

TEST REPORT

On behalf of

SUPRA Foto-Elektronik-Vertriebs-GmbH**Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)****Model No.: BKS-30 Black, BKS-30 Pink****FCC ID: Z5CBKS-30S**

Prepared For: SUPRA Foto-Elektronik-Vertriebs-GmbH
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Date of Report : 2026.08.31

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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TEST REPORT

Applicant : SUPRA Foto-Elektronik-Vertriebs-GmbH
EUT Description : Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)
(A) Model No. : BKS-30 Black, BKS-30 Pink
(B) Power Supply : DC 3.7V (Battery)
(C) Test Voltage : DC 3.7V (Battery),
DC 3.3V from test fixture
AC 120V/60Hz(for Adapter)

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C
AND ANSI C63.10:2020*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

This report applies to above tested Sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

Date of Test : 2026.06.04-08.20 Date of Report : 2026.08.31

Producer : Huimin Yan
HUIMIN YAN / Assistant

Review : Jarey Lu
JAREY LU / Deputy Assistant Manager
For and on behalf of
 Audix Technology (Shanghai) Co., Ltd.

Signatory : Kamp Chen
Authorized Signature(s) KAMP CHEN / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The result is determined according to the decision rules of customer selection in the ASC-403 application service form.

1. According to IEC GUIDE 115 Procedure 2 and ILAC-G8, the uncertainties value is not used in determining the PASS/FAIL results.

2. If the required specification or standard already contains the decision rules, it will be carried out in accordance with the regulations or standard documents or the requirements of the competent units. If the required specification or standard does not contain a decision rule, the same paragraph 1.

3. If your company has a required decision rule, it will be implemented in accordance with the requirements and ISO/IEC Guide 98-4 specifications.

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.209(a) 15.205(a)(c)
20 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(1)
Carrier Frequency Separation Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(1)
Number of Hopping Frequencies Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(1)(iii)
Dwell Time Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(1)(iii)
Maximum Peak Output Power Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(b)(1)
Band Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)
Emission Limitations Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)

Antenna Requirement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.203
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Type of EUT : ☒ Production ☐ Pre-product ☐ Pro-type

Product Name : Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)

Model Number : BKS-30 Black, BKS-30 Pink

Note#1 : The models are all the same except for the color.

Note#2 : According the difference as above, we selected Model BKS-30 Black to do the test in current report.

Test Model : BKS-30 Black

Radio Tech. : Bluetooth(BREDR)

Channel Freq. : 2402MHz-2480MHz, total 79 channels

Modulation : GFSK, $\pi/4$ DQPSK, 8DPSK.

Antenna Info. : Transmit Type: 1T1X;
Connector Type: PCB;
Antenna Type: PCB Antenna;
Antenna Gain: 1.7dBi.

Note#3 : The Antenna information was provided by the customer.

Applicant : SUPRA Foto-Elektronik-Vertriebs-GmbH
Denisstr. 28a, Kaiserslautern, 67663, Germany

Manufacturer : Same as Applicant.

2.2 EUT Specifications Assessed in Current Report

Mode	Modulation	Data Rate(Mbps)
BR	GFSK	1
EDR	$\pi/4$ -DQPSK, 8DPSK	Up to 3

Channel List			
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
00	2402	40	2442
01	2403	41	2443
02	2404	42	2444
03	2405	43	2445
...	...	...	...
...	...	...	...
...	...	...	...
36	2438	76	2478
37	2439	77	2479
38	2440	78	2480
39	2441		

2.3 Test Information

The test software “ BT Tool.exe” was used to control EUT work in TX mode, Power Setting and select test channel.

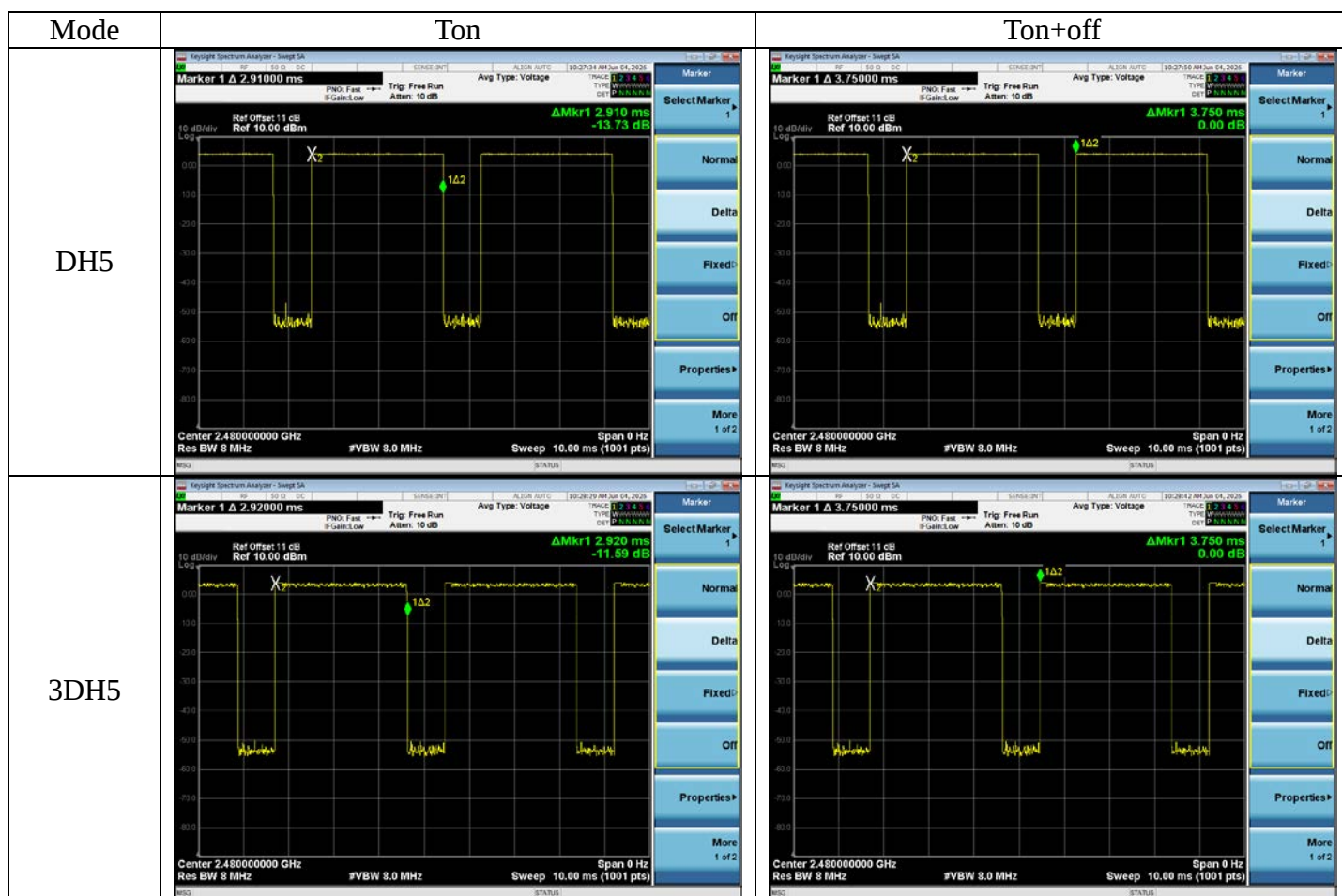
We had done the pre-scan and the worse case was selected to record in report:

Mode	data rate (Mbps)	pwrlvl Setting	Test Channel		Frequency (MHz)	Remark
BR-DH1	1	7	Low:	00	2402	Pre-Scan
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	
BR-DH3	1	7	Low:	00	2402	Pre-Scan
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	
BR-DH5	1	7	Low:	00	2402	Record
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	
EDR-3DH1	3	7	Low:	00	2402	Pre-Scan
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	
EDR-3DH3	3	7	Low:	00	2402	Pre-Scan
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	
EDR-3DH5	3	7	Low:	00	2402	Record
		7	Middle:	39	2441	
		7	High:	78	2480	
		7	Hopping:	--	--	

Note: The setting information was provided by the customer.

2.4 Duty Cycle Check

Mode	Transmission Duration (ms)	Transmission Period (ms)	Duty Cycle (%)	1/Ton (kHz)
DH5	2.91	3.75	77.60	0.3
3DH5	2.92	3.75	77.87	0.3



2.5 Sample Description

Test Item	Model Number	Sample Number	Date of receipted
Conducted Emission	BKS-30 Black	E20260521-01-01/03	2026.05.21
Radiated Emission	BKS-30 Black	E20260521-01-02/03	2026.05.21
Conducted RF Test	BKS-30 Black	E20260521a-01-01/03	2026.05.21

2.6 Supported equipment

Brand : Xiaomi
Product Name : Adapter
Model Number : MDY-08-ES
Serial Number : 4A41807P140530C
Input : 100-240VAC, 50/60Hz, 0.5A
Output : 5Vdc 3A, 9Vdc 2A, 12Vdc 1.5A.

Brand : Acer
Product Name : Notebook PC
Model Name : TravelMate P238 series
Model Number : N15W8

Product Name : Test Fixture
Product Function : USB to TTL

2.7 Description of Test Facility

Name of Firm : Audix Technology (Shanghai) Co., Ltd.
Site Location : 3F, Building 34, No. 680 Guiping Rd.,
Caohejing, Hi-Tech Park,
Shanghai 200233, China
Accredited by NVLAP, Lab Code : 200371-0
FCC Designation Number : CN5027
Test Firm Registration Number : 954668

3 CONDUCTED EMISSION TEST

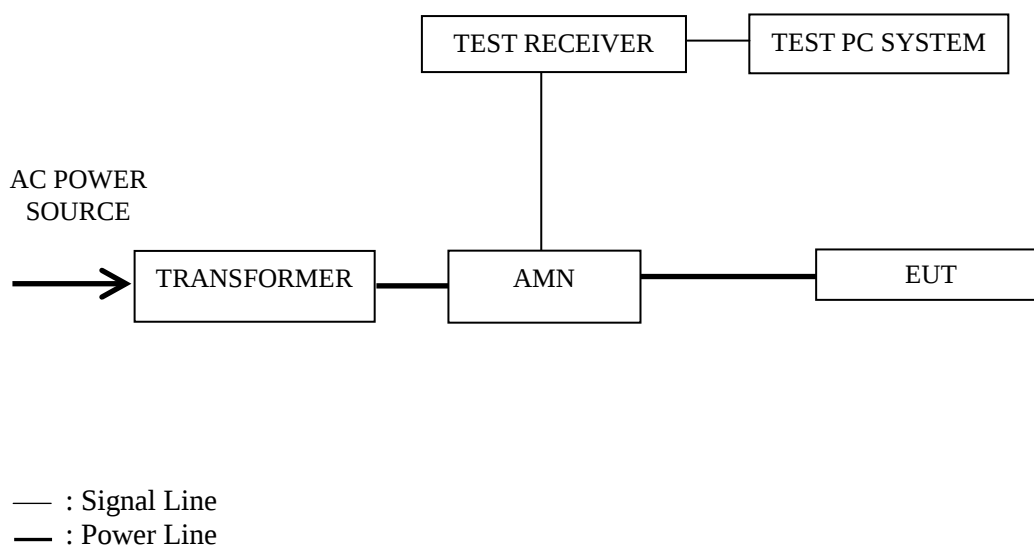
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	101302	2026.02.24	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2026.02.24	1 Year
3.	Fixed Attenuator	SHYL	TTS-1	001	2026.02.24	1 Year
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200655085	2026.02.24	1 Year
5.	Coaxial Cable	Audix	CE Cable	CE-SH1-001	2026.02.24	1 Year
6.	Software	Audix	e3	e3.v9.210616	--	--

3.2 Block Diagram of Test Setup

3.2.1 Conducted Disturbance Test Setup



3.3 Conducted Emission Limits (§15.207)

Frequency Range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Turn the EUT on the test mode, and then test.

3.6 Test Procedures

The EUT was placed upon a insulating support, which is 0.1 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 Ω coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to FCC Part 15 Subpart C and ANSI C63.10:2020 requirements during conducted disturbance test.

The I.F. bandwidth of Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

Test with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. (According to KDB 174176 D01 Line Conducted FAQ)

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Worst case emission:

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402 MHz	P15-16

NOTE 1 – Emission Level = Read Level + AMN Factor + Aux Factor + Cable Loss
Margin = Limits - Emission Level

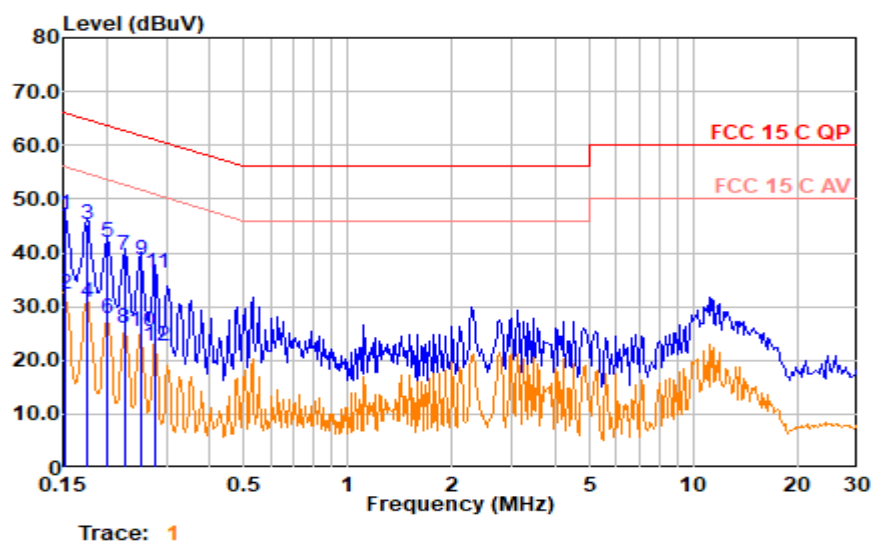
NOTE 2 – “QP” means “Quasi-Peak” values

NOTE 3 – The emission levels which not reported are too low against the official limit.

Worst case emission

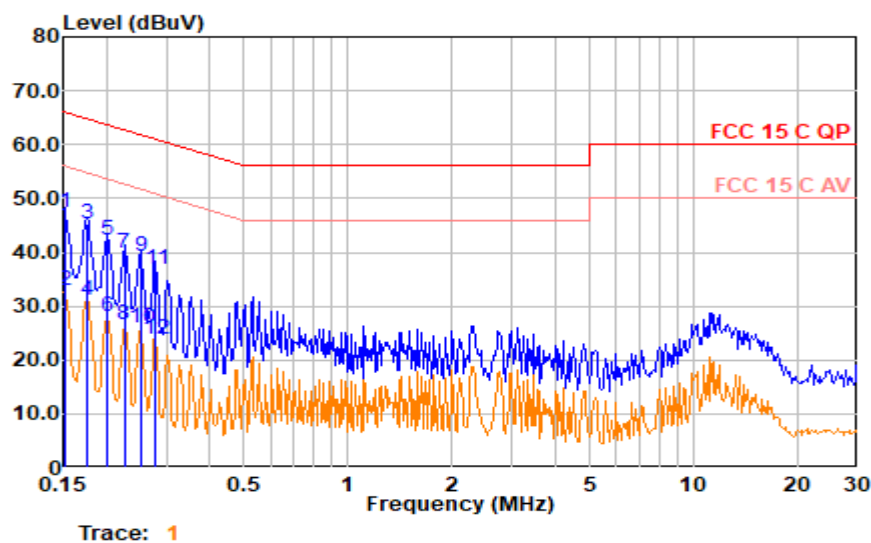
Test Date:	2026.08.10	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BR CH2402MHz



Polarization at Line

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.151	37.45	0.10	9.50	0.11	47.16	65.92	18.76	QP
0.151	22.72	0.10	9.50	0.11	32.43	55.92	23.49	Average
0.176	35.53	0.10	9.50	0.12	45.24	64.68	19.44	QP
0.176	21.08	0.10	9.50	0.12	30.79	54.68	23.89	Average
0.202	32.26	0.10	9.50	0.12	41.98	63.52	21.54	QP
0.202	18.00	0.10	9.50	0.12	27.71	53.52	25.81	Average
0.225	29.86	0.10	9.50	0.12	39.57	62.61	23.04	QP
0.225	16.12	0.10	9.50	0.12	25.83	52.61	26.78	Average
0.252	29.06	0.10	9.50	0.12	38.78	61.71	22.93	QP
0.252	15.57	0.10	9.50	0.12	25.29	51.71	26.42	Average
0.278	26.44	0.10	9.50	0.12	36.16	60.88	24.72	QP
0.278	12.96	0.10	9.50	0.12	22.68	50.88	28.20	Average

Mode: BR CH2402MHz**Polarization at Neutral**

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.151	37.63	0.10	9.50	0.11	47.34	65.92	18.57	QP
0.151	23.07	0.10	9.50	0.11	32.78	55.92	23.14	Average
0.176	35.70	0.10	9.50	0.12	45.42	64.68	19.26	QP
0.176	21.44	0.10	9.50	0.12	31.16	54.68	23.52	Average
0.202	32.48	0.10	9.50	0.12	42.19	63.52	21.33	QP
0.202	18.47	0.10	9.50	0.12	28.18	53.52	25.34	Average
0.225	30.21	0.10	9.50	0.12	39.92	62.61	22.69	QP
0.225	16.78	0.10	9.50	0.12	26.50	52.61	26.11	Average
0.252	29.47	0.10	9.50	0.12	39.19	61.71	22.51	QP
0.252	16.36	0.10	9.50	0.12	26.08	51.71	25.62	Average
0.278	27.04	0.10	9.50	0.12	36.76	60.88	24.12	QP
0.278	14.11	0.10	9.50	0.12	23.83	50.88	27.05	Average

4 RADIATED EMISSION TEST

4.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

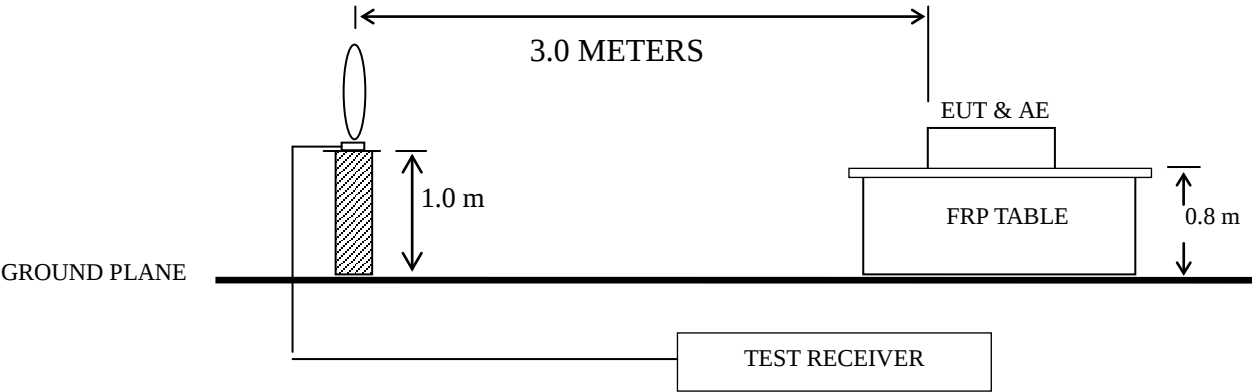
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Preamplifier	Agilent	8447D	2944A10548	2026.02.24	1 Year
2.	Preamplifier	HP	8449B	3008A00864	2026.02.24	1 Year
3.	Preamplifier	EM Electronics	EM18G40GA	060770	2026.02.24	1 Year
4.	EXA Signal Analyzer	Agilent	N9010A	MY52221182	2026.07.03	1 Year
5.	Test Receiver	R&S	ESCI	101303	2026.02.24	1 Year
6.	Loop Antenna	Schaffner	HLA6120	1193	2026.08.04	1 Year
7.	Bilog Antenna+ 6dB Attenuator	Schwarzbeck	VULB 9168+ EMCI-N-6-06	707+AT-N0637	2026.08.07	1 Year
8.	Horn Antenna	EMCO	3115	96074878	2026.08.06	1 Year
9.	Horn Antenna	EMCO	3116	00062643	2025.01.21	2 Year
10.	Cavity Band Rejection Filter	WT	WT-A3882-R10	WT200312-1-2	2026.02.24	1 Year
11.	3.5G High Pass Filter	Agilent	84300-80038	066	2026.02.24	1 Year
12.	RE Cable-3m+ Coaxial Switch	TIMES+ANRI TSU	LMR400-NMNM-3.0M+MP59B	20250211-0001+6200655086	2026.02.24	1 Year
13.	RE Cable-1m	TIMES	LMR400UF-NM NM-1.0M	20260303-001	2026.02.24	1 Year
14.	RE Cable-11m	TIMES	LMR400UF-NM NM-11.0M	20260303-001	2026.02.24	1 Year
15.	Coaxial Cable(CH.3)	Mini-Circuits	FLC-2FT-SMSM+	21112086	2026.02.24	1 Year
16.	RE Cable-5m	TIMES	SFT205-SMNM-5.0M	20250211-0001	2026.02.24	1 Year
17.	RF Cable-0.6m+4m	EM Electronics	EM102-0.6M+EM 102-4M	W0061790001+W0061800001	2026.02.24	1 Year
18.	Software	Audix	e3	e3.v9.210616	--	--

4.2 Block Diagram of Test Setup

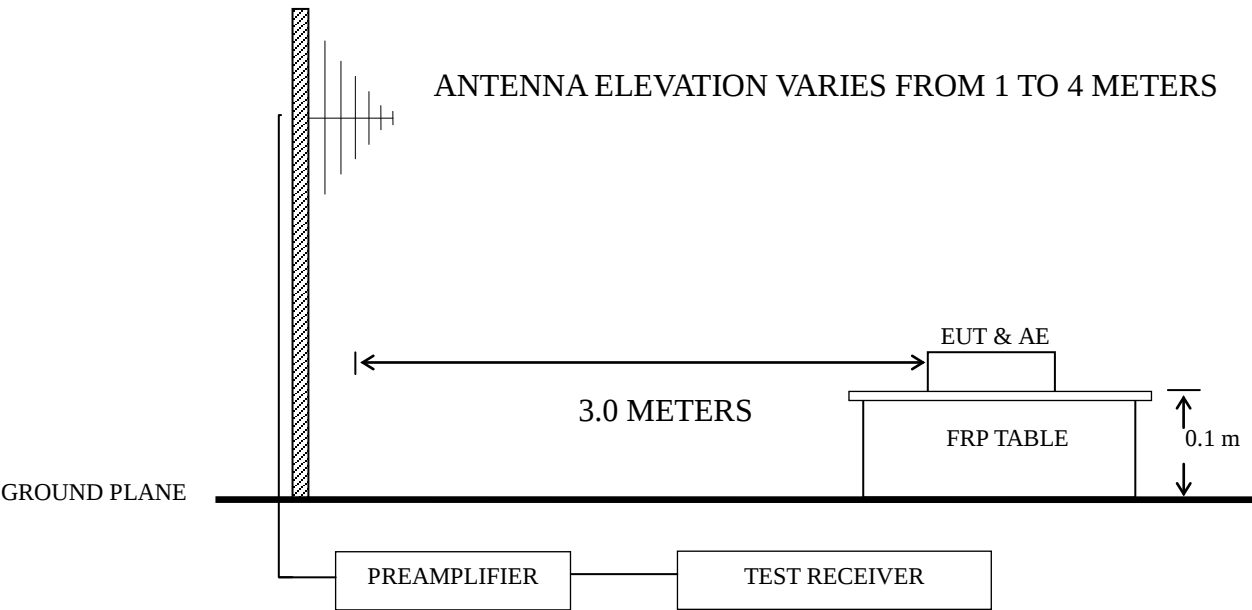
4.2.1 EUT & Peripherals



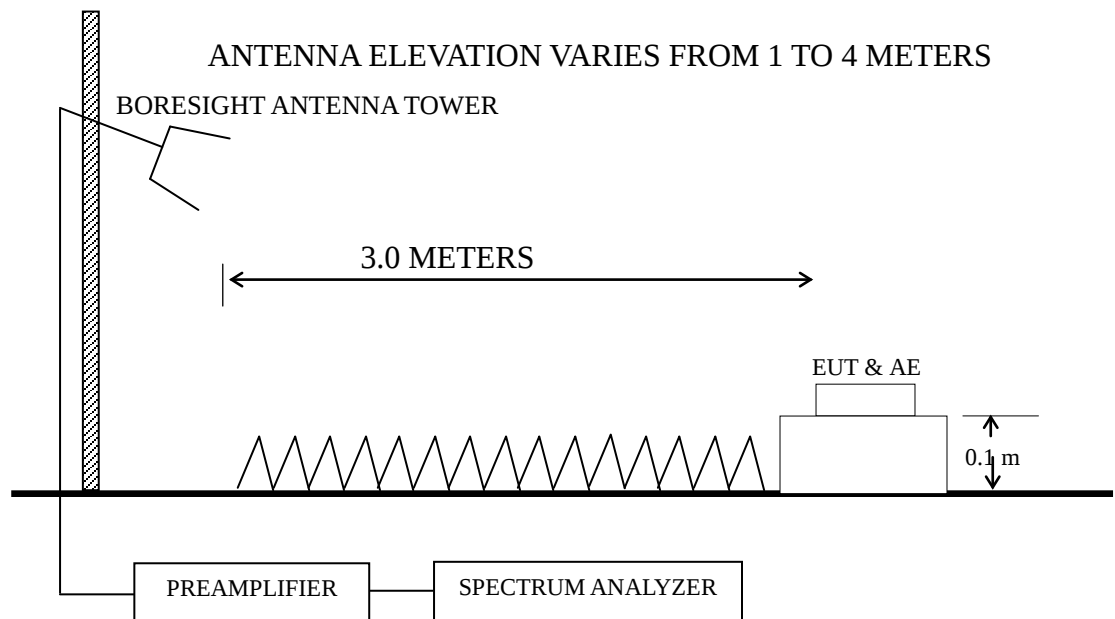
4.2.2 9kHz to 30MHz



4.2.3 30MHz to 1GHz



4.2.4 Above 1GHz



4.3 Radiated Emission Limit (§15.209)

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	dB (μV/m)
0.009 ~ 0.490	300	$2400/F(\text{kHz})$	$20\log(2400/F(\text{kHz}))$
0.490 ~ 1.705	30	$24000/F(\text{kHz})$	$20\log(24000/F(\text{kHz}))$
1.705 ~ 30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. The limits in these three bands are based on average detector.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

4.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (listed in Sec.2.2) were installed as shown on Sec.4.2 to meet FCC requirements and operating in a manner that tends to maximize its emission level in a normal application.

4.5 Operating Condition of EUT

4.5.1 Setup the EUT as shown in Sec. 3.2.

4.5.2 Turn the EUT on (powered by internal battery).

4.5.3 Connect the EUT and the TTL terminal of Test Fixture through three HCI cables of EUT, as follows (VCC to DC3V3, RX to TXD, GND to GND). Plug the USB terminal of Test Fixture to the USB port of Notebook PC.

4.5.4 Use the software as section 2.3 to select the test mode, remove Test Fixture and Notebook PC out of test area, and then test.

4.5.5 Repeat step 4.5.3 and 4.5.4, until the test of all modes finished.

4.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a 0.1m high insulating support on a turntable. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10:2020 requirements during radiated emission test.

The resolution bandwidth of Test Receiver R&S ESCI was set at 200 Hz from 9kHz to 150kHz, set 9kHz from 150kHz to 30MHz, and set at 120 kHz from 30MHz to 1000MHz.

The resolution bandwidth of Agilent N9010A was set at 1MHz for above 1GHz.

The frequency range from 9 kHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

All the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Frequency range: below 1GHz (Worst case emission):

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402MHz	P22-23

Note: The emissions between 9kHz to 30MHz were too low against the limit.

Frequency range: 1GHz to 18GHz (Worst case emission)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402 MHz	P24-27
2.		BR-3DH5	00	2402MHz	P28-31

Frequency range: above 18GHz (Worst case emission)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402 MHz	P32-33
2.		BR-3DH5	00	2402MHz	P34-35

Band-Edge and Restricted bands:

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402 MHz	P36-37
2.			78	2480 MHz	P38-39
3.		EDR-3DH5	00	2402 MHz	P40-41
4.			78	2480 MHz	P42-43

NOTE 1 – Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin = Limits - Emission Level.

NOTE 2 – “QP” means “Quasi-Peak” values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The emission levels which not reported are too low against the official limit.

NOTE 5 – The emission levels recorded below is data of EUT configured in Standing direction, for this direction was the maximum emission direction during the test. The Side & Lying direction are not a normal use and too low against the official limit to be reported.

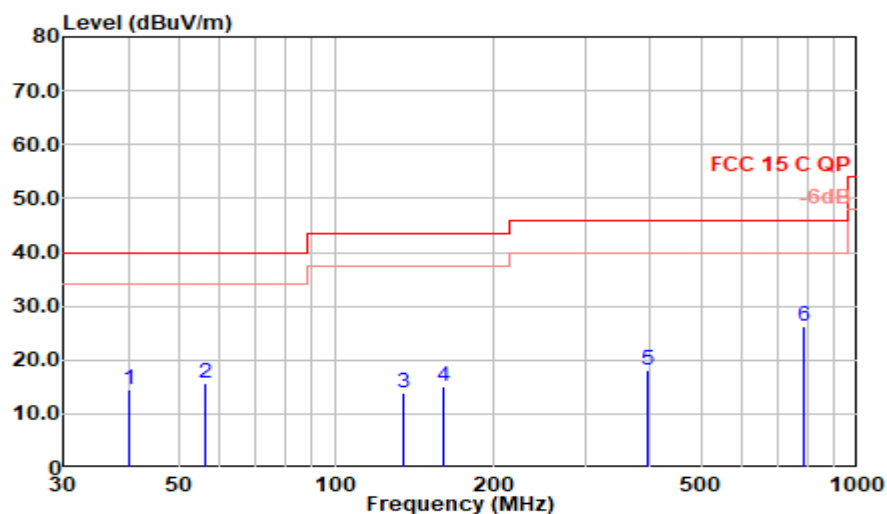
NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

For above 1GHz test, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 7 – The frequency range 2310-2390MHz & 2483.5-2500MHz were tested for Restricted bands.

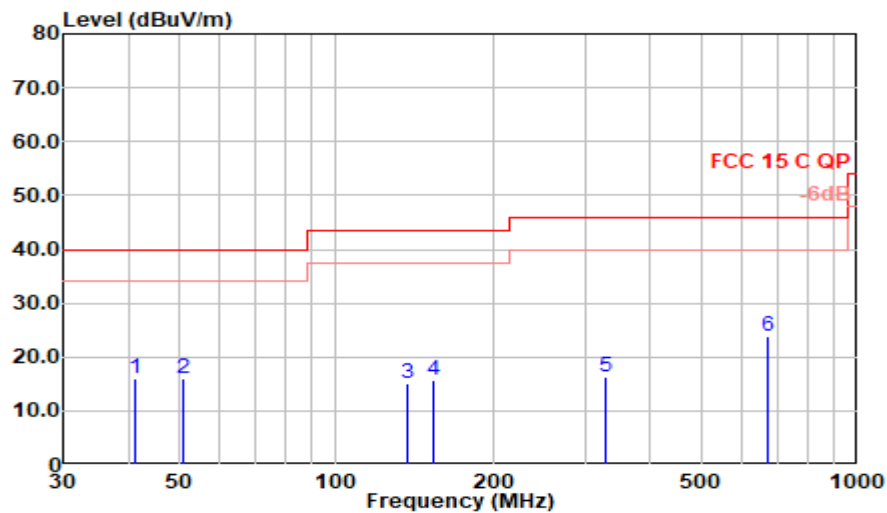
Radiated emission < 1GHz

Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BR CH2402MHz

Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
40.185	24.53	19.04	0.60	29.54	14.62	40.00	25.38	QP
56.190	24.98	19.40	0.66	29.48	15.56	40.00	24.44	QP
135.245	24.18	18.12	0.89	29.19	14.01	43.50	29.49	QP
160.950	23.94	19.10	0.94	29.00	14.98	43.50	28.52	QP
394.235	23.97	21.30	1.54	28.79	18.02	46.00	27.98	QP
784.660	23.65	28.21	2.19	27.74	26.30	46.00	19.70	QP

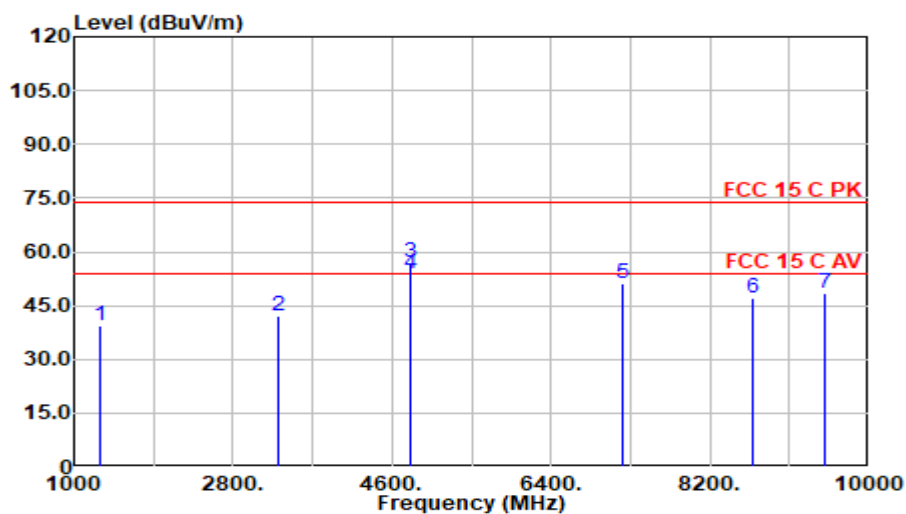
Mode: BR CH2402MHz**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
41.155	25.66	19.20	0.60	29.54	15.92	40.00	24.08	QP
50.855	25.25	19.69	0.64	29.50	16.08	40.00	23.92	QP
137.185	25.18	18.32	0.89	29.16	15.23	43.50	28.27	QP
153.675	24.68	19.20	0.93	29.00	15.81	43.50	27.69	QP
328.760	23.00	20.28	1.44	28.50	16.23	46.00	29.77	QP
671.170	23.83	26.40	1.98	28.43	23.78	46.00	22.22	QP

Radiated Emission 1GHz to 18GHz

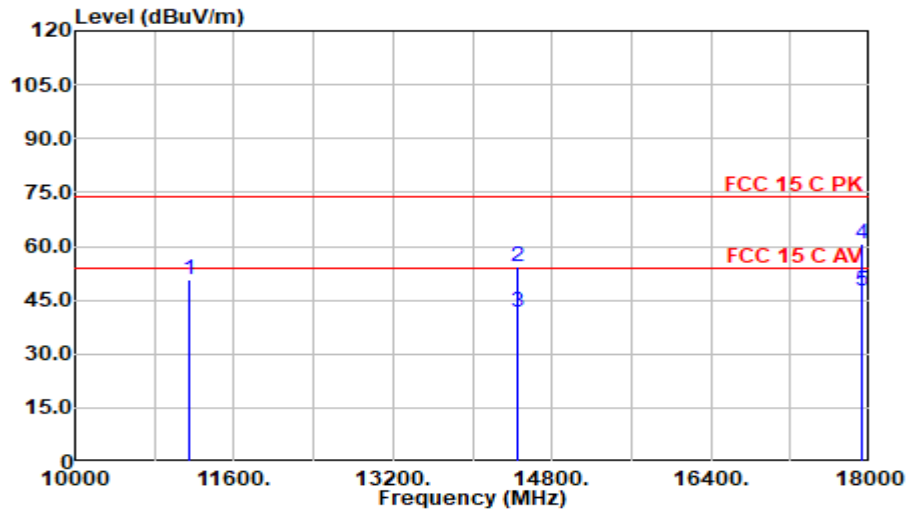
Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BR-DH5 CH2402MHz

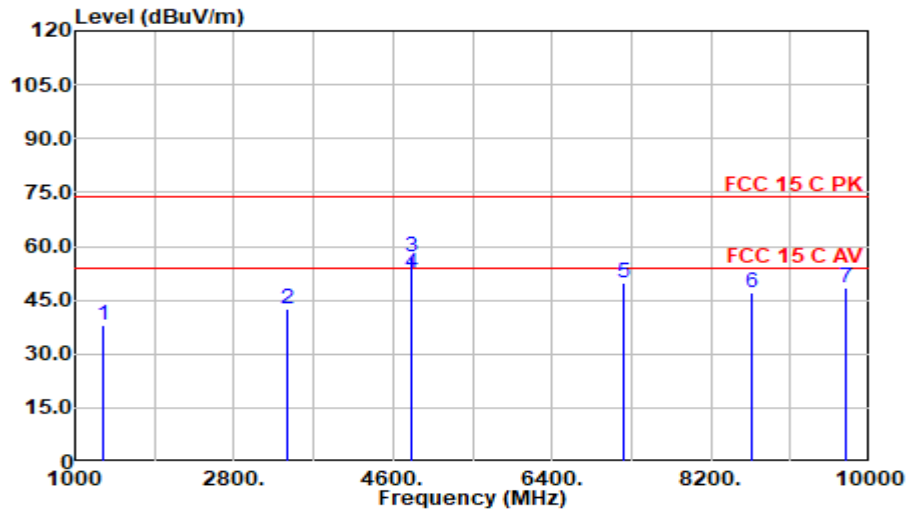


Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
1306.000	49.59	24.81	2.23	37.07	39.56	74.00	34.44	Peak
3318.375	43.64	30.54	3.46	35.65	42.00	74.00	32.00	Peak
4803.750	56.99	32.21	4.27	36.43	57.04	74.00	16.96	Peak
4803.750	53.75	32.21	4.27	36.43	53.80	54.00	0.20	Average
7205.000	47.32	35.52	5.34	36.99	51.20	74.00	22.80	Peak
8677.625	41.62	37.34	5.60	37.30	47.27	74.00	26.73	Peak
9506.375	42.36	37.40	5.97	37.14	48.59	74.00	25.41	Peak

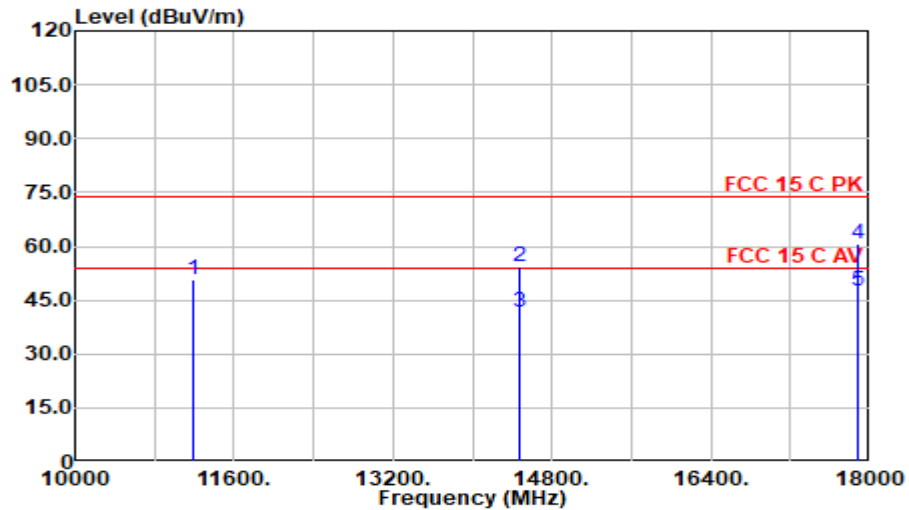
Mode: BR-DH5 CH2402MHz**Polarization at Horizontal**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11140.500	42.77	38.00	6.85	36.79	50.84	74.00	23.16	Peak
14459.750	42.01	41.72	7.65	37.07	54.32	74.00	19.68	Peak
14459.750	29.30	41.72	7.65	37.07	41.61	54.00	12.39	Average
17910.750	41.47	45.92	9.47	36.22	60.65	74.00	13.35	Peak
17910.750	28.55	45.92	9.47	36.22	47.73	54.00	6.27	Average

Mode: BR-DH5 CH2402MHz

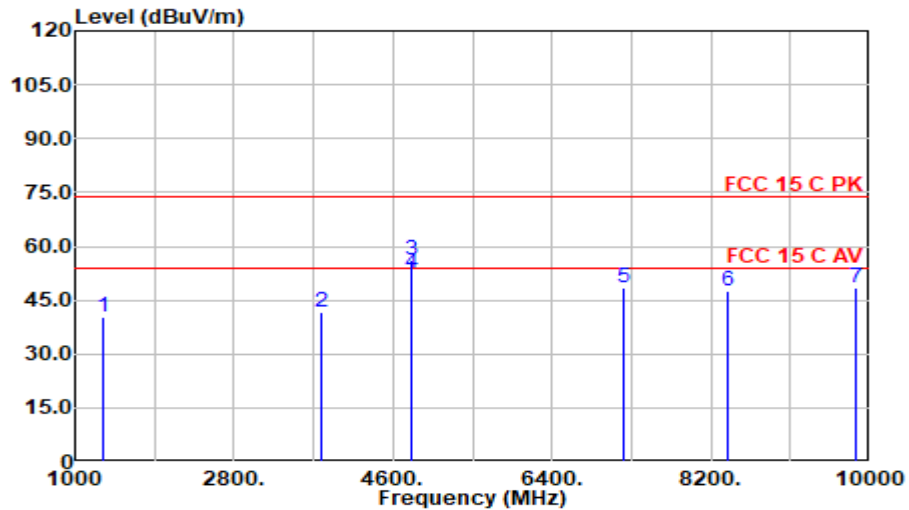
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
1308.125	48.03	24.82	2.23	37.07	38.01	74.00	35.99	Peak
3403.375	44.07	30.51	3.52	35.71	42.39	74.00	31.61	Peak
4803.750	56.85	32.21	4.27	36.43	56.89	74.00	17.11	Peak
4803.750	52.68	32.21	4.27	36.43	52.73	54.00	1.27	Average
7207.125	45.98	35.53	5.34	36.99	49.86	74.00	24.14	Peak
8652.125	41.37	37.40	5.59	37.30	47.06	74.00	26.94	Peak
9733.750	41.96	37.30	6.12	37.08	48.30	74.00	25.70	Peak

Mode: BR-DH5 CH2402MHz

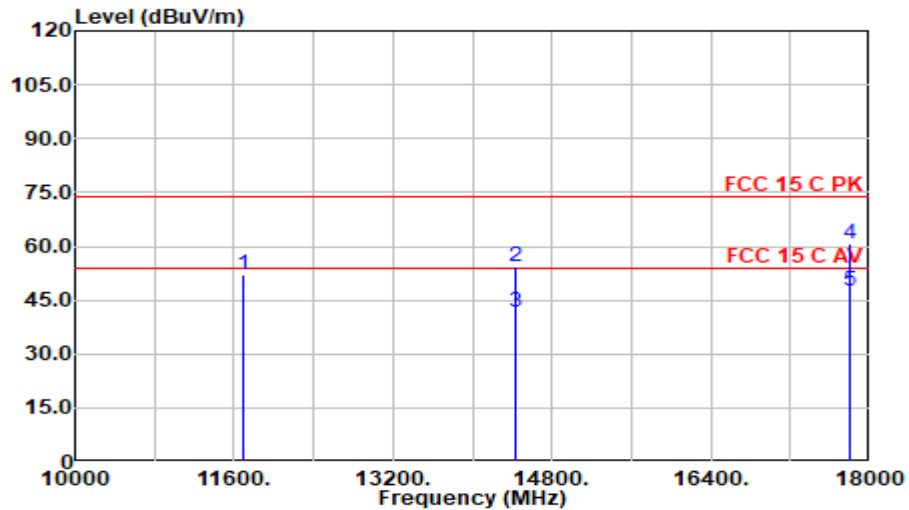
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11193.630	42.64	38.00	6.91	36.78	50.77	74.00	23.23	Peak
14476.750	42.10	41.75	7.65	37.06	54.44	74.00	19.56	Peak
14476.750	29.41	41.75	7.65	37.06	41.76	54.00	12.24	Average
17878.880	41.38	45.86	9.46	36.22	60.47	74.00	13.53	Peak
17878.880	28.64	45.86	9.46	36.22	47.73	54.00	6.27	Average

Mode: EDR-3DH5 CH2402MHz

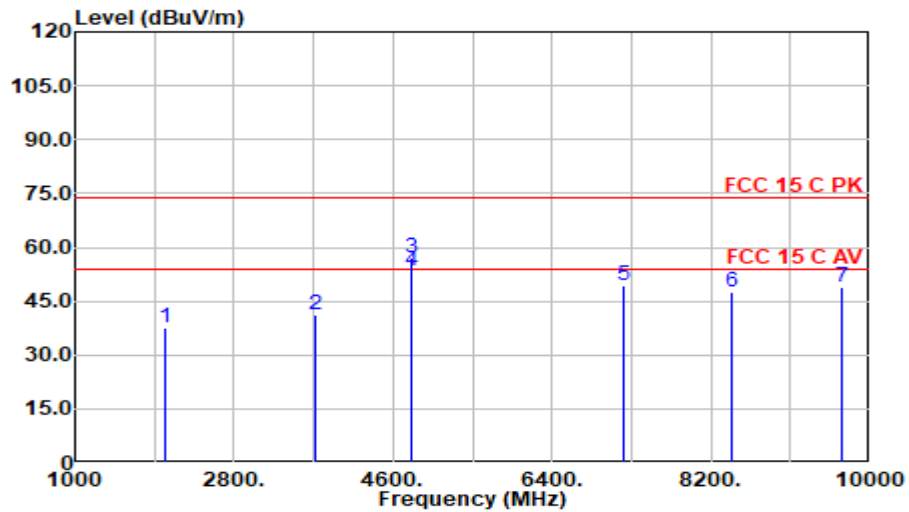
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
1308.125	50.46	24.82	2.23	37.07	40.44	74.00	33.56	Peak
3790.125	42.45	31.64	3.73	35.97	41.85	74.00	32.15	Peak
4803.750	56.16	32.21	4.27	36.43	56.21	74.00	17.79	Peak
4803.750	52.62	32.21	4.27	36.43	52.66	54.00	1.34	Average
7207.125	44.78	35.53	5.34	36.99	48.66	74.00	25.34	Peak
8382.250	41.92	37.36	5.53	37.30	47.51	74.00	26.49	Peak
9831.500	41.82	37.50	6.18	37.05	48.45	74.00	25.55	Peak

Mode: EDR-3DH5 CH2402MHz

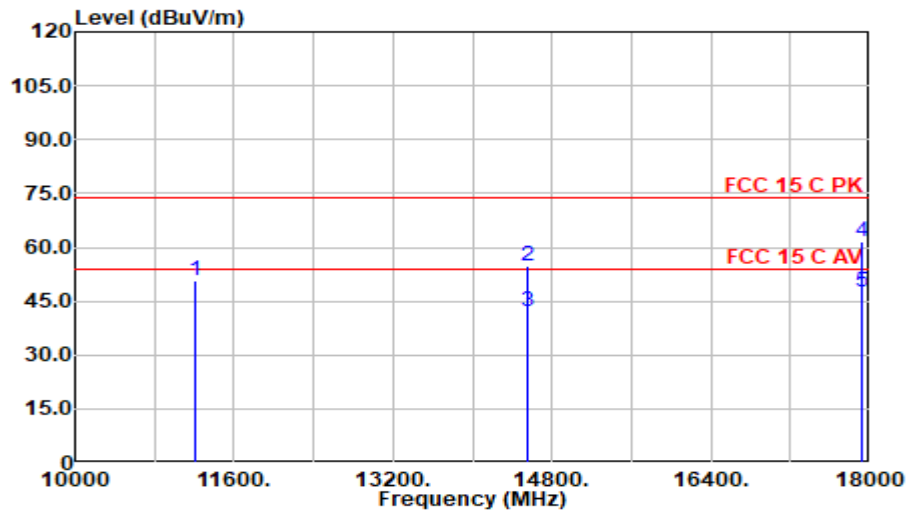
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11693.000	42.80	38.88	7.19	36.73	52.14	74.00	21.86	Peak
14436.380	42.22	41.67	7.65	37.08	54.47	74.00	19.53	Peak
14436.380	29.52	41.67	7.65	37.08	41.77	54.00	12.23	Average
17806.630	41.63	45.71	9.43	36.24	60.54	74.00	13.46	Peak
17806.630	28.66	45.71	9.43	36.24	47.57	54.00	6.43	Average

Mode: EDR-3DH5 CH2402MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2030.625	44.53	26.80	2.74	36.65	37.42	74.00	36.58	Peak
3722.125	42.16	31.23	3.70	35.92	41.16	74.00	32.84	Peak
4803.750	56.80	32.21	4.27	36.43	56.85	74.00	17.15	Peak
4803.750	53.58	32.21	4.27	36.43	53.63	54.00	0.37	Average
7205.000	45.31	35.52	5.34	36.99	49.18	74.00	24.82	Peak
8441.750	41.95	37.48	5.54	37.30	47.67	74.00	26.33	Peak
9676.375	42.79	37.35	6.08	37.09	49.13	74.00	24.87	Peak

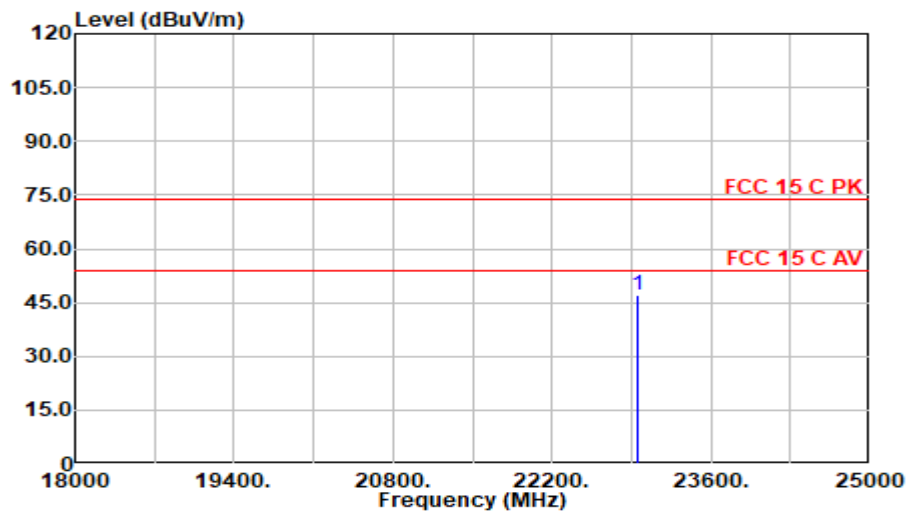
Mode: EDR-3DH5 CH2402MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11210.630	42.66	38.00	6.93	36.78	50.81	74.00	23.19	Peak
14561.750	42.27	41.86	7.67	37.01	54.79	74.00	19.21	Peak
14561.750	29.53	41.86	7.67	37.01	42.04	54.00	11.96	Average
17919.250	42.30	45.94	9.48	36.22	61.50	74.00	12.50	Peak
17919.250	28.53	45.94	9.48	36.22	47.73	54.00	6.27	Average

Radiated Emission > 18GHz

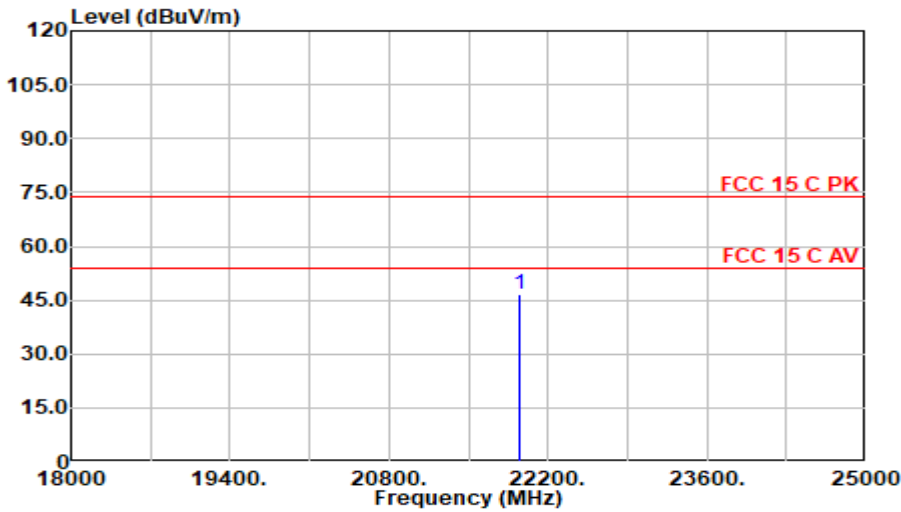
Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BR-DH5 CH2402MHz

Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
22954.000	47.26	45.02	8.43	53.81	46.90	74.00	27.10	Peak

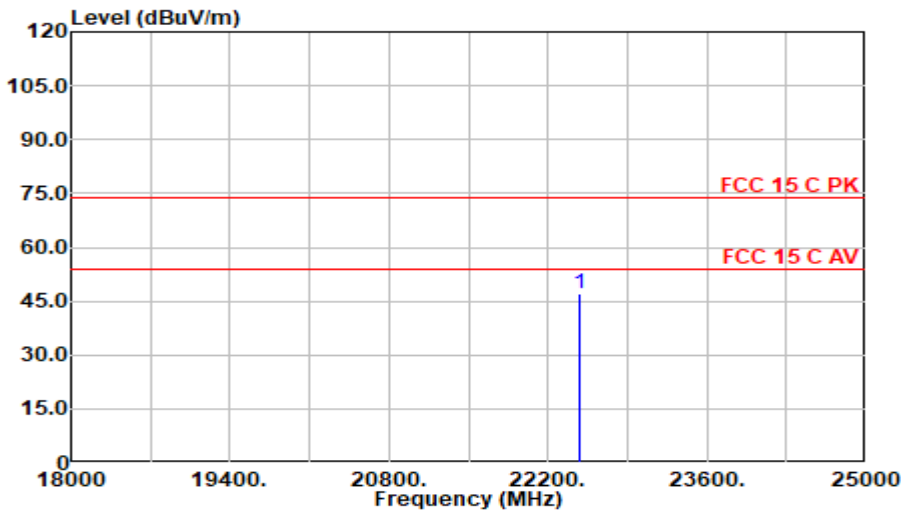
Mode: BR-DH5 CH2402MHz



Polarization at Vertical

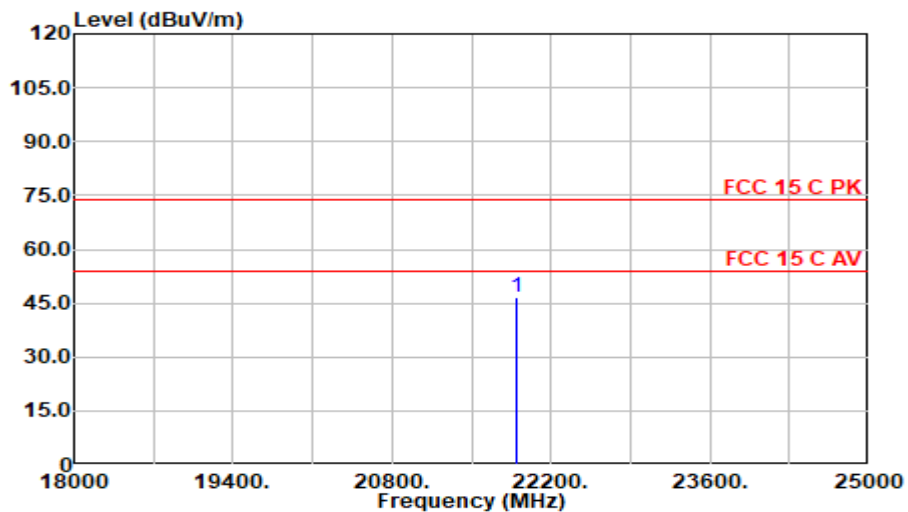
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
21945.000	47.31	44.98	8.31	54.00	46.60	74.00	27.40	Peak

Mode: EDR-3DH5 CH2402MHz



Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
22484.000	47.26	45.19	8.38	53.90	46.92	74.00	27.08	Peak

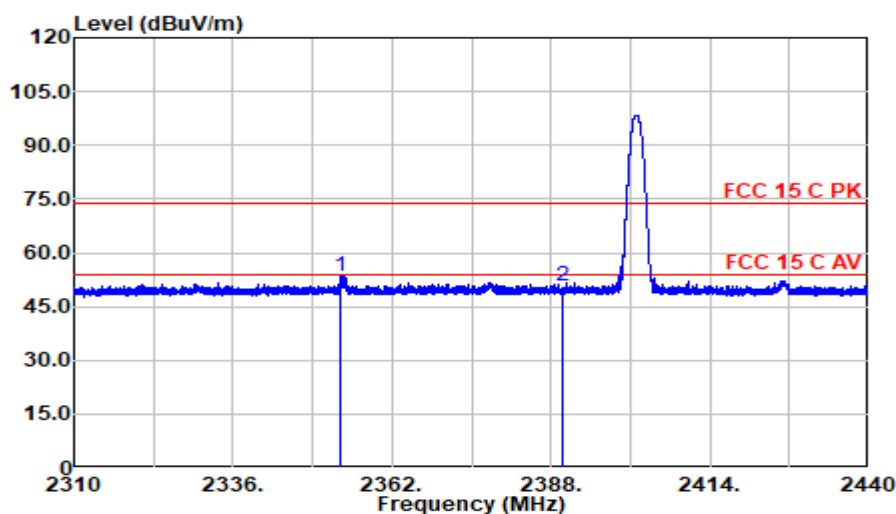
Mode: EDR-3DH5 CH2402MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
21904.000	47.16	44.96	8.30	54.00	46.42	74.00	27.58	Peak

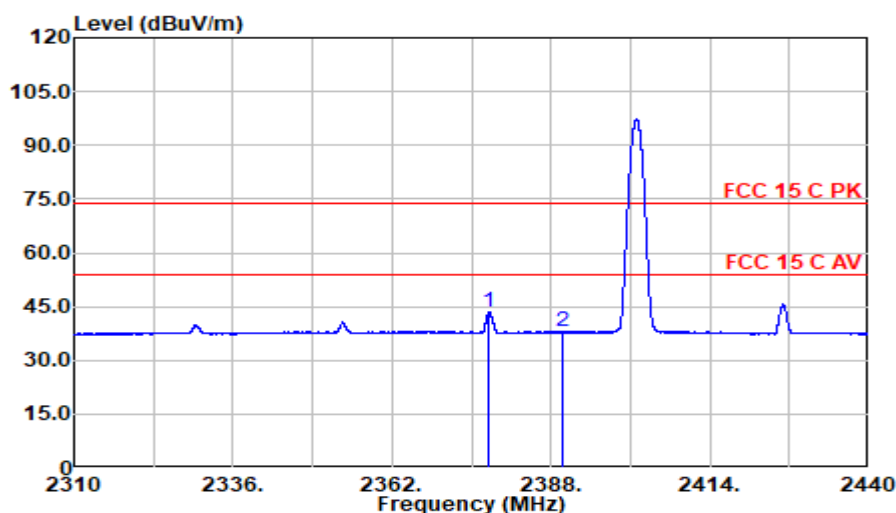
Band-Edge and Restricted bands:

Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: DH5 CH2402MHz

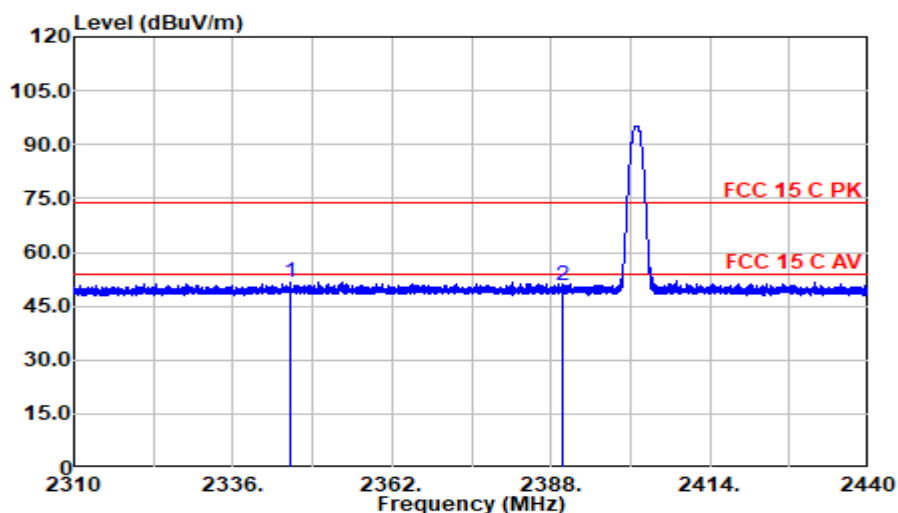
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2353.712	59.07	27.80	2.92	36.18	53.61	74.00	20.39	Peak
2390.000	56.13	27.80	2.94	36.13	50.74	74.00	23.26	Peak

Mode: DH5 CH2402MHz

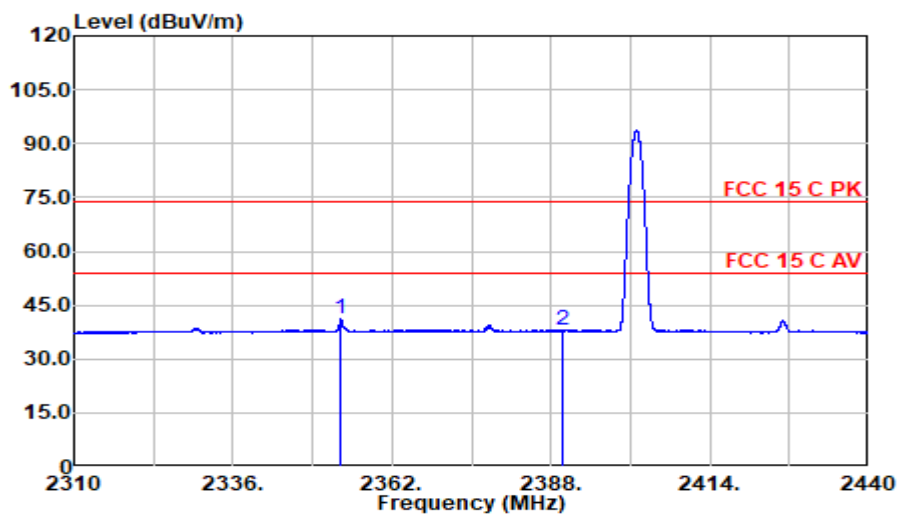
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2377.925	49.09	27.80	2.93	36.15	43.67	54.00	10.33	Average
2390.000	43.25	27.80	2.94	36.13	37.85	54.00	16.15	Average

Mode: DH5 CH2402MHz

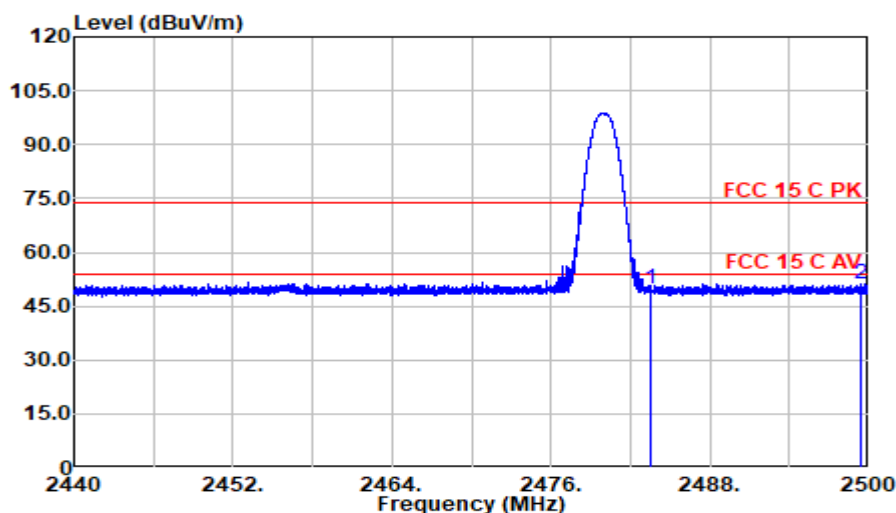
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2345.409	57.05	27.76	2.91	36.19	51.54	74.00	22.46	Peak
2390.000	56.15	27.80	2.94	36.13	50.75	74.00	23.25	Peak

Mode: DH5 CH2402MHz

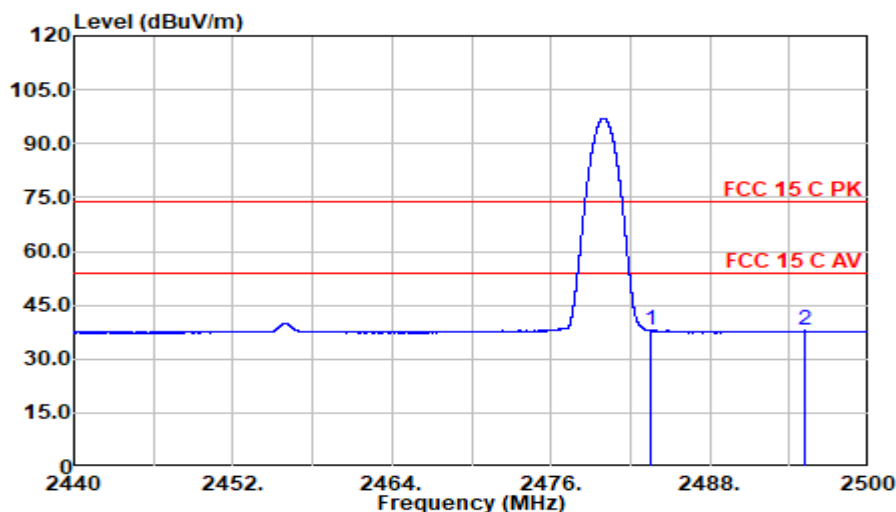
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2353.664	46.67	27.80	2.92	36.18	41.21	54.00	12.79	Average
2390.000	43.28	27.80	2.94	36.13	37.88	54.00	16.12	Average

Mode: DH5 CH2480MHz

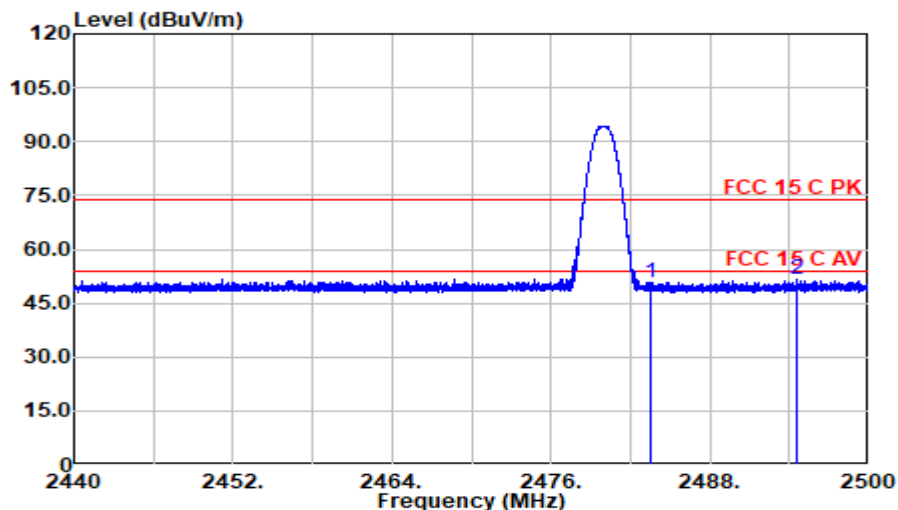
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	55.37	27.50	2.98	36.01	49.85	74.00	24.15	Peak
2499.460	56.53	27.50	2.99	35.99	51.03	74.00	22.97	Peak

Mode: DH5 CH2480MHz

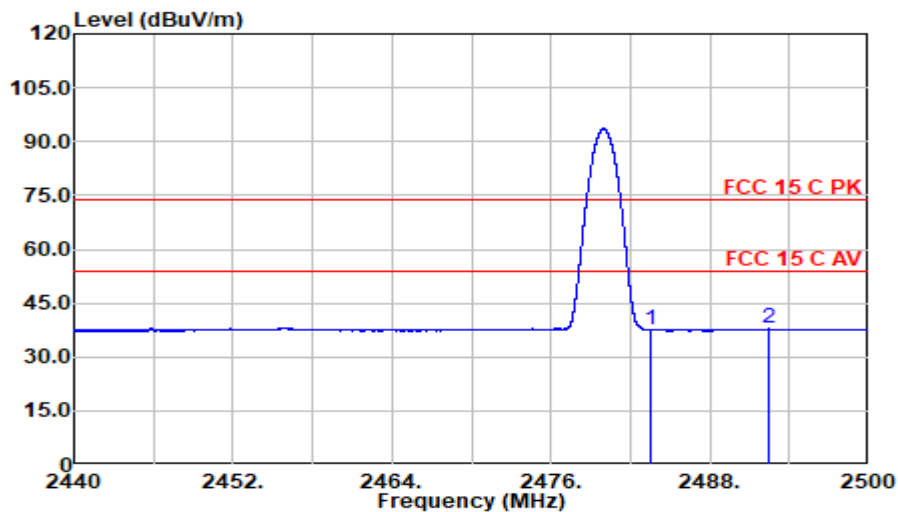
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	43.51	27.50	2.98	36.01	37.98	54.00	16.02	Average
2495.185	43.31	27.50	2.99	35.99	37.81	54.00	16.19	Average

Mode: DH5 CH2480MHz

Polarization at Vertical

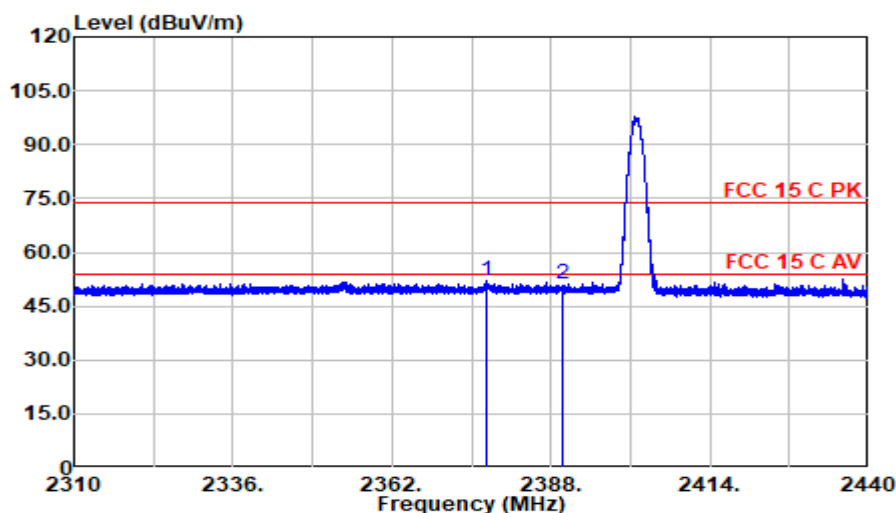
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	56.04	27.50	2.98	36.01	50.52	74.00	23.48	Peak
2494.548	56.92	27.50	2.99	35.99	51.41	74.00	22.59	Peak

Mode: DH5 CH2480MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	42.97	27.50	2.98	36.01	37.45	54.00	16.55	Average
2492.440	43.33	27.50	2.99	35.99	37.82	54.00	16.18	Average

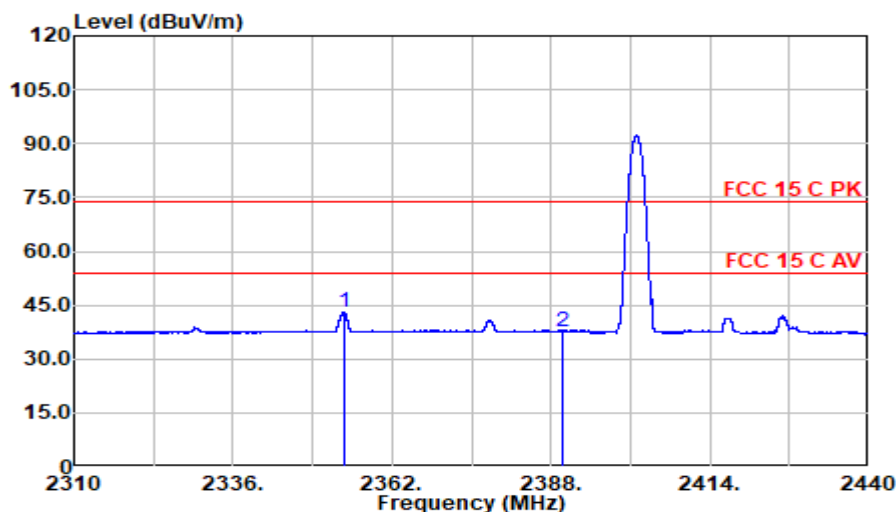
Mode: BR-3DH5 CH2402MHz



Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2377.405	57.43	27.80	2.93	36.15	52.01	74.00	21.99	Peak
2390.000	56.37	27.80	2.94	36.13	50.98	74.00	23.02	Peak

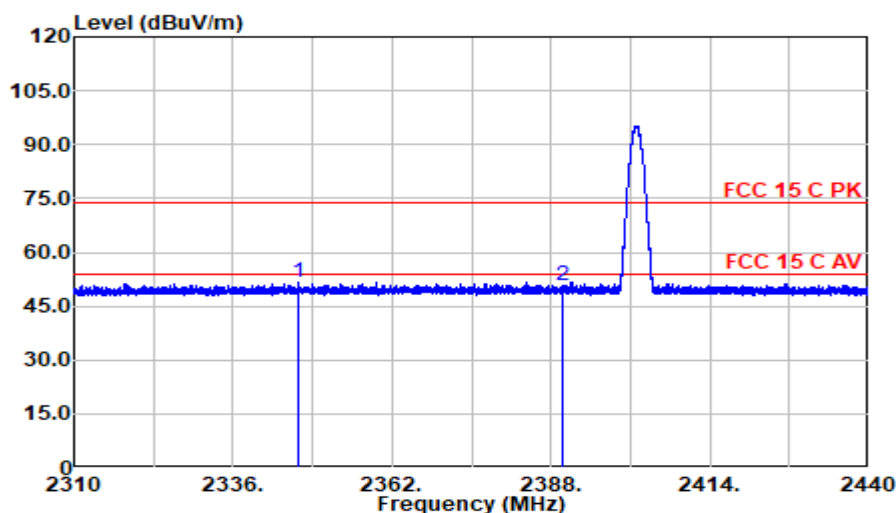
Mode: BR-3DH5 CH2402MHz



Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2354.119	48.61	27.80	2.92	36.18	43.15	54.00	10.85	Average
2390.000	43.17	27.80	2.94	36.13	37.78	54.00	16.22	Average

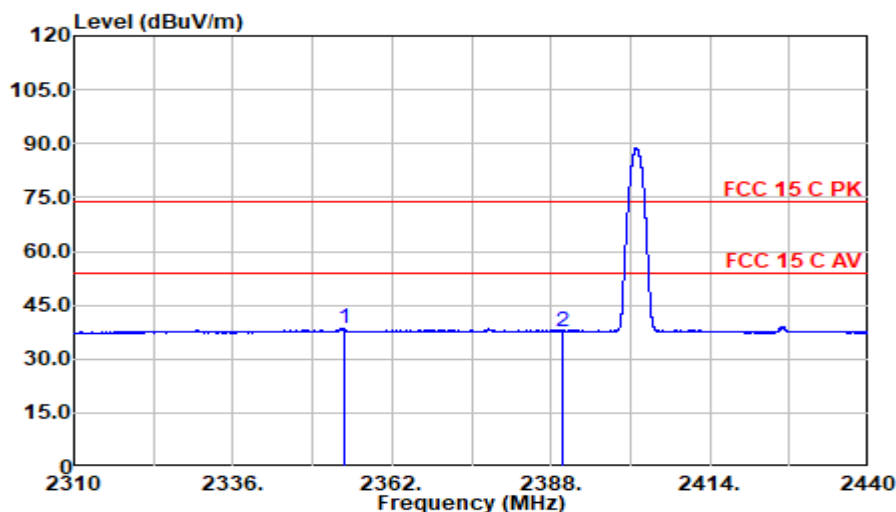
Mode: BR-3DH5 CH2402MHz



Polarization at Vertical

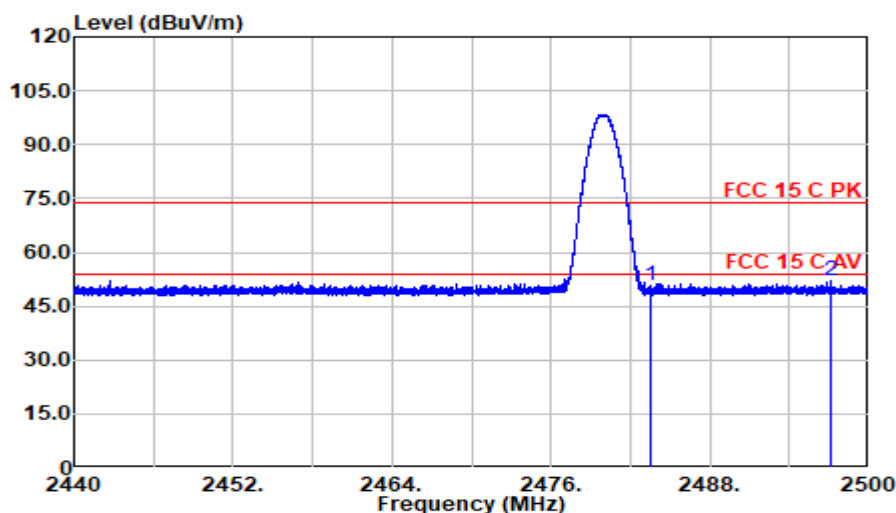
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2346.741	57.11	27.77	2.91	36.19	51.61	74.00	22.39	Peak
2390.000	56.01	27.80	2.94	36.13	50.62	74.00	23.38	Peak

Mode: BR-3DH5 CH2402MHz



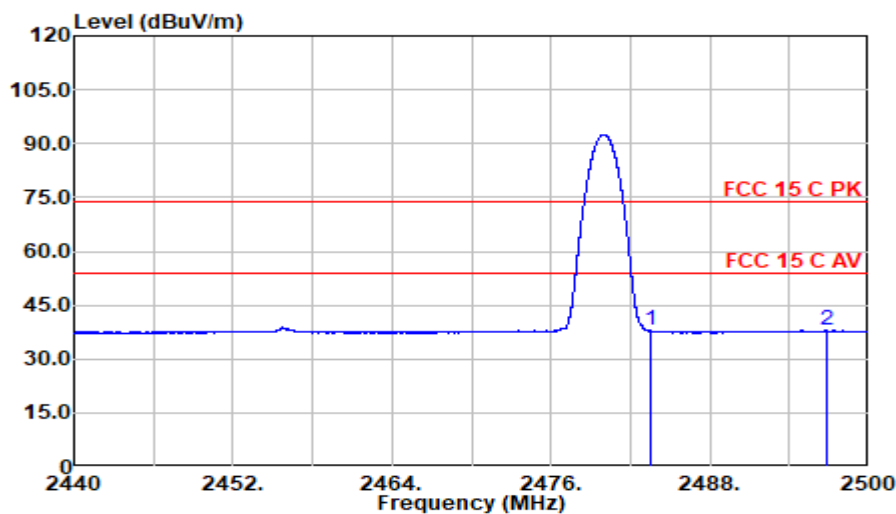
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2354.167	44.11	27.80	2.92	36.18	38.65	54.00	15.35	Average
2390.000	43.13	27.80	2.94	36.13	37.74	54.00	16.26	Average

Mode: BR-3DH5 CH2480MHz

Polarization at Horizontal

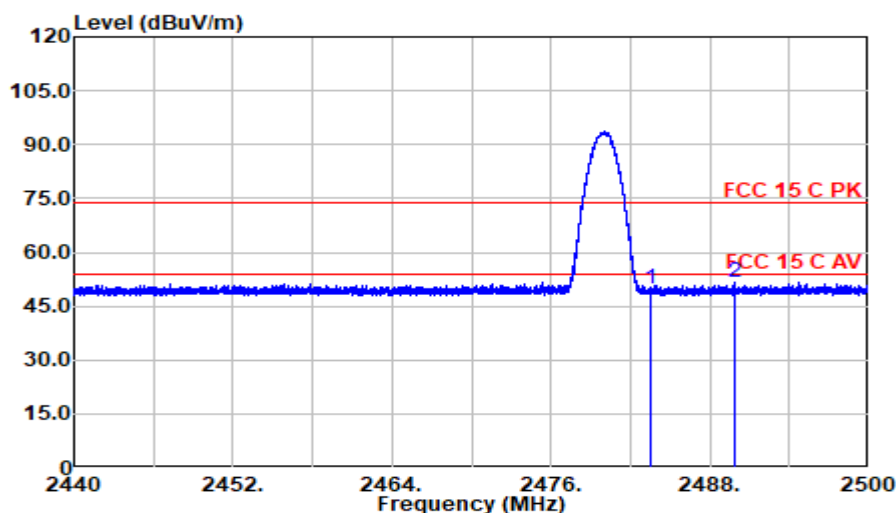
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	56.08	27.50	2.98	36.01	50.56	74.00	23.44	Peak
2497.090	57.46	27.50	2.99	35.99	51.96	74.00	22.04	Peak

Mode: BR-3DH5 CH2480MHz

Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	43.47	27.50	2.98	36.01	37.94	54.00	16.06	Average
2496.805	43.50	27.50	2.99	35.99	38.00	54.00	16.00	Average

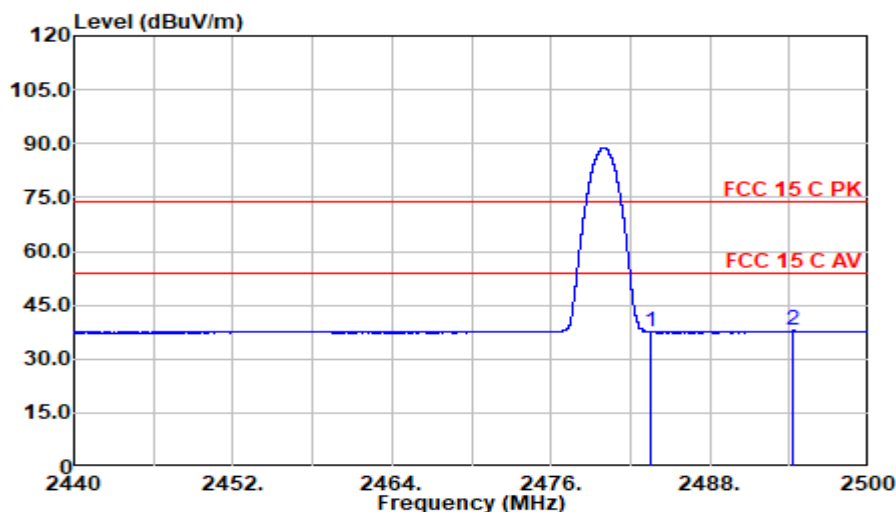
Mode: BR-3DH5 CH2480MHz



Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	55.47	27.50	2.98	36.01	49.94	74.00	24.06	Peak
2489.927	57.09	27.50	2.99	36.00	51.58	74.00	22.42	Peak

Mode: BR-3DH5 CH2480MHz



Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	42.94	27.50	2.98	36.01	37.42	54.00	16.58	Average
2494.300	43.41	27.50	2.99	35.99	37.91	54.00	16.09	Average

5 20DB BANDWIDTH MEASUREMENT

5.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2025.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2025.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	001	2026.02.24	1 Year

5.2 Block Diagram of Test Setup



5.3 Specification Limits (§15.247(a)(1))

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.

5.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

5.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of 20 dB bandwidth was measure by spectrum analyzer with settings: Span = between 2.0 times and 5.0 times of the OBW, RBW = 1% to 5% of the OBW, VBW $\geq 3 \times$ RBW, Detector = Peak, Trace = Max Hold.

Use the “x dB” bandwidth function of the instrument, set it as “-20 dB” to measure and report the 20dB bandwidth.

The test procedure is defined in ANSI C63.10:2020 (the 6.9.2 Measurement Procedure “ Occupied bandwidth—relative measurement procedure” was used).

5.6 Test Results

PASSED.

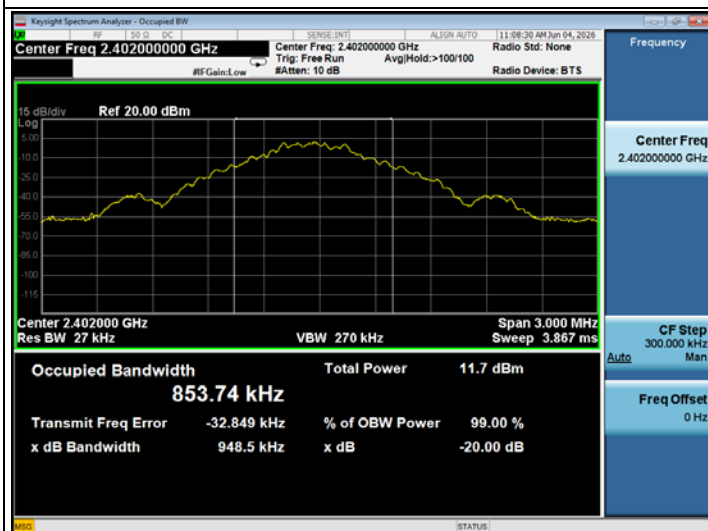
All the test results are attached in next pages.

(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

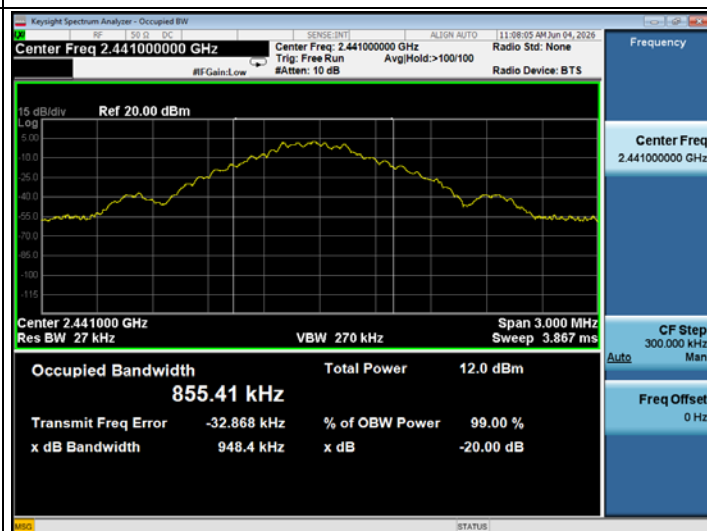
Mode	Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	2/3 20 dB Bandwidth (kHz)
BR-DH5	00	2402	948.5	632.3
	39	2441	948.4	632.3
	78	2480	948.3	632.2
EDR-3DH5	00	2402	1241	827.3
	39	2441	1240	826.7
	78	2480	1238	825.3

DH5

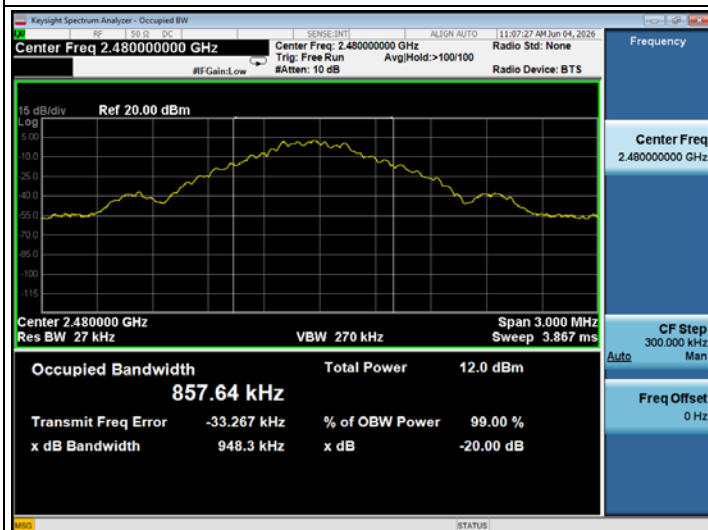
CH2402



CH2441

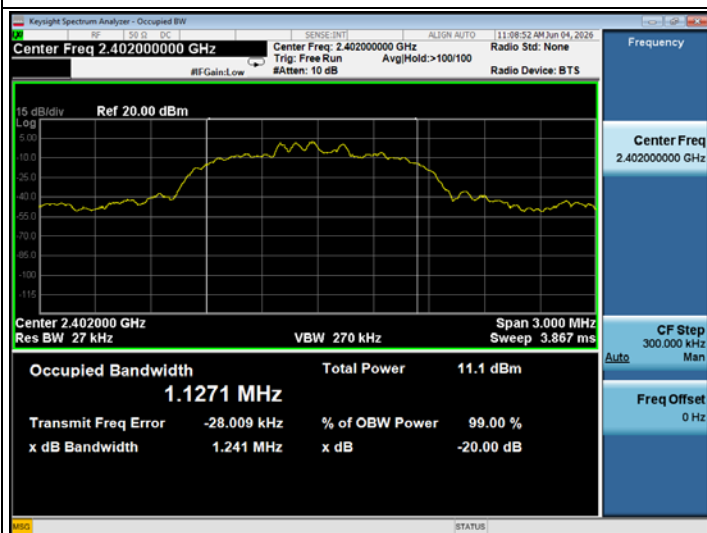


CH2480

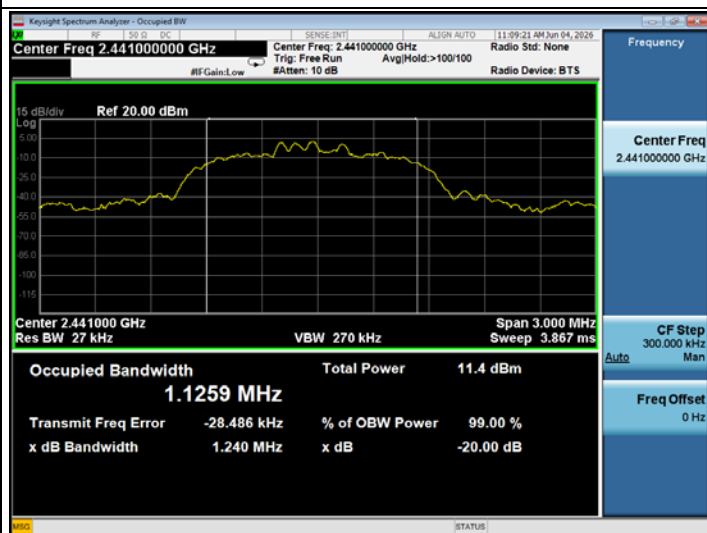


3DH5

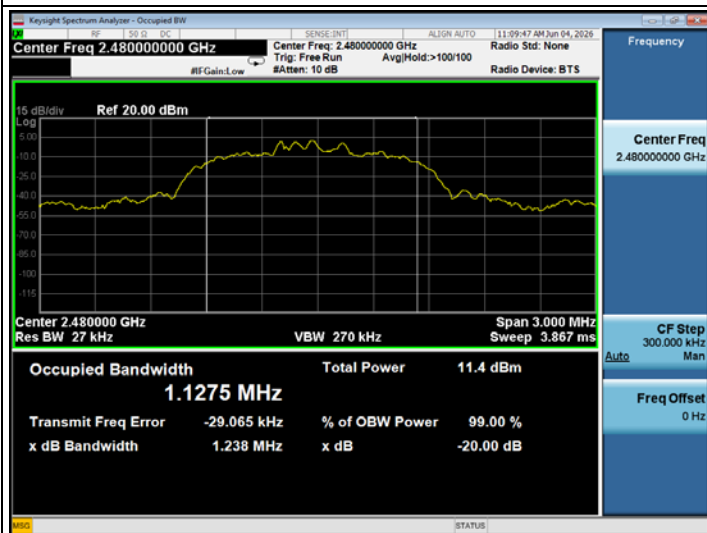
CH2402



CH2441



CH2480



6 CARRIER FREQUENCY SEPARATION

MEASUREMENT

6.1 Test Equipment

The Same as Section. 5.1

6.2 Block Diagram of Test Setup

The Same as Section. 5.2

6.3 Specification Limits (§15.247(a)(1))

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.

6.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to have its hopping function enabled.

6.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span = wide enough to capture the peaks of two adjacent channels
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) VBW $\geq$ RBW
- d) Sweep = auto
- e) Detector function = peak
- f) Trace = max hold
- g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

The test procedure is defined in ANSI C63.10:2020 (the 7.8.2 Measurement Procedure “Carrier frequency separation” was used).

6.6 Test Results

PASSED.

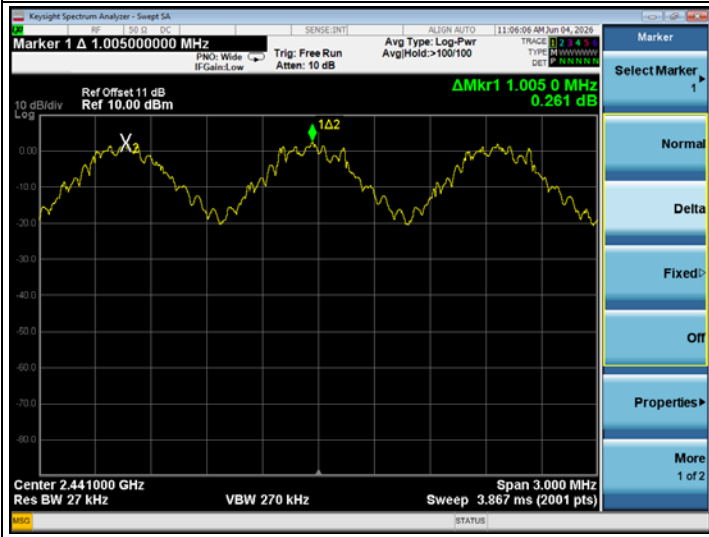
All the test results are attached in next pages.

(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

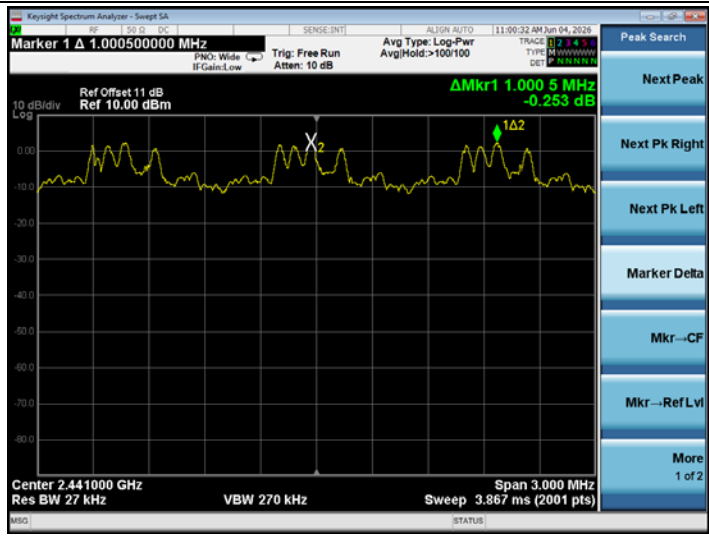
Mode	Channel	Separation (kHz)	Limit (kHz)
BR-DH5	Hopping	1000.5	>632.3
EDR-3DH5	Hopping	1005	>827.3

Note: As The EUT output power less than 0.125W(24dBm), the 2/3 20dB bandwidth was provided as the limit of this measurement.

DH5-Hopping



3DH5-Hopping



7 NUMBER OF HOPPING FREQUENCIES

MEASUREMENT

7.1 Test Equipment

The Same as Section. 5.1

7.2 Block Diagram of Test Setup

The Same as Section. 5.2

7.3 Specification Limits (§15.247(a)(1)(iii))

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

7.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to have its hopping function enabled.

7.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span = the frequency band of operation.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW $\geq$ RBW
- d) Sweep = auto
- e) Detector function = peak
- f) Trace = max hold
- g) Allow the trace to stabilize. It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies.

The test procedure is defined in ANSI C63.10:2020 (the 7.8.3 Measurement Procedure “Number of Hopping Frequencies” was used).

7.6 Test Results

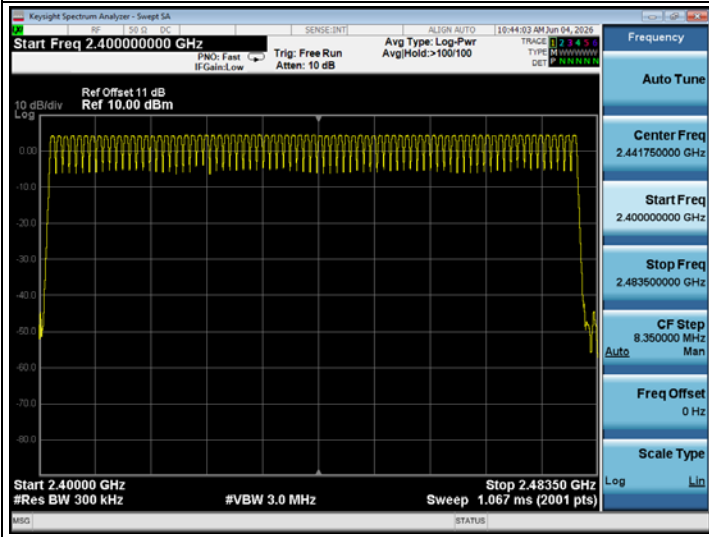
PASSED.

All the test results are attached in next pages.

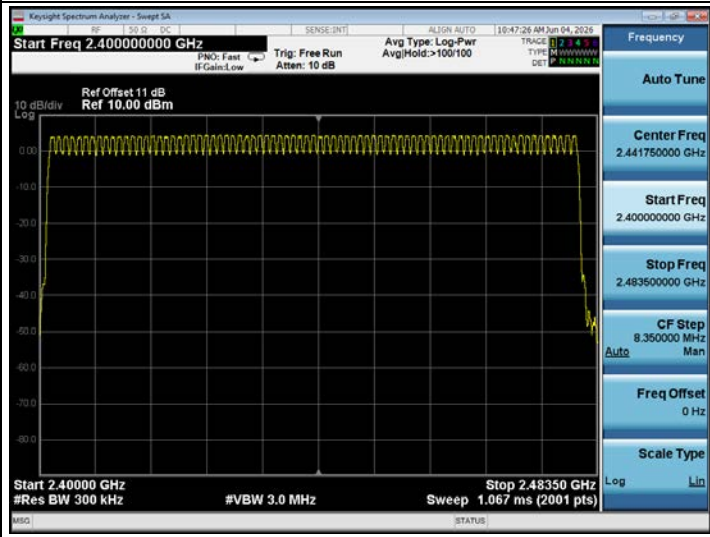
(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Number of Hopping Frequencies
BR-DH5	Hopping	79
EDR-3DH5	Hopping	79

DH5-Hopping



3DH5-Hopping



8 DWELL TIME MEASUREMENT

8.1 Test Equipment

The Same as Section. 5.1

8.2 Block Diagram of Test Setup

The Same as Section. 5.2

8.3 Specification Limits (§15.247(a)(1)(iii))

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.

8.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to have its hopping function enabled.

8.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span = zero span, centered on a hopping channel.
- b) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1 / T$, where T is the expected dwell time per channel.
- c) Sweep: As necessary to capture the entire dwell time per hopping channel.
- d) Detector function: Peak.
- e) Trace: Max hold.

Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements.

Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

$$\begin{aligned} & (\text{Number of hops in the period specified in the requirements}) = \\ & (\text{number of hops on spectrum analyzer}) \times (\text{period specified in the requirements} \\ & / \text{ analyzer sweep time}) \end{aligned}$$

The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements. If the number of hops in a specific time varies with different modes of operation

(data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation.

The test procedure is defined in ANSI C63.10:2020 (the 7.8.4 Measurement Procedure “Time of occupancy (dwell time)” was used).

The Dwell time is calculated from the average time of occupancy multiplied by the number of hopping channel employed.

8.6 Test Results

PASSED.

All the test results are attached in next pages.

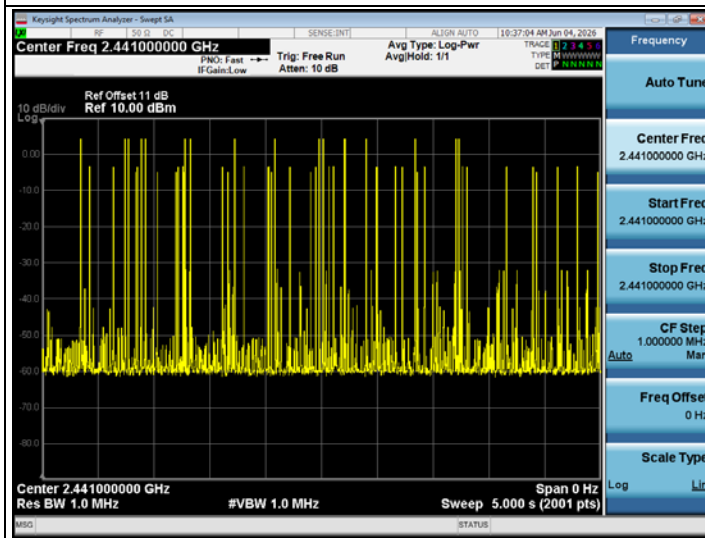
(Test Date: 2024.06.04 Temperature: 23°C Humidity: 51 %)

Mode	Number of Hops on SA	SA Sweep time (s)	Period specified in the requirements (s)	Number of Hops in period specified in the requirements
BR-DH5	16	5	0.4	1.28
EDR-3DH5	13	5	0.4	1.04

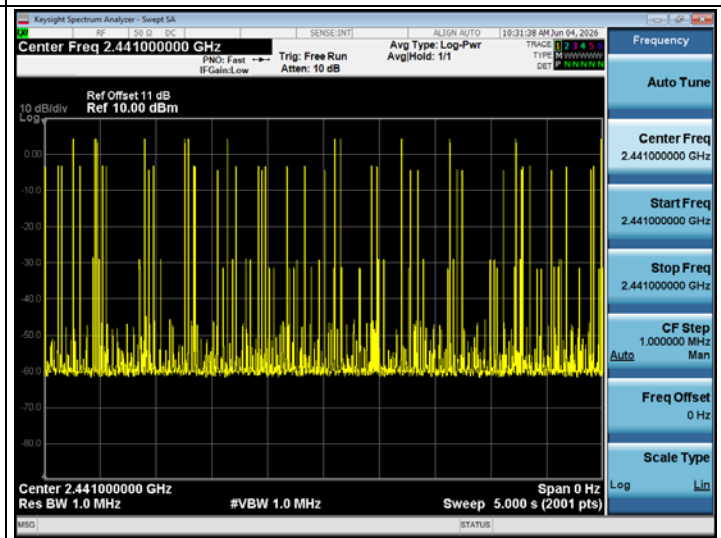
Mode	Number of Hops in period specified in the requirements	Transmit time per hop (ms)	Number of hopping channels employed	Dwell Time (ms)	Limit (ms)
BR-DH5	1.28	2.91	79	294.3	<400
EDR-3DH5	1.04	2.84	79	233.3	<400

Number of Hops on SA

DH5-Hopping

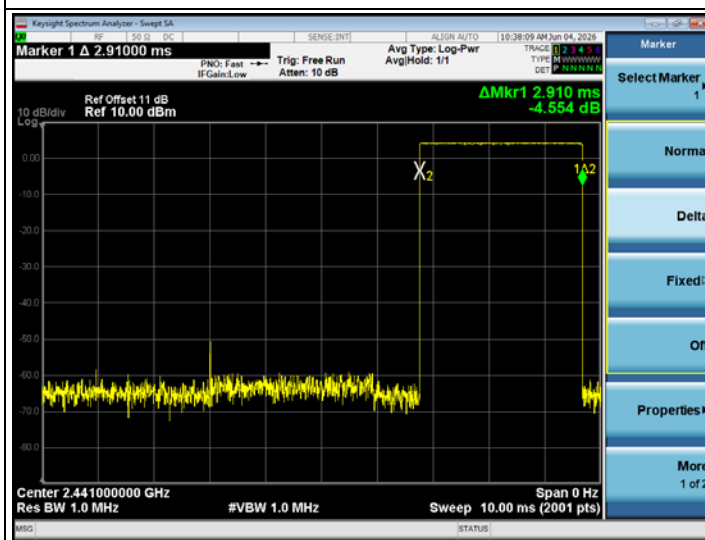


3DH5-Hopping

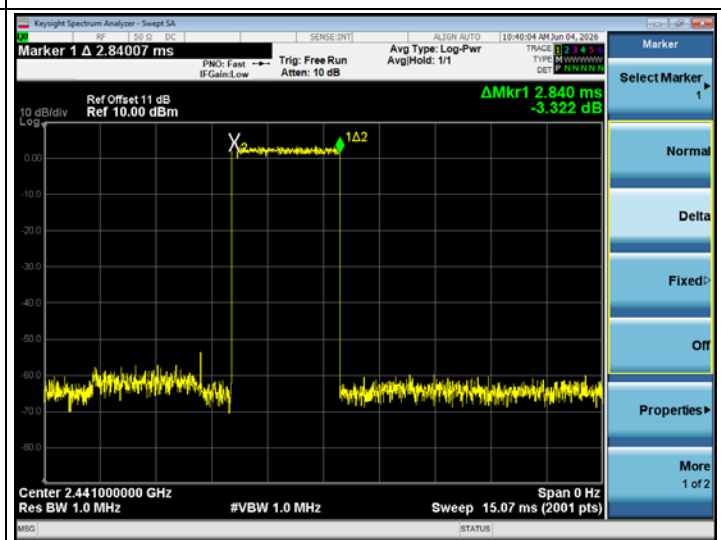


Transmit time per hop

DH5-Hopping



3DH5-Hopping



9 TRANSMITTER OUTPUT POWER

9.1 Test Equipment

The Same as section 5.1.

9.2 Block Diagram of Test Setup

The Same as section 5.2.

9.3 Specification Limits (§15.247(b)(1))

For 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.

9.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

9.5 Test Procedure

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:

a) Use the following spectrum analyzer settings:

- 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- 2) RBW > 20 dB bandwidth of the emission being measured.
- 3) VBW $\geq$ RBW.
- 4) Sweep: Auto.
- 5) Detector function: Peak.
- 6) Trace: Max hold.

b) Allow trace to stabilize.

c) Use the marker-to-peak function to set the marker to the peak of the emission.

d) The indicated level is the peak output power, after any corrections for external attenuators and cables.

The test procedure is defined in ANSI C63.10:2020 (7.8.5 Measurement Procedure “ Output power test procedure for frequency-hopping spread-spectrum (FHSS) devices” was used).

9.6 Test Results

PASSED.

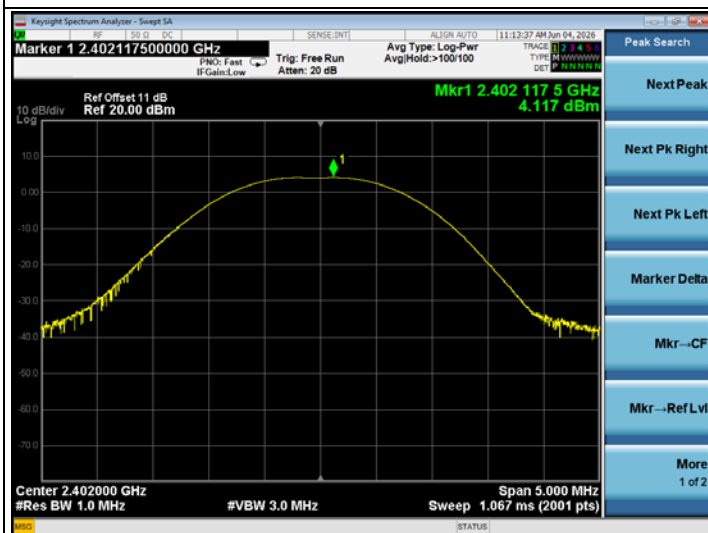
All the test results are listed below.

(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

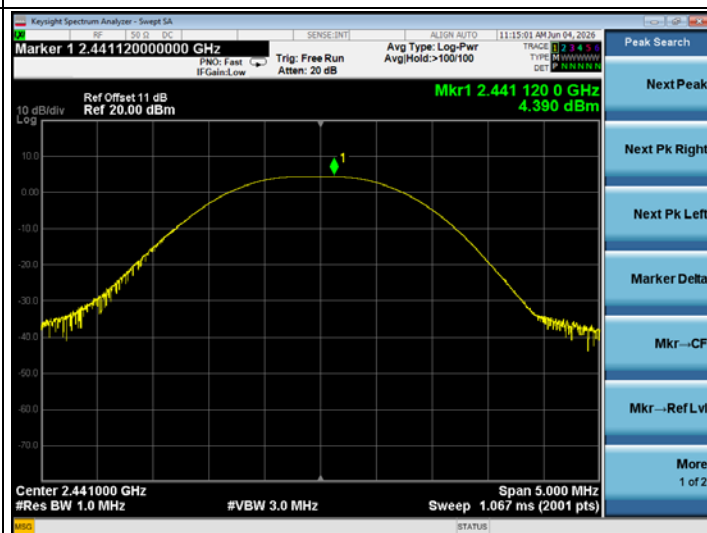
Mode	Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Limit (dBm)
BR-DH5	00	2402	4.117	30
	39	2441	4.39	30
	78	2480	4.353	30
EDR-3DH5	00	2402	4.147	30
	39	2441	4.446	30
	78	2480	4.39	30

DH5

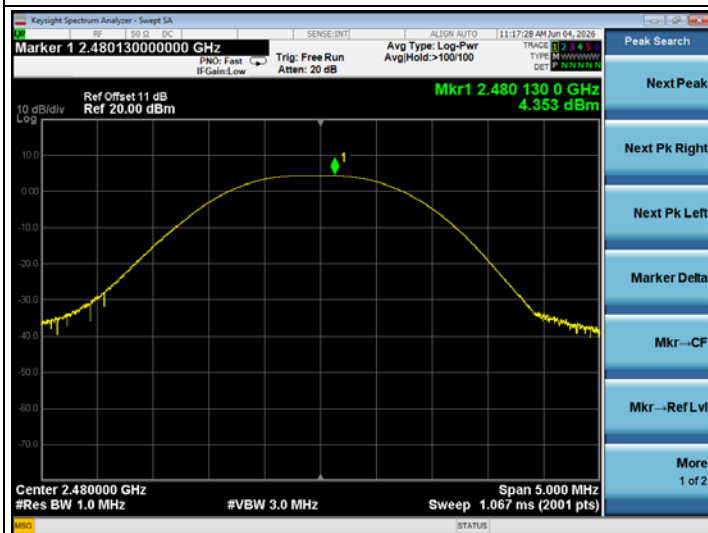
CH2402



CH2441

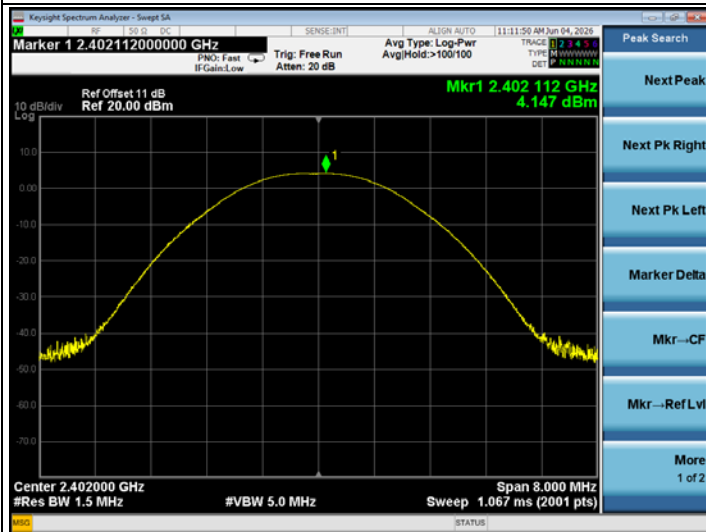


CH2480

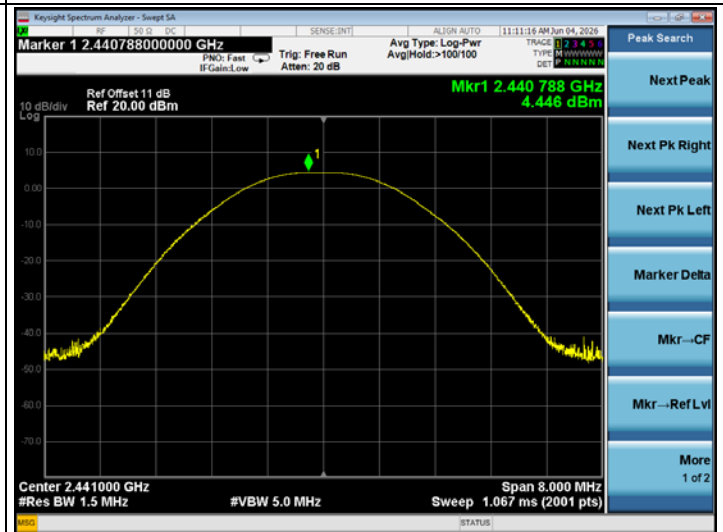


3DH5

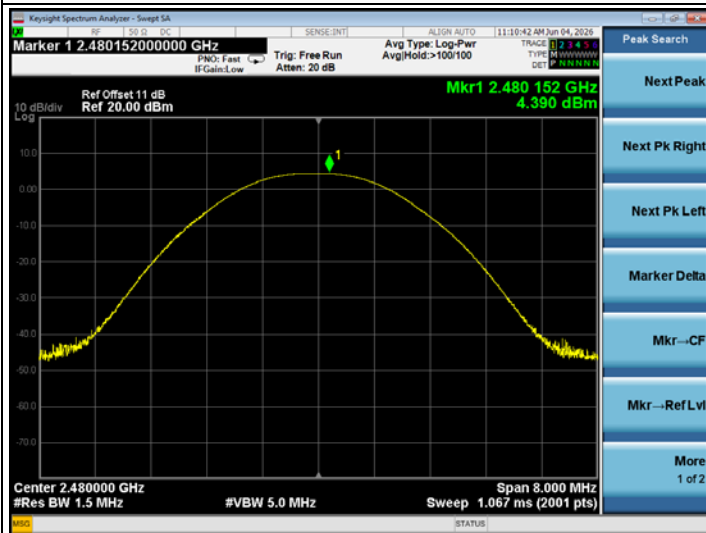
CH2402



CH2441



CH2480



10 BAND EDGE MEASUREMENT

10.1 Test Equipment

The Same as Section. 5.1

10.2 Block Diagram of Test Setup

The Same as Section. 5.2

10.3 Specification Limits (§15.247(d))

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

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). (※ This test result attaching to §4.7).

10.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one and have its hopping function enabled.

10.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

- a) Set the EUT to the lowest frequency channel (for the hopping on test, the hopping sequence shall include the lowest frequency channel).
- b) Set the EUT to operate at maximum output power and 100% duty cycle, or equivalent “normal mode of operation” as specified in 6.10.3 of ANSI C63.10.
- c) Perform the test as follows:
 - 1) Span: wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation.
 - 2) Attenuation: Auto
 - 3) Sweep time: Coupled.
 - 4) Resolution bandwidth: 100kHz.
 - 5) Video bandwidth: 300kHz.
 - 6) Detector: peak
 - 7) Trace: max hold.
- d) Allow the trace to stabilize. For the test with the hopping function turned ON, this can take several minutes to achieve a reasonable probability of intercepting any emissions due to oscillator overshoot.
- e) Set the marker on the emission at the band edge, or on the highest

modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.

f) Repeat step b) through step e) for every applicable modulation.

k) Set the EUT to the highest frequency channel (for the hopping on test, the hopping sequence shall include the highest frequency channel and repeat step b) through step f).

Band-edge measurements shall be tested both on single channels, and with the EUT hopping.

The test procedure is defined in ANSI C63.10:2020 (7.8.6 “ Band-edge measurements for RF conducted emissions”, 6.10.4 Measurement Procedure “ Authorized-band band-edge measurements (relative method)” was used).

10.6 Test Results

PASSED.

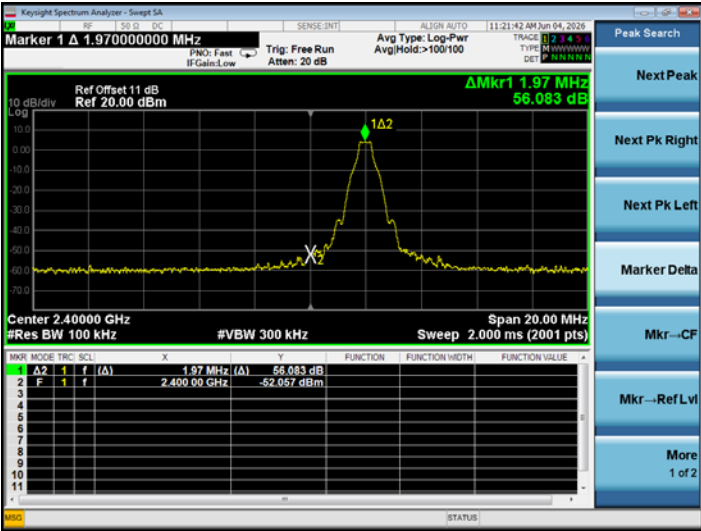
All the test results are attached in next pages.

(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

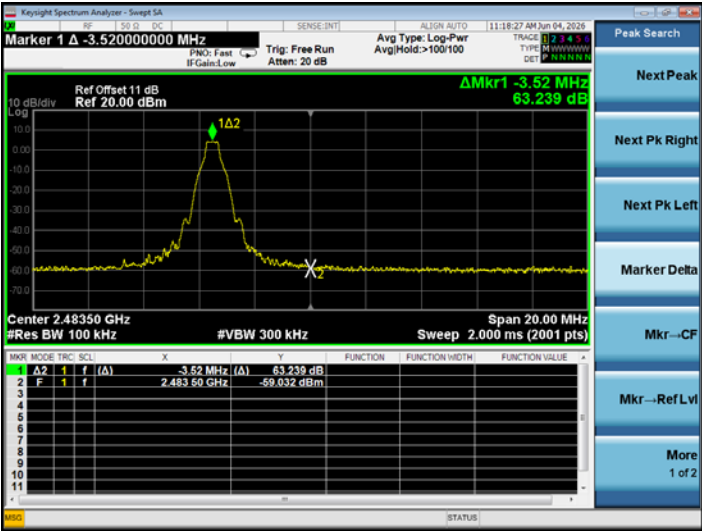
Mode	Location	Channel	Frequency (MHz)	Delta Marker (dB)	Limit (dB)
BR-DH5	Lower Edge	00	2402	56.083	>20
	Upper Edge	78	2480	63.239	>20
EDR-3DH5	Lower Edge	00	2402	57.263	>20
	Upper Edge	78	2480	61.779	>20
BR-DH5 Hopping	Lower Edge	Hopping	--	58.438	>20
	Upper Edge	Hopping	--	62.695	>20
BR-3DH5 Hopping	Lower Edge	Hopping	--	58.219	>20
	Upper Edge	Hopping	--	60.458	>20

DH5

CH2402

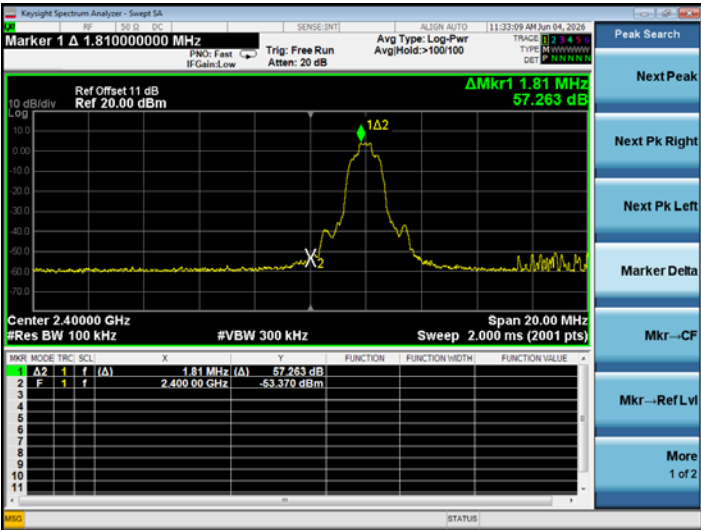


CH2480

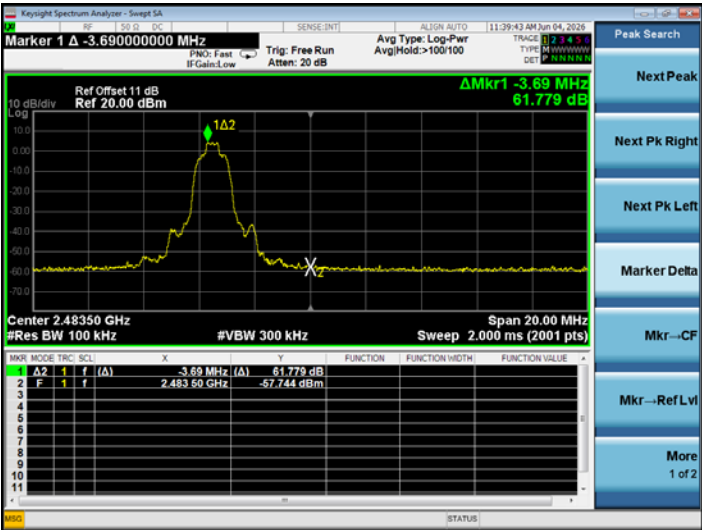


3DH5

CH2402

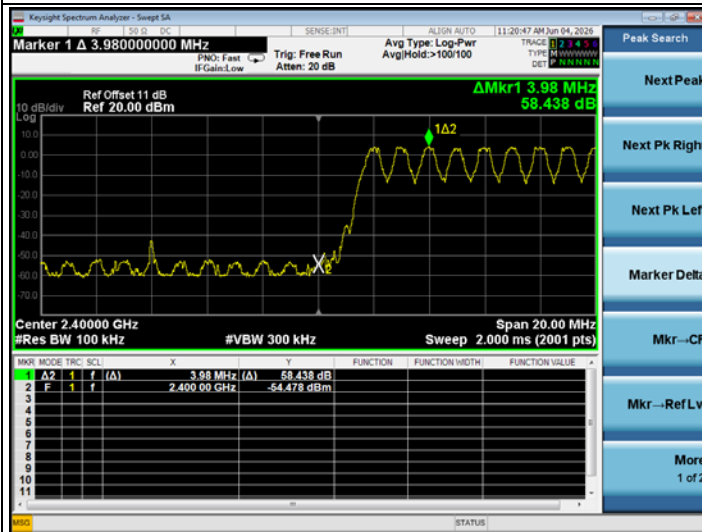


CH2480

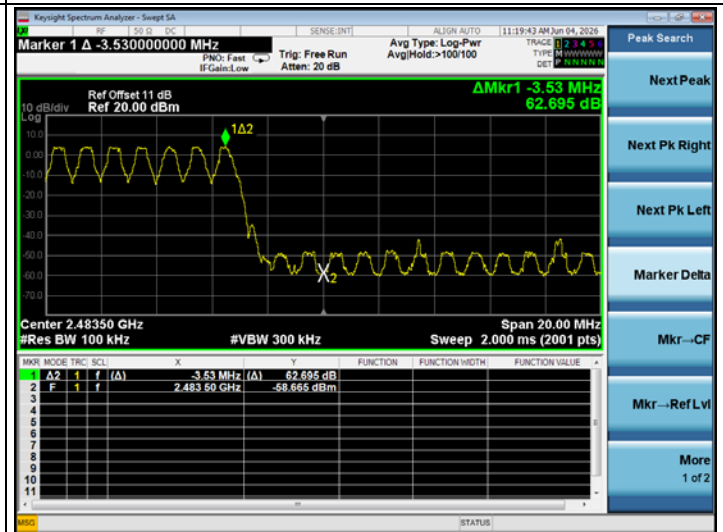


DH5

Hopping

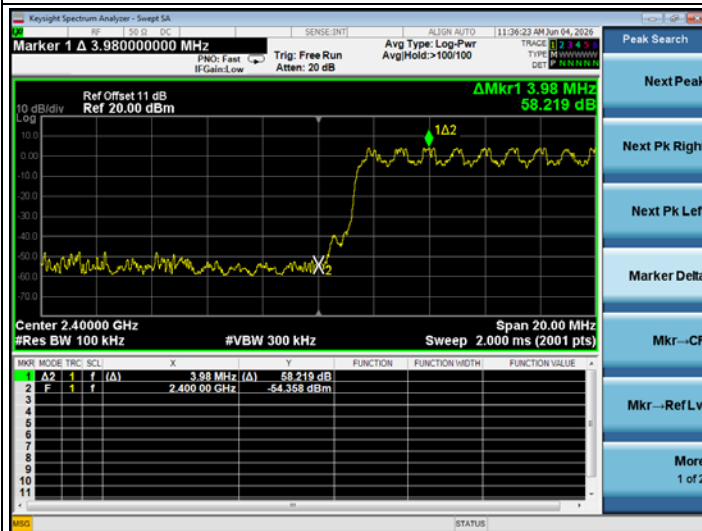


Hopping

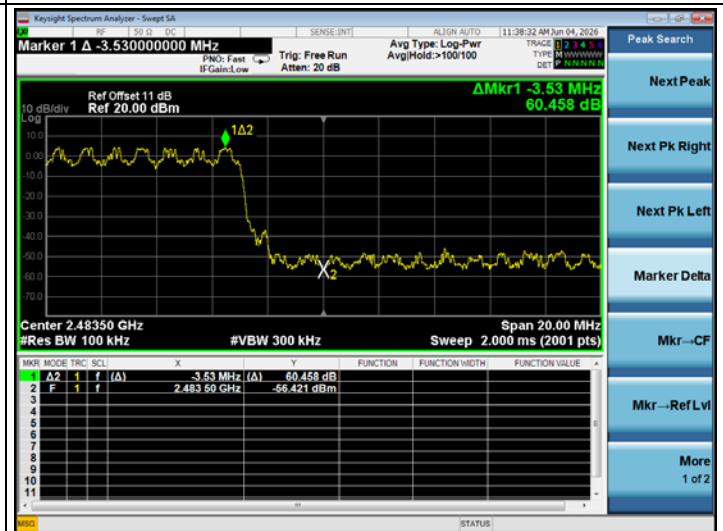


3DH5

Hopping



Hopping



11 UNWANTED EMISSIONS MEASUREMENT

11.1 Test Equipment

The Same as Section. 5.1.

11.2 Block Diagram of Test Setup

The Same as Section. 5.2.

11.3 Specification Limits (§15.247(d))

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

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). (※ This test result attaching to §4.7).

11.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

11.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

Establish a reference level by using the following procedure:

Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The instrument shall span 30 MHz to 10 times the operating frequency in GHz, with a resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector. The band 30 MHz to the highest frequency may be split into smaller spans, as long as the entire spectrum is covered.

The test procedure is defined in ANSI C63.10:2020 (7.8.8 “Conducted spurious emissions test methodology” was used).

11.6 Test Results

PASSED.

The test data was attached in the next pages.

(Test Date: 2026.06.04 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	Data Page
BR-DH5	00	2402	P69
	39	2441	P70
	78	2480	P71
EDR-3DH5	00	2402	P72
	39	2441	P73
	78	2480	P74

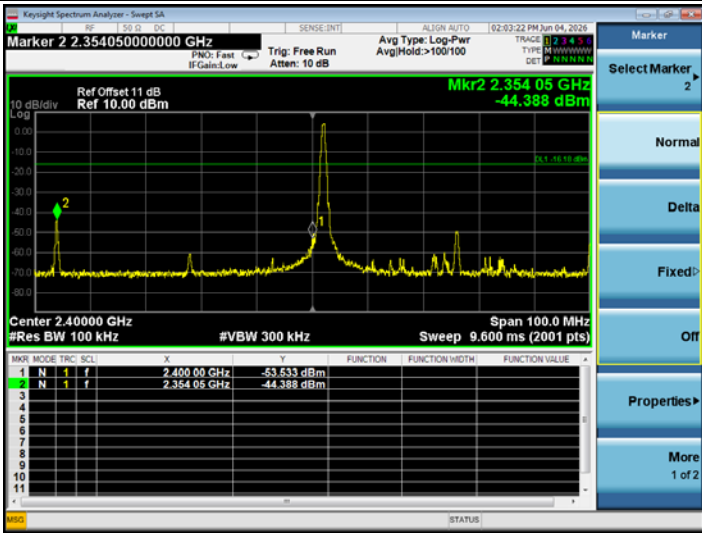
DH5

CH2402

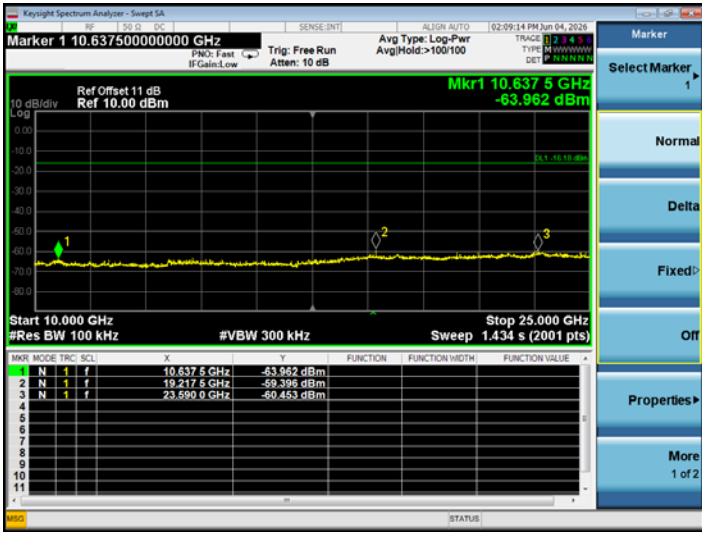
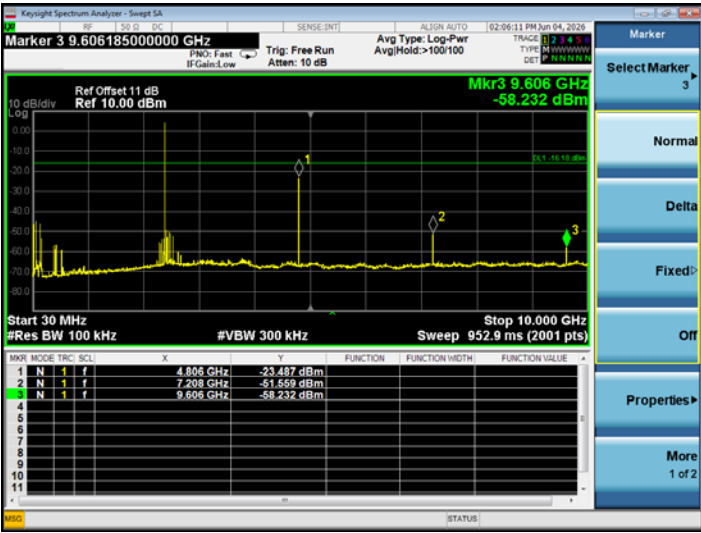
Reference Level



Lower Edge



Emission Level



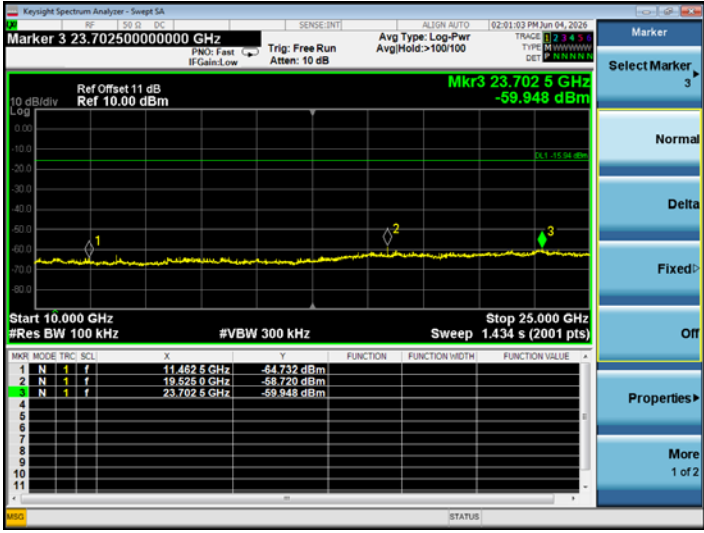
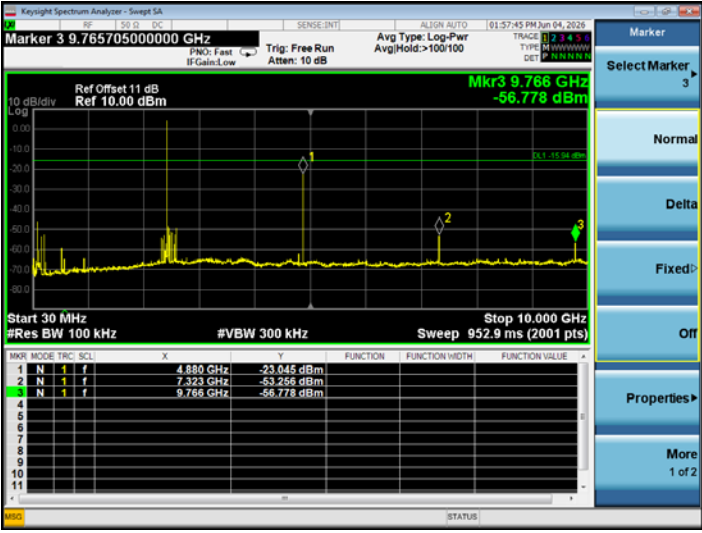
DH5

CH2441

Reference Level



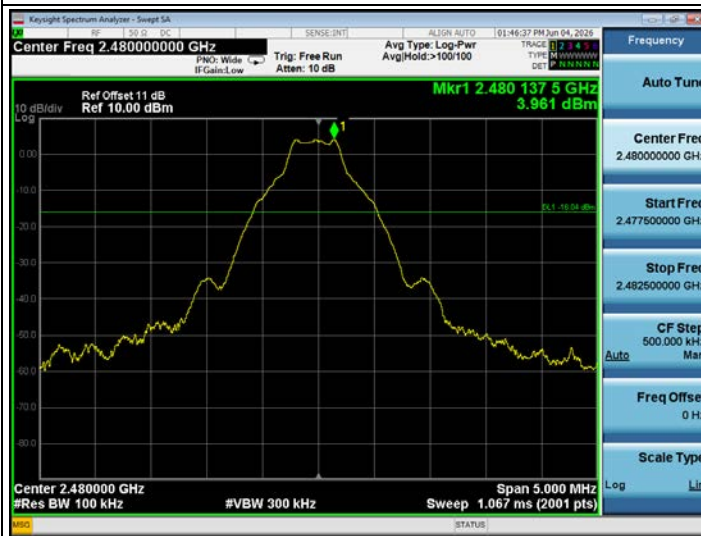
Emission Level



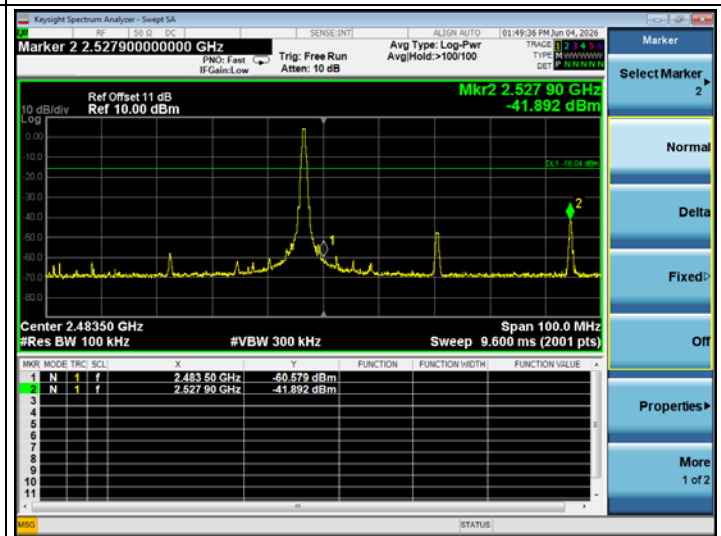
DH5

CH2480

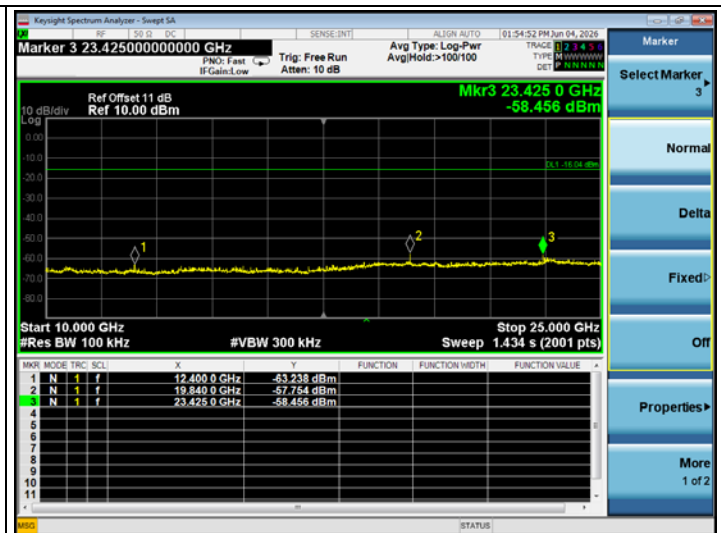
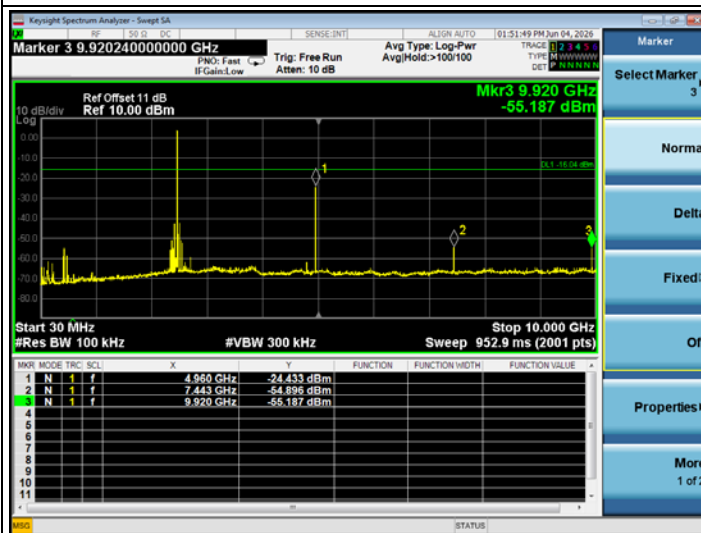
Reference Level



Higher Edge



Emission Level



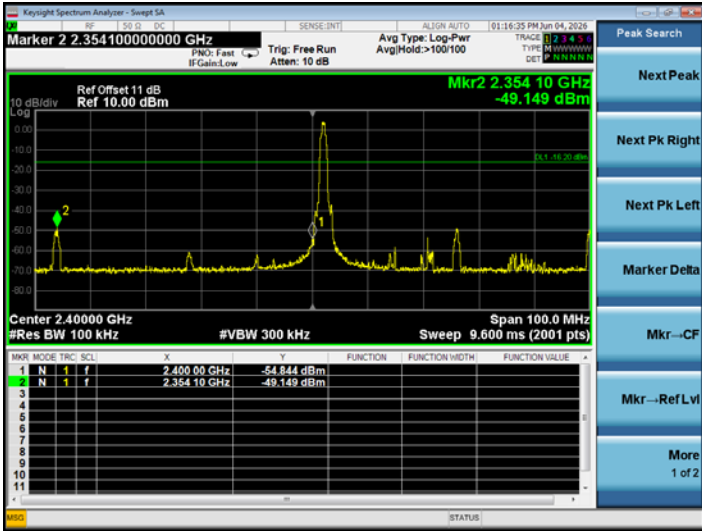
3DH5

CH2402

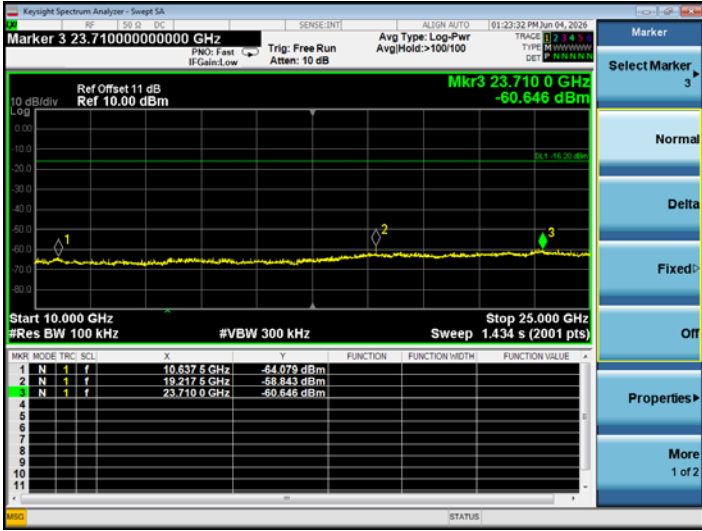
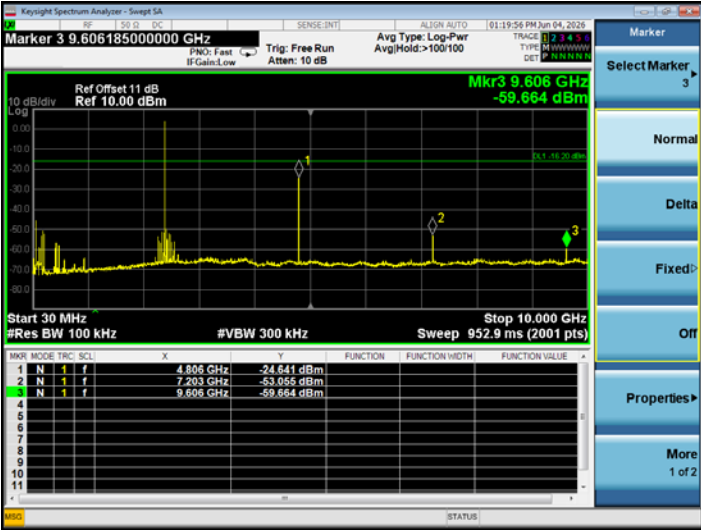
Reference Level



Lower Edge



Emission Level



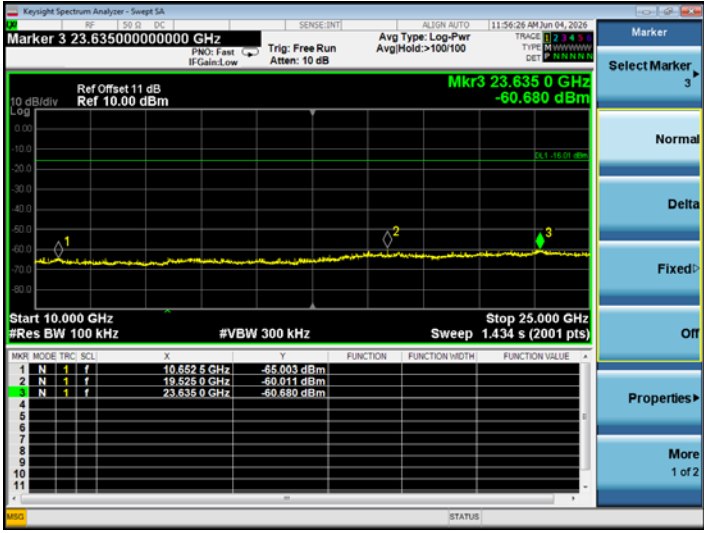
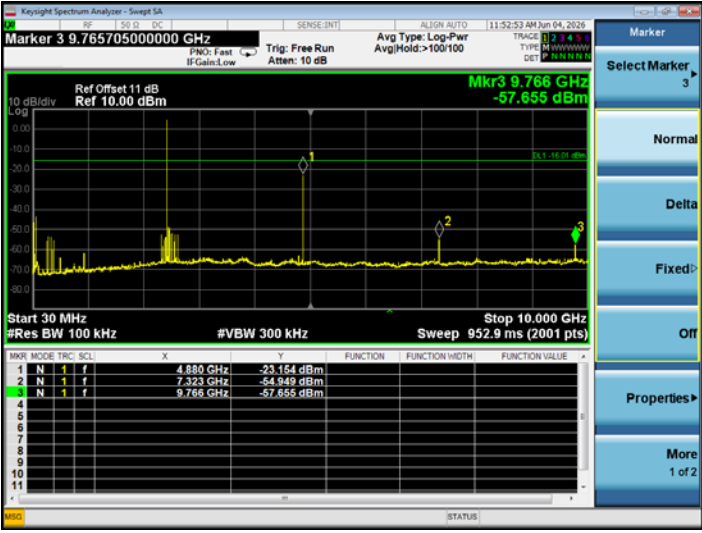
3DH5

CH2441

Reference Level



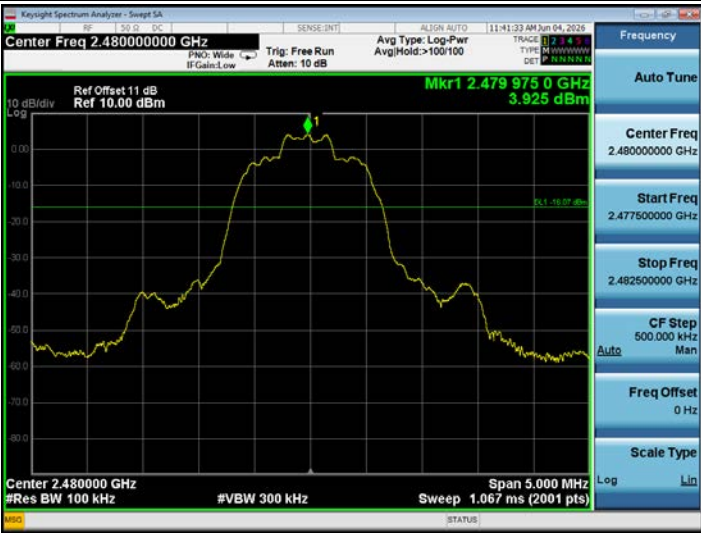
Emission Level



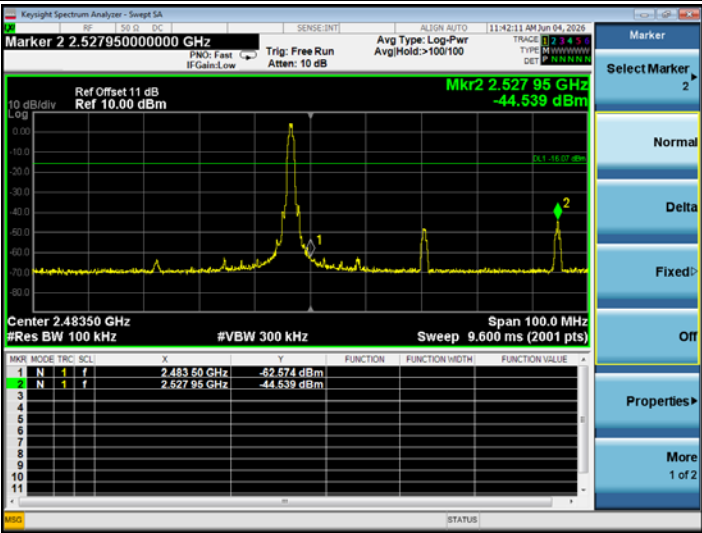
3DH5

CH2480

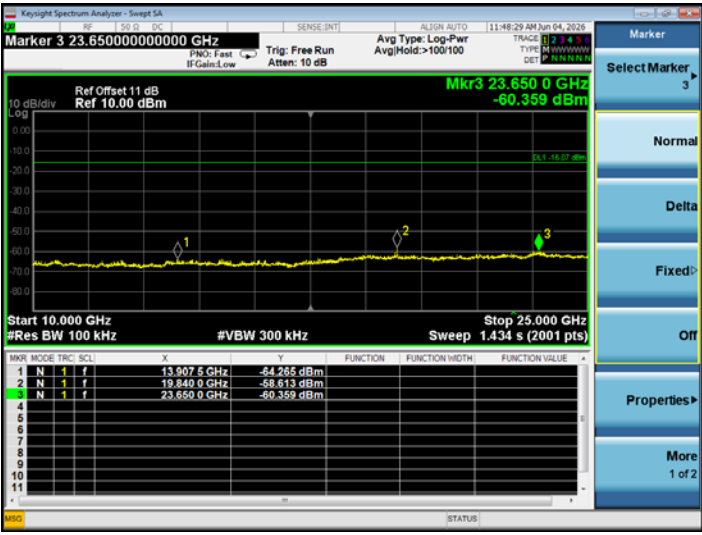
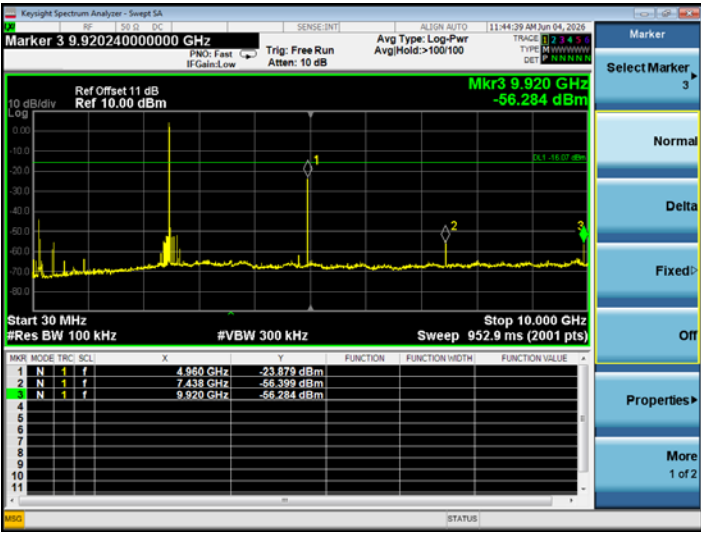
Reference Level



Higher Edge



Emission Level



12 ANTENNA REQUIREMENT

12.1 Specification Limits (§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.

12.2 Result

According to KDB 353028 D1, the following describes the three ways that can be used to demonstrate compliance to Section 15.203:

- a) Antenna permanently attached.
- b) Unique (non-standard) antenna connector.
- c) Professional installation.

For this product, the antenna is:

- ☒ Antenna permanently attached
- ☐ Unique (non-standard) antenna connector
- ☐ Professional installation
- ☐ not meet any of ways list above

that

- ☒ compliant
- ☐ not compliant

with the requirement of Section 15.203.

13 DEVIATION TO TEST SPECIFICATIONS

None.

14 MEASUREMENT UNCERTAINTY LIST

The measurement uncertainty was estimated for test on the EUT according to CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage of K=2.

The uncertainties value is not used in determining the PASS/FAIL results.

Test Items/Facilities	Frequency/Equipment/Unit	Uncertainty
Conducted Emission No.1 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Conducted Emission No.3 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Radiated Emission	30MHz~200MHz, Horizontal	±3.8 dB
	30MHz~200MHz, Vertical	±4.1 dB
	200MHz~1000MHz, Horizontal	±3.6 dB
	200MHz~1000MHz, Vertical	±5.1 dB
	1GHz~6GHz	±5.3 dB
	6GHz~18GHz	±5.3 dB
	18GHz~40GHz	±3.5 dB
Output Power Test	50MHz~18GHz	0.77 dB
Power Density Test	9kHz~6GHz	1.08 dB
RF Frequency Test	9kHz~40GHz	6×10^{-4}
Bandwidth Test	9kHz~6GHz	1.5×10^{-3}
RF Radiated Power Test	30MHz~1000MHz	3.06 dB
Conducted Output Power Test	50MHz~18GHz	0.83 dB
AC Voltage(<10kHz) Test	120V~230V	0.04 %
DC Power Test	0V~30V	0.4 %
Temperature	-40°C~+100°C	0.52 °C
Humidity	30%~95%	2.6 %

--END of REPORT--