

Test Report

Verified code: 371691

Report No.: E202212085403-01-1

Customer: Fiberhome Telecommunication Technologies Co., Ltd.

Address: No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China

Sample Name: Wireless Router

Sample Model: SR1021FS

Receive Sample Date: Dec.10,2022

Test Date: Dec.14,2022 ~ Jan.05,2023

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

Test Result: Pass

Prepared by:

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Approved by:

Zhao Zetian



GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Issued Date: 2023-02-23

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202212085403-01-1	Original Issue	2023-02-15

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1. TEST RESULT SUMMARY

Standard	Item	Limit / Severity	Result
CFR 47, FCC Part 15 Subpart C (§15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Spurious Emission	§15.247(d) §15.205 §15.209	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Conducted band edges and Spurious Emission	§15.247(d)	PASS
	Restricted bands of operation	§15.205 §15.209 §15.247(d)	PASS

The EUT have two antennas. The antenna is PCB antenna.

The max gain of antenna is 3.14dBi, which accordance 15.203is considered sufficient to comply with the provisions of this section.

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2. GENERAL DESCRIPTION OF EUT

2.1. APPLICANT

Name: Fiberhome Telecommunication Technologies Co., Ltd.
Address: No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China

2.2. MANUFACTURER

Name: Fiberhome Telecommunication Technologies Co., Ltd.
Address: No.88 Youkeyuan Road, Hongshan District, Wuhan,Hubei, China

2.3. FACTORY

Name: Fiberhome Telecommunication Technologies Co., Ltd.
Address: No.67,Chuangye Street,East Lake High-tech Development Zone,WuhanCity,HubeiProvince,P.R.China

2.4. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Product Name: Wireless Router
Product Model: SR1021FS
Adding Model: /
Trade Name: FiberHome
FCC ID: 2AV2N-SR1021FS
Power Supply: DC12.0V power supplied by adapter
Adapter
Specification: Adapter1: KL-WA120100-D
Input:100-240V~50/60Hz 0.5A Max
Output:12V  1.0A
Adapter2: RD1201000-C55-35MGD
Input:100-240V~50/60Hz 0.6A Max
Output:12V  1A
Frequency Band: 2412MHz-2462MHz for 802.11b/g/n HT20/ax HE20
2422MHz-2452MHz: 802.11n HT40/ax HE40
Modulation Type: DSSS for 802.11b mode;
OFDM for 802.11g/n mode
OFDM , OFDMA for 802.11ax mode
Antenna
Specification: PCB Antenna 1 with 3.14dBi gain (Max)
PCB Antenna 2 with 3.14dBi gain (Max)
Temperature Range: -5℃~45℃
Hardware Version: /
Software Version: V1.0
Sample submitting way: ☒ Provided by customer ☐ Sampling
Sample No: E202212085403-01-0001,E202212085403-01-0002
Note: /

2.5. CHANNEL LIST

CH01 - CH11 for IEEE 802.11b, IEEE 802.11g, IEEE 802.11n HT20, IEEE 802.11ax HE20							
CH03 – CH09 for IEEE 802.11n HT40, IEEE 802.11ax HE40,							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

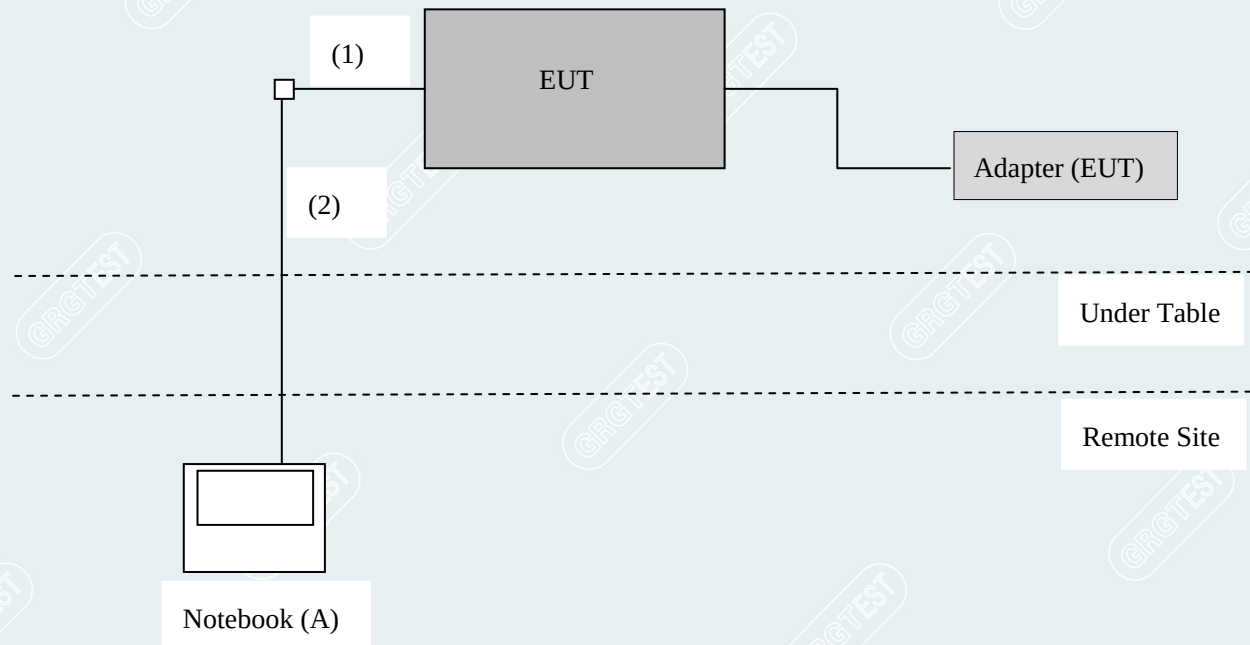
2.6. TEST OPERATION MODE

Mode No.	Description of the modes
1	2.4G Wi-Fi TX mode

2.7. LOCAL SUPPORTIVE INSTRUMENTS

ID	Name of Equipment	Manufacturer	Model	Serial Number	Note
A	Notebook	LENOVO	ZHAOYANG K4e-IML	LRX00A41	Provided by Lab
1	RJ45 LAN Cable	/	/	/	UnShielded,1.93m(for conducted test),accessory of EUT
2	RJ45 LAN Cable	/	/	/	UnShielded,10.0m(for radiated test),provided by Lab

2.8. CONFIGURATION OF SYSTEM UNDER TEST



Test software:

Software version
QAToolV0.0.6.00

Power Setting:

Mode	Date Rate	Frequency (MHz)	Power Setting
802.11b(SISO ant1 /ant2)	1M	2412	15
		2437	15
		2462	15
802.11g(SISO ant1 /ant2)	6M	2412	11
		2437	11
		2462	11
802.11n HT20(MIMO ant1&ant2)	MCS0	2412	7
		2437	7
		2462	7
802.11n HT40(MIMO ant1&ant2)	MCS0	2422	7
		2437	7
		2452	7

802.11ax HE20(MIMO ant1&ant2)	MCS0	2412	7
		2437	7
		2462	7
802.11ax HE40(MIMO ant1&ant2)	MCS0	2422	7
		2437	7
		2452	7

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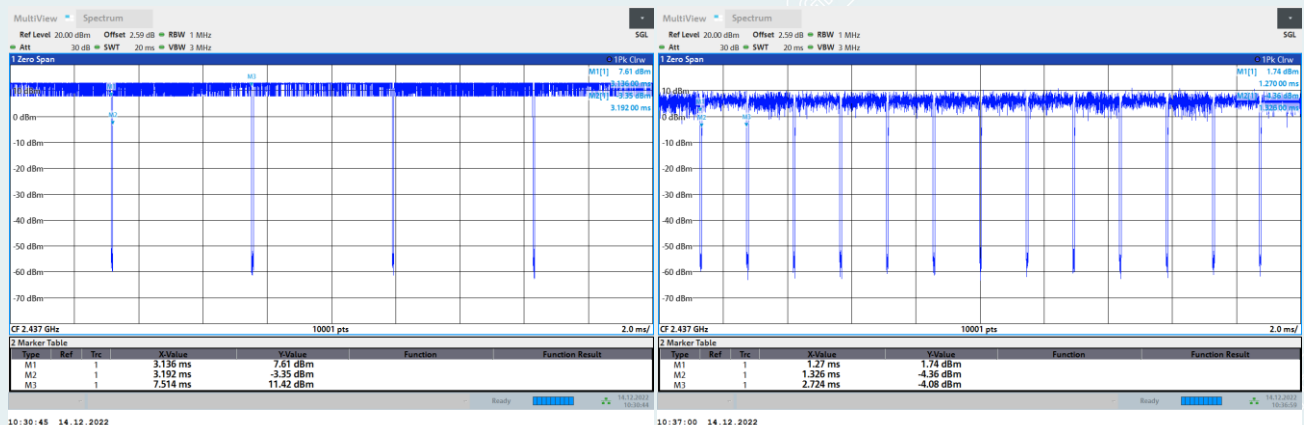
2.9. DUTY CYCLE

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	18.9°C/47%RH/101.1kPa	Test Voltage	AC120V/60Hz
Tested By	Yang Zhaoyun	Tested Date	2022/12/14~12/15

Test Mode	Antenna	Frequency (MHz)	Duty Cycle [%]	Correction Factor (dB)	1/T (kHz)
802.11b	Ant1	2437	98.72	0	0.23
802.11g	Ant1	2437	96.15	0.17	0.72
802.11n HT20	Ant1	2437	95.89	0.18	0.77
802.11n HT40	Ant1	2437	92.07	0.36	1.54
802.11ax HE20	Ant1	2437	84.49	0.73	3.16
802.11ax HE40	Ant1	2437	85.19	0.7	3.11

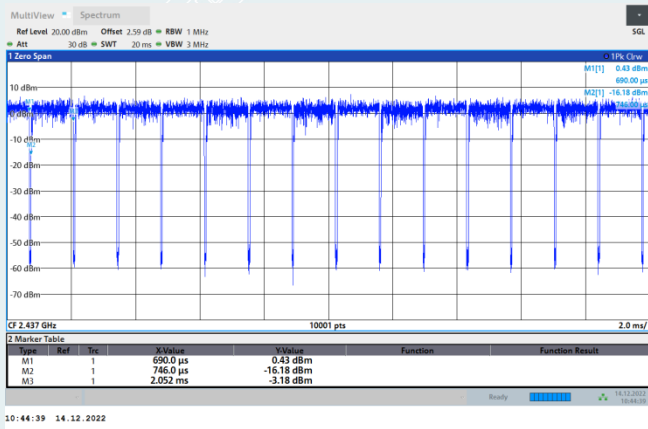
802.11b_Ant1_2437MHz

802.11g_Ant1_2437MHz

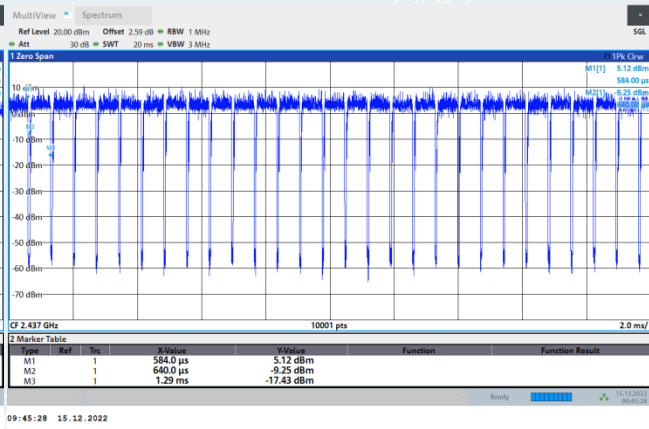


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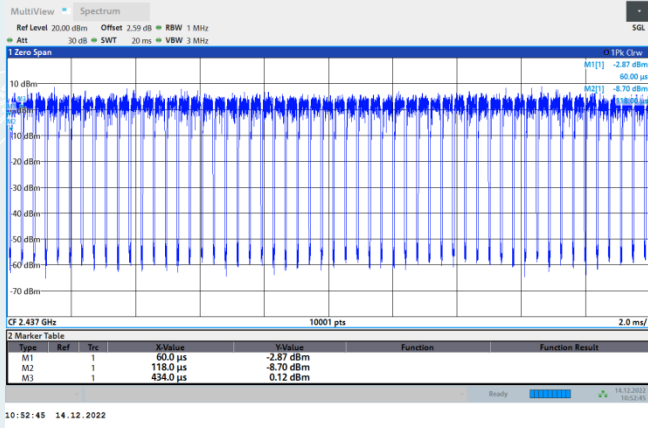
802.11n HT20_Ant1_2437MHz



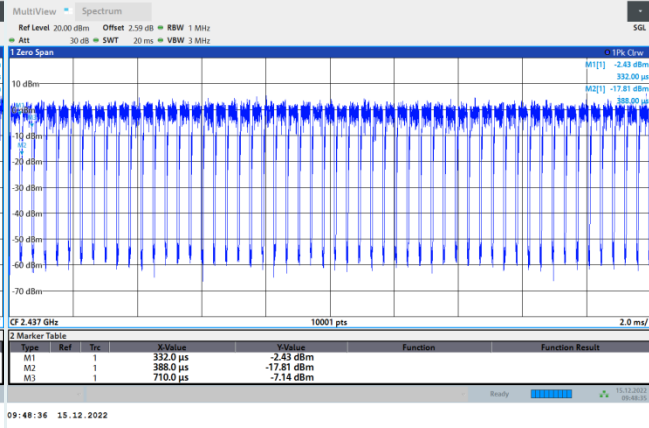
802.11n HT40_Ant1_2437MHz



802.11ax HE20_Ant1_2437MHz



802.11ax HE40_Ant1_2437MHz



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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.

Add : No.1301 Guangang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C. : 518110

Tel : 0755-61180008

Fax : 0755-61180008

3.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate#:2861.01)

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 Receiver	R&S	ESCI	100783	2023-08-28
LISN(EUT)	R&S	ENV216	101543	2023-09-13
Test S/W	Tonscend	JS32-CE/5.0.0.1		
Radiated Spurious Emission&Restricted bands of operation				
Test S/W	Tonscend	JS32-RE/5.0.0.2		
Test Receiver	R&S	ESR7	102444	2023-09-02
Preamplifier	EMEC	EM330	I00426	2023-03-05
Bi-log Antenna	Schwarzbeck	VULB9160	VULB9160-3401	2023-12-26
LoopAntenna	Schwarzbeck	FMZB 1513-60	1513-60-56	2023-08-06
Spectrum Analyzer	KEYSIGHT	N9010A	MY52221469	2023-06-29
Horn Antenna	Schwarzbeck	BBHA9120D	02143	2023-10-15
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2023-10-14
Amplifier	Tonscend	TAP01018048	AP20E8060075	2023-05-05
Amplifier	Tonscend	TAP184050	AP20E806071	2023-05-05
Test S/W	Tonscend	JS36-RE/2.5.1.5		
6dB Bandwidth&Conducted band edges and Spurious Emission&Power Spectral Density				
Spectrum Analyzer	R&S	FSW43	102072	2023-09-02
Output Power				
Pulse power sensor	Agilent	MA2411B	1126150	2023-03-01
Power meter	Anritsu	ML2495A	1204003	2023-02-28

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

5. CONDUCTED EMISSION MEASUREMENT

5.1. LIMITS

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

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2. TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.

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). A 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.

– Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 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.

The diagram illustrates a laboratory setup for EMI testing. An Equipment Under Test (EUT) is placed on a table that is 0.8m high. The table is situated on a Ground Reference Plane (G.R.P.). A Line Impedance Stabilization Network (LISN) is connected to the EUT and a power source. The distance from the EUT to the LISN is 0.4m. A RECEIVER is connected to the LISN. The setup is used to measure the EMI emissions from the EUT.

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

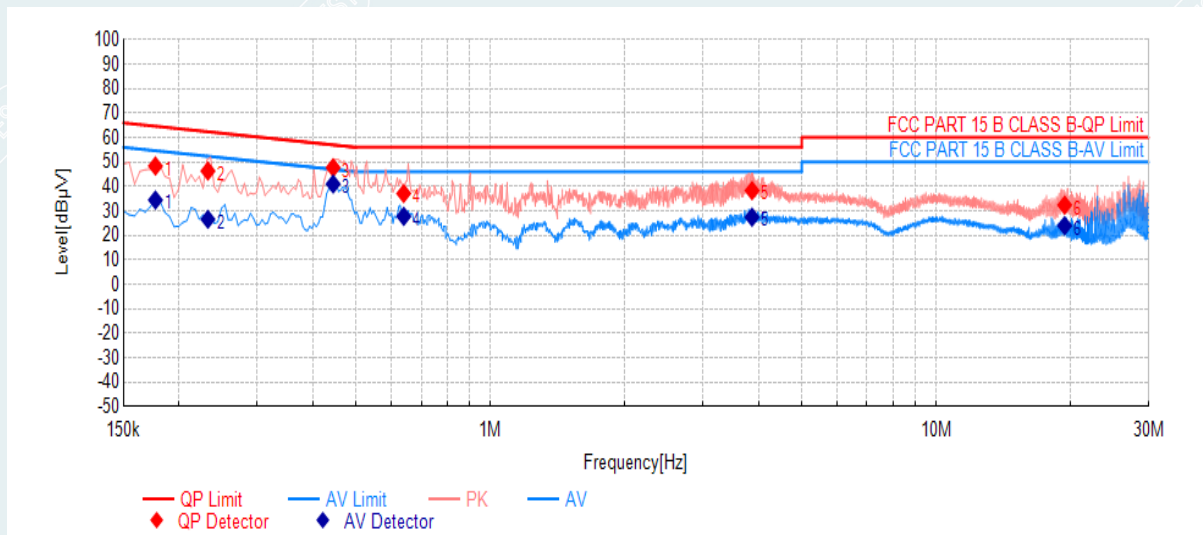
Factor	= Insertion loss of LISN + Cable Loss
Result	= Quasi-peak Reading/ Average Reading + Factor
Limit	= Limit stated in standard
Margin	= Result (dBuV) – Limit (dBuV)

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5.5. TEST RESULTS

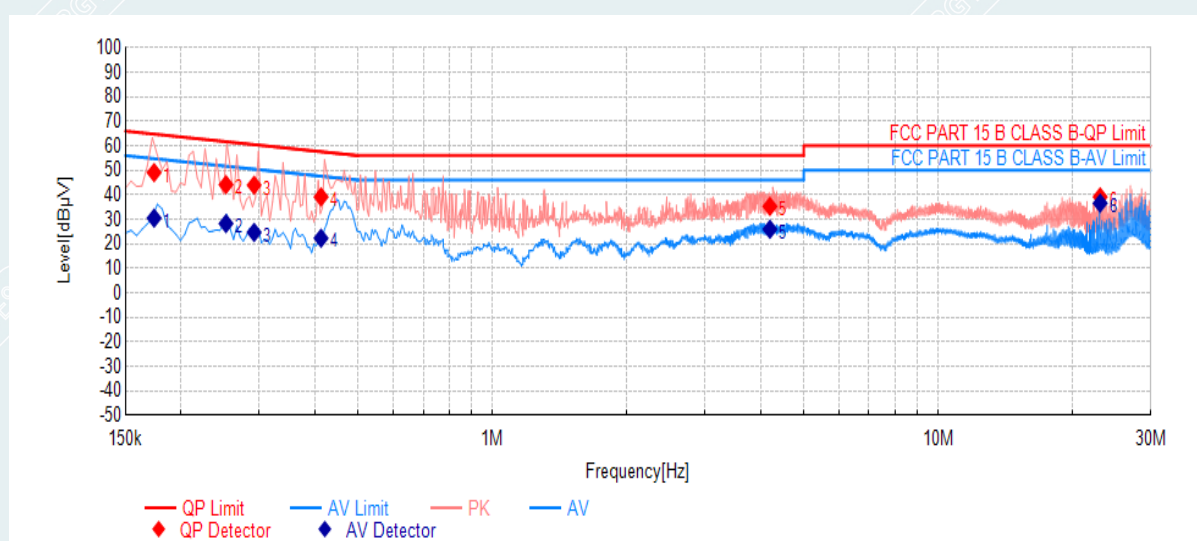
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11b 2412MHz ant1)

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	23.9°C/47%RH/101.1kPa	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	L
Tested Date	2022/12/29	Test Voltage	AC120V/60Hz
Remark	Adapter1: KL-WA120100-D		



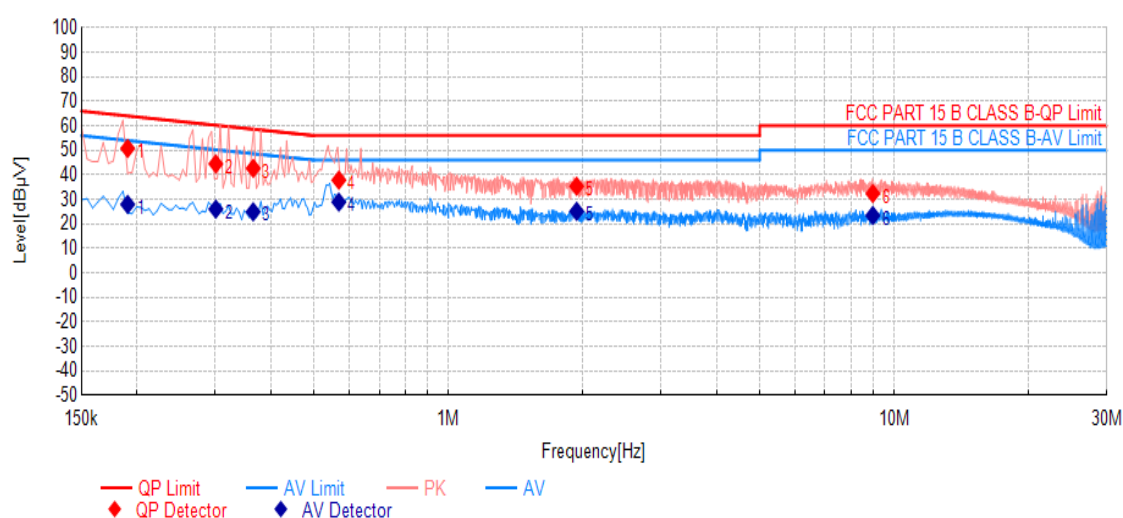
No.	Frequency	QP result	QP limit	QP margin	AV result	AV limit	AV margin	Remark
	[MHz]	[dBμV]	[dBμV]	[dB]	[dBμV]	[dBμV]	[dB]	
1	0.1771	48.34	64.62	16.28	34.47	54.62	20.15	PASS
2	0.2323	46.32	62.37	16.05	26.58	52.37	25.79	PASS
3	0.4437	47.70	56.99	9.29	41.00	46.99	5.99	PASS
4	0.6390	37.14	56.00	18.86	27.79	46.00	18.21	PASS
5	3.8658	38.32	56.00	17.68	27.46	46.00	18.54	PASS
6	19.4476	32.39	60.00	27.61	23.96	50.00	26.04	PASS

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	23.9°C /47%RH /101.1kPa	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	N
Tested Date	2022/12/29	Test Voltage	AC120V/60Hz
Remark	Adapter1: KL-WA120100-D		



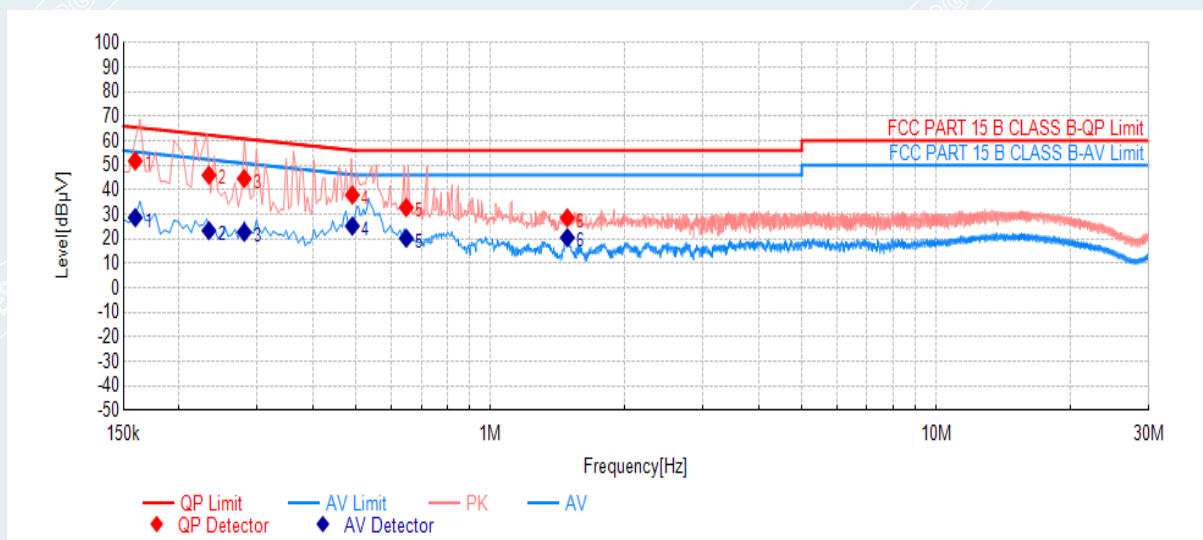
No.	Frequency	QP result	QP limit	QP margin	AV result	AV limit	AV margin	Remark
	[MHz]	[dBμV]	[dBμV]	[dB]	[dBμV]	[dBμV]	[dB]	
1	0.1741	49.07	64.76	15.69	30.51	54.76	24.25	PASS
2	0.2524	44.16	61.68	17.52	28.28	51.68	23.40	PASS
3	0.2919	43.93	60.47	16.54	24.66	50.47	25.81	PASS
4	0.4125	39.15	57.60	18.45	22.31	47.60	25.29	PASS
5	4.1966	35.29	56.00	20.71	25.94	46.00	20.06	PASS
6	23.1276	39.16	60.00	20.84	36.59	50.00	13.41	PASS

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	23.9℃/47%RH /101.1kPa	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	L
Tested Date	2022/12/29	Test Voltage	AC120V/60Hz
Remark	Adapter2: RD1201000-C55-35MGD		



No.	Frequency	QP result	QP limit	QP margin	AV result	AV limit	AV margin	Remark
	[MHz]	[dBμV]	[dBμV]	[dB]	[dBμV]	[dBμV]	[dB]	
1	0.1906	50.75	64.01	13.26	27.95	54.01	26.06	PASS
2	0.3006	44.46	60.23	15.77	26.00	50.23	24.23	PASS
3	0.3647	42.66	58.62	15.96	24.91	48.62	23.71	PASS
4	0.5676	37.83	56.00	18.17	28.89	46.00	17.11	PASS
5	1.9404	35.35	56.00	20.65	25.13	46.00	20.87	PASS
6	8.9662	32.37	60.00	27.63	23.39	50.00	26.61	PASS

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	23.9°C /47%RH /101.1kPa	Test Mode	Mode 1
Tested By	Wang Xinyuan	Line	N
Tested Date	2022/12/29	Test Voltage	AC120V/60Hz
Remark	Adapter2: RD1201000-C55-35MGD		



No.	Frequency	QP result	QP limit	QP margin	AV result	AV limit	AV margin	Remark
	[MHz]	[dBμV]	[dBμV]	[dB]	[dBμV]	[dBμV]	[dB]	
1	0.1596	51.75	65.48	13.73	28.63	55.48	26.85	PASS
2	0.2335	45.95	62.32	16.37	23.35	52.32	28.97	PASS
3	0.2802	44.56	60.81	16.25	22.72	50.81	28.09	PASS
4	0.4899	37.87	56.17	18.30	25.20	46.17	20.97	PASS
5	0.6475	32.78	56.00	23.22	20.20	46.00	25.80	PASS
6	1.4884	28.57	56.00	27.43	20.50	46.00	25.50	PASS

6. RADIATED SPURIOUS EMISSIONS

6.1. LIMITS

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

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak(dB $\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	93.8~128.5
0.490-1.705	24000/F(kHz)	30	62.96~73.8
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE:

- (1) The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the PeakLimit=74+20*log(3/1)=83.54 (dB $\mu\text{V/m}$).
The Avg Limit=54+20*log(3/1)=63.54 (dB $\mu\text{V/m}$).

6.2. TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna height is 1.0 meter.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 ° to 360 °) and by rotating the elevation axes (0 ° to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.

--- The EUT is placed on a desktop position in the center of the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 ° to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of pre-measurement the software maximize the peaks by changing turntable rotates from 0 ° to 360 ° and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre-measurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Use serial board or connecting line to make EUT and notebook to communicate, according to the actual need to make EUT send constant frequency signal continuously.
- The EUT is placed on a desktop position in the center of the turntable.
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

--- The antenna is moved spherical over the EUT in different polarizations of the antenna.

Final measurement:

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the pre-measurements with Peak and Average detector.

--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre-measurement and the limit will be stored.

NOTE:

(a).The frequency from 9KHz to 150KHz, Set RBW=300Hz(for Peak&AVG), VBW=300Hz(for Peak&AVG).
the frequency from 150KHz to 30MHz, Set RBW=9KHz, VBW=9KHz,(for QP Detector).

(b).The frequency from 30MHz to 1GHz, Set RBW=120KHz, VBW=300KHz,(for QP Detector).

(c).The frequency above 1000MHz, set the RBW=1MHz, VBW=3MHz for PK Detector.

(d). The frequency above 1000MHz, The AVG value measurement is based on duty cycle.If the EUT is configured to transmit with duty cycle $\geq 98\%$, set RBW=1MHz, $VBW \leq RBW/100$ (i.e.,10kHz) but not less than 10 Hz; If the EUT duty cycle is $< 98\%$, set RBW=1MHz, $VBW \geq 1/T$, Where T is defined in section 2.9.

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

6.3. TEST SETUP

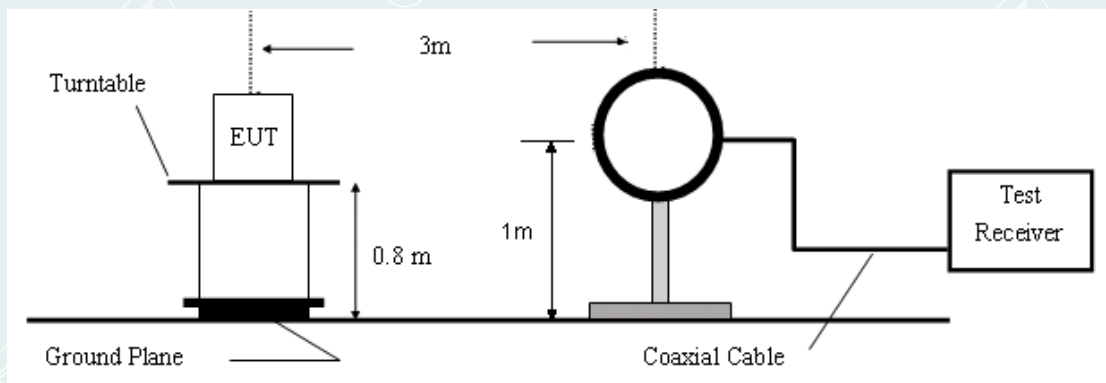


Figure 1. 9kHz to 30MHz radiated emissions test configuration

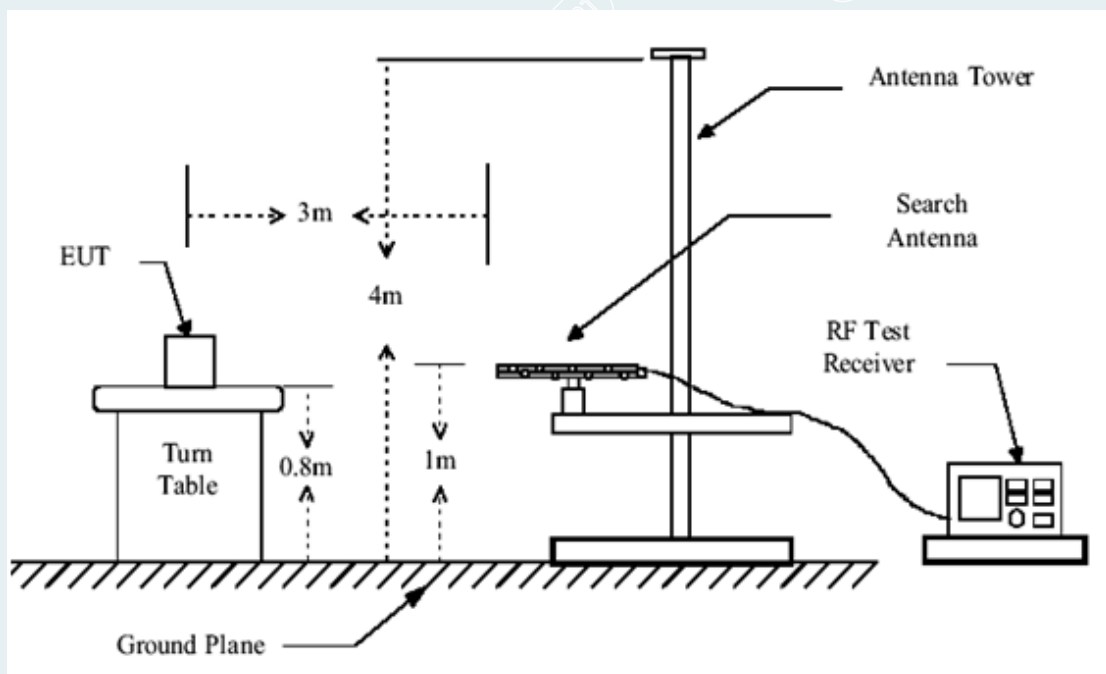


Figure 2. 30MHz to 1GHz radiated emissions test configuration

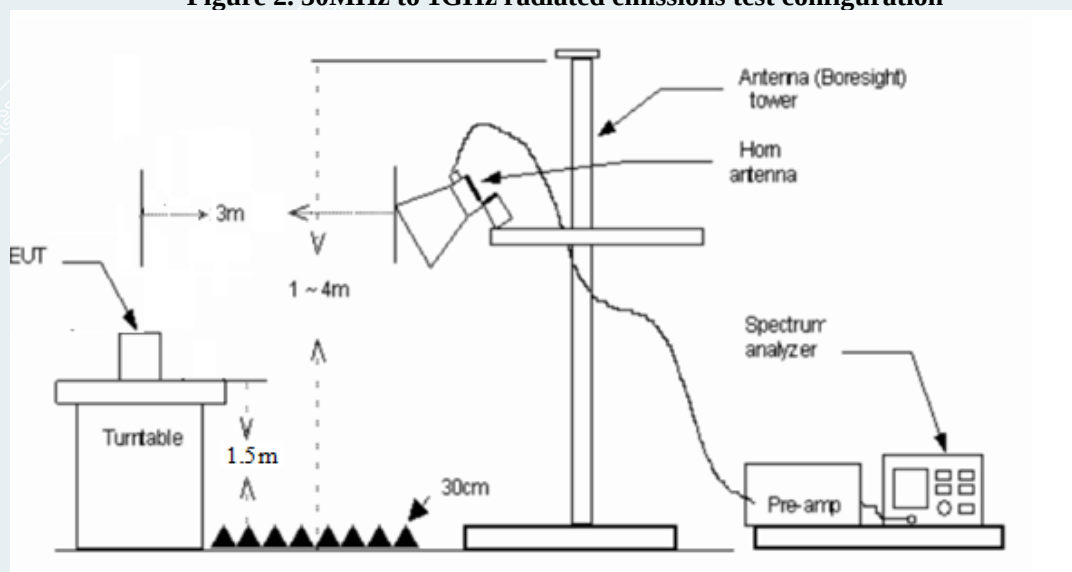


Figure 3. 1GHz to 18GHz radiated emissions test configuration

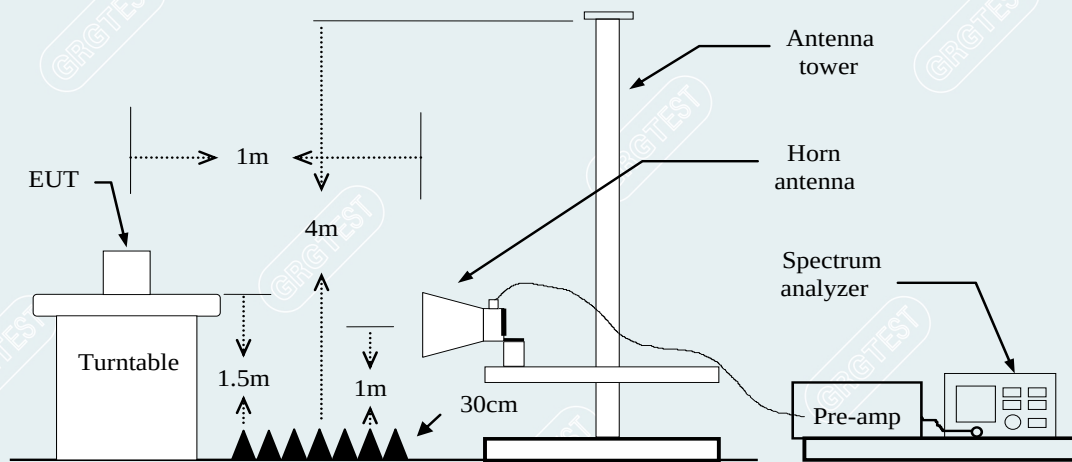


Figure 4.18GHz to 26.5GHz radiated emissions test configuration

6.4. DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

Above 1GHz-18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz) = Emission frequency in MHz

Ant.Pol. (H/V) = Antenna polarization

Reading (dBuV) = Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m) = Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Remark Result (dBuV/m) – Limit (dBuV/m)

Peak = Peak Reading

QP = Quasi-peak Reading

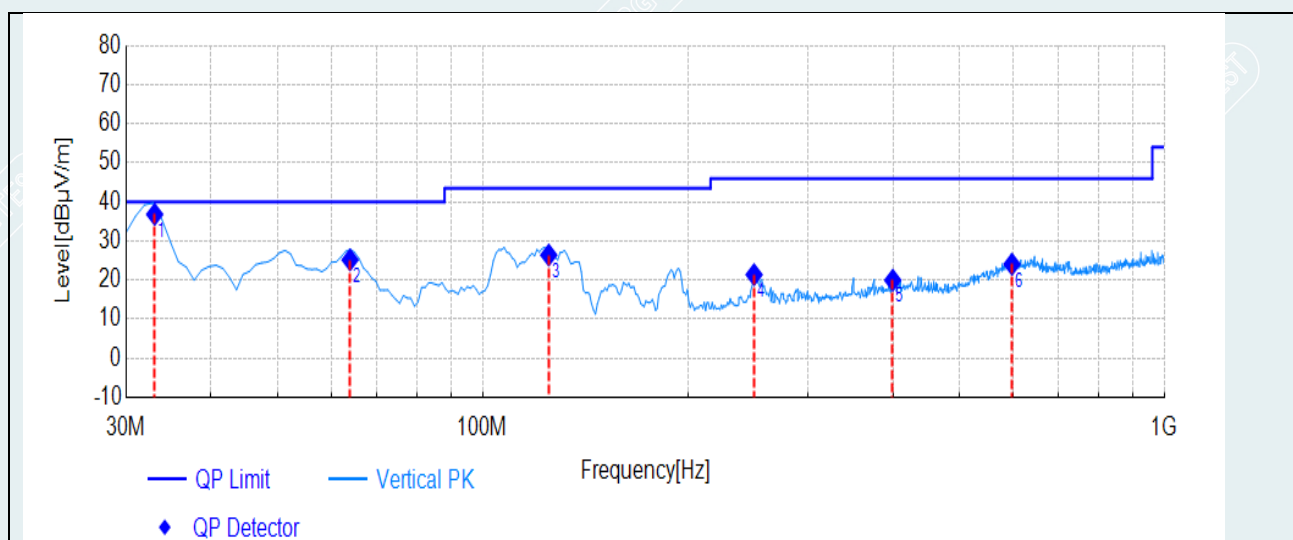
AVG = Average Reading

6.5. TEST RESULTS

Below 1GHz

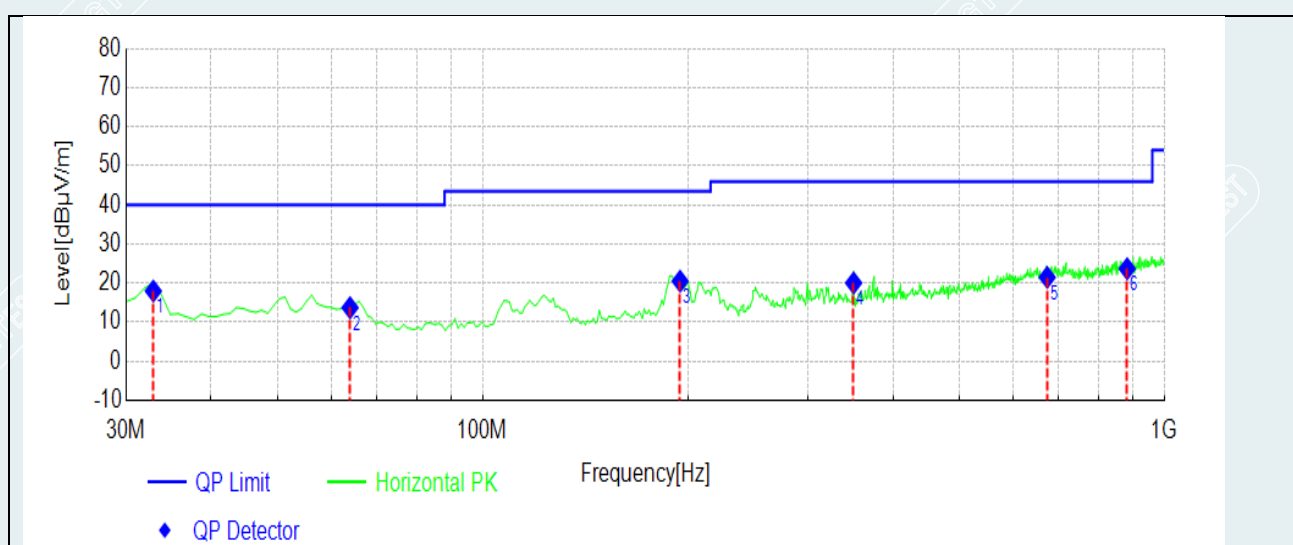
All models were pretested and only the worst modes and channels were recorded in this report. (IEEE 802.11b 2412MHz ant1)

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	18.5°C/45%RH/101.1kPa	Test Voltage	AC120V/60Hz
Test Mode	IEEE 802.11b ant 1(2412MHz)	Polarity	Vertical
Tested By	Zhang Zishan	Tested Date	2023-01-05
Note	Adapter1: KL-WA120100-D		



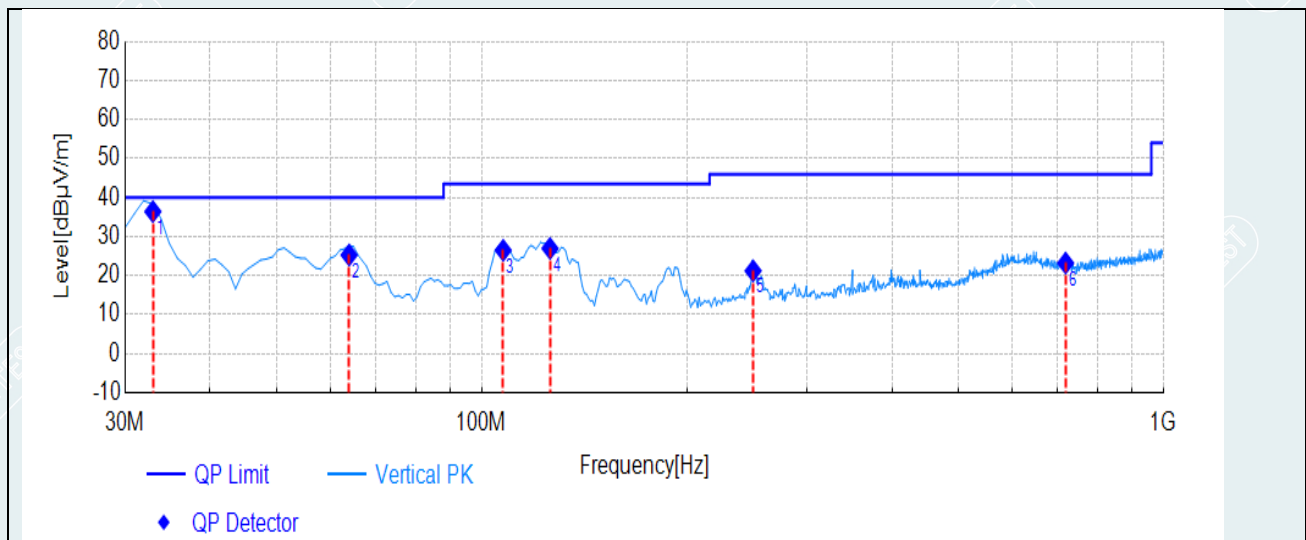
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	33.058	24.13	12.69	36.82	40.00	3.18	Vertical
2	63.95	11.61	13.57	25.18	40.00	14.82	Vertical
3	125.06	14.83	11.59	26.42	43.50	17.08	Vertical
4	250.19	6.76	14.63	21.39	46.00	24.61	Vertical
5	399.57	2.47	17.50	19.97	46.00	26.03	Vertical
6	597.45	2.59	21.47	24.06	46.00	21.94	Vertical

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	18.5°C/45%RH/101.1kPa	Test Voltage	AC120V/60Hz
Test Mode	IEEE 802.11b ant 1(2412MHz)	Polarity	Horizontal
Tested By	Zhang Zishan	Tested Date	2023-01-05
Note	Adapter1: KL-WA120100-D		



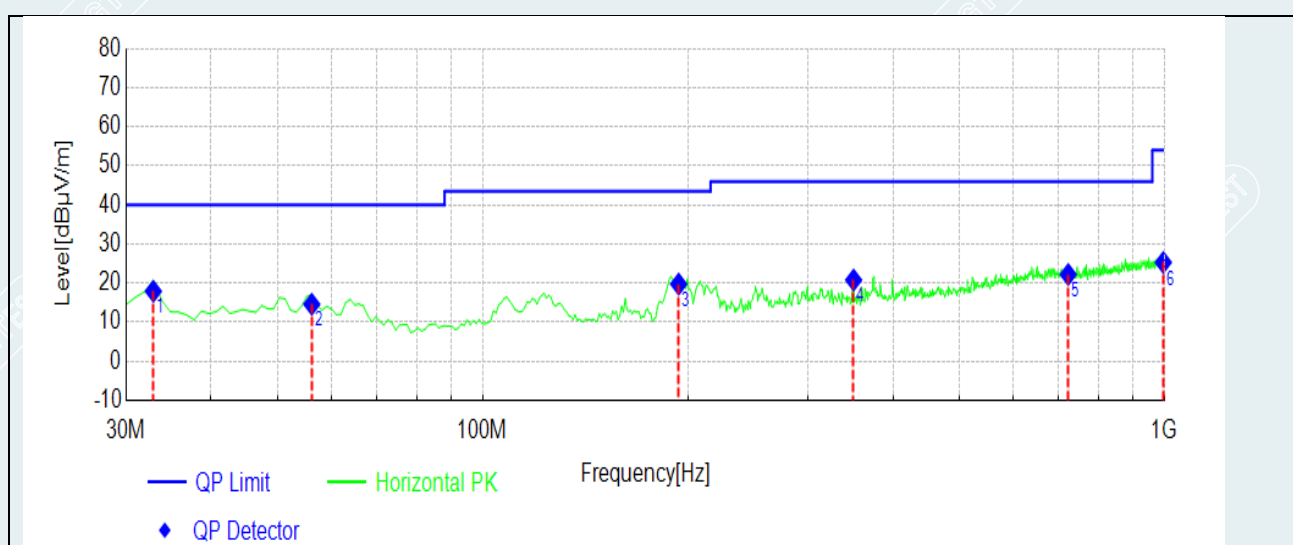
NO.	Freq. [MHz]	QP Reading [dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	32.91	5.26	12.69	17.95	40.00	22.05	Horizontal
2	63.95	0.12	13.57	13.69	40.00	26.31	Horizontal
3	194.9	7.38	13.10	20.48	43.50	23.02	Horizontal
4	350.1	3.24	16.80	20.04	46.00	25.96	Horizontal
5	673.11	-1.02	22.48	21.46	46.00	24.54	Horizontal
6	881.66	-1.4	25.06	23.66	46.00	22.34	Horizontal

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	18.5°C/45%RH/101.1kPa	Test Voltage	AC120V/60Hz
Test Mode	IEEE 802.11b ant 1(2412MHz)	Polarity	Vertical
Tested By	Zhang Zishan	Tested Date	2023-01-05
Note	Adapter2: RD1201000-C55-35MGD		



NO.	Freq. [MHz]	QP Reading[dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	32.971	23.92	12.50	36.42	40.00	3.58	Vertical
2	63.95	11.7	13.57	25.27	40.00	14.73	Vertical
3	107.6	14.67	11.80	26.47	43.50	17.03	Vertical
4	126.03	15.38	11.57	26.95	43.50	16.55	Vertical
5	250.19	6.57	14.63	21.20	46.00	24.80	Vertical
6	718.7	0.16	23.04	23.20	46.00	22.80	Vertical

EUT Name	Wireless Router	Model	SR1021FS
Environmental Conditions	18.5°C/45%RH/101.1kPa	Test Voltage	AC120V/60Hz
Test Mode	IEEE 802.11b ant 1(2412MHz)	Polarity	Horizontal
Tested By	Zhang Zishan	Tested Date	2023-01-05
Note	Adapter2: RD1201000-C55-35MGD		



NO.	Freq. [MHz]	QP Reading[dBμV/m]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Polarity
1	32.91	5.22	12.69	17.91	40.00	22.09	Horizontal
2	56.19	-0.7	15.28	14.58	40.00	25.42	Horizontal
3	193.93	6.65	13.09	19.74	43.50	23.76	Horizontal
4	350.1	3.97	16.80	20.77	46.00	25.23	Horizontal
5	722.58	-0.88	23.07	22.19	46.00	23.81	Horizontal
6	996.12	-1.26	26.54	25.28	54.00	28.72	Horizontal

Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9 kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 Data of measurement within this frequency range shown “---” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 4 The IF bandwidth of Receiver between 30MHz to 1GHz was 120 kHz.

1GHz-18GHz:

Mode: IEEE 802.11b ant1worse

Lowest Frequency (2412MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2022-12-28
Voltage:AC120V/60Hz**PK Final Data List**

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	1554	59.42	-19.36	40.06	74.00	33.94	Horizontal
2	3562.5	60.45	-14.61	45.84	74.00	28.16	Horizontal
3	4822.5	71.00	-9.25	61.75	74.00	12.25	Horizontal
4	7237.5	59.12	-2.94	56.18	74.00	17.82	Horizontal
5	9735	54.97	1.17	56.14	74.00	17.86	Horizontal

AV Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	1574	47.42	-19.31	28.11	54.00	25.89	Horizontal
2	3622.5	47.65	-14.38	33.27	54.00	20.73	Horizontal
3	4822.5	59.09	-9.25	49.84	54.00	4.16	Horizontal
4	7237.5	50.66	-2.94	47.72	54.00	6.28	Horizontal
5	9652.5	45.77	1.08	46.85	54.00	7.15	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	1458	59.55	-19.51	40.04	74.00	33.96	Vertical
2	3015	59.18	-15.34	43.84	74.00	30.16	Vertical
3	4822.5	64.79	-9.25	55.54	74.00	18.46	Vertical
4	7237.5	59.65	-2.94	56.71	74.00	17.29	Vertical
5	9652.5	61.14	1.08	62.22	74.00	11.78	Vertical

AV Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	1468	47.52	-19.51	28.01	54.00	25.99	Vertical
2	3015	47.13	-15.34	31.79	54.00	22.21	Vertical
3	4822.5	53.46	-9.25	44.21	54.00	9.79	Vertical
4	7237.5	51.48	-2.94	48.54	54.00	5.46	Vertical
5	9652.5	48.95	1.08	50.03	54.00	3.97	Vertical

Mode: IEEE 802.11b ant1worse
 Highest Frequency (2462MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3727.5	60.63	-14.00	46.63	74.00	27.37	Horizontal
2	4920	72.42	-8.60	63.82	74.00	10.18	Horizontal
3	5745	56.56	-7.53	49.03	74.00	24.97	Horizontal
4	7380	62.35	-2.66	59.69	74.00	14.31	Horizontal
5	10785	54.94	3.70	58.64	74.00	15.36	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3735	47.79	-13.96	33.83	54.00	20.17	Horizontal
2	4920	58.54	-8.60	49.94	54.00	4.06	Horizontal
3	5715	47.13	-7.52	39.61	54.00	14.39	Horizontal
4	7387.5	53.50	-2.64	50.86	54.00	3.14	Horizontal
5	10935	44.71	3.81	48.52	54.00	5.48	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3322.5	59.38	-15.02	44.36	74.00	29.64	Vertical
2	4920	62.88	-8.60	54.28	74.00	19.72	Vertical
3	7380	64.44	-2.66	61.78	74.00	12.22	Vertical
4	9847.5	62.61	1.28	63.89	74.00	10.11	Vertical
5	12855	54.96	5.24	60.20	74.00	13.80	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3315	46.58	-15.03	31.55	54.00	22.45	Vertical
2	4912.5	47.37	-8.65	38.72	54.00	15.28	Vertical
3	7372.5	51.53	-2.67	48.86	54.00	5.14	Vertical
4	9840	46.59	1.27	47.86	54.00	6.14	Vertical
5	11610	43.92	4.59	48.51	54.00	5.49	Vertical

Mode: IEEE 802.11g ant1worse
 Lowest Frequency (2412MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	2096	60.87	-20.29	40.58	74.00	33.42	Horizontal
2	3322.5	58.94	-15.02	43.92	74.00	30.08	Horizontal
3	4822.5	62.31	-9.25	53.06	74.00	20.94	Horizontal
4	7995	55.99	-0.48	55.51	74.00	18.49	Horizontal
5	10935	53.86	3.81	57.67	74.00	16.33	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	2098	49.15	-20.26	28.89	54.00	25.11	Horizontal
2	3345	46.59	-15.00	31.59	54.00	22.41	Horizontal
3	4822.5	51.90	-9.25	42.65	54.00	11.35	Horizontal
4	7927.5	45.86	-0.74	45.12	54.00	8.88	Horizontal
5	11250	44.66	4.27	48.93	54.00	5.07	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3397.5	60.10	-14.95	45.15	74.00	28.85	Vertical
2	4860	61.75	-9.00	52.75	74.00	21.25	Vertical
3	6495	56.91	-5.05	51.86	74.00	22.14	Vertical
4	9390	56.14	0.69	56.83	74.00	17.17	Vertical
5	11542.5	54.94	4.66	59.60	74.00	14.40	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3442.5	46.67	-14.90	31.77	54.00	22.23	Vertical
2	4822.5	49.45	-9.25	40.20	54.00	13.80	Vertical
3	6532.5	45.89	-4.92	40.97	54.00	13.03	Vertical
4	9375	45.18	0.66	45.84	54.00	8.16	Vertical
5	11205	45.59	4.20	49.79	54.00	4.21	Vertical

Mode: IEEE 802.11g ant1worse
 Highest Frequency (2462MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz
 /

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3585	58.68	-14.52	44.16	74.00	29.84	Horizontal
2	4927.5	62.49	-8.55	53.94	74.00	20.06	Horizontal
3	6487.5	56.13	-5.09	51.04	74.00	22.96	Horizontal
4	7987.5	55.33	-0.51	54.82	74.00	19.18	Horizontal
5	10507.5	54.09	3.51	57.60	74.00	16.40	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3765	48.01	-13.86	34.15	54.00	19.85	Horizontal
2	4920	53.20	-8.60	44.60	54.00	9.40	Horizontal
3	6765	45.36	-4.18	41.18	54.00	12.82	Horizontal
4	7995	45.80	-0.48	45.32	54.00	8.68	Horizontal
5	10552.5	44.37	3.53	47.90	54.00	6.10	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3907.5	58.26	-13.33	44.93	74.00	29.07	Vertical
2	4860	61.23	-9.00	52.23	74.00	21.77	Vertical
3	7387.5	59.22	-2.64	56.58	74.00	17.42	Vertical
4	9292.5	55.74	0.48	56.22	74.00	17.78	Vertical
5	14565	53.92	7.83	61.75	74.00	12.25	Vertical
6	14782.5	53.07	7.92	60.99	74.00	13.01	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4057.5	47.45	-12.79	34.66	54.00	19.34	Vertical
2	4860	49.56	-9.00	40.56	54.00	13.44	Vertical
3	7380	49.10	-2.66	46.44	54.00	7.56	Vertical
4	9847.5	45.21	1.28	46.49	54.00	7.51	Vertical

Mode: IEEE 802.11n HT20

Lowest Frequency (2412MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2022-12-28

Voltage:AC120V/60Hz

/

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3562.5	58.95	-14.61	44.34	74.00	29.66	Horizontal
2	4860	62.55	-9.00	53.55	74.00	20.45	Horizontal
3	7627.5	55.72	-1.92	53.80	74.00	20.20	Horizontal
4	11145	54.37	4.09	58.46	74.00	15.54	Horizontal
5	14370	53.90	7.68	61.58	74.00	12.42	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3652.5	48.14	-14.28	33.86	54.00	20.14	Horizontal
2	4822.5	48.58	-9.25	39.33	54.00	14.67	Horizontal
3	7702.5	45.38	-1.63	43.75	54.00	10.25	Horizontal
4	11205	44.90	4.20	49.10	54.00	4.90	Horizontal
5	14527.5	44.34	7.82	52.16	54.00	1.84	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3600	58.49	-14.47	44.02	74.00	29.98	Vertical
2	4860	59.70	-9.00	50.70	74.00	23.30	Vertical
3	7965	57.81	-0.60	57.21	74.00	16.79	Vertical
4	11617.5	55.83	4.59	60.42	74.00	13.58	Vertical
5	14542.5	54.41	7.83	62.24	74.00	11.76	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3765	48.03	-13.86	34.17	54.00	19.83	Vertical
2	4860	48.99	-9.00	39.99	54.00	14.01	Vertical
3	8010	45.64	-0.49	45.15	54.00	8.85	Vertical
4	11610	44.91	4.59	49.50	54.00	4.50	Vertical
5	14782.5	44.13	7.92	52.05	54.00	1.95	Vertical

Mode: IEEE 802.11n HT20
 Highest Frequency (2462MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz
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PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4860	60.71	-9.00	51.71	74.00	22.29	Horizontal
2	6907.5	56.01	-3.71	52.30	74.00	21.70	Horizontal
3	9255	55.38	0.40	55.78	74.00	18.22	Horizontal
4	11145	55.64	4.09	59.73	74.00	14.27	Horizontal
5	14010	54.72	7.32	62.04	74.00	11.96	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4927.5	48.71	-8.55	40.16	54.00	13.84	Horizontal
2	7102.5	45.22	-3.21	42.01	54.00	11.99	Horizontal
3	9285	45.48	0.46	45.94	54.00	8.06	Horizontal
4	11205	44.81	4.20	49.01	54.00	4.99	Horizontal
5	14047.5	44.70	7.36	52.06	54.00	1.94	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3345	59.49	-15.00	44.49	74.00	29.51	Vertical
2	4860	62.26	-9.00	53.26	74.00	20.74	Vertical
3	6495	56.17	-5.05	51.12	74.00	22.88	Vertical
4	7957.5	56.24	-0.63	55.61	74.00	18.39	Vertical
5	11152.5	54.33	4.11	58.44	74.00	15.56	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3435	46.69	-14.91	31.78	54.00	22.22	Vertical
2	4860	49.90	-9.00	40.90	54.00	13.10	Vertical
3	6562.5	45.59	-4.82	40.77	54.00	13.23	Vertical
4	8002.5	45.57	-0.46	45.11	54.00	8.89	Vertical
5	11197.5	45.22	4.18	49.40	54.00	4.60	Vertical

Mode: IEEE 802.11n HT40

Lowest Frequency (2422MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2022-12-28

Voltage:AC120V/60Hz

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PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3270	59.10	-15.08	44.02	74.00	29.98	Horizontal
2	4860	61.56	-9.00	52.56	74.00	21.44	Horizontal
3	8002.5	56.22	-0.46	55.76	74.00	18.24	Horizontal
4	11610	54.05	4.59	58.64	74.00	15.36	Horizontal
5	14422.5	54.58	7.73	62.31	74.00	11.69	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3142.5	46.85	-15.21	31.64	54.00	22.36	Horizontal
2	4860	47.99	-9.00	38.99	54.00	15.01	Horizontal
3	7995	45.91	-0.48	45.43	54.00	8.57	Horizontal
4	11205	45.02	4.20	49.22	54.00	4.78	Horizontal
5	14550	44.49	7.83	52.32	54.00	1.68	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4860	60.31	-9.00	51.31	74.00	22.69	Vertical
2	5602.5	58.82	-7.51	51.31	74.00	22.69	Vertical
3	8092.5	55.89	-0.68	55.21	74.00	18.79	Vertical
4	11145	55.52	4.09	59.61	74.00	14.39	Vertical
5	14362.5	54.27	7.68	61.95	74.00	12.05	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4860	48.92	-9.00	39.92	54.00	14.08	Vertical
2	5550	46.95	-7.51	39.44	54.00	14.56	Vertical
3	8025	45.96	-0.51	45.45	54.00	8.55	Vertical
4	11205	44.87	4.20	49.07	54.00	4.93	Vertical
5	14062.5	44.89	7.38	52.27	54.00	1.73	Vertical

Mode: IEEE 802.11n HT40

Highest Frequency (2452MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2022-12-28

Voltage:AC120V/60Hz

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3570	58.95	-14.58	44.37	74.00	29.63	Horizontal
2	4860	61.10	-9.00	52.10	74.00	21.90	Horizontal
3	7995	55.83	-0.48	55.35	74.00	18.65	Horizontal
4	9697.5	56.13	1.13	57.26	74.00	16.74	Horizontal
5	13747.5	54.79	5.98	60.77	74.00	13.23	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3765	48.16	-13.86	34.30	54.00	19.70	Horizontal
2	4860	48.52	-9.00	39.52	54.00	14.48	Horizontal
3	8055	46.01	-0.59	45.42	54.00	8.58	Horizontal
4	10680	44.50	3.62	48.12	54.00	5.88	Horizontal
5	14047.5	45.40	7.36	52.76	54.00	1.24	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4860	61.19	-9.00	52.19	74.00	21.81	Vertical
2	6705	56.97	-4.37	52.60	74.00	21.40	Vertical
3	8017.5	56.50	-0.50	56.00	74.00	18.00	Vertical
4	11160	54.85	4.12	58.97	74.00	15.03	Vertical
5	14550	54.53	7.83	62.36	74.00	11.64	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	5130	46.79	-7.92	38.87	54.00	15.13	Vertical
2	6907.5	45.62	-3.71	41.91	54.00	12.09	Vertical
3	8010	45.81	-0.49	45.32	54.00	8.68	Vertical
4	11610	45.21	4.59	49.80	54.00	4.20	Vertical
5	13980	44.56	7.21	51.77	54.00	2.23	Vertical

Mode: IEEE 802.11axHE20

Lowest Frequency (2412MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2022-12-28

Voltage:AC120V/60Hz

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PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3405	60.39	-14.94	45.45	74.00	28.55	Horizontal
2	4860	61.08	-9.00	52.08	74.00	21.92	Horizontal
3	7717.5	56.59	-1.57	55.02	74.00	18.98	Horizontal
4	11145	55.49	4.09	59.58	74.00	14.42	Horizontal
5	14070	54.91	7.38	62.29	74.00	11.71	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3405	47.58	-14.94	32.64	54.00	21.36	Horizontal
2	4830	48.83	-9.20	39.63	54.00	14.37	Horizontal
3	7935	45.95	-0.72	45.23	54.00	8.77	Horizontal
4	11610	44.92	4.59	49.51	54.00	4.49	Horizontal
5	14377.5	44.07	7.69	51.76	54.00	2.24	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3570	59.38	-14.58	44.80	74.00	29.20	Vertical
2	4860	61.03	-9.00	52.03	74.00	21.97	Vertical
3	7762.5	57.19	-1.39	55.80	74.00	18.20	Vertical
4	10087.5	56.00	1.80	57.80	74.00	16.20	Vertical
5	13215	54.97	5.35	60.32	74.00	13.68	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3757.5	47.68	-13.88	33.80	54.00	20.20	Vertical
2	5032.5	47.11	-8.03	39.08	54.00	14.92	Vertical
3	8002.5	45.72	-0.46	45.26	54.00	8.74	Vertical
4	10552.5	44.92	3.53	48.45	54.00	5.55	Vertical
5	12847.5	44.83	5.21	50.04	54.00	3.96	Vertical

Mode: IEEE 802.11ax HE20
 Highest Frequency (2462MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz
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PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3405	59.15	-14.94	44.21	74.00	29.79	Horizontal
2	4860	61.76	-9.00	52.76	74.00	21.24	Horizontal
3	7620	55.82	-1.95	53.87	74.00	20.13	Horizontal
4	11152.5	54.88	4.11	58.99	74.00	15.01	Horizontal
5	12862.5	55.42	5.28	60.70	74.00	13.30	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3577.5	46.81	-14.56	32.25	54.00	21.75	Horizontal
2	4927.5	48.45	-8.55	39.90	54.00	14.10	Horizontal
3	7695	45.76	-1.65	44.11	54.00	9.89	Horizontal
4	11205	44.48	4.20	48.68	54.00	5.32	Horizontal
5	12915	44.64	5.49	50.13	54.00	3.87	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3930	58.67	-13.24	45.43	74.00	28.57	Vertical
2	4860	60.77	-9.00	51.77	74.00	22.23	Vertical
3	8010	56.32	-0.49	55.83	74.00	18.17	Vertical
4	10560	54.82	3.54	58.36	74.00	15.64	Vertical
5	14542.5	55.78	7.83	63.61	74.00	10.39	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4057.5	47.62	-12.79	34.83	54.00	19.17	Vertical
2	4860	48.28	-9.00	39.28	54.00	14.72	Vertical
3	8002.5	45.76	-0.46	45.30	54.00	8.70	Vertical
4	10552.5	44.95	3.53	48.48	54.00	5.52	Vertical
5	14550	44.48	7.83	52.31	54.00	1.69	Vertical

Mode: IEEE 802.11ax HE40
 Lowest Frequency (2422MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3030	59.79	-15.33	44.46	74.00	29.54	Horizontal
2	4860	61.09	-9.00	52.09	74.00	21.91	Horizontal
3	7380	56.43	-2.66	53.77	74.00	20.23	Horizontal
4	11205	54.88	4.20	59.08	74.00	14.92	Horizontal
5	14422.5	55.02	7.73	62.75	74.00	11.25	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3000	46.97	-15.36	31.61	54.00	22.39	Horizontal
2	4860	48.53	-9.00	39.53	54.00	14.47	Horizontal
3	7627.5	45.39	-1.92	43.47	54.00	10.53	Horizontal
4	11205	45.55	4.20	49.75	54.00	4.25	Horizontal
5	14790	44.02	7.92	51.94	54.00	2.06	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	3562.5	58.55	-14.61	43.94	74.00	30.06	Vertical
2	4860	59.65	-9.00	50.65	74.00	23.35	Vertical
3	8002.5	55.81	-0.46	55.35	74.00	18.65	Vertical
4	11550	54.14	4.65	58.79	74.00	15.21	Vertical
5	14790	53.88	7.92	61.80	74.00	12.20	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	3667.5	47.48	-14.21	33.27	54.00	20.73	Vertical
2	4860	47.74	-9.00	38.74	54.00	15.26	Vertical
3	8002.5	46.08	-0.46	45.62	54.00	8.38	Vertical
4	11557.5	44.44	4.65	49.09	54.00	4.91	Vertical
5	14535	44.77	7.83	52.60	54.00	1.40	Vertical

Mode: IEEE 802.11ax HE40
 Highest Frequency (2452MHz)
 Environment: 18.9°C /47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2022-12-28
 Voltage:AC120V/60Hz

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4860	60.74	-9.00	51.74	74.00	22.26	Horizontal
2	5287.5	58.27	-7.74	50.53	74.00	23.47	Horizontal
3	8070	55.42	-0.62	54.80	74.00	19.20	Horizontal
4	11145	54.59	4.09	58.68	74.00	15.32	Horizontal
5	14542.5	55.44	7.83	63.27	74.00	10.73	Horizontal

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4860	47.70	-9.00	38.70	54.00	15.30	Horizontal
2	5265	47.31	-7.77	39.54	54.00	14.46	Horizontal
3	8002.5	45.95	-0.46	45.49	54.00	8.51	Horizontal
4	11205	44.72	4.20	48.92	54.00	5.08	Horizontal
5	14550	44.79	7.83	52.62	54.00	1.38	Horizontal

PK Final Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	4620	59.64	-10.58	49.06	74.00	24.94	Vertical
2	4860	59.83	-9.00	50.83	74.00	23.17	Vertical
3	8017.5	56.47	-0.50	55.97	74.00	18.03	Vertical
4	11152.5	53.88	4.11	57.99	74.00	16.01	Vertical
5	14415	54.46	7.73	62.19	74.00	11.81	Vertical

AV Final Data List

NO.	Freq. [MHz]	AV Reading [dBμV/m]	Factor [dB]	AV Level [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Polarity
1	4665	47.96	-10.29	37.67	54.00	16.33	Vertical
2	4860	48.80	-9.00	39.80	54.00	14.20	Vertical
3	8017.5	45.44	-0.50	44.94	54.00	9.06	Vertical
4	11205	45.13	4.20	49.33	54.00	4.67	Vertical
5	14535	44.76	7.83	52.59	54.00	1.41	Vertical

Above 18GHz:

Pre-scan all modes and recorded the worst case results in this report (IEEE 802.11b)
The peak test results is less than the average limits, so the average test results had not reported.

Mode: IEEE 802.11b Ant 1

Lowest Frequency (2412MHz)

Environment: 18.9°C/47%RH /101.1kPa

Tested By:Zhang Zishan

Date: 2023-01-05

Voltage:AC120V/60Hz

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Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	28337.8378	49.42	-8.52	40.90	83.54	42.64	Horizontal
2	29540.5405	50.14	-8.83	41.31	83.54	42.23	Horizontal
3	31472.973	51.36	-8.04	43.32	83.54	40.22	Horizontal
4	34189.1892	50.55	-7.76	42.79	83.54	40.75	Horizontal
5	36108.1081	52.35	-5.43	46.92	83.54	36.62	Horizontal
6	38229.7297	53.30	-8.11	45.19	83.54	38.35	Horizontal

Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	19114.6146	50.68	-6.70	43.98	83.54	39.56	Vertical
2	20297.2973	48.53	-7.05	41.48	83.54	42.06	Vertical
3	21658.6587	53.21	-6.95	46.26	83.54	37.28	Vertical
4	22671.1712	49.67	-5.84	43.83	83.54	39.71	Vertical
5	24109.1091	46.97	-5.75	41.22	83.54	42.32	Vertical
6	25623.6236	49.36	-4.79	44.57	83.54	38.97	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

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

Mode: IEEE 802.11b Ant 1
 Middle Frequency (2437MHz)
 Environment: 18.9°C/47%RH /101.1kPa
 Tested By:Zhang Zishan

Date: 2023-01-05
 Voltage:AC120V/60Hz
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Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	28797.2973	50.54	-8.43	42.11	83.54	41.43	Horizon
2	31054.0541	50.96	-8.17	42.79	83.54	40.75	Horizon
3	32986.4865	52.01	-8.50	43.51	83.54	40.03	Horizon
4	34878.3784	50.29	-6.47	43.82	83.54	39.72	Horizon
5	37040.5405	51.99	-6.82	45.17	83.54	38.37	Horizon
6	38972.973	53.78	-6.43	47.35	83.54	36.19	Horizon

Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	18765.7658	49.37	-6.76	42.61	83.54	40.93	Vertical
2	19939.9399	48.28	-7.17	41.11	83.54	42.43	Vertical
3	21454.4545	51.91	-6.88	45.03	83.54	38.51	Vertical
4	22518.018	50.41	-6.12	44.29	83.54	39.25	Vertical
5	23802.8028	48.92	-5.74	43.18	83.54	40.36	Vertical
6	25598.0981	49.96	-4.79	45.17	83.54	38.37	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dBμV/m).

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Mode: IEEE 802.11b Ant1
Highest Frequency (2462MHz)
Environment: 18.9°C/47%RH /101.1kPa
Tested By:Zhang Zishan

Date: 2023-01-05
Voltage:AC120V/60Hz
/

Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	28513.5135	49.63	-8.48	41.15	83.54	42.39	Horizontal
2	29837.8378	50.66	-9.08	41.58	83.54	41.96	Horizontal
3	31527.027	52.38	-8.03	44.35	83.54	39.19	Horizontal
4	33108.1081	52.44	-8.47	43.97	83.54	39.57	Horizontal
5	35540.5405	50.80	-5.72	45.08	83.54	38.46	Horizontal
6	38648.6486	53.10	-7.16	45.94	83.54	37.6	Horizontal

Suspected Data List							
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity
1	19072.0721	51.03	-6.68	44.35	83.54	39.19	Vertical
2	20680.1802	47.93	-6.87	41.06	83.54	42.48	Vertical
3	21905.4054	52.05	-7.04	45.01	83.54	38.53	Vertical
4	23317.8178	48.82	-5.43	43.39	83.54	40.15	Vertical
5	24645.1451	50.50	-5.17	45.33	83.54	38.21	Vertical
6	25555.5556	49.61	-4.79	44.82	83.54	38.72	Vertical

Note:

Above 18G test distance is 1m, so the Peak Limit= $74+20*\log(3/1)=83.54$ (dBμV/m).

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7. 6DB BANDWIDTH

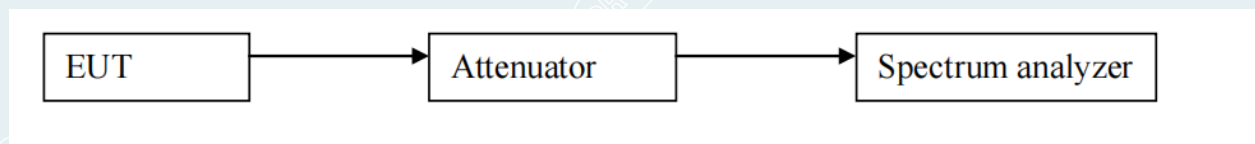
7.1. LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2. 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 resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
- 3) Repeat above procedures until all frequencies measured were complete.

7.3. TEST SETUP



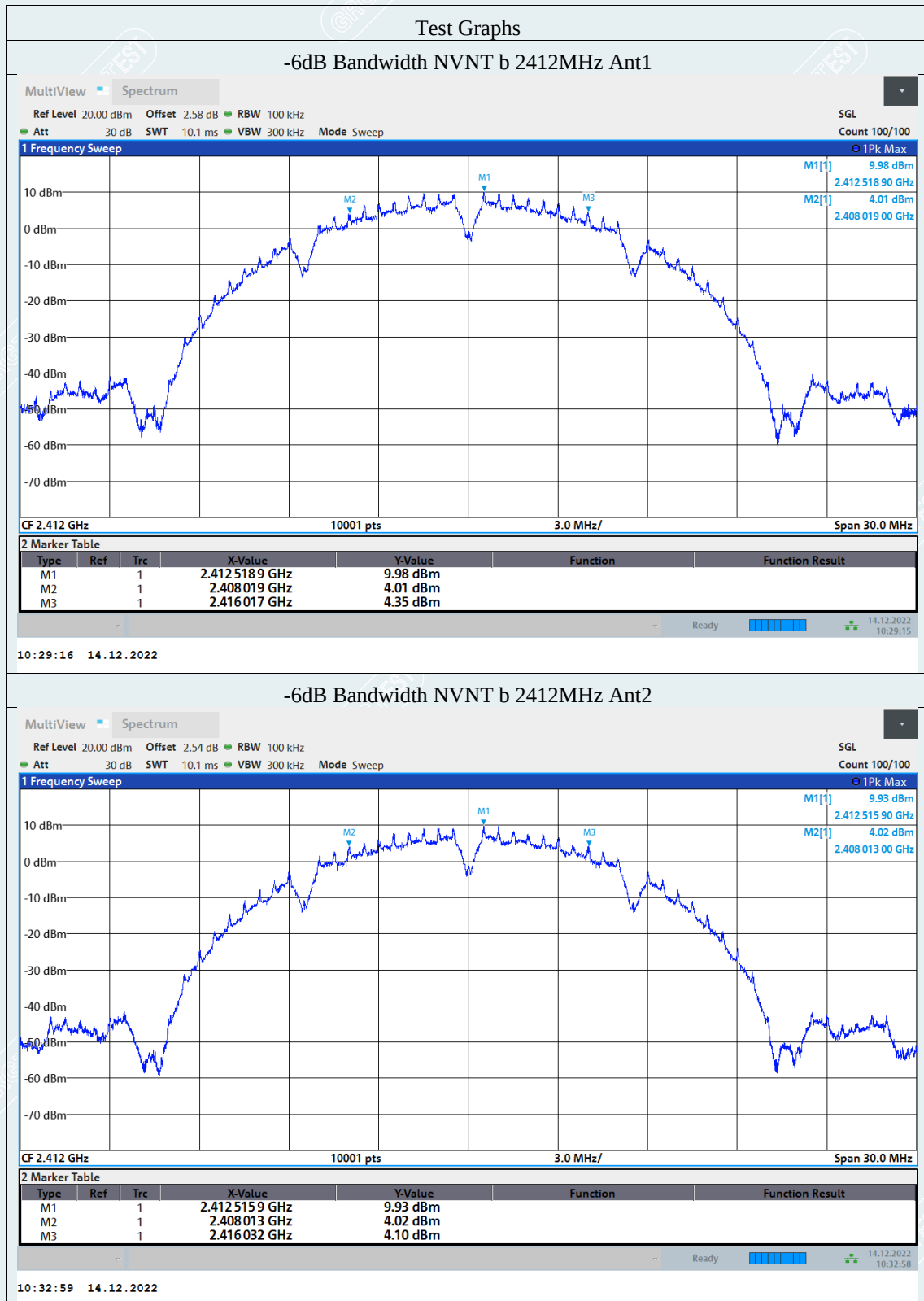
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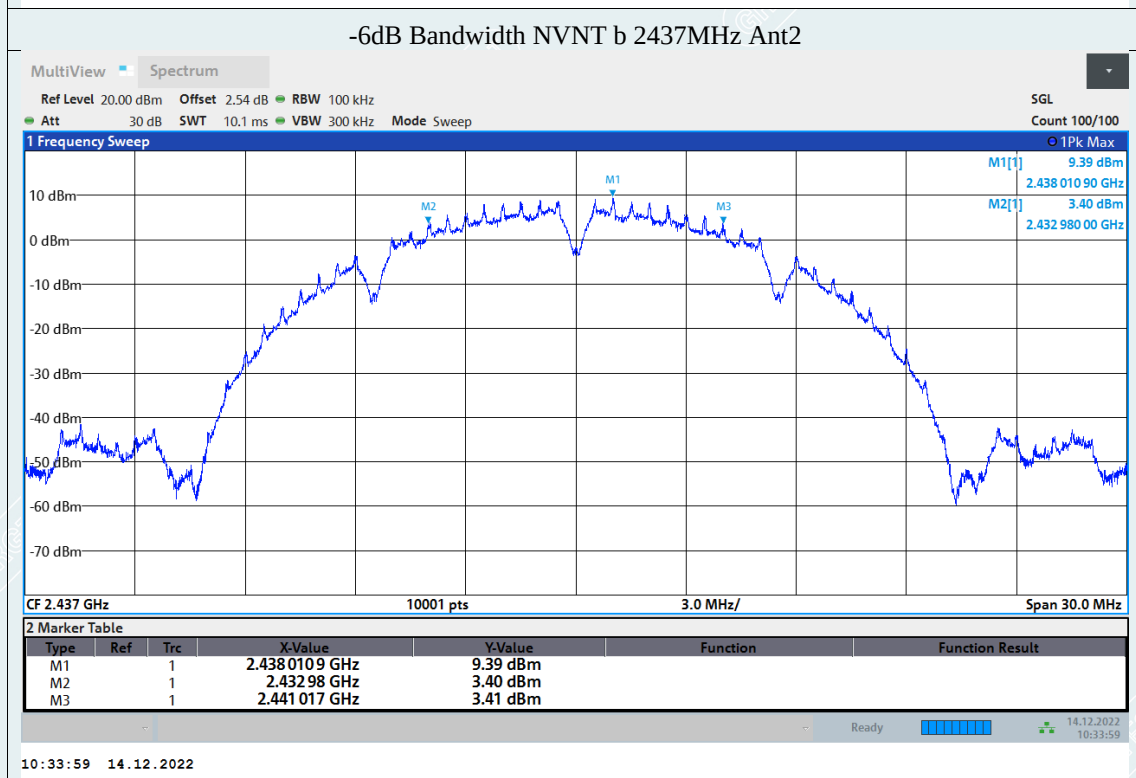
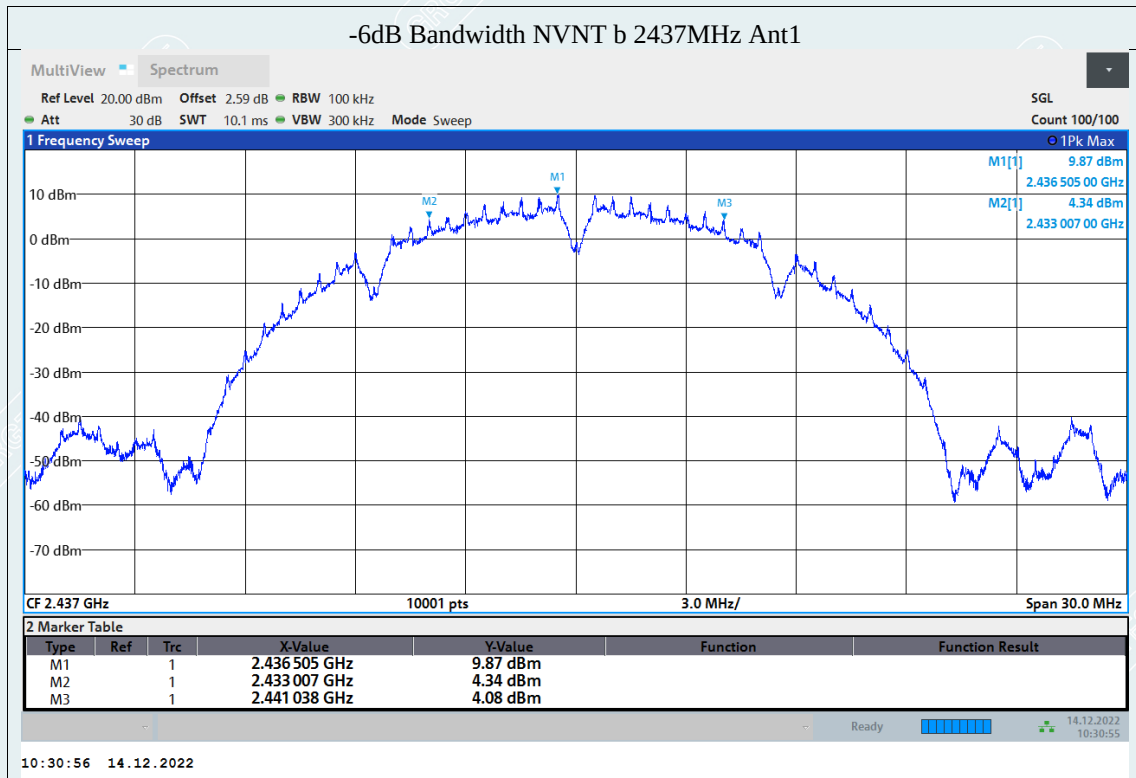
7.4. TEST RESULTS

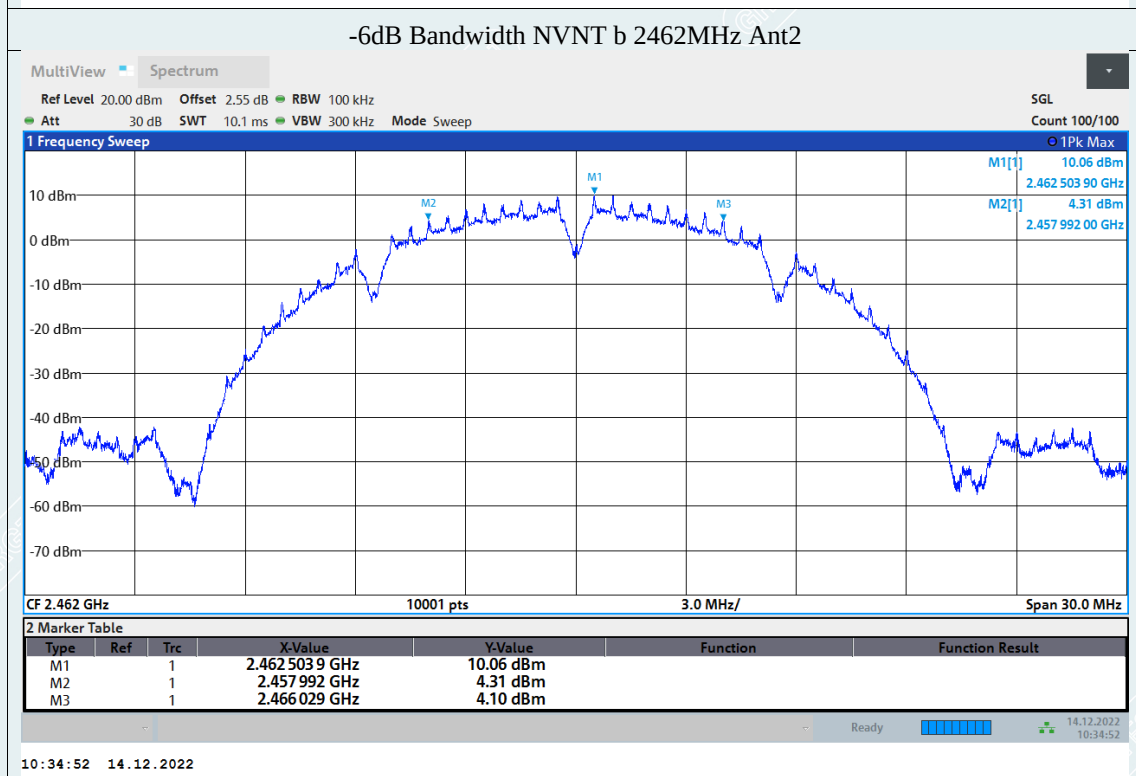
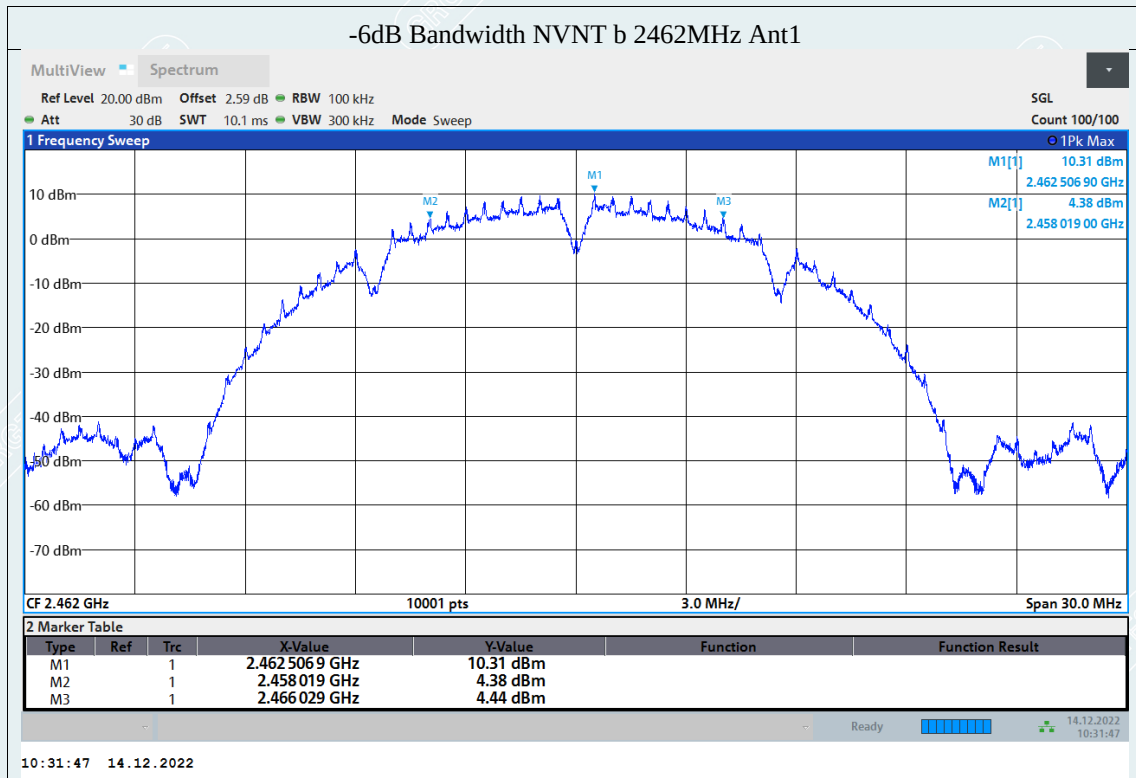
Environment: 18.9℃/47%RH /101.1kPa
 Tested By:Yang zhaiyun

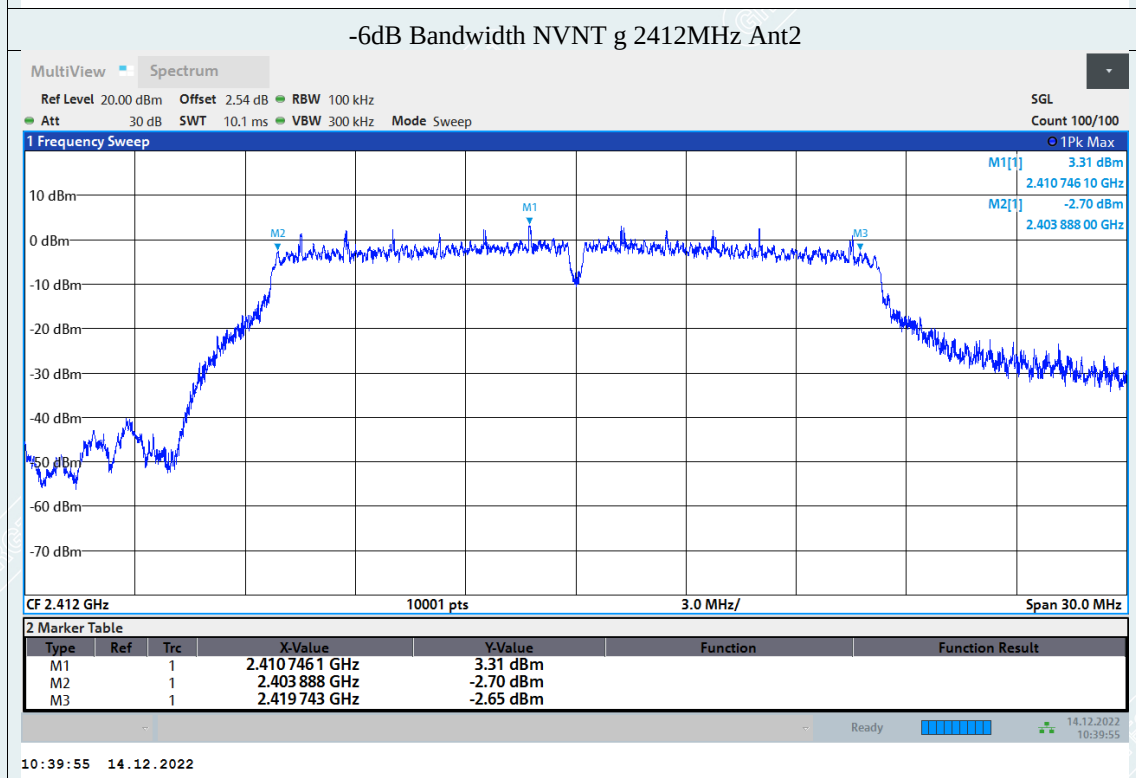
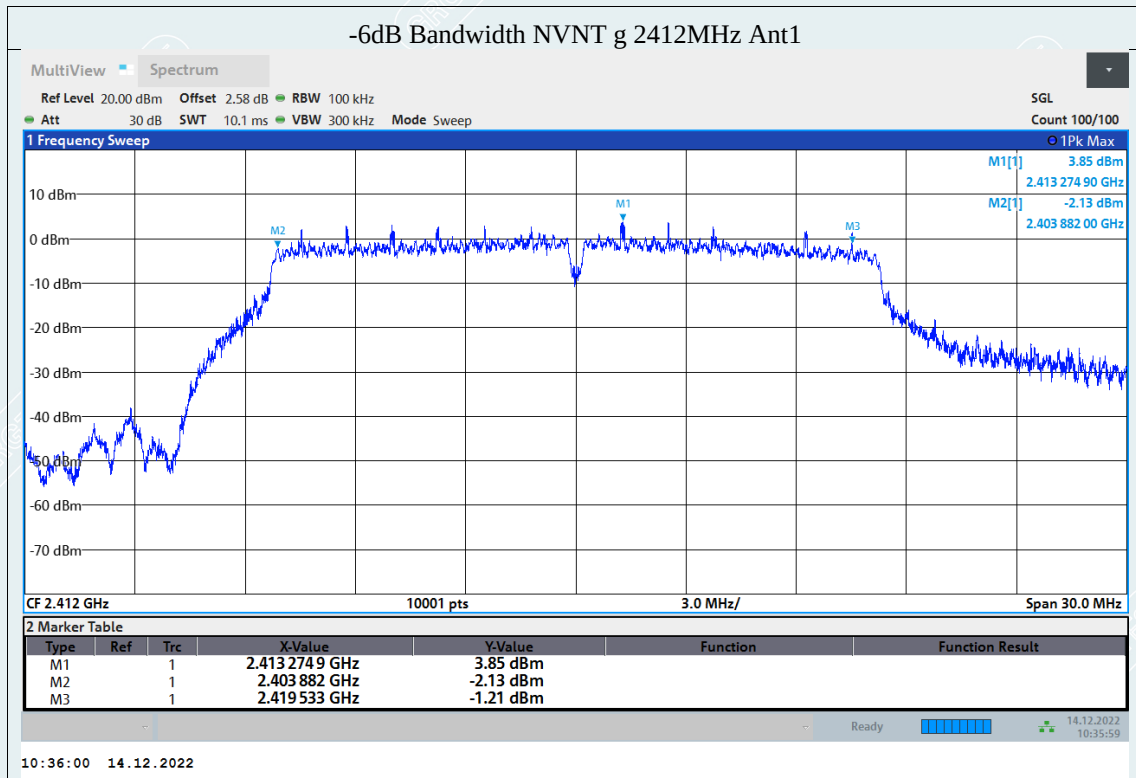
Voltage:AC120V/60Hz
 Date: 2022-12-14

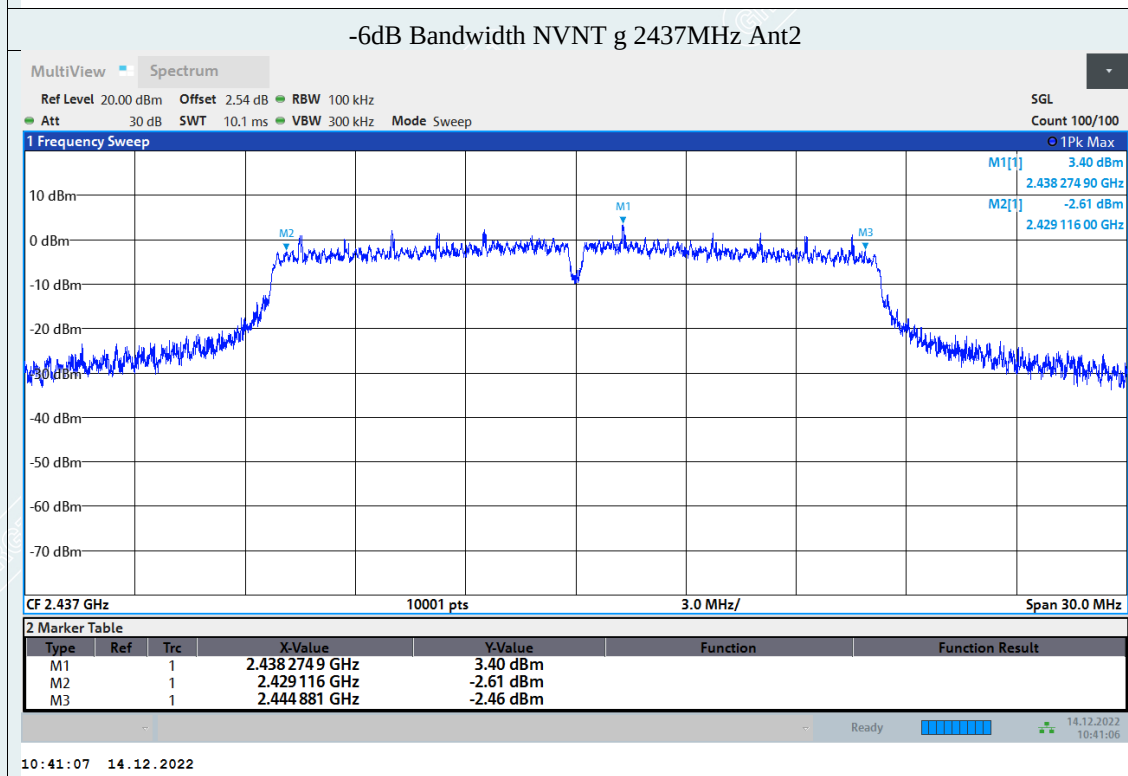
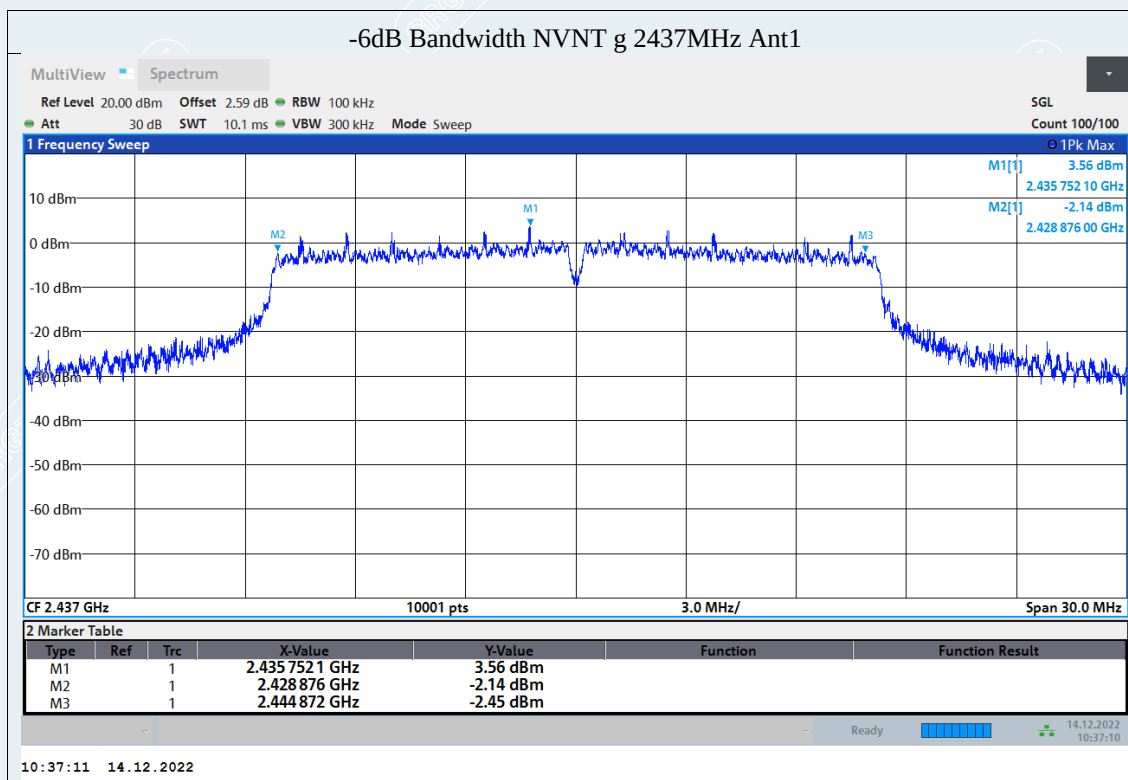
TestMode	Antenna	Frequency[MHz]	DTS BW[MHz]	Limit[MHz]	Verdict
802.11b	Ant1	2412	7.998	≥0.5	PASS
	Ant2	2412	8.019	≥0.5	PASS
	Ant1	2437	8.031	≥0.5	PASS
	Ant2	2437	8.037	≥0.5	PASS
	Ant1	2462	8.01	≥0.5	PASS
	Ant2	2462	8.037	≥0.5	PASS
802.11g	Ant1	2412	15.651	≥0.5	PASS
	Ant2	2412	15.855	≥0.5	PASS
	Ant1	2437	15.996	≥0.5	PASS
	Ant2	2437	15.765	≥0.5	PASS
	Ant1	2462	15.912	≥0.5	PASS
	Ant2	2462	16.02	≥0.5	PASS
802.11n HT20	Ant1	2412	16.311	≥0.5	PASS
	Ant2	2412	15.117	≥0.5	PASS
	Ant1	2437	15.435	≥0.5	PASS
	Ant2	2437	17.121	≥0.5	PASS
	Ant1	2462	15.423	≥0.5	PASS
	Ant2	2462	16.629	≥0.5	PASS
802.11n HT40	Ant1	2422	33.834	≥0.5	PASS
	Ant2	2422	35.07	≥0.5	PASS
	Ant1	2437	35.034	≥0.5	PASS
	Ant2	2437	35.04	≥0.5	PASS
	Ant1	2452	35.07	≥0.5	PASS
	Ant2	2452	35.064	≥0.5	PASS
802.11ax HE20	Ant1	2412	17.952	≥0.5	PASS
	Ant2	2412	18.606	≥0.5	PASS
	Ant1	2437	17.172	≥0.5	PASS
	Ant2	2437	18.246	≥0.5	PASS
	Ant1	2462	17.523	≥0.5	PASS
	Ant2	2462	17.772	≥0.5	PASS
802.11ax HE40	Ant1	2422	36.096	≥0.5	PASS
	Ant2	2422	35.088	≥0.5	PASS
	Ant1	2437	35.082	≥0.5	PASS
	Ant2	2437	35.082	≥0.5	PASS
	Ant1	2452	35.088	≥0.5	PASS
	Ant2	2452	35.082	≥0.5	PASS

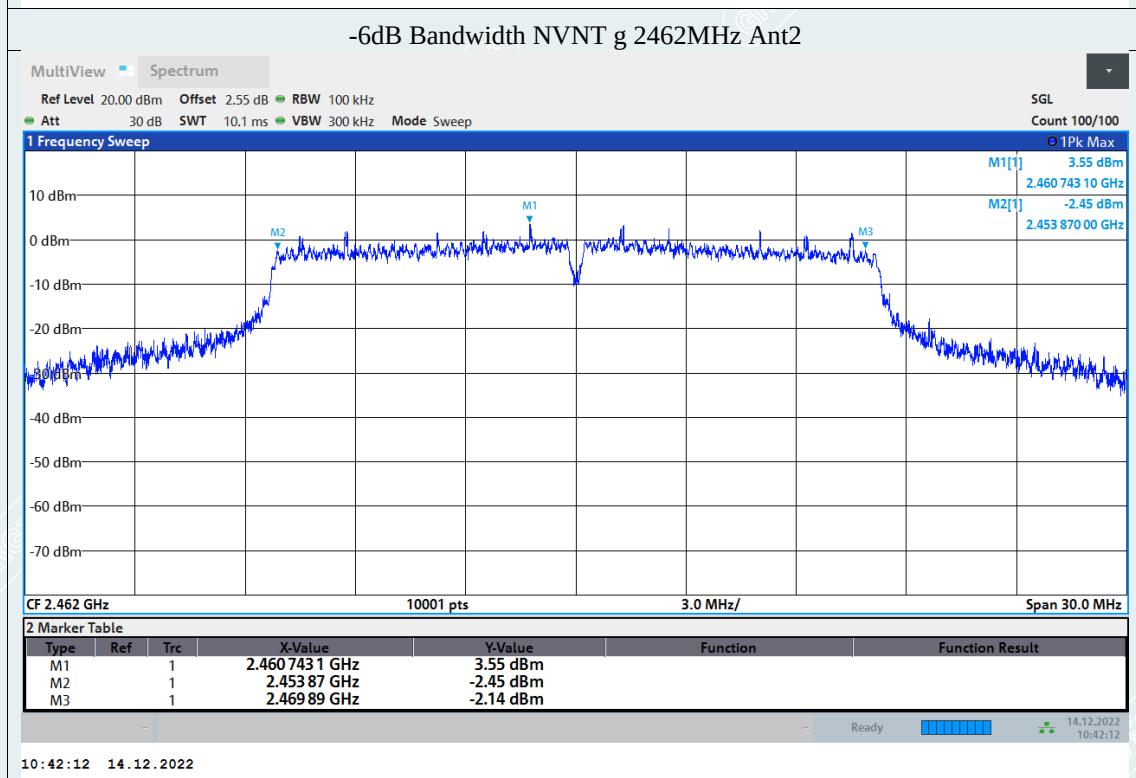
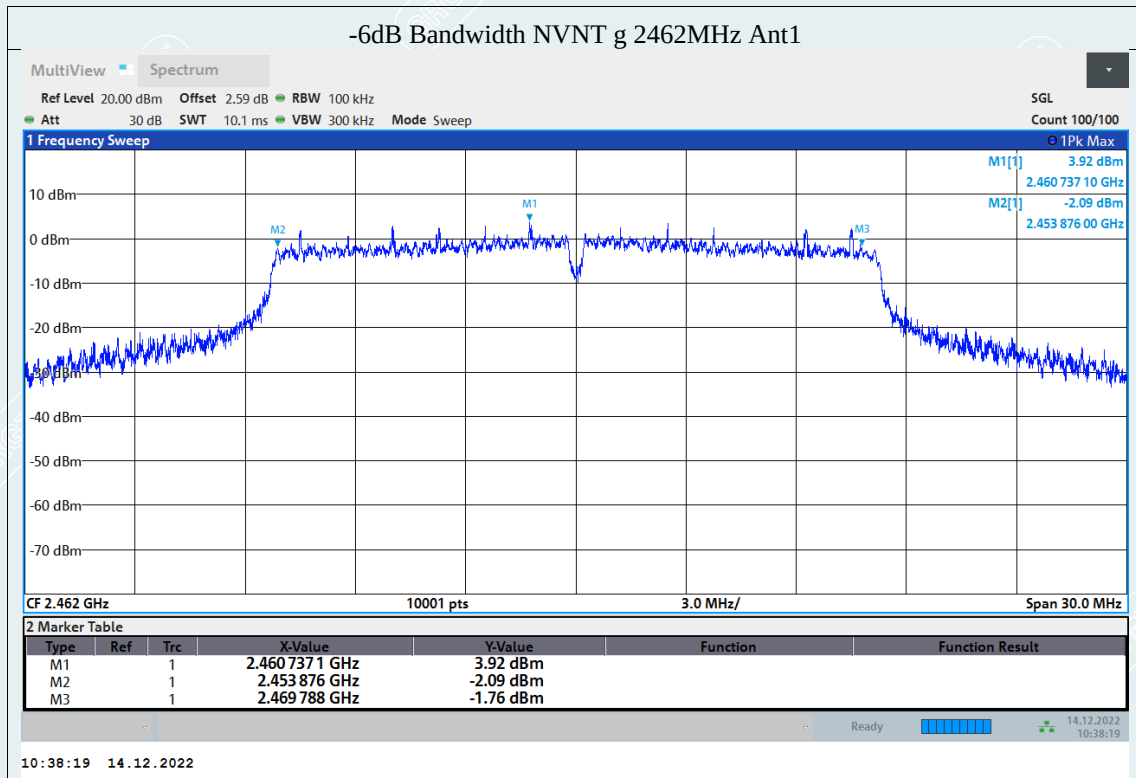


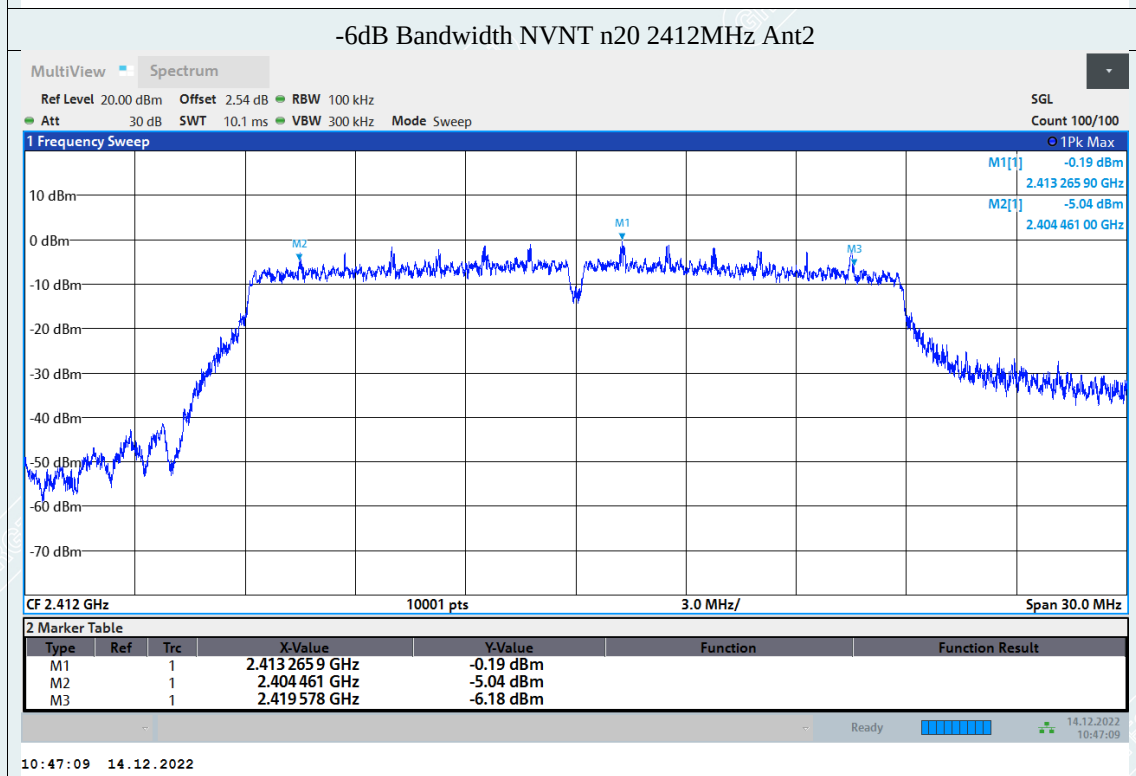
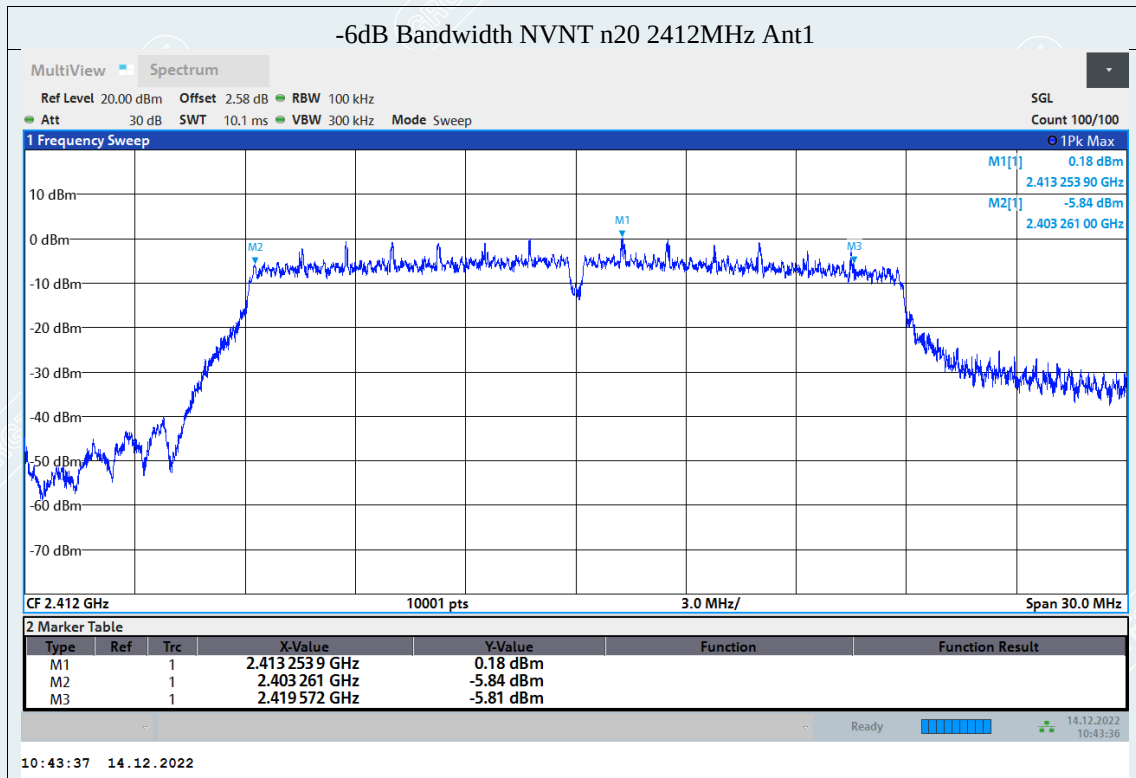


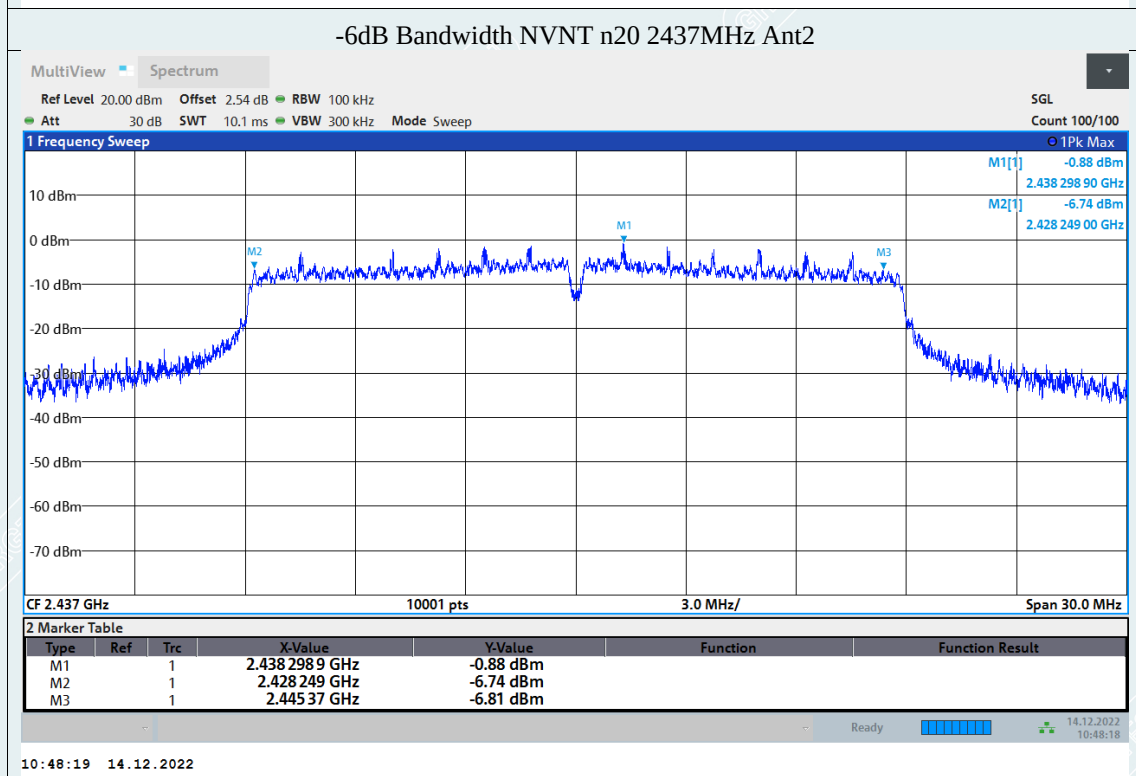
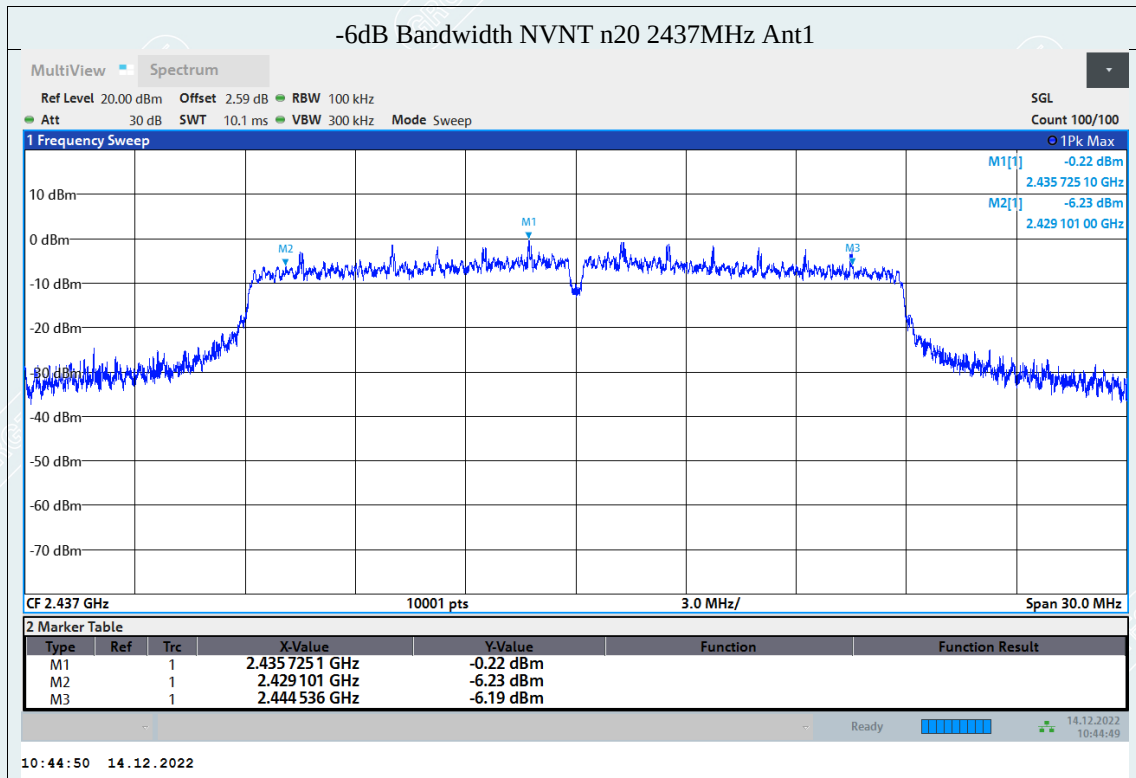


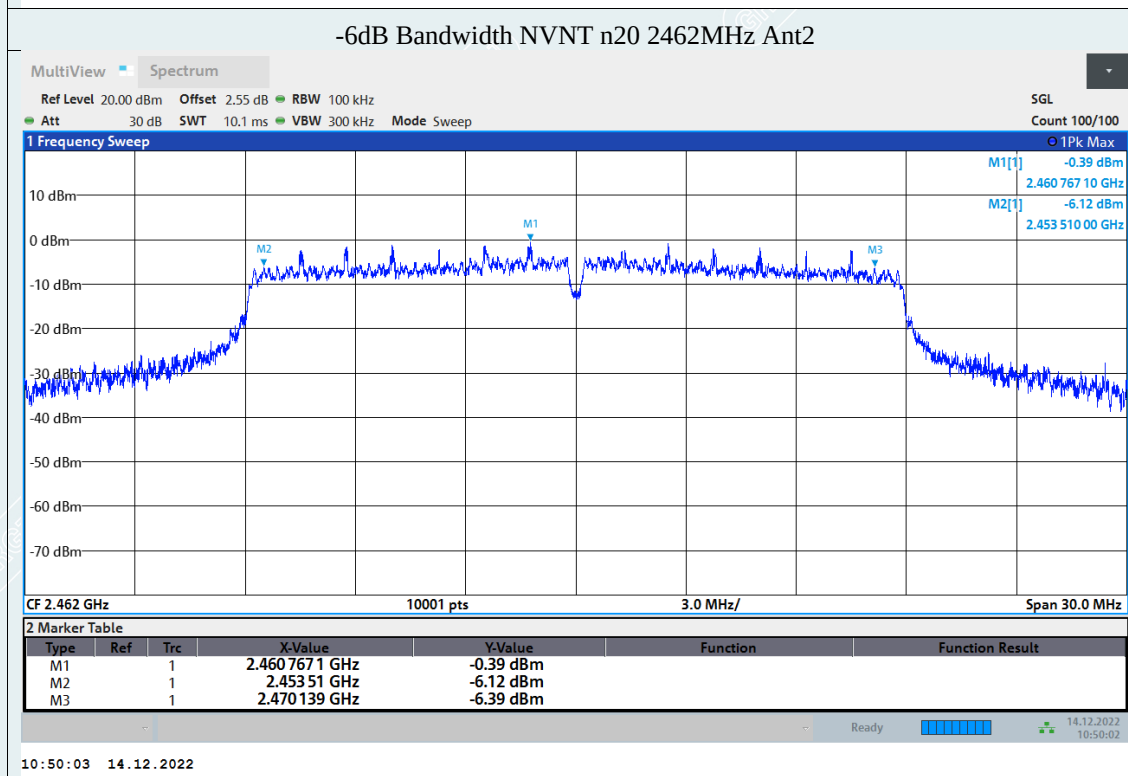
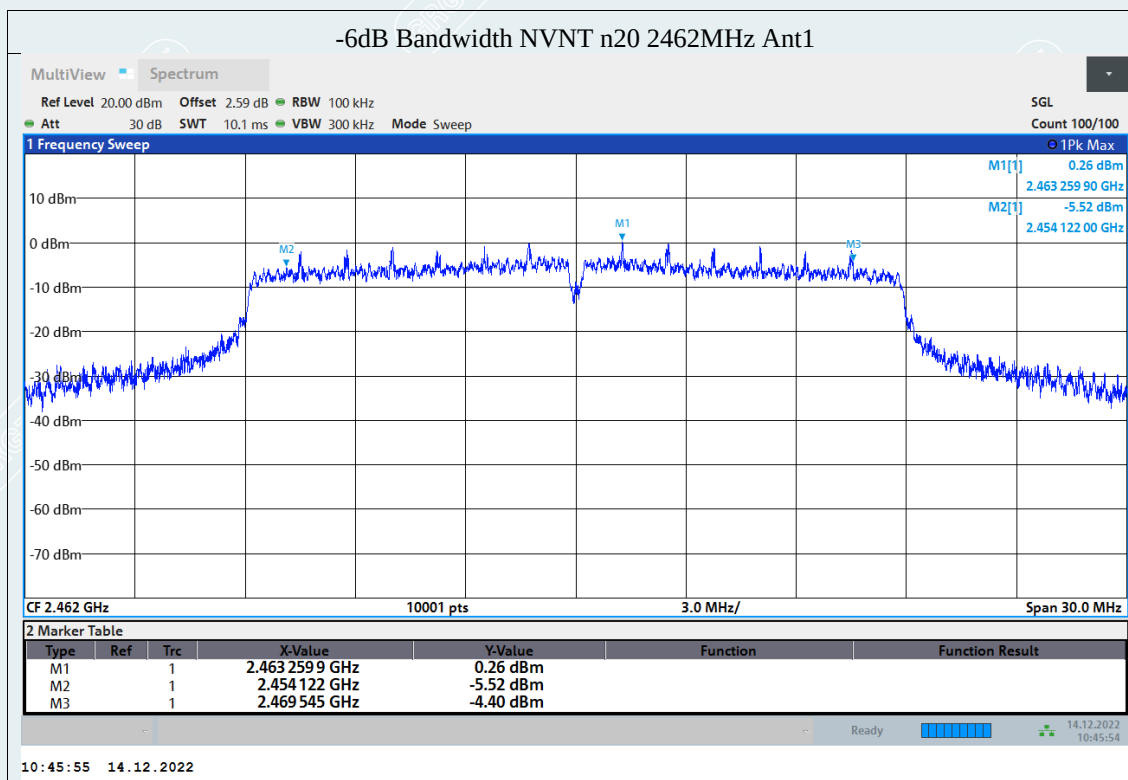


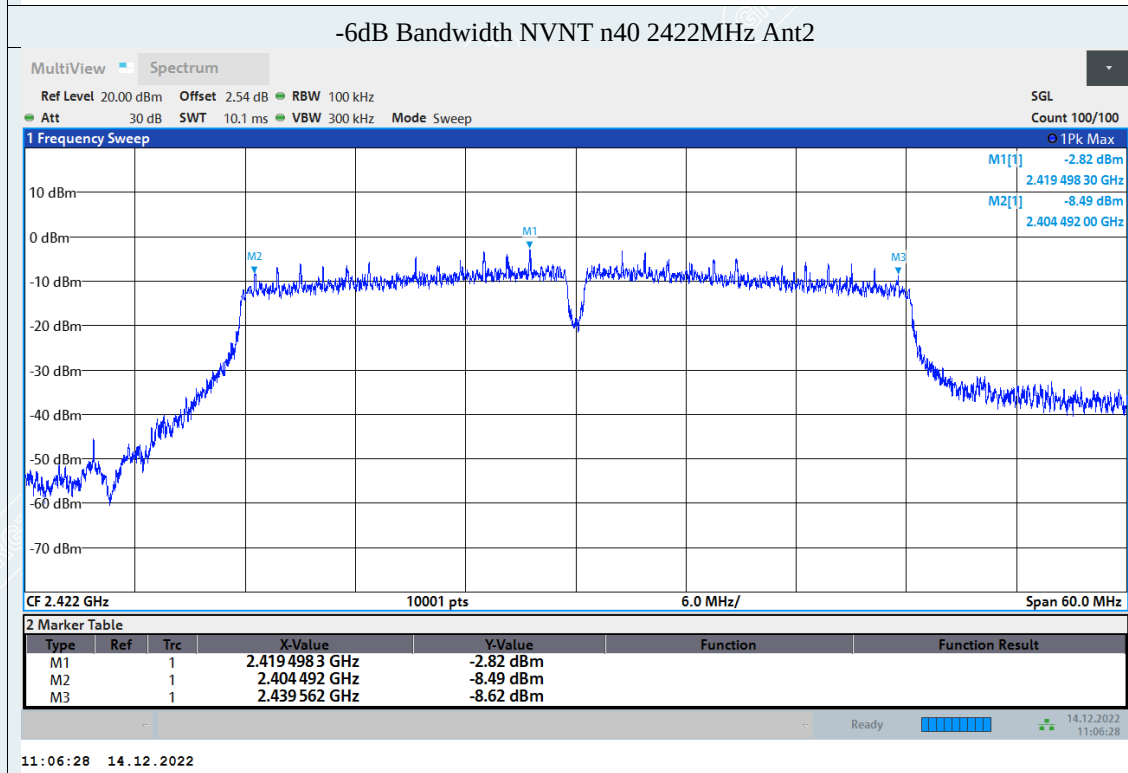
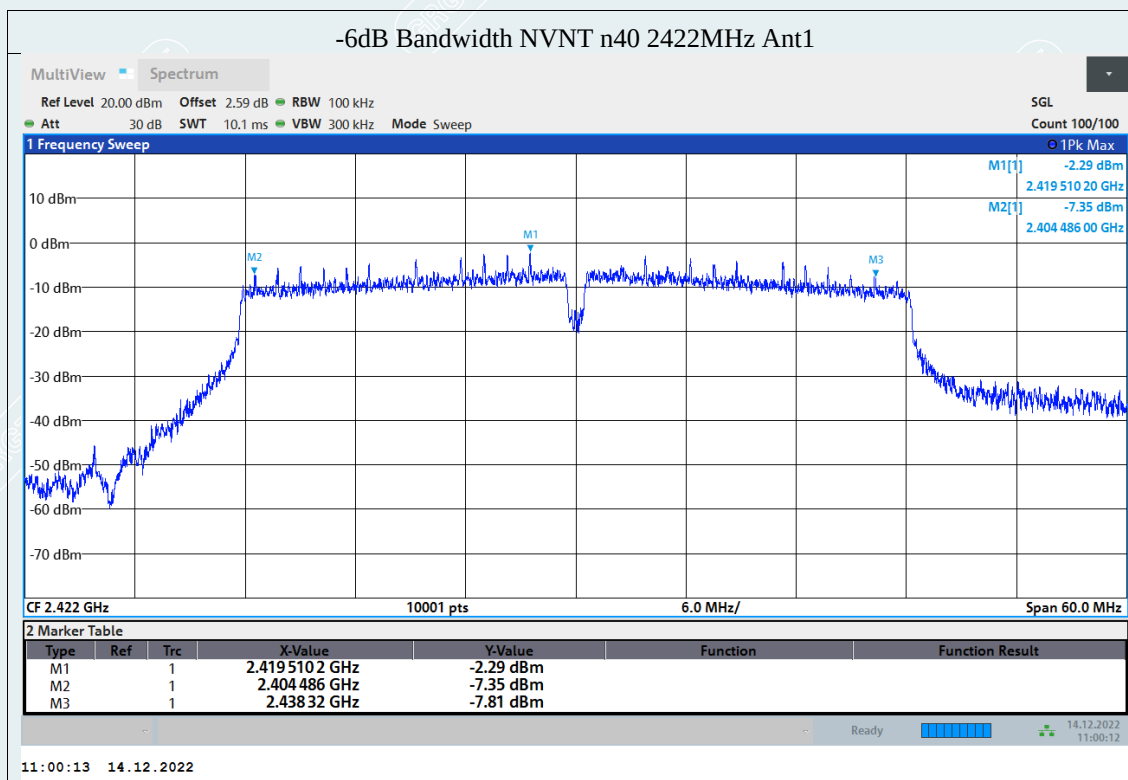


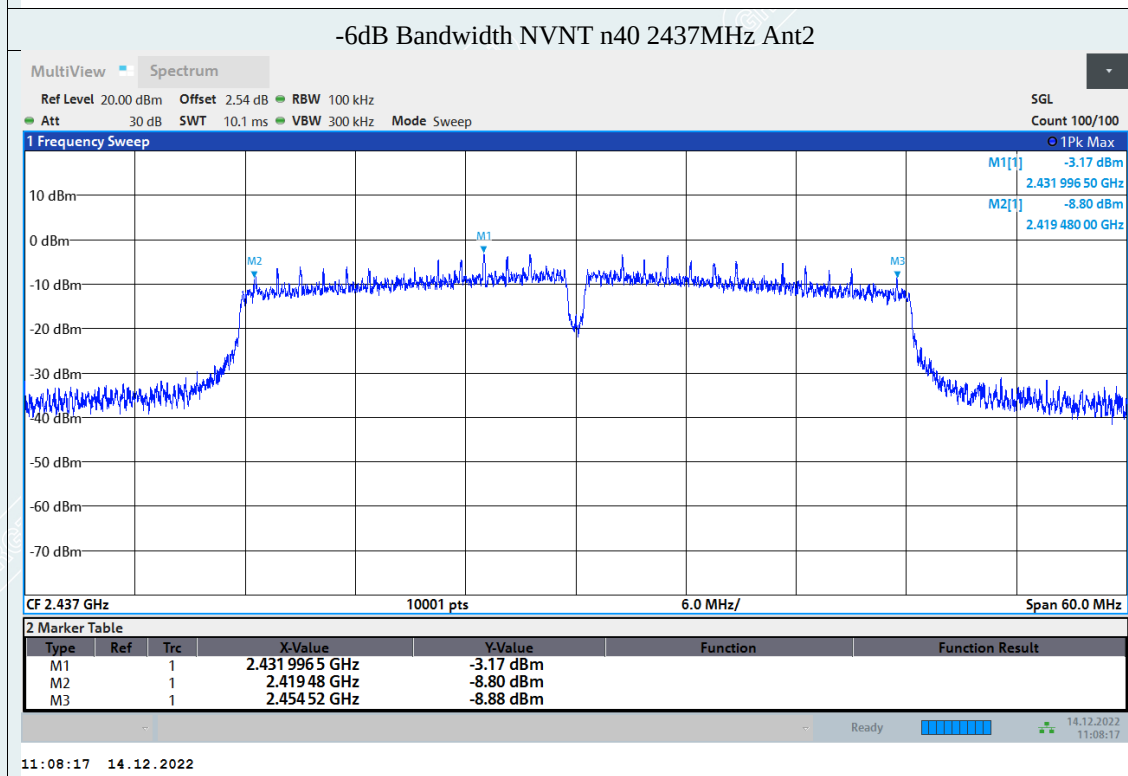
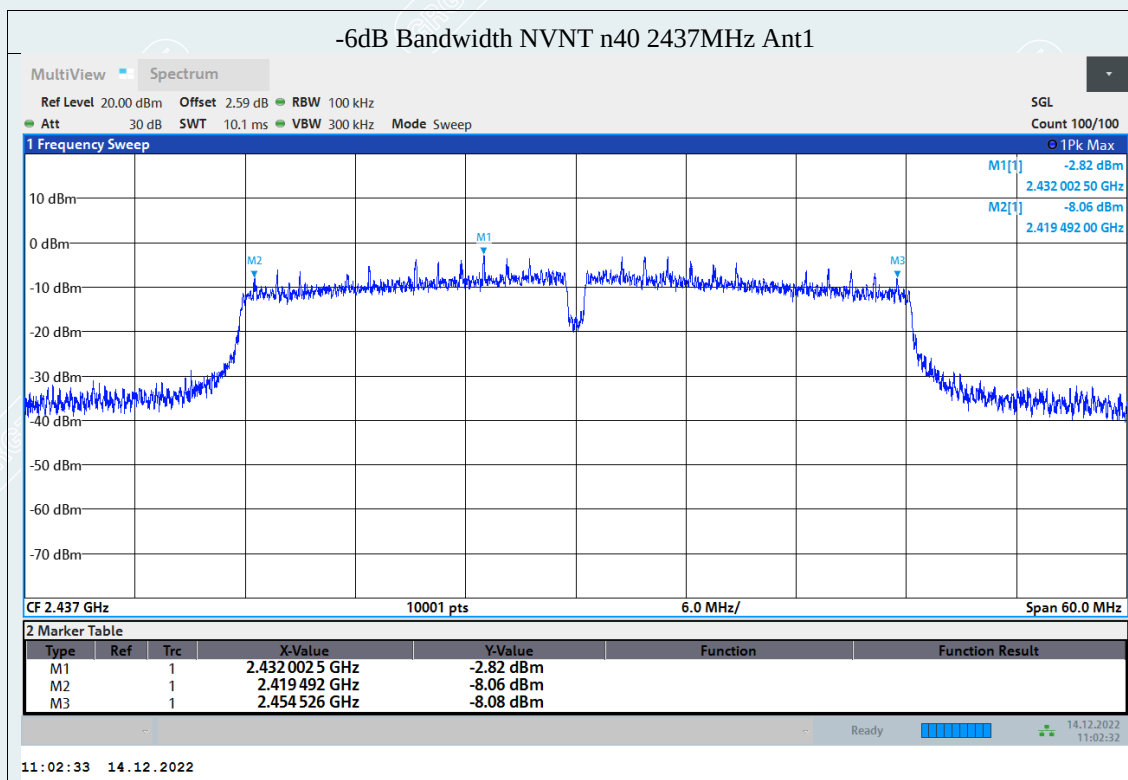


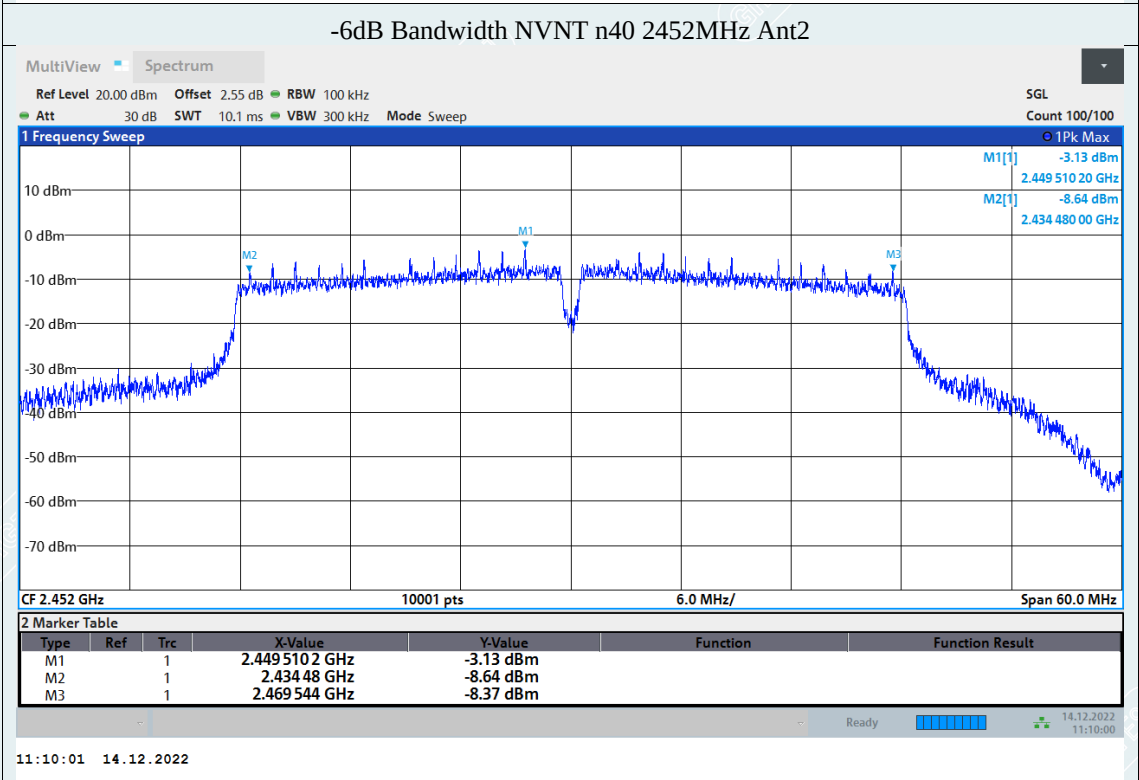
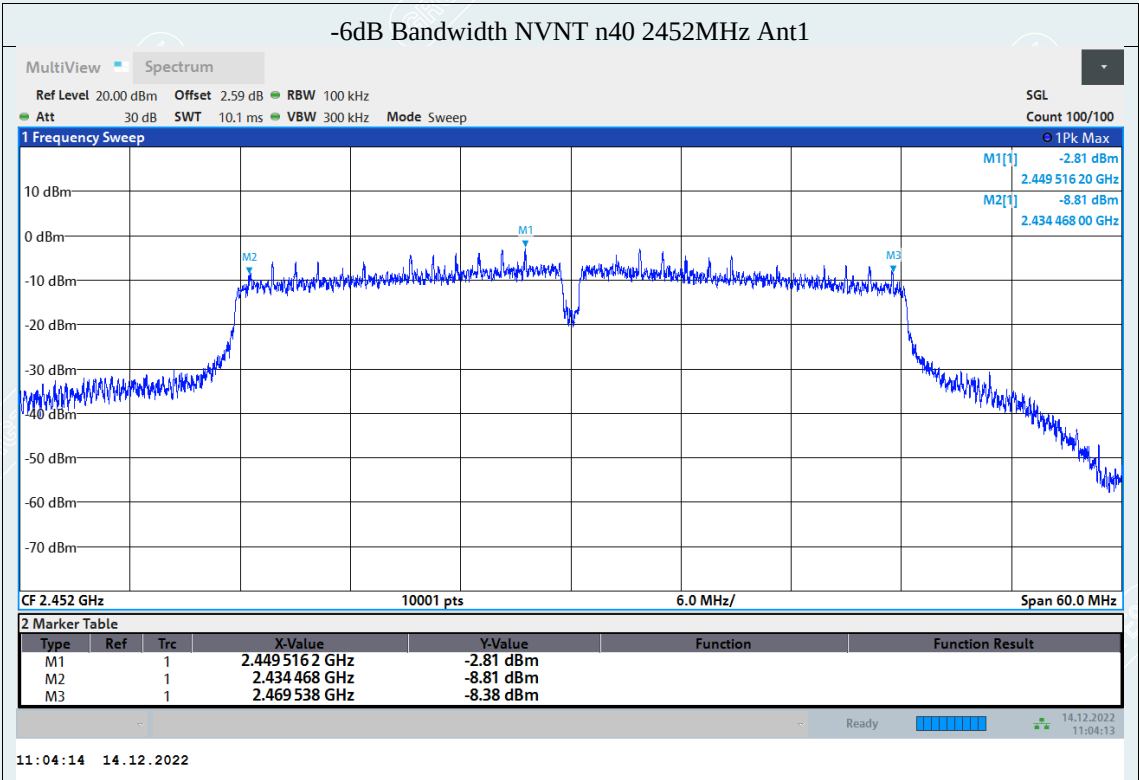


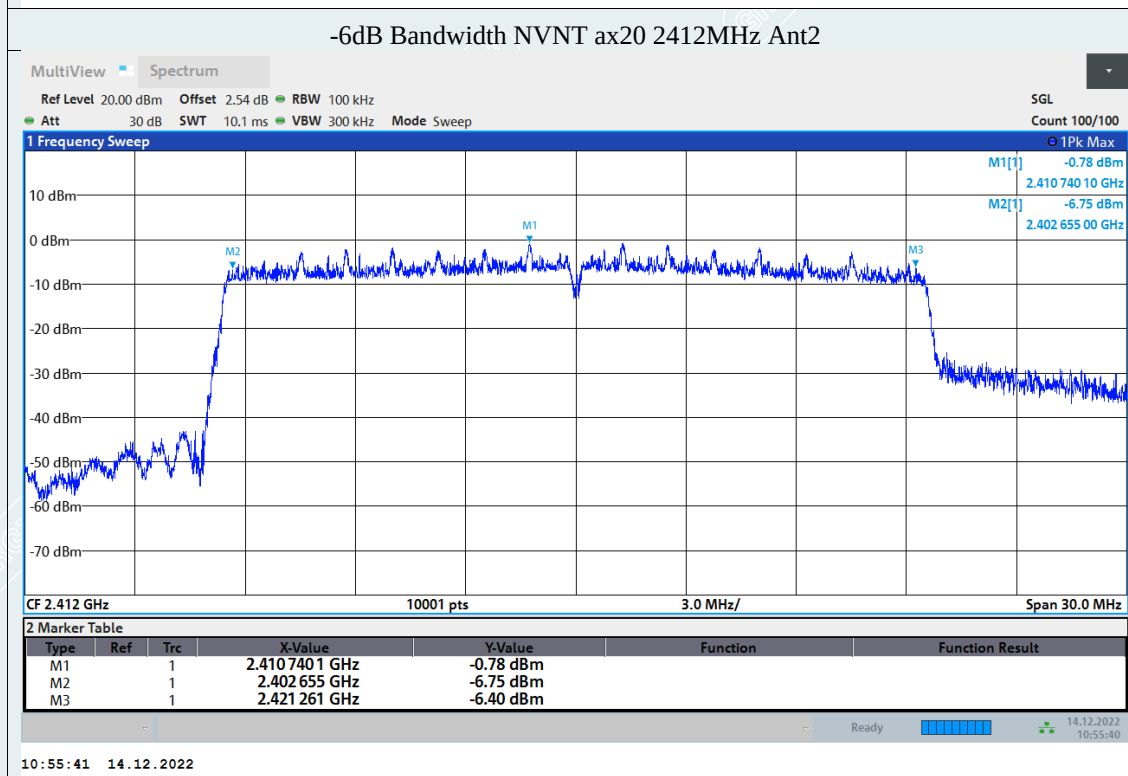
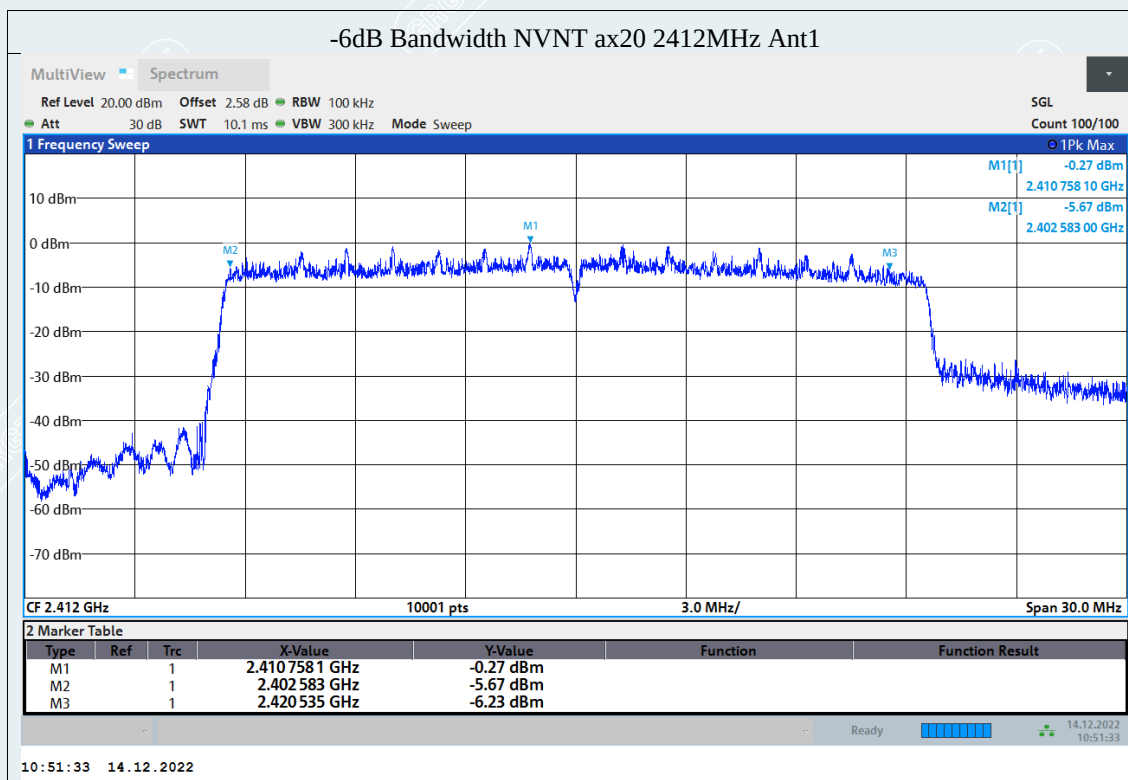


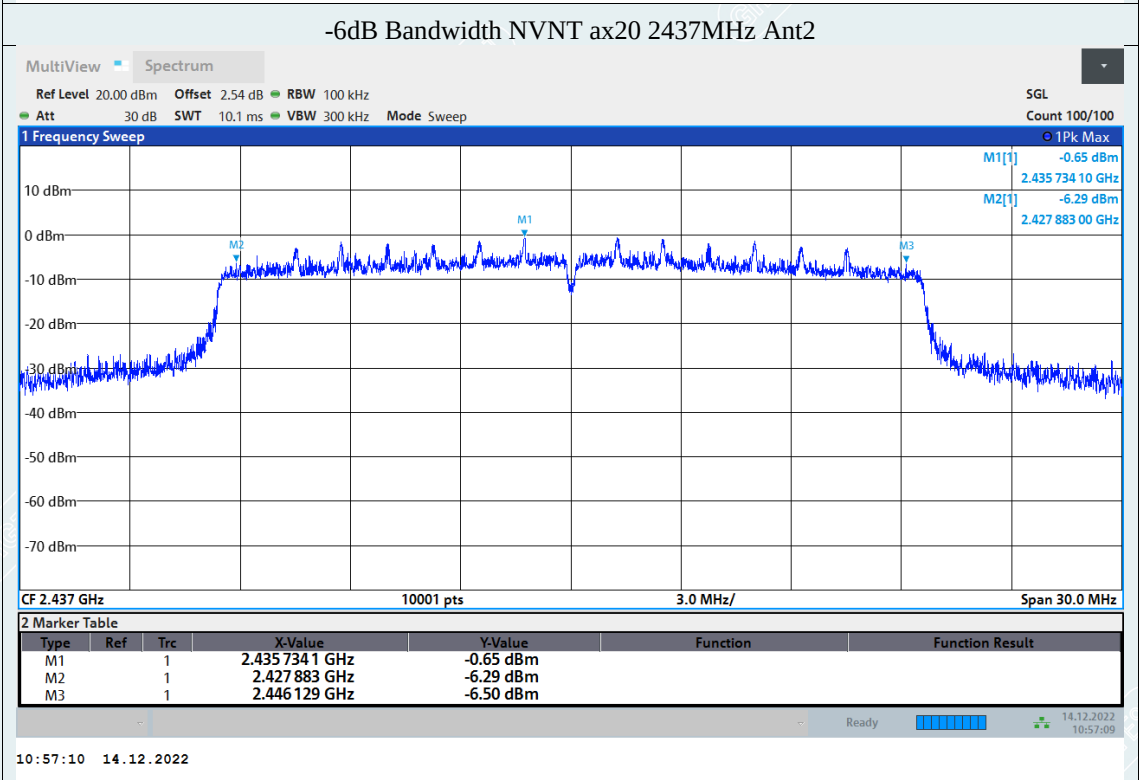
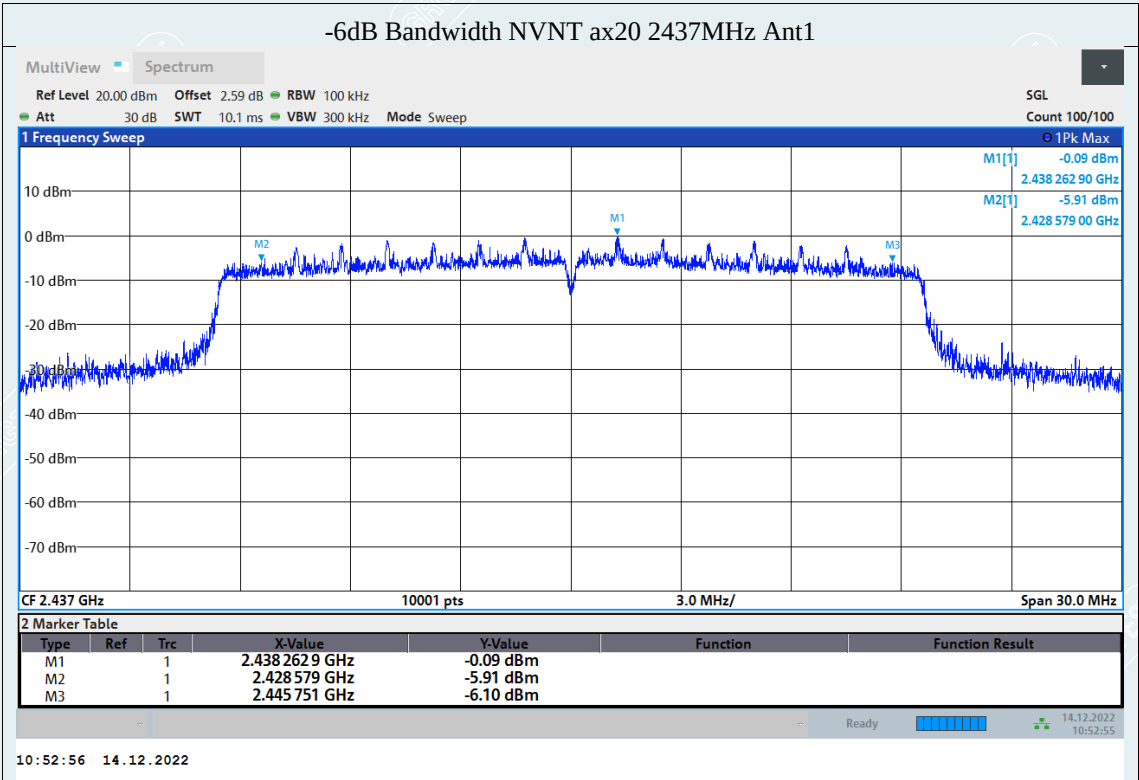


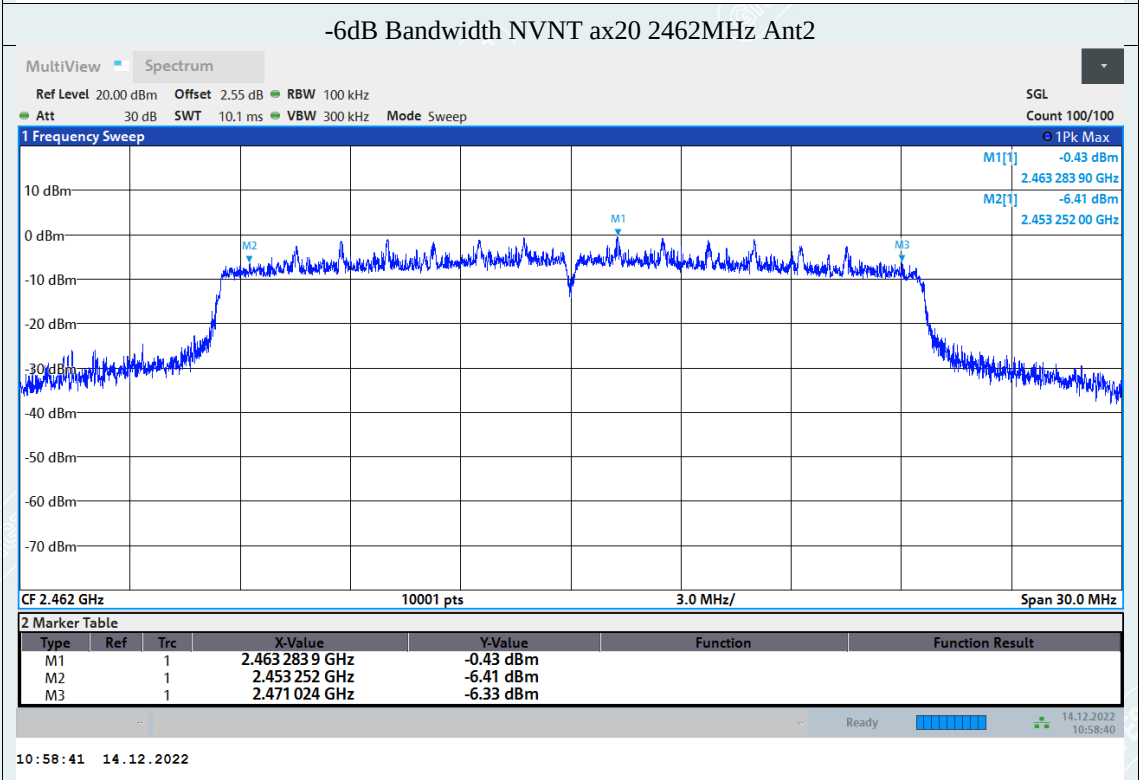
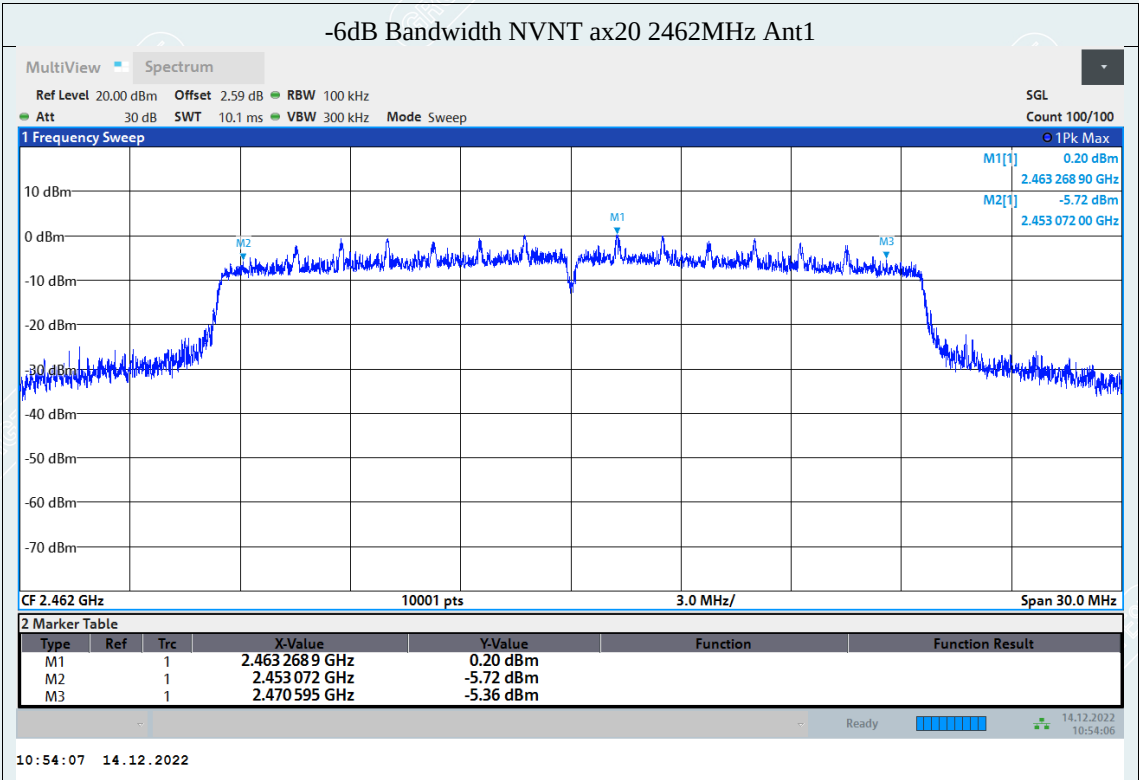


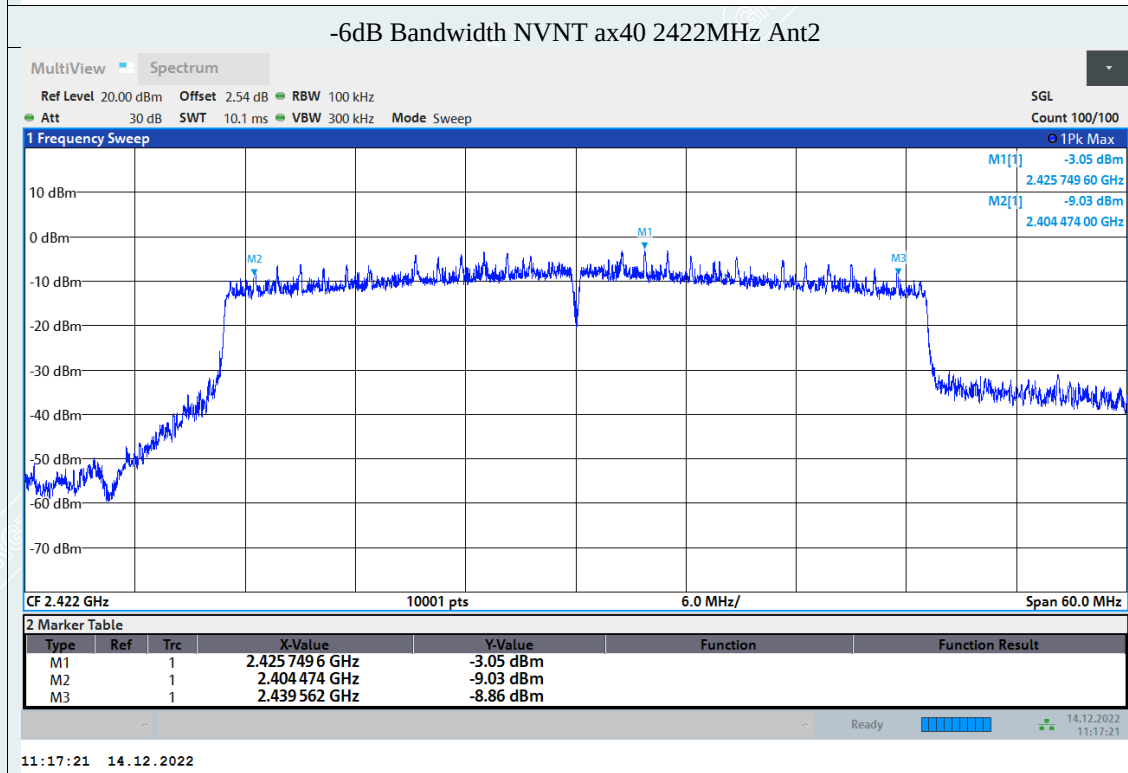
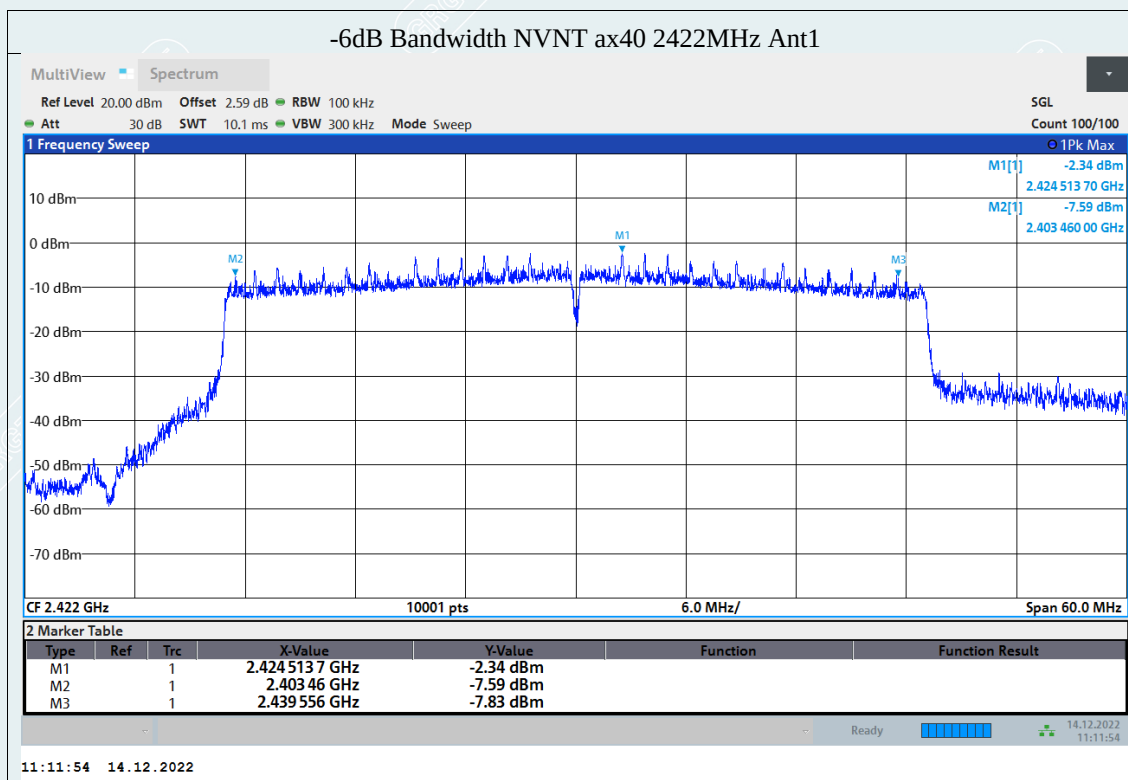


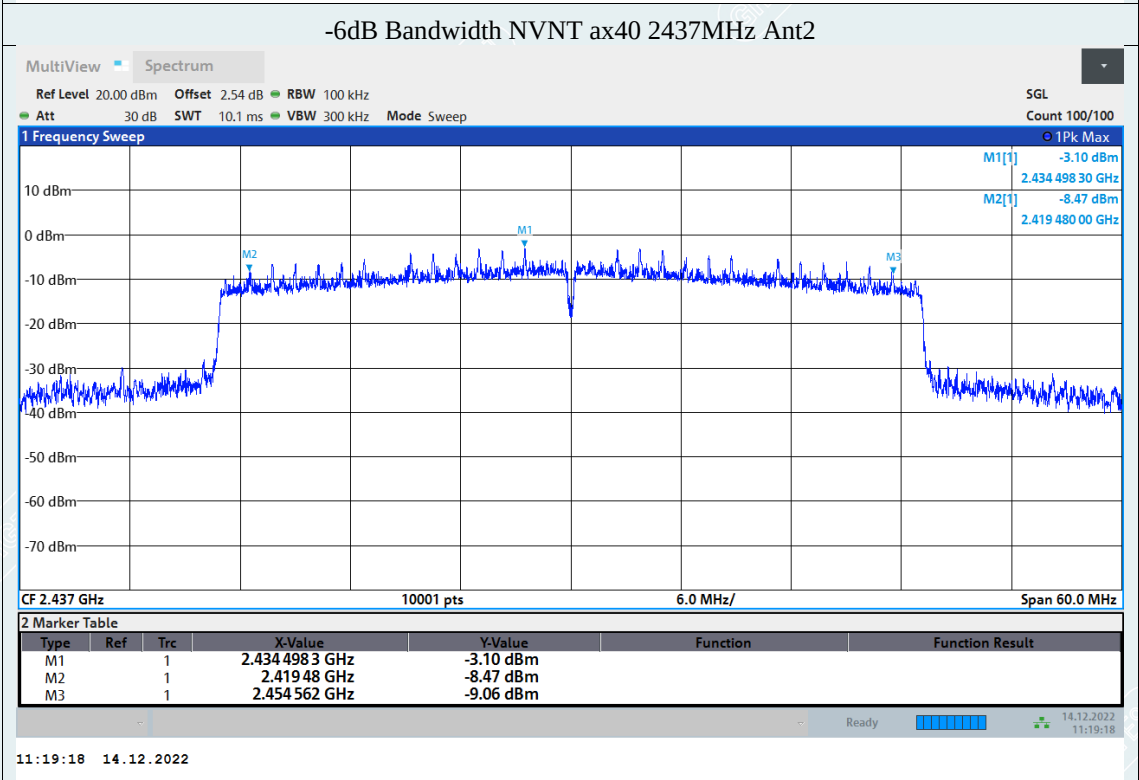
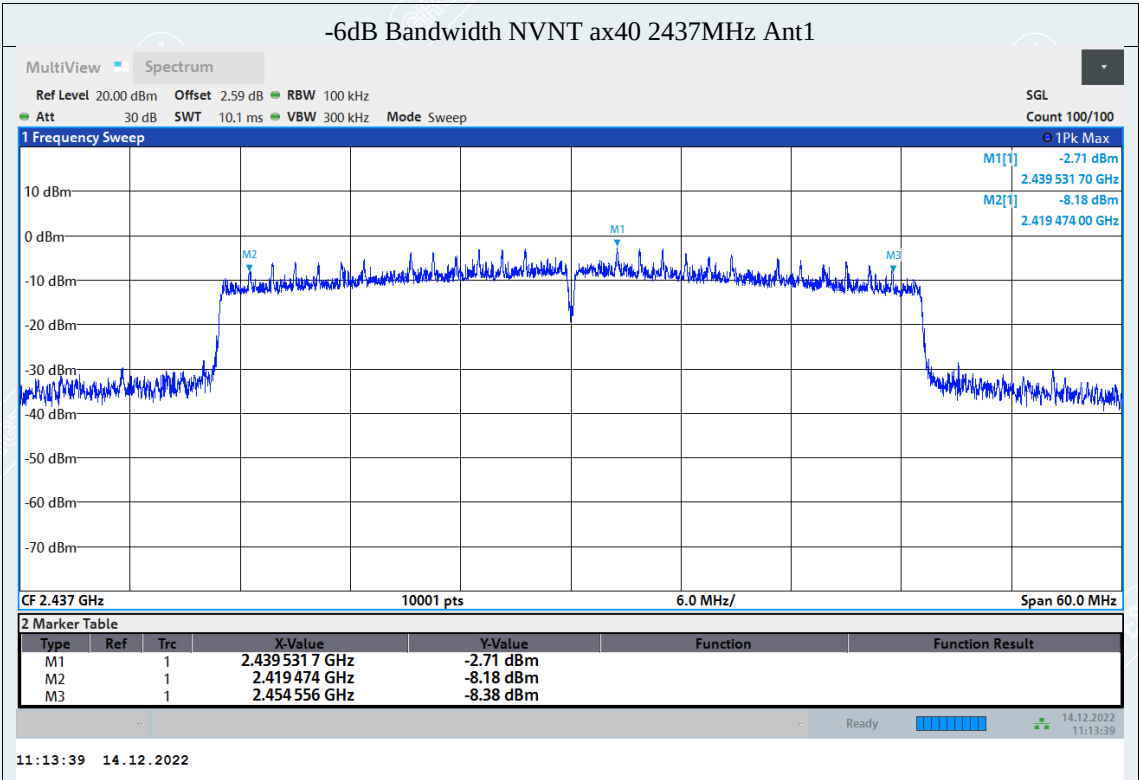


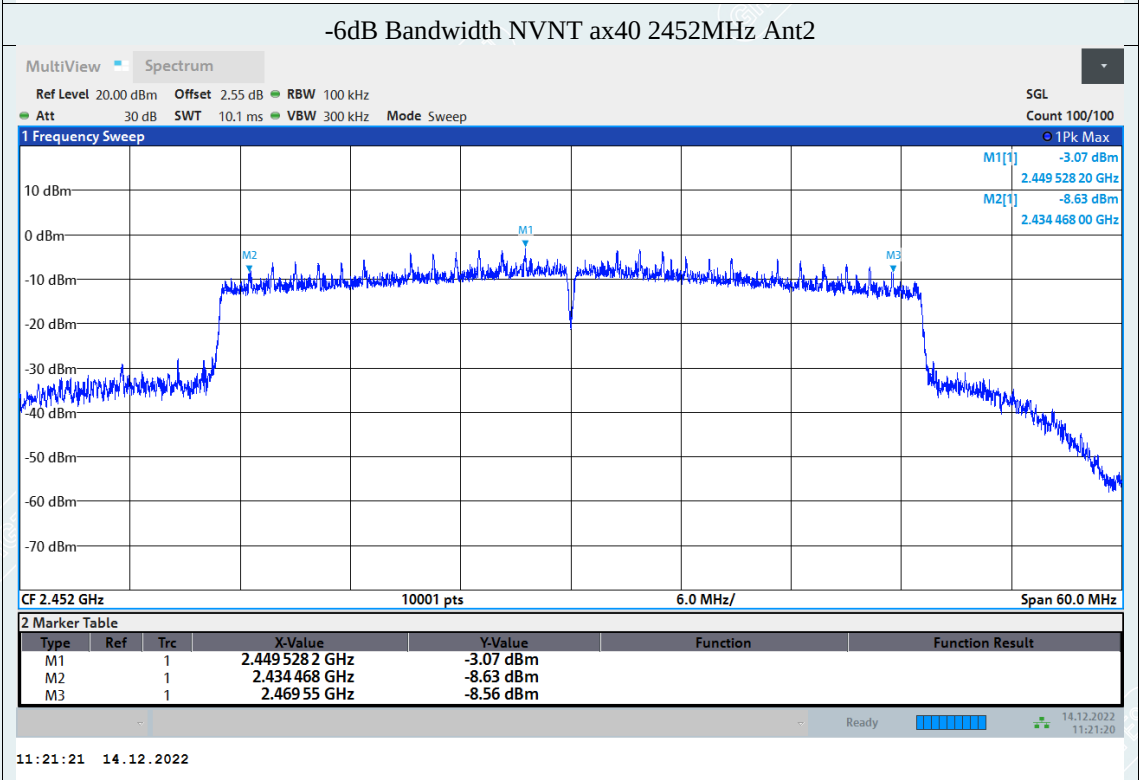
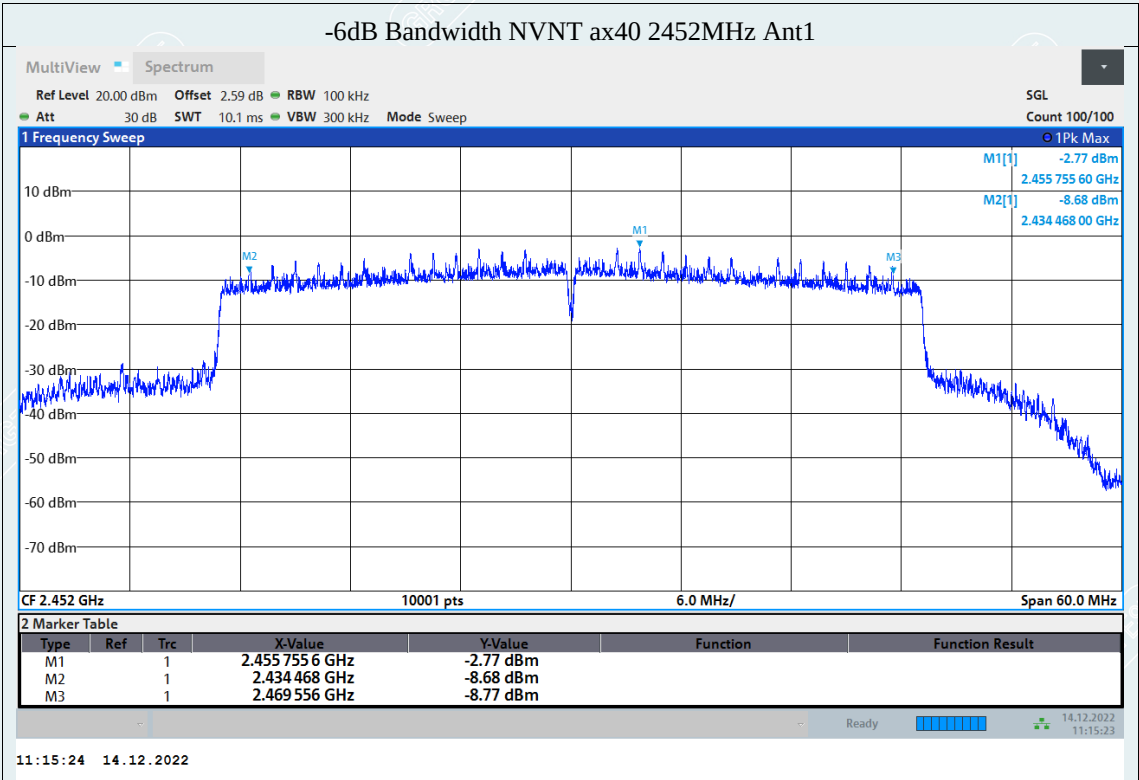












8. MAXIMUM PEAK OUTPUT POWER

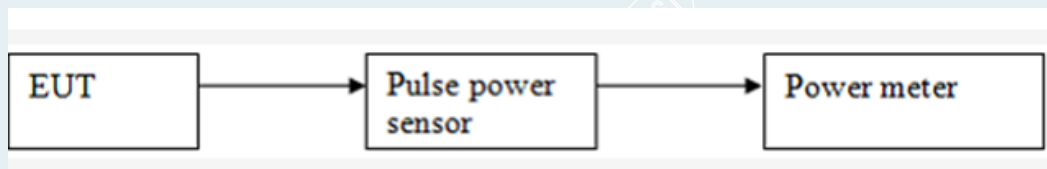
8.1. LIMITS

The maximum Peak output power measurement is 1W

8.2. TEST PROCEDURES

- 1) RF output of EUT was connected to the broadband peak RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

8.3. TEST SETUP



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

8.4. TEST RESULT

Environment: 18.9°C /47%RH /101.1kPa
 Tested By:Yang zhaiyun

Voltage:AC120V/60Hz
 Date: 2022-12-14

802.11b Mode (antenna 1):

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	21.41	Peak	30dBm	Pass
6	2437	21.07			Pass
11	2462	21.54			Pass

802.11b Mode (antenna 2):

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	21	Peak	30dBm	Pass
6	2437	20.78			Pass
11	2462	21.01			Pass

802.11g Mode (antenna 1):

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	21.81	Peak	30dBm	Pass
6	2437	21.31			Pass
11	2462	21.75			Pass

802.11g Mode (antenna 2):

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)	Peak / AVG	Limit	Result
1	2412	21.13	Peak	30dBm	Pass
6	2437	21.07			Pass
11	2462	21.32			Pass

802.11n HT20 Mode:

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
1	2412	17.88	17.28	20.6	Peak	30dBm	Pass
6	2437	17.45	17.14	20.31			Pass
11	2462	18.03	17.41	20.74			Pass

802.11n HT40 Mode:

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
3	2422	18.03	17.46	20.76	Peak	30dBm	Pass
6	2437	17.63	17.26	20.46			Pass
9	2452	17.76	17.16	20.48			Pass

802.11ax HE20 Mode:

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
1	2412	18.42	17.72	21.09	Peak	30dBm	Pass
6	2437	18.05	17.66	20.87			Pass
11	2462	18.56	17.98	21.29			Pass

802.11ax HE40 Mode:

Channel No.	Frequency (MHz)	Measured Channel Power (dBm)			Peak/ AVG	Limit	Result
		antenna 1	antenna 2	total			
3	2422	18.79	17.95	21.4	Peak	30dBm	Pass
6	2437	18.35	17.86	21.12			Pass
9	2452	18.19	17.86	21.04			Pass

Note: 1. This EUT supports MIMO 2X2, any transmit signals are correlated with each other,
For power measurements on IEEE 802.11 devices, $Array\ Gain = 0\ dB$ (i.e., no array gain) for $N_{ANT} \leq 4$.

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9. POWER SPECTRAL DENSITY

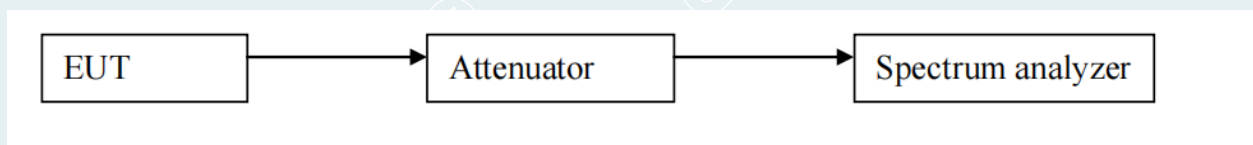
9.1. LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

9.2. 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) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) The following procedure shall be used if maximum peak conducted output power was used to determine compliance, and it is optional if the maximum conducted (average) output power was used to determine compliance:
 - a) Set analyzer center frequency to DTS channel center frequency.
 - b) Set the span to 1.5 times the DTS bandwidth.
 - c) Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
 - d) Set the VBW $\geq [3 \times \text{RBW}]$.
 - e) Detector = peak
 - f) Sweep time = auto couple.
 - g) Trace mode = max hold.
 - h) Allow trace to fully stabilize.
 - i) Use the peak marker function to determine the maximum amplitude level within the RBW.
 - j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
- 4) Repeat above procedures until all frequencies measured were complete.

9.3. TEST SETUP



9.4. TEST RESULTS

Environment: 18.9°C/47%RH /101.1kPa

Voltage:AC120V/60Hz

Tested By:Yang zhaiyun

Date: 2022-12-14

802.11b Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)		Limit (dBm/3kHz)	Result
		antenna 1	antenna 2		
1	2412	-3.82	-3.36	8.00	Pass
6	2437	-3.87	-4	8.00	Pass
11	2462	-3.13	-3.37	8.00	Pass

802.11g Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)		Limit (dBm/3kHz)	Result
		antenna 1	antenna 2		
1	2412	-10.01	-10.13	8.00	Pass
6	2437	-9.81	-10.11	8.00	Pass
11	2462	-9.75	-9.79	8.00	Pass

802.11n HT20 Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)	Result
		antenna 1	antenna 2	total		
1	2412	-12.9	-14.62	-10.67	7.85	Pass
6	2437	-13.85	-12.3	-10	7.85	Pass
11	2462	-13.27	-13.63	-10.44	7.85	Pass

802.11n HT40 Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)	Result
		antenna 1	antenna 2	total		
3	2422	-16.37	-16.8	-13.57	7.85	Pass
6	2437	-17.11	-17.05	-14.07	7.85	Pass
9	2452	-16.38	-17.11	-13.72	7.85	Pass

802.11axHE20 Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)	Result
		antenna 1	antenna 2	total		
1	2412	-14.7	-15.51	-12.08	7.85	Pass
6	2437	-14.96	-15.98	-12.43	7.85	Pass
11	2462	-14.4	-15.21	-11.78	7.85	Pass

802.11ax HE40 Mode:

Channel No.	Frequency (MHz)	PSD (dBm/3kHz)			Limit (dBm/3kHz)	Result
		antenna 1	antenna 2	total		
3	2422	-16.8	-17.83	-14.27	7.85	Pass
6	2437	-18.11	-17.68	-14.88	7.85	Pass
9	2452	-17	-18.33	-14.6	7.85	Pass

Note1: This EUT supports MIMO 2X2, any transmit signals are correlated with each other, So Directional gain = $3.14 + 10\log(2)$ dBi, HT20, HT40, HE20, HE40 mode: Directional gain (dBi) = 6.15.
Note2: Antenna gain is greater than 6, HT20, HT40, HE20, HE40 mode: PSD limit = $8 - (6.15 - 6) = 7.85$ dBm.

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