FCC Test Report

Report No.:	2405Z107592EC
Applicant:	Shenzhen Qianyan Technology LTD
Address:	No.3301, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Product Name:	Govee Outdoor Lamp Post Lights
Product Model:	H7072
Multiple Models:	N/A
Trade Mark:	Govee
FCC ID:	2A7VD-H7072
Standards:	FCC CFR Title 47 Part 15C (§15.247)
Test Date:	2024-12-18 to 2024-12-27
Test Result:	Complied
Report Date:	2024-12-31

Reviewed by:	Abel chen	**Approved by:**	Jacob Gong
	Abel Chen Project Engineer		Jacob Kong Manager

Prepared by:

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

NVLAP TESTING NVLAP LAB CODE 600335-0

ilac-MRA

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5. The information marked "#" is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

Revision History

Version No.	Issued Date	Description
00	*2024-12-31*	*Original*

Contents

1 General Information

1.1 Client Information

Applicant:	Shenzhen Qianyan Technology LTD
Address:	No.3301, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen Qianyan Technology LTD
Address:	No.3301, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen, China

1.2 Product Description of EUT

The EUT is Govee Outdoor Lamp Post Lights that contains BLE and 2.4G WLAN radios, this report covers the full testing of the 2.4G WLAN radio.

Sample Serial Number	2V9Z-3 for CE test, 2V9Z-1 for RE test, 2V9Z-2 for RF conducted test (assigned by WATC)
Sample Received Date	2024-12-02
Sample Status	Good Condition
Frequency Range	2412MHz - 2472MHz(802.11b, g, n-HT20)
Maximum Conducted Peak Output Power	16.75dBm
Modulation Technology	DSSS, OFDM
Antenna Gain#	4.82dBi
Spatial Streams#	SISO (1TX, 1RX)
Power Supply	DC 24V 1.5A from adapter
Adapter Information	Model: BI36GA-240150-U2 Input: AC100-240V, 50/60Hz, 1.2A Output: DC 24V/1.5A
Modification	Sample No Modification by the test lab

1.3 Antenna information

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Device Antenna information:	

The Wi-Fi antenna is an internal antenna which cannot replace by end-user. Please see product internal photos for details.

1.4 Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s)

1.5 Measurement Uncertainty

Parameter		Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
AC Power Lines Conducted Emissions		±3.14dB
Emissions, Radiated	Below 30MHz	±2.78dB
	Below 1GHz	±4.84dB
	Above 1GHz	±5.44dB
Emissions, Conducted		1.75dB
Conducted Power		0.74dB
Frequency Error		150Hz
Bandwidth		0.34%
Power Spectral Density		0.74dB

Note: *The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

1.6 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

1.7 Test Methodology

FCC CFR 47 Part 2

FCC CFR 47 Part 15

KDB 558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10-2013

Unless otherwise stated there are no any additions to, deviations, or exclusions from the method

2 Description of Measurement

2.1 Test Configuration

Operating channels:					
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467
3	2422	8	2447	13	2472
4	2427	9	2452	/	/
5	2432	10	2457	/	/
According to ANSI C63.10-2013 chapter 5.6.1 Table 11 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:					
802.11b, 802.11g, 802.11n-HT20					
Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	6	2442	11	2472

Test Mode:				
Transmitting mode:	Keep the EUT in continuous transmitting with modulation			
Exercise software#:	mptool			
Mode	**Worst-case Data rate**	**Power Level Setting#**		
		Low Channel	**Middle Channel**	**High Channel**
802.11b	1Mbps	77	77	77
802.11g	6Mbps	45	45	45
802.11n-HT20	6.5Mbps	45	45	45
The exercise software and the maximum power setting that provided by manufacturer.				

Worst-Case Configuration:
For AC power line conducted emission and radiated emission 9kHz-1GHz and above 18GHz were performed with the EUT transmits at the channel with highest output power as worst-case scenario. For radiated emissions below 30MHz, three antenna orientations (parallel, perpendicular, gound-parallel) were tested, only record the worse case test data in report.

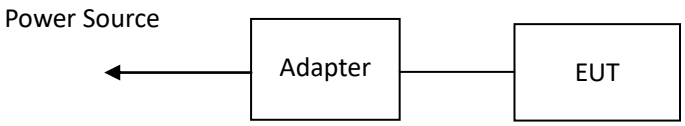
2.2 Test Auxiliary Equipment

Manufacturer	**Description**	**Model**	**Serial Number**
/	/	/	/

2.3 Interconnecting Cables

Manufacturer	Description	Length(m)	From	To
Unknown	DC Power Cable	2.0	Adapter	Extension cord
Unknown	Extension cord	3.0	Extension cord	Lamp

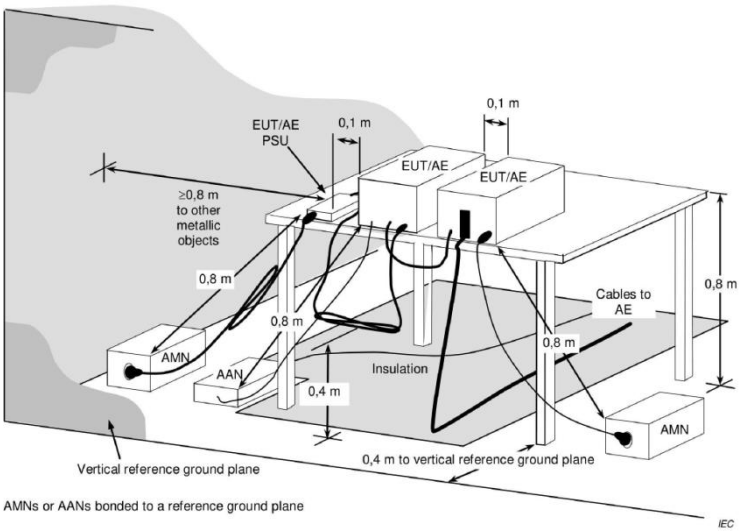
2.4 Block Diagram of Connection between EUT and AE



Note: for reference only, the actual connection setup used for testing please refer to the test photos.

2.5 Test Setup

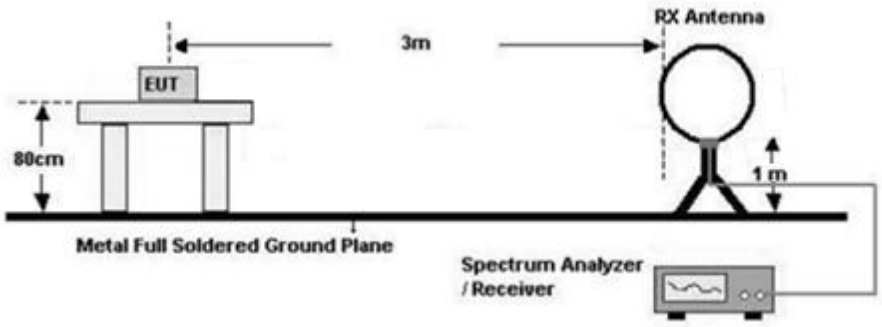
1) Conducted emission measurement:



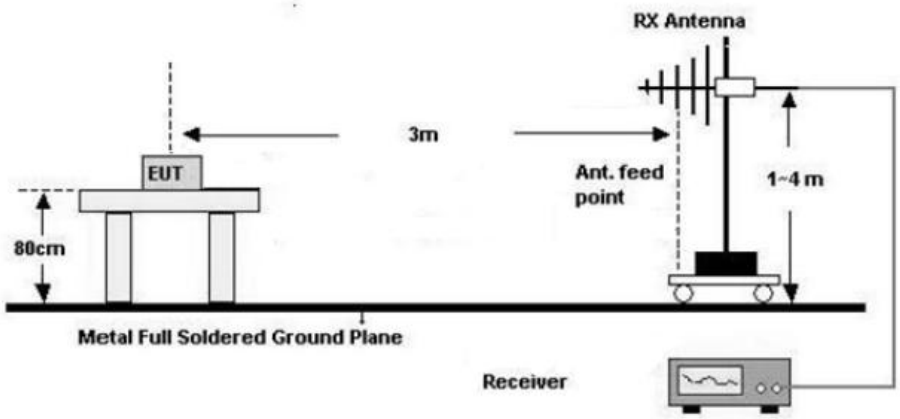
Note: The 0.8 m distance specified between EUT/AE/PSU and AMN/AAN, is applicable only to the EUT being measured. If the device is AE then it shall be >0.8 m.

2) Radiated emission measurement:

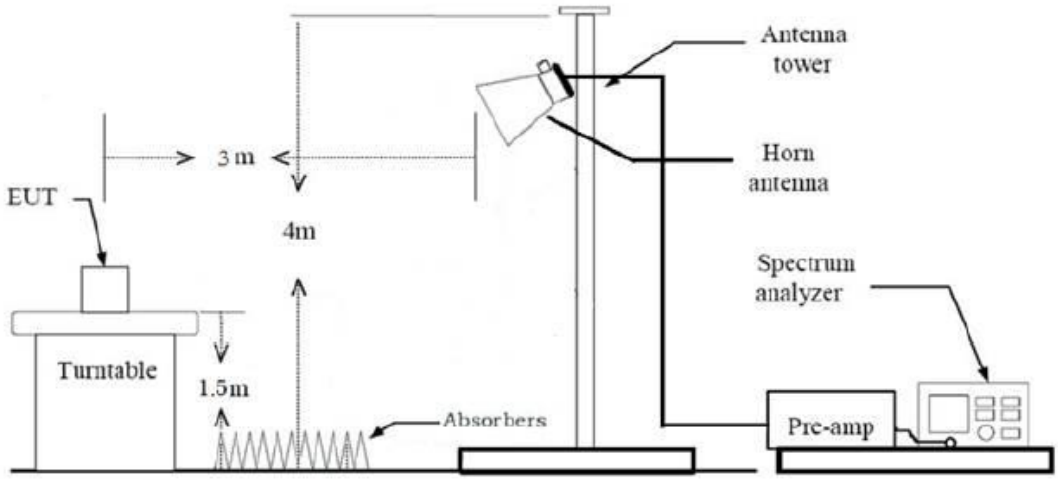
Below 30MHz (3m SAC)



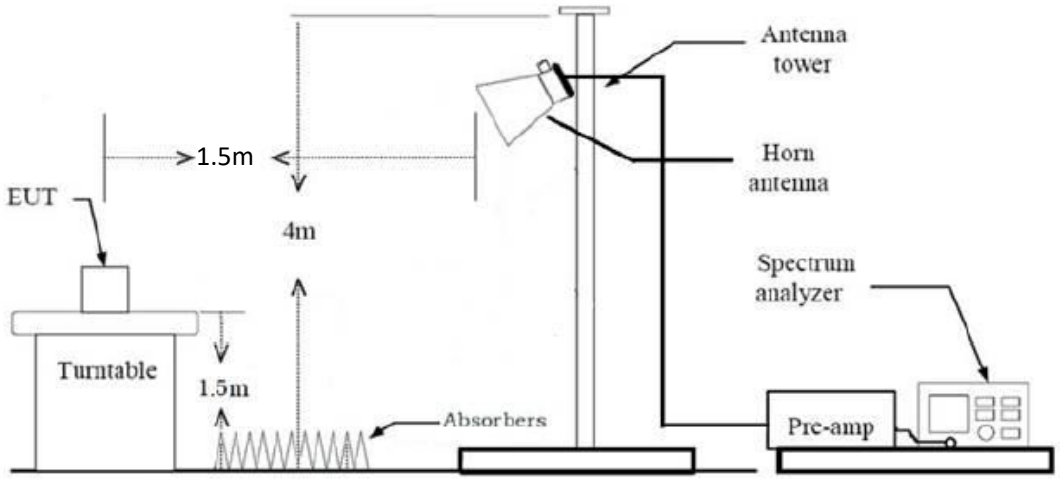
30MHz-1GHz (3m SAC)



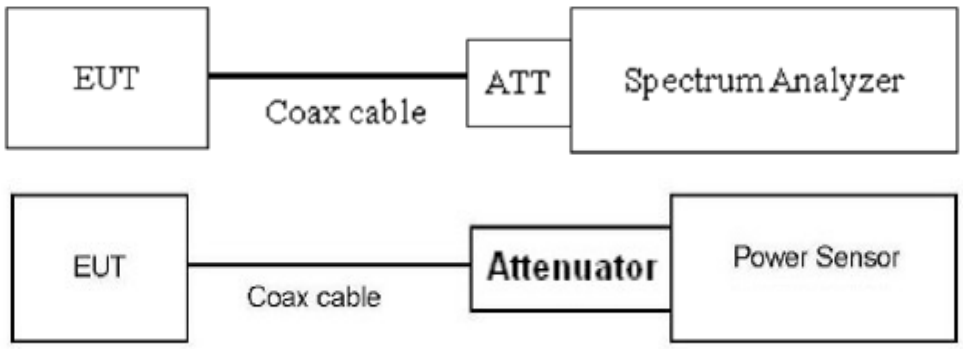
1GHz-18GHz(3m FAC)



Above 18GHz (3m FAC)



3) RF Conducted Test



2.6 Test Procedure

Conducted emission:

1. The E.U.T is placed on a non-conducting table 40cm from the vertical ground plane and 80cm above the horizontal ground plane (Please refer to the block diagram of the test setup and photographs).
2. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
3. Line conducted data is recorded for both Line and Neutral

Radiated Emission Procedure:

a) For below 30MHz

1. All measurements were made at a test distance of 3 m. The measured data was extrapolated from the test distance (3m) to the specification distance (300 m from 9-490 kHz and 30 m from 490 kHz- 30 MHz) to clearly show the relative levels of fundamental and spurious emissions and demonstrate compliance with the requirement that the level of any spurious emissions be below the level of the intentionally transmitted signal. The extrapolation factor for the limits were 40*Log (test distance / specification distance).

2. Loop antenna use, investigation was done on the three antenna orientations (parallel, perpendicular, gound-parallel)
3. The RBW/VBW of receiver is set to 300Hz/1kHz for 9kHz to 150kHz range, to 10kHz/30kHz for 150kHz to 30MHz range for scan Peak emission, 200Hz/9kHz IF BW was used for final measurement in the Quasi-peak or average detection mode for frequency range 9~150kHz/150kHz~30MHz respectively.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

b) For 30MHz-1GHz:

1. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m.
2. EUT works in each mode of operation that needs to be tested. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. The RBW/VBW of receiver is set to 100kHz/300kHz for scan Peak emission, 120kHz IF BW was used for final measurement in the Quasi-peak detection mode.
4. If the Peak emission complies with the QP limit, then perform final measurement is optional.

c) For above 1GHz:

1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m (1-18GHz) and 1.5 m (above 18GHz).
2. EUT works in each mode of operation that needs to be tested， and having the EUT continuously working. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations.
3. The RBW/VBW of spectrum analyzer is set to 1MHz/3MHz for scan Peak emission, for measured average emission, reduce the VBW to 10Hz(for duty cycle≥98%), or ≥1/T(for duty cycle<98%). T is minimum transmission duration. (Note: a high VBW (for example 1kHz, not less than 1/T) may used to scan average emissions to avoid long sweep time.)
4. If the Peak emission complies with the Average limit, then perform average measurement is optional.
5. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
6. Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

RF Conducted Test:

1. The antenna port of EUT was connected to the RF port of the test equipment (Power Meter or Spectrum analyzer) through Attenuator and RF cable.
2. The cable assembly insertion loss of 7.0dB (including 6.0 dB Attenuator and 1.0 dB cable) was entered as an offset in the power meter. Note: Actual cable loss was unavailable at the time of testing, therefore a loss of 1.0dB was assumed as worst case. This was later verified to be true by laboratory. (if the RF cable provided by client, the cable loss declared by client)
3. The EUT is keeping in continuous transmission mode and tested in all modulation modes.

2.7 Measurement Method

Description of Test	Measurement Method
AC Line Conducted Emissions	ANSI C63.10-2013 Section 6.2
Maximum Conducted Output Power	ANSI C63.10-2013 Section 11.9.1.2 PKPM1 Peak power meter method or ANSI C63.10-2013 Section 11.9.2.3.2 Method AVGPM-G
Power Spectral Density	ANSI C63.10-2013 Section 11.10.2 Method PKPSD (peak PSD)
6 dB Emission Bandwidth	ANSI C63.10-2013 Section 11.8.1
99% Occupied Bandwidth	ANSI C63.10-2013 Section 6.9.3
100kHz Bandwidth of Frequency Band Edge	ANSI C63.10-2013 Section 6.10
Radiated emission	ANSI C63.10-2013 Section 11.11&11.12
Duty Cycle	ANSI C63.10-2013 Section 11.6

2.8 Measurement Equipment

Manufacturer	Description	Model	Management No.	Calibration Date	Calibration Due Date
AC Line Conducted Emission Test					
ROHDE& SCHWARZ	EMI TEST RECEIVER	ESR	101817	2024/6/4	2025/6/3
R&S	LISN	ENV216	101748	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.12	N/A	2024/6/4	2025/6/3
Farad	Test Software	EZ-EMC	Ver. EMEC-3A1	/	/
Radiated Emission Test					
R&S	EMI test receiver	ESR3	102758	2024/6/4	2025/6/3
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40-N	101608	2024/6/4	2025/6/3
SONOMA INSTRUMENT	Low frequency amplifier	310	186014	2024/6/4	2025/6/3
A.H. Systems	PREAMPLIFIER	PAM-0118P	531	2024/6/4	2025/6/3
COM-POWER	Amplifier	PAM-840A	461306	2024/8/7	2025/8/6
BACL	Loop Antenna	1313-1A	4010611	2024/2/7	2027/2/6
SCHWARZBECK	Log - periodic wideband antenna	VULB 9163	9163-872	2023/7/7	2026/7/6
Astro Antenna Ltd	Horn antenna	AHA-118S	3015	2023/7/6	2026/7/5
Ducommun technologies	Horn Antenna	ARH-4223-02	1007726-03	2023/7/10	2026/7/9
Oulitong	Band Reject Filter	OBSF-2400-2483.5-50N	OE02103119	2024/6/4	2025/6/3
Unknown	6.7G High Pass Filter	Unknown	6.7G	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.9	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.13	N/A	2024/8/7	2025/8/6
N/A	Coaxial Cable	NO.15	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.16	N/A	2024/6/4	2025/6/3
N/A	Coaxial Cable	NO.17	N/A	2024/6/4	2025/6/3
Audix	Test Software	E3	191218 V9	/	/
RF Conducted Test					
ROHDE& SCHWARZ	SPECTRUM ANALYZER	FSV40	101419	2024/6/4	2025/6/3
ANRITSU	USB Power Sensor	MA24418A	12620	2024/6/4	2025/6/3
narda	6dB attenuator	603-06-1	N/A	2024/6/4	2025/6/3

Note: All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or International standards.

3 Test Results

3.1 Test Summary

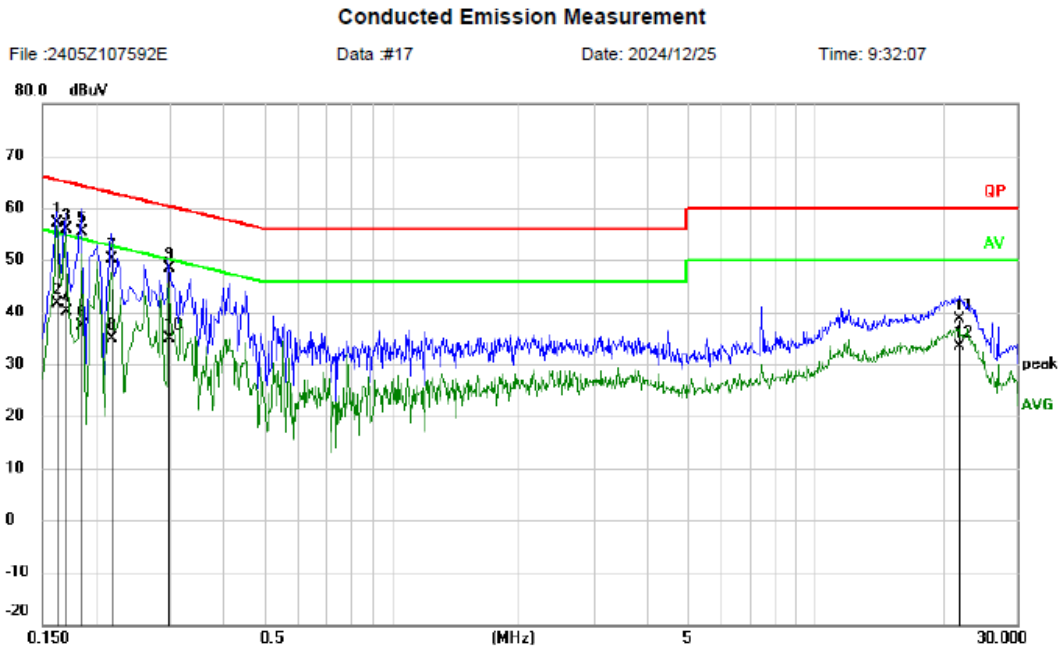
FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Compliance
§15.247(b)(3)	Maximum Conducted Output Power	Compliance
§15.247(e)	Power Spectral Density	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
-	99% Occupied Bandwidth	Report only
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Compliance
§15.205, §15.209, §15.247(d)	Radiated emission	Compliance
-	Duty Cycle	Report only

3.2 Limit

Test items	Limit
AC Line Conducted Emissions	See details §15.207 (a)
Conducted Output Power	For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.
6dB Emission Bandwidth	The minimum 6 dB bandwidth shall be at least 500 kHz.
Power Spectral Density	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.
Spurious Emissions, 100kHz Bandwidth of Frequency Band Edge	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

3.3 AC Line Conducted Emissions Test Data

Test Date:	2024-12-25	Test By:	Lirou Li
Environment condition:	Temperature: 21.1°C; Relative Humidity:44%; ATM Pressure: 101kPa		



Limit: QP
Mode:transmitting
Note: 802.11b H Channel

Phase: L1
Power: AC 120V/60Hz

Temperature: 21.1 ℃
Humidity: 44 %
Air Pressure: 1010 hpa

Receiver Setting: 9~150kHz: Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV
0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

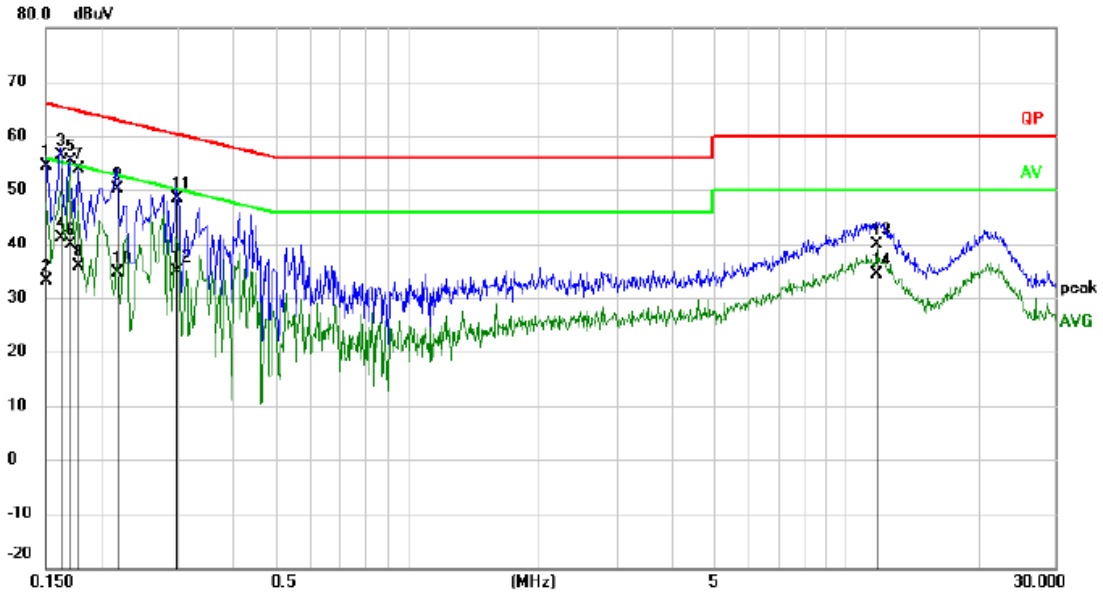
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1620	46.63	10.53	57.16	65.36	-8.20	QP	
2		0.1620	31.22	10.53	41.75	55.36	-13.61	AVG	
3		0.1700	45.31	10.55	55.86	64.96	-9.10	QP	
4		0.1700	29.57	10.55	40.12	54.96	-14.84	AVG	
5		0.1860	44.81	10.58	55.39	64.21	-8.82	QP	
6		0.1860	26.90	10.58	37.48	54.21	-16.73	AVG	
7		0.2180	39.58	10.62	50.20	62.89	-12.69	QP	
8		0.2180	24.21	10.62	34.83	52.89	-18.06	AVG	
9		0.2980	37.63	10.64	48.27	60.30	-12.03	QP	
10		0.2980	24.18	10.64	34.82	50.30	-15.48	AVG	
11		21.8700	27.30	11.28	38.58	60.00	-21.42	QP	
12		21.8700	22.01	11.28	33.29	50.00	-16.71	AVG	

*:Maximum data x:Over limit !:over margin

Engineer Signature: Lirou

Conducted Emission Measurement

File :2405Z107592E Data :#18 Date: 2024/12/25 Time: 9:36:21



Limit: QP Phase: N Temperature: 21.1 ℃

Mode:transmitting Power: AC 120V/60Hz Humidity: 44 %

Note: 802.11b H Channel Air Pressure: 1010 hpa

Receiver Setting: 9~150kHz: Pre-scan: RBW: 200Hz, DET: PK/AV; Final measure: RBW: 200Hz, DET: QP/AV
0.15~30MHz: Pre-scan: RBW: 9kHz, DET: PK/AV; Final measure: RBW: 9kHz, DET: QP/AV

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over Limit		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	44.01	10.41	54.42	66.00	-11.58	QP	
2		0.1500	22.82	10.41	33.23	56.00	-22.77	AVG	
3	*	0.1620	46.03	10.41	56.44	65.36	-8.92	QP	
4		0.1620	30.83	10.41	41.24	55.36	-14.12	AVG	
5		0.1700	45.04	10.41	55.45	64.96	-9.51	QP	
6		0.1700	29.41	10.41	39.82	54.96	-15.14	AVG	
7		0.1780	43.59	10.41	54.00	64.58	-10.58	QP	
8		0.1780	25.41	10.41	35.82	54.58	-18.76	AVG	
9		0.2180	39.65	10.44	50.09	62.89	-12.80	QP	
10		0.2180	24.27	10.44	34.71	52.89	-18.18	AVG	
11		0.2980	37.96	10.54	48.50	60.30	-11.80	QP	
12		0.2980	24.42	10.54	34.96	50.30	-15.34	AVG	
13		11.7100	29.33	10.64	39.97	60.00	-20.03	QP	
14		11.7100	23.69	10.64	34.33	50.00	-15.67	AVG	

*:Maximum data x:Over limit !:over margin Engineer Signature: Lirou

Remark:

Measurement (dBuV)= Reading Level (dBuV) + Correct Factor(dB)

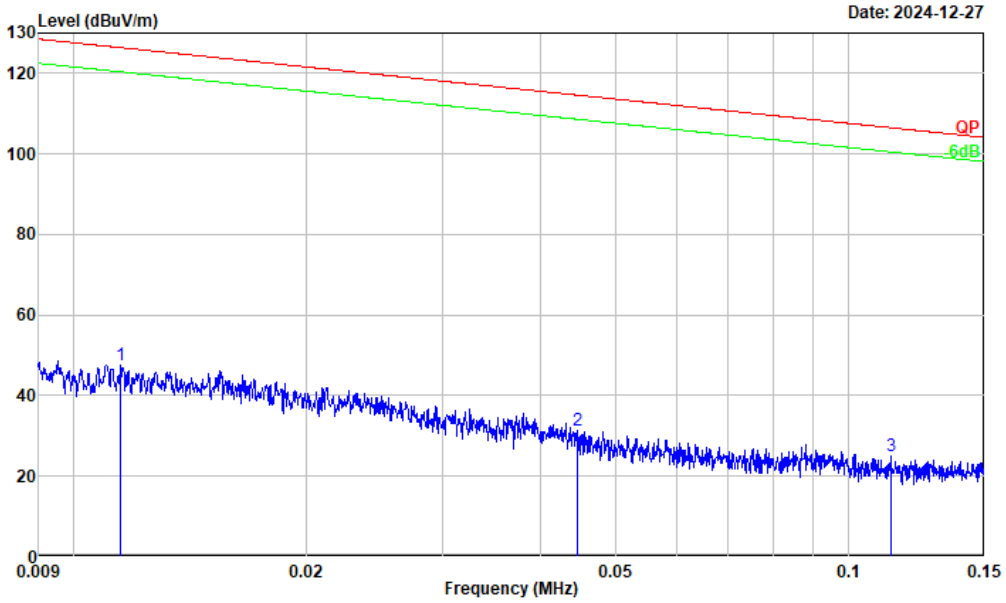
Correct Factor (dB)= LISN Voltage Division Factor (dB)+ Cable loss(dB)

Over Limit = Measurement – Limit

3.4 Radiated emission Test Data

9 kHz-30MHz:

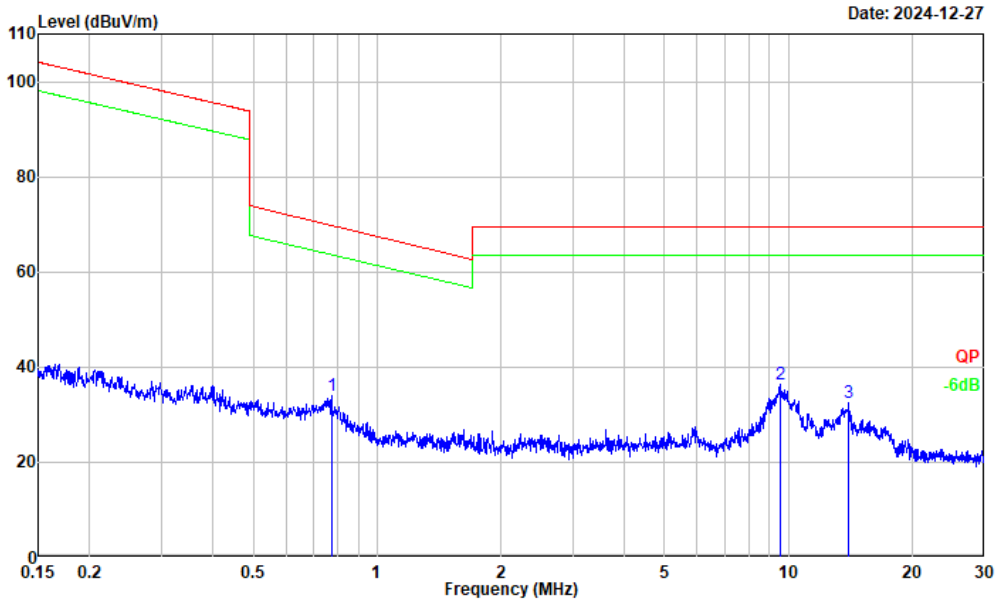
Test Date:	2024-12-27	Test By:	Luke Li
Environment condition:	Temperature: 24.1°C; Relative Humidity:31%; ATM Pressure: 101.1kPa		



Project No. : 2405Z107592E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/31%R.H./101.1kPa
Tested by : Luke Li
Polarization : PARALLEL
Remark : 802.11b high channel

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.012	11.47	36.25	47.72	126.38	-78.66	Peak
2	0.045	10.00	21.51	31.51	114.61	-83.10	Peak
3	0.113	10.38	14.59	24.97	106.52	-81.55	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VWB: 200Hz/1kHz, DET: PK



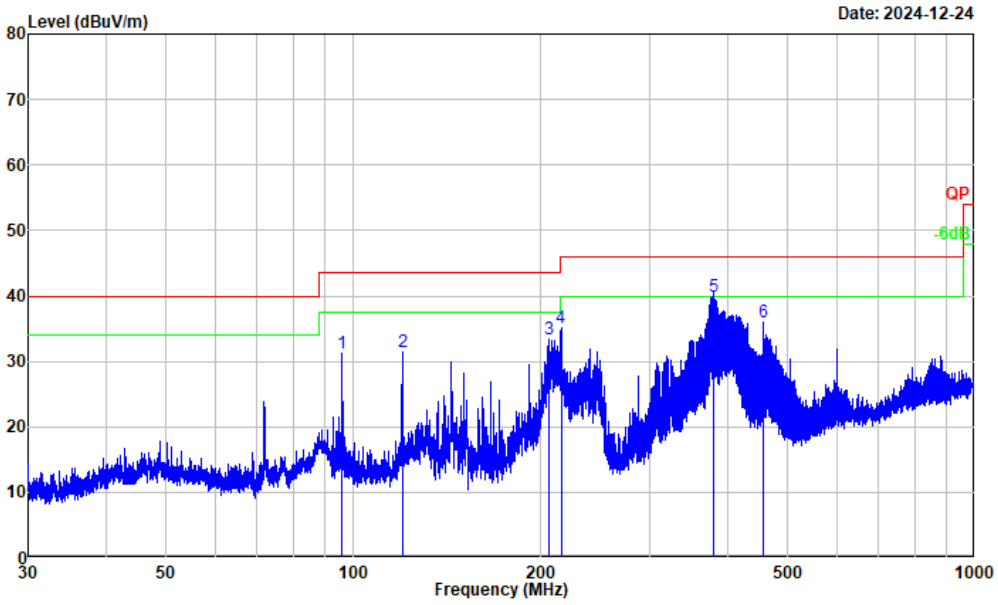
Project No. : 2405Z107592E-RF
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/31%R.H./101.1kPa
Tested by : Luke Li
Polarization : PARALLEL
Remark : 802.11b high channel

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	0.776	31.34	2.62	33.96	69.72	-35.76	Peak
2	9.547	39.96	-3.61	36.35	69.54	-33.19	Peak
3	13.983	36.05	-3.65	32.40	69.54	-37.14	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: RBW/VWB: 9kHz/30kHz, DET: PK

30MHz-1GHz:

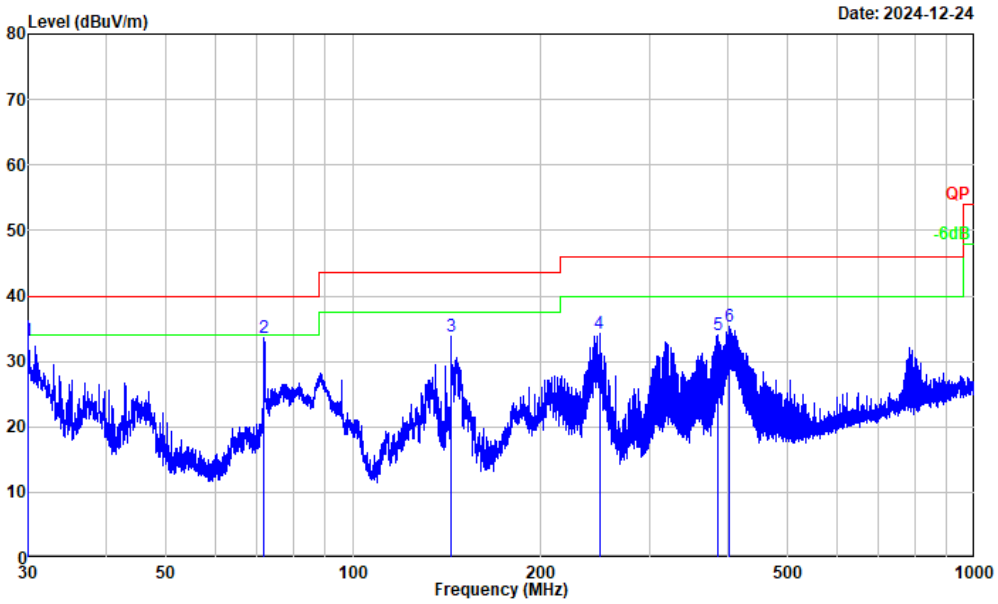
Test Date:	2024-12-24	Test By:	Luke Li
Environment condition:	Temperature: 23.8°C; Relative Humidity:29%; ATM Pressure: 101.4kPa		



Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 23.8℃/29%R.H./101.4kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11b high channel

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	96.014	45.90	-14.66	31.24	43.50	-12.26	Peak
2	119.961	47.17	-15.83	31.34	43.50	-12.16	Peak
3	207.032	47.18	-13.87	33.31	43.50	-10.19	Peak
4	216.024	49.01	-13.79	35.22	46.00	-10.78	Peak
5	380.081	49.26	-9.32	39.94	46.00	-6.06	QP
6	456.106	44.27	-8.37	35.90	46.00	-10.10	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP



Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 23.8℃/29%R.H./101.4kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11b high channel

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	30.026	48.21	-14.99	33.22	40.00	-6.78	QP
2	71.958	50.71	-17.12	33.59	40.00	-6.41	Peak
3	144.019	51.43	-17.57	33.86	43.50	-9.64	Peak
4	248.988	46.74	-12.50	34.24	46.00	-11.76	Peak
5	385.957	43.29	-9.15	34.14	46.00	-11.86	Peak
6	402.015	43.85	-8.62	35.23	46.00	-10.77	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Pre-scan: RBW/VWB: 100Hz/300kHz, DET: PK
Final measure: RBW: 120kHz, DET: QP

Above 1GHz:

Test Date:	2024-12-18~2024-12-23	Test By:	Luke Li
Environment condition:	Temperature: 24.1~24.7°C; Relative Humidity:27%; ATM Pressure: 101.2~101.3kPa		

Frequency (MHz)	Reading level (dBμV)	Polar (H/V)	Corrected Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Remark
802.11b							
Low Channel							
4824.000	52.15	horizontal	-2.75	49.40	74.00	-24.60	Peak
4824.000	54.74	vertical	-2.75	51.99	74.00	-22.01	Peak
Middle Channel							
4884.000	50.65	horizontal	-2.30	48.35	74.00	-25.65	Peak
4884.000	55.38	vertical	-2.30	53.08	74.00	-20.92	Peak
High Channel							
4944.000	50.42	horizontal	-2.18	48.24	74.00	-25.76	Peak
4944.000	54.18	vertical	-2.18	52.00	74.00	-22.00	Peak
802.11g							
Low Channel							
4824.000	47.99	horizontal	-2.75	45.24	74.00	-28.76	Peak
4824.000	48.05	vertical	-2.75	45.30	74.00	-28.70	Peak
Middle Channel							
4884.000	46.87	horizontal	-2.30	44.57	74.00	-29.43	Peak
4884.000	47.64	vertical	-2.30	45.34	74.00	-28.66	Peak
High Channel							
4944.000	47.93	horizontal	-2.18	45.75	74.00	-28.25	Peak
4944.000	47.72	vertical	-2.18	45.54	74.00	-28.46	Peak
802.11n20							
Low Channel							
4824.000	46.77	horizontal	-2.75	44.02	74.00	-29.98	Peak
4824.000	47.13	vertical	-2.75	44.38	74.00	-29.62	Peak
Middle Channel							
4884.000	47.07	horizontal	-2.30	44.77	74.00	-29.23	Peak
4884.000	46.67	vertical	-2.30	44.37	74.00	-29.63	Peak
High Channel							
4944.000	48.18	horizontal	-2.18	46.00	74.00	-28.00	Peak
4944.000	47.81	vertical	-2.18	45.63	74.00	-28.37	Peak

Remark:
Corrected Amplitude= Reading level + corrected Factor
Corrected Factor = Antenna factor + Cable loss – Amplifier gain
Margin = Corrected Amplitude – Limit

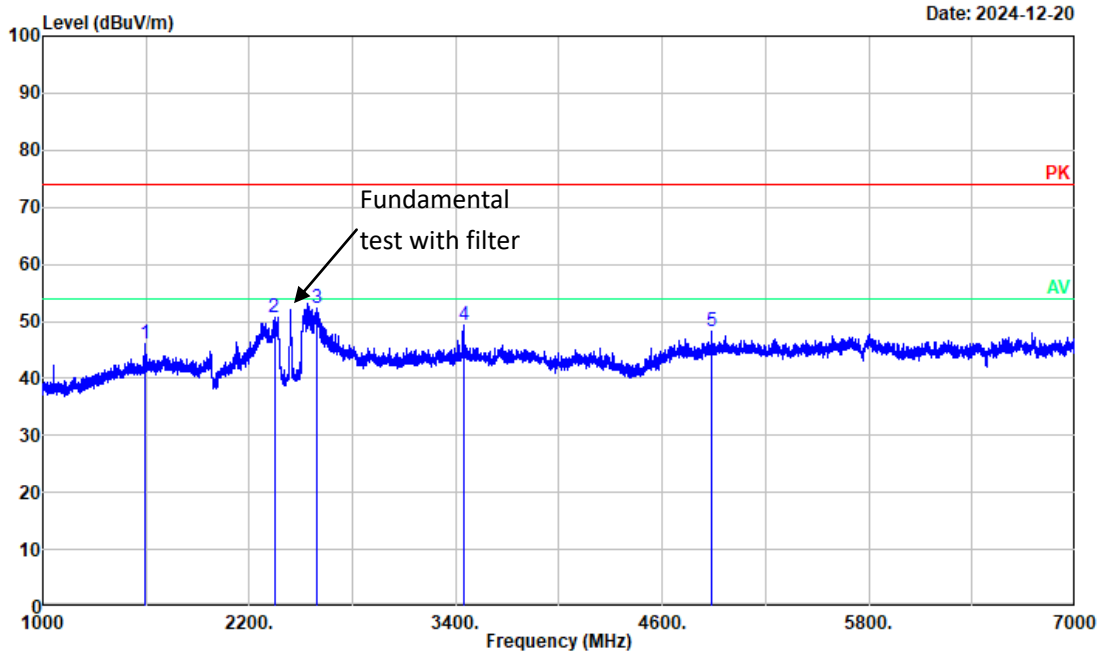
For the test result of Peak below the Peak limit more than 20dB, which can compliance with the average limit, just the Peak level was recorded.

The emission levels of other frequencies that were lower than the limit 20dB not show in test report.

For emissions in 18GHz-25GHz range, all emissions were investigated and in the noise floor level.

Test plot for example as below:

Mode:	802.11b	Channel:	2442MHz

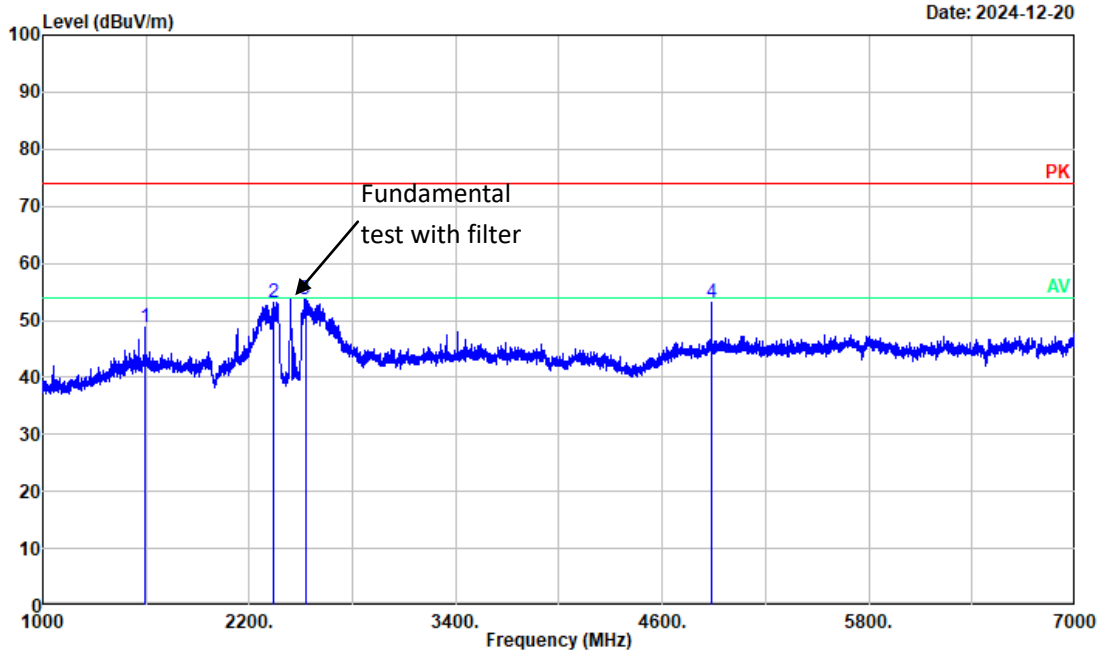


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11b 2442

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	1594.000	50.61	-4.50	46.11	74.00	-27.89	Peak
2	2345.000	53.94	-3.23	50.71	74.00	-23.29	Peak
3	2591.000	55.02	-2.81	52.21	74.00	-21.79	Peak
4	3443.000	52.24	-2.85	49.39	74.00	-24.61	Peak
5	4884.000	50.65	-2.30	48.35	74.00	-25.65	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11b	Channel:	2442MHz

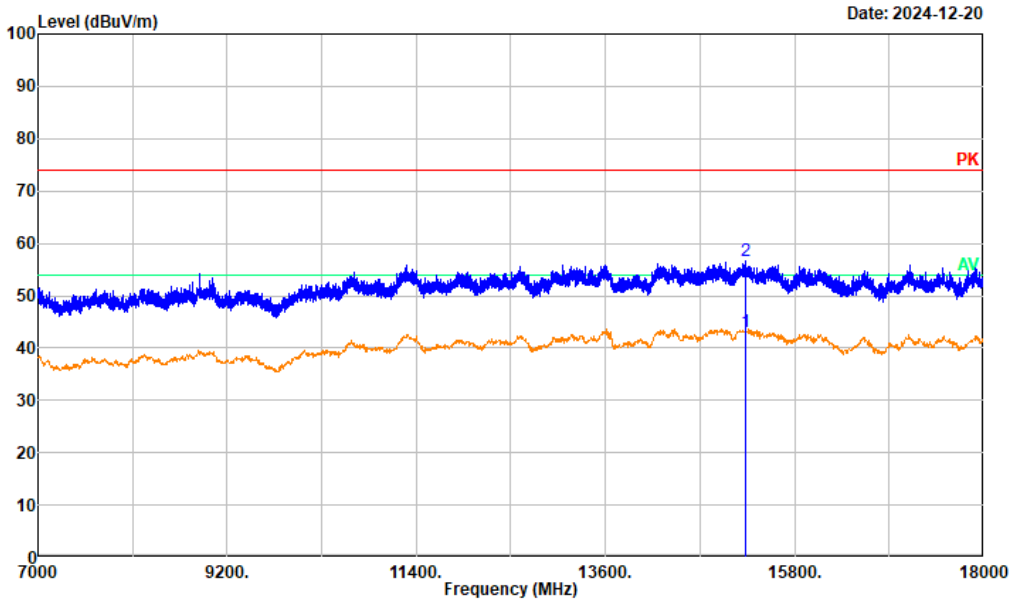


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11b 2442

--No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Detector
1	1591.000	53.34	-4.53	48.81	74.00	-25.19	Peak
2	2343.000	56.37	-3.23	53.14	74.00	-20.86	Peak
3	2525.000	56.57	-2.91	53.66	74.00	-20.34	Peak
4	4884.000	55.38	-2.30	53.08	74.00	-20.92	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11b	Channel:	2442MHz

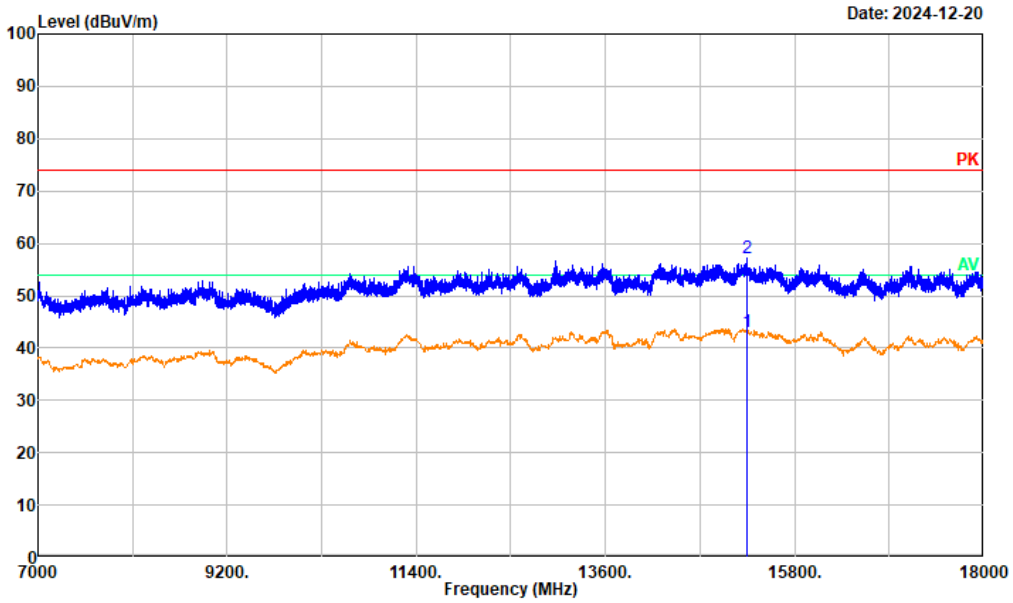


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11b 2442

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	15237.000	37.96	5.23	43.19	54.00	-10.81	Average
2	15237.000	51.47	5.23	56.70	74.00	-17.30	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11b	Channel:	2442MHz

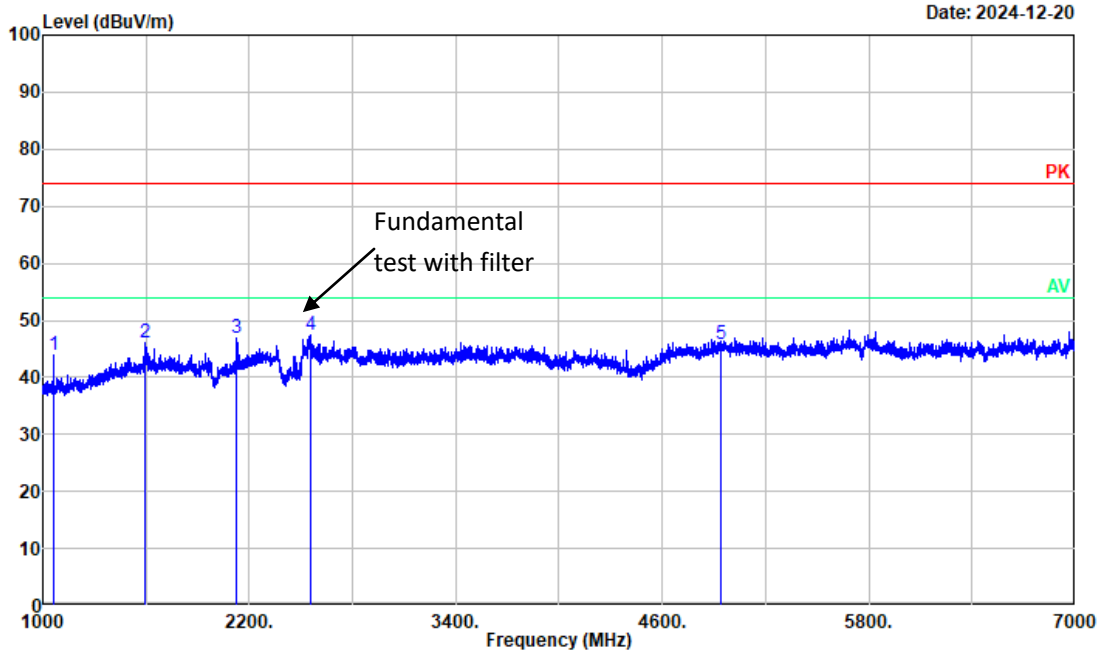


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11b 2442

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	15244.000	37.81	5.22	43.03	54.00	-10.97	Average
2	15244.000	52.02	5.22	57.24	74.00	-16.76	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11g	Channel:	2472MHz

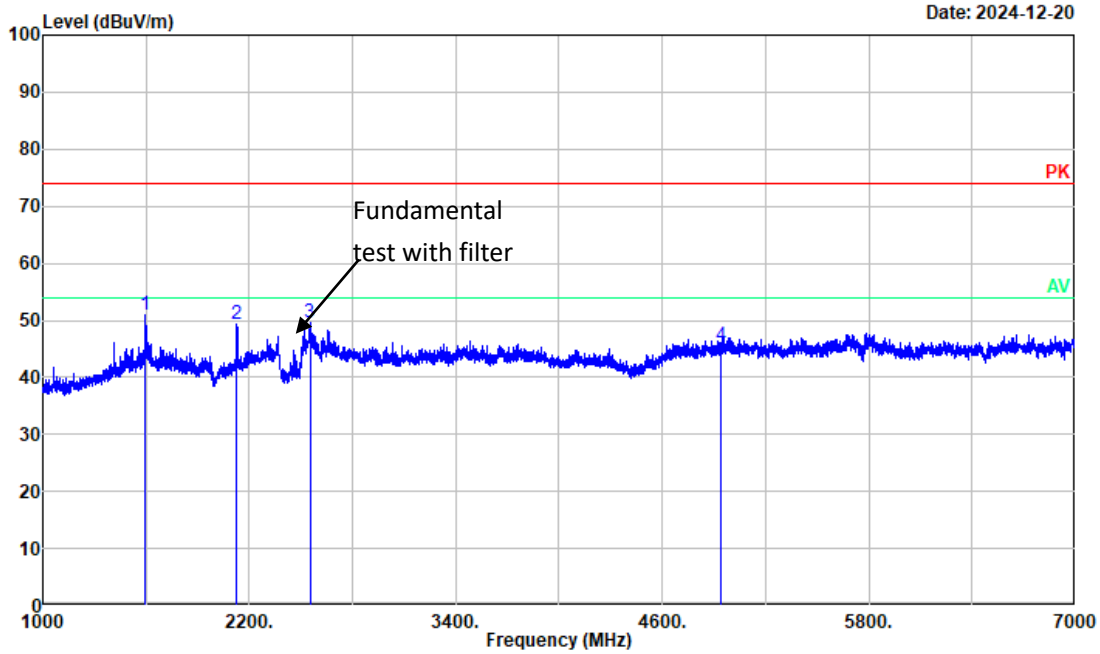


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	1066.000	51.90	-8.01	43.89	74.00	-30.11	Peak
2	1593.000	50.67	-4.51	46.16	74.00	-27.84	Peak
3	2128.000	51.03	-4.24	46.79	74.00	-27.21	Peak
4	2560.000	50.45	-2.89	47.56	74.00	-26.44	Peak
5	4944.000	47.93	-2.18	45.75	74.00	-28.25	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11g	Channel:	2472MHz

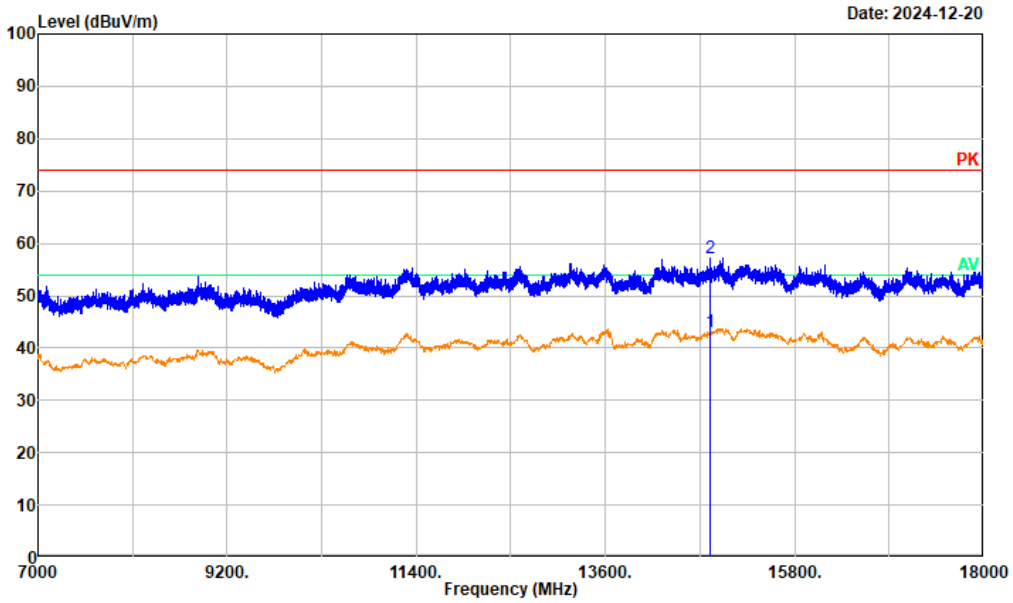


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	1594.000	55.39	-4.50	50.89	74.00	-23.11	Peak
2	2124.000	53.55	-4.26	49.29	74.00	-24.71	Peak
3	2552.000	52.55	-2.91	49.64	74.00	-24.36	Peak
4	4944.000	47.72	-2.18	45.54	74.00	-28.46	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11g	Channel:	2472MHz

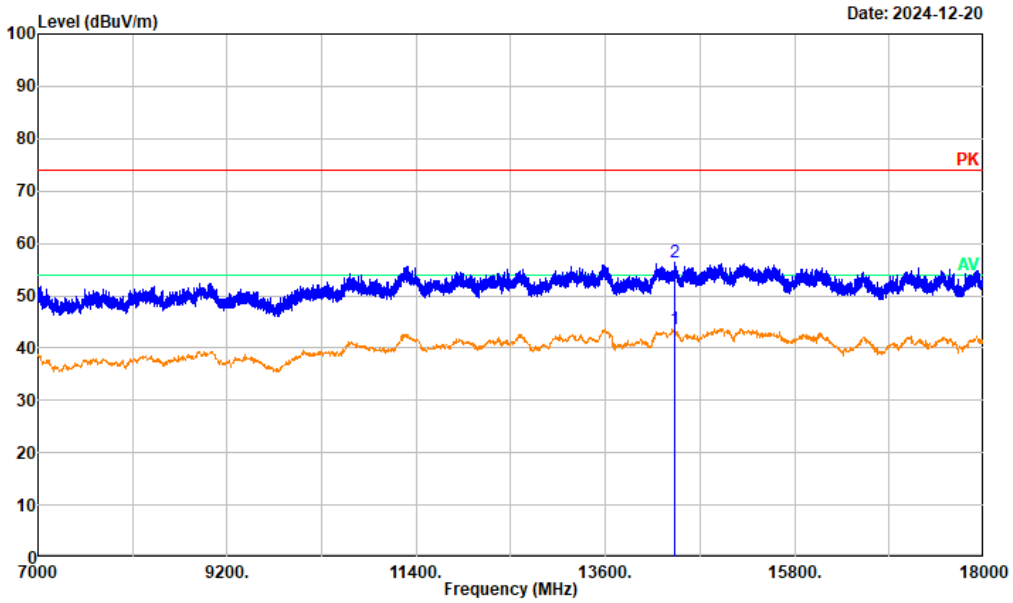


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	14812.000	37.58	5.61	43.19	54.00	-10.81	Average
2	14812.000	51.62	5.61	57.23	74.00	-16.77	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11g	Channel:	2472MHz

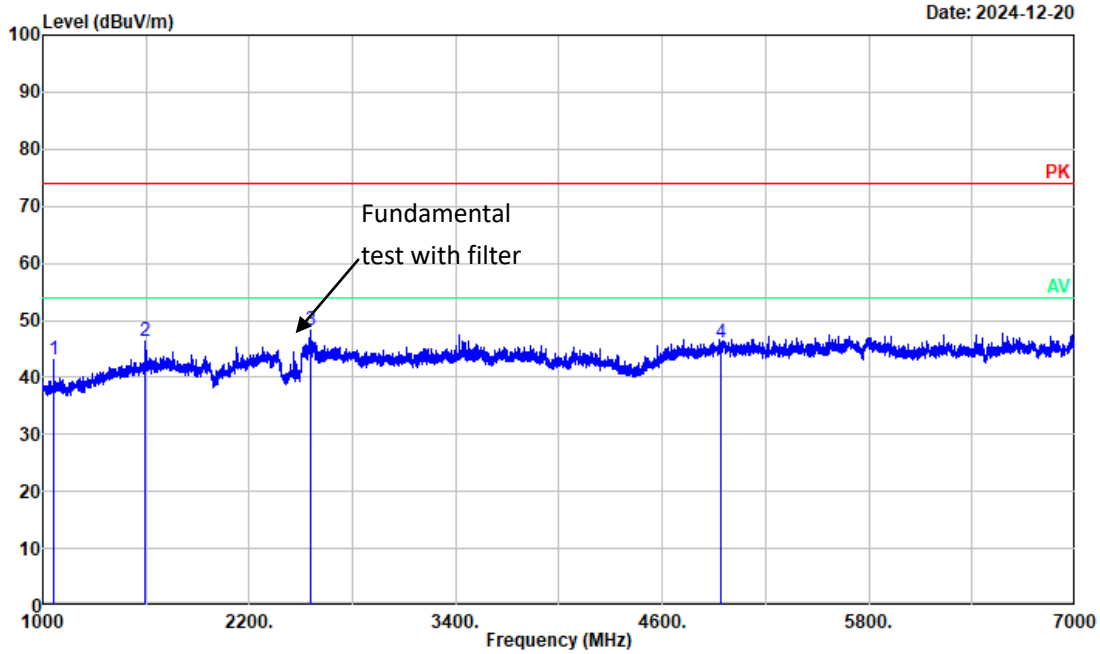


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	14400.000	38.32	5.25	43.57	54.00	-10.43	Average
2	14400.000	51.00	5.25	56.25	74.00	-17.75	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11n20	Channel:	2472MHz

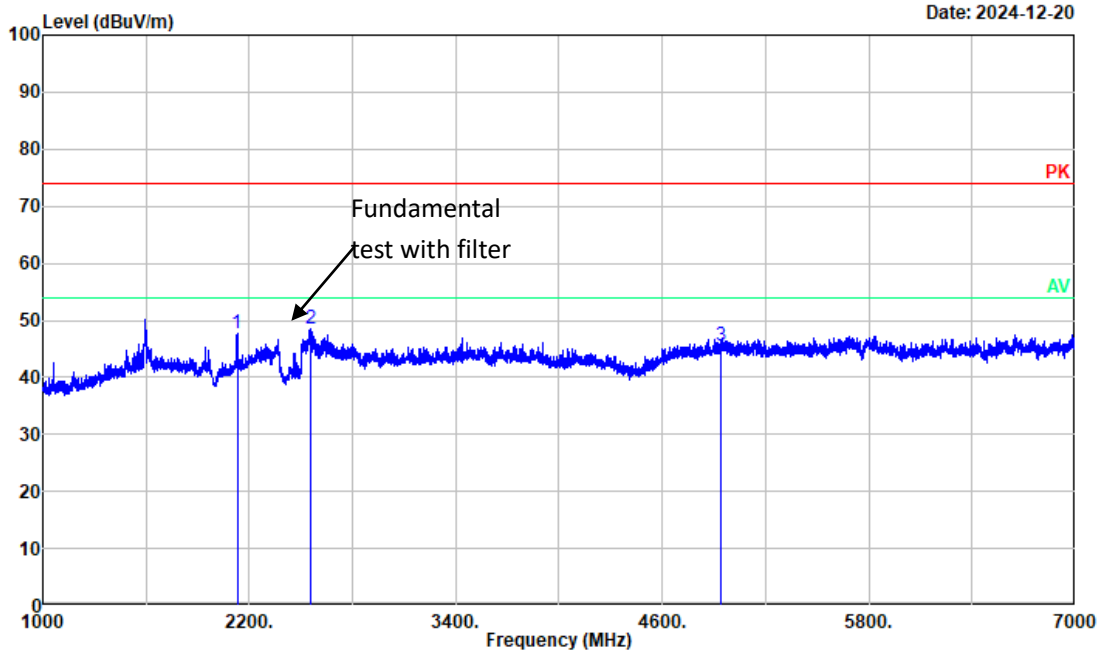


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	1066.000	51.09	-8.01	43.08	74.00	-30.92	Peak
2	1598.000	50.71	-4.47	46.24	74.00	-27.76	Peak
3	2559.000	51.22	-2.89	48.33	74.00	-25.67	Peak
4	4944.000	48.18	-2.18	46.00	74.00	-28.00	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11n20	Channel:	2472MHz

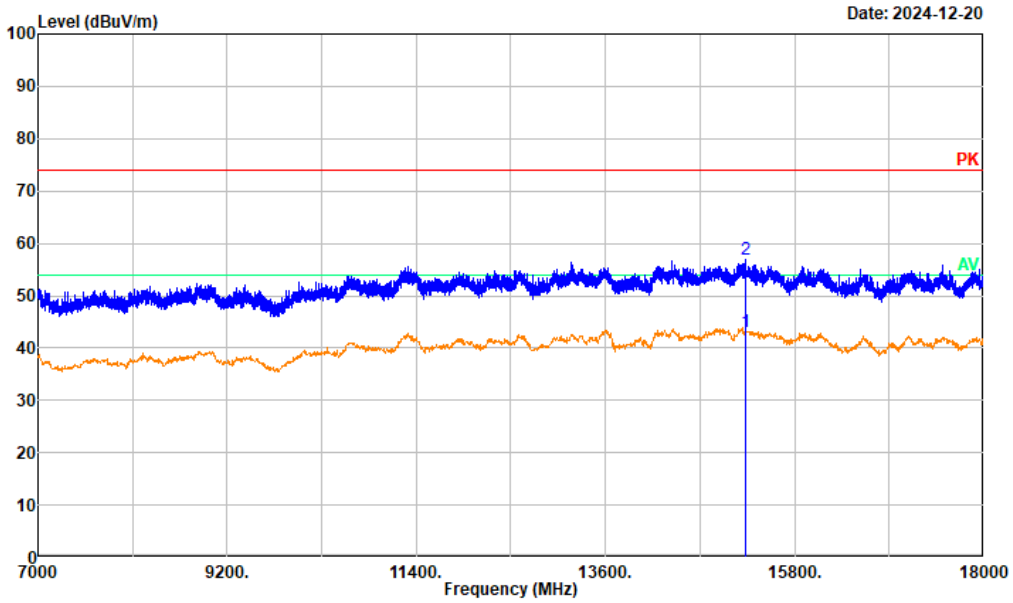


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2129.000	51.99	-4.23	47.76	74.00	-26.24	Peak
2	2553.000	51.51	-2.90	48.61	74.00	-25.39	Peak
3	4944.000	47.81	-2.18	45.63	74.00	-28.37	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11n20	Channel:	2472MHz

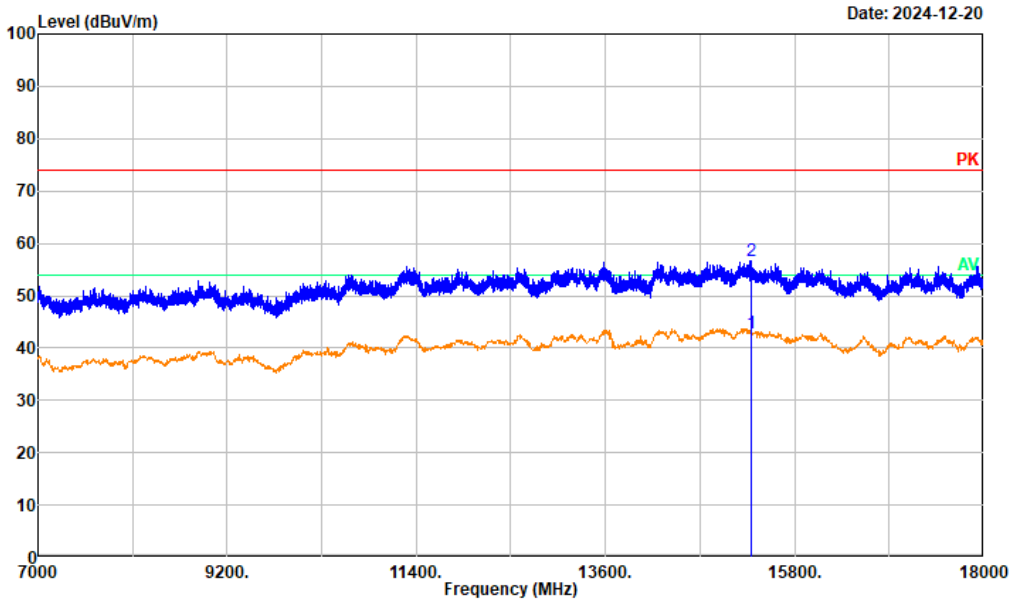


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	15222.000	37.73	5.25	42.98	54.00	-11.02	Average
2	15222.000	51.54	5.25	56.79	74.00	-17.21	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11n20	Channel:	2472MHz

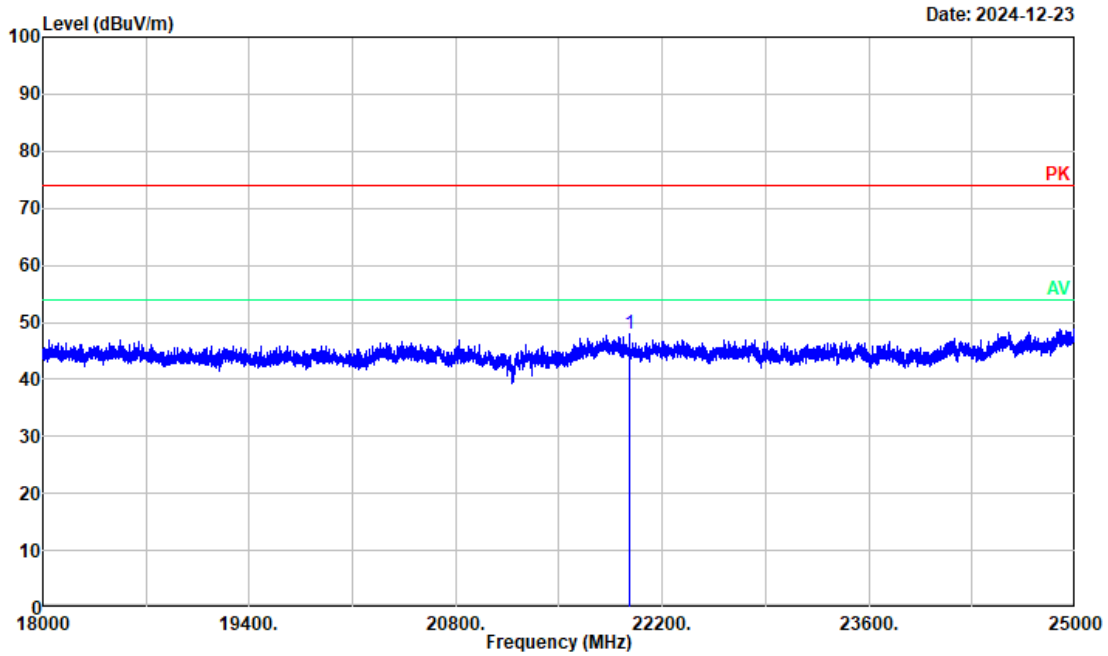


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	15293.000	37.67	5.15	42.82	54.00	-11.18	Average
2	15293.000	51.54	5.15	56.69	74.00	-17.31	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/1kHz, DET: PK

Mode:	802.11b	Channel:	2472MHz

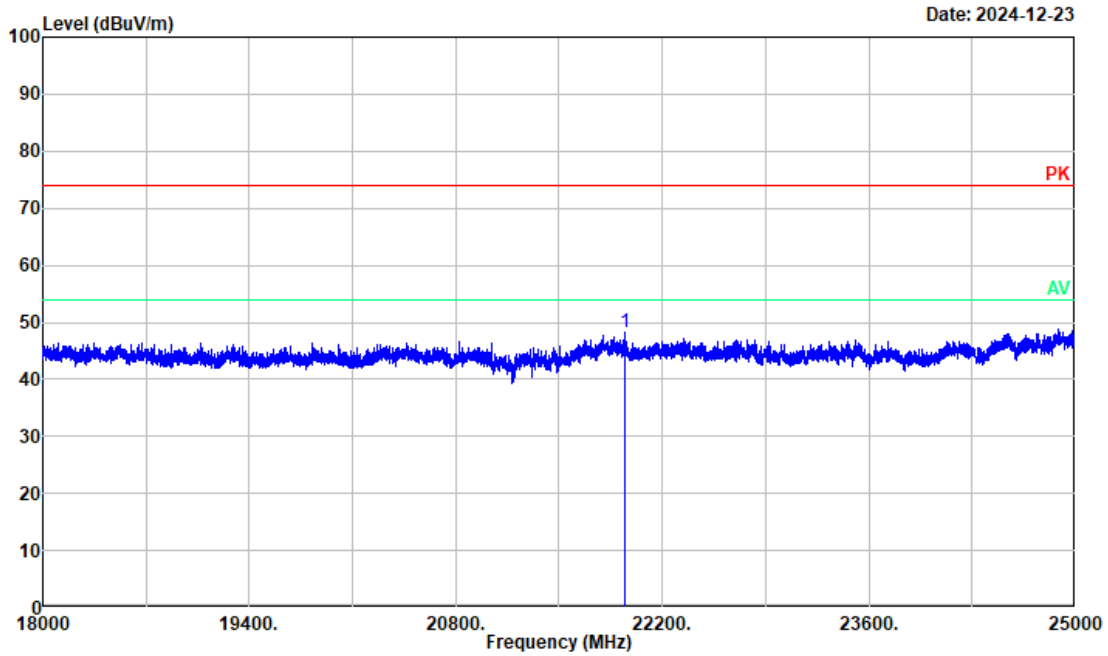


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : Horizontal
Remark : 802.11b 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	21980.570	54.60	-6.71	47.89	74.00	-26.11	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain - Distance extrapolate factor
Distance extrapolate factor = 20*log(specified distance/measured distance)
Specified distance = 3 meters, measured distance = 1.5 meters
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Mode:	802.11b	Channel:	2472MHz



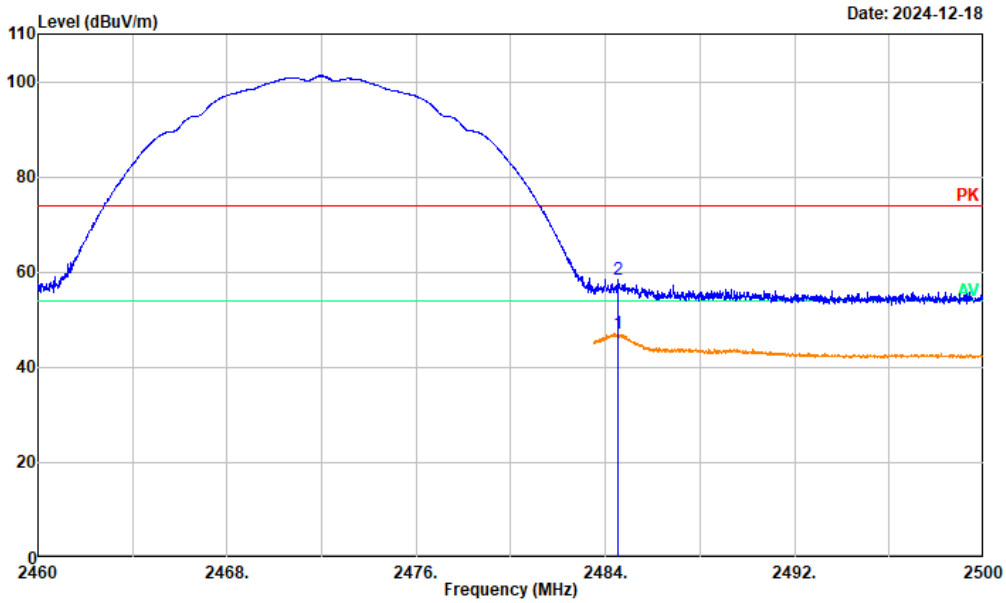
Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.1℃/27%R.H./101.2kPa
Tested by : Luke Li
Polarization : Vertical
Remark : 802.11b 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	21950.560	54.89	-6.75	48.14	74.00	-25.86	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain - Distance extrapolate factor
Distance extrapolate factor = 20*log(specified distance/measured distance)
Specified distance = 3 meters, measured distance = 1.5 meters
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK

Radiated Band edge:

Mode:	802.11b	Channel:	2412MHz

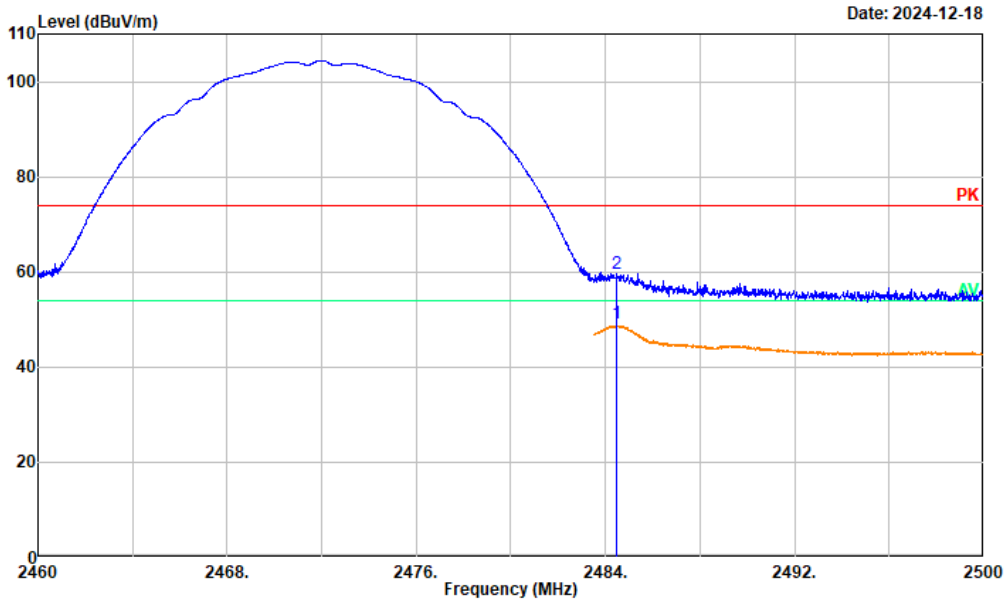


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11b 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2484.540	40.08	7.03	47.11	54.00	-6.89	Average
2	2484.540	51.40	7.03	58.43	74.00	-15.57	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11b	Channel:	2412MHz

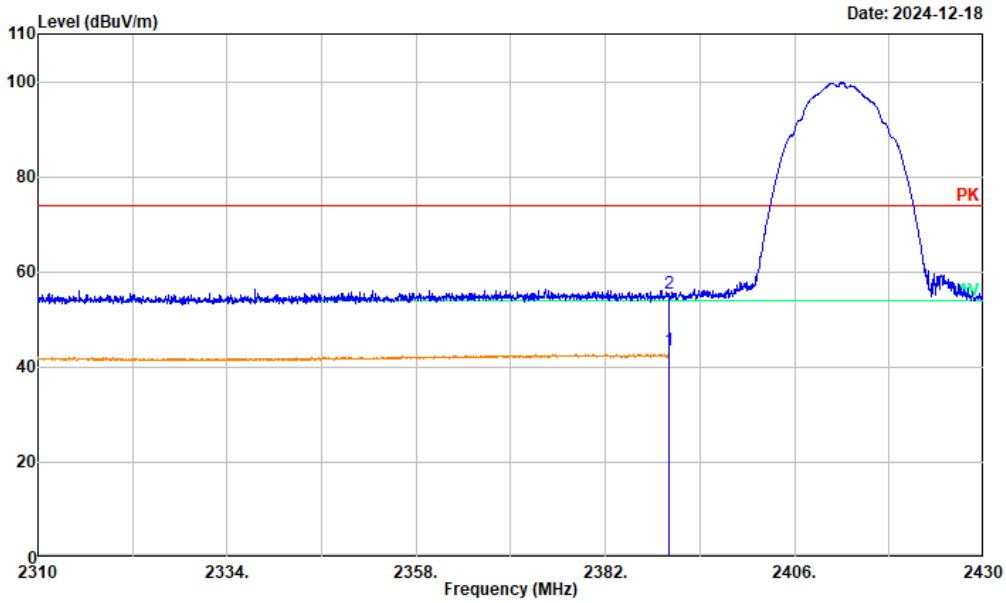


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11b 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2484.480	42.28	7.03	49.31	54.00	-4.69	Average
2	2484.480	52.63	7.03	59.66	74.00	-14.34	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11b	Channel:	2472MHz

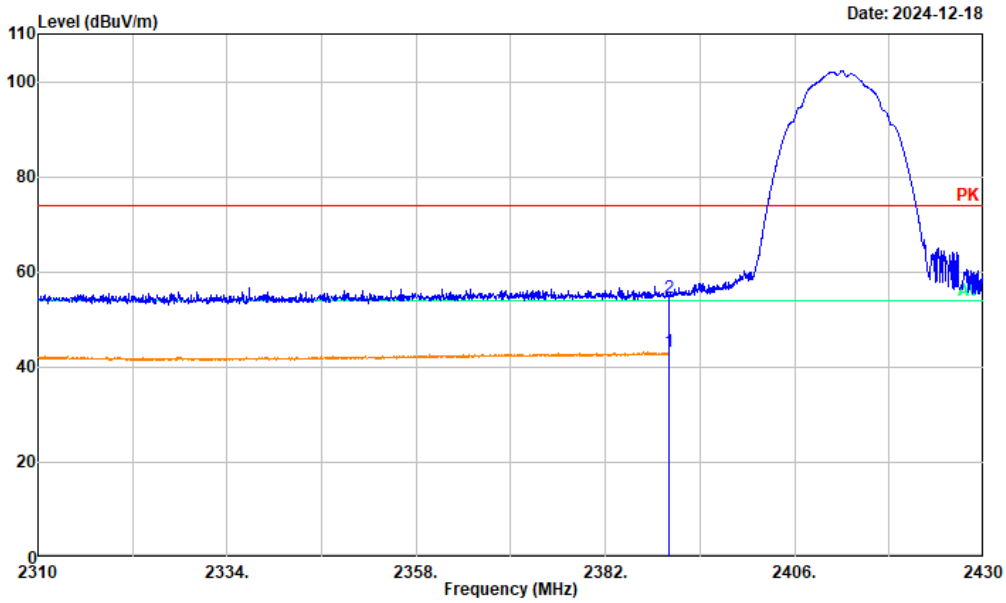


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11b 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.72	6.82	43.54	54.00	-10.46	Average
2	2389.980	48.78	6.82	55.60	74.00	-18.40	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11b	Channel:	2472MHz

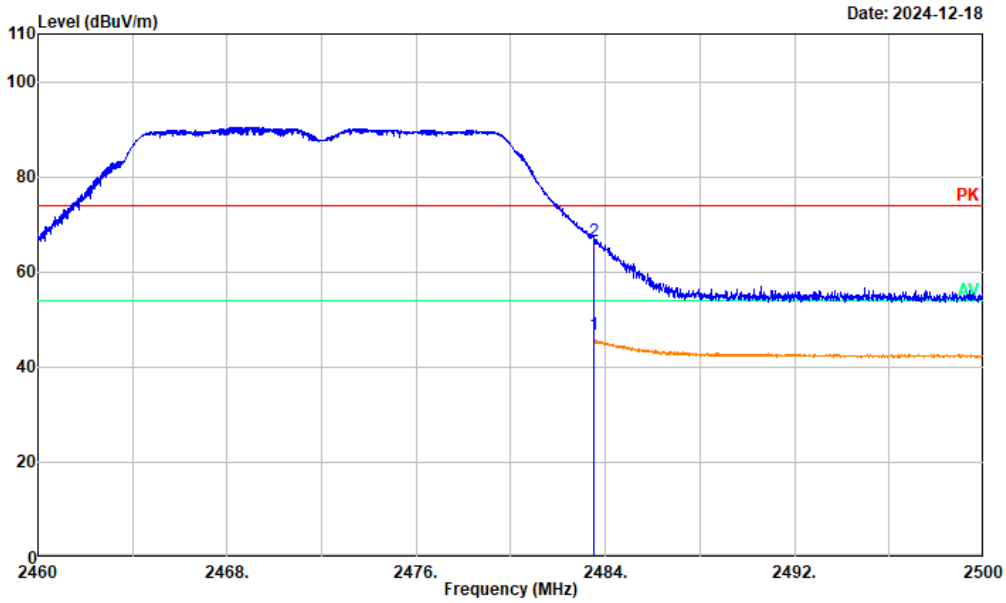


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11b 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.50	6.82	43.32	54.00	-10.68	Average
2	2389.980	47.88	6.82	54.70	74.00	-19.30	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11g	Channel:	2412MHz

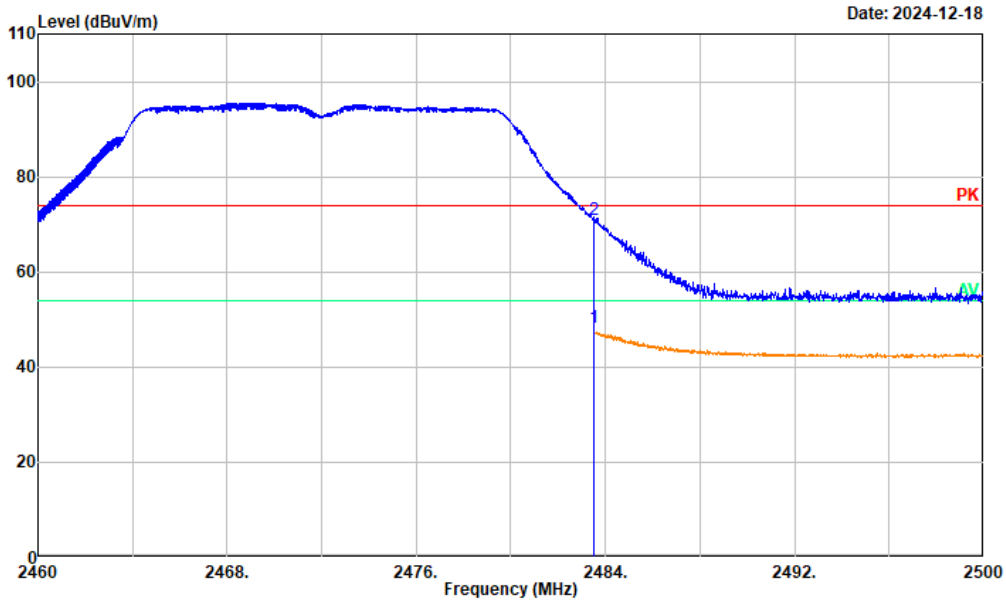


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.500	39.82	7.02	46.84	54.00	-7.16	Average
2	2483.500	59.58	7.02	66.60	74.00	-7.40	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11g	Channel:	2412MHz

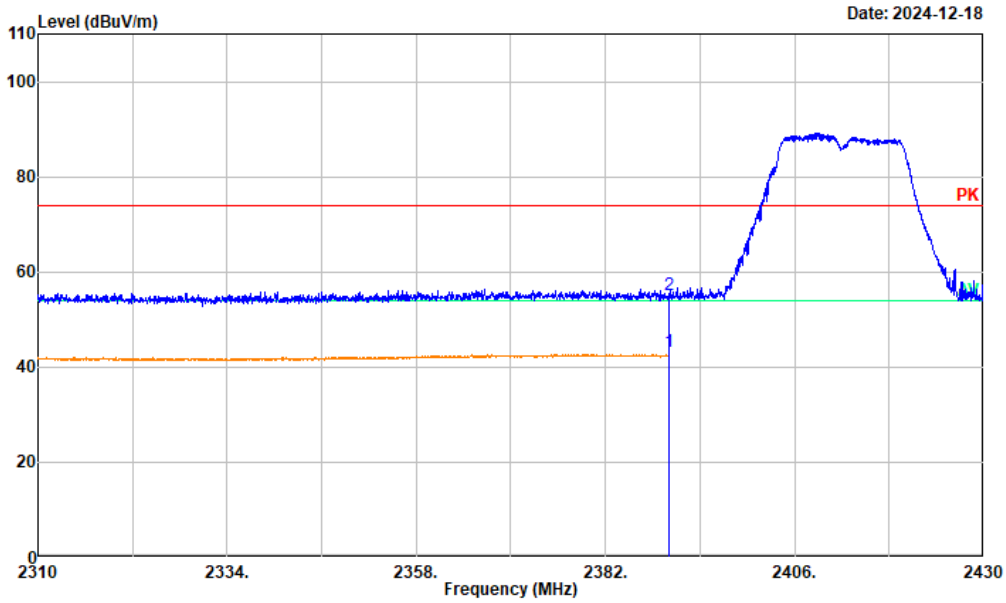


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11g 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.500	41.12	7.02	48.14	54.00	-5.86	Average
2	2483.500	63.87	7.02	70.89	74.00	-3.11	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11g	Channel:	2472MHz

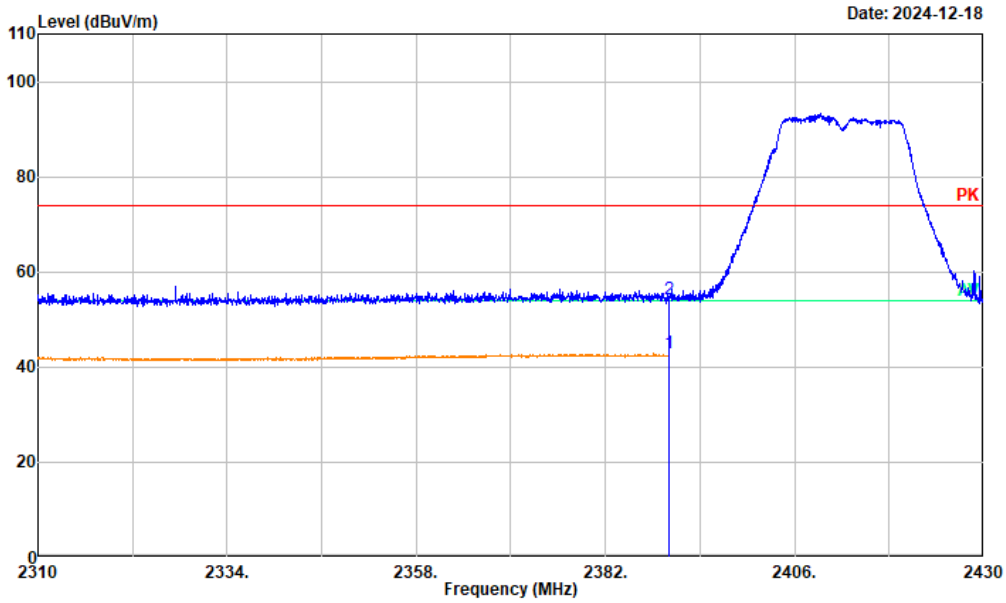


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11g 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.51	6.82	43.33	54.00	-10.67	Average
2	2389.980	48.20	6.82	55.02	74.00	-18.98	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11g	Channel:	2472MHz

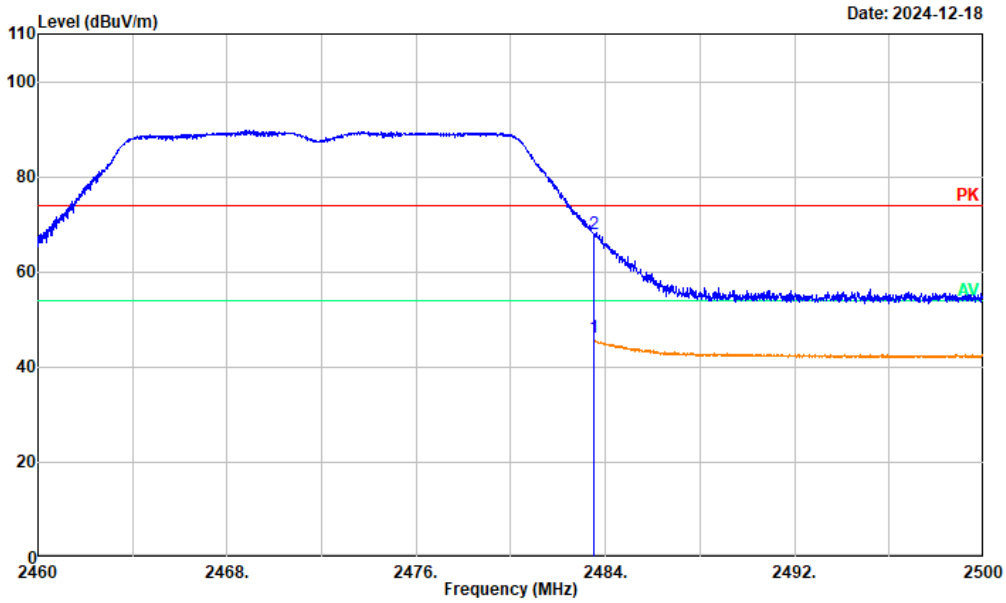


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11g 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.04	6.82	42.86	54.00	-11.14	Average
2	2389.980	47.51	6.82	54.33	74.00	-19.67	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11n20	Channel:	2412MHz

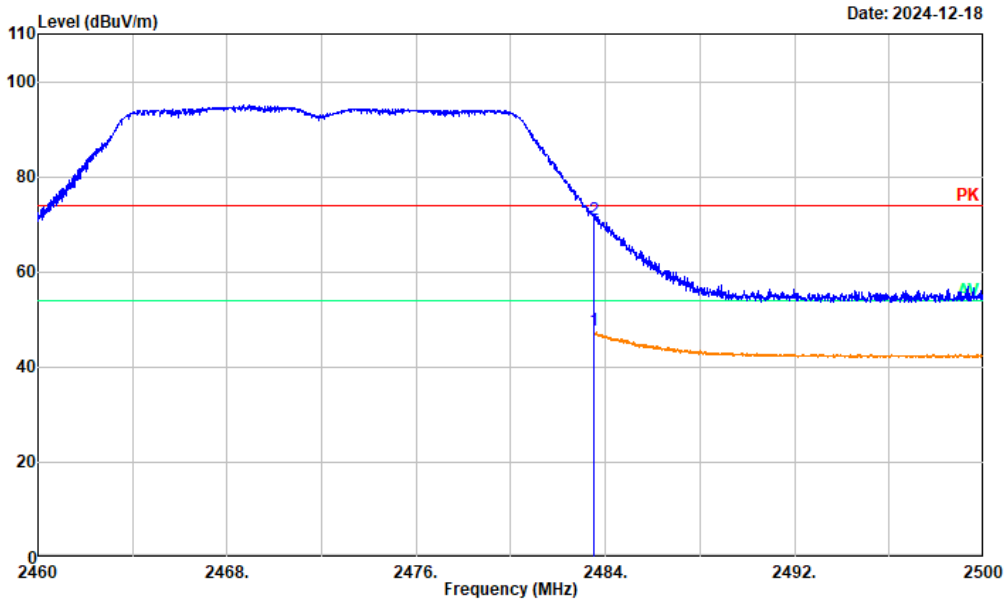


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.520	39.06	7.02	46.08	54.00	-7.92	Average
2	2483.520	60.86	7.02	67.88	74.00	-6.12	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11n20	Channel:	2412MHz

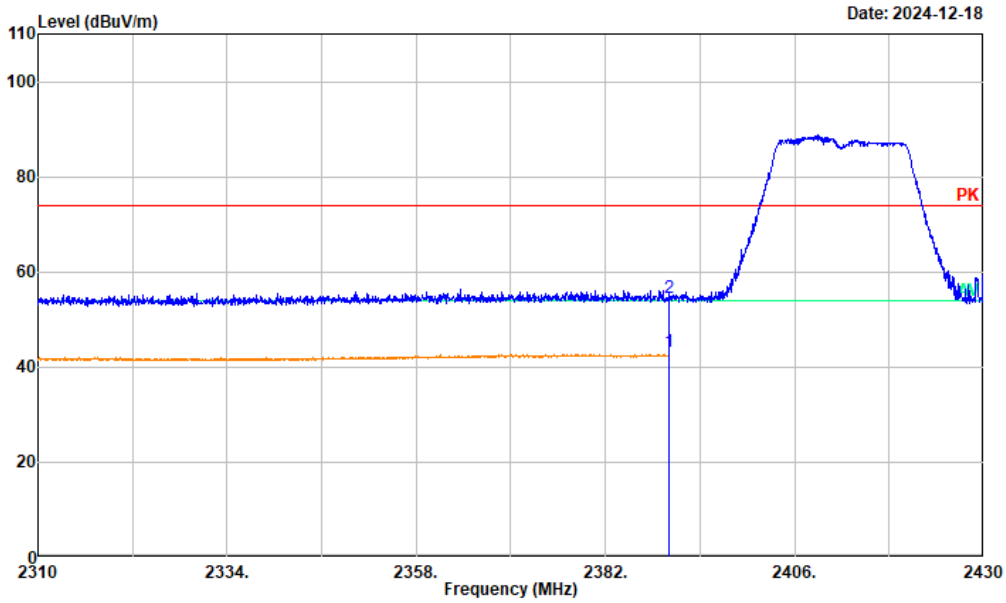


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11n20 2472

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2483.500	40.82	7.02	47.84	54.00	-6.16	Average
2	2483.500	63.95	7.02	70.97	74.00	-3.03	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11n20	Channel:	2472MHz

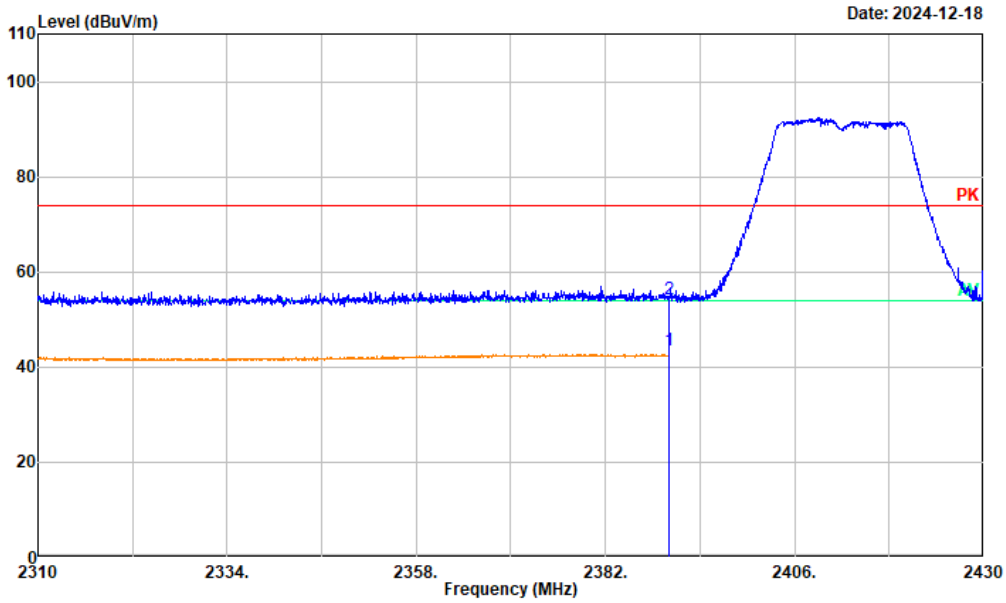


Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : horizontal
Remark : 802.11n20 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.36	6.82	43.18	54.00	-10.82	Average
2	2389.980	47.87	6.82	54.69	74.00	-19.31	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

Mode:	802.11n20	Channel:	2472MHz



Project No. : 2405Z107592E
Test Mode : Transmitting
Test Voltage : AC 120V/60Hz
Environment : 24.7℃/27%R.H./101.3kPa
Tested by : Luke Li
Polarization : vertical
Remark : 802.11n20 2412

--No.	Frequency (MHz)	Reading (dBµV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBµV/m)	Over Limit (dB)	Detector
1	2389.980	36.66	6.82	43.48	54.00	-10.52	Average
2	2389.980	47.37	6.82	54.19	74.00	-19.81	Peak

Remarks: Factor = Antenna factor + Cable loss - Preamp gain
Result = Reading + Factor
Over Limit = Result - Limit
SA setting: Peak: RBW/VWB: 1MHz/3MHz, DET: PK
Average: RBW/VWB: 1MHz/10Hz , DET: PK

3.5 RF Conducted Test Data

Test Date:	2024-12-24	Test By:	Ryan Zhang
Environment condition:	Temperature: 25.4°C; Relative Humidity:46%; ATM Pressure: 100.1kPa		

3.5.1 6dB Emission Bandwidth and 99% Occupied Bandwidth

Test Mode	Antenna	Channel	6dB BW [MHz]	99% OBW[MHz]	6dB BW Limit[MHz]	Verdict
11B	Chain 0	2412	9.129	14.120	0.5	pass
		2442	9.129	14.120	0.5	pass
		2472	9.209	14.120	0.5	pass
11G	Chain 0	2412	16.617	16.640	0.5	pass
		2442	16.657	16.680	0.5	pass
		2472	16.657	16.640	0.5	pass
11N20	Chain 0	2412	17.858	17.840	0.5	pass
		2442	17.858	17.800	0.5	pass
		2472	17.858	17.800	0.5	pass

3.5.2 Maximum Conducted Peak Output Power

Mode	Antenna	Test Frequency (MHz)	Peak Output Power(dBm)	Limit (dBm)	Verdict
802.11b	Chain 0	2412	16.22	30	Pass
		2442	16.44	30	Pass
		2472	16.75	30	Pass
802.11g	Chain 0	2412	12.24	30	Pass
		2442	12.50	30	Pass
		2472	12.75	30	Pass
802.11n20	Chain 0	2412	11.66	30	Pass
		2442	11.84	30	Pass
		2472	12.10	30	Pass

3.5.3 Power Spectral Density

Mode	Antenna	Test Frequency (MHz)	Result (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
802.11b	Chain 0	2412	-15.92	8	Pass
		2442	-15.60	8	Pass
		2472	-15.27	8	Pass
802.11g	Chain 0	2412	-25.85	8	Pass
		2442	-25.60	8	Pass
		2472	-25.32	8	Pass
802.11n20	Chain 0	2412	-25.28	8	Pass
		2442	-25.03	8	Pass
		2472	-24.75	8	Pass

3.5.4 100 kHz Bandwidth of Frequency Band Edge

Mode	Antenna	Test Frequency (MHz)	Result (dB)	Limit (dB)	Verdict
802.11b	Chain 0	2412	47.70	20	Pass
		2472	45.08	20	Pass
802.11g	Chain 0	2412	30.94	20	Pass
		2472	29.23	20	Pass
802.11n20	Chain 0	2412	30.62	20	Pass
		2472	29.28	20	Pass

3.5.5 Duty Cycle

Mode	Antenna	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	Duty Cycle Factor(dB)	1/Ton (Hz)	VBW Setting (kHz)
802.11b	Chain 0	2442	100	100	100	0	NA	0.010
802.11g	Chain 0	2442	100	100	100	0	NA	0.010
802.11n20	Chain 0	2442	100	100	100	0	NA	0.010

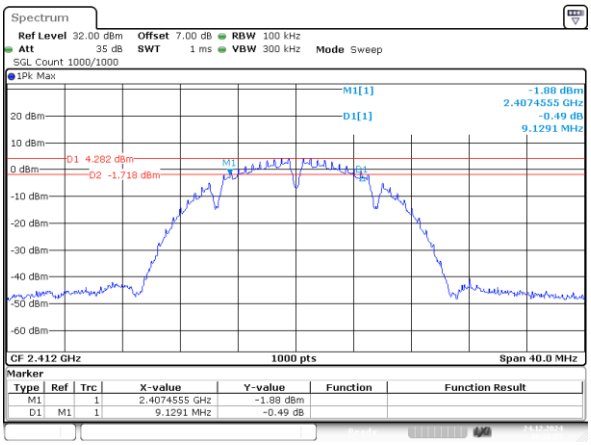
Duty Cycle = Ton/(Ton+Toff)*100%

Test Plots:

6 dB Emission Bandwidth

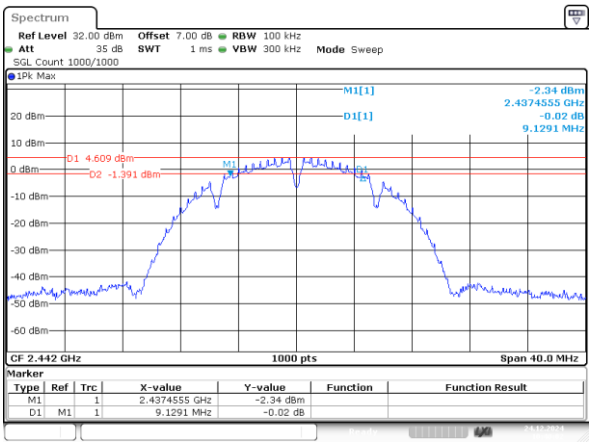
2412~2472

802.11b_2412MHz 9.129MHz



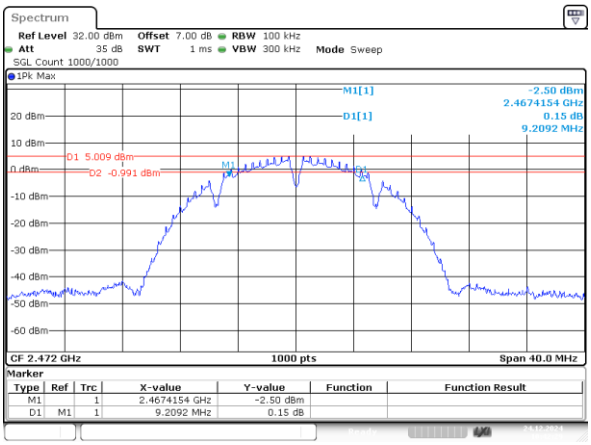
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:36:55

802.11b_2442MHz 9.129MHz



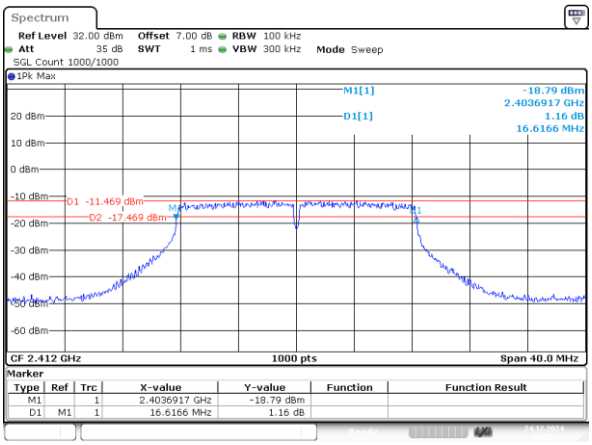
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:40:02

802.11b_2472MHz 9.209MHz



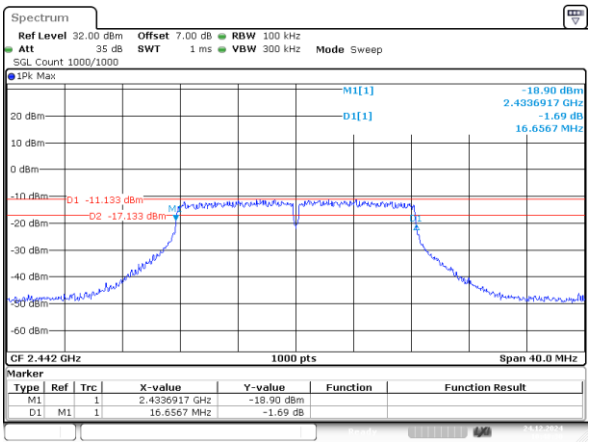
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:42:30

802.11g_2412MHz 16.617MHz



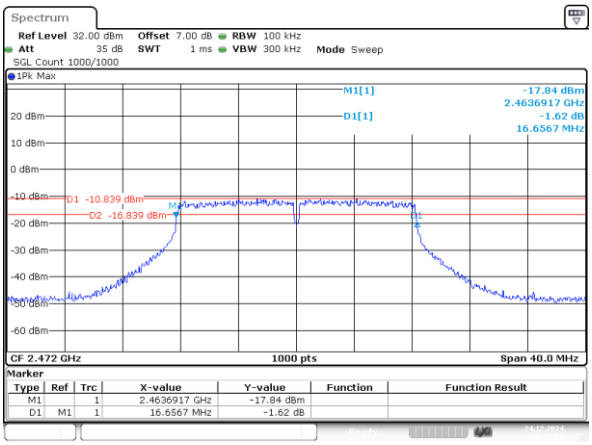
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:45:21

802.11g_2442MHz 16.657MHz



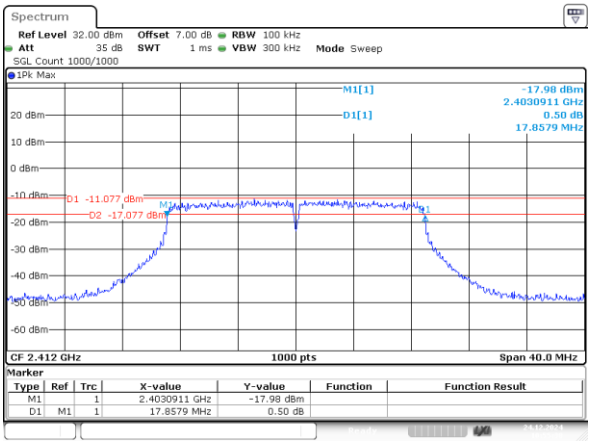
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:48:29

802.11g_2472MHz 16.657MHz



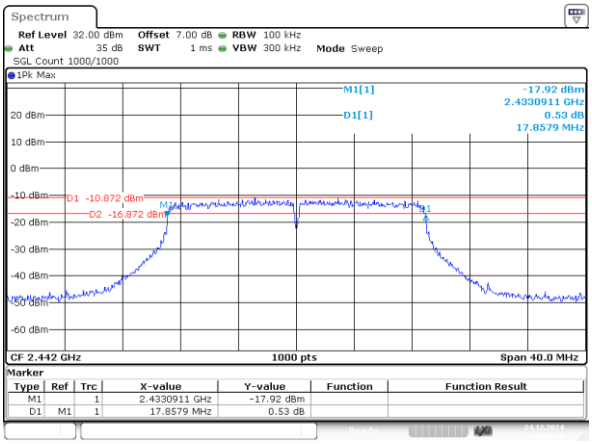
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:50:59

802.11n20_2412MHz 17.858MHz



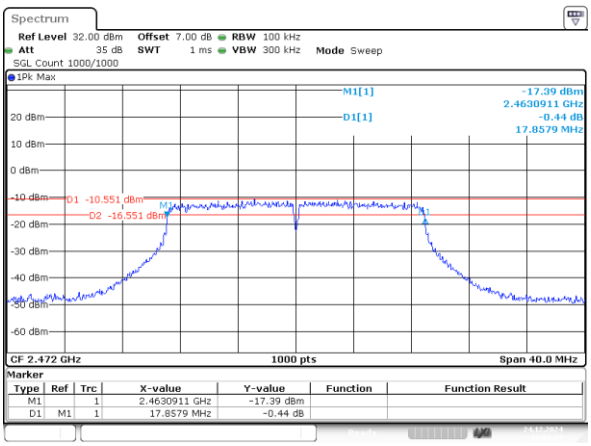
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:55:38

802.11n20_2442MHz 17.858MHz



ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:58:48

802.11n20_2472MHz 17.858MHz

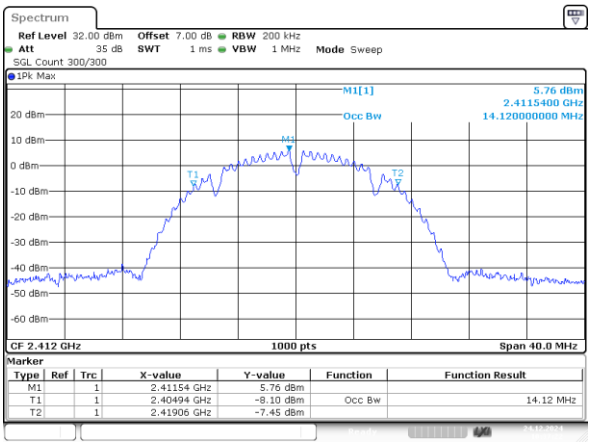


ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 11:01:29

99% Occupied Bandwidth

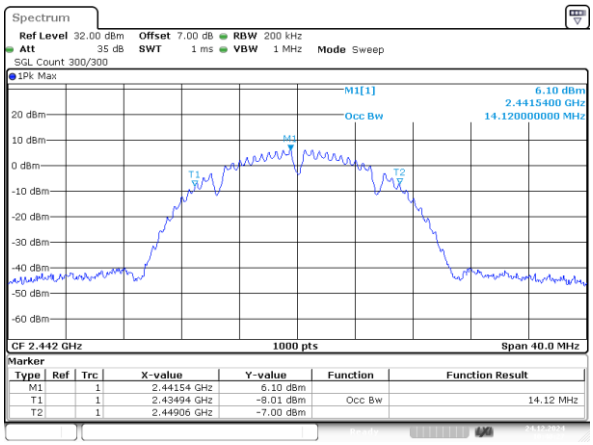
2412~2472

802.11b_2412MHz 14.120MHz



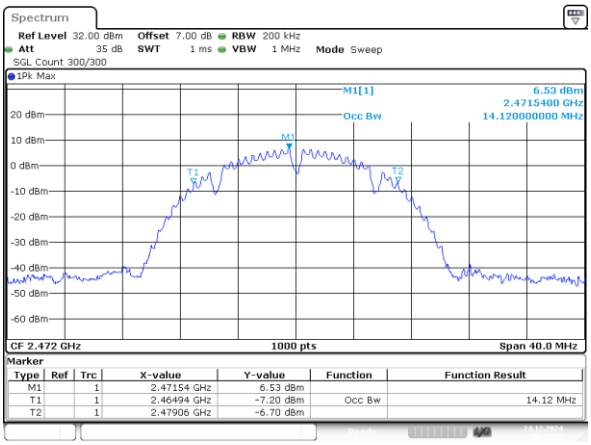
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:37:22

802.11b_2442MHz 14.120MHz



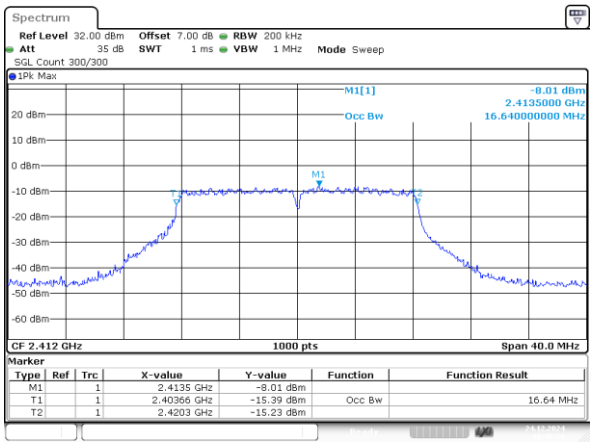
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:40:27

802.11b_2472MHz 14.120MHz



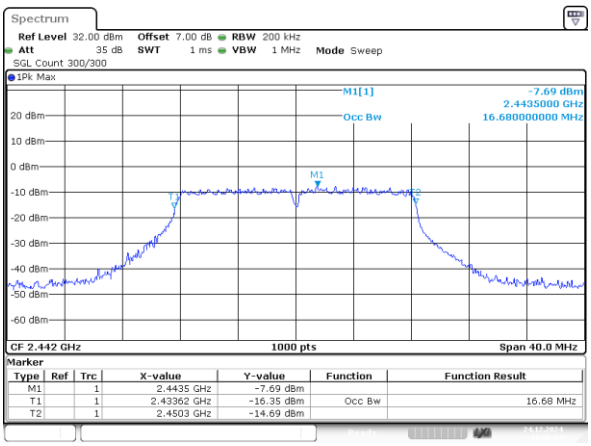
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:42:55

802.11g_2412MHz 16.640MHz



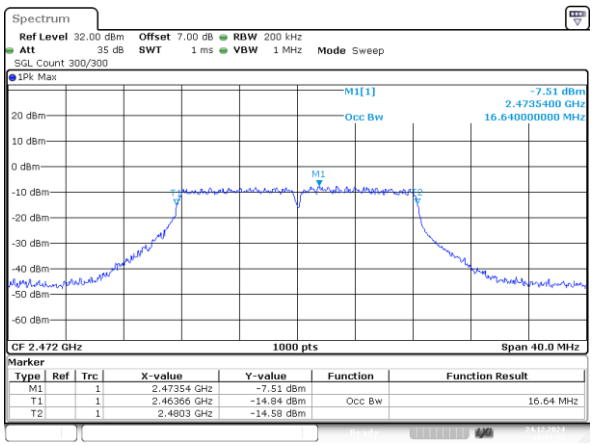
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:45:49

802.11g_2442MHz 16.680MHz



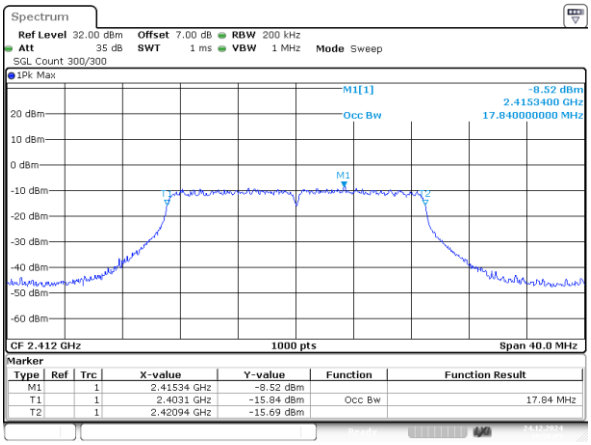
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:48:54

802.11g_2472MHz 16.640MHz

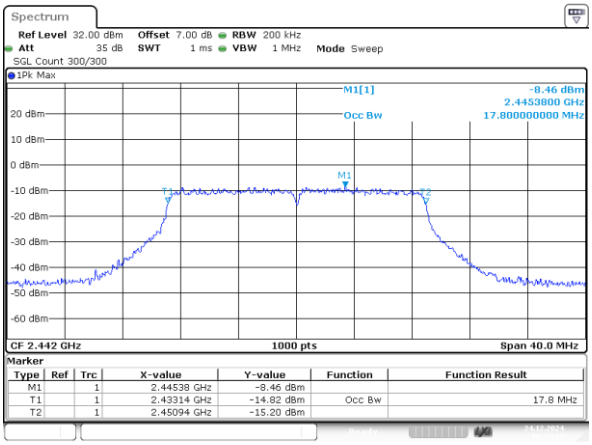


ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:51:24

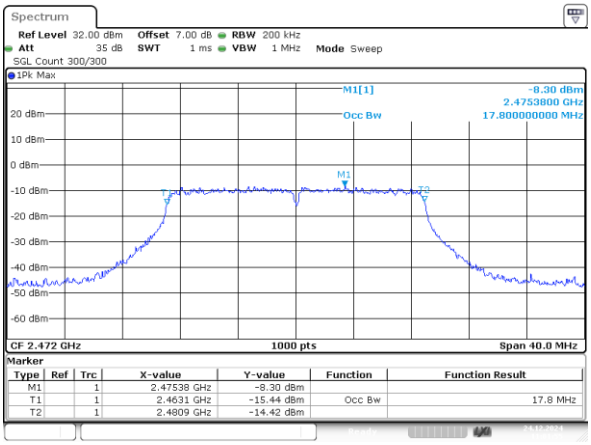
802.11n20_2412MHz 17.840MHz



802.11n20_2442MHz 17.800MHz



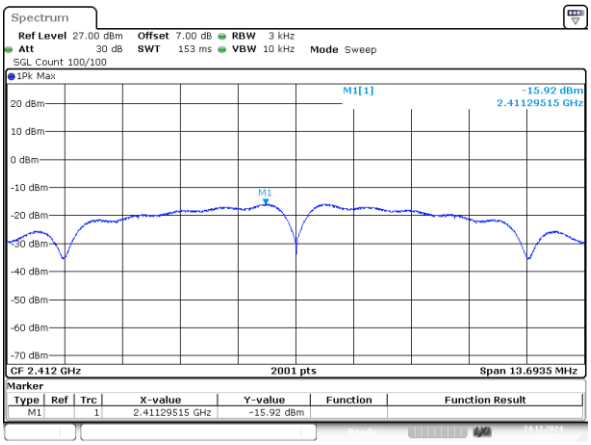
802.11n20_2472MHz 17.800MHz



Power Spectral Density

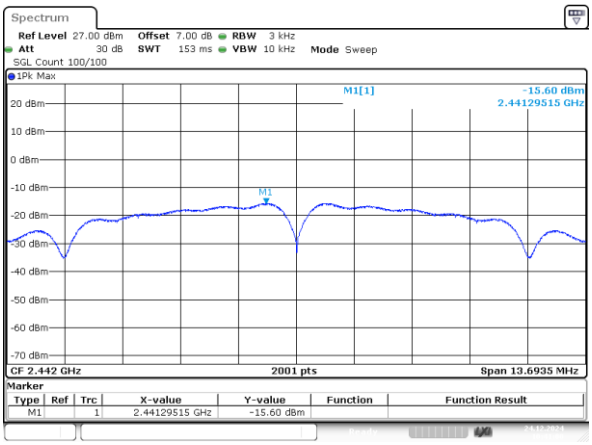
2412~2472

802.11b_2412MHz -15.92dBm/3kHz



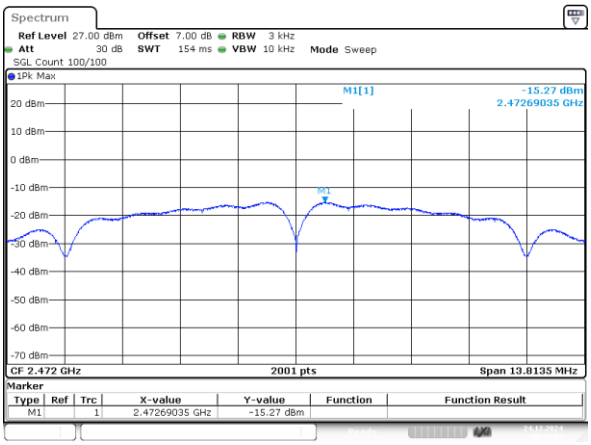
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:38:35

802.11b_2442MHz -15.60dBm/3kHz



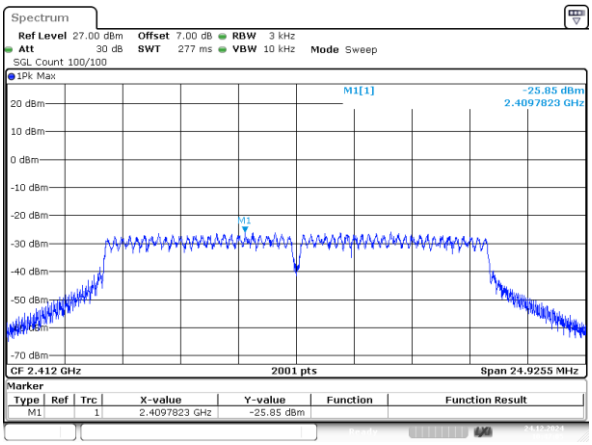
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:41:01

802.11b_2472MHz -15.27dBm/3kHz



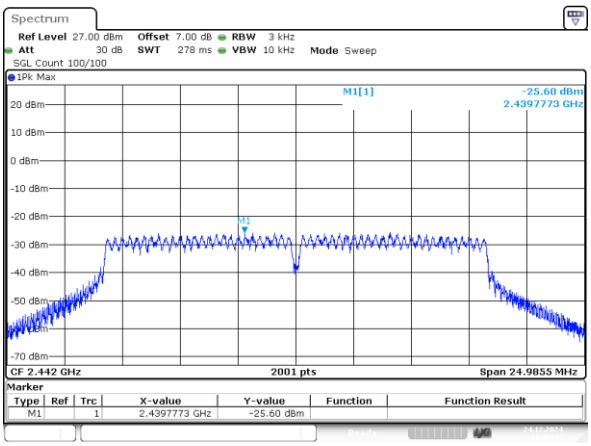
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:43:53

802.11g_2412MHz -25.85dBm/3kHz



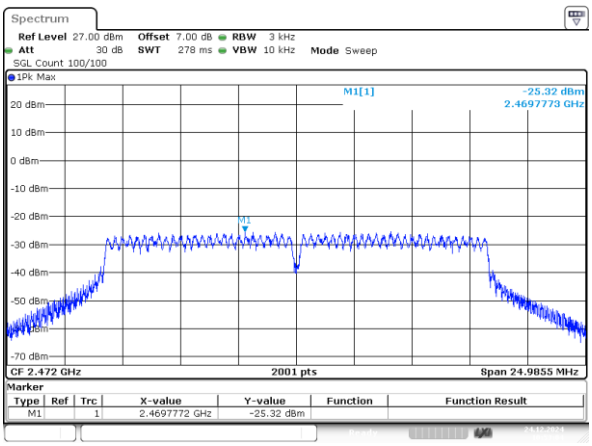
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:47:05

802.11g_2442MHz -25.60dBm/3kHz



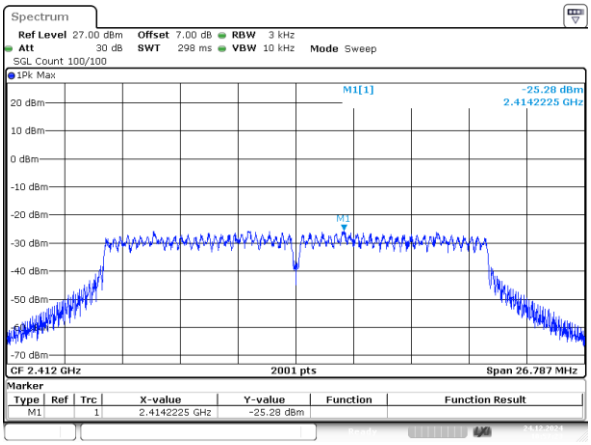
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:49:44

802.11g_2472MHz -25.32dBm/3kHz



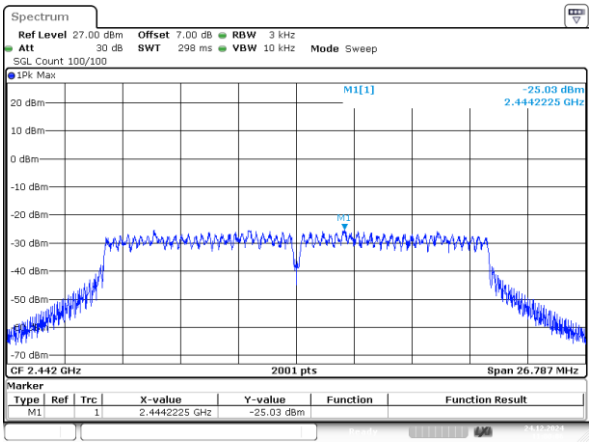
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:53:03

802.11n20_2412MHz -25.28dBm/3kHz



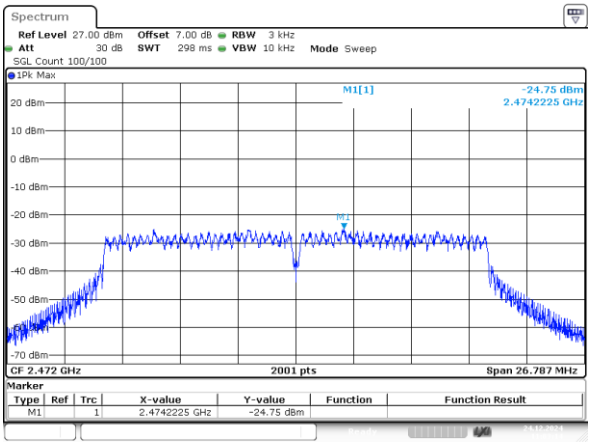
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:57:23

802.11n20_2442MHz -25.03dBm/3kHz



ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 11:00:06

802.11n20_2472MHz -24.75dBm/3kHz

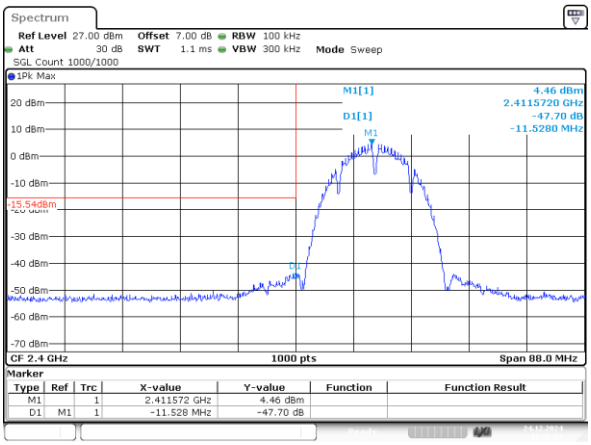


ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 11:03:14

100kHz Bandwidth of Frequency Band Edge

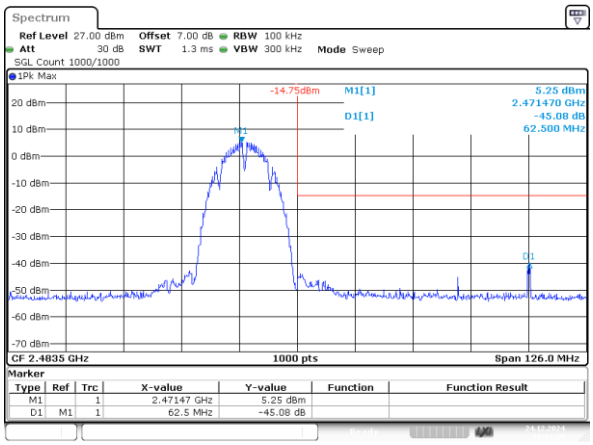
2412~2472

802.11b_2412MHz



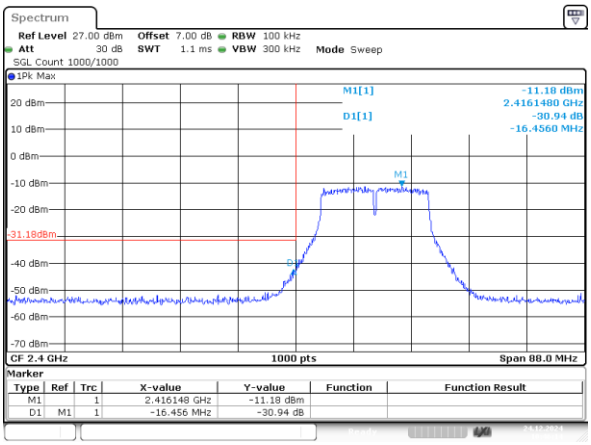
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:38:01

802.11b_2472MHz



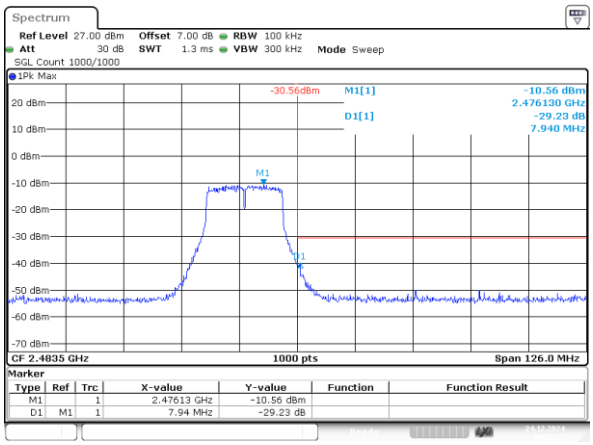
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:43:20

802.11g_2412MHz



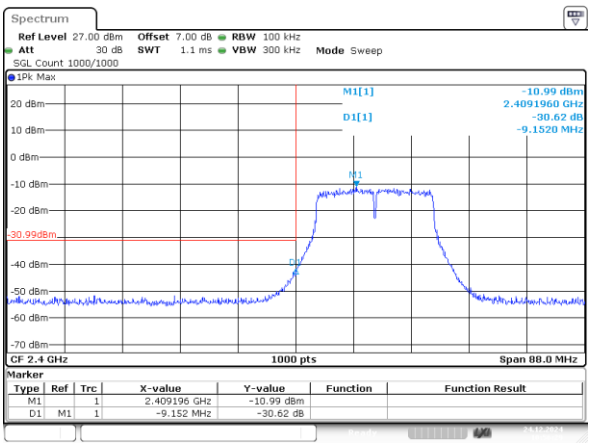
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:46:14

802.11g_2472MHz



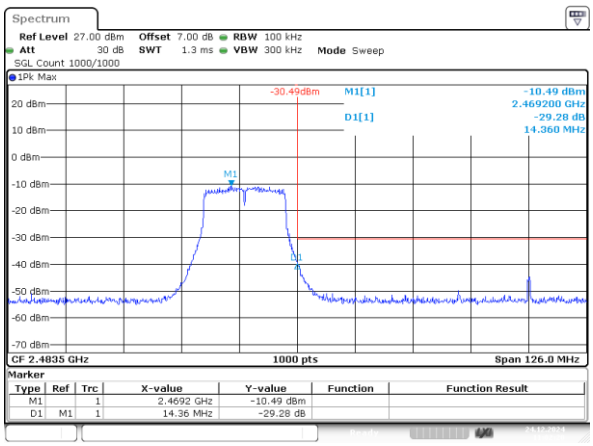
ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:52:12

802.11n20_2412MHz



ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 10:56:29

802.11n20_2472MHz

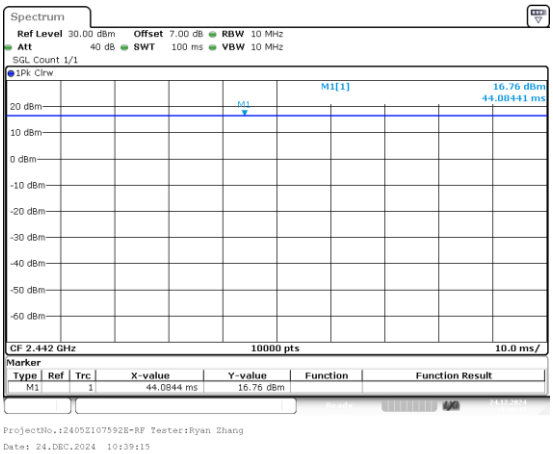


ProjectNo.:2405Z107592E-RF Tester:Ryan Zhang
Date: 24.DEC.2024 11:02:21

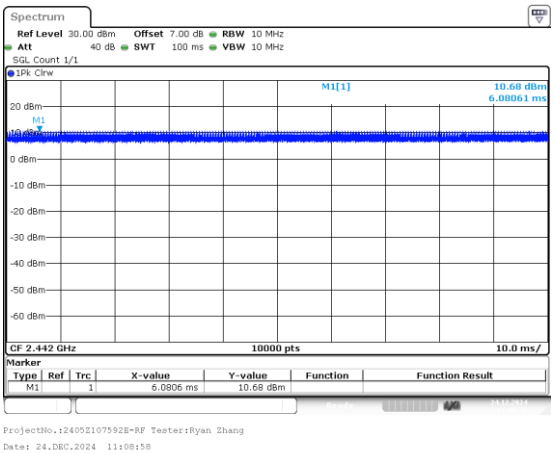
Duty Cycle

2412~2472

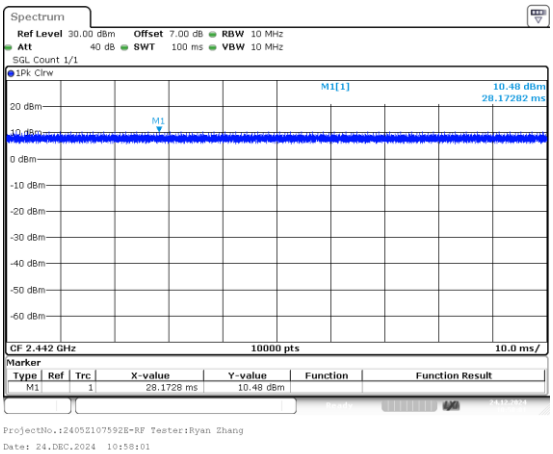
802.11b_2442MHz
100ms,100ms



802.11g_2442MHz
100ms,100ms



802.11n20_2442MHz
100ms,100ms



4 Test Setup Photo

Please refer to the attachment 2405Z107592E Test Setup photo.

5 E.U.T Photo

Please refer to the attachment 2405Z107592E External photo and 2405Z107592E Internal photo.

---End of Report---