RADIO TEST REPORT

Applicant	:	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address of Applicant	:	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Manufacturer	:	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address of Manufacturer	:	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Equipment under Test	:	2.0 Channel Soundbar Home Theater System
Model No.	:	HS1000, HS1000A, HS1000B, HS1000C, HS1000D, HS1000E, HS1000F, HS1000G, HS1000H, HS1000I, HS1000J, HS1000K, HS1000L, HS1000M, HS1000N, HS1000O, HS1000P, HS1000Q, HS1000R, HS1000S, HS1000T, HS1000U, HS1000V, HS1000W, HS1000X, HS1000Y, HS1000Z, HS1000AU, HS1000UK, HS1000JP, TS1000, TS1000A, TS1000B, TS1000C
FCC ID	:	HBOHS1000O
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C, ANSI C63.10:2013
Report No.	:	DDT-RE25052931-2E01
Issue Date	:	2025/08/29
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

Applicant	:	SHENZHEN FENDA TECHNOLOGY CO., LTD.
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Manufacturer	:	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address of Manufacturer	:	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C,
ANSI C63.10:2013

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE25052931-2E01		
Date of Receipt:	2025/06/11	**Date of Test:**	2025/06/11 - 2025/08/01

Created: Chen Ziqin	Reviewed: Zoe Peng	Approved: Damon Hu
Chen Ziqin	Zoe Peng	GUANGDONG DONGDIAN TESTING SERVICE CO.,LTD. 广东东电检测技术有限公司 Damon Hu Certificate and Report Seal 检验检测专用章
2025/08/01	2025/08/28	2025/08/29

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Version	Revision Content	Issue Date	Approved
V0	Initial issue	2025/08/29	Damon Hu

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	Maximum Peak Output Power	FCC Part 15: 15.247(b)(1)	/	Pass
2	20 dB Bandwidth	FCC Part 15: 15.247(a)(1)	/	Pass
3	99% Bandwidth	ANSI C63.10:2013	/	Pass
4	Carrier Frequency Separation	FCC Part 15: 15.247(a)(1)	/	Pass
5	Number of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii)	/	Pass
6	Dwell Time	FCC Part 15: 15.247(a)(1)(iii)	/	Pass
7	RF Conducted Spurious Emissions	FCC Part 15: 15.247(d)	/	Pass
8	Radiated Emission	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d)	/	Pass
9	Band Edge Compliance	FCC Part 15: 15.205, FCC Part 15: 15.209, FCC Part 15: 15.247(d)	/	Pass
10	Power Line Conducted Emissions	FCC Part 15: 15.207(a)	/	Pass
11	Antenna Requirement	FCC Part 15: 15.203	/	Pass
Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.				

2. General Test Information

2.1. Description of EUT

EUT Name	:	2.0 Channel Soundbar Home Theater System
Model Number	:	HS1000, HS1000A, HS1000B, HS1000C, HS1000D, HS1000E, HS1000F, HS1000G, HS1000H, HS1000I, HS1000J, HS1000K, HS1000L, HS1000M, HS1000N, HS1000O, HS1000P, HS1000Q, HS1000R, HS1000S, HS1000T, HS1000U, HS1000V, HS1000W, HS1000X, HS1000Y, HS1000Z, HS1000AU, HS1000UK, HS1000JP, TS1000, TS1000A, TS1000B, TS1000C
Difference of model number	:	Above models are identical in schematic and structure, only the model number are different, therefore the test performed on the model HS1000
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	AC 100-240V 50/60Hz
Hardware Version	:	HS1000K-MD
Software Version	:	V1.0
Antenna Type	:	PCB Antenna
Max Antenna Gain(dBi)	:	2.88

Radio Specification	:	Bluetooth BR/EDR
Operation Frequency	:	2402 MHz to 2480 MHz
Modulation	:	GFSK, π/4-DQPSK

Bluetooth BR/EDR Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	27	2429	54	2456
1	2403	28	2430	55	2457
2	2404	29	2431	56	2458
3	2405	30	2432	57	2459
4	2406	31	2433	58	2460
5	2407	32	2434	59	2461
6	2408	33	2435	60	2462
7	2409	34	2436	61	2463
8	2410	35	2437	62	2464
9	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471

16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454	/	
26	2428	53	2455	/	

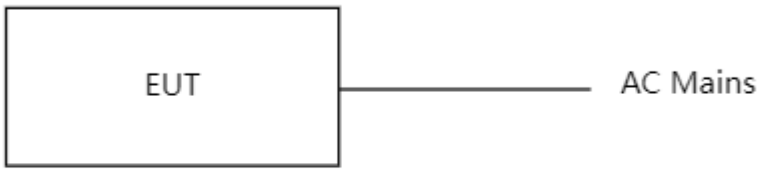
Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

"☒" means to be chosen or applicable; "□" means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
Remote control	/	EN1000H1H	/
HDMI cable	/	/	Length: 141cm, without core
Power cable	/	/	Length: 139cm, without core

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:
Test software: OPTEK_SComAssistant.exe

The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as below table.

The pathloss of external cable: 0.5 dB (According to the manufacturer's claims)

Tested mode, Tx Power Setting, Channel, and Frequency			
Tested mode	Tx Power Setting	Channel	Frequency (MHz)
GFSK hopping on Tx mode	0e	CH0 to CH78	2402 to 2480
π/4-DQPSK hopping on Tx mode	0e	CH0 to CH78	2402 to 2480
GFSK hopping off Tx mode	0e	CH0	2402
	0e	CH39	2441
	0e	CH78	2480
π/4-DQPSK hopping off Tx mode	0e	CH0	2402
	0e	CH39	2441
	0e	CH78	2480
Note: According exploratory test, EUT will have maximum output power in those data rate, worst-case data rates were: GFSK mode: DH5, π/4-DQPSK mode: 2DH5			

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	+15℃ to +35 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20240, G-2011

2.8. Measurement uncertainty

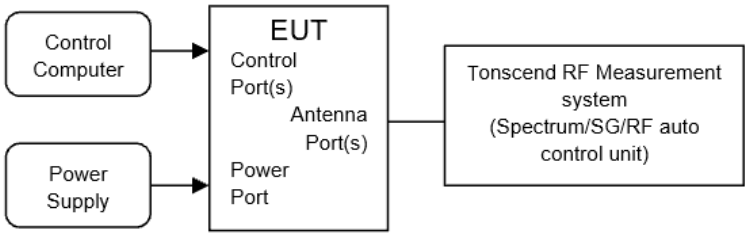
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒RF Connected Test (RF Measurement System 4#)				
Signal &Spectrum Analyzer	R&S	FSV3044	101173	2026/03/28
Wideband Radio Communication Tester	R&S	CMW500	168801	2026/03/28
MXG Vector Signal Generator	Agilent	N5182A	MY48180737	2026/03/28
PSG Vector Signal Generator	Agilent	E8267D	US49060192	2025/08/25
RF Control Unit	Tonscend	JS0806-2	21I8060485	2026/03/28
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2026/03/28
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. 20 dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

4.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 6.9.2.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for the 20 dB bandwidth measurement:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 2 times and 5 times the OBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold

(5) Measure and record the results in the report.

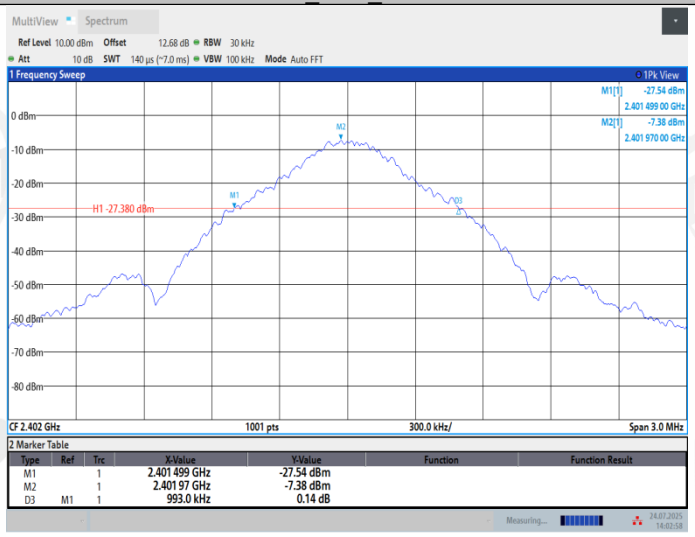
4.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

Test Mode	Antenna	Frequency [MHz]	20dB EBW[MHz]
DH5	Ant1	2402	0.99
		2441	1.03
		2480	0.99
2DH5	Ant1	2402	1.56
		2441	1.64
		2480	1.68

4.5. Test graphs

DH5_Ant1_2402



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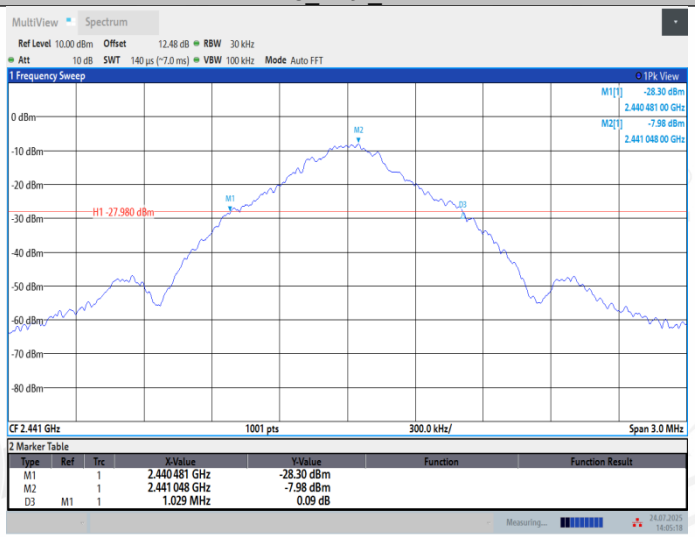
DH5_Ant1_2441



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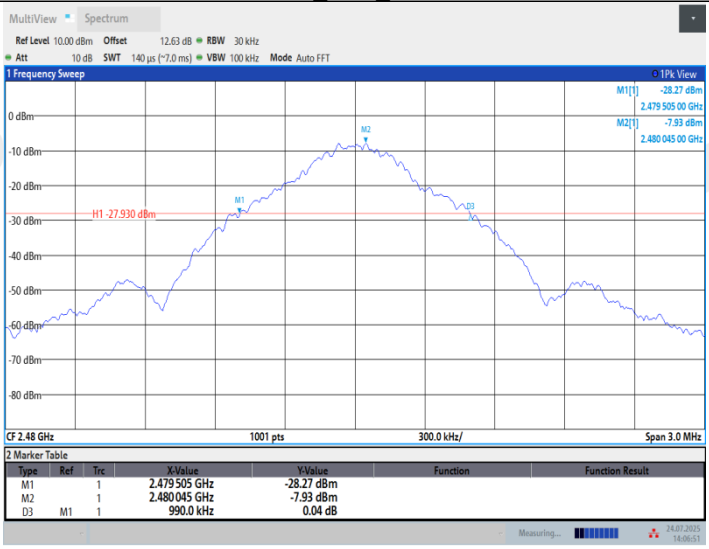
DH5_Ant1_2480



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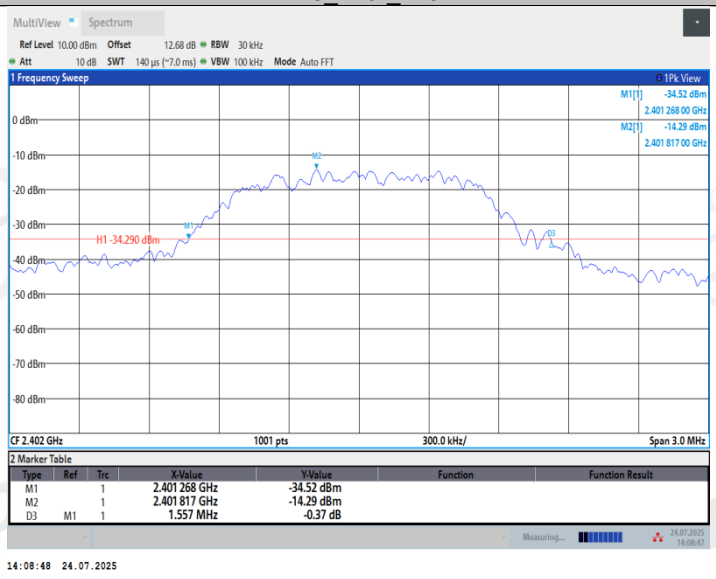

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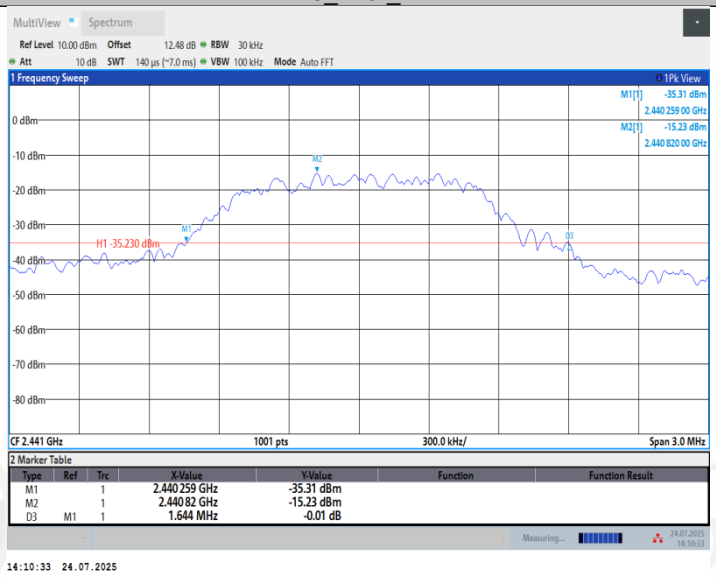
2DH5_Ant1_2441



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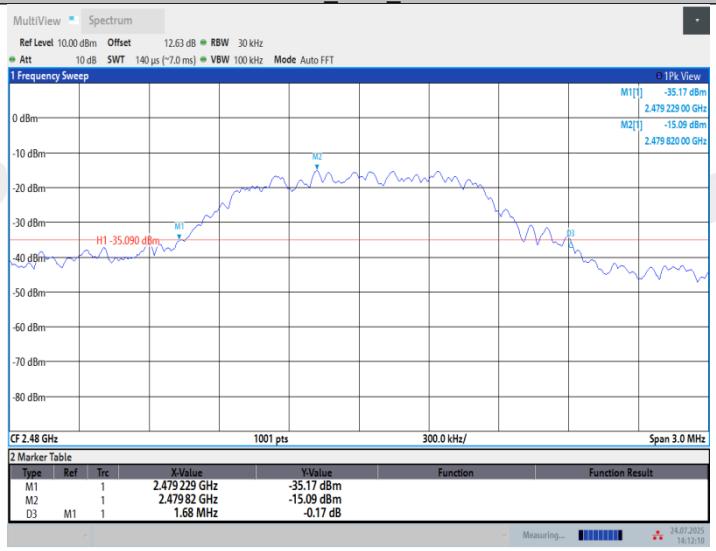

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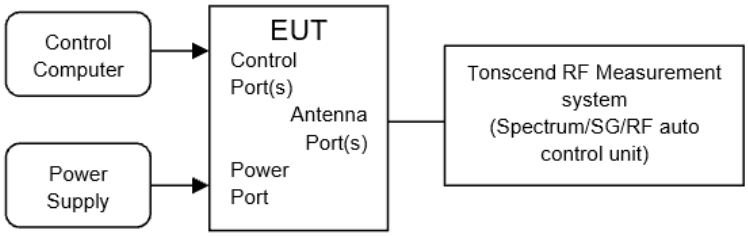
5. 99% Bandwidth

5.1. Block diagram of test setup



5.2. Limits

Just for Report.

5.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 6.9.3.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously
(4) Use the following spectrum analyzer settings for the 99% bandwidth measurement:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Span:	between 1.5 times and 5.0 times the OBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold

(5) Measure and record the results in the report.

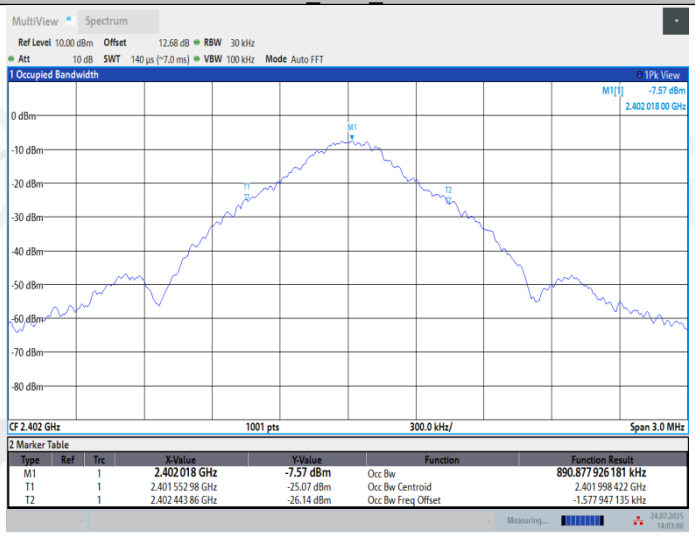
5.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

Test Mode	Antenna	Frequency [MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
DH5	Ant1	2402	0.89088	2401.5530	2402.4439
		2441	0.91414	2440.5454	2441.4596
		2480	0.92266	2479.5404	2480.4630
2DH5	Ant1	2402	1.3651	2401.3164	2402.6815
		2441	1.4399	2440.2882	2441.7280
		2480	1.4993	2479.2505	2480.7498

5.5. Test graphs

DH5_Ant1_2402



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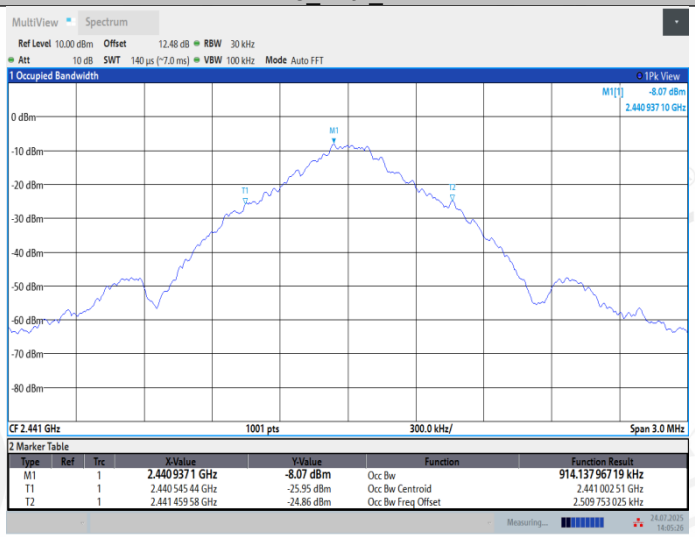
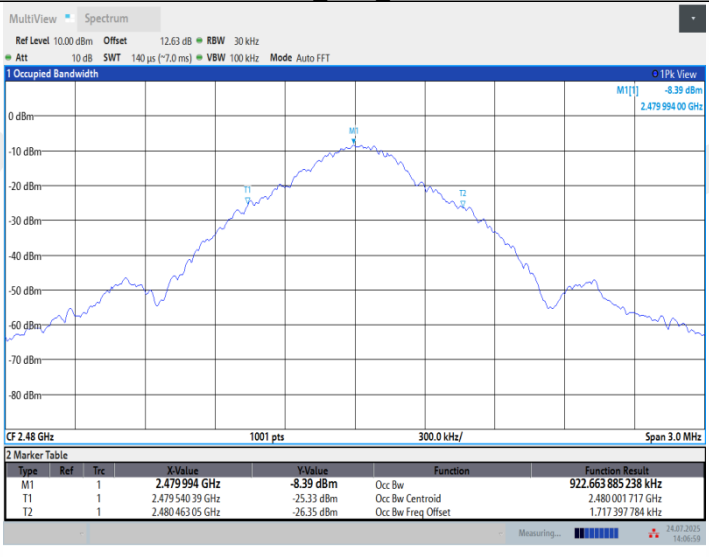


DH5_Ant1_2480



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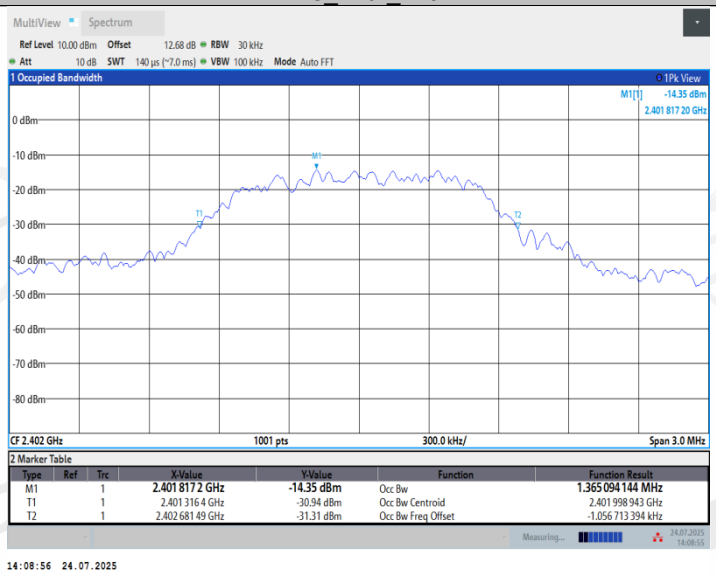

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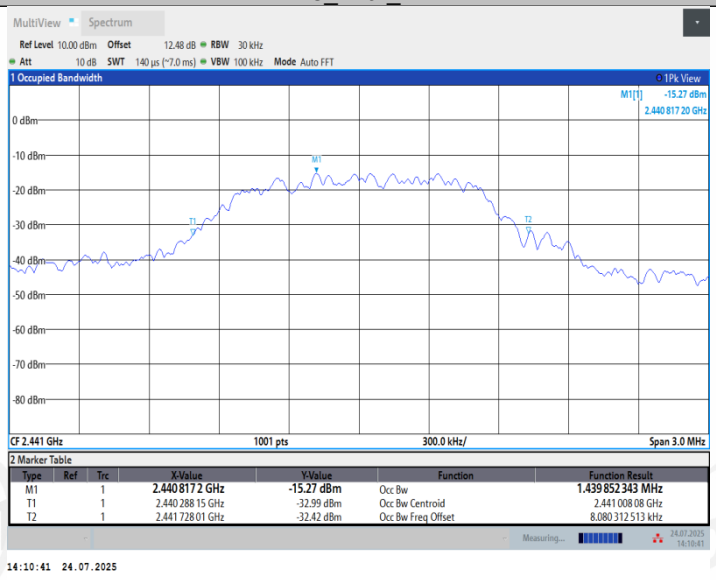

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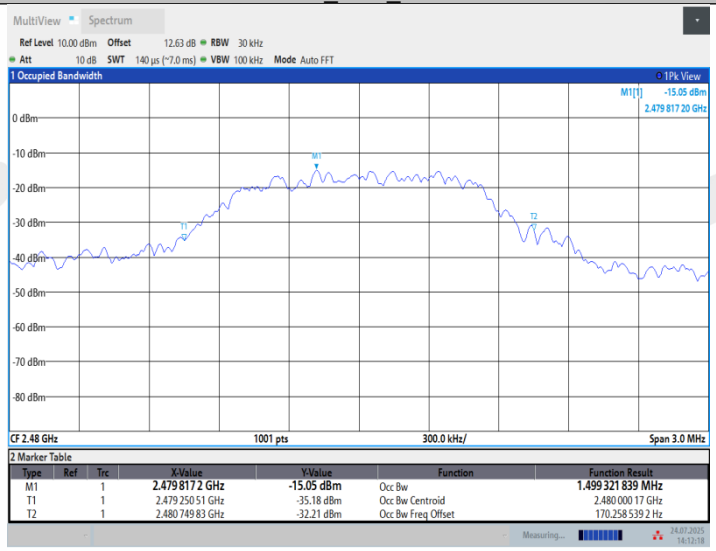
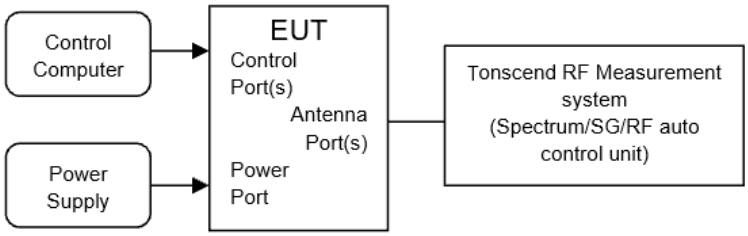
2DH5_Ant1_2480



14:12:19 24.07.2025

6. Maximum Peak Output Power

6.1. Block diagram of test setup



6.2. Limits

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, the e.i.r.p shall not exceed 4W.

6.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.5.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

RBW:	> 20 dB bandwidth of the emission being measured.
VBW:	VBW ≥ RBW.
Span:	Approximately five times the 20 dB bandwidth, centered on a hopping channel.
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold

(5) Use the marker-to-peak function to set the marker to the peak of the emission and record the results in the report.

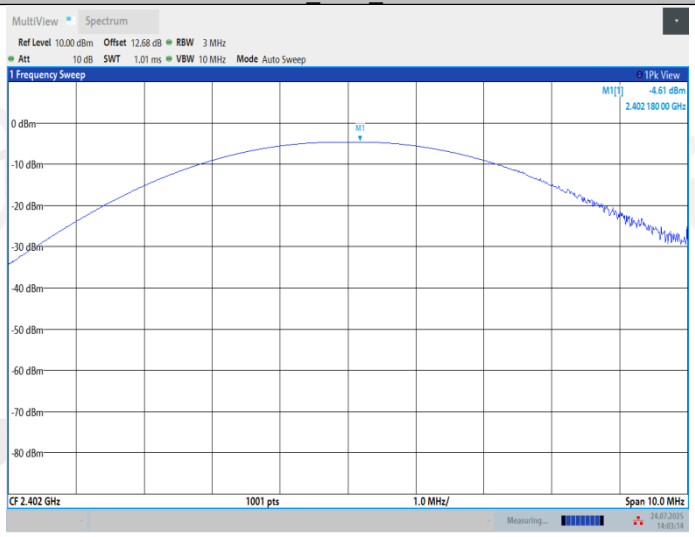
6.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
DH5	Ant1	2402	-4.61	≤20.97	-1.73	≤30	PASS
		2441	-5.51	≤20.97	-2.63	≤30	PASS
		2480	-5.43	≤20.97	-2.55	≤30	PASS
2DH5	Ant1	2402	-5.41	≤20.97	-2.53	≤30	PASS
		2441	-6.31	≤20.97	-3.43	≤30	PASS
		2480	-6.16	≤20.97	-3.28	≤30	PASS

6.5. Test graphs

DH5_Ant1_2402



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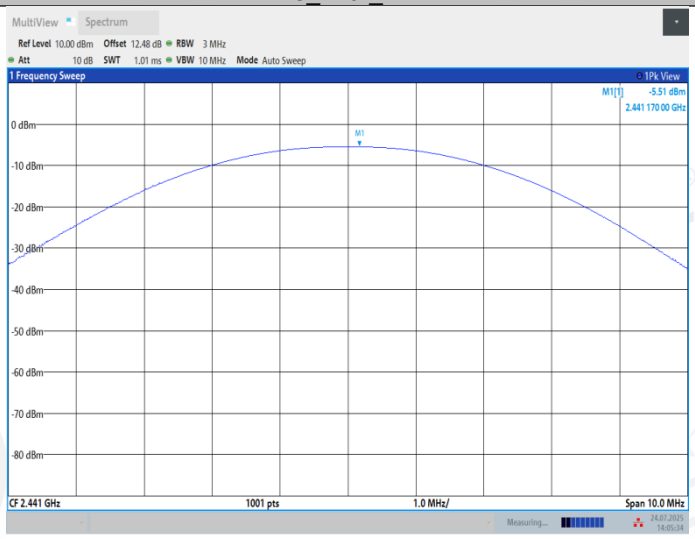

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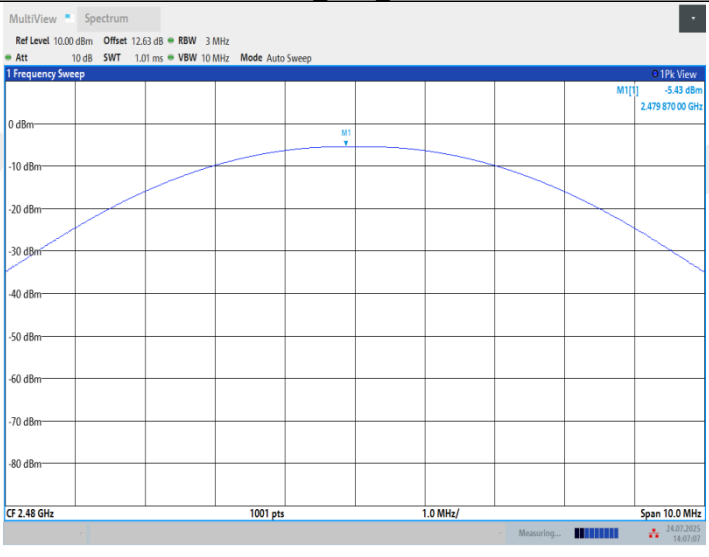
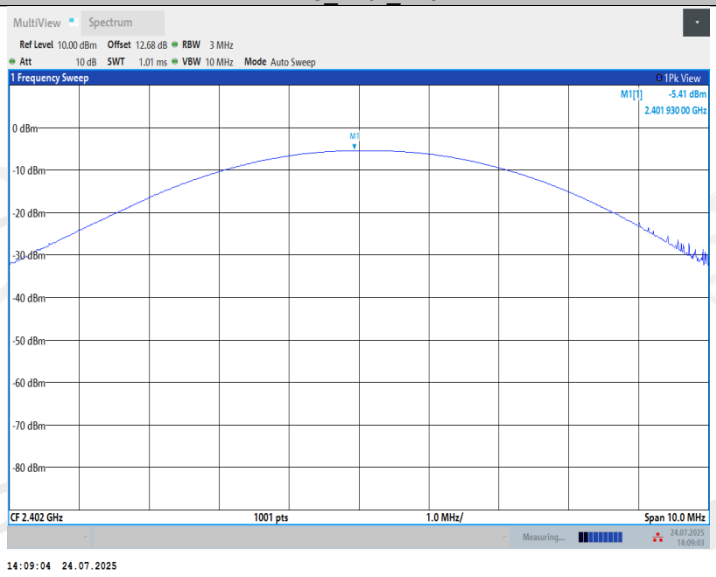
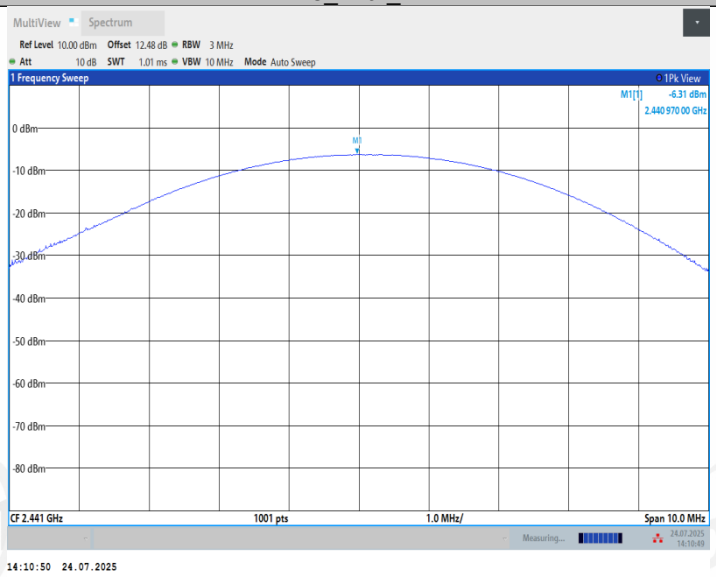


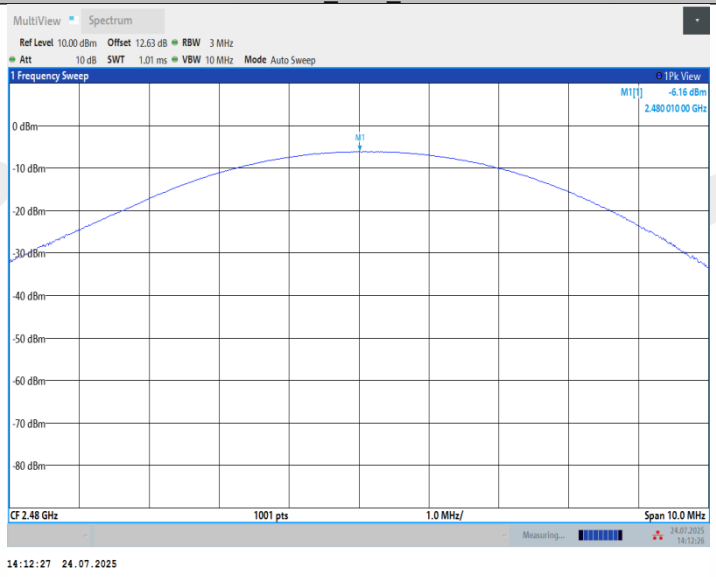
2DH5_Ant1_2402



2DH5_Ant1_2441

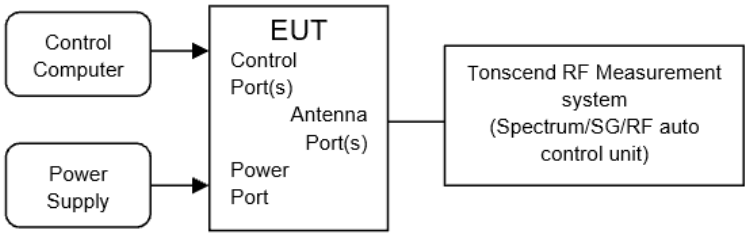


2DH5_Ant1_2480



7. Carrier Frequency Separation

7.1. Block diagram of test setup



7.2. Limits

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.

7.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.2.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

RBW:	approximately 30% of the channel spacing
VBW:	VBW ≥ RBW.
Span:	Wide enough to capture the peaks of two adjacent channels.
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold

(5) Use the marker-delta function to determine the separation between the peaks of the adjacent channels and record the results in the report.

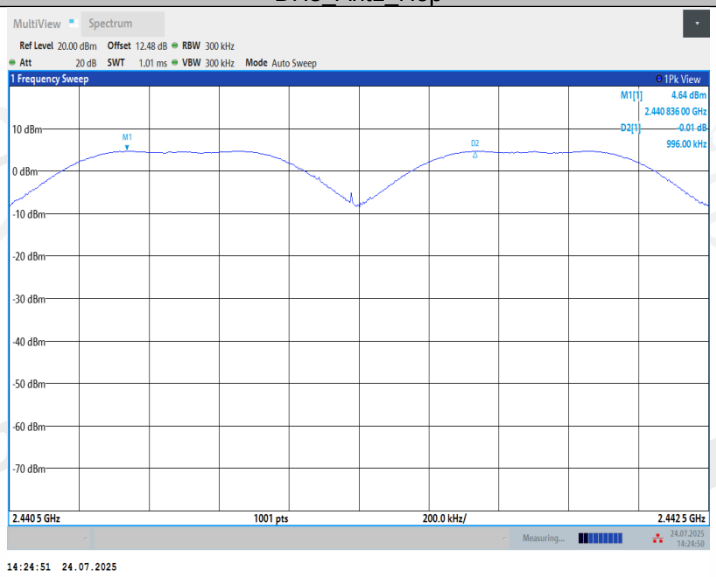
7.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

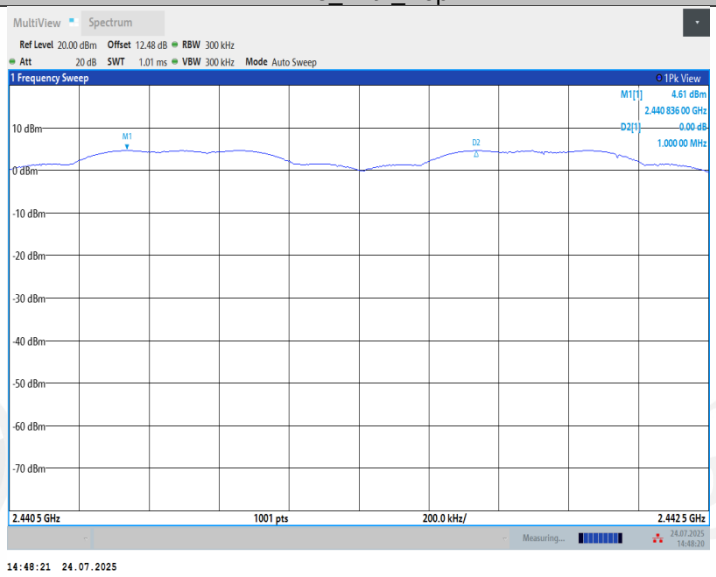
Test Mode	Antenna	Frequency [MHz]	Result [MHz]	Limit [MHz]	Verdict
DH5	Ant1	Hop	0.996	≥0.687	PASS
2DH5	Ant1	Hop	1	≥0.880	PASS

7.5. Test graphs

DH5_Ant1_Hop

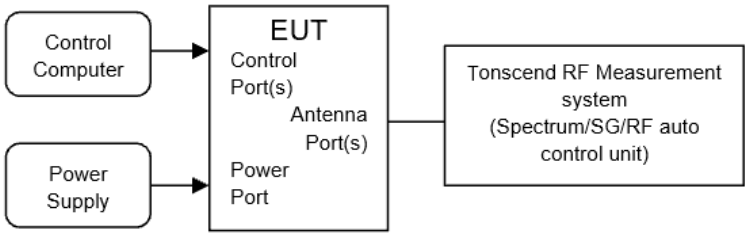


2DH5_Ant1_Hop



8. Dwell Time

8.1. Block diagram of test setup



8.2. Limits

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.

8.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.4.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:
RBW: ≤ channel spacing and where possible RBW should be set >>1 / T
VBW: VBW ≥ RBW.
Span: Zero span, centered on a hopping channel.
Detector Mode: Peak
Sweep time: Auto
Trace mode: Clear Write.
(5) The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s
(6) Measure the hopping number and on time of each pulse with spectrum analyzer in zero span set, and calculate dwell time with formula Dwell time = total hops *pulse's on time.
(7) Measure and record the results in the report.

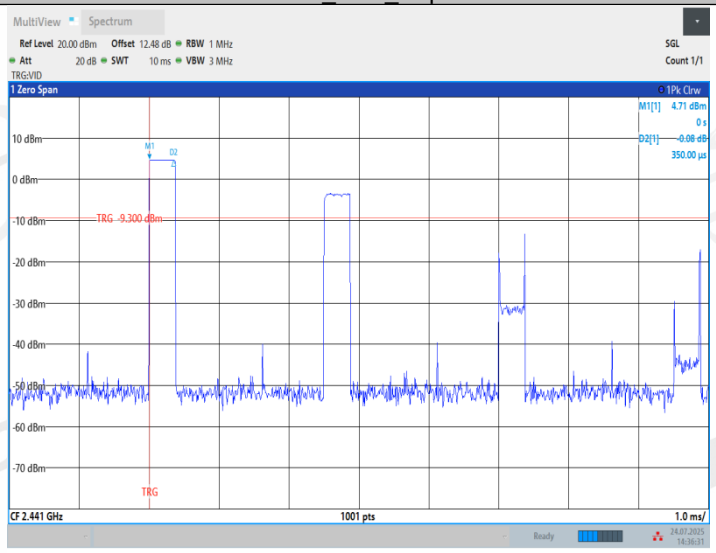
8.4. Test result

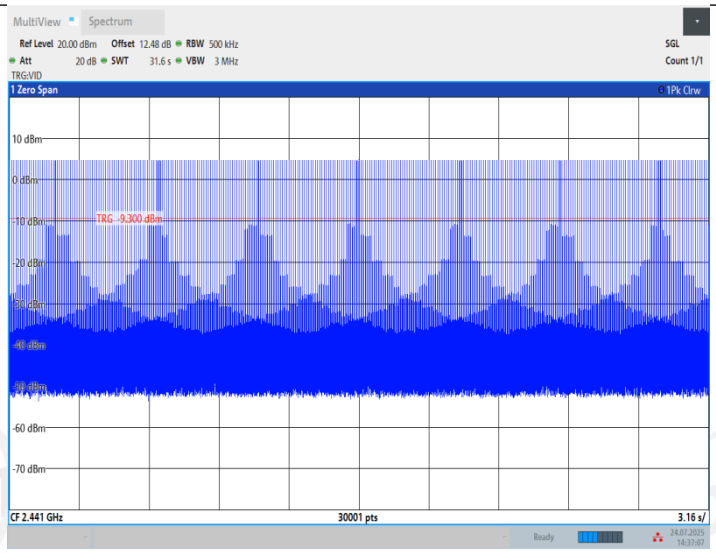
Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

Test Mode	Antenna	Frequency [MHz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH1	Ant1	Hop	0.350	320	0.112	≤0.4	PASS
DH3	Ant1	Hop	1.600	160	0.256	≤0.4	PASS
DH5	Ant1	Hop	2.820	107	0.302	≤0.4	PASS
2DH1	Ant1	Hop	0.360	320	0.115	≤0.4	PASS
2DH3	Ant1	Hop	1.490	160	0.238	≤0.4	PASS
2DH5	Ant1	Hop	2.870	107	0.307	≤0.4	PASS

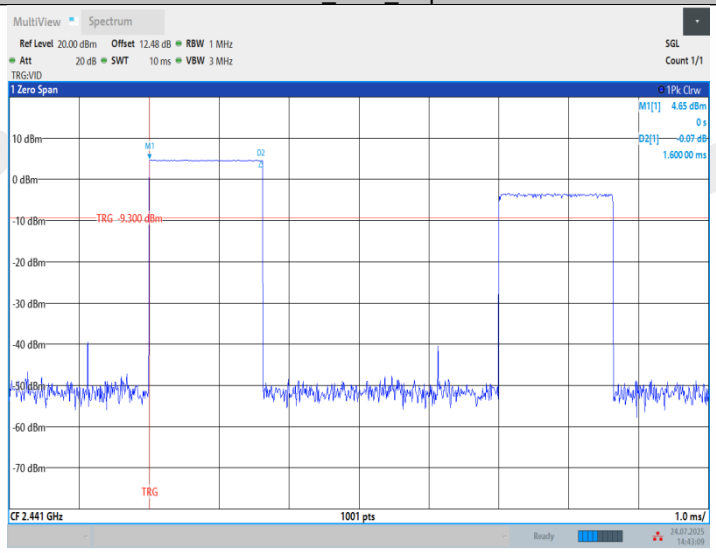
8.5. Test graphs

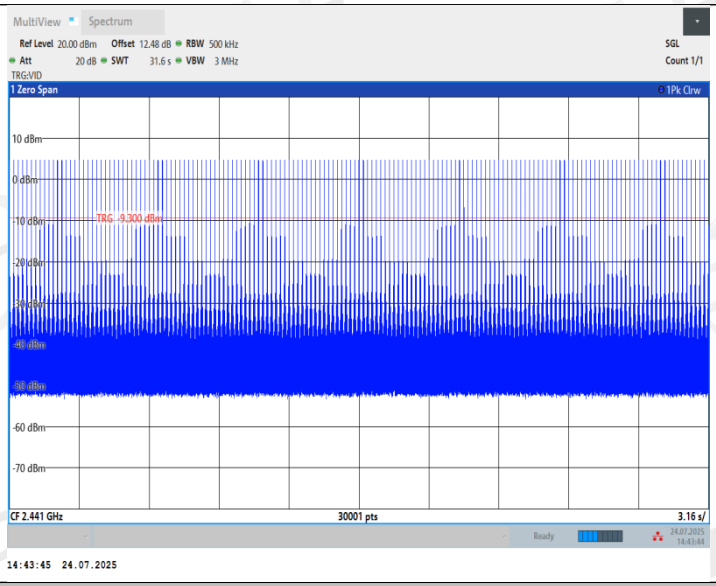
DH1_Ant1_Hop



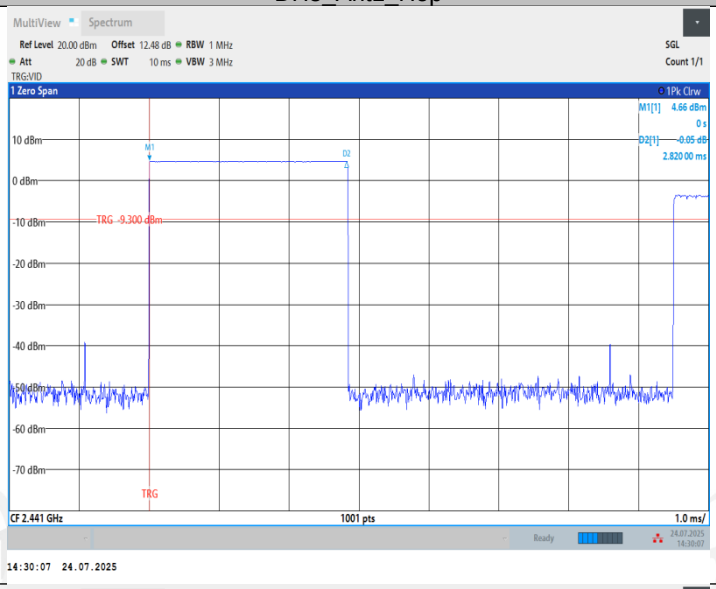


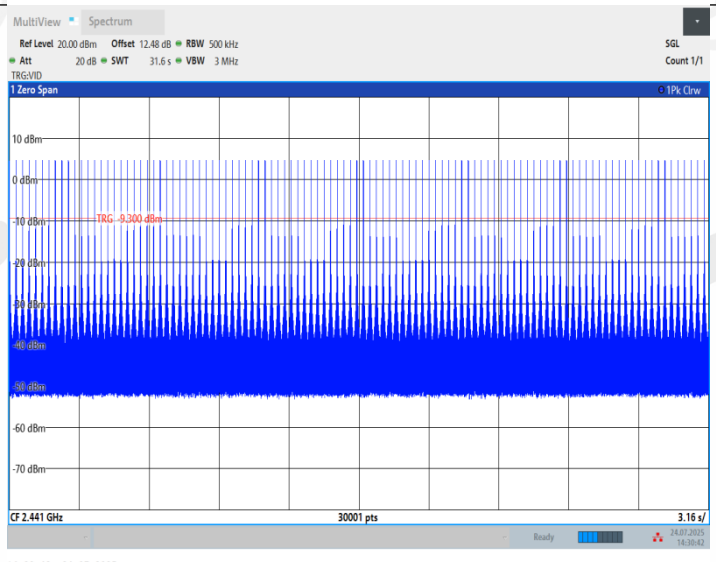
DH3_Ant1_Hop



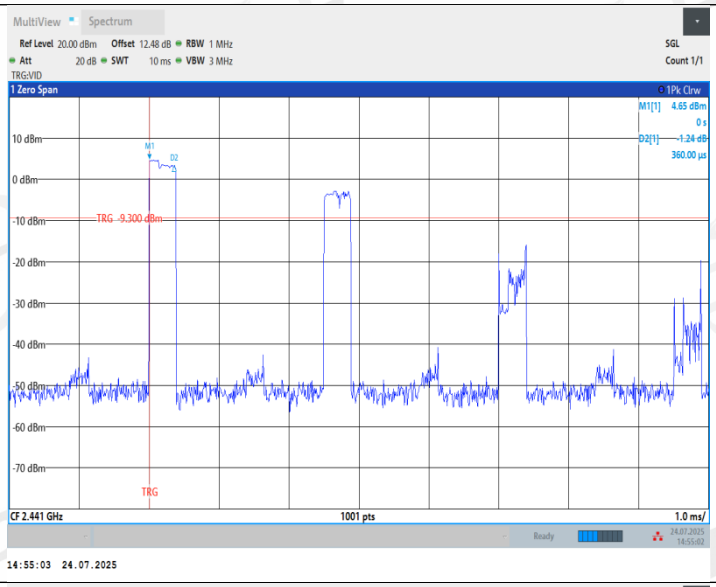


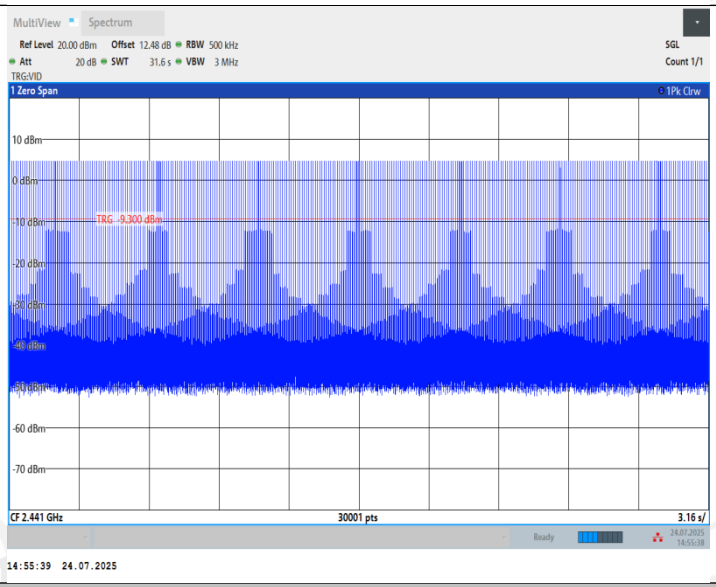
DH5_Ant1_Hop



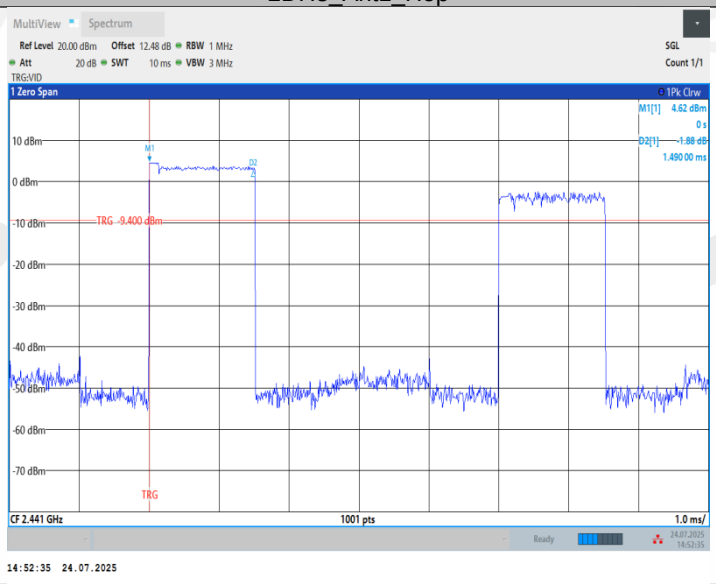


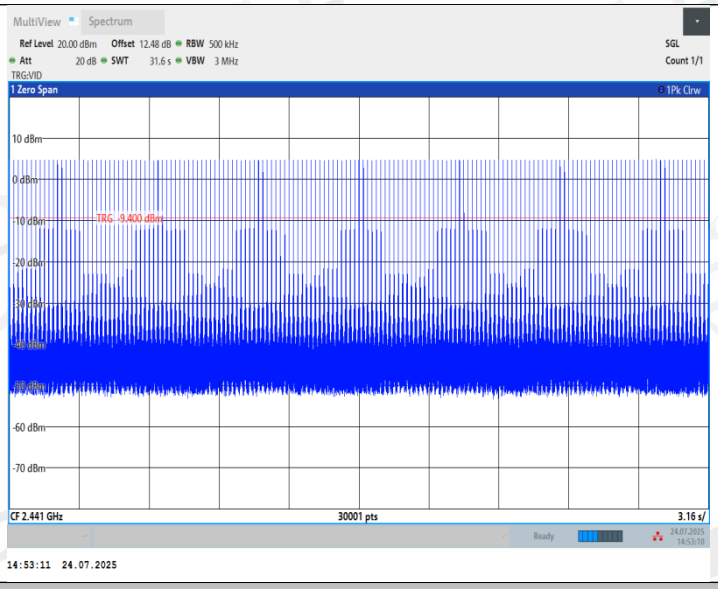
2DH1_Ant1_Hop



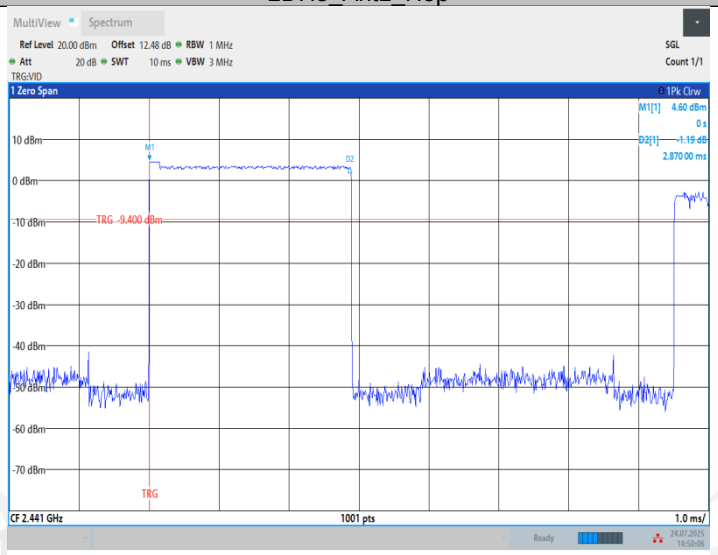


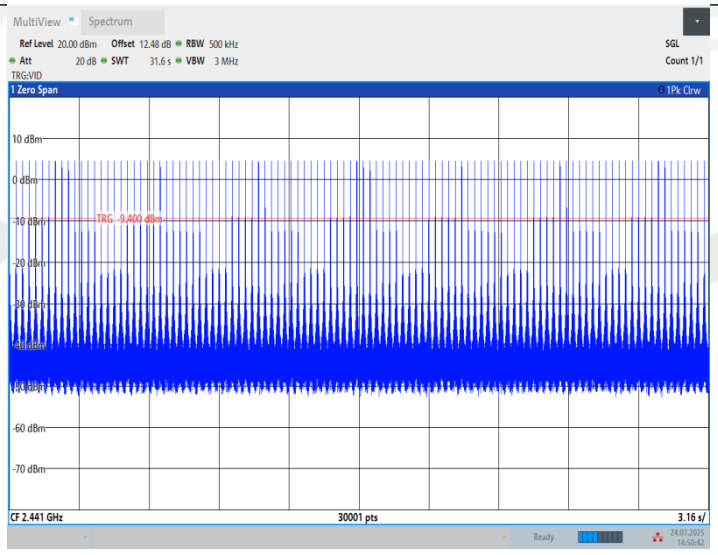
2DH3_Ant1_Hop





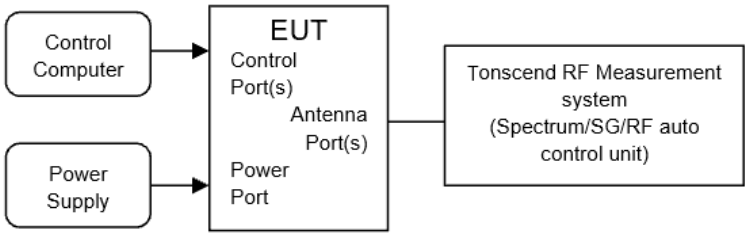
2DH5_Ant1_Hop





9. Number of Hopping Channel

9.1. Block diagram of test setup



9.2. Limits

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

9.3. Test procedure

(1) The test according to ANSI C63.10-2013 clause 7.8.3.
(2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
(3) Set the EUT as maximum power setting and enable the EUT transmit continuously.
(4) Use the following spectrum analyzer settings for the maximum peak output power measurement:

RBW:	RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
VBW:	VBW ≥ RBW.
Span:	The frequency band of operation
Detector Mode:	Peak
Sweep time:	Auto
Trace mode:	Max hold

(5) Measure the hopping number and record the results in the report.
(6) Measure and record the results in the report.

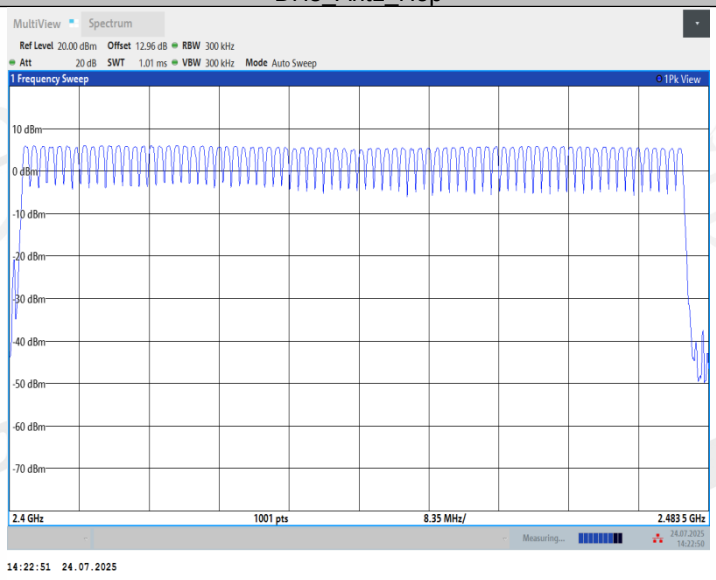
9.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

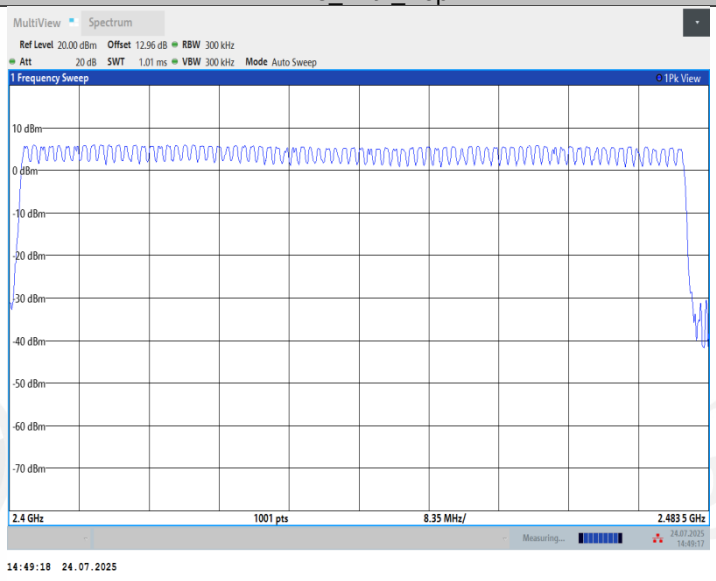
Test Mode	Antenna	Frequency [MHz]	Result [Num]	Limit [Num]	Verdict
DH5	Ant1	Hop	79	≥15	PASS
2DH5	Ant1	Hop	79	≥15	PASS

9.5. Test graphs

DH5_Ant1_Hop

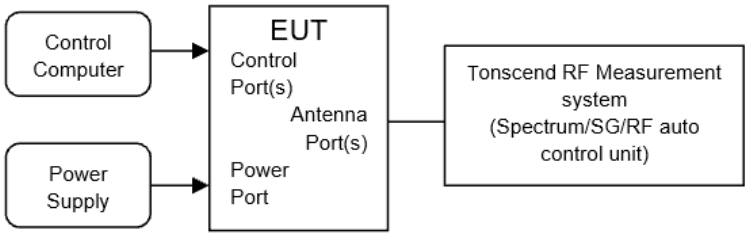


2DH5_Ant1_Hop



10. Band Edge Compliance (Conducted Method)

10.1. Block diagram of test setup



10.2. Limit

All restriction band should comply with 15.209, other emission should be at least 20dB below the fundamental.

10.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.
(2) Establish a reference level by using the following procedure:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.
(4) Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

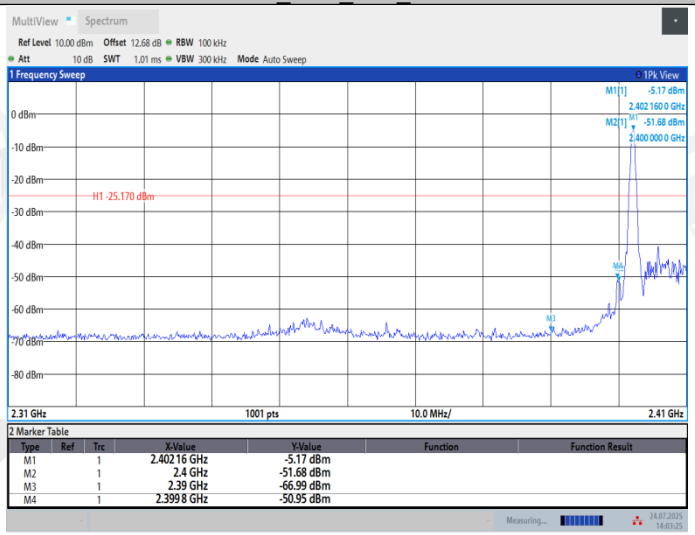
10.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

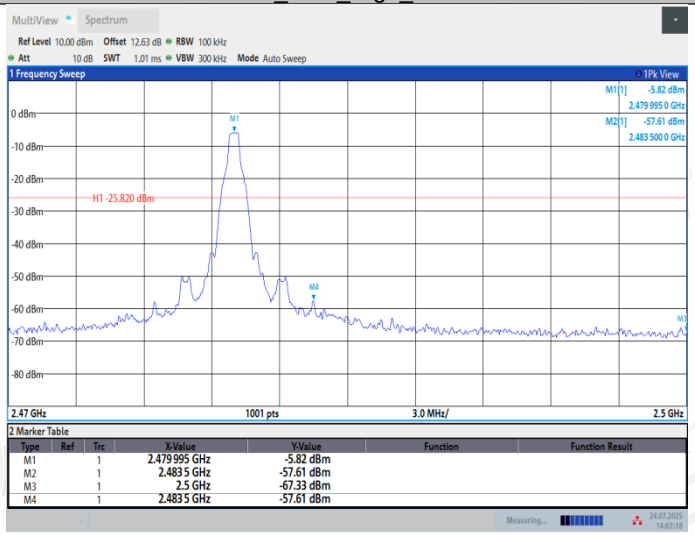
Mode	Freq. (MHz)	Verdict
GFSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass
π/4-DQPSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass

10.5. Test graphs

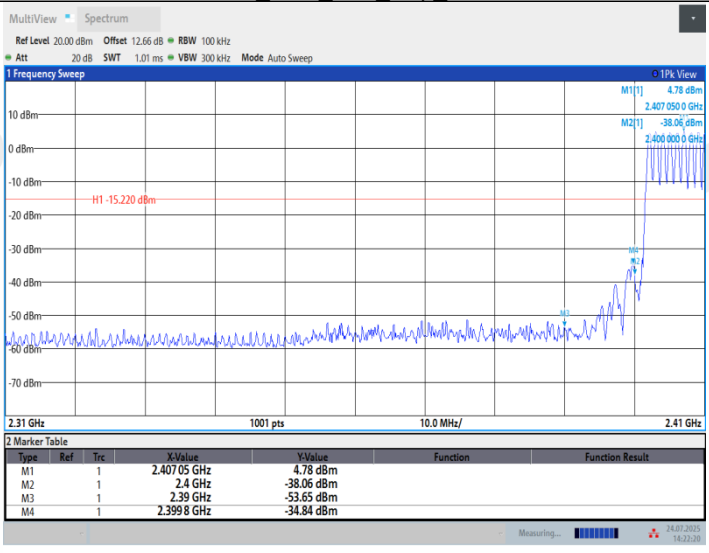
DH5_Ant1_Low_2402



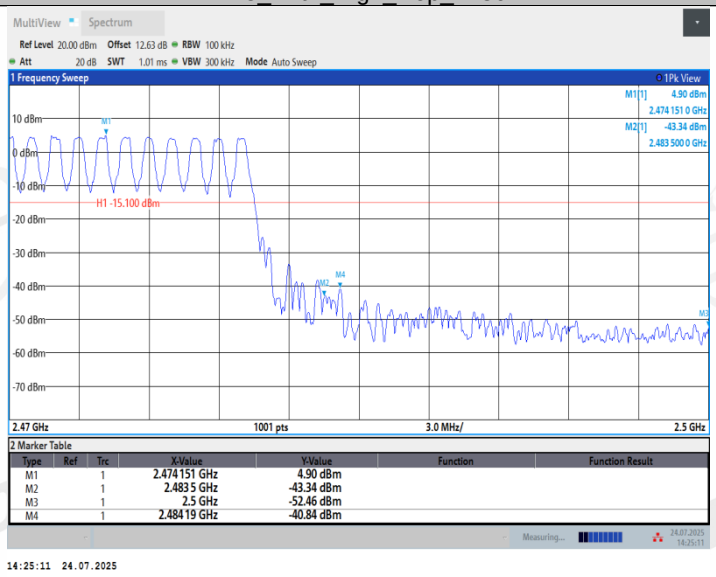
DH5_Ant1_High_2480



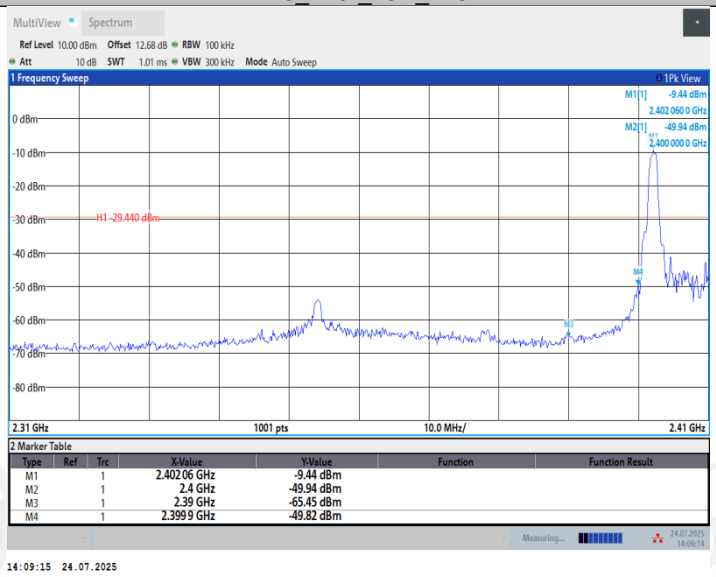
DH5_Ant1_Low_Hop_2402



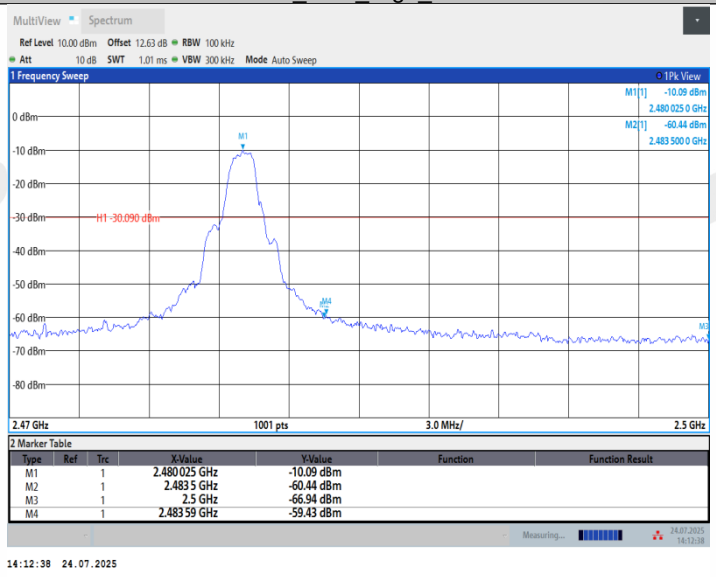
DH5_Ant1_High_Hop_2480



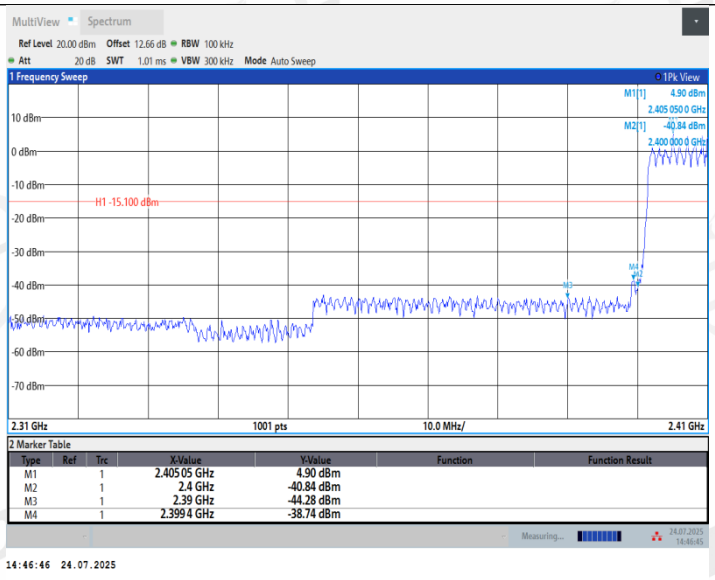
2DH5_Ant1_Low_2402



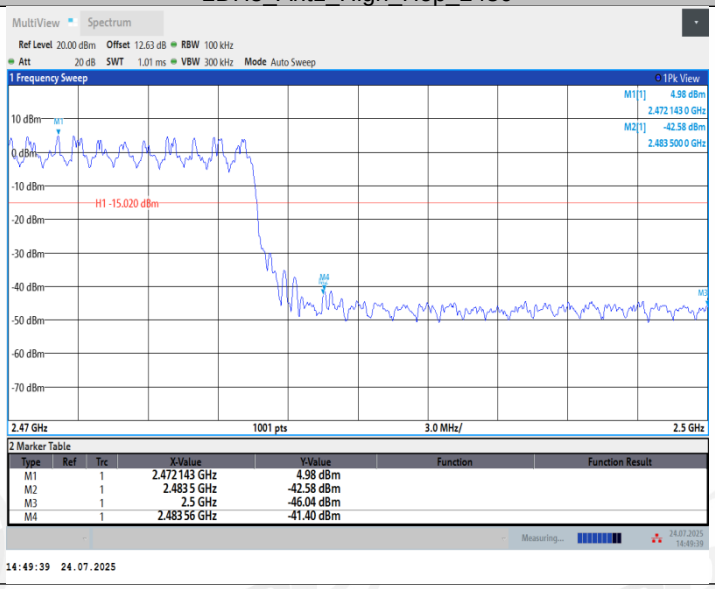
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402

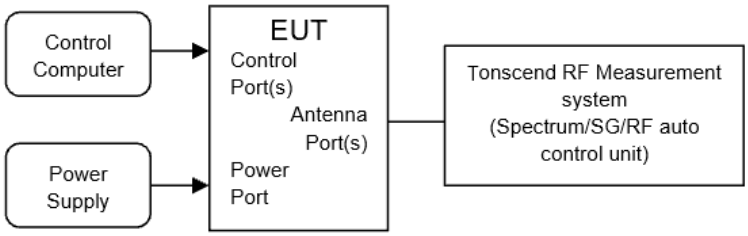


2DH5_Ant1_High_Hop_2480



11. RF Conducted Spurious Emissions

11.1. Block diagram of test setup



11.2. Limits

In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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.

11.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Establish a reference level by using the following procedure:

Center frequency	Test frequency
RBW:	100 kHz
VBW:	300 kHz
Span	Wide enough to capture the peak level of the in-band emission
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

(3) Allow the trace to stabilize, use the peak marker function to determine the maximum peak power level to establish the reference level.

(4) Set the spectrum analyzer as follows:

RBW:	100 kHz
VBW:	300 kHz
Span	Encompass frequency range to be measured
Number of measurement points	≥Span/RBW
Detector Mode:	Peak
Sweep time:	Auto
Trace mode	Max hold

Allow the trace to stabilize, use the peak marker function to determine the maximum amplitude of all unwanted emissions outside of the authorized frequency band

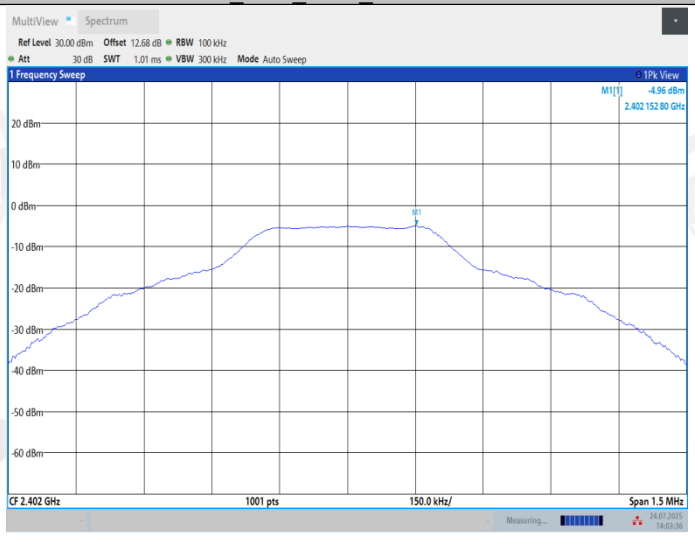
11.4. Test result

Test Engineer:	Huang Yanwen	Test Site:	RF Measurement System 4#
Ambient Condition:	25.3℃,45.8%RH	Test Date:	2025.07.24-2025.07.24
Test Power Supply:	AC 120V	Sample Number:	S25052931-006

Mode	Freq. (MHz)	Verdict
GFSK	Hopping off 2402	Pass
	Hopping off 2441	Pass
	Hopping off 2480	Pass
π/4-DQPSK	Hopping off 2402	Pass
	Hopping off 2441	Pass
	Hopping off 2480	Pass

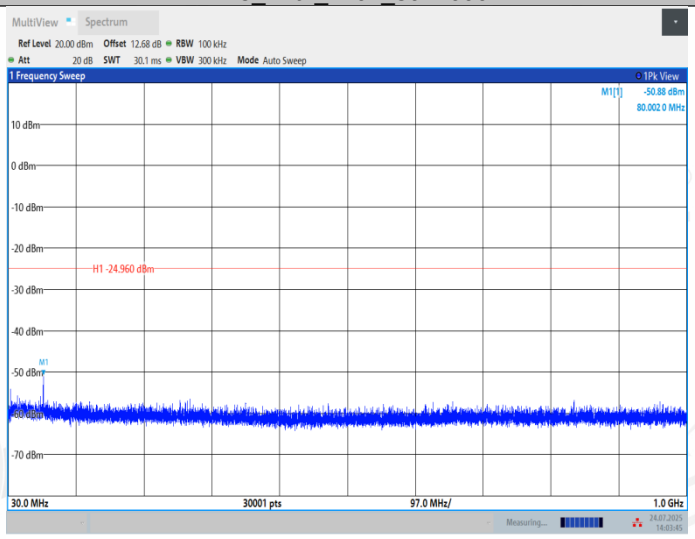
11.5. Test graphs

DH5_Ant1_2402_0~Reference



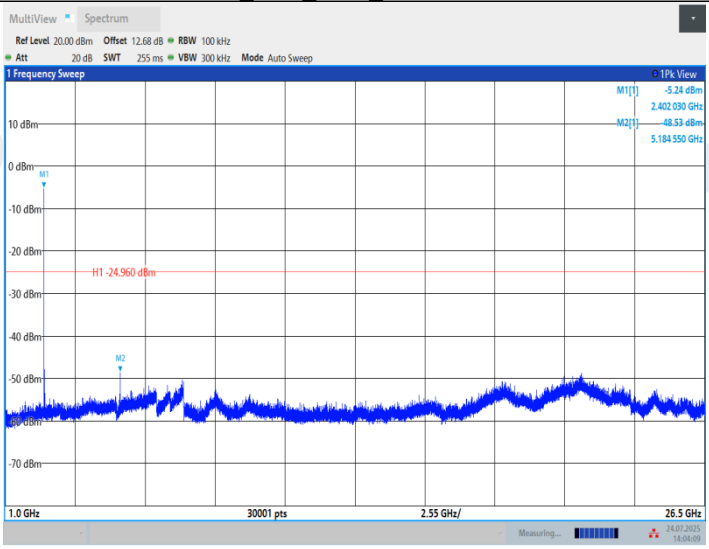
14:03:37 24.07.2025

DH5_Ant1_2402_30~1000



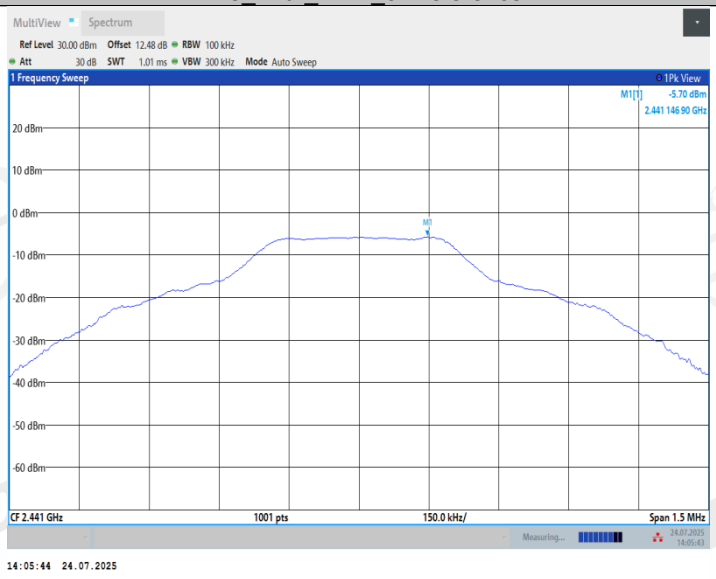
14:03:46 24.07.2025

DH5_Ant1_2402_1000~26500

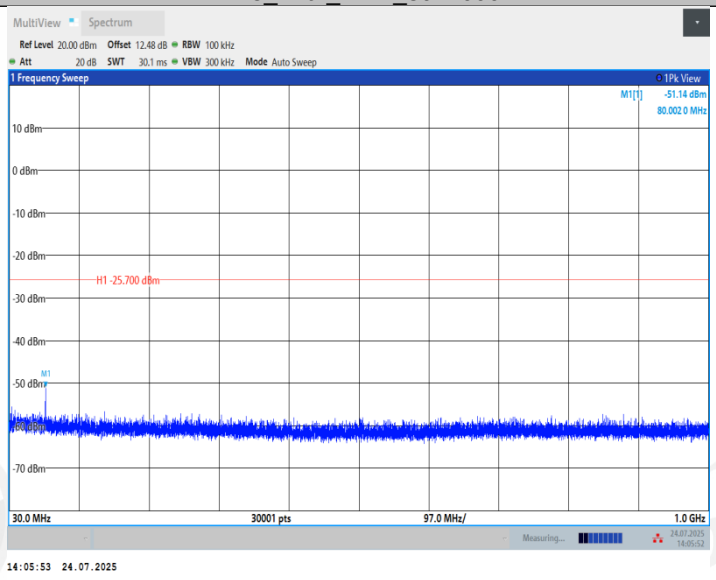


14:04:10 24.07.2025

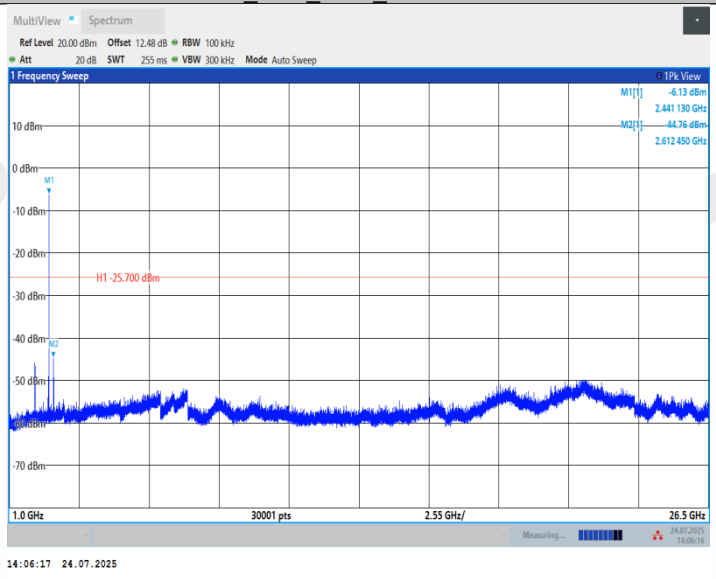
DH5_Ant1_2441_0~Reference



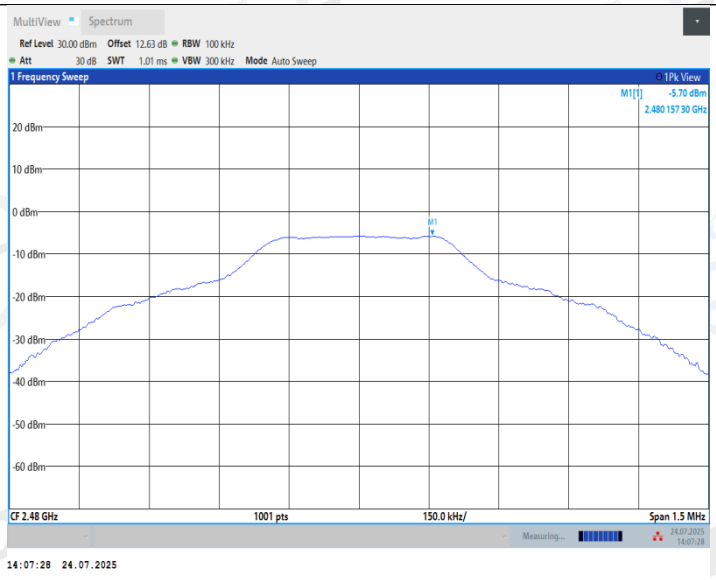
DH5_Ant1_2441_30~1000



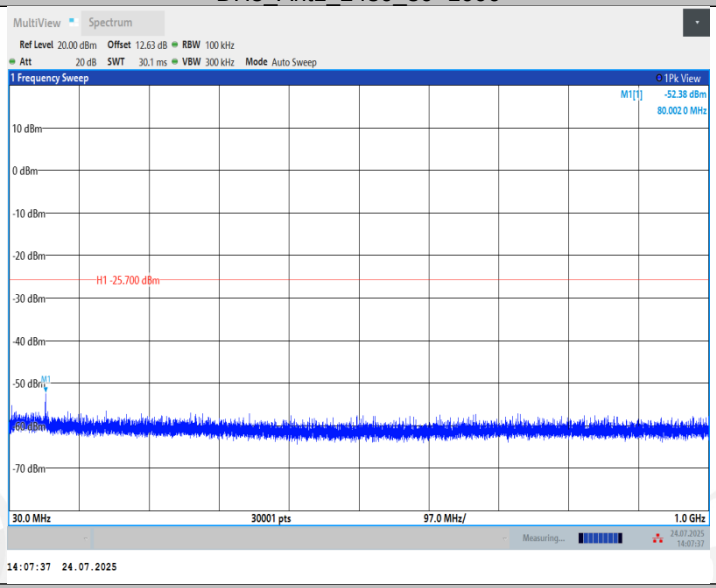
DH5_Ant1_2441_1000~26500



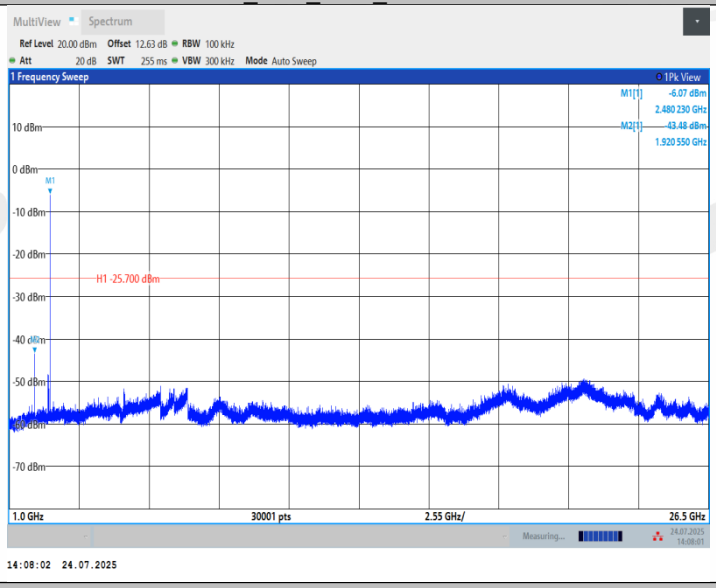
DH5_Ant1_2480_0~Reference



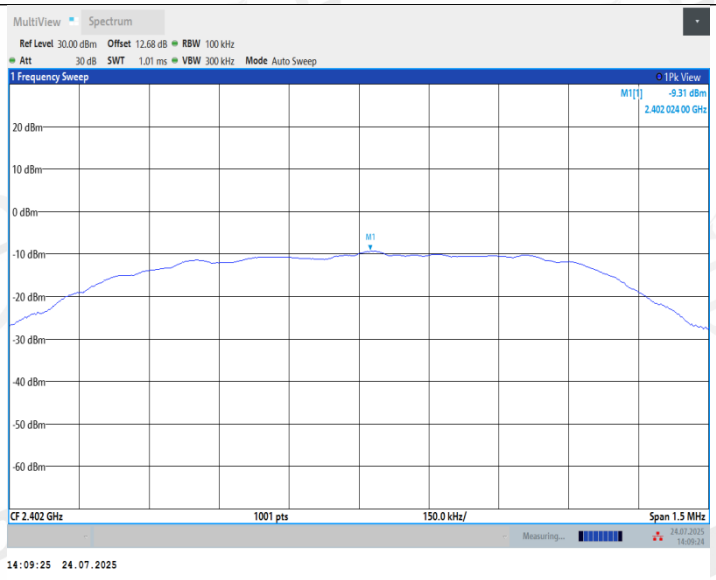
DH5_Ant1_2480_30~1000



DH5_Ant1_2480_1000~26500



2DH5_Ant1_2402_0~Reference



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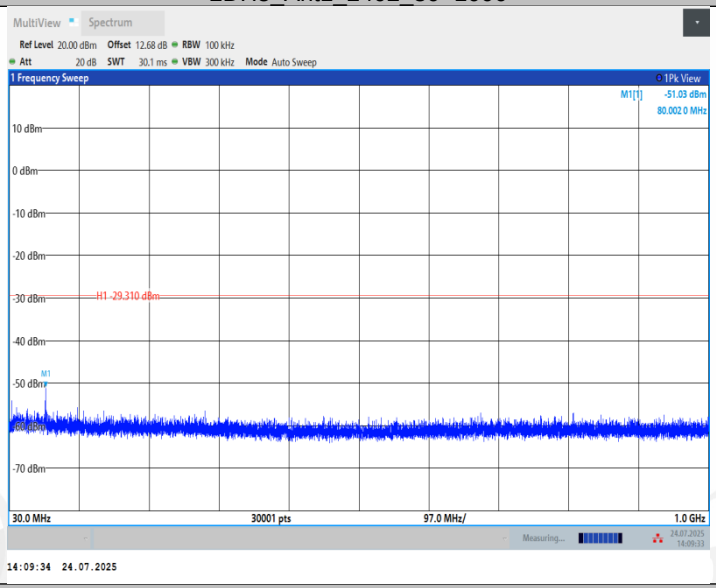

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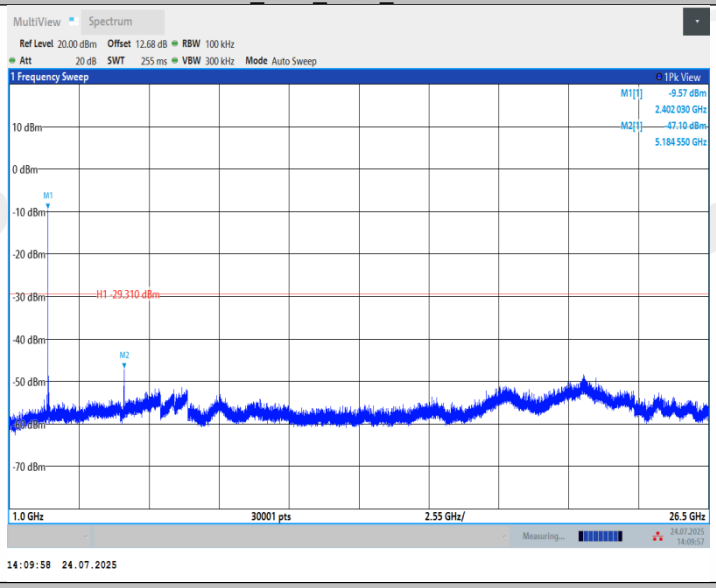

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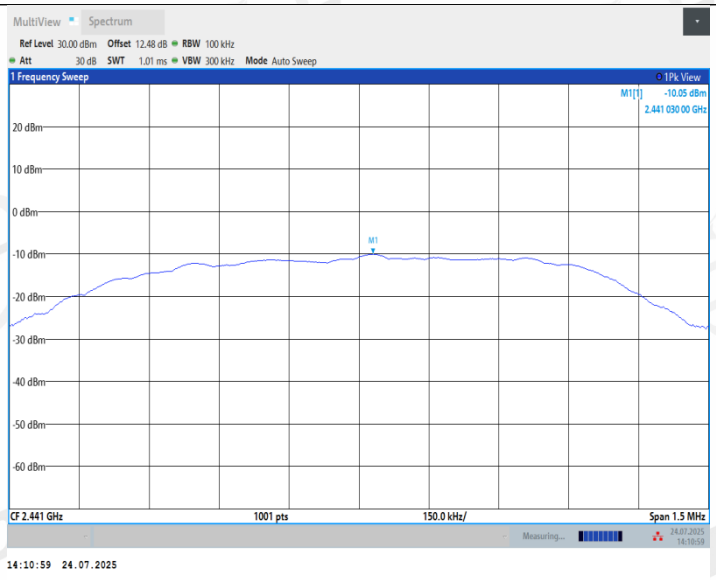

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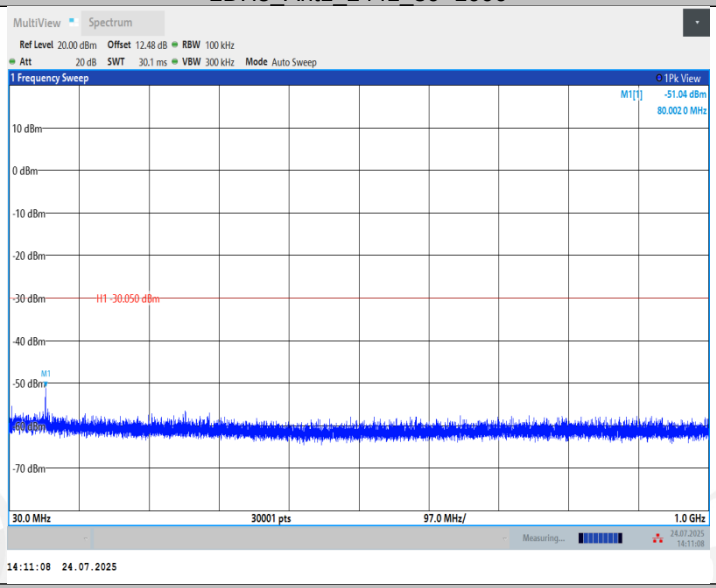

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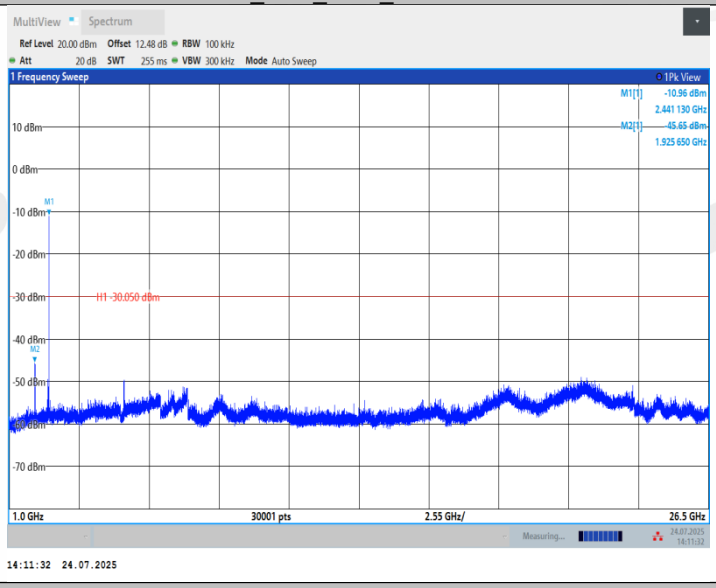
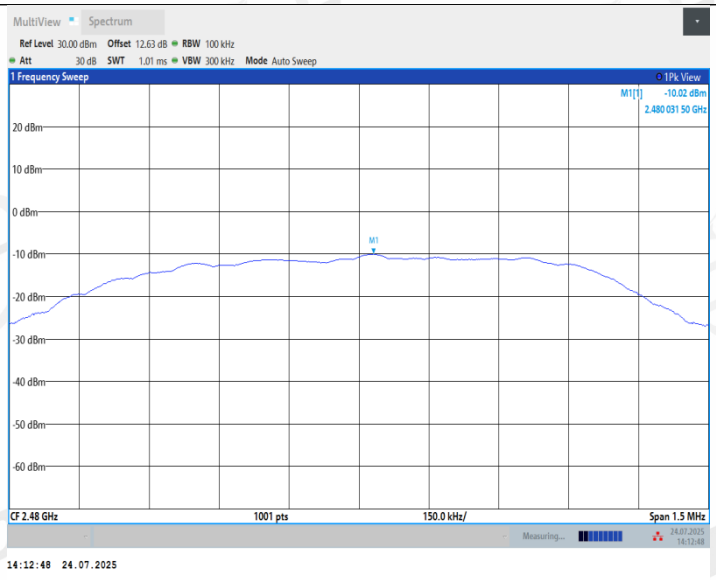


2DH5_Ant1_2480_0~Reference



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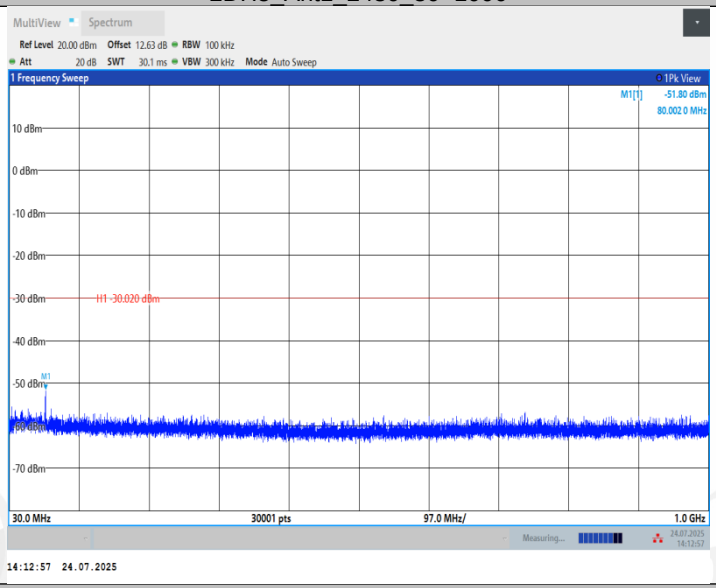

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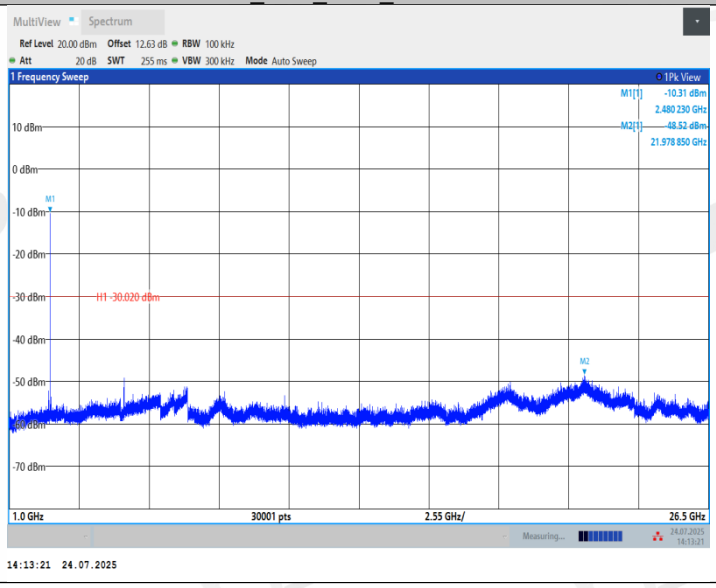
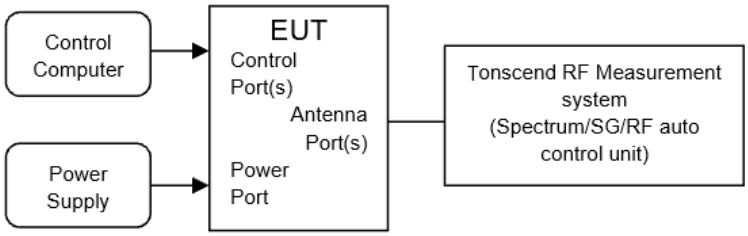


12. Duty cycle

12.1. Block diagram of test setup



12.2. Limit

Just for Report.

12.3. Test procedure

(1) Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, The cable loss and attenuator loss have been put into spectrum analyzer as amplitude offset.
set the Spectrum Analyzer as below:
Centre Frequency: The centre frequency of the middle hopping channel.
Resolution BW: 10 MHz.
Video BW: 10 MHz.
Span: Zero span.
Detector: Peak.
Trace Mode: Clear Write.
Sweep: Video Trigger

(2) When the trace is complete, measure the sending time of 1 burst and the duty cycle of 1 burst cycle.

(3) Calculate dwell time follow below formula:
Duty cycle= Pulse's on time / Burst cycle