FCC RADIO TEST REPORT

FCC ID	:	**UZ7WT0**
Equipment	:	**Wearable Computer**
Brand Name	:	**Zebra**
Model Name	:	**WT0**
Applicant	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Manufacturer	:	**Zebra Technologies Corporation 1 Zebra Plaza, Holtsville, NY 11742**
Standard	:	**FCC Part 15 Subpart C §15.247**

The product was received on Feb. 23, 2024 and testing was performed from Mar. 07, 2024 to Apr. 16, 2024. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

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Table of Contents

History of this test report

Report No.	Version	Description	Issue Date
FR422224C	01	Initial issue of report	Apr. 25, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	1.16 dB under the limit at 2483.52 MHz
3.6	15.207	AC Conducted Emission	Pass	5.04 dB under the limit at 13.56 MHz
3.7	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Wei Chen

Report Producer: Rebecca Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Wearable Computer
Brand Name	Zebra
Model Name	WT0
FCC ID	UZ7WT0
Sample 1	Premium sku
Sample 2	Base sku
EUT supports Radios application	NFC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	EV1.1
SW Version	13-14-19.00-TG-U00-PRD-NEM-04
OS Version	Android 13
FW Version	V03
MFD	30JAN24
EUT Stage	Engineering Sample

Remark: The EUT's information above is declared by manufacturer.

Specification of Accessories				
AC Adapter	**Brand Name**	Zebra	**Part Number**	PWR-WUA5V12W0US
Corded Adapter 1	**Brand Name**	Zebra	**Part Number**	CBL-RS5X6-ADPWT-01
Corded Adapter 2	**Brand Name**	Zebra	**Part Number**	CBL-RS5X6-ADPCT-01
Battery 1	**Brand Name**	Zebra	**Part Number**	BT-000490-1020
Battery 2	**Brand Name**	Zebra	**Part Number**	BT-000490-1820
USB Cable	**Brand Name**	Zebra	**Part Number**	CBL-NGWT-USBCHG-01
Vibrating Cable	**Brand Name**	Zebra	**Part Number**	CBL-NGWT-HDVBAP-01
Type-C cable	**Brand Name**	Zebra	**Part Number**	CBL-EC5X-USBC3A-01
Type-A to Type-C cable	**Brand Name**	Zebra	**Part Number**	CBL-TC5X-USBC2A-01
Audio Cable 1	**Brand Name**	Zebra	**Part Number**	CBL-HS2100-12S1-01
Audio Cable 2	**Brand Name**	Zebra	**Part Number**	CBL-HS3100-CUC1-01
Training cable	**Brand Name**	Zebra	**Part Number**	25-129938-02R
Audio Adapter Cable (Short)	**Brand Name**	Zebra	**Part Number**	CBL-NGWT-AUQDST-02
Audio Adapter Cable (Long)	**Brand Name**	Zebra	**Part Number**	CBL-NGWT-AUQDLG-01
HEADSET QUICK DISCONNECT CABLE	**Brand Name**	Zebra	**Part Number**	CBL-HS2100-QDC1-02
Scanner 1	**Brand Name**	Zebra	**Part Number**	RS61B0-KESSXWR
			Model Number	RS6100
Scanner 2	**Brand Name**	Zebra	**Part Number**	RS51B0-LCFSWR
			Model Number	RS5100
Scanner 3	**Brand Name**	Zebra	**Part Number**	RS4000-HPCSWR
			Model Number	RS4000
Scanner 4	**Brand Name**	Zebra	**Part Number**	RS4000-HPCLWR
			Model Number	RS4000
Scanner 5	**Brand Name**	Zebra	**Part Number**	RS5000-LCBSWR
			Model Number	RS5000
Earphone 1	**Brand Name**	Zebra	**Model Number**	HS2100
Earphone 2	**Brand Name**	Zebra	**Model Number**	HS3100
Earphone 3	**Brand Name**	Zebra	**Part Number**	HDST-USBC-PTT1-01
hip mount 1	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-HPMNT-01
hip mount 2	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-HPMTX-01

Specification of Accessories				
Wrist moun + Single dial strap (S)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTSS-01
Wrist moun + Single dial strap (L)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTSL-01
Wrist moun + Single dial strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTSX-01
Wrist moun + Dual dial strap (S)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTDS-01
Wrist moun + Dual dial strap (L)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTDL-01
Wrist moun + Dual dial strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTDX-01
Wrist moun + Velcro strap (S)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTVS-01
Wrist moun + Velcro strap (L)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTVL-01
Wrist moun + Velcro strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WMTVX-01
Dual dial strap (S)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTDS-01
Dual dial strap (L)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTDL-01
Dual dial strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTDX-01
Velcro strap (S)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTVS-01
Velcro strap (L)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTVL-01
Velcro strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-WT5X6-WSTVX-01
Single dial strap (S)	**Brand Name**	Zebra	**Part Number**	SG-NGWT-WSTPST-01
Single dial strap (L)	**Brand Name**	Zebra	**Part Number**	SG-NGWT-WSTPLN-01
Single dial strap (XL)	**Brand Name**	Zebra	**Part Number**	SG-NGWT-WSTPXL-01
sleeves for wrist mount	**Brand Name**	Zebra	**Part Number**	SG-WT4027050-01R
Screen Protector	**Brand Name**	Zebra	**Part Number**	MISC-WT5X6-SCRN-05

1.2 Product Specification of Equipment Under Test

<table>
<tr><th colspan="2">Product Specification is subject to this standard</th></tr>
<tr><td>Tx/Rx Frequency Range</td><td>2412 MHz ~ 2462 MHz</td></tr>
<tr><td>Maximum Output Power to Antenna</td><td>MIMO <Ant. 0+1>
802.11b : 24.64 dBm / 0.2911 W
802.11g : 24.94 dBm / 0.3119 W
802.11n HT20 : 24.54 dBm / 0.2844 W
802.11ac VHT20 : 24.64 dBm / 0.2911 W
802.11ax HE20 : 24.74 dBm / 0.2979 W</td></tr>
<tr><td>99% Occupied Bandwidth</td><td>MIMO <Ant. 0>
802.11b: 13.04 MHz
802.11g: 16.83 MHz
802.11ac VHT20: 17.78 MHz
802.11ax HE20: 19.13 MHz
MIMO <Ant. 1>
802.11b: 13.04 MHz
802.11g: 16.63 MHz
802.11ac VHT20: 17.78 MHz
802.11ax HE20: 19.08 MHz</td></tr>
<tr><td>Antenna Type / Gain</td><td><Ant. 0>: PIFA Antenna with gain 3.33 dBi
<Ant. 1>: Monopole Antenna with gain 2.50 dBi</td></tr>
<tr><td>Type of Modulation</td><td>802.11b : DSSS (DBPSK / DQPSK / CCK)
802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)
802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
802.11ax : OFDMA
(BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)</td></tr>
<tr><td>Antenna Function Description</td><td>
<table>
<tr><td></td><td>Ant. 0</td><td>Ant. 1</td></tr>
<tr><td>802.11 b/g/n/ac/ax MIMO</td><td>V</td><td>V</td></tr>
<tr><td>802.11ax TXBF</td><td>V</td><td>V</td></tr>
</table>
</td></tr>
</table>

Remark:

1. MIMO Ant. 0+1 Directional Gain is a calculated result from MIMO Ant. 0 and MIMO Ant. 1. The formula used in calculation is documented in section 1.2.1.
2. Power of MIMO Ant. 0 + Ant. 1 is a calculated result from sum of the power MIMO Ant. 0 and MIMO Ant. 1.
3. 802.11ax Support Tx Beamforming mode, and the manufacturer declares that Tx Beamforming power/EIRP is less than CDD mode 3dbm, so CDD mode cover Tx Beamforming mode.
4. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.2.1 Antenna Directional Gain

<For CDD Mode>

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)ii)

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

G_{ANT} is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;
N_{SS} = the number of independent spatial streams of data;
N_{ANT} = the total number of antennas
$g_{j,k} = 10^{G_k / 20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;
G_k is the gain in dBi of the kth antenna.

As minimum N_{SS}=1 is supported by EUT, the formula can be simplified as:

Directional gain = $10*\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi

Where G1, G2….GN denote single antenna gain.

The directional gain “DG” is calculated as following table.

	Ant 0 (dBi)	Ant 1 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
2.4GHz	3.33	2.50	3.33	5.94	0.00	0.00

Calculation example:

If a device has two antenna, G_{ANT1}= 3.33dBi; G_{ANT2}=2.50dBi

Directional gain of power measurement = max(3.33, 2.50) + 0 = 3.33 dBi

Directional gain of PSD derived from formula which is

10 x log { { [10^ (3.33 dBi / 20) + 10^ (2.50 dBi / 20)] ^ 2 } / 2 }

= 5.94 dBi

Power and PSD limit reduction = Composite gain – 6dBi, (min = 0)

<TXBF Modes>

The EUT supports beamforming modes , then

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)e)ii)

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

The directional gain “DG” is calculated as following table.

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant 0	Ant 1	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4GHz	3.33	2.50	5.94	5.94	0.00	0.00

Calculation example:

Directional gain is derived from formula which is

10 x log { { [10^ (3.33 dBi / 20) + 10^ (2.50 dBi / 20)] ^ 2 } / 2 }

= 5.94 dBi

Power and PSD limit reduction = Composite gain – 6dBi, (min = 0)

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	CO05-HY (TAF Code: 1190)
Remark	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	TH05-HY, 03CH20-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW1190 and TW3786

1.5 Applicable Standards

According to the specifications declared by the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.

b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

This device support 26/52/106/242-tone RU.

The PSD of partial RU is reduced to be smaller than full RU according to TCB workshop interim guidance Oct. 2018.

The 802.11ax mode is investigated among different tones, full resource units (RU), partial resource units. The partial RU has no higher power than full RU's, thus the full RU is chosen as main test configuration.

The 242-tone RU is covered by 20MHz channel.

The SISO mode conducted power is covered by MIMO mode per chain, so only the MIMO mode is tested.

The power for 802.11n mode is smaller than 802.11ac mode, so all other conducted and radiated test is covered by 802.11ac mode.

The final test modes include the worst data rates for each modulation shown in the table below.

MIMO Antenna

Modulation	Data Rate
802.11b	**1 Mbps**
802.11g	**6 Mbps**
802.11n HT20 (Covered by VHT20)	**MCS0**
802.11ac VHT20	**MCS0**
802.11ax HE20	**MCS0**

Remark: The conducted power level of each chain in MIMO mode is equal or higher than SISO mode.

Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Link + Bluetooth link + MP3 play + NFC on + Battery 1 + Scanner 1 + HEADSET QUICK DISCONNECT CABLE + Audio Adapter Cable (Short) + Earphone 1 + USB Cable (Charging from AC Adapter) for Sample 1
Remark: For Radiated Test Cases, the tests were performed with Battery 1, Earphone 1, and Audio Cable 1.	

<Sample 1>

Ch. #	2400-2483.5 MHz		
	802.11b	802.11g	802.11ax HE20
Low	01	01	01
Middle	06	06	06
High	11	11	11

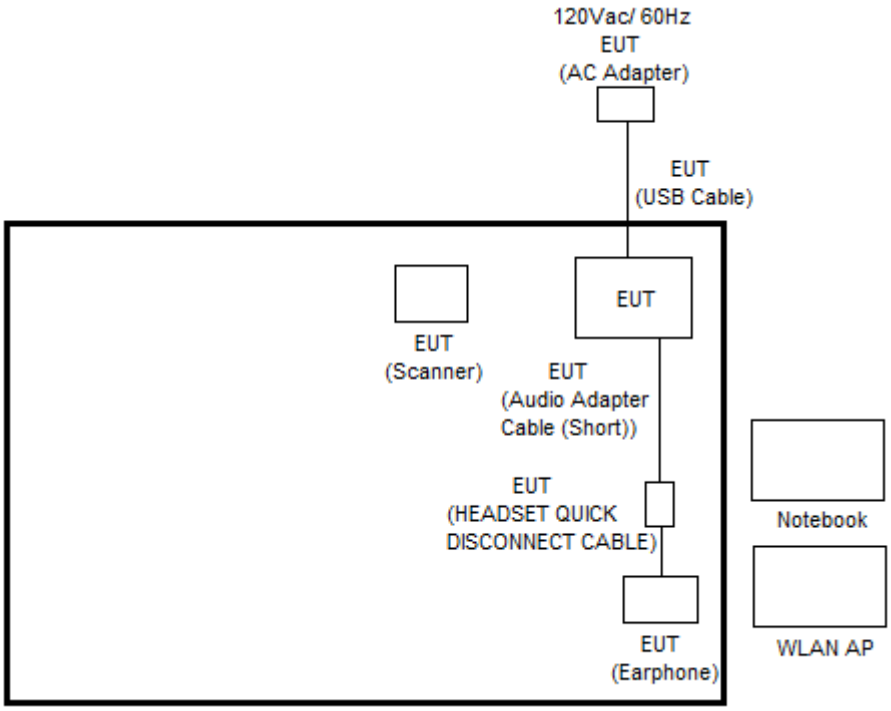
<Sample 2>

Ch. #	2400-2483.5 MHz
	802.11ax HE20
Low	-
Middle	-
High	11

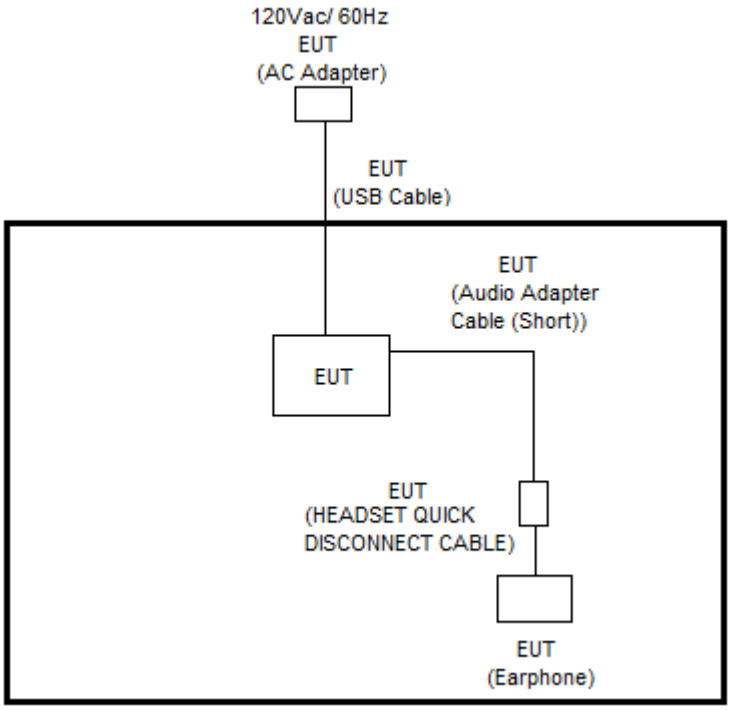
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

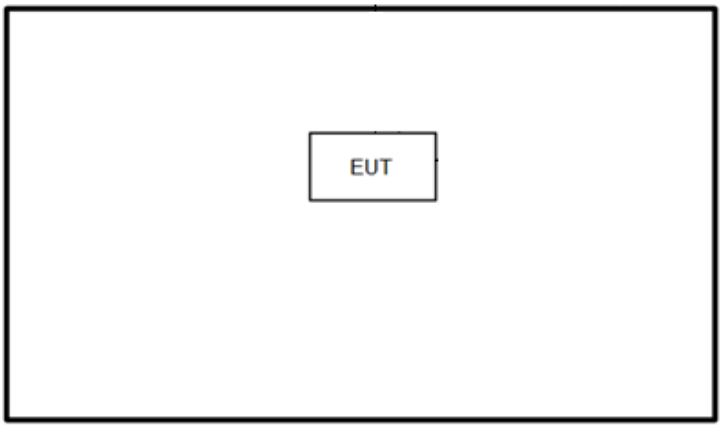
<AC Conducted Emission Mode>



<WLAN Tx with Adapter Mode>



<WLAN Tx without Accessories Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude 3420	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	Latitude 5310	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “QRCT Version 4.0.211.0” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.
Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

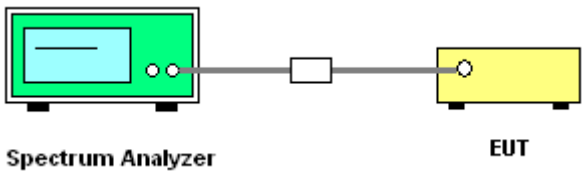
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) ≥ 3 * RBW.
6. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

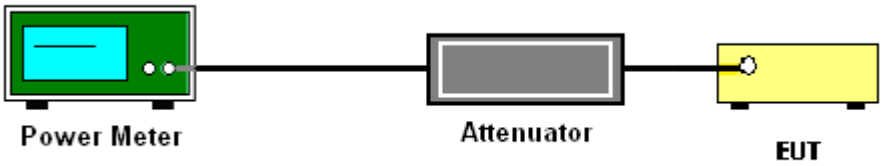
3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Measure the conducted output power and record the results in the test report.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

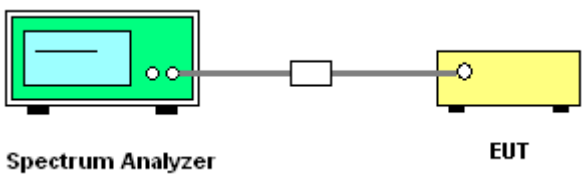
3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.
7. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

   Method (c): Measure and add 10 log(N_{ANT}) dB.

   With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. The addition of 10 log(N_{ANT}) dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{ANT}$ th of the PSD limit .

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Please refer to Appendix A.

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device is measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

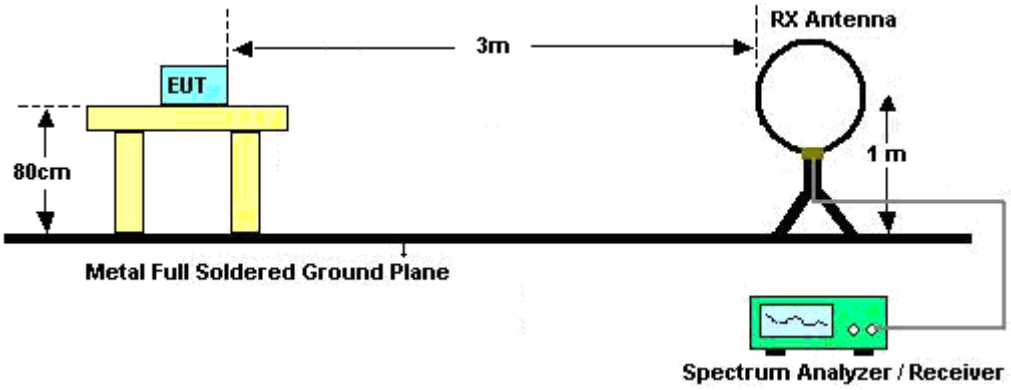
3.5.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-“.

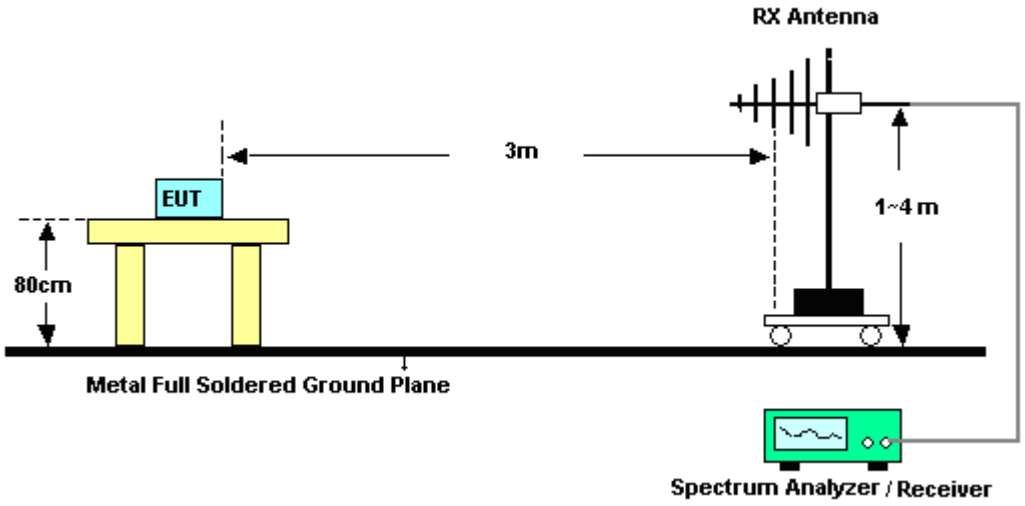
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as "-".
8. Use the following spectrum analyzer settings:
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) Set RBW = 100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3 MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

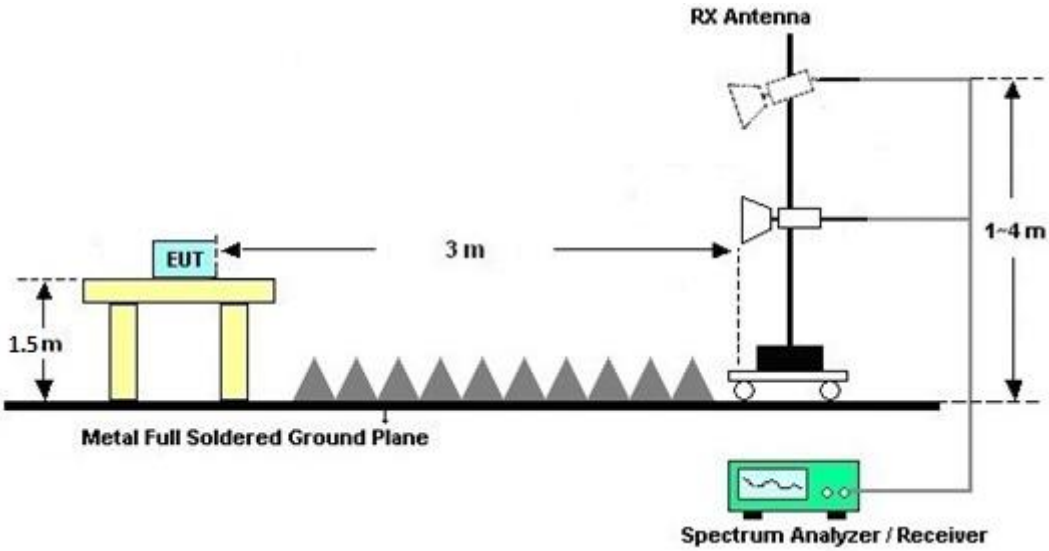
For radiated emissions below 30MHz



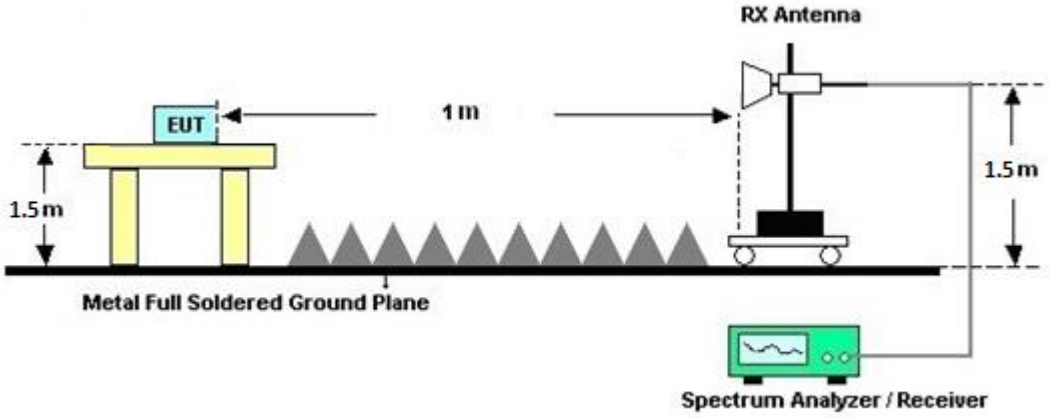
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

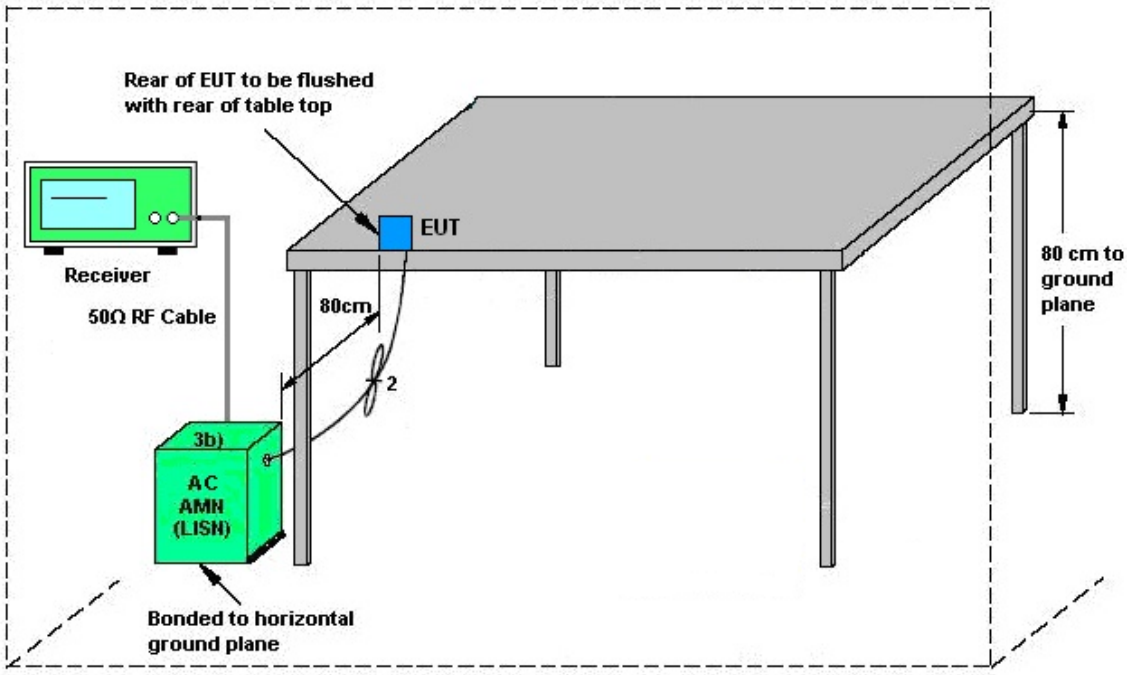
3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.7 Antenna Requirements

3.7.1 Standard Applicable

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9038A(MXE)	MY54130085	N/A	Oct. 06, 2023	Mar. 07, 2024~ Apr. 09, 2024	Oct. 05, 2024	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Mar. 07, 2024~ Apr. 09, 2024	Sep. 11, 2024	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Mar. 07, 2024~ Apr. 09, 2024	Jun. 26, 2024	Radiation (03CH20-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Mar. 07, 2024~ Apr. 09, 2024	N/A	Radiation (03CH20-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Mar. 07, 2024~ Apr. 09, 2024	N/A	Radiation (03CH20-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Mar. 07, 2024~ Apr. 09, 2024	N/A	Radiation (03CH20-HY)
Signal Analyzer	Keysight	N9010B	MY60240520	N/A	Dec. 12, 2023	Mar. 07, 2024~ Apr. 09, 2024	Dec. 11, 2024	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 20, 2023	Mar. 07, 2024~ Apr. 09, 2024	Oct. 19, 2024	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	02360	1GHz-18GHz	Oct. 30, 2023	Mar. 07, 2024~ Apr. 09, 2024	Oct. 29, 2024	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jul. 10, 2023	Mar. 07, 2024~ Apr. 09, 2024	Jul. 09, 2024	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 01, 2024	Mar. 07, 2024~ Apr. 09, 2024	Dec. 31, 2024	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 13, 2023	Mar. 07, 2024~ Apr. 09, 2024	Nov. 12, 2024	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804015/2,804027/2	N/A	Jan. 17, 2024	Mar. 07, 2024~ Apr. 09, 2024	Jan. 16, 2025	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 28, 2023	Mar. 07, 2024~ Mar. 26, 2024	Mar. 27, 2024	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303A	TP211382	N/A	Mar. 27, 2024	Mar. 27, 2024~ Apr. 09, 2024	Mar. 26, 2025	Radiation (03CH20-HY)
Software	Audix	N/A	RK-002156	N/A	N/A	Mar. 07, 2024~ Apr. 09, 2024	N/A	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07, 2023	Mar. 13, 2024~ Apr. 16, 2024	Nov. 06, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO10 (NO:248)	10MHz~6GHz	Jun. 05, 2023	Mar. 13, 2024~ Apr. 16, 2024	Jun. 04, 2024	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 23, 2023	Mar. 13, 2024~ Apr. 16, 2024	Aug. 22, 2024	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Mar. 30, 2024	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 06, 2023	Mar. 30, 2024	Dec. 05, 2024	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Oct. 26, 2023	Mar. 30, 2024	Oct. 25, 2024	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 22, 2023	Mar. 30, 2024	Nov. 21, 2024	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Mar. 30, 2024	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2023	Mar. 30, 2024	Jul. 27, 2024	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 28, 2023	Mar. 30, 2024	Dec. 27, 2024	Conduction (CO05-HY)

5 Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.5 dB**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.4 dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.5 dB**

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.6 dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.4 dB**

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Sylvia Li	Temperature:	21~25	°C
Test Date:	2024/03/13 ~ 2024/04/16	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant0	Ant1	Ant0	Ant1		
11b	1Mbps	2	1	2412	12.74	12.74	8.06	7.55	0.50	Pass
11b	1Mbps	2	6	2437	13.04	13.04	8.07	8.04	0.50	Pass
11b	1Mbps	2	11	2462	12.84	12.74	8.06	8.07	0.50	Pass
11g	6Mbps	2	1	2412	16.43	16.48	16.28	16.28	0.50	Pass
11g	6Mbps	2	6	2437	16.83	16.63	15.02	15.09	0.50	Pass
11g	6Mbps	2	11	2462	16.48	16.48	16.29	16.30	0.50	Pass
VHT20	MCS0	2	1	2412	17.63	17.63	17.13	17.15	0.50	Pass
VHT20	MCS0	2	6	2437	17.78	17.78	17.16	17.10	0.50	Pass
VHT20	MCS0	2	11	2462	17.63	17.63	17.53	17.53	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant0	Ant1	SUM	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
11b	1Mbps	2	1	2412	18.78	18.58	21.69	30.00		3.33		25.02		36.00		Pass
11b	1Mbps	2	6	2437	21.78	21.48	24.64	30.00		3.33		27.97		36.00		Pass
11b	1Mbps	2	11	2462	18.58	18.88	21.74	30.00		3.33		25.07		36.00		Pass
11g	6Mbps	2	1	2412	19.88	19.58	22.74	30.00		3.33		26.07		36.00		Pass
11g	6Mbps	2	6	2437	21.88	21.98	24.94	30.00		3.33		28.27		36.00		Pass
11g	6Mbps	2	11	2462	19.88	19.78	22.84	30.00		3.33		26.17		36.00		Pass
HT20	MCS0	2	1	2412	19.28	19.08	22.19	30.00		3.33		25.52		36.00		Pass
HT20	MCS0	2	6	2437	21.48	21.58	24.54	30.00		3.33		27.87		36.00		Pass
HT20	MCS0	2	11	2462	18.38	18.58	21.49	30.00		3.33		24.82		36.00		Pass
VHT20	MCS0	2	1	2412	19.38	19.18	22.29	30.00		3.33		25.62		36.00		Pass
VHT20	MCS0	2	6	2437	21.58	21.68	24.64	30.00		3.33		27.97		36.00		Pass
VHT20	MCS0	2	11	2462	18.48	18.68	21.59	30.00		3.33		24.92		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant0	Ant1	Worse + 3.01	Ant0	Ant1	Ant0	Ant1	
11b	1Mbps	2	1	2412	-3.74	-4.07	-0.73	5.94		8.00		Pass
11b	1Mbps	2	6	2437	-1.07	-1.50	1.94	5.94		8.00		Pass
11b	1Mbps	2	11	2462	-3.63	-3.73	-0.62	5.94		8.00		Pass
11g	6Mbps	2	1	2412	-5.90	-6.21	-2.89	5.94		8.00		Pass
11g	6Mbps	2	6	2437	-3.31	-3.31	-0.30	5.94		8.00		Pass
11g	6Mbps	2	11	2462	-5.60	-6.19	-2.59	5.94		8.00		Pass
VHT20	MCS0	2	1	2412	-5.98	-5.98	-2.97	5.94		8.00		Pass
VHT20	MCS0	2	6	2437	-3.55	-3.76	-0.54	5.94		8.00		Pass
VHT20	MCS0	2	11	2462	-7.04	-7.28	-4.03	5.94		8.00		Pass

Measured power density (dBm) has offset with cable loss.

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
						Ant0	Ant1	Ant0	Ant1		
HE20	MCS0	2	1	2412	Full	18.98	18.98	18.85	18.63	0.50	Pass
HE20	MCS0	2	6	2437	Full	19.13	19.08	15.07	17.53	0.50	Pass
HE20	MCS0	2	11	2462	Full	19.03	18.93	18.66	18.84	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																	
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
						Ant0	Ant1	SUM	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	Ant0	Ant1	
HE20	MCS0	2	1	2412	Full	19.48	19.28	22.39	30.00		3.33		25.72		36.00		Pass
HE20	MCS0	2	1	2412	26/0	12.78	12.48	15.64	30.00		3.33		18.97		36.00		Pass
HE20	MCS0	2	1	2412	52/37	14.68	14.08	17.40	30.00		3.33		20.73		36.00		Pass
HE20	MCS0	2	1	2412	106/53	15.18	14.78	17.99	30.00		3.33		21.32		36.00		Pass
HE20	MCS0	2	6	2437	Full	21.68	21.78	24.74	30.00		3.33		28.07		36.00		Pass
HE20	MCS0	2	6	2437	26/4	14.08	13.48	16.80	30.00		3.33		20.13		36.00		Pass
HE20	MCS0	2	6	2437	52/38	15.78	14.98	18.41	30.00		3.33		21.74		36.00		Pass
HE20	MCS0	2	6	2437	106/53	18.48	17.88	21.20	30.00		3.33		24.53		36.00		Pass
HE20	MCS0	2	11	2462	Full	18.58	18.78	21.69	30.00		3.33		25.02		36.00		Pass
HE20	MCS0	2	11	2462	26/8	10.88	10.78	13.84	30.00		3.33		17.17		36.00		Pass
HE20	MCS0	2	11	2462	52/40	12.88	12.78	15.84	30.00		3.33		19.17		36.00		Pass
HE20	MCS0	2	11	2462	106/54	13.88	13.88	16.89	30.00		3.33		20.22		36.00		Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

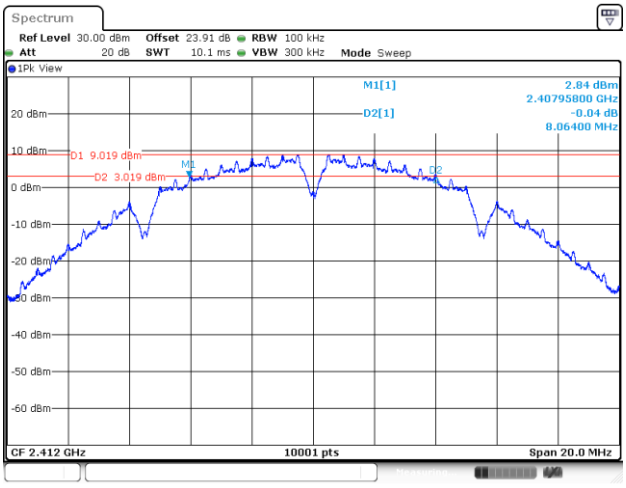
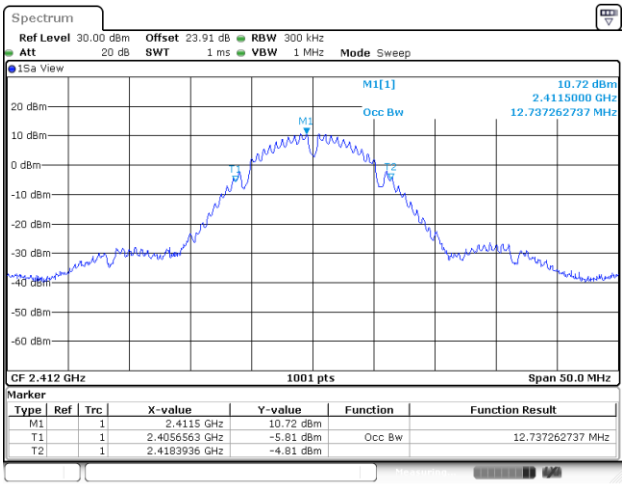
2.4GHz Band MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
						Ant0	Ant1	Worse + 3.01	Ant0	Ant1	Ant0	Ant1	
HE20	MCS0	2	1	2412	Full	-5.97	-6.22	-2.96	5.94		8.00		Pass
HE20	MCS0	2	1	2412	26/0	-6.38	-6.34	-3.33	5.94		8.00		Pass
HE20	MCS0	2	1	2412	52/37	-6.11	-6.45	-3.10	5.94		8.00		Pass
HE20	MCS0	2	1	2412	106/53	-7.96	-8.27	-4.95	5.94		8.00		Pass
HE20	MCS0	2	6	2437	Full	-3.71	-3.74	-0.70	5.94		8.00		Pass
HE20	MCS0	2	6	2437	26/4	-3.91	-4.25	-0.90	5.94		8.00		Pass
HE20	MCS0	2	6	2437	52/38	-4.13	-5.02	-1.12	5.94		8.00		Pass
HE20	MCS0	2	6	2437	106/53	-4.07	-4.92	-1.06	5.94		8.00		Pass
HE20	MCS0	2	11	2462	Full	-6.96	-7.28	-3.95	5.94		8.00		Pass
HE20	MCS0	2	11	2462	26/8	-7.36	-7.33	-4.32	5.94		8.00		Pass
HE20	MCS0	2	11	2462	52/40	-7.36	-7.34	-4.33	5.94		8.00		Pass
HE20	MCS0	2	11	2462	106/54	-8.81	-8.67	-5.66	5.94		8.00		Pass

Measured power density (dBm) has offset with cable loss.

6dB and 99% Occupied Bandwidth

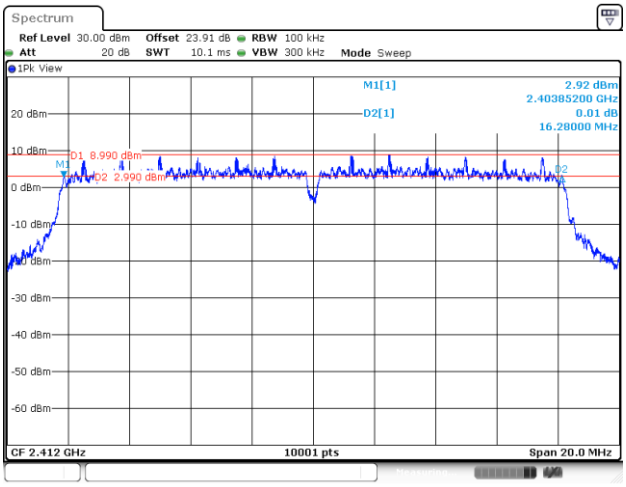
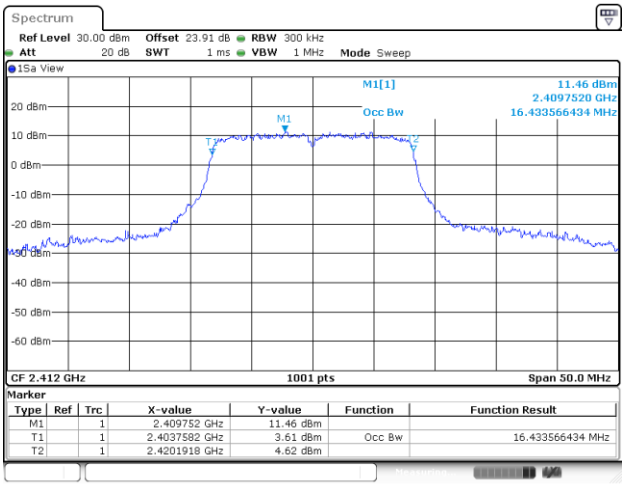
MIMO <Ant. 0+1>

<802.11b>

6dB Bandwidth	99% Occupied Bandwidth
	

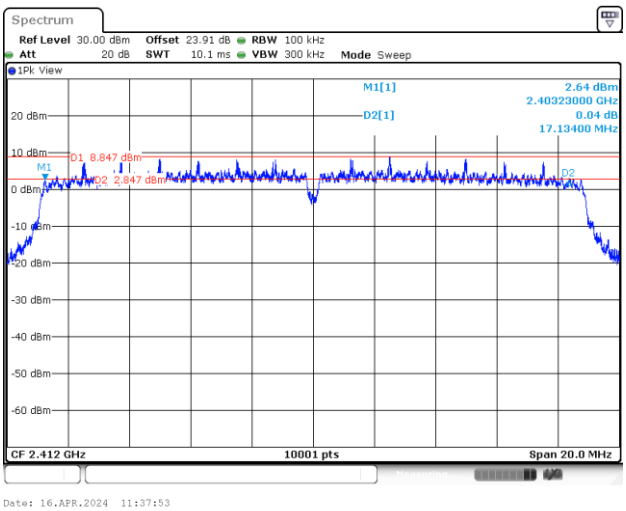
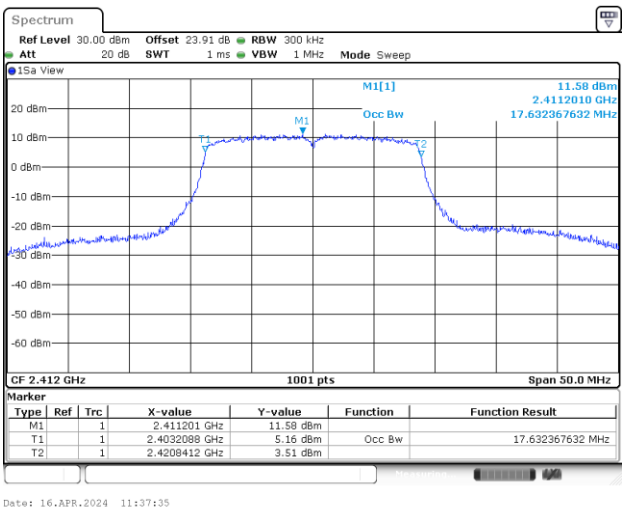
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11g>

6dB Bandwidth	99% Occupied Bandwidth
	

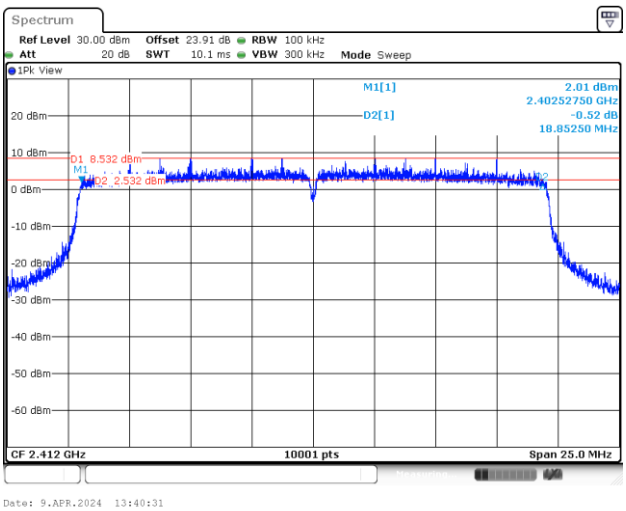
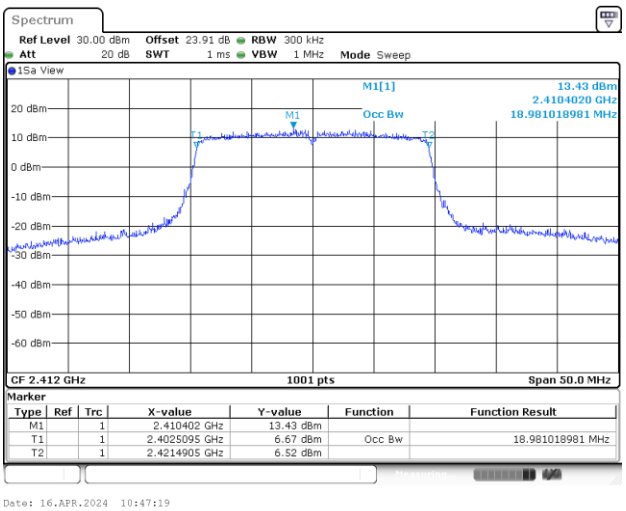
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

<802.11ac VHT20>

6dB Bandwidth	99% Occupied Bandwidth
	

Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

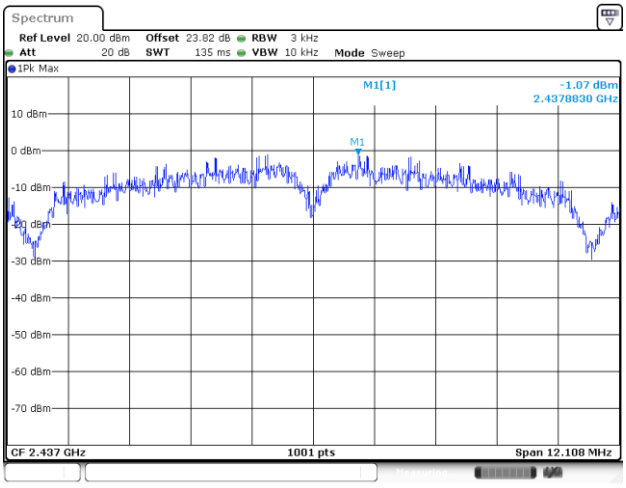
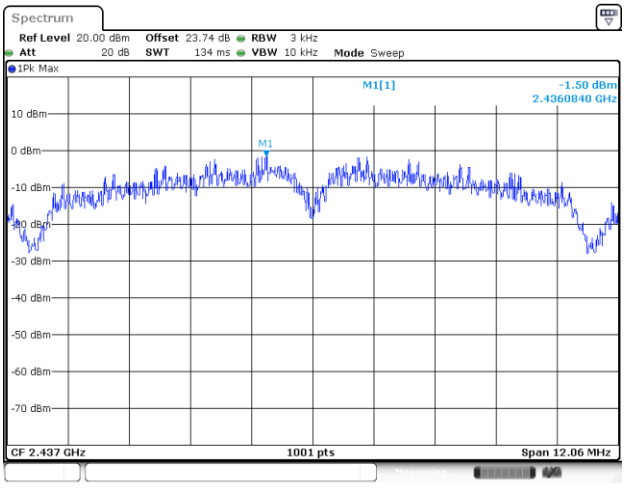
<802.11ax HE20>

6dB Bandwidth	99% Occupied Bandwidth
	

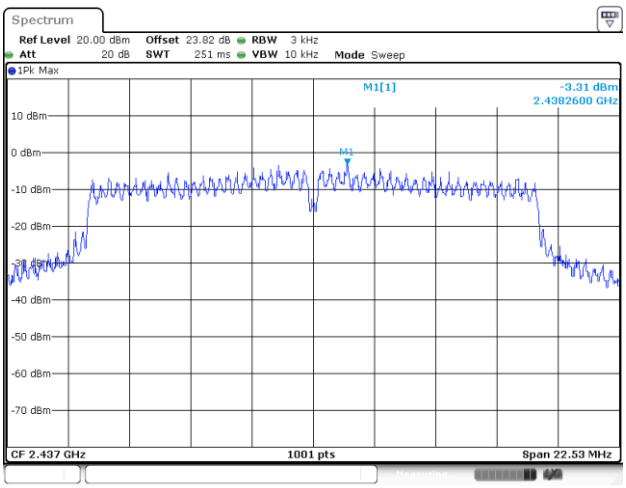
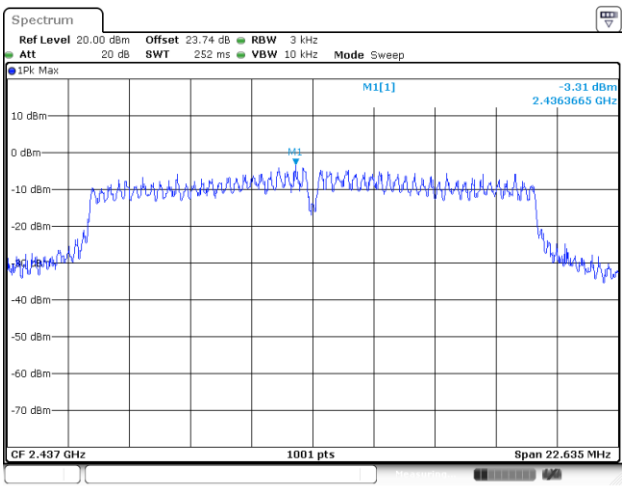
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

Power Spectral Density(dBm/3kHz)

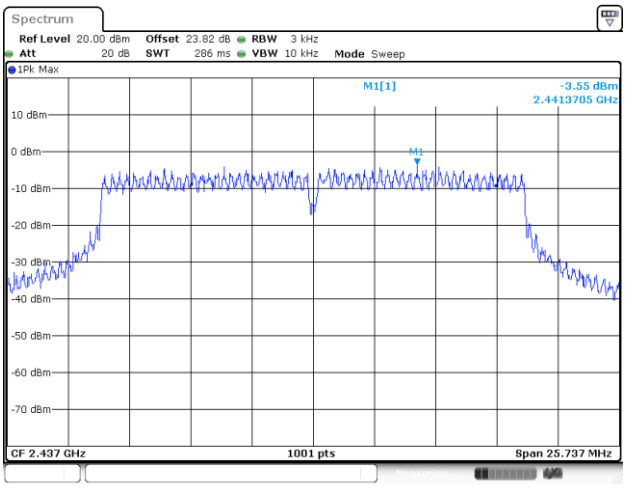
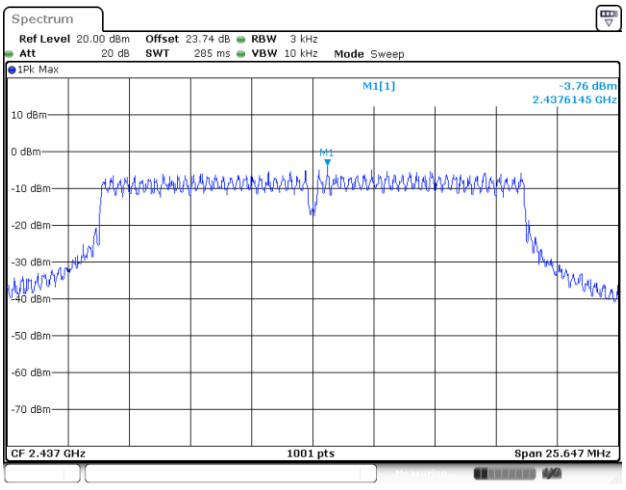
<802.11b>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

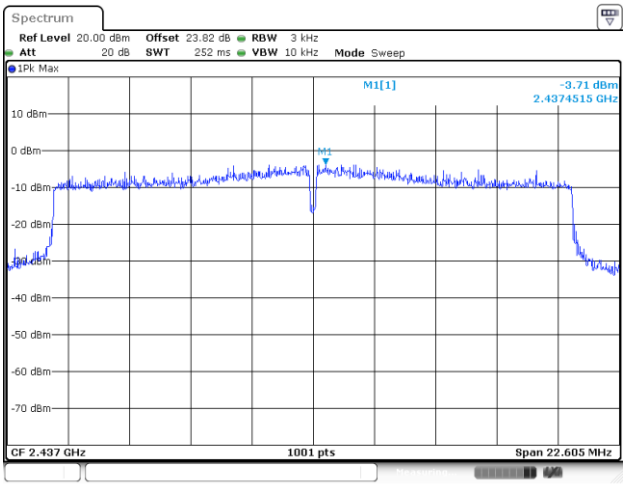
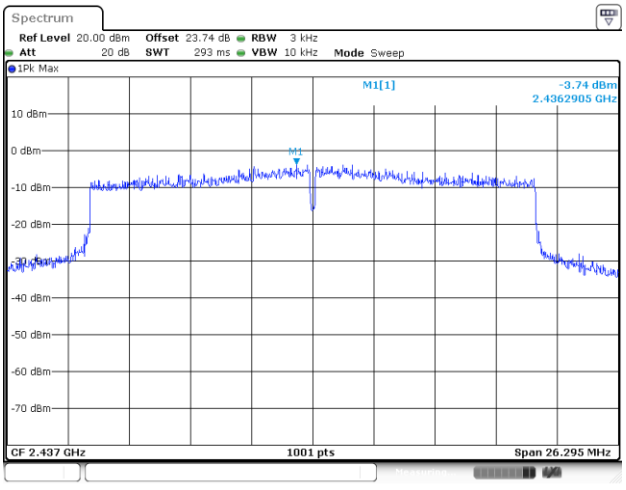
<802.11g>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

<802.11ac VHT20>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

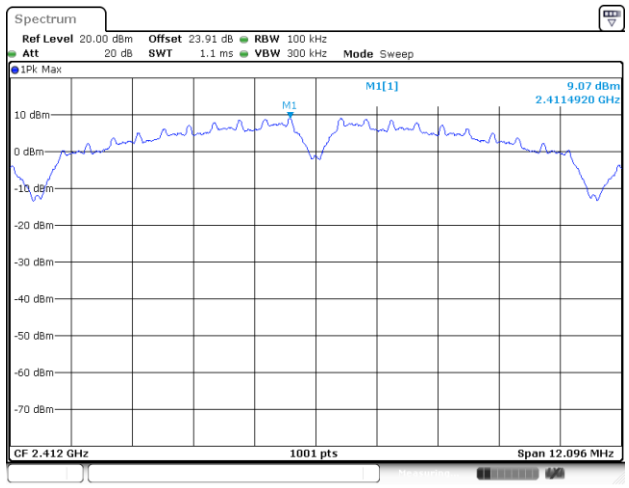
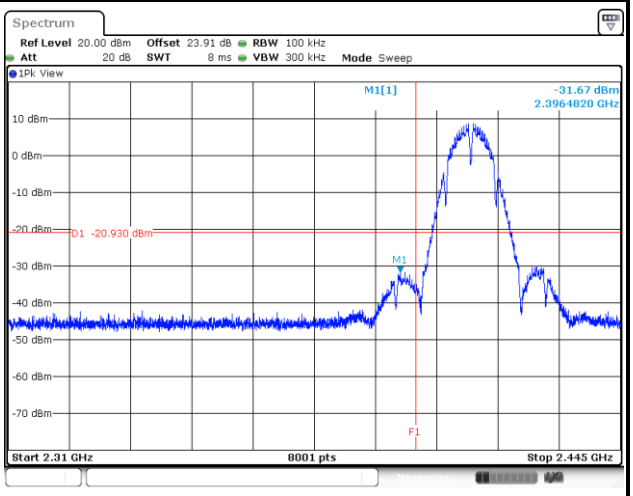
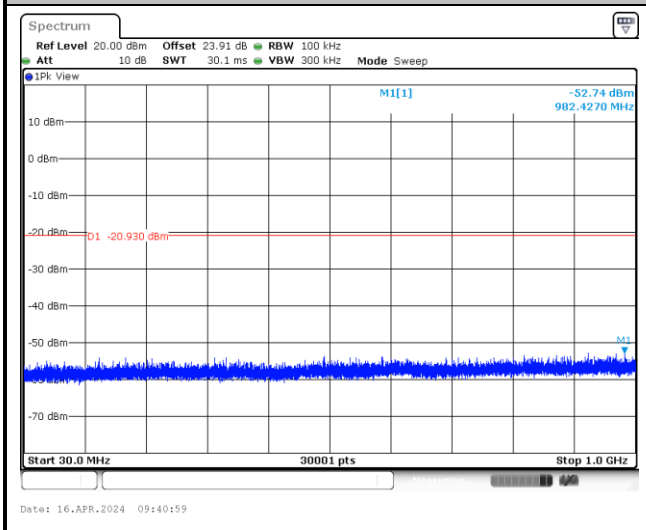
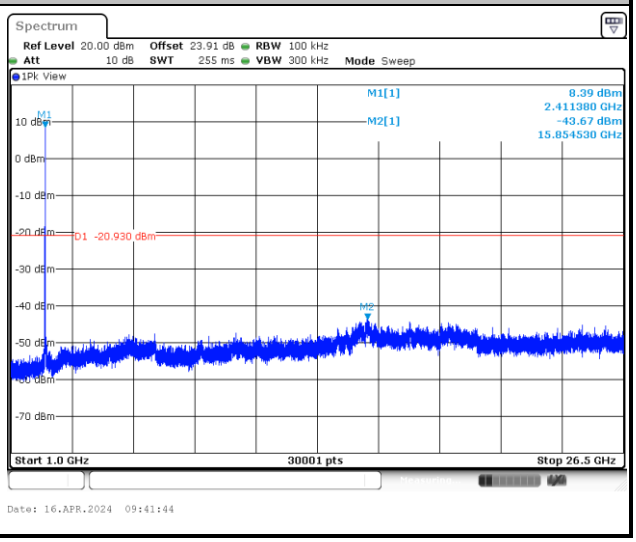
<802.11ax HE20>

Maximum Power Density Plot (dBm/3kHz)	
MIMO Ant 0	**MIMO Ant 1**
	

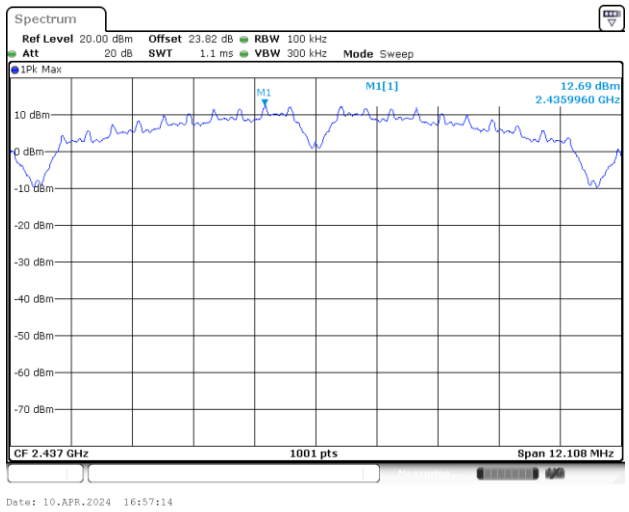
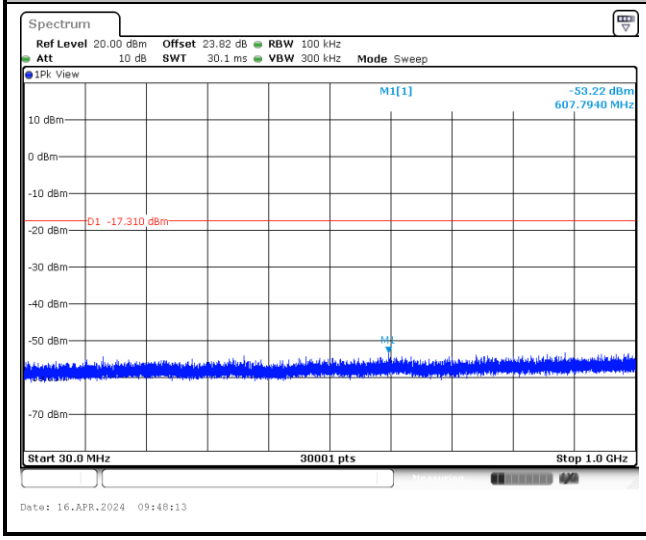
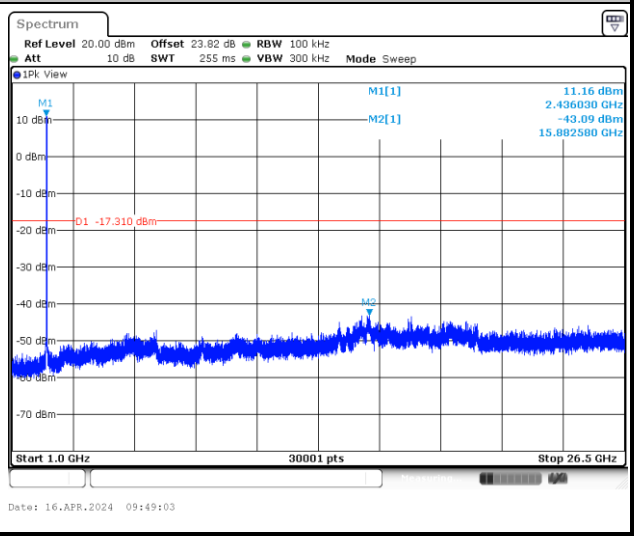
Band Edges and Spurious Emission

Number of TX = 2, Ant. 0 (Measured)

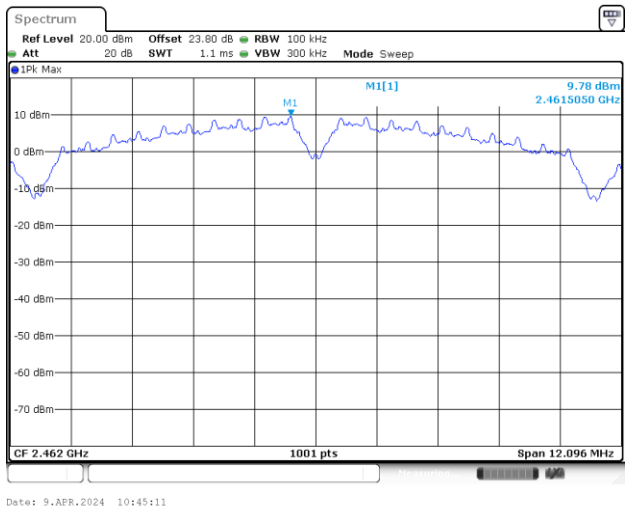
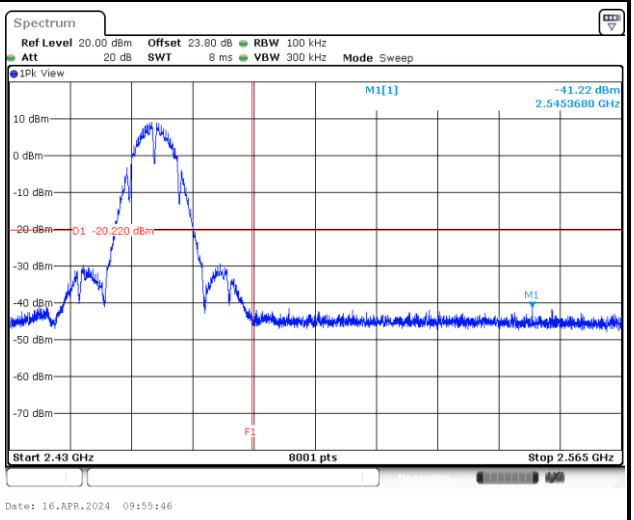
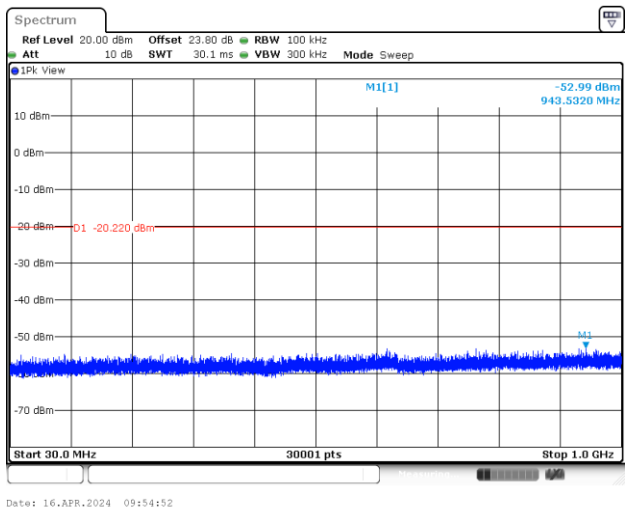
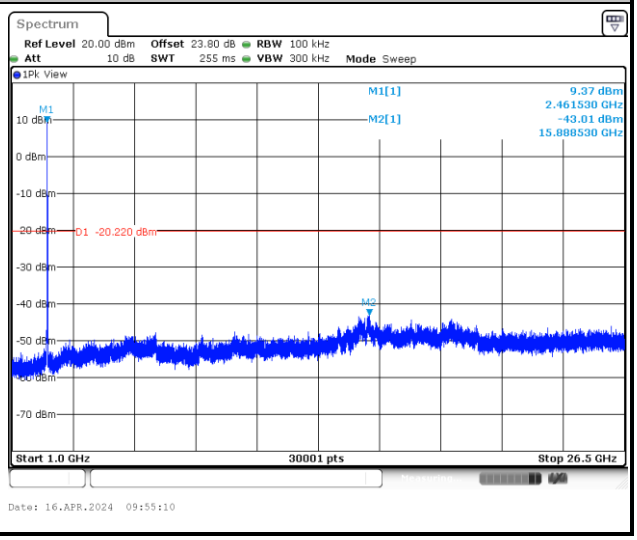
Test Mode :	802.11b	Test Channel :	01

100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

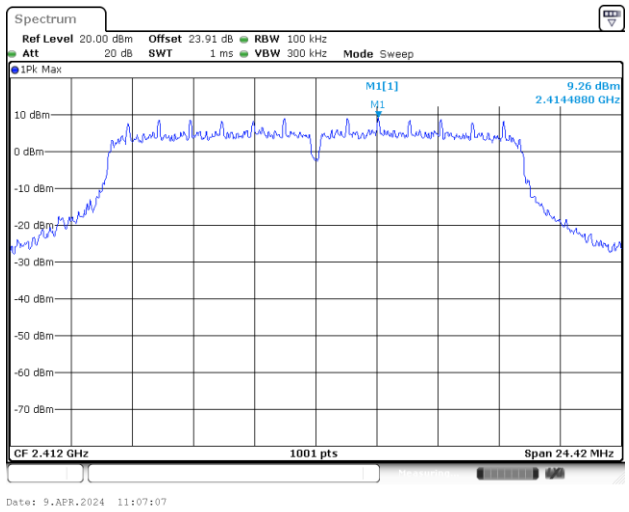
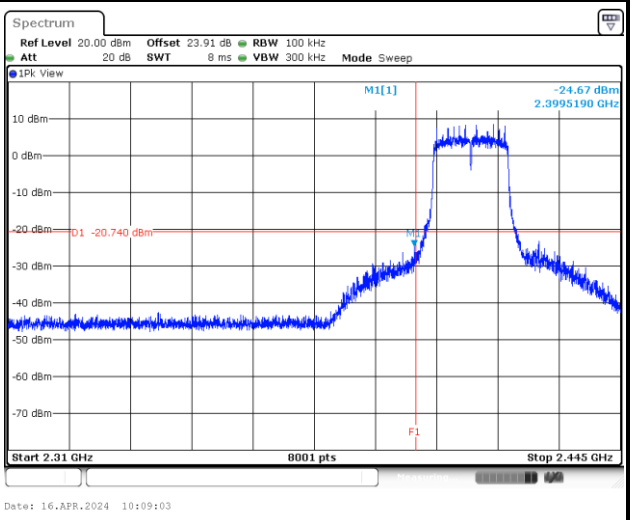
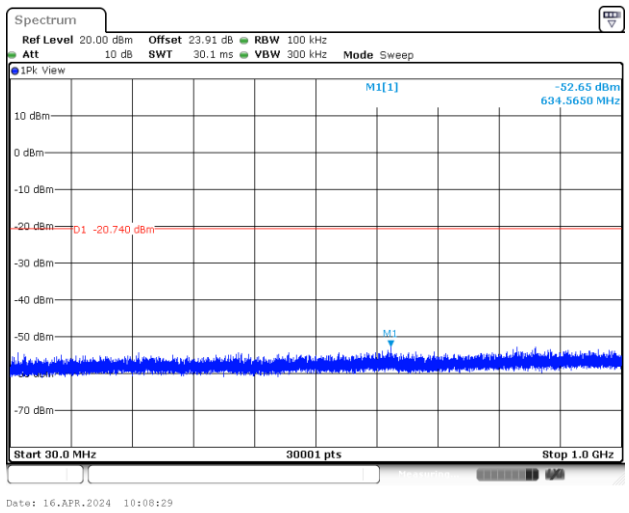
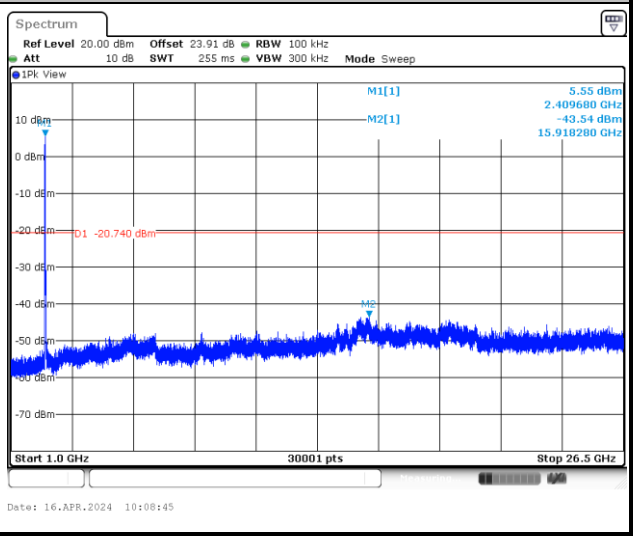
Test Mode :	802.11b	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

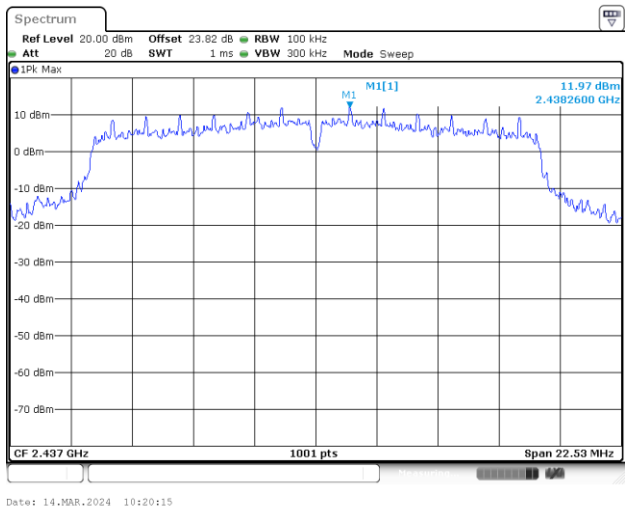
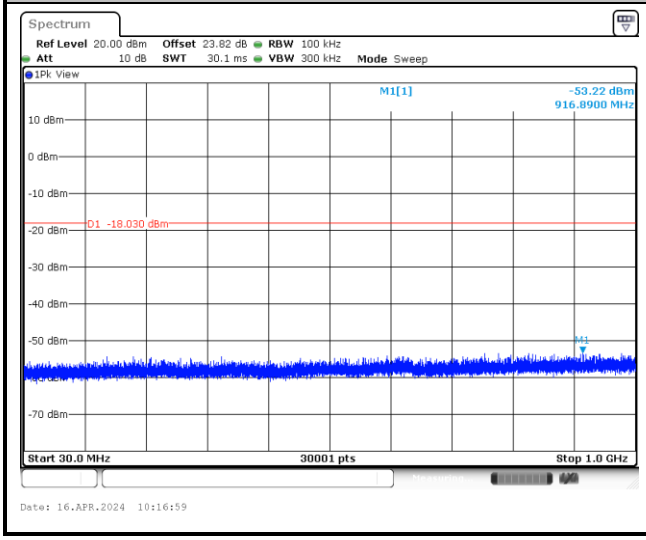
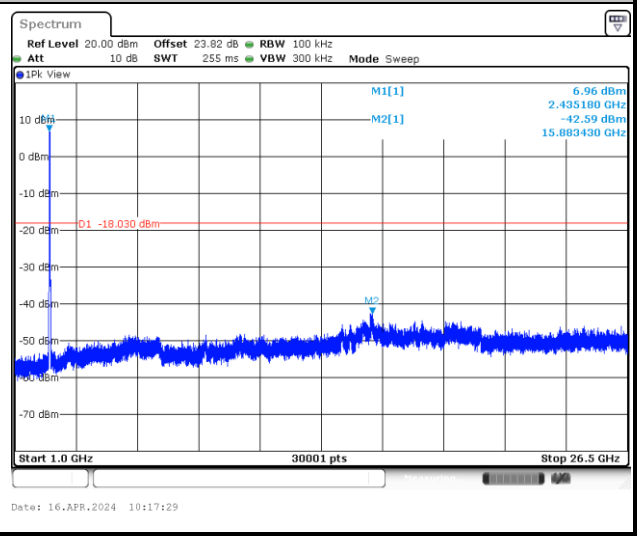
Test Mode :	802.11b	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

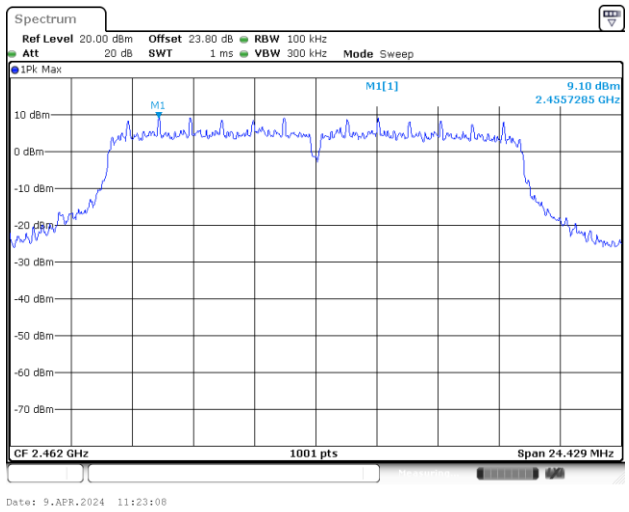
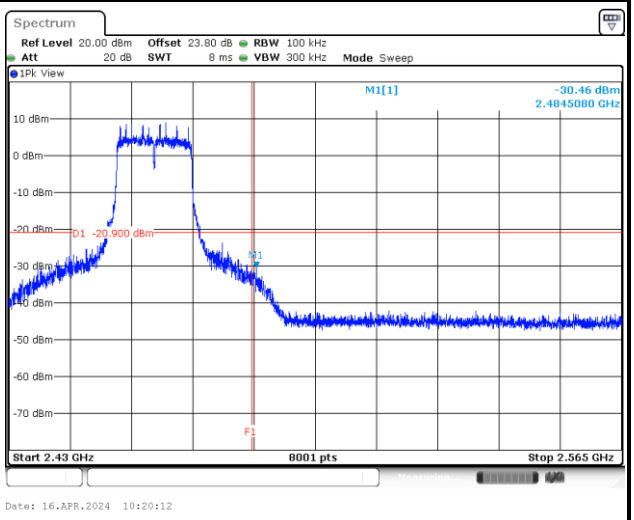
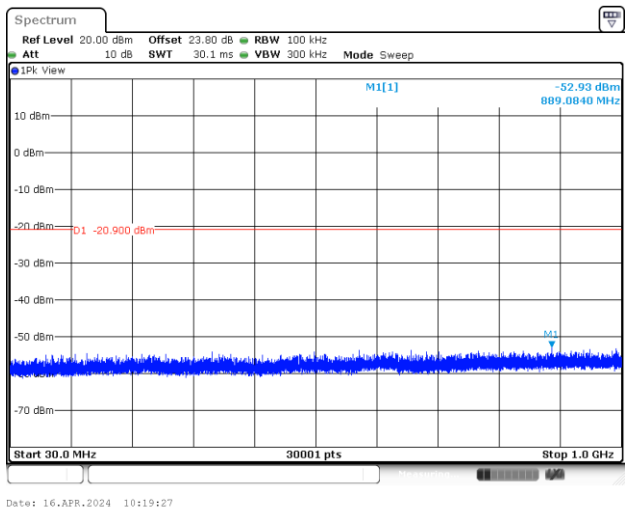
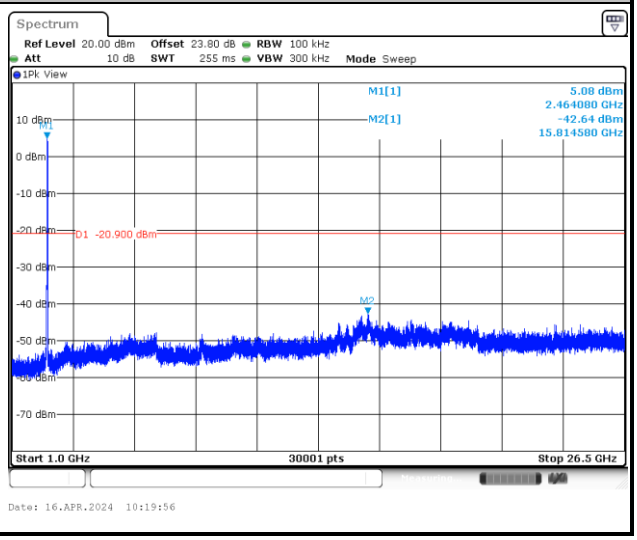
Test Mode :	802.11g	Test Channel :	01

100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

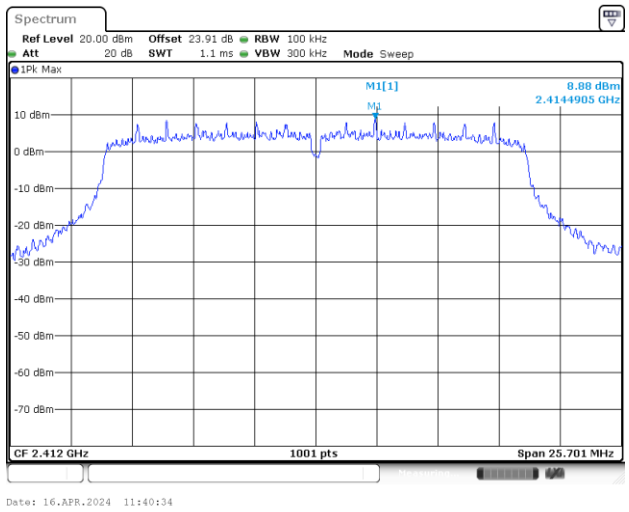
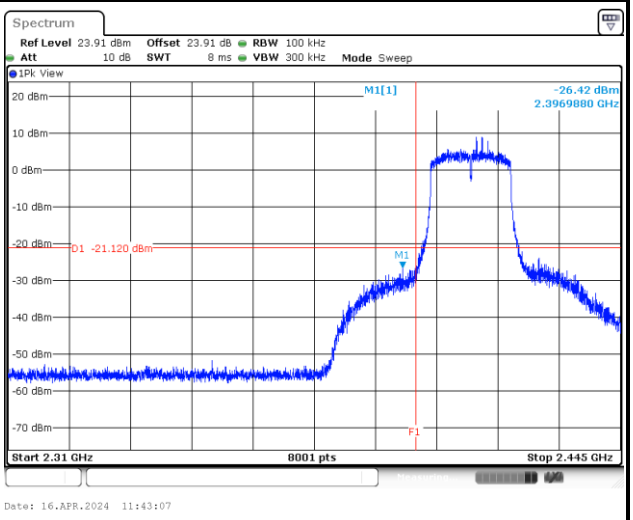
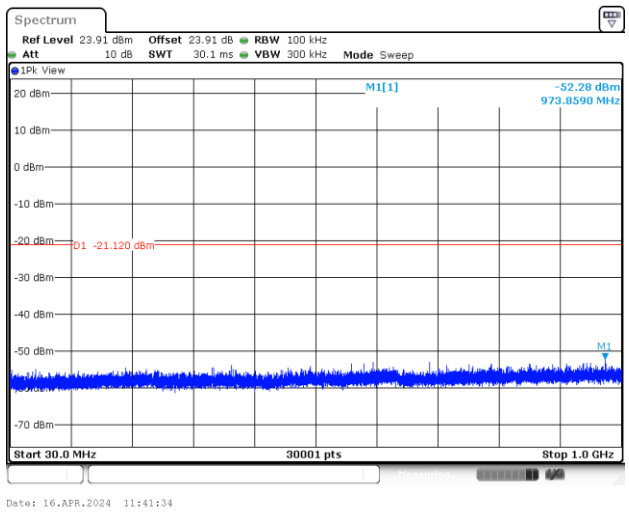
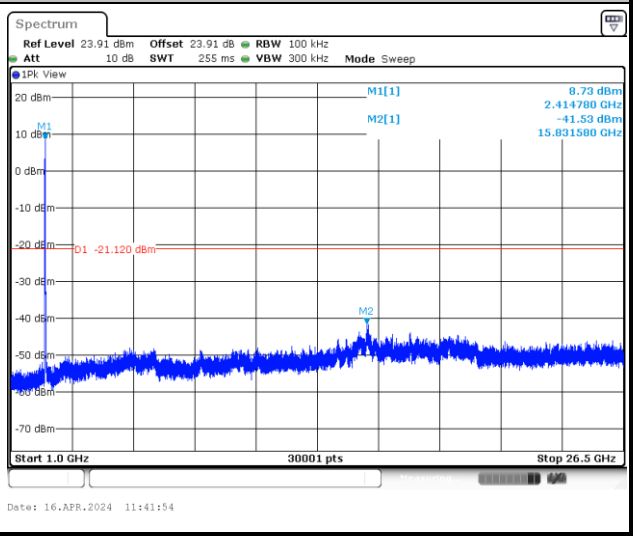
Test Mode :	802.11g	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

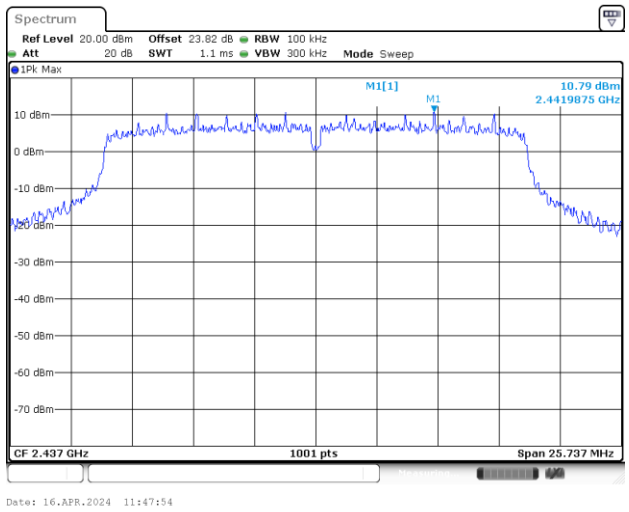
Test Mode :	802.11g	Test Channel :	11

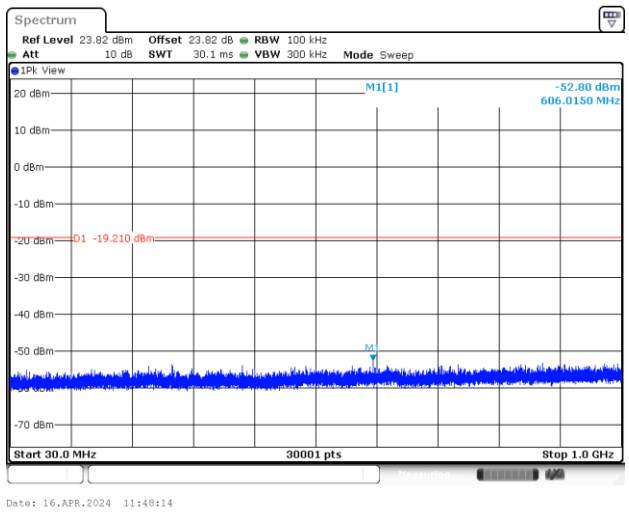
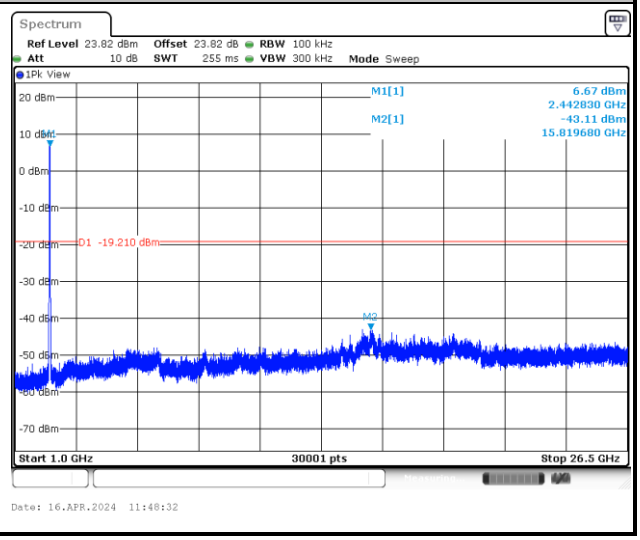
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ac VHT20	Test Channel :	01

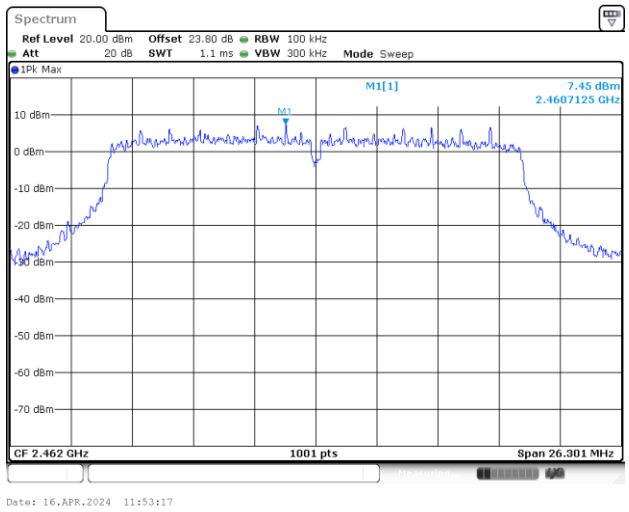
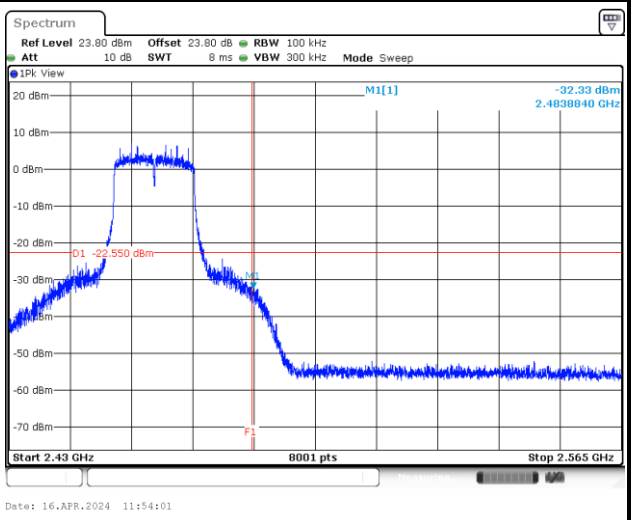
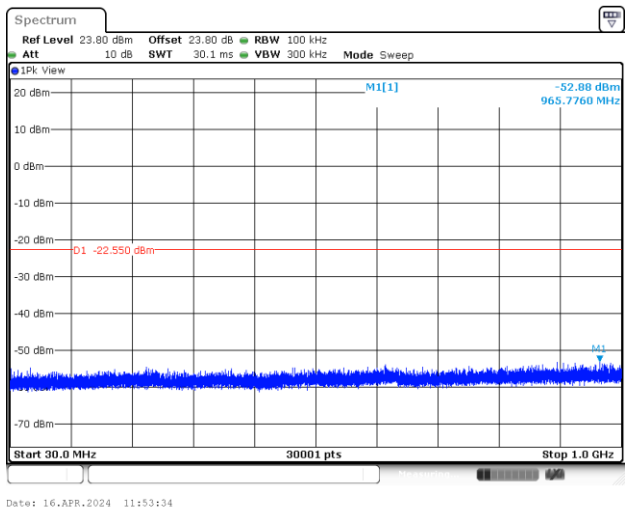
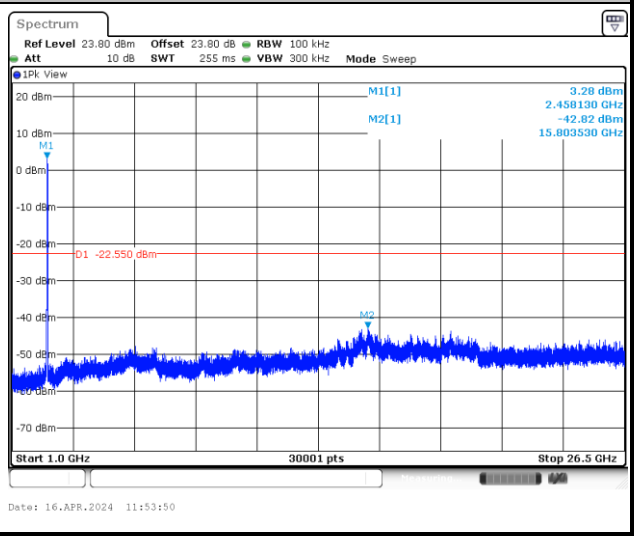
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ac VHT20	Test Channel :	06

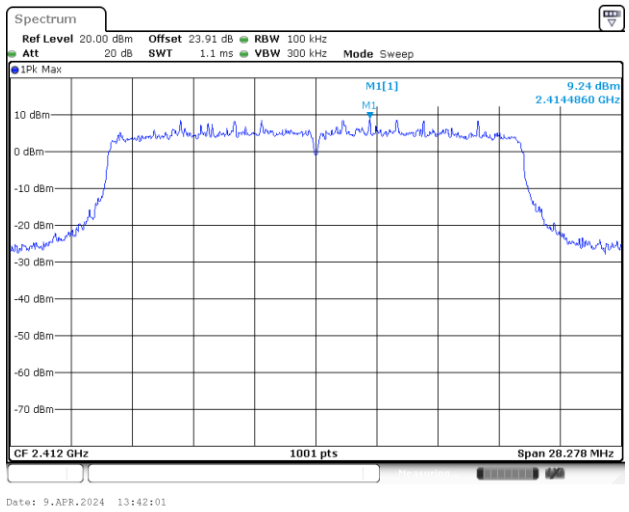
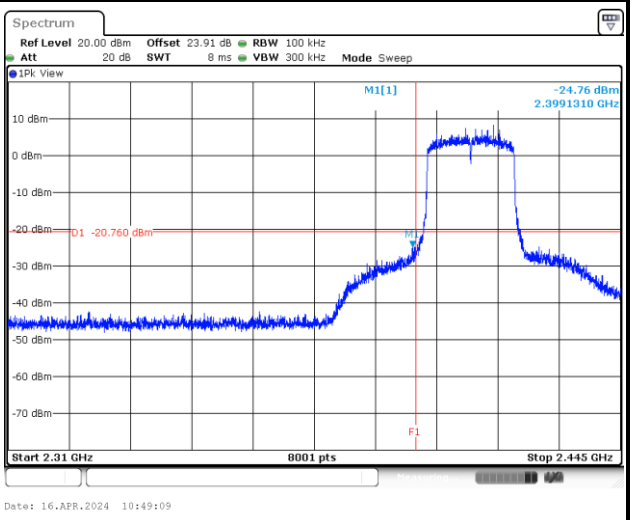
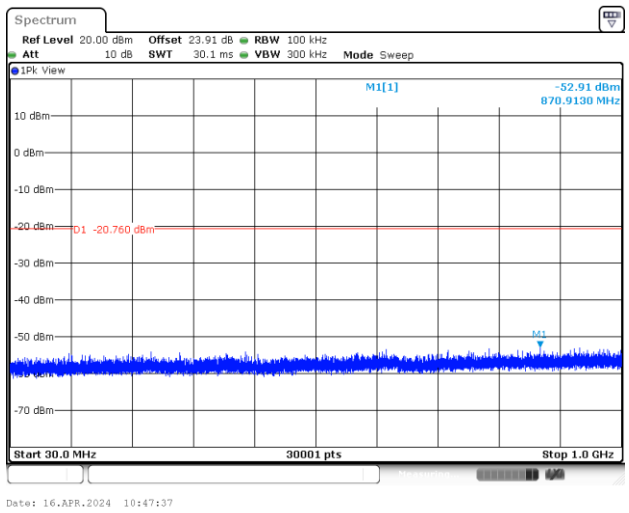
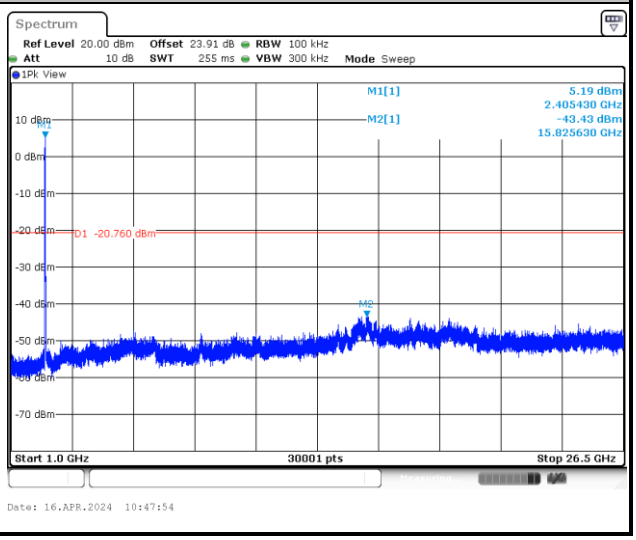
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

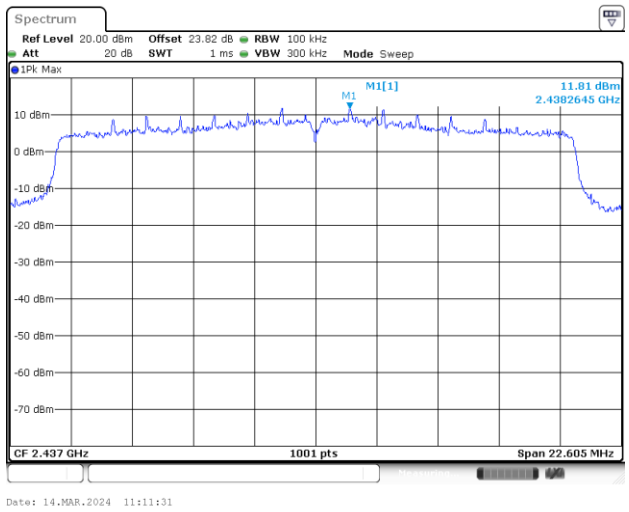
Test Mode :	802.11ac VHT20	Test Channel :	11

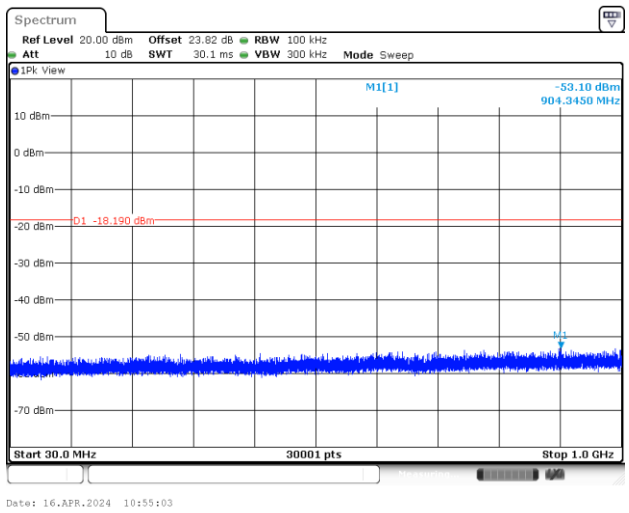
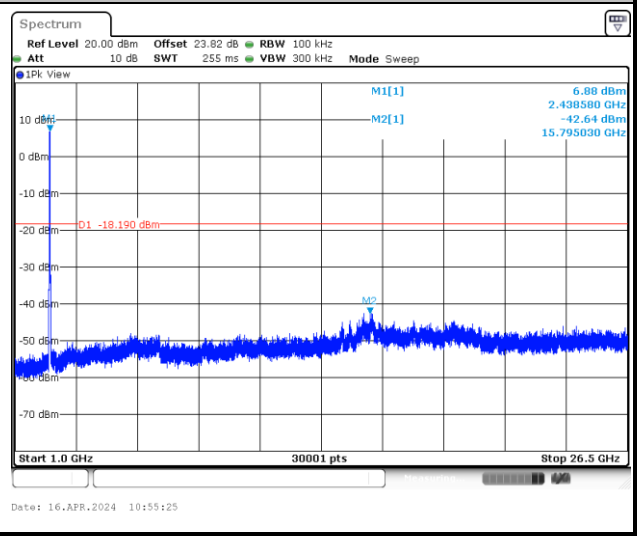
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	01

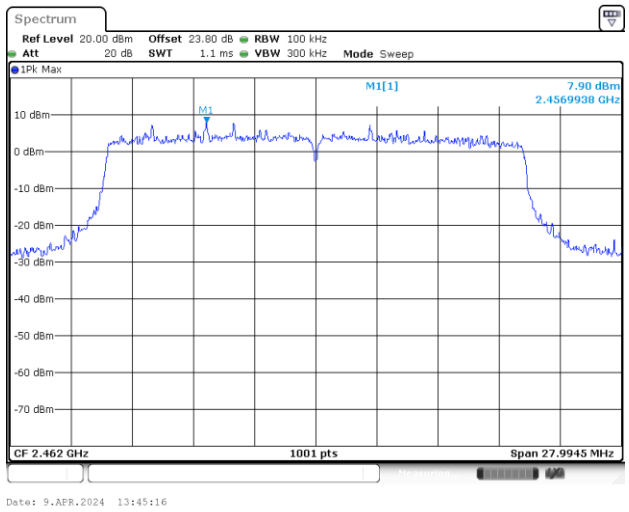
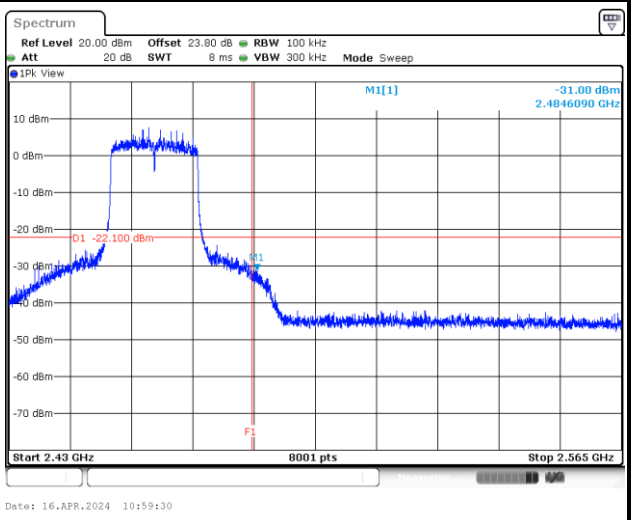
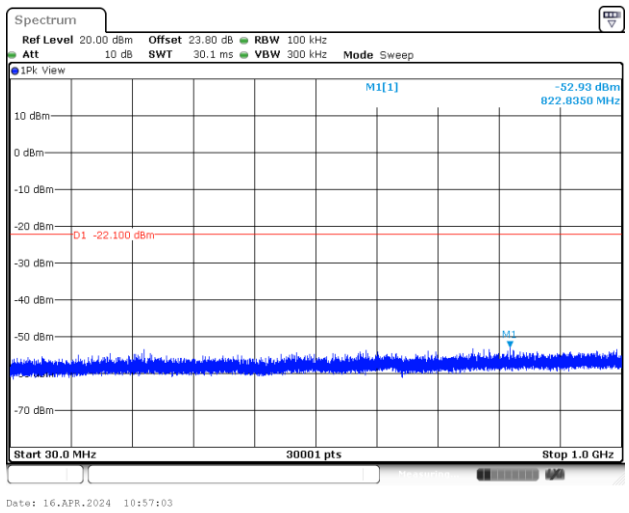
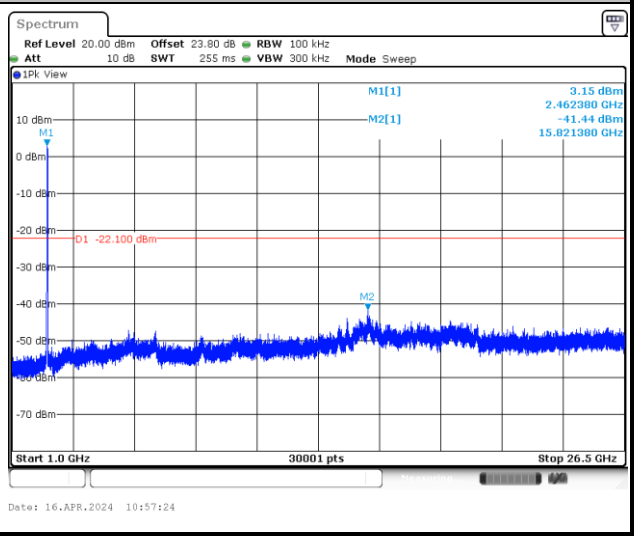
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	

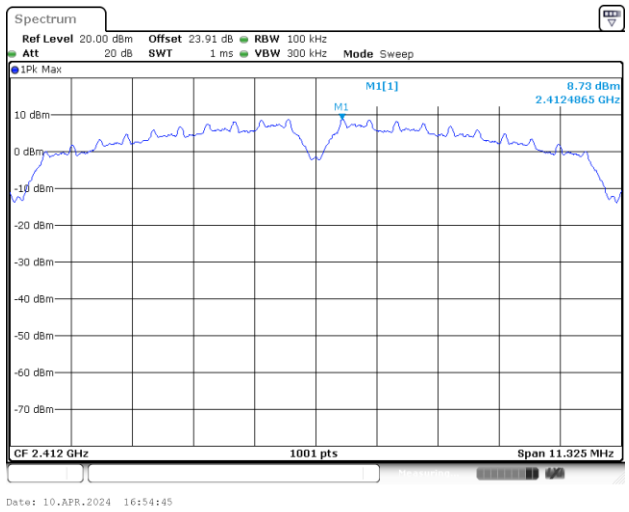
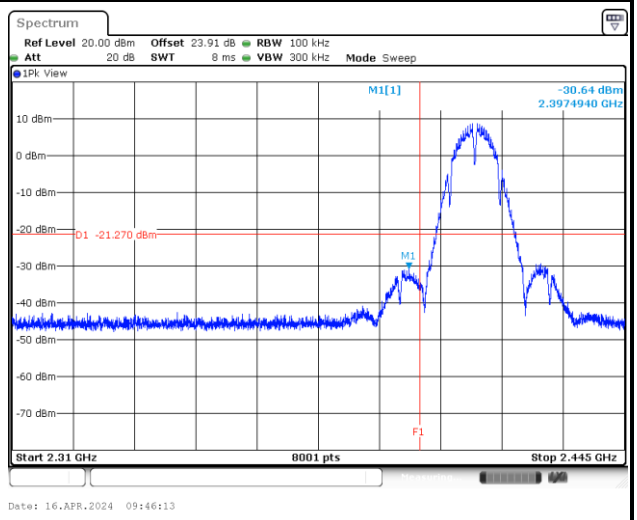
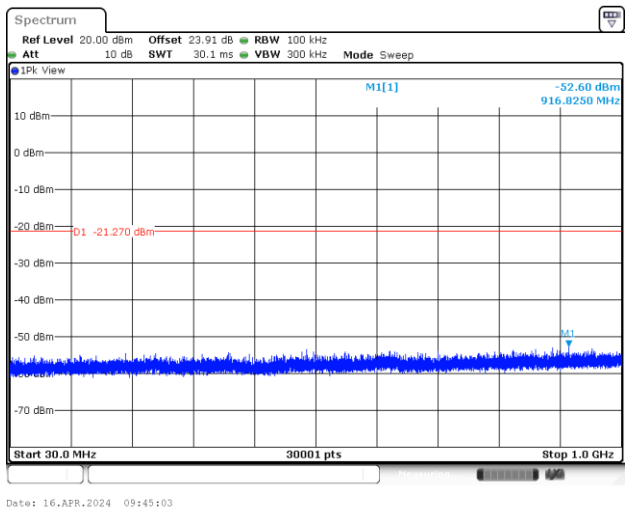
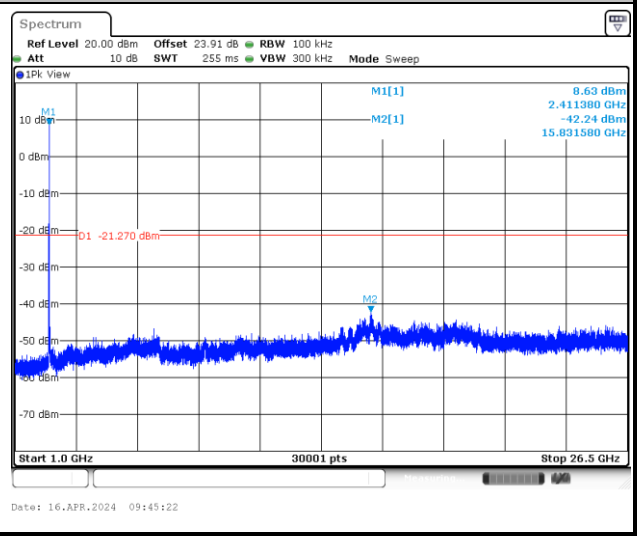
Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	11

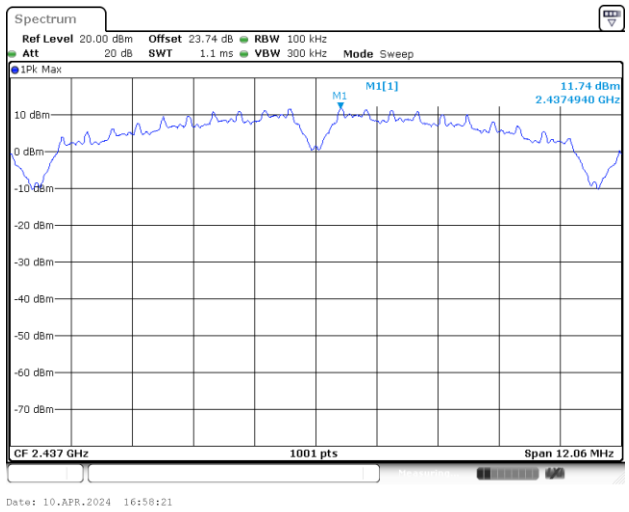
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

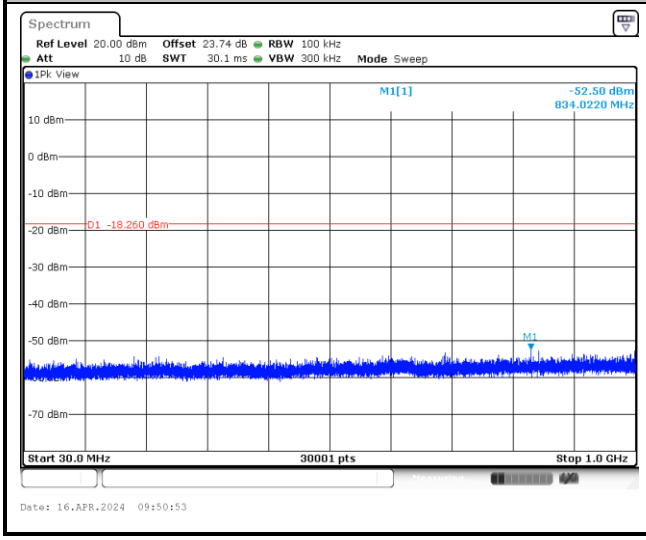
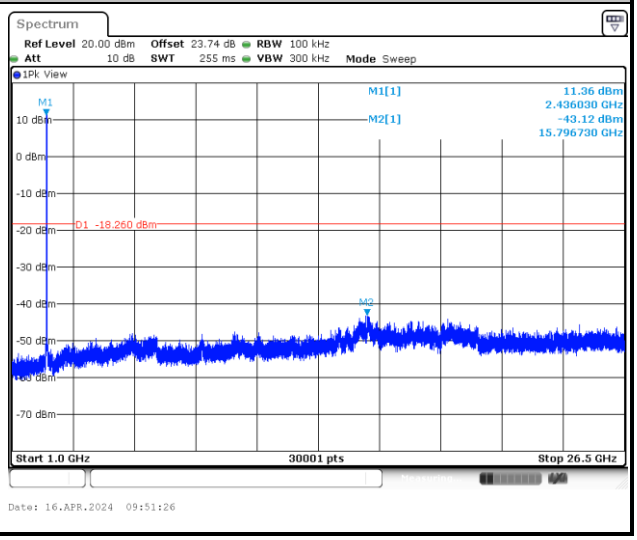
Number of TX = 2, Ant. 1 (Measured)

Test Mode :	802.11b	Test Channel :	01

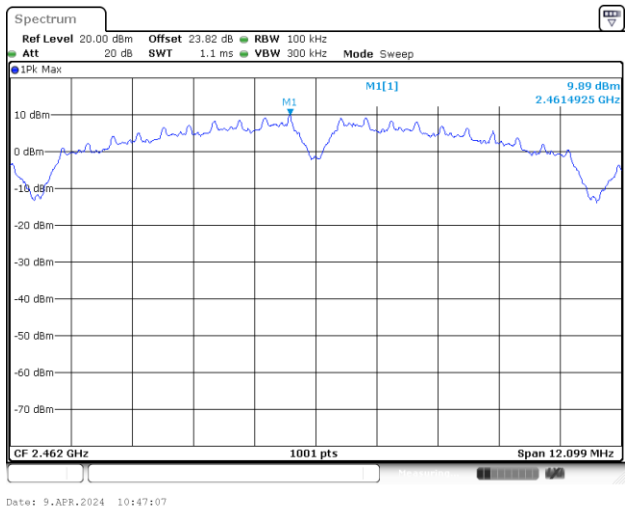
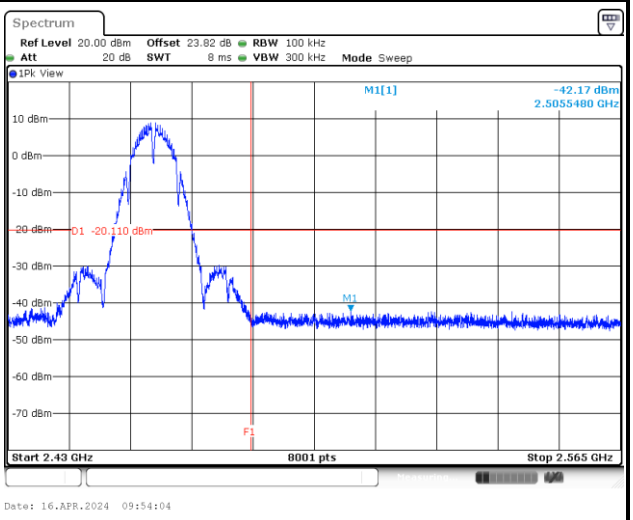
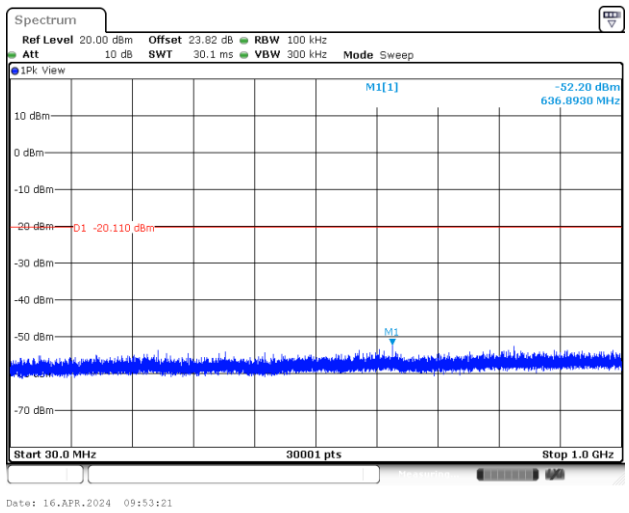
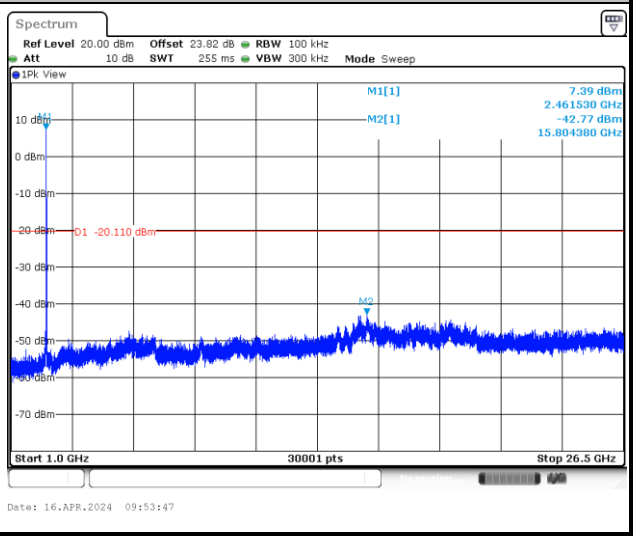
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11b	Test Channel :	06

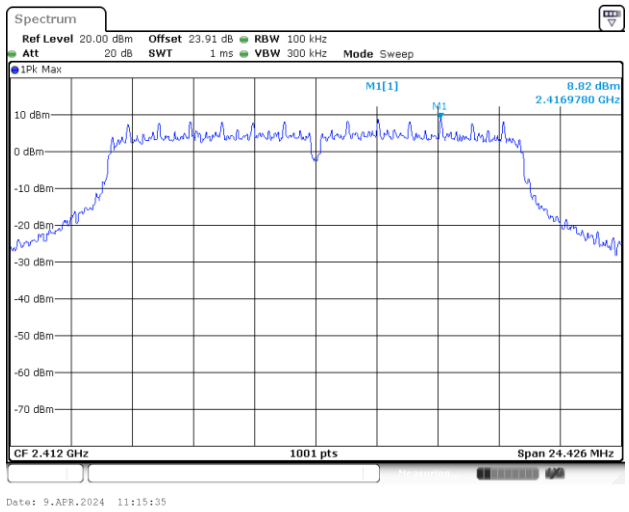
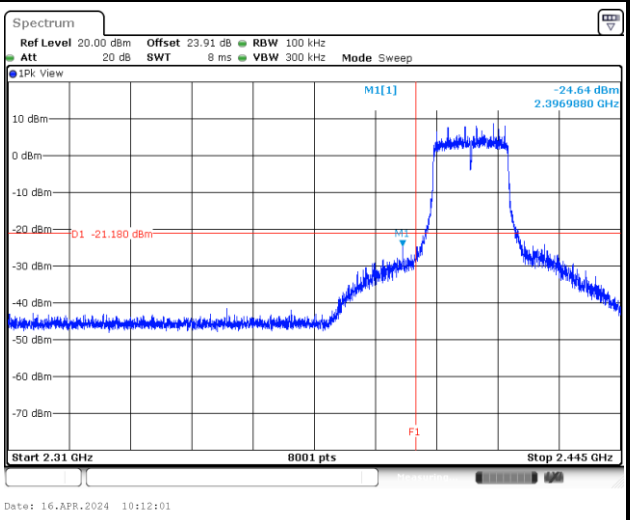
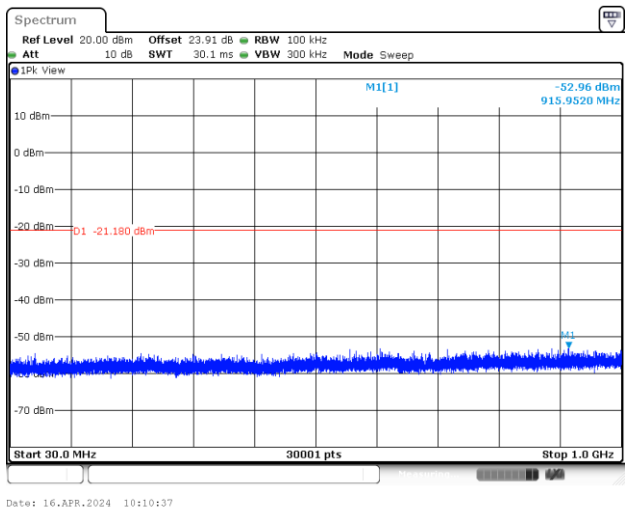
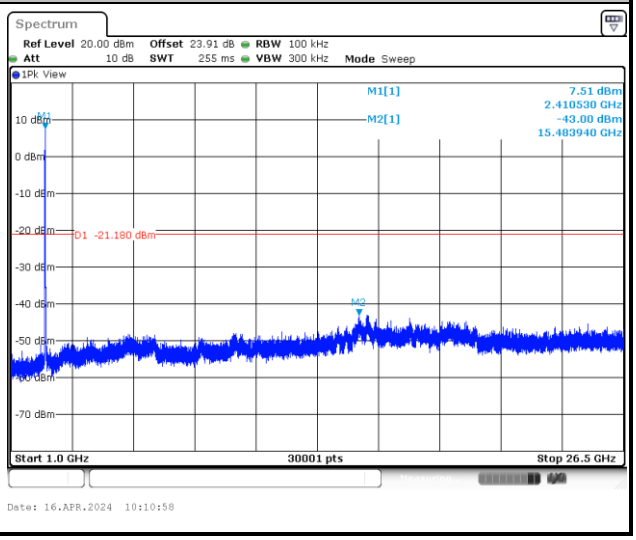
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

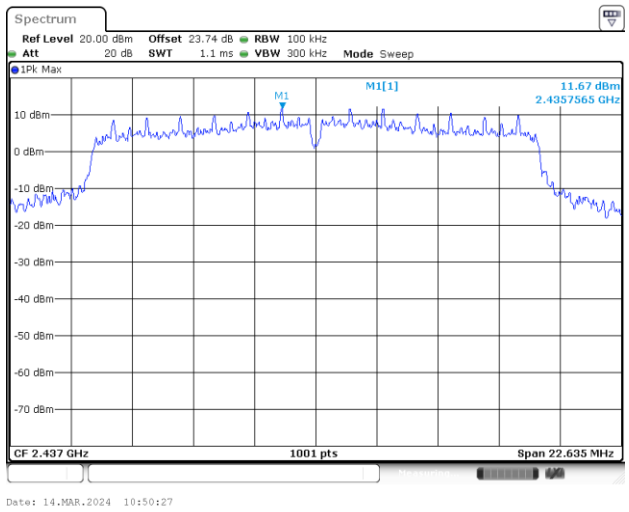
Test Mode :	802.11b	Test Channel :	11

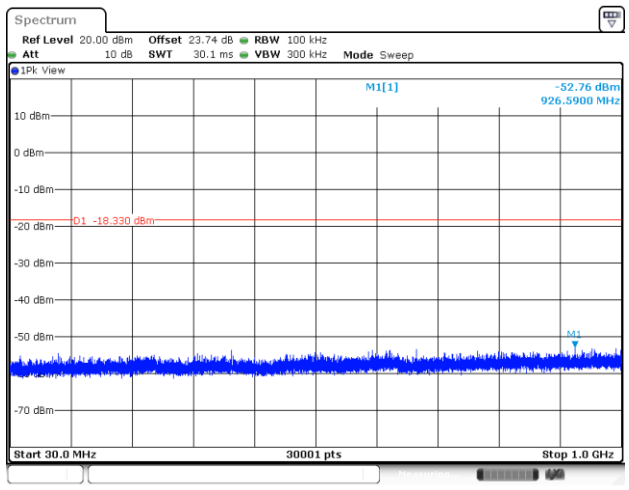
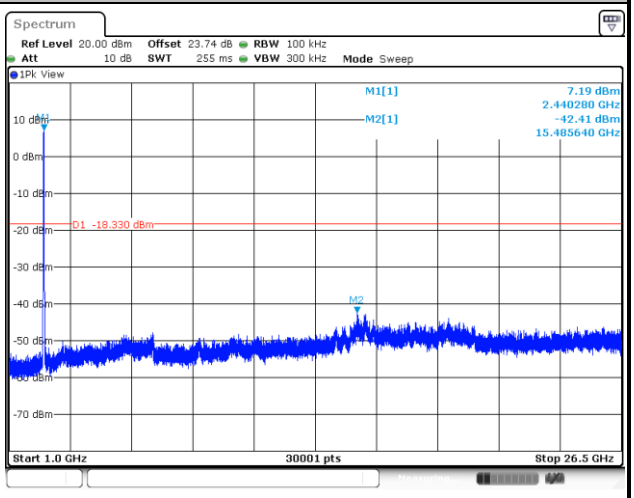
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	01

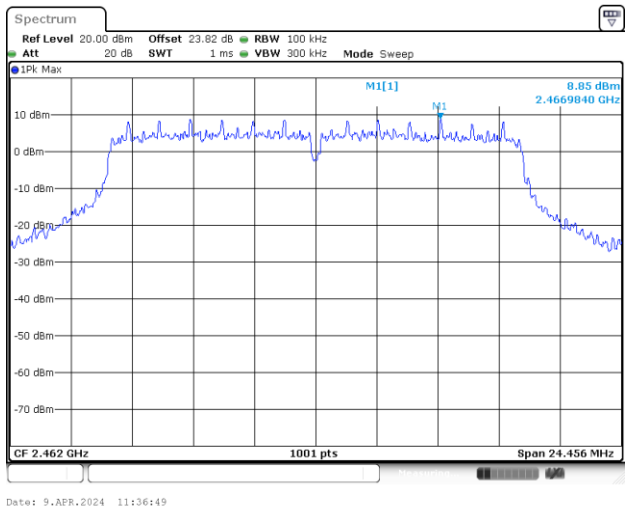
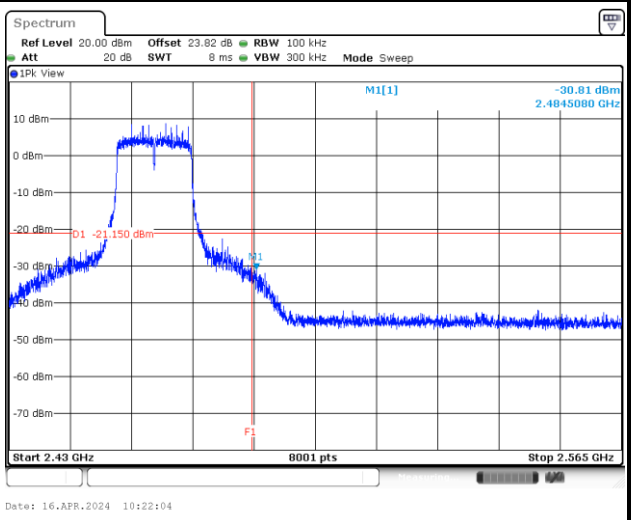
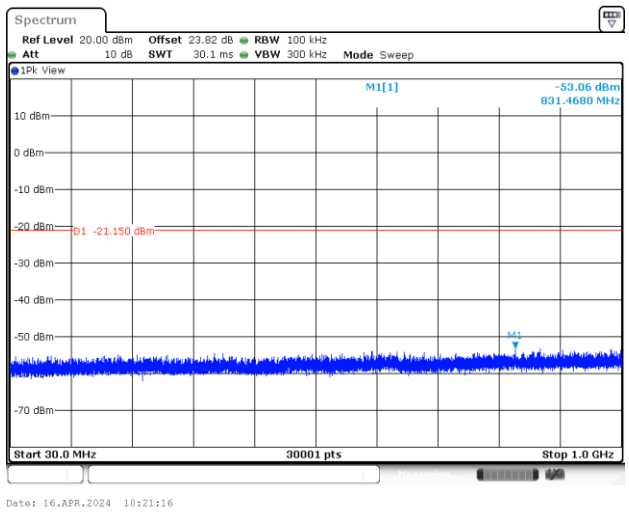
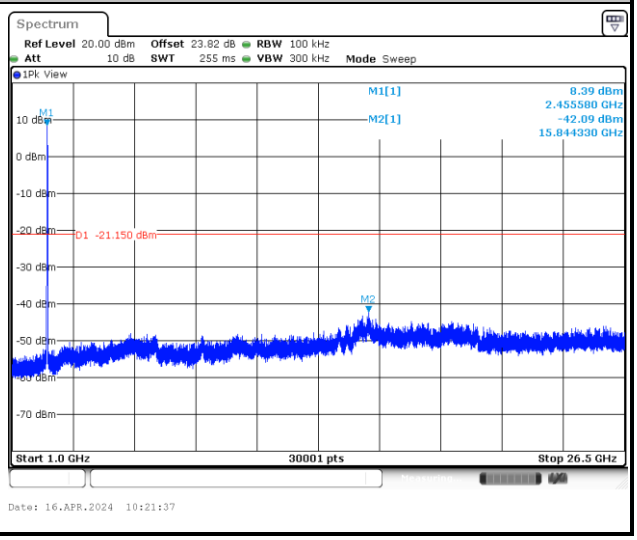
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11g	Test Channel :	06

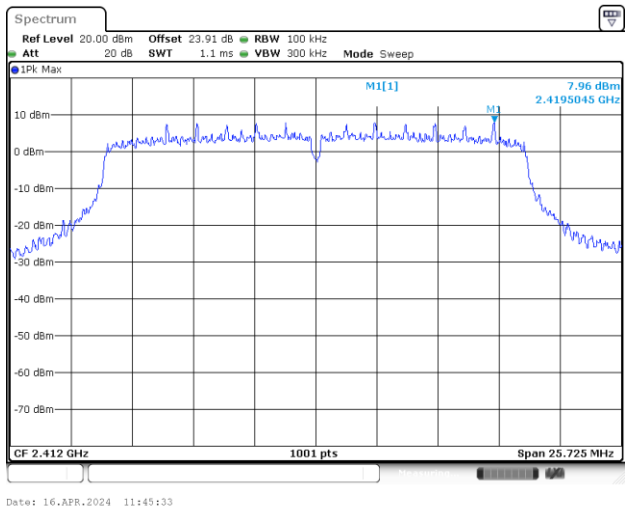
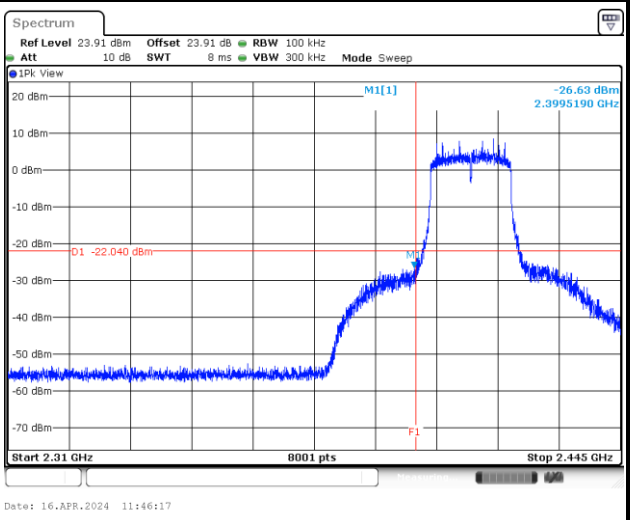
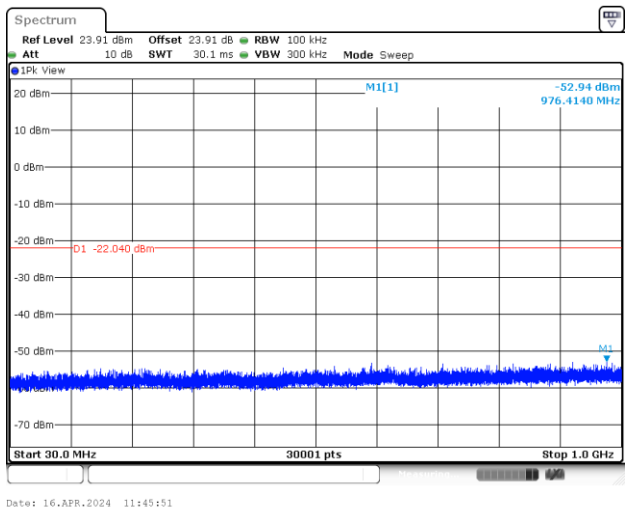
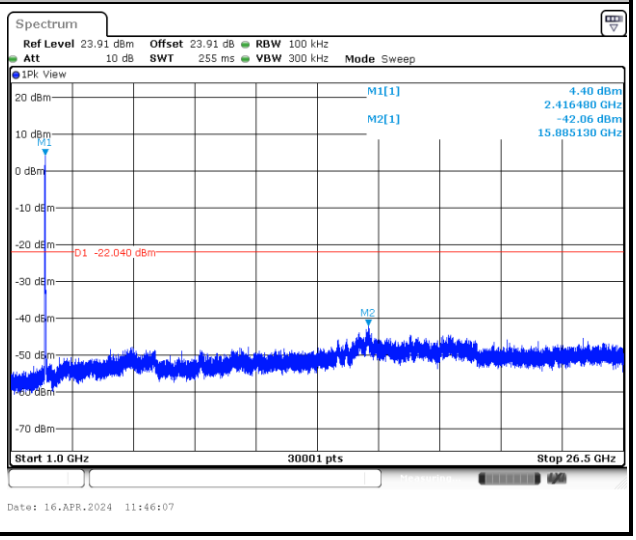
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

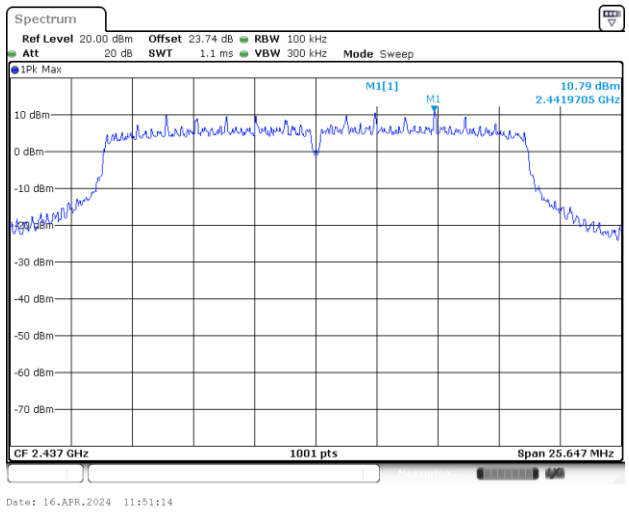
Test Mode :	802.11g	Test Channel :	11

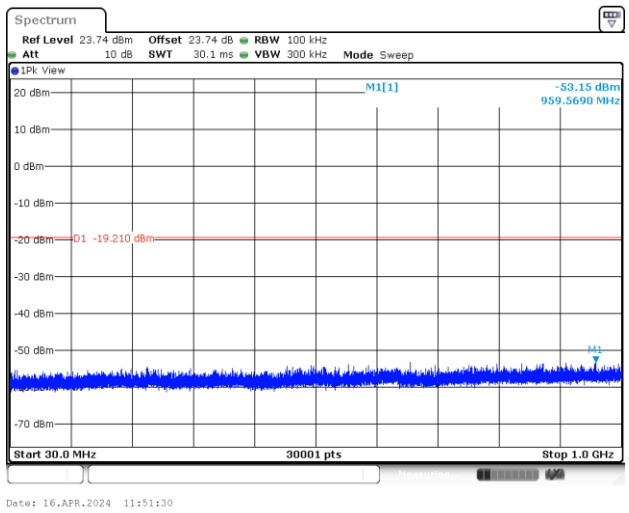
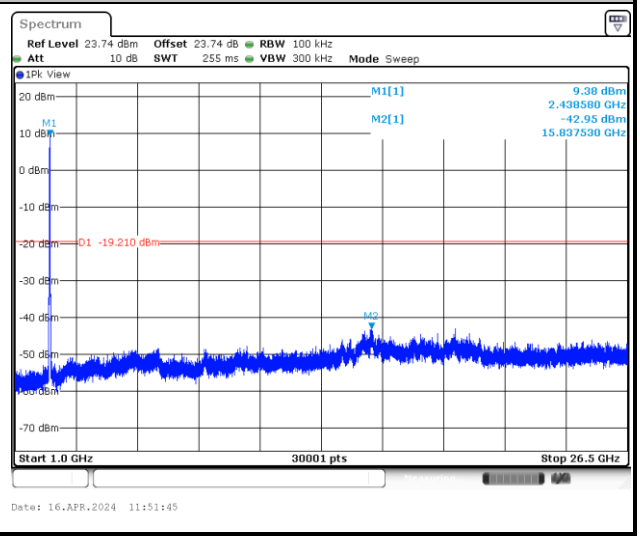
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ac VHT20	Test Channel :	01

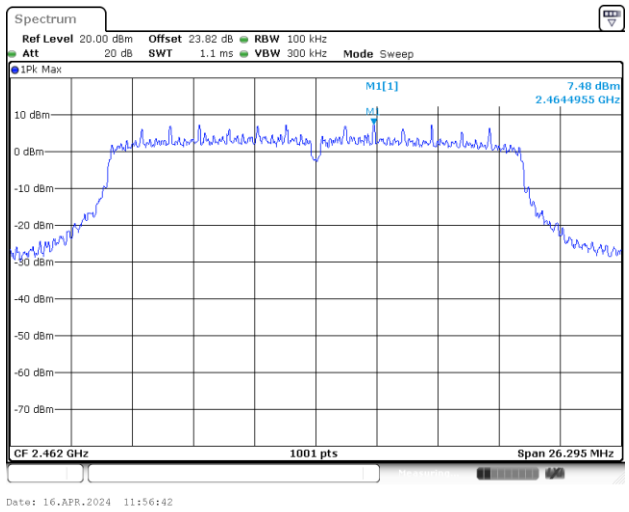
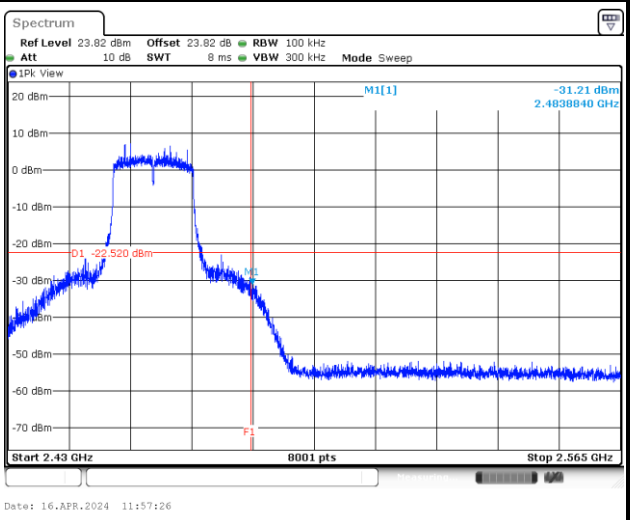
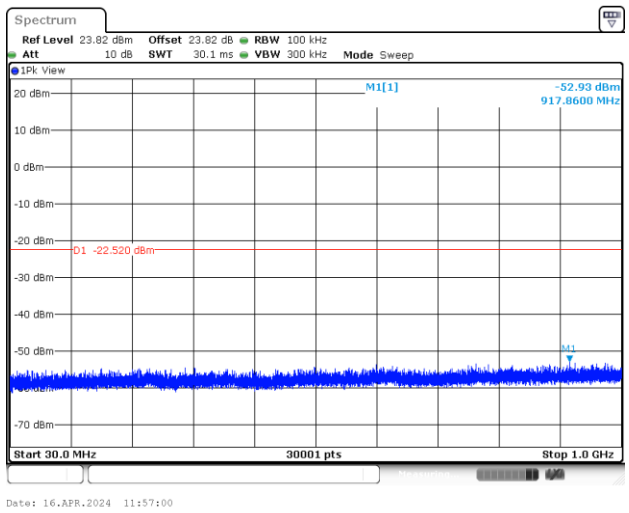
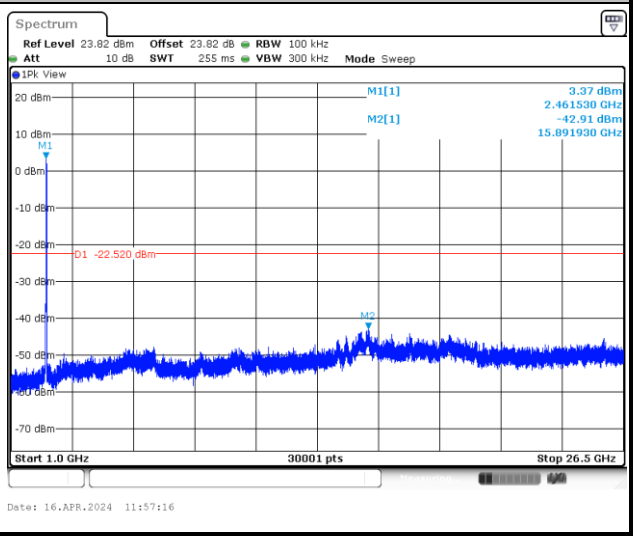
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ac VHT20	Test Channel :	06

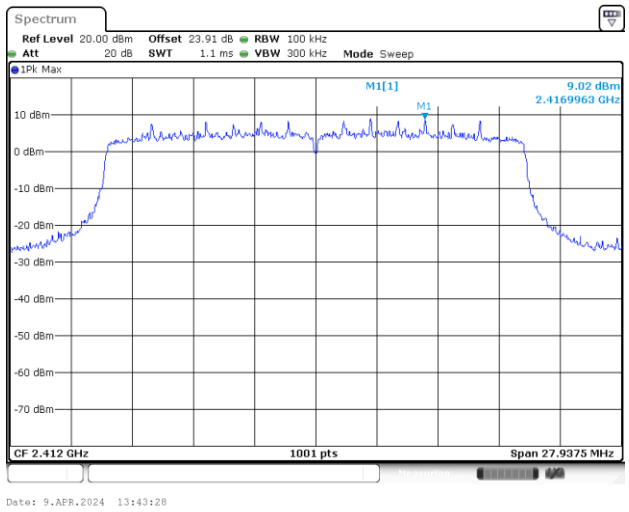
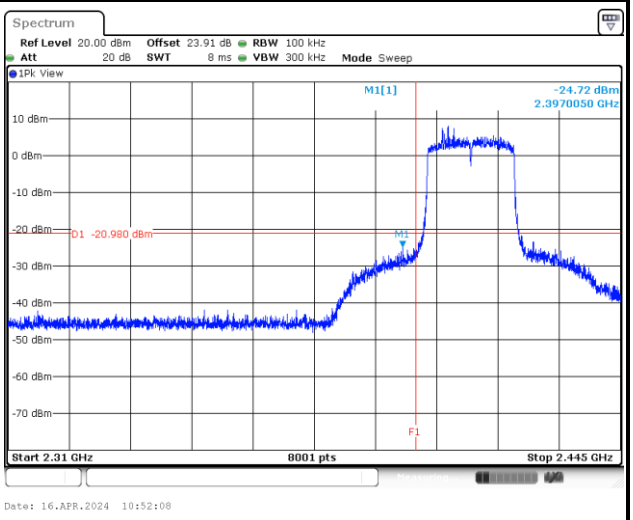
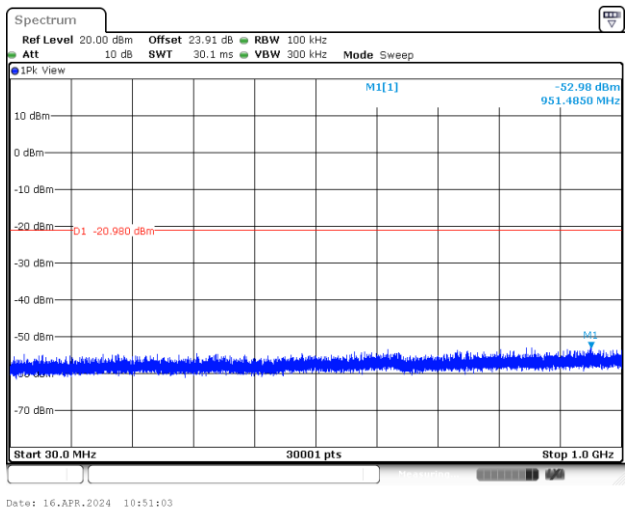
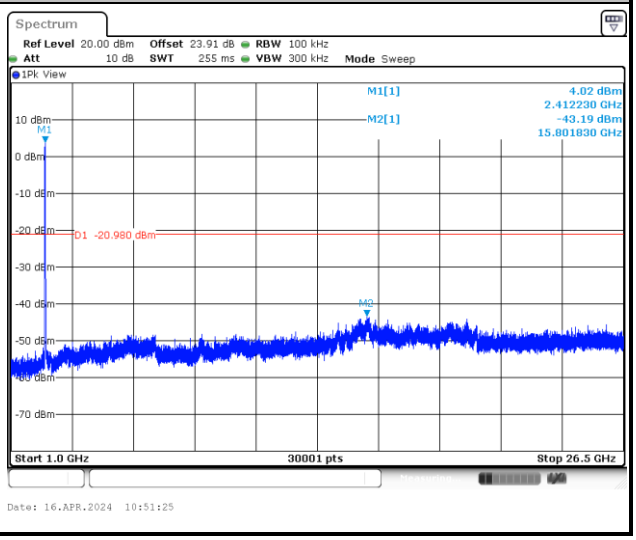
100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

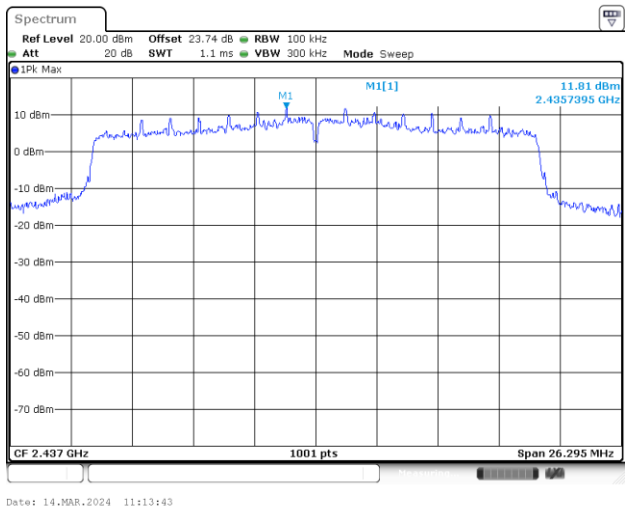
Test Mode :	802.11ac VHT20	Test Channel :	11

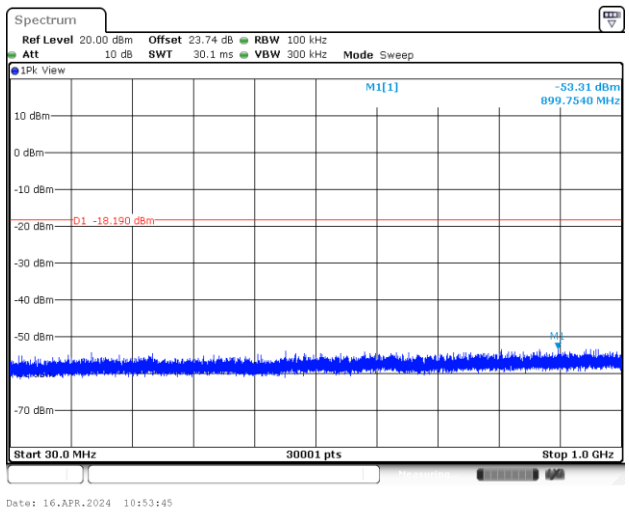
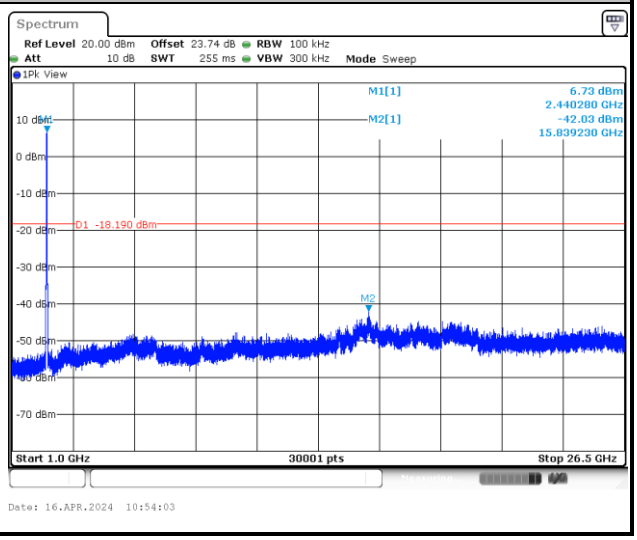
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	01

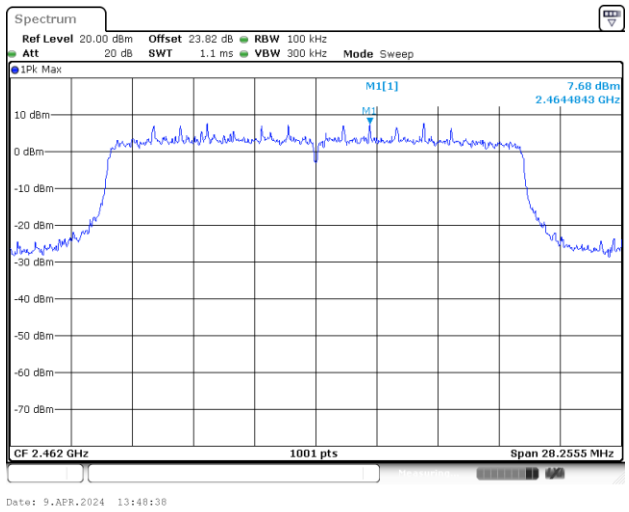
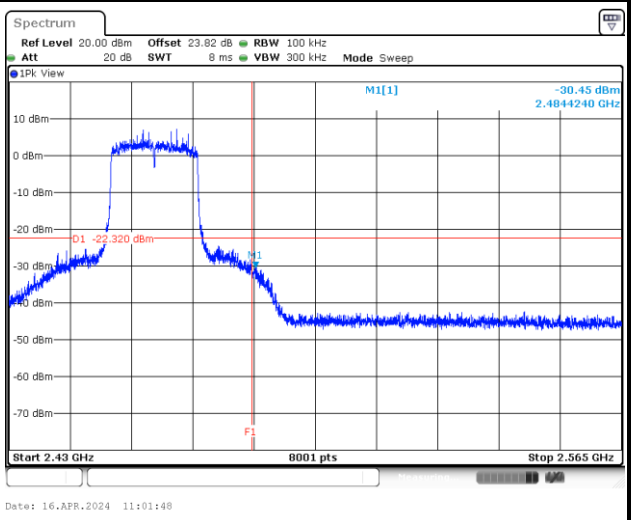
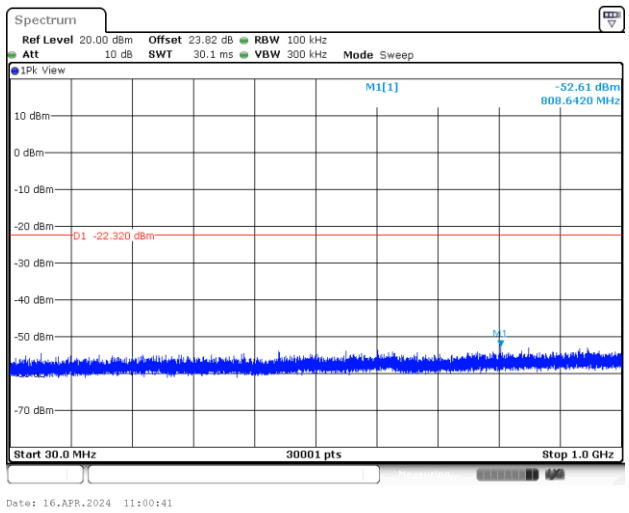
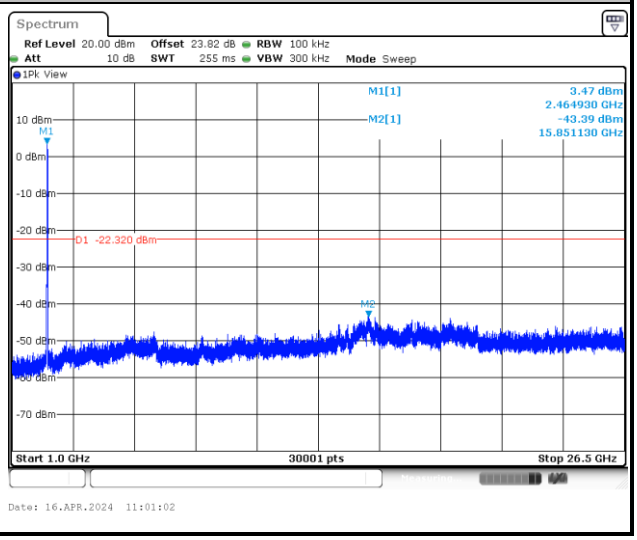
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	06

100kHz PSD reference Level	Middle Channel Plot
	

Spurious Emission 30MHz~1GHz	Spurious Emission 1GHz~26.5GHz
	

Test Mode :	802.11ax HE20_FullRU	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~1GHz	**Spurious Emission 1GHz~26.5GHz**
	

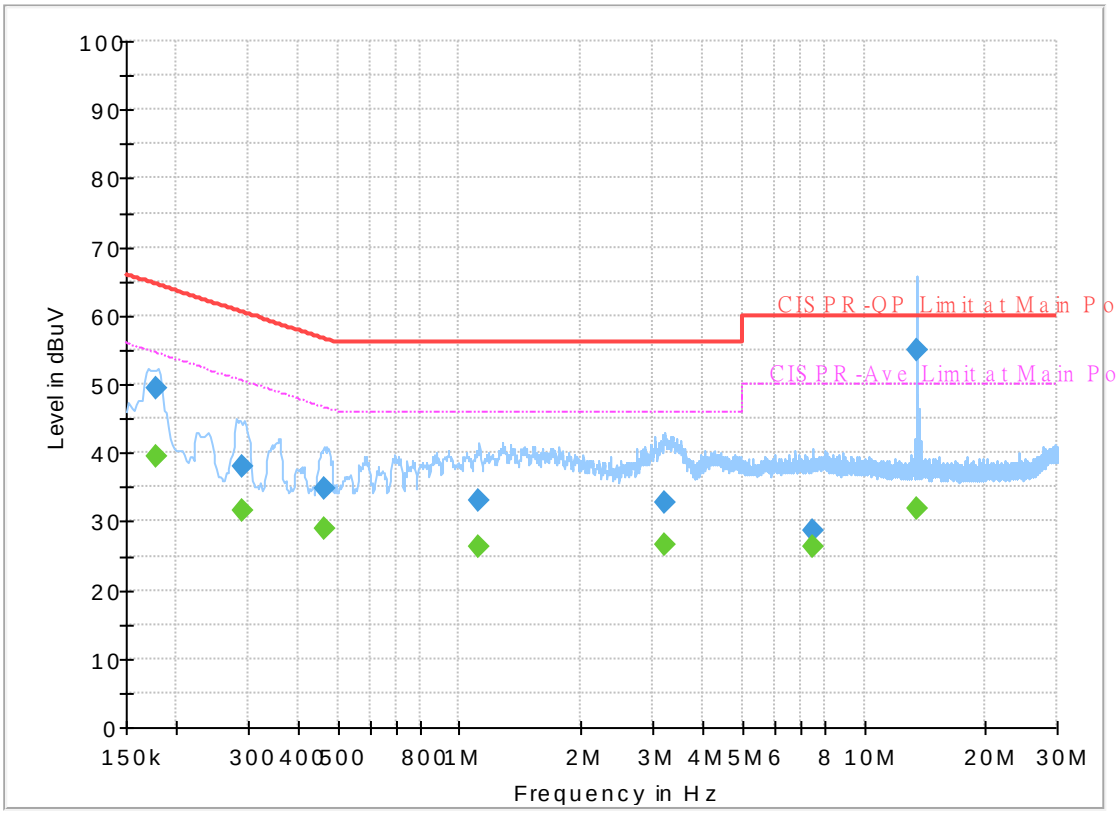
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	**Temperature :**	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO :	422224
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



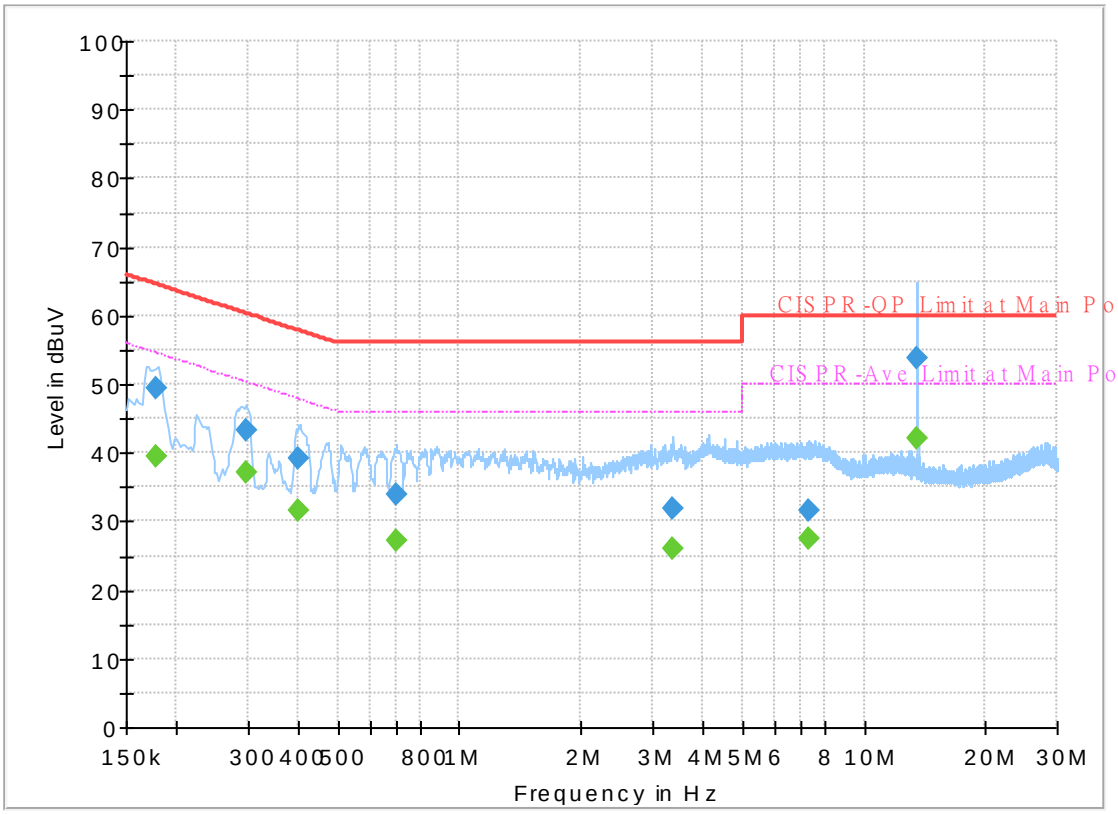
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.177000	---	39.35	54.63	15.28	L1	OFF	19.8
0.177000	49.27	---	64.63	15.36	L1	OFF	19.8
0.289500	---	31.54	50.54	19.00	L1	OFF	19.8
0.289500	38.06	---	60.54	22.48	L1	OFF	19.8
0.465000	---	28.97	46.60	17.63	L1	OFF	19.8
0.465000	34.65	---	56.60	21.95	L1	OFF	19.8
1.119750	---	26.17	46.00	19.83	L1	OFF	19.8
1.119750	33.02	---	56.00	22.98	L1	OFF	19.8
3.223500	---	26.64	46.00	19.36	L1	OFF	19.9
3.223500	32.79	---	56.00	23.21	L1	OFF	19.9
7.473750	---	26.24	50.00	23.76	L1	OFF	20.1
7.473750	28.60	---	60.00	31.40	L1	OFF	20.1
13.560000	---	31.95	50.00	18.05	L1	OFF	20.2
13.560000	54.96	---	60.00	5.04	L1	OFF	20.2

EUT Information

Report NO :	422224
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.177000	---	39.38	54.63	15.25	N	OFF	19.8
0.177000	49.53	---	64.63	15.10	N	OFF	19.8
0.296250	---	37.08	50.35	13.27	N	OFF	19.8
0.296250	43.37	---	60.35	16.98	N	OFF	19.8
0.399750	---	31.54	47.86	16.32	N	OFF	19.8
0.399750	39.25	---	57.86	18.61	N	OFF	19.8
0.699000	---	27.10	46.00	18.90	N	OFF	19.8
0.699000	34.00	---	56.00	22.00	N	OFF	19.8
3.360750	---	26.11	46.00	19.89	N	OFF	19.9
3.360750	31.99	---	56.00	24.01	N	OFF	19.9
7.289250	---	27.40	50.00	22.60	N	OFF	20.1
7.289250	31.44	---	60.00	28.56	N	OFF	20.1
13.560000	---	42.19	50.00	7.81	N	OFF	20.3
13.560000	53.89	---	60.00	6.11	N	OFF	20.3

Appendix C. Radiated Spurious Emission

Test Engineer :	John Chuang and David Dai	Temperature :	19.6~23.4°C
		Relative Humidity :	65.8~70.6%

<Sample 1>

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
0+1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2387.49	57.95	-16.05	74	48.22	27.25	18.72	36.24	119	324	P	H
		2387.175	51.66	-2.34	54	41.93	27.25	18.72	36.24	119	324	A	H
	*	2412	110.78	-	-	100.92	27.35	18.76	36.25	119	324	P	H
	*	2412	107.75	-	-	97.89	27.35	18.76	36.25	119	324	A	H
													H
		2386.545	54.92	-19.08	74	45.2	27.25	18.71	36.24	101	29	P	V
		2387.175	48.15	-5.85	54	38.42	27.25	18.72	36.24	101	29	A	V
	*	2412	107.61	-	-	97.75	27.35	18.76	36.25	101	29	P	V
	*	2412	104.41	-	-	94.55	27.35	18.76	36.25	101	29	A	V
													V
802.11b CH 06 2437MHz		2389.52	53.87	-20.13	74	44.13	27.26	18.72	36.24	141	297	P	H
		2389.04	44.84	-9.16	54	35.1	27.26	18.72	36.24	141	297	A	H
	*	2437	118.14	-	-	108.14	27.45	18.81	36.26	141	297	P	H
	*	2437	114.88	-	-	104.88	27.45	18.81	36.26	141	297	A	H
		2484.72	52.29	-21.71	74	42.02	27.64	18.9	36.27	141	297	P	H
		2483.52	42.26	-11.74	54	32.01	27.63	18.89	36.27	141	297	A	H
		2386.48	51.06	-22.94	74	41.34	27.25	18.71	36.24	100	10	P	V
		2386.96	40.84	-13.16	54	31.11	27.25	18.72	36.24	100	10	A	V
	*	2437	112.56	-	-	102.56	27.45	18.81	36.26	100	10	P	V
	*	2437	109.52	-	-	99.52	27.45	18.81	36.26	100	10	A	V
		2492.08	50.27	-23.73	74	39.97	27.67	18.91	36.28	100	10	P	V
		2483.68	40.09	-13.91	54	29.84	27.63	18.89	36.27	100	10	A	V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 11 2462MHz	*	2462	111.05	-	-	100.92	27.55	18.85	36.27	400	271	P	H
	*	2462	107.88	-	-	97.75	27.55	18.85	36.27	400	271	A	H
		2486.04	57.31	-16.69	74	47.05	27.64	18.9	36.28	400	271	P	H
		2486.48	51.83	-2.17	54	41.56	27.65	18.9	36.28	400	271	A	H
													H
													H
	*	2462	110.12	-	-	99.99	27.55	18.85	36.27	100	55	P	V
	*	2462	107.02	-	-	96.89	27.55	18.85	36.27	100	55	A	V
		2486.64	55.22	-18.78	74	44.95	27.65	18.9	36.28	100	55	P	V
		2486.68	48.87	-5.13	54	38.6	27.65	18.9	36.28	100	55	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	52.62	-21.38	74	44.78	32.4	12.96	37.52	100	237	P	H
		4824	48.51	-5.49	54	40.67	32.4	12.96	37.52	100	237	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4824	52.94	-21.06	74	45.1	32.4	12.96	37.52	100	312	P	V
		4824	49.52	-4.48	54	41.68	32.4	12.96	37.52	100	313	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	53.71	-20.29	74	45.71	32.5	13.06	37.56	106	22	P	H
		4874	49.14	-4.86	54	41.14	32.5	13.06	37.56	106	22	A	H
		7311	49.71	-24.29	74	35.47	36.9	15.95	38.61	400	299	P	H
		7311	39.11	-14.89	54	24.87	36.9	15.95	38.61	400	299	A	H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 06 2437MHz													H
		4874	51.84	-22.16	74	43.84	32.5	13.06	37.56	107	307	P	V
		4874	47.74	-6.26	54	39.74	32.5	13.06	37.56	107	307	A	V
		7311	48.89	-25.11	74	34.65	36.9	15.95	38.61	100	172	P	V
		7311	39.56	-14.44	54	25.32	36.9	15.95	38.61	100	172	A	V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4924	50.37	-23.63	74	42.07	32.74	13.16	37.6	100	220	P	H
		4924	45.1	-8.9	54	36.8	32.74	13.16	37.6	100	220	A	H
		7386	54.09	-19.91	74	40.03	36.68	16.05	38.67	100	273	P	H
		7386	46.65	-7.35	54	32.59	36.68	16.05	38.67	100	273	A	H
													H
													H
													H
													H
													H
													H
													H
802.11b CH 11 2462MHz													H
		4924	52.18	-21.82	74	43.88	32.74	13.16	37.6	100	306	P	V
		4924	48.15	-5.85	54	39.85	32.74	13.16	37.6	100	306	A	V
		7386	53.27	-20.73	74	39.21	36.68	16.05	38.67	102	170	P	V
		7386	45.06	-8.94	54	31	36.68	16.05	38.67	102	170	A	V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.905	64.03	-9.97	74	54.29	27.26	18.72	36.24	400	266	P	H
		2390	51.99	-2.01	54	42.25	27.26	18.72	36.24	400	266	A	H
	*	2412	117.05	-	-	107.19	27.35	18.76	36.25	400	266	P	H
	*	2412	109.54	-	-	99.68	27.35	18.76	36.25	400	266	A	H
													H
													H
		2390	58.32	-15.68	74	48.58	27.26	18.72	36.24	100	321	P	V
		2390	45.84	-8.16	54	36.1	27.26	18.72	36.24	100	321	A	V
	*	2412	113.17	-	-	103.31	27.35	18.76	36.25	100	321	P	V
	*	2412	105.64	-	-	95.78	27.35	18.76	36.25	100	321	A	V
													V
													V
802.11g CH 06 2437MHz		2389.84	55.64	-18.36	74	45.9	27.26	18.72	36.24	200	295	P	H
		2389.84	45.62	-8.38	54	35.88	27.26	18.72	36.24	200	295	A	H
	*	2437	119.01	-	-	109.01	27.45	18.81	36.26	200	295	P	H
	*	2437	111.5	-	-	101.5	27.45	18.81	36.26	200	295	A	H
		2485.28	54.39	-19.61	74	44.12	27.64	18.9	36.27	200	295	P	H
		2483.52	44.19	-9.81	54	33.94	27.63	18.89	36.27	200	295	A	H
		2388.72	52.71	-21.29	74	42.98	27.25	18.72	36.24	100	15	P	V
		2388.08	42.8	-11.2	54	33.07	27.25	18.72	36.24	100	15	A	V
	*	2437	115.97	-	-	105.97	27.45	18.81	36.26	100	15	P	V
	*	2437	108.18	-	-	98.18	27.45	18.81	36.26	100	15	A	V
		2485.12	52.64	-21.36	74	42.37	27.64	18.9	36.27	100	15	P	V
		2484.64	42.48	-11.52	54	32.21	27.64	18.9	36.27	100	15	A	V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 11 2462MHz	*	2462	114.73	-	-	104.6	27.55	18.85	36.27	300	133	P	H
	*	2462	107.23	-	-	97.1	27.55	18.85	36.27	300	133	A	H
		2483.64	62.53	-11.47	74	52.28	27.63	18.89	36.27	300	133	P	H
		2483.52	52.11	-1.89	54	41.86	27.63	18.89	36.27	300	133	A	H
													H
													H
	*	2462	113.66	-	-	103.53	27.55	18.85	36.27	100	345	P	V
	*	2462	106.09	-	-	95.96	27.55	18.85	36.27	100	345	A	V
		2483.92	61.78	-12.22	74	51.51	27.64	18.9	36.27	100	345	P	V
		2483.6	49.87	-4.13	54	39.62	27.63	18.89	36.27	100	345	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	48.15	-25.85	74	40.31	32.4	12.96	37.52	103	243	P	H
		4824	36.32	-17.68	54	28.48	32.4	12.96	37.52	103	243	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		4824	49.48	-24.52	74	41.64	32.4	12.96	37.52	100	317	P	V
		4824	38.56	-15.44	54	30.72	32.4	12.96	37.52	100	317	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	50.05	-23.95	74	42.05	32.5	13.06	37.56	100	31	P	H
		4874	38.26	-15.74	54	30.26	32.5	13.06	37.56	100	31	A	H
		7311	54.26	-19.74	74	40.02	36.9	15.95	38.61	398	307	P	H
		7311	43.12	-10.88	54	28.88	36.9	15.95	38.61	398	307	A	H
													H
													H
													H
													H
													H
													H
													H
802.11g CH 06 2437MHz													H
		4874	48.81	-25.19	74	40.81	32.5	13.06	37.56	100	315	P	V
		4874	36.44	-17.56	54	28.44	32.5	13.06	37.56	100	315	A	V
		7311	56.5	-17.5	74	42.26	36.9	15.95	38.61	100	137	P	V
		7311	45.46	-8.54	54	31.22	36.9	15.95	38.61	100	137	A	V
													V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4924	51.73	-22.27	74	43.43	32.74	13.16	37.6	100	27	P	H
		4924	40.42	-13.58	54	32.12	32.74	13.16	37.6	100	27	A	H
		7386	51.74	-22.26	74	37.68	36.68	16.05	38.67	101	134	P	H
		7386	40.89	-13.11	54	26.83	36.68	16.05	38.67	101	134	A	H
													H
													H
													H
													H
													H
													H
													H
802.11g CH 11 2462MHz													H
		4924	49.84	-24.16	74	41.54	32.74	13.16	37.6	100	51	P	V
		4924	38.74	-15.26	54	30.44	32.74	13.16	37.6	100	51	A	V
		7386	54.14	-19.86	74	40.08	36.68	16.05	38.67	100	158	P	V
		7386	42.03	-11.97	54	27.97	36.68	16.05	38.67	100	158	A	V
													V
													V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		2389.905	62.48	-11.52	74	52.74	27.26	18.72	36.24	100	253	P	H
		2389.485	50.11	-3.89	54	40.37	27.26	18.72	36.24	100	253	A	H
	*	2412	118.41	-	-	108.55	27.35	18.76	36.25	100	253	P	H
	*	2412	109.14	-	-	99.28	27.35	18.76	36.25	100	253	A	H
802.11ax													H
HE20 Full													H
CH 01		2389.065	62.53	-11.47	74	52.79	27.26	18.72	36.24	311	192	P	V
2412MHz		2390	50.02	-3.98	54	40.28	27.26	18.72	36.24	311	192	A	V
	*	2412	116.09	-	-	106.23	27.35	18.76	36.25	311	192	P	V
	*	2412	107.31	-	-	97.45	27.35	18.76	36.25	311	192	A	V
													V
													V
		2389.84	65.84	-8.16	74	56.1	27.26	18.72	36.24	292	267	P	H
		2390	45.65	-8.35	54	35.91	27.26	18.72	36.24	292	267	A	H
	*	2437	117.27	-	-	107.27	27.45	18.81	36.26	292	267	P	H
	*	2437	108.04	-	-	98.04	27.45	18.81	36.26	292	267	A	H
802.11ax		2484.72	64.18	-9.82	74	53.91	27.64	18.9	36.27	292	267	P	H
HE20 Full		2483.52	46.82	-7.18	54	36.57	27.63	18.89	36.27	292	267	A	H
CH 06		2388.56	55.75	-18.25	74	46.02	27.25	18.72	36.24	362	207	P	V
2437MHz		2390	41.62	-12.38	54	31.88	27.26	18.72	36.24	362	207	A	V
	*	2437	113.98	-	-	103.98	27.45	18.81	36.26	362	207	P	V
	*	2437	105.55	-	-	95.55	27.45	18.81	36.26	362	207	A	V
		2483.68	64.82	-9.18	74	54.57	27.63	18.89	36.27	362	207	P	V
		2483.52	45.05	-8.95	54	34.8	27.63	18.89	36.27	362	207	A	V

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
	*	2462	116.33	-	-	106.2	27.55	18.85	36.27	100	284	P	H
	*	2462	106.12	-	-	95.99	27.55	18.85	36.27	100	284	A	H
		2483.92	63.07	-10.93	74	52.8	27.64	18.9	36.27	100	284	P	H
		2483.52	52.83	-1.17	54	42.58	27.63	18.89	36.27	100	284	A	H
802.11ax													H
HE20 Full													H
CH 11	*	2462	113.55	-	-	103.42	27.55	18.85	36.27	288	205	P	V
2462MHz	*	2462	105.02	-	-	94.89	27.55	18.85	36.27	288	205	A	V
		2483.52	61.46	-12.54	74	51.21	27.63	18.89	36.27	288	205	P	V
		2483.52	49.9	-4.1	54	39.65	27.63	18.89	36.27	288	205	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4824	55.13	-18.87	74	47.29	32.4	12.96	37.52	100	259	P	H
		4824	40.37	-13.63	54	32.53	32.4	12.96	37.52	100	259	A	H
													H
													H
													H
													H
													H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 01		4824	54.34	-19.66	74	46.5	32.4	12.96	37.52	100	313	P	V
2412MHz		4824	40.05	-13.95	54	32.21	32.4	12.96	37.52	100	313	A	V
													V
													V
													V
													V
													V
													V
													V
													V
													V
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WIFI Ant. 0+1	Note	Frequency (MHz)	Level (dBµV/m)	Margin (dB)	Limit Line (dBµV/m)	Read Level (dBµV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
		4874	49.52	-24.48	74	41.52	32.5	13.06	37.56	100	305	P	H
		4874	38.42	-15.58	54	30.42	32.5	13.06	37.56	100	305	A	H
		7311	53.7	-20.3	74	39.46	36.9	15.95	38.61	304	239	P	H
		7311	40.68	-13.32	54	26.44	36.9	15.95	38.61	304	239	A	H
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													H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 06		4874	50.46	-23.54	74	42.46	32.5	13.06	37.56	102	310	P	V
2437MHz		4874	39.07	-14.93	54	31.07	32.5	13.06	37.56	102	310	A	V
		7311	54.94	-19.06	74	40.7	36.9	15.95	38.61	101	171	P	V
		7311	41.9	-12.1	54	27.66	36.9	15.95	38.61	101	171	A	V
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