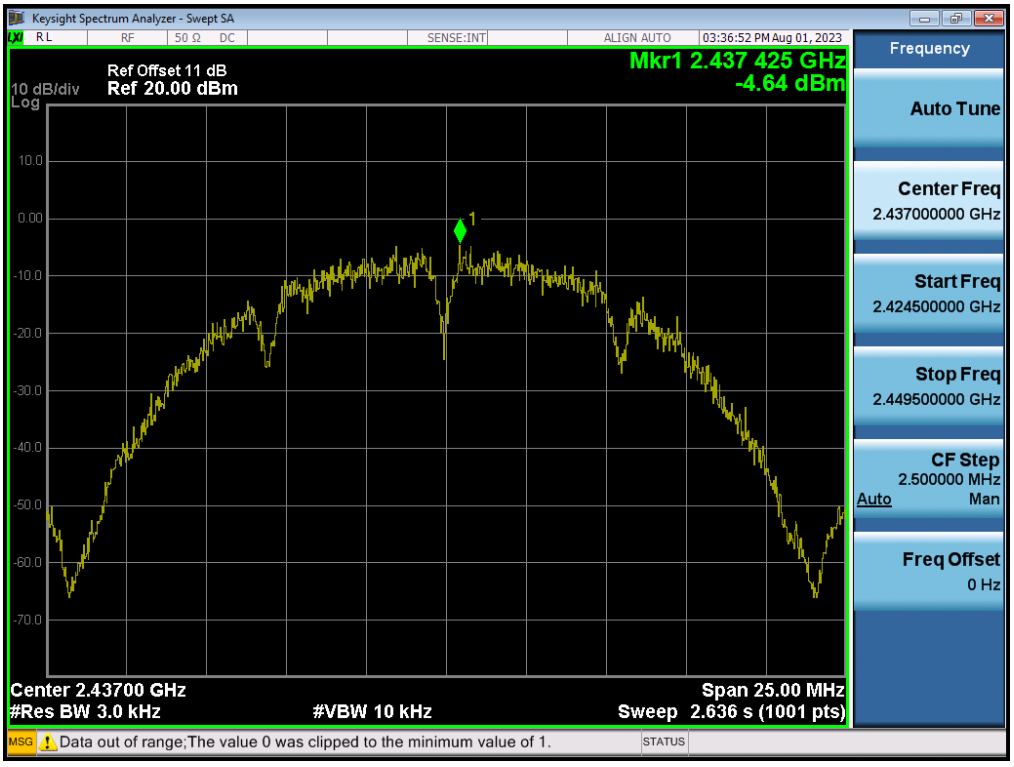
9.6 TEST RESULT

Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	802.11b
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-3.37	8
CH06	2437	-4.64	8
CH11	2462	-4.78	8

CH01：

CH06：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:36:52 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.437 425 GHz
-4.64 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424500000 GHz
Stop Freq
2.449500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

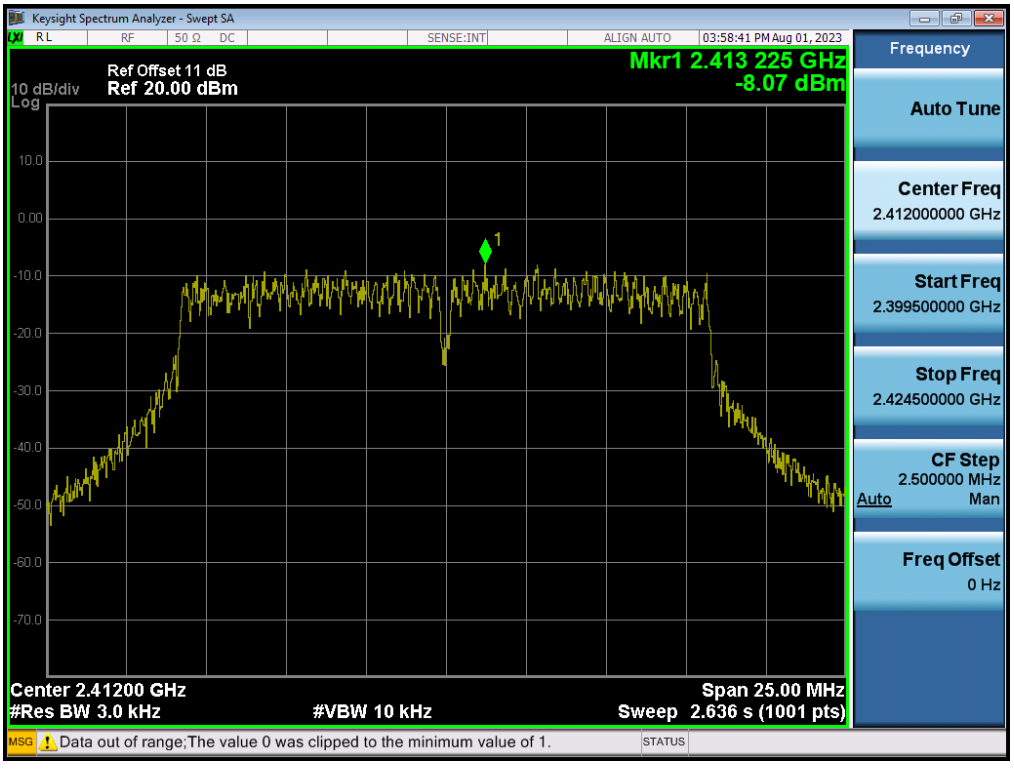
CH11：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:37:59 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.462 775 GHz
-4.78 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449500000 GHz
Stop Freq
2.474500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

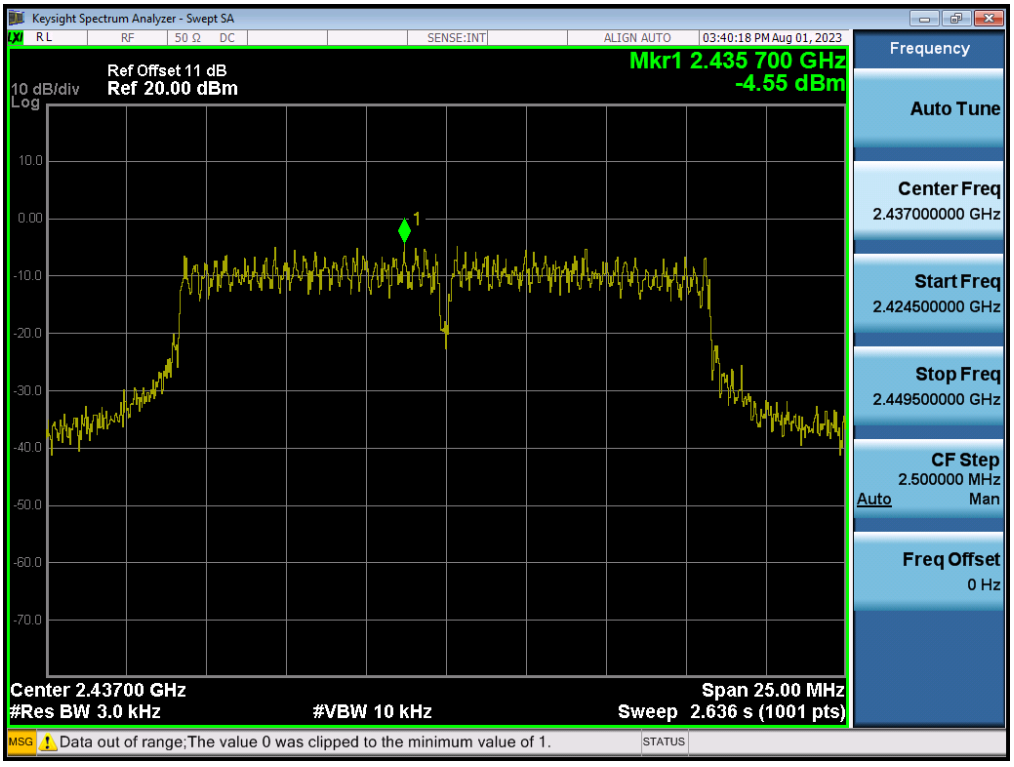
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	802.11g
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-8.07	8
CH06	2437	-4.55	8
CH11	2462	-4.39	8

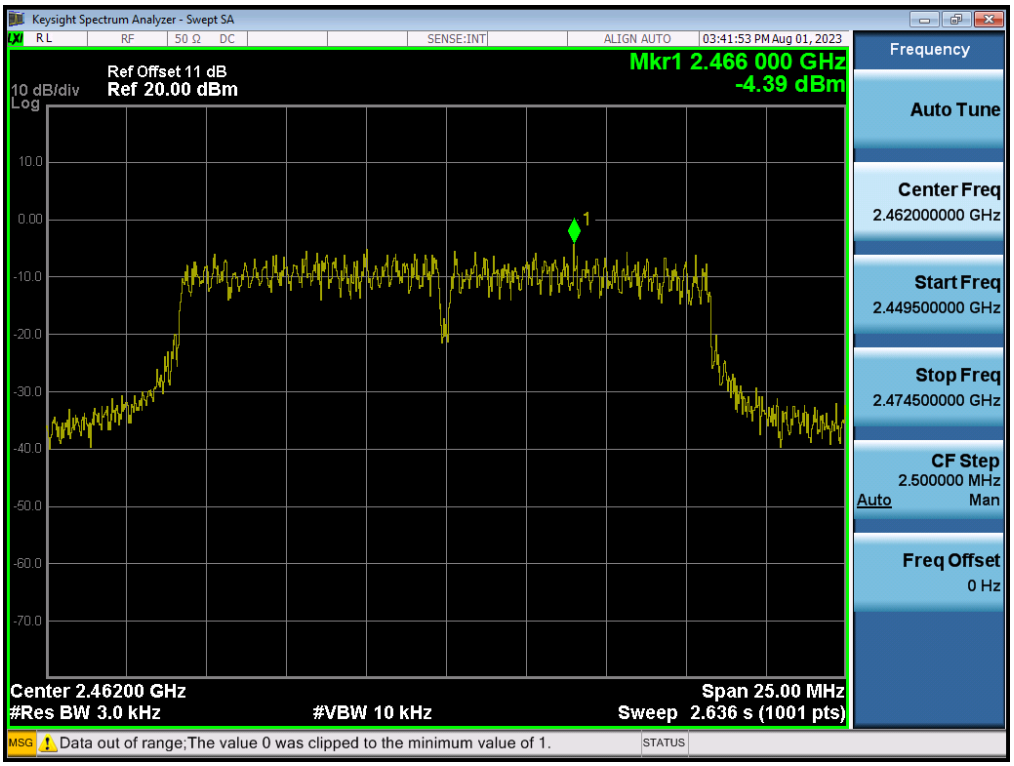
CH01：



CH06：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:40:18 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.435 700 GHz
-4.55 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424500000 GHz
Stop Freq
2.449500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

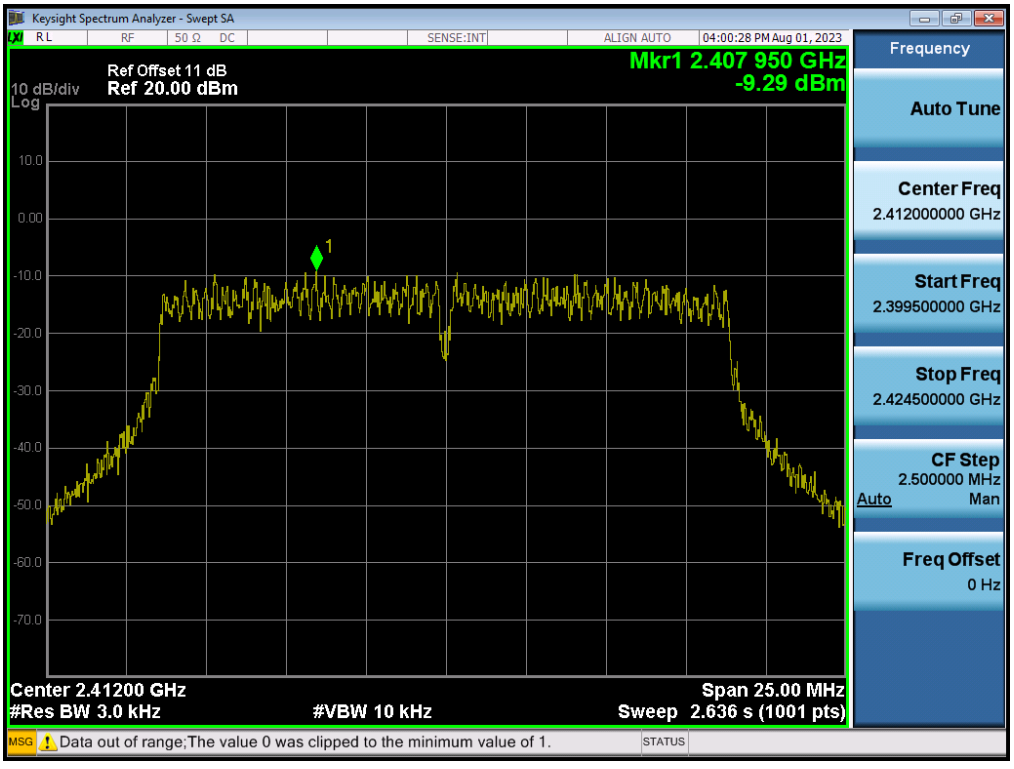
CH11：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:41:53 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.466 000 GHz
-4.39 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449500000 GHz
Stop Freq
2.474500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

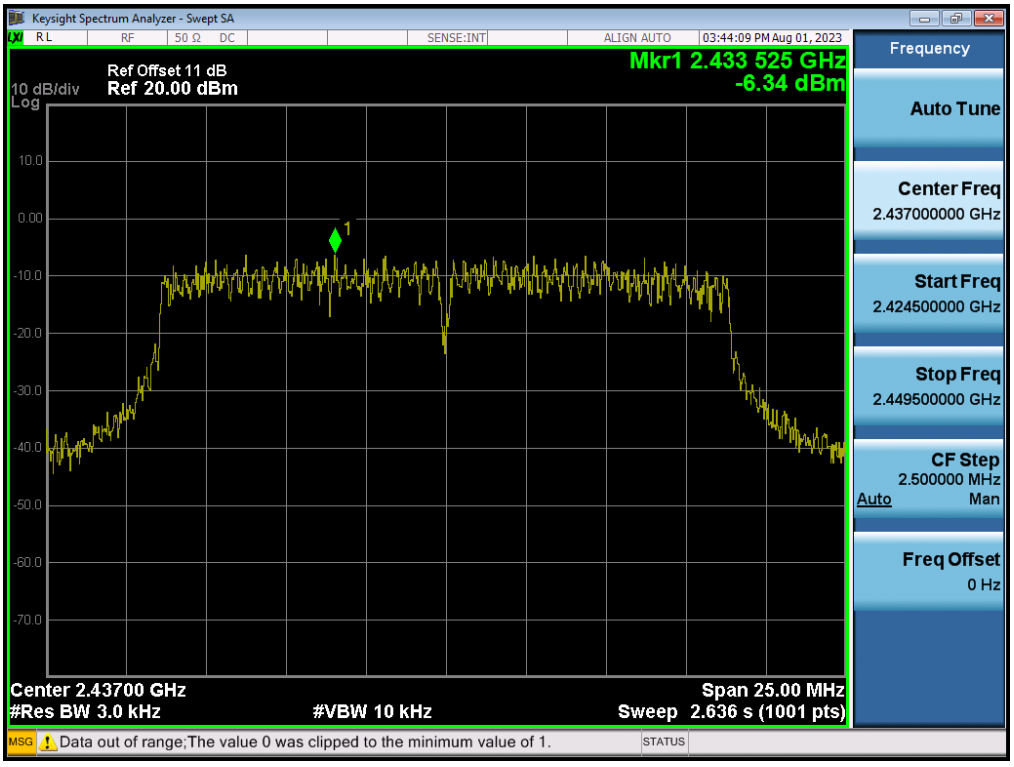
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	802.11n - HT20
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH01	2412	-9.29	8
CH06	2437	-6.34	8
CH11	2462	-6.50	8

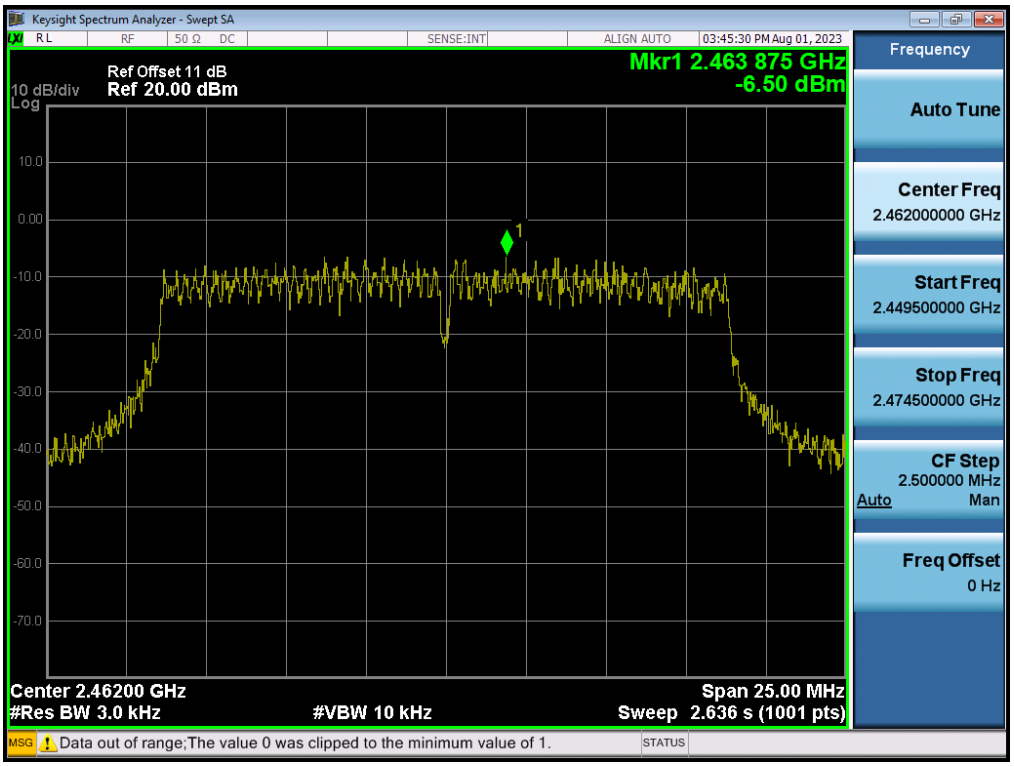
CH01：



CH06：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:44:09 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.433 525 GHz
-6.34 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424500000 GHz
Stop Freq
2.449500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

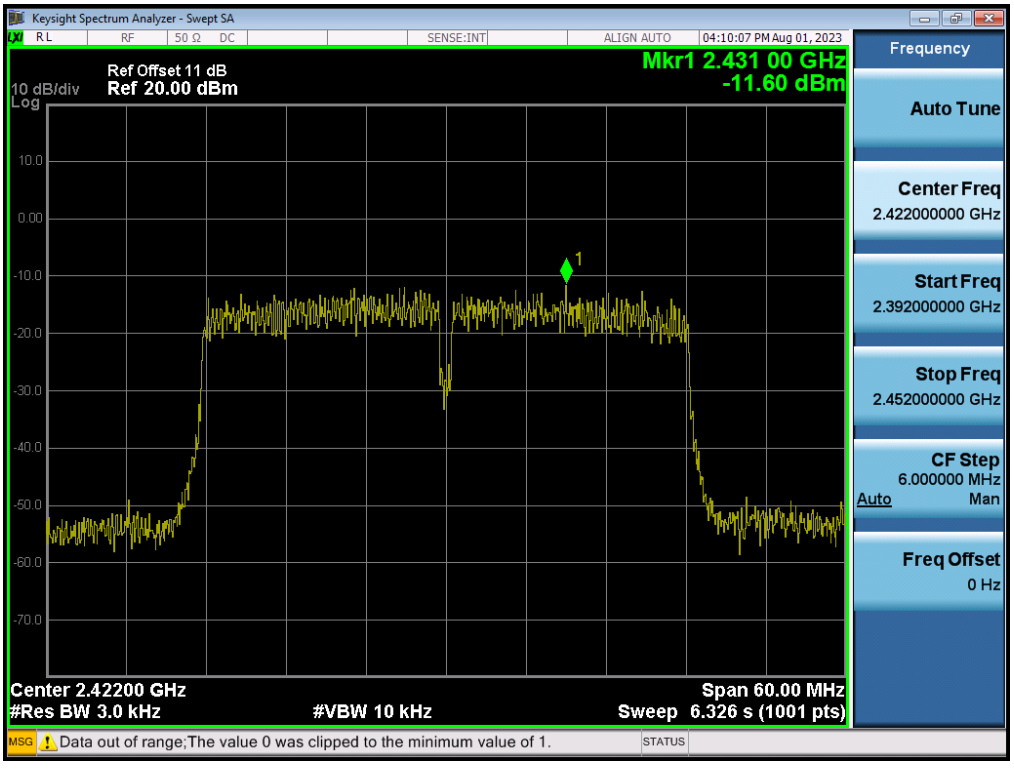
CH11：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
03:45:30 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.463 875 GHz
-6.50 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.46200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 25.00 MHz
Sweep 2.636 s (1001 pts)
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449500000 GHz
Stop Freq
2.474500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
Data out of range;The value 0 was clipped to the minimum value of 1.
STATUS

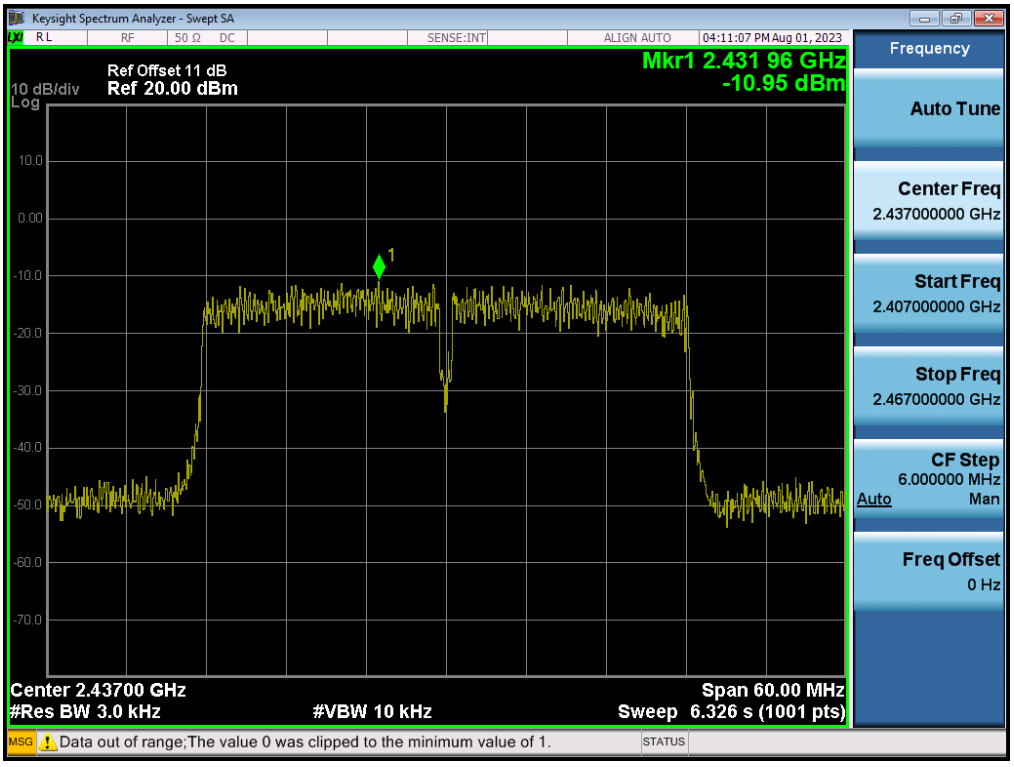
Temperature:	28 °C	Humidity:	74 %RH
Detector:	Peak	Test Mode:	802.11n - HT40
RBW:	3 kHz	VBW:	10 kHz
Tested By:	Jimmy tseng	Tested Date:	Aug. 01, 2023

Channel Number	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)
CH03	2422	-11.60	8
CH06	2437	-10.95	8
CH09	2452	-10.79	8

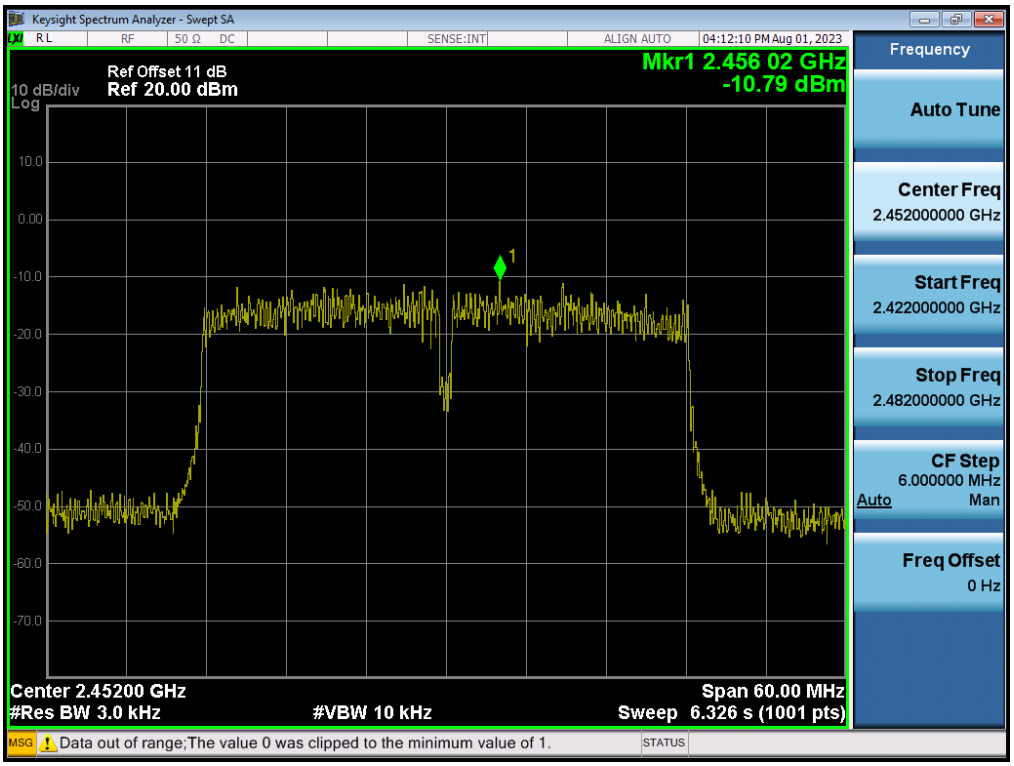
CH03：



CH06：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:11:07 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.431 96 GHz
-10.95 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.43700 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 60.00 MHz
Sweep 6.326 s (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.407000000 GHz
Stop Freq
2.467000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

CH09：


Keysight Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
04:12:10 PM Aug 01, 2023
Ref Offset 11 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr1 2.456 02 GHz
-10.79 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.45200 GHz
#Res BW 3.0 kHz
#VBW 10 kHz
Span 60.00 MHz
Sweep 6.326 s (1001 pts)
Data out of range;The value 0 was clipped to the minimum value of 1.
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.452000000 GHz
Start Freq
2.422000000 GHz
Stop Freq
2.482000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

10 Antenna application

10.1 Antenna requirement

The EUT's antenna is met the requirement of FCC Part 15C section 15.203 and 15.204.

FCC Part 15C section 15.247 requirement:
Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

10.2 Result

The EUT's antenna used a FPC Antenna (Brand: HP, Model: CC180W). Gain of 4.25 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