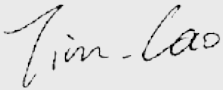


Test report No:
25A0379R.702

TEST REPORT

Product Name	LED Device
Trademark	PHILIPS , hue, 
Model and /or type reference	9290042770, 9290042769, 9290042771, 9290046109, 9290046111
FCC ID	2AGBW9290046111X
IC	20812-46111X
Applicant's name / address	Signify (China) Investment Co., Ltd Building No.9, Lane 888, Tianlin Road, Minhang district, 200233, Shanghai, China
Test method requested, standard	47 CFR FCC Part 15 (Section 15.247) RSS-Gen Issue 5 Amendment 2 RSS-247 Issue 4 ANSI C63.10-2020 + Cor.1-2023
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Tim Cao/ Project Manager 
Approved by (name / position & signature)	Frank He/ Technical Manager 
Date of issue	2025-11-18
Report Version	V1.0
Report template No.	Template_FCC Part 15C-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

Test Locatio	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Test Facility	A2LA (Certificate No. 3235.01) CNAS (Certificate No. L5313) FCC - Designation Number: CN1199 Test Firm Registration Number: 566524 ISED - CAB identifier: CN0040 IC#: 4075B
Date (receive sample)	Oct. 10, 2025
Date (start test)	Oct. 14, 2025
Date (finish test)	Oct. 31, 2025

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, it is not necessary to account the uncertainty associated with the measurement result.



DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
25A0379R.702	V1.0	Initial issue of report.	2025-11-18

TEST SUMMARY

Requirement – Test Item of FCC	Standard(s)	Verdict
20dB Emission Bandwidth	FCC 15.247(a)(2)	PASS
Maximum conducted output power	15.247 (b)(3)	PASS
Maximum power spectral density	FCC 15.247(e)	PASS
Band edge measurements	FCC 15.247(d) FCC 15.205 FCC 15.209	PASS
Conducted Spurious Emission	FCC 15.247(d), FCC 15.209	PASS
Duty cycle	ANSI C63.10:2013	PASS
Emissions in Restricted Bands	FCC 15.205 FCC 15.209	PASS
AC Power Line Conducted Emission	FCC 15.207	PASS
Antenna Requirement	FCC 15.203	PASS

Requirement – Test case of ISCED	Standard(s)	Verdict
DTS Bandwidth	RSS-Gen Issue 5 A2 Paragraph 6.7 RSS-247 Issue 4 Paragraph 6.3.1(a)	PASS
99% Emission Bandwidth	RSS-Gen Issue 5 A2 Paragraph 6.7 RSS-247 Issue4 Clause 6.3.1(a)	PASS
Maximum conducted output power	RSS-247 Issue4 Clause 6.3.2	PASS
Maximum power spectral density	RSS-247 Issue4 Clause 6.3.1(b)	PASS
Band edge measurements	RSS-Gen Issue5 A2 Clause 8.9, 8.10	PASS
Conducted Spurious Emission	RSS-247 Issue4 Clause 6.6	PASS
Duty cycle	ANSI C63.10:2020	PASS
Emissions in Restricted Bands	RSS-Gen Issue5 A2 Clause 8.9, 8.10	PASS
AC Power Line Conducted Emission	RSS-Gen Issue5 A2 Clause 8.8	PASS
Antenna Requirement	RSS-Gen Issue5 A2 Clause 6.8	PASS

USED EQUIPMENT

Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
Wireless Connectivity Tester	R&S	CMW 270	102593	2024.05.15	2025.05.14	V 4.0.60	N/A
Coaxial Cable	N/A	N/A	2477	2024.06.11	2025.06.10	N/A	N/A
Coaxial Cable	N/A	N/A	2478	2024.06.11	2025.06.10	N/A	N/A
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2025.04.13	2026.04.12	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	RF08	2024.07.11	2025.07.10	N/A	N/A
Test system							
Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
MAX Signal Analyzer	Keysight	N9010A	MY48030494	2024.10.26	2025.10.25	A.14.03	N/A
RF Control Unit	Tonscend	JS0806-2	22G8060594	2024.02.06	2025.02.05	N/A	N/A
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	2024.05.12	2025.05.11	B.01.96	N/A
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	2024.05.12	2025.05.11	N/A	N/A
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2024.07.06	2025.07.05	B.01.95	N/A
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A	N/A	V3.0.22

AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
Shielding room	Quietek	4.9m*4m*3m	TR1	2023.03.04	2028.03.03	N/A	N/A
EMI Test Receiver	R&S	ESR7	102086	2025.01.11	2026.01.10	3.36 SP2	N/A
Two-Line V-Network	R&S	ENV216	101189	2025.05.10	2026.05.09	N/A	N/A
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2025.03.16	2026.03.15	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-1909	THM-012	2025.04.30	2026.04.29	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

Radiated Emission(30MHz-1GHz) / AC6

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
Anechoic chamber	Quietek	9m*5.5m*5.5m	AC6	2024.06.30	2029.06.29	N/A	N/A
Signal Analyzer	Agilent	N9010A	MY55370495	2025.09.14	2026.09.13	A.18.17	N/A
Loop Antenna	R&S	HFH2-Z2E	101149	2025.04.16	2026.04.15	N/A	N/A
DRG Horn Antenna	RFSPIN	DRH18-E	CE2C07A18EN	2024.12.07	2025.12.06	N/A	N/A
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9170	750	2024.11.24	2025.11.23	N/A	N/A
Pre-Amplifier	Schwarzbeck	BBV 9721	'00114	2025.05.17	2026.05.16	N/A	N/A
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9168	1231	2025.05.28	2026.05.27	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	RF07	2025.06.17	2026.06.16	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	RF04	2025.06.17	2026.06.16	N/A	N/A
Pre-amplifier	Tonscend	TAP01008028	806JSAP041204251019	2025.05.17	2026.05.16	N/A	N/A
Pre-amplifier	Tonscend	TAP01018048S	806JSAP040204251009	2025.05.17	2026.05.16	N/A	N/A
Wideband Radio Communication Tester	R&S	CMW 500	170870	2025.05.10	2026.05.09	X4.0.62.11	N/A
Radio Communication Test Station	Anritsu	MT8000A	6272458317	2024.12.14	2025.12.13	N/A	N/A
Radio Communication Analyzer	Anritsu	MT8821C	6262297906	2024.12.14	2025.12.13	10.10.13.1	N/A
Test Software	Tonscend	JS36	JS36-RSE	N/A	N/A	N/A	5.0.0

Radiated Emission(9kHz-30MHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date	Firmware Version	Software version
Anechoic chamber	Quietek	9m*6m*6m	AC2	2024.07.07	2029.07.06	N/A	N/A
EMI Test Receiver	R&S	ESCI	100573	2025.01.11	2026.01.10	4.42 SP2	N/A
Loop Antenna	R&S	HFH2-Z2E	101149	2025.04.16	2026.04.15	N/A	N/A
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2025.03.24	2026.03.23	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-1909	THM-021	2025.04.30	2026.04.29	N/A	N/A
Dekra test software	Dekra	N/A	N/A	N/A	N/A	N/A	3

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95% .

Test item	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.60 dB 150kHz~30MHz: 2.90 dB
Peak Power Output	± 1.3 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.5 dB 200MHz~1GHz: 3.6 dB Vertical: 30MHz~200MHz: 3.6 dB 200MHz~1GHz: 3.8 dB
Radiated Emission(1GHz~26.5GHz)	Horizontal: 1GHz~18GHz: 5.0 dB Vertical: 1GHz~18GHz: 4.8 dB Horizontal: 18GHz~26.5GHz: 5.3 dB Vertical: 18GHz~26.5GHz: 4.9 dB
RF antenna conducted test	± 1.3 dB
Radiated Emission Band Edge	± 3.9 dB
DTS Bandwidth	± 1.0 kHz
Occupied Bandwidth	± 1.0 kHz
Power Density	± 1.3 dB

1 GENERAL INFORMATION

Product Name.....:	LED Device
Model No.:	9290042770, 9290042769, 9290042771, 9290046109, 9290046111
Model Difference(s).:	The lengths and appearances of the string lights are different.
Trademark.:	PHILIPS , hue, 
FCC ID.....:	2AGBW9290046111X
IC	20812-46111X
Manufacturer	Signify (China) Investment Co., Ltd
Manufacturer Address	Building No.9, Lane 888, Tianlin Road, Minhang district, 200233, Shanghai, China
Power supply	110-130 Vac
Wireless specification	Zigbee
Operating frequency range(s)	2405~2480MHz
Type of Modulation	O-QPSK
Data Rate	250kbps
Channel Spacing	5MHz
Antenna type	PCB
Antenna Gain.....:	-0.84 dBi

Remark:

As above information is provided and confirmed by the applicant. DEKRA is not liable to the accuracy, suitability, reliability or/and integrity of the information.

2 DESCRIPTION OF TEST SETUP

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	Think pad x220	Lenovo	Adapter
(2) USB Control Cable	N/A	N/A	N/A
(3) USB Control Cable	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
HueApprobationTool	N/A	N/A	N/A

Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2)USB Control Cable	1	☒	☒
(3)USB Control Cable	8	☒	☒

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
CFR 47, FCC Part 15 C	2024	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
RSS-Gen Issue5 Amendment2	2021	General Requirements for Compliance of Radio Apparatus
RSS-247 Issue4	2025	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
ANSI C63.10-2020 + Cor.1-2023	2023	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB 558074 D01V05r02	2019	Guidance for performing compliance measurements on Digital Transmission System (DTS) operating under section 15.247

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Power setting in test

Mode	Channel	Frequency (MHz)	Power setting
Mode1	11	2405	10
	18	2440	10
	26	2480	10

4 TEST ITEMS OF LIMIT/SETUP/PROCEDURE

4.1 DTS Bandwidth

VERDICT: PASS

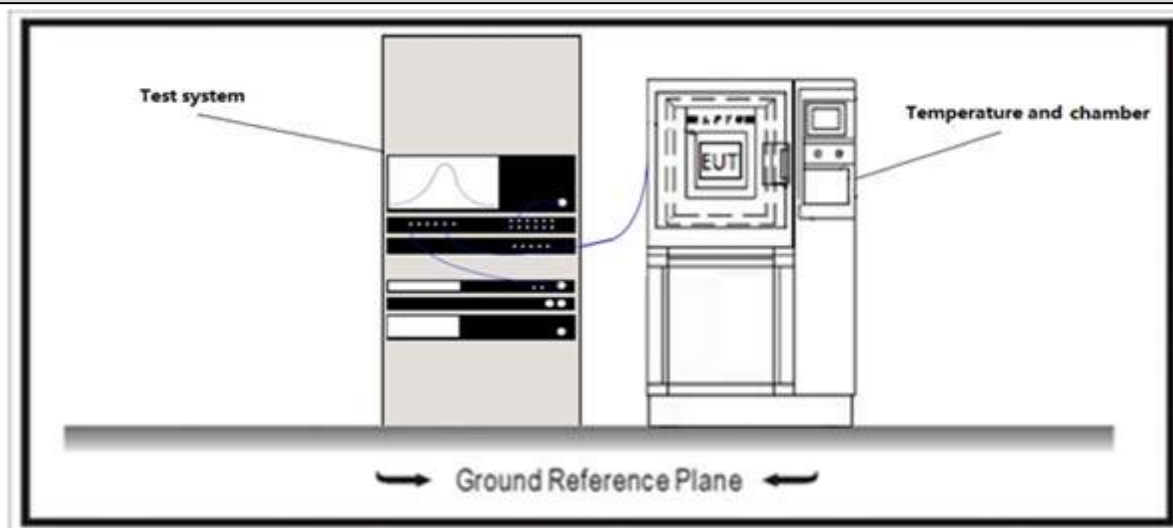
4.1.1 Limit

Standard

FCC Part 15 Subpart C Paragraph 15.247 (a)(2); RSS-247 Issue4 Clause 6.3.1(a)

Systems using digital modulation techniques operate in the 2400-2483.5 MHz. The minimum 6 dB bandwidth shall be at least 500 kHz

4.1.2 Test Setup



4.1.3 Test Procedure

	Reference Rule		Chapter	Description
☒	ANSI C63.10		11.8	DTS bandwidth
☒	ANSI C63.10	11.8.1	Option 1	
☐	ANSI C63.10	11.8.2	Option 2	

4.2 Occupied Channel Bandwidth

VERDICT: PASS

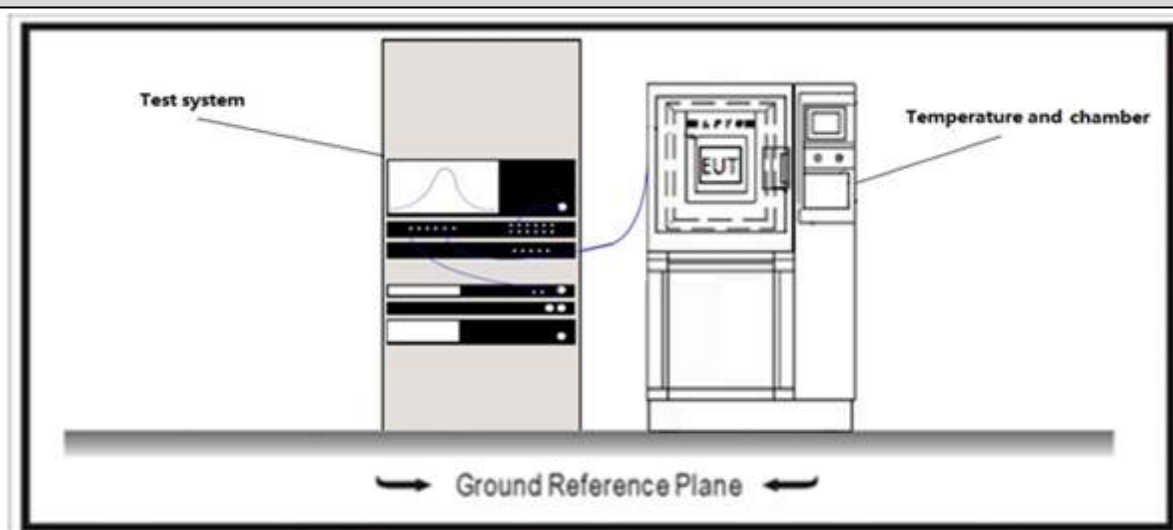
4.2.1 Limit

Standard

RSS-Gen Issue 5 Paragraph 6.7

The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs

4.2.2 Test Setup



4.2.3 Test Procedure

	Reference Rule	Chapter	Description
☒	ANSI C63.10	6.9	Occupied bandwidth tests
☐	ANSI C63.10	6.9.2	Option 1
☒	ANSI C63.10	6.9.3	Option 2

4.3 Maximum Conducted Output Power

VERDICT: PASS

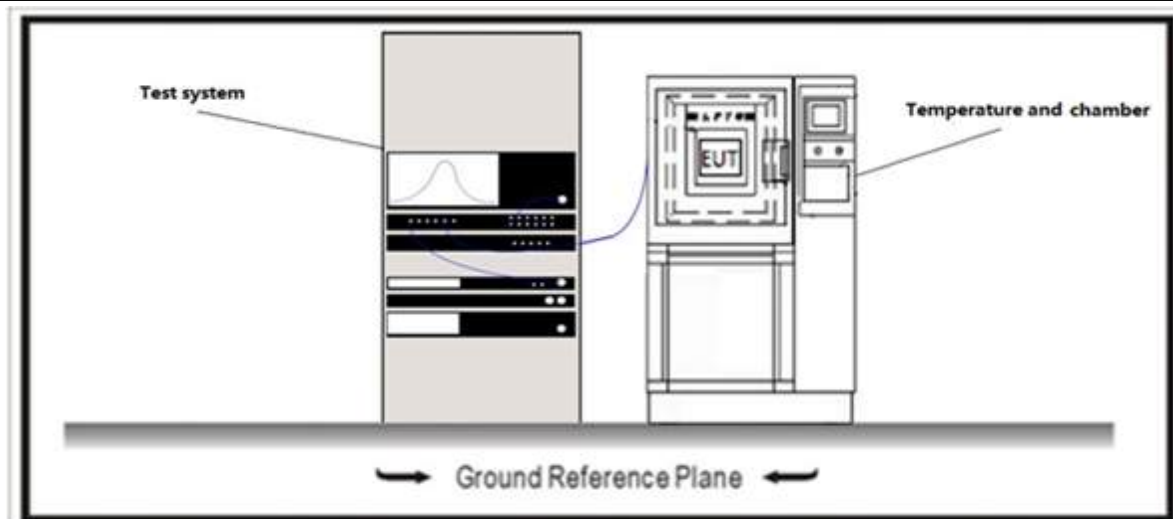
4.3.1 Limit

Standard		FCC Part 15 Subpart C Paragraph 15.247 (b)(3); RSS-247 Issue4 Clause 6.3.2.
☒	GTX < 6dBi	Pout≤30dBm
☐	GTX > 6dBi	
☐	Non-Fix point-point	Pout≤30-(GTX -6)
☐	Fix point-point	Pout≤30-[(GTX-6)]/3
☐	Point-to-multipoint	Pout≤30-(GTX-6)
☐	Overlap Beams	Pout≤30-[(GTX-6)]/3
☐	Aggregate power transmitted simultaneously on all beams	Pout≤30-[(GTX-6)]/3
☐	single directional beam	Pout≤30-[(GTX-6)]/3+8dB

Note 1 : GTX directional gain of transmitting antennas.

Note 2 : Pout is maximum peak conducted output power .

4.3.2 Test Setup



4.3.3 Test Procedure

	References Rule			Chapter	Description		
☒	ANSI C63.10			11.9	Fundamental emission output power		
	☒	ANSI C63.10			11.9.1	Maximum peak conducted output power	
		☐	ANSI C63.10	11.9.1.1	RBW ≥ DTS bandwidth		
		☐	ANSI C63.10	11.9.1.2	Integrated band power method		
		☒	ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method		
	☐	ANSI C63.10			11.9.2	Maximum conducted (average) output power	
		☐	ANSI C63.10			11.9.2.2	Measurement using a spectrum analyzer (SA)
			☐	ANSI C63.10	11.9.2.2.2	Method AVGSA-1(Duty cycle ≥98%)	
			☐	ANSI C63.10	11.9.2.2.3	Method AVGSA-1A(Duty cycle ≥98%)	
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-2(Duty cycle ≤98%)	
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-2A(Duty cycle ≤98%)	
			☐	ANSI C63.10	11.9.2.2.4	Method AVGSA-3	
			☐	ANSI C63.10	11.9.2.2.5	Method AVGSA-3A	
		☐	ANSI C63.10			11.9.2.3	Measurement using a power meter (PM)
			☐	ANSI C63.10	11.9.2.3.1	Method AVGPM	
			☐	ANSI C63.10	11.9.2.3.2	Method AVGPM-G	

4.4 Maximum Power Spectral Density

VERDICT: PASS

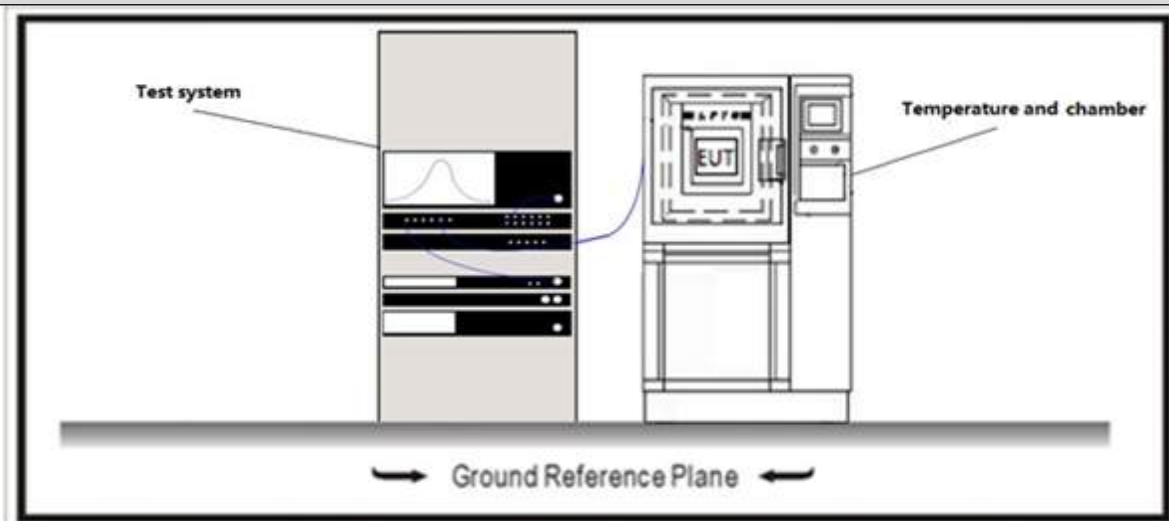
4.4.1 Limit

Standard

 FCC Part 15 Subpart C Paragraph 15.247 (b)(3);
 RSS-247 Issue4 Clause 6.3.1(b).

 Power Spectral Density $\leq 8\text{dBm}/3\text{kHz}$

4.4.2 Test Setup



4.4.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		11.10	Maximum power spectral density level in the fundamental emission
	☒	ANSI C63.10	11.10.2	Method PKPSD (peak PSD)
	☐	ANSI C63.10	11.10.3	Method AVGPSD-1(Duty cycle $\geq 98\%$)
	☐	ANSI C63.10	11.10.4	Method AVGPSD-1A(Duty cycle $\geq 98\%$)
	☐	ANSI C63.10	11.10.5	Method AVGPSD-2(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.6	Method AVGPSD-2A(Duty cycle $< 98\%$)
	☐	ANSI C63.10	11.10.7	Method AVGPSD-3
	☐	ANSI C63.10	11.10.8	Method AVGPSD-3A

4.5 Band Edge Measurements

VERDICT: PASS

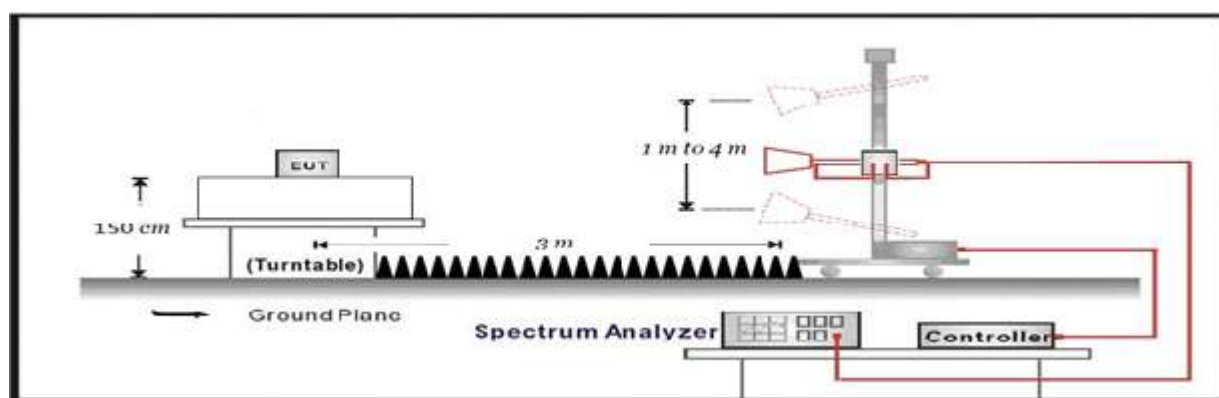
4.5.1 Limit

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) , 15.209; RSS-Gen Issue5 A2 Clause 8.9		
Frequency bands (MHz)	Detector	Limit (dB μ V/m)	RBW (MHz)	Distance (m)
2310-2390	PK	74	1	3
2483.5-2500	AV	54	1	3

Note: The field strength of emissions appearing within these frequency bands shall not exceed the limits.

4.5.2 Test Setup

Above 1GHz Test Setup:



4.5.3 Test Procedure

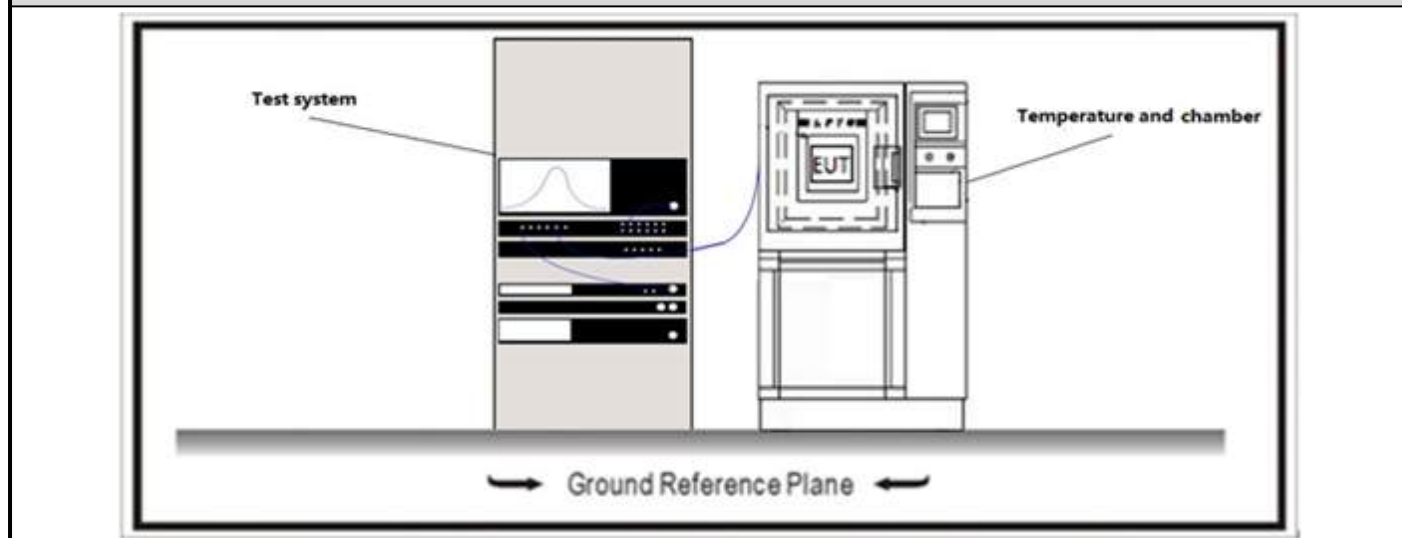
	References Rule	Chapter	Description
☒	ANSI C63.10	6.10	Band-edge testing
☒	ANSI C63.10	6.10.5	Restricted-band band-edge measurements
☐	ANSI C63.10	6.10.6	Marker-delta method
☒	ANSI C63.10	11.12	Emissions in restricted frequency bands
☒	ANSI C63.10	11.12.1	Radiated emission measurements
☒	ANSI C63.10	11.12.2.7	Radiated spurious emission test
☐	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
☐	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.6 Conducted Spurious Emission**VERDICT: PASS****4.6.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247(d); RSS-247 Issue4 Clause 6.6.
RF Output power (Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output power(PK detector)	20dBc(Note2)

Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

4.6.2 Test Setup**4.6.3 Test Procedure**

References Rule	Chapter	Description
☒ ANSI C63.10	11.11	Emissions in non-restricted frequency bands
☒ ANSI C63.10	11.11.1	General
☒ ANSI C63.10	11.11.2	Reference level measurement
☒ ANSI C63.10	11.11.3	Emission level measurement

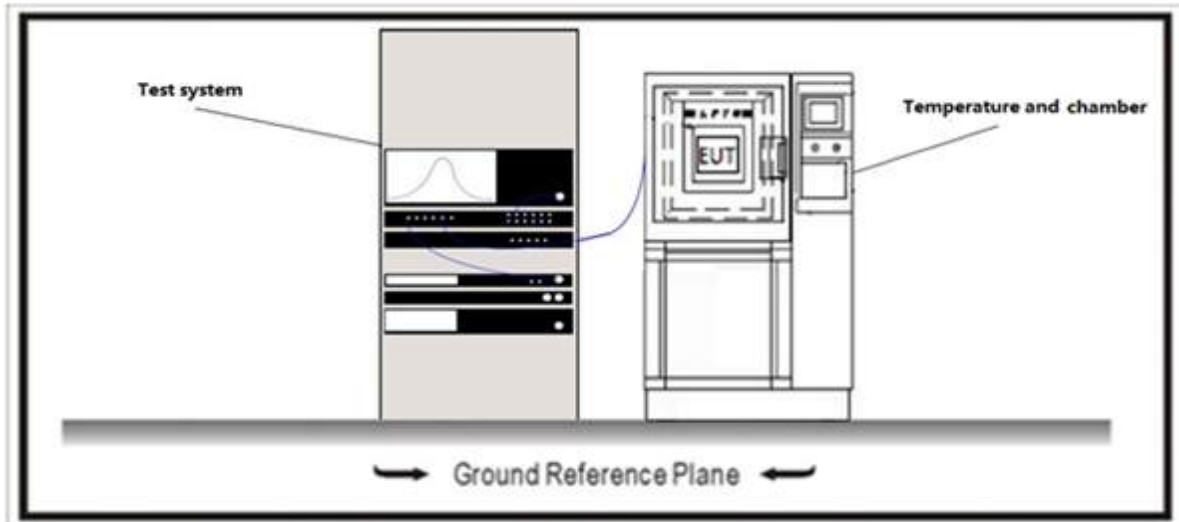
4.7 Duty cycle

VERDICT: PASS

4.7.1 Limit

N/A

4.7.2 Test Setup



4.7.3 Test Procedure

References Rule		Chapter	Description
☒	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum power control level

4.8 Emissions in Restricted Bands**VERDICT: PASS****4.8.1 Limit****Standard**

FCC Part 15 Subpart C Paragraph 15.205

Restricted Bands of operation

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15
0.495 – 0.505	16.69475 – 16.69525	608 – 614	5.35 – 5.46
2.1735 – 2.1905	16.80425 – 16.80475	960 – 1240	7.25 – 7.75
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 – 8.5
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 – 9.2
4.20725 – 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5
8.291 – 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2
8.362 – 8.366	156.52475 – 156.52525	2483.5 – 2500	17.7 – 21.4
8.37625 – 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12
8.81425 – 8.81475	162.0125 – 167.17	3260 – 3267	23.6 – 24.0
12.29 – 12.293	167.72 – 173.2	3332 – 3339	31.2 – 31.8
12.51975 – 12.52025	240 – 285	3345.8 – 3358	36.43 – 36.5
12.57675 – 12.57725	322 – 335.4	3600 – 4400	
13.36 – 13.41			

Standard

RSS-Gen Issue5 A2 Clause 8.10

Restricted Bands of operation for IC

0.090 - 0.110	13.36 - 13.41	960 - 1427	9.0 - 9.2
0.495 - 0.505	16.42 - 16.423	1435 - 1626.5	9.3 - 9.5
2.1735 - 2.1905	16.69475 - 16.69525	1645.5 - 1646.5	10.6 - 12.7
3.020 - 3.026	16.80425 - 16.80475	1660 - 1710	13.25 - 13.4
4.125 - 4.128	25.5 - 25.67	1718.8 - 1722.2	14.47 - 14.5
4.17725 - 4.17775	37.5 - 38.25	2200 - 2300	15.35 - 16.2
4.20725 - 4.20775	73 - 74.6	2310 - 2390	17.7 - 21.4
5.677 - 5.683	74.8 - 75.2	2483.5 - 2500	22.01 - 23.12
6.215 - 6.218	108 - 138	2655 - 2900	23.6 - 24.0
6.26775 - 6.26825	149.9 - 150.05	3260 - 3267	31.2 - 31.8
6.31175 - 6.31225	156.52475 - 156.52525	3332 - 3339	36.43 - 36.5
8.291 - 8.294	156.7 - 156.9	3345.8 - 3358	Above 38.6
8.362 - 8.366	162.0125 - 167.17	3500 - 4400	
8.37625 - 8.38675	167.72 - 173.2	4500 - 5150	
8.41425 - 8.41475	240 - 285	5350 - 5460	
12.29 - 12.293	322 - 335.4	7250 - 7750	
12.51975 - 12.52025	399.9 - 410	8025 - 8500	
12.57675 - 12.57725	608 - 614	--	

Restricted Band Emissions Limit

FCC Part 15 Subpart C Paragraph 15.209

Frequency (MHz)	Field strength ($\mu\text{V/m}$)	Field strength ($\text{dB}\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

RSS-Gen Issue 5 A2 Paragraph 8.9.

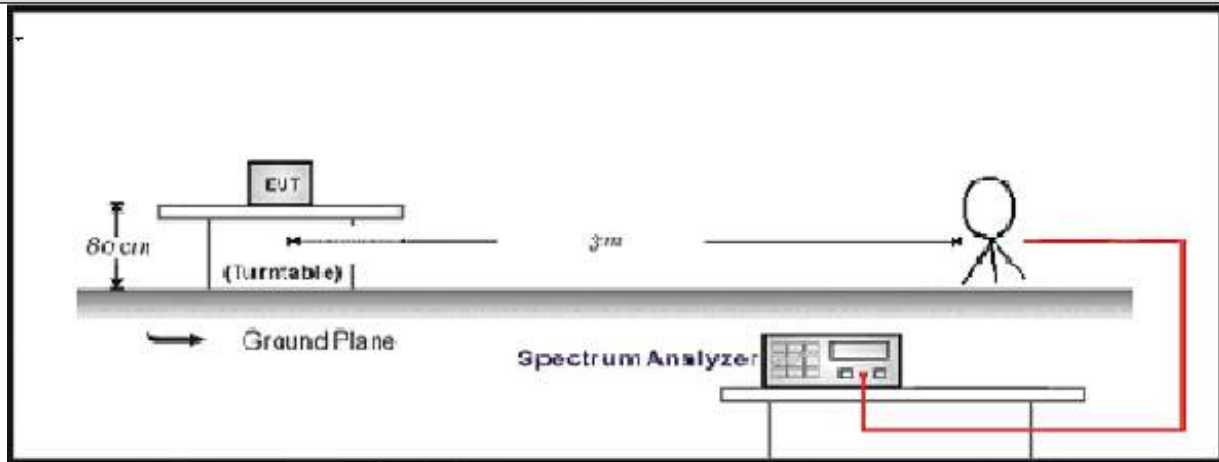
Frequency (MHz)	Field strength	Field strength ($\text{dB}\mu\text{V/m}$)	Measurement distance (m)
0.009 - 0.49	6.37/F(kHz) $\mu\text{A/m}$	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	63.7/F(kHz) $\mu\text{A/m}$	33.8 - 23	30 _(Note 1)
1.705 - 30	30 $\mu\text{V/m}$	29.5	30 _(Note 1)
30 - 88	100 $\mu\text{V/m}$	40	3 _(Note 2)
88 - 216	150 $\mu\text{V/m}$	43.5	3 _(Note 2)
216 - 960	200 $\mu\text{V/m}$	46	3 _(Note 2)
Above 960	500 $\mu\text{V/m}$	54	3 _(Note 2)

Note 1: At frequencies below 30 MHz, 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. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

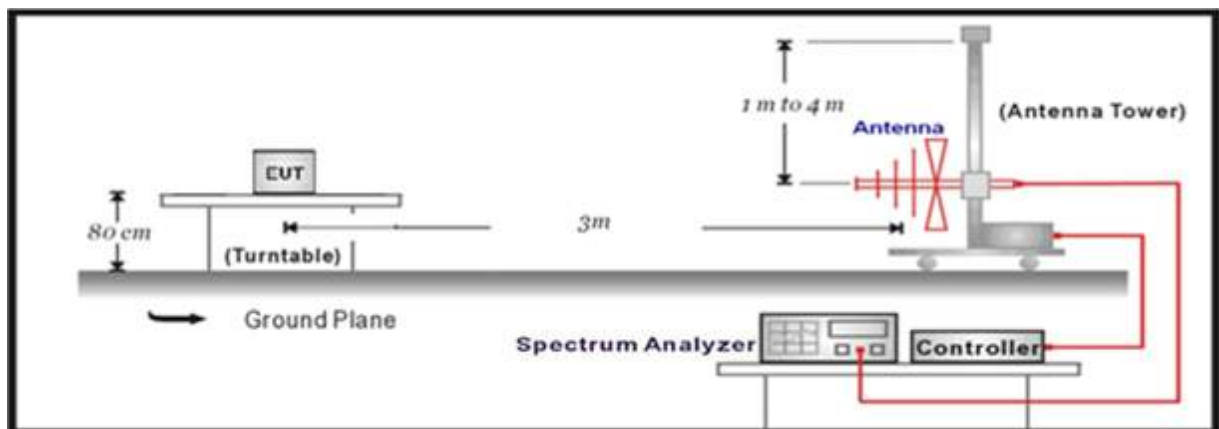
Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.8.2 Test Setup

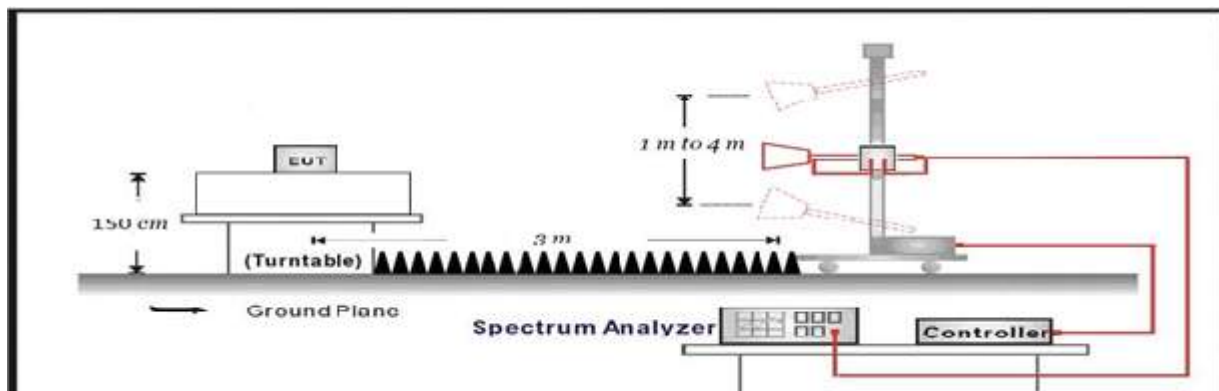
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.8.3 Test Procedure

	References Rule		Chapter	Description
☒	ANSI C63.10		11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10	11.12.1	Radiated emission measurements
	☒	ANSI C63.10	11.12.2.7	Radiated spurious emission test
	☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	☒	ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	☒	ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.9 AC Power Line Conducted Emission**VERDICT: PASS****4.9.1 Limit**

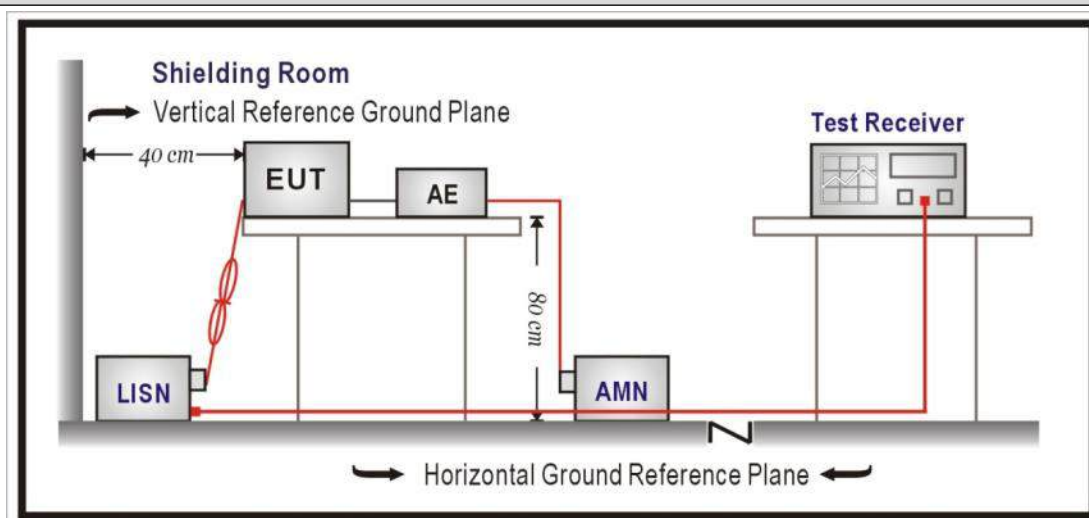
Standard	FCC Part 15 Subpart C Paragraph 15.207 ; RSS-Gen Issue5 A2 Clause 8.8.	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾]	Limit: AV [dB(μV) ¹⁾]
0,15 - 0,50	66 - 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.

NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.9.2 Test Setup**4.9.3 Test Procedure**

	References Rule	Chapter	Item
☒	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.10 Antenna Requirement**VERDICT: PASS****4.10.1 Limit:****Standard**FCC Part 15 Subpart C Paragraph 15.203;
RSS-Gen Issue 5 A2 Paragraph 6.8.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

4.10.2 Antenna Connector Construction:

- | | |
|-------------------------------------|--|
| ☒ | The use of a permanently attached antenna |
| ☐ | The antenna use of a unique coupling to the intentional radiator |
| ☐ | The use of a nonstandard antenna jack or electrical connector |

Please refer to the attached document "Internal Photograph" to show the antenna connector.

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

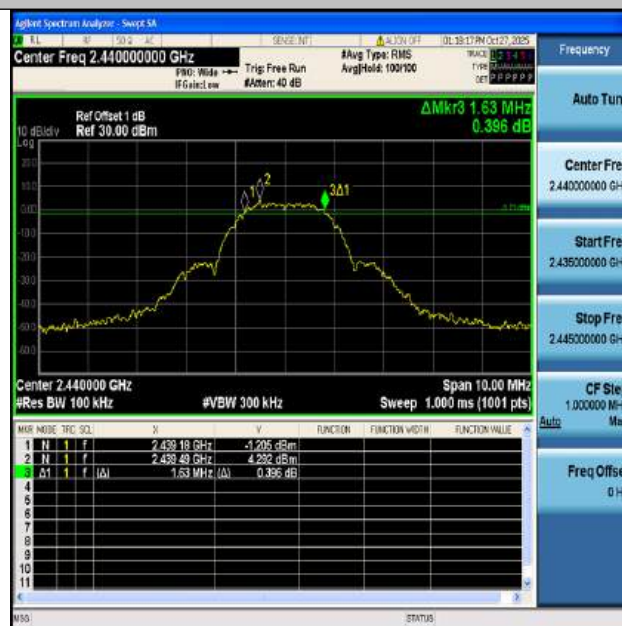
6 TEST RESULT

Appendix A: DTS Bandwidth

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	1.760	2404.150	2405.910	0.5	PASS
ZIGB	Ant1	2440	1.630	2439.180	2440.810	0.5	PASS
ZIGB	Ant1	2480	1.710	2479.150	2480.860	0.5	PASS



ZIGB-Ant1-2405-PASS



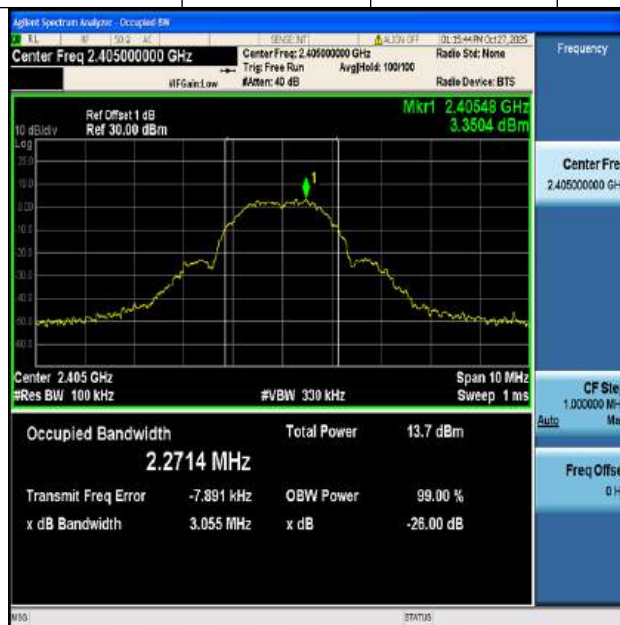
ZIGB-Ant1-2440-PASS



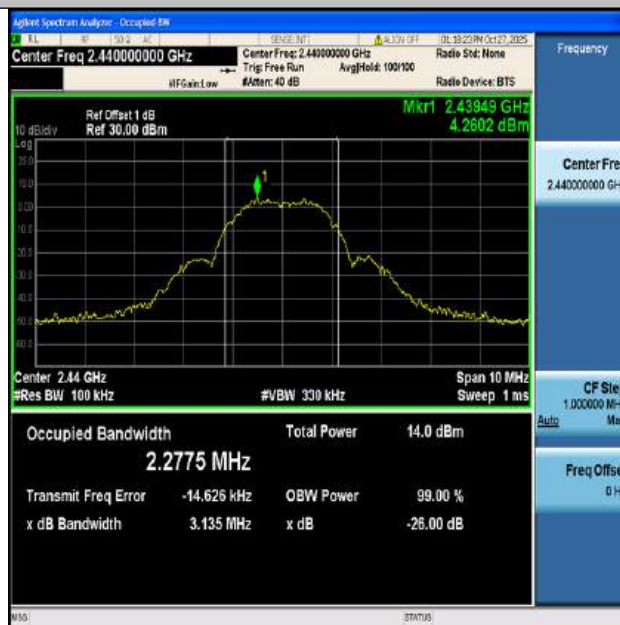
ZIGB-Ant1-2475-PASS

Appendix B: Occupied Channel Bandwidth

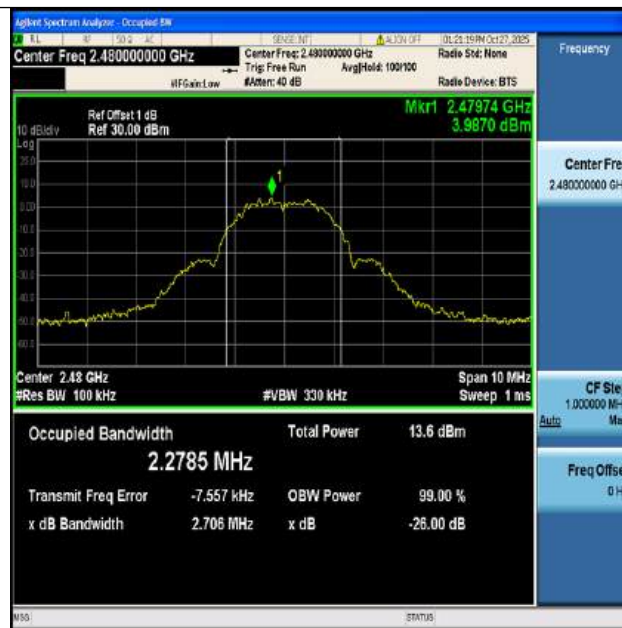
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
ZIGB	Ant1	2405	2.2714	2403.8564	2406.1278	Within band	Pass
ZIGB	Ant1	2440	2.2775	2438.8466	2441.1241	Within band	Pass
ZIGB	Ant1	2480	2.2785	2478.8532	2481.1317	Within band	Pass



ZIGB-Ant1-2405



ZIGB-Ant1-2440



ZIGB-Ant1-2475

Appendix C: Maximum conducted output power

Test Mode	Frequency (MHz)	Measured Power (dBm)	EIRP (dBm)	Conducted Limit(dBm)	EIRP Limit (dBm)
Mode1	2405	7.53	6.69	≤ 30	≤ 36
	2440	7.98	7.14	≤ 30	≤ 36
	2480	7.46	6.62	≤ 30	≤ 36

Note 1: EIRP=Measured power+Antenna gain

Note 2: The antenna gain please refer to clause 1.2

Appendix D: Maximum power spectral density

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
Mode 1	Ant1	2405	-7.57	≤8.00	PASS
	Ant1	2440	-7.11	≤8.00	PASS
	Ant1	2480	-7.55	≤8.00	PASS



ZIGB-Ant1-2405-PASS



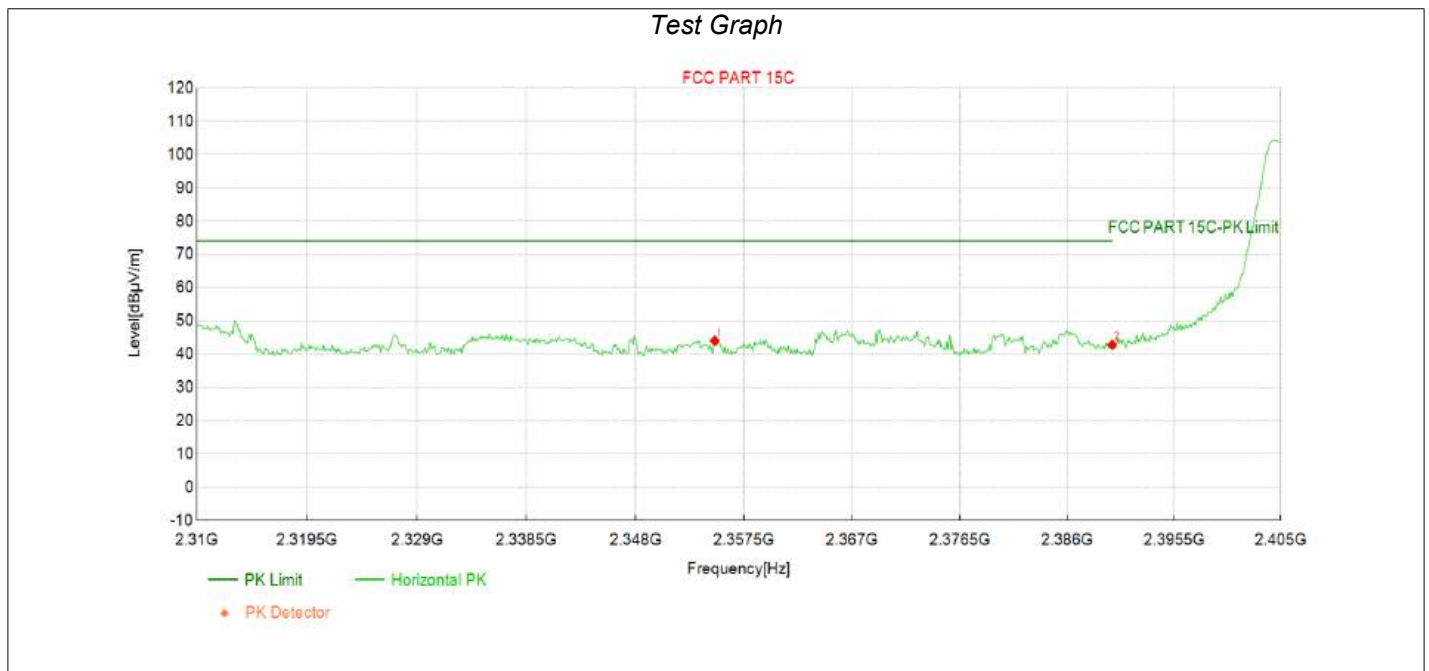
ZIGB-Ant1-2440-PASS



ZIGB-Ant1-2480-PASS

Appendix E: Band edge measurements

Transmit at 2405Hz by ZigBee

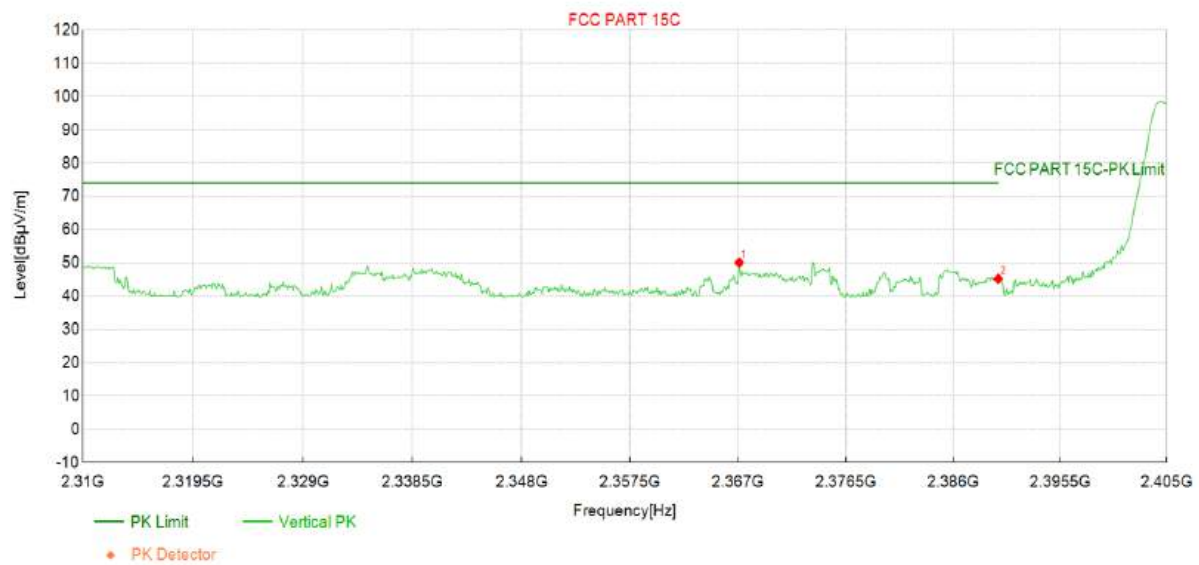


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2354.94	44.2	44.02	-0.130	74.00	29.98	PK	Horizo	PASS
2	2390.00	42.9	42.80	-0.050	74.00	31.20	PK	Horizo	PASS

Transmit at 2405Hz by ZigBee

Test Graph

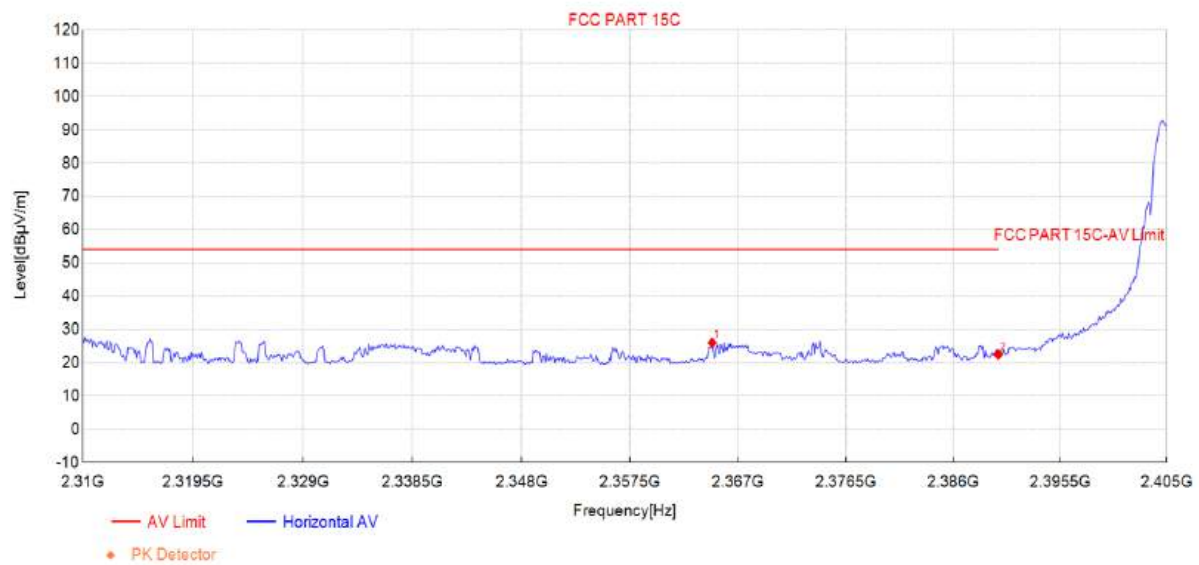


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2367.10	50.2	50.10	-0.110	74.00	23.90	PK	Vertic	PASS
2	2390.00	45.2	45.17	-0.050	74.00	28.83	PK	Vertic	PASS

Transmit at 2405Hz by ZigBee

Test Graph

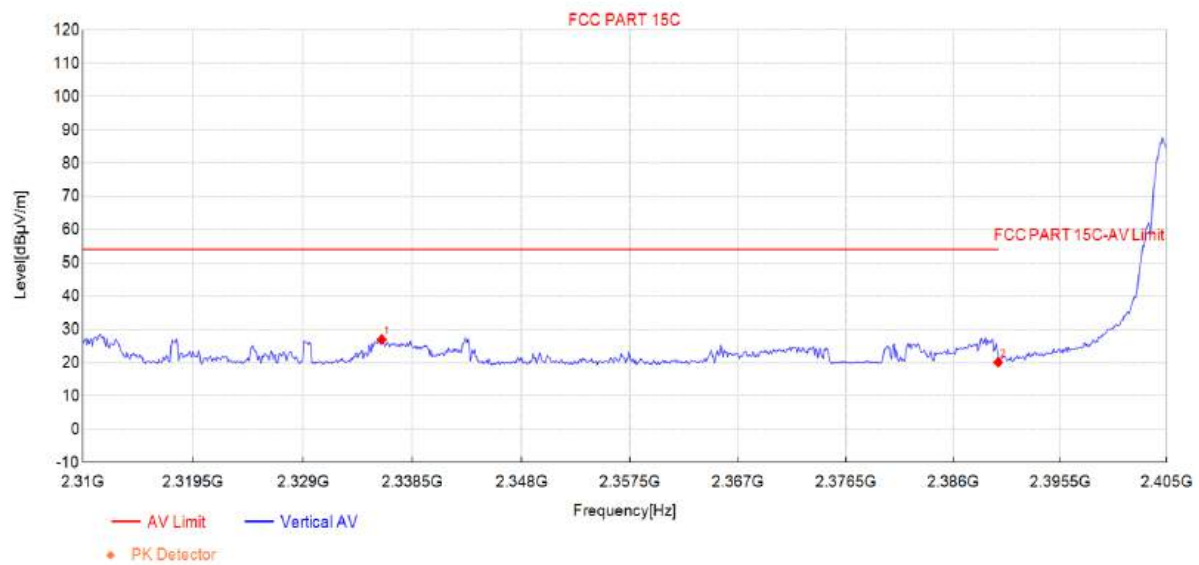


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2364.72	26.1	25.97	-0.110	54.00	28.03	AV	Horizo	PASS
2	2390.00	22.5	22.45	-0.050	54.00	31.55	AV	Horizo	PASS

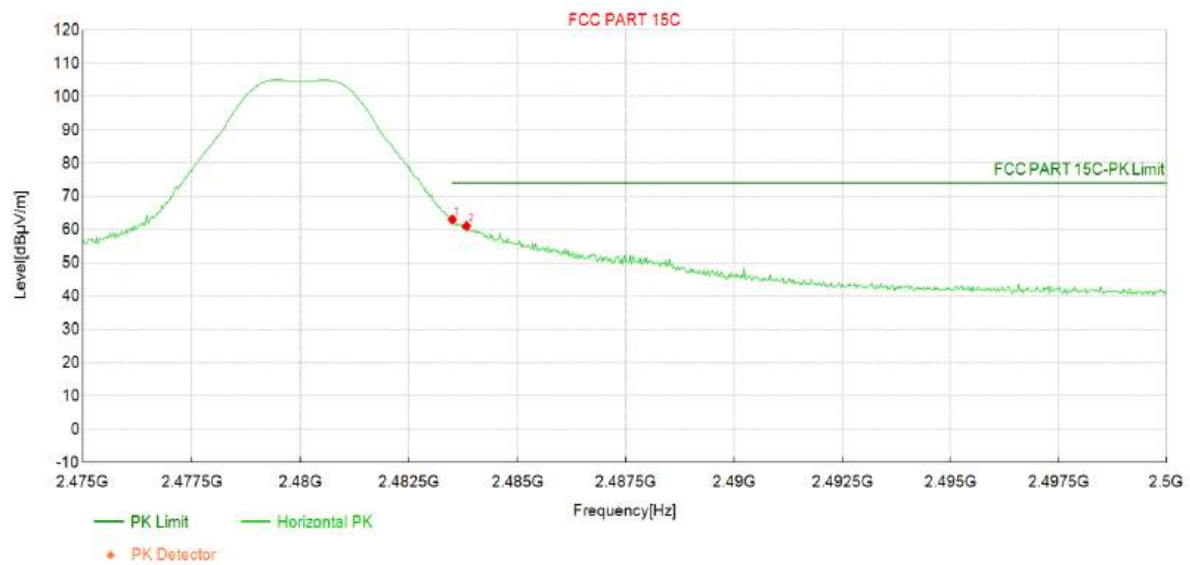
Transmit at 2405Hz by ZigBee

Test Graph

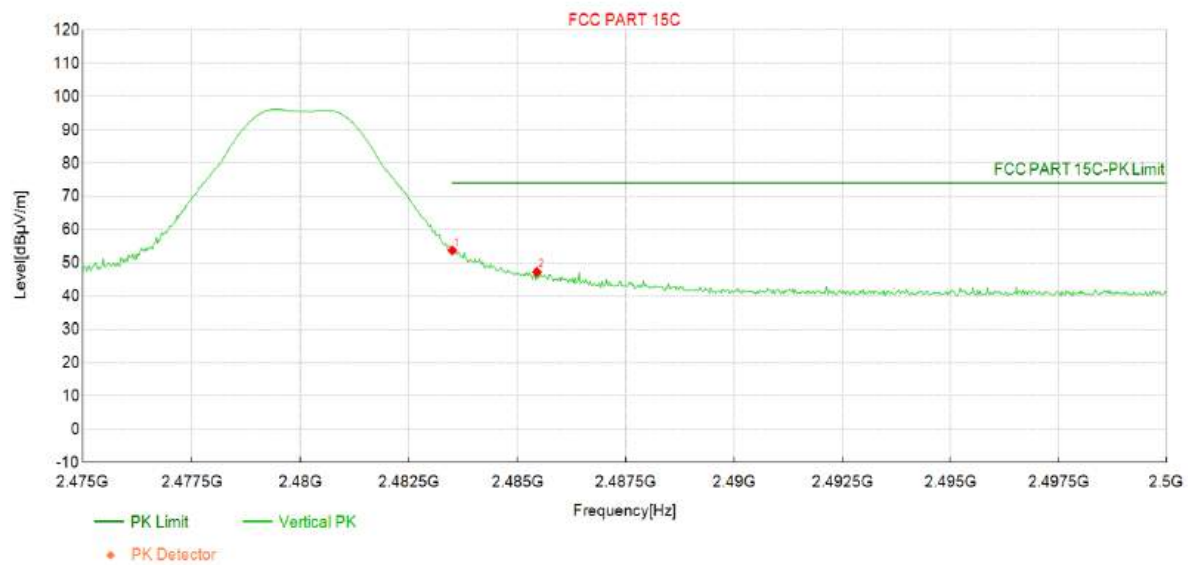


Data List

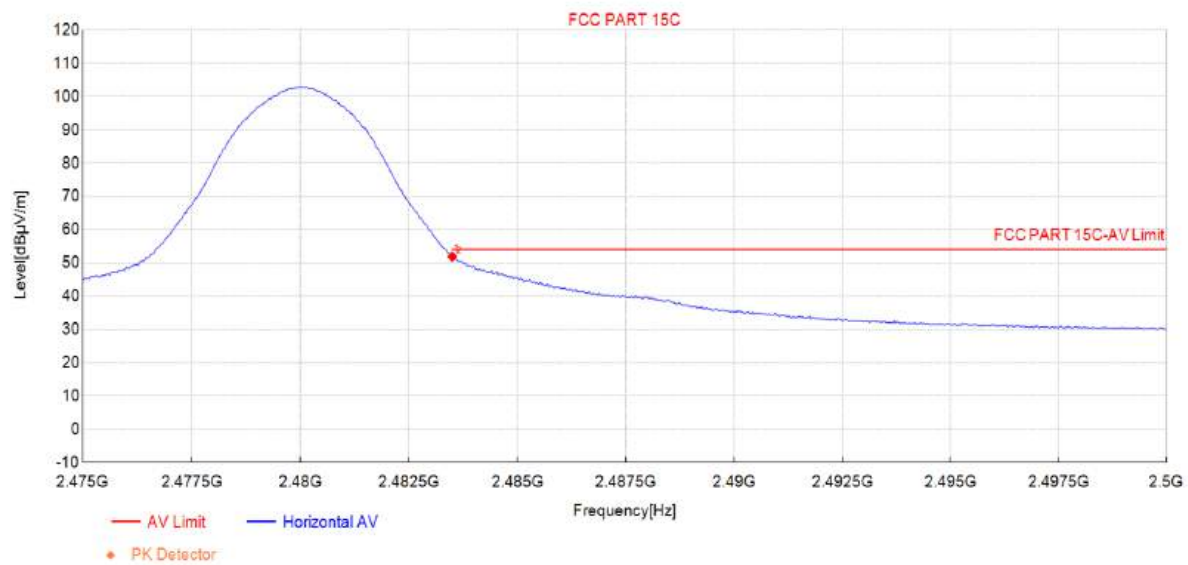
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2335.84	27.1	26.95	-0.180	54.00	27.05	AV	Vertic	PASS
2	2390.00	20.2	20.15	-0.050	54.00	33.85	AV	Vertic	PASS

Transmit at 2480Hz by ZigBee*Test Graph***Data List**

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	62.8	63.05	0.270	74.00	10.95	PK	Horizo	PASS
2	2483.83	60.8	61.08	0.270	74.00	12.92	PK	Horizo	PASS

Transmit at 2480Hz by ZigBee*Test Graph***Data List**

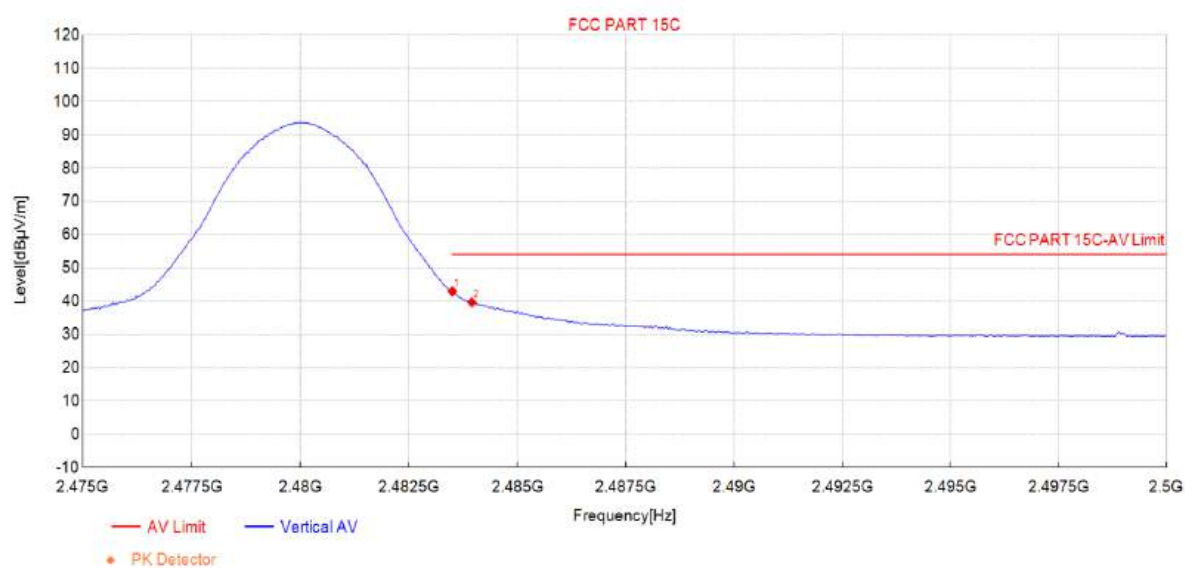
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	53.5	53.74	0.270	74.00	20.26	PK	Vertic	PASS
2	2485.45	47.0	47.26	0.290	74.00	26.74	PK	Vertic	PASS

Transmit at 2480Hz by ZigBee*Test Graph***Data List**

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	51.6	51.85	0.270	54.00	2.15	AV	Horizo	PASS
2	2483.55	51.1	51.35	0.270	54.00	2.65	AV	Horizo	PASS

Transmit at 2480Hz by ZigBee

Test Graph



Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	42.7	42.94	0.270	54.00	11.06	AV	Vertic	PASS
2	2483.95	39.4	39.64	0.270	54.00	14.36	AV	Vertic	PASS

Note:

1. Level = Reading + Factor(Probe+Cable-Amp).
2. Margin = Limit - Level

Appendix F Conducted Spurious Emission

Reference level measurement :

TestMode	Antenna	Freq(MHz)	Max.Point[MHz]	Result[dBm]
ZIGB	Ant1	2405	2404.74	3.57
ZIGB	Ant1	2440	2439.72	4.23
ZIGB	Ant1	2480	2479.74	3.70



ZIGB-Ant1-2405-PASS



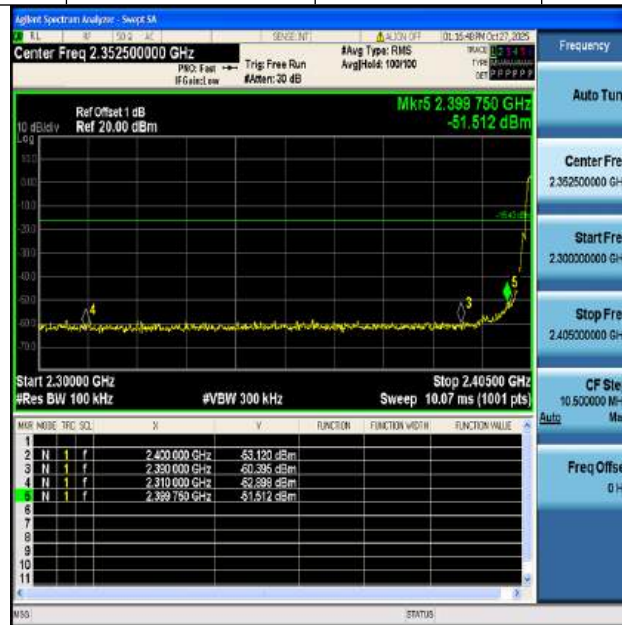
ZIGB-Ant1-2440-PASS



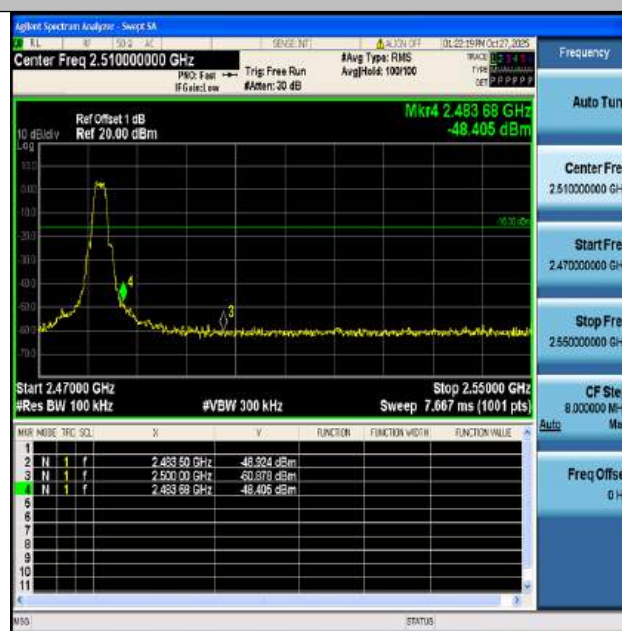
ZIGB-Ant1-2475-PASS

Band edge measurements:

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	Low	2405	3.57	-51.51	≤-16.43	PASS
ZIGB	Ant1	High	2480	3.70	-48.41	≤-16.3	PASS



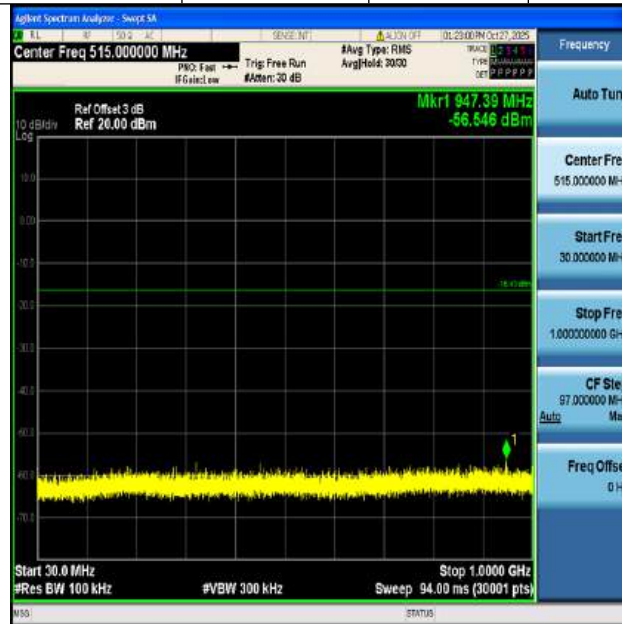
ZIGB-Ant1-2405-PASS



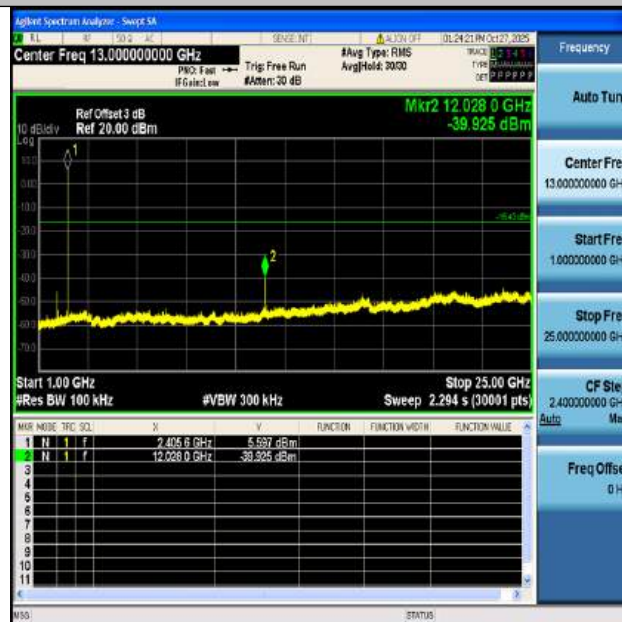
ZIGB-Ant1-2475-PASS

Conducted Spurious Emission:

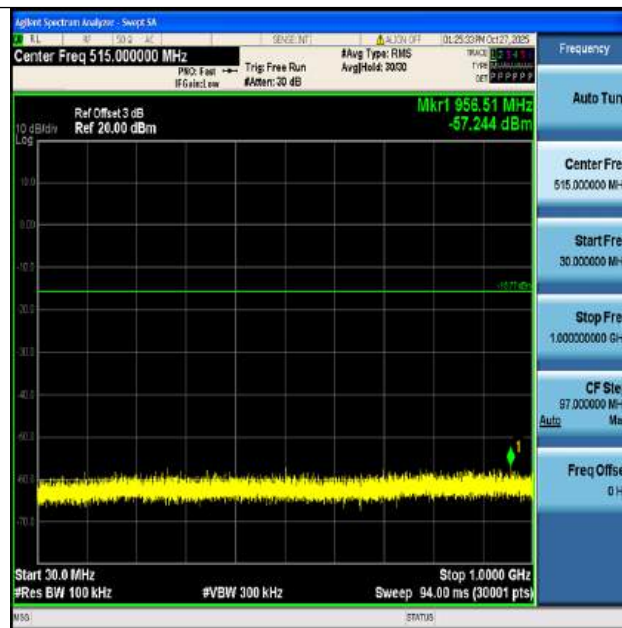
TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
ZIGB	Ant1	2405	30~1000	3.57	-56.55	≤-16.43	PASS
ZIGB	Ant1	2405	1000~25000	3.57	-39.93	≤-16.43	PASS
ZIGB	Ant1	2440	30~1000	4.23	-57.24	≤-15.77	PASS
ZIGB	Ant1	2440	1000~25000	4.23	-35.4	≤-15.77	PASS
ZIGB	Ant1	2480	30~1000	3.70	-56.69	≤-16.3	PASS
ZIGB	Ant1	2480	1000~25000	3.70	-38.38	≤-16.3	PASS



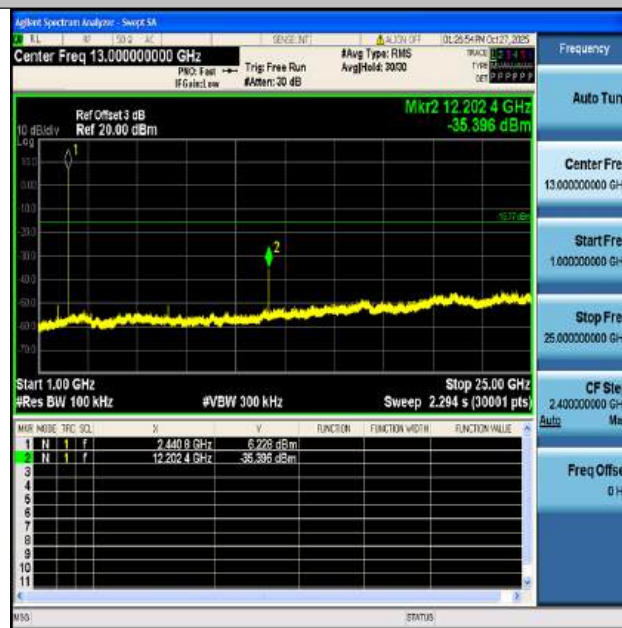
ZIGB-Ant1-2405-30~1000-PASS



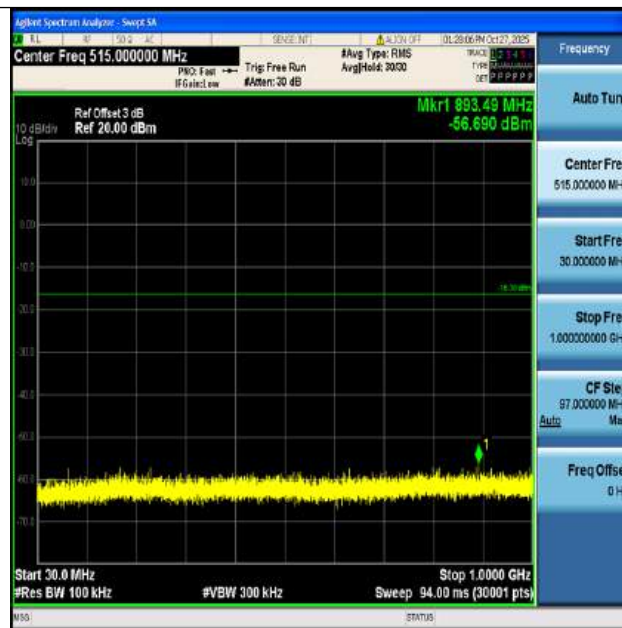
ZIGB-Ant1-2405-1000~25000-PASS



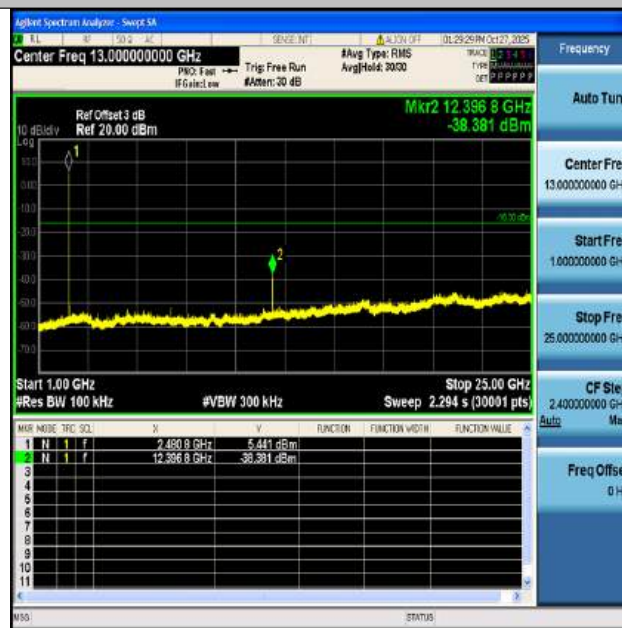
ZIGB-Ant1-2440-30~1000-PASS



ZIGB-Ant1-2440-1000~25000-PASS



ZIGB-Ant1-2480-30~1000-PASS



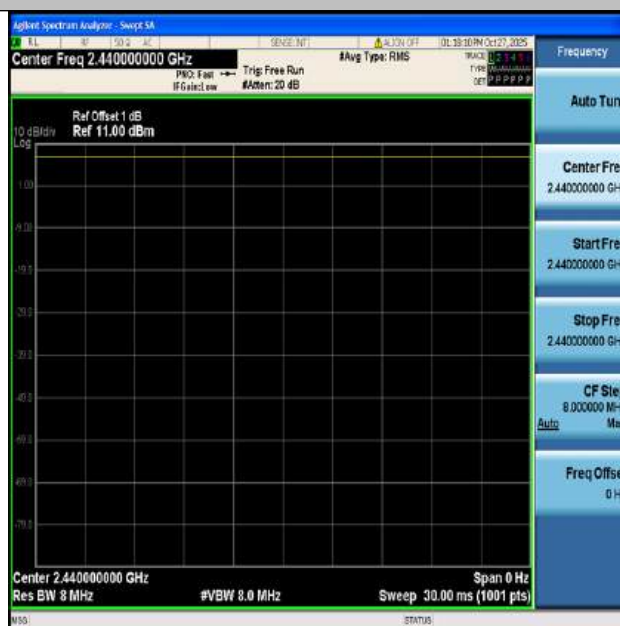
ZIGB-Ant1-2480-1000~25000-PASS

Appendix G: Duty Cycle

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Duty Cycle [%]	Limit
ZIGB	Ant1	2405	N/A	100	N/A
ZIGB	Ant1	2440	N/A	100	N/A
ZIGB	Ant1	2480	N/A	100	N/A



NTNV-ZIGB-Ant1-2405



NTNV-ZIGB-Ant1-2440

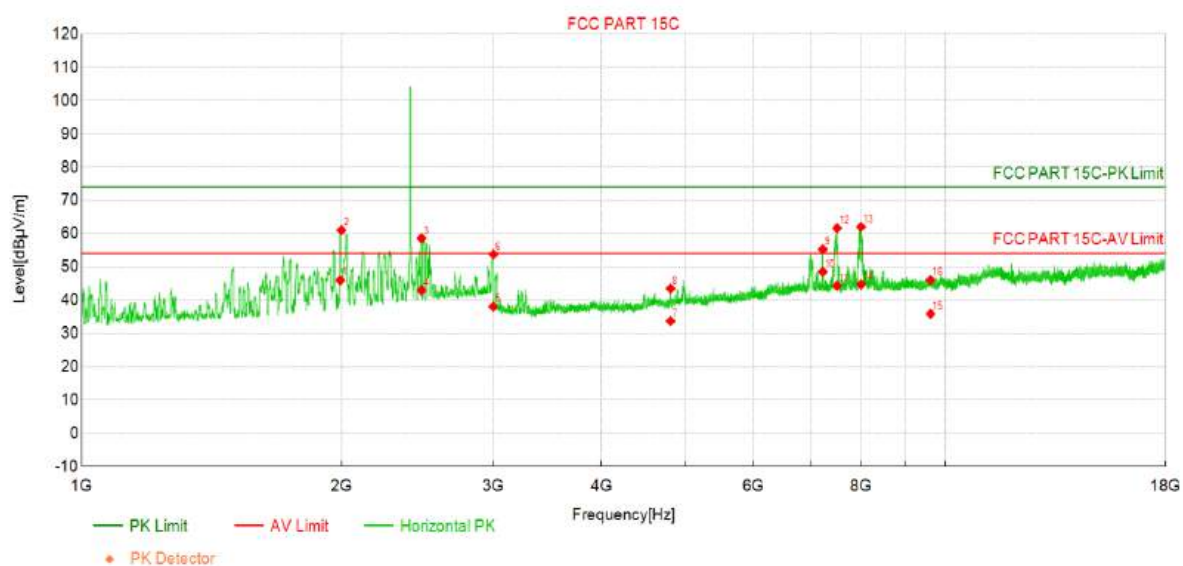


NTNV-ZIGB-Ant1-2480

Appendix H: Emissions in Restricted Bands

Transmit at 2405Hz by ZigBee

Test Graph

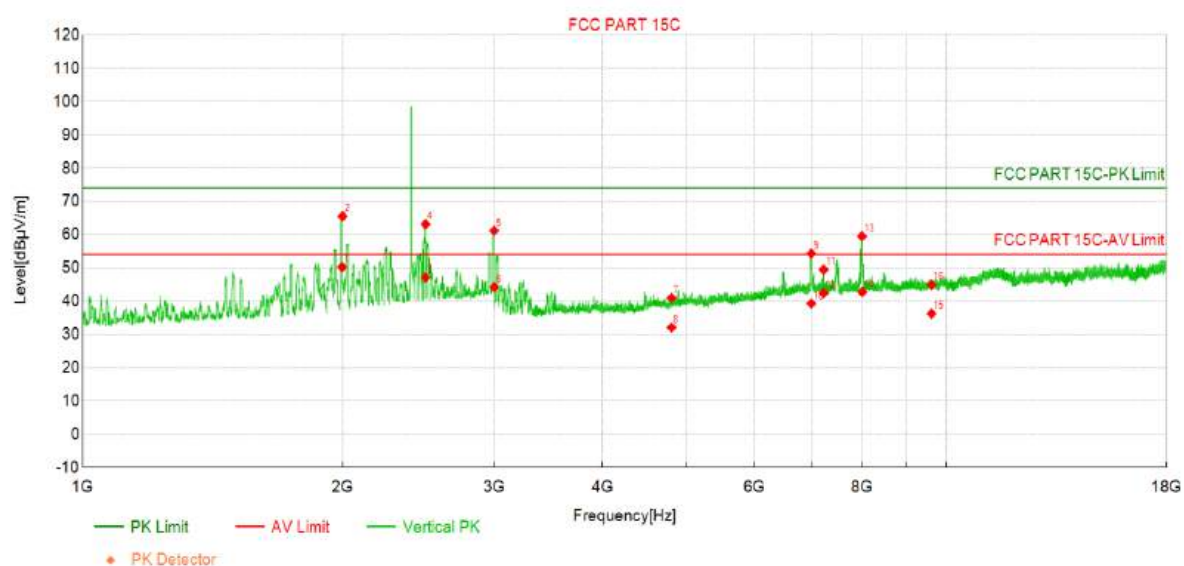


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1993.50	47.7	45.95	-1.770	54.00	8.05	AV	Horizo	PASS
2	1999.50	62.8	61.02	-1.730	74.00	12.98	PK	Horizo	PASS
3	2475.50	58.4	58.59	0.240	74.00	15.41	PK	Horizo	PASS
4	2476.50	42.7	42.98	0.250	54.00	11.02	AV	Horizo	PASS
5	2997.00	35.7	38.05	2.390	54.00	15.95	AV	Horizo	PASS
6	2999.50	51.4	53.80	2.410	74.00	20.20	PK	Horizo	PASS
7	4810.00	42.2	33.70	-8.450	54.00	20.30	AV	Horizo	PASS
8	4810.00	51.9	43.46	-8.450	74.00	30.54	PK	Horizo	PASS
9	7217.25	56.9	55.30	-1.620	74.00	18.70	PK	Horizo	PASS
10	7217.25	50.2	48.56	-1.620	54.00	5.44	AV	Horizo	PASS
11	7498.50	46.3	44.33	-1.930	54.00	9.67	AV	Horizo	PASS
12	7499.25	63.6	61.62	-1.930	74.00	12.38	PK	Horizo	PASS
13	7993.50	63.1	62.01	-1.100	74.00	11.99	PK	Horizo	PASS
14	7994.25	45.8	44.70	-1.100	54.00	9.30	AV	Horizo	PASS
15	9620.00	34.5	35.90	1.390	54.00	18.10	AV	Horizo	PASS
16	9620.00	44.6	46.01	1.390	74.00	27.99	PK	Horizo	PASS

Transmit at 2405Hz by ZigBee

Test Graph

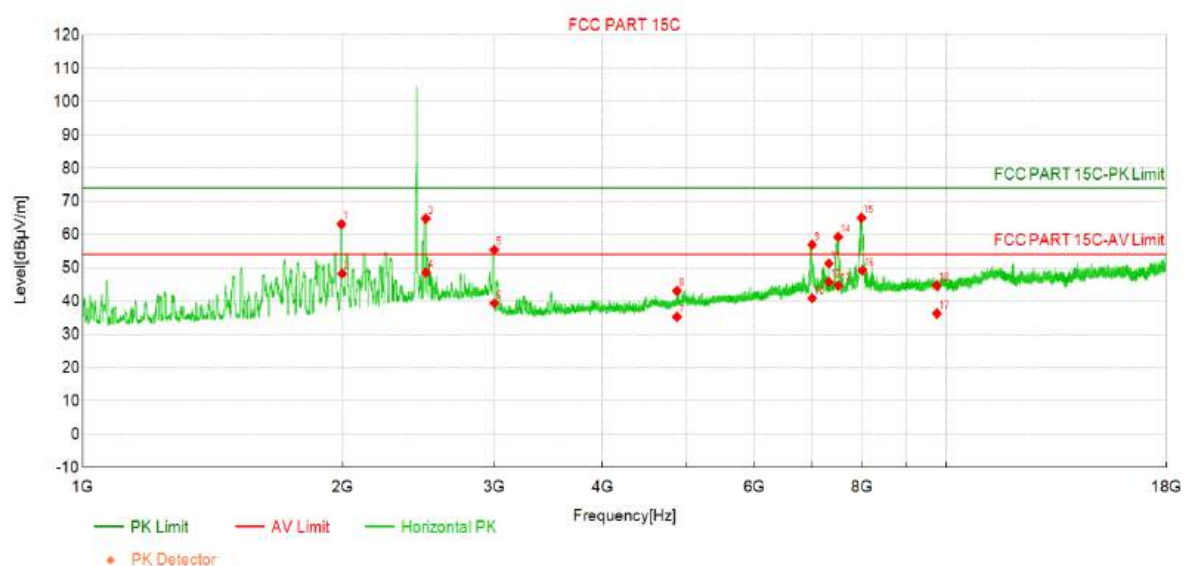


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1998.00	52.0	50.25	-1.740	54.00	3.75	AV	Vertic	PASS
2	2000.00	67.2	65.51	-1.730	74.00	8.49	PK	Vertic	PASS
3	2495.00	46.8	47.10	0.320	54.00	6.90	AV	Vertic	PASS
4	2495.50	62.8	63.15	0.320	74.00	10.85	PK	Vertic	PASS
5	2996.50	58.8	61.17	2.390	74.00	12.83	PK	Vertic	PASS
6	2997.50	41.8	44.22	2.390	54.00	9.78	AV	Vertic	PASS
7	4810.00	49.4	40.97	-8.450	74.00	33.03	PK	Vertic	PASS
8	4810.00	40.5	32.08	-8.450	54.00	21.92	AV	Vertic	PASS
9	6981.00	56.3	54.33	-1.960	74.00	19.67	PK	Vertic	PASS
10	6981.75	41.3	39.29	-1.960	54.00	14.71	AV	Vertic	PASS
11	7213.50	51.1	49.48	-1.620	74.00	24.52	PK	Vertic	PASS
12	7214.25	44.1	42.46	-1.610	54.00	11.54	AV	Vertic	PASS
13	7990.50	60.6	59.48	-1.130	74.00	14.52	PK	Vertic	PASS
14	7998.00	43.9	42.76	-1.090	54.00	11.24	AV	Vertic	PASS
15	9620.00	34.9	36.25	1.390	54.00	17.75	AV	Vertic	PASS
16	9620.00	43.5	44.90	1.390	74.00	29.10	PK	Vertic	PASS

Transmit at 2440Hz by ZigBee

Test Graph

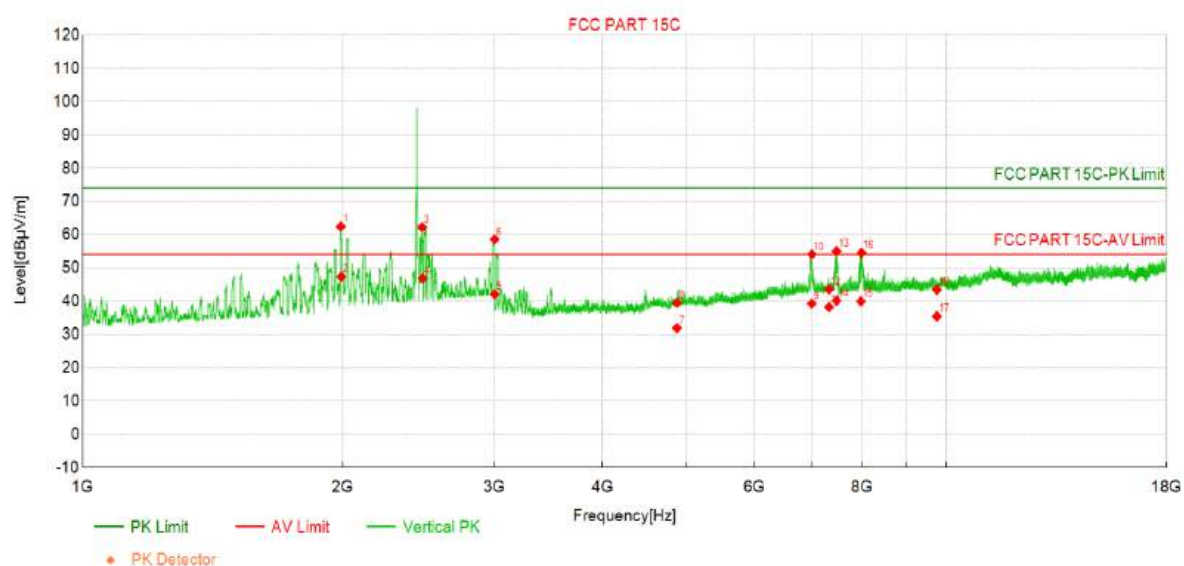


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1994.50	65.0	63.19	-1.770	74.00	10.81	PK	Horizo	PASS
2	1998.50	50.0	48.27	-1.740	54.00	5.73	AV	Horizo	PASS
3	2497.00	64.5	64.83	0.320	74.00	9.17	PK	Horizo	PASS
4	2498.50	48.3	48.61	0.330	54.00	5.39	AV	Horizo	PASS
5	2998.00	53.1	55.47	2.410	74.00	18.53	PK	Horizo	PASS
6	2998.50	37.0	39.36	2.410	54.00	14.64	AV	Horizo	PASS
7	4880.00	43.5	35.30	-8.160	54.00	18.70	AV	Horizo	PASS
8	4880.00	51.3	43.09	-8.160	74.00	30.91	PK	Horizo	PASS
9	6996.00	59.0	56.97	-2.000	74.00	17.03	PK	Horizo	PASS
10	6997.50	42.9	40.88	-2.000	54.00	13.12	AV	Horizo	PASS
11	7318.50	52.8	51.31	-1.450	74.00	22.69	PK	Horizo	PASS
12	7319.25	47.1	45.69	-1.450	54.00	8.31	AV	Horizo	PASS
13	7500.00	46.6	44.68	-1.940	54.00	9.32	AV	Horizo	PASS
14	7500.00	61.2	59.26	-1.940	74.00	14.74	PK	Horizo	PASS
15	7980.75	66.2	65.04	-1.160	74.00	8.96	PK	Horizo	PASS
16	7997.25	50.4	49.27	-1.090	54.00	4.73	AV	Horizo	PASS
17	9760.00	34.9	36.30	1.450	54.00	17.70	AV	Horizo	PASS
18	9760.00	43.3	44.73	1.450	74.00	29.27	PK	Horizo	PASS

Transmit at 2440Hz by ZigBee

Test Graph

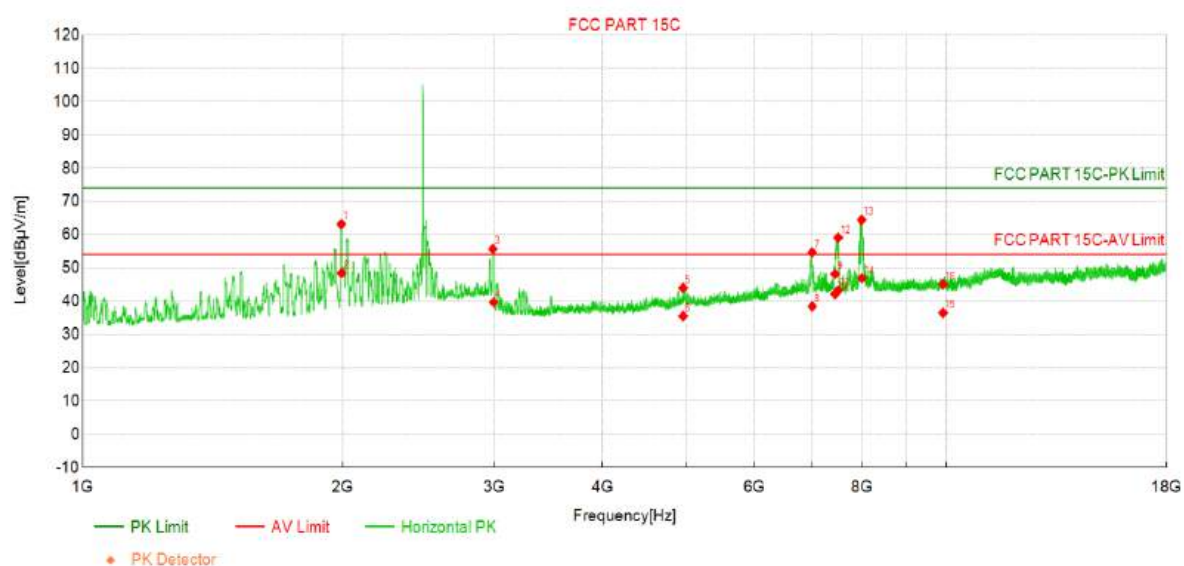


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1991.00	64.2	62.41	-1.800	74.00	11.59	PK	Vertic	PASS
2	1993.50	49.1	47.32	-1.770	54.00	6.68	AV	Vertic	PASS
3	2473.00	62.0	62.21	0.240	74.00	11.79	PK	Vertic	PASS
4	2476.50	46.6	46.85	0.250	54.00	7.15	AV	Vertic	PASS
5	3000.00	55.6	42.07	-13.500	54.00	11.93	AV	Vertic	PASS
6	3000.00	72.1	58.57	-13.500	74.00	15.43	PK	Vertic	PASS
7	4880.00	40.1	31.89	-8.160	54.00	22.11	AV	Vertic	PASS
8	4880.00	47.6	39.47	-8.160	74.00	34.53	PK	Vertic	PASS
9	6990.75	41.2	39.25	-1.990	54.00	14.75	AV	Vertic	PASS
10	6993.75	56.1	54.08	-1.990	74.00	19.92	PK	Vertic	PASS
11	7320.00	39.7	38.21	-1.450	54.00	15.79	AV	Vertic	PASS
12	7320.00	45.0	43.56	-1.450	74.00	30.44	PK	Vertic	PASS
13	7468.50	56.6	54.98	-1.610	74.00	19.02	PK	Vertic	PASS
14	7468.50	41.7	40.12	-1.610	54.00	13.88	AV	Vertic	PASS
15	7968.75	41.2	39.93	-1.220	54.00	14.07	AV	Vertic	PASS
16	7983.75	55.7	54.52	-1.150	74.00	19.48	PK	Vertic	PASS
17	9760.00	34.0	35.44	1.450	54.00	18.56	AV	Vertic	PASS
18	9760.00	42.0	43.46	1.450	74.00	30.54	PK	Vertic	PASS

Transmit at 2480Hz by ZigBee

Test Graph

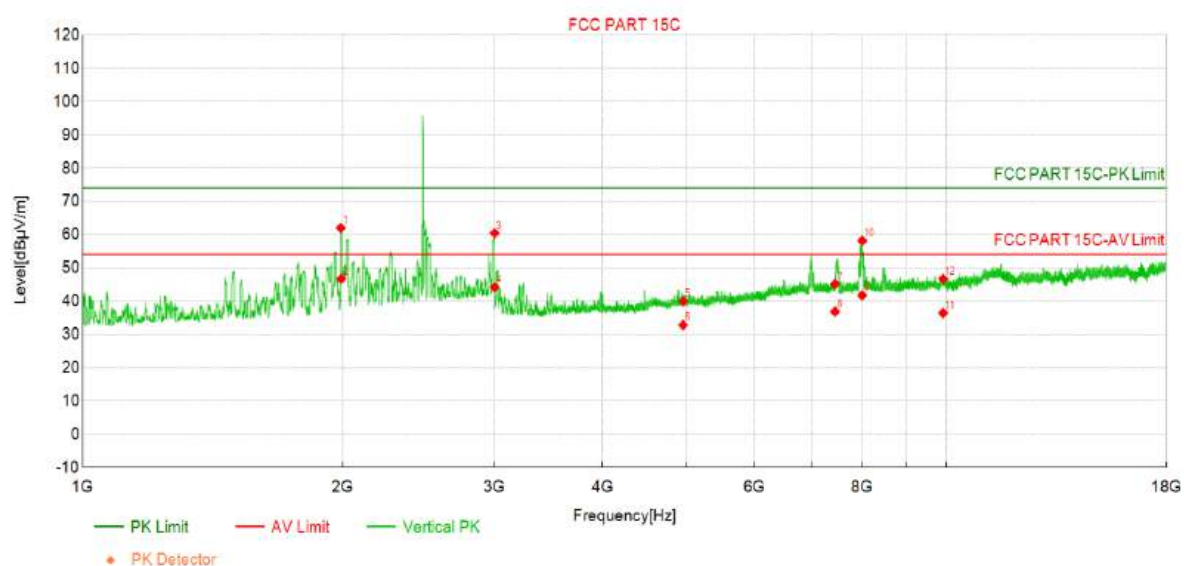


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1994.00	65.0	63.18	-1.770	74.00	10.82	PK	Horizo	PASS
2	1995.50	50.2	48.47	-1.760	54.00	5.53	AV	Horizo	PASS
3	2987.00	53.4	55.72	2.350	74.00	18.28	PK	Horizo	PASS
4	2992.50	37.3	39.69	2.370	54.00	14.31	AV	Horizo	PASS
5	4960.00	51.8	43.93	-7.830	74.00	30.07	PK	Horizo	PASS
6	4960.00	43.3	35.51	-7.830	54.00	18.49	AV	Horizo	PASS
7	6997.50	56.7	54.65	-2.000	74.00	19.35	PK	Horizo	PASS
8	6999.00	40.4	38.41	-2.010	54.00	15.59	AV	Horizo	PASS
9	7440.00	49.5	48.19	-1.300	74.00	25.81	PK	Horizo	PASS
10	7440.00	43.4	42.14	-1.300	54.00	11.86	AV	Horizo	PASS
11	7497.75	45.1	43.18	-1.920	54.00	10.82	AV	Horizo	PASS
12	7500.00	61.0	59.05	-1.940	74.00	14.95	PK	Horizo	PASS
13	7984.50	65.6	64.44	-1.150	74.00	9.56	PK	Horizo	PASS
14	7992.75	48.0	46.91	-1.110	54.00	7.09	AV	Horizo	PASS
15	9920.00	34.1	36.47	2.350	54.00	17.53	AV	Horizo	PASS
16	9920.00	42.7	45.05	2.350	74.00	28.95	PK	Horizo	PASS

Transmit at 2480Hz by ZigBee

Test Graph



Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	1991.00	63.8	61.99	-1.800	74.00	12.01	PK	Vertic	PASS
2	1993.00	48.5	46.71	-1.780	54.00	7.29	AV	Vertic	PASS
3	3000.00	73.9	60.42	-13.500	74.00	13.58	PK	Vertic	PASS
4	3000.00	57.7	44.17	-13.500	54.00	9.83	AV	Vertic	PASS
5	4960.00	47.8	39.95	-7.830	74.00	34.05	PK	Vertic	PASS
6	4960.00	40.6	32.81	-7.830	54.00	21.19	AV	Vertic	PASS
7	7440.00	46.4	45.13	-1.300	74.00	28.87	PK	Vertic	PASS
8	7440.00	38.2	36.87	-1.300	54.00	17.13	AV	Vertic	PASS
9	7995.75	42.9	41.78	-1.100	54.00	12.22	AV	Vertic	PASS
10	7998.75	59.2	58.16	-1.080	74.00	15.84	PK	Vertic	PASS
11	9920.00	34.1	36.43	2.350	54.00	17.57	AV	Vertic	PASS
12	9920.00	44.3	46.67	2.350	74.00	27.33	PK	Vertic	PASS

Note:

1. Level = Reading + Factor(Probe+Cable-Amp).

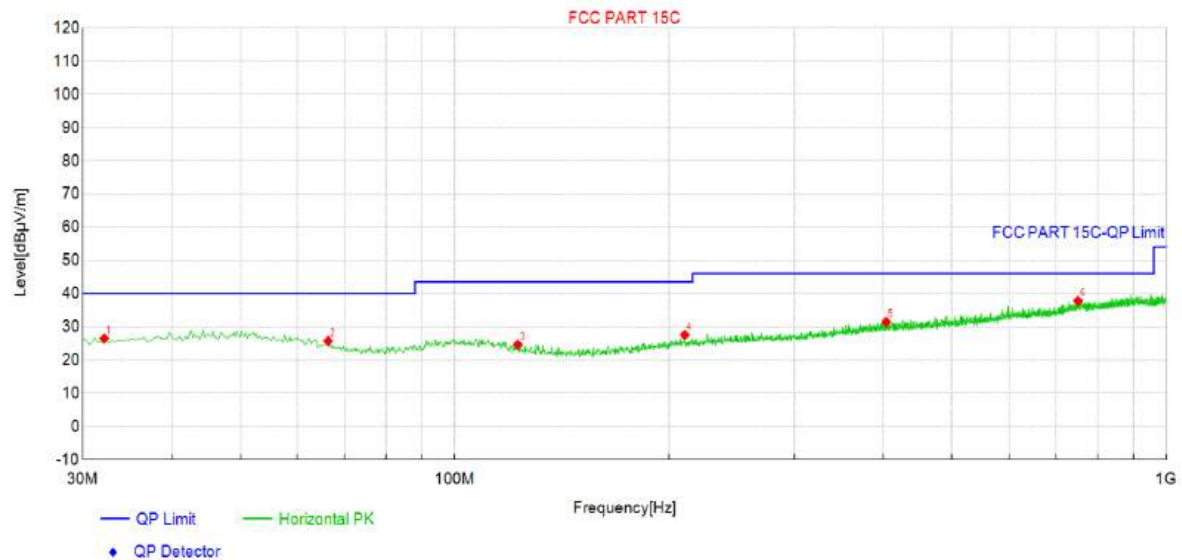
2. Margin = Limit - Level

3. The test frequency range, 18GHz~26GHz test result on peak is lower than average limit, all is the noise base, therefore no data appear in the report.

Worst data of radiated emissions below 1GHz:

Transmit at 2402Hz by ZigBee

Test Graph

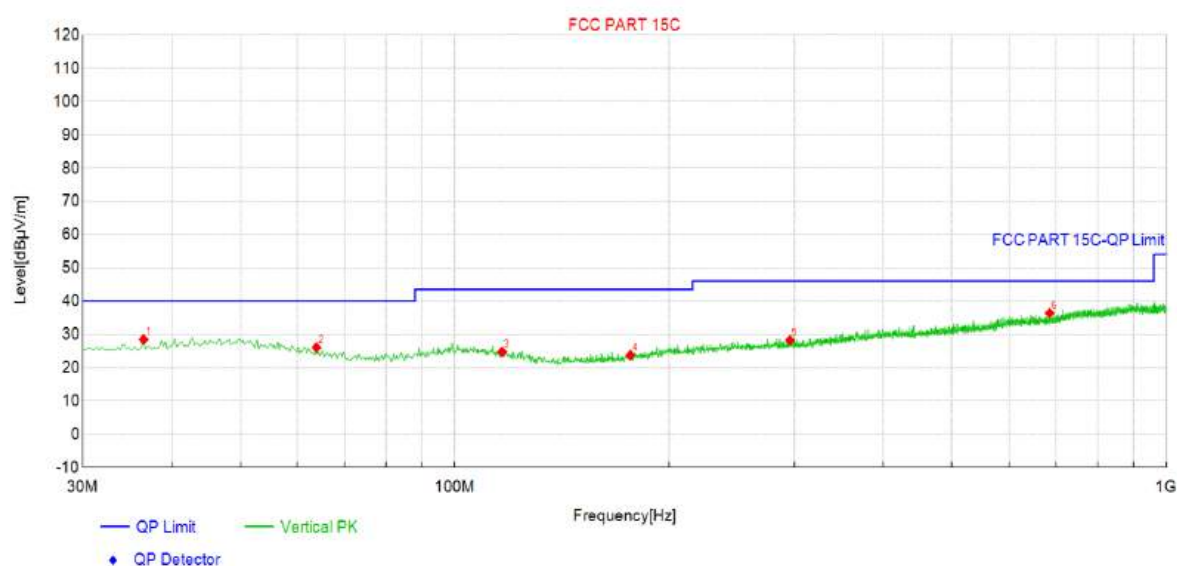


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	32.18	13.5	26.49	13.040	40.00	13.51	PK	Horizo	PASS
2	66.38	14.6	25.73	11.180	40.00	14.27	PK	Horizo	PASS
3	122.64	14.0	24.62	10.590	43.50	18.88	PK	Horizo	PASS
4	210.42	15.4	27.57	12.220	43.50	15.93	PK	Horizo	PASS
5	403.69	15.1	31.43	16.340	46.00	14.57	PK	Horizo	PASS
6	751.20	16.2	37.77	21.580	46.00	8.23	PK	Horizo	PASS

Transmit at 2402Hz by ZigBee

Test Graph



Data List

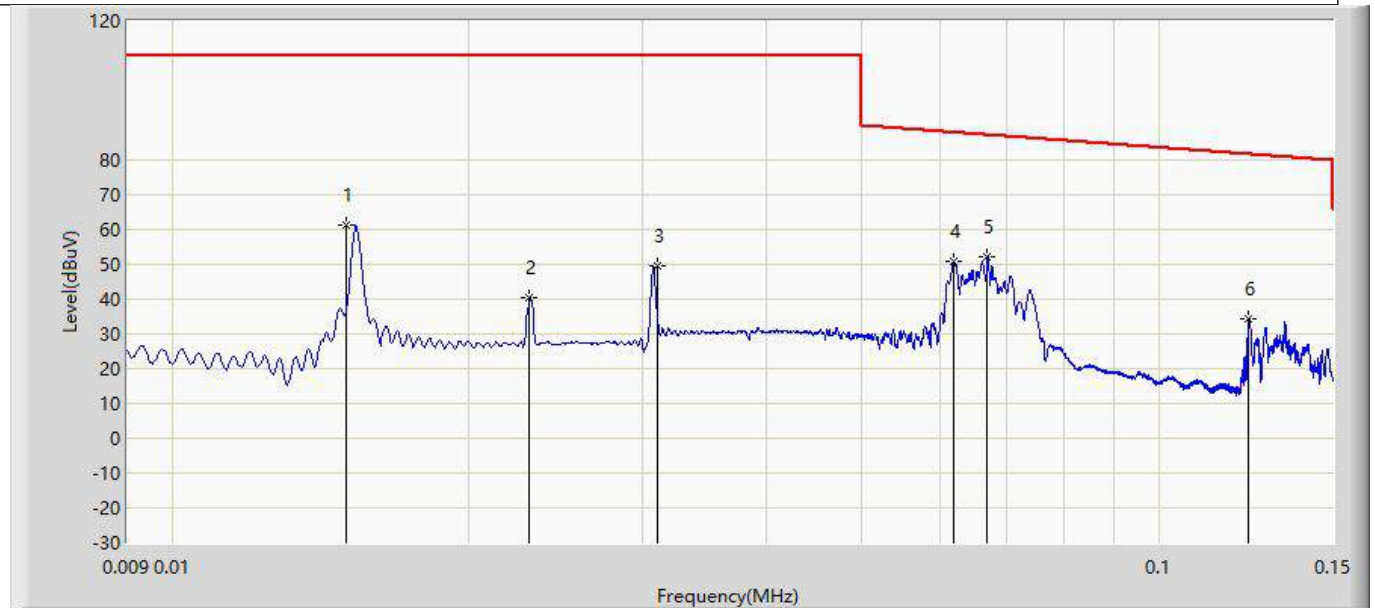
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	36.55	15.1	28.48	13.400	40.00	11.52	PK	Vertic	PASS
2	63.95	14.3	26.07	11.800	40.00	13.93	PK	Vertic	PASS
3	116.57	13.4	24.75	11.360	43.50	18.75	PK	Vertic	PASS
4	176.47	13.4	23.75	10.370	43.50	19.75	PK	Vertic	PASS
5	295.78	14.3	28.26	13.990	46.00	17.74	PK	Vertic	PASS
6	685.24	16.1	36.39	20.280	46.00	9.61	PK	Vertic	PASS

Note:

1. Level = Reading + Factor(Probe+Cable-Amp).
2. Margin = Limit – Level
3. The test frequency range, 9kHz~30MHz, worst case are at least 20dB below the limits, therefore no data appear in the report.

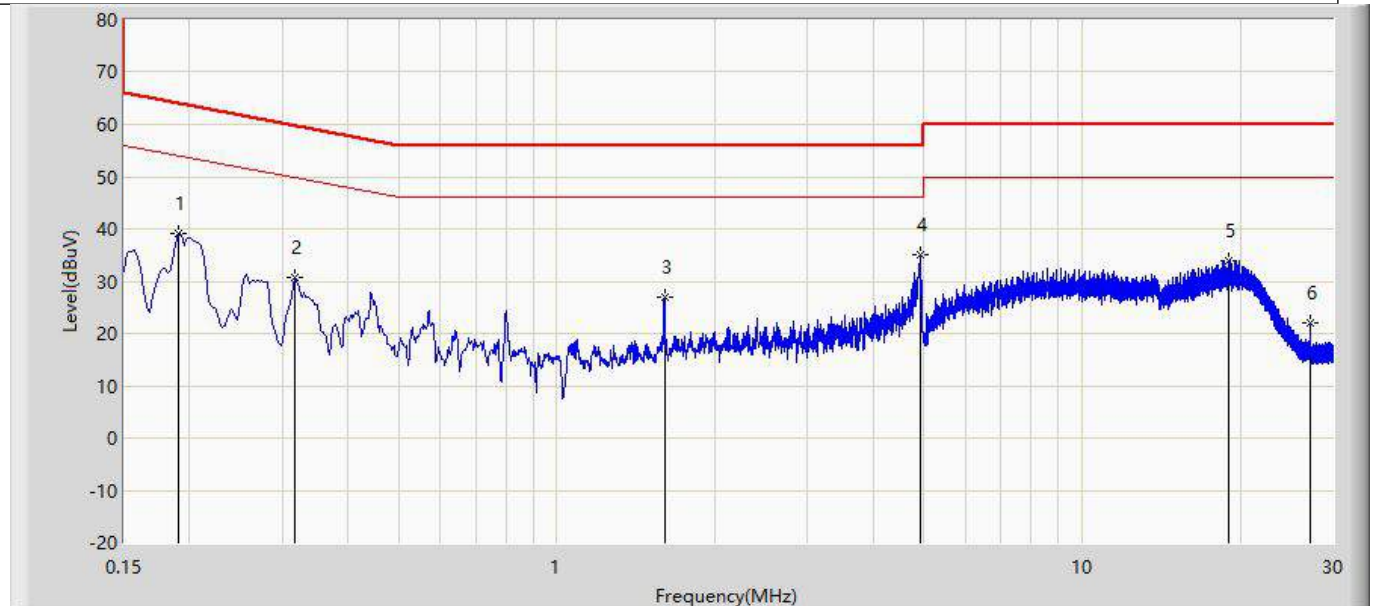
Appendix I: AC Power Line Conducted Emission

Profile: 25A0379R	Page No.: 5
Engineer: Yu Liu	
Site: TR1	Time: 2025//11/11 - 19:08
Limit: IC_CE_AC Power-1	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: LED Device	Power: AC 120V/60Hz
Note: Transmit at 2405MHz by ZigBee	



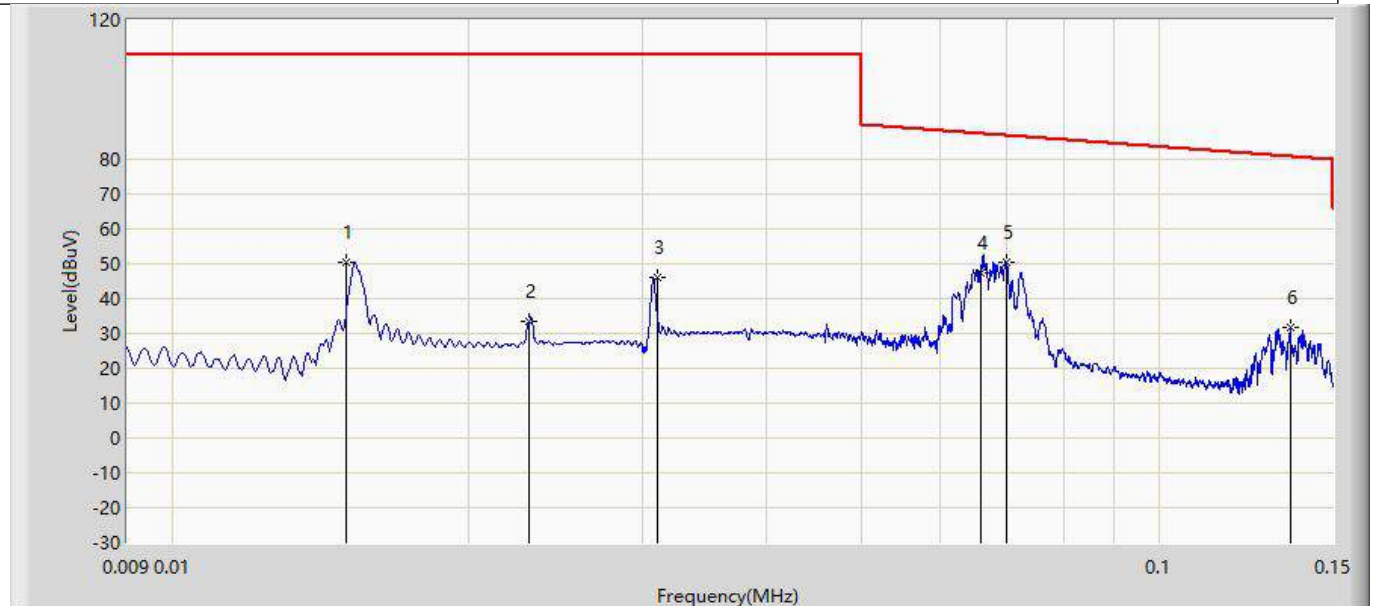
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.015	61.445	51.200	-48.555	110.000	10.245	QP
2		0.023	40.464	30.387	-69.536	110.000	10.077	QP
3		0.031	49.357	39.447	-60.643	110.000	9.910	QP
4		0.062	50.941	41.223	-37.101	88.042	9.718	QP
5	*	0.067	52.138	42.426	-35.198	87.336	9.712	QP
6		0.123	34.149	24.468	-47.657	81.806	9.682	QP

Profile: 25A0379R	Page No.: 6
Engineer: Yu Liu	
Site: TR1	Time: 2025//11/11 - 19:08
Limit: IC_CE_AC Power-1	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Line
EUT: LED Device	Power: AC 120V/60Hz
Note: Transmit at 2405MHz by ZigBee	



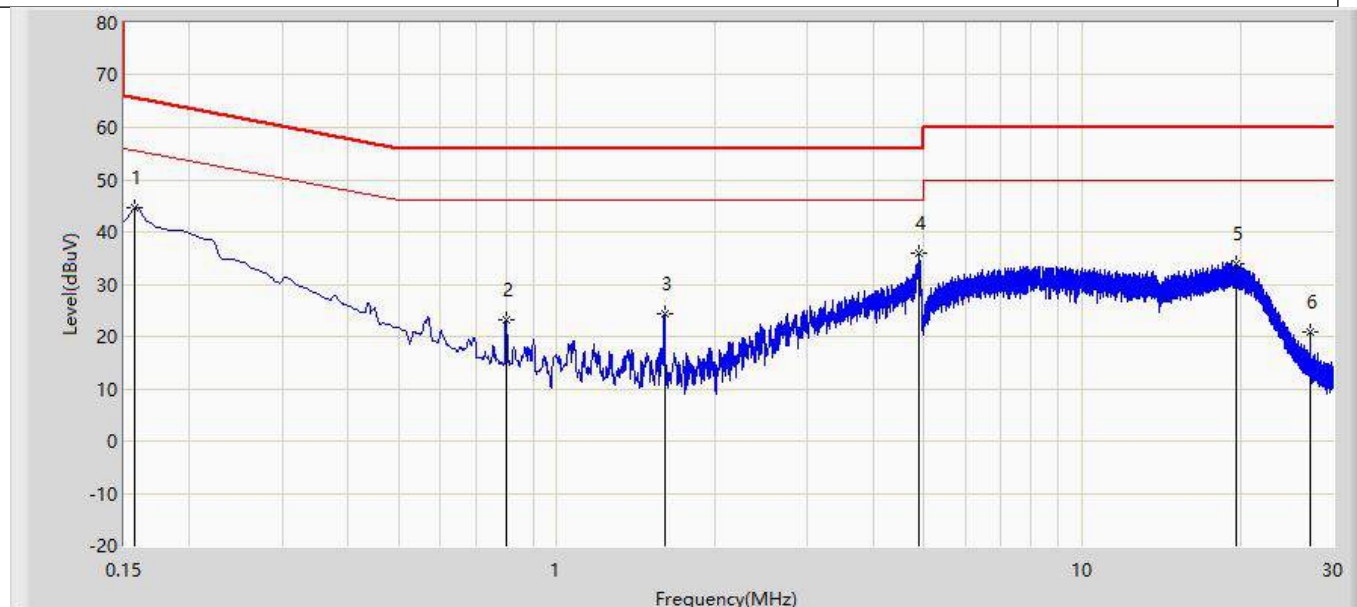
No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.191	39.011	29.354	-24.982	63.993	9.657	QP
2		0.317	30.702	21.029	-29.083	59.785	9.673	QP
3		1.601	26.968	17.229	-29.032	56.000	9.739	QP
4	*	4.911	34.991	25.182	-21.009	56.000	9.809	QP
5		18.960	34.009	23.583	-25.991	60.000	10.426	QP
6		27.195	21.945	11.230	-38.055	60.000	10.715	QP

Profile: 25A0379R	Page No.: 7
Engineer: Yu Liu	
Site: TR1	Time: 2025//11/11 - 19:09
Limit: IC_CE_AC Power-1	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: LED Device	Power: AC 120V/60Hz
Note: Transmit at 2405MHz by ZigBee	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.015	50.381	40.103	-59.619	110.000	10.278	QP
2		0.023	33.682	23.581	-76.318	110.000	10.101	QP
3		0.031	46.212	36.287	-63.788	110.000	9.925	QP
4		0.066	47.604	37.898	-39.869	87.473	9.706	QP
5	*	0.070	50.455	40.756	-36.482	86.937	9.699	QP
6		0.136	31.747	22.064	-49.145	80.892	9.682	QP

Profile: 25A0379R	Page No.: 8
Engineer: Yu Liu	
Site: TR1	Time: 2025//11/11 - 19:09
Limit: IC_CE_AC Power-1	Margin: 0
Probe: ENV216_101189(0.009-30MHz)	Polarity: Neutral
EUT: LED Device	Power: AC 120V/60Hz
Note: Transmit at 2405MHz by ZigBee	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.157	44.616	34.926	-21.005	65.621	9.690	QP
2		0.800	23.233	13.573	-32.767	56.000	9.660	QP
3		1.601	24.308	14.619	-31.692	56.000	9.689	QP
4	*	4.898	35.915	26.118	-20.085	56.000	9.797	QP
5		19.592	34.033	23.665	-25.967	60.000	10.368	QP
6		27.197	20.770	9.945	-39.230	60.000	10.825	QP

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp)

_____ The End _____