Report No.:DDT-R22102430-6E01

Issued Date: Nov. 14, 2022

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	ASA Electronics Shenzhen Limited
Address	:	Room 503, 5/F., Unit A, Skyworth Building, Gaoxin Avenue.1.S., Nanshan District, Shen Zhen, China
Equipment under Test	:	AM/FM/WX/BT/PA/USB Heavy Duty Radio
Model No.	:	JHD22, RMJHD22
Trade Mark	:	JENSEN
FCC ID	:	2AHU2JHD22
Manufacturer	:	ASA Electronics.LLC
Address	:	2602 Marina Drive.Elkhart.IN 46514 USA

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

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

REPORT

Table of Contents

Test report declares....4
1. Summary of Test Results.... 6
2. General Test Information 7
2.1. Description of EUT 7
2.2. Accessories of EUT.... 7
2.3. Assistant equipment used for test.... 8
2.4. Block diagram of EUT configuration for test 8
2.5. Deviations of test standard.... 8
2.6. Test environment conditions 9
2.7. Test laboratory 9
2.8. Measurement uncertainty.... 9
3. Equipment Used During Test.... 10
4. Maximum Peak Output Power 11
4.1. Block diagram of test setup.... 11
4.2. Limits 11
4.3. Test procedure 11
4.4. Test result.... 11
4.5. Original test data 12
5. 20 dB Bandwidth and 99% Bandwidth.... 16
5.1. Block diagram of test setup.... 16
5.2. Limits 16
5.3. Test procedure 16
5.4. Test result.... 16
5.5. Original test data 17
6. Carrier Frequency Separation.... 24
6.1. Block diagram of test setup.... 24
6.2. Limits 24
6.3. Test procedure 24
6.4. Test result.... 24
6.5. Original test data 25
7. Number of Hopping Channel 27
7.1. Block diagram of test setup.... 27
7.2. Limits 27
7.3. Test procedure 27
7.4. Test result.... 27
7.5. Original test data 28
8. Dwell Time.... 30

8.1. Block diagram of test setup 30
8.2. Limits 30
8.3. Test procedure 30
8.4. Test result 30
8.5. Original test data 31
9. Band Edge Compliance (Conducted Method) 38
9.1. Block diagram of test setup 38
9.2. Limit 38
9.3. Test procedure 38
9.4. Test result 38
9.5. Original test data 39
10. Radiated Emission 44
10.1. Block diagram of test setup 44
10.2. Limit 45
10.3. Test Procedure 46
10.4. Test result 48
11. RF Conducted Spurious Emissions 63
11.1. Block diagram of test setup 63
11.2. Limits 63
11.3. Test procedure 63
11.4. Test result 64
11.5. Original test data 64
12. Band Edge Compliance (Radiated Method) 74
12.1. Block diagram of test setup 74
12.2. Limit 74
12.3. Test Procedure 74
12.4. Test result 74
13. Power Line Conducted Emission 87
13.1. Block diagram of test setup 87
13.2. Power line conducted emission limits 87
13.3. Test procedure 87
13.4. Test result 88
14. Antenna Requirements 89
14.1. Limit 89
14.2. Result 89
15. Test Setup Photograph 90
16. Photos of the EUT 92

Test Report Declare

Applicant	:	ASA Electronics Shenzhen Limited
Address	:	Room 503, 5/F., Unit A, Skyworth Building, Gaoxin Avenue.1.S., Nanshan District, Shen Zhen, China
Equipment under Test	:	AM/FM/WX/BT/PA/USB Heavy Duty Radio
Model No.	:	JHD22, RMJHD22
Trade Mark	:	JENSEN
Manufacturer	:	ASA Electronics.LLC
Address	:	2602 Marina Drive.Elkhart.IN 46514 USA

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C

Test Procedure Used:

ANSI C63.10:2013

We Declare:

The equipment described above is tested by Dongguan 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 Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-R22102430-6E01		
Date of Receipt:	Oct. 25, 2022	**Date of Test:**	Oct. 25, 2022 ~ Nov. 14, 2022

Prepared By: ***Approved By:***

Johnny Wang

Johnny Wang/Engineer ***Damon Hu/EMC Manager***

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

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Nov. 14, 2022	

1. Summary of Test Results

Description of Test Item	Standard	Verdict
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) ANSI C63.10:2013	Pass
20 dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013	Pass
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.10:2013	Pass
Number of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10:2013	Pass
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10:2013	Pass
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10:2013	Pass
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.10:2013	Pass
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10:2013	N/A
Antenna Requirement	FCC Part 15: 15.203	Pass

2. General Test Information

2.1. Description of EUT

EUT* Name	:	AM/FM/WX/BT/PA/USB Heavy Duty Radio
Model Number	:	JHD22, RMJHD22
Difference of models	:	Above models are identical in schematic and structure. Only the name is different for all the models, therefore the test performed on the model JHD22 and record in this report.
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 12V
Radio Specification	:	Bluetooth V5.1
Operation Frequency	:	2402 MHz - 2480 MHz
Modulation	:	GFSK, π/4-DQPSK, 8DPSK
Data Rate	:	1 Mbps, 2 Mbps, 3 Mbps
Antenna Gain	:	0.09 dBi
Sample Type	:	Series production
Sample Number	:	S22102430-06

Note: EUT is the ab. of equipment under test.

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		

2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Description	Other
N/A	N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

DC Mains —— EUT

Test software: BlueTest3.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: 0.5dB (According to the manufacturer's claims)

Tested mode, channel, information			
Mode	Setting Tx Power	Channel	Frequency (MHz)
GFSK hopping on Tx Mode	/	CH0 to CH78	2402 to 2480
π/4-DQPSK hopping on Tx Mode	/	CH0 to CH78	2402 to 2480
8DPSK hopping on Tx Mode	/	CH0 to CH78	2402 to 2480
GFSK hopping off Tx Mode	/	CH0	2402
	/	CH39	2441
	/	CH78	2480
π/4-DQPSK hopping off Tx Mode	/	CH0	2402
	/	CH39	2441
	/	CH78	2480
8DPSK hopping off Tx Mode	/	CH0	2402
	/	CH39	2441
	/	CH78	2480

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:	+21 ℃ to +25 ℃
Humidity range:	40% to 75%
Pressure range:	86 kPa to 106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, 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-20155, G-20118

2.8. Measurement uncertainty

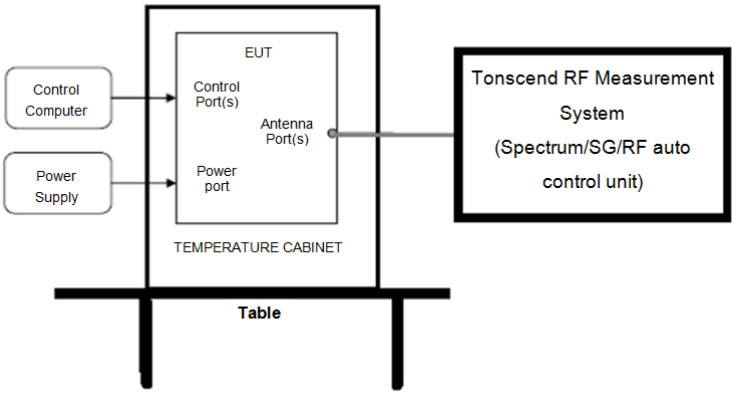
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 x 10^{-8} (Antenna couple method)
	5.5 x 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 < 22 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
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	3.32 dB (150 kHz - 30 MHz)
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 Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☒RF Connected Test (Tonscend RF Measurement System 3#)					
SPECTRUM ANALYZER	R&S	FSV40	101407	Jul. 21, 2022	1 Year
Wideband Radio Communication tester	R&S	CMW500	117491	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY19060405	May 18, 2022	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180912	May 18, 2022	1 Year
RF Control Unit	Tonsend	JS0806-2	DDT-ZC01449	May 18, 2022	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150 L	ZX170110-A	May 26, 2022	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.2.6.77.0518	N/A	N/A
☒Radiation 3#chamber					
EMI Test Receiver	R&S	ESU	100472	May 18, 2022	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 18, 2022	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA 9120 D	02468	Nov. 29, 2021	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022	1 Year
Pre-amplifier	COM-POWE R	PAM-118A	18040084	Aug. 17, 2022	1 Year
Pre-amplifier	COM-POWE R	PAM-840A	461369	Apr. 11, 2022	1 Year
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5M+ JCT26S-NJ-NJ-1.5M	4.5M+8M+1.5M+ 1.5M	Aug.17, 2022	1 Year
RF Cable	Yuhu Technology	JCTB810-NJ-NJ-9M	21123964	May. 19,2022	1 Year
Test software	Tonscend	JS32-RE	V 5.0.0.1	N/A	N/A
☒Power Line Conducted Emissions Test 1#					
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year
LISN 1	R&S	ENV216	101109	Aug. 26, 2022	1 Year
LISN 2	R&S	ESH2-Z5	100309	Aug. 26, 2022	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Aug. 26, 2022	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Aug. 26, 2022	1 Year
Test software	Tonscend	JS32-RE	V 5.0.0.1	N/A	N/A

4. Maximum Peak Output Power

4.1. Block diagram of test setup



4.2. 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.

4.3. Test procedure

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

(2) Measure the maximum conducted output power of EUT by spectrum analyzer with PK detector and RBW=3 MHz (above 20 dB bandwidth of measured signal), VBW=10 MHz

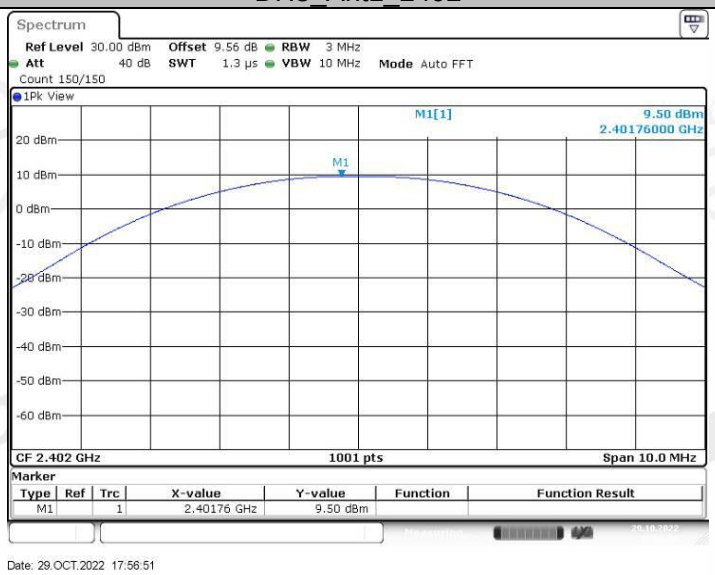
Note: The attenuator loss was inputted into spectrum analyzer as amplitude offset.

4.4. Test result

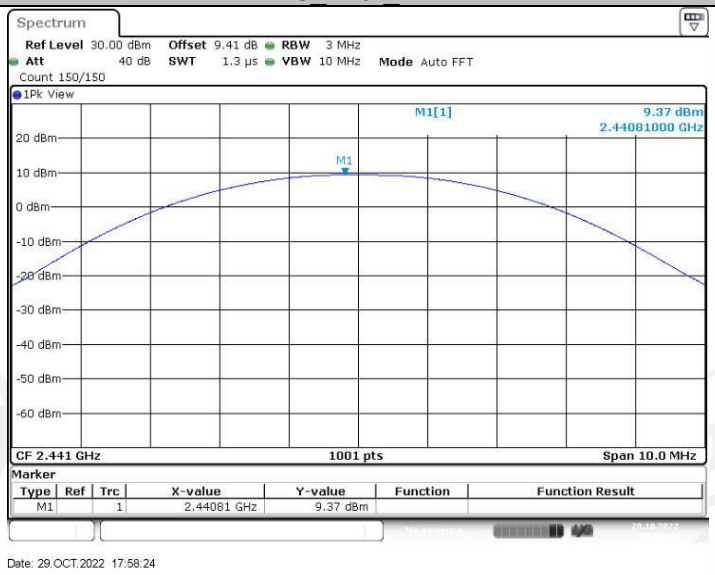
Mode	Antenna	Freq. (MHz)	Conducted Output Power (dBm)	Limit (dBm)	Verdict
GFSK	ANT1	2402	9.50	21	Pass
	ANT1	2441	9.37	21	Pass
	ANT1	2480	9.03	21	Pass
π/4-DQPSK	ANT1	2402	11.34	21	Pass
	ANT1	2441	11.14	21	Pass
	ANT1	2480	10.87	21	Pass
8DPSK	ANT1	2402	**11.73**	21	Pass
	ANT1	2441	11.49	21	Pass
	ANT1	2480	11.09	21	Pass

4.5. Original test data

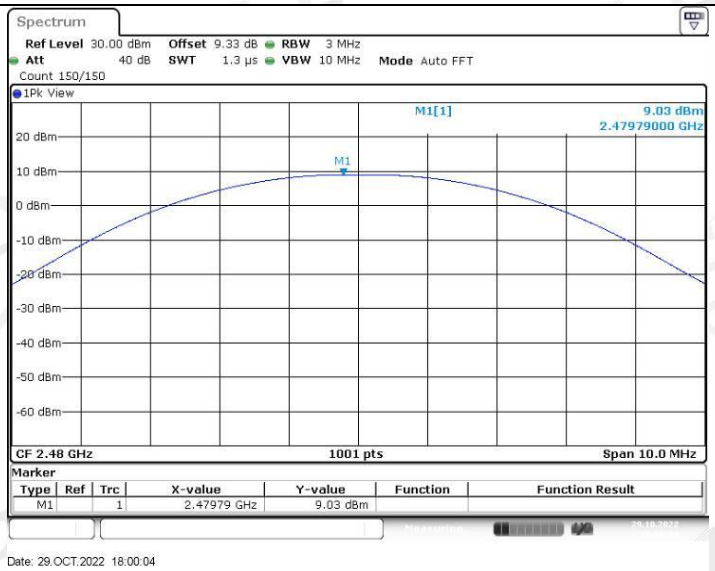
DH5_Ant1_2402



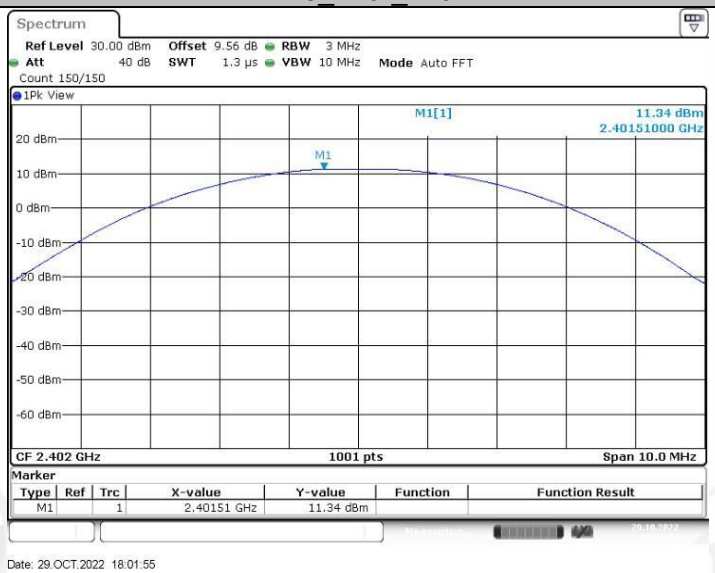
DH5_Ant1_2441



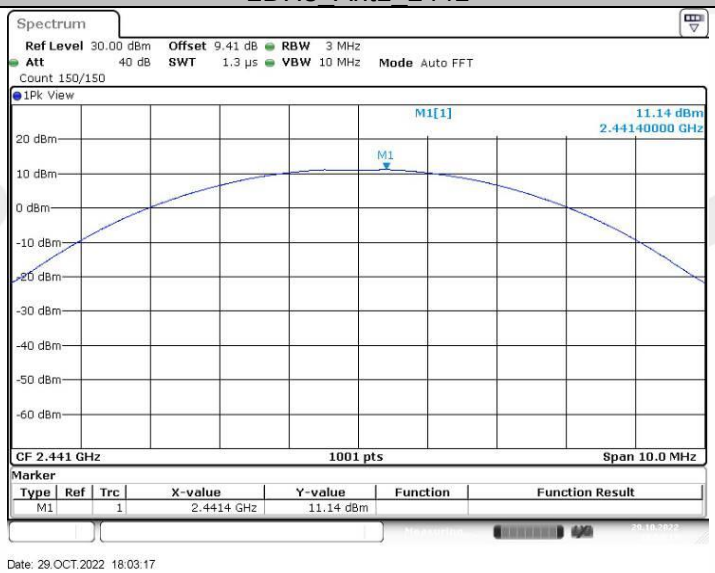
DH5_Ant1_2480



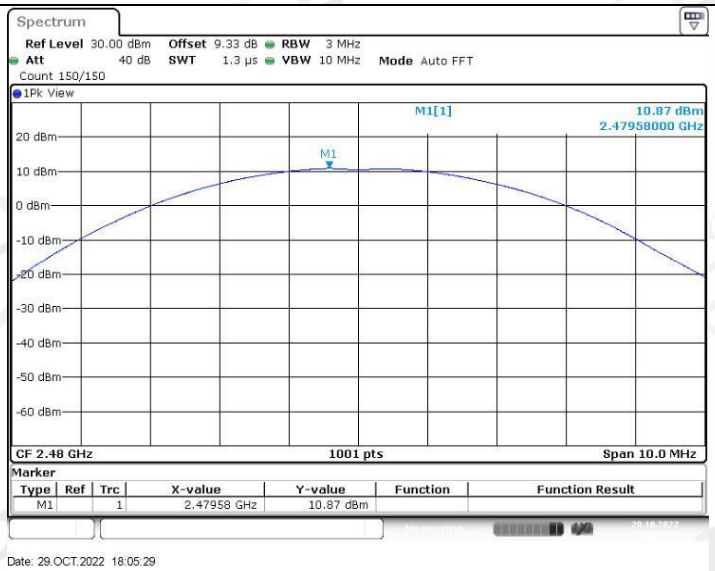
2DH5_Ant1_2402



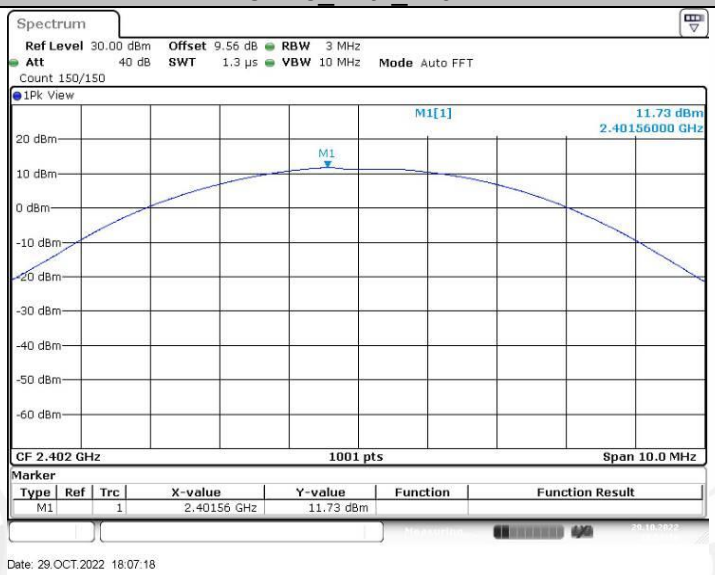
2DH5_Ant1_2441



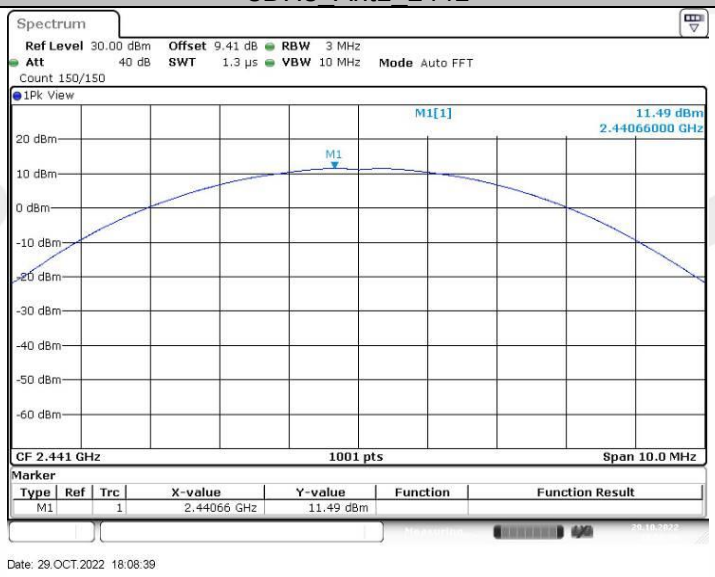
2DH5_Ant1_2480



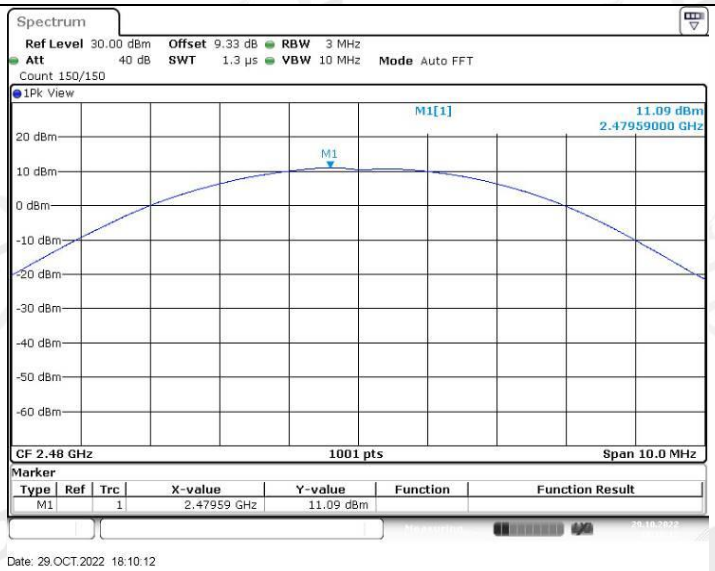
3DH5_Ant1_2402



3DH5_Ant1_2441



3DH5_Ant1_2480


Spectrum
Ref Level 30.00 dBm Offset 9.33 dB RBW 3 MHz
Att 40 dB SWT 1.3 µs VBW 10 MHz Mode Auto FFT
Count 150/150
1Pk View
M1[1] 11.09 dBm
2.47959000 GHz
M1
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
CF 2.48 GHz
1001 pts
Span 10.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.47959 GHz 11.09 dBm
Date: 29.OCT.2022 18:10:12

5. 20 dB Bandwidth and 99% Bandwidth

5.1. Block diagram of test setup

Same as section 4.1

5.2. 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.

5.3. Test procedure

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

(2) The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30 kHz RBW and 100 kHz VBW. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20 dB.

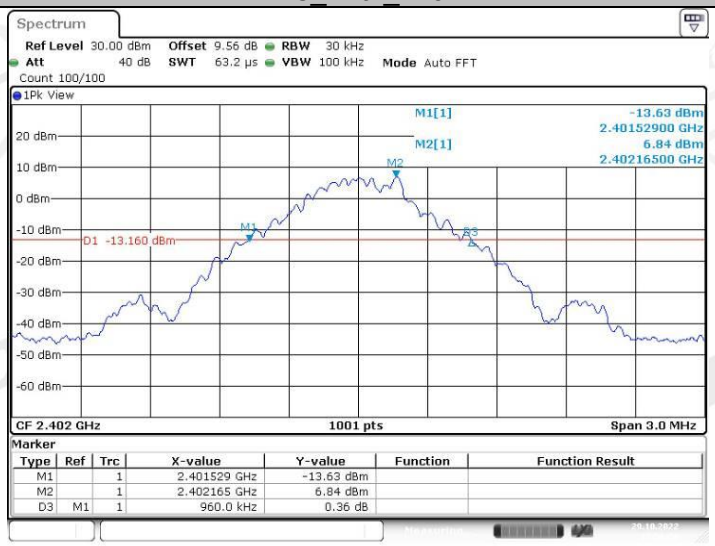
5.4. Test result

Mode	Freq. (MHz)	20 dB bandwidth Result (MHz)	99% bandwidth Result (MHz)	Verdict
GFSK	2402	0.96	0.872	Pass
	2441	0.96	0.869	Pass
	2480	0.96	0.866	Pass
π/4-DQPSK	2402	1.35	1.196	Pass
	2441	1.35	1.196	Pass
	2480	1.34	1.196	Pass
8DPSK	2402	1.31	1.184	Pass
	2441	1.31	1.187	Pass
	2480	1.31	1.184	Pass

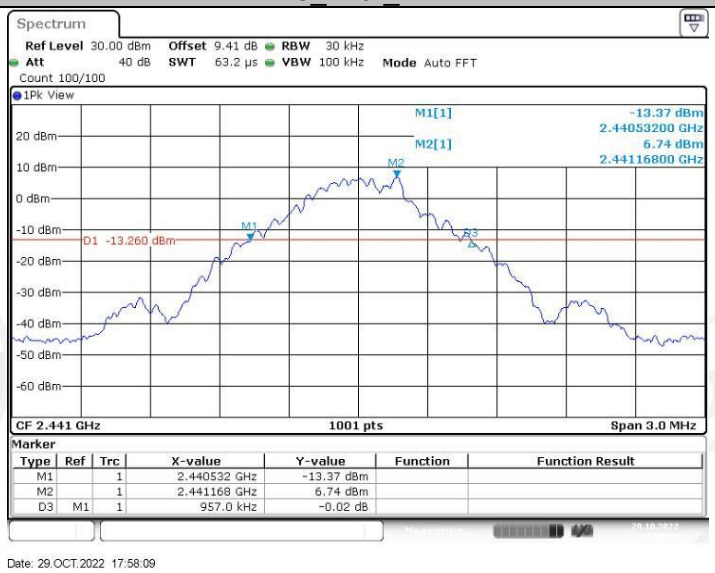
5.5. Original test data

20dB bandwidth：

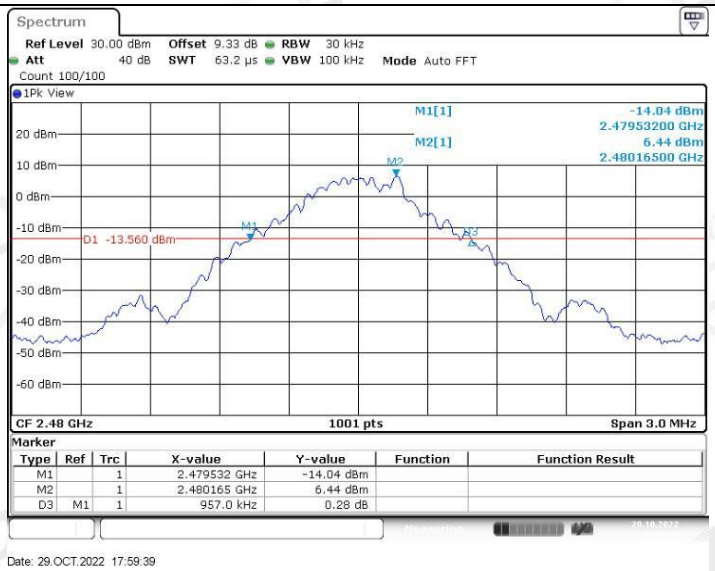
DH5_Ant1_2402



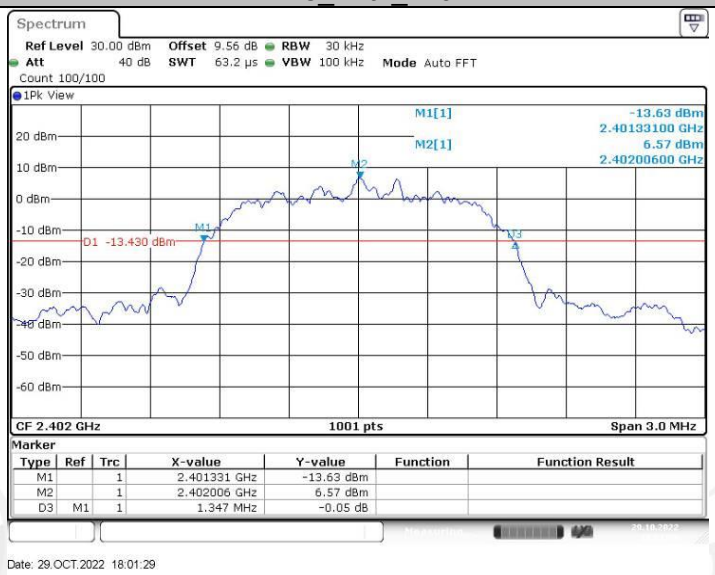
DH5_Ant1_2441



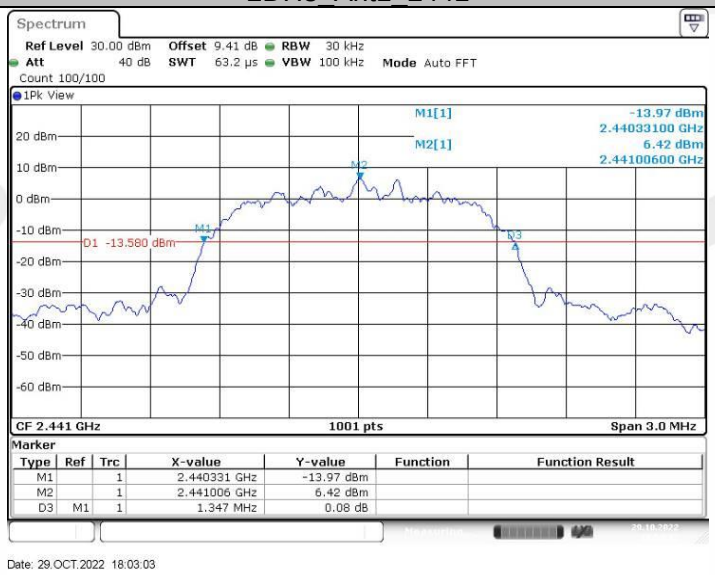
DH5_Ant1_2480



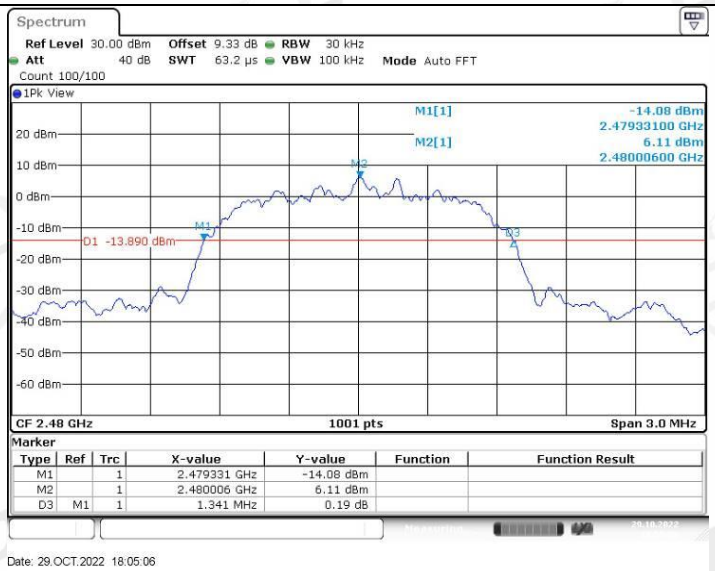
2DH5_Ant1_2402



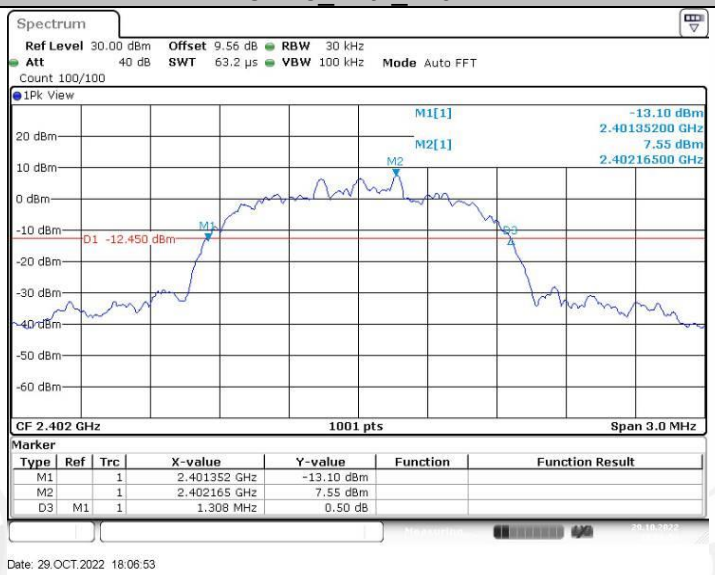
2DH5_Ant1_2441



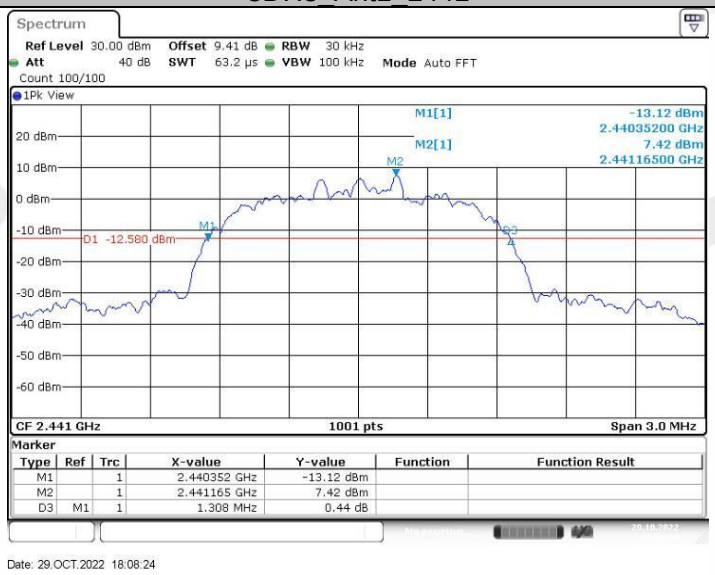
2DH5_Ant1_2480



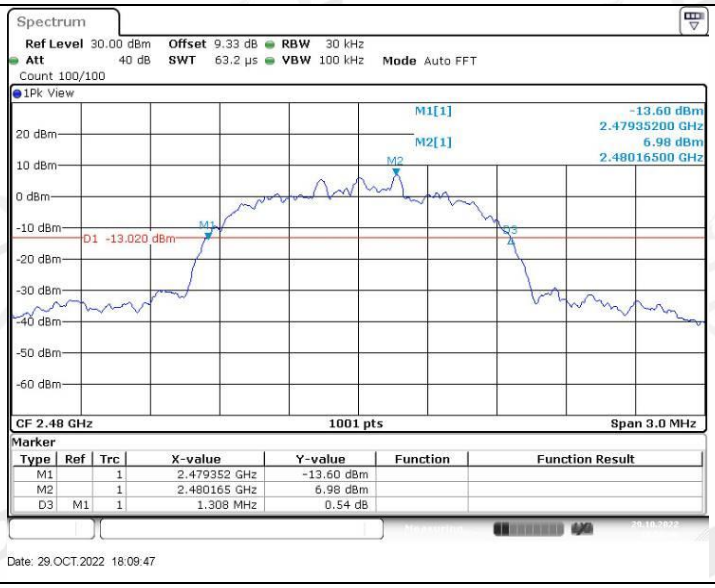
3DH5_Ant1_2402



3DH5_Ant1_2441

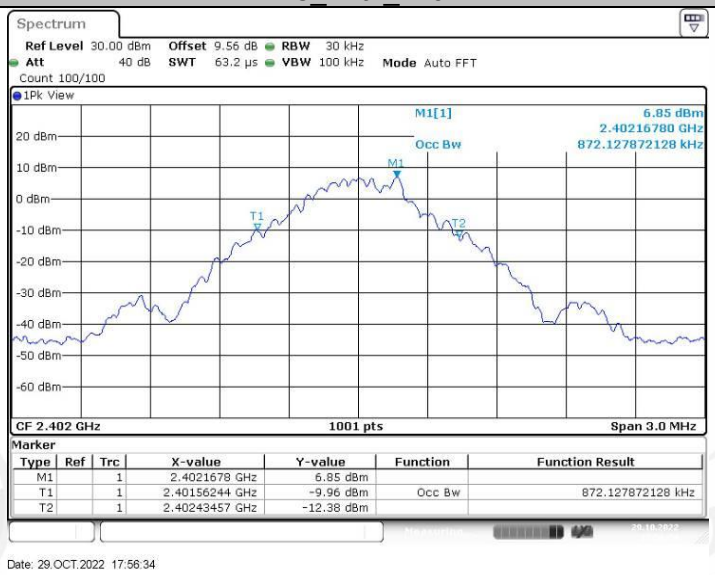


3DH5_Ant1_2480

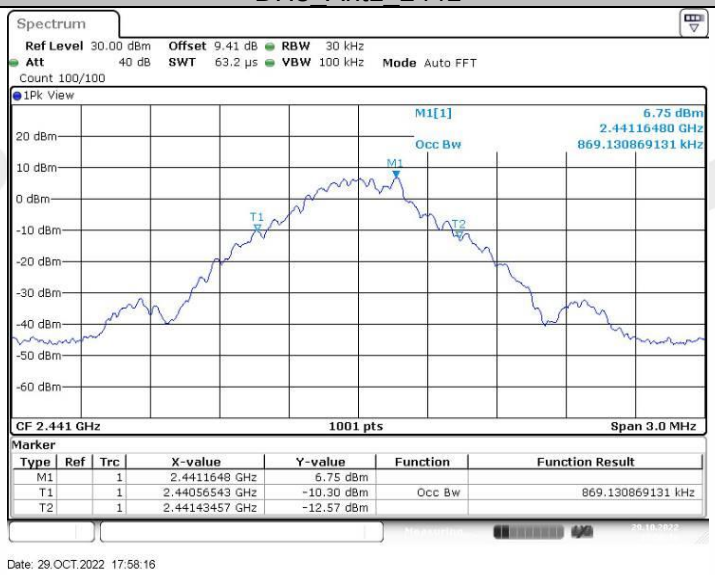


99% bandwidth

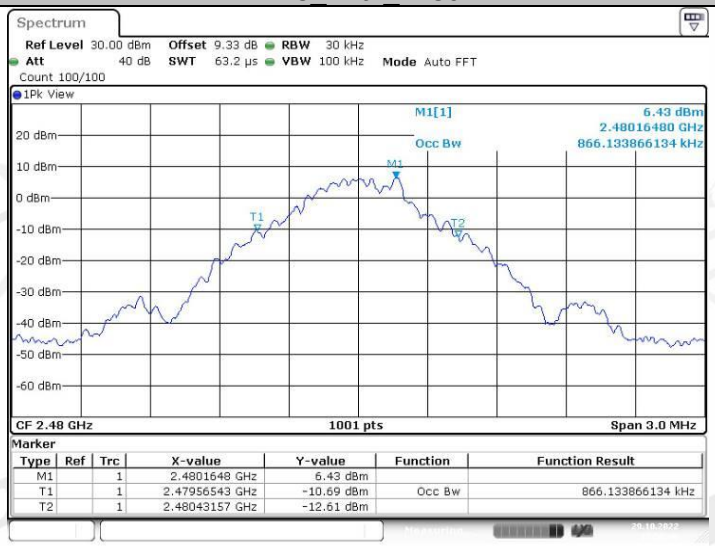
DH5_Ant1_2402



DH5_Ant1_2441

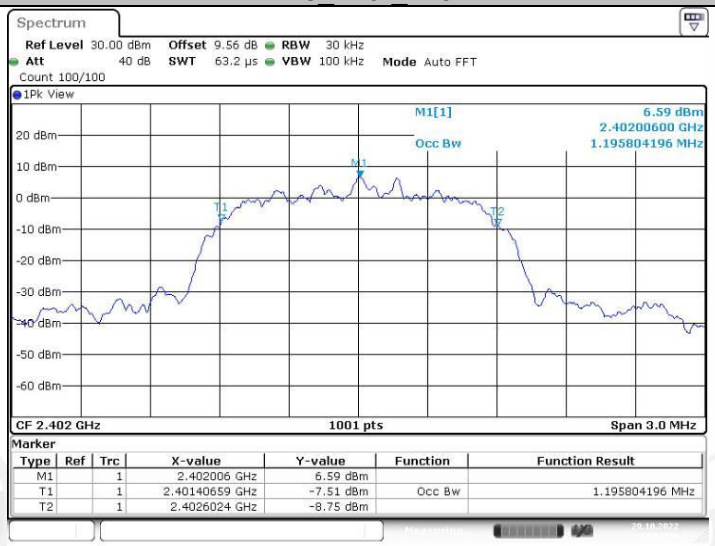


DH5_Ant1_2480



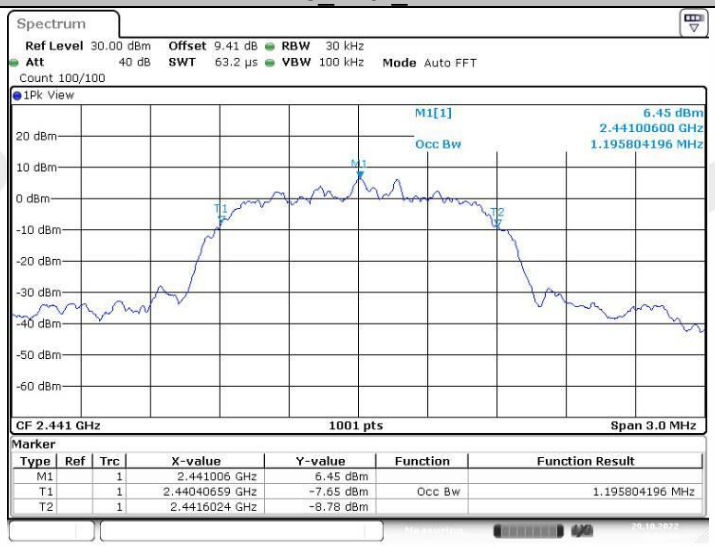
Date: 29.OCT.2022 17:59:46

2DH5_Ant1_2402



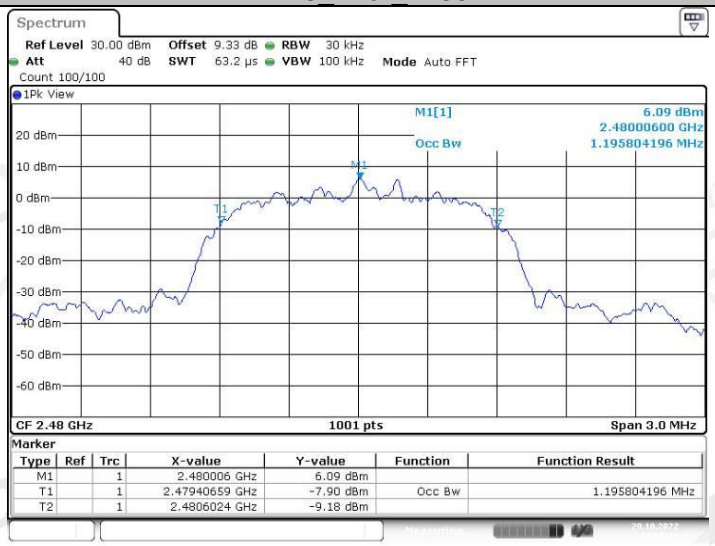
Date: 29.OCT.2022 18:01:36

2DH5_Ant1_2441



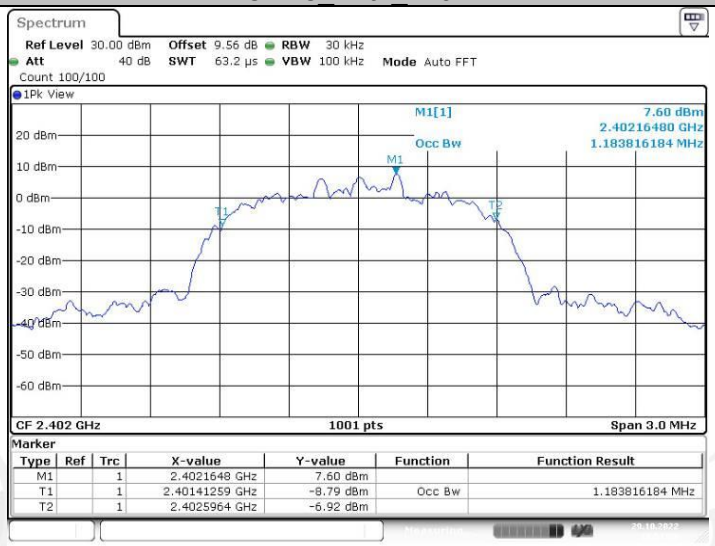
Date: 29.OCT.2022 18:03:10

2DH5_Ant1_2480



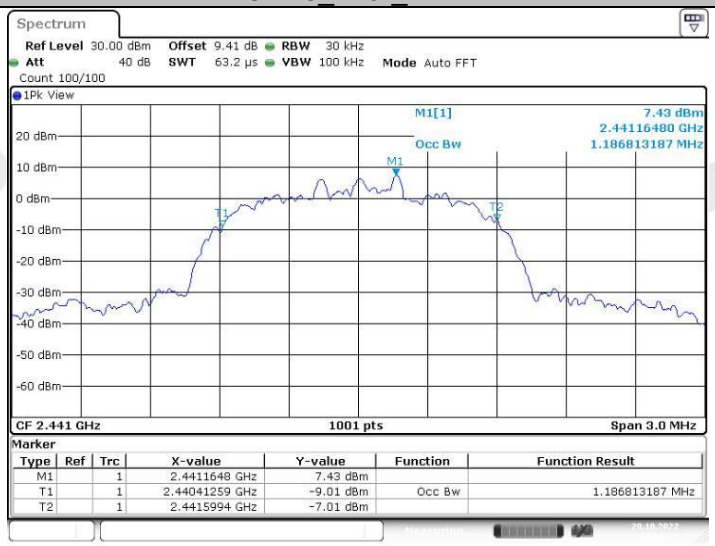
Date: 29.OCT.2022 18:05:12

3DH5_Ant1_2402



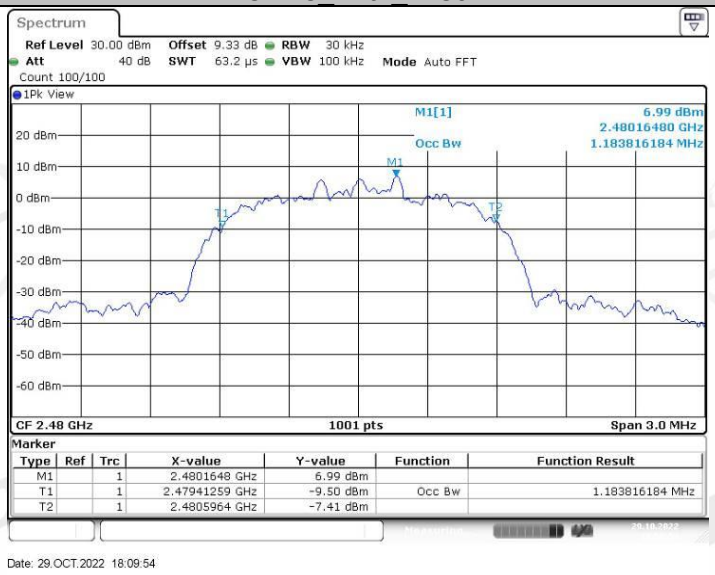
Date: 29.OCT.2022 18:07:00

3DH5_Ant1_2441



Date: 29.OCT.2022 18:08:32

3DH5_Ant1_2480



6. Carrier Frequency Separation

6.1. Block diagram of test setup

Same as section 4.1

6.2. 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.

6.3. Test procedure

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

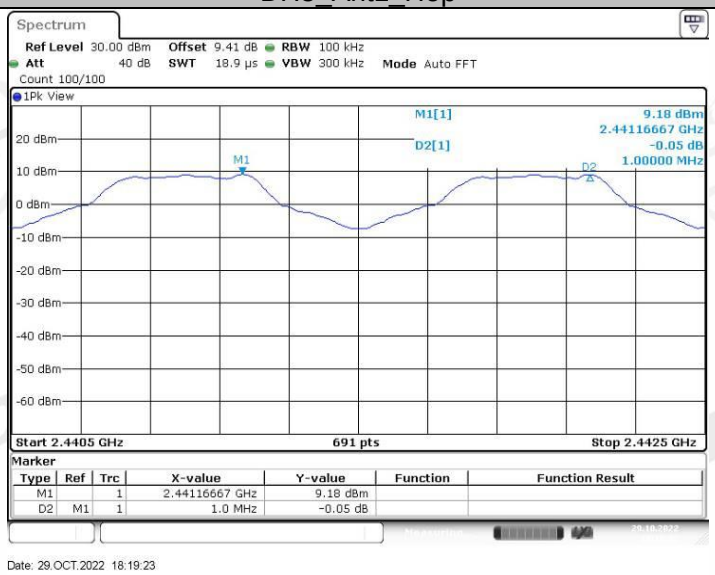
(2) The carrier frequency was measured by spectrum analyzer with 100 kHz RBW and 300 kHz VBW.

6.4. Test result

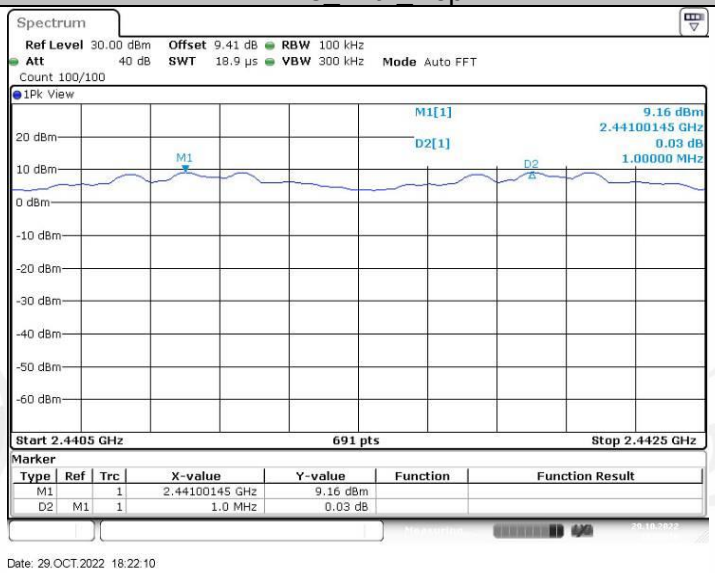
Mode	Channel separation (MHz)	20dB bandwidth (MHz) (worse case)	Limit (MHz) 2/3 of 20dB bandwidth	Verdict
GFSK	1.000	0.96	≥0.640	Pass
π/4-DQPSK	1.000	1.35	≥0.900	Pass
8DPSK	1.003	1.31	≥0.873	Pass

6.5. Original test data

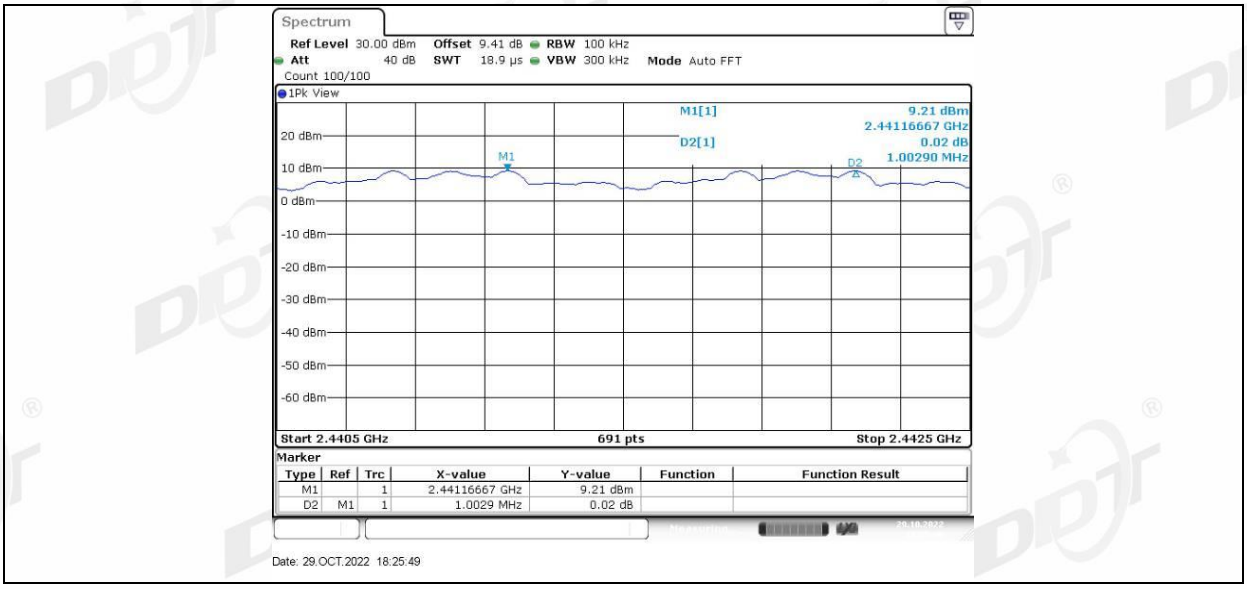
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Spectrum
Ref Level 30.00 dBm Offset 9.41 dB RBW 100 kHz
Att 40 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT
Count 100/100
1Pk View
M1[1] 9.21 dBm
2.44116667 GHz
D2[1] 0.02 dB
1.00290 MHz
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
Start 2.4405 GHz 691 pts Stop 2.4425 GHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 2.44116667 GHz 9.21 dBm
D2 M1 1 1.0029 MHz 0.02 dB
Date: 29.OCT.2022 18:25:49

7. Number of Hopping Channel

7.1. Block diagram of test setup

Same as section 4.1

7.2. Limits

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

7.3. Test procedure

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

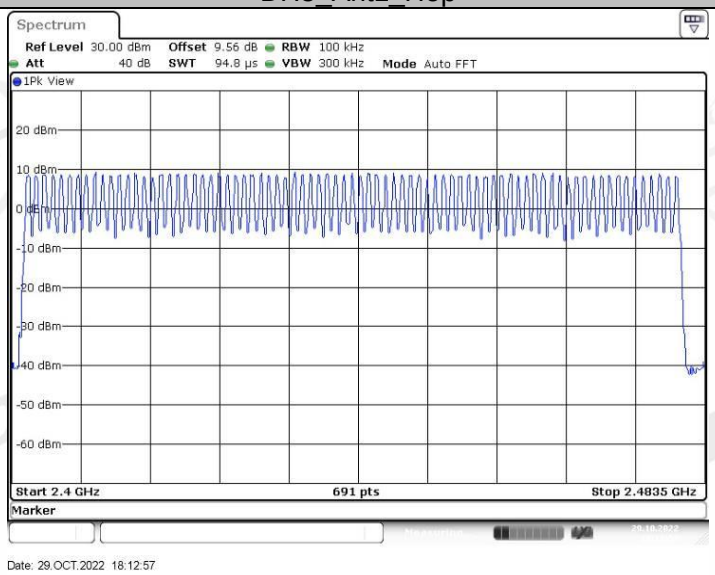
(2) The number of hopping channels was measured by spectrum analyzer with 100 kHz RBW and 300 kHz VBW.

7.4. Test result

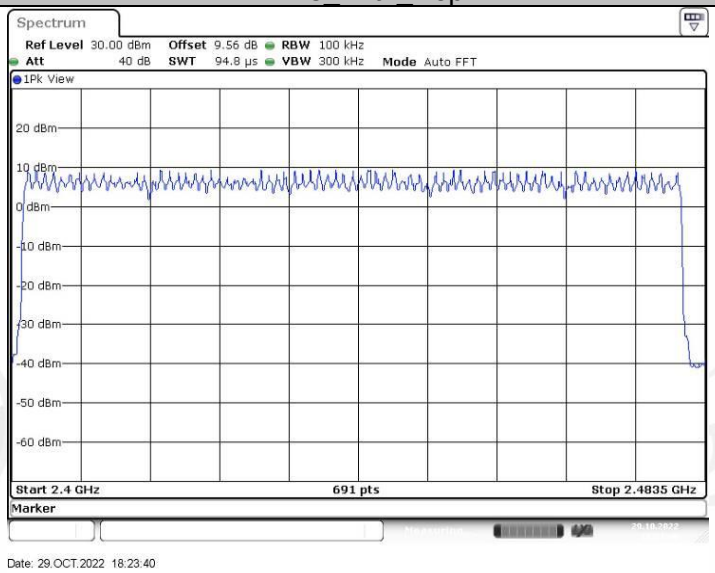
Mode	Number of hopping channels	Limit	Verdict
GFSK	79	>15	Pass
π/4-DQPSK	79	>15	Pass
8DPSK	79	>15	Pass

7.5. Original test data

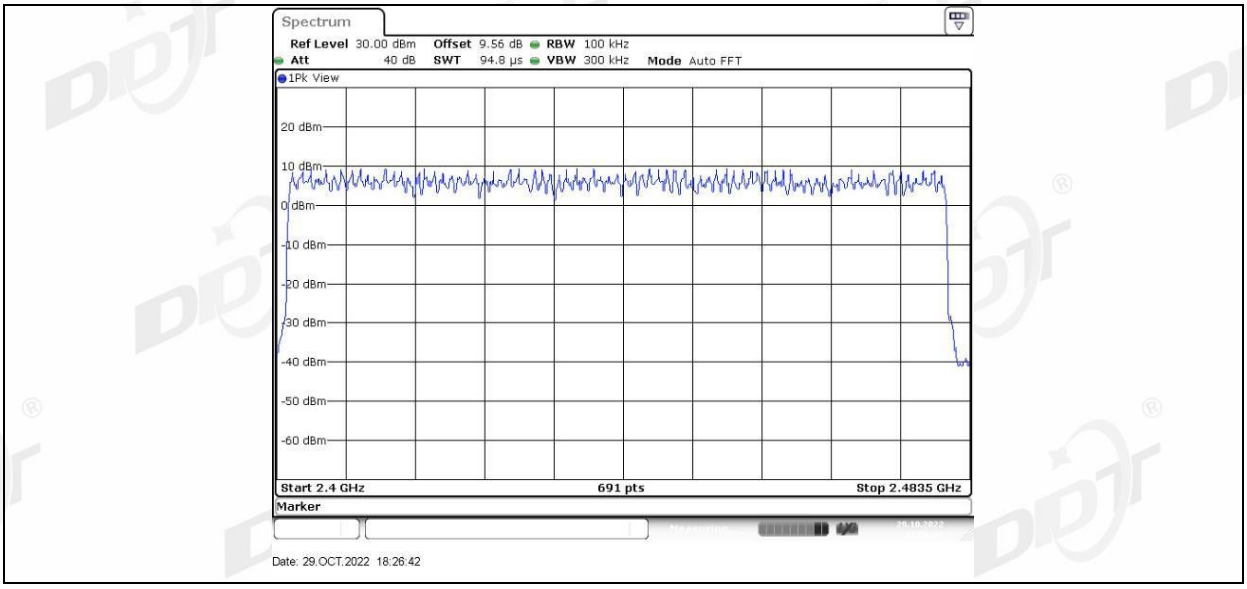
DH5_Ant1_Hop



2DH5_Ant1_Hop



3DH5_Ant1_Hop


Spectrum
Ref Level 30.00 dBm Offset 9.56 dB RBW 100 kHz
Att 40 dB SWT 94.8 µs VBW 300 kHz Mode Auto FFT
1Pk View
20 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
Start 2.4 GHz
691 pts
Stop 2.4835 GHz
Marker
Date: 29.OCT.2022 18:26:42

8. Dwell Time

8.1. Block diagram of test setup

Same as section 4.1

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

(2) The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

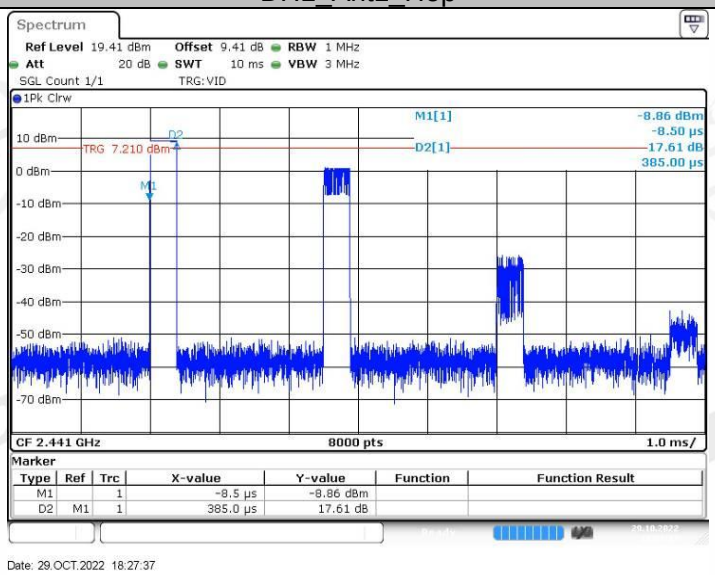
(3) Measure the hopping number and on time of each pulse with spectrum analyzer in zero span set, and calculate dwell time with formula Dwell time = total hops *pulse's on time.

8.4. Test result

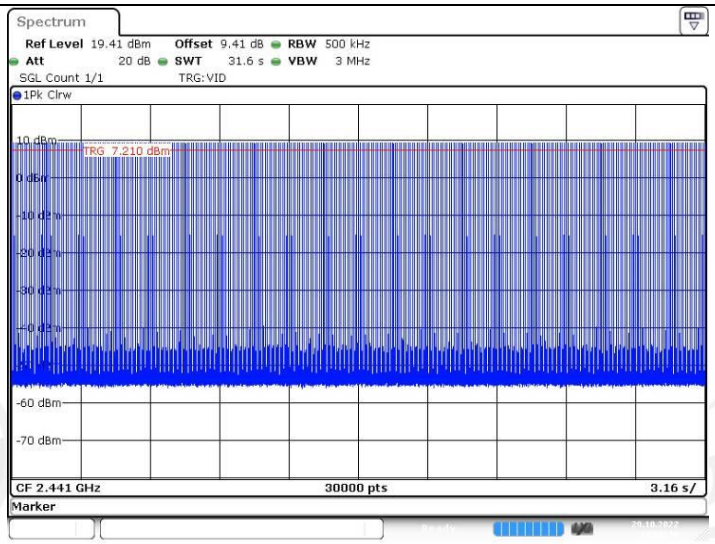
Mode	Dwell time (s)	Pulse's on time (ms)	Total hops	Limit	Verdict
DH1	0.123	0.385	320	<400ms	Pass
DH3	0.262	1.640	160	<400ms	Pass
DH5	0.309	2.889	107	<400ms	Pass
2DH1	0.126	0.395	320	<400ms	Pass
2DH3	0.264	1.648	160	<400ms	Pass
2DH5	0.310	2.895	107	<400ms	Pass
3DH1	0.126	0.395	320	<400ms	Pass
3DH3	0.263	1.645	160	<400ms	Pass
3DH5	0.310	2.897	107	<400ms	Pass
Note: Dwell time = total hops *pulse's on time.					

8.5. Original test data

DH1_Ant1_Hop

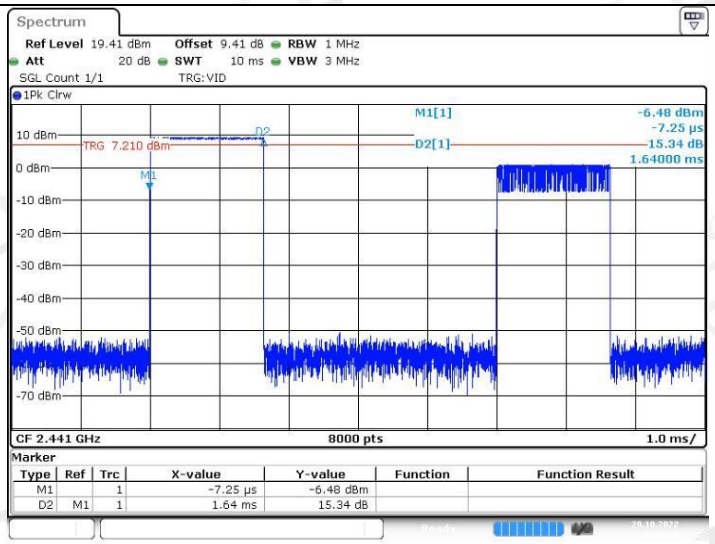


Date: 29.OCT.2022 18:27:37

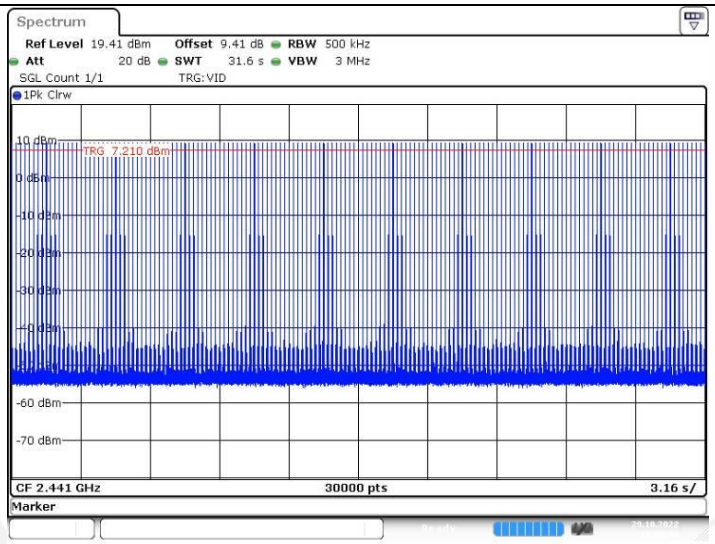


Date: 29.OCT.2022 18:28:11

DH3_Ant1_Hop

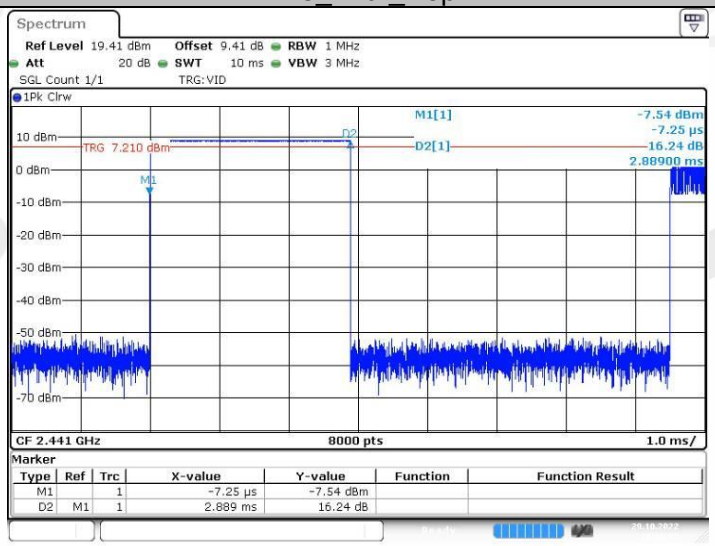


Date: 29.OCT.2022 18:28:58

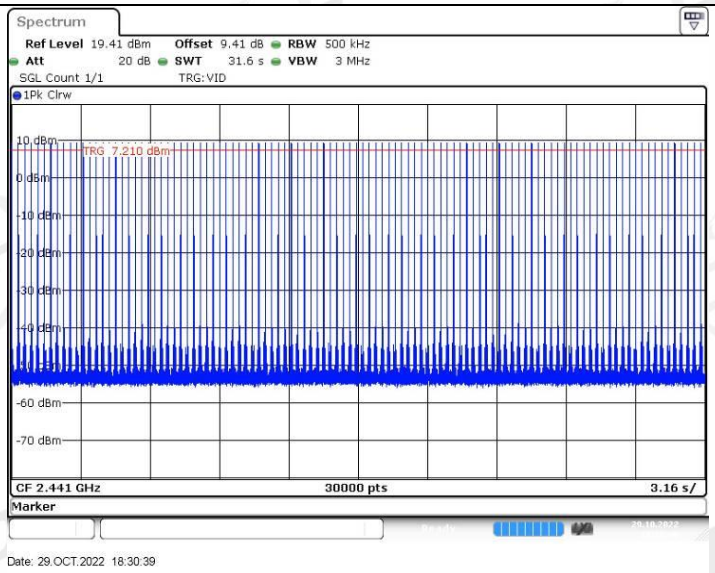


Date: 29.OCT.2022 18:29:32

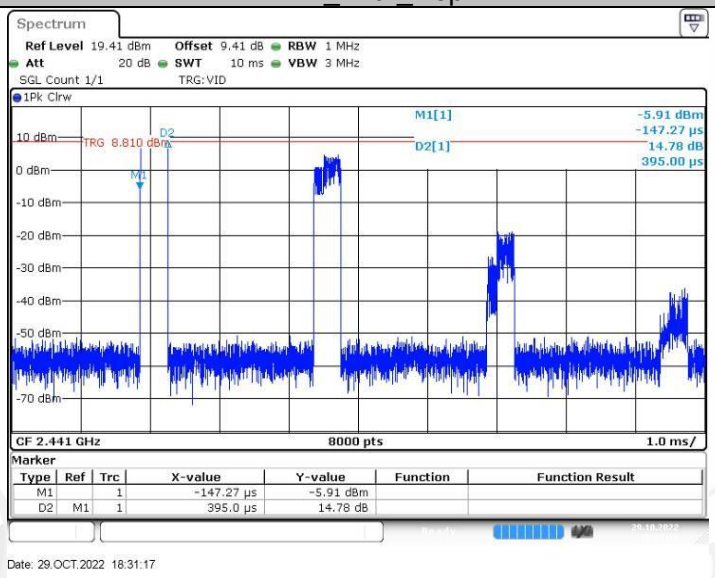
DH5_Ant1_Hop

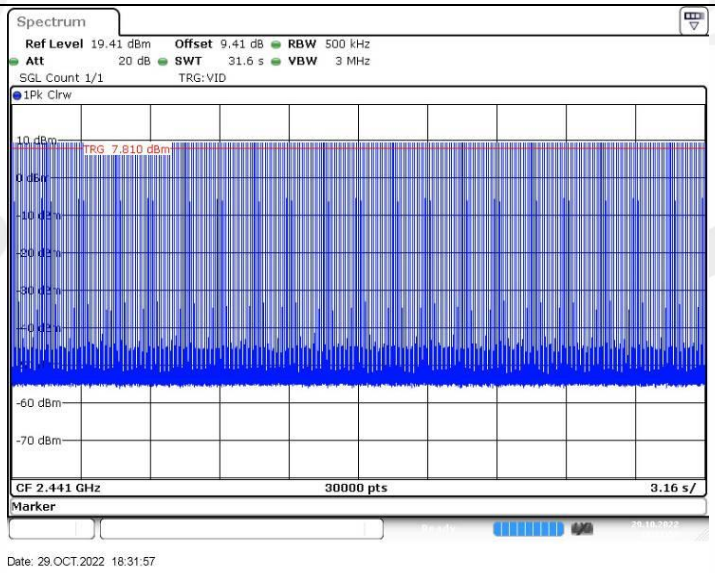


Date: 29.OCT.2022 18:30:05

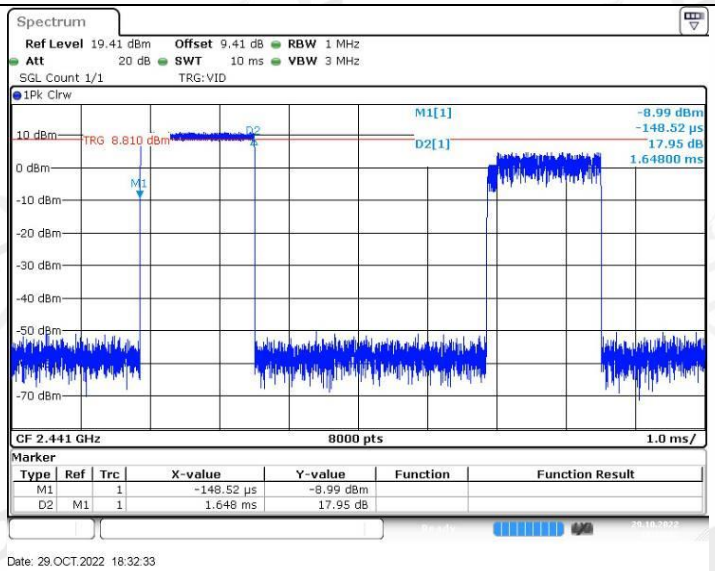


2DH1_Ant1_Hop

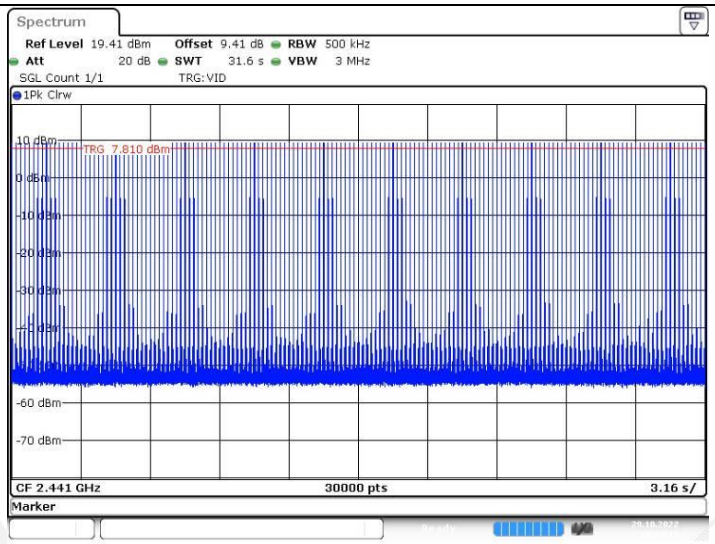




2DH3_Ant1_Hop

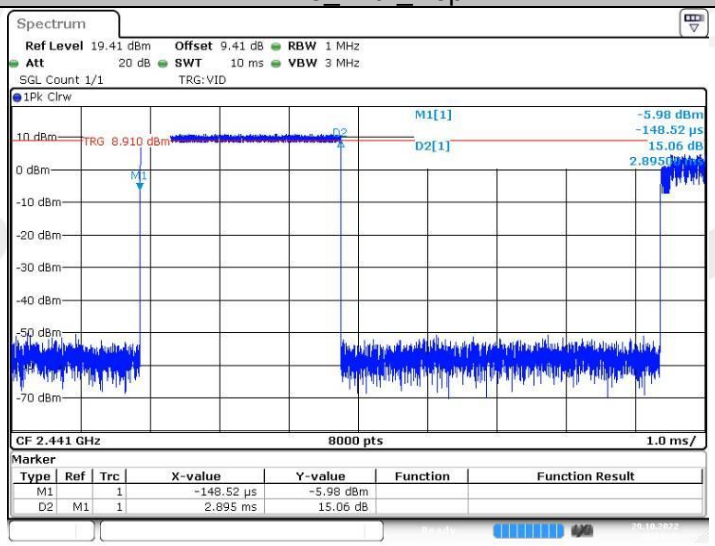


Date: 29.OCT.2022 18:32:33

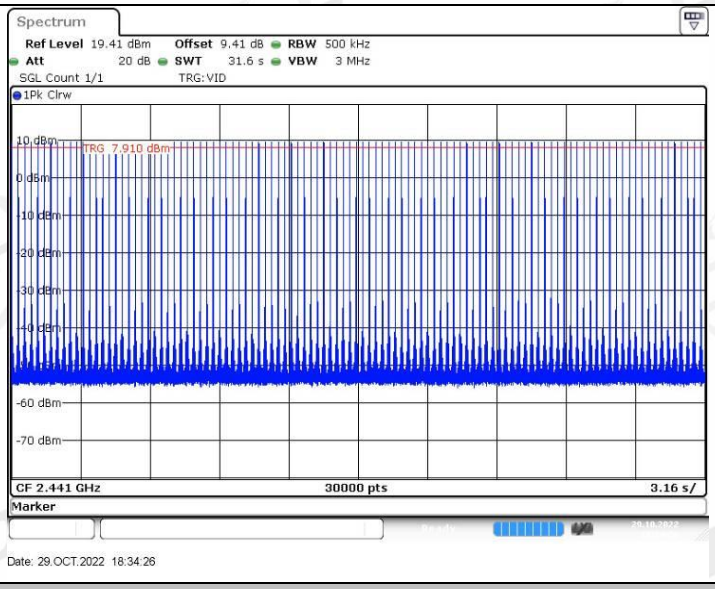


Date: 29.OCT.2022 18:33:13

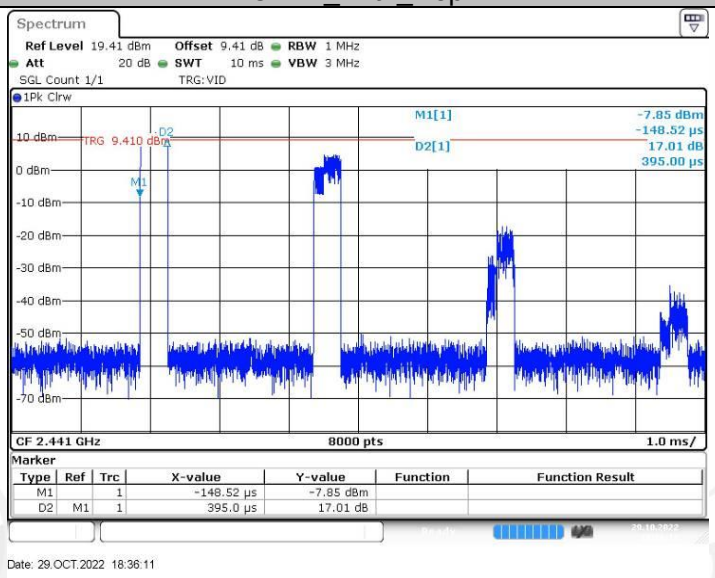
2DH5_Ant1_Hop

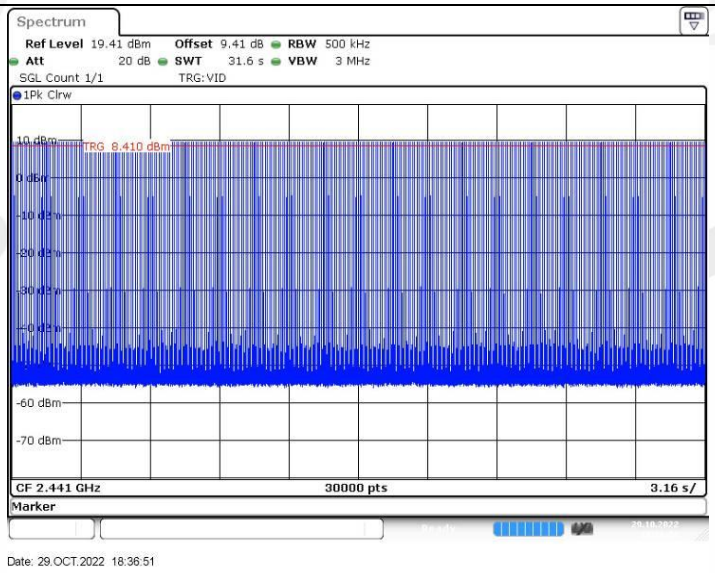


Date: 29.OCT.2022 18:33:45

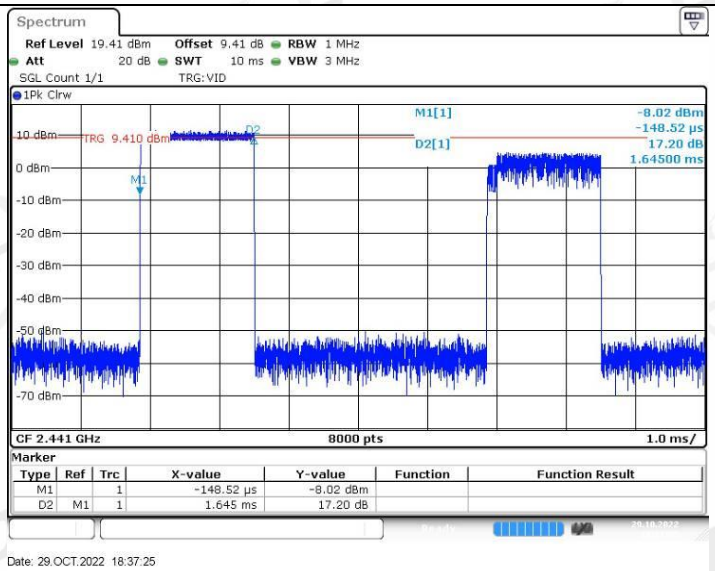


3DH1_Ant1_Hop

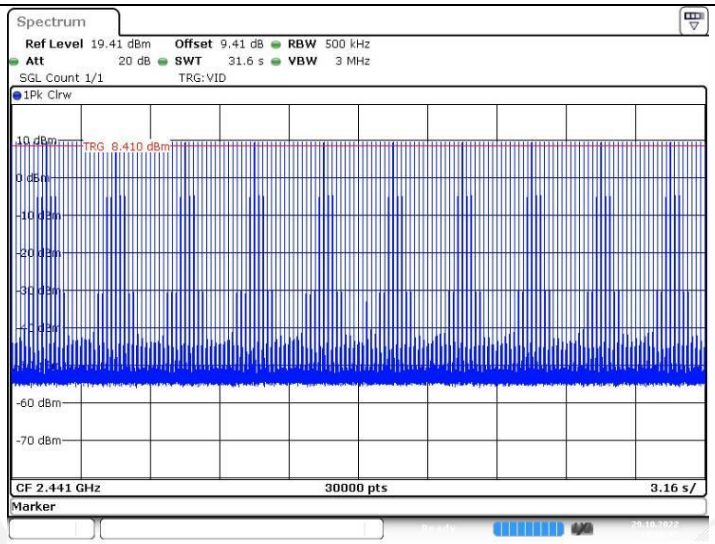




3DH3_Ant1_Hop

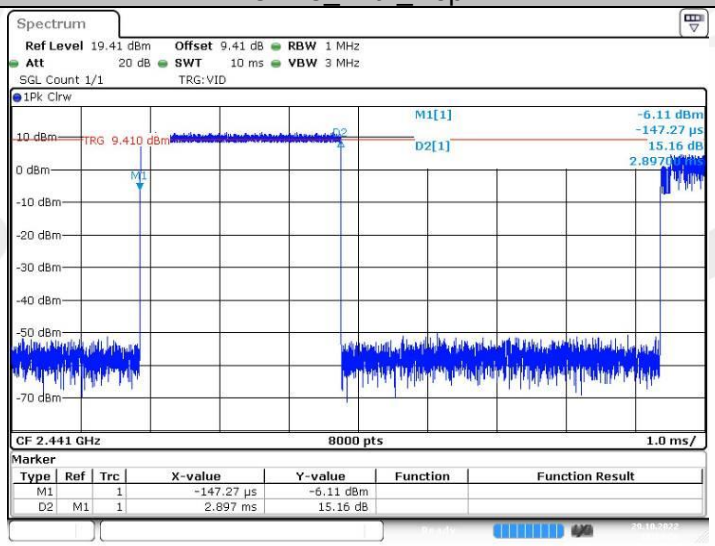


Date: 29.OCT.2022 18:37:25

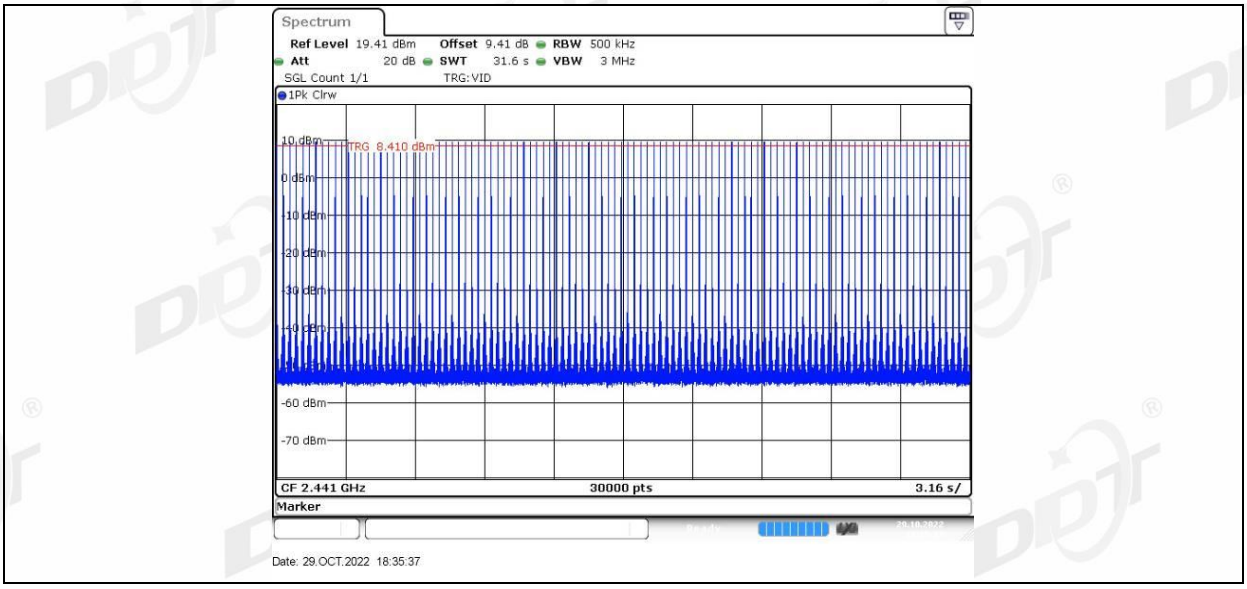


Date: 29.OCT.2022 18:38:05

3DH5_Ant1_Hop



Date: 29.OCT.2022 18:34:56


Spectrum
Ref Level 19.41 dBm Offset 9.41 dB RBW 500 kHz
Att 20 dB SWT 31.6 s VBW 3 MHz
SGL Count 1/1 TRG: VID
1Pk Clrw
TRG 8.410 dBm
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-60 dBm
-70 dBm
CF 2.441 GHz 30000 pts 3.16 s/
Marker
Date: 29.OCT.2022 18:35:37

9. Band Edge Compliance (Conducted Method)

9.1. Block diagram of test setup

Same as section 4.1

9.2. Limit

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

9.3. 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.

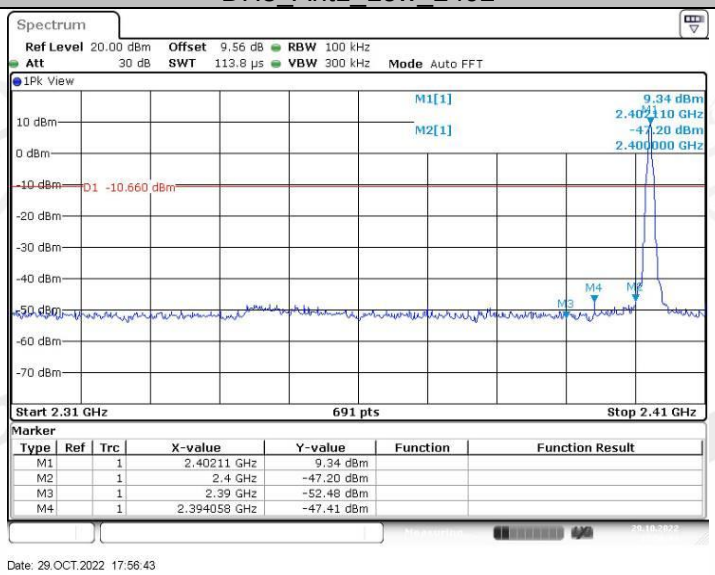
(4) Then mark the maximum amplitude of all unwanted emissions outside of the authorized frequency band.

9.4. Test result

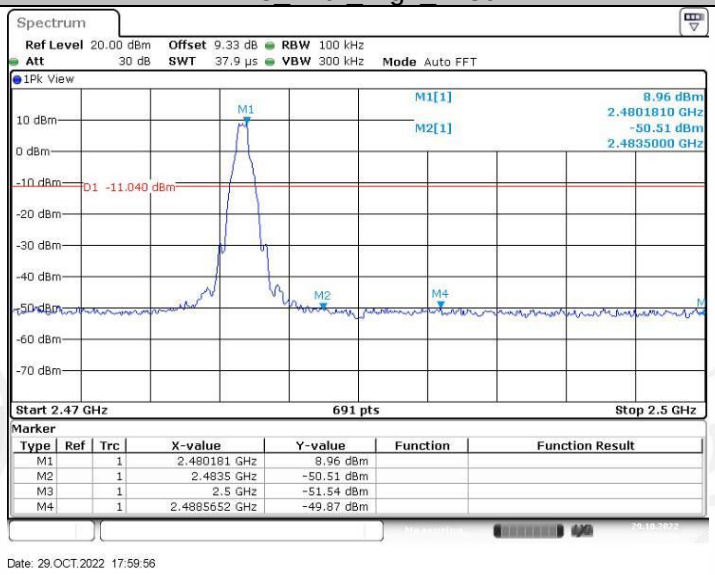
Mode	Freq. (MHz)	Verdict
GFSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass
π/4-DQPSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass
8DPSK	Hopping off 2402	Pass
	Hopping off 2480	Pass
	Hopping on	Pass

9.5. Original test data

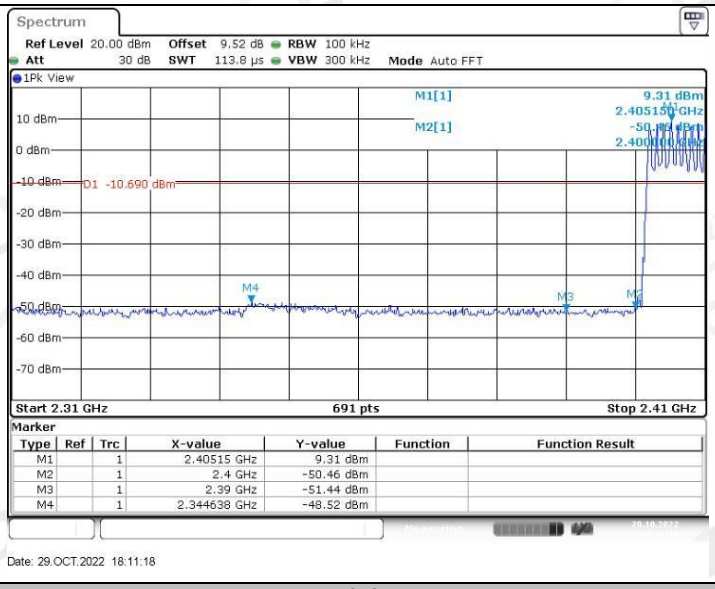
DH5_Ant1_Low_2402



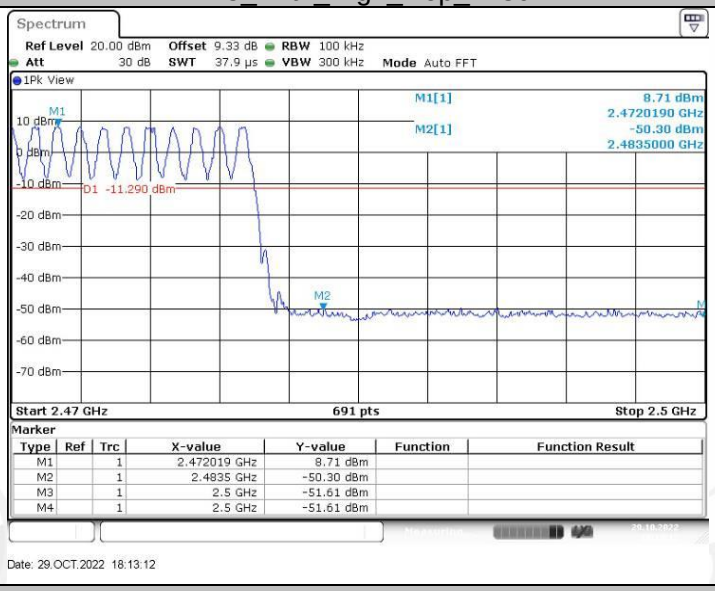
DH5_Ant1_High_2480



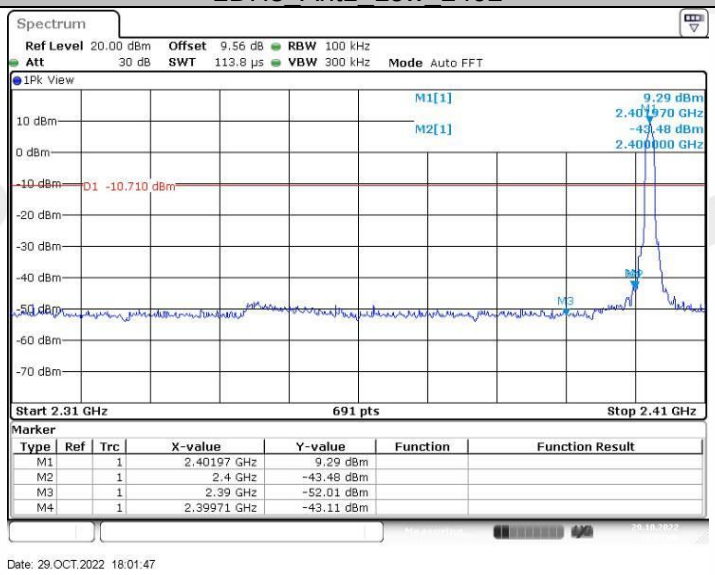
DH5_Ant1_Low_Hop_2402



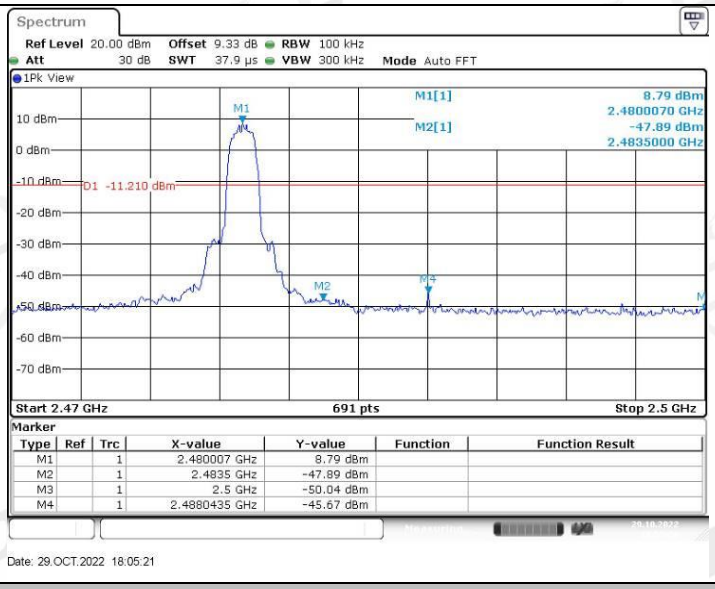
DH5_Ant1_High_Hop_2480



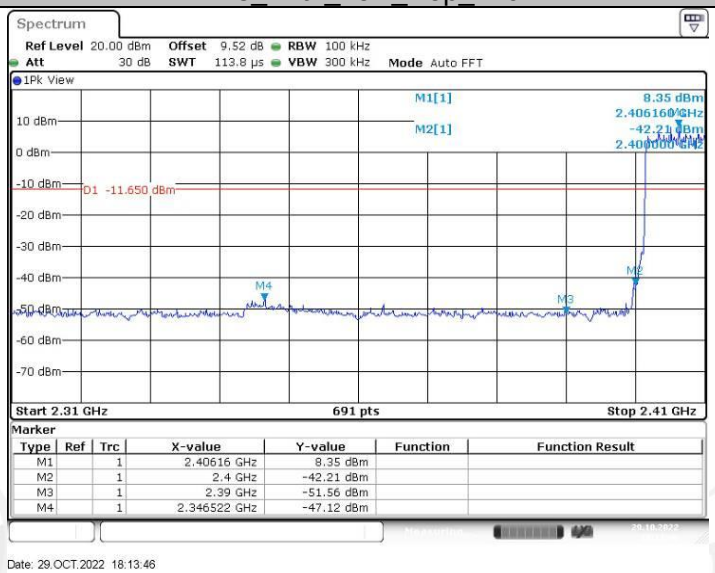
2DH5_Ant1_Low_2402



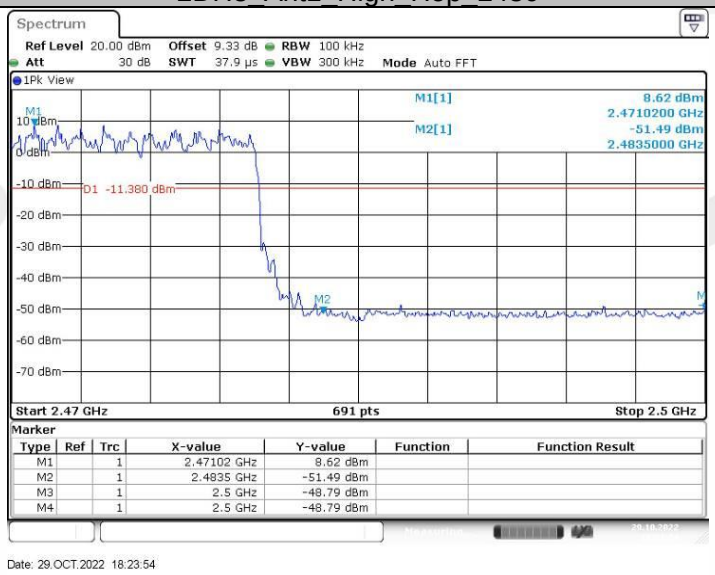
2DH5_Ant1_High_2480



2DH5_Ant1_Low_Hop_2402



2DH5_Ant1_High_Hop_2480



3DH5_Ant1_Low_2402