Prüfbericht-Nr.: *Test report no.:*	CN2205TH(P15C-WiFi) 001	**Auftrags-Nr.:** *Order no.*:	238538787	Seite 1 von 33 *Page 1 of 33*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2022-01-17	
Auftraggeber: *Client:*	VIA Technologies, Inc 8F, No.535, Zhongzheng Rd., Xindian Dist, New Taipei City 231, Taiwan			
Prüfgegenstand: *Test item:*	IVT01			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	IVT01			
Auftrags-Inhalt: *Order content*:	FCC Part 15C Test report (WiFi 2.4GHz)			
Prüfgrundlage: *Test specification:*	FCC 47CFR Part 15: Subpart C Section 15.247			

Wareneingangsdatum: *Date of sample receipt:*	2022-01-18
Prüfmuster-Nr.: *Test sample no:*	A003202360-003
Prüfzeitraum: *Testing period:*	2022-03-04 - 2022-05-10
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories
Prüfergebnis*: *Test result*:*	Pass

zusammengestellt von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2022-05-17	Ethan Shao	**Ausstellungsdatum:** *Issue date:* 2022-05-17	Brenda Chen
Stellung / *Position:*	Assistant Project Engineer	**Stellung** / *Position:*	Senior Project Manager

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.247(b) & 15.203	Antenna Requirement	Pass
5.1.2	15.247(b)(3)	Peak Output Power	Pass
5.1.3	15.247(a)(2)	6 dB Bandwidth	Pass
5.1.3	2.1049	99% Occupied Bandwidth	Pass
5.1.4	15.247(e)	Power Spectral Density	Pass
5.1.5	15.247(d)	Conducted Spurious Emissions and Band Edges	Pass
5.1.6	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
5.2.1	15.207	Mains Conducted Emission	Pass

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Contents

HISTORY OF THIS TEST REPORT

Report No.	Description	Date Issued
CN2205TH(P15C-WiFi) 001	Original Release	2022-05-17

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix A - Test Result of Conducted
Appendix B - Test Result of Radiated Emissions & Mains Conducted Emission
Appendix SP - Photographs of Test Setup
Appendix EP - Photographs of EUT

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart C Section 15.247
FCC 47CFR Part 2: Subpart J Section 2.1049
ANSI C63.10:2013
KDB 558074 D01 15.247 Meas Guidance v05r02
KDB 662911 D01 Multiple Transmitter Output v02r01

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 226631
ISED Registration No.: 25563

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of k=2 to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (9 kHz ~ 30 MHz)	± 1.15 dB
Radiated Emission (30 MHz ~ 200 MHz)	± 1.30 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.30 dB
Radiated Emission (1 GHz ~ 18 GHz)	± 1.54 dB
Radiated Emission (18 GHz ~ 40 GHz)	± 2.52 dB
Mains Conducted Emission	± 1.65 dB

3. General Product Information

3.1 Product Function and Intended Use

The EUT is an IVT01. It contains a WLAN compatible module enabling the user to communicate data through a Wireless interface.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	IVT01
Type Identification	IVT01
FCC ID	NCI-IVT01

Technical Specification of EUT

Item	EUT information
Operating Frequency	2412 MHz ~ 2462 MHz
Channel Spacing	5 MHz
Channel Number	802.11b/g/ac HT20: 11 802.11ac VHT40: 7
Data Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to MCS7
Operation Voltage	12Vdc
Modulation	DSSS (DBPSK, DQPSK, CCK) OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) OFDMA (1024QAM)
Maximum Output Power (mW)	802.11b: 92.91
	802.11g: 330.56
	802.11n HT20: 283.52
	802.11n HT40: 284.83
	802.11ac VHT20: 287.79
	802.11ac VHT40: 289.46
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.4

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output expected by the customer and is going to be fixed on the firmware of the final end product.

Table for Parameters of Test Software Setting

802.11b		802.11g		802.11n HT20		802.11n HT40	
Channel	Power Setting	Channel	Power Setting	Channel	Power Setting	Channel	Power Setting
1	4	1	4.5	1	4	3	2
6	3.5	6	6	6	6	6	6
11	4	11	5	11	6.5	9	6
802.11ac VHT20		802.11ac VHT40					
Channel	Power Setting	Channel	Power Setting				
1	4	3	2				
6	6	6	6				
11	6.5	9	6				

4.2 Carrier Frequency and Channel

802.11b, 802.11g, 802.11n HT20, 802.11ac VHT20:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432		
6	2437		
7	2442		

802.11n HT40, 802.11ac VHT40:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442
4	2427	8	2447
5	2432	9	2452
6	2437		

4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with a USB interface which makes it possible to control them through a test software installed on a notebook computer.
This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	iperf

The samples were used as follows:
A003202360-003

Full test was applied on all test modes, but only worst case was shown.
The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers.

Modulation Mode	Tx Function
802.11b	2TX (MIMO)
802.11g	2TX (MIMO)
802.11n HT20	2TX (MIMO)
802.11n HT40	2TX (MIMO)
802.11ac VHT20	2TX (MIMO)
802.11ac VHT40	2TX (MIMO)

* The modulation and bandwidth are similar for 802.11n mode HT20/HT40 and 802.11ac mode VHT20/VHT40, therefore investigated worse case as representative mode in test report.

EUT Configure Mode	Applicable To				Description
	Antenna Port Conducted Measurement	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
-	√	√	√	√	-

Note:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when position on Y-plane.
2. "-" means no effect.

Antenna Port Conducted Measurement

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	1.0
-	802.11g	1 to 11	1, 6, 11	6.0
-	802.11n HT20	1 to 11	1, 6, 11	MCS0
-	802.11n HT40	3 to 9	3, 6, 9	MCS0
-	802.11ac VHT20	1 to 11	1, 6, 11	NSS1 MCS0
-	802.11ac VHT40	3 to 9	3, 6, 9	NSS1 MCS0

Radiated Spurious Emissions (Above 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11b	1 to 11	1, 6, 11	1.0
-	802.11g	1 to 11	1, 6, 11	6.0
-	802.11ac VHT20	1 to 11	1, 6, 11	NSS1 MCS0
-	802.11ac VHT40	3 to 9	3, 6, 9	NSS1 MCS0

Radiated Spurious Emissions (Below 1 GHz)

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11g	1 to 11	6	6.0

Mains Conducted Emission

☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Available Channel	Tested Channel	Date Rate (Mbps)
-	802.11g	1 to 11	6	6.0

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	22.7-23.7 °C	61-70 %	Andy Chen
Radiated Spurious Emissions above 1 GHz	21.1-21.9 °C	60-64 %	Chuan Chu
Radiated Spurious Emissions below 1 GHz	21.1-21.9 °C	60-64 %	Chuan Chu
Mains Conducted Emission	21.9 °C	59 %	Ray Huang

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

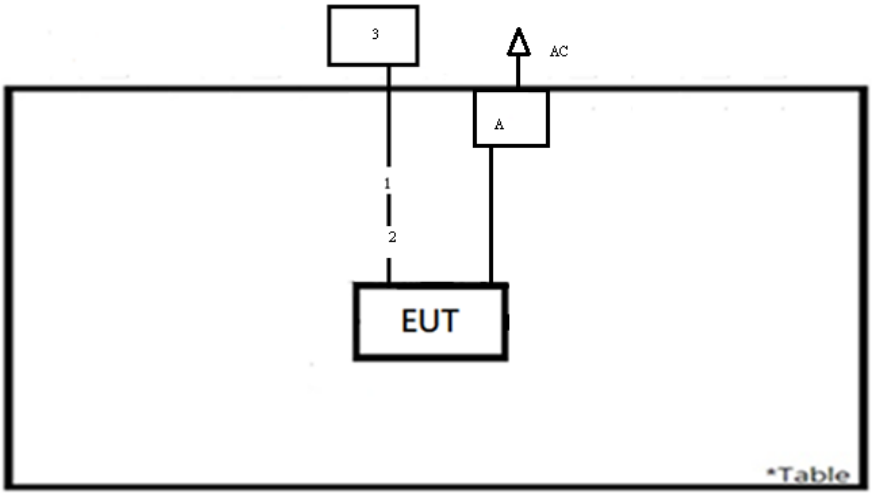
None.

Support Unit

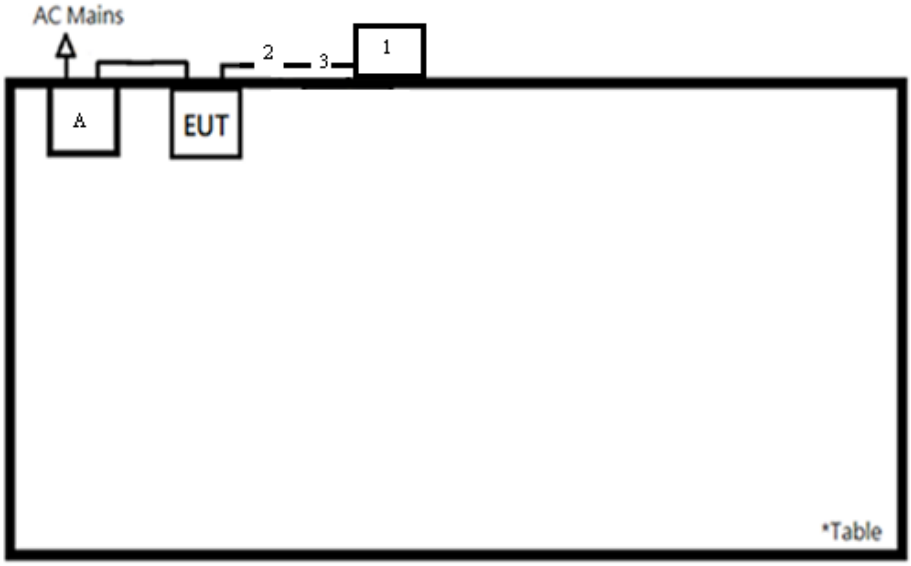
No.	Description	Brand	Model	S/N	Remark
Radiated Test					
A	Adapter	FSP	FSP060-DIBAN2	-	150 cm non-shielded cable with core
1	USB TO USB cable	TUV	TUV-01	-	300 cm non-shielded cable with core
2	USB to Micro	TUV	TUV-02	-	200 cm non-shielded cable with core
3	Notebook	Lenovo	81BL	MP1DCD6Y	-
Mains Conducted Test					
A	Adapter	FSP	FSP060-DIBAN2	-	150 cm non-shielded cable with core
1	Notebook	Lenovo	81BL	MP1DCD6Y	-
2	Micro USB Cable	TUV	TUV-01	-	200 cm non-shielded cable with core
3	USB Cable	TUV	TUV-02	-	300 cm non-shielded cable with core
Conducted Test					
-	Notebook	HP	TPN-C139	CND93662VF	-

4.5 Test Setup Diagram

<Radiated Spurious Emissions mode>



<Mains Conducted Emission mode>

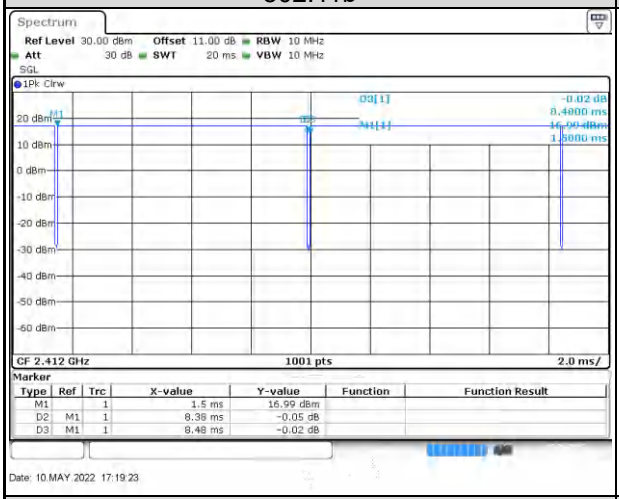


4.6 Duty Cycle of Test Signal

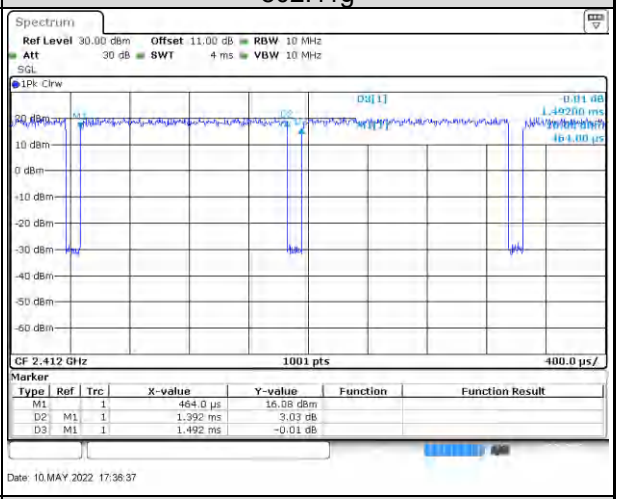
Mode	On + Off Time (ms)	On Time (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11b	8.48	8.38	98.82	0.05
802.11g	1.49	1.39	93.30	0.30
802.11ac VHT20	1.40	1.30	92.86	0.32
802.11ac VHT40	0.75	0.65	86.90	0.61

Ant 1

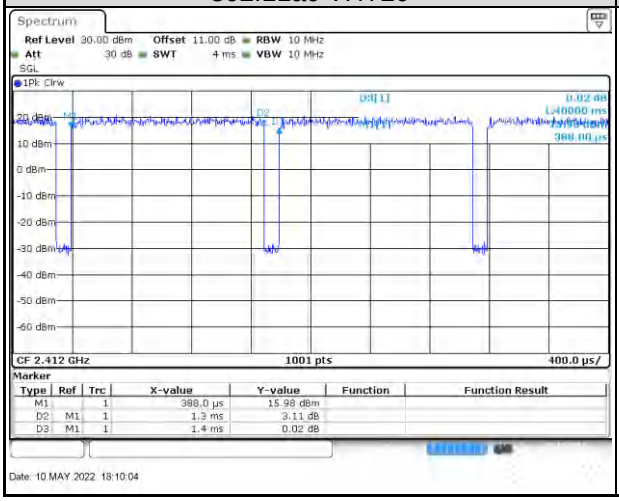
802.11b



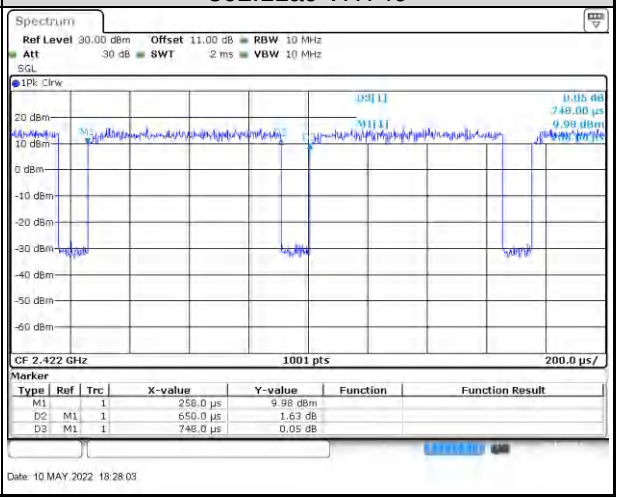
802.11g

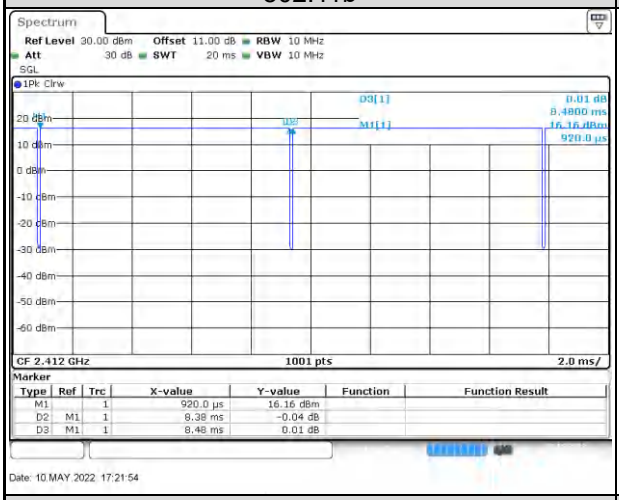
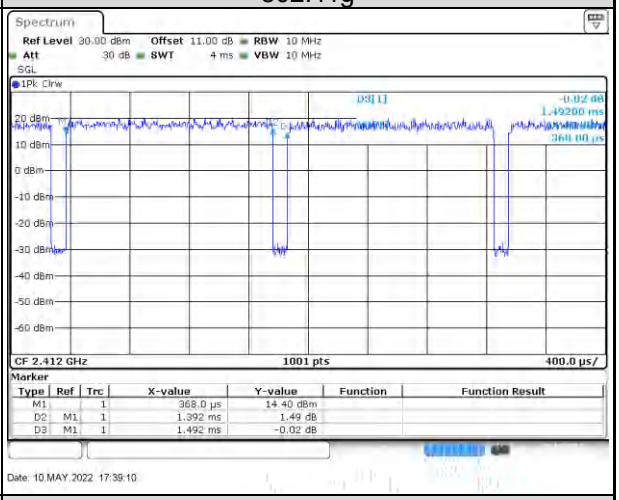
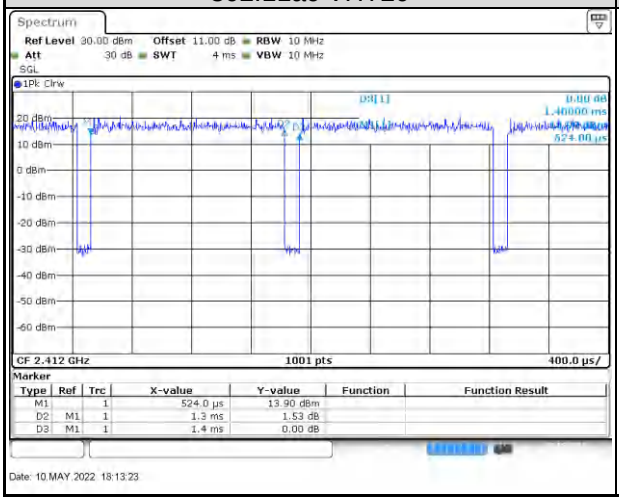
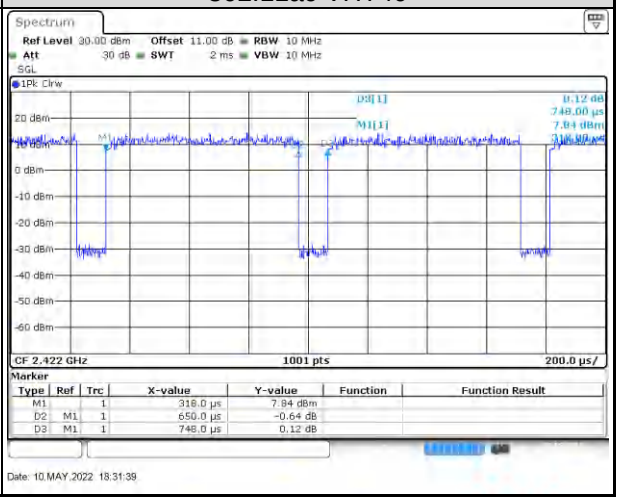


802.11ac VHT20



802.11ac VHT40



Ant 2	
802.11b	802.11g
	
802.11ac VHT20	802.11ac VHT40
	

5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

According to the manufacturer declaration, the EUT's antenna specifications are described as below. The antenna is used with no possibility of replacement with a non-approved antenna by the end-user. Therefore, the EUT is considered to comply with this provision.

ANT		Gain (dBi)	Antenna Type
1		2.84	PCB
2		2.69	PCB
CDD Mode	Power Directional Gain =	2.84	-
	PSD Directional Gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}]$ =	5.78	-

Refer to EUT photo for details.

5.1.2 Peak Output Power

Limit 1 watt (30 dBm)

Kind of Test Site Shielded room

Test Setup

Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Power Meter	Anritsu	ML2495A	1901008	2022/3/15	2023/3/14	2022/4/13	2022/5/10
Power Sensor	Anritsu	MA2411B	1725269	2022/3/15	2023/3/14	2022/4/13	2022/5/10

Test Procedures

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

Test Result

Peak Output Power

<802.11b>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
1	2412	16.74	16.37	19.57	90.56	30
6	2437	16.61	16.49	19.56	90.38	30
11	2462	16.72	16.62	19.68	92.91	30

<802.11g>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
1	2412	20.68	20.09	23.41	219.04	30
6	2437	22.04	22.32	25.19	330.56	30
11	2462	21.27	20.72	24.01	252.00	30

<802.11n HT20>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
1	2412	20.81	20.19	23.52	224.98	30
6	2437	21.58	21.45	24.53	283.52	30
11	2462	21.68	21.18	24.45	278.45	30

<802.11n HT40>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
3	2422	21.56	21.44	24.51	282.53	30
6	2437	21.60	21.47	24.55	284.83	30
9	2452	21.46	21.29	24.39	274.54	30

<802.11ac VHT20>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
1	2412	20.88	20.28	23.60	229.12	30
6	2437	21.64	21.52	24.59	287.79	30
11	2462	21.73	21.24	24.50	281.98	30

<802.11ac VHT40>

Channel	Channel Frequency (MHz)	Peak Output Power (dBm)		Total Power		Limit (dBm)
		Ant 1	Ant 2	(dBm)	(mW)	
3	2422	21.62	21.52	24.58	287.12	30
6	2437	21.68	21.53	24.62	289.46	30
9	2452	21.53	21.35	24.45	278.69	30

Average Power

<802.11b>

Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
1	2412	14.56	14.15	17.37	54.60
6	2437	14.37	14.25	17.32	53.96
11	2462	14.47	14.36	17.43	55.28

<802.11g>

Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
1	2412	14.48	13.14	16.87	48.66
6	2437	15.58	14.10	17.91	61.84
11	2462	14.98	12.74	17.01	50.27

<802.11n HT20>

Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
1	2412	13.76	12.37	16.13	41.03
6	2437	15.34	13.87	17.68	58.58
11	2462	15.50	13.61	17.67	58.44

<802.11n HT40>

Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
3	2422	12.71	11.10	14.99	31.55
6	2437	15.52	13.60	17.68	58.55
9	2452	15.43	13.48	17.57	57.20

<802.11ac VHT20>

Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
1	2412	13.82	12.44	16.19	41.64
6	2437	15.41	13.94	17.75	59.53
11	2462	15.56	13.68	17.73	59.31

<802.11ac VHT40>

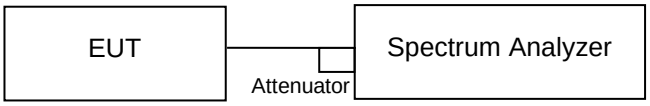
Channel	Channel Frequency (MHz)	Average Power (dBm)		Total Power	
		Ant 1	Ant 2	(dBm)	(mW)
3	2422	12.79	11.17	15.07	32.10
6	2437	15.59	13.67	17.75	59.51
9	2452	15.49	13.54	17.63	57.99

5.1.3 6 dB Bandwidth and 99% Occupied Bandwidth

Limit The minimum 6 dB bandwidth shall be at least 500 kHz.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2022/2/24	2023/2/23	2022/5/10	2022/5/10

Test Procedure

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
f. For 99% occupied bandwidth measurement, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to PEAK. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

Test Results

Please refer to Appendix A.

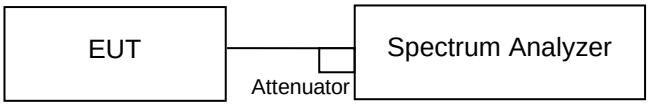
5.1.4 Power Spectral Density

Limit

The power spectral density shall not be greater than 8 dBm in any 3 kHz band.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2022/2/24	2023/2/23	2022/5/10	2022/5/10

Test Procedure

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 kHz ≤ RBW ≤ 100 kHz.
d. Set the VBW ≥ 3 × 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.

Test Results

Please refer to Appendix A.

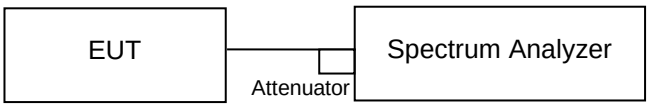
5.1.5 Conducted Spurious Emissions and Frequency Band Edges Measured in 100 kHz Bandwidth

Limit

20 dB (below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.)

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Spectrum Analyzer	R&S	FSV40	101512	2022/2/24	2023/2/23	2022/5/10	2022/5/10

Test Procedure

Measurement procedure REF
1. Set the RBW = 100 kHz.
2. Set the VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement procedure OOBE
1. Set RBW = 100 kHz.
2. Set VBW ≥ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

Test Results

Please refer to Appendix A.

5.1.6 Radiated Spurious Emissions and Band Edges

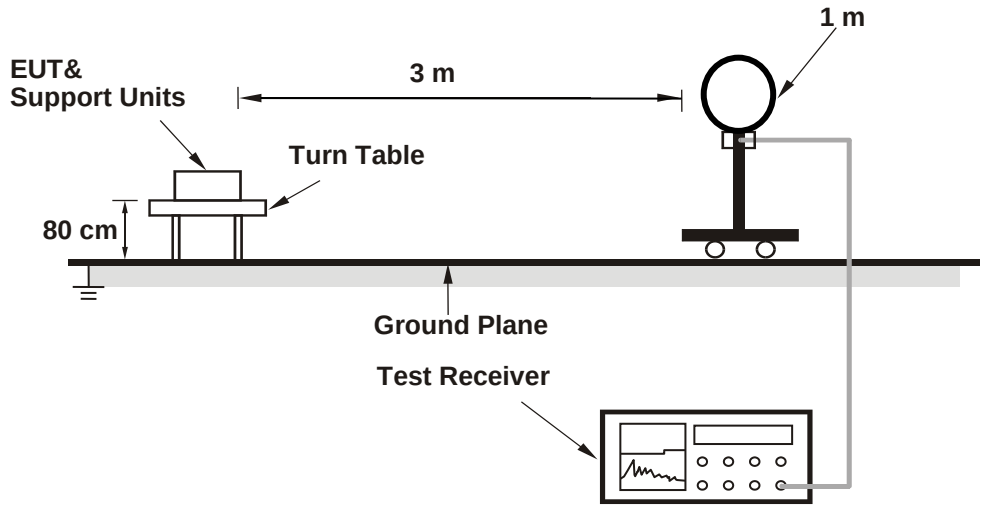
Limit

Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).
Emissions radiated outside the restricted and authorized frequency bands must either comply with the radiated emission limits specified for the restricted bands or in §15.247(d).

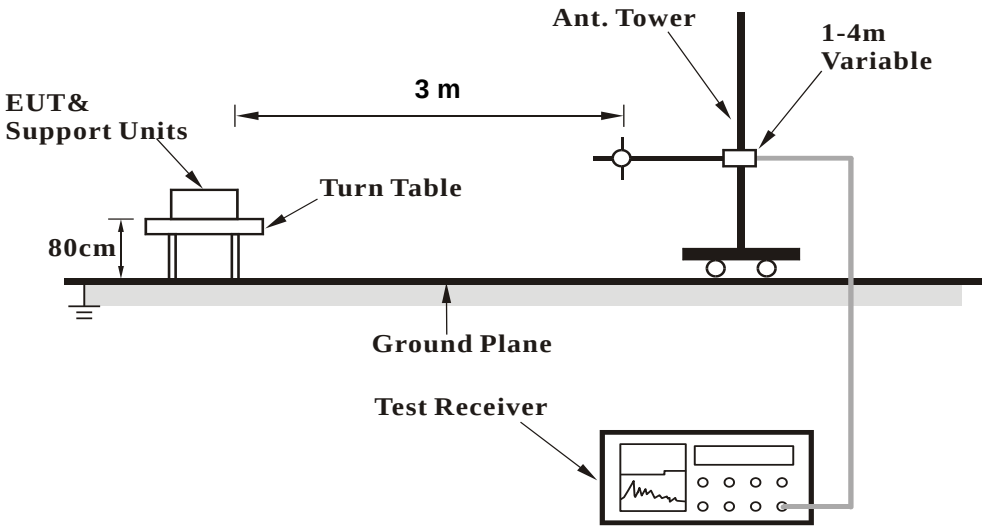
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

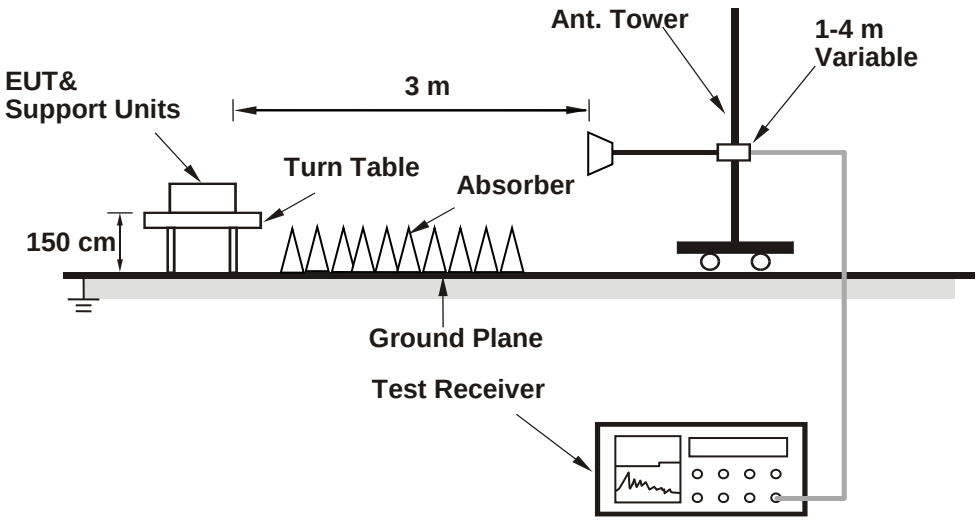
<Radiated Emissions below 30 MHz>



<Radiated Emissions 30 MHz to 1 GHz>



<Radiated Emissions above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

Test Instruments

Below 30MHz: 2022/4/26

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Receiver	R&S	ESR7	102109	2022/2/25	2023/2/24
Microwave Cable	SUCOFLEX 104EA	800056/4EA	804680/4	2022/3/22	2023/3/21
Loop Antenna	SCHWARZBECK	FMZB 1519B	00215	2021/12/8	2022/12/7

30MHz-1GHz: 2022/5/3

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Receiver	R&S	ESR7	102109	2022/2/25	2023/2/24
Bilog Antenna	SCHWARZBECK	VULB-9168	00949	2021/5/30	2022/5/29
LF-AMP	Agilent	8447D	2727A05146	2022/2/16	2023/2/15

Above 1GHz: 2022/4/14-2022/4/18

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101513	2021/5/28	2022/5/27
Horn Antenna	ETS-Lindgren	3117	00218929	2021/11/25	2022/11/24
HF-AMP + AC source	EMCI	EMC051845SE	980635	2022/1/20	2023/1/19
HF-AMP + AC source	EMCI	EMC184045SE	980656	2022/1/20	2023/1/19
Horn Antenna	SCHWARZBECK	BBHA 9170	00887	2022/3/29	2023/3/28

Test Procedures

For Radiated Emissions below 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. Parallel (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) orientations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The Radiated Emissions testing was performed in the X(E1), Y(H) and Z(E2) axis orientation. The worst-case Axis orientation is recorded in this test report.

Test Results

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix B.

5.2 Mains Emission

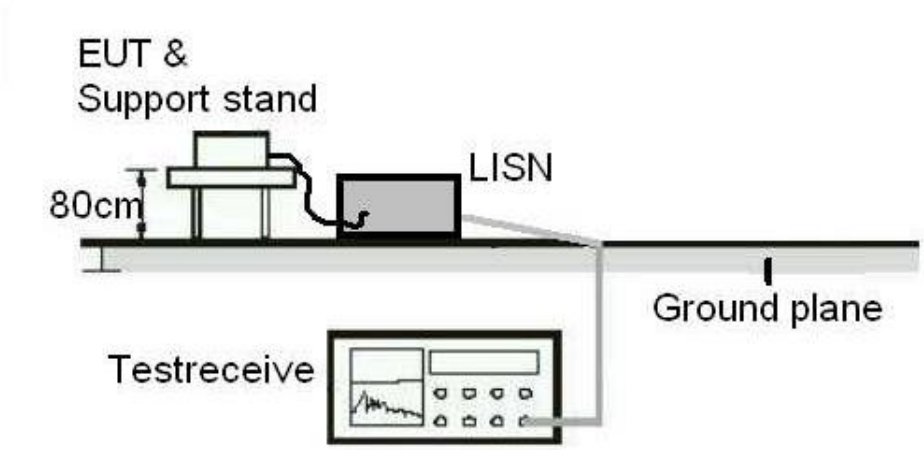
5.2.1 Mains Conducted Emission

Limit

Mains Conducted Emission as defined in §15.207 must comply with the mains conducted emission limits.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Test Date: 2022/5/7

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Two-Line V-Network	Rohde & Schwarz	ENV216	101938	2021/9/23	2022/9/22
EMI Test Receiver	R&S	ESCI	1816063	2021/11/15	2022/11/14

Test Procedures

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

Test Results

Please refer to Appendix B.

Appendix A: Test Results of Conducted Test

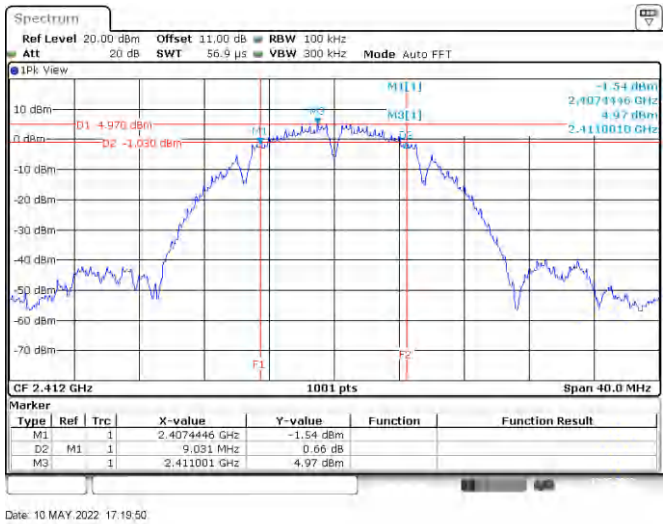
Test Result of 6 dB Bandwidth

802.11b: 2TX

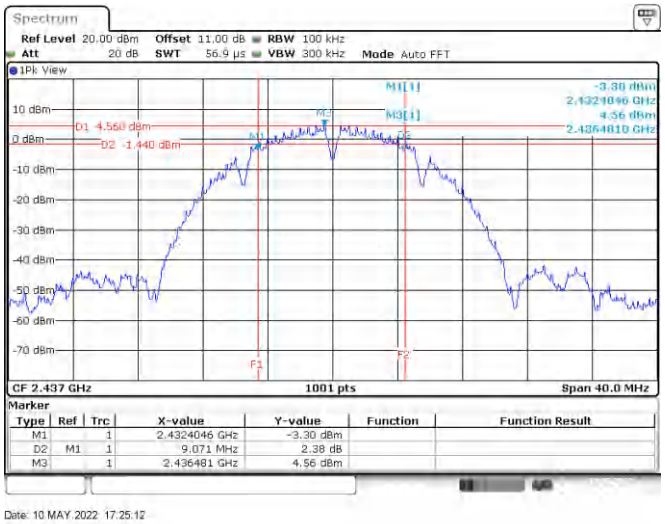
Channel	Channel Frequency (MHz)	6 dB Bandwidth (MHz)		Limit (MHz)	Result
		Chain 0	Chain 1		
Low Channel	2412	9.03	9.07	> 0.5	Pass
Middle Channel	2437	9.07	9.07	> 0.5	Pass
High Channel	2462	9.07	9.07	> 0.5	Pass

<Chain 0>

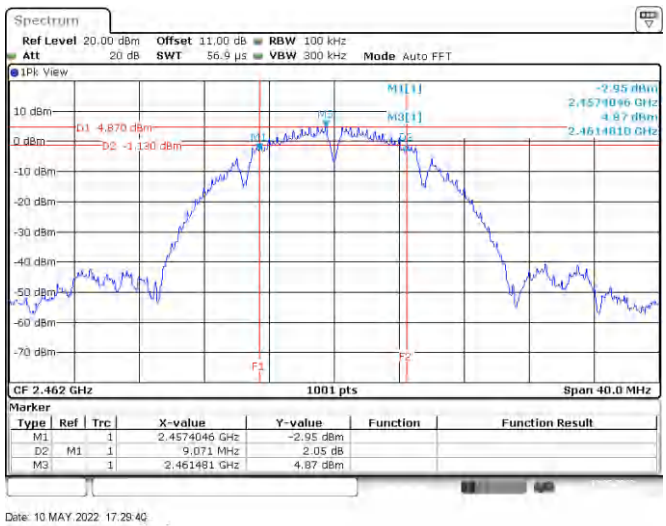
Low Channel



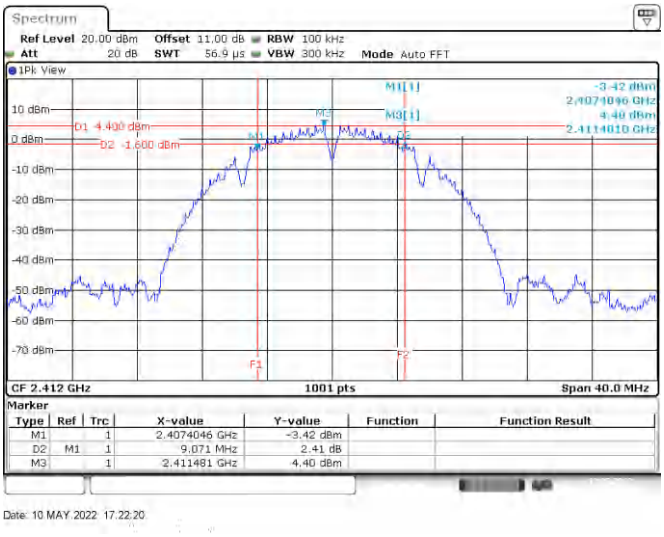
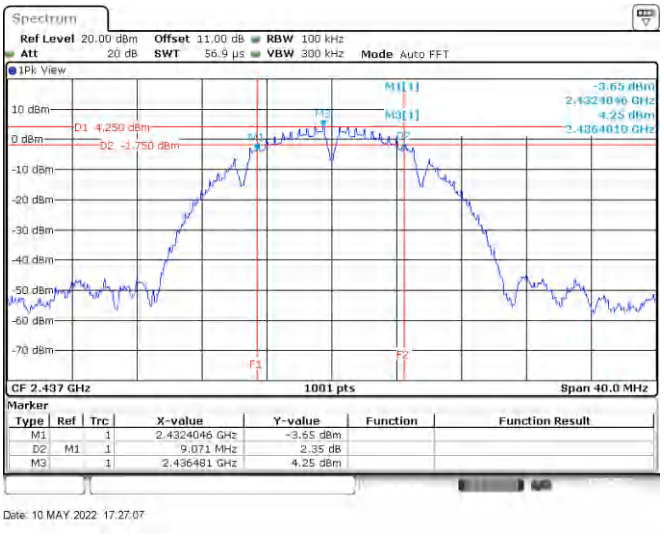
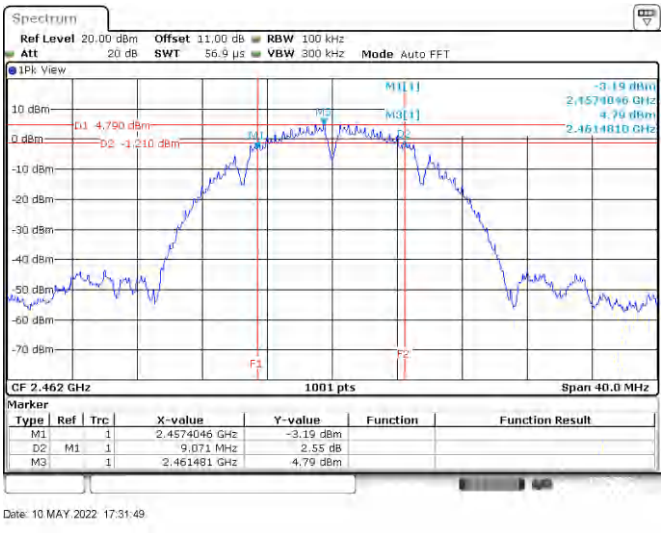
Middle Channel



High Channel



<Chain 1>

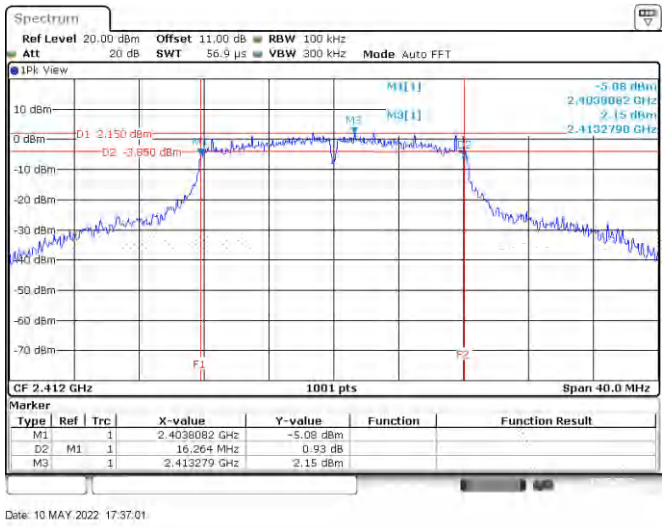
Low Channel	Middle Channel
	
High Channel	
	

802.11g: 2TX

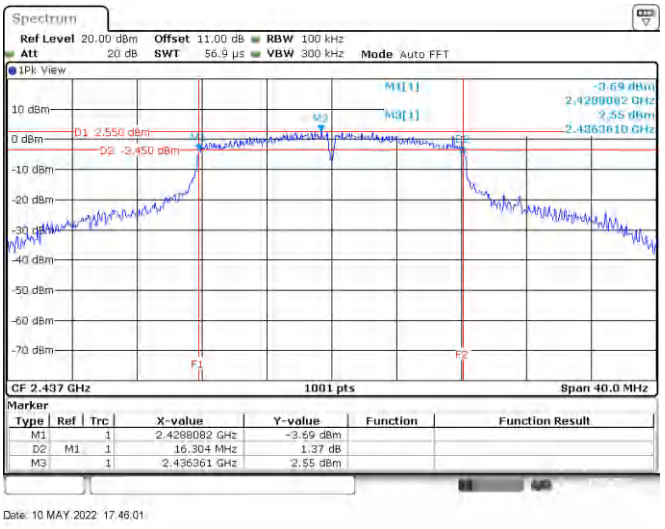
Channel	Channel Frequency (MHz)	6 dB Bandwidth (MHz)		Limit (MHz)	Result
		Chain 0	Chain 1		
Low Channel	2412	16.26	15.70	> 0.5	Pass
Middle Channel	2437	16.30	15.11	> 0.5	Pass
High Channel	2462	15.03	15.27	> 0.5	Pass

<Chain 0>

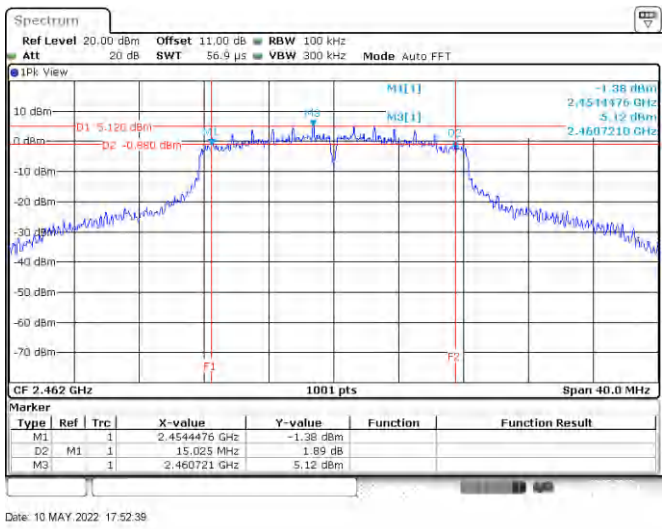
Low Channel



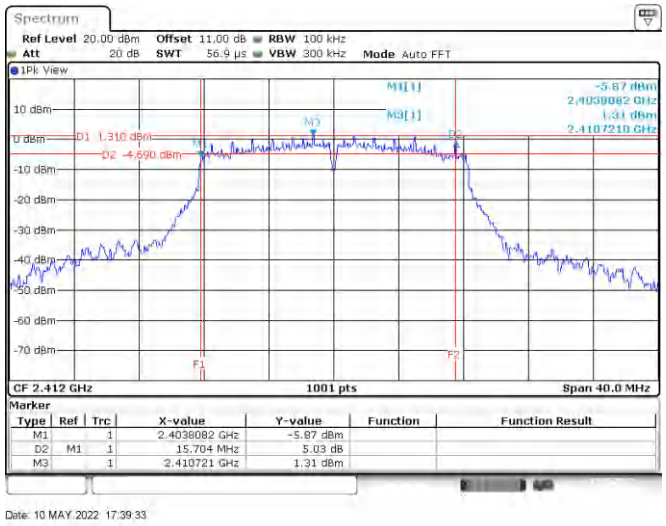
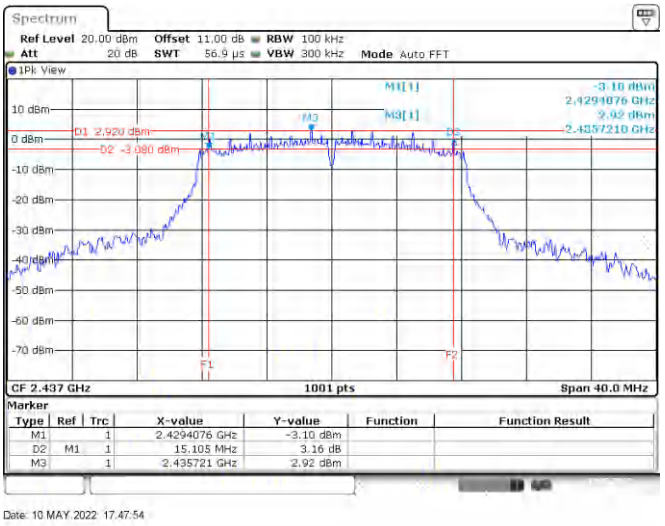
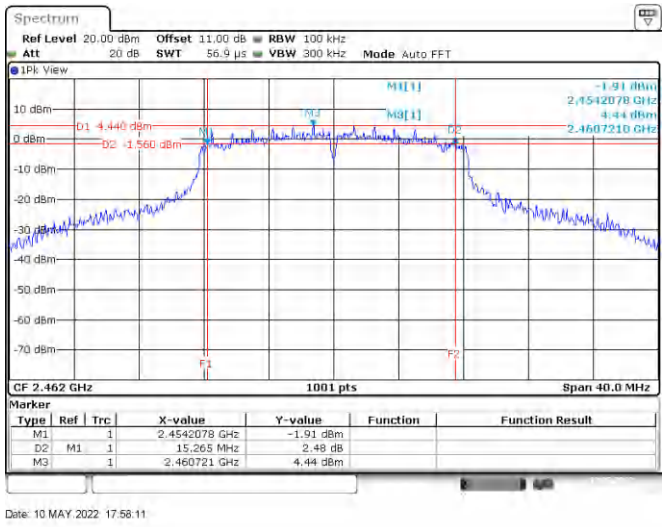
Middle Channel



High Channel



<Chain 1>

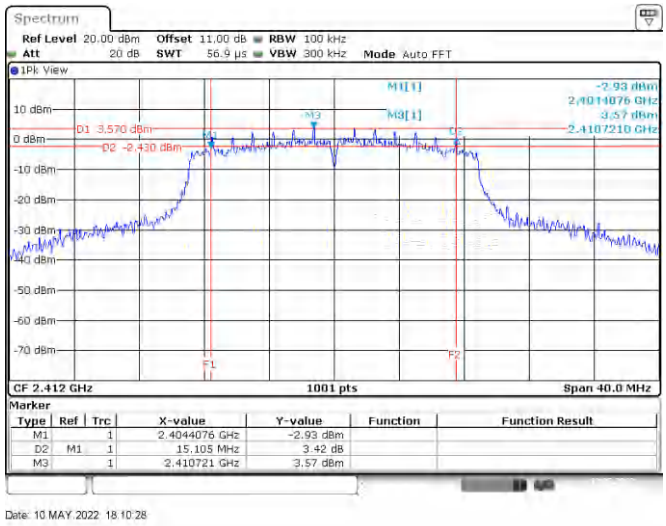
Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT20: 2TX

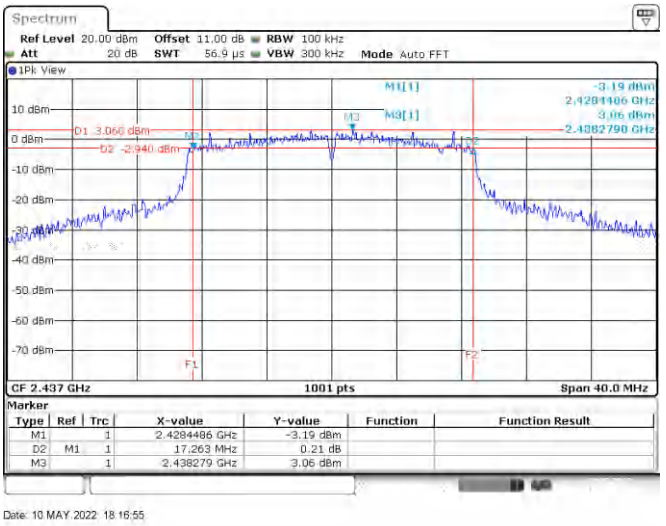
Channel	Channel Frequency (MHz)	6 dB Bandwidth (MHz)		Limit (MHz)	Result
		Chain 0	Chain 1		
Low Channel	2412	15.11	15.07	> 0.5	Pass
Middle Channel	2437	17.26	16.30	> 0.5	Pass
High Channel	2462	17.54	16.50	> 0.5	Pass

<Chain 0>

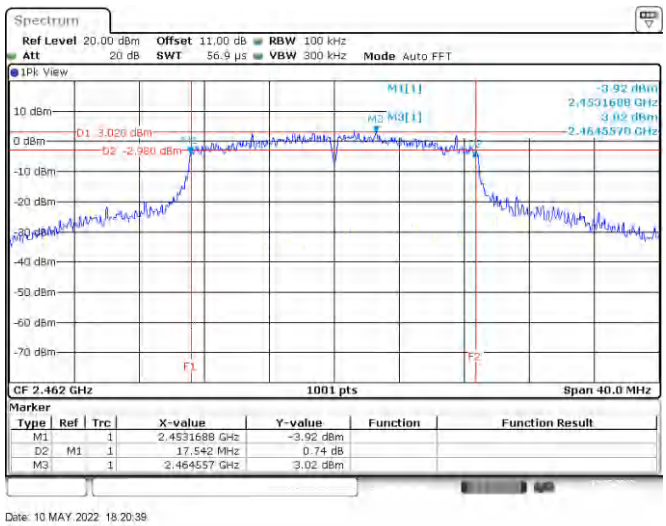
Low Channel



Middle Channel

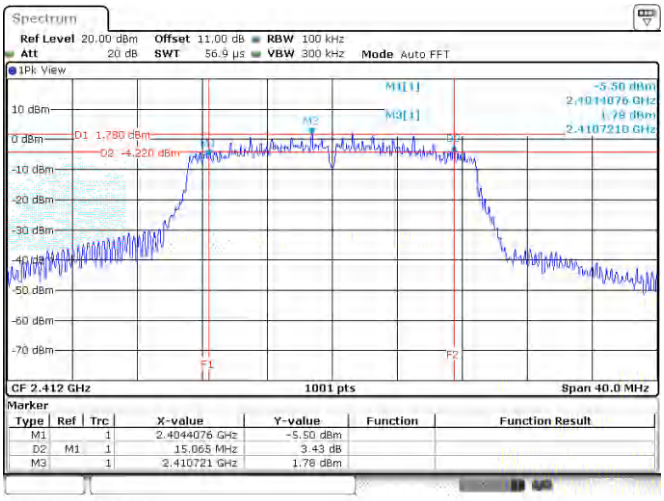


High Channel

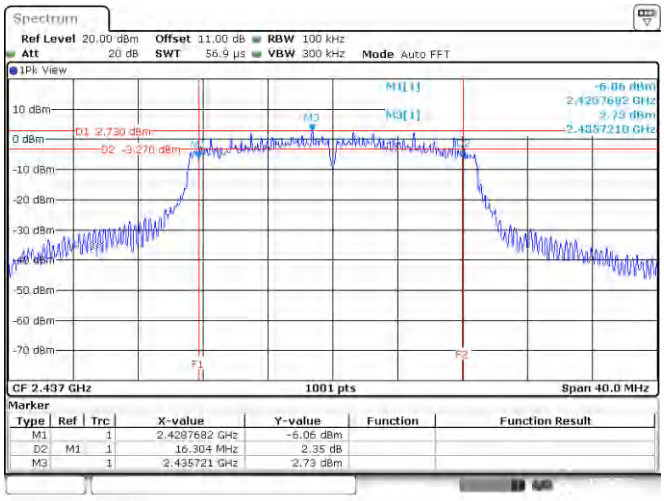


<Chain 1>

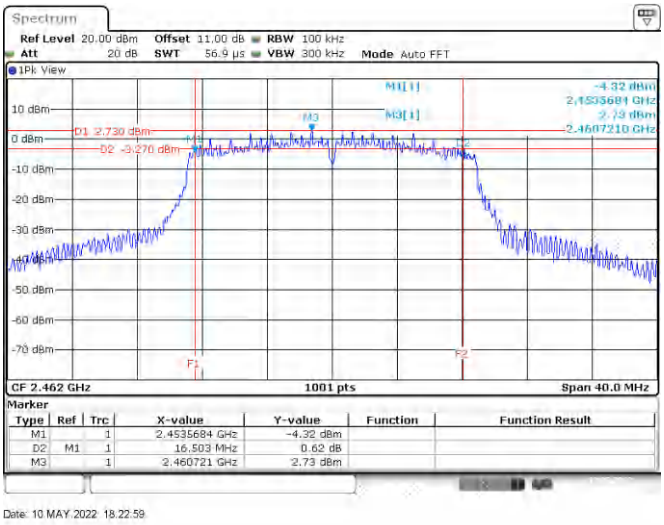
Low Channel



Middle Channel



High Channel

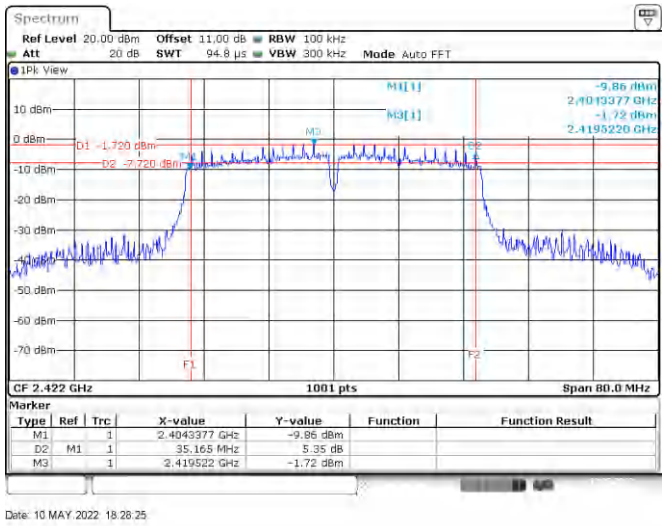


802.11ac VHT40: 2TX

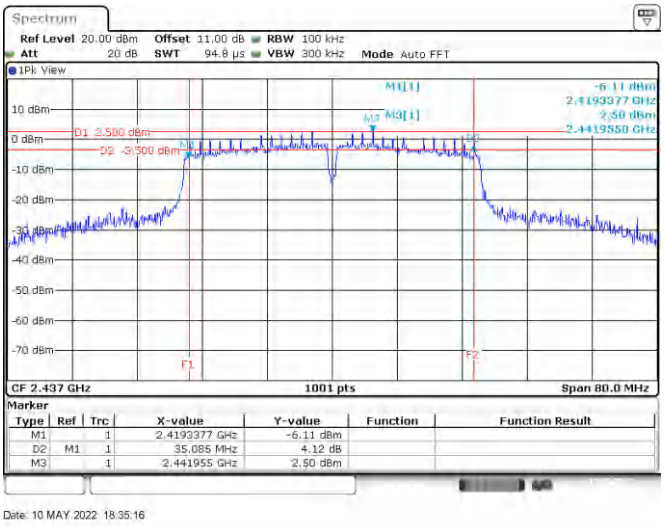
Channel	Channel Frequency (MHz)	6 dB Bandwidth (MHz)		Limit (MHz)	Result
		Chain 0	Chain 1		
Low Channel	2422	35.17	35.09	> 0.5	Pass
Middle Channel	2437	35.09	35.09	> 0.5	Pass
High Channel	2452	35.09	35.09	> 0.5	Pass

<Chain 0>

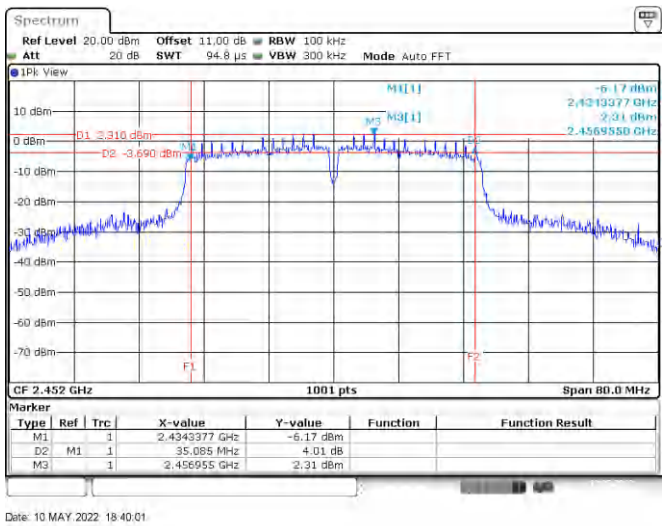
Low Channel



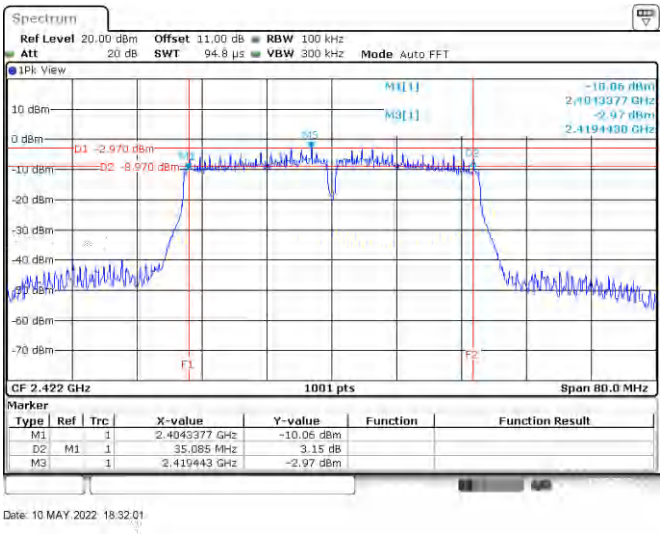
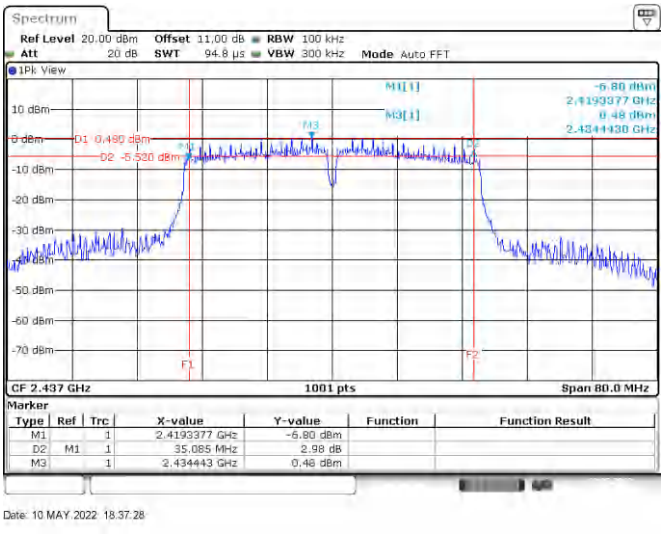
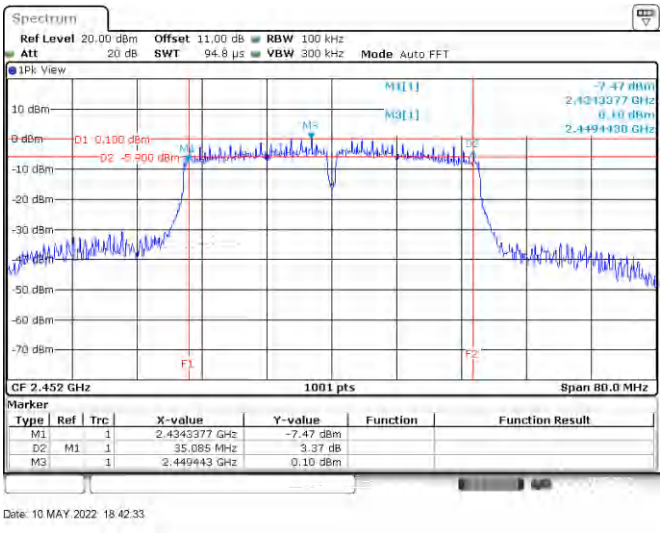
Middle Channel



High Channel



<Chain 1>

Low Channel	Middle Channel
	
High Channel	
	

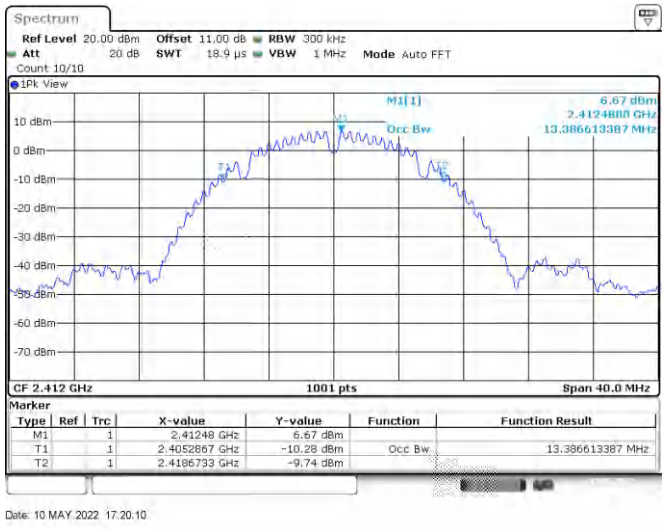
Test Result of 99% Occupied Bandwidth

802.11b: 2TX

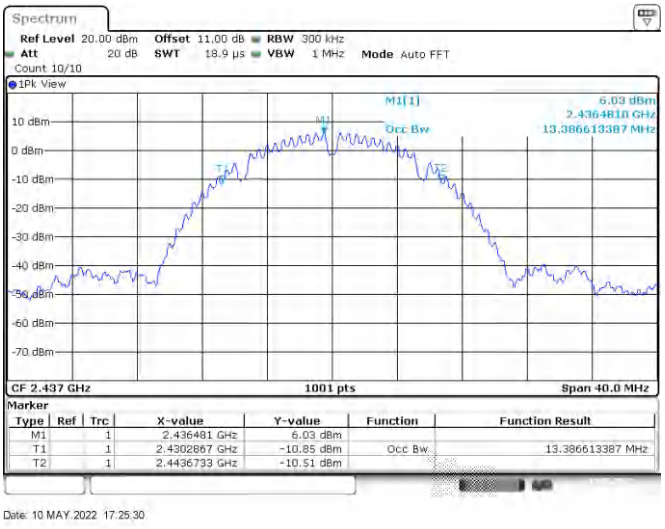
Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	
		Chain 0	Chain 1
Low Channel	2412	13.39	13.31
Middle Channel	2437	13.39	13.31
High Channel	2462	13.39	13.31

<Chain 0>

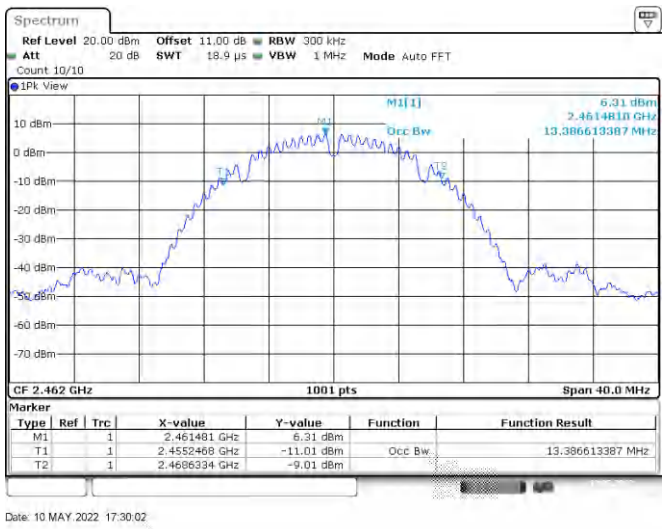
Low Channel



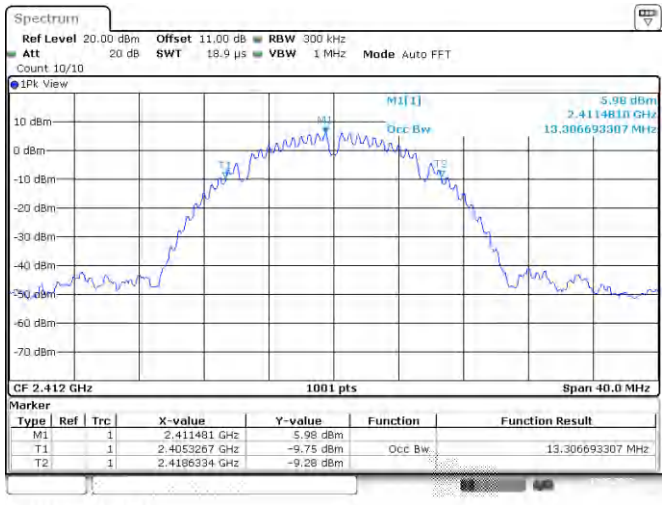
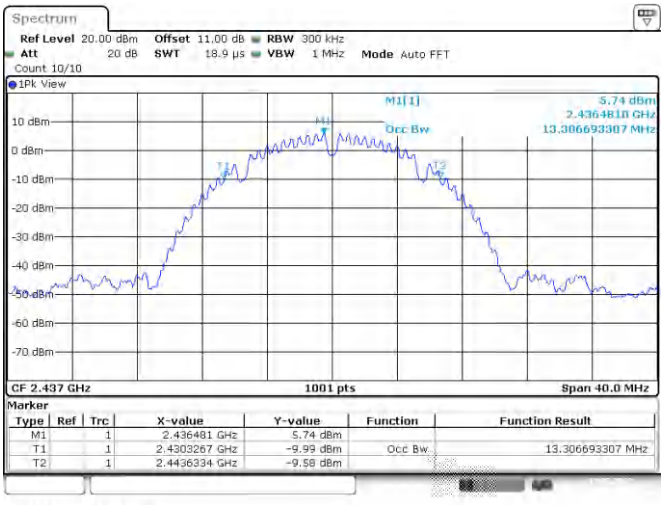
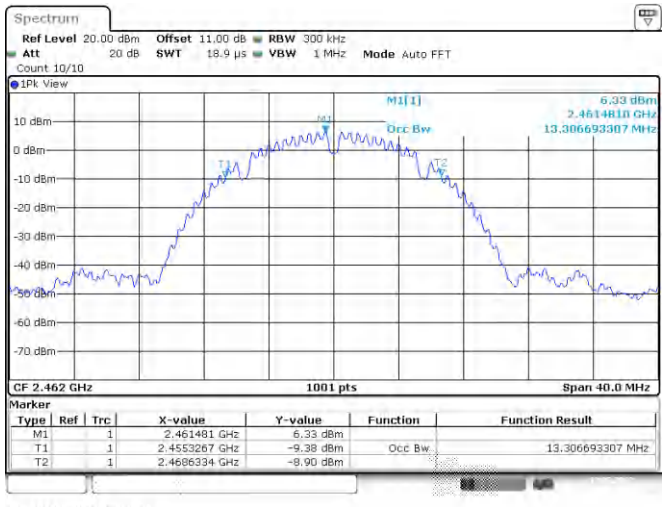
Middle Channel



High Channel



<Chain 1>

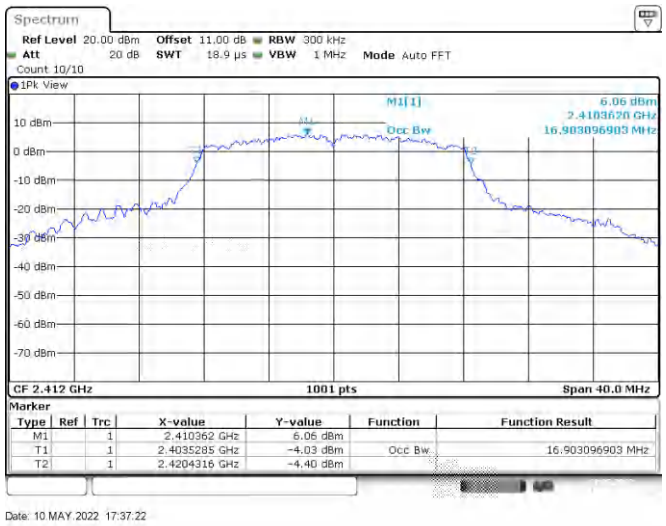
Low Channel	Middle Channel
	
High Channel	
	

802.11g: 2TX

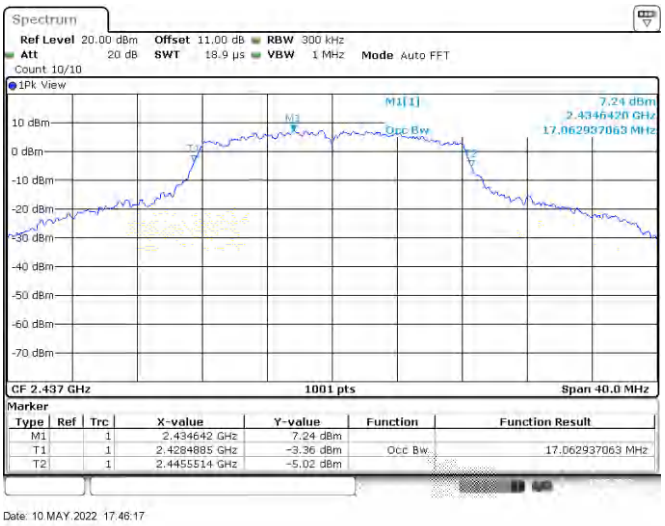
Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	
		Chain 0	Chain 1
Low Channel	2412	16.90	16.46
Middle Channel	2437	17.06	16.46
High Channel	2462	17.30	17.02

<Chain 0>

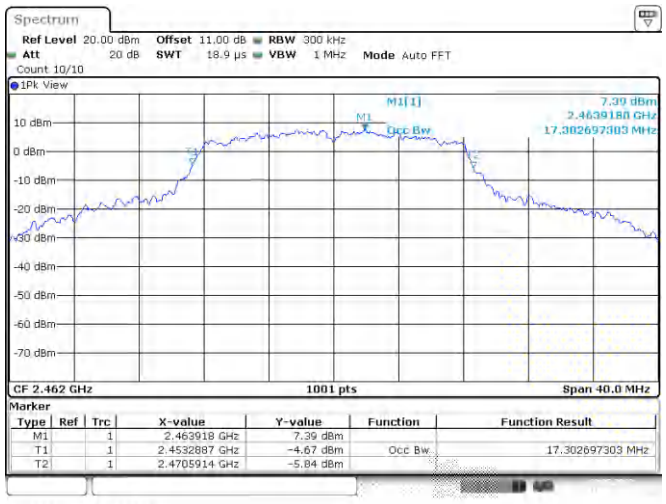
Low Channel



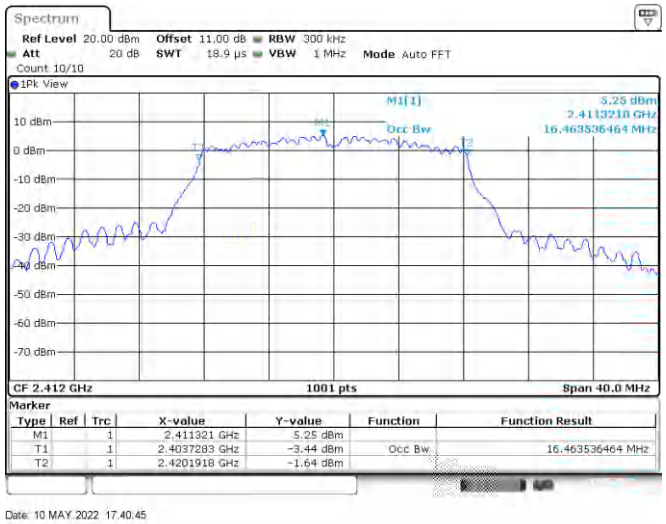
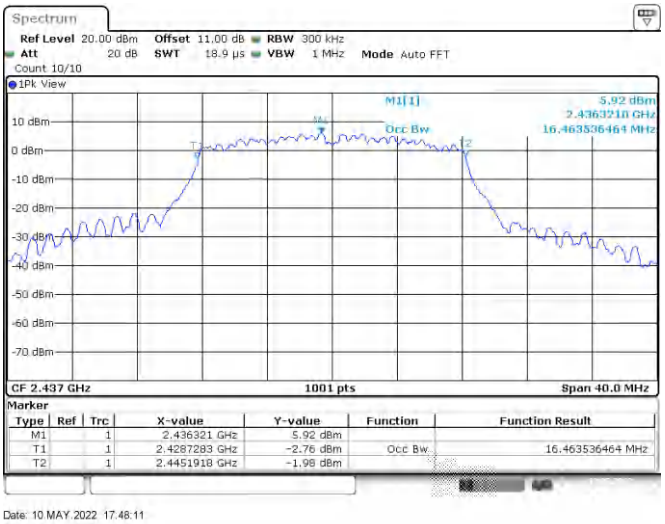
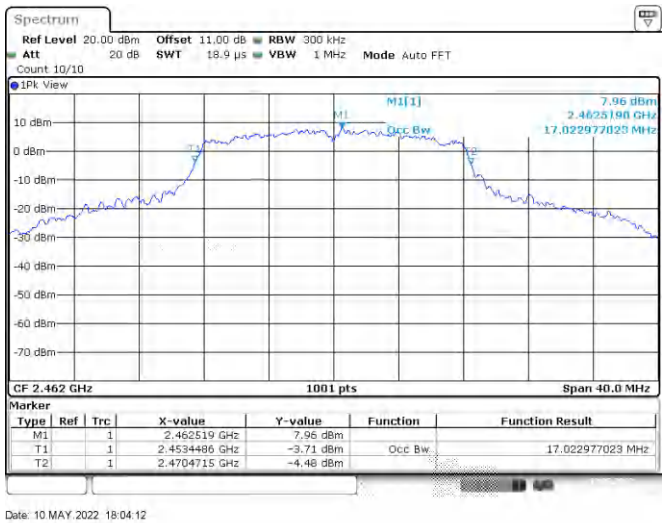
Middle Channel



High Channel



<Chain 1>

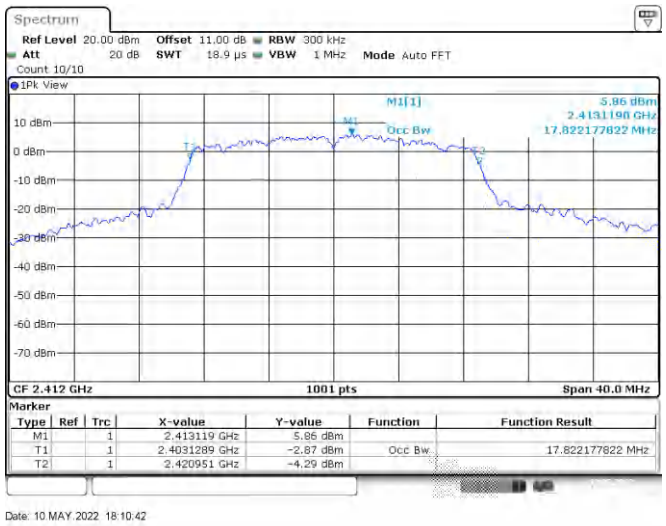
Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT20: 2TX

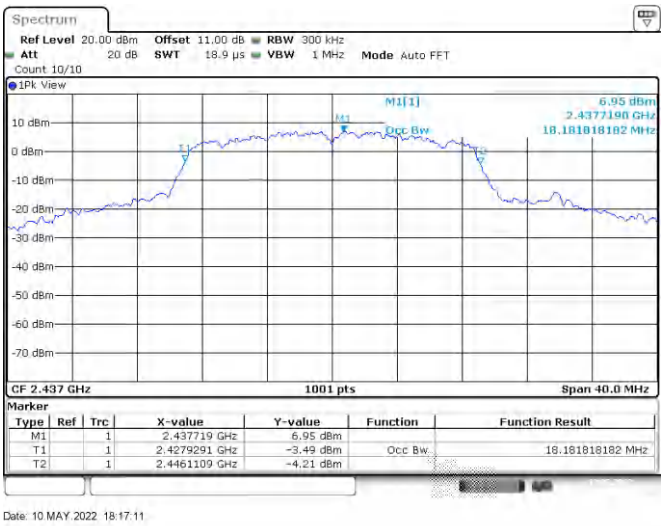
Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	
		Chain 0	Chain 1
Low Channel	2412	17.82	17.54
Middle Channel	2437	18.18	17.54
High Channel	2462	18.18	17.54

<Chain 0>

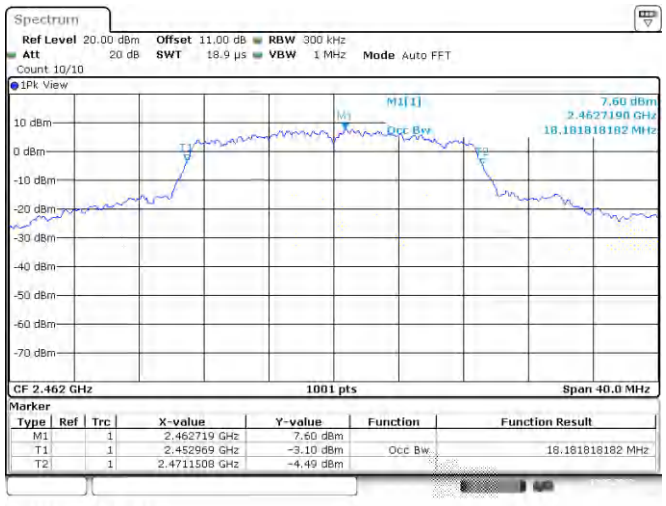
Low Channel



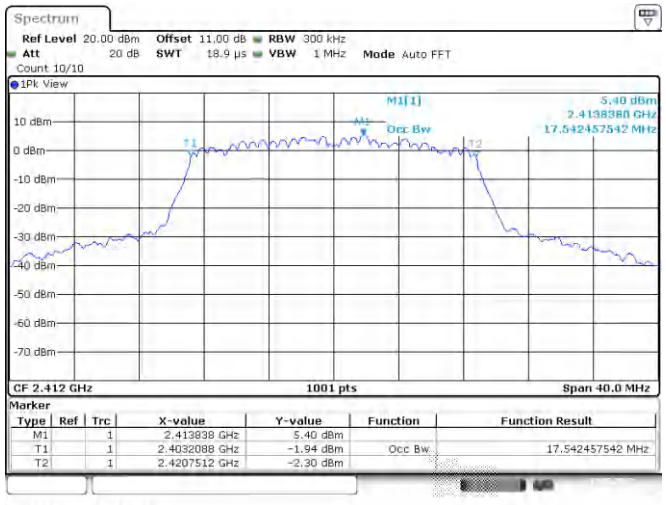
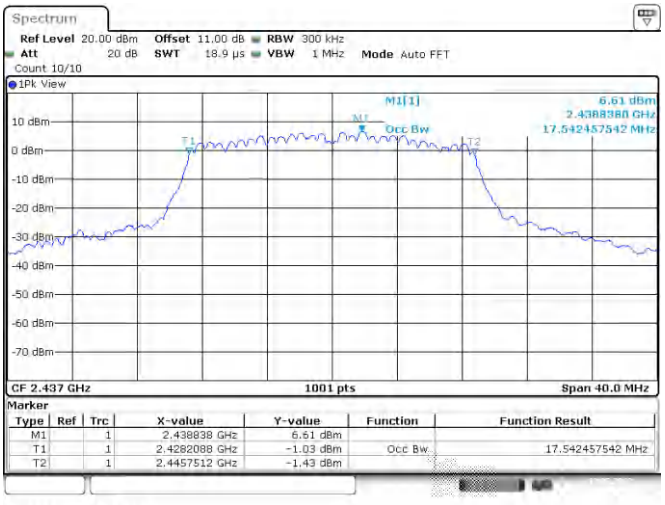
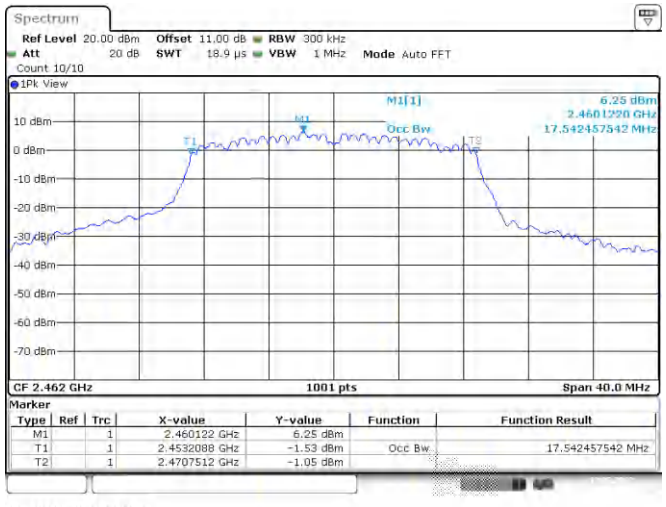
Middle Channel



High Channel



<Chain 1>

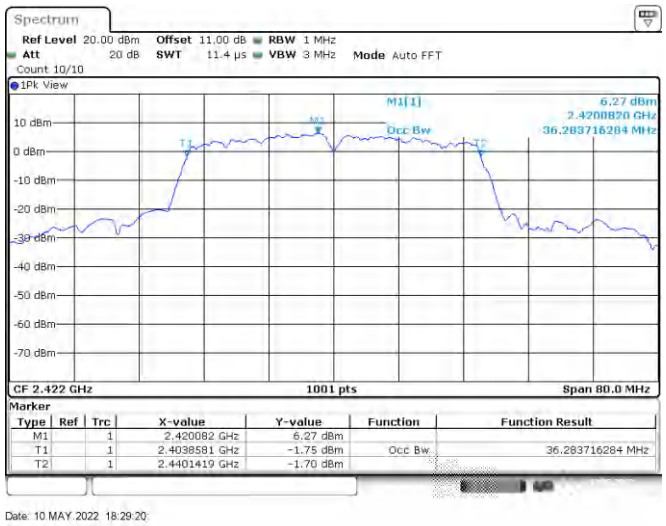
Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT40: 2TX

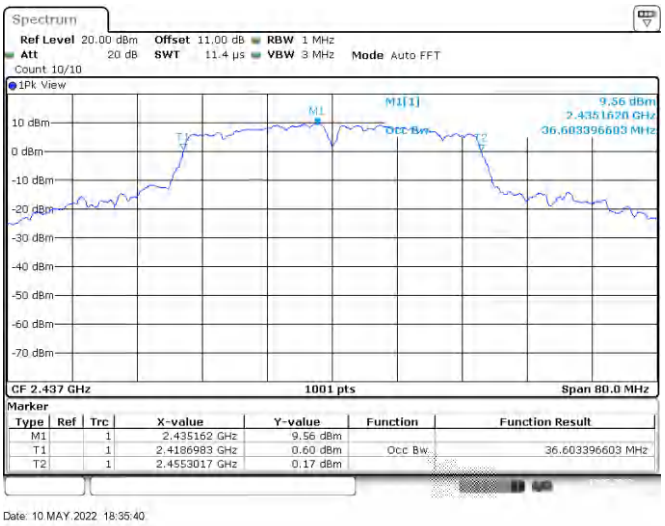
Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	
		Chain 0	Chain 1
Low Channel	2422	36.28	36.44
Middle Channel	2437	36.60	36.28
High Channel	2452	36.76	36.36

<Chain 0>

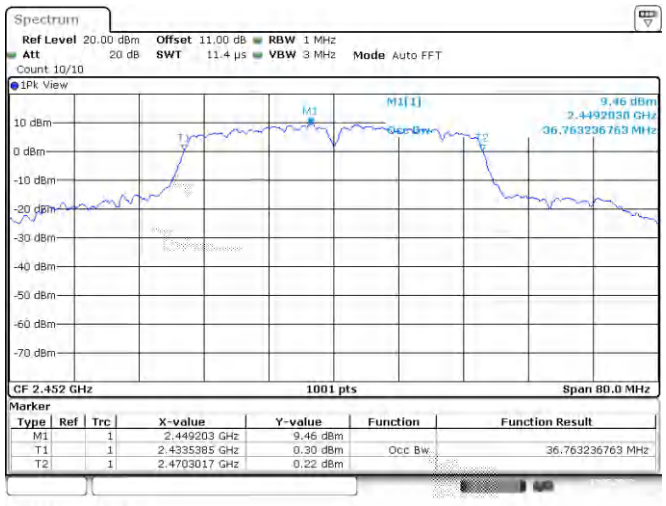
Low Channel



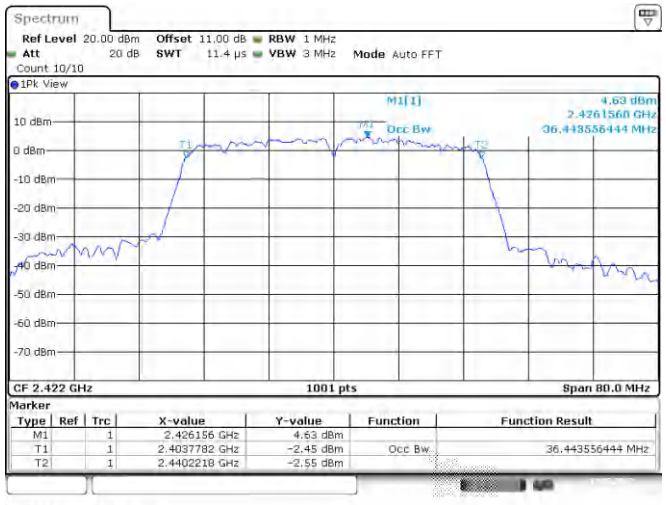
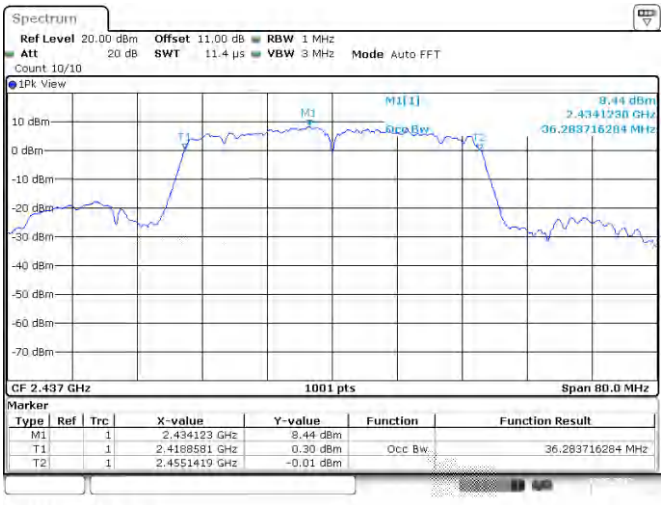
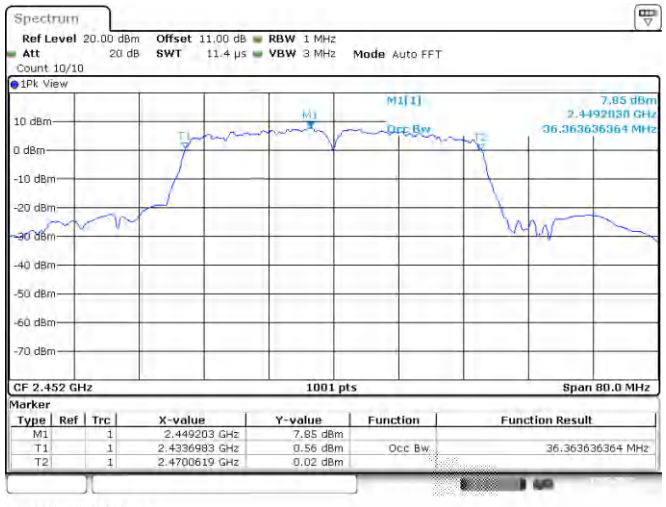
Middle Channel



High Channel



<Chain 1>

Low Channel	Middle Channel
	
High Channel	
	

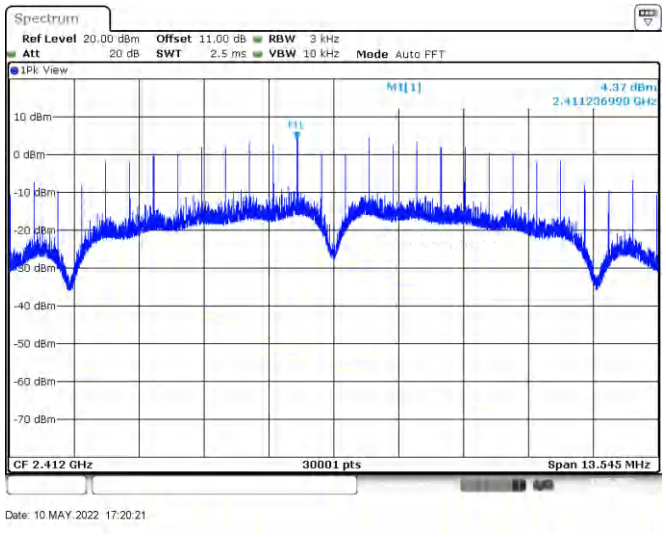
Test Result of Power Spectral Density

802.11b: 2TX

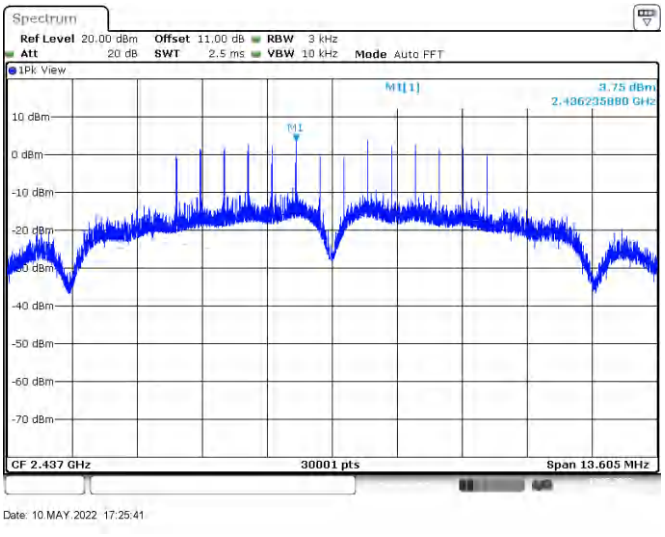
Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)
		Chain 0	Chain 1		
Low Channel	2412	4.37	3.69	7.05	8
Middle Channel	2437	3.75	3.45	6.61	8
High Channel	2462	4.01	4.04	7.04	8

<Chain 0>

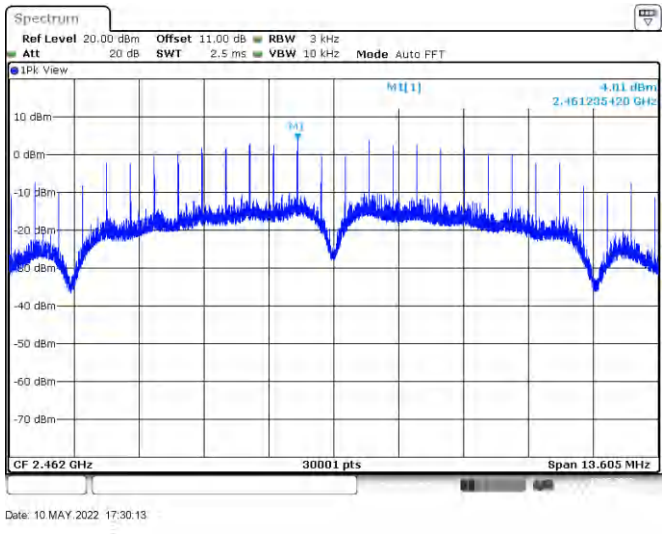
Low Channel



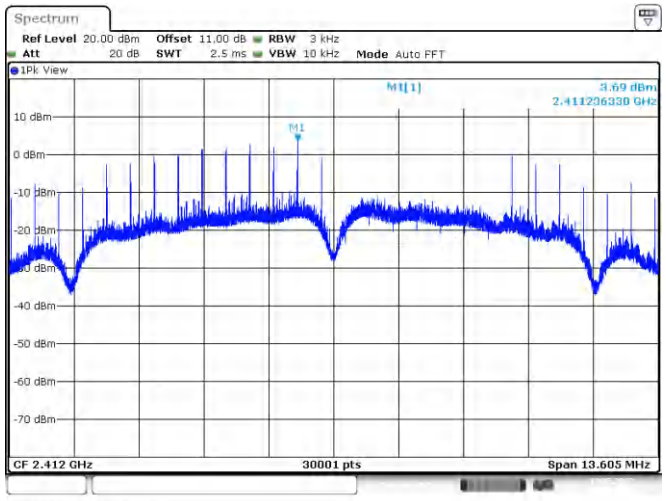
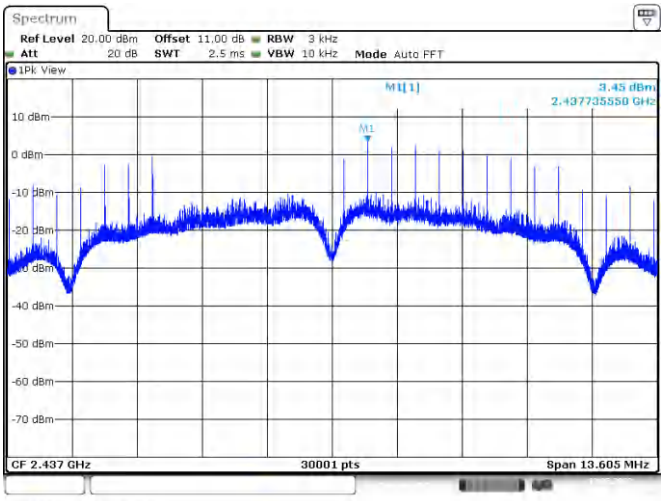
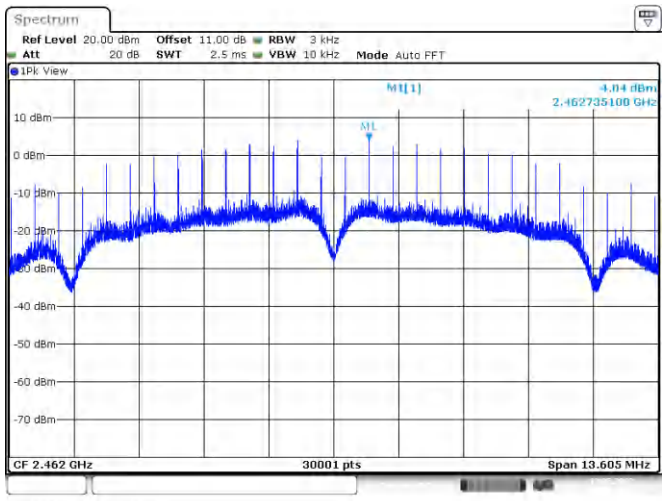
Middle Channel



High Channel



<Chain 1>

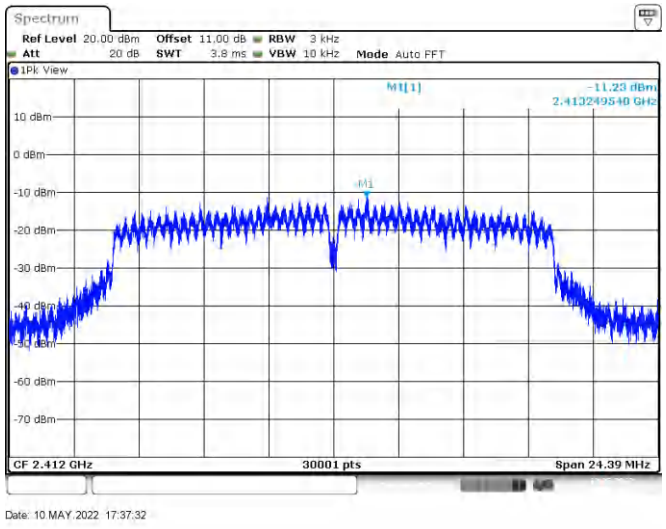
Low Channel	Middle Channel
	
High Channel	
	

802.11g: 2TX

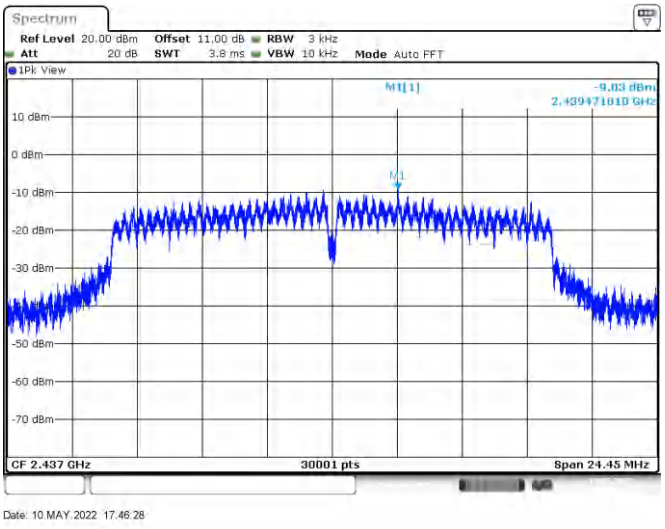
Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)
		Chain 0	Chain 1		
Low Channel	2412	-11.23	-11.73	-8.46	8
Middle Channel	2437	-9.03	-11.95	-7.24	8
High Channel	2462	-10.33	-9.60	-6.94	8

<Chain 0>

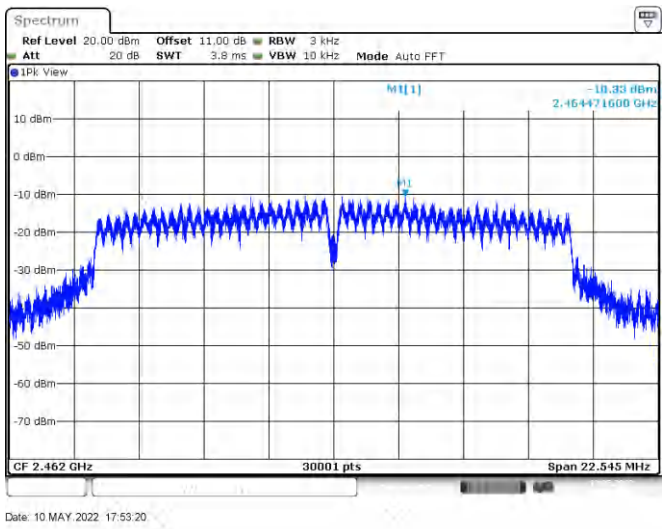
Low Channel



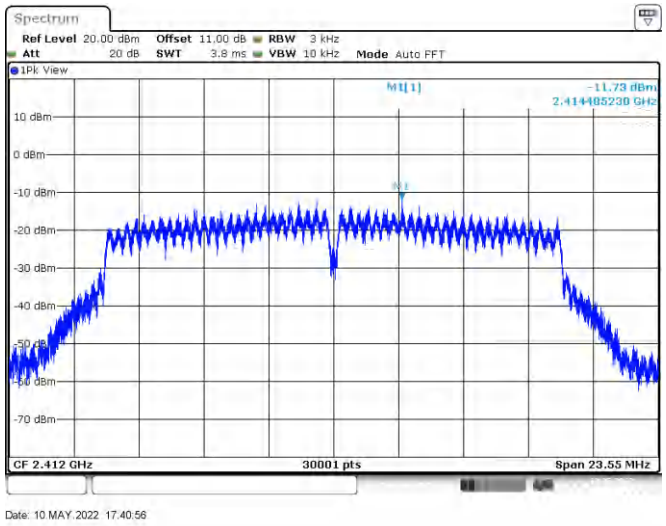
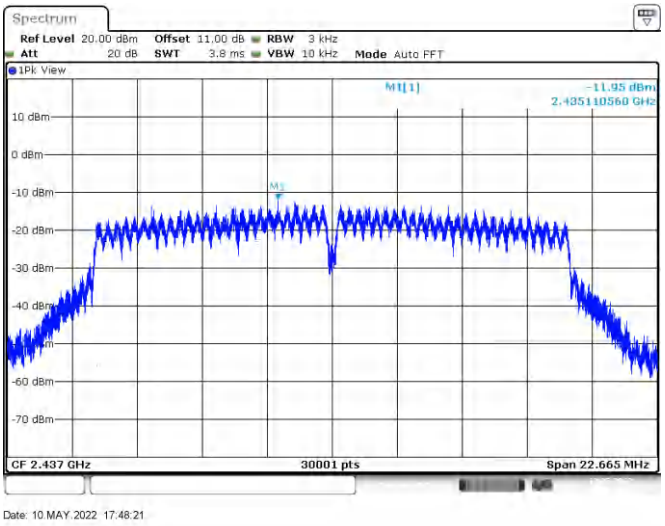
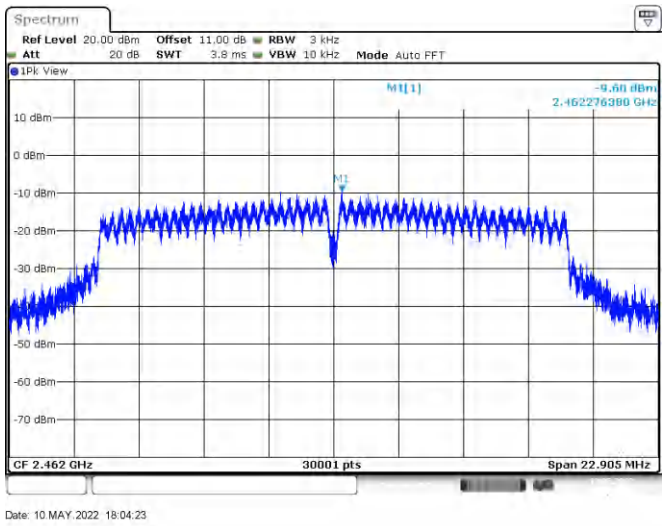
Middle Channel



High Channel



<Chain 1>

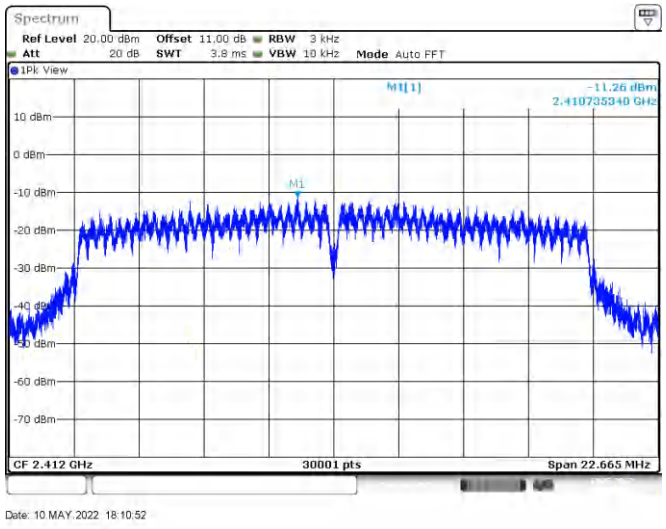
Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT20: 2TX

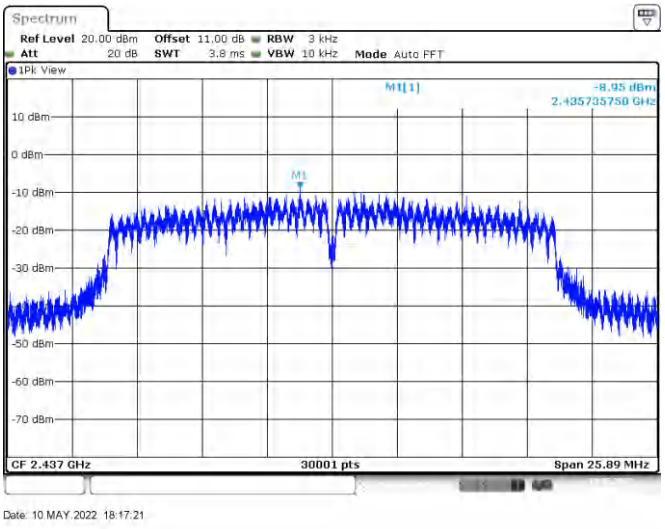
Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)
		Chain 0	Chain 1		
Low Channel	2412	-11.26	-12.40	-8.78	8
Middle Channel	2437	-8.95	-8.24	-5.57	8
High Channel	2462	-8.54	-8.56	-5.54	8

<Chain 0>

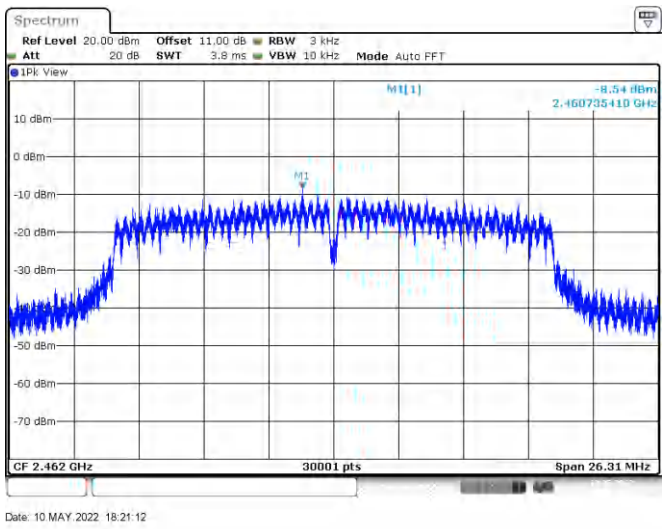
Low Channel



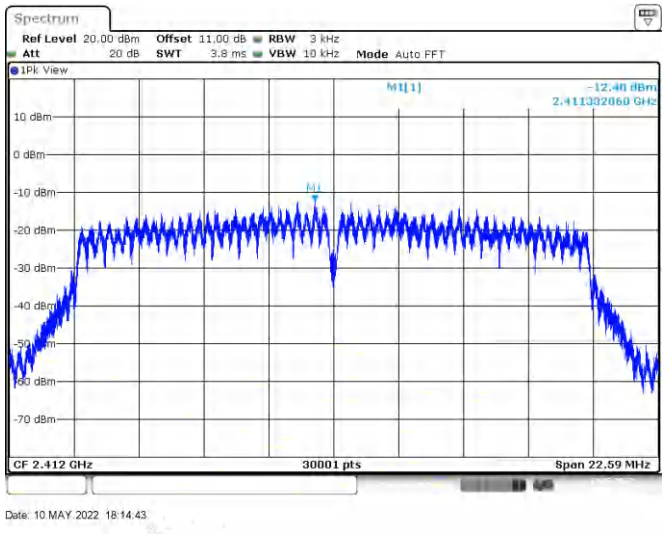
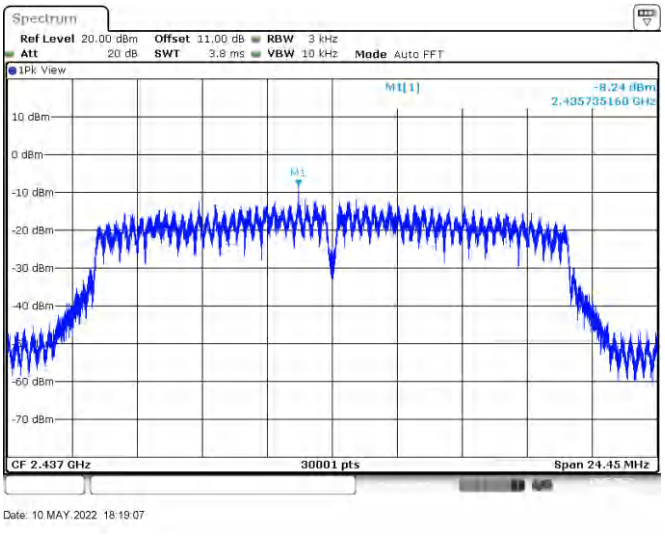
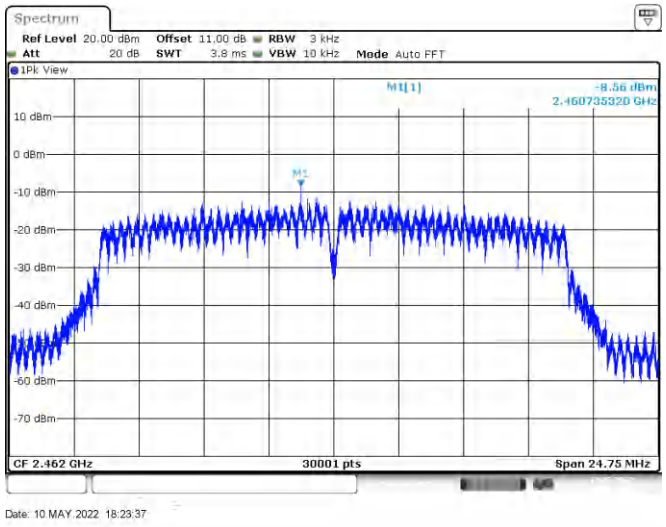
Middle Channel



High Channel



<Chain 1>

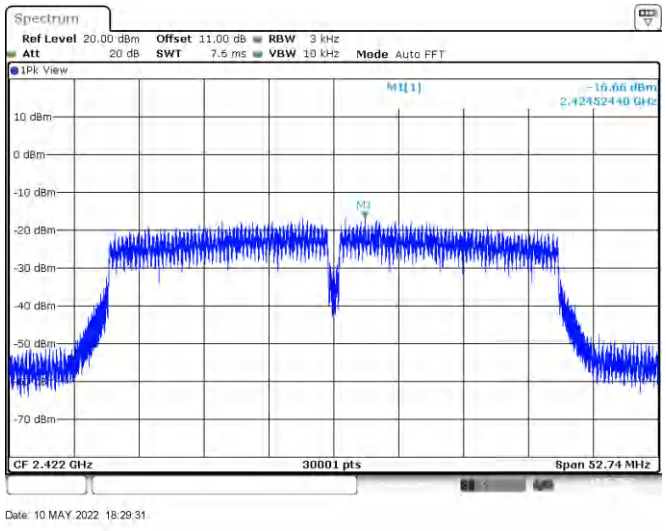
Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT40: 2TX

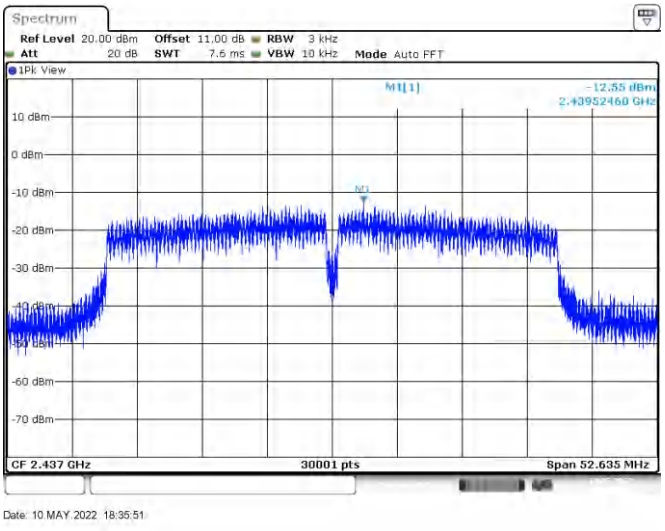
Channel	Channel Frequency (MHz)	Power Density (dBm/3kHz)		Total PSD (dBm/3kHz)	Limit (dBm/3kHz)
		Chain 0	Chain 1		
Low Channel	2412	-16.66	-18.74	-14.57	8
Middle Channel	2437	-12.55	-15.32	-10.71	8
High Channel	2462	-13.80	-15.89	-11.71	8

<Chain 0>

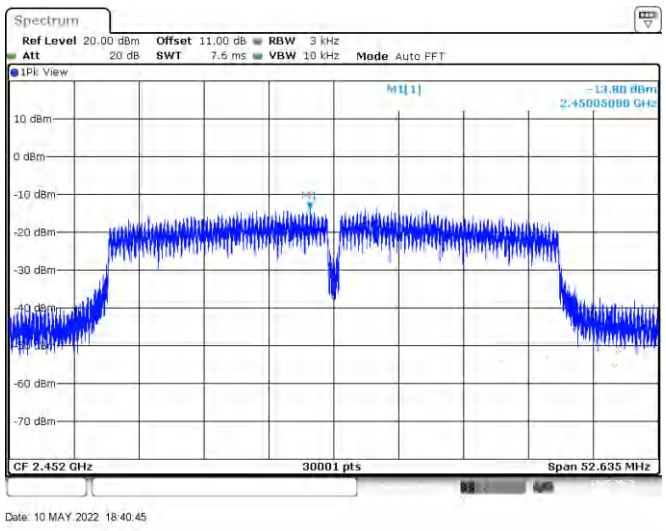
Low Channel



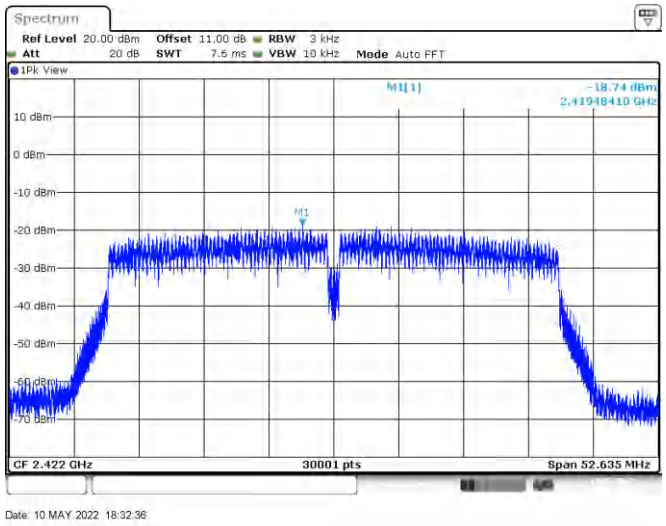
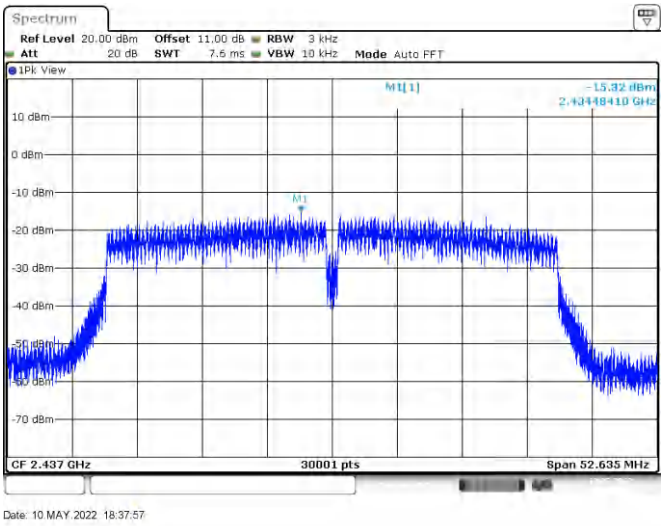
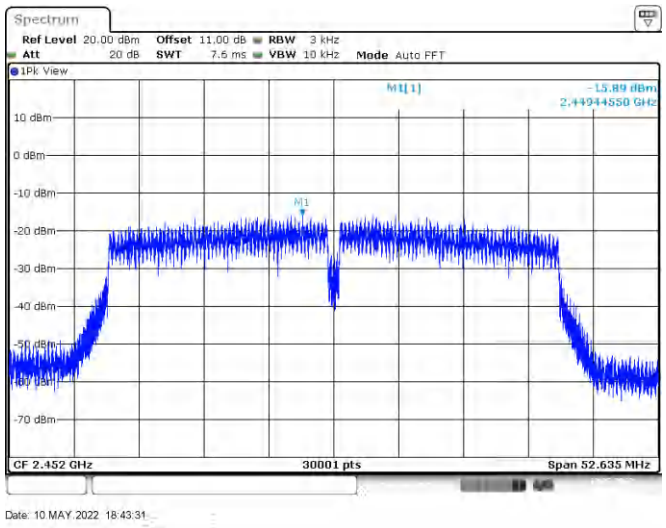
Middle Channel



High Channel



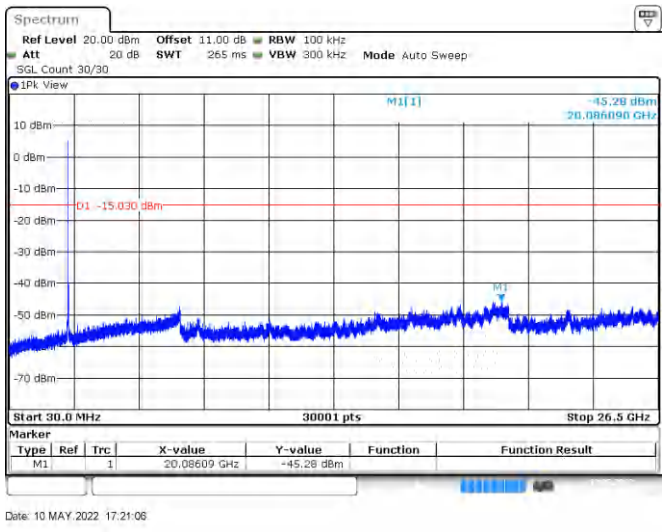
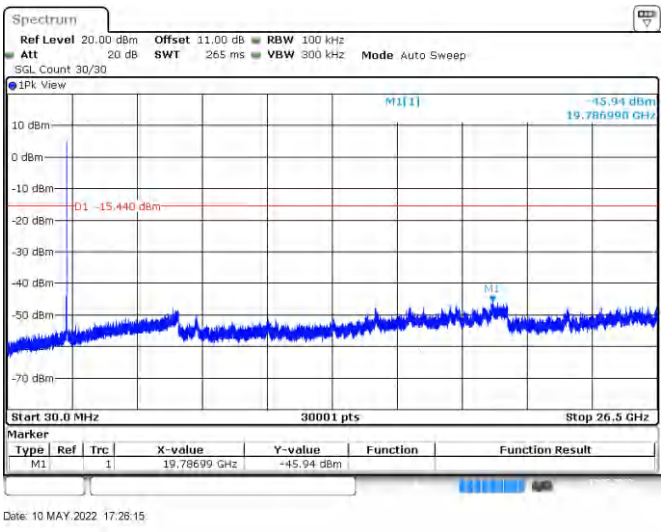
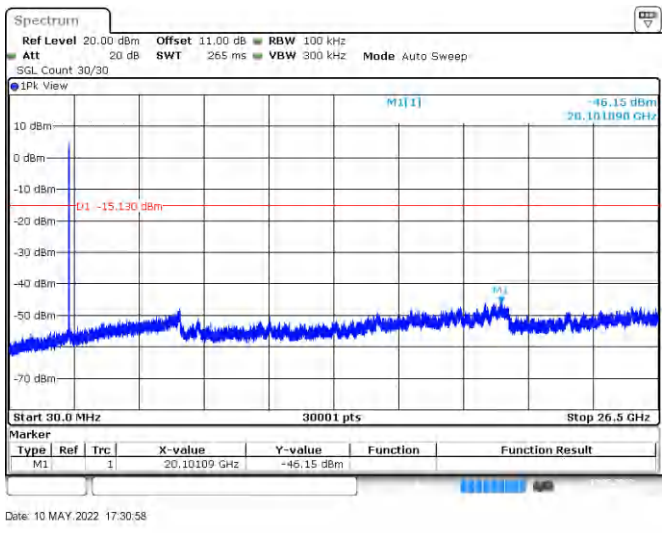
<Chain 1>

Low Channel	Middle Channel
	
High Channel	
	

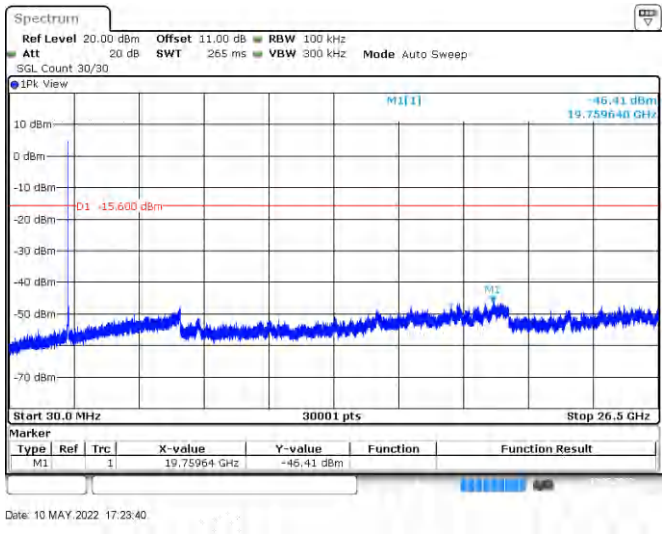
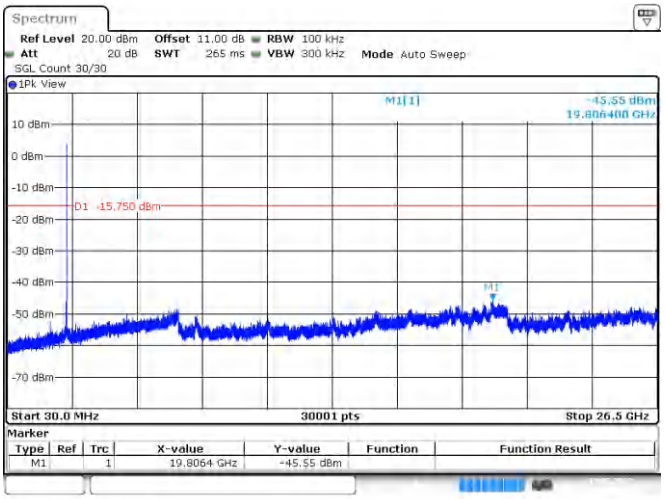
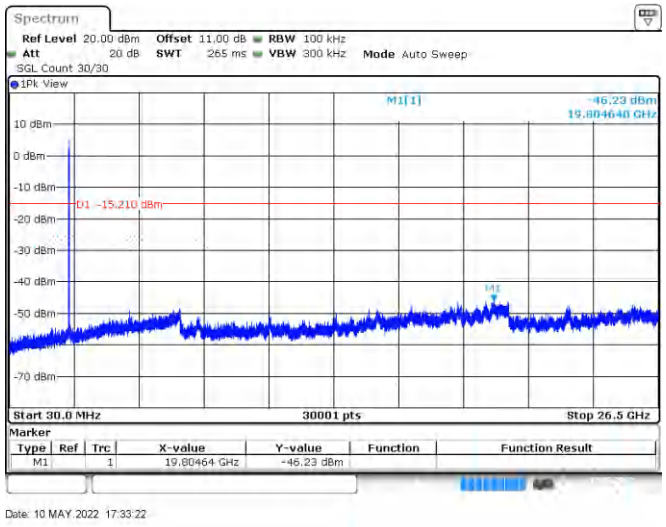
Test Result of Conducted Spurious Emissions

802.11b: 2TX

<Chain 0>

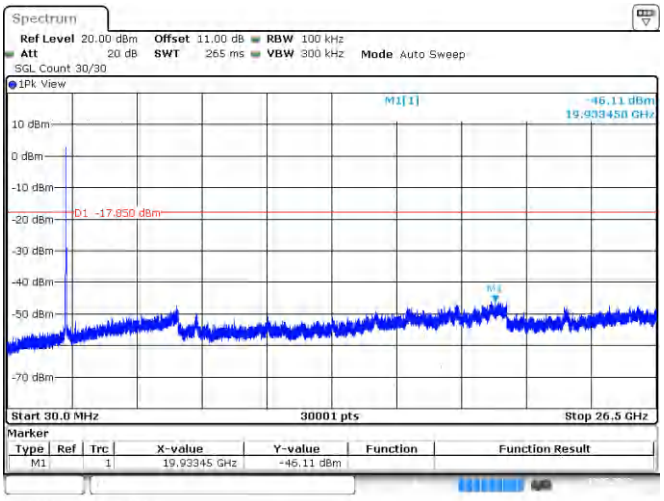
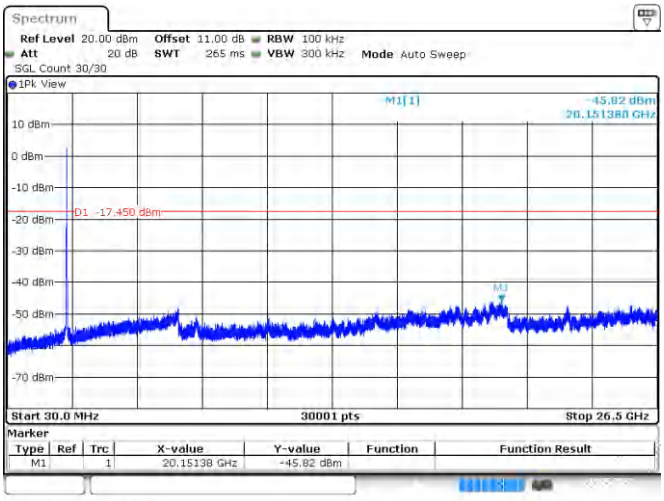
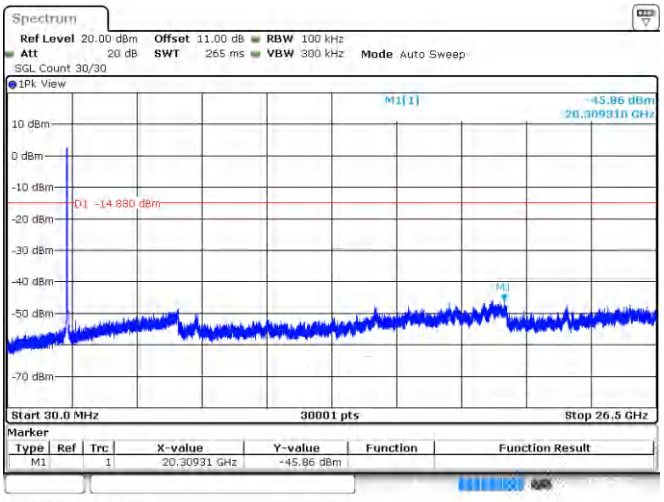
Low Channel	Middle Channel
	
High Channel	
	

<Chain 1>

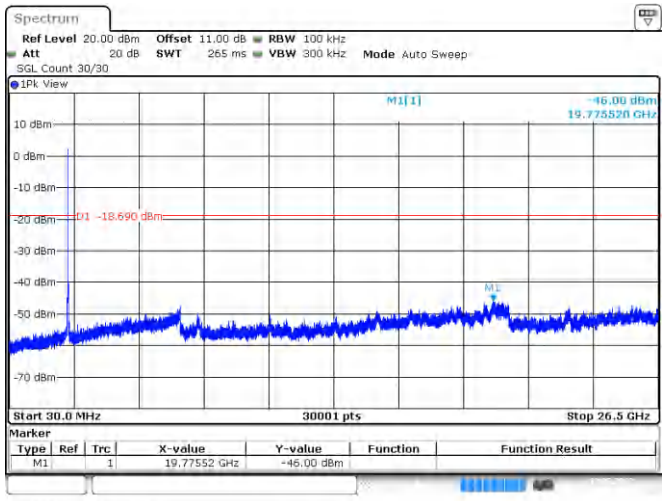
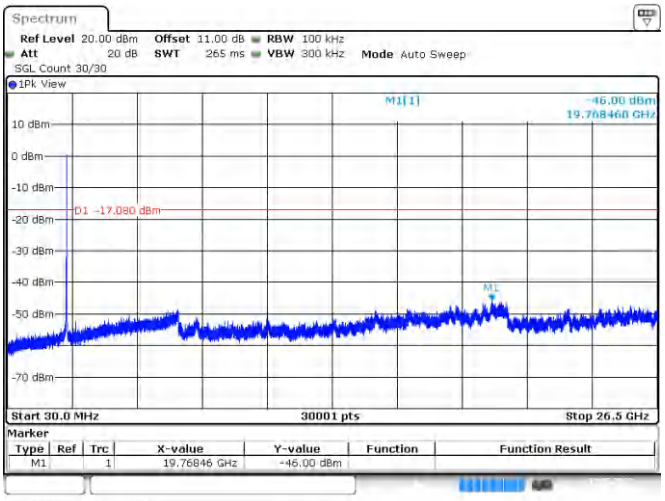
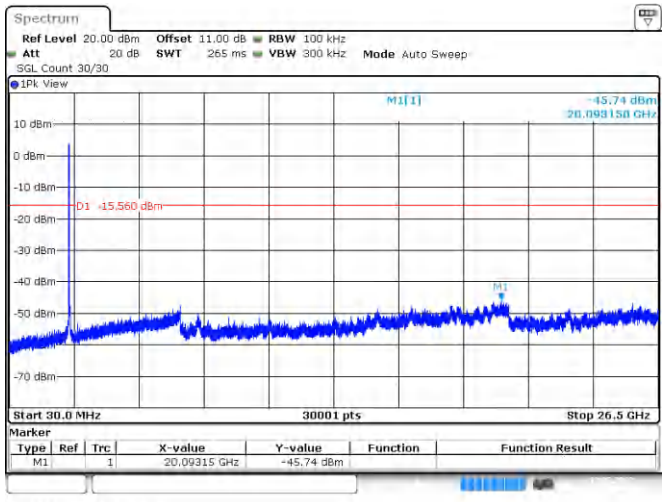
Low Channel	Middle Channel
	
High Channel	
	

802.11g: 2TX

<Chain 0>

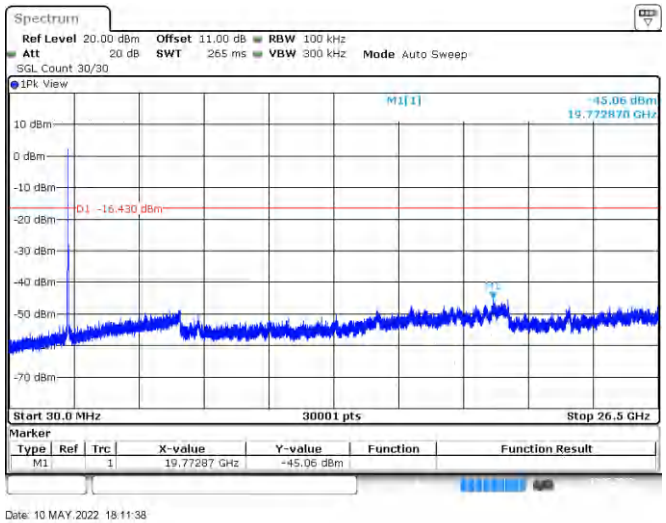
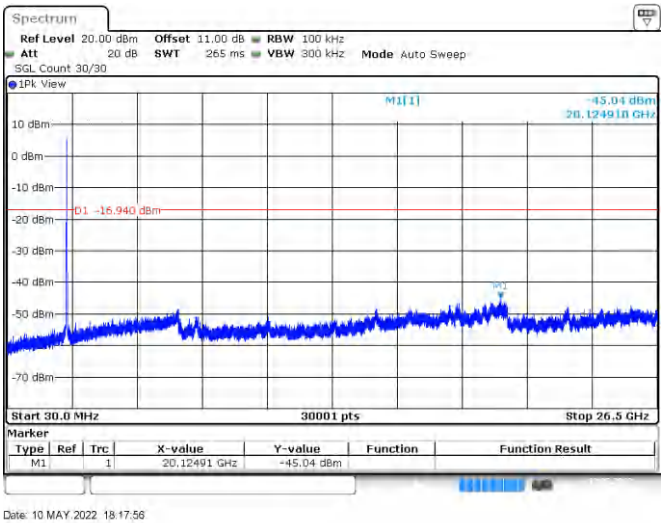
Low Channel	Middle Channel
	
High Channel	
	

<Chain 1>

Low Channel	Middle Channel
	
High Channel	
	

802.11ac VHT20: 2TX

<Chain 0>

Low Channel	Middle Channel
	
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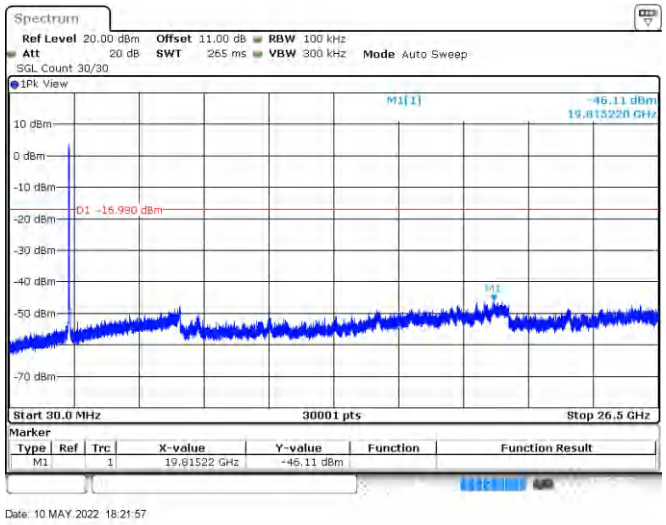
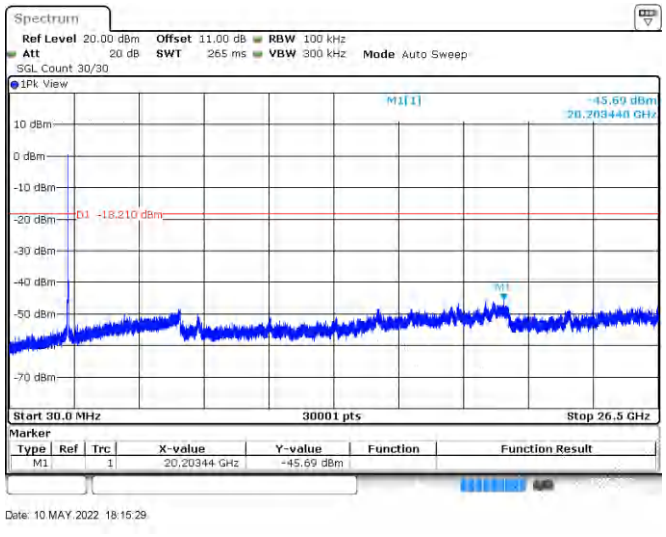
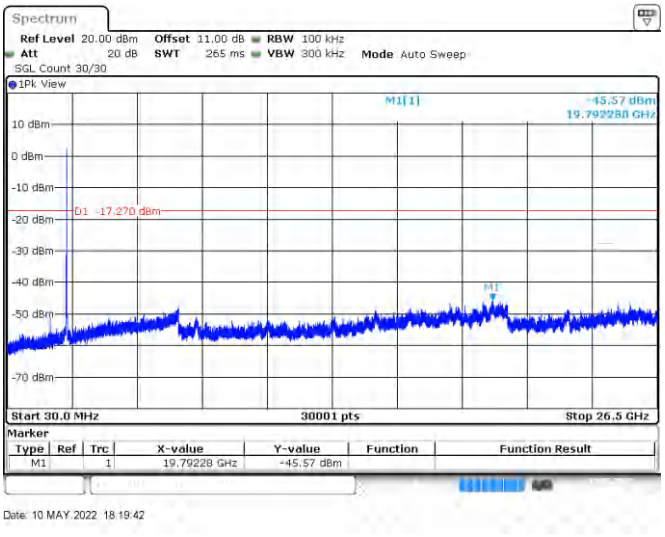
	

<Chain 1>

Low Channel	Middle Channel
	
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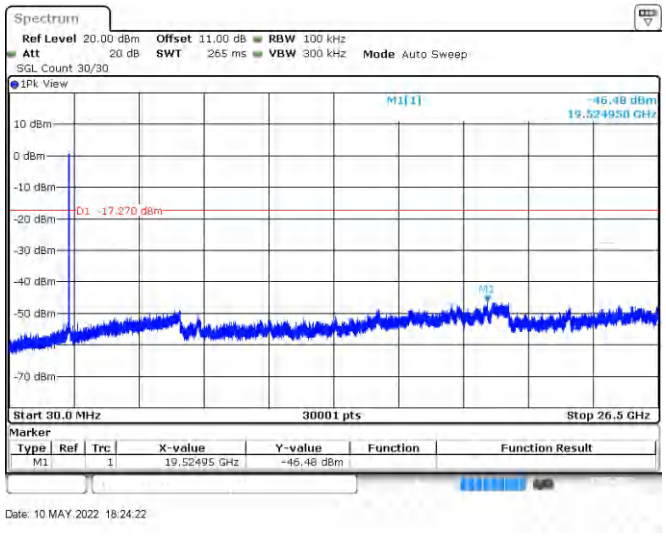	

802.11ac VHT40: 2TX

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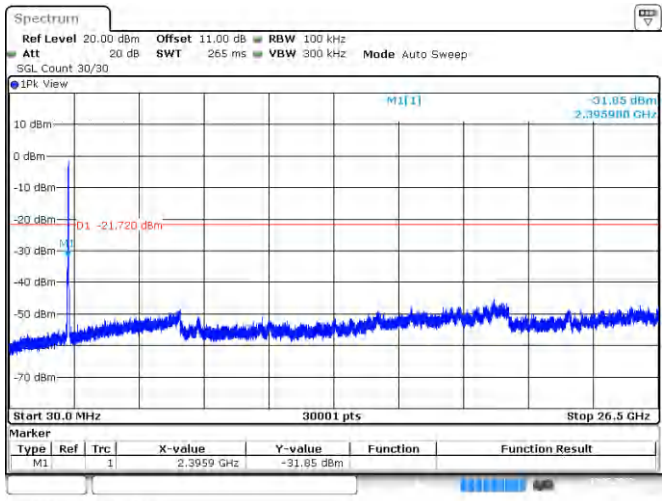
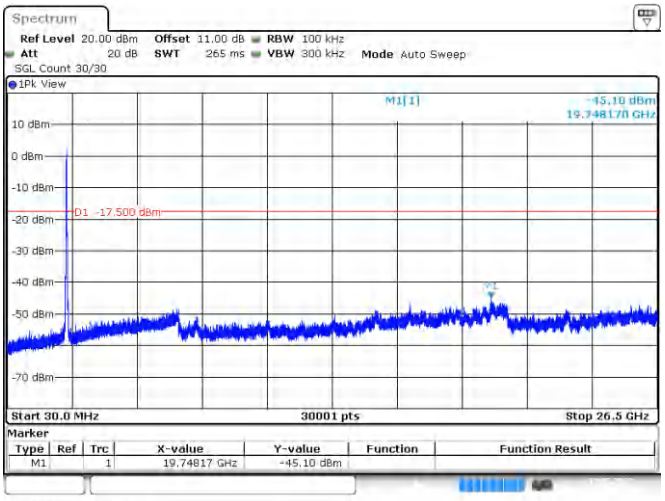
Low Channel	Middle Channel
	
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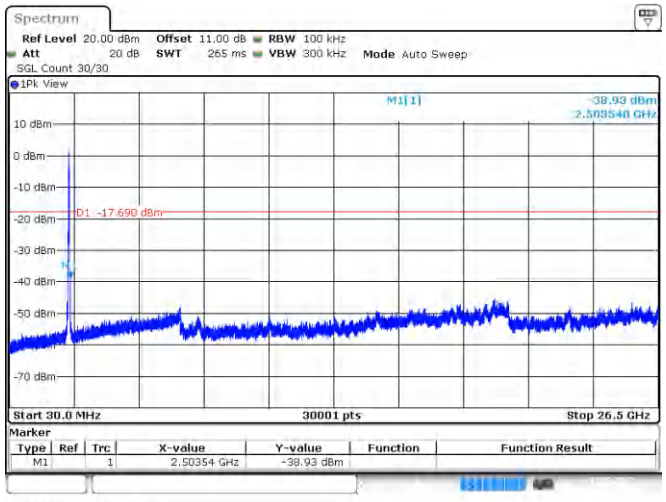
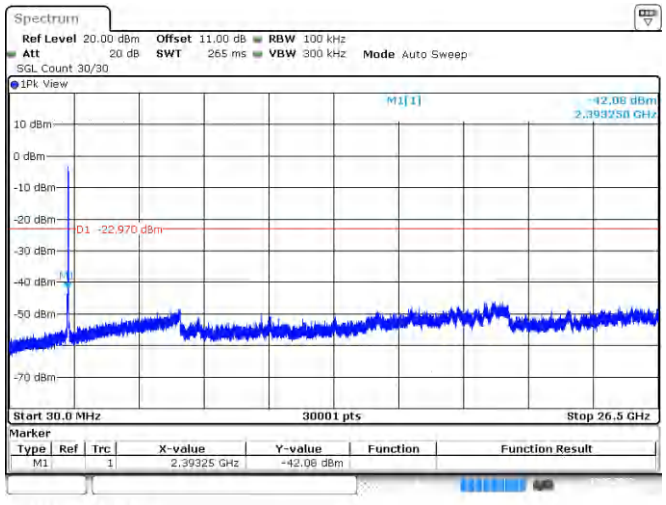
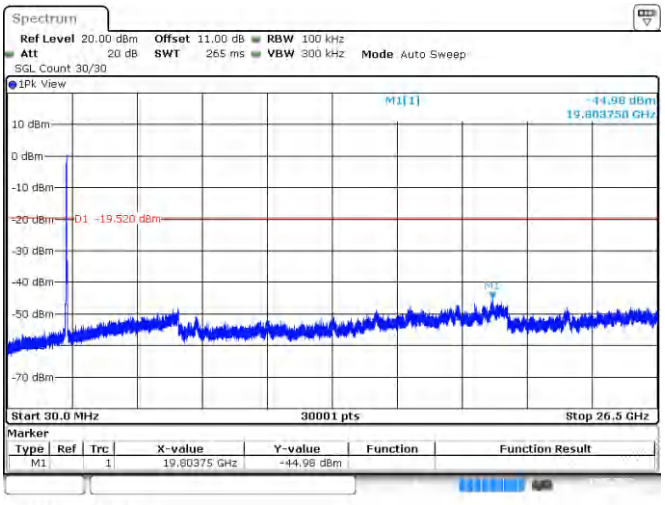
	

<Chain 1>

Low Channel	Middle Channel
	
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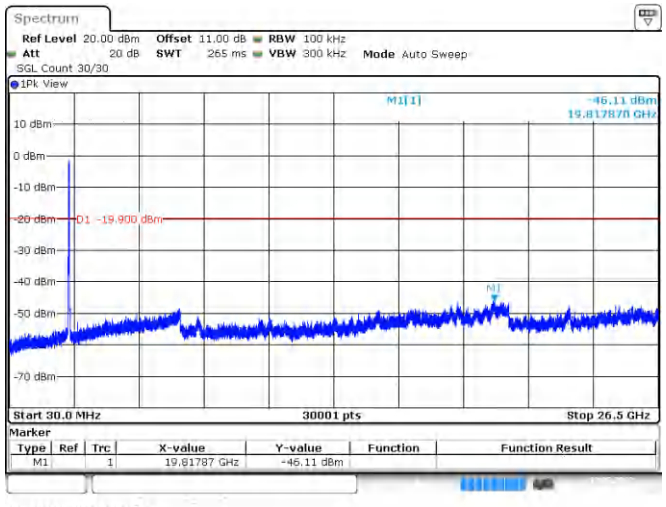	

Test Result of Conducted Bandedge, Tx Mode

802.11b: 2TX

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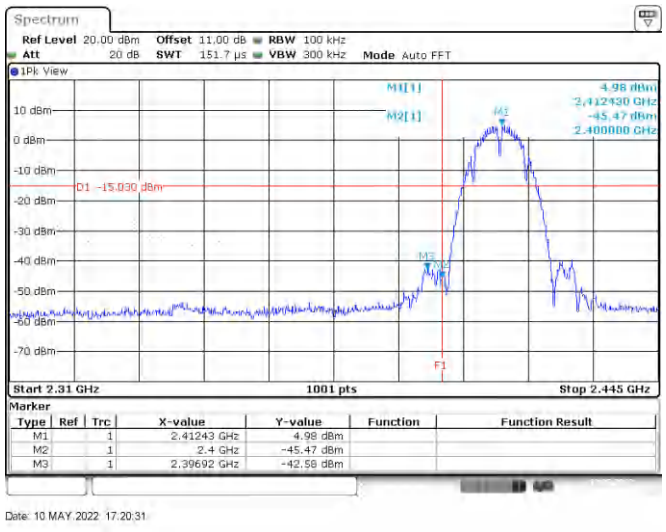
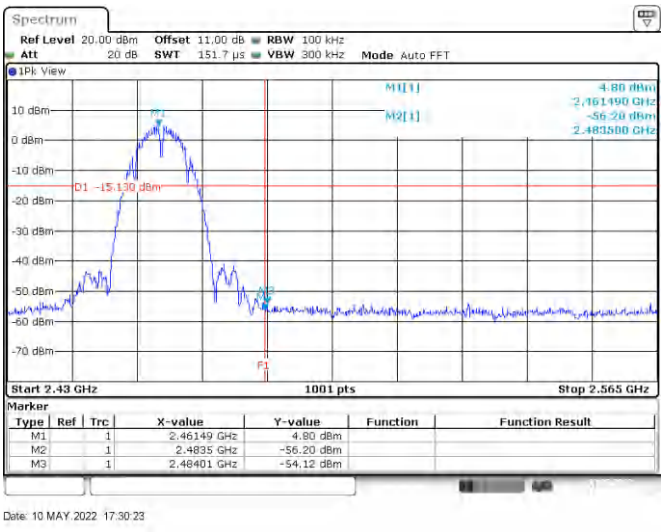
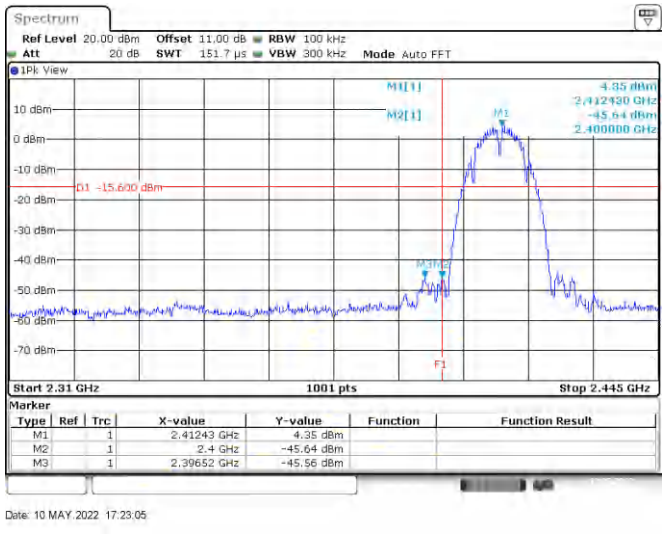
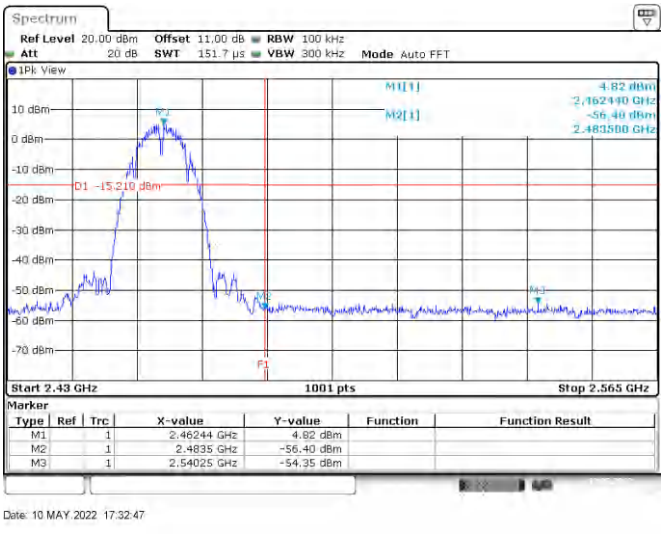
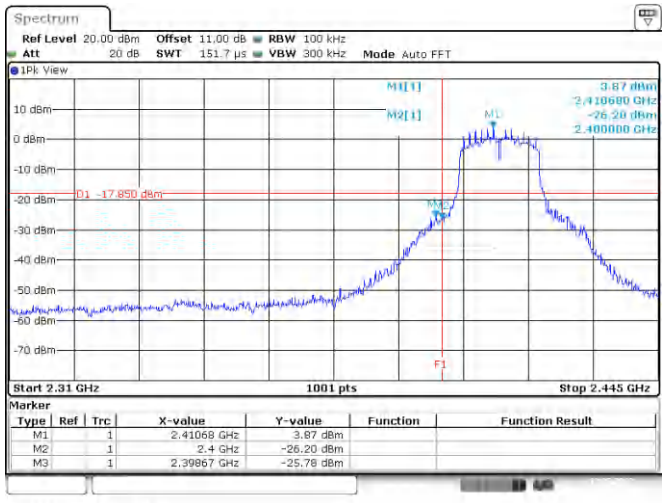
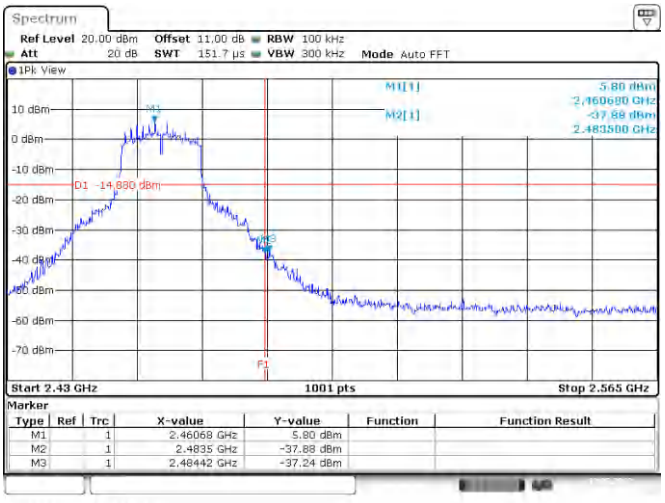
	

<Chain 1>

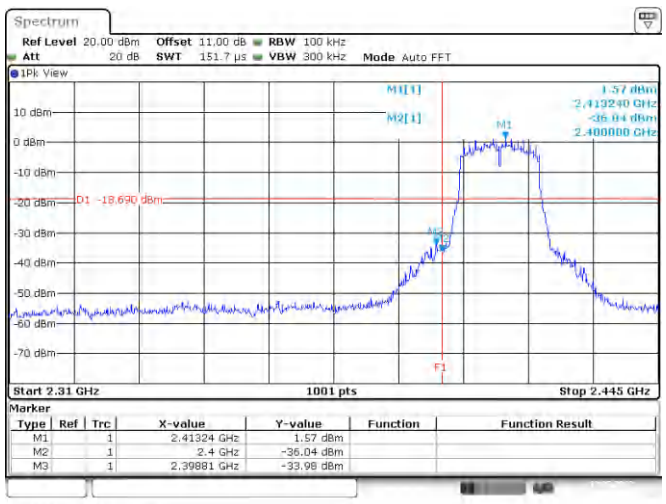
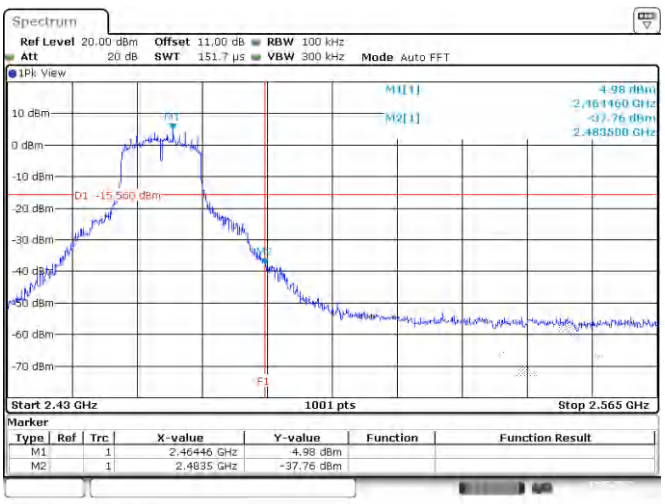
Low Channel	High Channel
	

802.11g

<Chain 0>

Low Channel	High Channel
	

<Chain 1>

Low Channel	High Channel
	

802.11ac VHT20: 2TX

<Chain 0>

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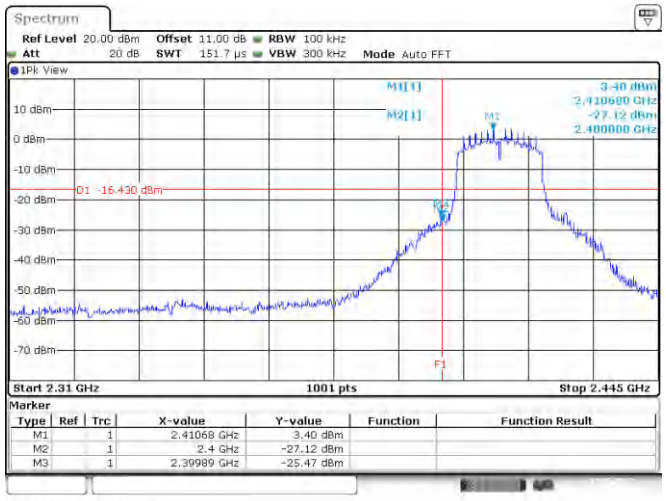
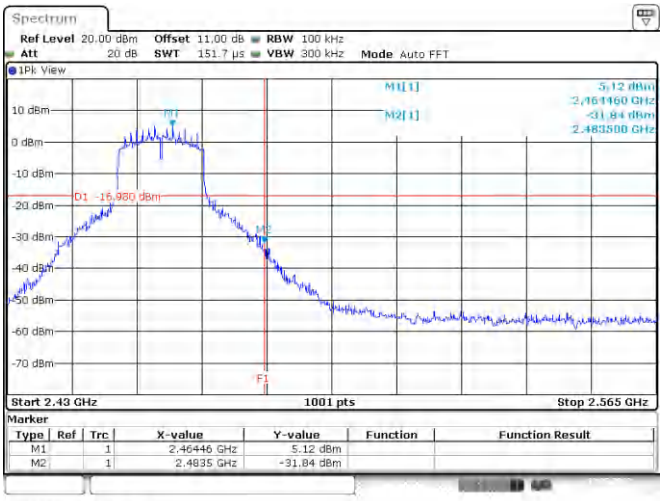
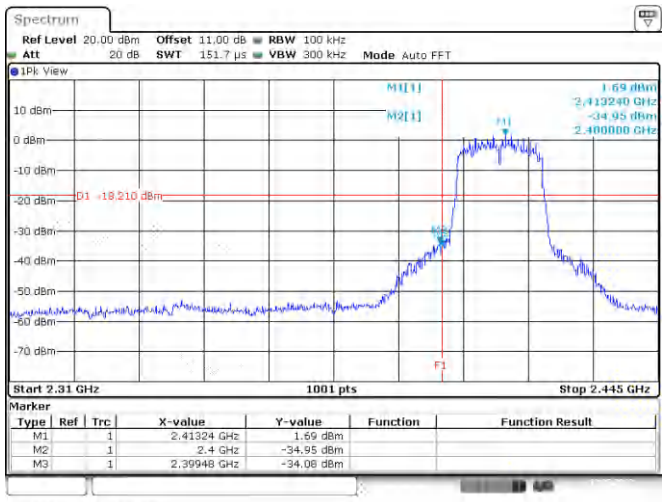
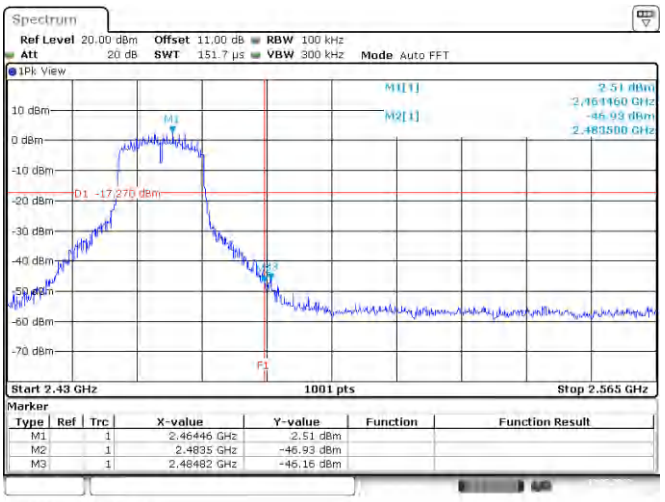
	

<Chain 1>

Low Channel	High Channel
	

802.11ac VHT40: 2TX

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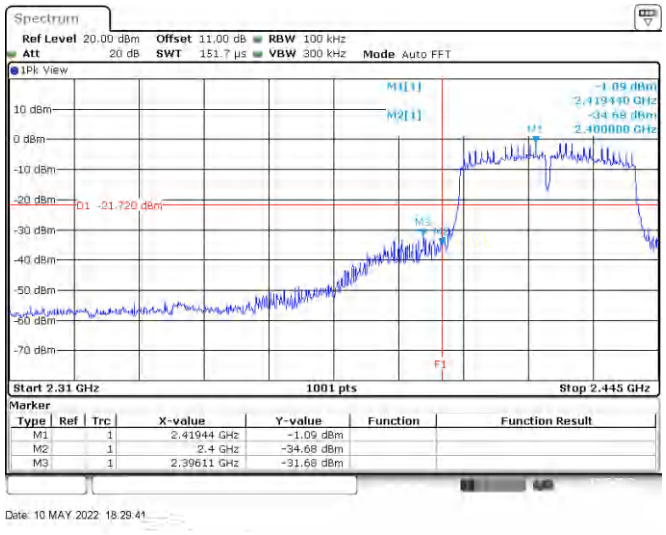
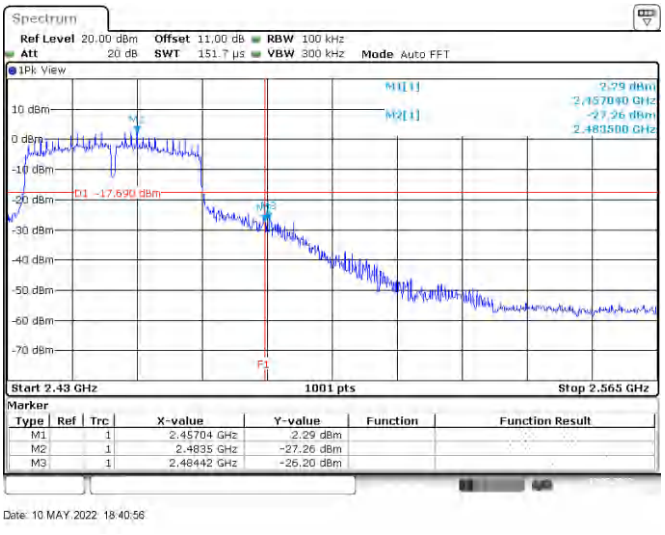
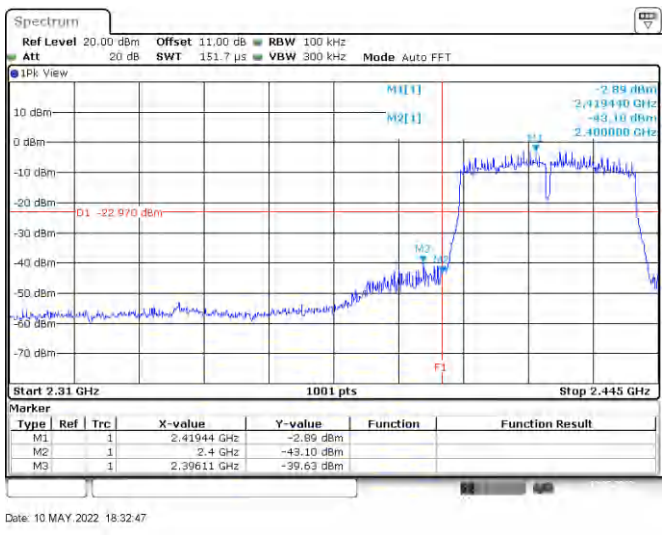
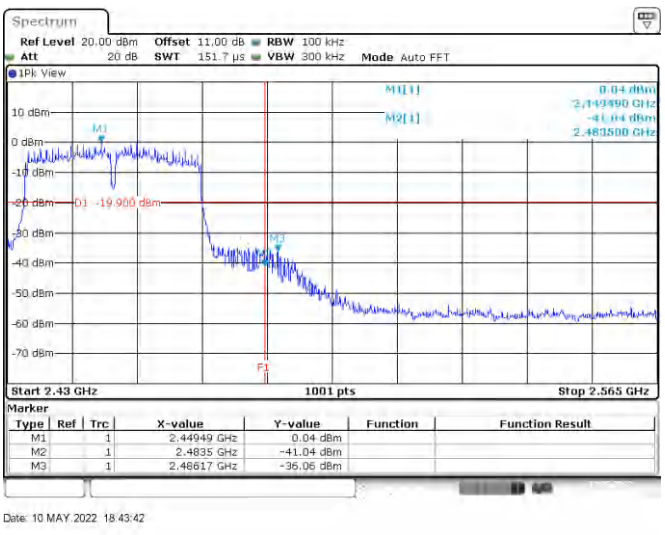
Low Channel	High Channel
	

<Chain 1>

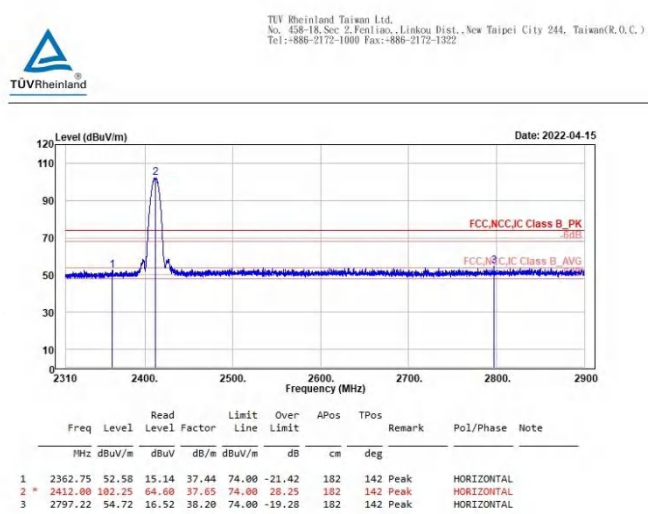
Low Channel	High Channel
	

Appendix B: Test Results of Radiated Spurious Emissions & Mains

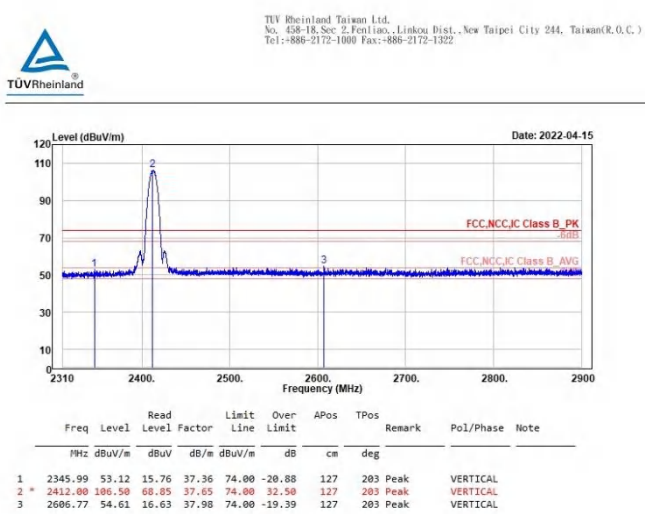
Conducted Emission Test

Band Edges, 2.31GHz ~ 2.9GHz

802.11b	
Low Channel (Horizontal) Peak	**Low Channel (Vertical) Peak**



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2362.75	52.58	15.14	37.44	74.00	-21.42	182	142	Peak	HORIZONTAL	
2 *	2412.00	102.25	64.60	37.65	74.00	28.25	182	142	Peak	HORIZONTAL	
3	2797.22	54.72	16.52	38.20	74.00	-19.28	182	142	Peak	HORIZONTAL	

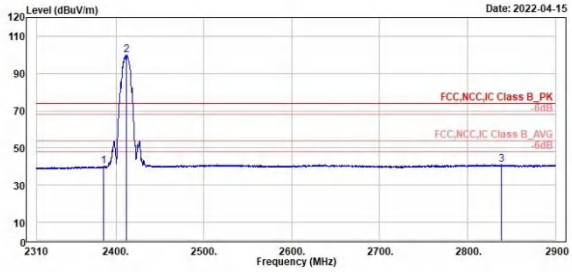


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2345.99	53.12	15.76	37.36	74.00	-20.88	127	203	Peak	VERTICAL	
2 *	2412.00	106.50	68.85	37.65	74.00	32.50	127	203	Peak	VERTICAL	
3	2606.77	54.61	16.63	37.98	74.00	-19.39	127	203	Peak	VERTICAL	

802.11b

Low Channel (Horizontal) Average

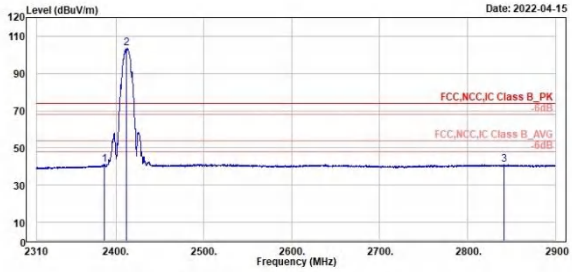
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.46	40.35	2.78	37.57	54.00	-13.65	182	142	Average	HORIZONTAL	
2 *	2412.00	99.89	62.24	37.65	54.00	45.89	182	142	Average	HORIZONTAL	
3	2838.17	41.10	2.93	38.17	54.00	-12.90	182	142	Average	HORIZONTAL	

Low Channel (Vertical) Average

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.82	41.13	3.56	37.57	54.00	-12.87	127	203	Average	VERTICAL	
2 *	2412.00	103.77	66.12	37.65	54.00	49.77	127	203	Average	VERTICAL	
3	2841.71	41.23	3.06	38.17	54.00	-12.77	127	203	Average	VERTICAL	

802.11b

High Channel (Horizontal) Peak

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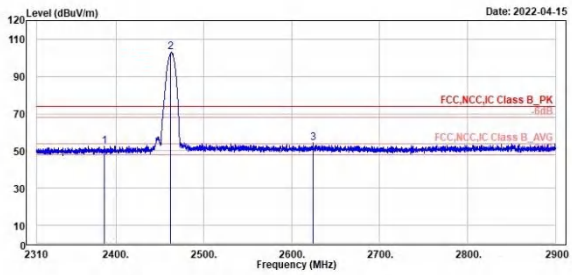
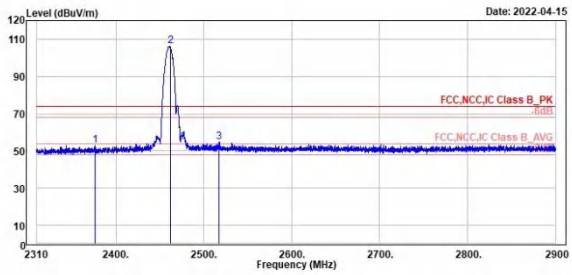
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2387.05	52.56	14.99	37.57	74.00	-21.44	197	176	Peak	Horizontal	
2 *	2462.00	102.97	65.24	37.73	74.00	28.97	197	176	Peak	Horizontal	
3	2624.12	54.12	16.12	38.00	74.00	-19.88	197	176	Peak	Horizontal	

High Channel (Vertical) Peak

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

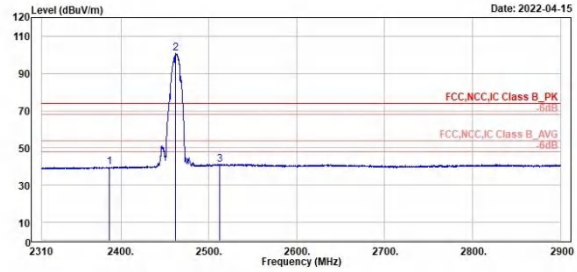


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2376.32	53.08	15.57	37.51	74.00	-20.92	146	211	Peak	VERTICAL	
2 *	2462.00	106.17	68.44	37.73	74.00	32.17	146	211	Peak	VERTICAL	
3	2517.68	54.84	16.97	37.87	74.00	-19.16	146	211	Peak	VERTICAL	

802.11b

High Channel (Horizontal) Average

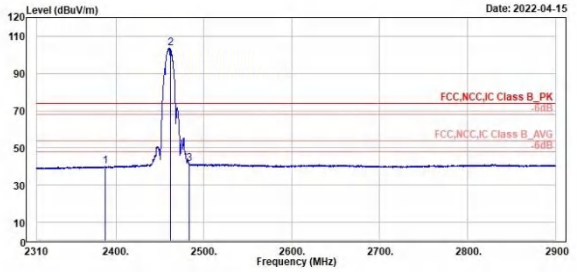
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2387.17	39.70	2.13	37.57	54.00	-14.30	197	176	Average	Horizontal	
2 *	2462.00	100.63	62.90	37.73	54.00	46.63	197	176	Average	Horizontal	
3	2512.49	41.14	3.28	37.86	54.00	-12.86	197	176	Average	Horizontal	

High Channel (Vertical) Average

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

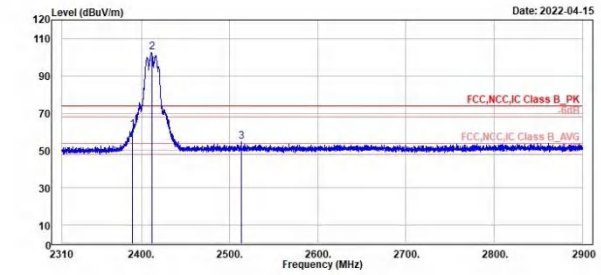


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2387.64	40.21	2.64	37.57	54.00	-13.79	146	211	Average	VERTICAL	
2 *	2462.00	103.58	65.85	37.73	54.00	49.58	146	211	Average	VERTICAL	
3	2483.46	41.50	3.70	37.80	54.00	-12.50	146	211	Average	VERTICAL	

802.11g

Low Channel (Horizontal) Peak

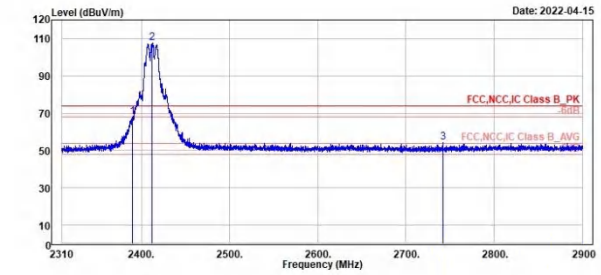
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.65	61.27	23.69	37.58	74.00	-12.73	213	205	Peak	Horizontal	
2 *	2412.00	102.65	65.00	37.65	74.00	28.65	213	205	Peak	Horizontal	
3	2513.08	54.54	16.67	37.87	74.00	-19.46	213	205	Peak	Horizontal	

Low Channel (Vertical) Peak

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

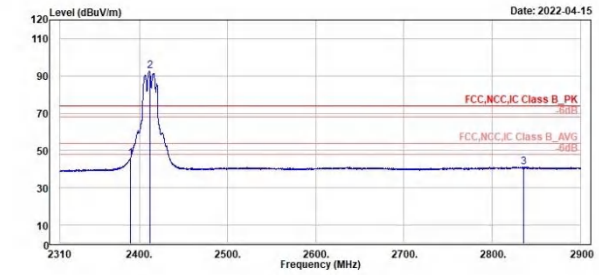


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.53	67.85	30.27	37.58	74.00	-6.15	100	204	Peak	Vertical	
2 *	2412.00	107.61	69.96	37.65	74.00	33.61	100	204	Peak	Vertical	
3	2741.76	54.39	16.28	38.11	74.00	-19.61	100	204	Peak	Vertical	

802.11g

Low Channel (Horizontal) Average

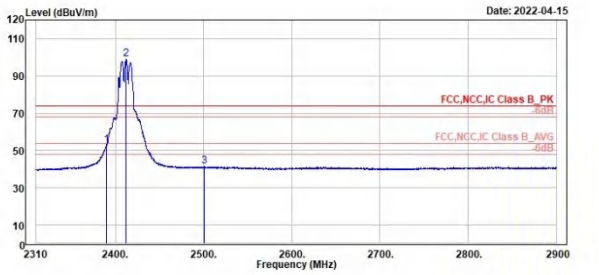
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2390.00	45.67	8.09	37.58	54.00	-8.33	213	205	Average	Horizontal	
2 *	2412.00	92.82	55.17	37.65	54.00	38.82	213	205	Average	Horizontal	
3	2835.81	41.10	2.92	38.18	54.00	-12.90	213	205	Average	Horizontal	

Low Channel (Vertical) Average

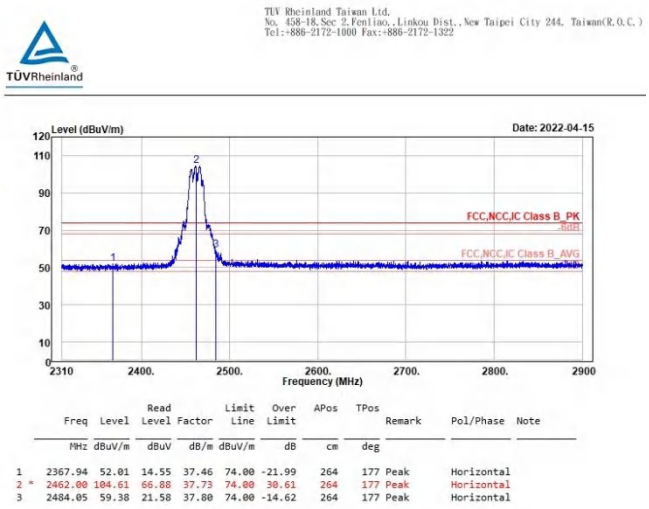
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2390.00	52.97	15.39	37.58	54.00	-1.03	100	204	Average	Vertical	
2 *	2412.00	98.99	61.34	37.65	54.00	44.99	100	204	Average	Vertical	
3	2500.92	41.31	3.46	37.85	54.00	-12.69	100	204	Average	Vertical	

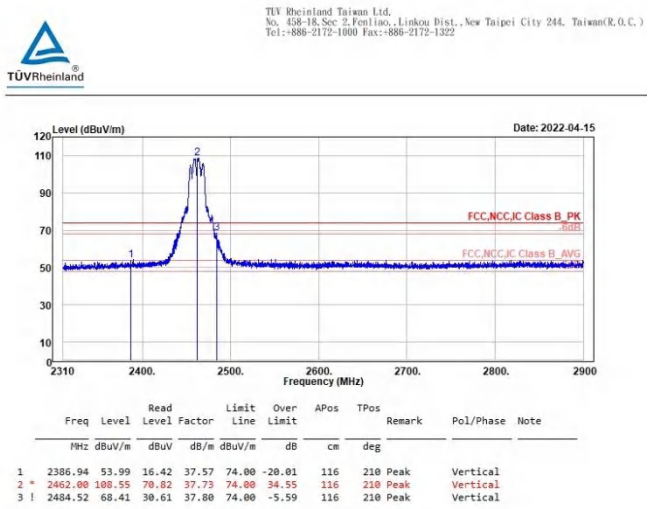
802.11g

High Channel (Horizontal) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2367.94	52.01	14.55	37.46	74.00	-21.99	264	177	Peak	Horizontal	
2 *	2462.00	104.61	66.88	37.73	74.00	30.61	264	177	Peak	Horizontal	
3	2484.05	59.38	21.58	37.80	74.00	-14.62	264	177	Peak	Horizontal	

High Channel (Vertical) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2386.94	53.99	16.42	37.57	74.00	-20.01	116	210	Peak	Vertical	
2 *	2462.00	108.55	70.82	37.73	74.00	34.55	116	210	Peak	Vertical	
3 !	2484.52	68.41	30.61	37.80	74.00	-5.59	116	210	Peak	Vertical	

802.11g

High Channel (Horizontal) Average

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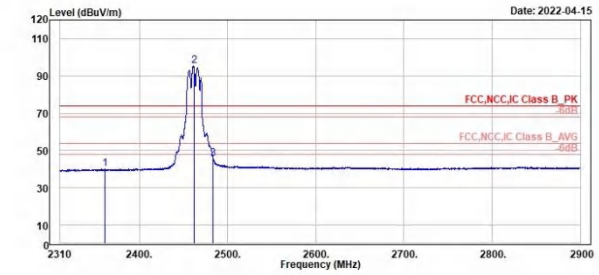

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2360.74	40.00	2.57	37.43	54.00	-14.00	264	177	Average	Horizontal	
2 *	2462.00	95.37	57.64	37.73	54.00	41.37	264	177	Average	Horizontal	
3	2483.46	45.81	8.01	37.80	54.00	-8.19	264	177	Average	Horizontal	

High Channel (Vertical) Average

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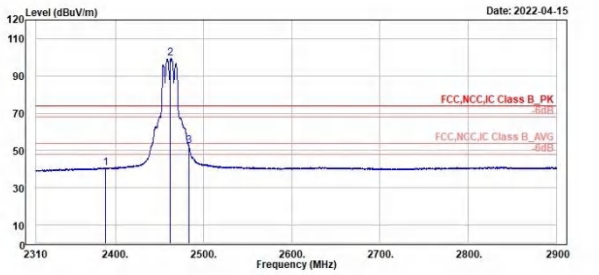
No. 458-18, Sec 2, Fenliao, , Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.18	40.71	3.13	37.58	54.00	-13.29	116	210	Average	Vertical	
2 *	2462.00	99.48	61.75	37.73	54.00	45.48	116	210	Average	Vertical	
3 !	2483.46	52.62	14.82	37.80	54.00	-1.38	116	210	Average	Vertical	

802.11ac VHT20

Low Channel (Horizontal) Peak

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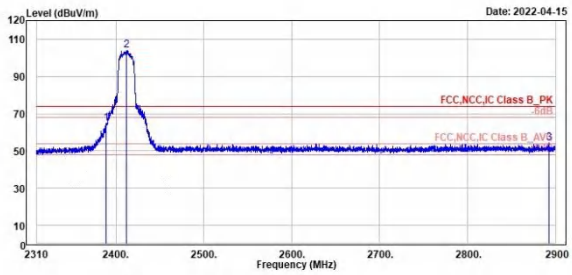
No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.06	64.94	27.36	37.58	74.00	-9.06	136	201	Peak	Horizontal	
2 *	2412.00	103.83	66.18	37.65	74.00	29.83	136	201	Peak	Horizontal	
3	2892.45	54.43	16.05	38.38	74.00	-19.57	136	201	Peak	Horizontal	

Low Channel (Vertical) Peak

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No. 458-18, Sec 2, Fenliao, Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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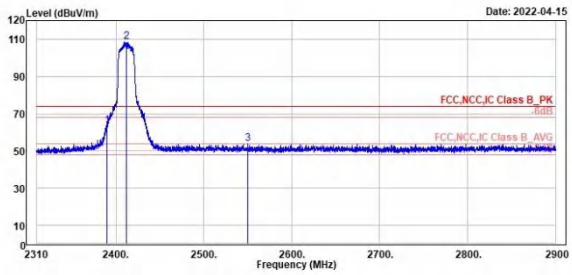

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.65	63.62	26.04	37.58	74.00	-10.38	288	202	Peak	VERTICAL	
2 *	2412.00	108.51	70.86	37.65	74.00	34.51	288	202	Peak	VERTICAL	
3	2550.01	53.63	15.72	37.91	74.00	-20.37	288	202	Peak	VERTICAL	

802.11ac VHT20

Low Channel (Horizontal) Average

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No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
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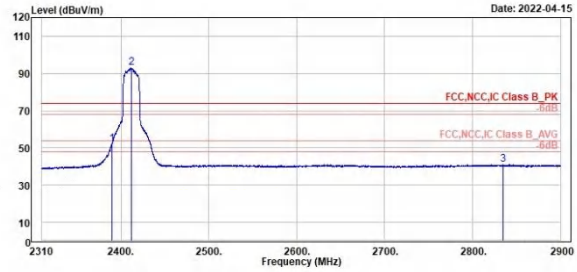
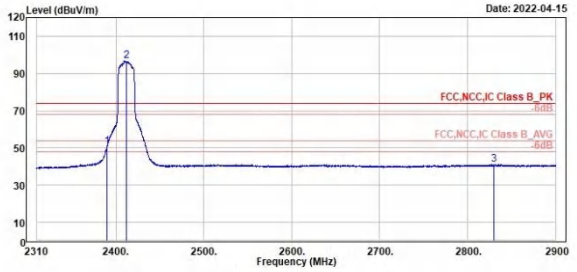


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2390.00	51.99	14.41	37.58	54.00	-2.01	136	201	Average	Horizontal	
2 *	2412.00	92.90	55.25	37.65	54.00	38.90	136	201	Average	Horizontal	
3	2834.39	41.06	2.89	38.17	54.00	-12.94	136	201	Average	Horizontal	

Low Channel (Vertical) Average

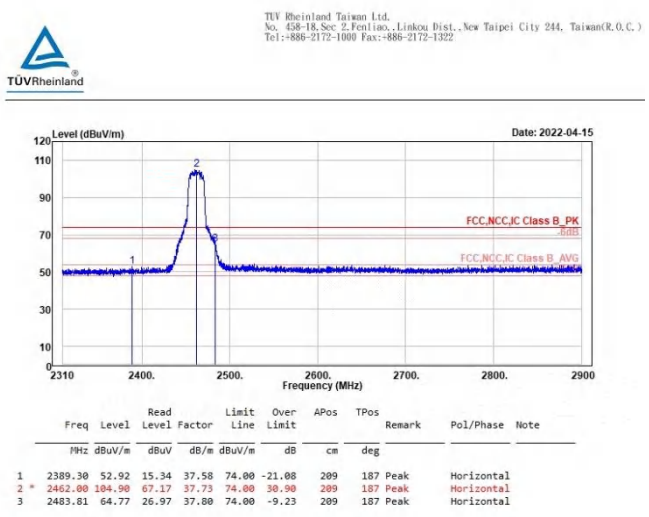
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2390.00	50.81	13.23	37.58	54.00	-3.19	288	202	Average	VERTICAL	
2 *	2412.00	96.80	59.15	37.65	54.00	42.80	288	202	Average	VERTICAL	
3	2829.67	41.07	2.89	38.18	54.00	-12.93	288	202	Average	VERTICAL	

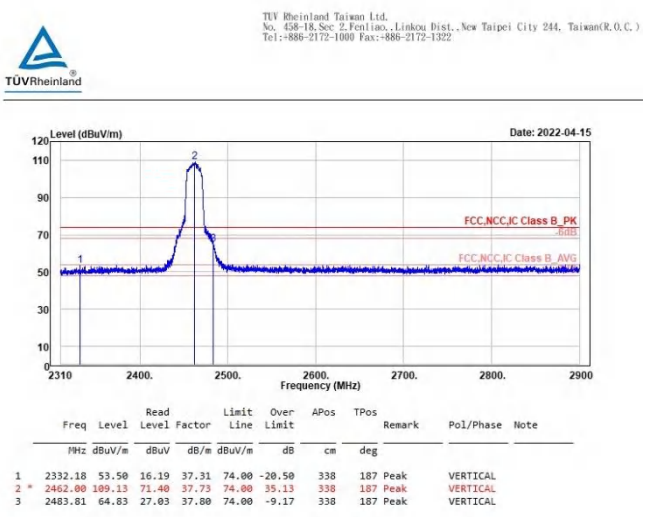
802.11ac VHT20

High Channel (Horizontal) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.30	52.92	15.34	37.58	74.00	-21.08	209	187	Peak	Horizontal	
2 *	2462.00	104.90	67.17	37.73	74.00	30.90	209	187	Peak	Horizontal	
3	2483.81	64.77	26.97	37.80	74.00	-9.23	209	187	Peak	Horizontal	

High Channel (Vertical) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2332.18	53.50	16.19	37.31	74.00	-20.50	338	187	Peak	VERTICAL	
2 *	2462.00	109.13	71.40	37.73	74.00	35.13	338	187	Peak	VERTICAL	
3	2483.81	64.83	27.03	37.80	74.00	-9.17	338	187	Peak	VERTICAL	

802.11ac VHT20

High Channel (Horizontal) Average

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No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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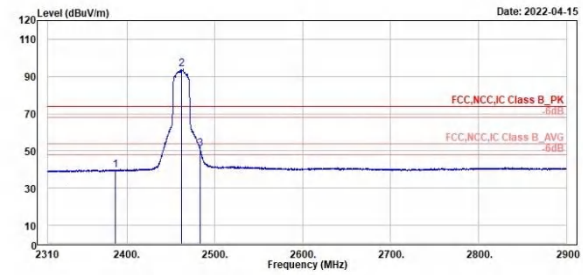
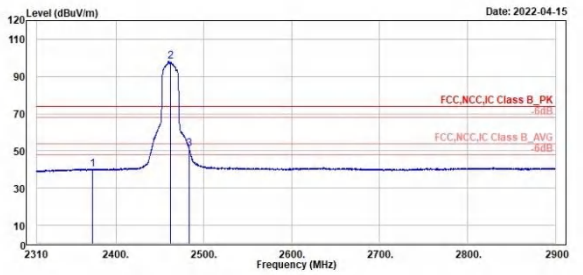


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2387.41	39.83	2.26	37.57	54.00	-14.17	209	187	Average	Horizontal	
2 *	2462.00	93.80	56.07	37.73	54.00	39.80	209	187	Average	Horizontal	
3 !	2483.46	50.98	13.18	37.80	54.00	-3.02	209	187	Average	Horizontal	

High Channel (Vertical) Average

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

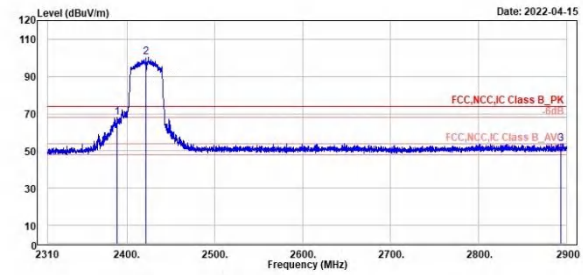


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2373.72	40.33	2.84	37.49	54.00	-13.67	338	187	Average	VERTICAL	
2 *	2462.00	98.04	60.31	37.73	54.00	44.04	338	187	Average	VERTICAL	
3 !	2483.58	51.21	13.41	37.80	54.00	-2.79	338	187	Average	VERTICAL	

802.11ac VHT40

Low Channel (Horizontal) Peak

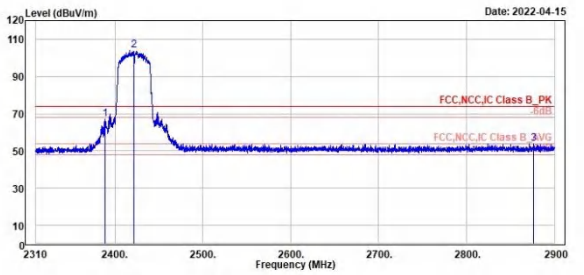
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2389.30	68.06	30.48	37.58	74.00	-5.94	212	200	Peak	Horizontal	
2 *	2422.00	100.24	62.58	37.66	74.00	26.24	212	200	Peak	Horizontal	
3	2893.75	53.74	15.36	38.38	74.00	-20.26	212	200	Peak	Horizontal	

Low Channel (Vertical) Peak

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.30	67.11	29.53	37.58	74.00	-6.89	349	197	Peak	Vertical	
2 *	2422.00	104.01	66.35	37.66	74.00	30.01	349	197	Peak	Vertical	
3	2875.93	53.94	15.65	38.29	74.00	-20.06	349	197	Peak	Vertical	

802.11ac VHT40

Low Channel (Horizontal) Average

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No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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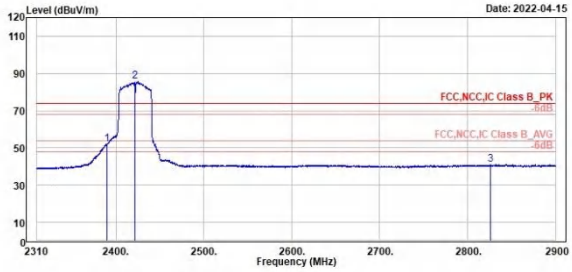

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2389.77	52.17	14.59	37.58	54.00	-1.83	212	200	Average	Horizontal	
2 *	2422.00	85.99	48.33	37.66	54.00	31.99	212	200	Average	Horizontal	
3	2825.66	40.93	2.75	38.18	54.00	-13.07	212	200	Average	Horizontal	

Low Channel (Vertical) Average

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No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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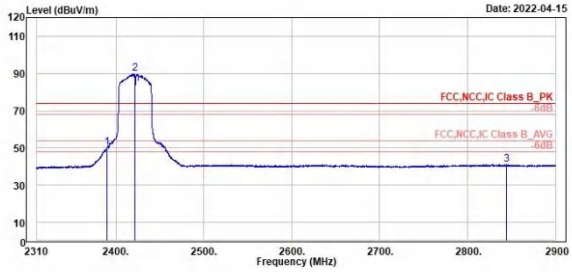
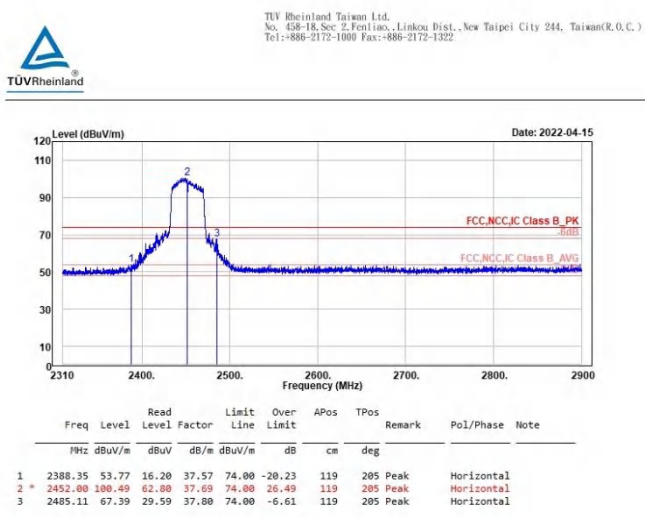


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1 !	2390.00	50.04	12.46	37.58	54.00	-3.96	349	197	Average	Vertical	
2 *	2422.00	89.72	52.06	37.66	54.00	35.72	349	197	Average	Vertical	
3	2844.07	41.00	2.83	38.17	54.00	-13.00	349	197	Average	Vertical	

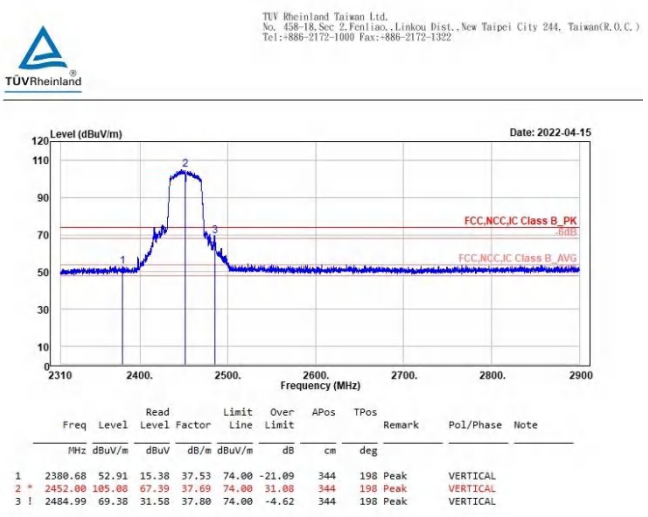
802.11ac VHT40

High Channel (Horizontal) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2388.35	53.77	16.20	37.57	74.00	-20.23	119	205	Peak	Horizontal	
2 *	2452.00	100.49	62.80	37.69	74.00	26.49	119	205	Peak	Horizontal	
3	2485.11	67.39	29.59	37.80	74.00	-6.61	119	205	Peak	Horizontal	

High Channel (Vertical) Peak



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2380.68	52.91	15.38	37.53	74.00	-21.09	344	198	Peak	VERTICAL	
2 *	2452.00	105.08	67.39	37.69	74.00	31.08	344	198	Peak	VERTICAL	
3 !	2484.99	69.38	31.58	37.80	74.00	-4.62	344	198	Peak	VERTICAL	

802.11ac VHT40

High Channel (Horizontal) Average

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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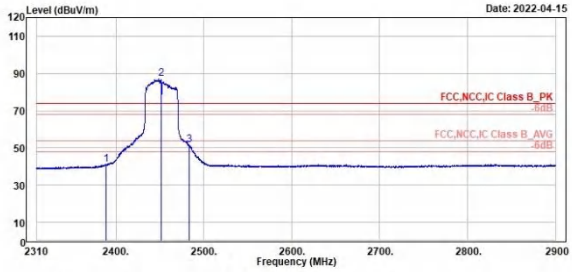

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2389.06	41.03	3.45	37.58	54.00	-12.97	119	205	Average	Horizontal	
2 *	2452.00	87.01	49.32	37.69	54.00	33.01	119	205	Average	Horizontal	
3 !	2483.46	51.66	13.86	37.80	54.00	-2.34	119	205	Average	Horizontal	

High Channel (Vertical) Average

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No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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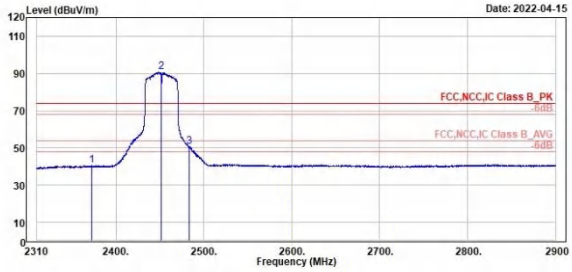

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	2372.19	40.62	3.13	37.49	54.00	-13.38	344	198	Average	VERTICAL	
2 *	2452.00	91.00	53.31	37.69	54.00	37.00	344	198	Average	VERTICAL	
3 !	2483.70	50.52	12.72	37.80	54.00	-3.48	344	198	Average	VERTICAL	

Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

802.11g

Middle Channel 9kHz~150kHz(Open)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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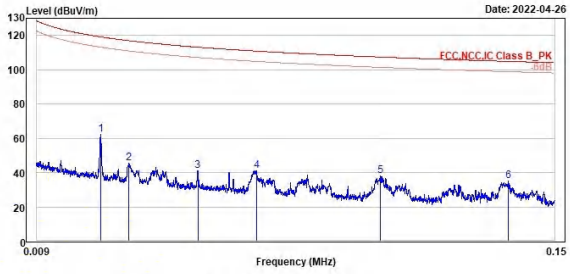
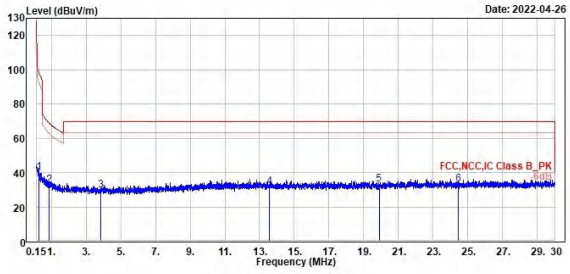


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.03	62.04	42.85	19.19	119.14	-57.10	100	185	QP	Open	
2	0.03	45.26	25.79	19.47	116.92	-71.66	100	272	QP	Open	
3	0.05	40.89	21.64	19.25	113.13	-72.24	100	211	QP	Open	
4	0.07	40.99	22.09	18.90	110.84	-69.85	100	293	QP	Open	
5	0.10	38.06	19.83	18.23	107.37	-69.31	100	269	QP	Open	
6	0.14	35.27	16.92	18.35	104.84	-69.57	100	272	QP	Open	

Middle Channel 150kHz~30MHz(Open)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

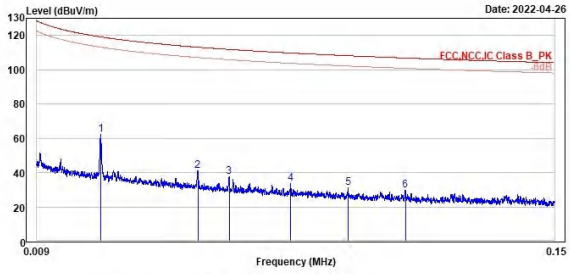


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.30	39.88	20.95	18.93	98.17	-58.29	100	287	QP	Open	
2	0.89	32.62	13.41	19.21	68.58	-35.96	100	226	QP	Open	
3	3.87	29.78	10.32	19.46	69.50	-39.72	100	17	QP	Open	
4	13.57	31.53	9.78	21.75	69.50	-37.97	100	228	QP	Open	
5	19.88	33.24	11.05	22.19	69.50	-36.26	100	285	QP	Open	
6	24.44	33.24	10.84	22.40	69.50	-36.26	100	279	QP	Open	

802.11g

Middle Channel 9kHz~150kHz(Close)

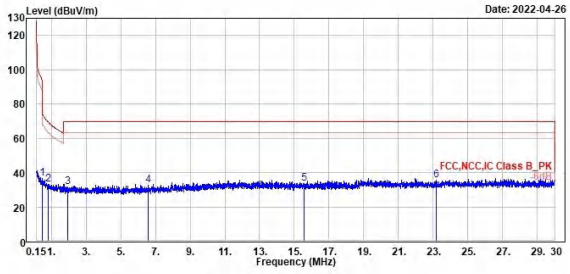
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.03	62.16	42.97	19.19	119.14	-56.98	100	170	QP	Close	
2	0.05	41.19	21.94	19.25	113.13	-71.94	100	332	QP	Close	
3	0.06	37.39	18.33	19.06	111.83	-74.44	100	13	QP	Close	
4	0.08	33.62	14.93	18.69	109.74	-76.12	100	11	QP	Close	
5	0.09	31.27	12.92	18.35	108.16	-76.89	100	74	QP	Close	
6	0.11	29.62	11.37	18.25	106.82	-77.20	100	334	QP	Close	

Middle Channel 150kHz~30MHz(Close)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



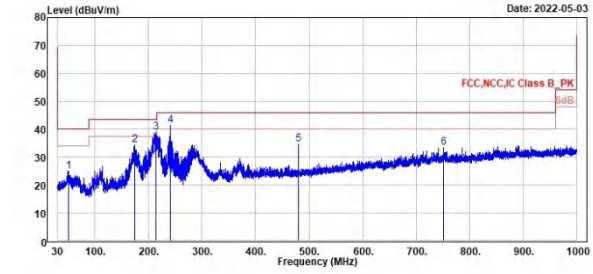
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	0.49	36.45	17.50	18.95	93.85	-57.40	100	283	QP	Close	
2	0.85	32.97	13.80	19.17	69.06	-36.09	100	302	QP	Close	
3	1.96	31.88	12.47	19.41	69.50	-37.62	100	17	QP	Close	
4	6.57	32.69	12.67	20.02	69.50	-36.81	100	87	QP	Close	
5	15.54	33.61	11.72	21.89	69.50	-35.89	100	201	QP	Close	
6	23.19	35.62	13.27	22.35	69.50	-33.88	100	83	QP	Close	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

802.11g

Middle Channel (Horizontal)

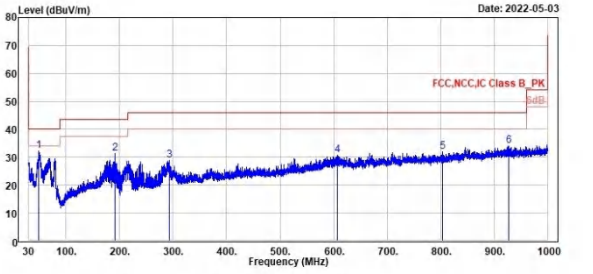
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	50.27	24.94	31.05	-6.11	40.00	-15.06	300	105	QP	Horizontal	
2	173.27	34.31	40.81	-6.50	43.50	-9.19	200	135	QP	Horizontal	
3 !	214.01	38.83	46.99	-8.16	43.50	-4.67	100	62	QP	Horizontal	
4 !	240.01	41.24	47.97	-6.73	46.00	-4.76	100	139	QP	Horizontal	
5	479.98	34.74	36.80	-2.06	46.00	-11.26	100	214	QP	Horizontal	
6	751.68	33.43	30.78	2.65	46.00	-12.57	100	177	QP	Horizontal	

Middle Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



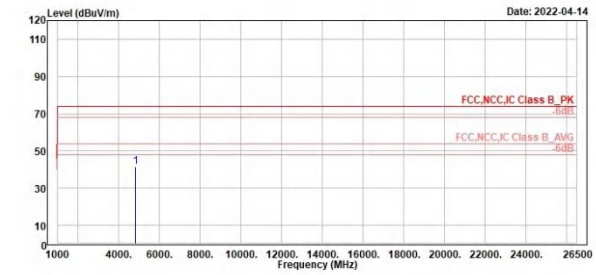
	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	49.30	32.16	38.25	-6.09	40.00	-7.84	100	63	QP	Vertical	
2	191.99	31.45	39.95	-8.50	43.50	-12.05	144	360	QP	Vertical	
3	292.29	28.99	33.96	-4.97	46.00	-17.01	200	71	QP	Vertical	
4	607.73	30.81	30.54	0.27	46.00	-15.19	200	25	QP	Vertical	
5	804.25	31.81	28.77	3.04	46.00	-14.19	400	24	QP	Vertical	
6	927.83	34.05	28.78	5.27	46.00	-11.95	100	160	QP	Vertical	

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

802.11b

Low Channel (Horizontal)

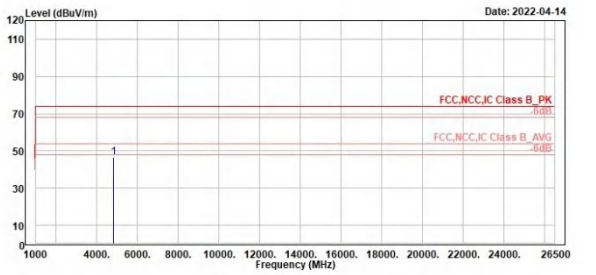
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	41.46	51.27	-9.81	74.00	-32.54	200	160	Peak	Horizontal	

Low Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist. ,New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

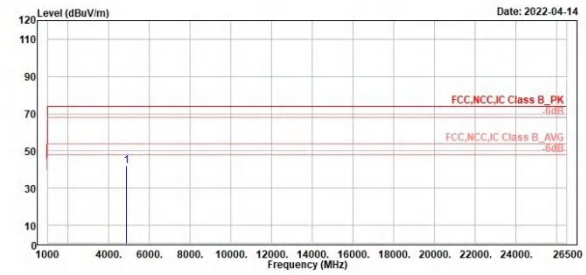


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	46.60	56.41	-9.81	74.00	-27.40	200	179	Peak	Vertical	

802.11b

Middle Channel (Horizontal)

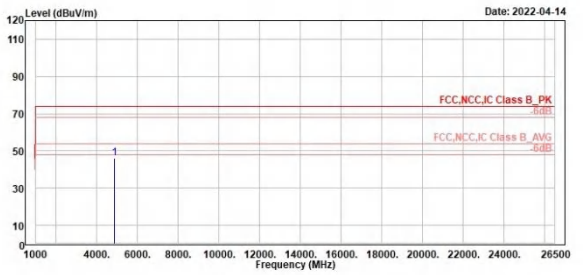
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	42.18	51.95	-9.77	74.00	-31.82	100	150	Peak	Horizontal	

Middle Channel (Vertical)

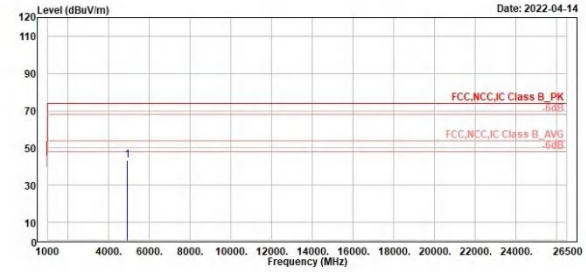
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	46.04	55.81	-9.77	74.00	-27.96	200	180	Peak	Vertical	

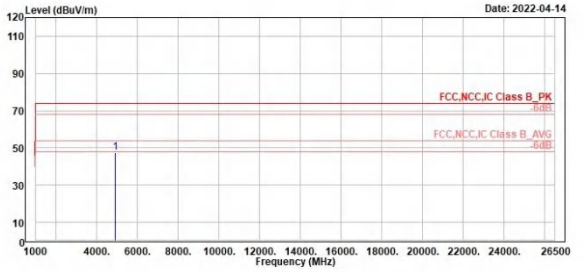
802.11b	
High Channel (Horizontal)	**High Channel (Vertical)**

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	43.37	53.05	-9.68	74.00	-30.63	200	138	Peak	Horizontal	

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

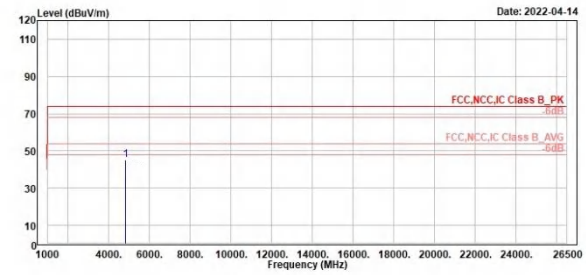


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	47.37	57.05	-9.68	74.00	-26.63	200	183	Peak	Vertical	

802.11g

Low Channel (Horizontal)

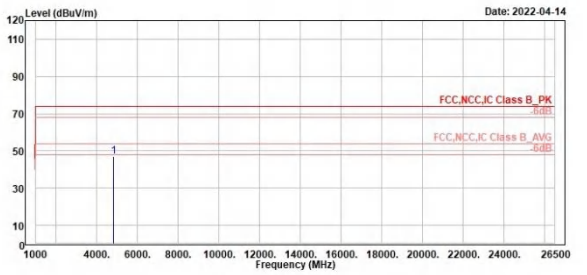
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	44.98	54.79	-9.81	74.00	-29.02	200	129	Peak	Horizontal	

Low Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

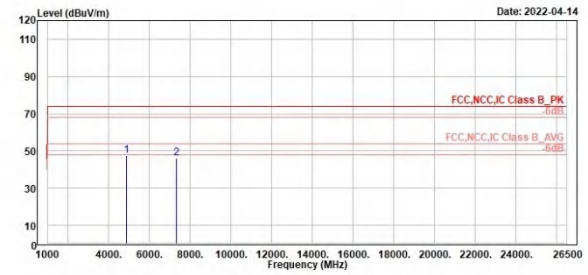


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	47.03	56.84	-9.81	74.00	-26.97	100	172	Peak	Vertical	

802.11g

Middle Channel (Horizontal)

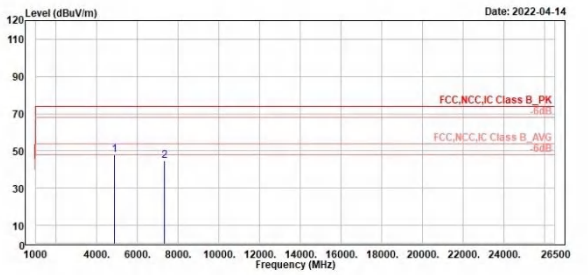
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	47.68	57.45	-9.77	74.00	-26.32	200	130	Peak	Horizontal	
2	7311.00	46.26	53.77	-7.51	74.00	-27.74	200	168	Peak	Horizontal	

Middle Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

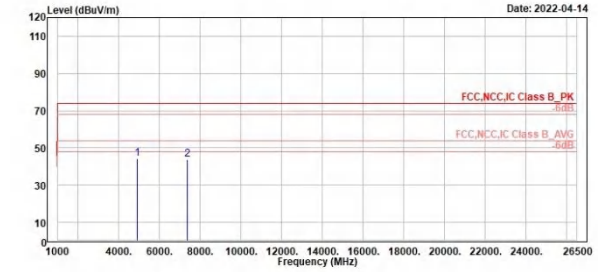


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	47.84	57.61	-9.77	74.00	-26.16	100	321	Peak	Vertical	
2	7311.00	44.92	52.43	-7.51	74.00	-29.08	116	360	Peak	Vertical	

802.11g

High Channel (Horizontal)

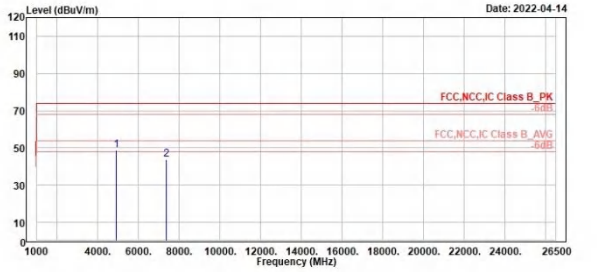
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	44.29	53.97	-9.68	74.00	-29.71	300	171	Peak	Horizontal	
2	7386.00	44.03	51.46	-7.43	74.00	-29.97	100	275	Peak	Horizontal	

High Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. ,Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

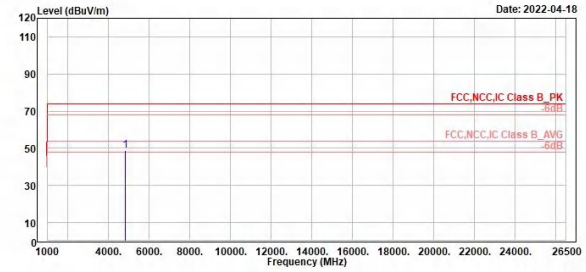


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	48.83	58.51	-9.68	74.00	-25.17	100	139	Peak	Vertical	
2	7386.00	43.60	51.03	-7.43	74.00	-30.40	100	223	Peak	Vertical	

802.11ac VHT20

Low Channel (Horizontal)

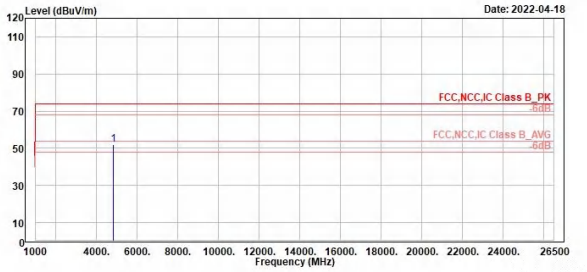
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	48.70	58.51	-9.81	74.00	-25.30	200	315	Peak	Horizontal	

Low Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

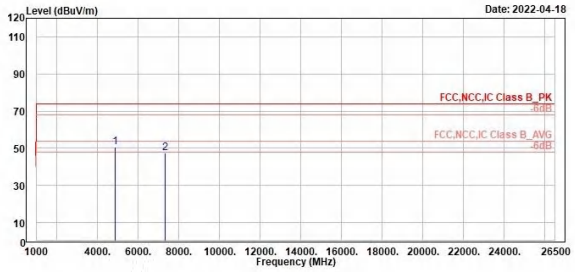


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4824.00	52.01	61.82	-9.81	74.00	-21.99	304	360	Peak	Vertical	

802.11ac VHT20

Middle Channel (Horizontal)

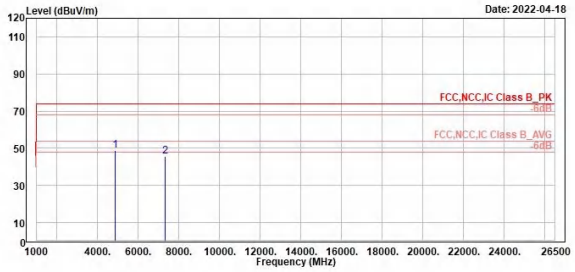
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	50.71	60.48	-9.77	74.00	-23.29	200	344	Peak	Horizontal	
2	7311.00	47.26	54.77	-7.51	74.00	-26.74	300	300	Peak	Horizontal	

Middle Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

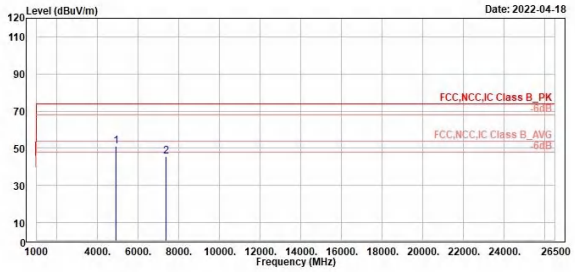


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	48.65	58.42	-9.77	74.00	-25.35	200	321	Peak	Vertical	
2	7311.00	45.83	53.34	-7.51	74.00	-28.17	300	294	Peak	Vertical	

802.11ac VHT20

High Channel (Horizontal)

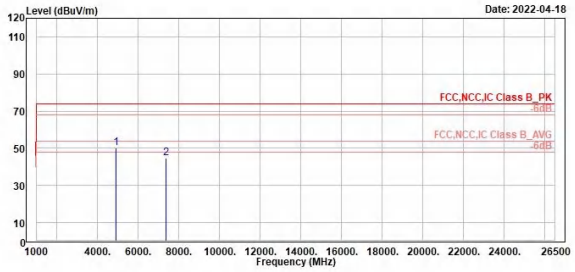
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. .Linkou Dist. .New Taipei City 244. Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	51.33	61.01	-9.68	74.00	-22.67	188	360	Peak	Horizontal	
2	7386.00	45.85	53.28	-7.43	74.00	-28.15	200	298	Peak	Horizontal	

High Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. .Linkou Dist. .New Taipei City 244. Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4924.00	50.19	59.87	-9.68	74.00	-23.81	300	173	Peak	Vertical	
2	7386.00	44.54	51.97	-7.43	74.00	-29.46	400	23	Peak	Vertical	

802.11ac VHT40

Low Channel (Horizontal)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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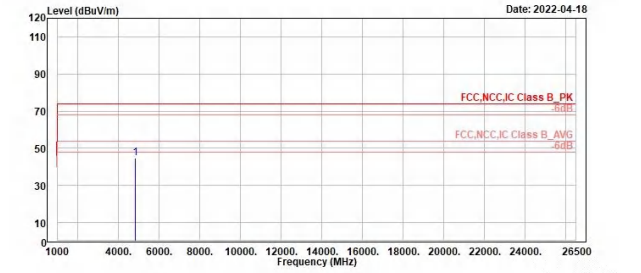
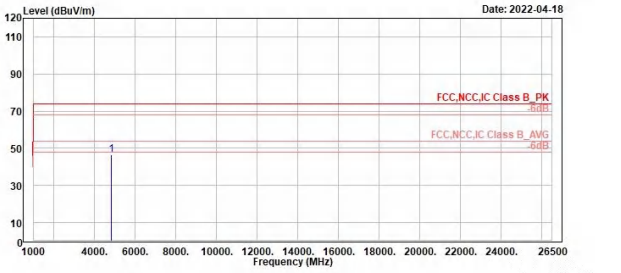


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4844.00	44.80	54.56	-9.76	74.00	-29.20	200	310	Peak	Horizontal	

Low Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao., Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

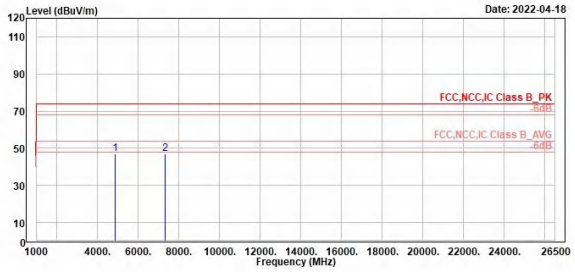


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4844.00	46.40	56.16	-9.76	74.00	-27.60	200	317	Peak	Vertical	

802.11ac VHT40

Middle Channel (Horizontal)

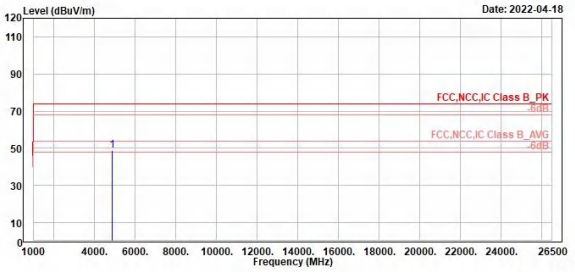
TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	46.77	56.54	-9.77	74.00	-27.23	180	360	Peak	Horizontal	
2	7311.00	47.22	54.73	-7.51	74.00	-26.78	200	39	Peak	Horizontal	

Middle Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322

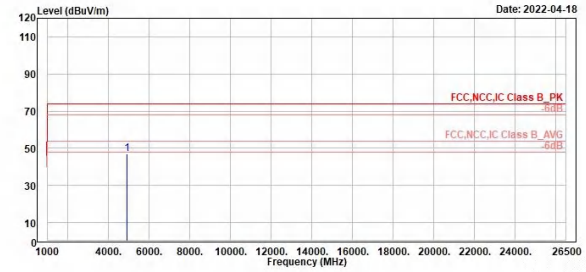


	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4874.00	48.94	58.71	-9.77	74.00	-25.06	300	46	Peak	Vertical	

802.11ac VHT40

High Channel (Horizontal)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
Tel:+886-2172-1000 Fax:+886-2172-1322



	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4904.00	46.81	56.59	-9.78	74.00	-27.19	172	360	Peak	Horizontal	

High Channel (Vertical)

TUV Rheinland Taiwan Ltd.
No. 458-18, Sec 2, Fenliao. Linkou Dist., New Taipei City 244, Taiwan(R.O.C.)
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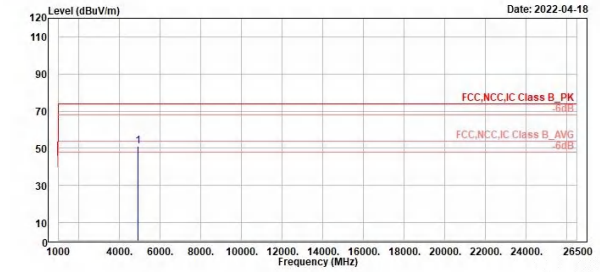

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg			
1	4904.00	50.89	60.67	-9.78	74.00	-23.11	200	326	Peak	Vertical	

Mains Conducted Emission, 150kHz ~ 30MHz

Worst Band

(Line)

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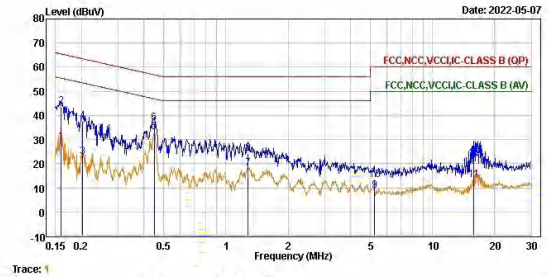

Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.16	29.06	19.45	9.61	55.50	-26.44	Average	line1	
2	0.16	43.56	33.95	9.61	65.50	-21.94	QP	line1	
3	0.20	22.69	13.08	9.61	53.47	-30.78	Average	line1	
4	0.20	37.67	28.06	9.61	63.47	-25.80	QP	line1	
5	0.45	33.26	23.64	9.62	46.89	-13.63	Average	line1	
6	0.45	36.81	27.19	9.62	56.89	-20.08	QP	line1	
7	1.27	17.89	8.25	9.64	46.00	-28.11	Average	line1	
8	1.27	24.14	14.50	9.64	56.00	-31.86	QP	line1	
9	5.22	8.83	-0.86	9.69	50.00	-41.17	Average	line1	
10	5.22	13.41	3.72	9.69	60.00	-46.59	QP	line1	
11	15.77	13.16	3.43	9.73	50.00	-36.84	Average	line1	
12	15.77	22.08	12.35	9.73	60.00	-37.92	QP	line1	

(Neutral)

TÜV Rheinland Taiwan Ltd.
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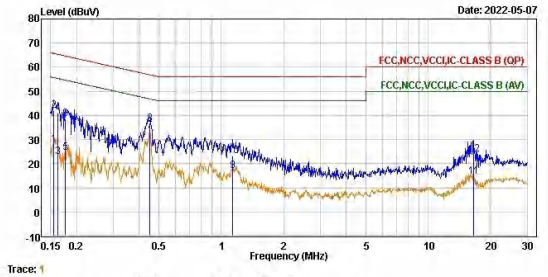

Trace: 1

	Freq	Level	Read Level	Factor	Limit Line	Over Limit	Remark	Pol/Phase	Note
	MHz	dBuV	dBuV	dB	dBuV	dB			
1	0.15	28.08	18.49	9.59	55.75	-27.67	Average	neutral	
2	0.15	41.97	32.38	9.59	65.75	-23.78	QP	neutral	
3	0.16	22.73	13.14	9.59	55.34	-32.61	Average	neutral	
4	0.16	41.12	31.53	9.59	65.34	-24.22	QP	neutral	
5	0.18	24.45	14.86	9.59	54.63	-30.18	Average	neutral	
6	0.18	38.54	28.95	9.59	64.63	-26.09	QP	neutral	
7	0.45	33.58	23.98	9.60	46.85	-13.27	Average	neutral	
8	0.45	36.60	27.00	9.60	56.85	-20.25	QP	neutral	
9	1.13	17.03	7.43	9.60	46.00	-28.97	Average	neutral	
10	1.13	23.34	13.74	9.60	56.00	-32.66	QP	neutral	
11	16.50	14.65	4.87	9.78	50.00	-35.35	Average	neutral	
12	16.50	23.91	14.13	9.78	60.00	-36.09	QP	neutral	