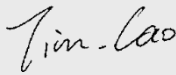


Test report No:
2570826R.702A

TEST REPORT

Product Name	WiFi BT Module
Trademark	Hisense
Model and /or type reference	MWH702B
FCC ID	2AJVQ-MWH702B
Applicant's name / address	Qingdao Intelligent & Precise Electronics Co., Ltd. No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China
Test method requested, standard	47 CFR FCC Part 15 (Section 15.247) ANSI C63.10: 2020
Verdict Summary	IN COMPLIANCE
Tested By (name / position & signature)	Tim Cao / Project Manager 
Approved by (name / position & signature)	Frank He / Technical Manager 
Date of issue	2025-09-20
Report Version	V1.0
Report template No.	Template_FCC Part 15C-RF-V1.0

INDEX

	page
Competences and Guarantees	4
General conditions	4
Document History	5
Test Summary	6
Used Equipment.....	7
Uncertainty	9
1 General Information	10
2 Description of Test Setup.....	11
3 Verdict summary section.....	12
3.1 Standards	12
3.2 Deviation(s) from the Standard(s) / Test Specification(s).....	12
4 Test Results	13
4.1 AC Power Line Conducted Emission.....	13
4.1.1 Limit	13
4.1.2 Test Setup	13
4.1.3 Test Procedure	13
4.2 Emissions in restricted frequency bands	14
4.2.1 Limit	14
4.2.2 Test Setup	15
4.2.3 Test Procedure	16
4.3 Emissions in non-restricted frequency band	17
4.3.1 Limit	17
4.3.2 Test Setup	17
4.3.3 Test Procedure	17
4.4 Duty cycle	18
4.4.1 Limit	18
4.4.2 Test Setup	18
4.4.3 Test Procedure	18
4.5 Radiated Emission Band Edge	19
4.5.1 Limit	19
4.5.2 Test Setup	19
4.5.3 Test Procedure	19
4.6 20dB Emission Bandwidth	20
4.6.1 Limit	20

4.6.2	Test Setup	20
4.6.3	Test Procedure	20
4.7	Fundamental emission output power.....	21
4.7.1	Limit	21
4.7.2	Test Setup	21
4.7.3	Test Procedure	21
4.8	Carrier Frequency Separation	22
4.8.1	Limit	22
4.8.2	Test Setup	22
4.9.3	Test Procedure	22
4.9	Time of Occupancy.....	23
4.9.1	Limit	23
4.9.2	Test Setup	23
4.9.3	Test Procedure	23
4.10	Number of hopping Frequencies	24
4.10.1	Limit	24
4.10.2	Test Setup	24
4.10.3	Test Procedure	24
4.11	Antenna Requirement.....	25
4.11.1	Limit	25
4.11.2	Antenna Connector Construction:	25
5	Test setup photo and EUT Photo	26
Appendix A: Test results of 20dB Emission Bandwidth		27
Appendix B: Test results of Maximum conducted output power		35
Appendix C: Test results of Carrier Frequency Separation		36
Appendix D: Test results of Time of Occupancy		38
Appendix E: Test results of Number of Hopping Frequencies		42
Appendix F: Test results of Band edge measurements		44
Appendix G: Test results of Conducted Spurious Emission		58
Appendix H: Test results of Duty cycle		74
Appendix I: Test results of Emissions in Restricted Bands.....		78

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.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

Test Location	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)	Jul. 29, 2025
Date (start test)	Aug. 05, 2025
Date (finish test)	Sep. 12, 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.

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2570826R.702A	V1.0	Initial issue of report.	2025-09-20

TEST SUMMARY

Requirement – Test Item	Standard(s)	Verdict	Remark
20dB Emission Bandwidth	FCC 15.247(a)(1)	PASS	Test data please refer to Appendix A
Maximum conducted output power	FCC 15.247(b)(1)	PASS	Test data please refer to Appendix B
Carrier Frequency Separation	FCC 15.247(a)(1)	PASS	Test data please refer to Appendix C
Time of Occupancy (Dwell Time)	FCC 15.247(a)(1)(iii)	PASS	Test data please refer to Appendix D
Number of Hopping Frequencies	FCC 15.247(a)(1)(iii)	PASS	Test data please refer to Appendix E
Band edge measurements	FCC 15.247(d)	PASS	Test data please refer to Appendix F
Conducted Spurious Emission	FCC 15.247(d) FCC 15.209	PASS	Test data please refer to Appendix G
Duty Cycle	ANSI C63.10	PASS	Test data please refer to Appendix H
Emissions in Restricted Bands	FCC 15.247(b)(3)	PASS	Test data please refer to Appendix I
AC Power Line Conducted Emission	FCC 15.207	N/A	Note ¹⁾
Antenna Requirement	FCC 15.203	PASS	---
Note: EUT is DC powered			

USED EQUIPMENT

Conducted Test/ TR8

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Wireless Connectivity Tester	R&S	CMW 270	102593	2025.05.10	2026.05.09
Power Meter	Anritsu	MA2411B	1339267	2025.07.30	2026.07.29
Coaxial Cable	N/A	N/A	2477	2025.06.10	2026.06.09
Coaxial Cable	N/A	N/A	2478	2025.06.10	2026.06.09
High and low temperature and fast temperature change test box	ASTUOD	ASTD-FBT-225K	N/A	2025.03.15	2026.03.14
Temperature/Humidity Meter	RTS	RTS-8S	RF07	2025.06.17	2026.06.16
Test system					
Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
MAX Signal Analyzer	Keysight	N9010A	MY48030494	2024.10.26	2025.10.25
RF Control Unit	Tonscend	JS0806-2	22G8060594	2025.01.26	2026.01.25
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY61252529	2025.03.23	2026.03.22
Frequency extender for EXG or MXG	Keysight	N5182BX07	MY59362500	2025.03.23	2026.03.22
EXG-B MW Analog Signal Generator	Keysight	N5173B	MY61252566	2025.05.10	2026.05.09
Test Software	Tonscend	TS1120	JS1120-3	N/A	N/A

Radiated Emission(9KHz-1GHz) / AC2

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100176	2025.03.23	2026.03.22
Loop Antenna	R&S	HFH2-Z2E	101149	2025.04.16	2026.04.15
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2025.03.24	2026.03.23
Temperature/Humidity Meter	RTS	RTS-1909	THM-021	2025.04.30	2026.04.29
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2025.03.16	2026.03.15
Dekra test software	Dekra	N/A	N/A	N/A	N/A

Radiated Emission Band Edge / AC5

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EXA Spectrum Analyzer	Keysight	N9020B	MY60112218	2024.11.02	2025.11.01
Pre-Amplifier	SKET	LNPA_0118G-45	SK2021090101	2025.04.26	2026.04.25
DRG Horn	ETS-Lindgren	3117	123988	2024.11.24	2025.11.23
Filter Switch Box	MVE	MSW-F196	C070001S	2025.03.15	2026.03.14
Temperature/Humidity Meter	RTS	RTS-1909	THM-024	2025.04.30	2026.04.29
Coaxial Cable	Lair Microwave	LA800-NMNWM-6.5M	502201001001	2025.03.15	2026.03.14
Coaxial Cable	Lair Microwave	LA800-SWMSWM-06.M	502201005001	2025.03.15	2026.03.14
Dekra test software	Dekra	N/A	N/A	N/A	N/A
Wideband Radio Communication Tester	R&S	CMW 500	170870	2025.05.10	2026.05.09

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 Test Location	Uncertainty
AC Power Line Conducted Emission	9kHz~150kHz: 2.8 dB 150kHz~30MHz: 2.4 dB
Peak Power Output	± 1.3 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.5 dB 300MHz~1GHz: 3.6 dB Vertical: 30MHz~200MHz: 3.6 dB 300MHz~1GHz: 3.5 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
Carrier Frequency Separation	± 1.0 kHz
Number of Hopping Frequencies	± 1.0 kHz
Time of Occupancy (Dwell Time)	± 0.10 us
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

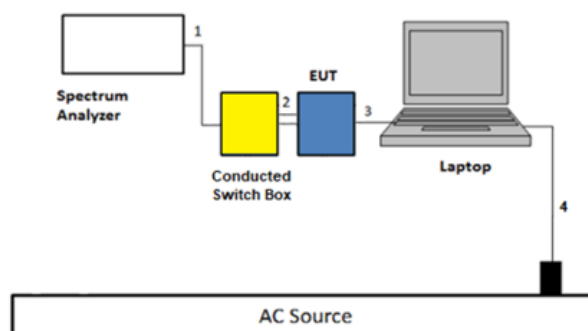
Product Name	WiFi BT Module
Model No.	MWH702B
Trademark.	Hisense
FCC ID.....	2AJVQ-MWH702B
Manufacturer	Qingdao Intelligent & Precise Electronics Co., Ltd.
Manufacturer Address	No.218, Qianwangang Road, Economic and Technological Development Zone, Qingdao, Shandong Province, China
Power Supply	4.5~5.5 Vdc
Wireless specification	Bluetooth
Operating frequency range(s)	2402~2480MHz
Type of modulation	GFSK
Number of channels	79
Data Rate	GFSK 1Mbit/s, Pi/4 DQPSK 1Mbit/s, 8DPSK 3Mbit/s
Antenna type	Slot Antenna
Antenna Gain	Antenna 0: -1.83 dBi
	Antenna 1: -3.85 dBi
Remark: 1. 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. Except for the power tests of all antenna ports, other conducted data only shows the data of the worst antenna.	

Power setting in test

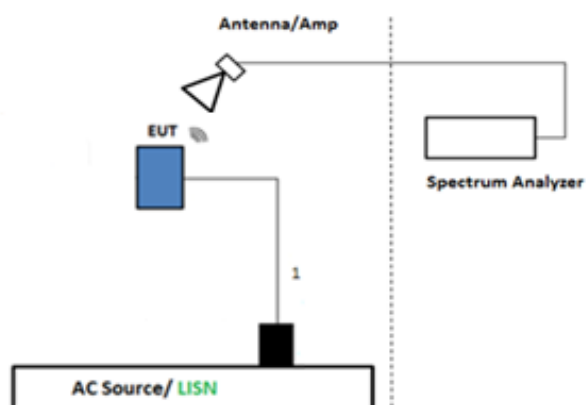
Mode	Power setting
BR / EDR	Default

2 DESCRIPTION OF TEST SETUP

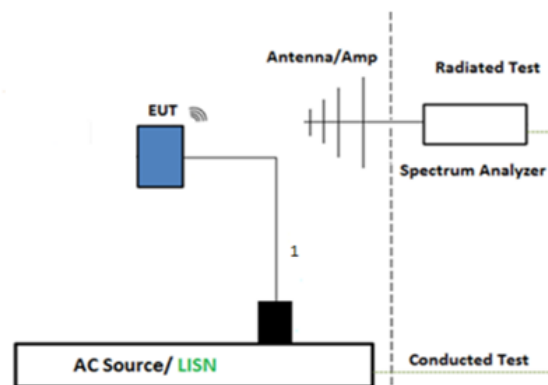
Auxiliary equipment	Type / Version	Manufacturer	Supplied by
(1) Notebook	Think pad x220	Lenovo	Adapter
(2) Ethernet cable	N/A	N/A	N/A
(3) Ethernet cable	N/A	N/A	N/A
Software	Type / Version	Manufacturer	Supplied by
MT7925_QA-Tool	0.0.2.99	MEDIATEK	N/A



Conducted RF



Radiated Test Above 1GHz



Radiated Test Below 1GHz

Accessories Information	Cable		
	Length used during test [m]	Attached during test	Shielded
(2) Ethernet cable	1	☒	☒
(3) Ethernet 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
FCC CFR Title 47 Part 15 Subpart C Section 15.247	2020	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz.
ANSI C63.10	2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

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)

4 TEST RESULTS

4.1 AC Power Line Conducted Emission

VERDICT: N/A

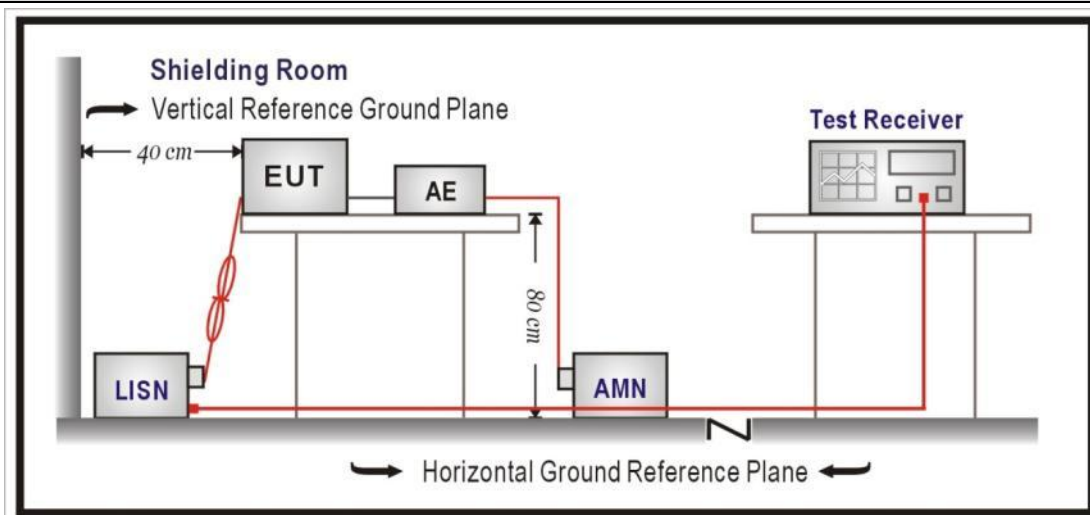
4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
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.

4.1.2 Test Setup



4.1.3 Test Procedure

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

4.2 Emissions in restricted frequency bands**VERDICT: PASS****4.2.1 Limit****Standard** FCC Part 15 Subpart C Paragraph 15.205; 15.209

Restricted Bands of operation for FCC

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	Above 38.6
13.36 – 13.41	--	--	--

Restricted Band Emissions Limit

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/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)

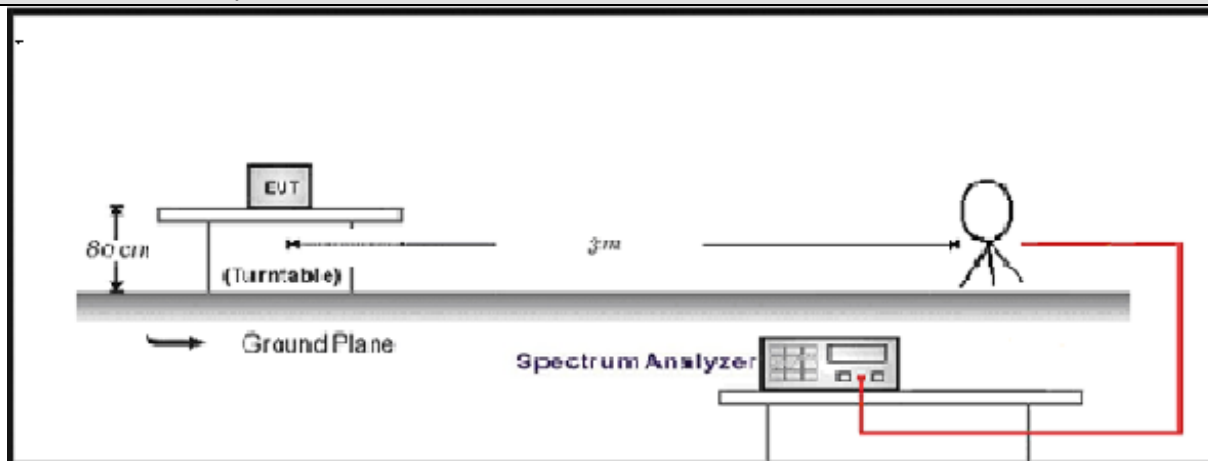
Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed 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

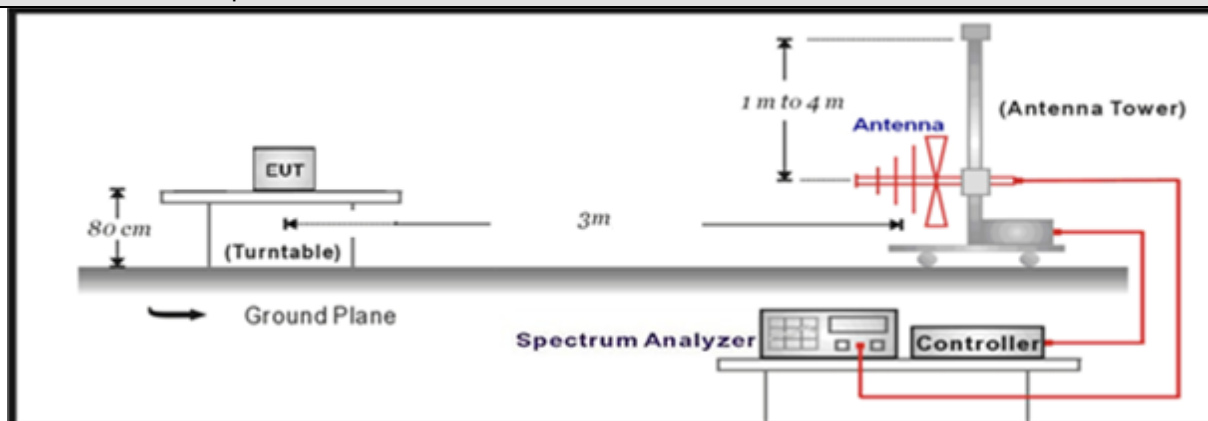
factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

4.2.2 Test Setup

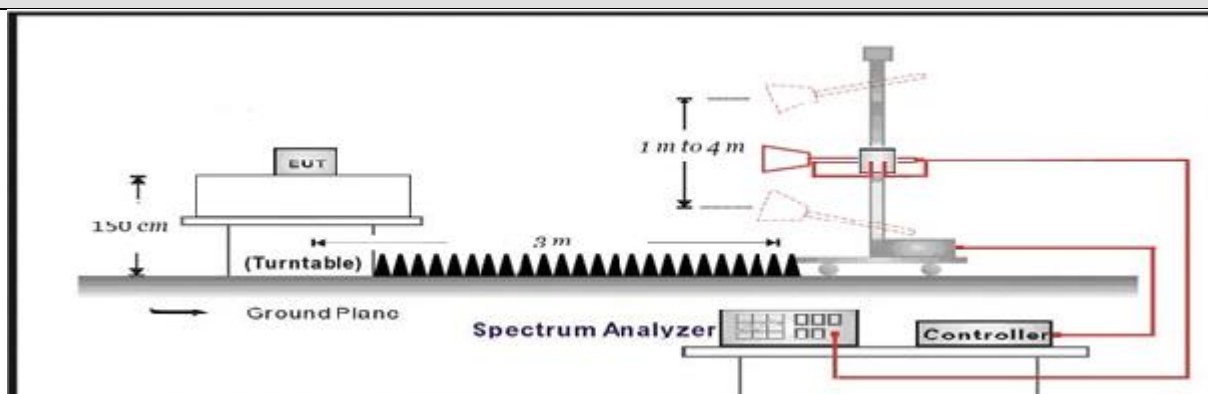
Below 30MHz Test Setup:



30MHz-1GHz Test Setup:



Above 1GHz Test Setup:



4.2.3 Test Procedure

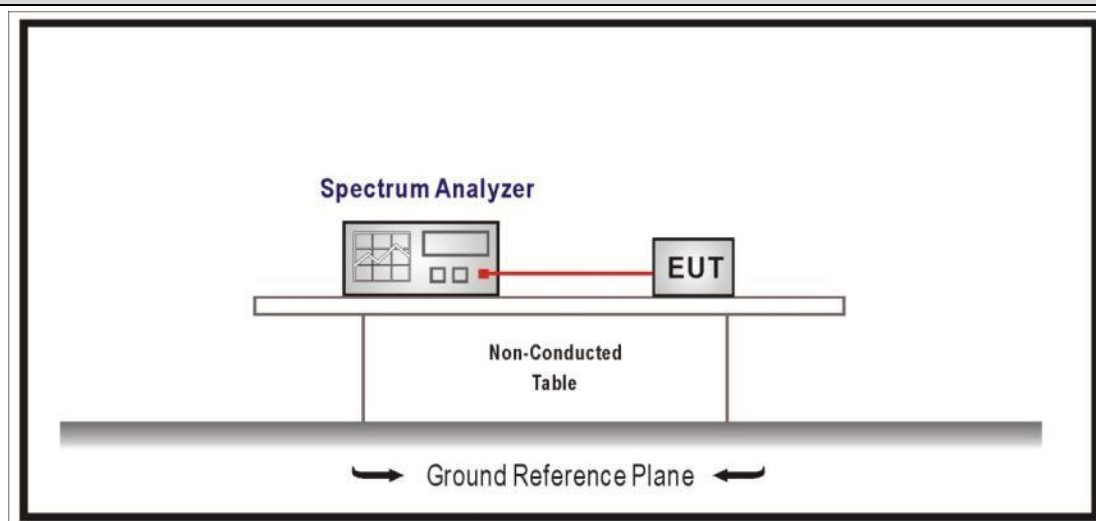
	References Rule		Chapter	Description
☒	ANSI C63.10		11.12	Emissions in restricted frequency bands
	☒	ANSI C63.10	11.12.1	Radiated emission measurements
	☒	ANSI C63.10	6.3	Radiated spurious emission test
	☒	ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	☒	ANSI C63.10	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

4.3 Emissions in non-restricted frequency band**VERDICT: PASS****4.3.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247(d)
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).

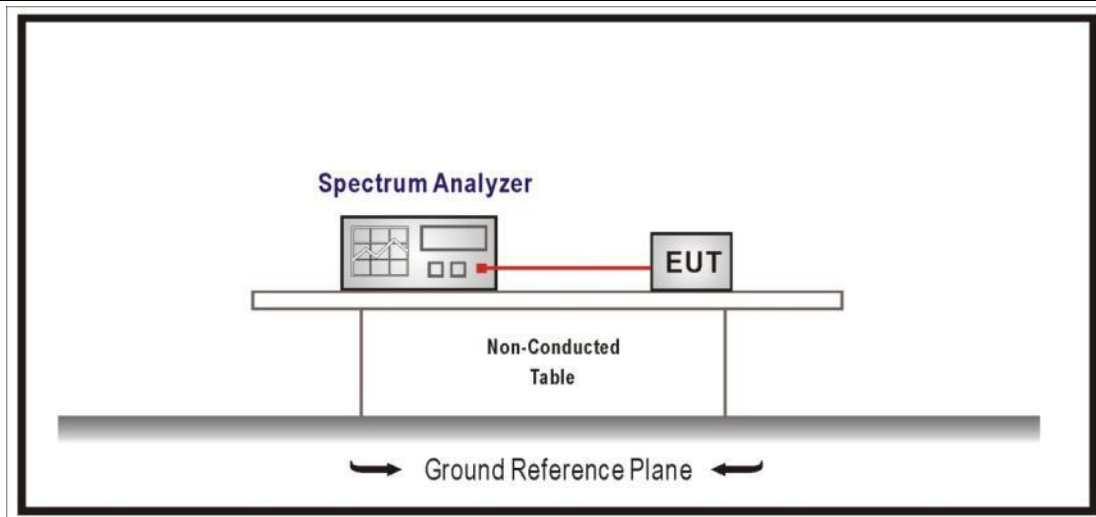
Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

4.3.2 Test Setup**4.3.3 Test Procedure**

References Rule	Chapter	Description
☒ ANSI C63.10	7.8.7	Conducted spurious emissions test methodology
☒ ANSI C63.10	7.8.7.1	General
☒ ANSI C63.10	7.8.7.2	Band-edges

4.4 Duty cycle**VERDICT: PASS****4.4.1 Limit**

N/A

4.4.2 Test Setup**4.4.3 Test Procedure**

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

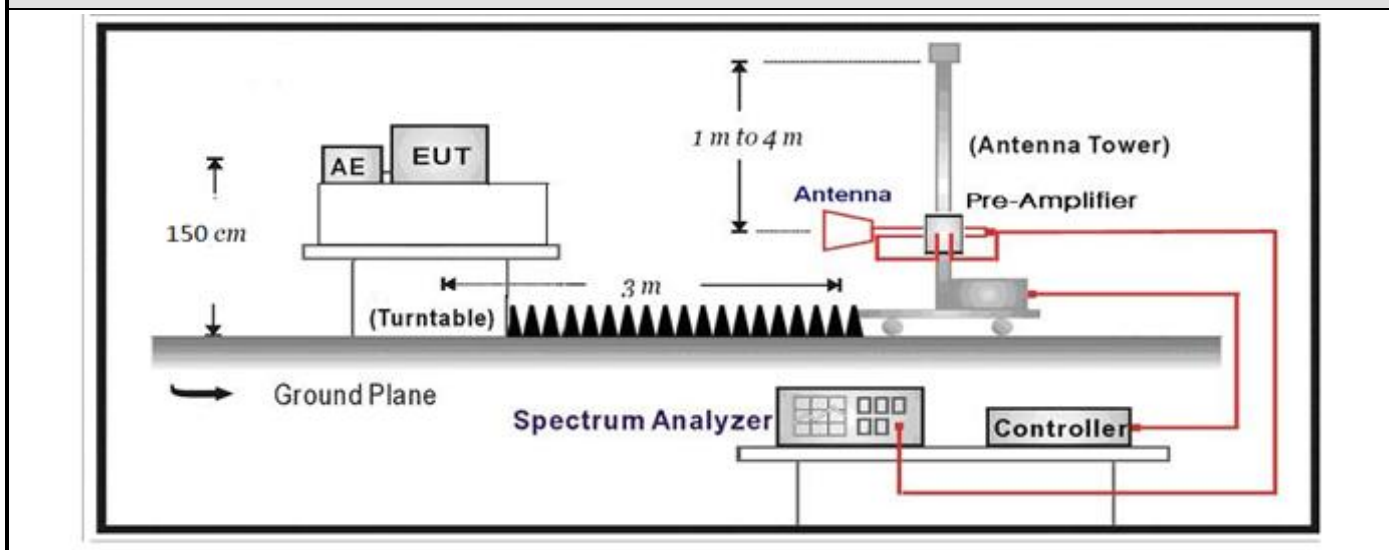
4.5 Radiated Emission Band Edge**VERDICT: PASS****4.5.1 Limit**

Standard		FCC Part 15 Subpart C Paragraph 15.247(d) , 15.205, 15.209		
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	7.8.8	Band-edge testing

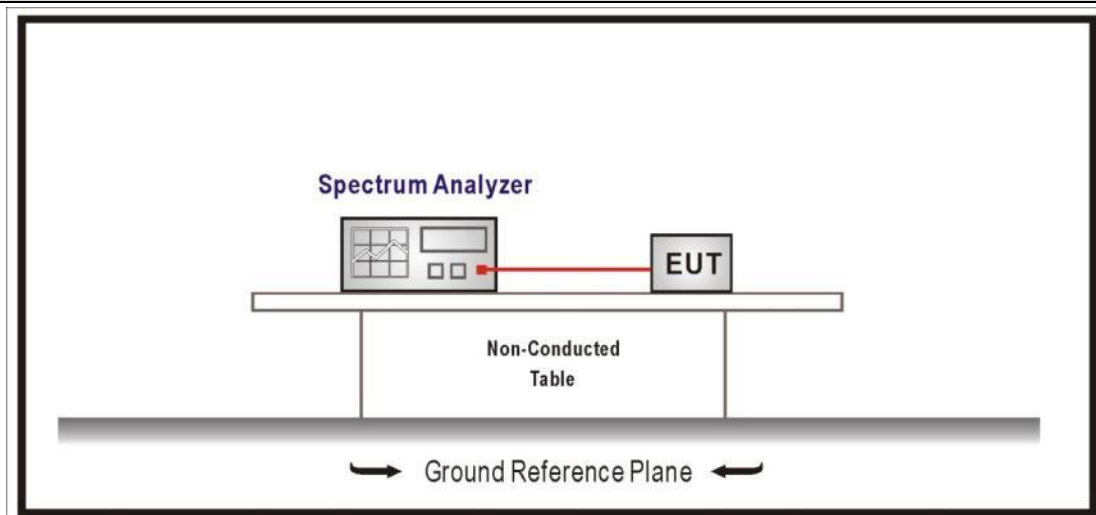
4.6 20dB Emission Bandwidth**VERDICT: PASS****4.6.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)
-----------------	---

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

Standard	ANSI C63.10 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. The occupied bandwidth should be within the required frequency range.

4.6.2 Test Setup**4.6.3 Test Procedure**

	Reference Rule	Chapter	Description
☒	ANSI C63.10	7.8.6	Occupied bandwidth

4.7 Fundamental emission output power**VERDICT: PASS****4.7.1 Limit**

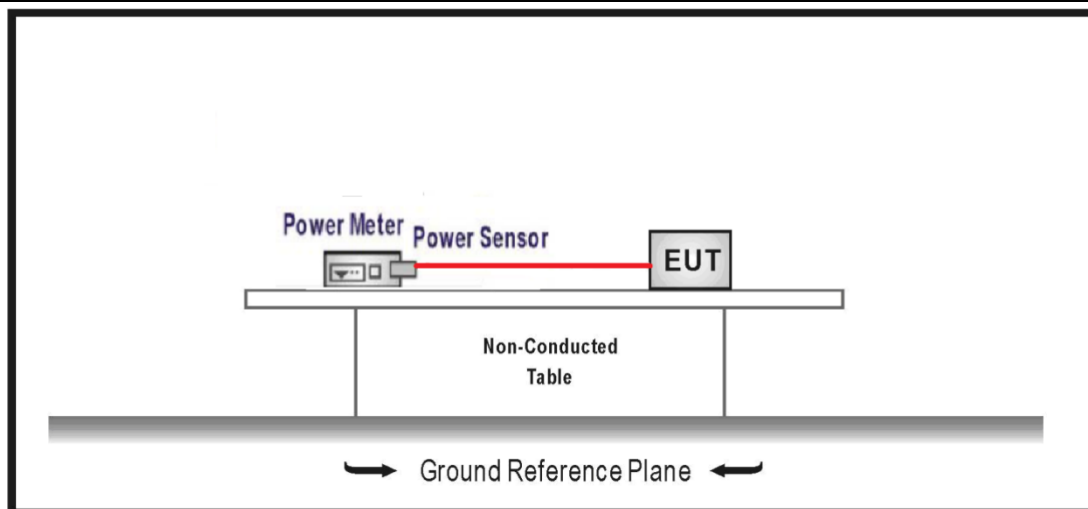
Standard	FCC Part 15 Subpart C Paragraph 15.247 (b)(3)
-----------------	---

Frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Note 1 : GTX directional gain of transmitting antennas.

Note 2 : Pout is maximum conducted output power .

4.7.2 Test Setup**4.7.3 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 $\geq$ DTS bandwidth
		☒	ANSI C63.10	11.9.1.2	PKPM1 Peak power meter method

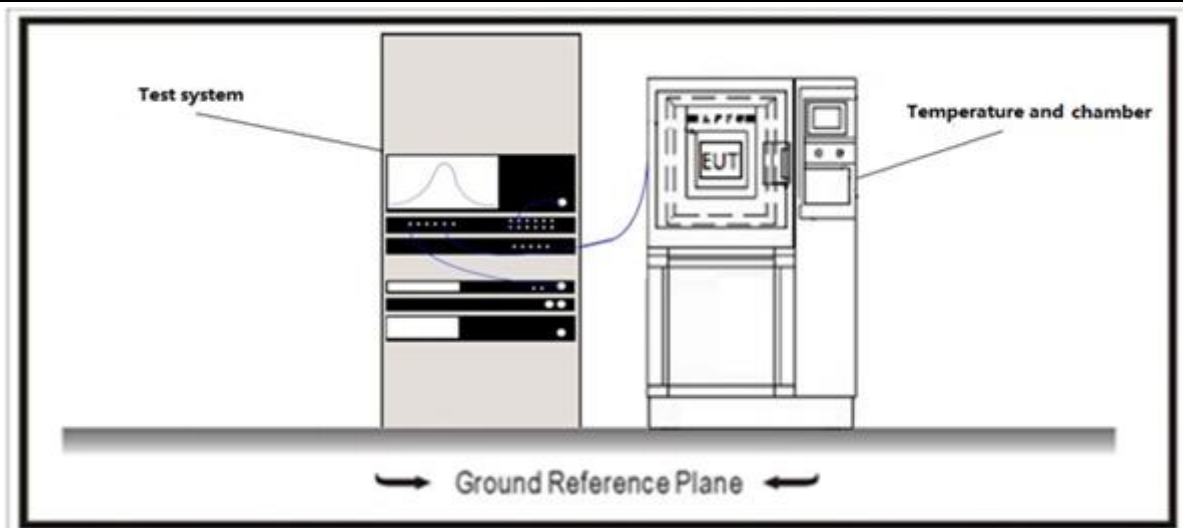
4.8 Carrier Frequency Separation

VERDICT: PASS

4.8.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.247(a);
☐	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
☒	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel.
☐	The 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period;
☐	The 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.

4.8.2 Test Setup

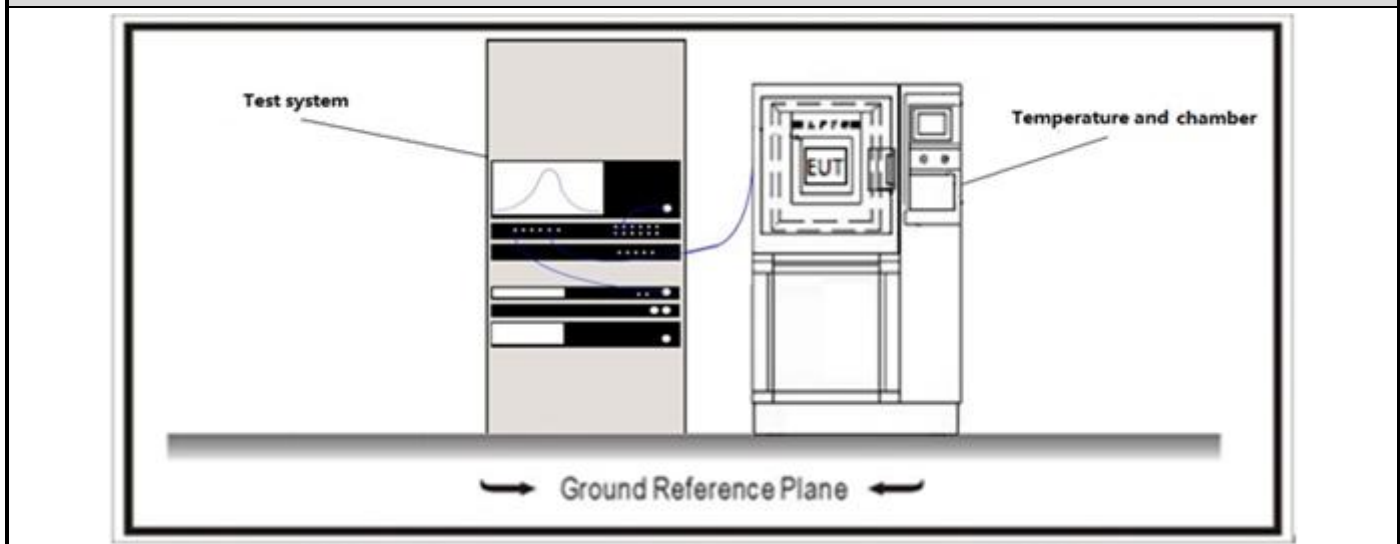


4.9.3 Test Procedure

References Rule	Chapter	Description
☒ ANSI C63.10	7.8	Evaluation of frequency-hopping device parameters
☒ ANSI C63.10	7.8.2	Carrier frequency separation

4.9 Time of Occupancy**VERDICT: PASS****4.9.1 Limit**

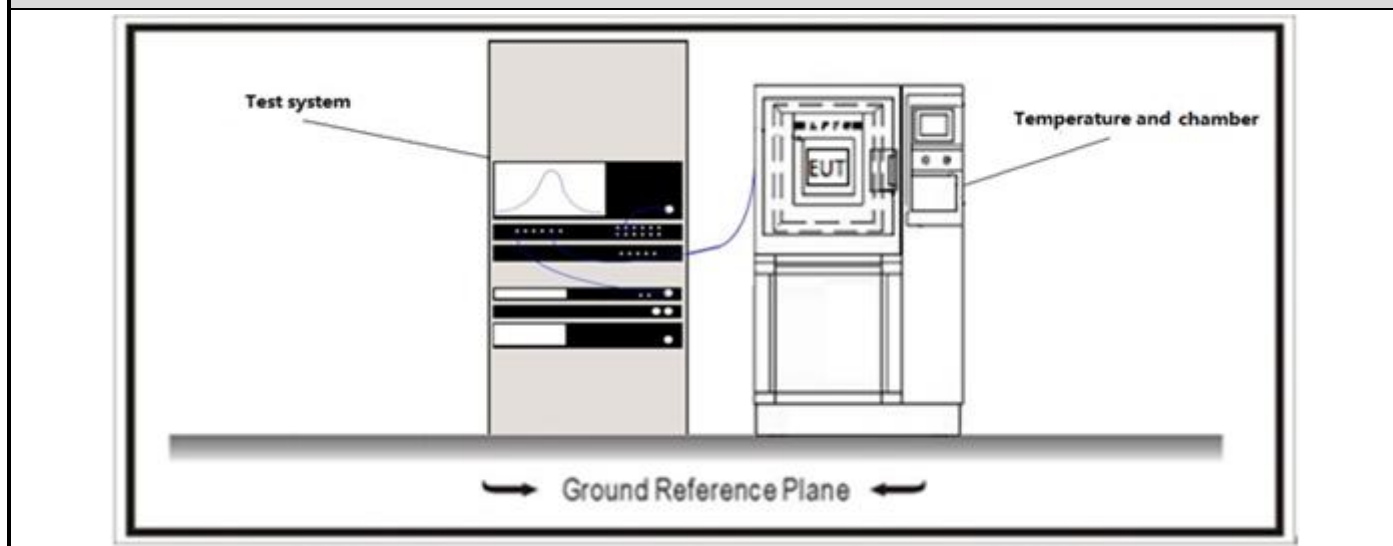
Standard		FCC Part 15 Subpart C Paragraph 15.247(a);
☒	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.	
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period	
☐	For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.	
☐	Frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies. The maximum 20 dB bandwidth of the hopping channel is 1 MHz. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.	

4.9.2 Test Setup**4.9.3 Test Procedure**

References Rule		Chapter	Description
☒	ANSI C63.10	7.8	Evaluation of frequency-hopping device parameters
☐	☒ ANSI C63.10	7.8.4	Time of occupancy (dwell time)

4.10 Number of hopping Frequencies**VERDICT: PASS****4.10.1 Limit**

Standard	FCC Part 15 Subpart C Paragraph 15.247(a);
☒	For frequency hopping systems operating in the 2400-2483.5 MHz band shall use at least 15 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is less than 250 kHz, shall use at least 50 hopping frequencies.
☐	For frequency hopping systems operating in 902-928 MHz band, if the 20 dB bandwidth of the hopping channel is higher than 250 kHz, shall use at least 25 hopping frequencies.
☐	For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

4.10.2 Test Setup**4.10.3 Test Procedure**

References Rule	Chapter	Description
☒ ANSI C63.10	7.8.	Evaluation of frequency-hopping device parameters
☒ ANSI C63.10	7.8.3	Number of Hopping Frequencies

4.11 Antenna Requirement**VERDICT: PASS****4.11.1 Limit:****Standard**

FCC Part 15 Subpart C Paragraph 15.203

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.

4.11.2 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.

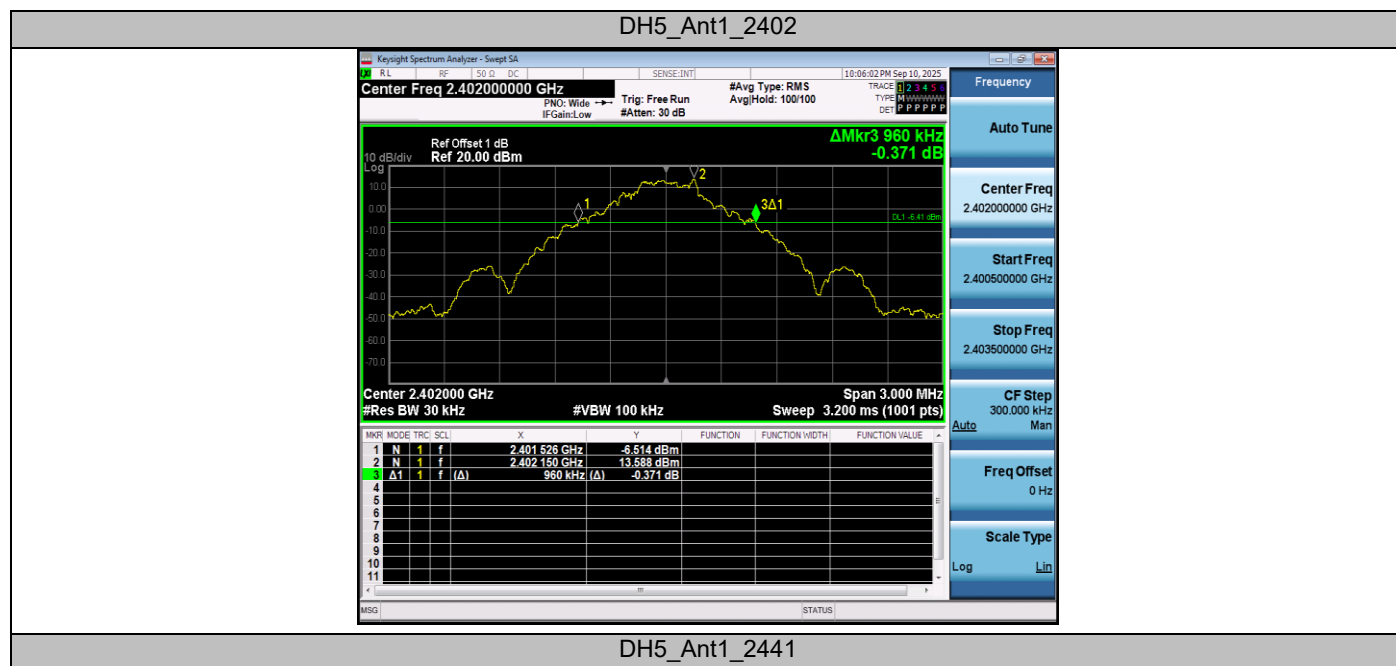
Appendix A: Test results of 20dB Emission Bandwidth

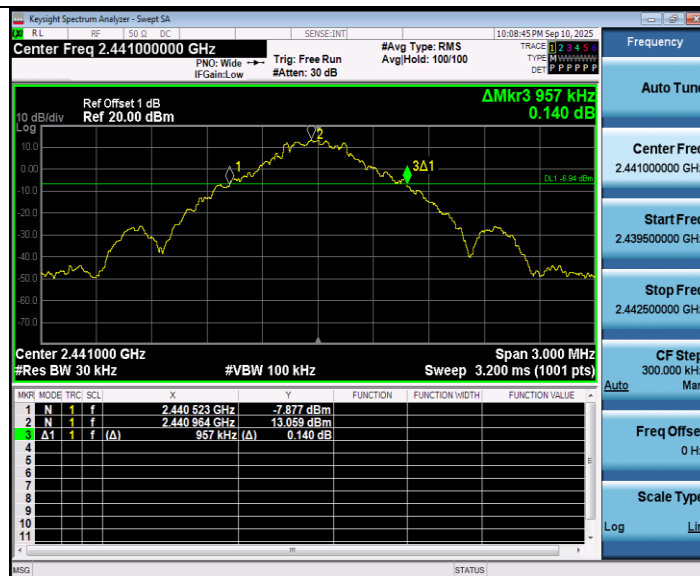
20dB Emission Bandwidth:

Test Result

TestMode	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	2402	0.960	2401.526	2402.486	---	---
	2441	0.957	2440.523	2441.480	---	---
	2480	0.966	2479.520	2480.486	---	---
2DH5	2402	1.287	2401.352	2402.639	---	---
	2441	1.263	2440.361	2441.624	---	---
	2480	1.287	2479.352	2480.639	---	---
3DH5	2402	1.263	2401.349	2402.612	---	---
	2441	1.275	2440.343	2441.618	---	---
	2480	1.266	2479.352	2480.618	---	---

Test Graphs





DH5_Ant1_2480



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480



3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



99% Occupied bandwidth:**Test Result**

TestMode	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	2402	0.87231	2401.5544	2402.4267	---	---
	2441	0.89022	2440.5461	2441.4363	---	---
	2480	0.87866	2479.5500	2480.4287	---	---
2DH5	2402	1.1587	2401.4066	2402.5653	---	---
	2441	1.1707	2440.4004	2441.5711	---	---
	2480	1.1776	2479.3982	2480.5758	---	---
3DH5	2402	1.1693	2401.4080	2402.5773	---	---
	2441	1.1663	2440.4104	2441.5767	---	---
	2480	1.1756	2479.4028	2480.5784	---	---

Test Graphs

DH5_Ant1_2480



2DH5_Ant1_2402



2DH5_Ant1_2441



2DH5_Ant1_2480

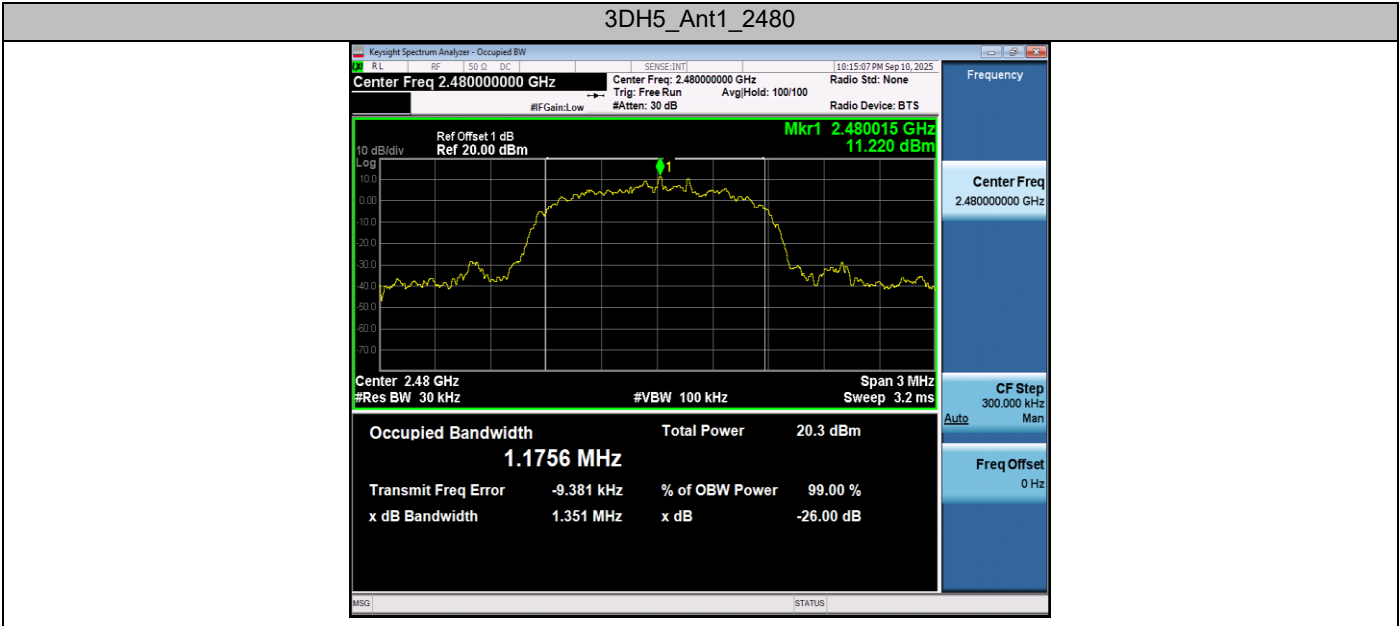


3DH5_Ant1_2402



3DH5_Ant1_2441





Appendix B: Test results of Maximum conducted output power

Mode	Channel	Frequency (MHz)	Measure result (dBm)		Limit (dBm)	Verdict
			Ant 1	Ant 2		
DH5	00	2402	13.95	13.55	≤30	Pass
	39	2441	13.89	13.54	≤30	Pass
	79	2480	13.82	13.54	≤30	Pass
2DH5	00	2402	11.52	10.92	≤30	Pass
	39	2441	11.39	10.93	≤30	Pass
	79	2480	11.45	11.00	≤30	Pass
3DH5	00	2402	11.32	10.96	≤30	Pass
	39	2441	11.45	10.92	≤30	Pass
	79	2480	11.25	10.98	≤30	Pass

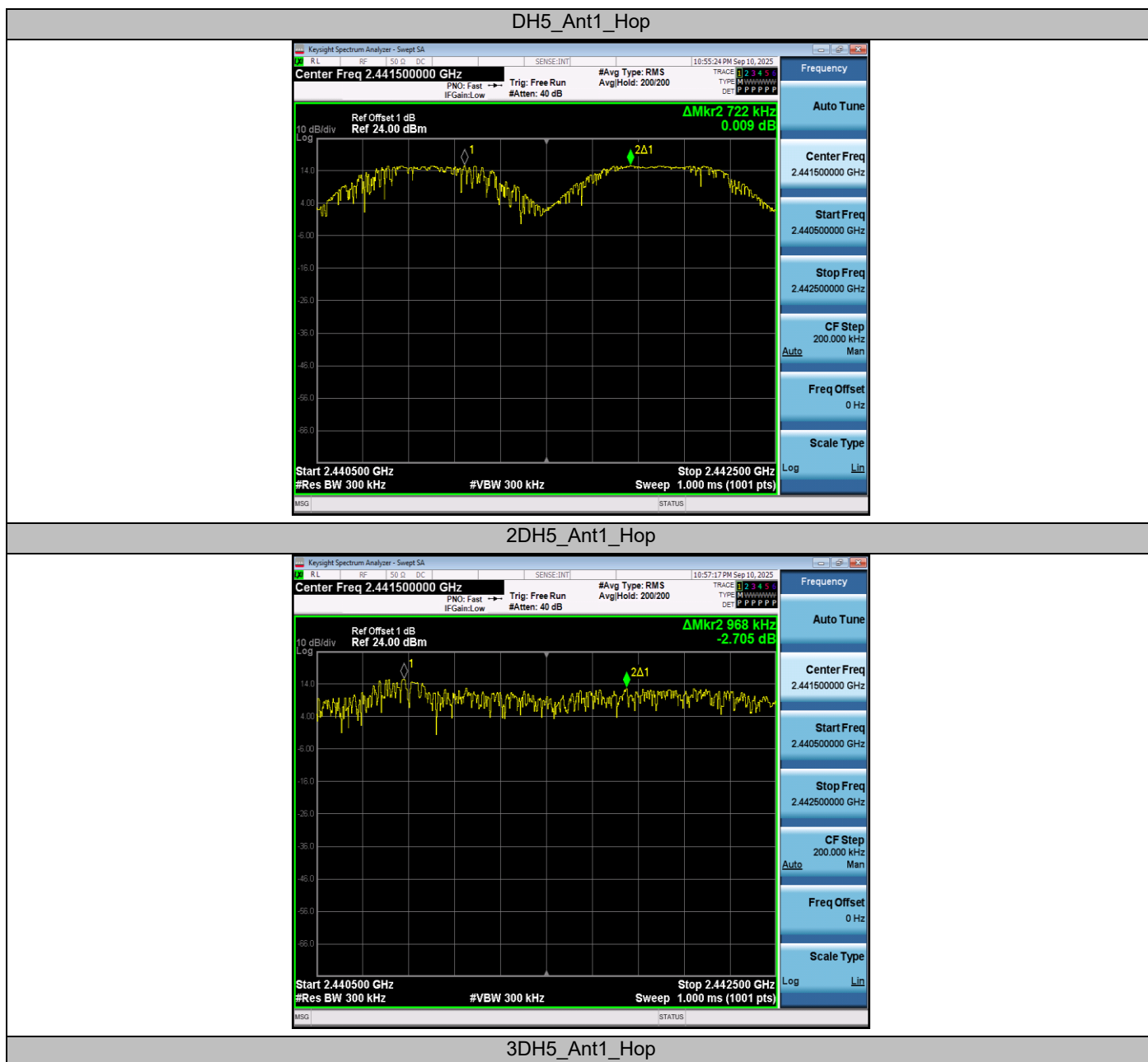
Note: Measure result = Conducted Power + Duty Cycle Factor

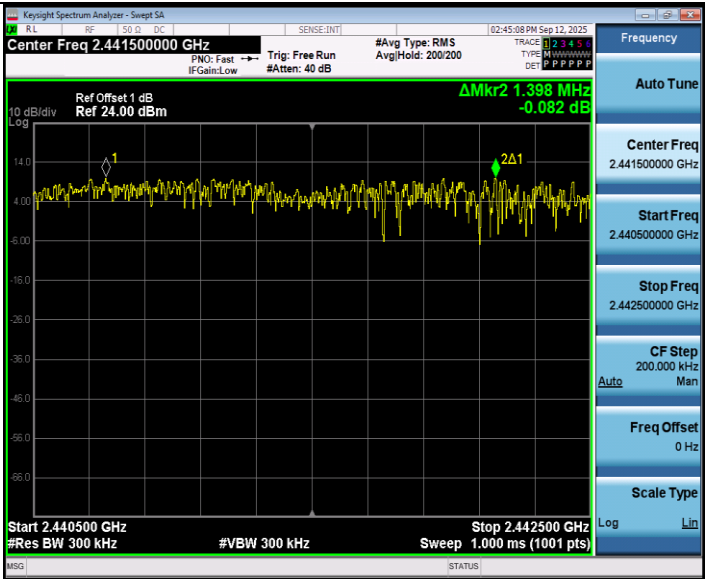
Appendix C: Test results of Carrier Frequency Separation

Test Result

TestMode	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Hop	0.722	≥ 0.644	PASS
2DH5	Hop	0.968	≥ 0.858	PASS
3DH5	Hop	1.398	≥ 1.275	PASS

Test Graphs



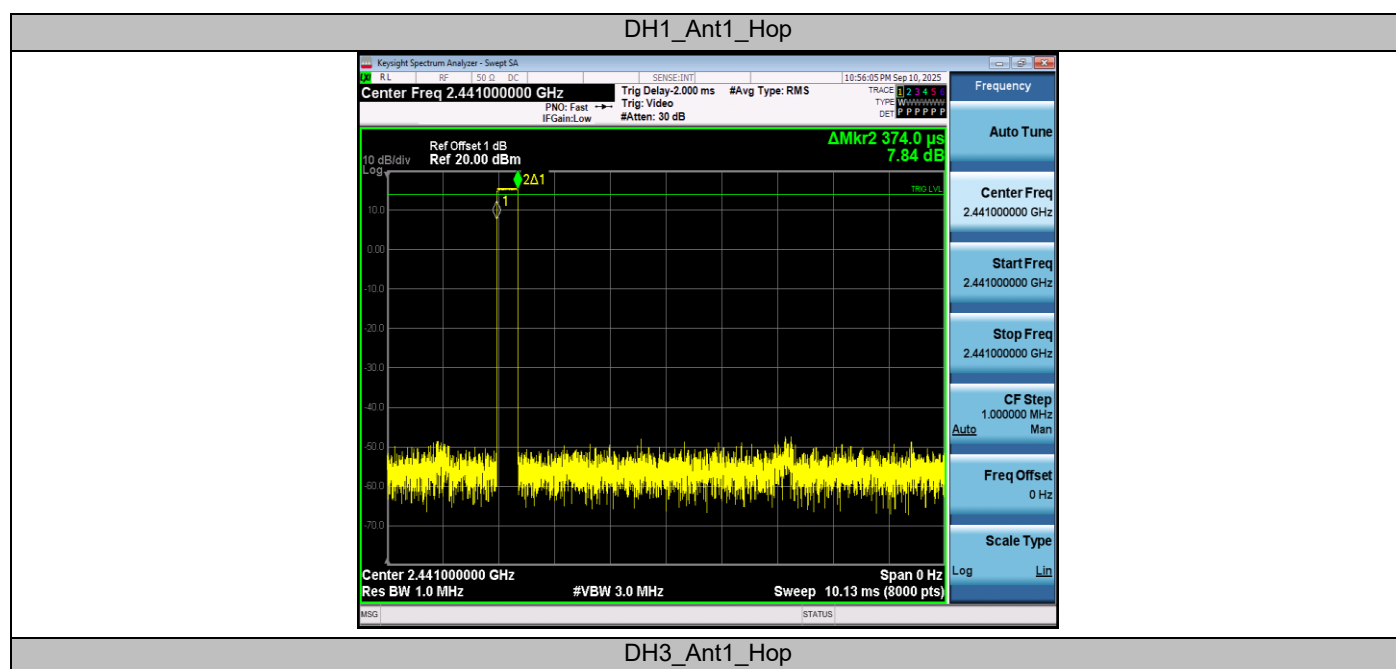


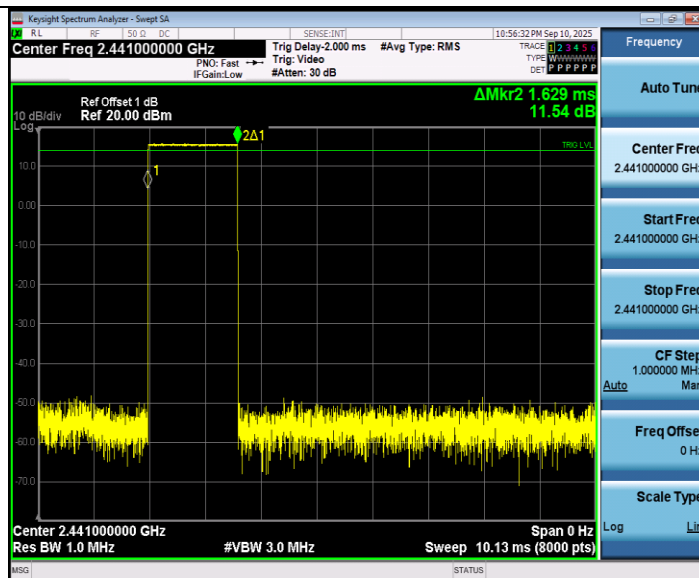
Appendix D: Test results of Time of Occupancy

Test Result

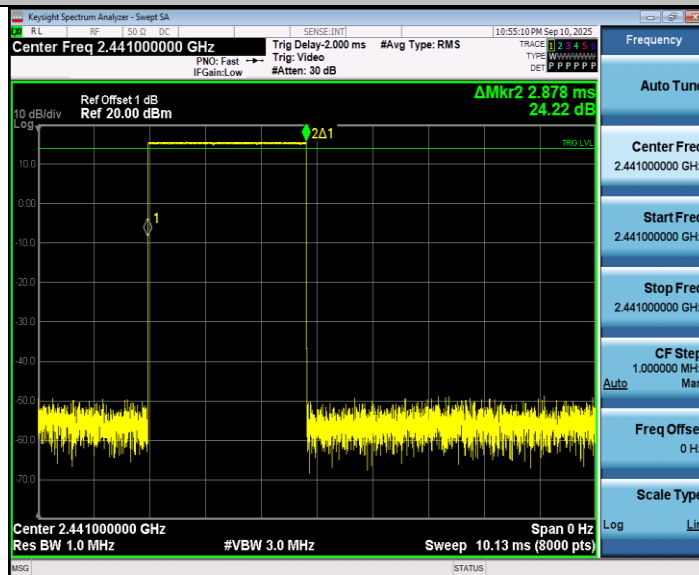
TestMode	Frequency[MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Hop	0.374	320	0.12	≤0.4	PASS
DH3	Hop	1.629	160	0.261	≤0.4	PASS
DH5	Hop	2.878	106.67	0.307	≤0.4	PASS
2DH1	Hop	0.383	320	0.123	≤0.4	PASS
2DH3	Hop	1.634	160	0.261	≤0.4	PASS
2DH5	Hop	2.882	106.67	0.307	≤0.4	PASS
3DH1	Hop	0.383	320	0.123	≤0.4	PASS
3DH3	Hop	1.633	160	0.261	≤0.4	PASS
3DH5	Hop	2.884	106.67	0.308	≤0.4	PASS

Test Graphs

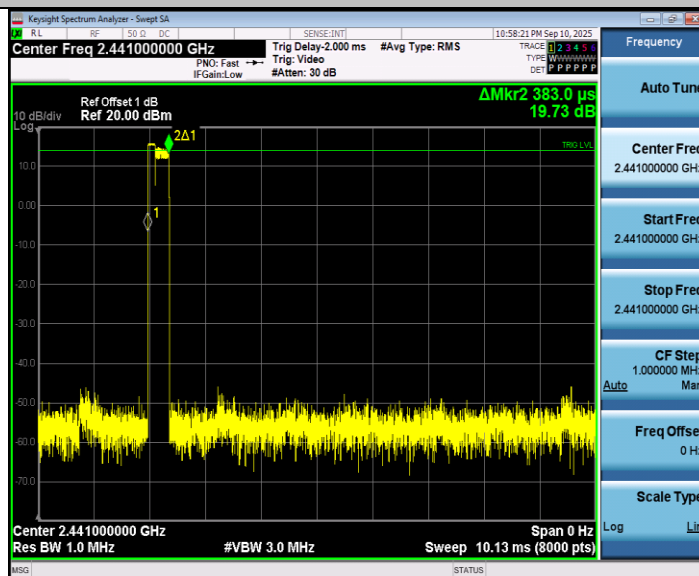




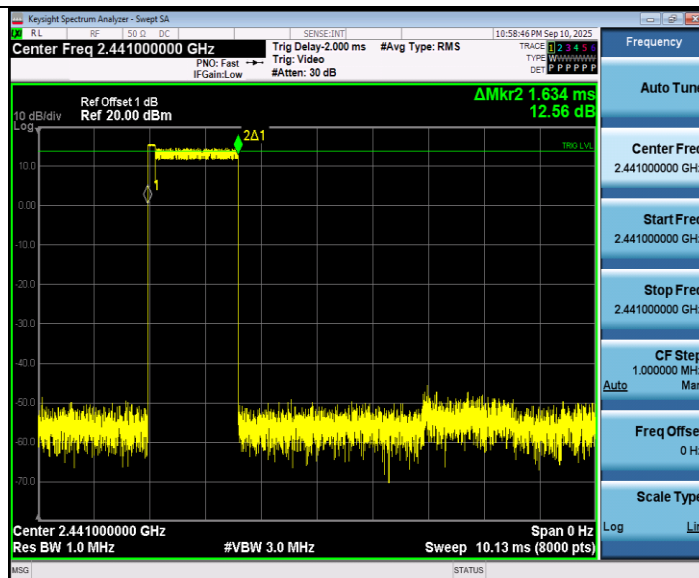
DH5_Ant1_Hop



2DH1_Ant1_Hop



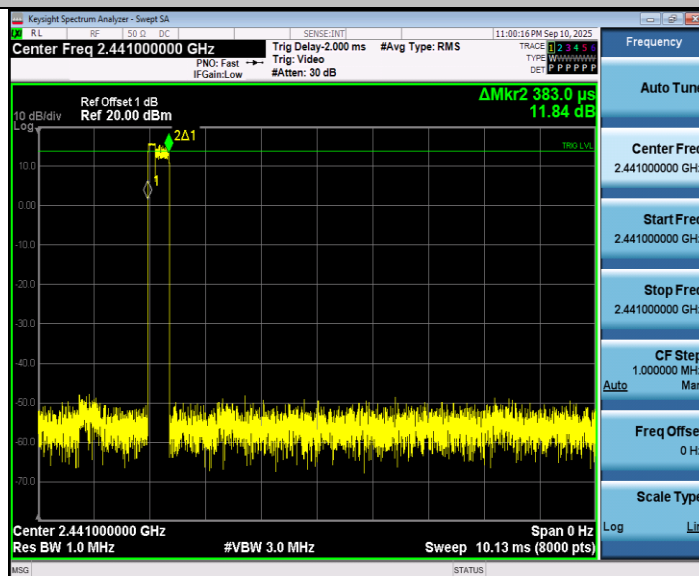
2DH3_Ant1_Hop



2DH5_Ant1_Hop



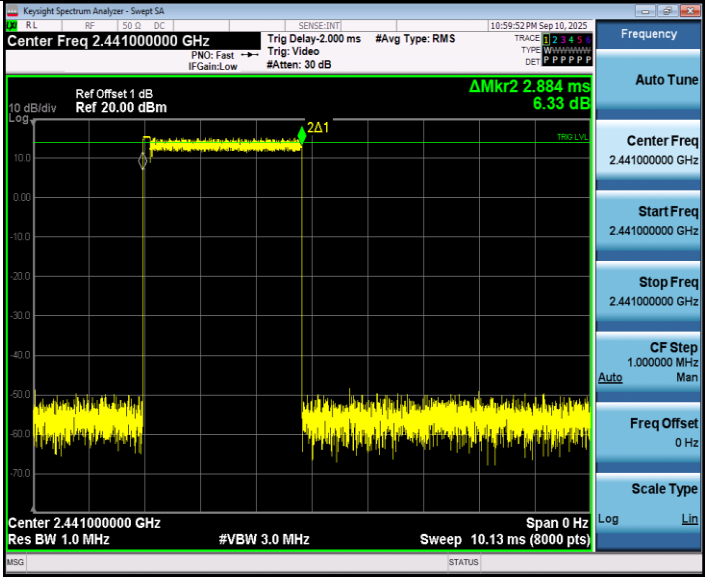
3DH1_Ant1_Hop



3DH3_Ant1_Hop



3DH5_Ant1_Hop



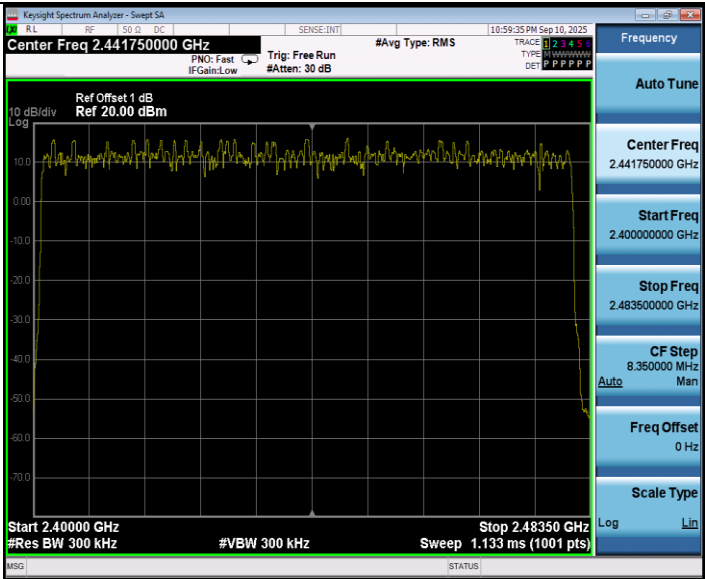
Appendix E: Test results of Number of Hopping Frequencies

Test Result

TestMode	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Hop	79	≥15	PASS
2DH5	Hop	79	≥15	PASS
3DH5	Hop	79	≥15	PASS

Test Graphs



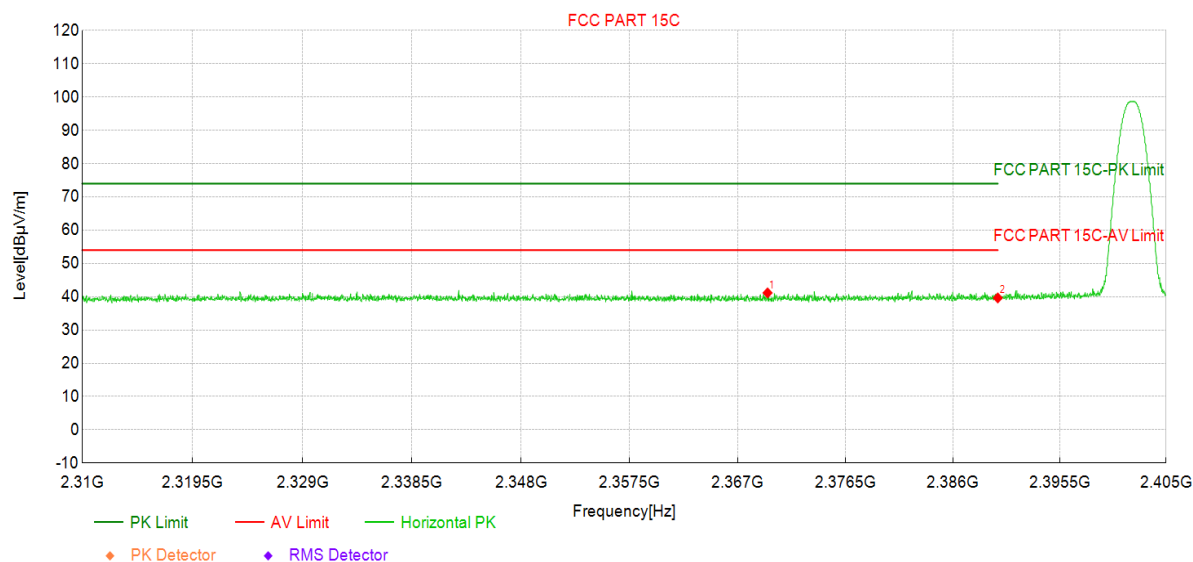


Appendix F: Test results of Band edge measurements

Antenna BT 0

Transmit at 2402MHz by DH5

Test Graph

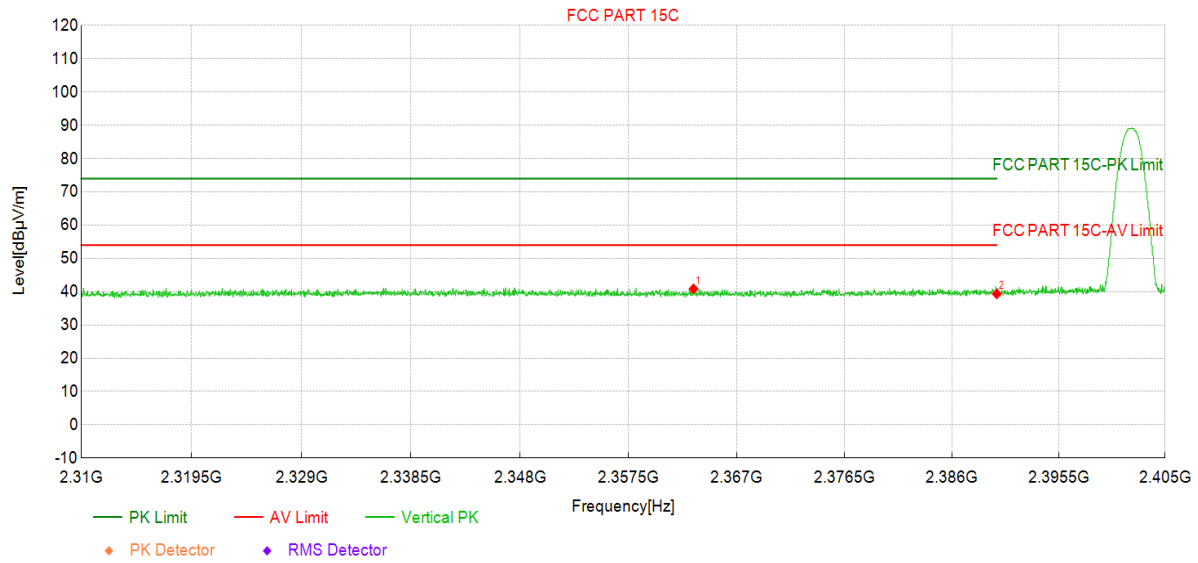


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2369.63	41.30	41.15	-0.10	74.00	32.85	PK	Horizo	PASS
	2369.63	-	16.36	-	54.00	37.64	AV	Horizo	PASS
2	2390.00	39.70	39.63	-0.05	74.00	34.37	PK	Horizo	PASS
	2390.00	-	14.84	-	54.00	39.16	AV	Horizo	PASS

Transmit at 2402MHz by DH5

Test Graph

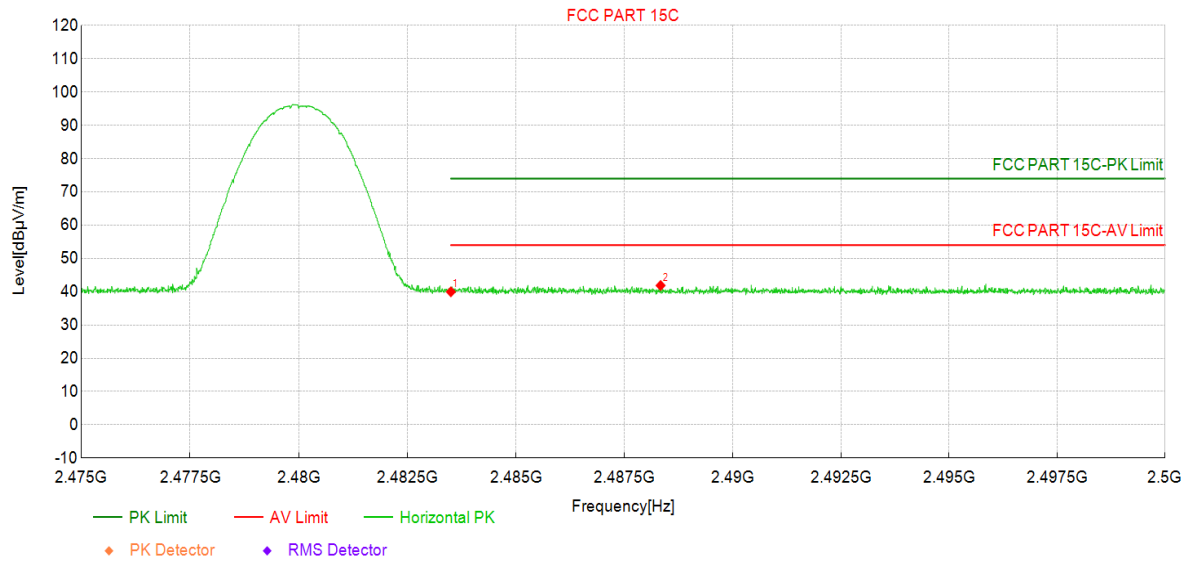


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2363.20	41.00	40.85	-0.11	74.00	33.15	PK	Vertic	PASS
	2363.20	-	16.06	-	54.00	37.94	AV	Vertic	PASS
2	2390.00	39.40	39.35	-0.05	74.00	34.65	PK	Vertic	PASS
	2390.00	-	14.56	-	54.00	39.44	AV	Vertic	PASS

Transmit at 2480MHz by DH5

Test Graph

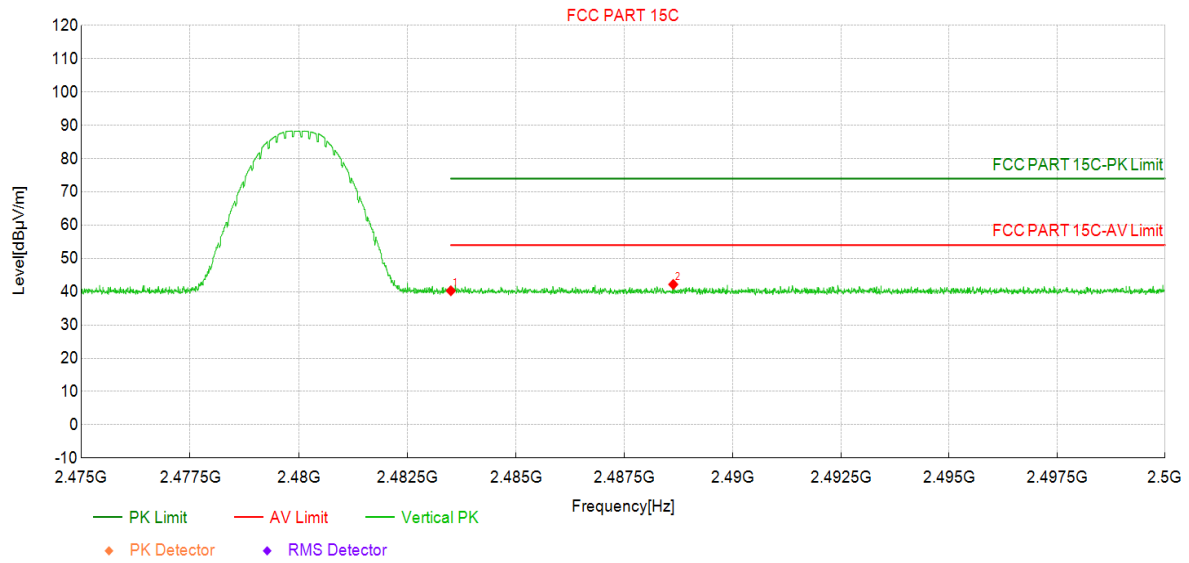


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	39.70	39.98	0.27	74.00	34.02	PK	Horizo	PASS
	2483.50	-	15.19	-	54.00	38.81	AV	Horizo	PASS
2	2488.33	41.60	41.87	0.29	74.00	32.13	PK	Horizo	PASS
	2488.33	-	17.08	-	54.00	36.92	AV	Horizo	PASS

Transmit at 2480MHz by DH5

Test Graph

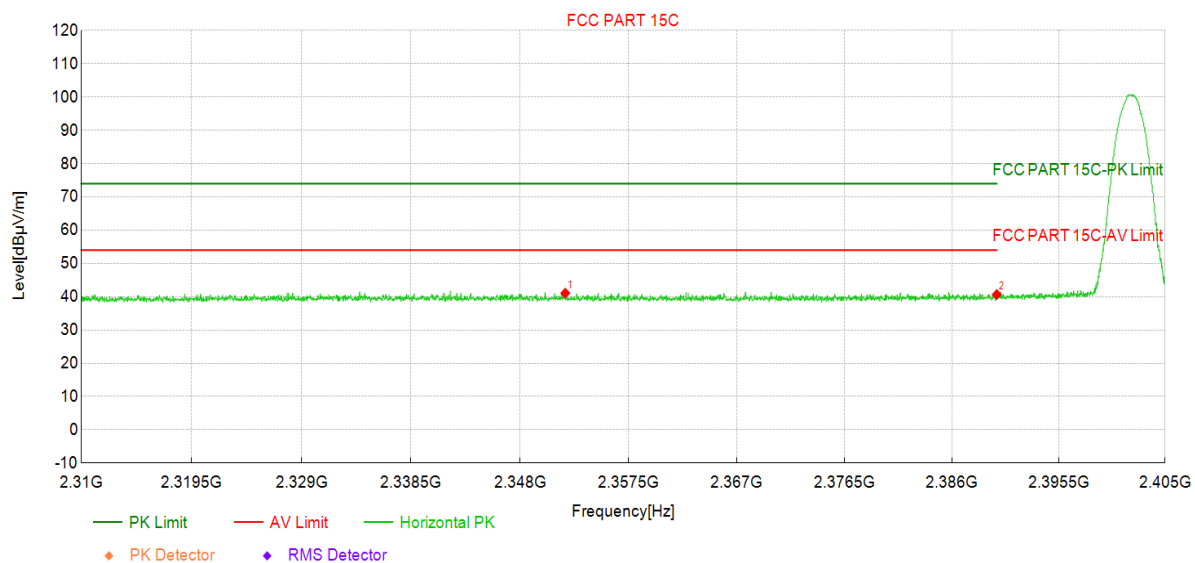


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	40.00	40.28	0.27	74.00	33.72	PK	Vertic	PASS
	2483.50	-	15.49	-	54.00	38.51	AV	Vertic	PASS
2	2488.63	41.90	42.19	0.29	74.00	31.81	PK	Vertic	PASS
	2488.63	-	17.40	-	54.00	36.60	AV	Vertic	PASS

Transmit at 2402MHz by 2DH5

Test Graph

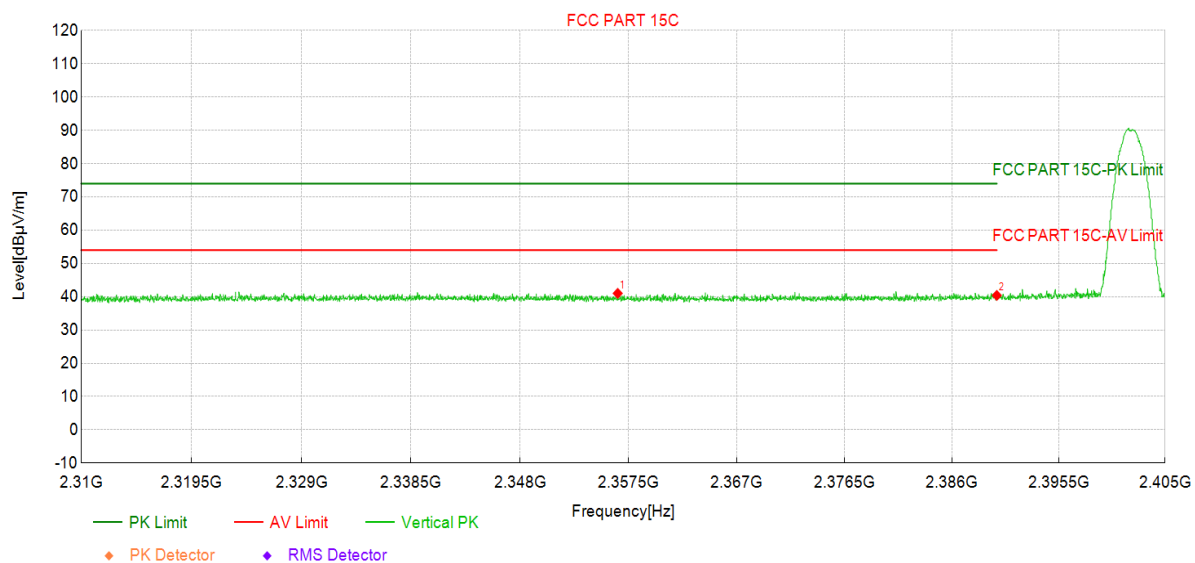


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2351.96	41.20	41.07	-0.15	74.00	32.93	PK	Horizo	PASS
	2351.96	-	16.28	-	54.00	37.72	AV	Horizo	PASS
2	2390.00	40.70	40.67	-0.05	74.00	33.33	PK	Horizo	PASS
	2390.00	-	15.88	-	54.00	38.12	AV	Horizo	PASS

Transmit at 2402MHz by 2DH5

Test Graph

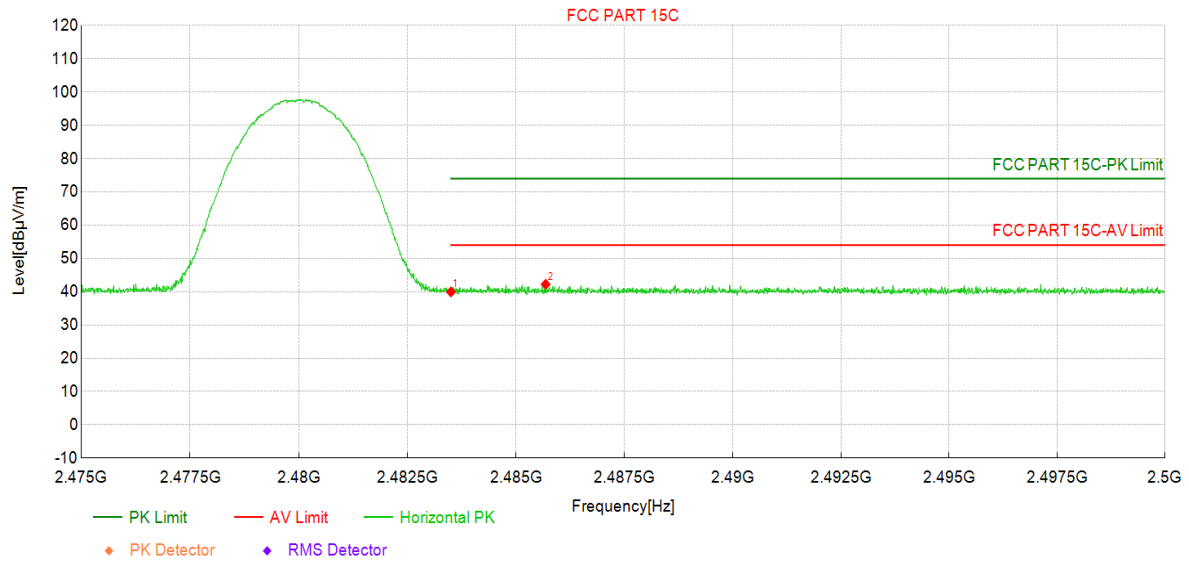


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2356.55	41.10	41.01	-0.13	74.00	32.99	PK	Vertic	PASS
	2356.55	-	16.22	-	54.00	37.78	AV	Vertic	PASS
2	2390.00	40.50	40.40	-0.05	74.00	33.60	PK	Vertic	PASS
	2390.00	-	15.61	-	54.00	38.39	AV	Vertic	PASS

Transmit at 2480MHz by 2DH5

Test Graph

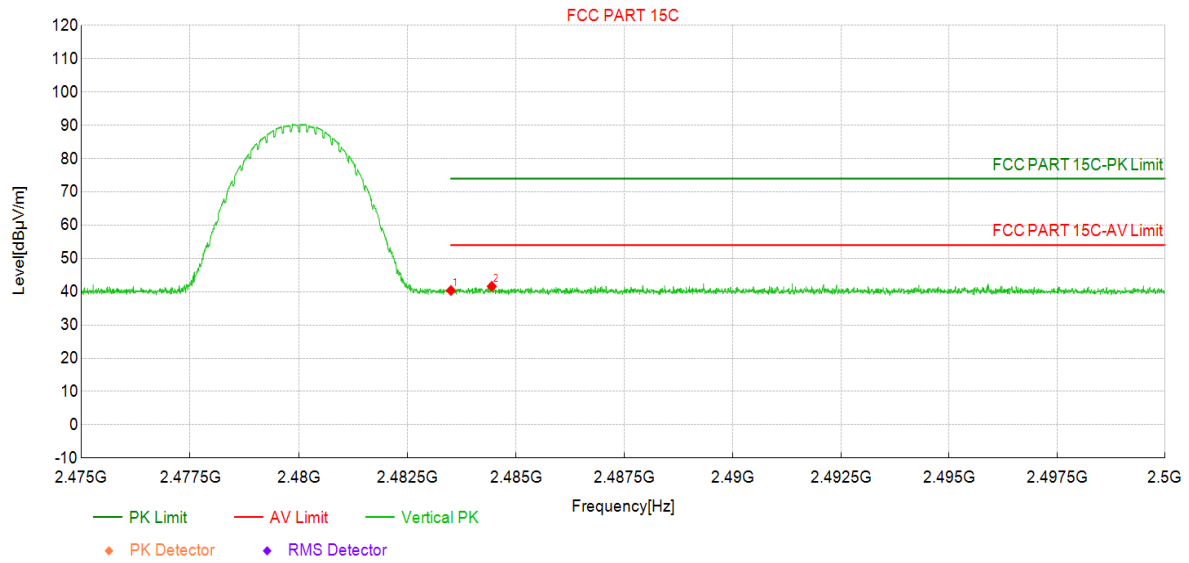


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	39.70	39.94	0.27	74.00	34.06	PK	Horizo	PASS
	2483.50	-	15.15	-	54.00	38.85	AV	Horizo	PASS
2	2485.68	41.90	42.23	0.29	74.00	31.77	PK	Horizo	PASS
	2485.68	-	17.44	-	54.00	36.56	AV	Horizo	PASS

Transmit at 2480MHz by 2DH5

Test Graph

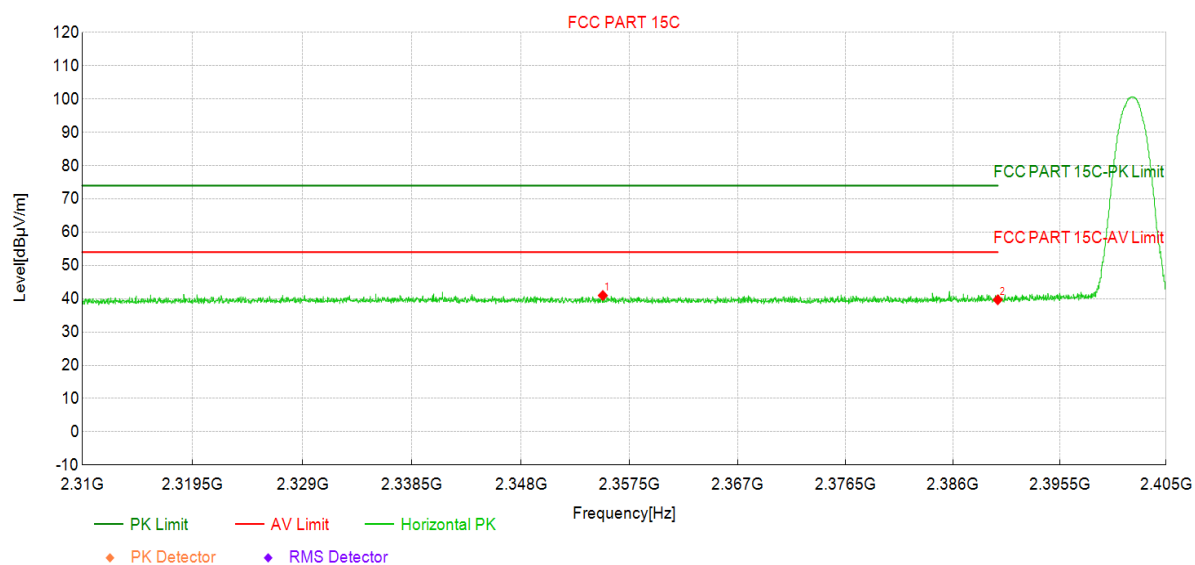


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	40.10	40.36	0.27	74.00	33.64	PK	Vertic	PASS
	2483.50	-	15.57	-	54.00	38.43	AV	Vertic	PASS
2	2484.44	41.40	41.62	0.27	74.00	32.38	PK	Vertic	PASS
	2484.44	-	16.83	-	54.00	37.17	AV	Vertic	PASS

Transmit at 2402MHz by 3DH5

Test Graph

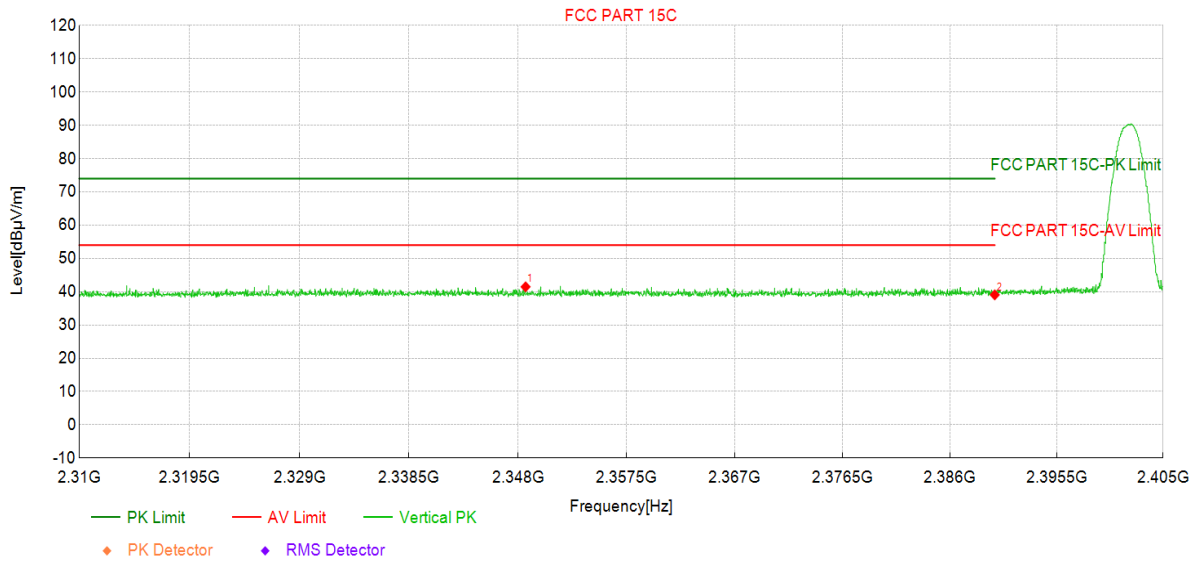


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2355.16	41.10	40.97	-0.13	74.00	33.03	PK	Horizo	PASS
	2355.16	-	16.18	-	54.00	37.82	AV	Horizo	PASS
2	2390.00	39.70	39.68	-0.05	74.00	34.32	PK	Horizo	PASS
	2390.00	-	14.89	-	54.00	39.11	AV	Horizo	PASS

Transmit at 2402MHz by 3DH5

Test Graph

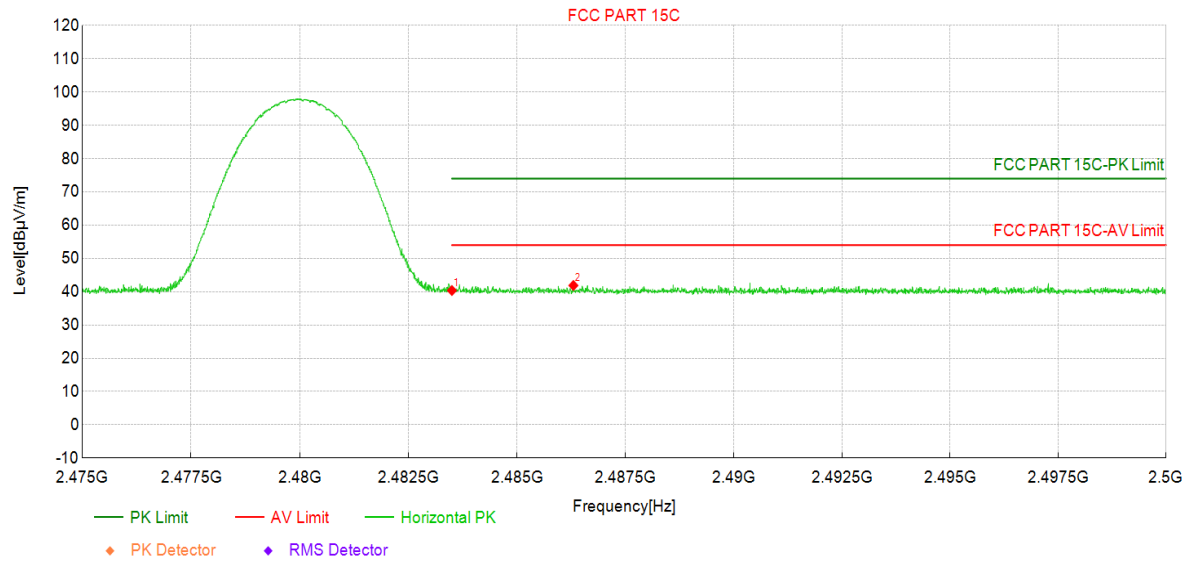


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2348.67	41.60	41.47	-0.15	74.00	32.53	PK	Vertic	PASS
	2348.67	-	16.68	-	54.00	37.32	AV	Vertic	PASS
2	2390.00	39.10	39.06	-0.05	74.00	34.94	PK	Vertic	PASS
	2390.00	-	14.27	-	54.00	39.73	AV	Vertic	PASS

Transmit at 2480MHz by 3DH5

Test Graph

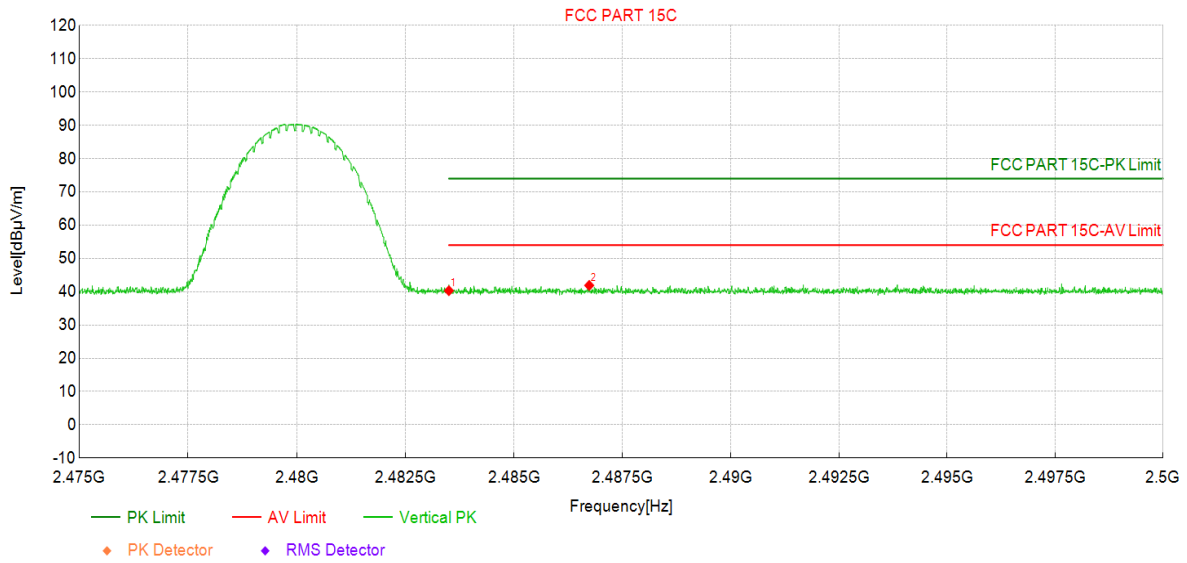


Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	40.10	40.36	0.27	74.00	33.64	PK	Horizo	PASS
	2483.50	-	15.57	-	54.00	38.43	AV	Horizo	PASS
2	2486.30	41.60	41.88	0.29	74.00	32.12	PK	Horizo	PASS
	2486.30	-	17.09	-	54.00	36.91	AV	Horizo	PASS

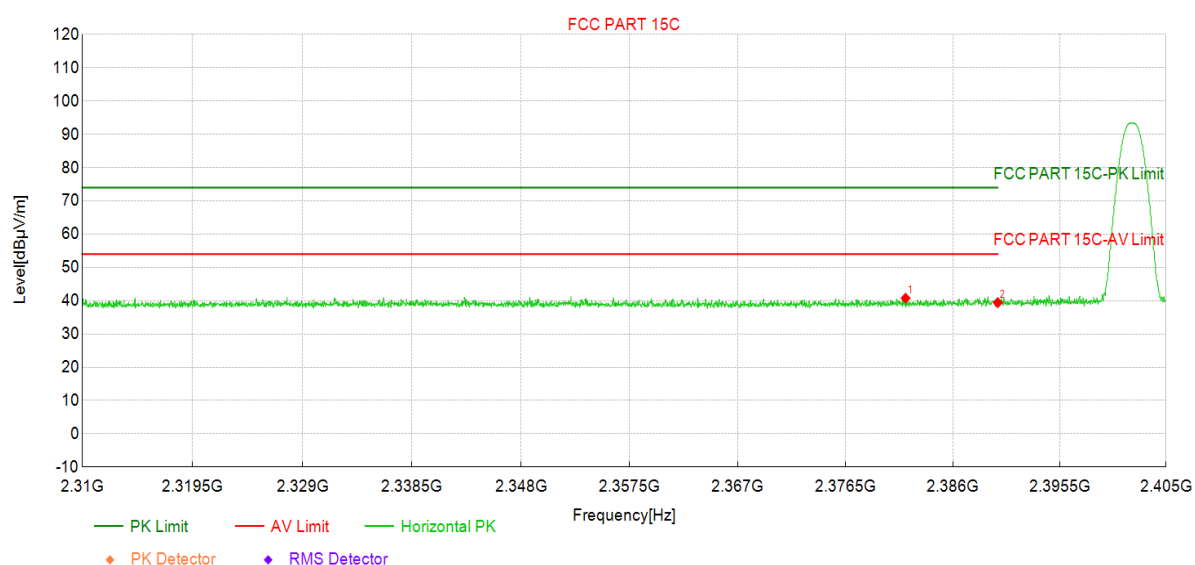
Transmit at 2480MHz by 3DH5

Test Graph



Data List

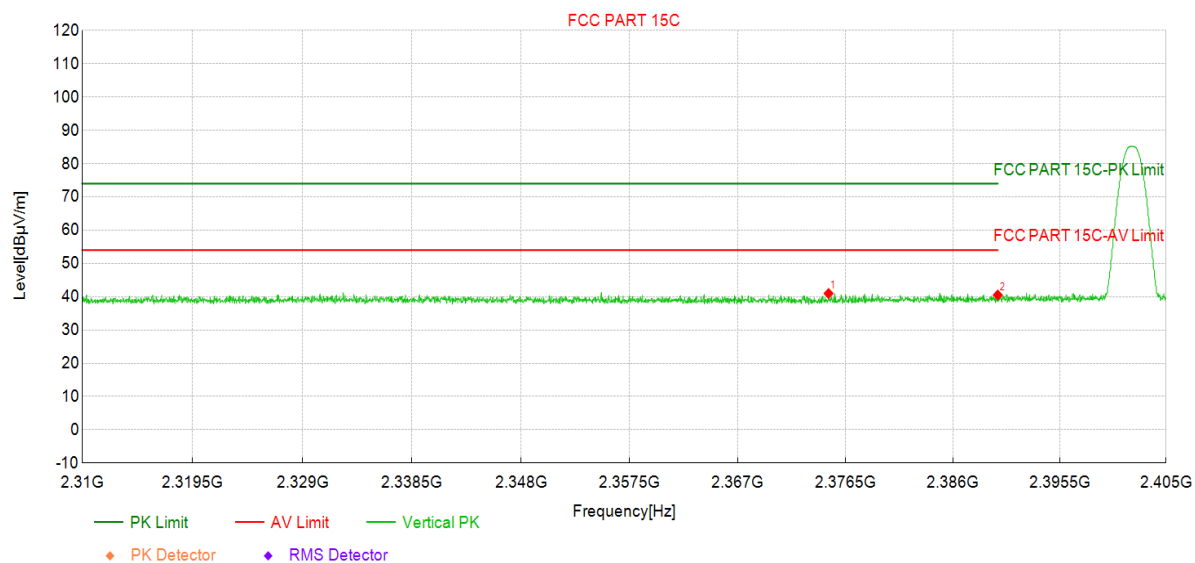
NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2483.50	40.00	40.31	0.27	74.00	33.69	PK	Vertic	PASS
	2483.50	-	15.52	-	54.00	38.48	AV	Vertic	PASS
2	2486.73	41.60	41.89	0.29	74.00	32.11	PK	Vertic	PASS
	2486.73	-	17.10	-	54.00	36.90	AV	Vertic	PASS

Antenna BT 1**Transmit at 2402MHz by DH5****Test Graph****Data List**

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2381.82	40.90	40.77	-0.08	74.00	33.23	PK	Horizo	PASS
	2381.82	-	15.98	-	54.00	38.02	AV	Horizo	PASS
2	2390.00	39.50	39.41	-0.05	74.00	34.59	PK	Horizo	PASS
	2390.00	-	14.62	-	54.00	39.38	AV	Horizo	PASS

Transmit at 2402MHz by DH5

Test Graph



Data List

NO	Frequency [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Det	Pol	Verdict
1	2375.01	41.10	40.97	-0.08	74.00	33.03	PK	Vertic	PASS
	2375.01	-	16.18	-	54.00	37.82	AV	Vertic	PASS
2	2390.00	40.60	40.51	-0.05	74.00	33.49	PK	Vertic	PASS
	2390.00	-	15.72	-	54.00	38.28	AV	Vertic	PASS

Note: Level = Reading + Factor

Note: We have evaluated each antenna and both BT Antenna 0 and BT Antenna 1, only worst data shown in report.

Appendix G: Test results of Conducted Spurious Emission

Test Graphs for Reference level

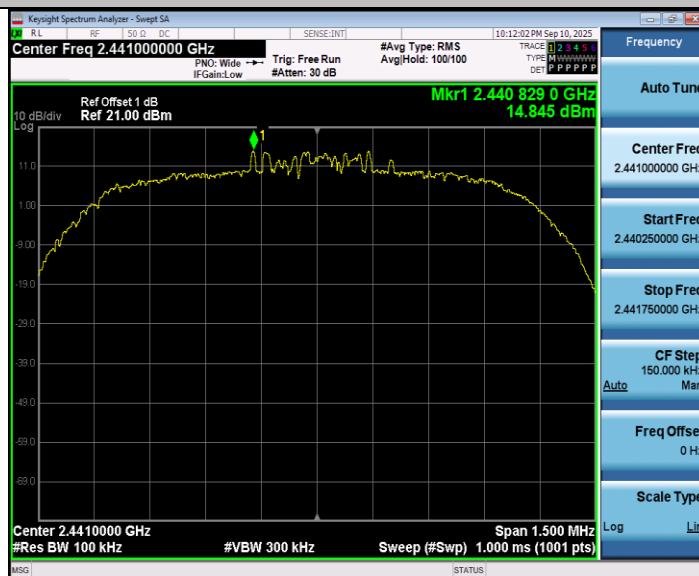




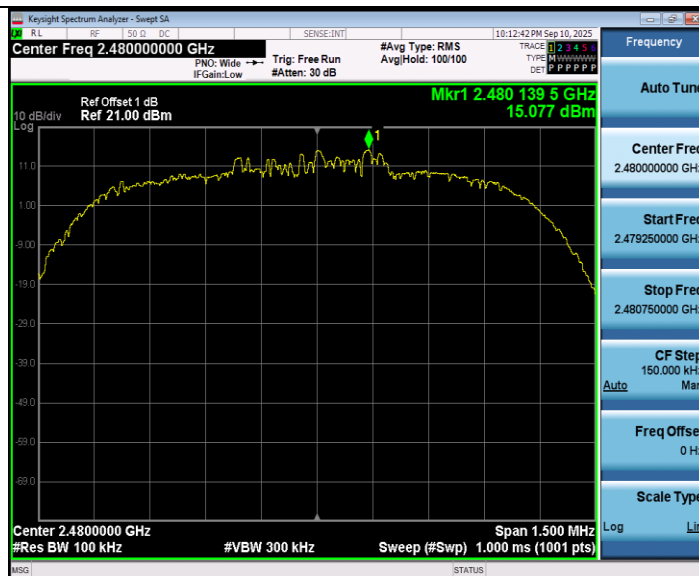
2DH5_Ant1_2402



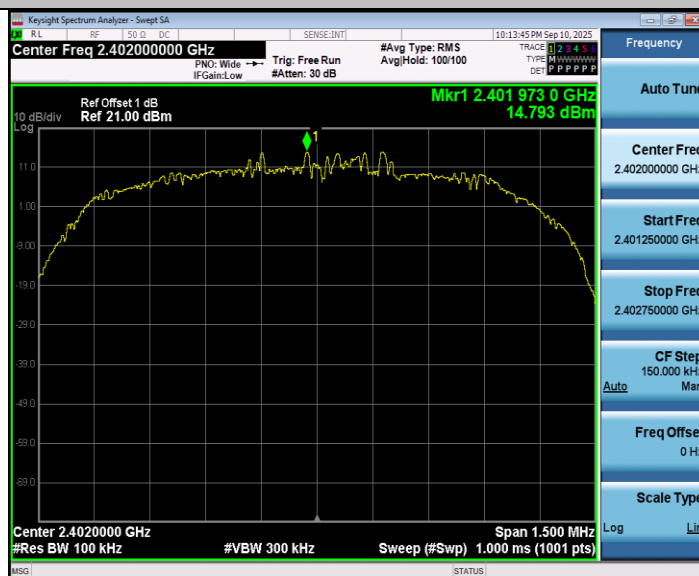
2DH5_Ant1_2441



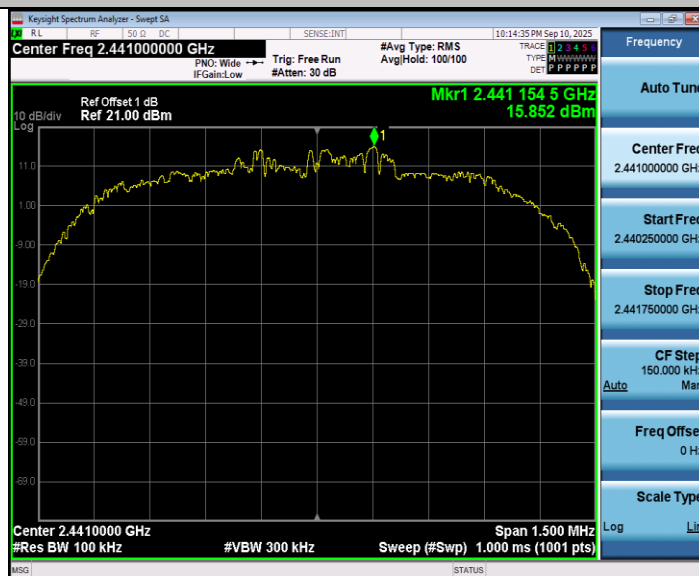
2DH5_Ant1_2480



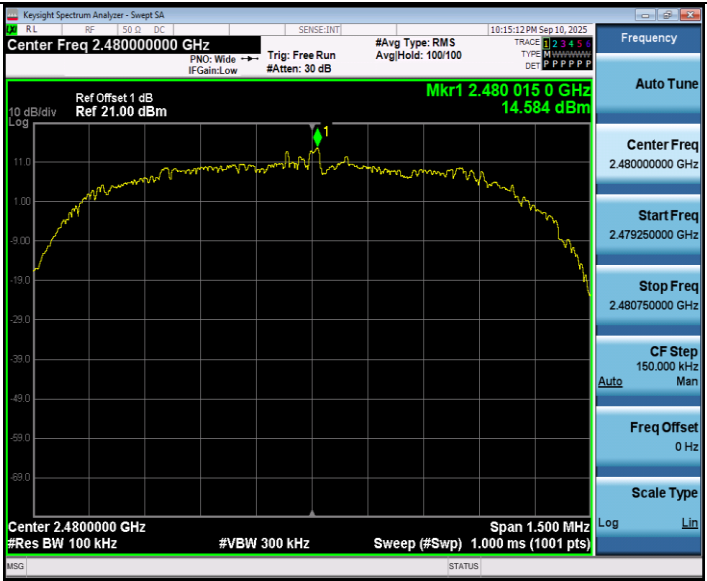
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480



Test Graphs for Band edge

