



# FCC RADIO TEST REPORT

**FCC ID** : PU5-TP00139AS  
**Equipment** : Notebook Computer  
**Brand Name** : Lenovo  
**Model Name** : TP00139A  
**Applicant** : Wistron Corporation  
21F, No. 88, Sec. 1, Hsin Tai Wu Rd., Hsichih  
Dist, New Taipei City 221, Taiwan  
**Manufacturer** : Lenovo PC HK Limited.  
23/F, Lincoln House, Taikoo Place, 979  
King's Road, Quarry Bay, Hong Kong, China  
**Standard** : FCC Part 15 Subpart C §15.247

Equipment: Murata LBEE5QG2CX tested inside of Lenovo Notebook Computer.

The product was received on Dec. 21, 2021 and testing was performed from Jan. 08, 2022 to Feb. 24, 2022. 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.

Approved by: Louis Wu

*Sporton International Inc. Wensan Laboratory*



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## 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	0.70 dB under the limit at 2483.520 MHz
3.6	15.207	AC Conducted Emission	Pass	12.69 dB under the limit at 11.746 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

**Declaration of Conformity:**

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- The measurement uncertainty please refer to this report "Uncertainty of Evaluation".

**Comments and Explanations:**

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

**Reviewed by: Sheng Kuo**

**Report Producer: Amy Chen**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook Computer
Brand Name	Lenovo
Model Name	TP00139A
FCC ID	PU5-TP00139AS
Sample 1	EUT with INPAQ Antenna
Sample 2	EUT with WNC Antenna
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/GNSS WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

**Remark:**

1. The above EUT's information was declared by manufacturer.
2. Equipment: Murata LBEE5QG2CX tested inside of Lenovo Notebook Computer.

Antenna Information			
Antenna 1	Manufacturer	INPAQ	
	Antenna Type	PIFA Antenna	PIFA Antenna
	Part number	025.901YK.0011	025.901YL.0011
	Peak gain (dbi)	Main Antenna : WLAN (2.4G): 2.48 dBi	Aux Antenna : WLAN (2.4G): 2.45 dBi
Antenna 2	Manufacturer	WNC	
	Antenna Type	PIFA Antenna	PIFA Antenna
	Part number	025.901YK.0001	025.901YL.0001
	Peak gain (dbi)	Main Antenna : WLAN (2.4G): 2.62 dBi	Aux Antenna : WLAN (2.4G): 2.54 dBi

**Remark:** The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.

## 1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard			
<b>Tx/Rx Channel Frequency Range</b>	2412 MHz ~ 2472 MHz		
<b>Maximum (Average) Output Power to antenna</b>	<b>MIMO &lt;Chain 1+2&gt;</b> 802.11b : 16.86 dBm (0.0485 W) 802.11g : 16.86 dBm (0.0485 W) 802.11n HT20 : 16.56 dBm (0.0453 W) 802.11n HT40 : 16.71 dBm (0.0469 W) 802.11ac VHT20 : 16.56 dBm (0.0453 W) 802.11ac VHT40 : 16.71 dBm (0.0469 W) 802.11ax HE20 : 16.66 dBm (0.0463 W) 802.11ax HE40 : 16.81 dBm (0.0480 W)		
<b>99% Occupied Bandwidth</b>	<b>MIMO &lt;Chain 1&gt;</b> 802.11b : 13.60 MHz 802.11g : 17.20 MHz 802.11ax HE20 : 19.45 MHz 802.11ax HE40 : 38.30 MHz <b>MIMO &lt;Chain 2&gt;</b> 802.11b : 13.50 MHz 802.11g : 17.25 MHz 802.11ax HE20 : 19.45 MHz 802.11ax HE40 : 37.90 MHz		
<b>Type of Modulation</b>	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)		
<b>Antenna Function for Transmitter</b>		Chain 1	Chain 2
	802.11b/g/n/ac/ax MIMO	V	V

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.
2. MIMO Chain 1+2 is a calculated result from sum of the power MIMO Chain 1 and MIMO Chain 2.

## 1.3 Modification of EUT

No modifications made to the EUT during the testing.



### 1.4 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010
Test Site No.	<b>Sporton Site No.</b>
	TH05-HY, 03CH20HY, CO07-HY

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

FCC designation No.: 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 DTS 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.

## 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).
- 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	8	2447
	2	2417	9	2452
	3	2422	10	2457
	4	2427	11	2462
	5	2432	12	2467
	6	2437	13	2472
	7	2442		

### 2.2 Test Mode

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 CDD mode is chosen as worst case configuration for all test cases due to higher power than SISO mode.

The 802.11n/ac mode has no higher power and PSD than 802.11ax mode, thus the 802.11ax mode is chosen as main test configuration, and the 802.11n/ac mode is verified the power.

**The final test modes consider the modulation and the worst data rates as shown in the table below.**

#### MIMO Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20 (Covered by HE20)	MCS0
802.11n HT40 (Covered by HE40)	MCS0
802.11ac VHT20 (Covered by HE20)	MCS0
802.11ac VHT40 (Covered by HE40)	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0





Test Cases	
<b>AC Conducted Emission</b>	Mode 1: WLAN (2.4GHz) Link + Bluetooth Link + Earphone + Battery 1 + Adapter + USB Cable (Data Link with HD) for Sample 2
<b>Remark:</b>	
1. For Radiated Test Cases, the tests were performed with Battery 1.	
2. Data Link with HD means data application transferred mode between EUT and HD.	

<Sample 2>

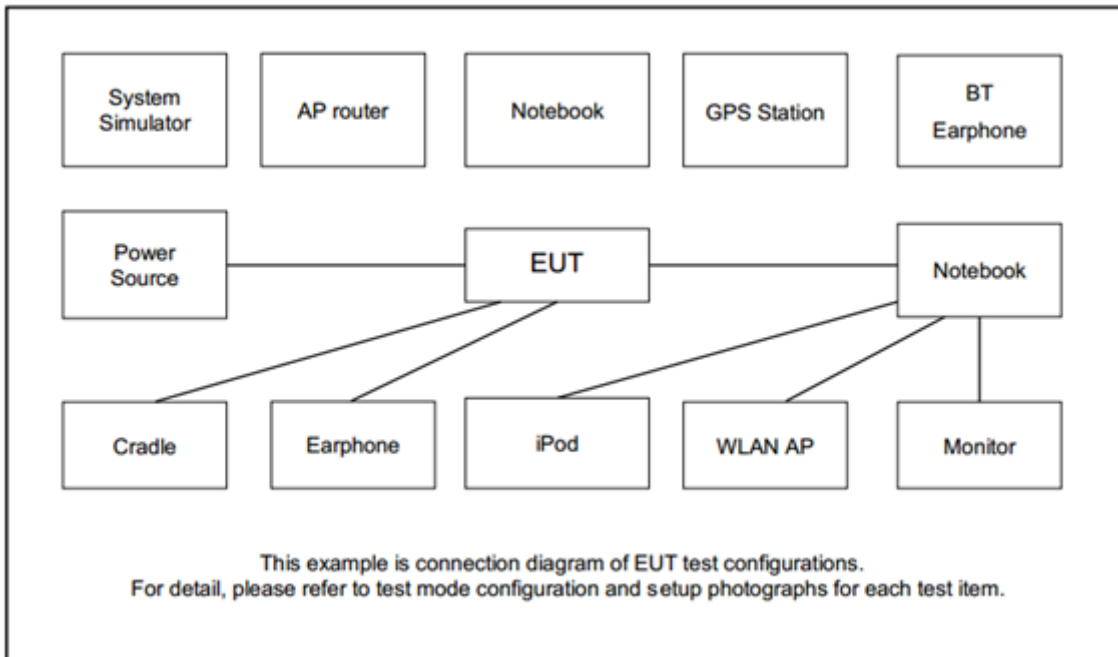
Ch. #	2400-2483.5 MHz			
	802.11b	802.11g	802.11ax HE20	802.11ax HE40
Low	01	01	01	03
Middle	06	06	06	06
High	11	11	11	09
	12	12	12	10
	13	13	13	11

<Sample 1>

Ch. #	2400-2483.5 MHz
	802.11ax HE40
Low	-
Middle	-
High	09

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



### 2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	GT-AXE11000	MSQ-RTAXJF00	N/A	Unshielded, 1.8m
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A
4.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	USB HD	WD	WDBGPU0010BBL	FCC DoC	Shielded, 1m	N/A

### 2.5 EUT Operation Test Setup

The RF test items, utility “QRCT v4.0.00154.0” was installed in EUT 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.

$$\begin{aligned} \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\ &= 4.2 + 10 = 14.2 \text{ (dB)} \end{aligned}$$

### 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)  $\geq 3 * RBW$ .
6. Measure and record the results in the test report.

##### 3.1.4 Test Setup

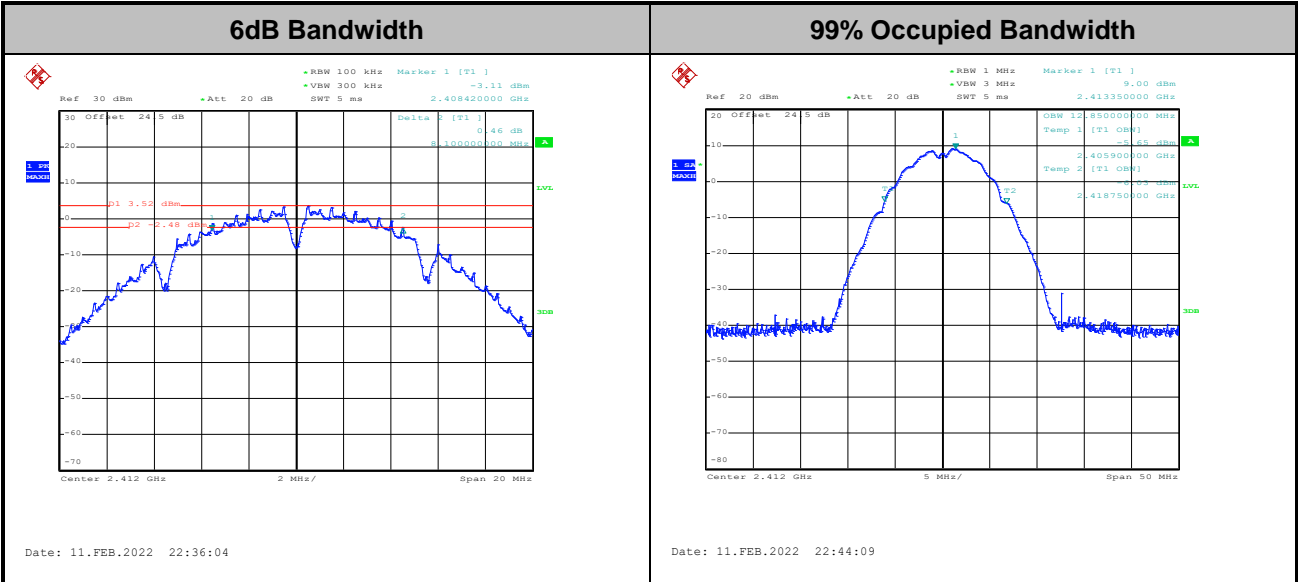




### 3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

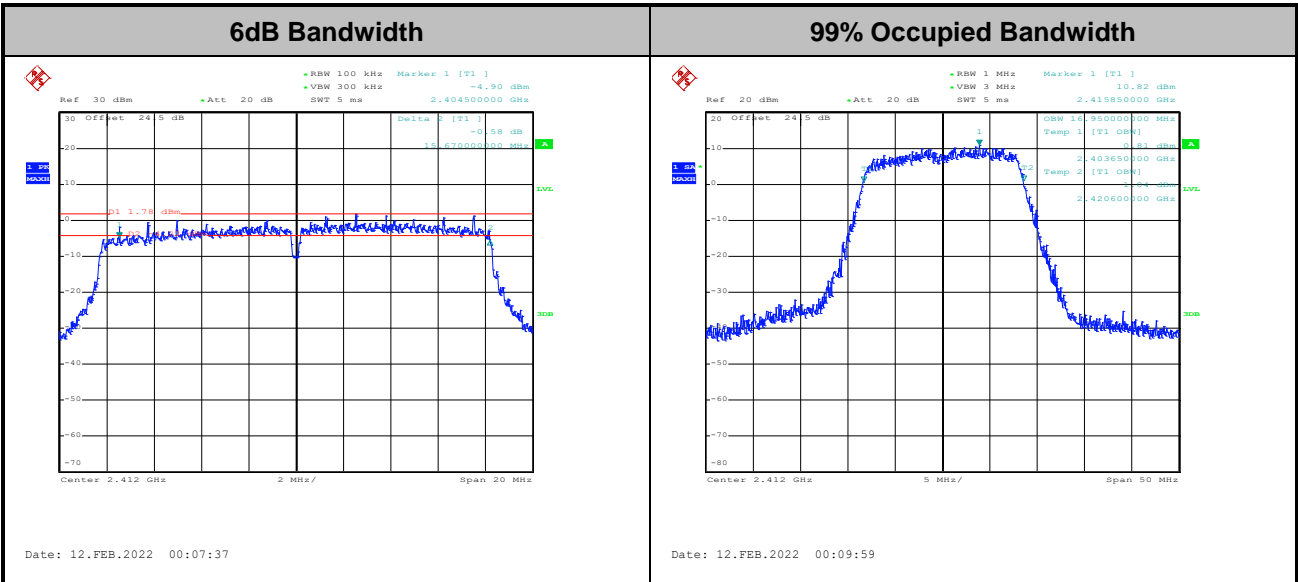
Please refer to Appendix A.

<802.11b>



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

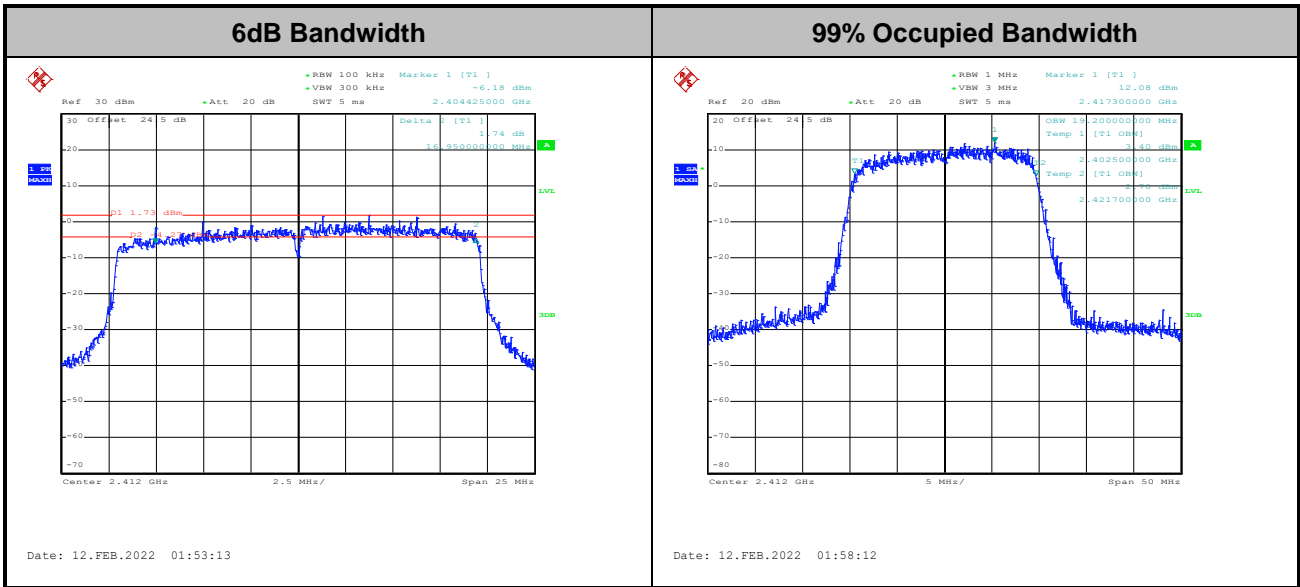
<802.11g>



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

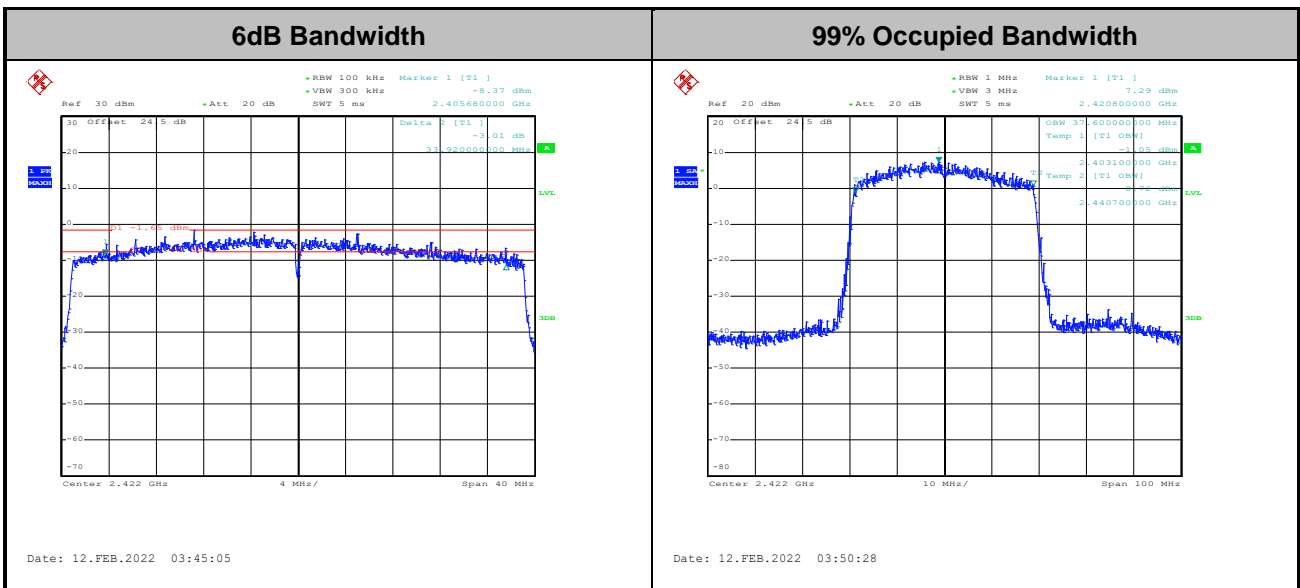


<802.11ax HE20>



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

<802.11ax HE40>



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

## 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.

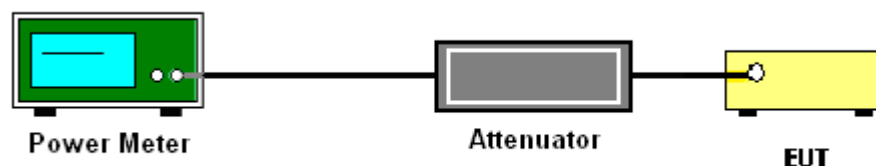
### 3.2.2 Measuring Instruments

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.

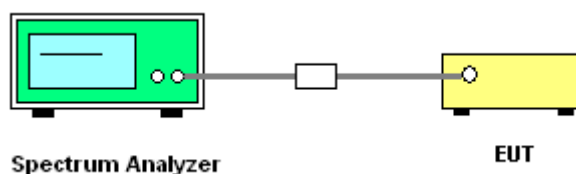
If measurements performed using method (2) plus  $10 \log(N)$  exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

Method (1): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points, the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

Method (2): Measure and add  $10 \log(N)$  dB, where N is the number of outputs. (N=2)

#### 3.3.4 Test Setup



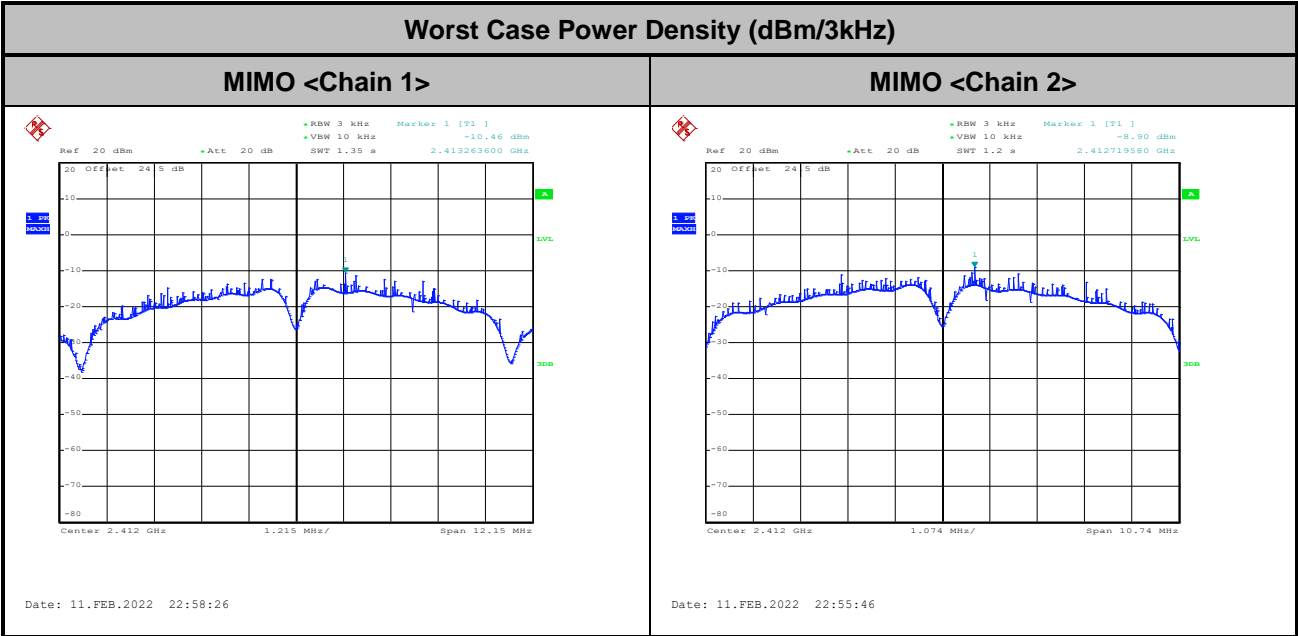




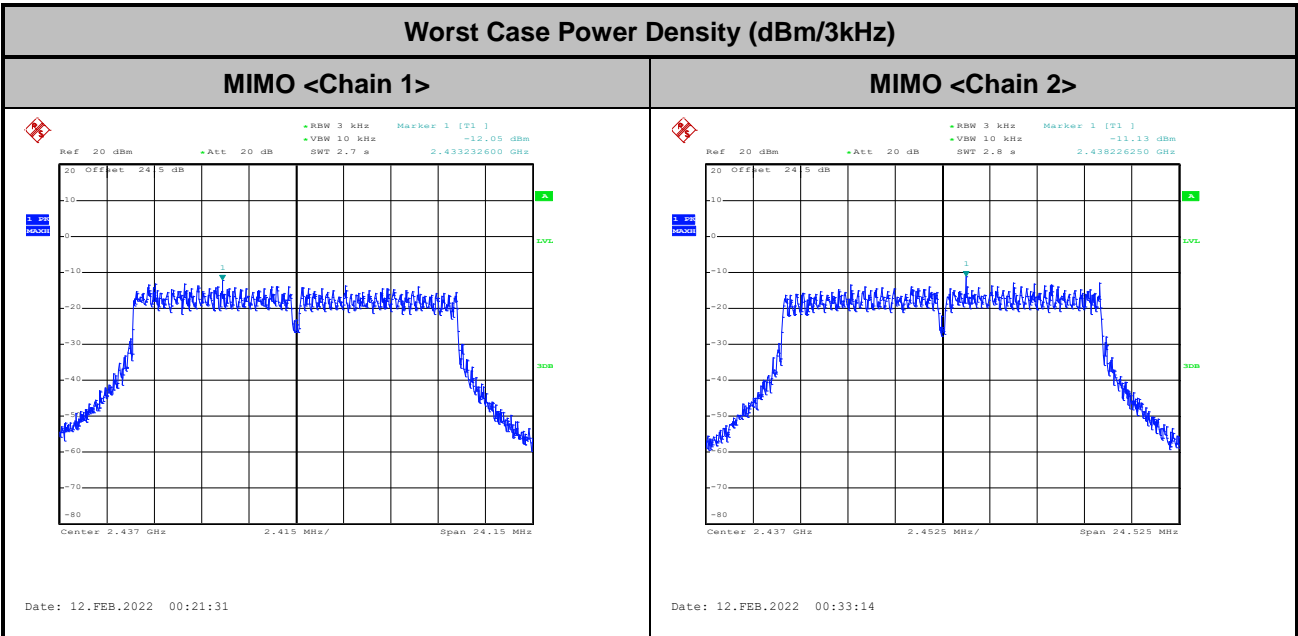
### 3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11b>

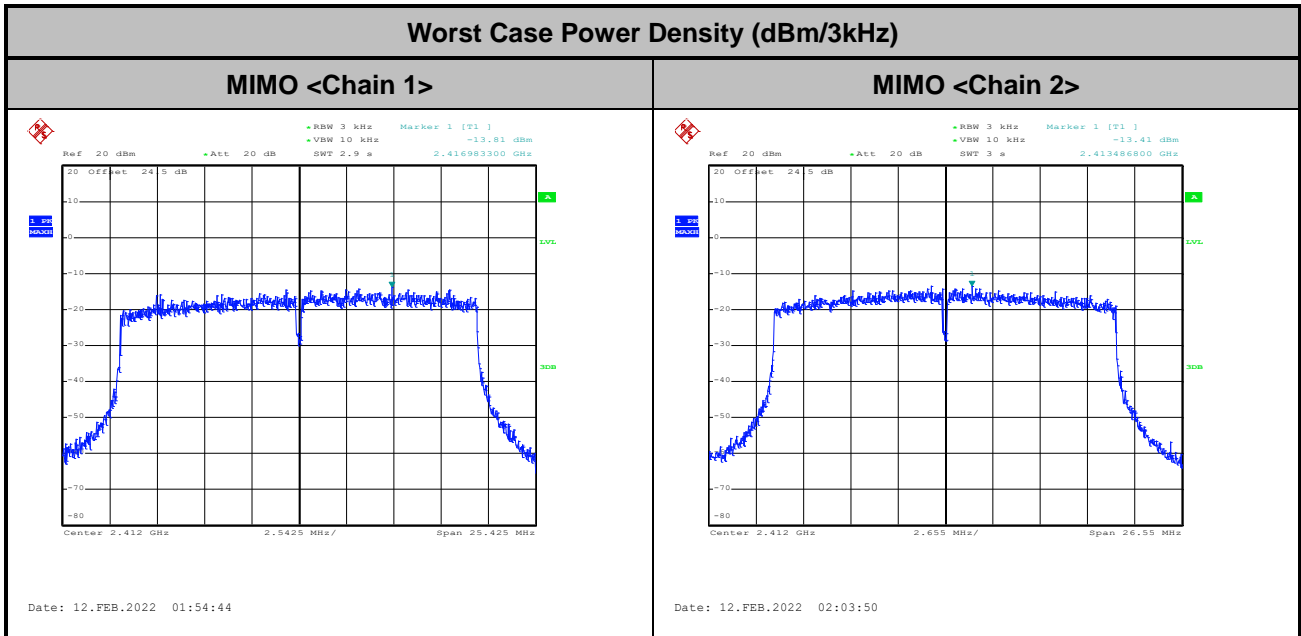


<802.11g>

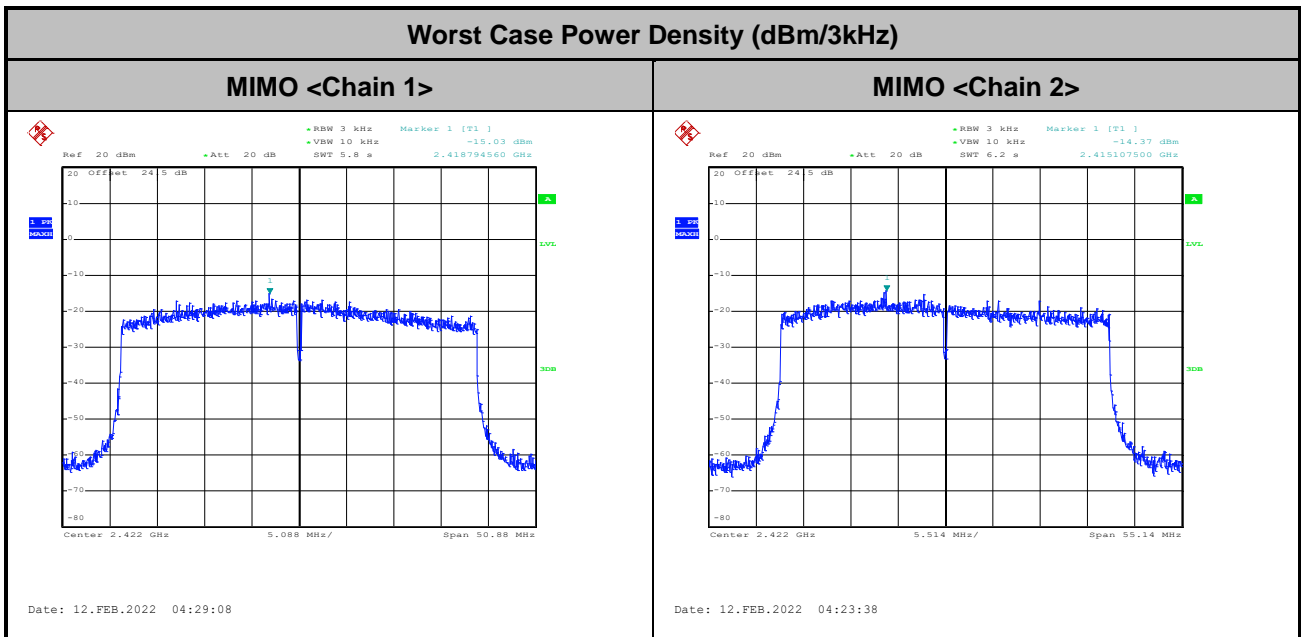




<802.11ax HE20>



<802.11ax HE40>



## 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.

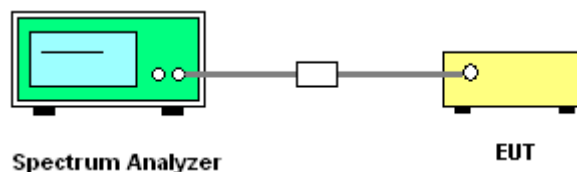
### 3.4.2 Measuring Instruments

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



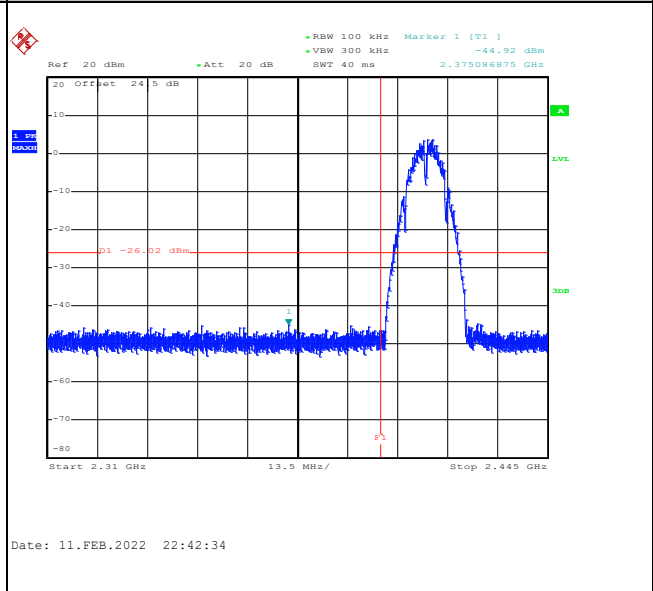
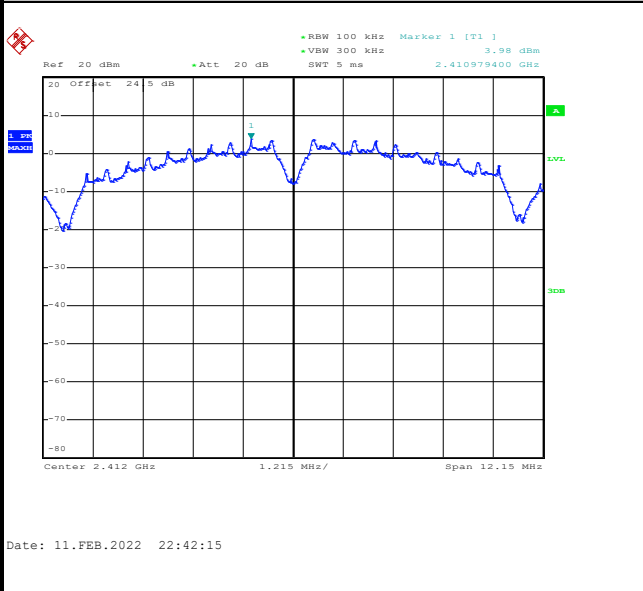


### 3.4.5 Test Result of Conducted Band Edges and Spurious Emission

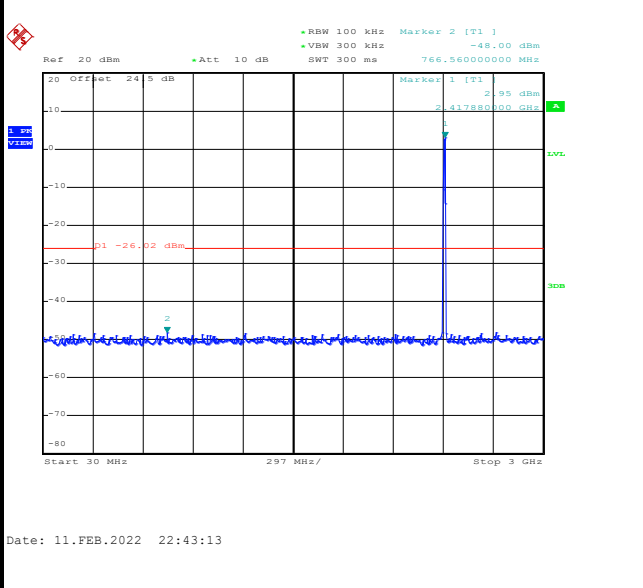
Number of TX = 2, Chain 1 (Measured)

Test Mode :	802.11b	Test Channel :	01
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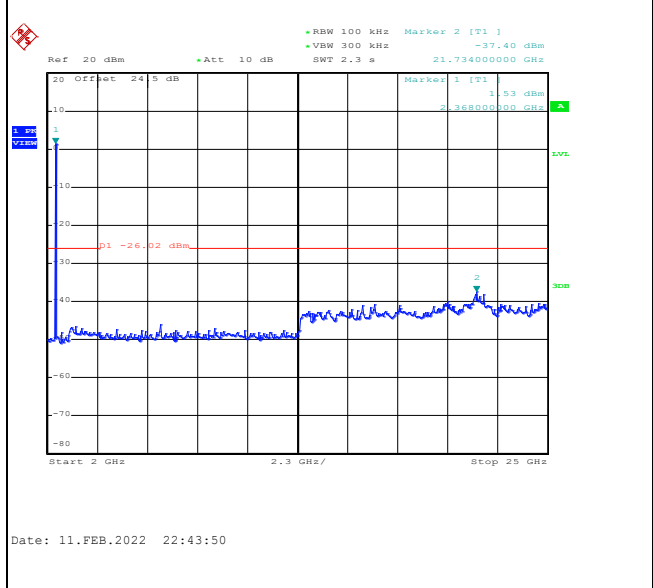
<b>100kHz PSD reference Level</b>	<b>Low Channel Plot</b>
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#### Spurious Emission 30MHz~3GHz



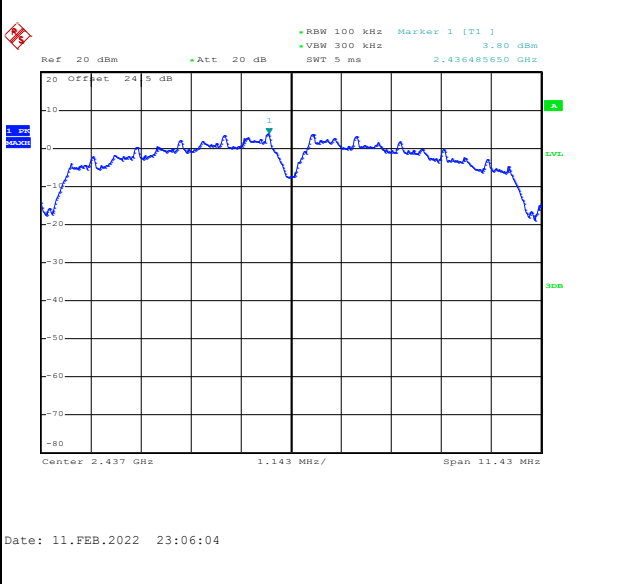
#### Spurious Emission 2GHz~25GHz



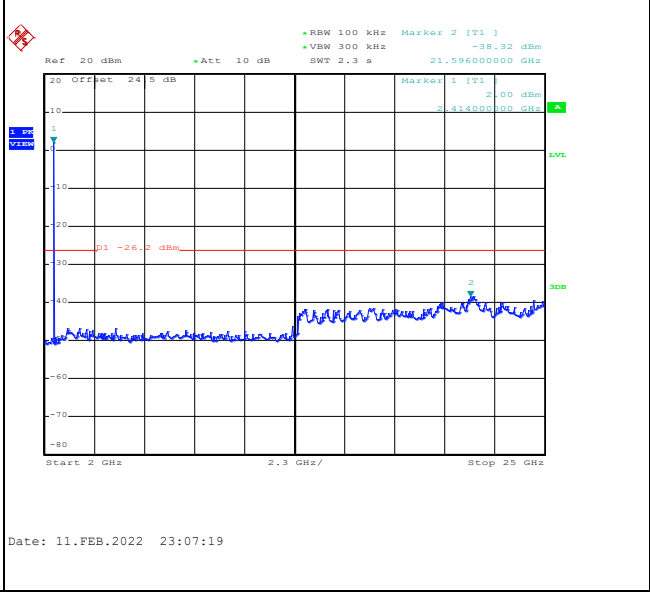
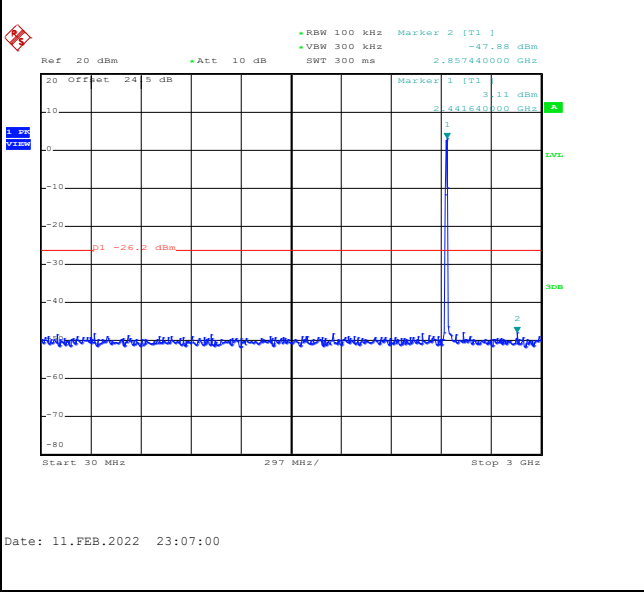


Test Mode :	802.11b	Test Channel :	06
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<b>100kHz PSD reference Level</b>	<b>Mid Channel Plot</b>
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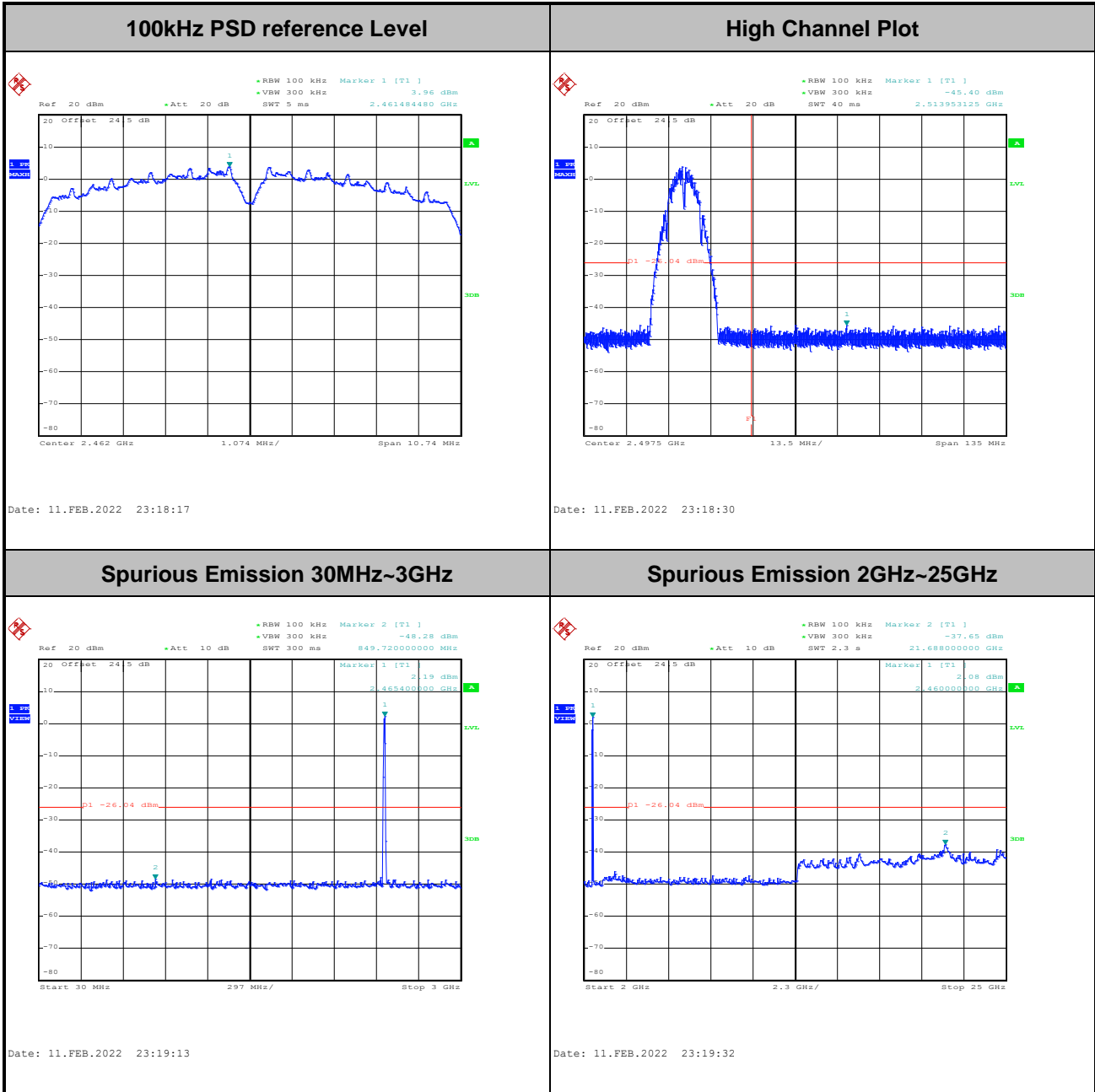


<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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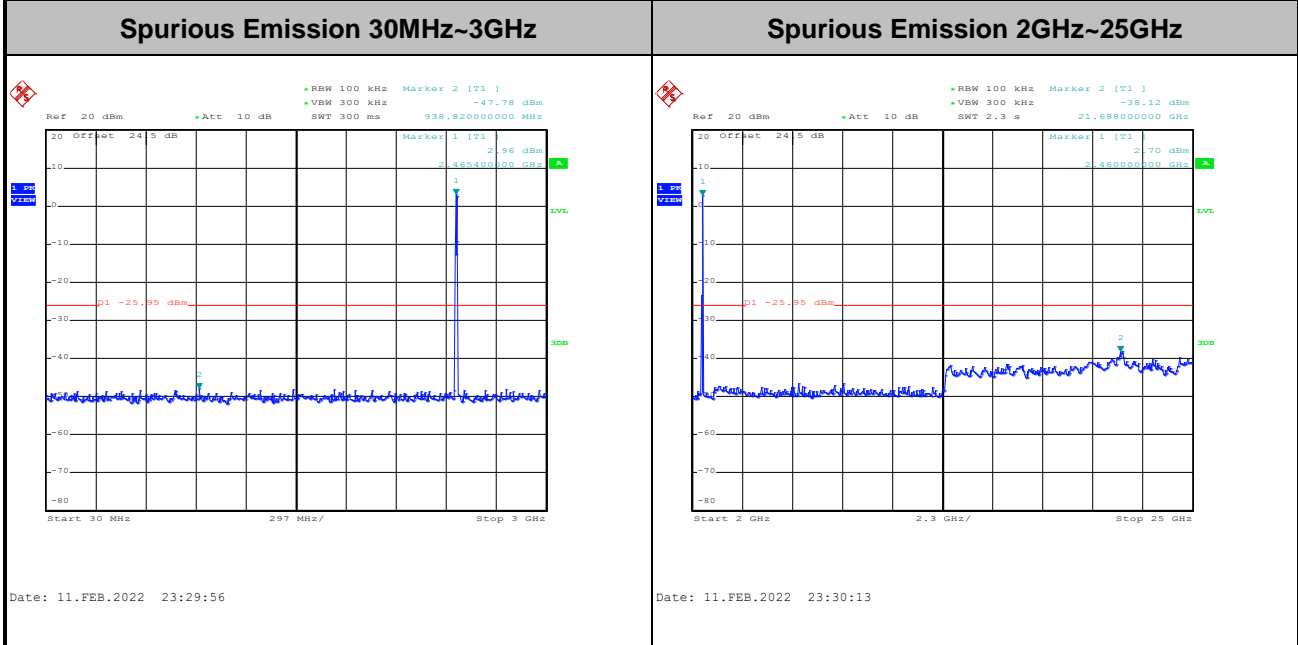
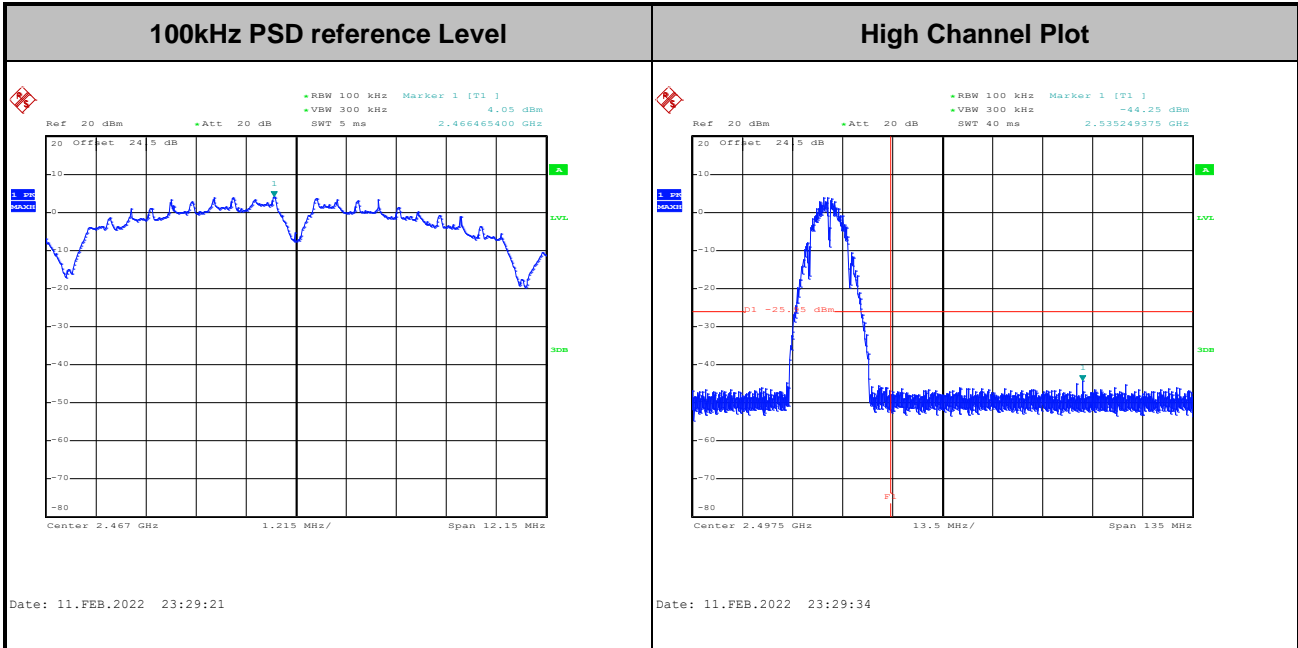


Test Mode :	802.11b	Test Channel :	11
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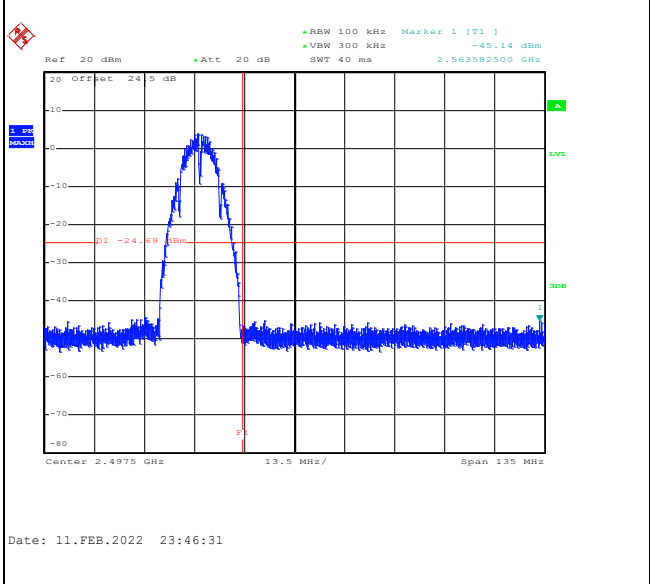
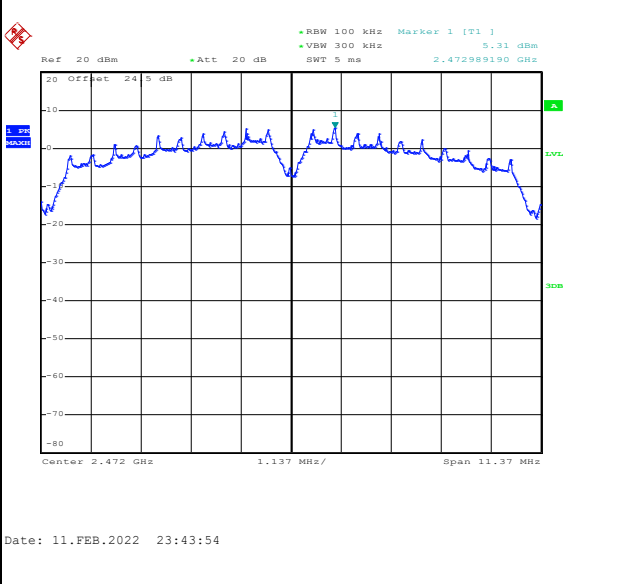
Test Mode :	802.11b	Test Channel :	12
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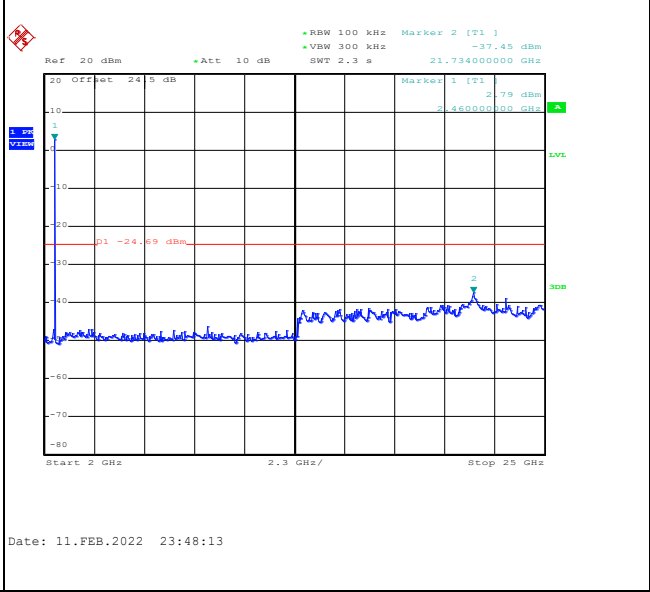
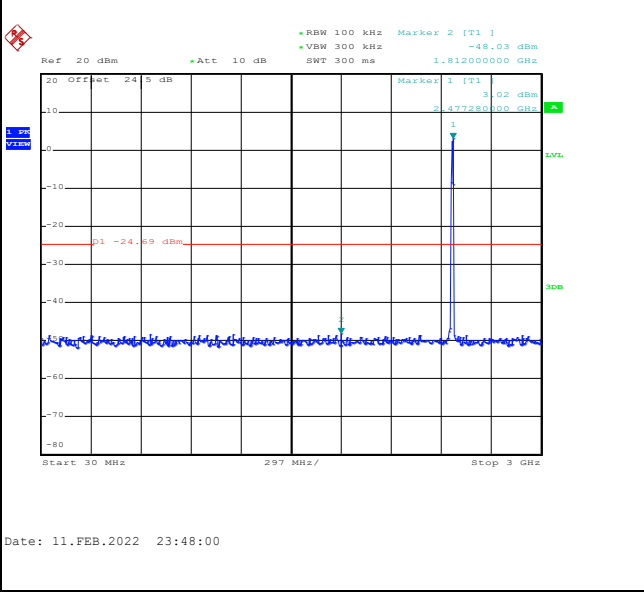


Test Mode :	802.11b	Test Channel :	13
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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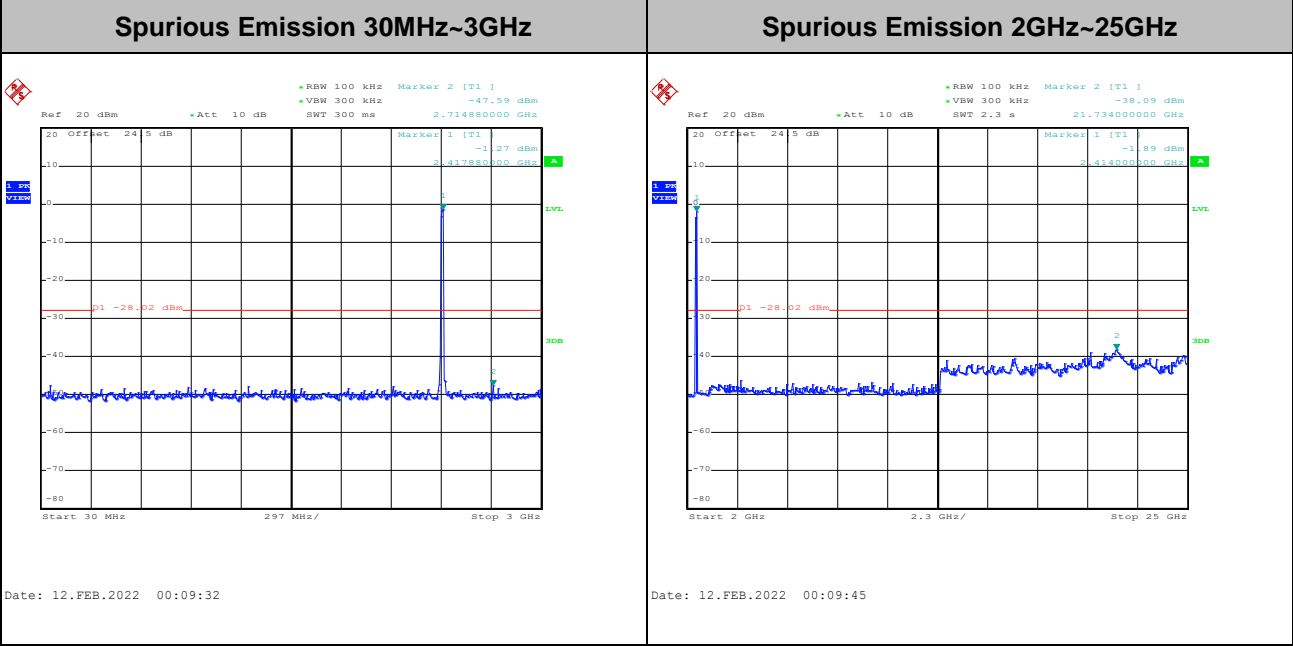
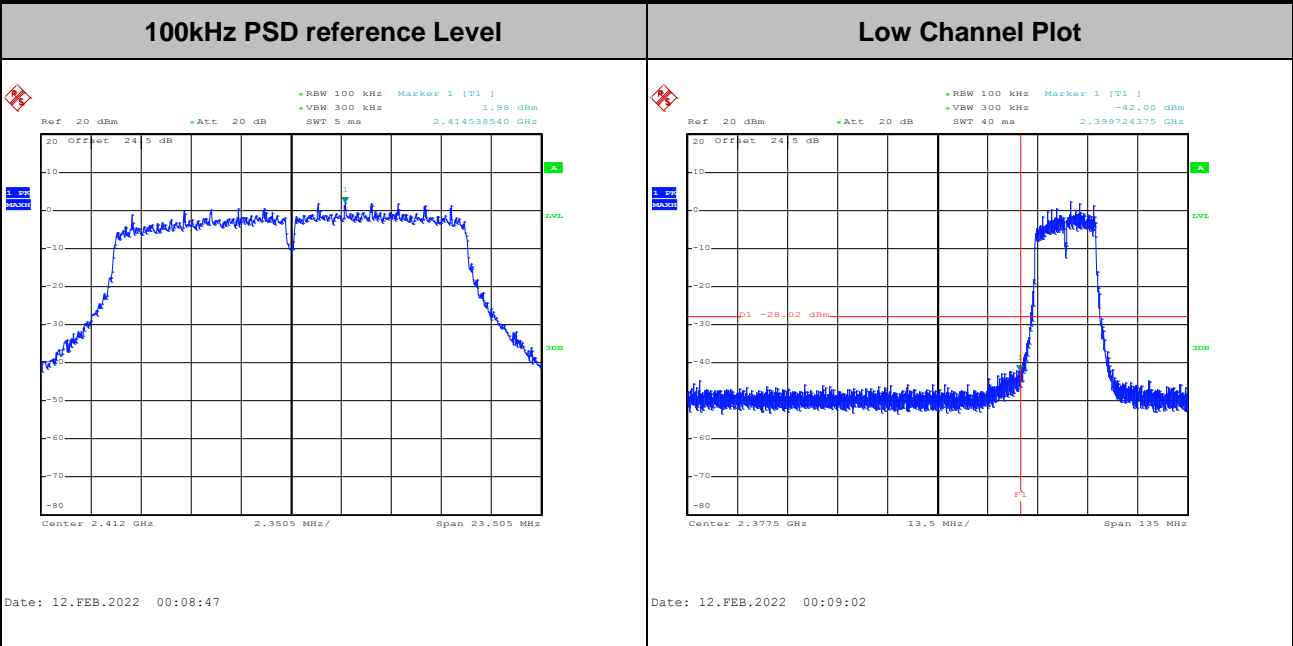
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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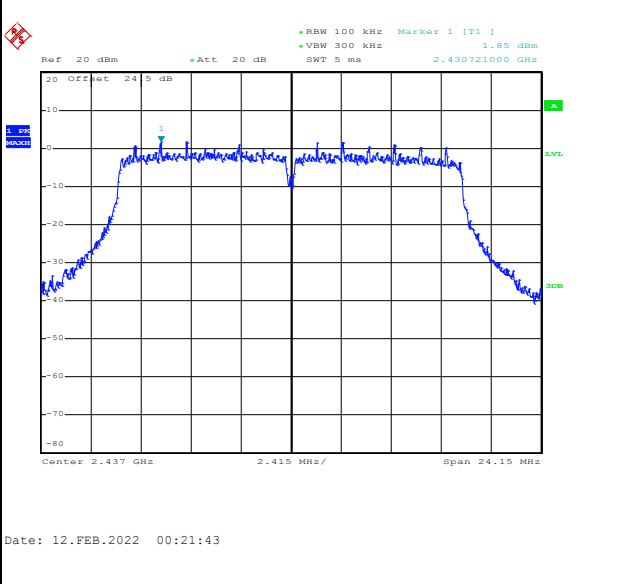
Test Mode :	802.11g	Test Channel :	01
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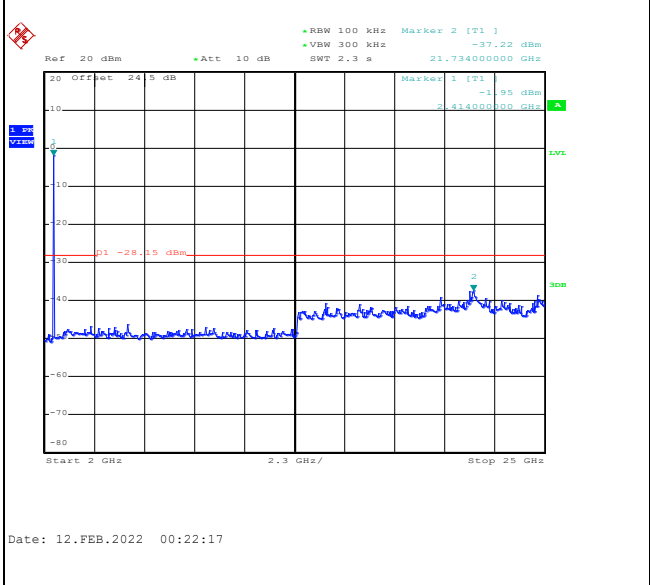
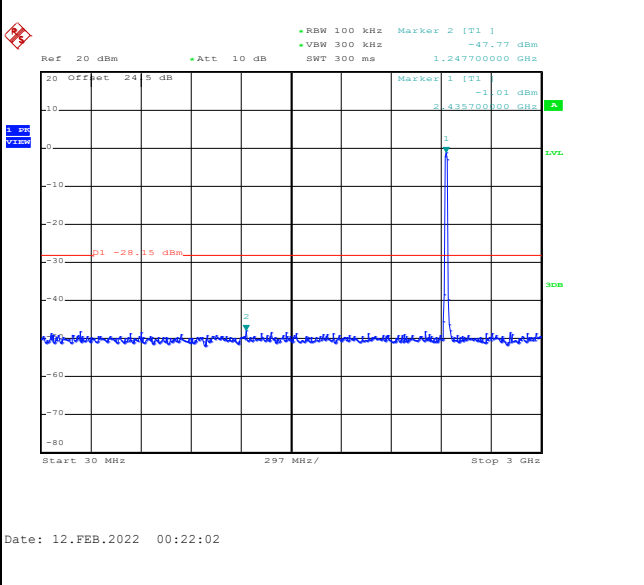


Test Mode :	802.11g	Test Channel :	06
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<b>100kHz PSD reference Level</b>	<b>Mid Channel Plot</b>
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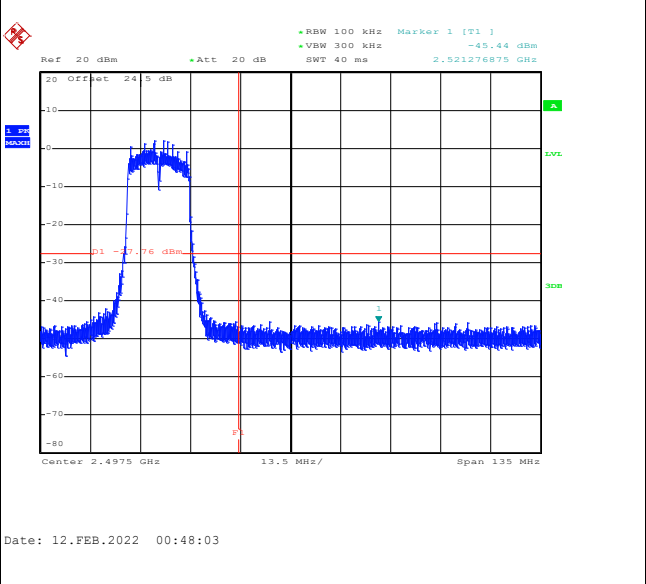
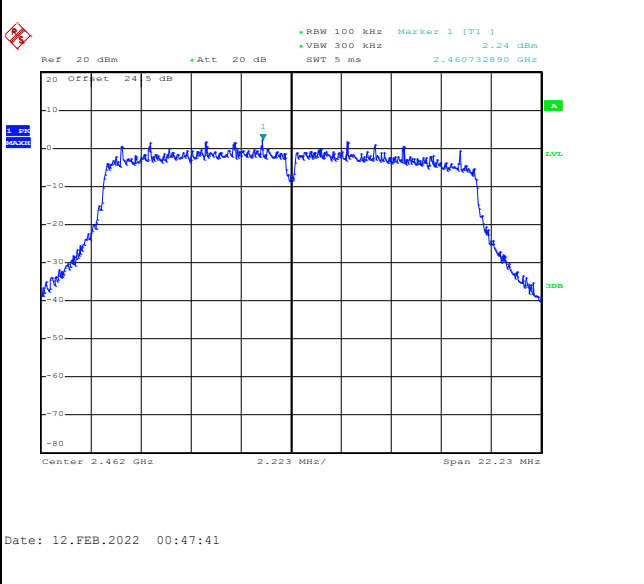
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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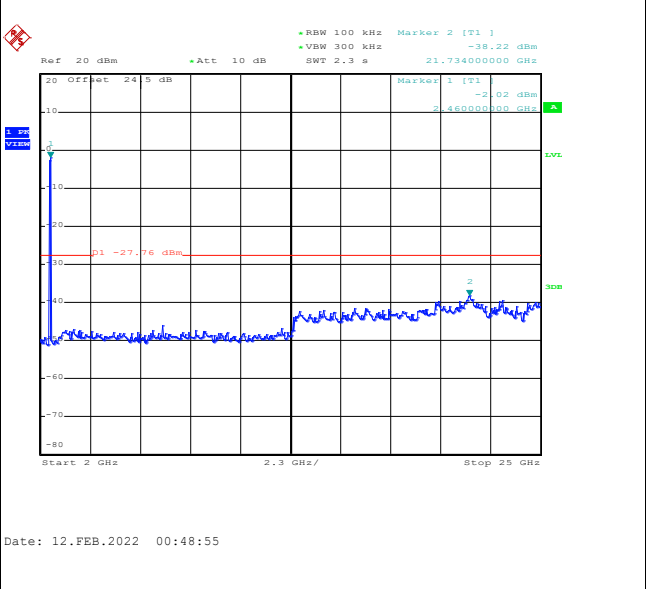
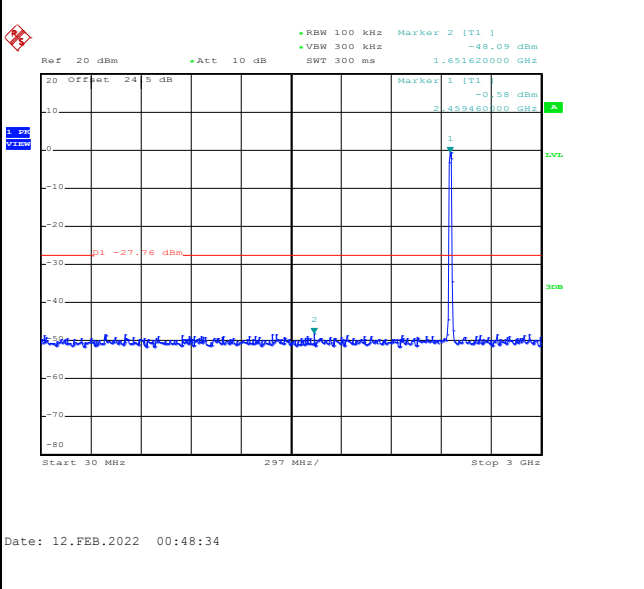


Test Mode :	802.11g	Test Channel :	11
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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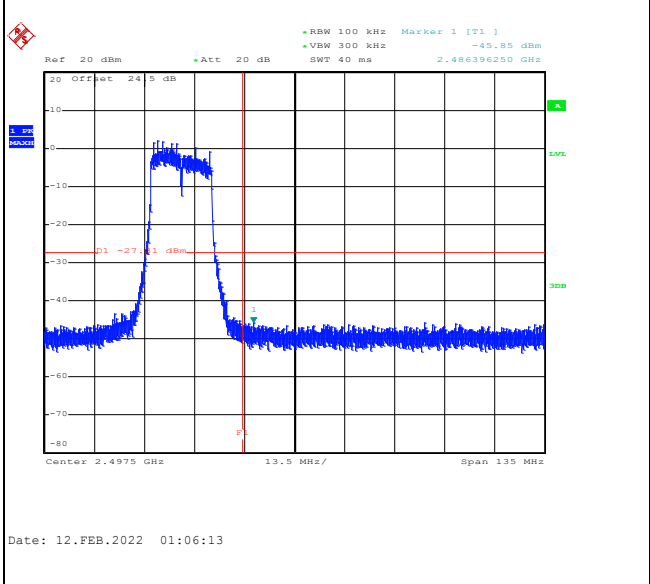
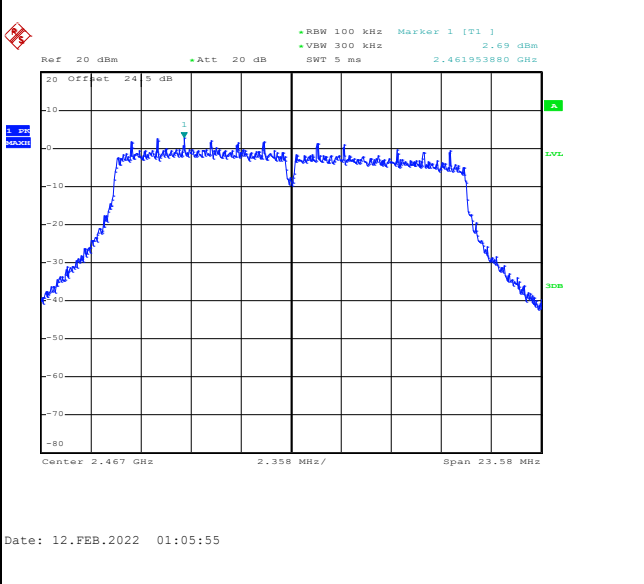
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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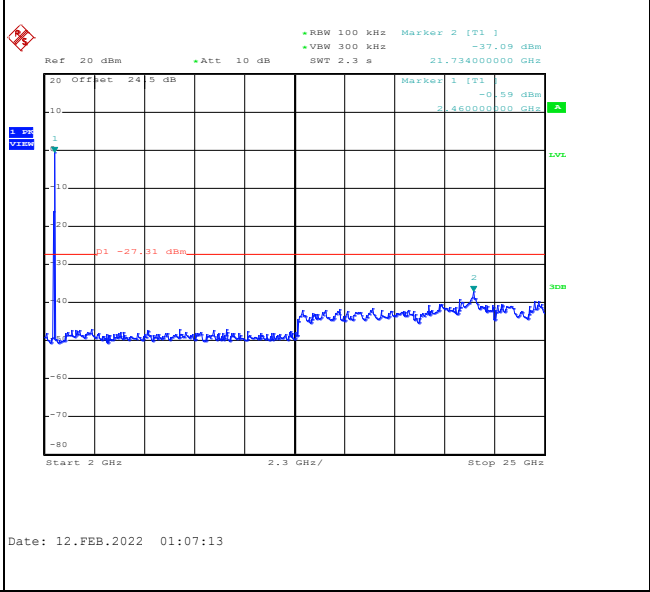
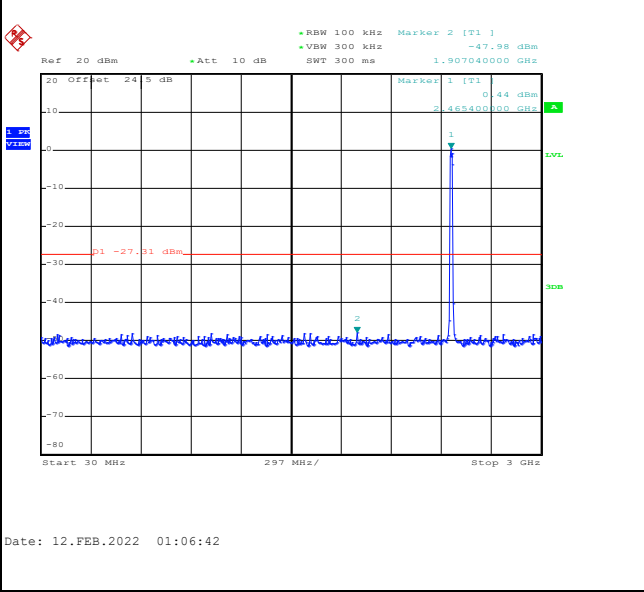


Test Mode :	802.11g	Test Channel :	12
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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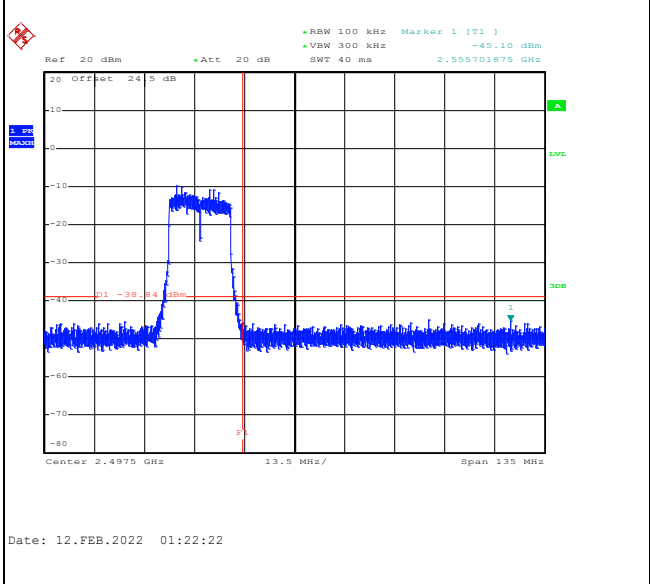
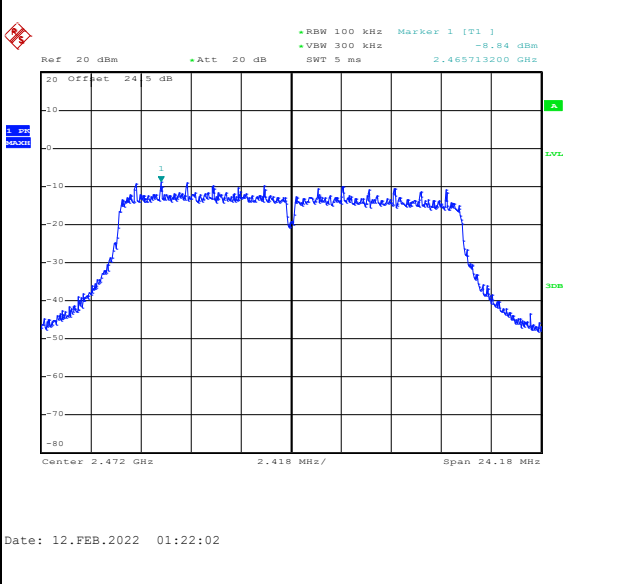
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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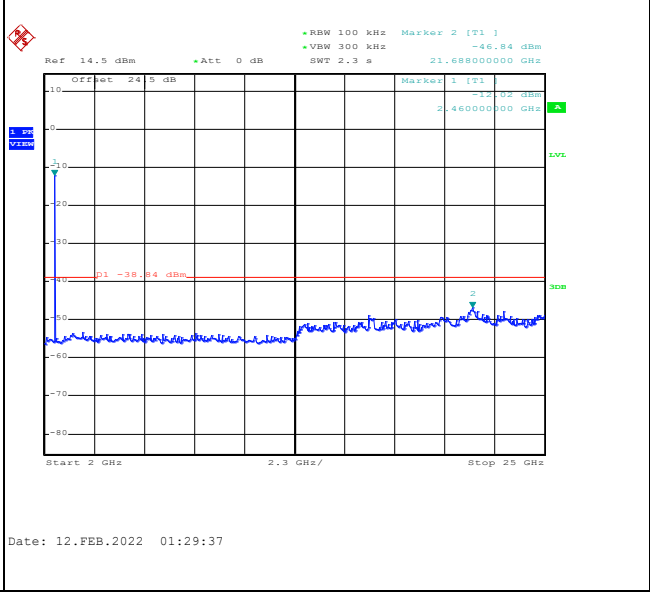
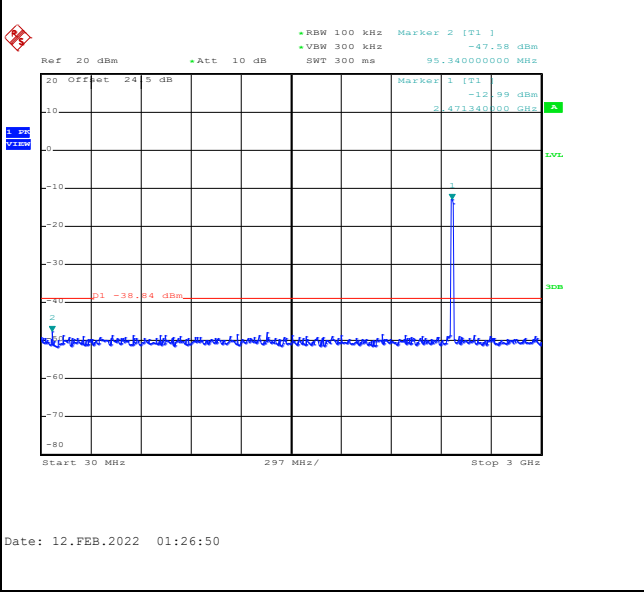


Test Mode :	802.11g	Test Channel :	13
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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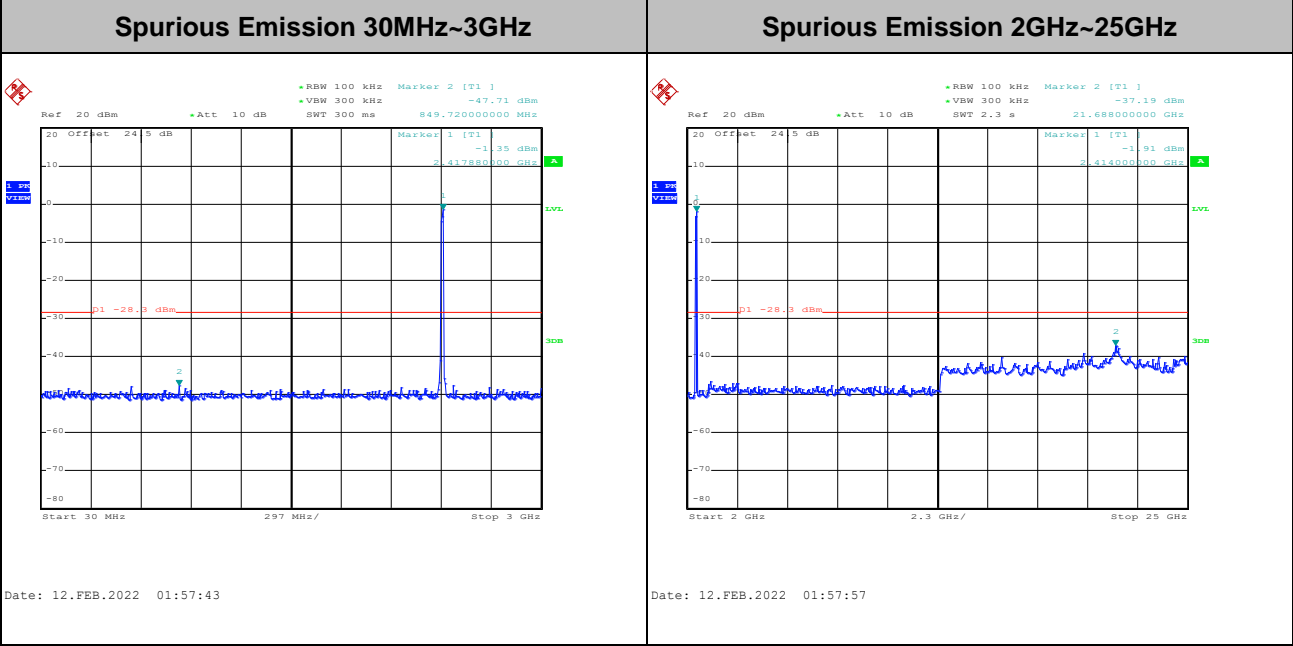
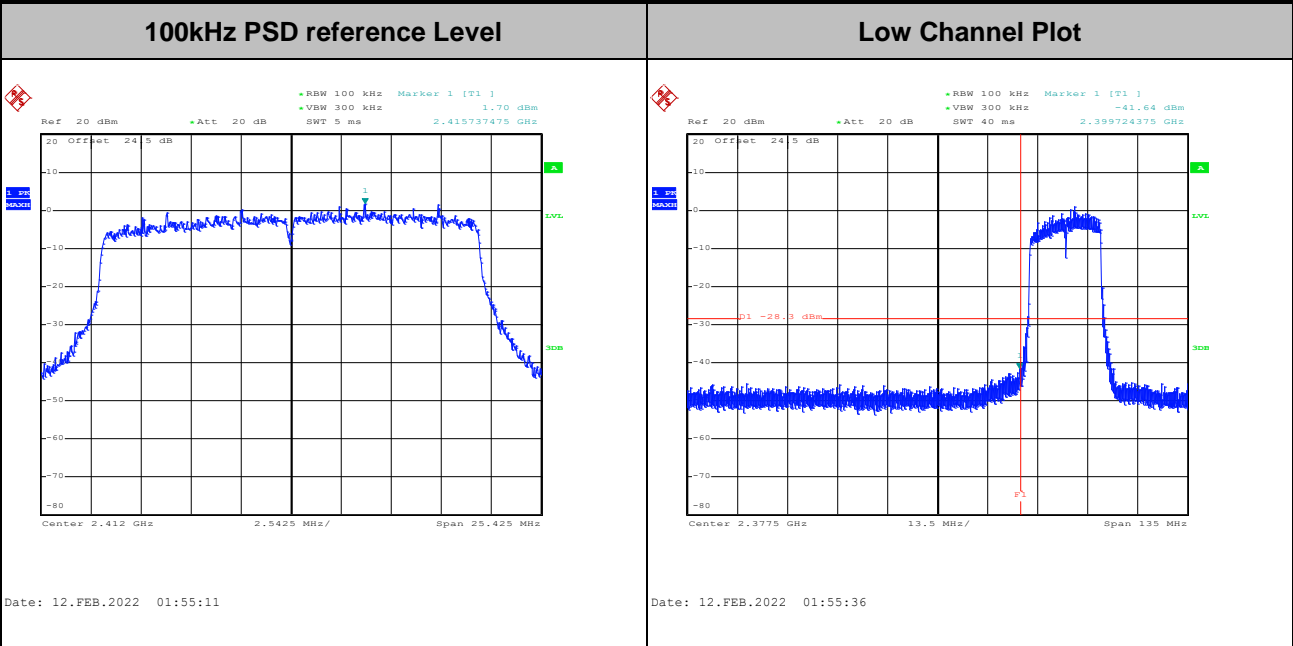


<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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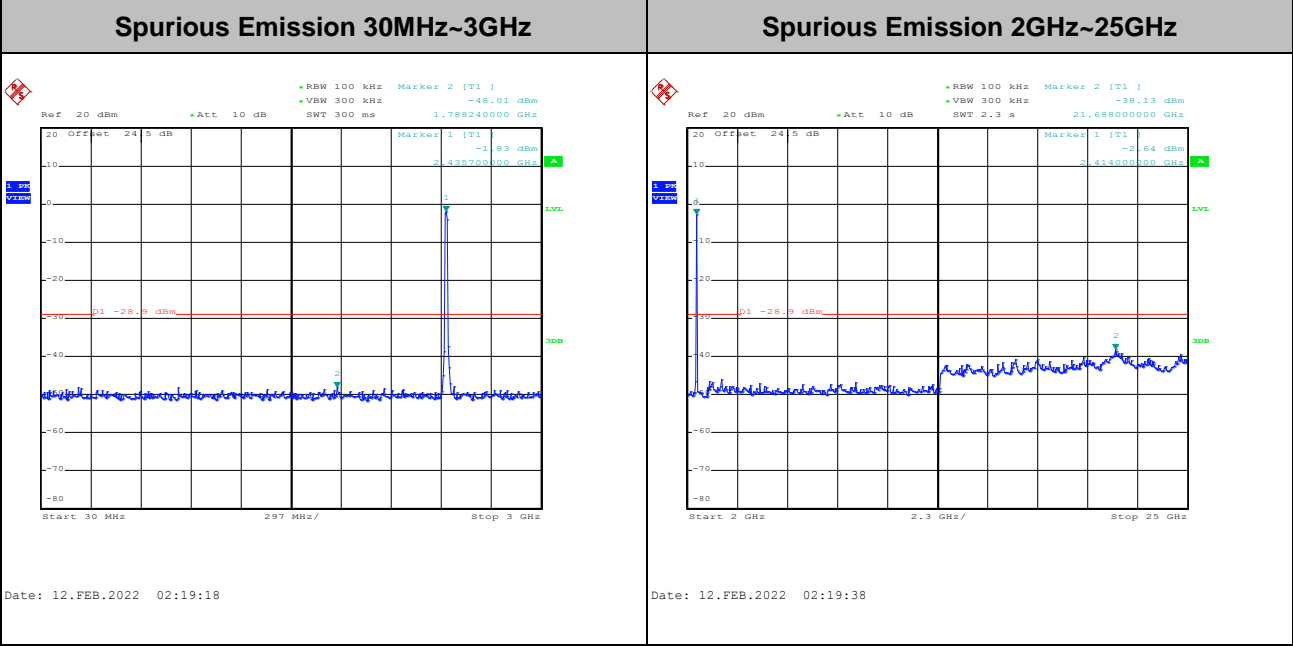
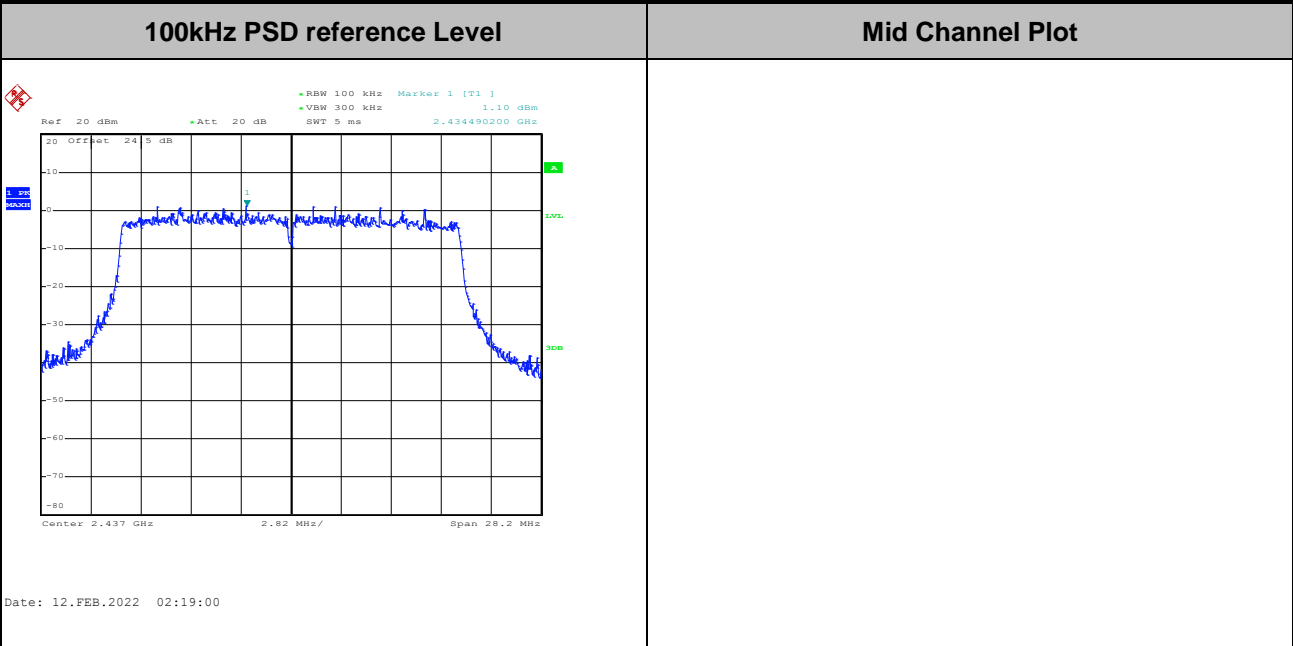


Test Mode :	802.11ax HE20	Test Channel :	01 Full RU
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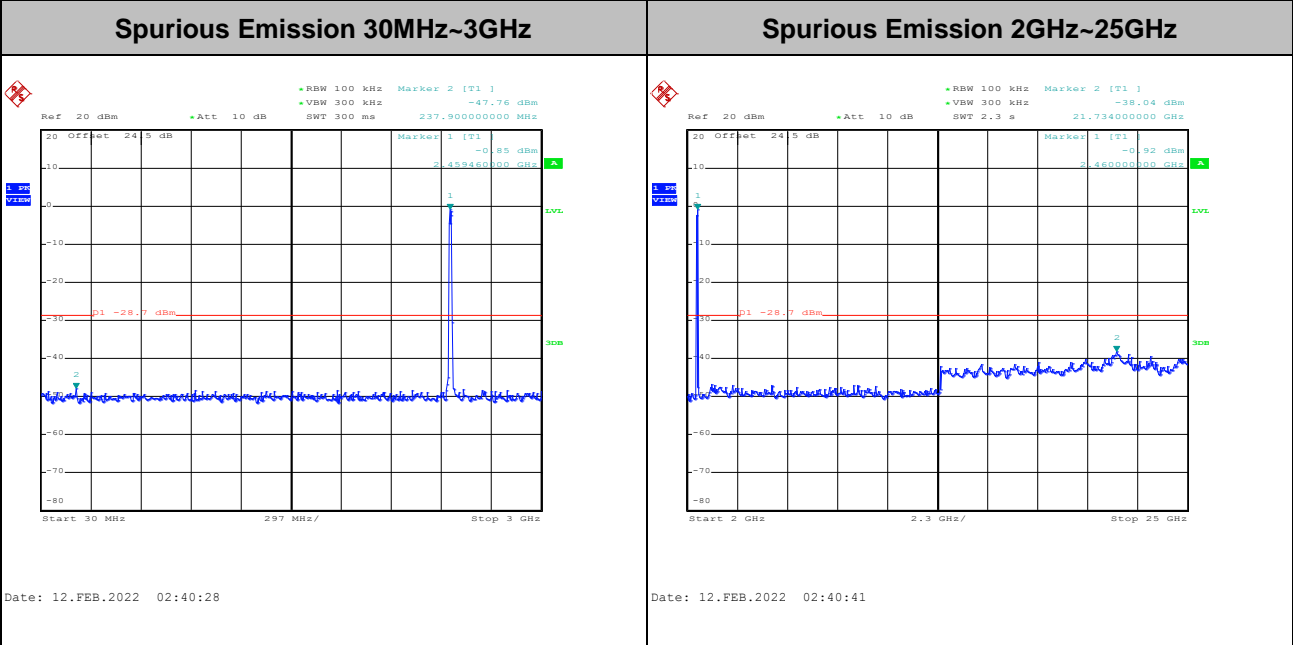
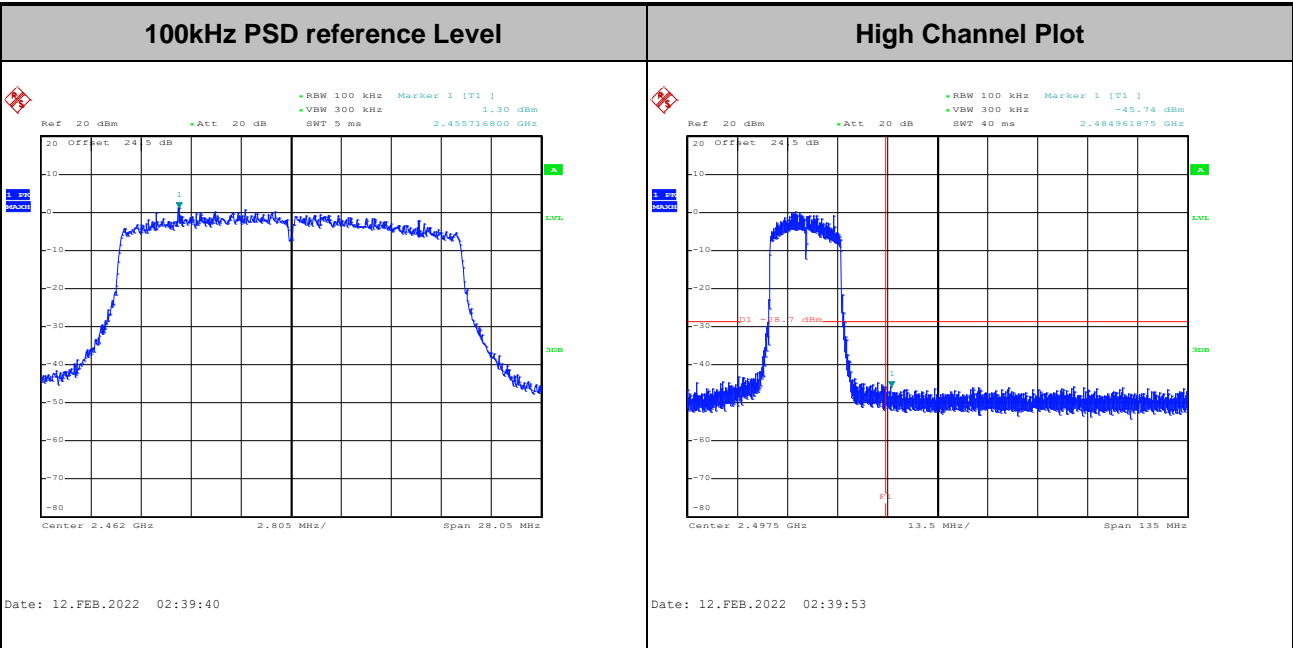


<b>Test Mode :</b>	802.11ax HE20	<b>Test Channel :</b>	06 Full RU
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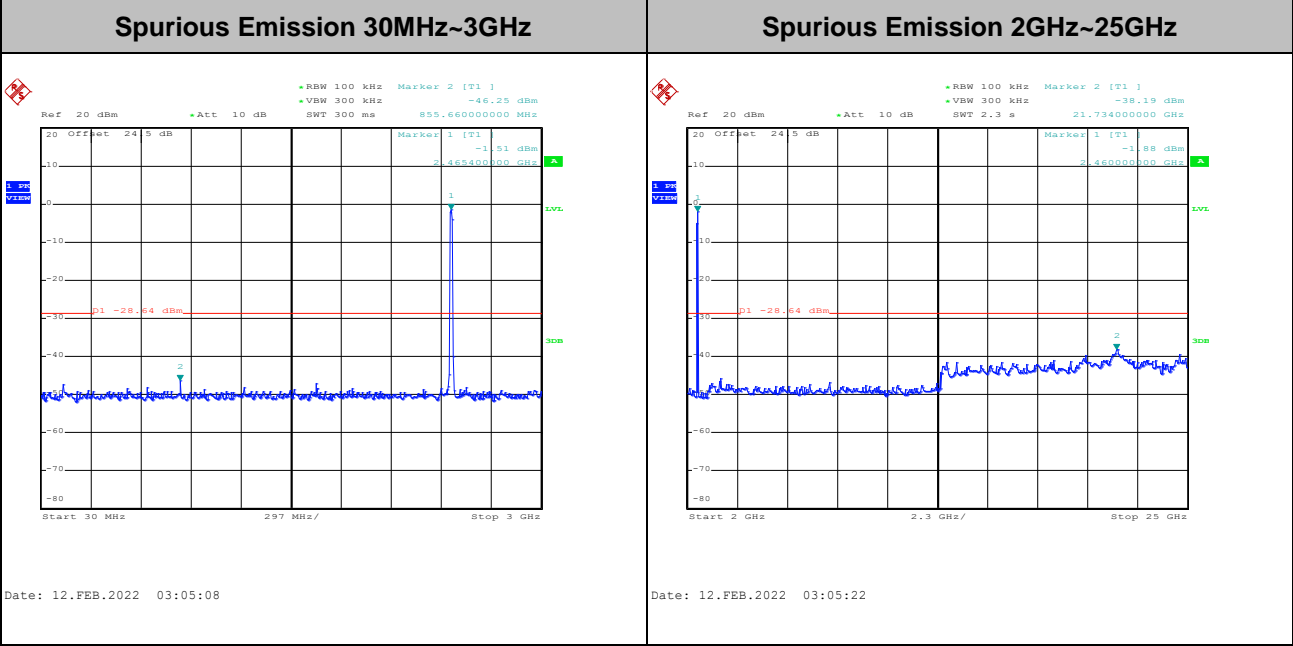
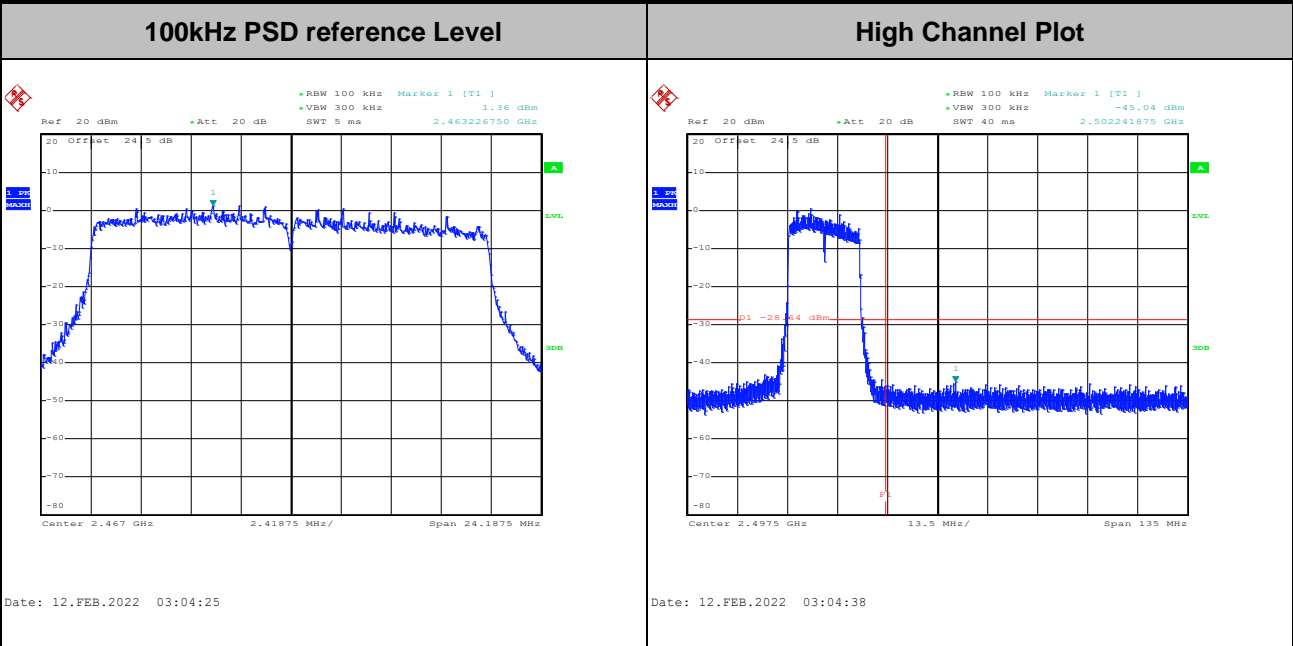
Test Mode :	802.11ax HE20	Test Channel :	11 Full RU
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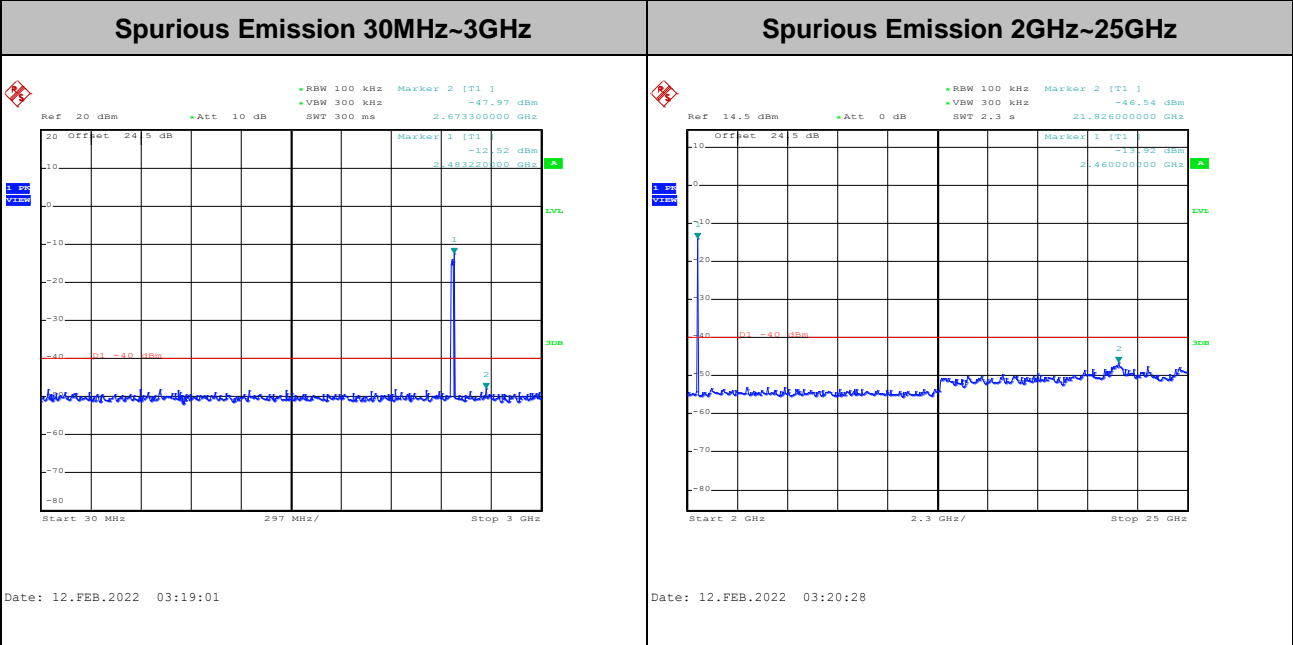
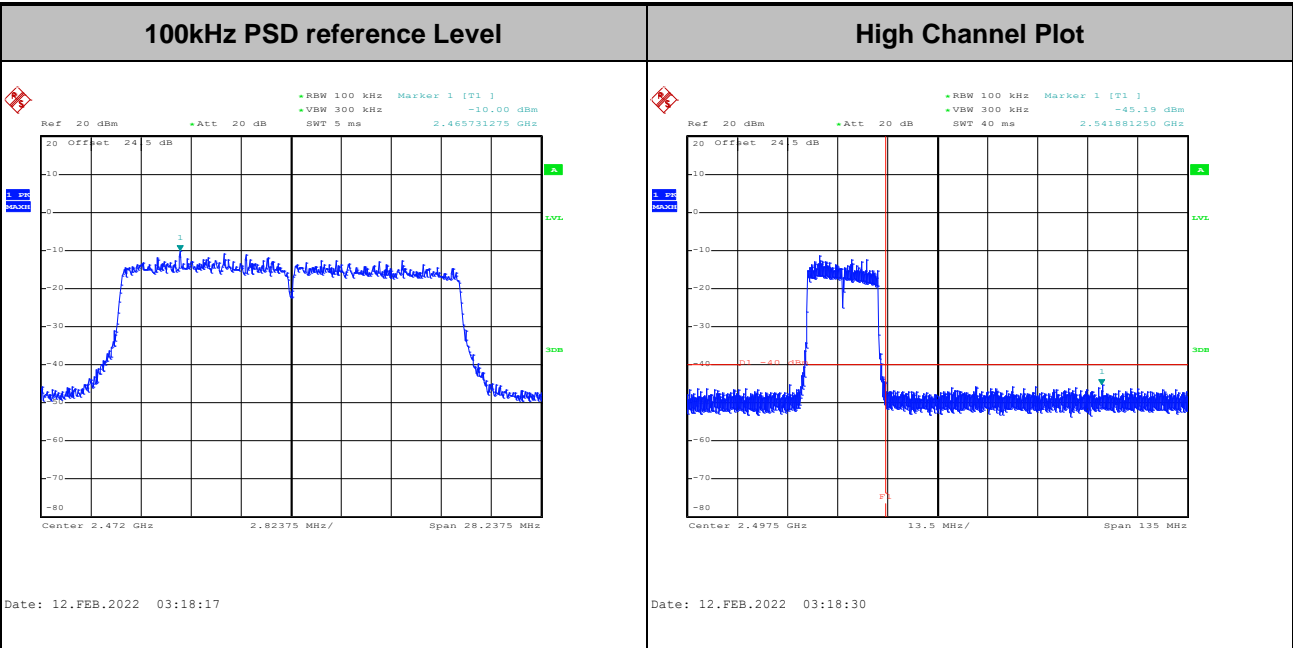


<b>Test Mode :</b>	802.11ax HE20	<b>Test Channel :</b>	12 Full RU
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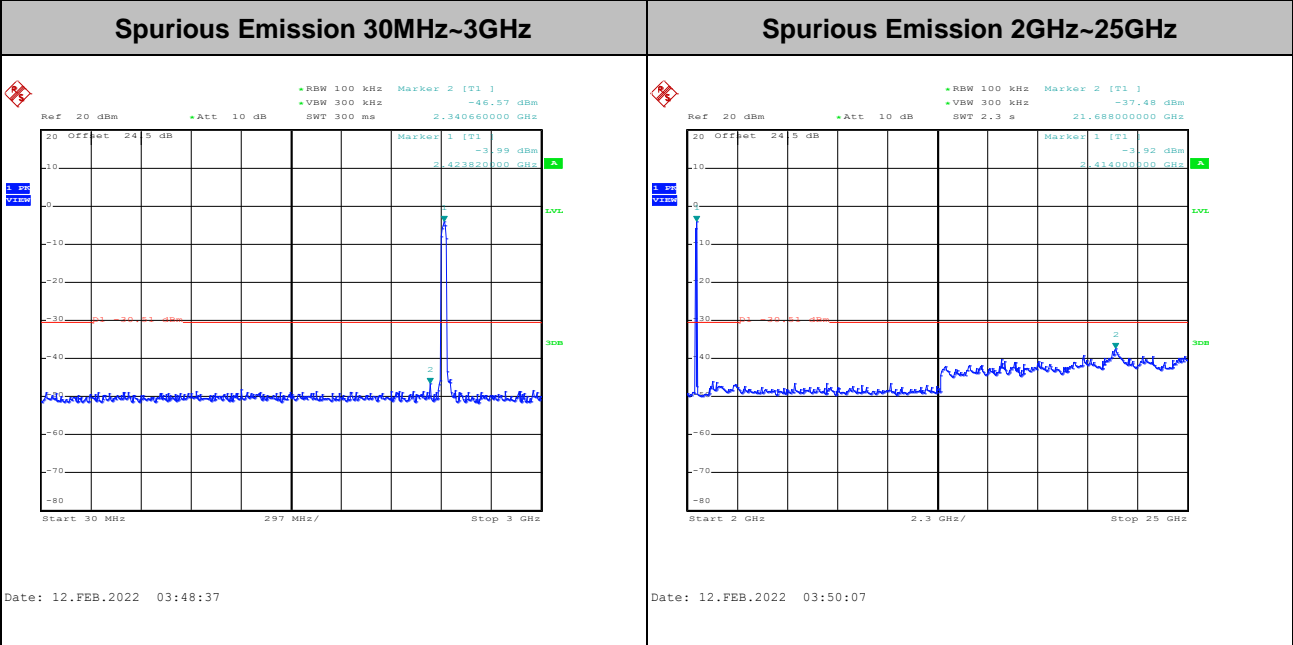
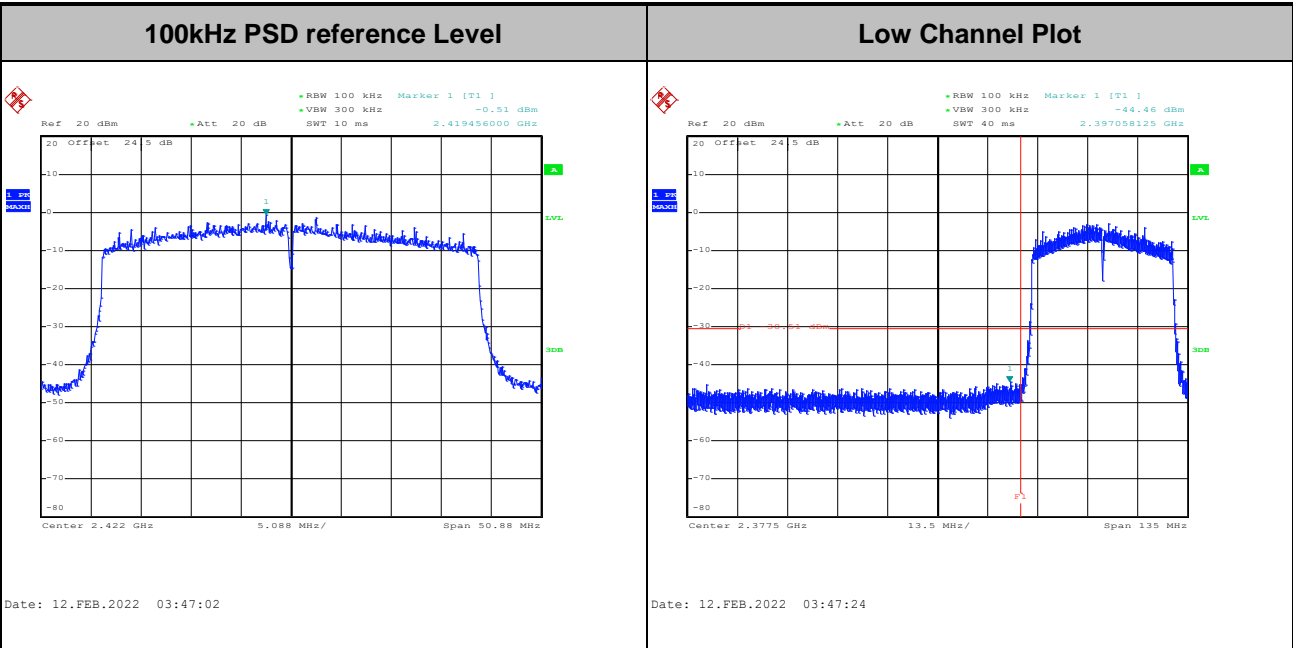


<b>Test Mode :</b>	802.11ax HE20	<b>Test Channel :</b>	13 Full Ru
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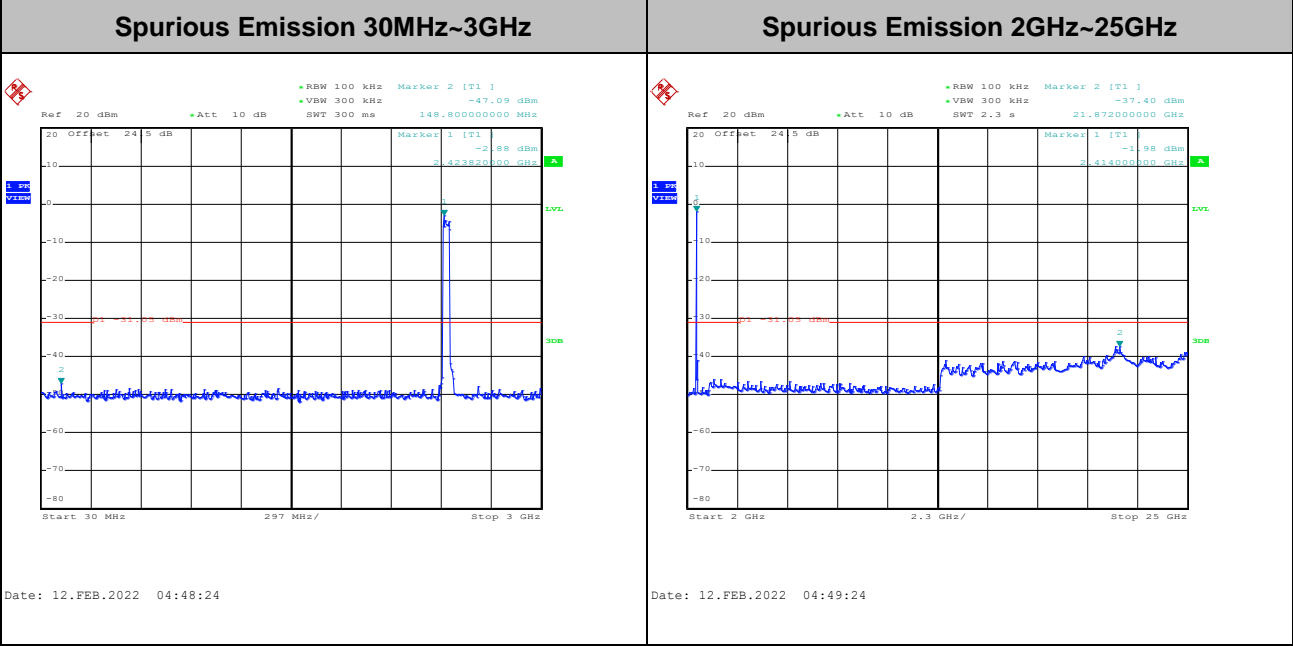
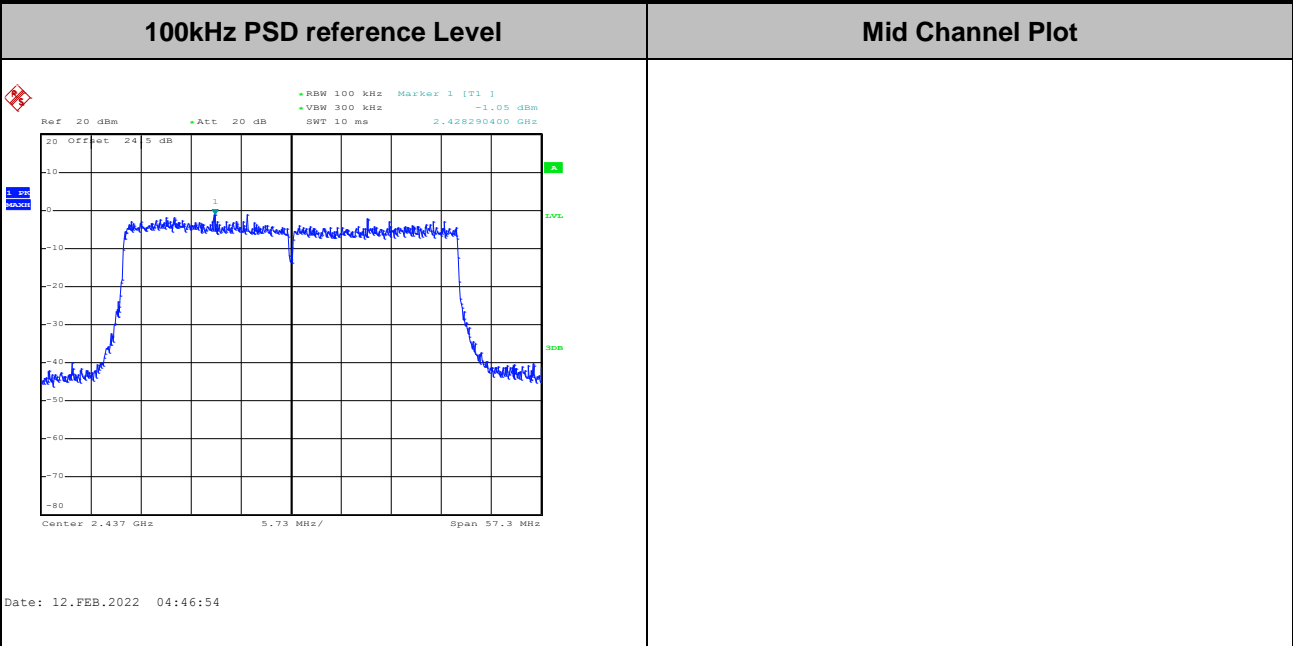


Test Mode :	802.11ax HE40	Test Channel :	03 Full RU
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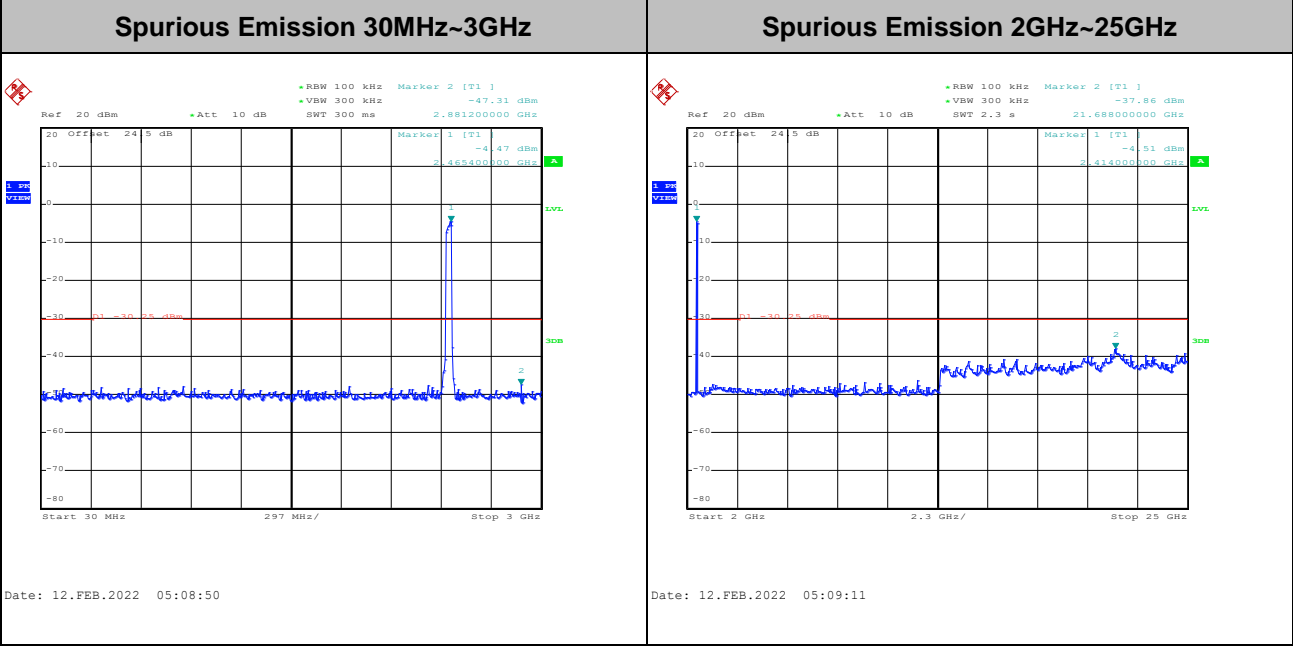
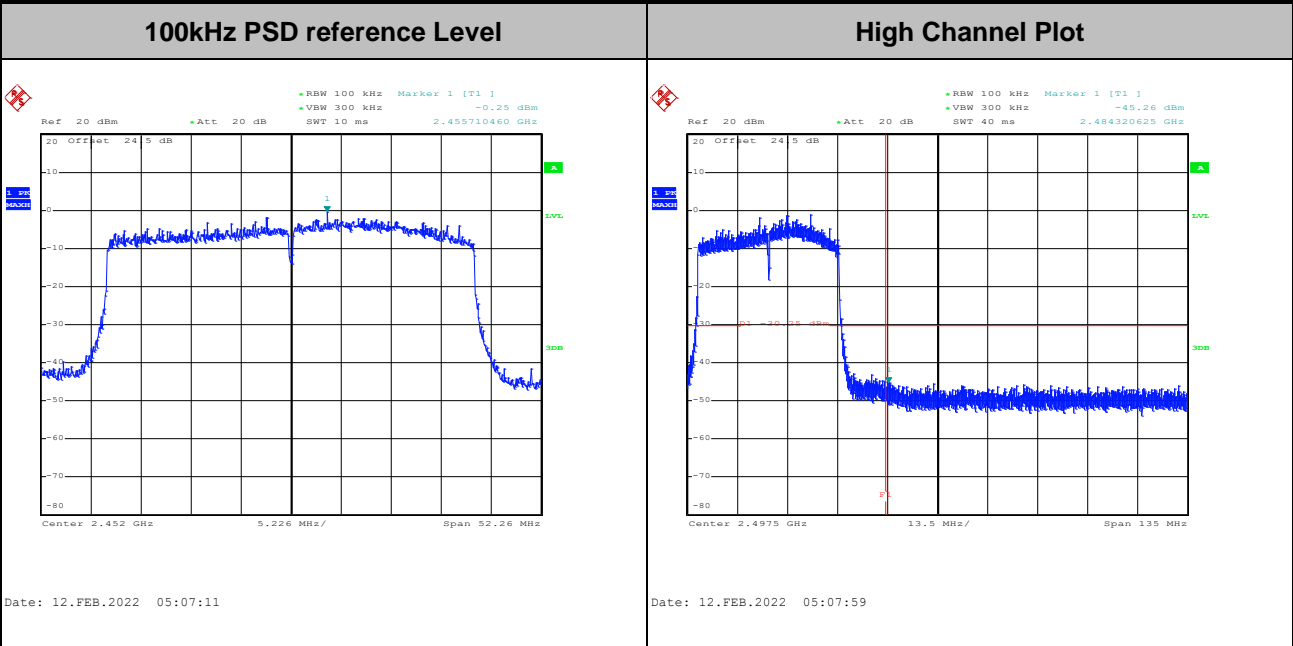


<b>Test Mode :</b>	802.11ax HE40	<b>Test Channel :</b>	06 Full RU
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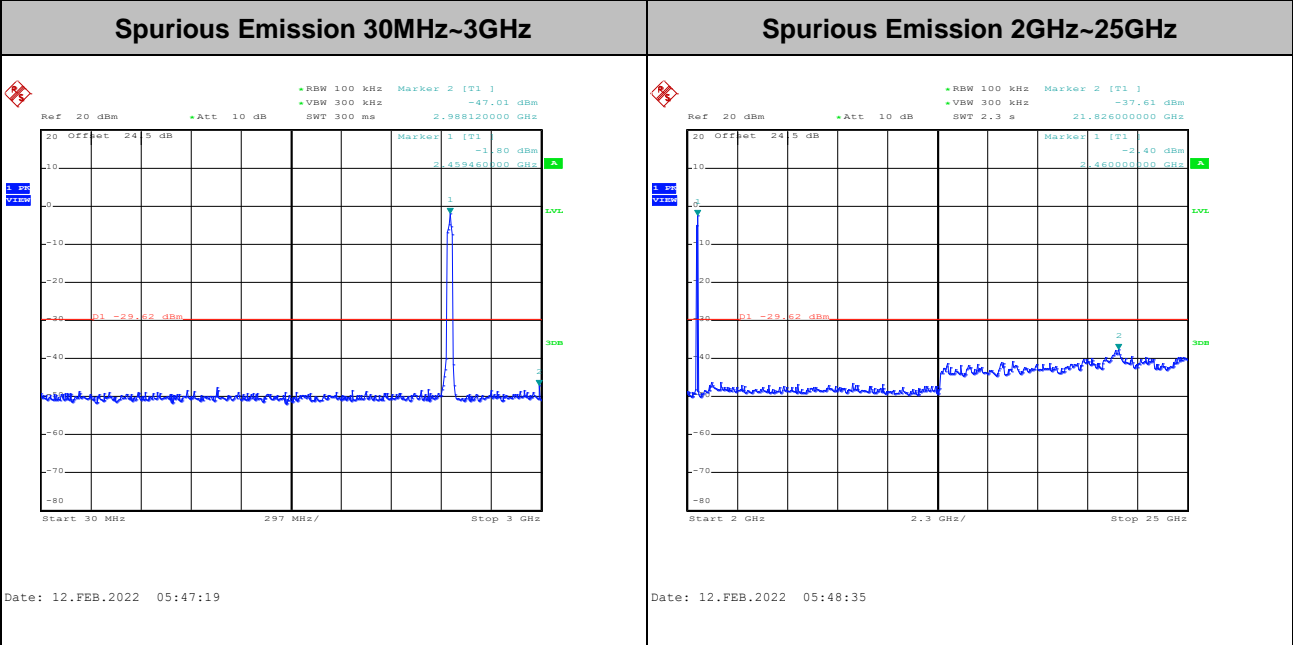
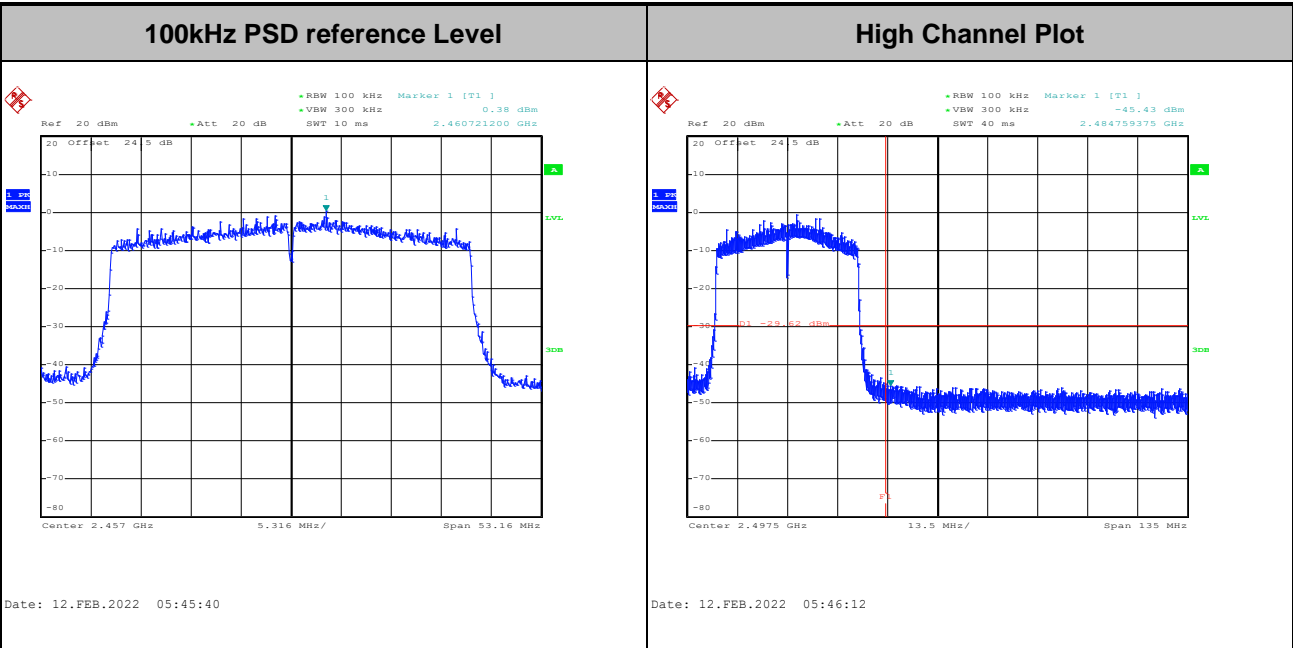


Test Mode :	802.11ax HE40	Test Channel :	09 Full RU
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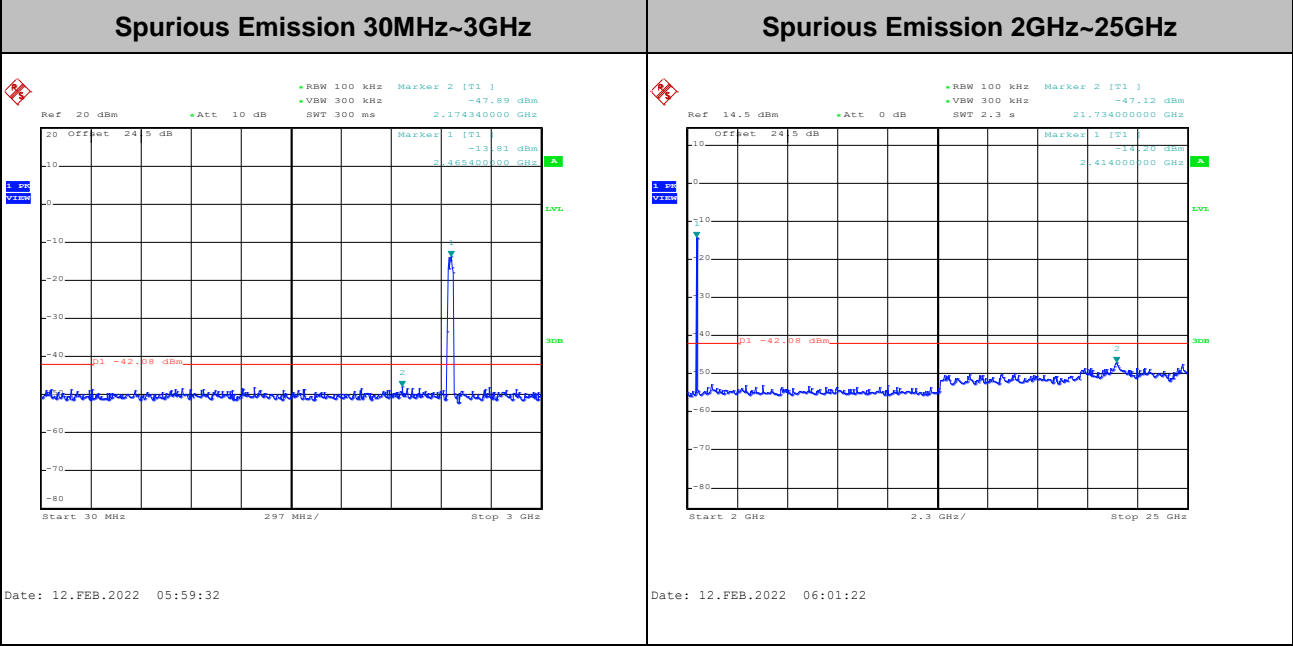
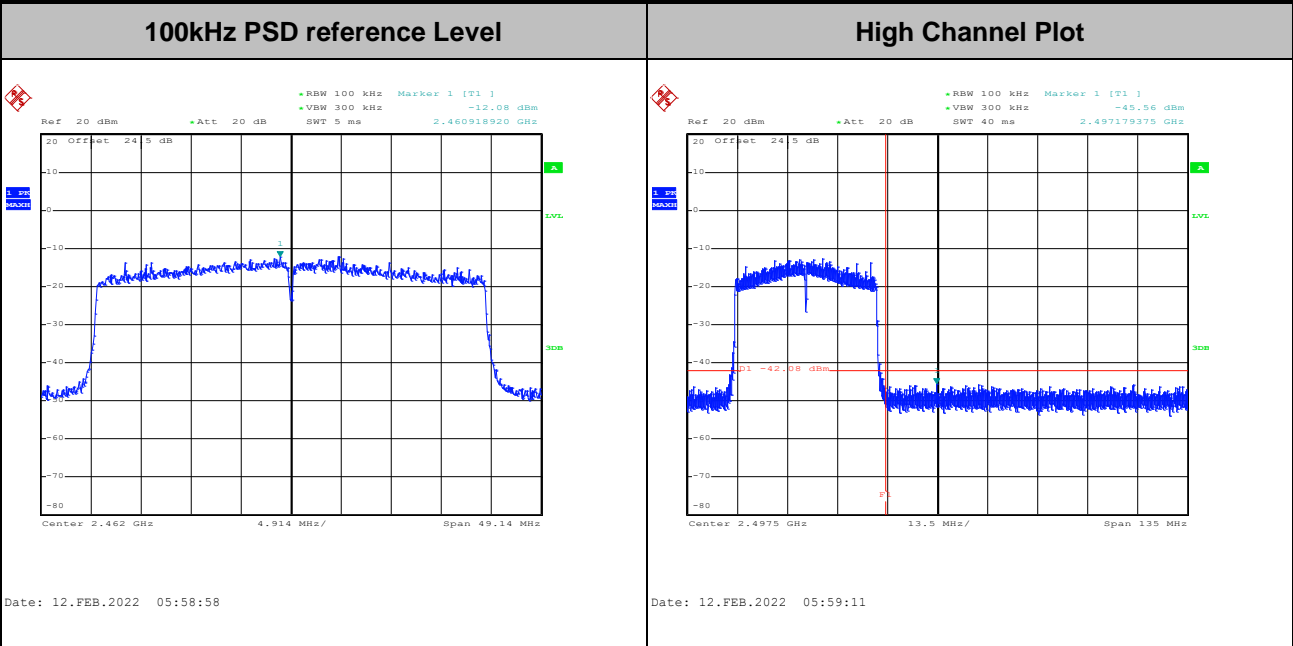


<b>Test Mode :</b>	802.11ax HE40	<b>Test Channel :</b>	10 Full RU
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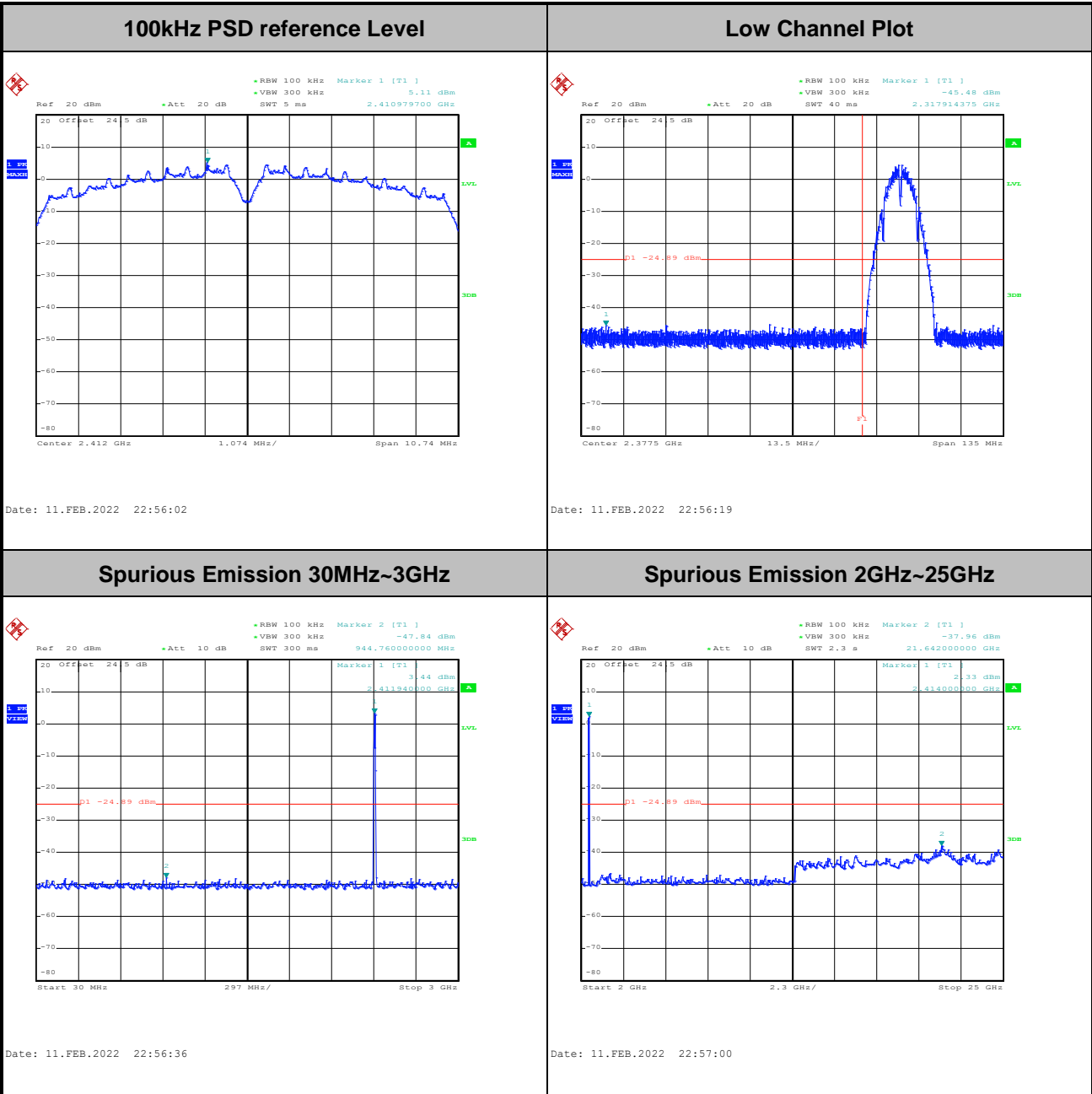
Test Mode :	802.11ax HE40	Test Channel :	11 Full RU
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Number of TX = 2, Chain 2 (Measured)

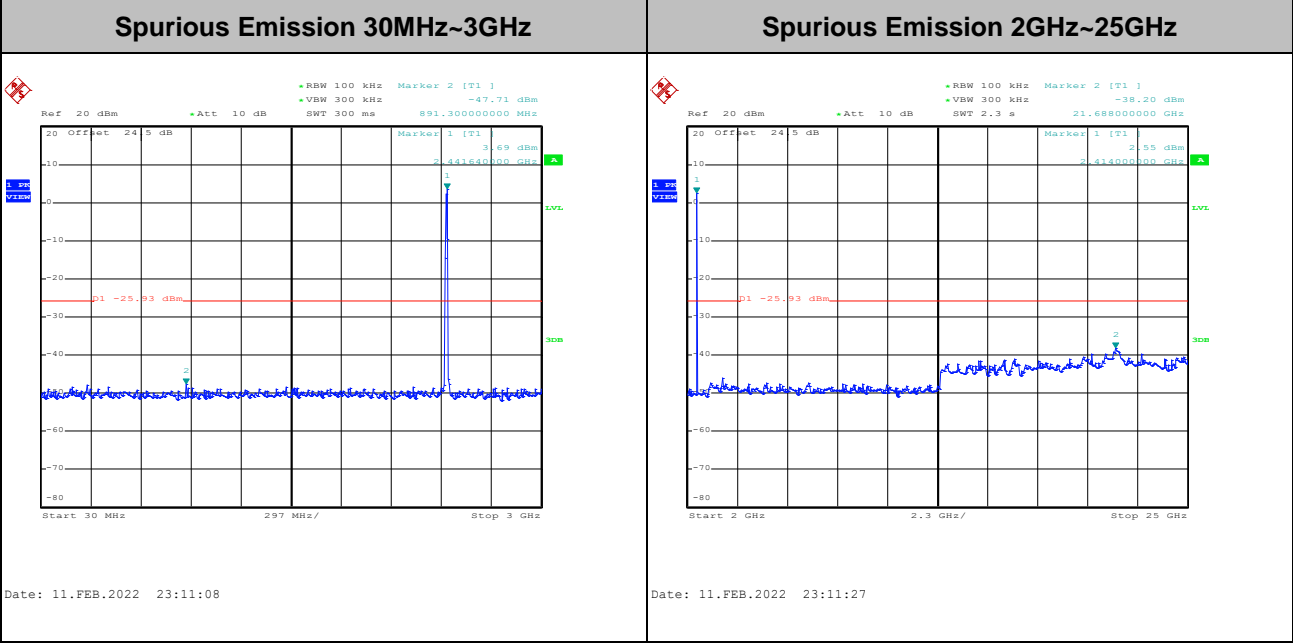
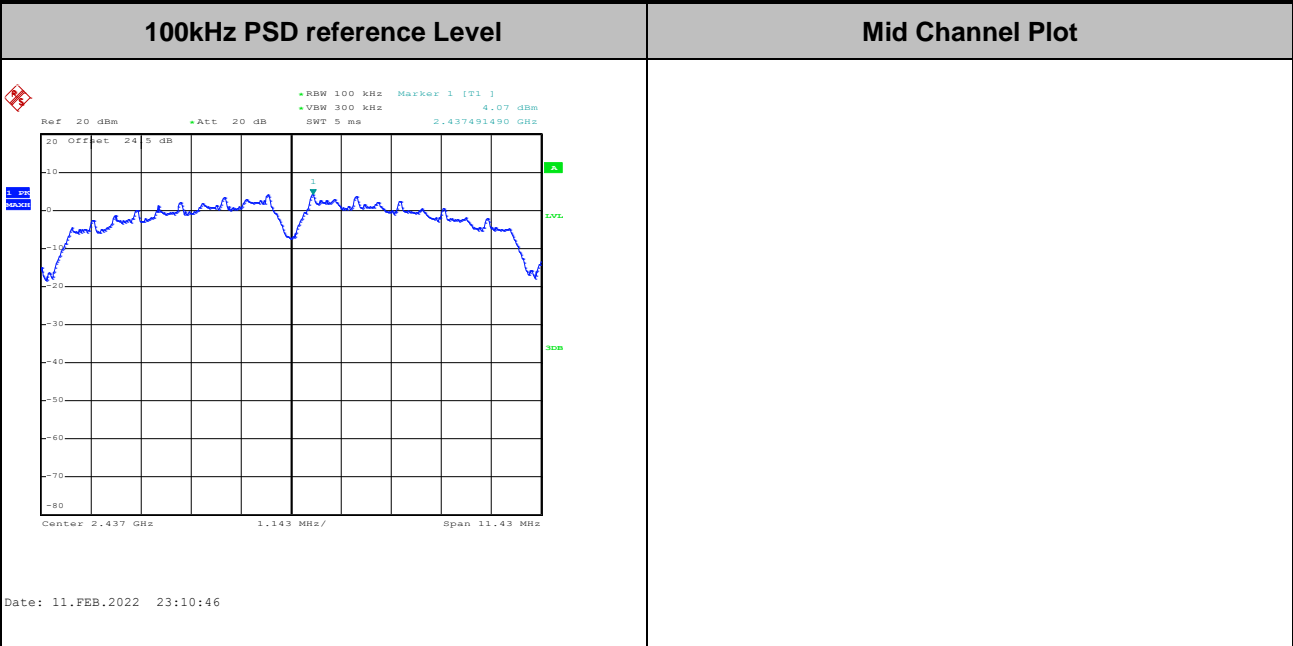
Test Mode :	802.11b	Test Channel :	01
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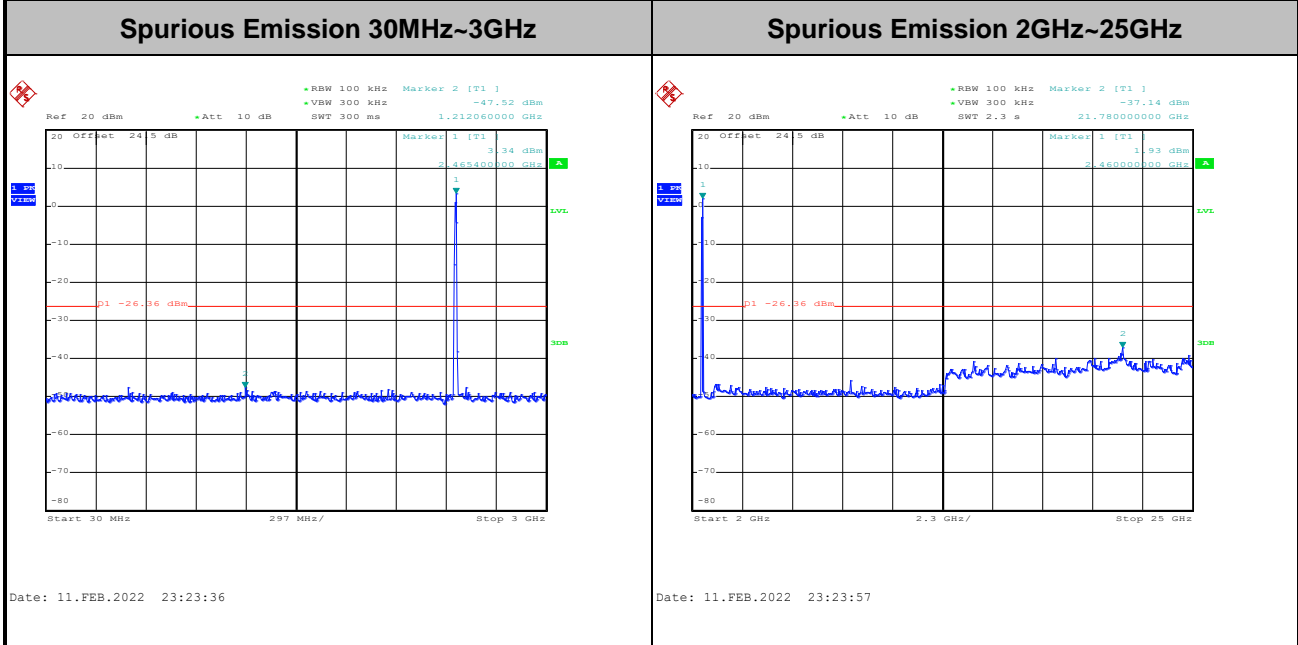
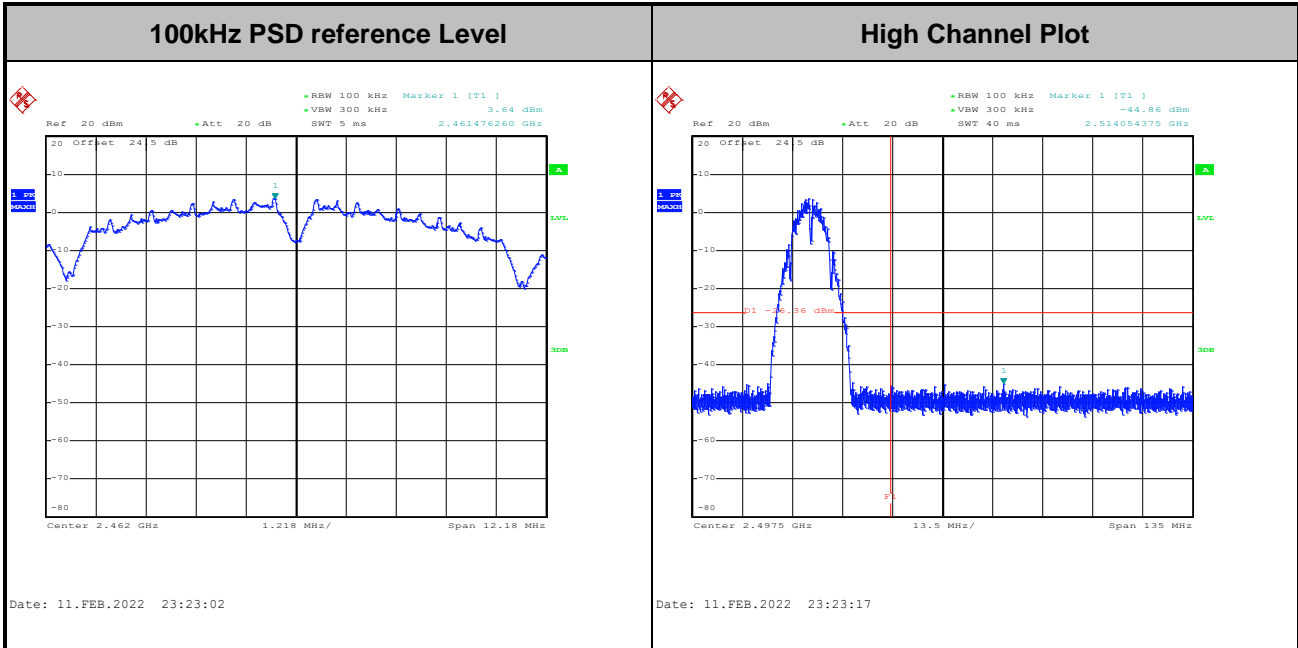


Test Mode :	802.11b	Test Channel :	06
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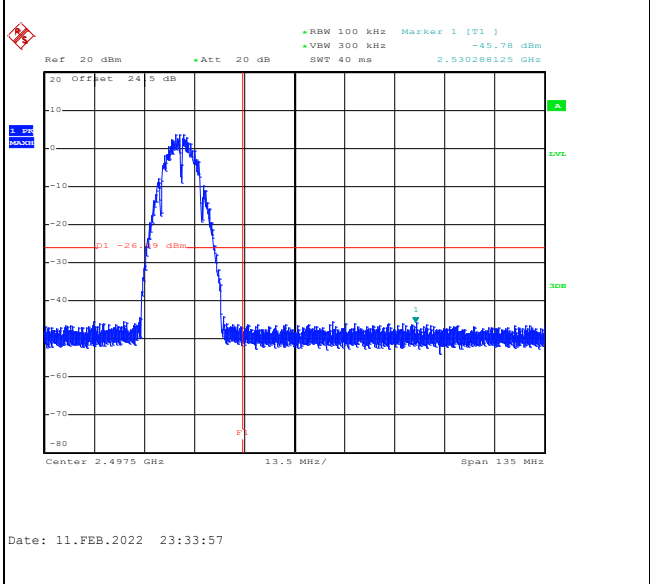
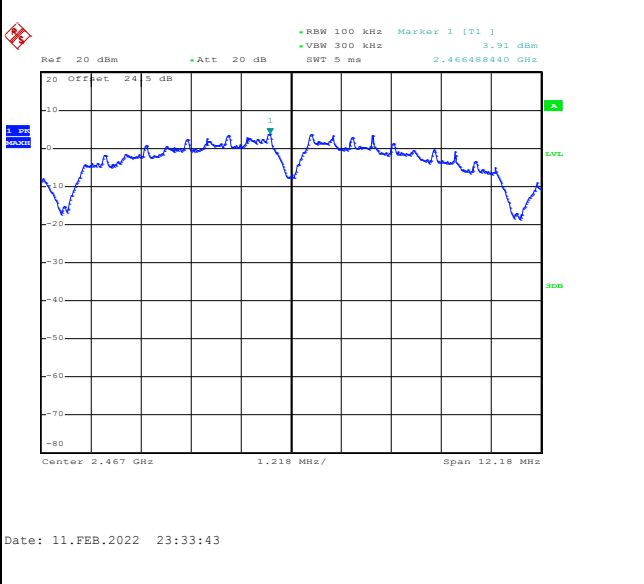
Test Mode :	802.11b	Test Channel :	11
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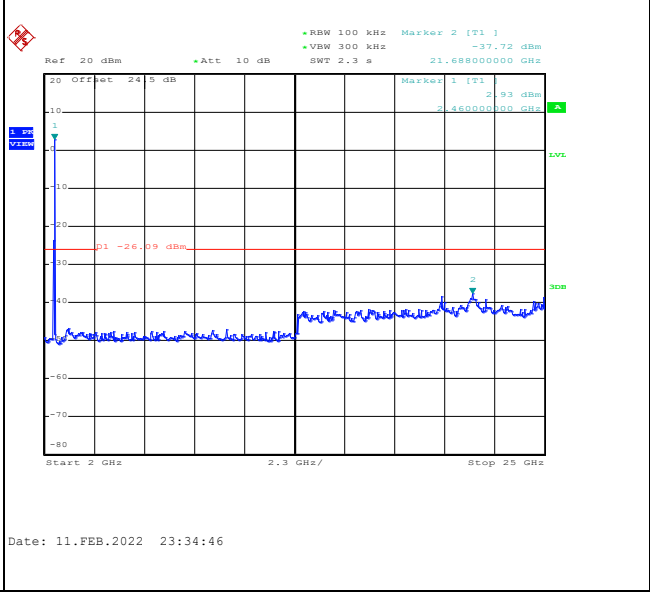
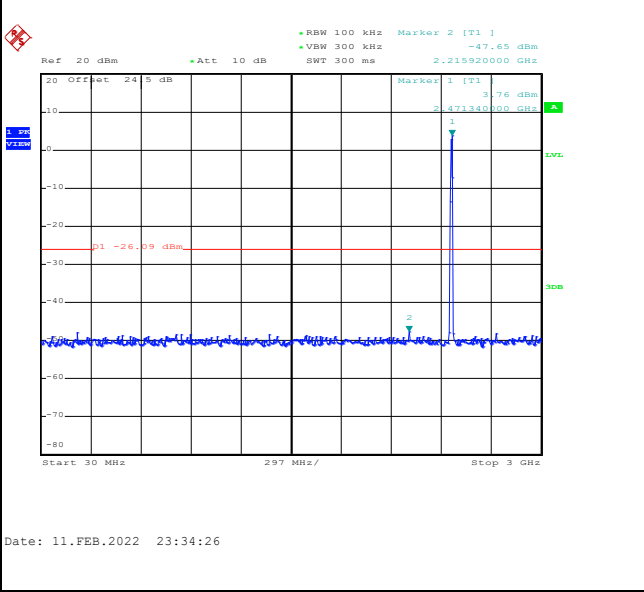


Test Mode :	802.11b	Test Channel :	12
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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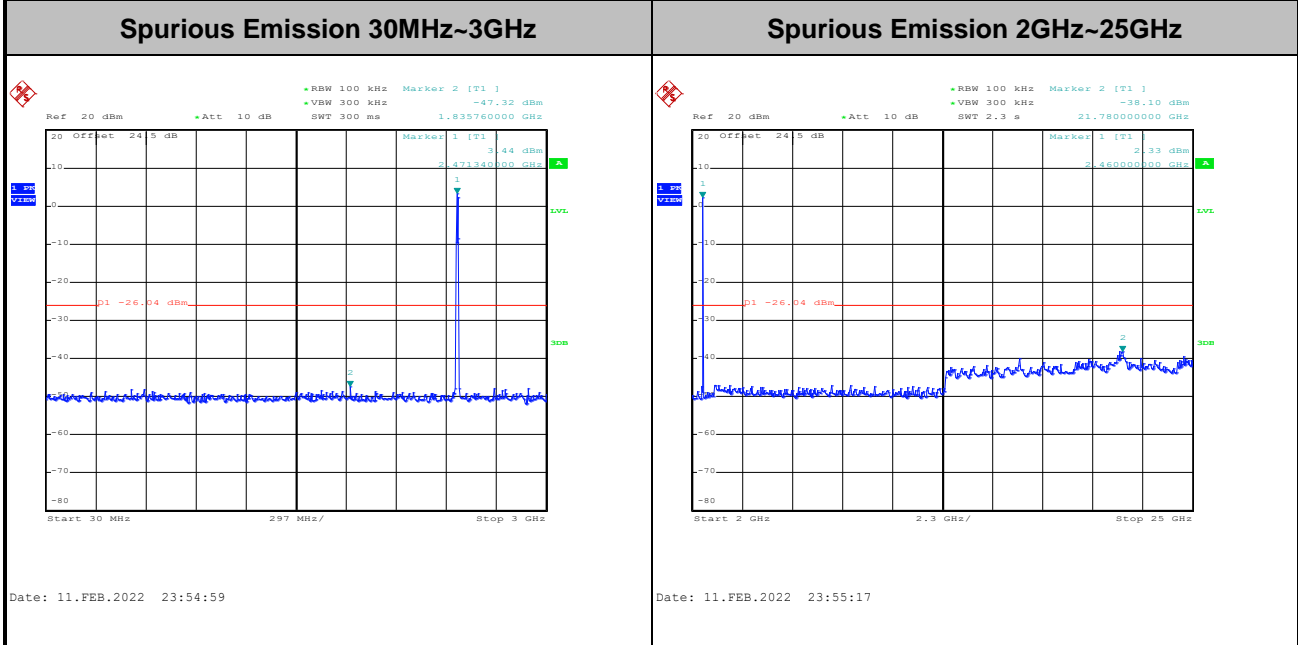
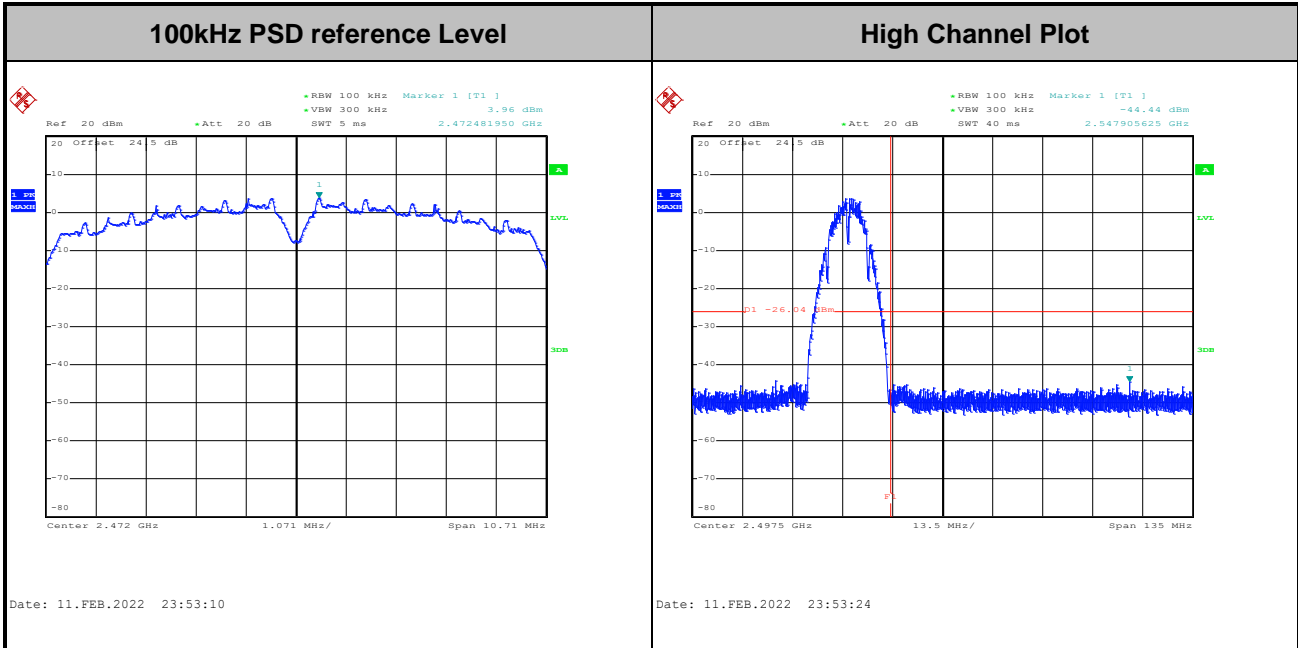


<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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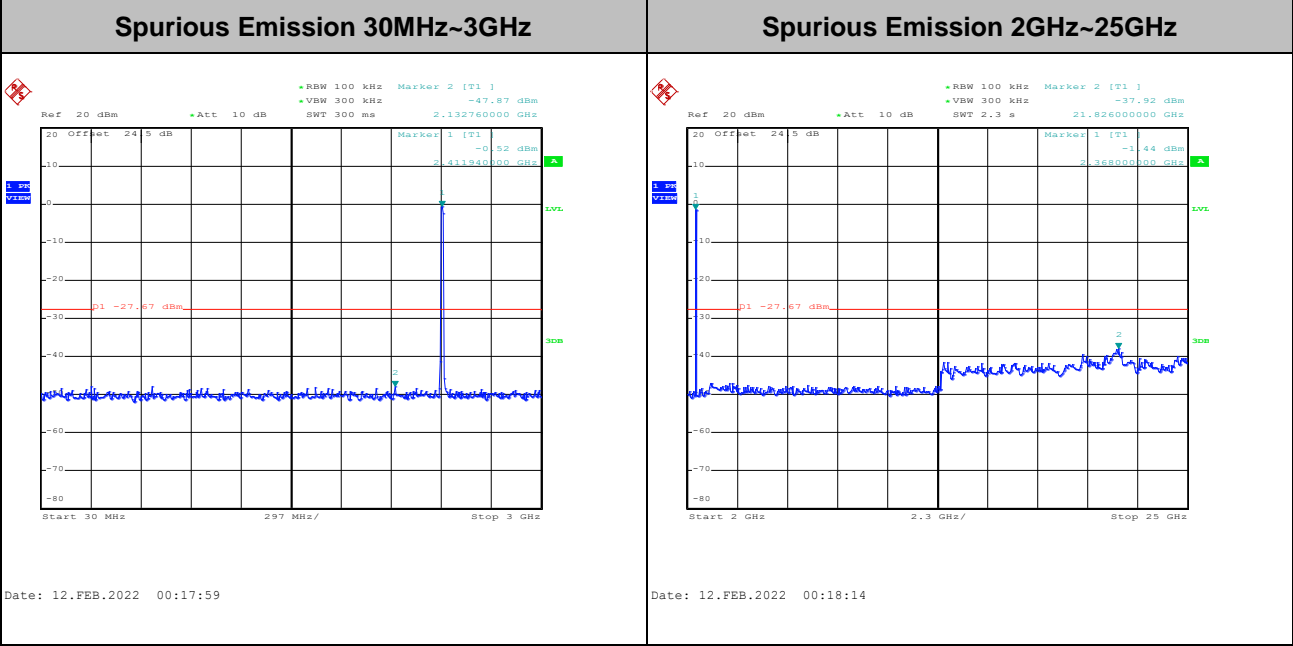
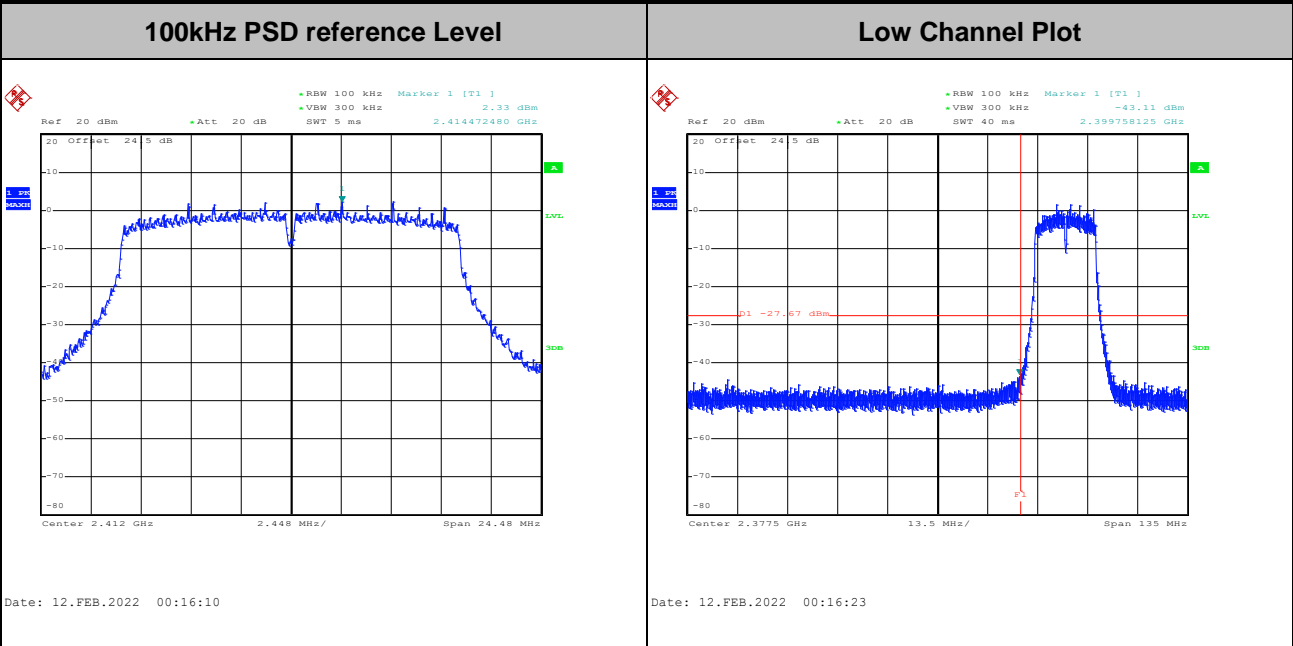


Test Mode :	802.11b	Test Channel :	13
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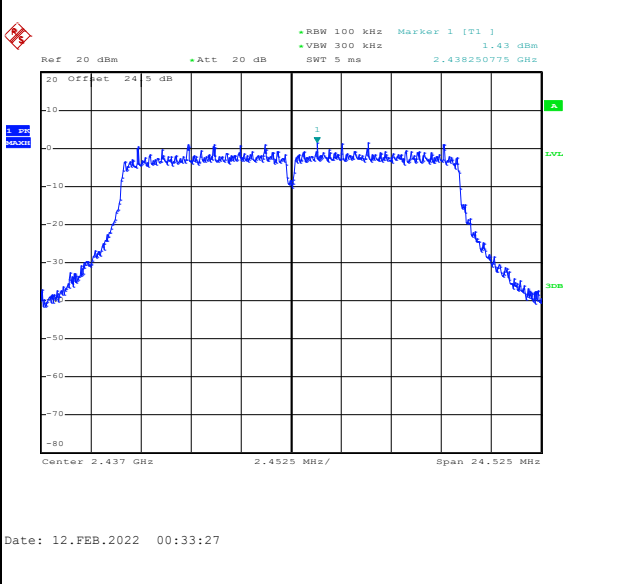
Test Mode :	802.11g	Test Channel :	01
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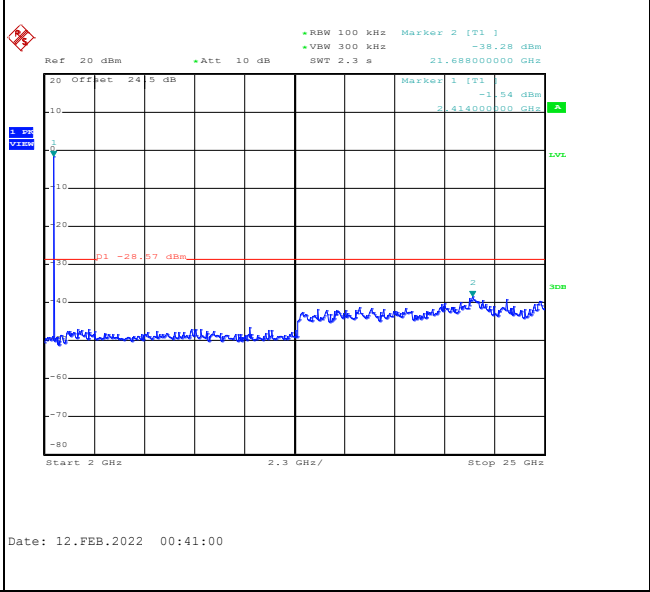
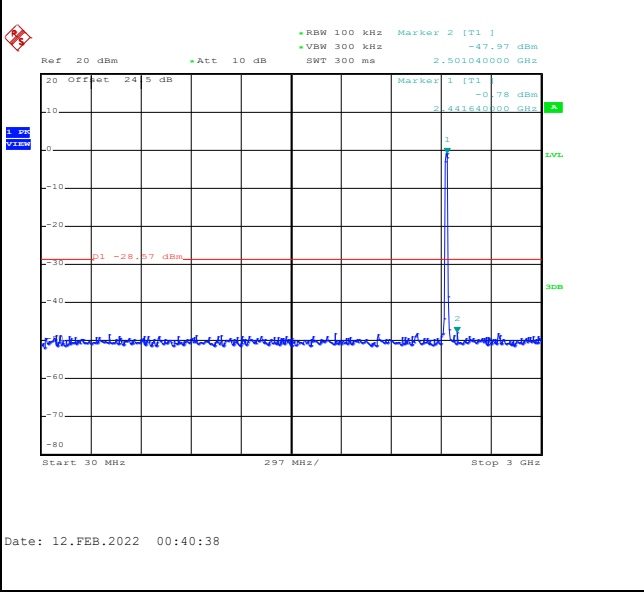


Test Mode :	802.11g	Test Channel :	06
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<b>100kHz PSD reference Level</b>	<b>Mid Channel Plot</b>
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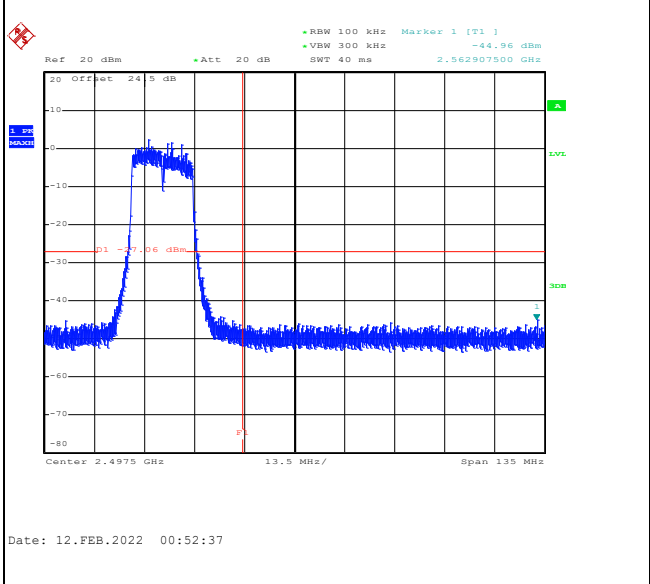
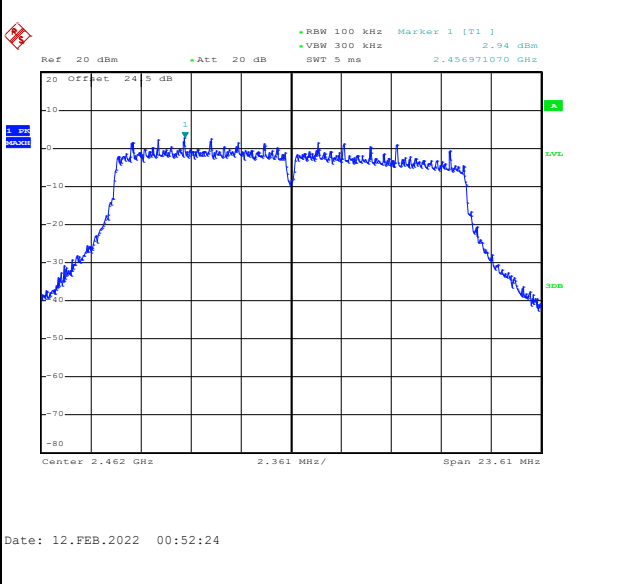
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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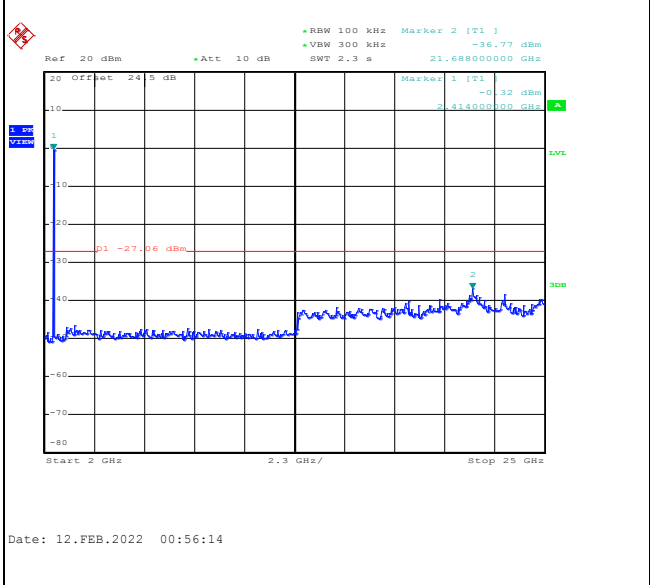
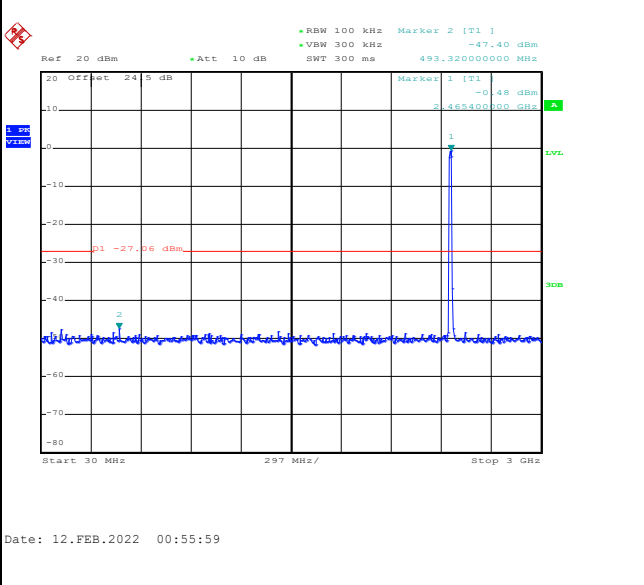


Test Mode :	802.11g	Test Channel :	11
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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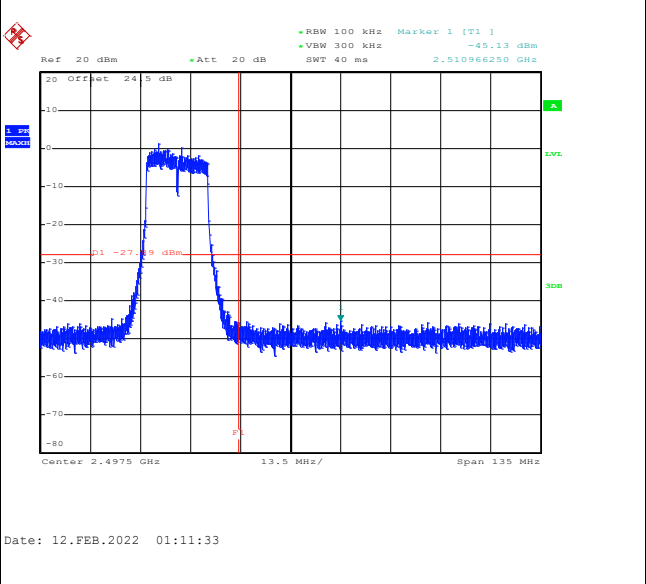
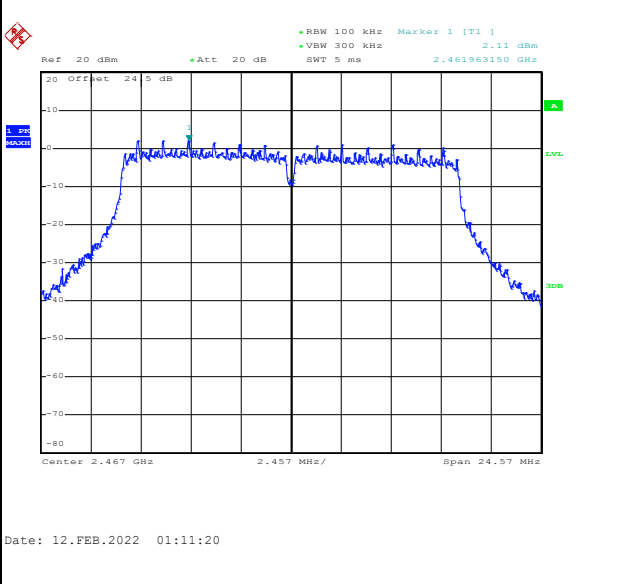
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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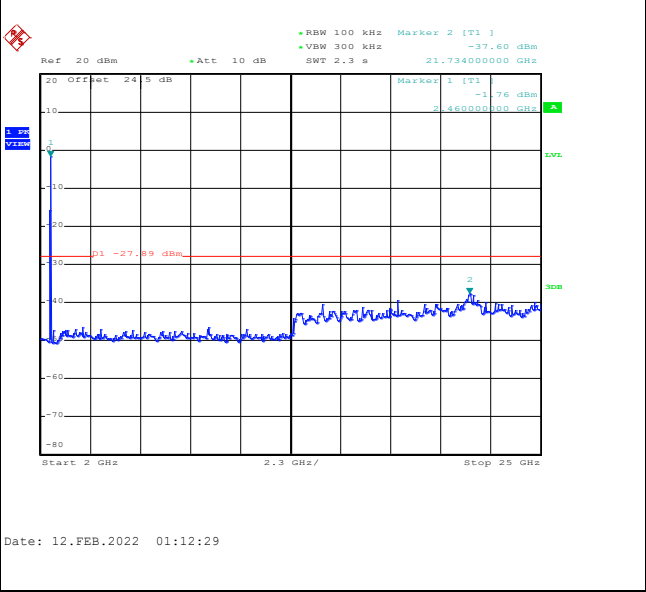
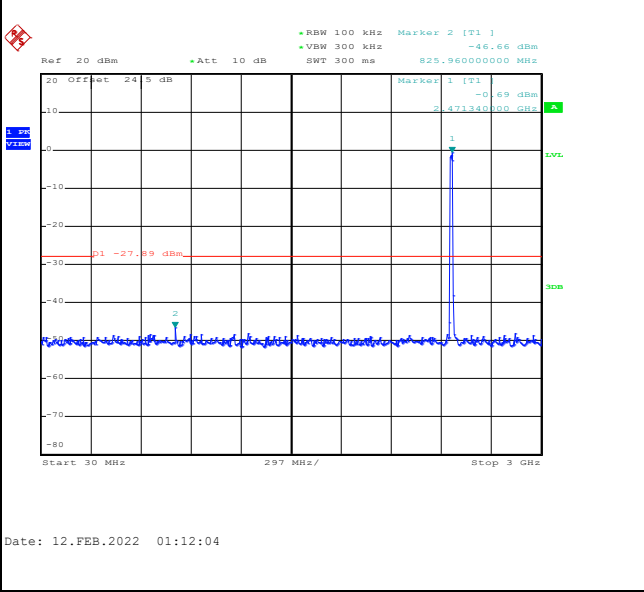


Test Mode :	802.11g	Test Channel :	12
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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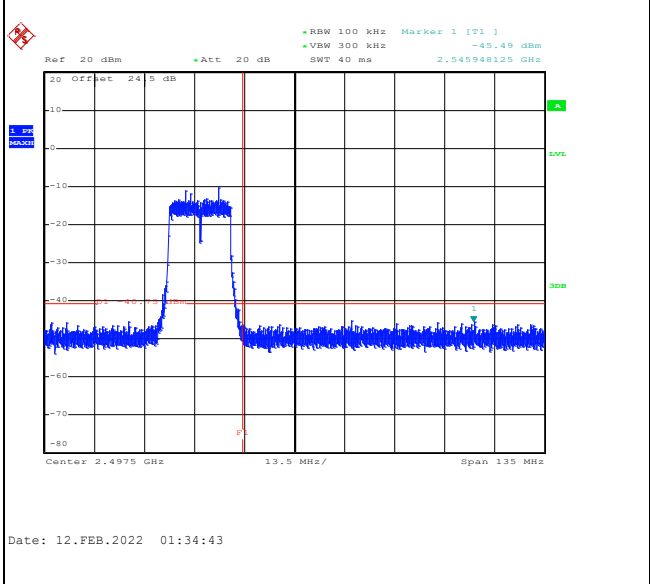
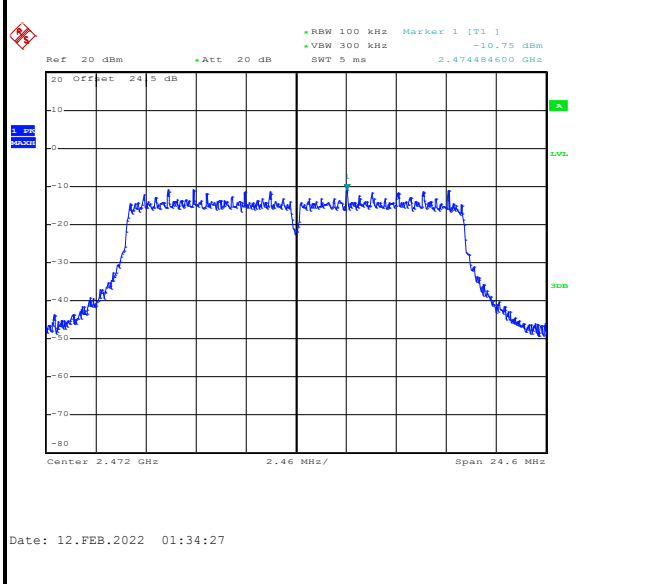




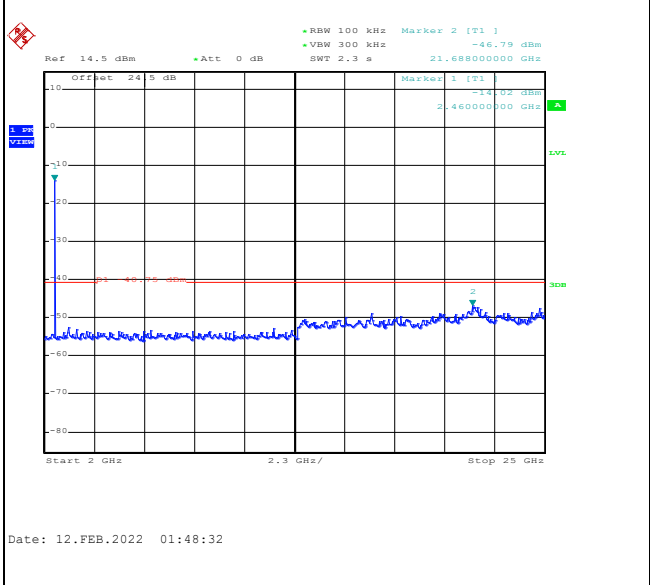
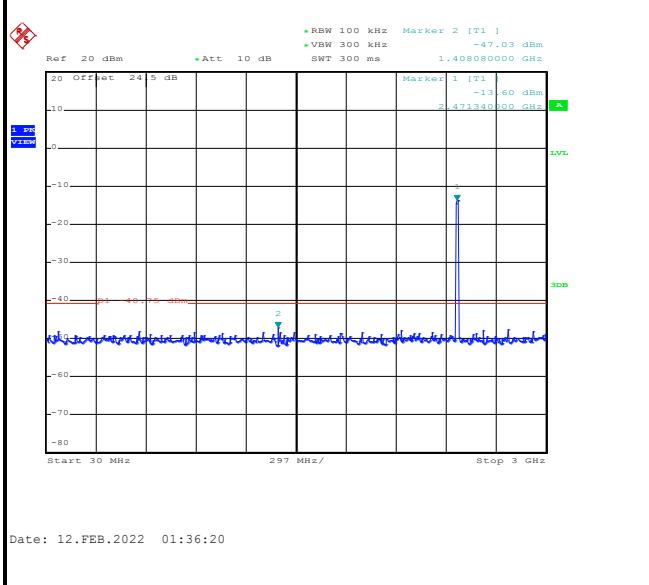


Test Mode :	802.11g	Test Channel :	13
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<b>100kHz PSD reference Level</b>	<b>High Channel Plot</b>
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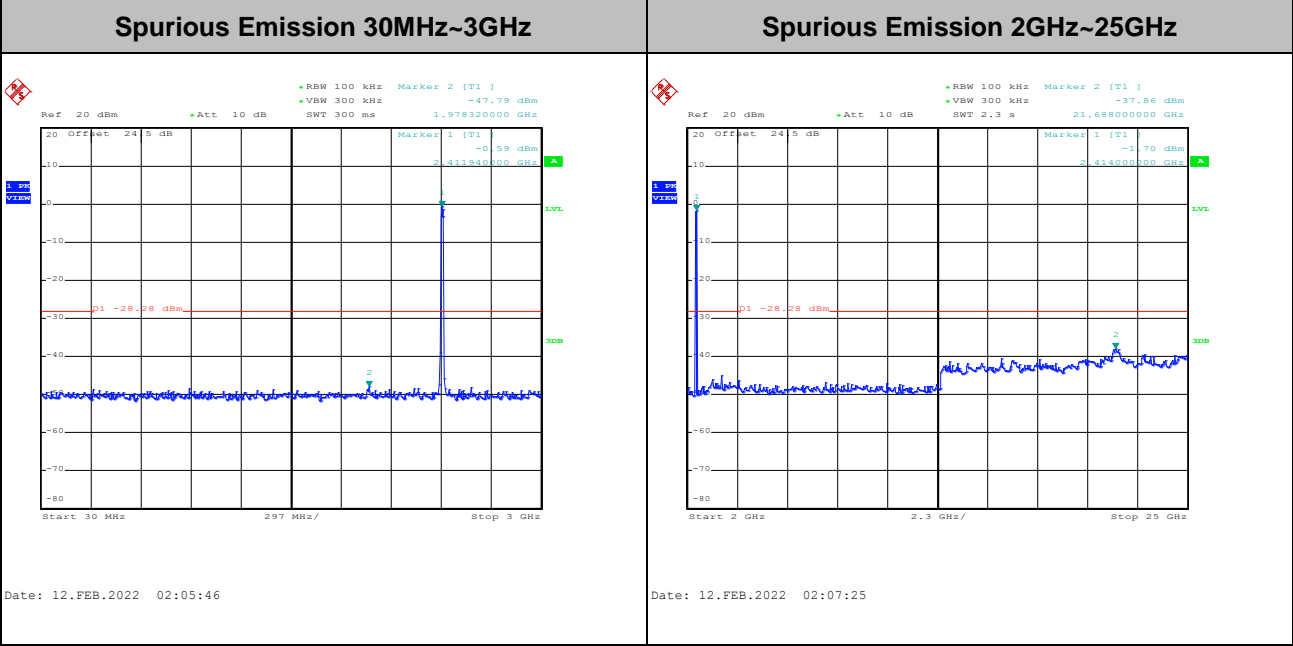
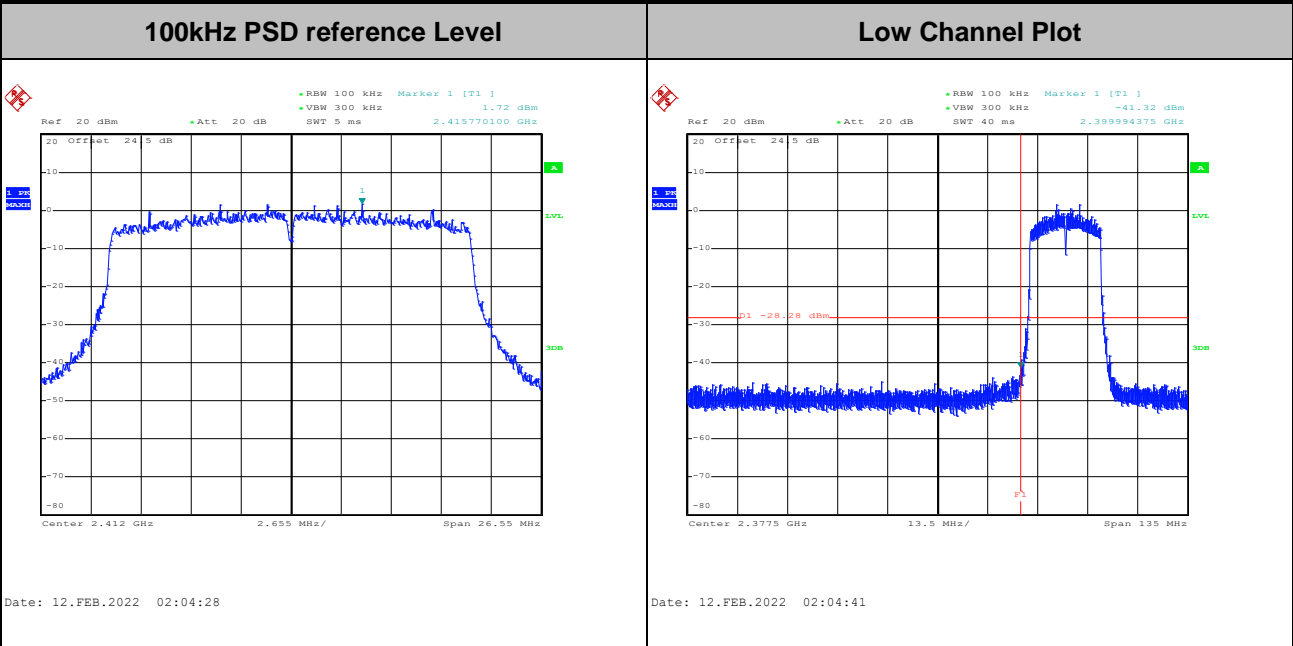


<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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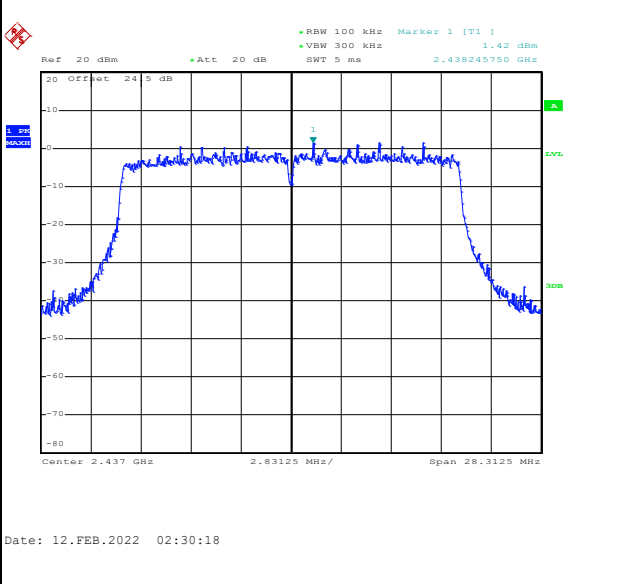
Test Mode :	802.11ax HE20	Test Channel :	01 Full RU
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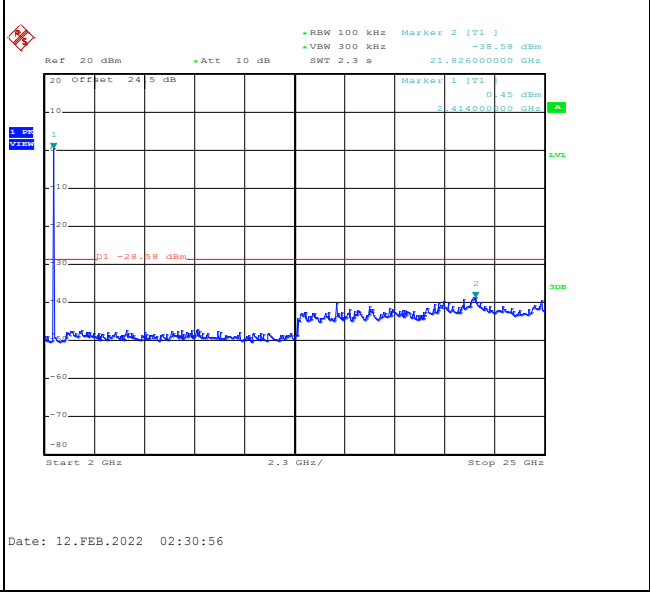
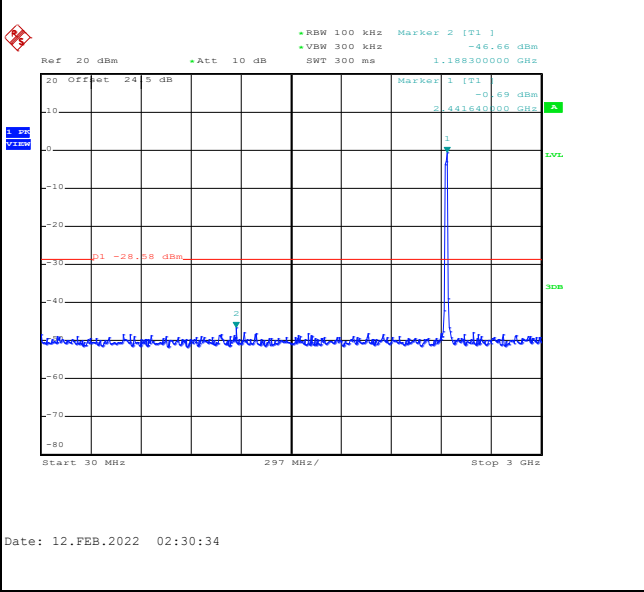


Test Mode :	802.11ax HE20	Test Channel :	06 Full RU
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<b>100kHz PSD reference Level</b>	<b>Mid Channel Plot</b>
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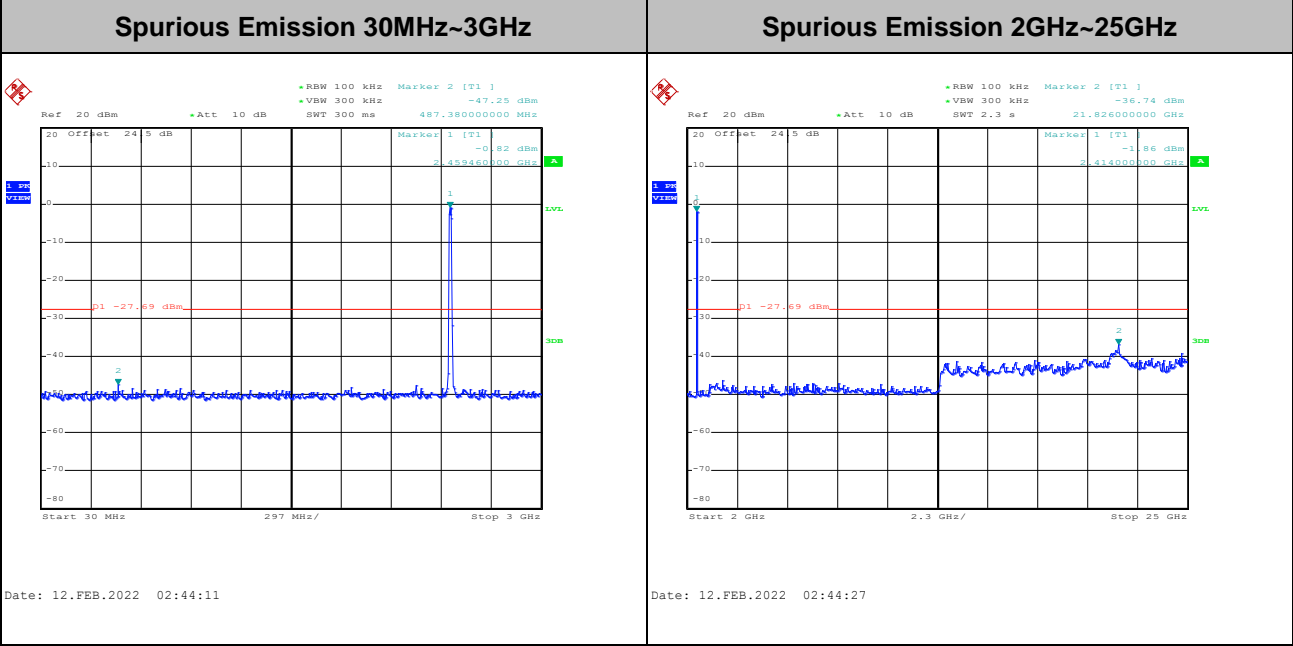
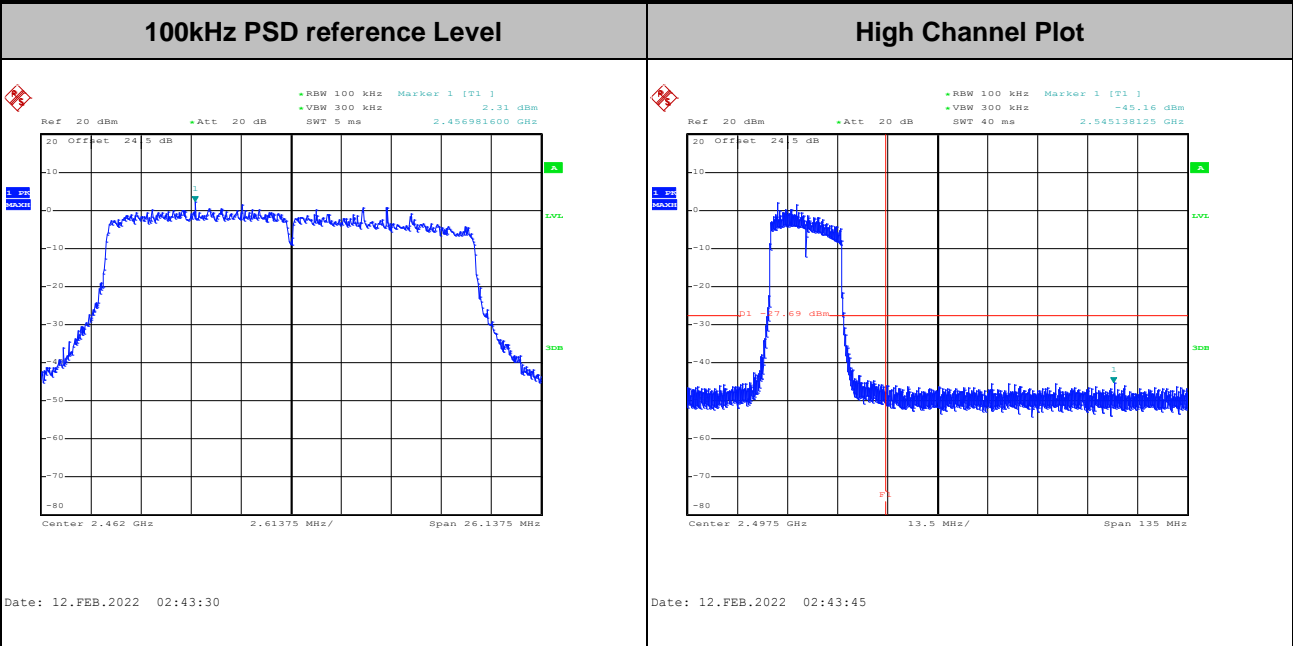


<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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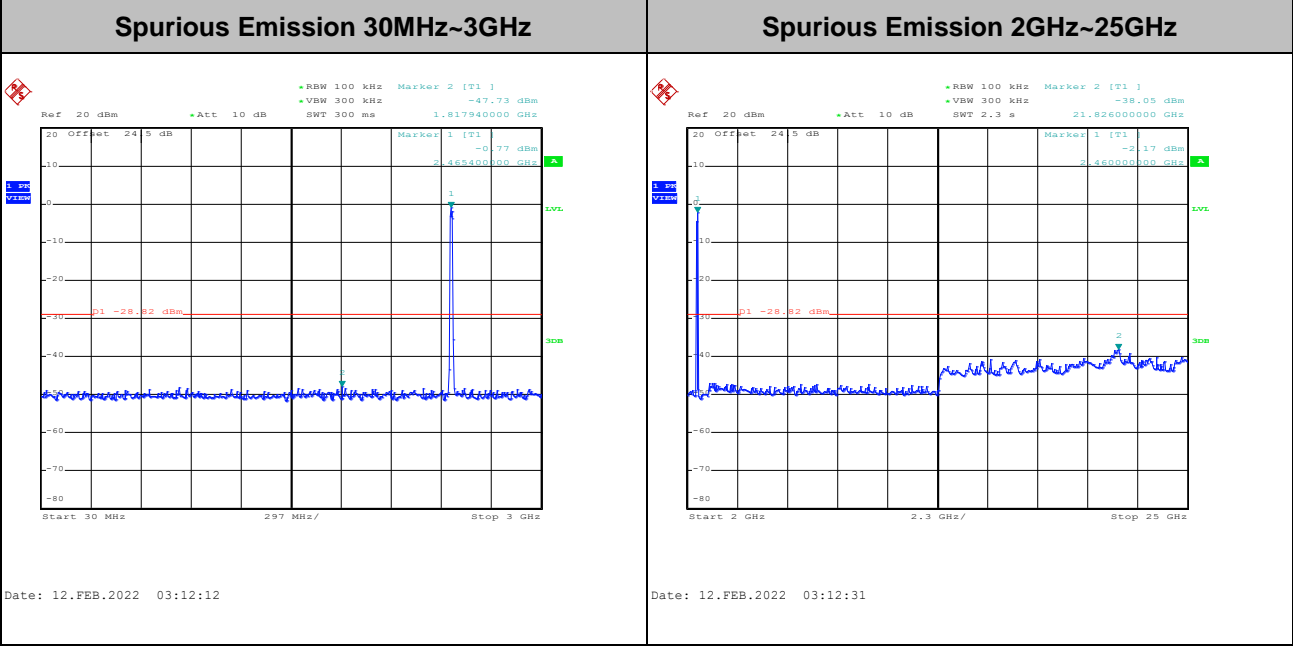
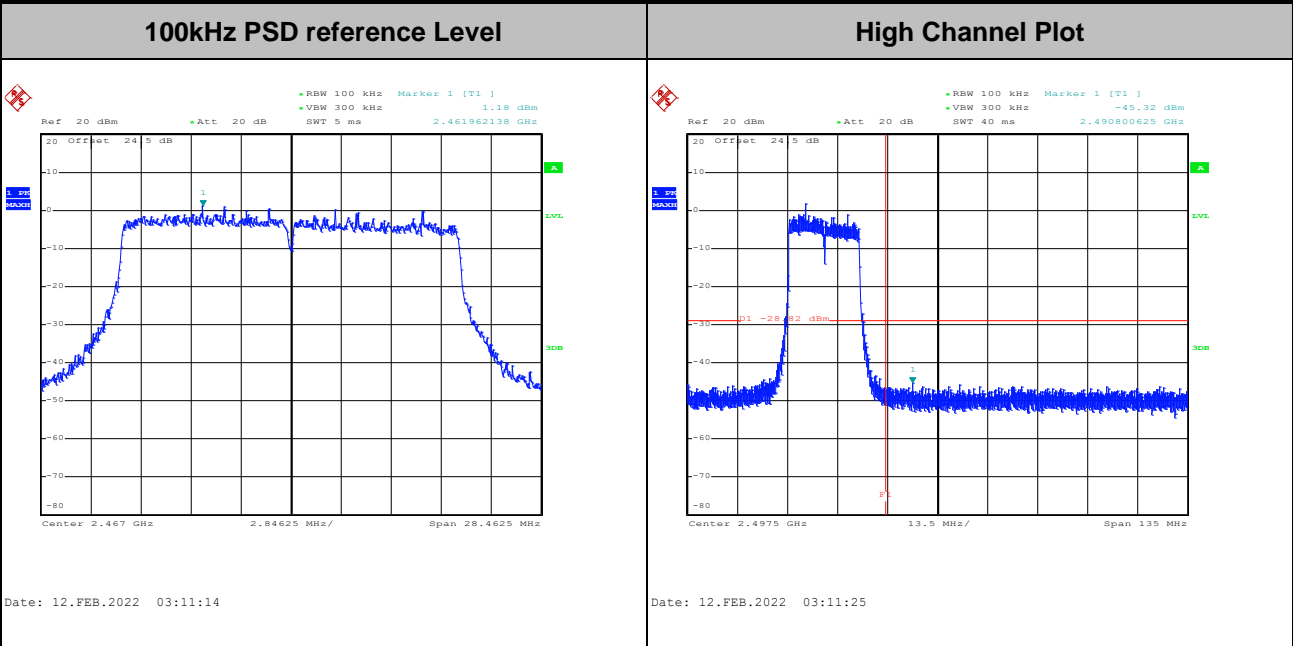


Test Mode :	802.11ax HE20	Test Channel :	11 Full RU
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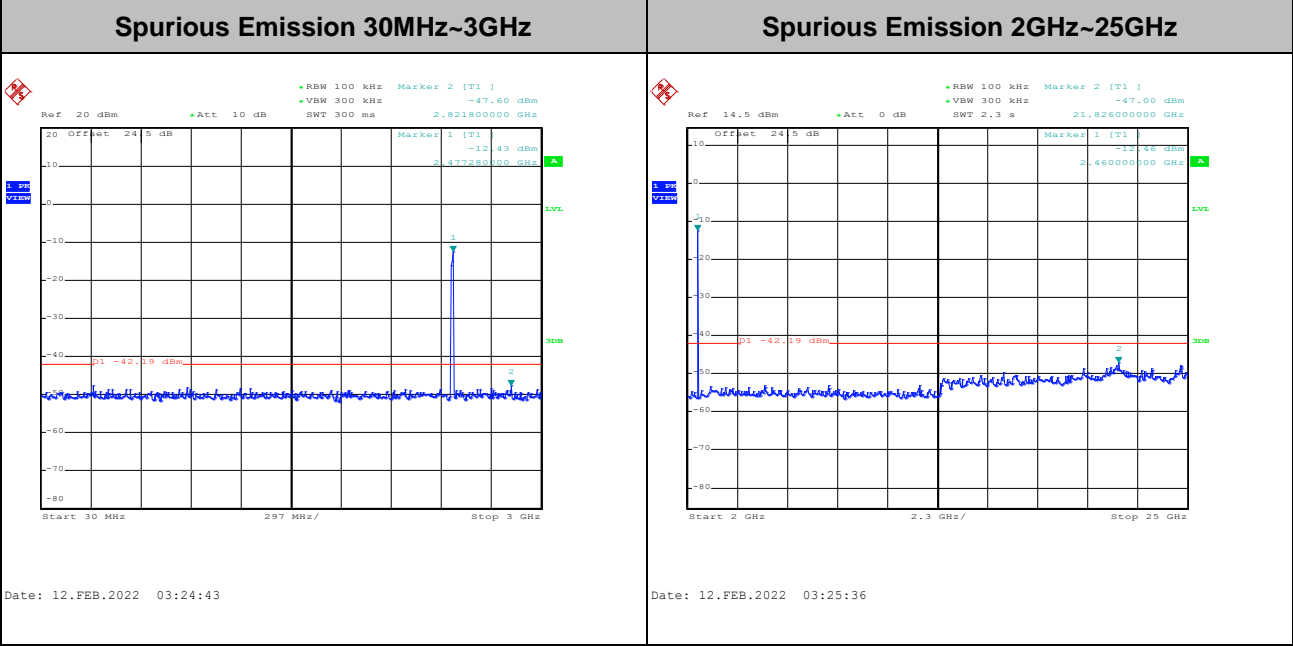
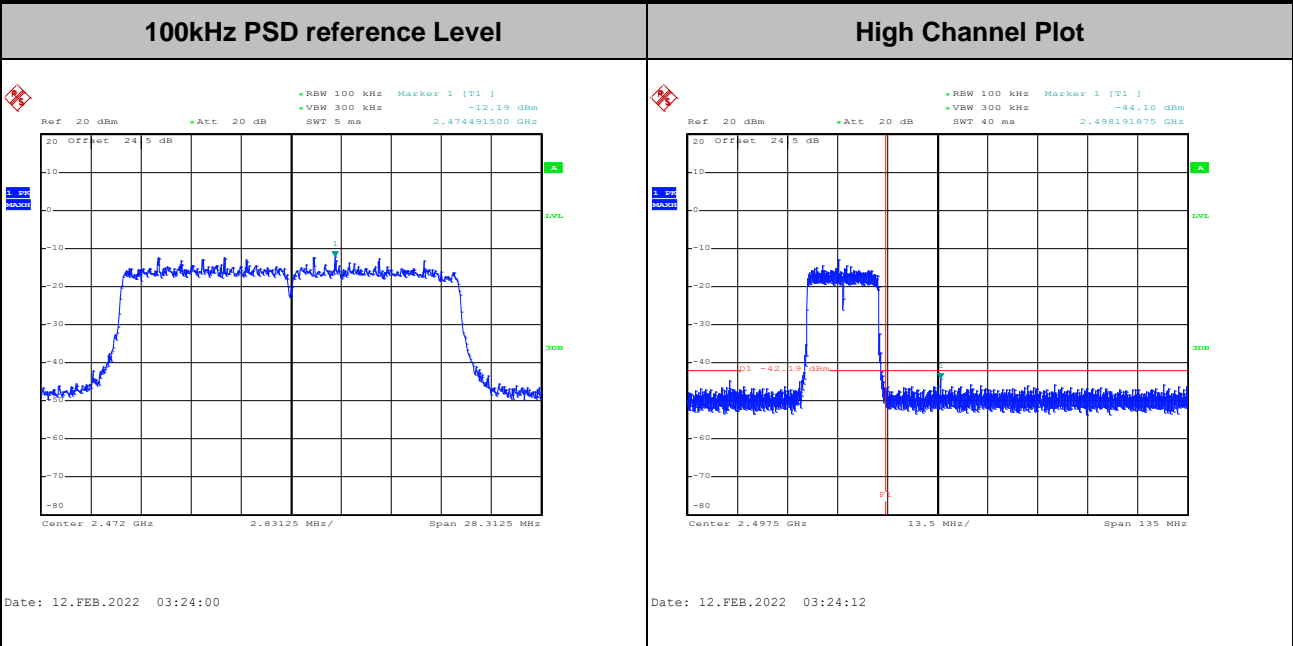


<b>Test Mode :</b>	802.11ax HE20	<b>Test Channel :</b>	12 Full RU
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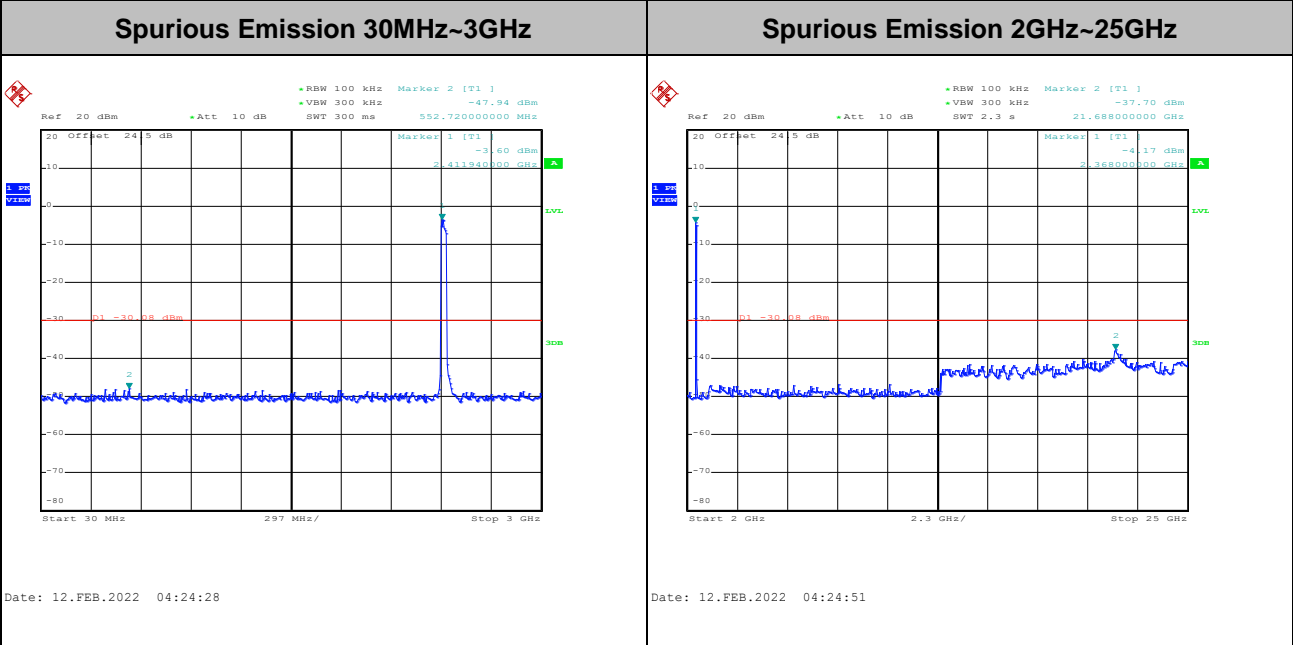
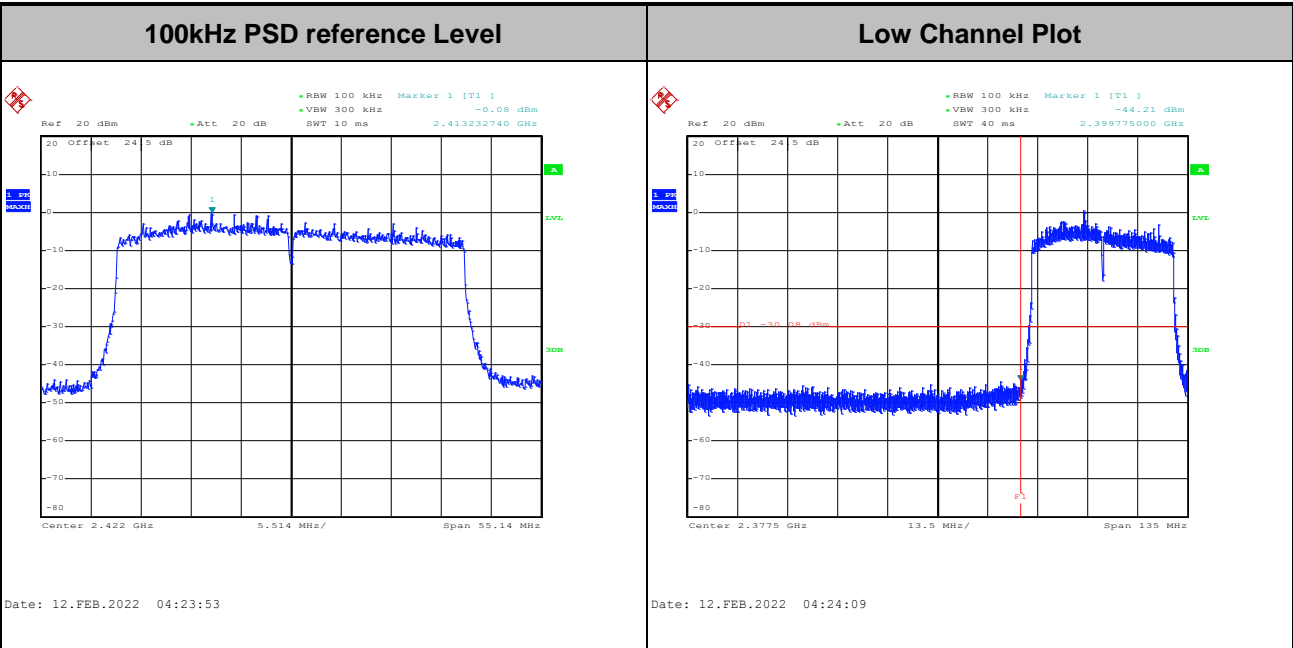


<b>Test Mode :</b>	802.11ax HE20	<b>Test Channel :</b>	13 Full Ru
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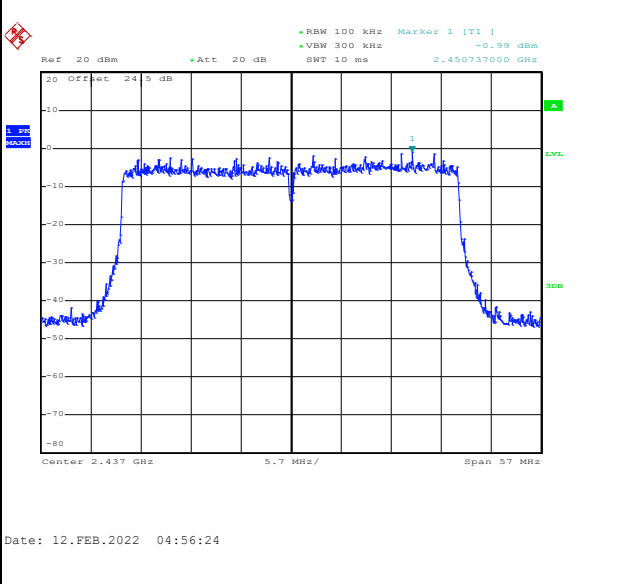
Test Mode :	802.11ax HE40	Test Channel :	03 Full RU
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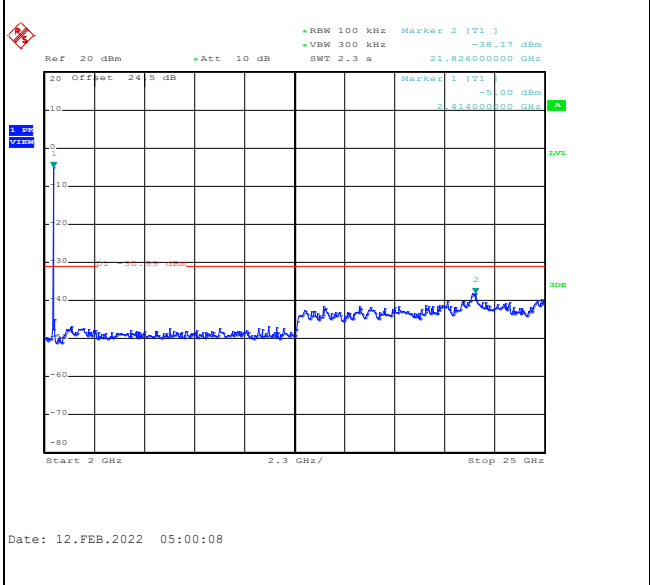
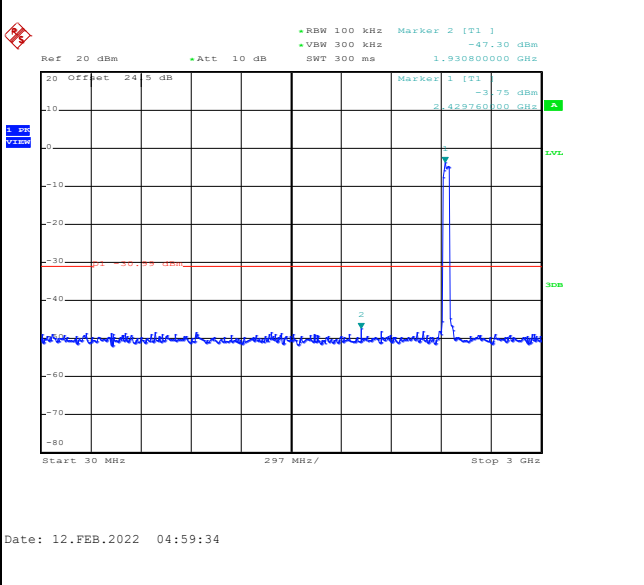


<b>Test Mode :</b>	802.11ax HE40	<b>Test Channel :</b>	06 Full RU
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<b>100kHz PSD reference Level</b>	<b>Mid Channel Plot</b>
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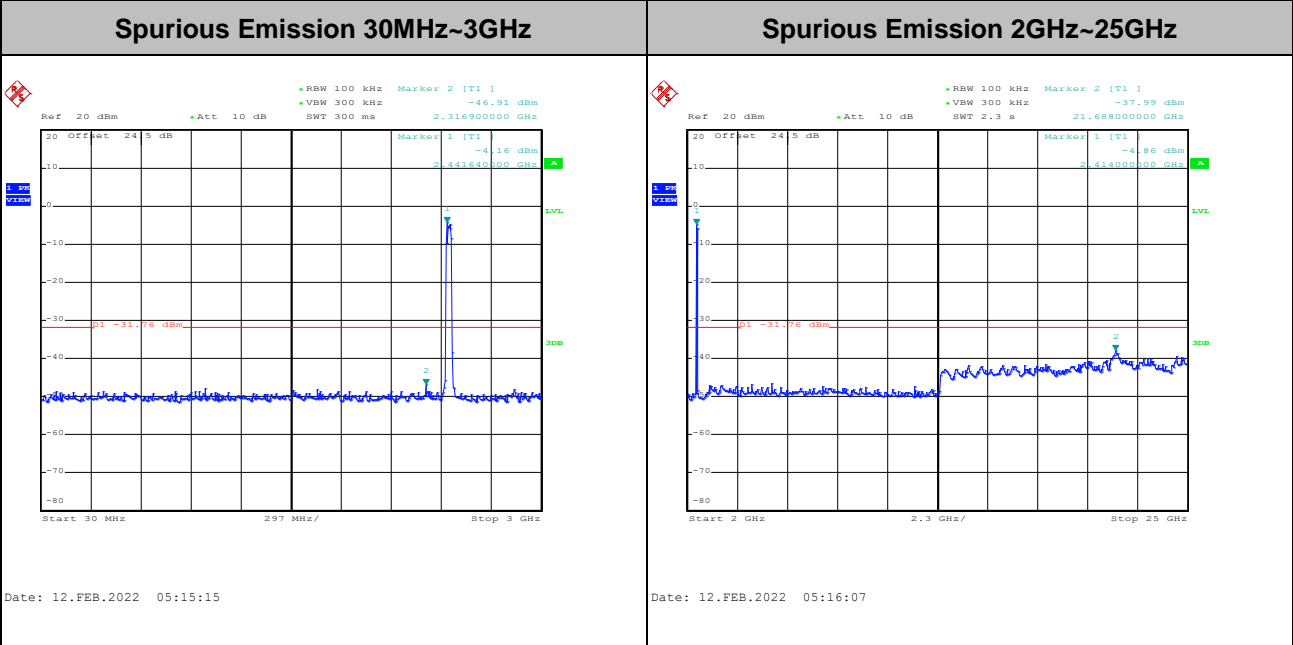
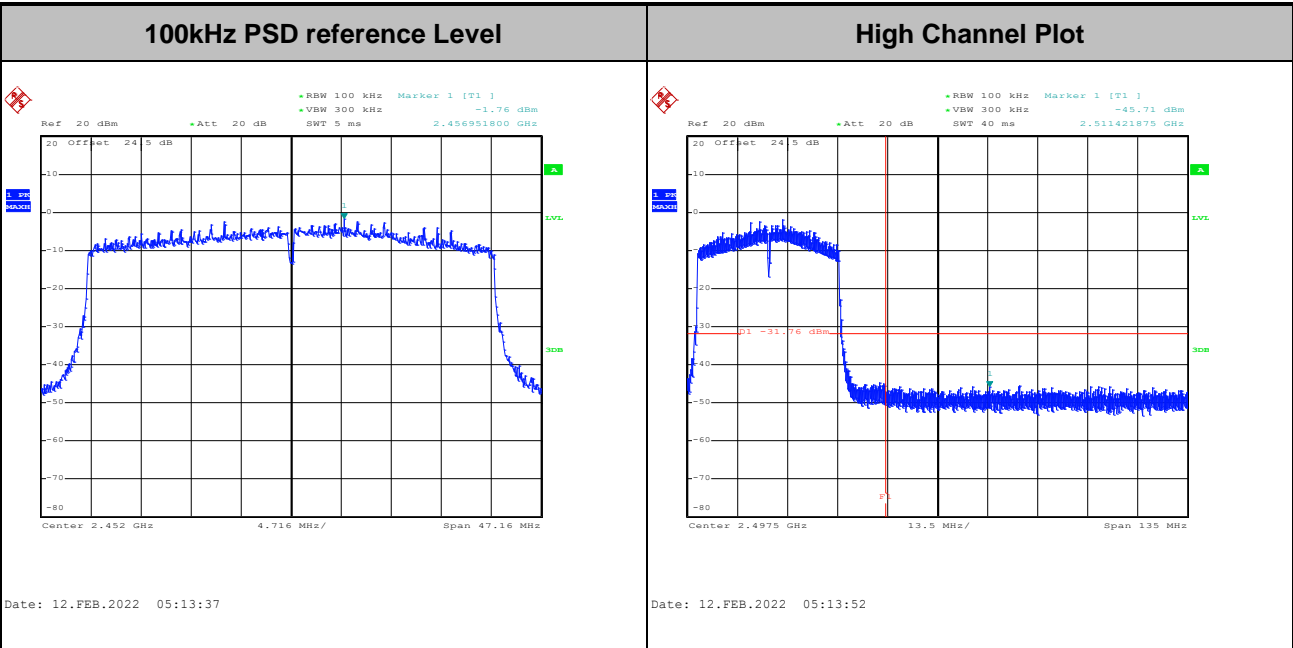
<b>Spurious Emission 30MHz~3GHz</b>	<b>Spurious Emission 2GHz~25GHz</b>
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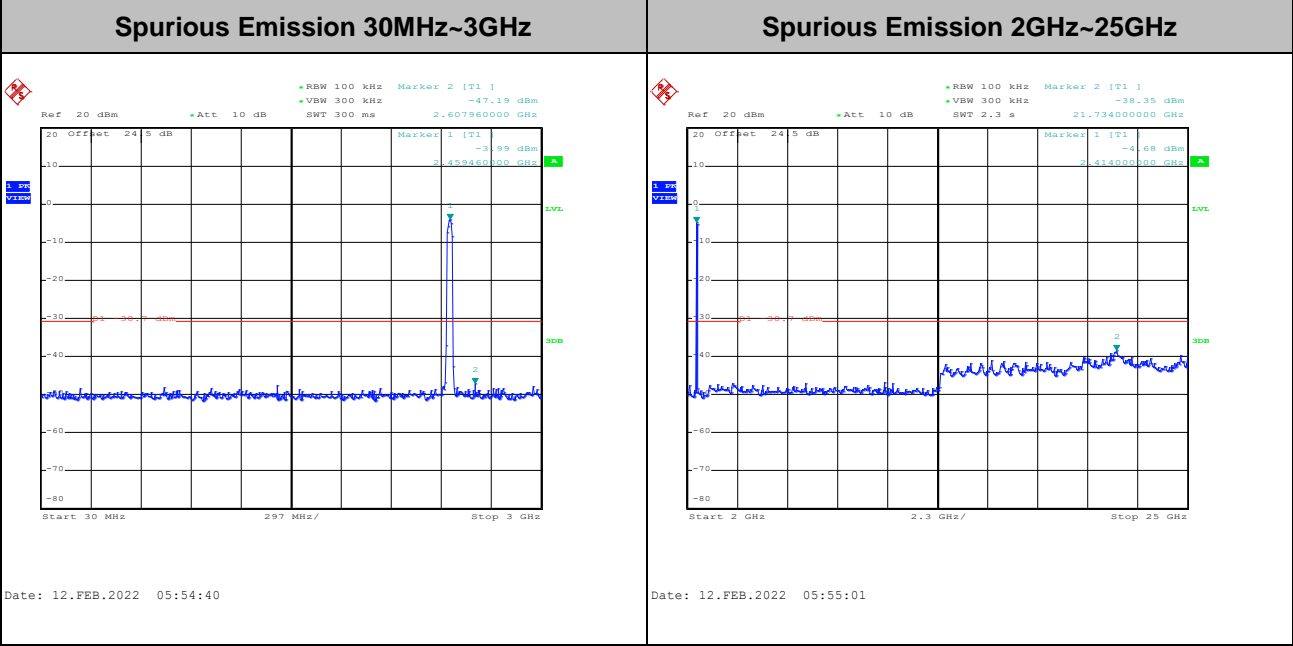
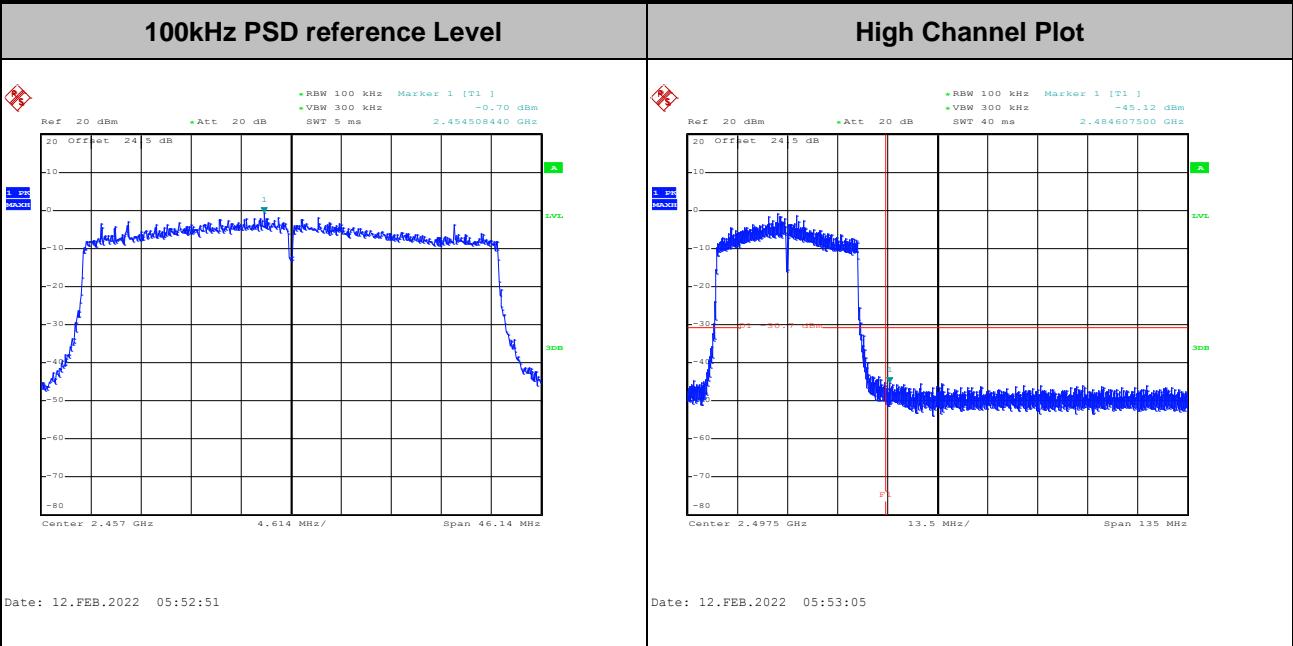


Test Mode :	802.11ax HE40	Test Channel :	09 Full RU
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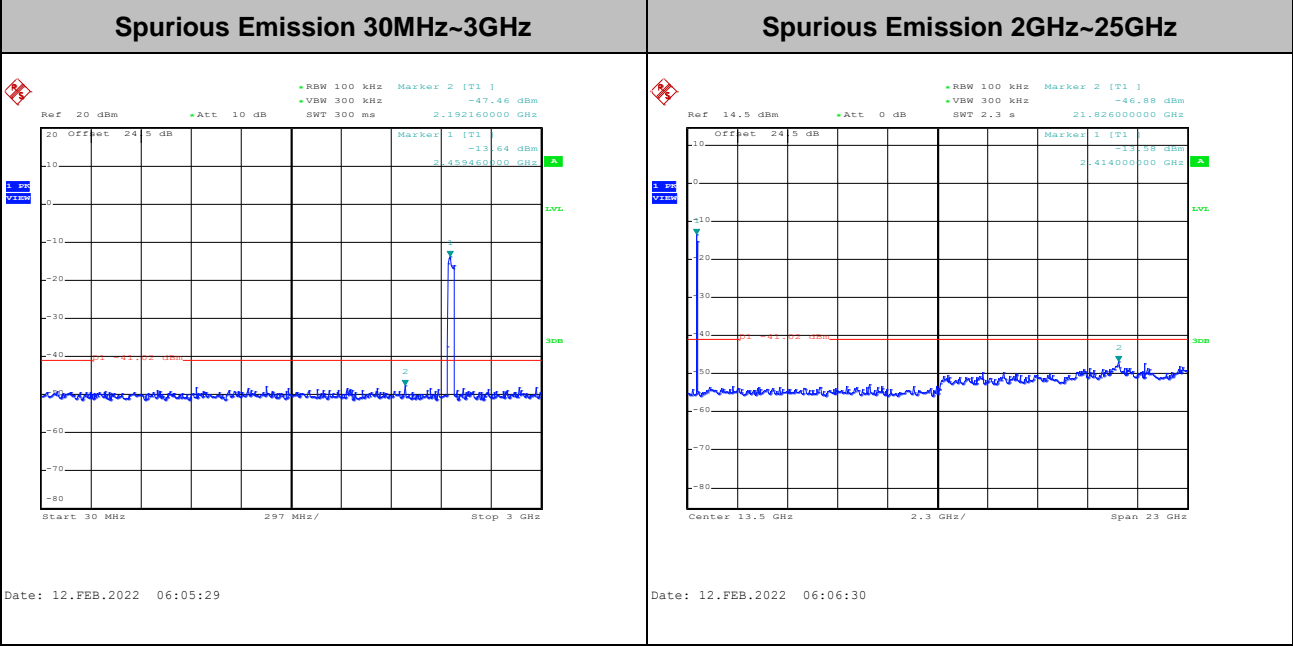
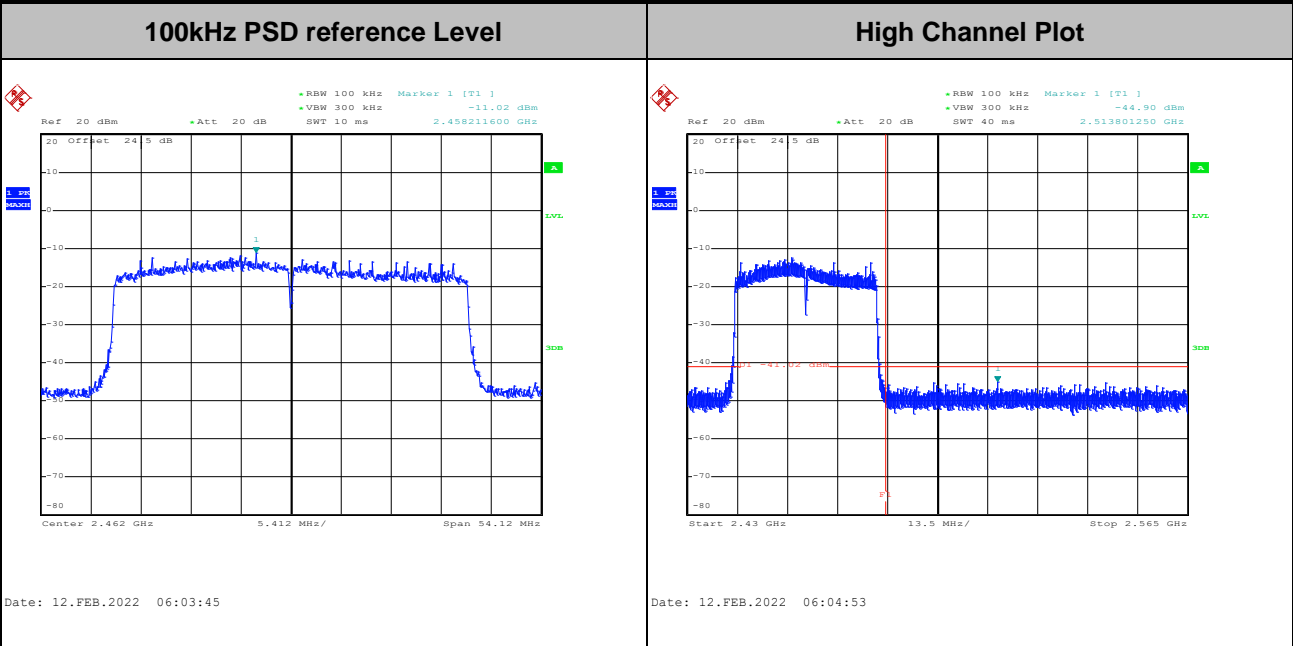


<b>Test Mode :</b>	802.11ax HE40	<b>Test Channel :</b>	10 Full RU
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<b>Test Mode :</b>	802.11ax HE40	<b>Test Channel :</b>	11 Full RU
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## 3.5 Radiated Band Edges and Spurious Emission Measurement

### 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.

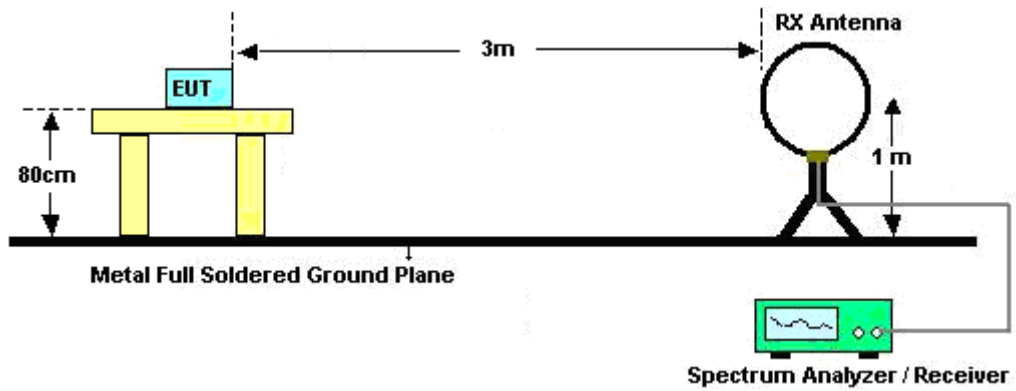


### 3.5.3 Test Procedures

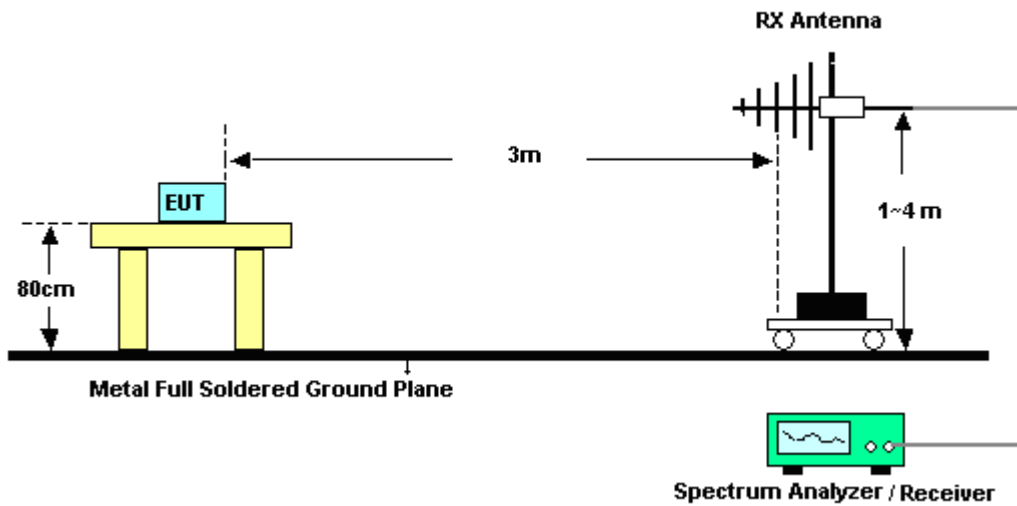
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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:  $\text{Antenna Factor} + \text{Cable Loss} + \text{Read Level} - \text{Preamp Factor} = \text{Level}$
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  $f < 1 \text{ GHz}$ ;  $\text{VBW} \geq \text{RBW}$ ; Sweep = auto; Detector function = peak; Trace = max hold;
  - (3) Set RBW = 1 MHz,  $\text{VBW} = 3 \text{ MHz}$  for  $f \geq 1 \text{ GHz}$  for peak measurement.  
For average measurement:
    - $\text{VBW} = 10 \text{ Hz}$ , when duty cycle is no less than 98 percent.
    - $\text{VBW} \geq 1/T$ , 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

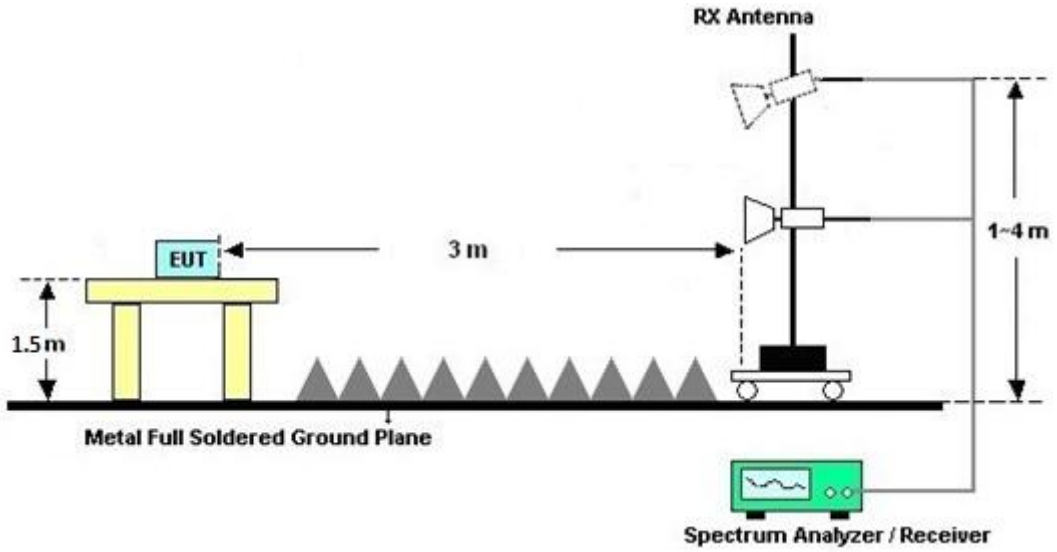
For radiated emissions below 30MHz



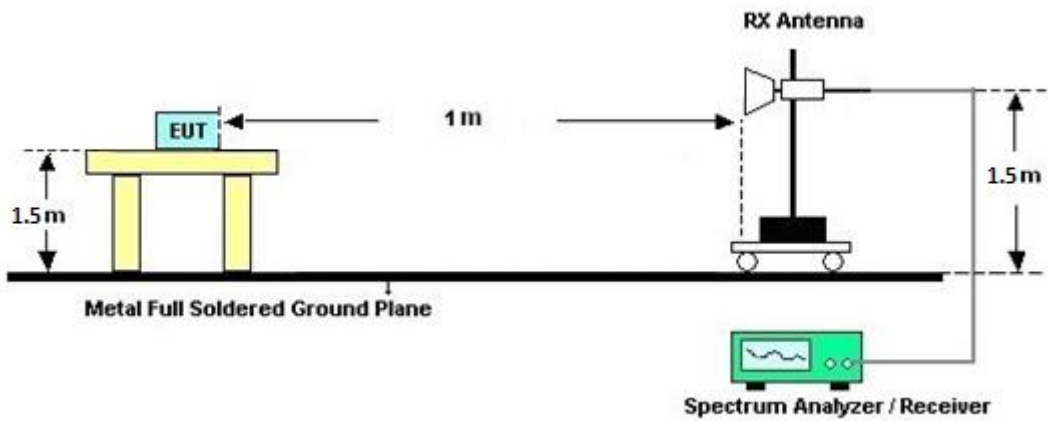
For radiated emissions from 30MHz to 1GHz



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 ~ 10<sup>th</sup> 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 (dB $\mu$ V)	
	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



### 3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

### 3.7 Antenna Requirements

#### 3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. 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.

#### 3.7.3 Antenna Gain

Refer to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

<CDD Modes >

For power measurements on IEEE 802.11 devices,

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

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 follows F)2)f)ii) of KDB 662911 D01 v02r01.

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

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  $k$ th antenna is being fed by spatial stream  $j$ , or zero if it is not;

$G_k$  is the gain in dBi of the  $k$ th antenna.

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

Directional gain =  $10 \cdot \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$  dBi

Where  $G_1, G_2, \dots, G_N$  denote single antenna gain.

For example: If a device has two antenna,  $G_{ANT1}= 3.6$ dBi;  $G_{ANT2}=4.2$ dBi

Directional gain of power measurement =  $\max(3.6, 4.2) + 0 = 4.2$  dBi

Directional gain of PSD measurement =  $10 \cdot \log[ (10^{3.6/20} + 10^{4.2/20})^2 / 2 ] = 6.92$  dBi



<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Chain 1	Chain 2	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
<b>2.4 GHz</b>	2.54	2.62	2.62	5.59	0.00	0.00

Calculation example:

The DG for PSD is derived from formula is

$$10 \times \log \left\{ \left[ 10^{(2.54\text{dBi} / 20)} + 10^{(2.62 \text{ dBi} / 20)} \right]^{2} / 2 \right\}$$

= 5.59 dBi



## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver	Keysight	N9010B	MY60241055	10Hz~44GHz	Jul. 12, 2021	Jan. 18, 2022~ Feb. 12, 2022	Jul. 11, 2022	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz~1000MHz	Jan. 03, 2022	Jan. 18, 2022~ Feb. 12, 2022	Jan. 02, 2023	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 15, 2021	Jan. 18, 2022~ Feb. 12, 2022	Nov. 14, 2022	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Jan. 18, 2022~ Feb. 12, 2022	Jun. 21, 2022	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Jan. 18, 2022~ Feb. 12, 2022	Jan. 06, 2023	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 17, 2021	Jan. 18, 2022~ Feb. 12, 2022	Oct. 16, 2022	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 23, 2021	Jan. 18, 2022~ Feb. 12, 2022	Jun. 22, 2022	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00991	18GHz-40GHz	May 12, 2021	Jan. 18, 2022~ Feb. 12, 2022	May 11, 2022	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 09, 2021	Jan. 18, 2022~ Feb. 12, 2022	Mar. 08, 2022	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 20, 2021	Jan. 18, 2022	Jan. 19, 2022	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,804 015/2,804027 /2	N/A	Jan. 19, 2022	Jan. 19, 2022~ Feb. 12, 2022	Jan. 18, 2023	Radiation (03CH20-HY)
1.53GHz Low Pass Filter	Wainwright	WLK4-1000-15 30-8000-40SS	SN27	N/A	May 25, 2021	Jan. 18, 2022~ Feb. 12, 2022	May 24, 2022	Radiation (03CH20-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 OST	SN8	N/A	Mar. 26, 2021	Jan. 18, 2022~ Feb. 12, 2022	Mar. 25, 2022	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8-24	RK-002156	N/A	N/A	Jan. 18, 2022~ Feb. 12, 2022	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jan. 18, 2022~ Feb. 12, 2022	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jan. 18, 2022~ Feb. 12, 2022	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jan. 18, 2022~ Feb. 12, 2022	N/A	Radiation (03CH20-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Jan. 08, 2022~ Feb. 24, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Meter	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Jan. 08, 2022~ Feb. 24, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Dec. 30, 2021	Jan. 08, 2022~ Feb. 24, 2022	Dec. 29, 2022	Conducted (TH05-HY)
Switch Control Manframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Jan. 08, 2022~ Feb. 24, 2022	Aug. 11, 2022	Conducted (TH05-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Jan. 25, 2022	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jan. 25, 2022	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	9561-FN00373	9kHz-200MHz	Oct. 29, 2021	Jan. 25, 2022	Oct. 28, 2022	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	N/A	Jan. 25, 2022	N/A	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Feb. 01, 2021	Jan. 25, 2022	Jan. 31, 2022	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESC17	100724	9kHz~7GHz	Feb. 18, 2021	Jan. 25, 2022	Feb. 17, 2022	Conduction (CO07-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 09, 2021	Jan. 25, 2022	Mar. 08, 2022	Conduction (CO07-HY)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.3 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.9 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.2 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.7 dB
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## Appendix A. Test Result of Conducted Test Items

Test Engineer:	Benny Ku and Junyu Zhou	Temperature:	19.3~22.4	°C
Test Date:	2022/1/8~2022/2/24	Relative Humidity:	49.5~67.2	%

**Remark:** For Conducted Test Items, Ant. 1 means Chain 1 (Aux.) and Ant. 2 means Chain 2 (Main).



**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
					Ant1	Ant2	Ant1	Ant2		
11b	1Mbps	2	1	2412	12.85	12.70	8.10	7.16	0.50	Pass
11b	1Mbps	2	6	2437	13.40	13.25	7.62	7.62	0.50	Pass
11b	1Mbps	2	11	2462	12.65	13.00	7.16	8.12	0.50	Pass
11b	1Mbps	2	12	2467	13.15	13.50	8.10	8.12	0.50	Pass
11b	1Mbps	2	13	2472	13.60	13.45	7.58	7.14	0.50	Pass
11g	6Mbps	2	1	2412	16.95	16.85	15.67	16.32	0.50	Pass
11g	6Mbps	2	6	2437	17.15	17.10	16.10	16.35	0.50	Pass
11g	6Mbps	2	11	2462	16.85	17.00	14.82	15.74	0.50	Pass
11g	6Mbps	2	12	2467	17.05	17.20	15.72	16.38	0.50	Pass
11g	6Mbps	2	13	2472	17.20	17.25	16.12	16.40	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
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	13.30	14.00	16.67	30.00		2.62		19.29		36.00	Pass	
11b	1Mbps	2	6	2437	13.90	13.80	16.86	30.00		2.62		19.48		36.00	Pass	
11b	1Mbps	2	11	2462	13.40	13.90	16.67	30.00		2.62		19.29		36.00	Pass	
11b	1Mbps	2	12	2467	13.80	13.50	16.66	30.00		2.62		19.28		36.00	Pass	
11b	1Mbps	2	13	2472	14.00	13.50	16.77	30.00		2.62		19.39		36.00	Pass	
11g	6Mbps	2	1	2412	13.70	13.90	16.81	30.00		2.62		19.43		36.00	Pass	
11g	6Mbps	2	6	2437	14.00	13.50	16.77	30.00		2.62		19.39		36.00	Pass	
11g	6Mbps	2	11	2462	13.80	13.90	16.86	30.00		2.62		19.48		36.00	Pass	
11g	6Mbps	2	12	2467	13.80	13.40	16.61	30.00		2.62		19.23		36.00	Pass	
11g	6Mbps	2	13	2472	2.50	1.50	5.04	30.00		2.62		7.66		36.00	Pass	
HT20	MCS0	2	1	2412	13.40	13.60	16.51	30.00		2.62		19.13		36.00	Pass	
HT20	MCS0	2	6	2437	13.70	13.30	16.51	30.00		2.62		19.13		36.00	Pass	
HT20	MCS0	2	11	2462	13.40	13.70	16.56	30.00		2.62		19.18		36.00	Pass	
HT20	MCS0	2	12	2467	13.40	13.20	16.31	30.00		2.62		18.93		36.00	Pass	
HT20	MCS0	2	13	2472	1.60	0.20	3.97	30.00		2.62		6.59		36.00	Pass	
HT40	MCS0	2	3	2422	13.00	13.70	16.37	30.00		2.62		18.99		36.00	Pass	
HT40	MCS0	2	6	2437	13.90	13.40	16.67	30.00		2.62		19.29		36.00	Pass	
HT40	MCS0	2	9	2452	13.30	13.00	16.16	30.00		2.62		18.78		36.00	Pass	
HT40	MCS0	2	10	2457	13.60	13.80	16.71	30.00		2.62		19.33		36.00	Pass	
HT40	MCS0	2	11	2462	3.90	3.60	6.76	30.00		2.62		9.38		36.00	Pass	
VHT20	MCS0	2	1	2412	13.40	13.60	16.51	30.00		2.62		19.13		36.00	Pass	
VHT20	MCS0	2	6	2437	13.70	13.30	16.51	30.00		2.62		19.13		36.00	Pass	
VHT20	MCS0	2	11	2462	13.40	13.70	16.56	30.00		2.62		19.18		36.00	Pass	
VHT20	MCS0	2	12	2467	13.40	13.20	16.31	30.00		2.62		18.93		36.00	Pass	
VHT20	MCS0	2	13	2472	1.60	0.20	3.97	30.00		2.62		6.59		36.00	Pass	
VHT40	MCS0	2	3	2422	13.00	13.70	16.37	30.00		2.62		18.99		36.00	Pass	
VHT40	MCS0	2	6	2437	13.90	13.40	16.67	30.00		2.62		19.29		36.00	Pass	
VHT40	MCS0	2	9	2452	13.30	13.00	16.16	30.00		2.62		18.78		36.00	Pass	
VHT40	MCS0	2	10	2457	13.60	13.80	16.71	30.00		2.62		19.33		36.00	Pass	
VHT40	MCS0	2	11	2462	3.90	3.60	6.76	30.00		2.62		9.38		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
					Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	-10.46	-8.90	-5.89	5.59		8.00		Pass
11b	1Mbps	2	6	2437	-11.74	-11.72	-8.71	5.59		8.00		Pass
11b	1Mbps	2	11	2462	-10.94	-11.91	-7.93	5.59		8.00		Pass
11b	1Mbps	2	12	2467	-10.96	-11.11	-7.95	5.59		8.00		Pass
11b	1Mbps	2	13	2472	-10.26	-11.37	-7.25	5.59		8.00		Pass
11g	6Mbps	2	1	2412	-11.84	-11.19	-8.18	5.59		8.00		Pass
11g	6Mbps	2	6	2437	-12.05	-11.13	-8.12	5.59		8.00		Pass
11g	6Mbps	2	11	2462	-11.14	-11.18	-8.13	5.59		8.00		Pass
11g	6Mbps	2	12	2467	-11.42	-11.64	-8.41	5.59		8.00		Pass
11g	6Mbps	2	13	2472	-23.01	-24.10	-20.00	5.59		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
						Ant1	Ant2	Ant1	Ant2		
HE20	MCS0	2	1	2412	Full	19.20	19.15	16.95	17.70	0.50	Pass
HE20	MCS0	2	6	2437	Full	19.45	19.40	18.80	18.88	0.50	Pass
HE20	MCS0	2	11	2462	Full	19.05	19.15	18.70	17.43	0.50	Pass
HE20	MCS0	2	12	2467	Full	19.25	19.45	16.13	18.98	0.50	Pass
HE20	MCS0	2	13	2472	Full	19.40	19.40	18.83	18.88	0.50	Pass
HE40	MCS0	2	3	2422	Full	37.60	37.90	33.92	36.76	0.50	Pass
HE40	MCS0	2	6	2437	Full	38.30	38.10	38.20	38.00	0.50	Pass
HE40	MCS0	2	9	2452	Full	37.70	37.50	34.84	31.44	0.50	Pass
HE40	MCS0	2	10	2457	Full	37.70	37.70	35.44	30.76	0.50	Pass
HE40	MCS0	2	11	2462	Full	37.70	37.90	32.76	36.08	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
						Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
HE20	MCS0	2	1	2412	Full	13.50	13.70	16.61	30.00		2.62		19.23		36.00	Pass	
HE20	MCS0	2	1	2412	26/0	4.00	5.30	7.71	30.00		2.62		10.33		36.00	Pass	
HE20	MCS0	2	1	2412	52/37	5.50	6.80	9.21	30.00		2.62		11.83		36.00	Pass	
HE20	MCS0	2	1	2412	106/53	9.70	10.90	13.35	30.00		2.62		15.97		36.00	Pass	
HE20	MCS0	2	1	2412	242/61	12.30	12.60	15.46	30.00		2.62		18.08		36.00	Pass	
HE20	MCS0	2	6	2437	Full	13.80	13.40	16.61	30.00		2.62		19.23		36.00	Pass	
HE20	MCS0	2	6	2437	26/4	4.00	4.10	7.06	30.00		2.62		9.68		36.00	Pass	
HE20	MCS0	2	6	2437	52/39	6.90	7.20	10.06	30.00		2.62		12.68		36.00	Pass	
HE20	MCS0	2	6	2437	106/53	9.70	8.60	12.20	30.00		2.62		14.82		36.00	Pass	
HE20	MCS0	2	6	2437	242/61	12.00	11.90	14.96	30.00		2.62		17.58		36.00	Pass	
HE20	MCS0	2	11	2462	Full	13.50	13.80	16.66	30.00		2.62		19.28		36.00	Pass	
HE20	MCS0	2	11	2462	26/8	4.00	4.20	7.11	30.00		2.62		9.73		36.00	Pass	
HE20	MCS0	2	11	2462	52/40	7.30	7.30	10.31	30.00		2.62		12.93		36.00	Pass	
HE20	MCS0	2	11	2462	106/54	9.50	9.10	12.31	30.00		2.62		14.93		36.00	Pass	
HE20	MCS0	2	11	2462	242/61	12.60	12.90	15.76	30.00		2.62		18.38		36.00	Pass	
HE20	MCS0	2	12	2467	Full	13.50	13.30	16.41	30.00		2.62		19.03		36.00	Pass	
HE20	MCS0	2	12	2467	26/8	3.40	4.30	6.88	30.00		2.62		9.50		36.00	Pass	
HE20	MCS0	2	12	2467	52/40	6.30	7.00	9.67	30.00		2.62		12.29		36.00	Pass	
HE20	MCS0	2	12	2467	106/54	9.20	9.10	12.16	30.00		2.62		14.78		36.00	Pass	
HE20	MCS0	2	12	2467	242/61	12.20	11.90	15.06	30.00		2.62		17.68		36.00	Pass	
HE20	MCS0	2	13	2472	Full	1.70	0.30	4.07	30.00		2.62		6.69		36.00	Pass	
HE20	MCS0	2	13	2472	26/8	-8.20	-8.70	-5.43	30.00		2.62		-2.81		36.00	Pass	
HE20	MCS0	2	13	2472	52/40	-5.50	-5.90	-2.69	30.00		2.62		-0.07		36.00	Pass	
HE20	MCS0	2	13	2472	106/54	-2.20	-2.80	0.52	30.00		2.62		3.14		36.00	Pass	
HE20	MCS0	2	13	2472	242/61	0.50	-0.80	2.91	30.00		2.62		5.53		36.00	Pass	
HE40	MCS0	2	3	2422	Full	13.10	13.80	16.47	30.00		2.62		19.09		36.00	Pass	
HE40	MCS0	2	3	2422	484/65	12.60	13.60	16.14	30.00		2.62		18.76		36.00	Pass	
HE40	MCS0	2	6	2437	Full	14.00	13.50	16.77	30.00		2.62		19.39		36.00	Pass	
HE40	MCS0	2	6	2437	484/65	13.50	13.20	16.36	30.00		2.62		18.98		36.00	Pass	
HE40	MCS0	2	9	2452	Full	13.40	13.10	16.26	30.00		2.62		18.88		36.00	Pass	
HE40	MCS0	2	9	2452	484/65	12.70	12.20	15.47	30.00		2.62		18.09		36.00	Pass	
HE40	MCS0	2	10	2457	Full	13.70	13.90	16.81	30.00		2.62		19.43		36.00	Pass	
HE40	MCS0	2	10	2457	484/65	12.80	12.90	15.86	30.00		2.62		18.48		36.00	Pass	
HE40	MCS0	2	11	2462	Full	4.00	3.70	6.86	30.00		2.62		9.48		36.00	Pass	
HE40	MCS0	2	11	2462	484/65	1.20	0.50	3.87	30.00		2.62		6.49		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	N <sub>Tx</sub>	CH.	Freq. (MHz)	RU Config	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
						Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
HE20	MCS0	2	1	2412	Full	-13.81	-13.41	-10.40	5.59		8.00		Pass
HE20	MCS0	2	1	2412	26/0	-14.21	-13.51	-10.50	5.59		8.00		Pass
HE20	MCS0	2	1	2412	52/37	-13.99	-13.58	-10.57	5.59		8.00		Pass
HE20	MCS0	2	1	2412	106/53	-14.21	-13.72	-10.71	5.59		8.00		Pass
HE20	MCS0	2	1	2412	242/61	-14.00	-13.79	-10.78	5.59		8.00		Pass
HE20	MCS0	2	6	2437	Full	-14.02	-13.81	-10.80	5.59		8.00		Pass
HE20	MCS0	2	6	2437	26/4	-14.48	-13.91	-10.90	5.59		8.00		Pass
HE20	MCS0	2	6	2437	52/39	-14.07	-14.22	-11.06	5.59		8.00		Pass
HE20	MCS0	2	6	2437	106/53	-14.14	-14.19	-11.13	5.59		8.00		Pass
HE20	MCS0	2	6	2437	242/61	-14.43	-14.22	-11.21	5.59		8.00		Pass
HE20	MCS0	2	11	2462	Full	-13.78	-13.42	-10.41	5.59		8.00		Pass
HE20	MCS0	2	11	2462	26/8	-13.82	-13.74	-10.73	5.59		8.00		Pass
HE20	MCS0	2	11	2462	52/40	-13.87	-13.60	-10.59	5.59		8.00		Pass
HE20	MCS0	2	11	2462	106/54	-14.11	-13.86	-10.85	5.59		8.00		Pass
HE20	MCS0	2	11	2462	242/61	-13.91	-13.64	-10.63	5.59		8.00		Pass
HE20	MCS0	2	12	2467	Full	-14.12	-13.64	-10.63	5.59		8.00		Pass
HE20	MCS0	2	12	2467	26/8	-14.46	-13.85	-10.84	5.59		8.00		Pass
HE20	MCS0	2	12	2467	52/40	-14.48	-13.92	-10.91	5.59		8.00		Pass
HE20	MCS0	2	12	2467	106/54	-14.30	-13.88	-10.87	5.59		8.00		Pass
HE20	MCS0	2	12	2467	242/61	-14.41	-14.13	-11.12	5.59		8.00		Pass
HE20	MCS0	2	13	2472	Full	-25.76	-26.72	-22.75	5.59		8.00		Pass
HE20	MCS0	2	13	2472	26/8	-26.07	-26.78	-23.06	5.59		8.00		Pass
HE20	MCS0	2	13	2472	52/40	-26.05	-27.08	-23.04	5.59		8.00		Pass
HE20	MCS0	2	13	2472	106/54	-25.90	-26.97	-22.89	5.59		8.00		Pass
HE20	MCS0	2	13	2472	242/61	-26.04	-26.89	-23.03	5.59		8.00		Pass
HE40	MCS0	2	3	2422	Full	-15.03	-14.37	-11.36	5.59		8.00		Pass
HE40	MCS0	2	3	2422	484/65	-16.61	-15.30	-12.29	5.59		8.00		Pass
HE40	MCS0	2	6	2437	Full	-15.27	-15.97	-12.26	5.59		8.00		Pass
HE40	MCS0	2	6	2437	484/65	-15.69	-16.31	-12.68	5.59		8.00		Pass
HE40	MCS0	2	9	2452	Full	-15.99	-15.28	-12.27	5.59		8.00		Pass
HE40	MCS0	2	9	2452	484/65	-16.41	-15.91	-12.90	5.59		8.00		Pass
HE40	MCS0	2	10	2457	Full	-14.91	-14.72	-11.71	5.59		8.00		Pass
HE40	MCS0	2	10	2457	484/65	-15.63	-15.37	-12.36	5.59		8.00		Pass
HE40	MCS0	2	11	2462	Full	-25.30	-25.54	-22.29	5.59		8.00		Pass
HE40	MCS0	2	11	2462	484/65	-26.73	-27.85	-23.72	5.59		8.00		Pass

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



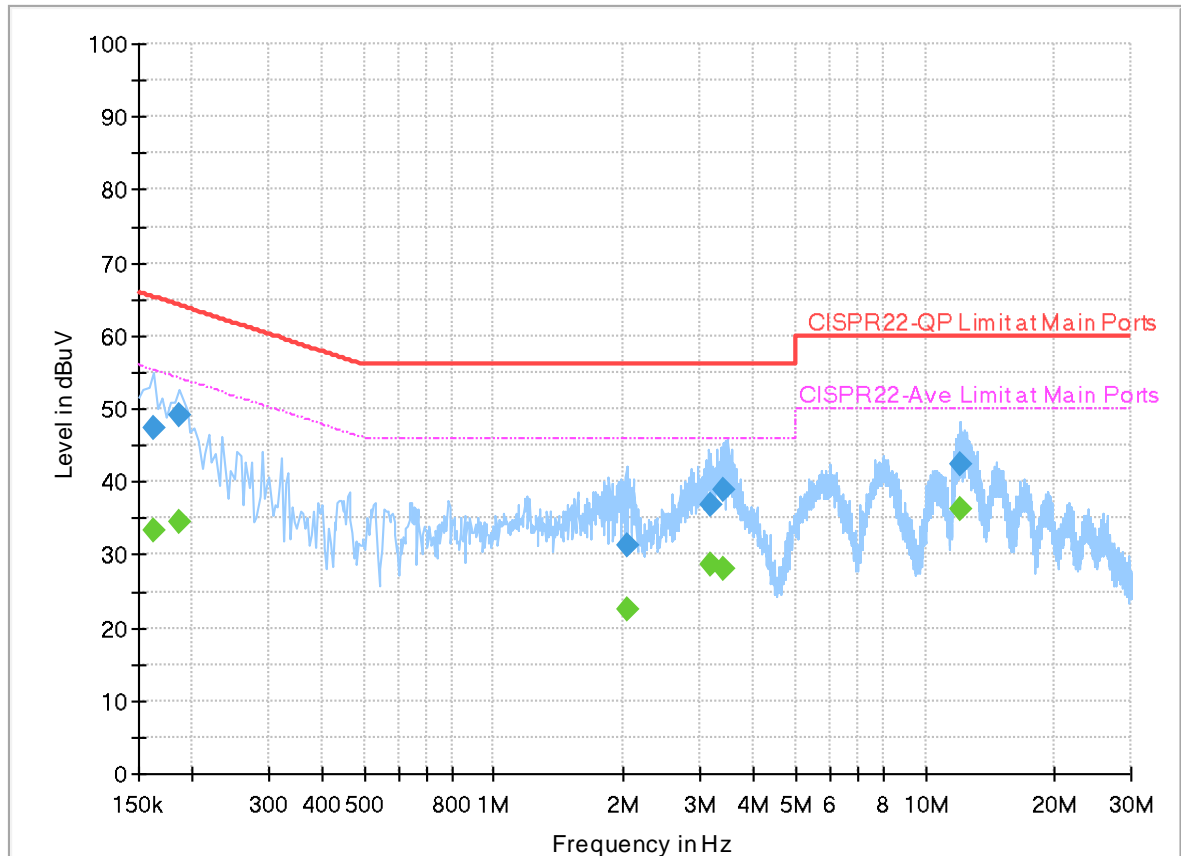
## Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26°C
		Relative Humidity :	45~55%

## EUT Information

Report NO : 1D1645-01  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



## Final\_Result

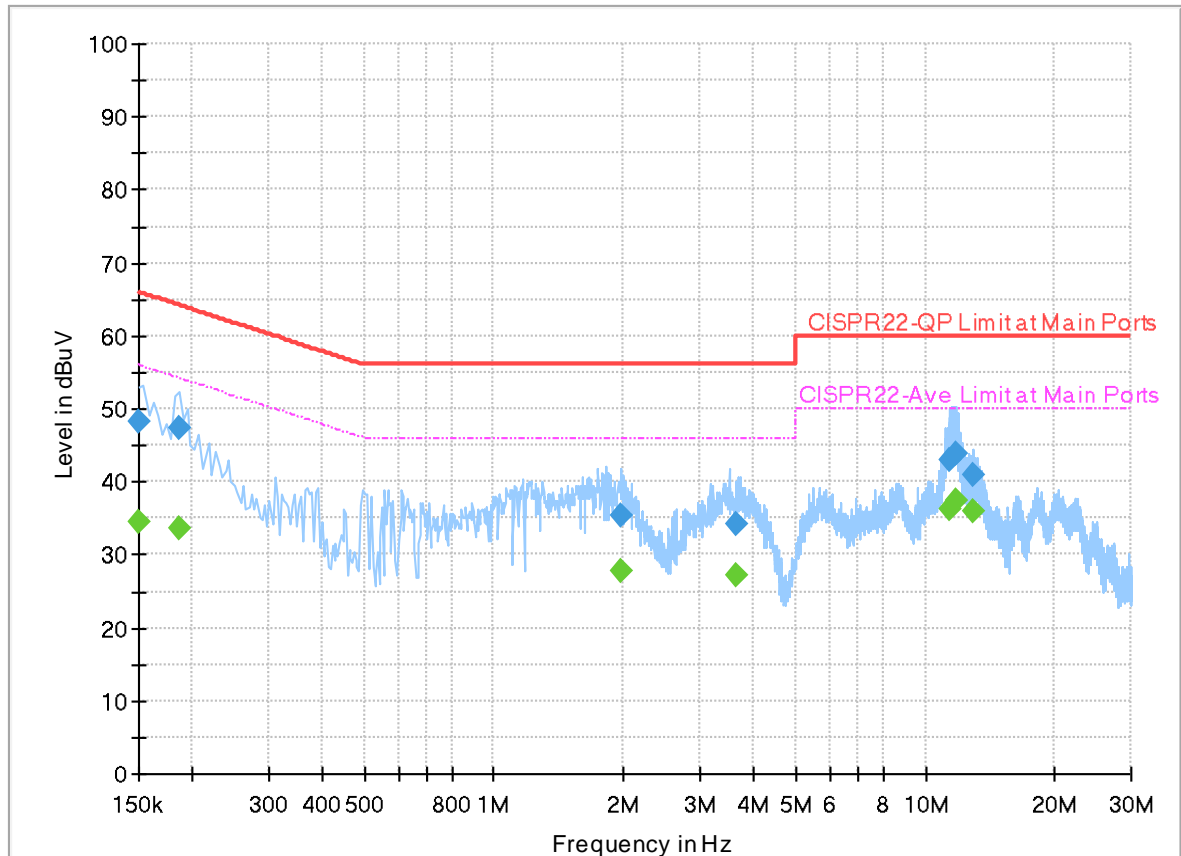
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.162000	---	33.30	55.36	22.06	L1	OFF	20.1
0.162000	47.33	---	65.36	18.03	L1	OFF	20.1
0.186000	---	34.39	54.21	19.82	L1	OFF	20.0
0.186000	49.25	---	64.21	14.96	L1	OFF	20.0
2.030000	---	22.63	46.00	23.37	L1	OFF	20.1
2.030000	31.30	---	56.00	24.70	L1	OFF	20.1
3.190000	---	28.58	46.00	17.42	L1	OFF	20.1
3.190000	36.70	---	56.00	19.30	L1	OFF	20.1
3.406000	---	28.06	46.00	17.94	L1	OFF	20.1
3.406000	38.92	---	56.00	17.08	L1	OFF	20.1
12.038000	---	36.27	50.00	13.73	L1	OFF	20.3
12.038000	42.35	---	60.00	17.65	L1	OFF	20.3



## EUT Information

Report NO : 1D1645-01  
 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)
0.150000	---	34.40	56.00	21.60	N	OFF	20.1
0.150000	48.35	---	66.00	17.65	N	OFF	20.1
0.186000	---	33.49	54.21	20.72	N	OFF	20.1
0.186000	47.37	---	64.21	16.84	N	OFF	20.1
1.970000	---	27.89	46.00	18.11	N	OFF	20.1
1.970000	35.30	---	56.00	20.70	N	OFF	20.1
3.634000	---	27.31	46.00	18.69	N	OFF	20.1
3.634000	34.22	---	56.00	21.78	N	OFF	20.1
11.386000	---	36.32	50.00	13.68	N	OFF	20.2
11.386000	42.93	---	60.00	17.07	N	OFF	20.2
11.746000	---	37.31	50.00	12.69	N	OFF	20.2
11.746000	43.78	---	60.00	16.22	N	OFF	20.2
12.870000	---	35.96	50.00	14.04	N	OFF	20.2
12.870000	40.93	---	60.00	19.07	N	OFF	20.2



### Appendix C. Radiated Spurious Emission

Test Engineer :	Bill Chang, JC Liang, Karl Hou and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

Remark: For Radiated Spurious Emission Test Items, Ant. 1 means Chain 1 (Aux.) and Ant. 2 means Chain 2 (Main).

<Sample 1>

**2.4GHz 2400~2483.5MHz  
WIFI 802.11ax HE40 Full (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Full CH 09 2452MHz		2337.86	48.66	-25.34	74	39.22	27.1	18.59	36.25	313	115	P	H	
		2381.96	38.46	-15.54	54	28.83	27.23	18.67	36.27	313	115	A	H	
	*	2452	100.57	-	-	90.56	27.51	18.8	36.3	313	115	P	H	
	*	2452	92.5	-	-	82.49	27.51	18.8	36.3	313	115	A	H	
			2485.28	54.41	-19.59	74	44.22	27.64	18.86	36.31	313	115	P	H
			2486.56	43.28	-10.72	54	33.08	27.65	18.86	36.31	313	115	A	H
			2378.04	49.26	-24.74	74	39.66	27.21	18.66	36.27	295	164	P	V
			2389.94	38.55	-15.45	54	28.88	27.26	18.68	36.27	295	164	A	V
		*	2452	104.85	-	-	94.84	27.51	18.8	36.3	295	164	P	V
		*	2452	96.96	-	-	86.95	27.51	18.8	36.3	295	164	A	V
			2484.08	56.51	-17.49	74	46.32	27.64	18.86	36.31	295	164	P	V
			2483.76	47.34	-6.66	54	37.15	27.64	18.86	36.31	295	164	A	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 HE40 Full (Harmonic @ 3m)**

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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)	
802.11ax HE40 Full CH 09 2452MHz		4904	44.51	-29.49	74	36.43	32.72	12.98	37.62	-	-	P	H	
		7356	47.58	-26.42	74	33.51	36.65	15.98	38.56	-	-	P	H	
		12660	52.19	-21.81	74	34.84	39.42	21.17	43.24	-	-	P	H	
		12660	41.57	-12.43	54	24.22	39.42	21.17	43.24	-	-	A	H	
		13395	53.01	-20.99	74	34.29	39.99	21.9	43.17	-	-	P	H	
		13395	42.95	-11.05	54	24.23	39.99	21.9	43.17	-	-	A	H	
		17940	54.82	-19.18	74	34.02	41.38	24.85	45.43	-	-	P	H	
		17940	46.13	-7.87	54	25.33	41.38	24.85	45.43	-	-	A	H	
														H
														H
														H
														H
			4904	43.99	-30.01	74	35.91	32.72	12.98	37.62	-	-	P	V
			7356	47.71	-26.29	74	33.64	36.65	15.98	38.56	-	-	P	V
			12060	53.28	-20.72	74	36.69	39.12	20.53	43.06	-	-	P	V
			12060	40.97	-13.03	54	24.38	39.12	20.53	43.06	-	-	A	V
			13365	53.15	-20.85	74	34.52	39.93	21.87	43.17	-	-	P	V
			13365	42.85	-11.15	54	24.22	39.93	21.87	43.17	-	-	A	V
			17955	55.28	-18.72	74	34.37	41.49	24.86	45.44	-	-	P	V
			17955	46.14	-7.86	54	25.23	41.49	24.86	45.44	-	-	A	V
													V	
													V	
													V	
													V	

**Remark**

- No other spurious found.
- All results are PASS against Peak and Average limit line.
- The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
- The emission level close to 18GHz is checked that the average emission level is noise floor only.



<Sample 2>

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

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )	
802.11b CH 01 2412MHz		2347.59	48.79	-25.21	74	39.6	27.1	18.34	36.25	365	237	P	H	
		2390	38.25	-15.75	54	28.84	27.26	18.42	36.27	365	237	A	H	
	*	2412	109.36	-	-	99.82	27.36	18.46	36.28	365	237	P	H	
	*	2412	106.36	-	-	96.82	27.36	18.46	36.28	365	237	A	H	
													H	
														H
			2385.39	48.8	-25.2	74	39.42	27.24	18.41	36.27	400	220	P	V
			2390	39.32	-14.68	54	29.91	27.26	18.42	36.27	400	220	A	V
	*		2412	114.25	-	-	104.72	27.35	18.46	36.28	400	220	P	V
	*		2412	111.31	-	-	101.78	27.35	18.46	36.28	400	220	A	V
														V
														V
802.11b CH 06 2437MHz		2374	48.72	-25.28	74	39.39	27.2	18.39	36.26	359	234	P	H	
		2389.84	37.99	-16.01	54	28.58	27.26	18.42	36.27	359	234	A	H	
	*	2437	110.06	-	-	100.4	27.45	18.5	36.29	359	234	P	H	
	*	2437	106.88	-	-	97.22	27.45	18.5	36.29	359	234	A	H	
			2498.88	49.23	-24.77	74	39.24	27.7	18.61	36.32	359	234	P	H
			2483.52	38.38	-15.62	54	28.47	27.63	18.59	36.31	359	234	A	H
			2389.84	49.72	-24.28	74	40.31	27.26	18.42	36.27	396	221	P	V
			2390	38.65	-15.35	54	29.24	27.26	18.42	36.27	396	221	A	V
	*		2437	114.3	-	-	104.64	27.45	18.5	36.29	396	221	P	V
	*		2437	111.1	-	-	101.44	27.45	18.5	36.29	396	221	A	V
			2493.04	50.06	-23.94	74	40.11	27.67	18.6	36.32	396	221	P	V
			2483.52	39.01	-14.99	54	29.1	27.63	18.59	36.31	396	221	A	V



<b>802.11b CH 11 2462MHz</b>	*	2462	110.88	-	-	101.08	27.55	18.55	36.3	397	237	P	H
	*	2462	107.75	-	-	97.95	27.55	18.55	36.3	397	237	A	H
		2483.8	50.37	-23.63	74	40.45	27.64	18.59	36.31	397	237	P	H
		2483.56	39.17	-14.83	54	29.26	27.63	18.59	36.31	397	237	A	H
													H
													H
	*	2462	113.41	-	-	103.61	27.55	18.55	36.3	397	216	P	V
	*	2462	110.15	-	-	100.35	27.55	18.55	36.3	397	216	A	V
		2486.2	50.52	-23.48	74	40.6	27.64	18.59	36.31	397	216	P	V
		2483.52	39.89	-14.11	54	29.98	27.63	18.59	36.31	397	216	A	V
													V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 12 2467MHz	*	2467	110.58	-	-	100.76	27.57	18.56	36.31	400	235	P	H
	*	2467	107.47	-	-	97.65	27.57	18.56	36.31	400	235	A	H
		2483.6	53.4	-20.6	74	43.49	27.63	18.59	36.31	400	235	P	H
		2484.28	42.44	-11.56	54	32.52	27.64	18.59	36.31	400	235	A	H
													H
													H
	*	2467	113.13	-	-	103.31	27.57	18.56	36.31	384	213	P	V
	*	2467	109.79	-	-	99.97	27.57	18.56	36.31	384	213	A	V
		2483.52	55.23	-18.77	74	45.32	27.63	18.59	36.31	384	213	P	V
		2484.24	44.1	-9.9	54	34.18	27.64	18.59	36.31	384	213	A	V
													V
													V
802.11b CH 13 2472MHz	*	2472	110.33	-	-	100.48	27.59	18.57	36.31	400	236	P	H
	*	2472	107.13	-	-	97.28	27.59	18.57	36.31	400	236	A	H
		2483.52	68	-6	74	58.09	27.63	18.59	36.31	400	236	P	H
		2483.52	49.06	-4.94	54	39.15	27.63	18.59	36.31	400	236	A	H
													H
													H
	*	2472	113.31	-	-	103.46	27.59	18.57	36.31	400	217	P	V
	*	2472	110.12	-	-	100.27	27.59	18.57	36.31	400	217	A	V
		2483.52	71.77	-2.23	74	61.86	27.63	18.59	36.31	400	217	P	V
		2483.52	52.31	-1.69	54	42.4	27.63	18.59	36.31	400	217	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. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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	43.58	-30.42	74	35.82	32.3	13.02	37.56	-	-	P	H	
		12690	52.39	-21.61	74	34.92	39.48	21.21	43.22	-	-	P	H	
		12690	41.75	-12.25	54	24.28	39.48	21.21	43.22	-	-	A	H	
		13350	53.44	-20.56	74	34.84	39.9	21.86	43.16	-	-	P	H	
		13350	42.94	-11.06	54	24.34	39.9	21.86	43.16	-	-	A	H	
		17985	55.49	-18.51	74	34.38	41.69	24.88	45.46	-	-	P	H	
		17985	46.3	-7.7	54	25.19	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
														H
														H
			4824	42.79	-31.21	74	35.03	32.3	13.02	37.56	-	-	P	V
			12225	52.2	-21.8	74	35.47	39.17	20.71	43.15	-	-	P	V
			12225	40.9	-13.1	54	24.17	39.17	20.71	43.15	-	-	A	V
			13380	53.57	-20.43	74	34.89	39.96	21.89	43.17	-	-	P	V
			13380	42.89	-11.11	54	24.21	39.96	21.89	43.17	-	-	A	V
			17955	54.83	-19.17	74	33.92	41.49	24.86	45.44	-	-	P	V
			17955	46.04	-7.96	54	25.13	41.49	24.86	45.44	-	-	A	V
													V	
													V	
													V	
													V	
													V	



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 06 2437MHz		4874	42.33	-31.67	74	34.62	32.54	12.77	37.6	-	-	P	H	
		7311	47.97	-26.03	74	34.34	36.78	15.38	38.53	-	-	P	H	
		11520	51.69	-22.31	74	36.1	38.86	19.4	42.67	-	-	P	H	
		11520	39.75	-14.25	54	24.16	38.86	19.4	42.67	-	-	A	H	
		13365	51.51	-22.49	74	33.55	39.93	21.2	43.17	-	-	P	H	
		13365	42.28	-11.72	54	24.32	39.93	21.2	43.17	-	-	A	H	
		17970	55.72	-18.28	74	35.02	41.59	24.56	45.45	-	-	P	H	
		17970	45.94	-8.06	54	25.24	41.59	24.56	45.45	-	-	A	H	
														H
														H
														H
														H
			4874	42.67	-31.33	74	34.96	32.54	12.77	37.6	-	-	P	V
			7311	47.16	-26.84	74	33.53	36.78	15.38	38.53	-	-	P	V
			12645	50.5	-23.5	74	34.04	39.39	20.31	43.24	-	-	P	V
			12645	40.67	-13.33	54	24.21	39.39	20.31	43.24	-	-	A	V
			13380	51.5	-22.5	74	33.49	39.96	21.22	43.17	-	-	P	V
			13380	42.34	-11.66	54	24.33	39.96	21.22	43.17	-	-	A	V
			17970	55.5	-18.5	74	34.8	41.59	24.56	45.45	-	-	P	V
			17970	46.02	-7.98	54	25.32	41.59	24.56	45.45	-	-	A	V
													V	
													V	
													V	
													V	





WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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		4924	44.5	-29.5	74	36.32	32.84	12.97	37.63	-	-	P	H	
		7386	47.2	-26.8	74	33.37	36.41	16.01	38.59	-	-	P	H	
		12435	52.55	-21.45	74	35.81	39.07	20.93	43.26	-	-	P	H	
		12435	40.89	-13.11	54	24.15	39.07	20.93	43.26	-	-	A	H	
		13395	53.29	-20.71	74	34.57	39.99	21.9	43.17	-	-	P	H	
		13395	43.09	-10.91	54	24.37	39.99	21.9	43.17	-	-	A	H	
		17985	54.96	-19.04	74	33.85	41.69	24.88	45.46	-	-	P	H	
		17985	46.56	-7.44	54	25.45	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4924	42.96	-31.04	74	34.78	32.84	12.97	37.63	-	-	P	V
			7386	47.46	-26.54	74	33.63	36.41	16.01	38.59	-	-	P	V
			12660	52.66	-21.34	74	35.31	39.42	21.17	43.24	-	-	P	V
			12660	41.63	-12.37	54	24.28	39.42	21.17	43.24	-	-	A	V
			13395	53.1	-20.9	74	34.38	39.99	21.9	43.17	-	-	P	V
			13395	43	-11	54	24.28	39.99	21.9	43.17	-	-	A	V
			17955	55.51	-18.49	74	34.6	41.49	24.86	45.44	-	-	P	V
			17955	46.17	-7.83	54	25.26	41.49	24.86	45.44	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 12 2467MHz		4934	43.36	-30.64	74	35.13	32.9	12.97	37.64	-	-	P	H	
		7401	47.62	-26.38	74	33.89	36.3	16.03	38.6	-	-	P	H	
		12630	52.61	-21.39	74	35.36	39.36	21.14	43.25	-	-	P	H	
		12630	41.5	-12.5	54	24.25	39.36	21.14	43.25	-	-	A	H	
		13320	52.71	-21.29	74	34.19	39.84	21.84	43.16	-	-	P	H	
		13320	42.65	-11.35	54	24.13	39.84	21.84	43.16	-	-	A	H	
		17985	55.2	-18.8	74	34.09	41.69	24.88	45.46	-	-	P	H	
		17985	46.38	-7.62	54	25.27	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4934	43.91	-30.09	74	35.68	32.9	12.97	37.64	-	-	P	V
			7401	47.35	-26.65	74	33.62	36.3	16.03	38.6	-	-	P	V
			12585	52.44	-21.56	74	35.33	39.28	21.1	43.27	-	-	P	V
			12585	41.34	-12.66	54	24.23	39.28	21.1	43.27	-	-	A	V
			13305	54.2	-19.8	74	35.73	39.81	21.81	43.15	-	-	P	V
			13305	42.74	-11.26	54	24.27	39.81	21.81	43.15	-	-	A	V
			17970	55.39	-18.61	74	34.38	41.59	24.87	45.45	-	-	P	V
			17970	46.38	-7.62	54	25.37	41.59	24.87	45.45	-	-	A	V
													V	
													V	
													V	
													V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 13 2472MHz		4944	43.45	-30.55	74	35.18	32.96	12.96	37.65	-	-	P	H	
		7416	47.4	-26.6	74	33.73	36.27	16.01	38.61	-	-	P	H	
		12225	52.09	-21.91	74	35.36	39.17	20.71	43.15	-	-	P	H	
		12225	40.95	-13.05	54	24.22	39.17	20.71	43.15	-	-	A	H	
		13350	53.15	-20.85	74	34.55	39.9	21.86	43.16	-	-	P	H	
		13350	42.75	-11.25	54	24.15	39.9	21.86	43.16	-	-	A	H	
		17970	54.51	-19.49	74	33.5	41.59	24.87	45.45	-	-	P	H	
		17970	46.29	-7.71	54	25.28	41.59	24.87	45.45	-	-	A	H	
														H
														H
														H
														H
			4944	43.11	-30.89	74	34.84	32.96	12.96	37.65	-	-	P	V
			7416	47.36	-26.64	74	33.69	36.27	16.01	38.61	-	-	P	V
			12645	52.36	-21.64	74	35.05	39.39	21.16	43.24	-	-	P	V
			12645	41.46	-12.54	54	24.15	39.39	21.16	43.24	-	-	A	V
			13305	53.82	-20.18	74	35.35	39.81	21.81	43.15	-	-	P	V
			13305	42.79	-11.21	54	24.32	39.81	21.81	43.15	-	-	A	V
			17940	55.32	-18.68	74	34.52	41.38	24.85	45.43	-	-	P	V
			17940	46.01	-7.99	54	25.21	41.38	24.85	45.43	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



2.4GHz 2400~2483.5MHz  
WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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	53.89	-20.11	74	44.48	27.26	18.42	36.27	336	61	P	H	
		2389.905	41.85	-12.15	54	32.44	27.26	18.42	36.27	336	61	A	H	
	*	2412	109.82	-	-	100.29	27.35	18.46	36.28	336	61	P	H	
	*	2412	102.32	-	-	92.79	27.35	18.46	36.28	336	61	A	H	
													H	
														H
			2389.905	54.79	-19.21	74	45.38	27.26	18.42	36.27	400	205	P	V
			2390	44.48	-9.52	54	35.07	27.26	18.42	36.27	400	205	A	V
	*		2412	113.88	-	-	104.35	27.35	18.46	36.28	400	205	P	V
	*		2412	106.56	-	-	97.03	27.35	18.46	36.28	400	205	A	V
														V
														V
802.11g CH 06 2437MHz		2360.08	48.35	-25.65	74	39.1	27.14	18.37	36.26	400	231	P	H	
		2390	37.86	-16.14	54	28.45	27.26	18.42	36.27	400	231	A	H	
	*	2437	110.28	-	-	100.62	27.45	18.5	36.29	400	231	P	H	
	*	2437	102.74	-	-	93.08	27.45	18.5	36.29	400	231	A	H	
			2484.88	48.87	-25.13	74	38.95	27.64	18.59	36.31	400	231	P	H
			2483.76	38.37	-15.63	54	28.45	27.64	18.59	36.31	400	231	A	H
			2389.2	48.69	-25.31	74	39.28	27.26	18.42	36.27	400	222	P	V
			2390	38.46	-15.54	54	29.05	27.26	18.42	36.27	400	222	A	V
	*		2437	113.42	-	-	103.76	27.45	18.5	36.29	400	222	P	V
	*		2437	105.95	-	-	96.29	27.45	18.5	36.29	400	222	A	V
			2486.8	50.31	-23.69	74	40.38	27.65	18.59	36.31	400	222	P	V
			2483.6	38.78	-15.22	54	28.87	27.63	18.59	36.31	400	222	A	V



<b>802.11g</b>  <b>CH 11</b>  <b>2462MHz</b>	*	2462	111.72	-	-	101.92	27.55	18.55	36.3	400	234	P	H
	*	2462	104.35	-	-	94.55	27.55	18.55	36.3	400	234	A	H
		2483.56	55.76	-18.24	74	45.85	27.63	18.59	36.31	400	234	P	H
		2483.52	44.27	-9.73	54	34.36	27.63	18.59	36.31	400	234	A	H
													H
													H
	*	2462	113.53	-	-	103.73	27.55	18.55	36.3	400	227	P	V
	*	2462	106.34	-	-	96.54	27.55	18.55	36.3	400	227	A	V
		2483.68	57.7	-16.3	74	47.79	27.63	18.59	36.31	400	227	P	V
		2483.52	46.45	-7.55	54	36.54	27.63	18.59	36.31	400	227	A	V
													V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 12 2467MHz	*	2467	111.01	-	-	101.19	27.57	18.56	36.31	400	238	P	H	
	*	2467	103.63	-	-	93.81	27.57	18.56	36.31	400	238	A	H	
		2483.6	59.83	-14.17	74	49.92	27.63	18.59	36.31	400	238	P	H	
		2483.52	47.36	-6.64	54	37.45	27.63	18.59	36.31	400	238	A	H	
													H	
														H
	*	2467	113.54	-	-	103.72	27.57	18.56	36.31	400	223	223	P	V
	*	2467	106.06	-	-	96.24	27.57	18.56	36.31	400	223	223	A	V
		2483.52	62.17	-11.83	74	52.26	27.63	18.59	36.31	400	223	223	P	V
		2483.52	50.19	-3.81	54	40.28	27.63	18.59	36.31	400	223	223	A	V
														V
														V
802.11g CH 13 2472MHz	*	2472	96.36	-	-	86.51	27.59	18.57	36.31	340	65	P	H	
	*	2472	88.89	-	-	79.04	27.59	18.57	36.31	340	65	A	H	
		2483.52	59.71	-14.29	74	49.8	27.63	18.59	36.31	340	65	P	H	
		2483.52	46.09	-7.91	54	36.18	27.63	18.59	36.31	340	65	A	H	
														H
														H
	*	2472	99.86	-	-	90.01	27.59	18.57	36.31	328	194	194	P	V
	*	2472	92.41	-	-	82.56	27.59	18.57	36.31	328	194	194	A	V
		2483.52	63.47	-10.53	74	53.56	27.63	18.59	36.31	328	194	194	P	V
		2483.52	49.39	-4.61	54	39.48	27.63	18.59	36.31	328	194	194	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. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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	43.55	-30.45	74	35.79	32.3	13.02	37.56	-	-	P	H	
		12630	52.9	-21.1	74	35.65	39.36	21.14	43.25	-	-	P	H	
		12630	41.62	-12.38	54	24.37	39.36	21.14	43.25	-	-	A	H	
		13380	53.89	-20.11	74	35.21	39.96	21.89	43.17	-	-	P	H	
		13380	42.97	-11.03	54	24.29	39.96	21.89	43.17	-	-	A	H	
		17985	54.8	-19.2	74	33.69	41.69	24.88	45.46	-	-	P	H	
		17985	46.46	-7.54	54	25.35	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
														H
			4824	43.6	-30.4	74	35.84	32.3	13.02	37.56	-	-	P	V
			11520	51.97	-22.03	74	35.74	38.86	20.04	42.67	-	-	P	V
			11520	40.48	-13.52	54	24.25	38.86	20.04	42.67	-	-	A	V
			13380	52.97	-21.03	74	34.29	39.96	21.89	43.17	-	-	P	V
			13380	43.97	-10.03	54	25.29	39.96	21.89	43.17	-	-	A	V
			17955	54.67	-19.33	74	33.76	41.49	24.86	45.44	-	-	P	V
			17955	46.55	-7.45	54	25.64	41.49	24.86	45.44	-	-	A	V
														V
													V	
													V	
													V	
													V	



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 06 2437MHz		4874	42.49	-31.51	74	34.55	32.54	13	37.6	-	-	P	H	
		7311	47.37	-26.63	74	33.2	36.78	15.92	38.53	-	-	P	H	
		12660	52.84	-21.16	74	35.49	39.42	21.17	43.24	-	-	P	H	
		12660	41.64	-12.36	54	24.29	39.42	21.17	43.24	-	-	A	H	
		13365	54.3	-19.7	74	35.67	39.93	21.87	43.17	-	-	P	H	
		13365	43.2	-10.8	54	24.57	39.93	21.87	43.17	-	-	A	H	
		17970	54.77	-19.23	74	33.76	41.59	24.87	45.45	-	-	P	H	
		17970	46.17	-7.83	54	25.16	41.59	24.87	45.45	-	-	A	H	
														H
														H
														H
														H
			4874	43.02	-30.98	74	35.08	32.54	13	37.6	-	-	P	V
			7311	47.61	-26.39	74	33.44	36.78	15.92	38.53	-	-	P	V
			12090	52.6	-21.4	74	35.93	39.18	20.57	43.08	-	-	P	V
			12090	41.03	-12.97	54	24.36	39.18	20.57	43.08	-	-	A	V
			13395	53.09	-20.91	74	34.37	39.99	21.9	43.17	-	-	P	V
			13395	43.15	-10.85	54	24.43	39.99	21.9	43.17	-	-	A	V
			17940	54.88	-19.12	74	34.08	41.38	24.85	45.43	-	-	P	V
			17940	46.46	-7.54	54	25.66	41.38	24.85	45.43	-	-	A	V
													V	
													V	
													V	
													V	





WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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		4924	43.26	-30.74	74	35.08	32.84	12.97	37.63	-	-	P	H	
		7386	46.89	-27.11	74	33.06	36.41	16.01	38.59	-	-	P	H	
		12165	52.28	-21.72	74	35.56	39.2	20.64	43.12	-	-	P	H	
		12165	40.98	-13.02	54	24.26	39.2	20.64	43.12	-	-	A	H	
		13365	52.96	-21.04	74	34.33	39.93	21.87	43.17	-	-	P	H	
		13365	42.87	-11.13	54	24.24	39.93	21.87	43.17	-	-	A	H	
		17985	55.39	-18.61	74	34.28	41.69	24.88	45.46	-	-	P	H	
		17985	46.44	-7.56	54	25.33	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4924	44.26	-29.74	74	36.08	32.84	12.97	37.63	-	-	P	V
			7386	47.68	-26.32	74	33.85	36.41	16.01	38.59	-	-	P	V
			12240	52.22	-21.78	74	35.49	39.16	20.73	43.16	-	-	P	V
			12240	41	-13	54	24.27	39.16	20.73	43.16	-	-	A	V
			13365	52.94	-21.06	74	34.31	39.93	21.87	43.17	-	-	P	V
			13365	42.95	-11.05	54	24.32	39.93	21.87	43.17	-	-	A	V
			17970	54.9	-19.1	74	33.89	41.59	24.87	45.45	-	-	P	V
			17970	46.59	-7.41	54	25.58	41.59	24.87	45.45	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 12 2467MHz		4934	43.57	-30.43	74	35.34	32.9	12.97	37.64	-	-	P	H	
		7401	47.24	-26.76	74	33.51	36.3	16.03	38.6	-	-	P	H	
		12660	53.06	-20.94	74	35.71	39.42	21.17	43.24	-	-	P	H	
		12660	41.59	-12.41	54	24.24	39.42	21.17	43.24	-	-	A	H	
		13395	53.3	-20.7	74	34.58	39.99	21.9	43.17	-	-	P	H	
		13395	43	-11	54	24.28	39.99	21.9	43.17	-	-	A	H	
		17970	55.46	-18.54	74	34.45	41.59	24.87	45.45	-	-	P	H	
		17970	46.45	-7.55	54	25.44	41.59	24.87	45.45	-	-	A	H	
														H
														H
														H
														H
			4934	43.44	-30.56	74	35.21	32.9	12.97	37.64	-	-	P	V
			7401	46.75	-27.25	74	33.02	36.3	16.03	38.6	-	-	P	V
			12675	52.42	-21.58	74	35.01	39.45	21.19	43.23	-	-	P	V
			12675	41.59	-12.41	54	24.18	39.45	21.19	43.23	-	-	A	V
			13335	53.53	-20.47	74	34.97	39.87	21.85	43.16	-	-	P	V
			13335	42.78	-11.22	54	24.22	39.87	21.85	43.16	-	-	A	V
			17970	54.72	-19.28	74	33.71	41.59	24.87	45.45	-	-	P	V
			17970	46.57	-7.43	54	25.56	41.59	24.87	45.45	-	-	A	V
													V	
													V	
													V	
													V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 13 2472MHz		4944	43.52	-30.48	74	35.25	32.96	12.96	37.65	-	-	P	H	
		7416	47	-27	74	33.33	36.27	16.01	38.61	-	-	P	H	
		12699	52.35	-21.65	74	34.85	39.5	21.22	43.22	-	-	P	H	
		12699	41.83	-12.17	54	24.33	39.5	21.22	43.22	-	-	A	H	
		13395	53.18	-20.82	74	34.46	39.99	21.9	43.17	-	-	P	H	
		13395	42.97	-11.03	54	24.25	39.99	21.9	43.17	-	-	A	H	
		17985	54.89	-19.11	74	33.78	41.69	24.88	45.46	-	-	P	H	
		17985	46.79	-7.21	54	25.68	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4944	43.76	-30.24	74	35.49	32.96	12.96	37.65	-	-	P	V
			7416	47.47	-26.53	74	33.8	36.27	16.01	38.61	-	-	P	V
			12390	52.59	-21.41	74	35.93	39.01	20.89	43.24	-	-	P	V
			12390	40.92	-13.08	54	24.26	39.01	20.89	43.24	-	-	A	V
			13350	53.19	-20.81	74	34.59	39.9	21.86	43.16	-	-	P	V
			13350	42.78	-11.22	54	24.18	39.9	21.86	43.16	-	-	A	V
			17970	55.42	-18.58	74	34.41	41.59	24.87	45.45	-	-	P	V
			17970	46.28	-7.72	54	25.27	41.59	24.87	45.45	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



**2.4GHz 2400~2483.5MHz**  
**WIFI 802.11ax HE20 Full (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 01 2412MHz		2389.38	54.66	-19.34	74	45.25	27.26	18.42	36.27	400	118	P	H	
		2390	43.86	-10.14	54	34.45	27.26	18.42	36.27	400	118	A	H	
	*	2412	108.55	-	-	99.02	27.35	18.46	36.28	400	118	P	H	
	*	2412	100.04	-	-	90.51	27.35	18.46	36.28	400	118	A	H	
													H	
														H
			2389.59	59.82	-14.18	74	50.41	27.26	18.42	36.27	400	219	P	V
			2390	49.95	-4.05	54	40.54	27.26	18.42	36.27	400	219	A	V
		*	2412	115.1	-	-	105.57	27.35	18.46	36.28	400	219	P	V
		*	2412	106.76	-	-	97.23	27.35	18.46	36.28	400	219	A	V
802.11ax HE20 Full CH 06 2437MHz		2370.34	49.11	-24.89	74	39.8	27.18	18.39	36.26	400	232	P	H	
		2389.24	38.17	-15.83	54	28.76	27.26	18.42	36.27	400	232	A	H	
		* 2437	111.57	-	-	101.91	27.45	18.5	36.29	400	232	P	H	
		* 2437	102.89	-	-	93.23	27.45	18.5	36.29	400	232	A	H	
			2498.72	49.57	-24.43	74	39.59	27.69	18.61	36.32	400	232	P	H
			2485.36	38.8	-15.2	54	28.88	27.64	18.59	36.31	400	232	A	H
			2367.26	48.85	-25.15	74	39.56	27.17	18.38	36.26	396	220	P	V
			2389.52	38.76	-15.24	54	29.35	27.26	18.42	36.27	396	220	A	V
		*	2437	113.4	-	-	103.74	27.45	18.5	36.29	396	220	P	V
		*	2437	106.12	-	-	96.46	27.45	18.5	36.29	396	220	A	V
		2492.4	49.58	-24.42	74	39.63	27.67	18.6	36.32	396	220	P	V	
		2484.4	39.12	-14.88	54	29.2	27.64	18.59	36.31	396	220	A	V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 11 2462MHz	*	2462	111.65	-	-	101.58	27.55	18.82	36.3	392	232	P	H	
	*	2462	103.01	-	-	92.94	27.55	18.82	36.3	392	232	A	H	
		2483.72	61.79	-12.21	74	51.61	27.63	18.86	36.31	392	232	P	H	
		2483.6	47.84	-6.16	54	37.66	27.63	18.86	36.31	392	232	A	H	
													H	
														H
	*	2462	114.16	-	-	104.09	27.55	18.82	36.3	400	224	P	V	
	*	2462	105.65	-	-	95.58	27.55	18.82	36.3	400	224	A	V	
		2483.64	65.31	-8.69	74	55.13	27.63	18.86	36.31	400	224	P	V	
		2483.52	50.58	-3.42	54	40.4	27.63	18.86	36.31	400	224	A	V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>													



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )
802.11ax HE20 Full CH 12 2467MHz	*	2467	110.21	-	-	100.12	27.57	18.83	36.31	400	243	P	H
	*	2467	101.98	-	-	91.89	27.57	18.83	36.31	400	243	A	H
		2483.64	64.22	-9.78	74	54.04	27.63	18.86	36.31	400	243	P	H
		2483.52	49.07	-4.93	54	38.89	27.63	18.86	36.31	400	243	A	H
													H
													H
	*	2467	113.13	-	-	103.04	27.57	18.83	36.31	395	229	P	V
	*	2467	104.57	-	-	94.48	27.57	18.83	36.31	395	229	A	V
		2483.92	65.94	-8.06	74	55.75	27.64	18.86	36.31	395	229	P	V
		2483.52	51.03	-2.97	54	40.85	27.63	18.86	36.31	395	229	A	V
												V	
												V	
802.11ax HE20 Full CH 13 2472MHz	*	2472	96.59	-	-	86.47	27.59	18.84	36.31	390	228	P	H
	*	2472	88.3	-	-	78.18	27.59	18.84	36.31	390	228	A	H
		2483.52	62.07	-11.93	74	51.89	27.63	18.86	36.31	390	228	P	H
		2483.52	46.19	-7.81	54	36.01	27.63	18.86	36.31	390	228	A	H
													H
													H
	*	2472	99.49	-	-	89.37	27.59	18.84	36.31	374	218	P	V
	*	2472	91.4	-	-	81.28	27.59	18.84	36.31	374	218	A	V
		2483.64	68.22	-5.78	74	58.04	27.63	18.86	36.31	374	218	P	V
		2483.52	50.3	-3.7	54	40.12	27.63	18.86	36.31	374	218	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. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 01 2412MHz		4824	42.13	-31.87	74	34.37	32.3	13.02	37.56	-	-	P	H	
		12675	52.29	-21.71	74	34.88	39.45	21.19	43.23	-	-	P	H	
		12675	41.88	-12.12	54	24.47	39.45	21.19	43.23	-	-	A	H	
		13335	53.51	-20.49	74	34.95	39.87	21.85	43.16	-	-	P	H	
		13335	43.07	-10.93	54	24.51	39.87	21.85	43.16	-	-	A	H	
		17970	55.61	-18.39	74	34.6	41.59	24.87	45.45	-	-	P	H	
		17970	46.27	-7.73	54	25.26	41.59	24.87	45.45	-	-	A	H	
														H
														H
														H
														H
														H
														H
														H
														H
			4824	42.83	-31.17	74	35.07	32.3	13.02	37.56	-	-	P	V
			12690	52.82	-21.18	74	35.35	39.48	21.21	43.22	-	-	P	V
			12690	41.71	-12.29	54	24.24	39.48	21.21	43.22	-	-	A	V
		13380	53.34	-20.66	74	34.66	39.96	21.89	43.17	-	-	P	V	
		13380	43.3	-10.7	54	24.62	39.96	21.89	43.17	-	-	A	V	
		17985	55.03	-18.97	74	33.92	41.69	24.88	45.46	-	-	P	V	
		17985	46.45	-7.55	54	25.34	41.69	24.88	45.46	-	-	A	V	
													V	
													V	
													V	
													V	
													V	







WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBµV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 11 2462MHz		4924	43.55	-30.45	74	35.37	32.84	12.97	37.63	-	-	P	H	
		7386	47.75	-26.25	74	33.92	36.41	16.01	38.59	-	-	P	H	
		12615	52.37	-21.63	74	35.16	39.33	21.13	43.25	-	-	P	H	
		12615	41.46	-12.54	54	24.25	39.33	21.13	43.25	-	-	A	H	
		13395	53.86	-20.14	74	35.14	39.99	21.9	43.17	-	-	P	H	
		13395	43.03	-10.97	54	24.31	39.99	21.9	43.17	-	-	A	H	
		17955	55.1	-18.9	74	34.19	41.49	24.86	45.44	-	-	P	H	
		17955	46.43	-7.57	54	25.52	41.49	24.86	45.44	-	-	A	H	
														H
														H
														H
														H
			4924	44.81	-29.19	74	36.63	32.84	12.97	37.63	-	-	P	V
			7386	47.82	-26.18	74	33.99	36.41	16.01	38.59	-	-	P	V
			12699	52.3	-21.7	74	34.8	39.5	21.22	43.22	-	-	P	V
			12699	41.84	-12.16	54	24.34	39.5	21.22	43.22	-	-	A	V
			13290	53.11	-20.89	74	34.67	39.79	21.8	43.15	-	-	P	V
			13290	43.05	-10.95	54	24.61	39.79	21.8	43.15	-	-	A	V
		18000	54.76	-19.24	74	33.54	41.8	24.89	45.47	-	-	P	V	
		18000	46.58	-7.42	54	25.36	41.8	24.89	45.47	-	-	A	V	
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 12 2467MHz		4934	44.64	-29.36	74	36.41	32.9	12.97	37.64	-	-	P	H	
		7401	47.84	-26.16	74	34.11	36.3	16.03	38.6	-	-	P	H	
		12345	52.2	-21.8	74	35.52	39.06	20.84	43.22	-	-	P	H	
		12345	40.85	-13.15	54	24.17	39.06	20.84	43.22	-	-	A	H	
		13395	53.45	-20.55	74	34.73	39.99	21.9	43.17	-	-	P	H	
		13395	42.95	-11.05	54	24.23	39.99	21.9	43.17	-	-	A	H	
		18000	54.93	-19.07	74	33.71	41.8	24.89	45.47	-	-	P	H	
		18000	46.93	-7.07	54	25.71	41.8	24.89	45.47	-	-	A	H	
														H
														H
														H
														H
			4934	43.78	-30.22	74	35.55	32.9	12.97	37.64	-	-	P	V
			7401	47.59	-26.41	74	33.86	36.3	16.03	38.6	-	-	P	V
			12690	52.14	-21.86	74	34.67	39.48	21.21	43.22	-	-	P	V
			12690	41.72	-12.28	54	24.25	39.48	21.21	43.22	-	-	A	V
			13350	53.27	-20.73	74	34.67	39.9	21.86	43.16	-	-	P	V
			13350	42.94	-11.06	54	24.34	39.9	21.86	43.16	-	-	A	V
			17985	56.28	-17.72	74	35.17	41.69	24.88	45.46	-	-	P	V
			17985	46.38	-7.62	54	25.27	41.69	24.88	45.46	-	-	A	V
													V	
													V	
													V	
													V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE20 Full CH 13 2472MHz		4944	43.39	-30.61	74	35.12	32.96	12.96	37.65	-	-	P	H	
		7416	47.09	-26.91	74	33.4	36.28	16.02	38.61	-	-	P	H	
		12660	53.66	-20.34	74	36.31	39.42	21.17	43.24	-	-	P	H	
		12660	42.01	-11.99	54	24.66	39.42	21.17	43.24	-	-	A	H	
		13335	53.55	-20.45	74	34.99	39.87	21.85	43.16	-	-	P	H	
		13335	42.84	-11.16	54	24.28	39.87	21.85	43.16	-	-	A	H	
		17955	54.41	-19.59	74	33.5	41.49	24.86	45.44	-	-	P	H	
		17955	46.39	-7.61	54	25.48	41.49	24.86	45.44	-	-	A	H	
														H
														H
														H
														H
			4944	43.8	-30.2	74	35.53	32.96	12.96	37.65	-	-	P	V
			7416	47.09	-26.91	74	33.4	36.28	16.02	38.61	-	-	P	V
			12695	52.7	-21.3	74	35.21	39.49	21.22	43.22	-	-	P	V
			12695	41.61	-12.39	54	24.12	39.49	21.22	43.22	-	-	A	V
			13290	53.27	-20.73	74	34.83	39.79	21.8	43.15	-	-	P	V
			13290	42.82	-11.18	54	24.38	39.79	21.8	43.15	-	-	A	V
			17985	55.62	-18.38	74	34.51	41.69	24.88	45.46	-	-	P	V
			17985	46.29	-7.71	54	25.18	41.69	24.88	45.46	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



**2.4GHz 2400~2483.5MHz**  
**WIFI 802.11ax HE40 Full (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )
802.11ax HE40 Full CH 03 2422MHz		2389.8	54.65	-19.35	74	44.98	27.26	18.68	36.27	357	119	P	H
		2389.94	44.56	-9.44	54	34.89	27.26	18.68	36.27	357	119	A	H
	*	2422	105.4	-	-	95.56	27.39	18.74	36.29	357	119	P	H
	*	2422	96.96	-	-	87.12	27.39	18.74	36.29	357	119	A	H
		2498.72	48.91	-25.09	74	38.65	27.69	18.89	36.32	357	119	P	H
		2484.24	39.11	-14.89	54	28.92	27.64	18.86	36.31	357	119	A	H
		2389.66	58.74	-15.26	74	49.07	27.26	18.68	36.27	369	217	P	V
		2389.94	49.07	-4.93	54	39.4	27.26	18.68	36.27	369	217	A	V
	*	2422	113.11	-	-	103.27	27.39	18.74	36.29	369	217	P	V
	*	2422	103.12	-	-	93.28	27.39	18.74	36.29	369	217	A	V
		2485.52	49.94	-24.06	74	39.75	27.64	18.86	36.31	369	217	P	V
		2483.52	40.18	-13.82	54	30	27.63	18.86	36.31	369	217	A	V
802.11ax HE40 Full CH 06 2437MHz		2371.6	49.89	-24.11	74	40.31	27.19	18.65	36.26	398	231	P	H
		2389.94	40.1	-13.9	54	30.43	27.26	18.68	36.27	398	231	A	H
	*	2437	109.31	-	-	99.38	27.45	18.77	36.29	398	231	P	H
	*	2437	100.37	-	-	90.44	27.45	18.77	36.29	398	231	A	H
		2483.92	52	-22	74	41.81	27.64	18.86	36.31	398	231	P	H
		2483.68	40.8	-13.2	54	30.62	27.63	18.86	36.31	398	231	A	H
		2389.8	54.24	-19.76	74	44.57	27.26	18.68	36.27	400	225	P	V
		2388.82	43.15	-10.85	54	33.48	27.26	18.68	36.27	400	225	A	V
	*	2437	113.4	-	-	103.47	27.45	18.77	36.29	400	225	P	V
	*	2437	103.6	-	-	93.67	27.45	18.77	36.29	400	225	A	V
		2483.52	55.91	-18.09	74	45.73	27.63	18.86	36.31	400	225	P	V
		2487.2	42.07	-11.93	54	31.86	27.65	18.87	36.31	400	225	A	V



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )
802.11ax HE40 Full CH 09 2452MHz		2388.82	49.76	-24.24	74	40.09	27.26	18.68	36.27	386	229	P	H
		2388.82	38.96	-15.04	54	29.29	27.26	18.68	36.27	386	229	A	H
	*	2452	107.56	-	-	97.55	27.51	18.8	36.3	386	229	P	H
	*	2452	99.6	-	-	89.59	27.51	18.8	36.3	386	229	A	H
		2484.08	61.35	-12.65	74	51.16	27.64	18.86	36.31	386	229	P	H
		2483.92	49.76	-4.24	54	39.57	27.64	18.86	36.31	386	229	A	H
		2389.66	51.45	-22.55	74	41.78	27.26	18.68	36.27	399	221	P	V
		2389.94	40.78	-13.22	54	31.11	27.26	18.68	36.27	399	221	A	V
	*	2452	113.64	-	-	103.63	27.51	18.8	36.3	399	221	P	V
	*	2452	103.79	-	-	93.78	27.51	18.8	36.3	399	221	A	V
		2483.84	63.69	-10.31	74	53.5	27.64	18.86	36.31	399	221	P	V
		2483.52	53.25	-0.75	54	43.07	27.63	18.86	36.31	399	221	A	V
Remark	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>												



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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)
802.11ax HE40 Full CH 10 2457MHz		2356.48	49.72	-24.28	74	40.23	27.13	18.62	36.26	298	194	P	H
		2389.94	38.26	-15.74	54	28.59	27.26	18.68	36.27	298	194	A	H
	*	2457	103.26	-	-	93.22	27.53	18.81	36.3	298	194	P	H
	*	2457	92.99	-	-	82.95	27.53	18.81	36.3	298	194	A	H
		2485.36	54.93	-19.07	74	44.74	27.64	18.86	36.31	298	194	P	H
		2483.52	44.11	-9.89	54	33.93	27.63	18.86	36.31	298	194	A	H
		2389.1	51.82	-22.18	74	42.15	27.26	18.68	36.27	328	194	P	V
		2389.94	39.19	-14.81	54	29.52	27.26	18.68	36.27	328	194	A	V
	*	2457	110.44	-	-	100.4	27.53	18.81	36.3	328	194	P	V
	*	2457	101.27	-	-	91.23	27.53	18.81	36.3	328	194	A	V
		2483.52	63.92	-10.08	74	53.74	27.63	18.86	36.31	328	194	P	V
		2483.6	51.53	-2.47	54	41.35	27.63	18.86	36.31	328	194	A	V
802.11ax HE40 Full CH 11 2462MHz		2369.22	48.6	-25.4	74	39.04	27.18	18.64	36.26	399	247	P	H
		2389.1	38.34	-15.66	54	28.67	27.26	18.68	36.27	399	247	A	H
	*	2462	97.28	-	-	87.21	27.55	18.82	36.3	399	247	P	H
	*	2462	89.08	-	-	79.01	27.55	18.82	36.3	399	247	A	H
		2483.6	59.74	-14.26	74	49.56	27.63	18.86	36.31	399	247	P	H
		2483.52	43.74	-10.26	54	33.56	27.63	18.86	36.31	399	247	A	H
		2360.96	49.27	-24.73	74	39.76	27.14	18.63	36.26	397	223	P	V
		2389.1	38.33	-15.67	54	28.66	27.26	18.68	36.27	397	223	A	V
	*	2462	102.59	-	-	92.52	27.55	18.82	36.3	397	223	P	V
	*	2462	92.83	-	-	82.76	27.55	18.82	36.3	397	223	A	V
		2483.52	64.3	-9.7	74	54.12	27.63	18.86	36.31	397	223	P	V
		2483.52	48.25	-5.75	54	38.07	27.63	18.86	36.31	397	223	A	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 HE40 Full (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Full CH 03 2422MHz		4844	43.09	-30.91	74	35.27	32.38	13.01	37.57	-	-	P	H	
		7266	47.82	-26.18	74	33.5	36.94	15.87	38.49	-	-	P	H	
		12585	52.06	-21.94	74	34.95	39.28	21.1	43.27	-	-	P	H	
		12585	41.27	-12.73	54	24.16	39.28	21.1	43.27	-	-	A	H	
		13290	51.89	-22.11	74	33.45	39.79	21.8	43.15	-	-	P	H	
		13290	43.51	-10.49	54	25.07	39.79	21.8	43.15	-	-	A	H	
		17985	55.46	-18.54	74	34.35	41.69	24.88	45.46	-	-	P	H	
		17985	46.72	-7.28	54	25.61	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
														H
			4844	42.25	-31.75	74	34.43	32.38	13.01	37.57	-	-	P	V
			7266	48.19	-25.81	74	33.87	36.94	15.87	38.49	-	-	P	V
			10845	51.75	-22.25	74	35.03	38.97	19.43	41.68	-	-	P	V
			10845	41.82	-12.18	54	25.1	38.97	19.43	41.68	-	-	A	V
			13260	52.3	-21.7	74	33.91	39.76	21.78	43.15	-	-	P	V
			13260	43.4	-10.6	54	25.01	39.76	21.78	43.15	-	-	A	V
		17910	56.03	-17.97	74	35.44	41.17	24.83	45.41	-	-	P	V	
		17910	46.02	-7.98	54	25.43	41.17	24.83	45.41	-	-	A	V	
													V	
													V	
													V	
													V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
I802.11ax HE40 Full CH 06 2437MHz		4874	42.42	-31.58	74	34.48	32.54	13	37.6	-	-	P	H	
		7311	47.81	-26.19	74	33.64	36.78	15.92	38.53	-	-	P	H	
		12000	51.72	-22.28	74	35.28	39	20.47	43.03	-	-	P	H	
		12000	41.46	-12.54	54	25.02	39	20.47	43.03	-	-	A	H	
		13320	52.06	-21.94	74	33.54	39.84	21.84	43.16	-	-	P	H	
		13320	42.65	-11.35	54	24.13	39.84	21.84	43.16	-	-	A	H	
		17985	55.83	-18.17	74	34.72	41.69	24.88	45.46	-	-	P	H	
		17985	46.55	-7.45	54	25.44	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4874	42.39	-31.61	74	34.45	32.54	13	37.6	-	-	P	V
			7311	48.47	-25.53	74	34.3	36.78	15.92	38.53	-	-	P	V
			12630	51.94	-22.06	74	34.69	39.36	21.14	43.25	-	-	P	V
			12630	41.38	-12.62	54	24.13	39.36	21.14	43.25	-	-	A	V
			13380	52.18	-21.82	74	33.5	39.96	21.89	43.17	-	-	P	V
			13380	42.99	-11.01	54	24.31	39.96	21.89	43.17	-	-	A	V
			17955	56.02	-17.98	74	35.11	41.49	24.86	45.44	-	-	P	V
		17955	46.05	-7.95	54	25.14	41.49	24.86	45.44	-	-	A	V	
													V	
													V	
													V	
													V	





WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Full CH 09 2452MHz		4904	44.24	-29.76	74	36.16	32.72	12.98	37.62	-	-	P	H	
		7356	47.75	-26.25	74	33.68	36.65	15.98	38.56	-	-	P	H	
		11355	52.25	-21.75	74	35.71	39.01	19.9	42.37	-	-	P	H	
		11355	41.54	-12.46	54	25	39.01	19.9	42.37	-	-	A	H	
		13395	52.16	-21.84	74	33.44	39.99	21.9	43.17	-	-	P	H	
		13395	43.54	-10.46	54	24.82	39.99	21.9	43.17	-	-	A	H	
		17970	54.99	-19.01	74	33.98	41.59	24.87	45.45	-	-	P	H	
		17970	46.04	-7.96	54	25.03	41.59	24.87	45.45	-	-	A	H	
														H
														H
														H
														H
			4904	43.5	-30.5	74	35.42	32.72	12.98	37.62	-	-	P	V
			7356	48.38	-25.62	74	34.31	36.65	15.98	38.56	351	232	P	V
			7356	38.47	-15.53	54	24.4	36.65	15.98	38.56	351	232	A	V
			12510	51.78	-22.22	74	34.86	39.21	21.01	43.3	-	-	P	V
			12510	41.05	-12.95	54	24.13	39.21	21.01	43.3	-	-	A	V
			13305	52.3	-21.7	74	33.83	39.81	21.81	43.15	-	-	P	V
			13305	43.5	-10.5	54	25.03	39.81	21.81	43.15	-	-	A	V
			17955	55.84	-18.16	74	34.93	41.49	24.86	45.44	-	-	P	V
		17955	46.14	-7.86	54	25.23	41.49	24.86	45.44	-	-	A	V	
													V	
													V	
													V	
<b>Remark</b>	5. No other spurious found. 6. All results are PASS against Peak and Average limit line. 7. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 8. The emission level close to 18GHz is checked that the average emission level is noise floor only.													



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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)	
802.11ax HE40 Full CH 10 2457MHz		4914	42.44	-31.56	74	34.32	32.78	12.97	37.63	-	-	P	H	
		7371	47.81	-26.19	74	33.85	36.53	16	38.57	-	-	P	H	
		10755	51.58	-22.42	74	34.93	39.01	19.34	41.7	-	-	P	H	
		10755	40.66	-13.34	54	24.01	39.01	19.34	41.7	-	-	A	H	
		13365	51.78	-22.22	74	33.15	39.93	21.87	43.17	-	-	P	H	
		13365	42.87	-11.13	54	24.24	39.93	21.87	43.17	-	-	A	H	
		17985	56.24	-17.76	74	35.13	41.69	24.88	45.46	-	-	P	H	
		17985	46.84	-7.16	54	25.73	41.69	24.88	45.46	-	-	A	H	
														H
														H
														H
														H
			4914	43.56	-30.44	74	35.44	32.78	12.97	37.63	-	-	P	V
			7371	47.87	-26.13	74	33.91	36.53	16	38.57	-	-	P	V
			12510	51.85	-22.15	74	34.93	39.21	21.01	43.3	-	-	P	V
			12510	41.56	-12.44	54	24.64	39.21	21.01	43.3	-	-	A	V
			13380	52.24	-21.76	74	33.56	39.96	21.89	43.17	-	-	P	V
			13380	43.69	-10.31	54	25.01	39.96	21.89	43.17	-	-	A	V
			17955	56.25	-17.75	74	35.34	41.49	24.86	45.44	-	-	P	V
			17955	46.81	-7.19	54	25.9	41.49	24.86	45.44	-	-	A	V
													V	
													V	
													V	
													V	



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Full CH 11 2462MHz		4924	43.1	-30.9	74	34.92	32.84	12.97	37.63	-	-	P	H	
		7386	46.85	-27.15	74	33.02	36.41	16.01	38.59	-	-	P	H	
		11970	51.67	-22.33	74	35.27	38.97	20.44	43.01	-	-	P	H	
		11970	40.43	-13.57	54	24.03	38.97	20.44	43.01	-	-	A	H	
		13365	52.42	-21.58	74	33.79	39.93	21.87	43.17	-	-	P	H	
		13365	43.16	-10.84	54	24.53	39.93	21.87	43.17	-	-	A	H	
		17895	55.79	-18.21	74	35.3	41.06	24.82	45.39	-	-	P	H	
		17895	46.56	-7.44	54	26.07	41.06	24.82	45.39	-	-	A	H	
														H
														H
														H
														H
			4924	43.27	-30.73	74	35.09	32.84	12.97	37.63	-	-	P	V
			7386	47.53	-26.47	74	33.7	36.41	16.01	38.59	-	-	P	V
			12285	52.01	-21.99	74	35.31	39.11	20.77	43.18	-	-	P	V
			12285	40.86	-13.14	54	24.16	39.11	20.77	43.18	-	-	A	V
			13305	52.82	-21.18	74	34.35	39.81	21.81	43.15	-	-	P	V
			13305	42.2	-11.8	54	23.73	39.81	21.81	43.15	-	-	A	V
			17970	56.24	-17.76	74	35.23	41.59	24.87	45.45	-	-	P	V
			17970	46.88	-7.12	54	25.87	41.59	24.87	45.45	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



**2.4GHz 2400~2483.5MHz  
WIFI 802.11ax HE40 Partial 484 (Band Edge @ 3m)**

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )
<b>802.11ax HE40 Partial 484/65 CH 03 2422MHz</b>		2390	65.23	-8.77	74	55.56	27.26	18.68	36.27	400	110	P	H
		2390	47.61	-6.39	54	37.94	27.26	18.68	36.27	400	110	A	H
	*	2422	105.78	-	-	95.94	27.39	18.74	36.29	400	110	P	H
	*	2422	97.48	-	-	87.64	27.39	18.74	36.29	400	110	A	H
		2484.08	51.82	-22.18	74	41.63	27.64	18.86	36.31	400	110	P	H
		2483.52	38.73	-15.27	54	28.55	27.63	18.86	36.31	400	110	A	H
		2390	71.11	-2.89	74	61.44	27.26	18.68	36.27	400	223	P	V
		2390	53.06	-0.94	54	43.39	27.26	18.68	36.27	400	223	A	V
	*	2422	112.23	-	-	102.39	27.39	18.74	36.29	400	223	P	V
	*	2422	104.33	-	-	94.49	27.39	18.74	36.29	400	223	A	V
	2484	55.28	-18.72	74	45.09	27.64	18.86	36.31	400	223	P	V	
	2483.52	42.03	-11.97	54	31.85	27.63	18.86	36.31	400	223	A	V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



WiFi Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )
802.11ax HE40 Partial 484/65 CH 11 2462MHz		2389.04	49.71	-24.29	74	40.04	27.26	18.68	36.27	400	234	P	H
		2389.2	37.86	-16.14	54	28.19	27.26	18.68	36.27	400	234	A	H
	*	2462	96.62	-	-	86.55	27.55	18.82	36.3	400	234	P	H
	*	2462	88.04	-	-	77.97	27.55	18.82	36.3	400	234	A	H
		2483.52	68.52	-5.48	74	58.34	27.63	18.86	36.31	400	234	P	H
		2483.52	47.08	-6.92	54	36.9	27.63	18.86	36.31	400	234	A	H
		2376.72	49.46	-24.54	74	39.86	27.21	18.66	36.27	297	203	P	V
		2389.84	37.86	-16.14	54	28.19	27.26	18.68	36.27	297	203	A	V
	*	2462	99.1	-	-	89.03	27.55	18.82	36.3	297	203	P	V
	*	2462	88.55	-	-	78.48	27.55	18.82	36.3	297	203	A	V
		2483.52	73.3	-0.7	74	63.12	27.63	18.86	36.31	297	203	P	V
		2483.52	51.51	-2.49	54	41.33	27.63	18.86	36.31	297	203	A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> </ol>												



2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE40 Partial 484 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Partial 484/65 CH 03 2422MHz		4844	43.24	-30.76	74	35.42	32.38	13.01	37.57	-	-	P	H	
		7266	47.79	-26.21	74	33.47	36.94	15.87	38.49	-	-	P	H	
		12540	51.73	-22.27	74	34.73	39.24	21.04	43.28	-	-	P	H	
		12540	41.53	-12.47	54	24.53	39.24	21.04	43.28	-	-	A	H	
		13275	52.44	-21.56	74	34.02	39.78	21.79	43.15	-	-	P	H	
		13275	43.43	-10.57	54	25.01	39.78	21.79	43.15	-	-	A	H	
		17955	55.72	-18.28	74	34.81	41.49	24.86	45.44	-	-	P	H	
		17955	46.78	-7.22	54	25.87	41.49	24.86	45.44	-	-	A	H	
														H
														H
														H
														H
			4844	42.36	-31.64	74	34.54	32.38	13.01	37.57	-	-	P	V
			7266	49.14	-24.86	74	34.82	36.94	15.87	38.49	-	-	P	V
			12570	51.82	-22.18	74	34.74	39.27	21.08	43.27	-	-	P	V
			12570	42.1	-11.9	54	25.02	39.27	21.08	43.27	-	-	A	V
			13245	52.58	-21.42	74	34.22	39.74	21.76	43.14	-	-	P	V
			13245	43.48	-10.52	54	25.12	39.74	21.76	43.14	-	-	A	V
		17970	56.43	-17.57	74	35.42	41.59	24.87	45.45	-	-	P	V	
		17970	47.04	-6.96	54	26.03	41.59	24.87	45.45	-	-	A	V	
													V	
													V	
													V	
													V	



WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
802.11ax HE40 Partial 484/65 CH 11 2462MHz		4924	43.18	-30.82	74	35	32.84	12.97	37.63	-	-	P	H	
		7386	47.66	-26.34	74	33.83	36.41	16.01	38.59	-	-	P	H	
		12420	52.2	-21.8	74	35.5	39.04	20.92	43.26	-	-	P	H	
		12420	40.82	-13.18	54	24.12	39.04	20.92	43.26	-	-	A	H	
		13395	52.67	-21.33	74	33.95	39.99	21.9	43.17	-	-	P	H	
		13395	43.43	-10.57	54	24.71	39.99	21.9	43.17	-	-	A	H	
		17910	54.99	-19.01	74	34.4	41.17	24.83	45.41	-	-	P	H	
		17910	46.67	-7.33	54	26.08	41.17	24.83	45.41	-	-	A	H	
														H
														H
														H
														H
			4924	43.55	-30.45	74	35.37	32.84	12.97	37.63	-	-	P	V
			7386	47.49	-26.51	74	33.66	36.41	16.01	38.59	-	-	P	V
			12435	51.43	-22.57	74	34.69	39.07	20.93	43.26	-	-	P	V
			12435	41.06	-12.94	54	24.32	39.07	20.93	43.26	-	-	A	V
			13260	51.63	-22.37	74	33.24	39.76	21.78	43.15	-	-	P	V
			13260	42.93	-11.07	54	24.54	39.76	21.78	43.15	-	-	A	V
			17985	55.36	-18.64	74	34.25	41.69	24.88	45.46	-	-	P	V
			17985	47.08	-6.92	54	25.97	41.69	24.88	45.46	-	-	A	V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



Emission above 18GHz

2.4GHz WIFI 802.11ax HE40 Partial RU484/65 (SHF)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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)	
2.4GHz 802.11ax HE40 Partial RU484/65 SHF		23999	40.86	-33.14	74	37.2	38.8	18.66	53.8	-	-	P	H	
													H	
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													H	
			24440	41.15	-32.85	74	36.41	39.05	19.14	53.45	-	-	P	V
														V
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													





Emission below 1GHz

2.4GHz WIFI 802.11ax HE40 Partial RU484/65 (LF)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( 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 )	
2.4GHz 802.11ax HE40 Partial RU484/65 LF		119.24	16.34	-27.16	43.5	32.22	17.45	2.19	35.52	-	-	P	H	
		259.89	21.44	-24.56	46	33.49	20.09	3.12	35.26	-	-	P	H	
		636.25	30.2	-15.8	46	33.48	26.15	4.78	34.21	-	-	P	H	
		729.37	35.91	-10.09	46	37.38	27.26	5.09	33.82	-	-	P	H	
		862.26	33.1	-12.9	46	31.84	28.85	5.69	33.28	-	-	P	H	
		954.41	34.83	-11.17	46	31.24	30.57	5.99	32.97	-	-	P	H	
														H
														H
														H
														H
														H
														H
			130.88	16.04	-27.46	43.5	31.83	17.41	2.31	35.51	-	-	P	V
			334.58	23.04	-22.96	46	34.64	19.95	3.5	35.05	-	-	P	V
			563.5	29.02	-16.98	46	33.02	25.92	4.52	34.44	-	-	P	V
			729.37	36.58	-9.42	46	38.05	27.26	5.09	33.82	-	-	P	V
			739.07	34.73	-11.27	46	35.81	27.56	5.14	33.78	-	-	P	V
			896.21	35.78	-10.22	46	34.37	28.69	5.86	33.14	-	-	P	V
														V
														V
													V	
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													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against limit line.</li> <li>The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.</li> </ol>													



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =  
Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)  
= 55.45 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 74(dBμV/m)  
= -18.55(dB)

**For Average Limit @ 2390MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
2. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 43.54(dBμV/m) – 54(dBμV/m)  
= -10.46(dB)

**Both peak and average measured complies with the limit line, so test result is “PASS”.**



## Appendix D. Radiated Spurious Emission Plots

<b>Test Engineer :</b>	Bill Chang, JC Liang, Karl Hou and Wilson Wu	<b>Temperature :</b>	20~25°C
		<b>Relative Humidity :</b>	50~60%

**Remark:** For Radiated Spurious Emission Test Items, Ant. 1 means Chain 1 (Aux.) and Ant. 2 means Chain 2 (Main).

### Note symbol

-L	Low channel location
-R	High channel location



<Sample 1>

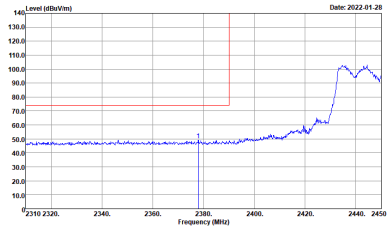
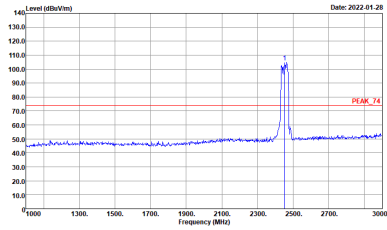
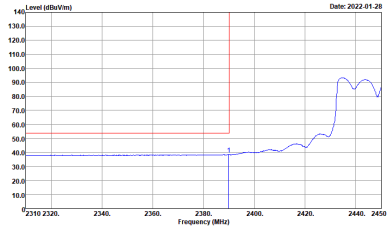
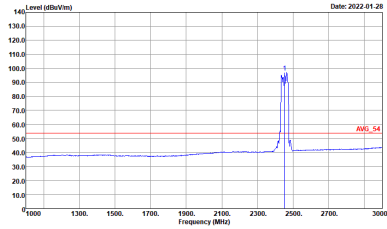
2.4GHz 2400~2483.5MHz  
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE_74 3m 9120D_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : PEAK_74 3m 9120D_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH20-HY Condition : AVG_BE_54 3m 9120D_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH20-HY Condition : AVG_54 3m 9120D_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH20-HY Condition : AVG_BE_64 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH20-1FV Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : PEAK_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-1FV Condition : AVG_BE_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : AVG_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH20-HY Condition : AVG_BE_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank





2.4GHz 2400~2483.5MHz

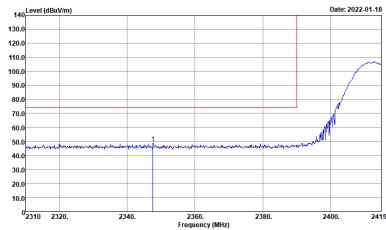
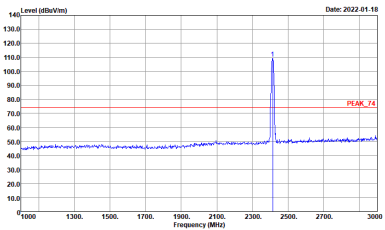
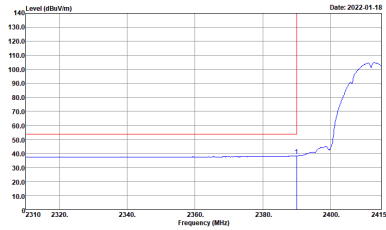
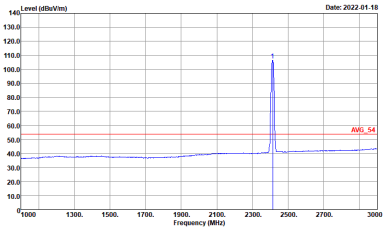
WIFI 802.11 ax HE40 Full (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11 ax HE40 Full CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH20-HY Condition : PEAK_74 3m 91200_02294_1110622 HORIZONTAL</p>	<p>Site : 03CH20-HY Condition : PEAK_74 3m 91200_02294_1110622 VERTICAL</p>



<Sample 2>

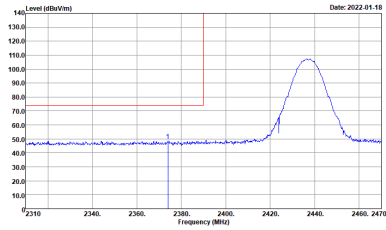
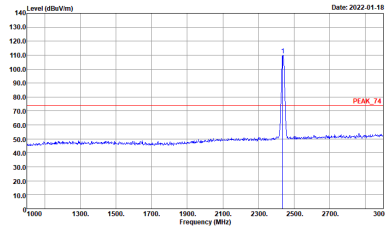
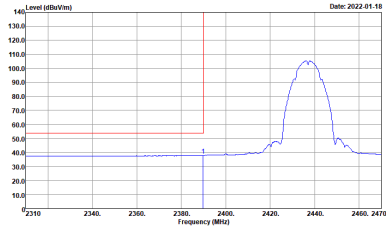
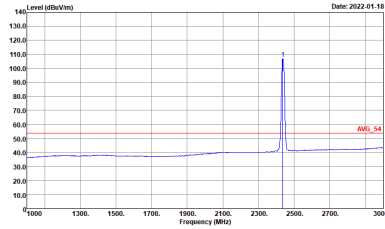
2.4GHz 2400~2483.5MHz  
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-HY Condition : PEAK_BE_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : PEAK_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-HY Condition : AVG_BE_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>	 <p>Site : 03CH20-HY Condition : AVG_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.010kHz SWT:Auto</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	<p>Site : 03CH20-1FV Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH20-1FV Condition : PEAK_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH20-1FV Condition : AVG_BE_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>	<p>Site : 03CH20-1FV Condition : AVG_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>

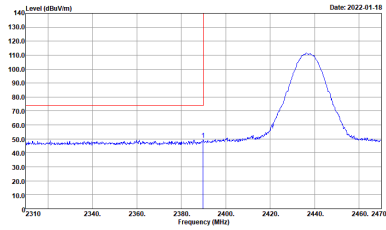
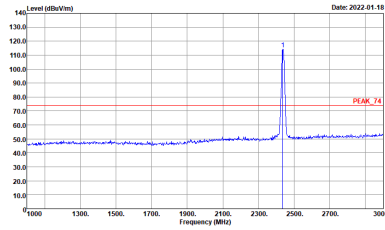
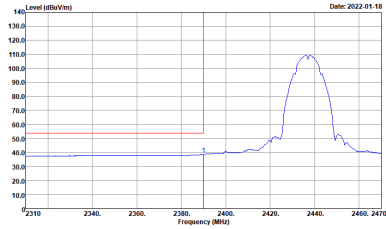
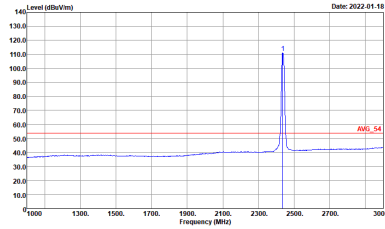


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-1FY Condition : PEAK_BE_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FY Condition : PEAK_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-1FY Condition : AVG_BE_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>	 <p>Site : 03CH20-1FY Condition : AVG_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>

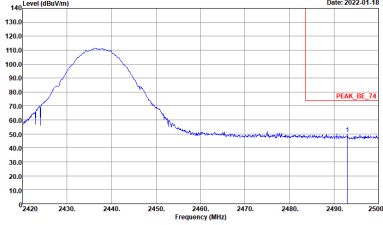
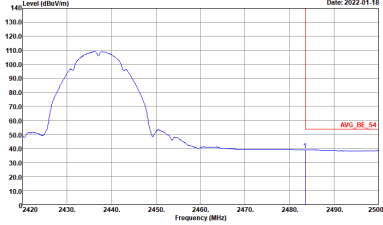


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	<p>Site : 03CH20-HY Condition : PEAK_BE_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH20-HY Condition : AVG_BE_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:10100Hz SWT:Auto</p>	Left blank

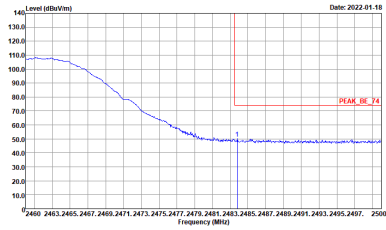
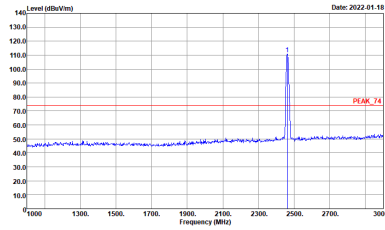
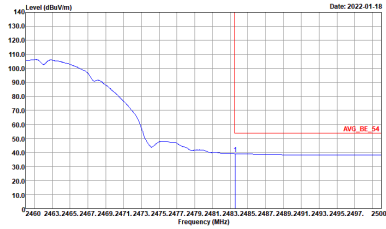
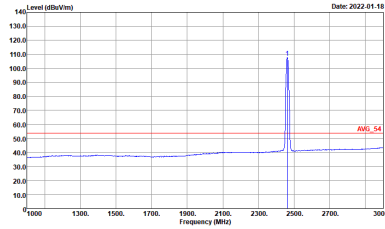


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH20-1FV Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : PEAK_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-1FV Condition : AVG_BE_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : AVG_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>



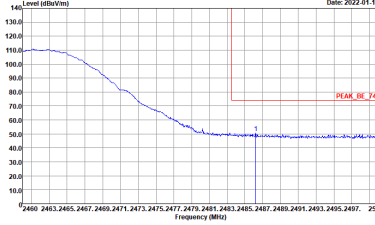
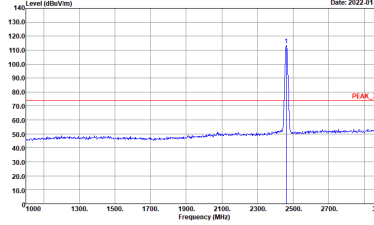
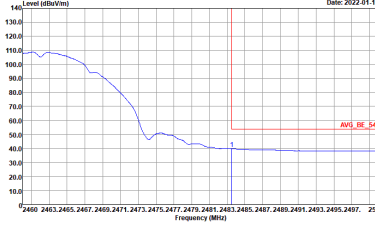
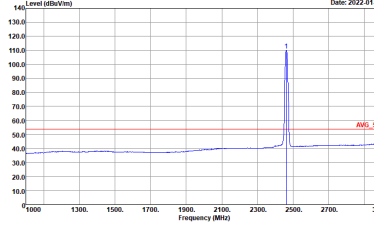
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH20-HY            Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL            : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH20-HY            Condition : AVG_BE_64 3m 91200_02294_1110622 VERTICAL            : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH20-1FV Condition : PEAK_BE_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : PEAK_74 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-1FV Condition : AVG_BE_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : AVG_54 3m 91200_02294_1110622 HORIZONTAL : RBW:1000.000kHz VBW:0.0100kHz SWT:Auto</p>





WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH20-1FV Condition : PEAK_BE_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : PEAK_74 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH20-1FV Condition : AVG_BE_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:10100kHz SWT:Auto</p>	 <p>Site : 03CH20-1FV Condition : AVG_54 3m 91200_02294_1110622 VERTICAL : RBW:1000.000kHz VBW:10100kHz SWT:Auto</p>