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检测
TESTING
CNAS L0446



Page 1 of 93

Test Report

Verified code: 558849

Report No.: E202111252962-4-G1

Customer: Hydrow, Inc.

Address: 10 Summer St, Floor 5, Boston, MA 02110, USA

Sample Name: Hydrow Touchscreen Monitor

Sample Model: CVC15101

Receive Sample Date: Nov.26,2021

Test Date: Dec.03,2021 ~ Dec.21,2021

Reference Document: CFR 47, FCC Part 15 Subpart C
RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: Yang Zhaoyun

Reviewed by:

Jiang Tao

Approved by:

Xiao Liang

GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-03-29

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202111252962-4	Original Issue	2022/02/23
2.0	E202111252962-4-G1	Update	2022/03/28

Version 2.0:

1. On the basis of the original report, update the description of test items in the report.
2. This report instead the report E202111252962-4, and from the date of issuance of this report, the report which being replaced become invalid.

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1. TEST RESULT SUMMARY

FCC 47 CFR Part 15 Subpart C 15.247, ANSI C63.10-2013 KDB 558074 D01 15.247 measurement guidance v05r02			
Standard	Item	Limit / Severity	Result
FCC 47 CFR Part 15 Subpart C (15.247)	Antenna Requirement	Section 15.203	PASS
	20dB Bandwidth	Section 15.247(a)(1)	PASS
	Carrier Frequencies Separated	Section 15.247(a)(1)	PASS
	Hopping Channel Number	Section 15.247(a)(1)(ii)	PASS
	Dwell Time	Section 15.247(a)(1)(iii)	PASS
	Maximum Peak Output Power	Section 15.247(b)(1)	PASS
	Conducted Emission	Section 15.207	PASS
	Conducted band edges and Spurious Emission	Section 15.209 & 15.247(d)	PASS
	Radiated Spurious Emission	Section 15.209 & 15.247(d)	PASS
	Restricted bands of operation	Section 15.247 (d) & 15.205	PASS

The EUT antenna is internal antenna. Max Antenna gain is 3.5dBi ,which accordance 15.203.is considered sufficient to comply with the provisions of this section

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Hydrow, Inc.
Address: 10 Summer St, Floor 5, Boston, MA 02110, USA

2.2 MANUFACTURER

Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.3 FACTORY

Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China 610045

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Hydrow Touchscreen Monitor
Model No.: CVC15101
Adding Model: /
Models discrepancy: /
Trade Name: Hydrow
FCC ID: 2A3HV-CVC15A
Power supply: DC12V Power supplied by adapter
Adapter specification: Model No: WT1205000
In put:100-240V~50/60Hz 1.6A
Out put: 12V---5.0A
Frequency Range: 2402MHz~2480MHz
Transmit Power: GFSK:6.30dBm
 $\pi/4$ -DQPSK:6.43dBm
8DPSK:6.69dBm
Type of Modulation: FHSS (GFSK for 1Mbps, $\pi/4$ -DQPSK for 2Mbps,8DPSK for 3Mbps)
Antenna Specification: Internal antenna with3.5dBi gain (Max)
Temperature Range: -20℃~85℃
Hardware Version: V1.1
Software Version: V1.0

Sample No: E202111252962-0001
E202111252962-0002

Note: /

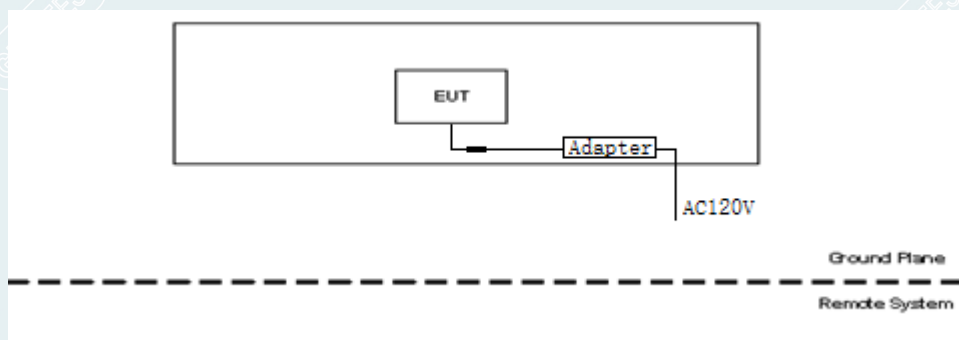
2.5 TEST OPERATION MODE

Mode No.	Description of the modes
1	Bluetooth(BT) fixed frequency transmitting

2.6 LOCAL SUPPORTIVE

Name of Equipment	Manufacturer	Model	Serial Number	Note
Adapter	Wen Tong	WT1205000	A211014000600	/
Cable				
AC cable (DC power)	/	/	/	UnShielded, 1.0m
DC cable (DC power)	/	/	/	Shielded, 1.0m

2.7 CONFIGURATION OF SYSTEM UNDER TEST



Test software:

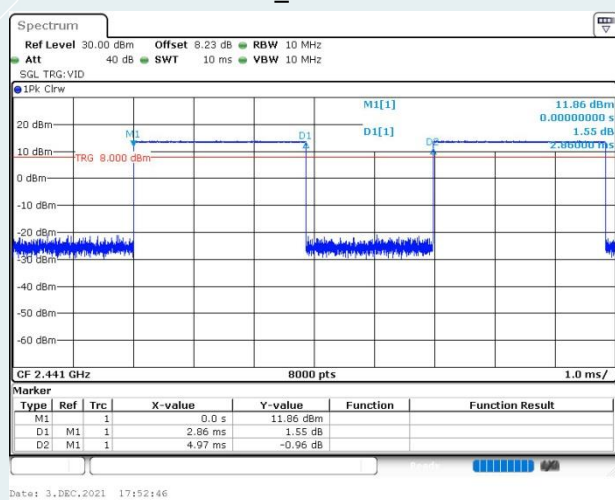
Software version	Test level
ADB	5

2.8 DUTY CYCLE

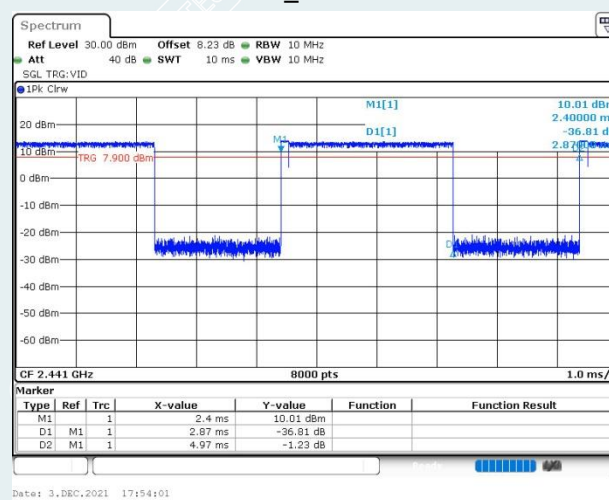
EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	23.5°C/48%RH	Test Voltage	AC120V/60Hz
Tested By	Lu Wei	Tested Date	2021/12/03

TestMode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
DH5	Ant1	2441	2.86	4.97	57.55	0.00286
2DH5	Ant1	2441	2.87	4.97	57.75	0.00287
3DH5	Ant1	2441	2.87	4.97	57.75	0.00287

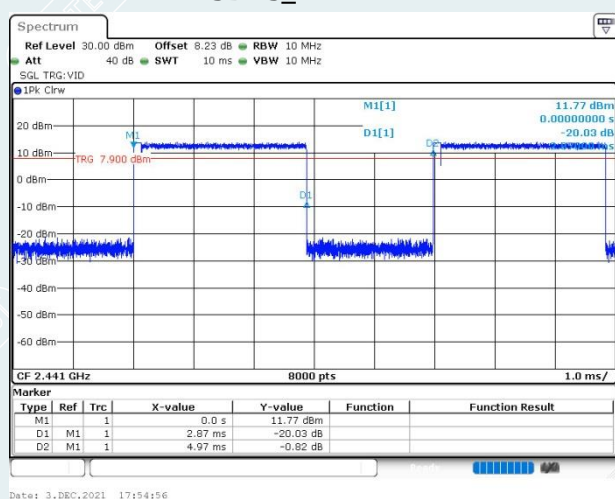
DH5_2441MHz



2DH5_2441MHz



3DH5_2441MHz



3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

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P.C. : 518000

Tel : 0755-61180008

Fax : 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to GB/T 27025(ISO/IEC 17025:2017)

USA A2LA(Certificate #2861.01)

China CNAS(L0446)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

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3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26.5GHz	3.65dB
	Vertical	9kHz~30MHz	4.46dB
		30MHz~1000MHz	4.30dB
		1GHz~18GHz	5.60dB
		18GHz~26.5GHz	3.65dB
Conduction Emission		9 kHz~150kHz	2.80dB
		150kHz~10MHz	2.80dB
		10MHz~30MHz	2.20dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.78 dB
Occupied channel bandwidth	0.4 dB
Unwanted emission, conducted	0.68 dB
Humidity	6 %
Temperature	2°C

This uncertainty represents an expanded uncertainty factor of k=2.

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4. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Conducted Emissions				
EMI TEST RECEIVER	R&S	ESCI	100783	2022-09-13
LISN(EUT)	R&S	ENV216	101543	2022-02-25
Test S/W	EZ	CCS-3A1-CE		
Hopping Channel Number				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Dwell Time				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	EZ	CCS-2ANT	/	/
Loop Antenna	TESEQ	HLA6121	52599	2022-04-21
Test Receiver	R&S	ESCI	100088	2022-10-31
Preamplifier	EMEC	EM330	/	2022-03-21
Bi-log Antenna	TESEQ	CBL6143A	32399	2022-11-25
Spectrum Analyzer	Agilent	N9010A	MY52221469	2022-04-16
Horn Antenna	Schwarzbeck	BBHA9120D (1201)	02143	2022-10-22
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170-497	2022-10-16
Amplifier	Tonscend	TAP01018048	AP20E8060075	2022-05-09
Amplifier	Tonscend	TAP184050	AP20E806071	2022-05-17
Test S/W	Tonscend	JS36-RSE/2.5.1.5		
20 dB Bandwidth				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Maximum Peak Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2022-03-21
Power meter	Anritsu	ML2495A	1204003	2022-03-21
Conducted band edges and Spurious Emission				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10
Carrier Frequencies Separated				
Spectrum Analyzer	R&S	FSV30	104381	2022-12-10

Note: The calibration interval of the above test instruments is 12 months.

5. TEST RESULTS

5.1 E.U.T. TEST CONDITIONS

Type of antenna: Internal

Test frequencies: According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top 1 near middle and 1 near bottom

EUT channels and frequencies list:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2416	28	2430
1	2403	15	2417	29	2431
2	2404	16	2418	30	2432
3	2405	17	2419	31	2433
4	2406	18	2420	32	2434
5	2407	19	2421	33	2435
6	2408	20	2422	34	2436
7	2409	21	2423	35	2437
8	2410	22	2424	36	2438
9	2411	23	2425	37	2439
10	2412	24	2426	38	2440
11	2413	25	2427	39	2441
12	2414	26	2428	40	2442
13	2415	27	2429	41	2443

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	2444	55	2457	68	2470
43	2445	56	2458	69	2471
44	2446	57	2459	70	2472
45	2447	58	2460	71	2473
46	2448	59	2461	72	2474
47	2449	60	2462	73	2475
48	2450	61	2463	74	2476
49	2451	62	2464	75	2477
50	2452	63	2465	76	2478
51	2453	64	2466	77	2479
52	2454	65	2467	78	2480
53	2455	66	2468		
54	2456	67	2469		

Test frequency is the lowest channel: 0 frequency(2402MHz), middle channel: 39 frequency (2441MHz) and highest channel: 78 frequency(2480MHz)

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6. 20dB BANDWIDTH

6.1 LIMITS

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.

6.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set the spectrum analyzer as RBW=30 kHz, VBW=100 kHz, Span=3MHz, Sweep = auto. Allow the trace to stabilize, record 20dB bandwidth value
- 3) Repeat until all the test channels are investigated.

6.2.1 TEST SETUP



6.2.2 TEST RESULTS

Environment: 23.5°C/48%RH
Tested By: Lu Wei

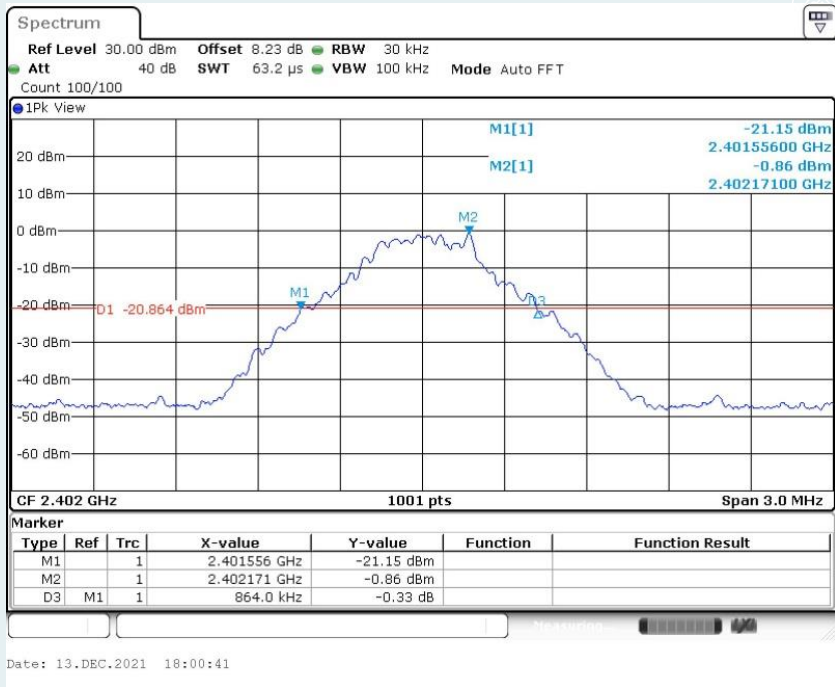
Voltage: AC120V/60Hz
Date: 2021-12-13

Test mode	Channel	Frequency (MHz)	20 dB Bandwidth (kHz)
DH5	Lowest	2402	864
	Middle	2441	861
	Highest	2480	861
Test mode	Channel	Frequency (MHz)	20 dB Bandwidth (kHz)
2DH5	Lowest	2402	1257
	Middle	2441	1257
	Highest	2480	1257
Test mode	Channel	Frequency (MHz)	20 dB Bandwidth (kHz)
3DH5	Lowest	2402	1254
	Middle	2441	1254
	Highest	2480	1251

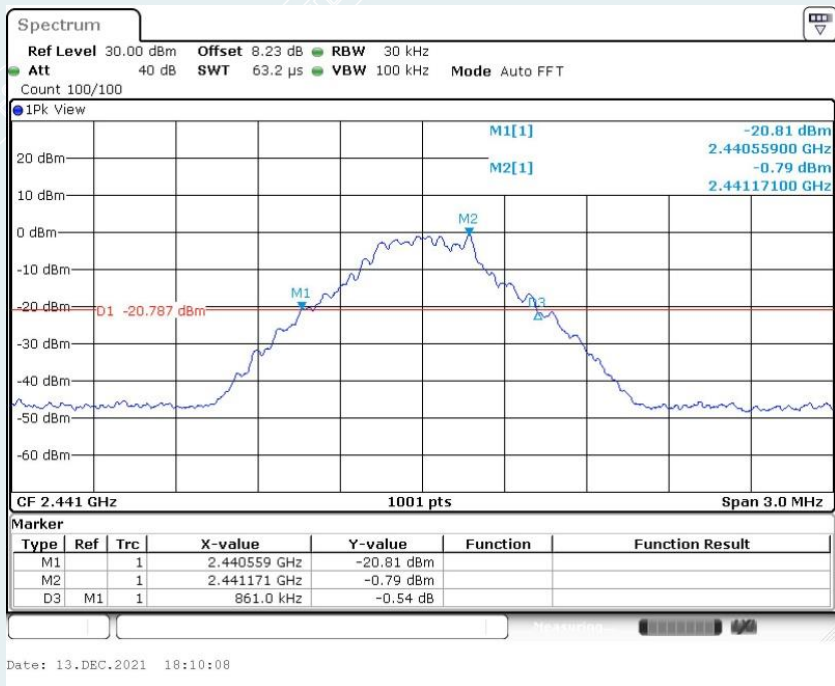
Result plot as follows:

DH5

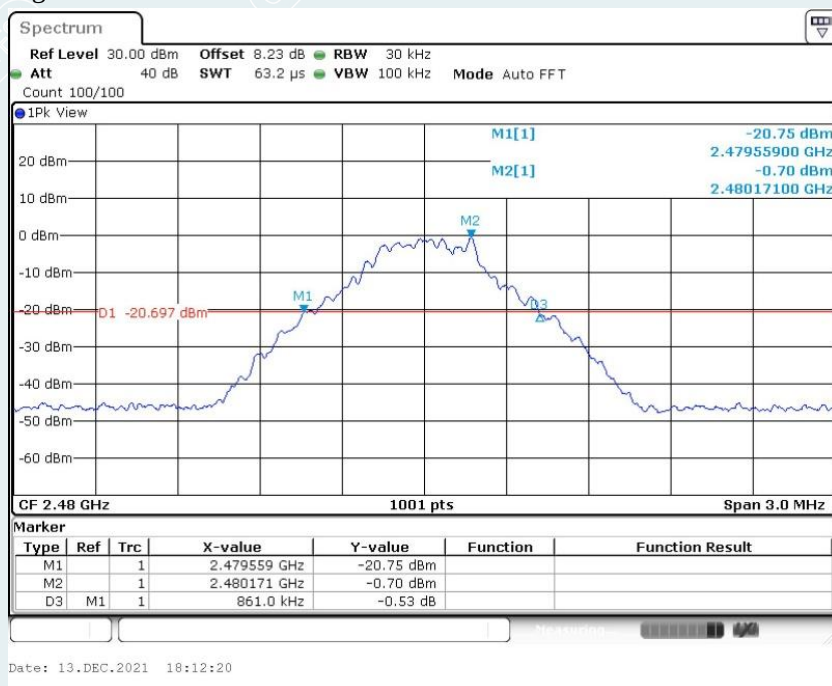
Lowest Channel



Middle Channel

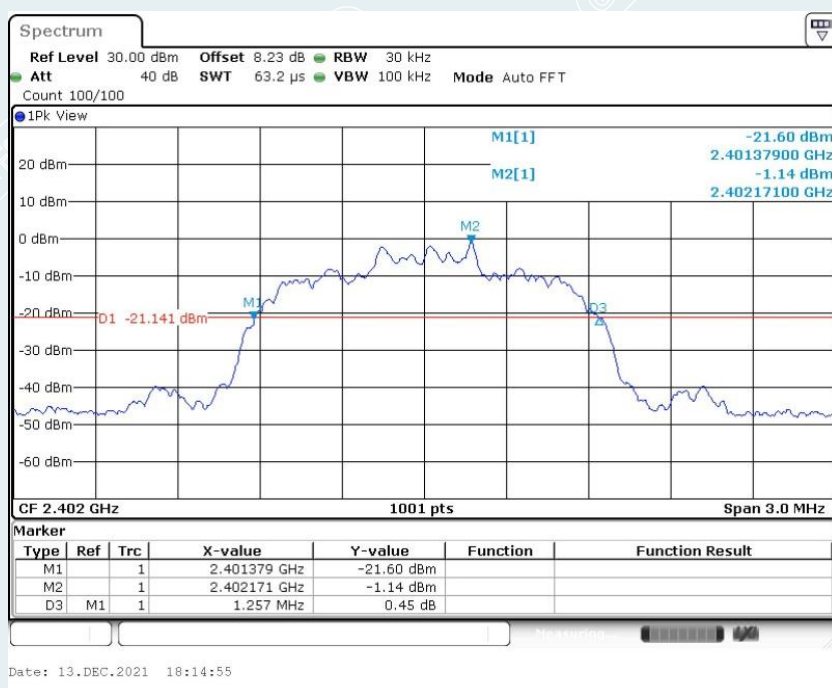


Highest Channel

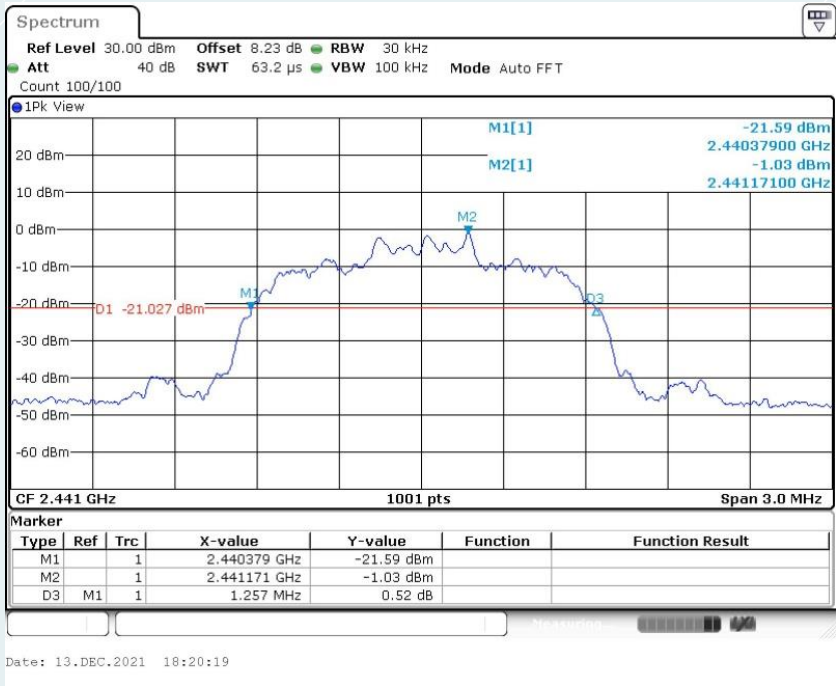


2DH5

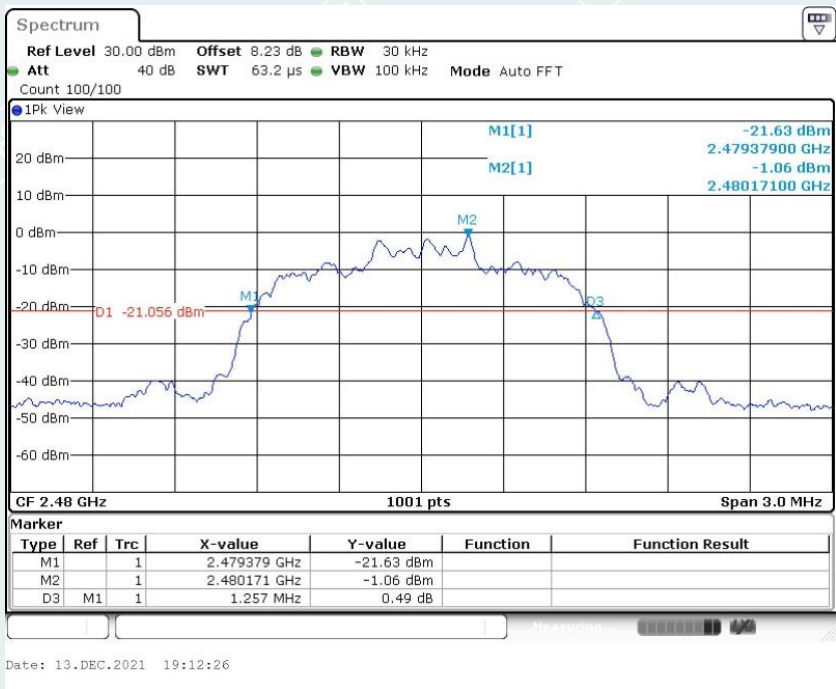
Lowest Channel



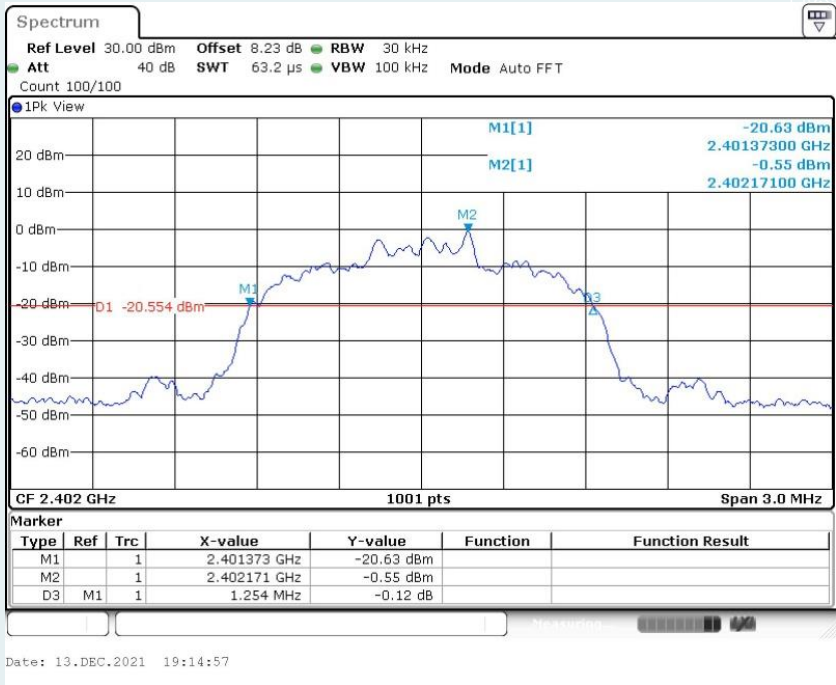
Middle Channel



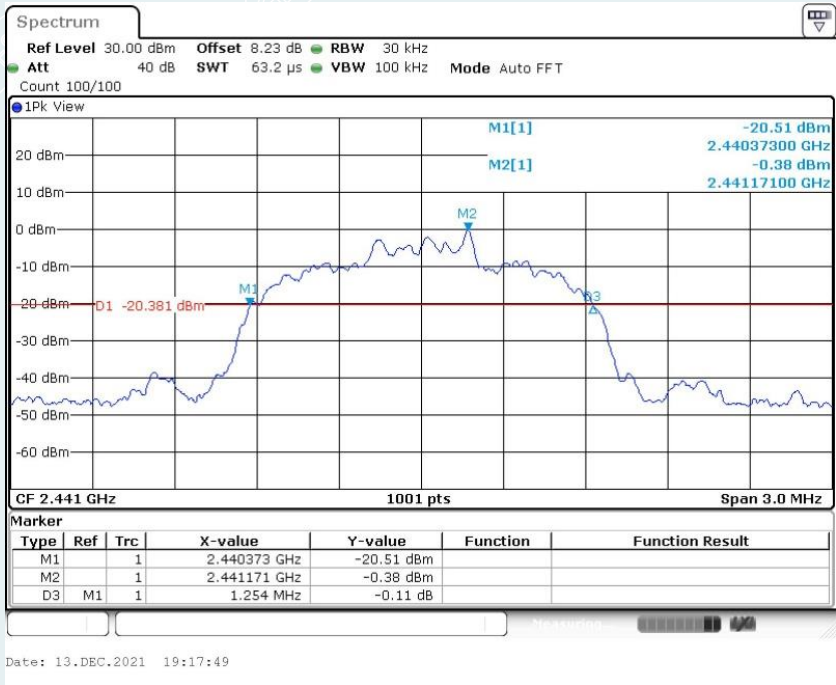
Highest Channel



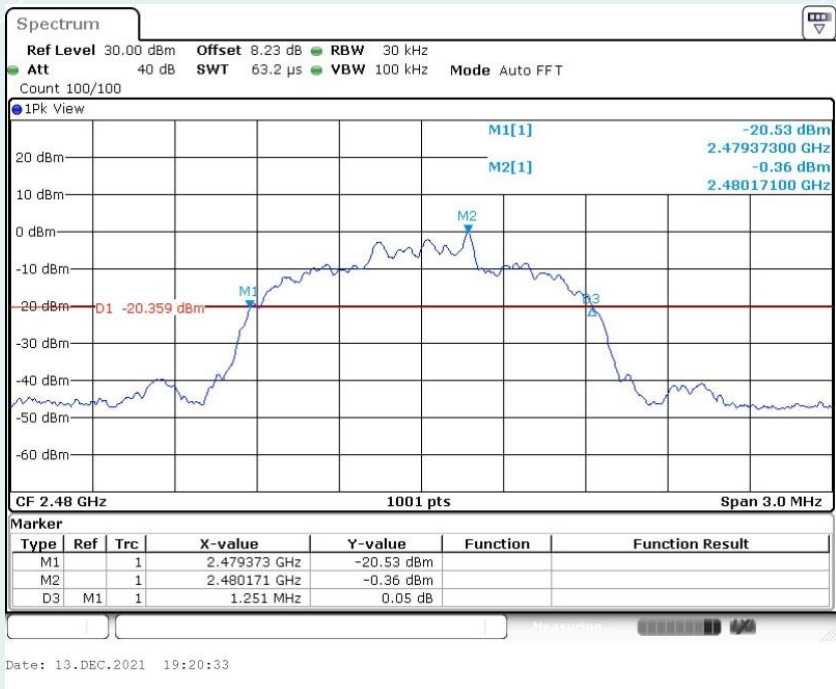
3DH5
Lowest Channel



Middle Channel



Highest Channel



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6.3 CARRIER FREQUENCIES SEPARATED

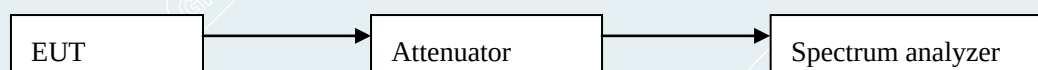
6.3.1 LIMITS

1) 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.

6.3.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2) Set center frequency of spectrum analyzer = middle of hopping channel.
- 3) Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Adjust Span to 2MHz, Sweep = auto
- 4) Use the marker-delta function to mark hopping channel carrier frequencies and record the channel separation.

6.3.3 TEST SETUP



6.3.4 TEST RESULTS

Environment: 23.5°C/48%RH
Tested By: Lu Wei

Voltage: AC120V/60Hz
Date: 2021-12-15

DH5

Channel Separation (MHz)	Two-thirds of the 20 dB Bandwidth (kHz)	Channel Separation Limit	Result
1.003	576	> Two-thirds of the 20 dB Bandwidth	Pass

2DH5

Channel Separation (MHz)	Two-thirds of the 20 dB Bandwidth (kHz)	Channel Separation Limit	Result
1.000	838	> Two-thirds of the 20 dB Bandwidth	Pass

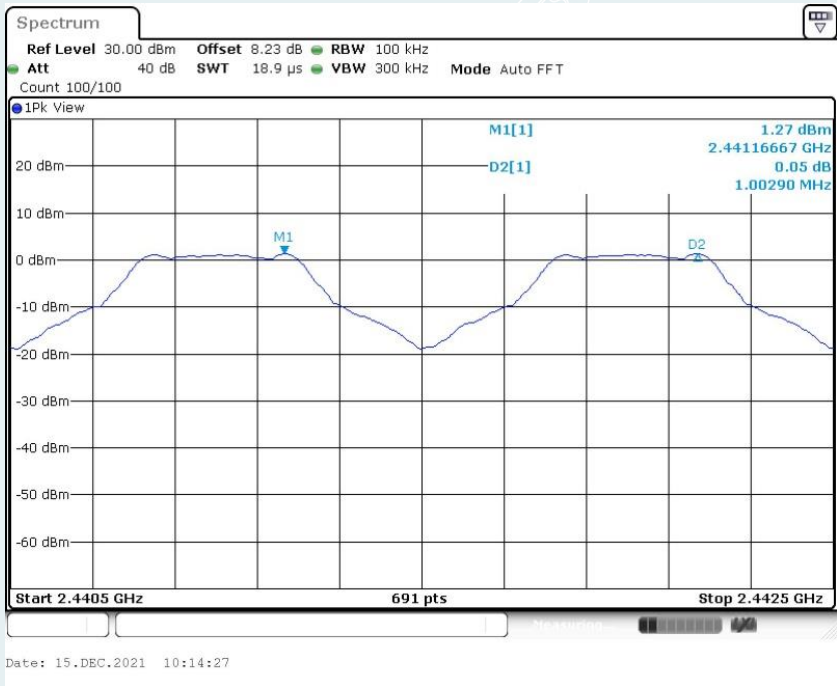
3DH5

Channel Separation (MHz)	Two-thirds of the 20 dB Bandwidth (kHz)	Channel Separation Limit	Result
1.003	836	> Two-thirds of the 20 dB Bandwidth	Pass

Result plot as follows:

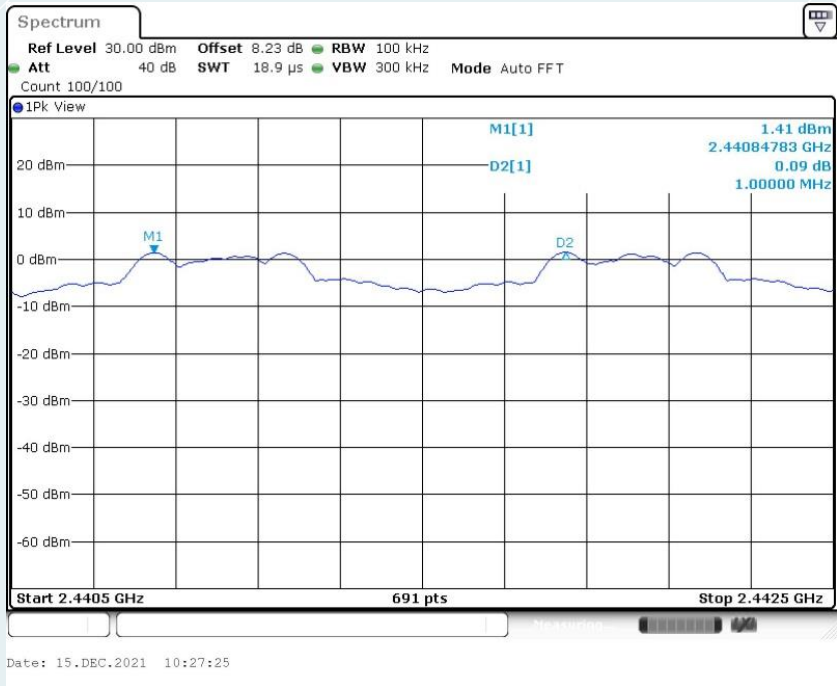
DH5

Measurement of Channel Separation

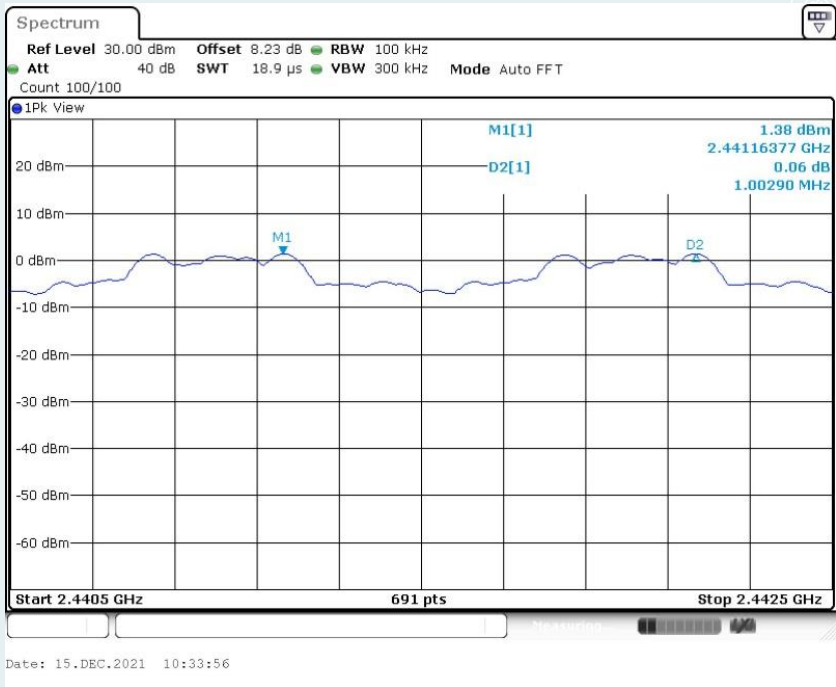


2DH5

Measurement of Channel Separation



3DH5
Measurement of Channel Separation



Test result: The unit does meet the FCC requirements.

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6.4 HOPPING CHANNEL NUMBER

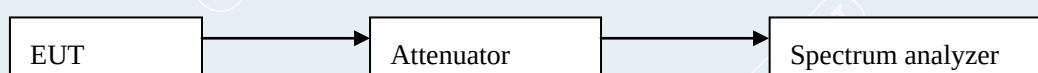
6.4.1 LIMITS

Regulation 15.247 (a) (1)(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

6.4.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2) Set the spectrum analyzer as RBW=100kHz, VBW=300kHz.
- 3) Set the spectrum analyzer: start frequency = 2400MHz. stop frequency = 2483.5MHz. Submit the test result graph.

6.4.3 TEST SETUP



6.4.4 TEST RESULTS

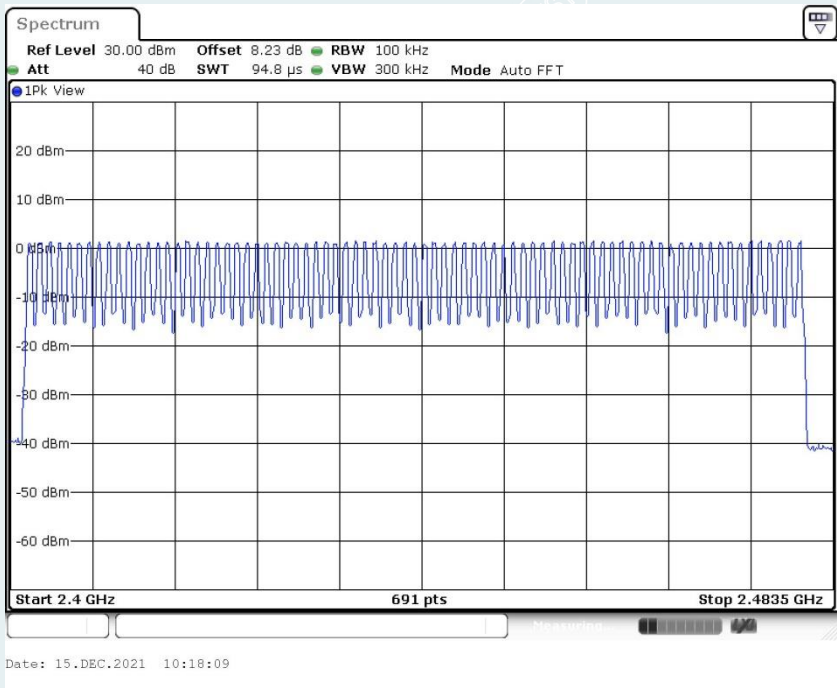
Environment: 23.5°C/48%RH
Tested By: Lu Wei

Voltage: AC120V/60Hz
Date: 2021-12-15

Result (No. of CH)	Limit (No. of CH)	Result
79	≥15	PASS

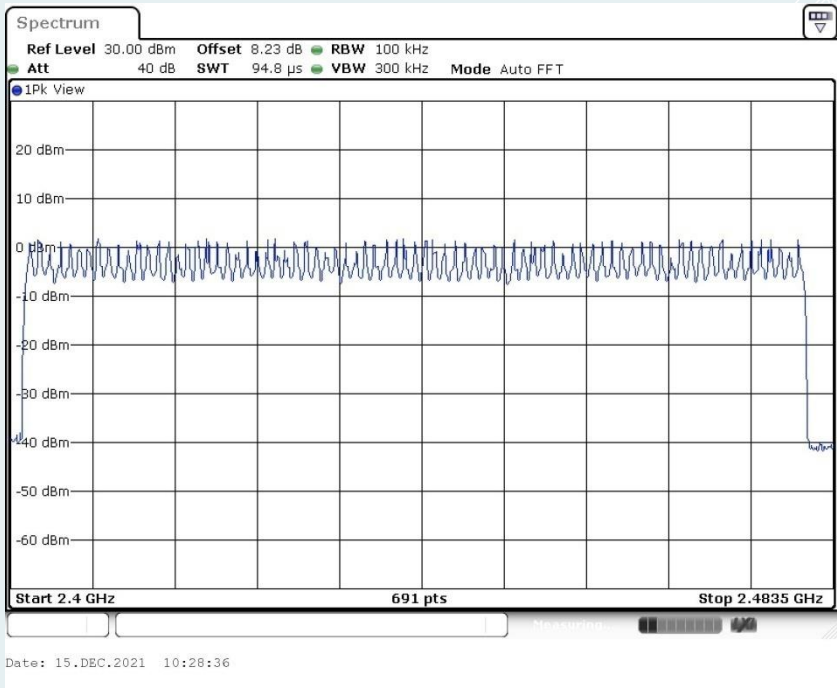
GFSK

2.400 GHz – 2.4835 GHz

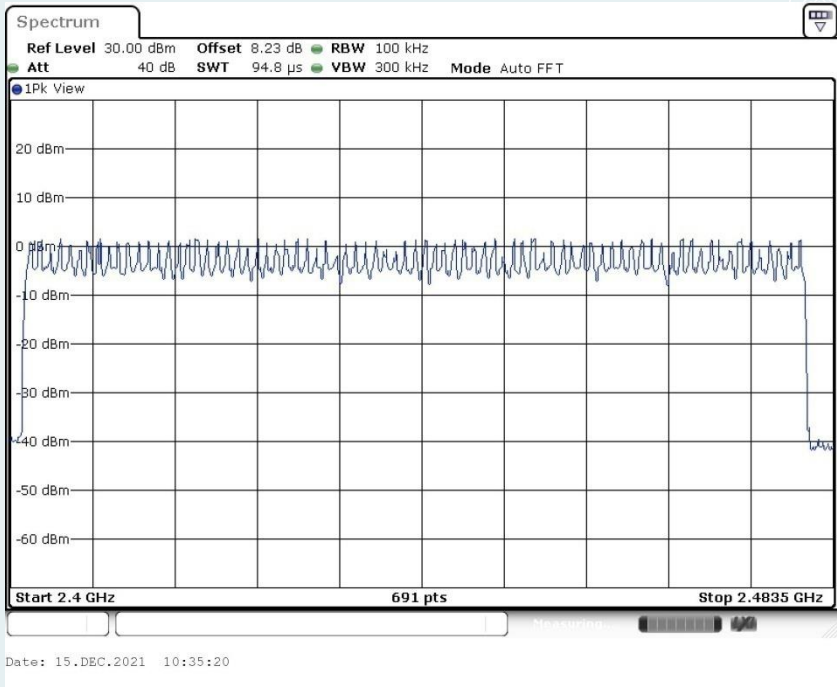


$\pi/4$ -DQPSK

2.400 GHz – 2.4835 GHz



8DPSK
2.400 GHz – 2.4835 GHz



Test result: The unit does meet the FCC requirements.

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6.5 DWELL TIME

6.5.1 LIMITS

Regulation 15.247(a)(1)(iii) Frequency hopping systems in the 2400-2483.5MHz 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

6.5.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
- 2) Set spectrum analyzer span = 0. centered on a hopping channel;
- 3) Set RBW = 1MHz and VBW = 3MHz. Sweep = as necessary to capture the entire dwell time per hopping channel. Detector Function = Peak. Trace = Max hold;
- 4) Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.). Repeat this test for each variation.
- 5) DH1 Packet permit maximum $1600 / 79 / 2 = 10.12$ hops per second in each channel (1 time slot TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times $10.12 \times 31.6 = 320$ within 31.6 seconds
- 6) DH3 Packet permit maximum $1600 / 79 / 4 = 5.06$ hops per second in each channel (3 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times $5.06 \times 31.6 = 160$ within 31.6 seconds
- 7) DH5 Packet permit maximum $1600 / 79 / 6 = 3.37$ hops per second in each channel (5 time slots TX, 1 time slot RX). So, the dwell time is the time duration of the pulse times $3.37 \times 31.6 = 106.6$ within 31.6 seconds

6.5.3 TEST SETUP



6.5.4 TEST RESULTS

Environment: 23.5°C/48%RH
Tested By: Lu Wei

Voltage: AC120V/60Hz
Date: 2021-12-15

The test period: $T = 0.4 \text{ Second/Channel} \times 79 \text{ Channel} = 31.6 \text{ s}$

GFSK: Middle Channel (2.441GHz)

DH1	time slot=	0.38	(ms)*	$(1600/(2*79))$	*	31.6	=	64	ms
DH3	time slot=	1.62	(ms)*	$(1600/(4*79))$	*	31.6	=	292	ms
DH5	time slot=	2.86	(ms)*	$(1600/(6*79))$	*	31.6	=	258	ms

$\pi/4$ -DQPSK: Middle Channel (2.441GHz)

2DH1	time slot=	0.38	(ms)*	$(1600/(2*79))$	*	31.6	=	57	ms
2DH3	time slot=	1.63	(ms)*	$(1600/(4*79))$	*	31.6	=	260	ms
2DH5	time slot=	2.87	(ms)*	$(1600/(6*79))$	*	31.6	=	287	ms

8DPSK: Middle Channel (2.441GHz)

3DH1	time slot=	0.38	(ms)*	$(1600/(2*79))$	*	31.6	=	65	ms
3DH3	time slot=	1.63	(ms)*	$(1600/(4*79))$	*	31.6	=	260	ms
3DH5	time slot=	2.87	(ms)*	$(1600/(6*79))$	*	31.6	=	258	ms

The results are not greater than 0.4 seconds.
The unit does meet the requirements.

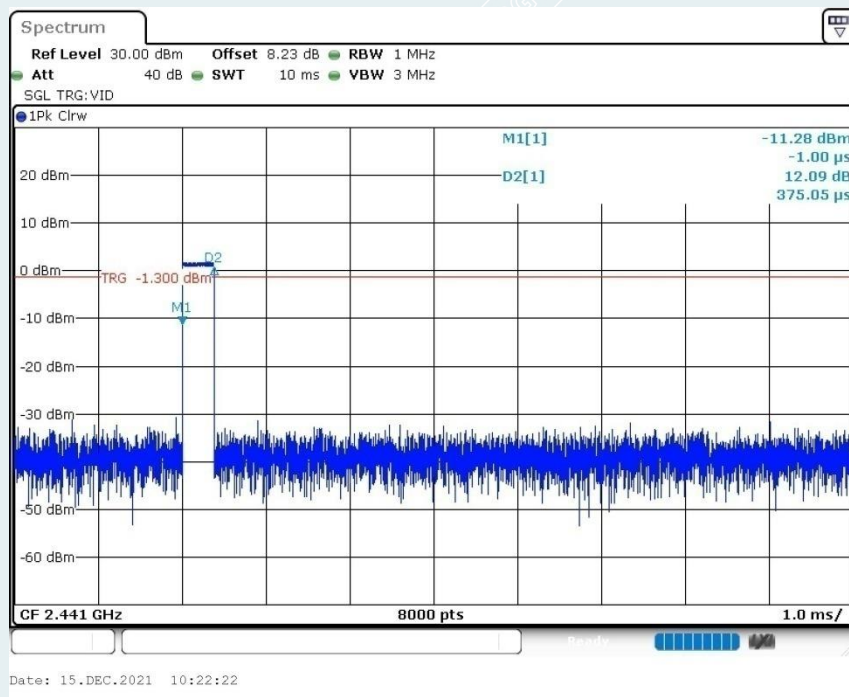
----- The following blanks -----

Please refer the graph as below:

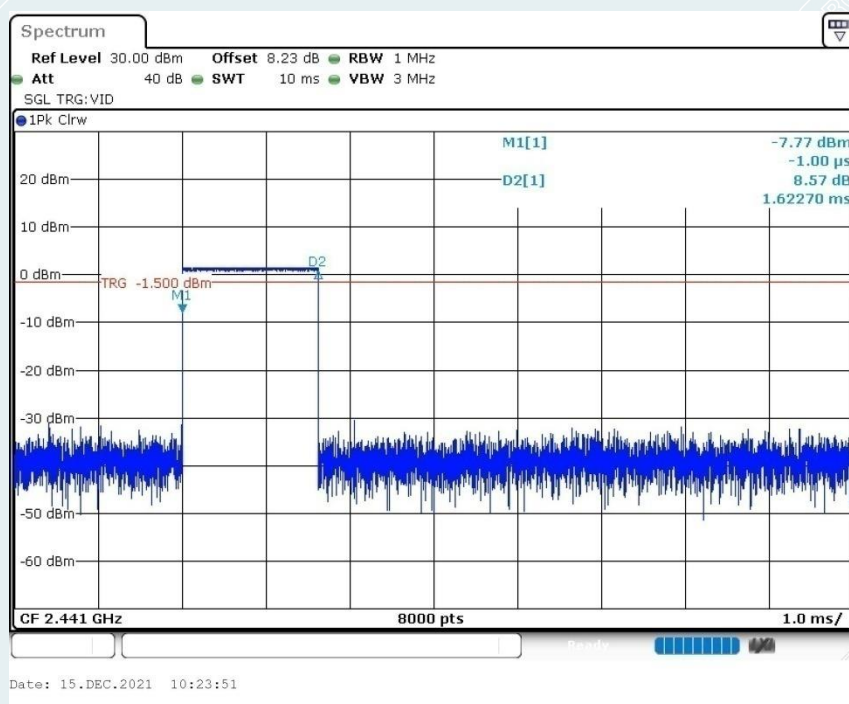
GFSK

Middle Frequency (2.441GHz)

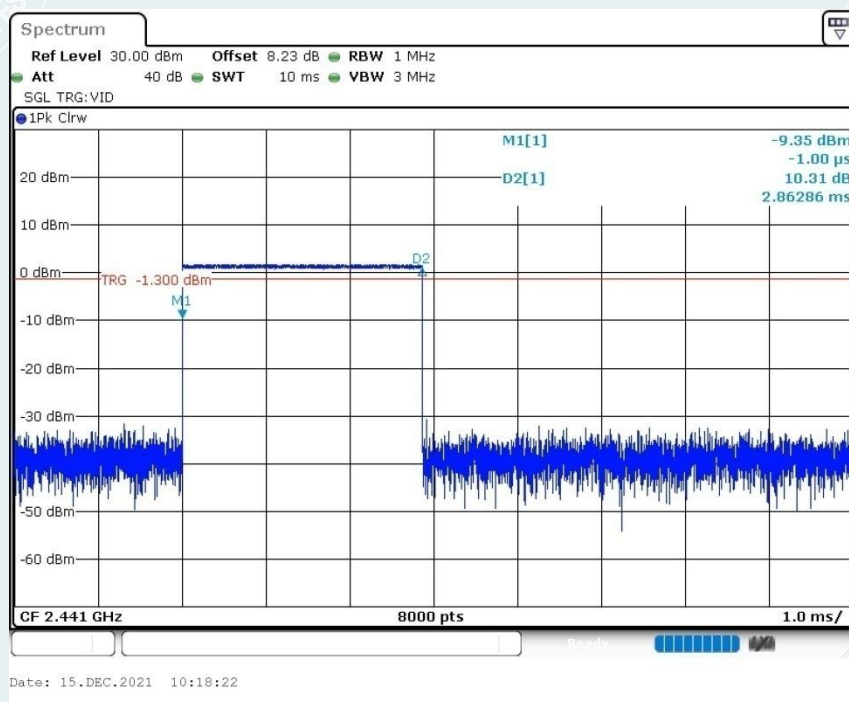
DH1



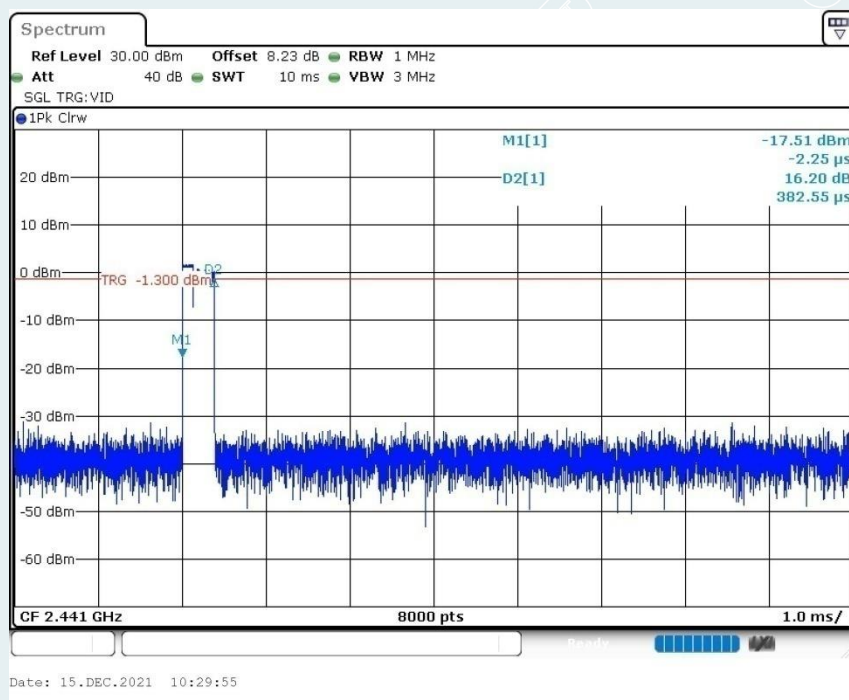
DH3



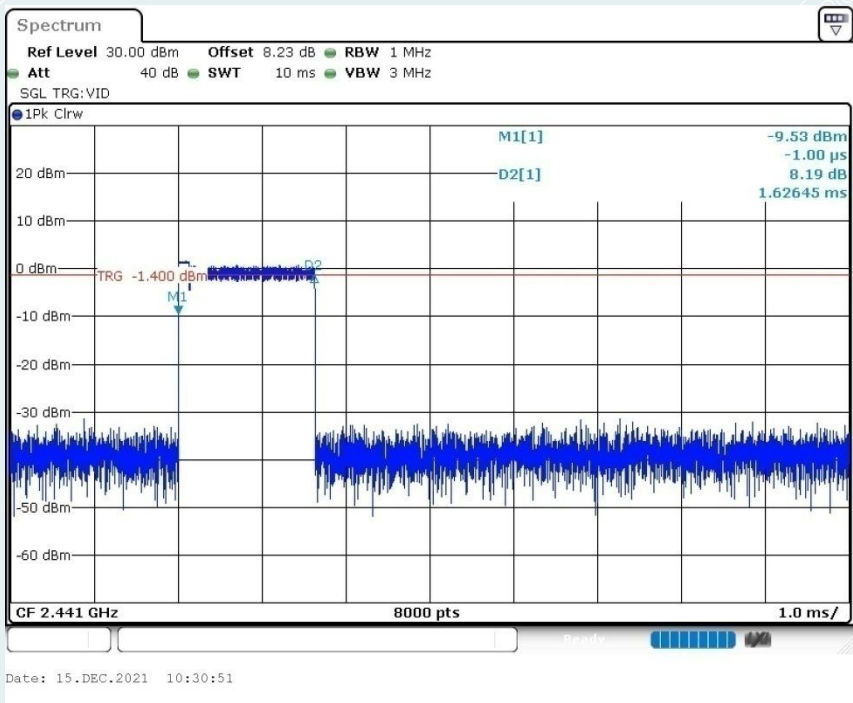
DH5



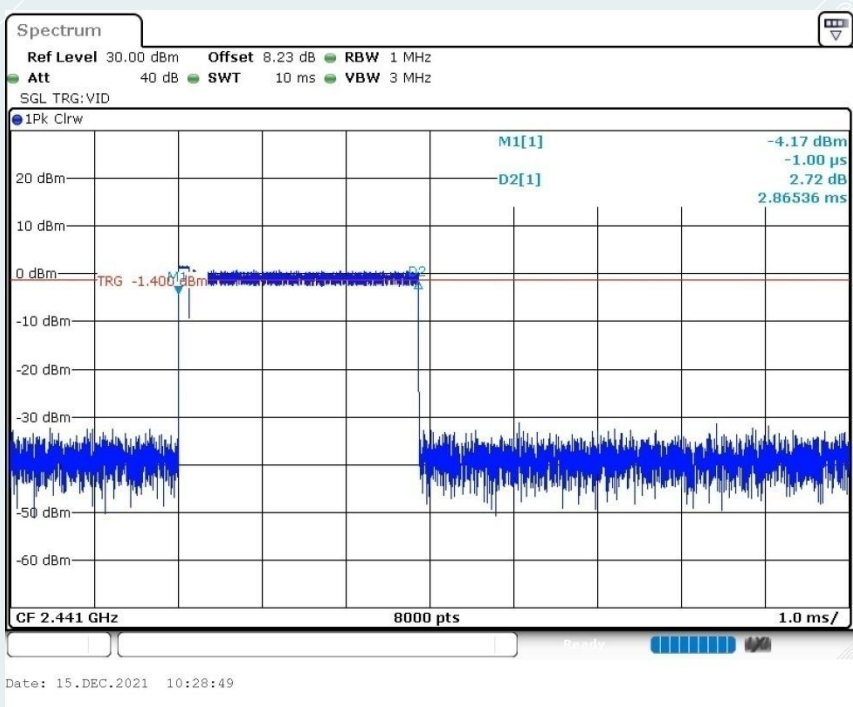
$\pi/4$ -DQPSK
Middle Frequency (2.441GHz)
2DH1



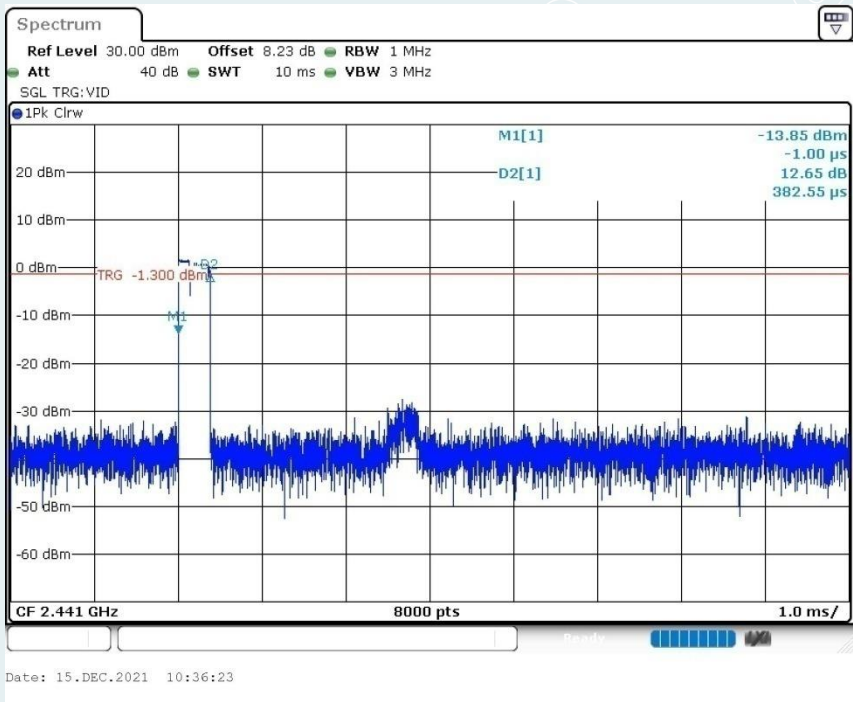
Mid Frequency (2.441GHz)
2DH3



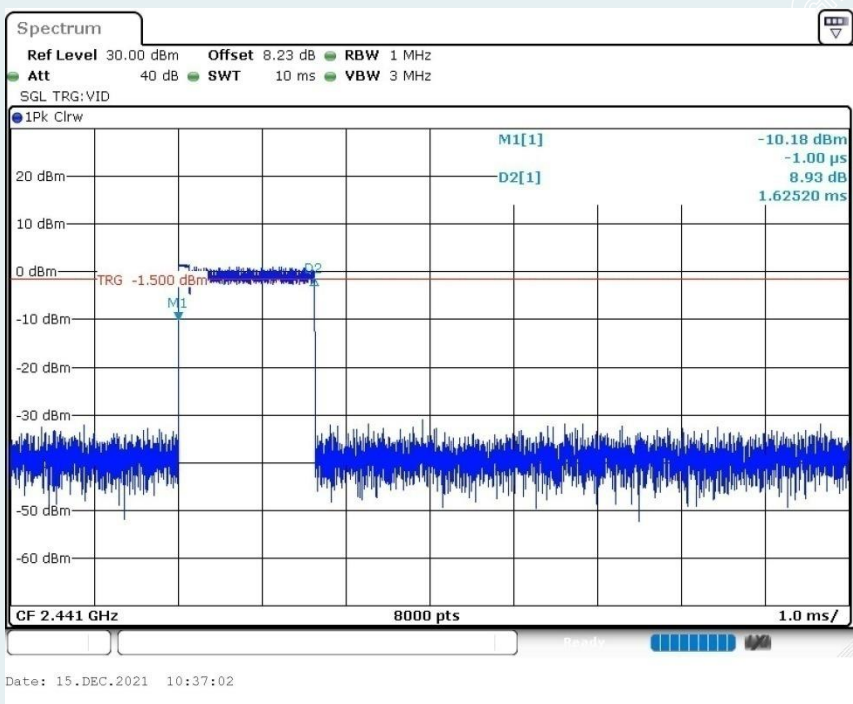
2DH5



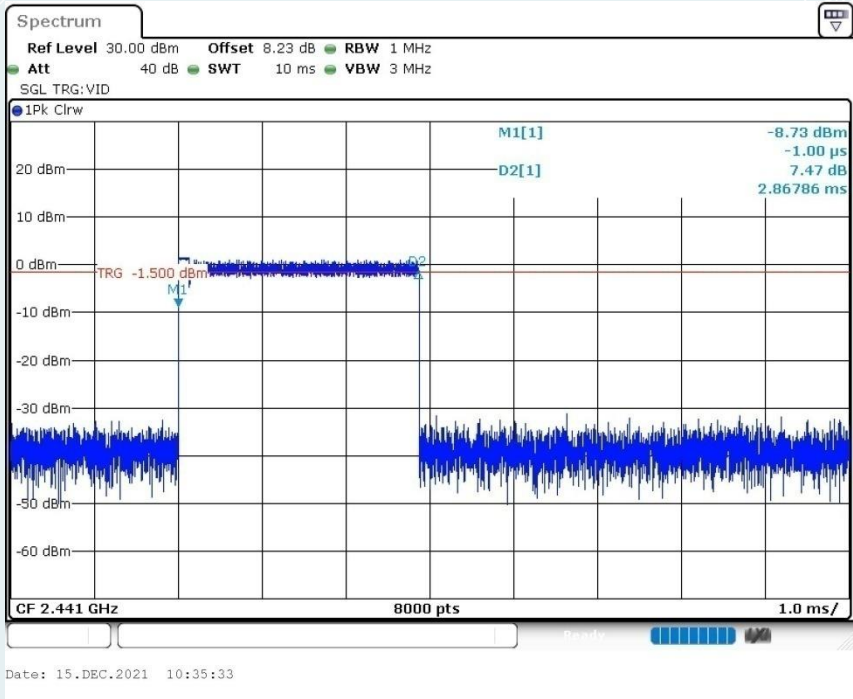
8DPSK
Middle Frequency (2.441GHz)
3DH1



3DH3



3DH5



----- The following blanks -----

6.6 CONDUCTED EMISSION MEASUREMENT

6.6.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

6.6.2 TEST PROCEDURES

Procedure of Preliminary Test

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) Place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or

- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

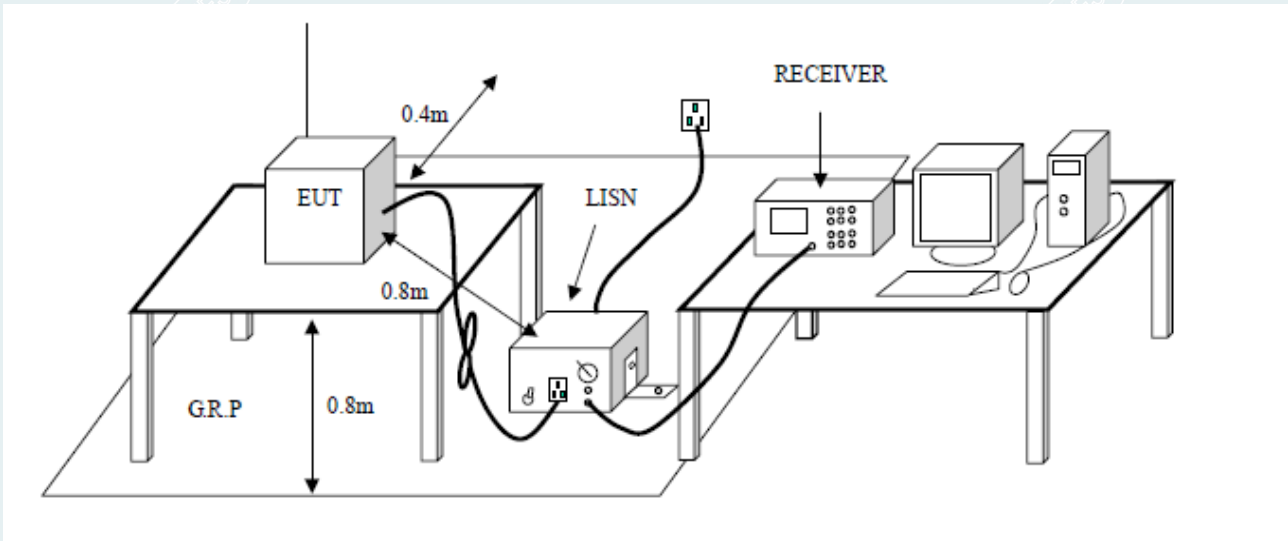
The test mode(s) described in Item 2.5 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.5 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

6.6.3 TEST SETUP



6.6.4 DATA SAMPLE

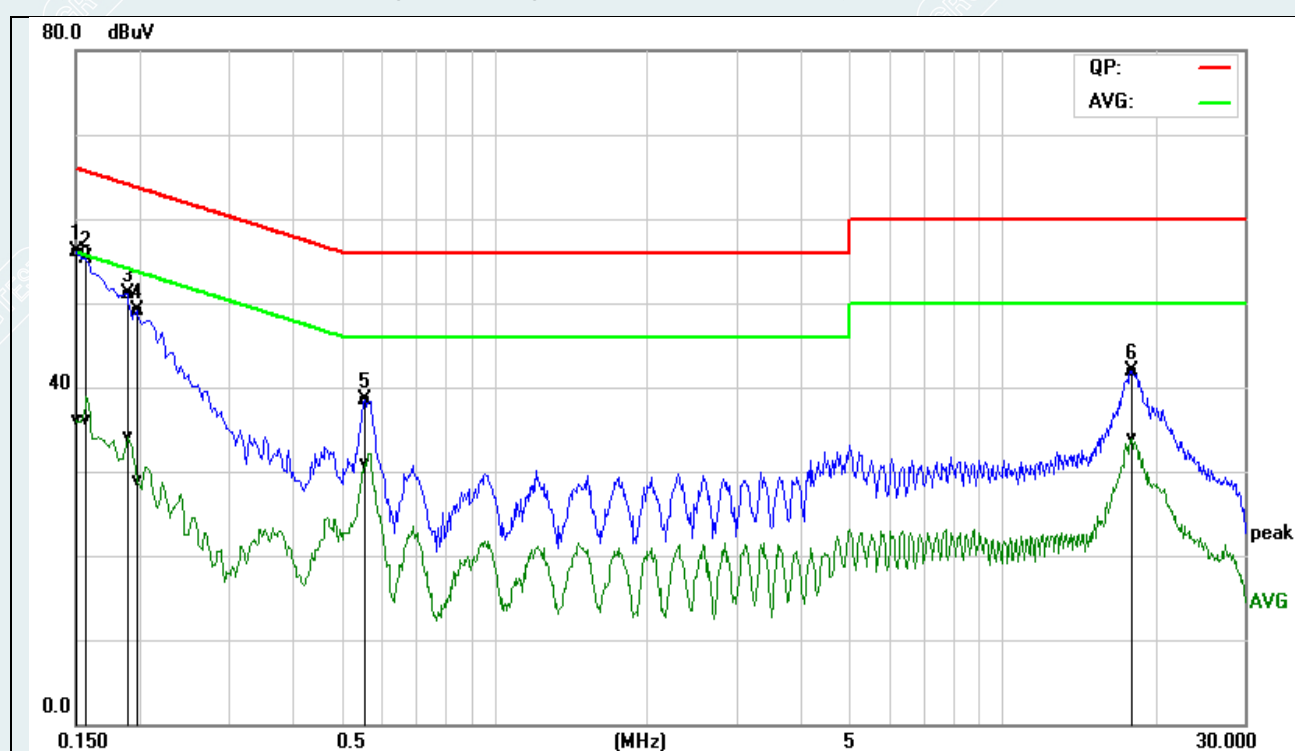
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit = Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

6.6.5 TEST RESULTS

EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	22.0°C/53%RH	Test Mode	DH5 2480MHz
Tested By	Zeng xianglong	Line	L
Tested Date	2021-12-21	Test Voltage	AC120V/60Hz

(The chart below shows the highest readings taken from the final data.)



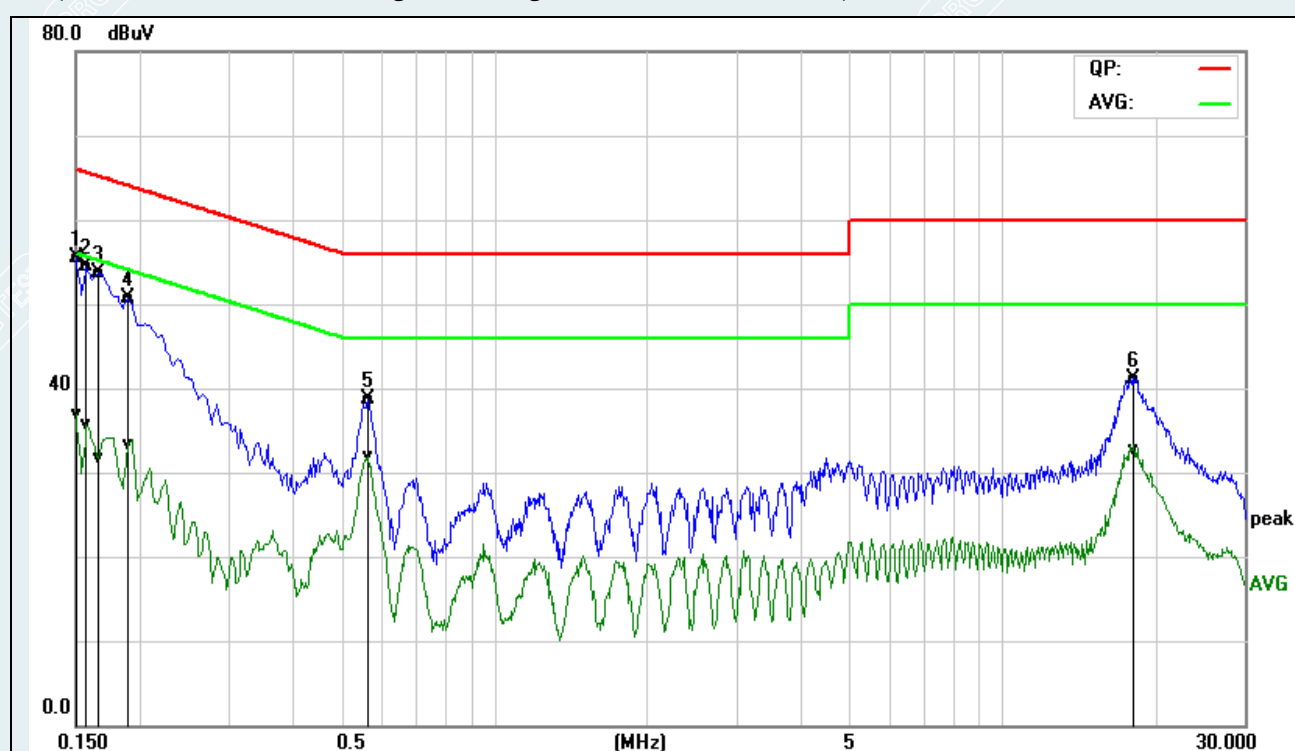
No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1500	46.64	26.49	9.53	56.17	36.02	65.99	56.00	-9.82	-19.98	Pass
2*	0.1580	46.64	26.49	9.53	56.17	36.02	65.56	55.57	-9.39	-19.55	Pass
3	0.1900	41.56	24.65	9.54	51.10	34.19	64.03	54.04	-12.93	-19.85	Pass
4	0.1980	39.59	19.32	9.54	49.13	28.86	63.69	53.69	-14.56	-24.83	Pass
5	0.5580	28.91	21.40	9.57	38.48	30.97	56.00	46.00	-17.52	-15.03	Pass
6	17.9860	32.09	24.00	9.89	41.98	33.89	60.00	50.00	-18.02	-16.11	Pass

REMARKS: L = Live Line

Pre-scan all mode and recorded the worst case results in this report (TX-High Channel(1Mbps))

EUT Name	Hydrow Touchscreen Monitor	Model	CVC15101
Environmental Conditions	22.0°C/53%RH	Test Mode	DH5 2480MHz
Tested By	Zhong Fuping	Line	N
Tested Date	2021-12-21	Test Voltage	AC120V/60Hz

(The chart below shows the highest readings taken from the final data.)



No.	Frequency	QuasiPeak reading	Average reading	Correction factor	QuasiPeak result	Average result	QuasiPeak limit	Average limit	QuasiPeak margin	Average margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1*	0.1500	46.05	27.35	9.50	55.55	36.85	65.99	56.00	-10.44	-19.15	Pass
2	0.1580	44.93	26.16	9.51	54.44	35.67	65.56	55.57	-11.12	-19.90	Pass
3	0.1660	44.23	22.10	9.52	53.75	31.62	65.15	55.16	-11.40	-23.54	Pass
4	0.1900	41.09	23.79	9.56	50.65	33.35	64.03	54.04	-13.38	-20.69	Pass
5	0.5660	29.00	22.22	9.69	38.69	31.91	56.00	46.00	-17.31	-14.09	Pass
6	18.1140	31.28	22.79	9.92	41.20	32.71	60.00	50.00	-18.80	-17.29	Pass

REMARKS: N = Neutral Line.

Pre-scan all mode and recorded the worst case results in this report (TX-High Channel(1Mbps))

6.7 MAXIMUM PEAK OUTPUT POWER

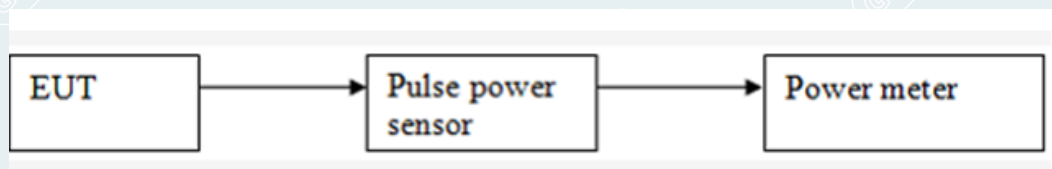
6.7.1 LIMITS

Regulation 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.

6.7.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the power meter and enable the EUT transmit continuously.
- 2) Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

6.7.3 TEST SETUP



6.7.4 TEST RESULTS

Environment: 23.5°C/48%RH
Tested By: Lu Wei

Voltage: AC120V/60Hz
Date: 2021-12-13

DH5

Test Channel	Fundamental Frequency (GHz)	Max Output Power(dBm)	Limit (dBm)	Peak/Average	Pass/Fail
Lowest	2.402	6.11	20.97	Peak	Pass
Middle	2.441	6.30			Pass
Highest	2.480	6.27			Pass

2DH5

Test Channel	Fundamental Frequency (GHz)	Max Output Power(dBm)	Limit (dBm)	Peak/Average	Pass/Fail
Lowest	2.402	6.21	20.97	Peak	Pass
Middle	2.441	6.40			Pass
Highest	2.480	6.43			Pass

3DH5

Test Channel	Fundamental Frequency (GHz)	Max Output Power(dBm)	Limit (dBm)	Peak/Average	Pass/Fail
Lowest	2.402	6.49	20.97	Peak	Pass
Middle	2.441	6.69			Pass
Highest	2.480	6.62			Pass

Test result: The unit does meet the FCC requirements.

6.8 CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

6.8.1 LIMITS

In any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB.

6.8.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v05r02.

- 1) Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.
- 2) Set the spectrum analyzer: RBW =100KHz; VBW =300KHz, Frequency range = 30MHz to 26.5GHz; Sweep = auto; Detector Function = Peak. Trace = Max, hold.
- 3) Measure and record the results in the test report.
- 4) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

6.8.3 TEST SETUP



6.8.4 TEST RESULTS

Environment: 23.5°C/48%RH
Tested By: Lu Wei

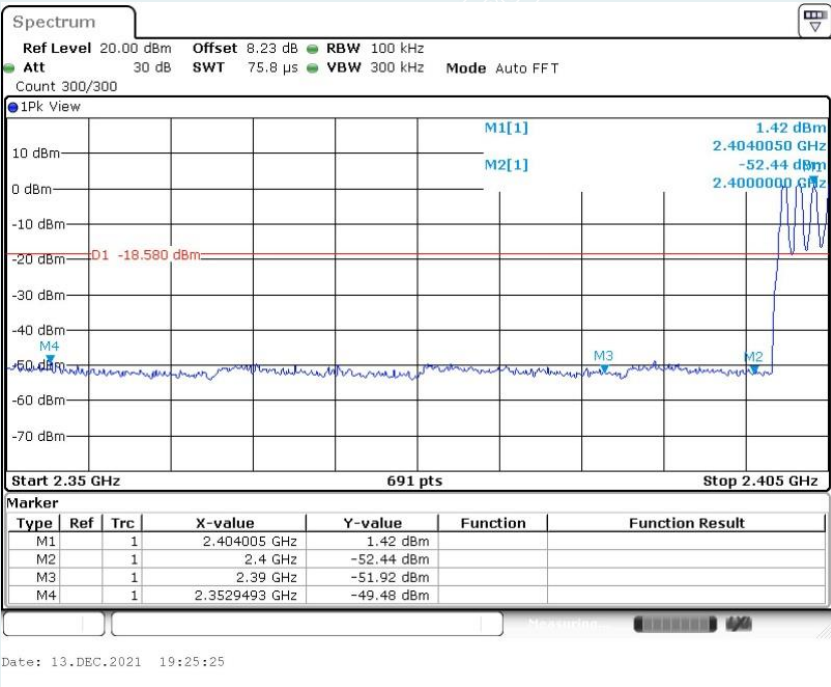
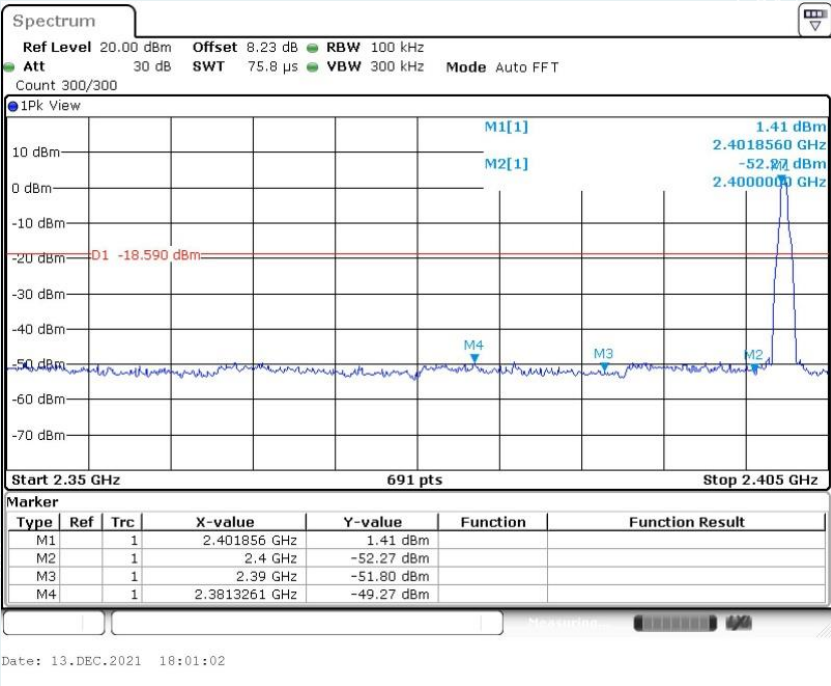
Voltage: AC120V/60Hz
Date: 2021-12-13

Test result plot as follows:

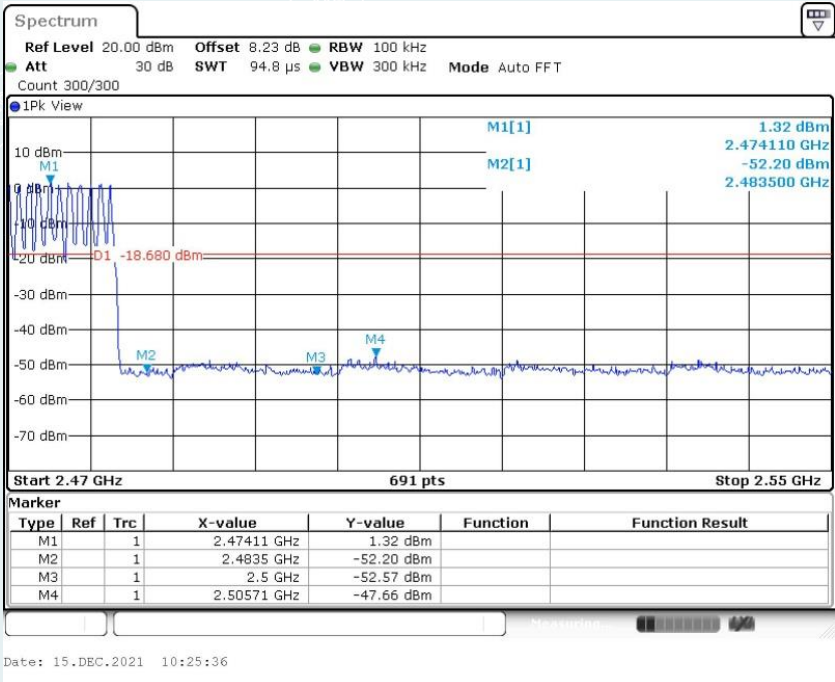
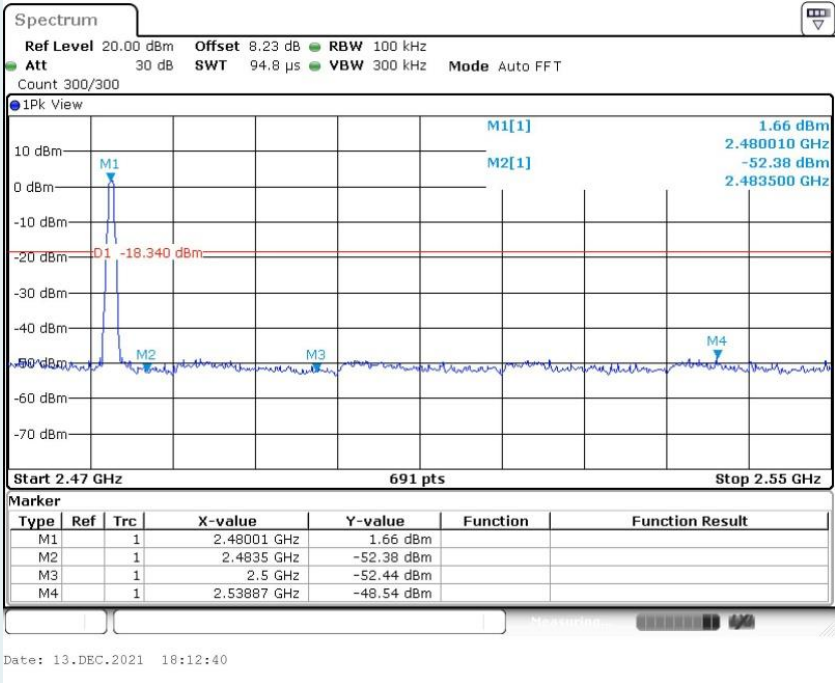
Band Edges

DH5

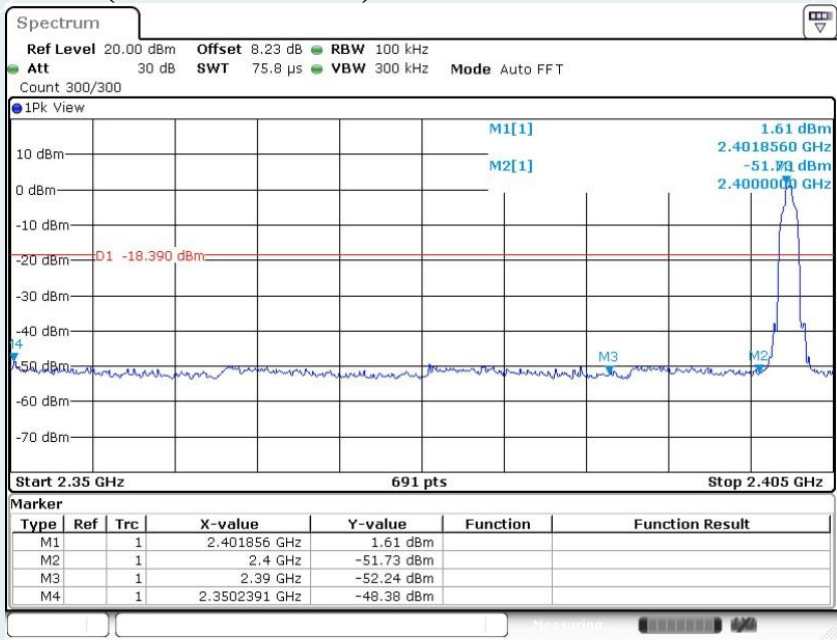
CH Low (2.35GHz ~2.405GHz)



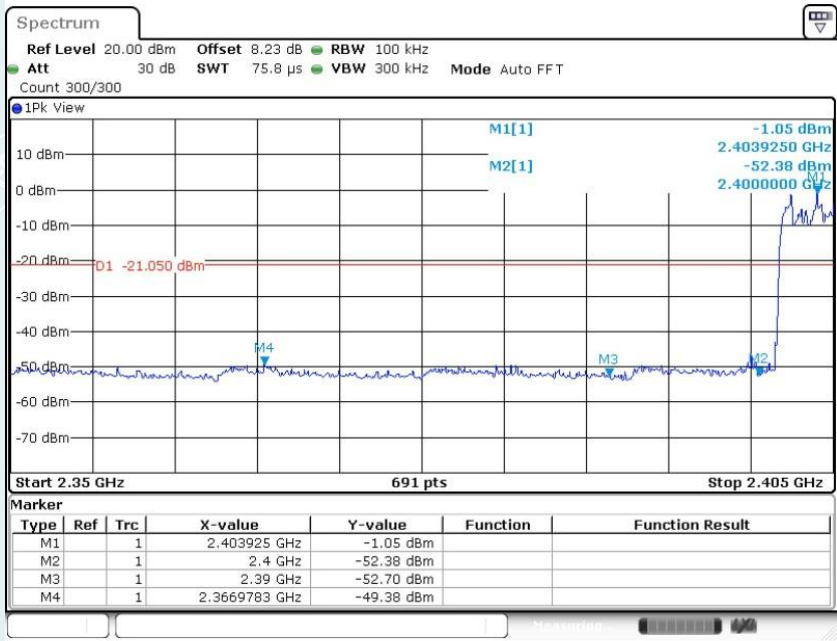
CH High (2.47GHz ~ 2.55GHz)



2DH5
CH Low (2.35GHz ~2.405GHz)

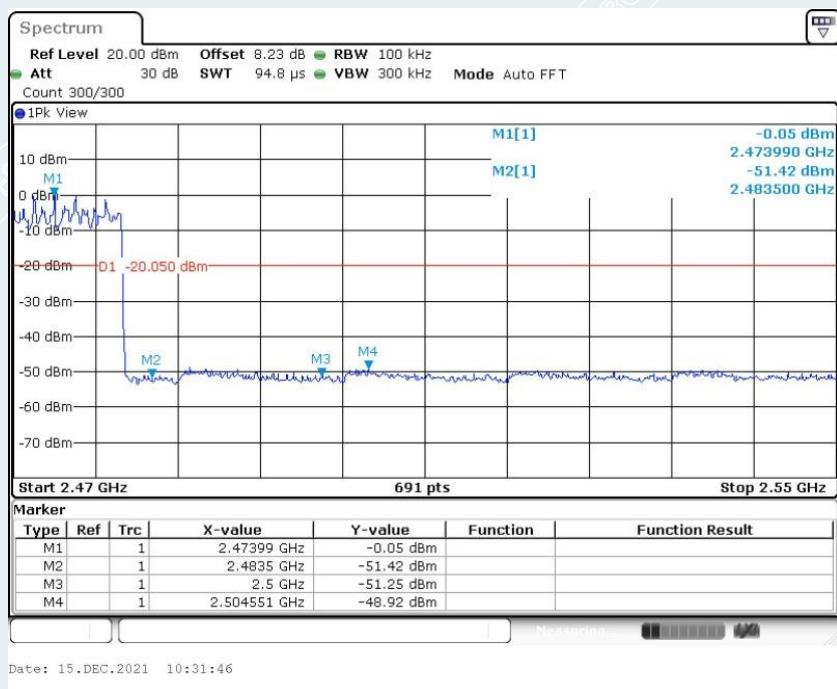
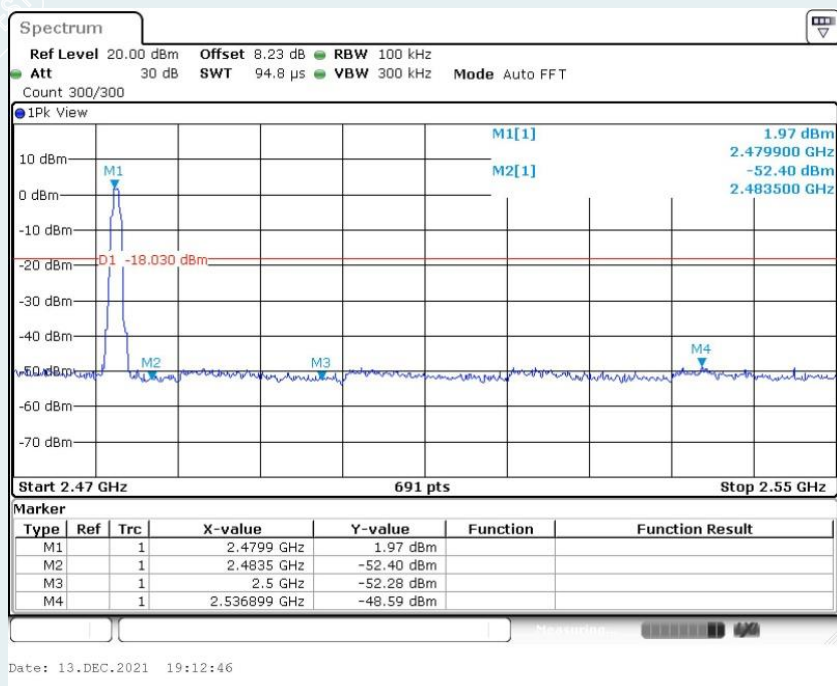


Date: 13.DEC.2021 18:15:15



Date: 15.DEC.2021 10:26:23

CH High (2.47GHz ~ 2.55GHz)



3DH5
CH Low (2.35GHz ~2.405GHz)

