

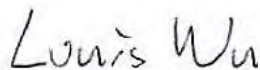


FCC RADIO TEST REPORT

FCC ID : APYHRO00297
Equipment : Mobile Router
Brand Name : Sharp Mobile Router
Applicant : SHARP CORPORATION
1 Takumi-cho, Sakai-ku, Sakai City, Osaka
590-8522, Japan
Manufacturer : SHARP CORPORATION
1 Takumi-cho, Sakai-ku, Sakai City, Osaka
590-8522, Japan
Standard : FCC Part 15 Subpart C §15.247

The product was received on May 14, 2021 and testing was started from May 24, 2021 and completed on Jun. 03, 2021. We, Sporton International Inc. EMC & Wireless Communications 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 of Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FR151401	01	Initial issue of report	Jun. 28, 2021

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	Under limit 5.97 dB at 2483.520 MHz
3.6	15.207	AC Conducted Emission	Pass	Under limit 14.32 dB at 0.503 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Avis Chuang

Report Producer: Tina Chuang

1 General Description

1.1 Product Feature of Equipment Under Test

WCDMA/LTE and Wi-Fi 2.4GHz 802.11b/g/n/ac/ax.

Product Specification subjective to this standard		
Sample 1	Non-Shielding	
Sample 2	Shielding	
Antenna Type	WWAN: PIFA Antenna WLAN <Ant. 1>: PIFA Antenna <Ant. 2>: PIFA Antenna	

Antenna information		
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	Ant. 1: 2.21 Ant. 2: 1.39

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

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. TH02-HY, CO05-HY

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH20-HY (TAF Code: 3786)
Remark	The Radiated Spurious Emissions test item subcontracted to Sporton International Inc. Wensan Laboratory.

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

FCC designation No.: TW1190 and TW3786

1.4 Applicable Standards

According to the specifications of 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 test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Z plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

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

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

Final test modes are considering the modulation and worse data rates as below table.

MIMO Antenna

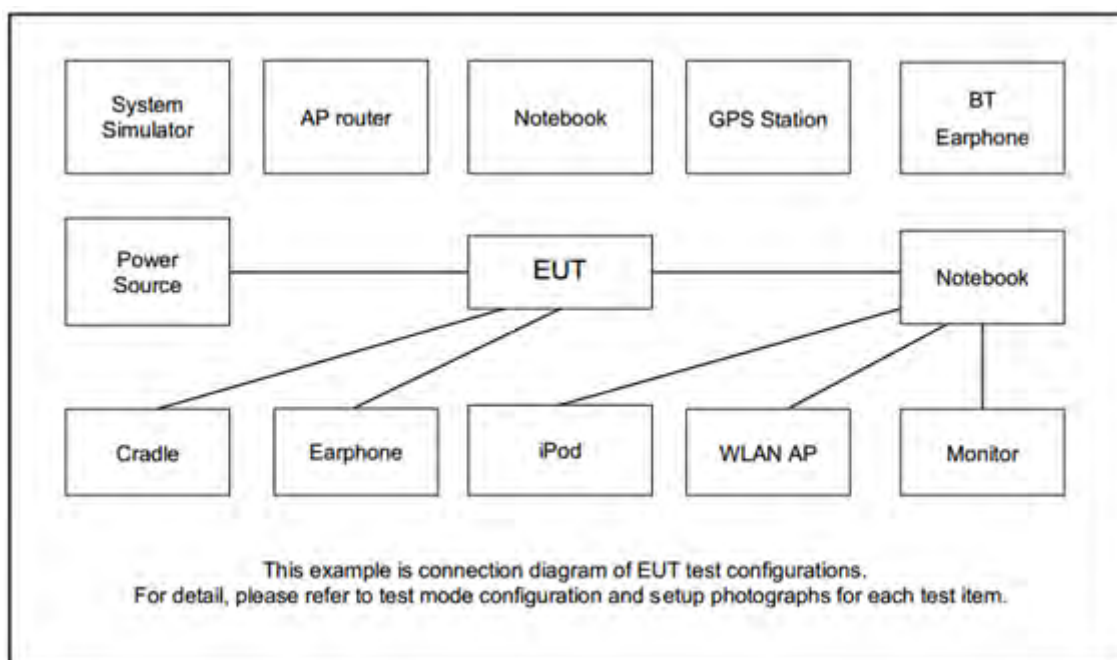
Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20 (Covered by HE20)	MCS0
802.11n HT40(Covered by HE40)	MCS0
802.11ac VHT20 (Covered by HE20)	MCS0
802.11ac VHT40 (Covered by HE40)	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WCDMA Band V Idle + WLAN (2.4GHz) Link + AC Adapter for Sample 1 Mode 2 : WCDMA Band V Idle + WLAN (2.4GHz) Link + AC Adapter for 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

Remark: For radiation spurious emission, the final modulation and the worst data rate was reference 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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Notebook	DELL	Latitude 5310	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m



2.5 EUT Operation Test Setup

The RF test items, utility “QCRT 4.0.00185.0” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

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

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.

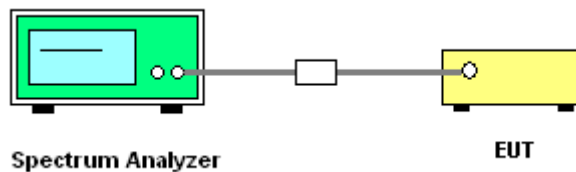
3.1.2 Measuring Instruments

See list of measuring equipment of 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 was connected to the spectrum analyzer by RF cable and attenuator. The path loss was 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.

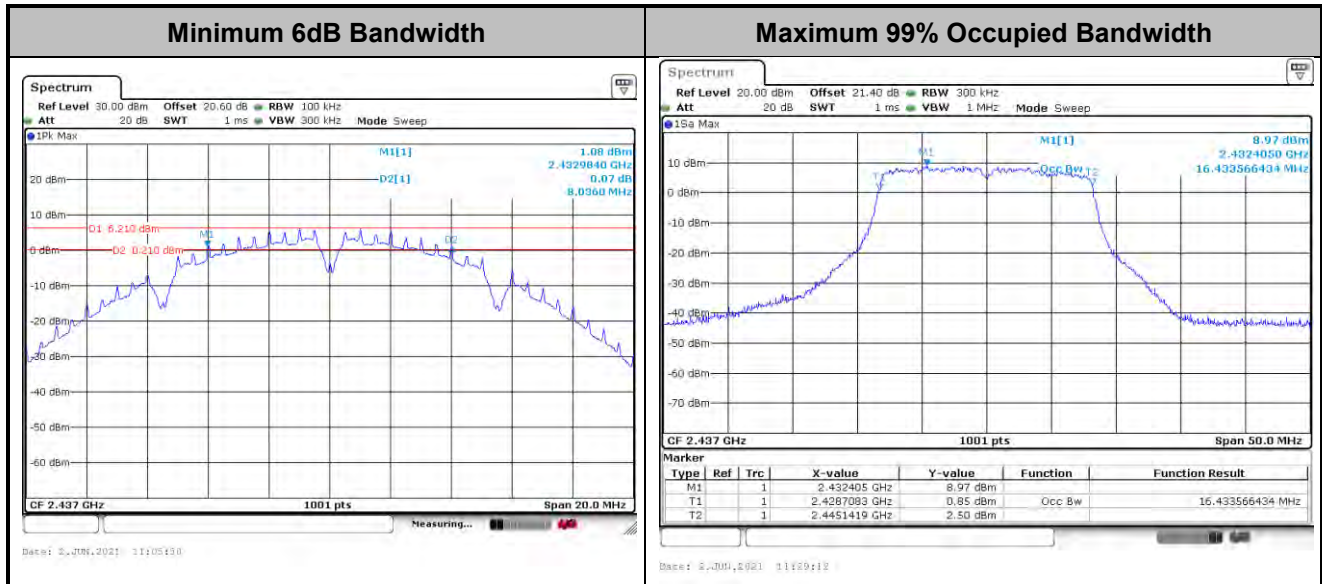
3.1.4 Test Setup





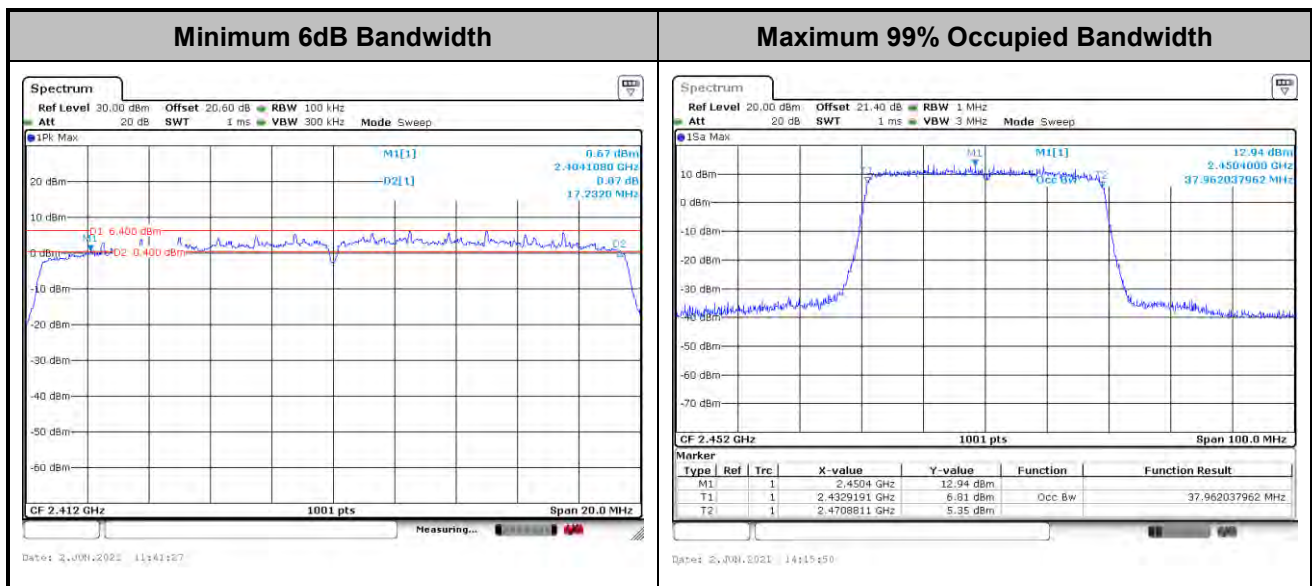
3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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

<For 802.11ax Mode>



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.

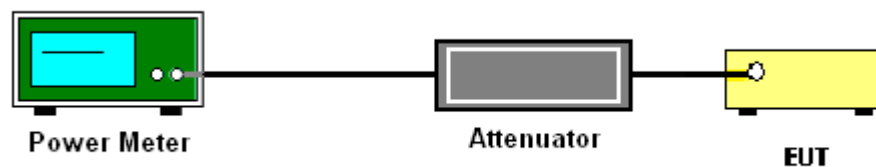
3.2.2 Measuring Instruments

See list of measuring equipment of 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 was connected to the power meter by RF cable and attenuator. The path loss was 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

See list of measuring equipment of 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 was connected to the spectrum analyzer by RF cable and attenuator. The path loss was 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.

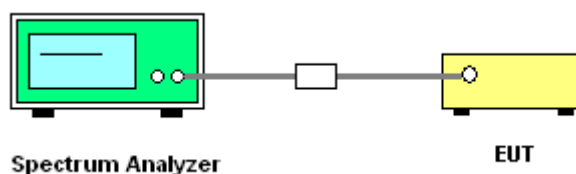
If measurements performed using method (2) plus $10 \log(N)$ exceeds the emission limit, the test should choose method (1) before declaring that the device fails the emission limit.

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.

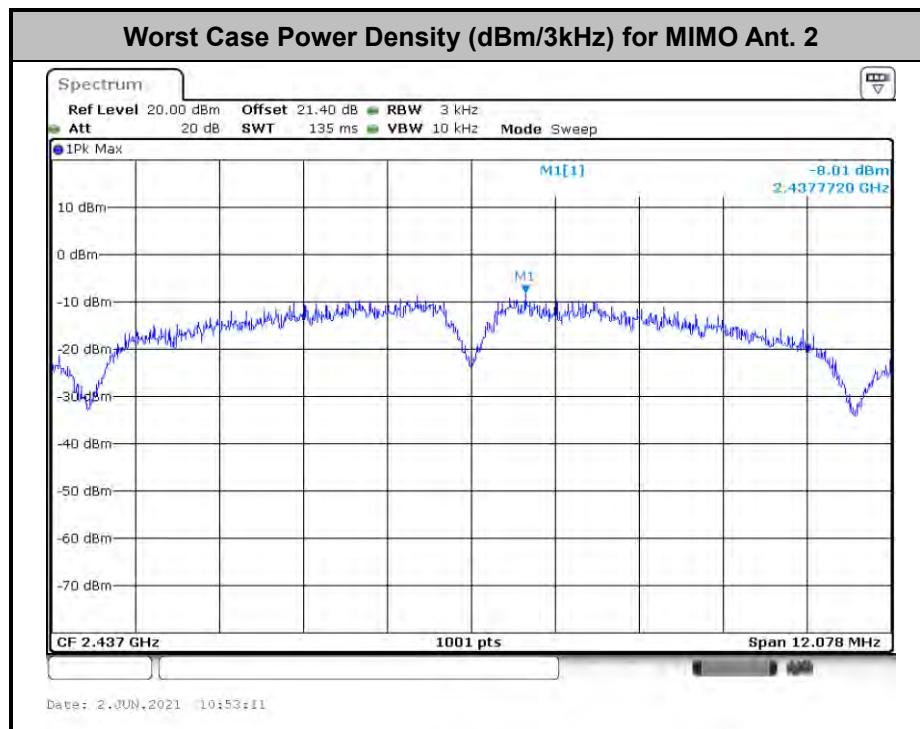
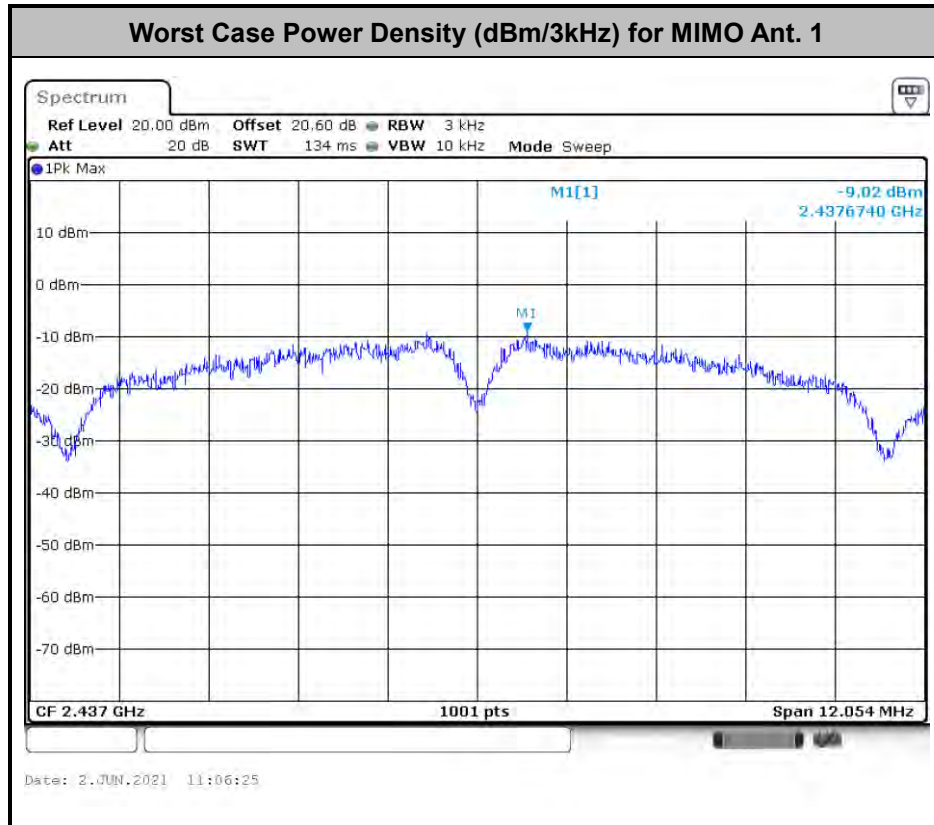
Method (2): Measure and add $10 \log(N)$ dB, where N is the number of outputs. (N=2)

3.3.4 Test Setup

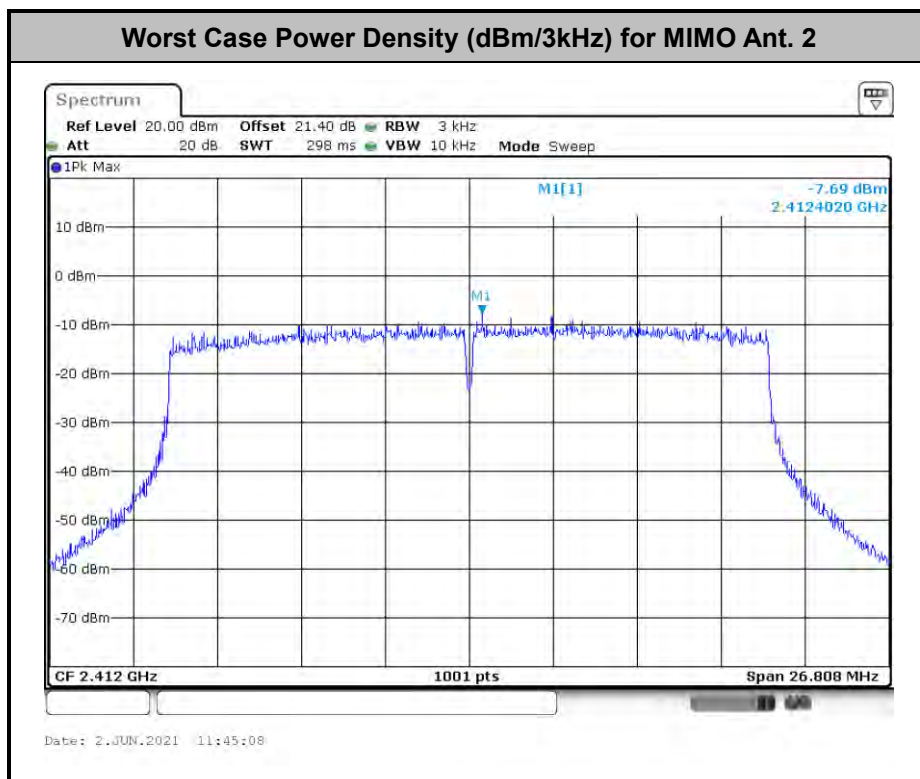
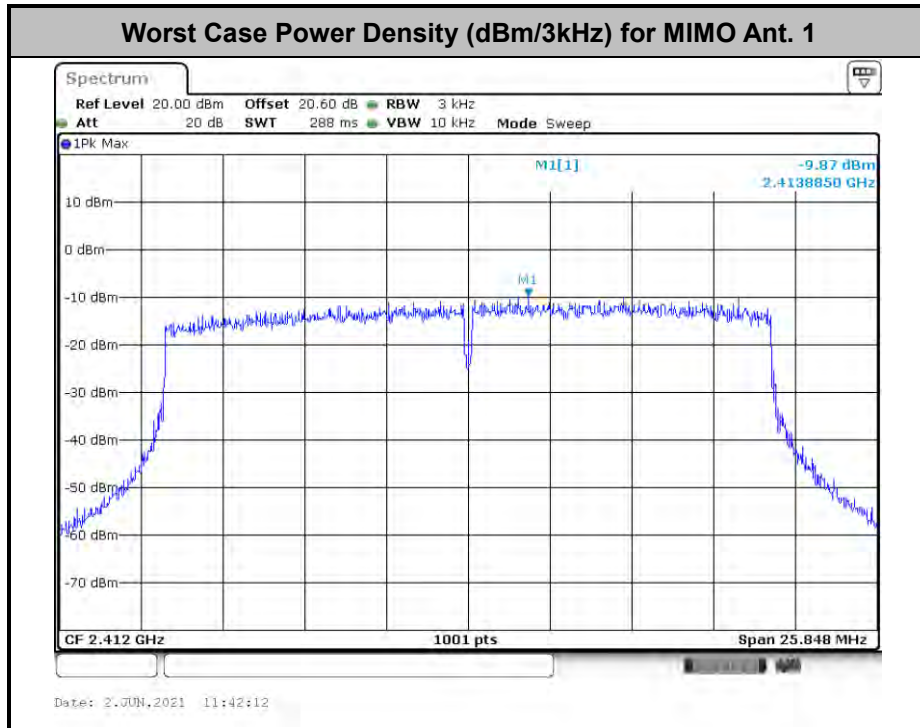


3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



<For 802.11ax Mode>



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.

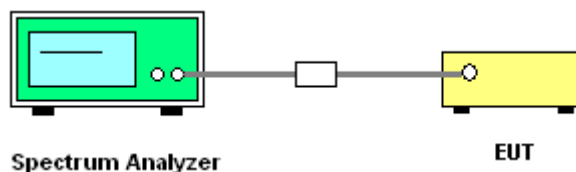
3.4.2 Measuring Instruments

See list of measuring equipment of 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 was connected to the spectrum analyzer by RF cable and attenuator. The path loss was 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



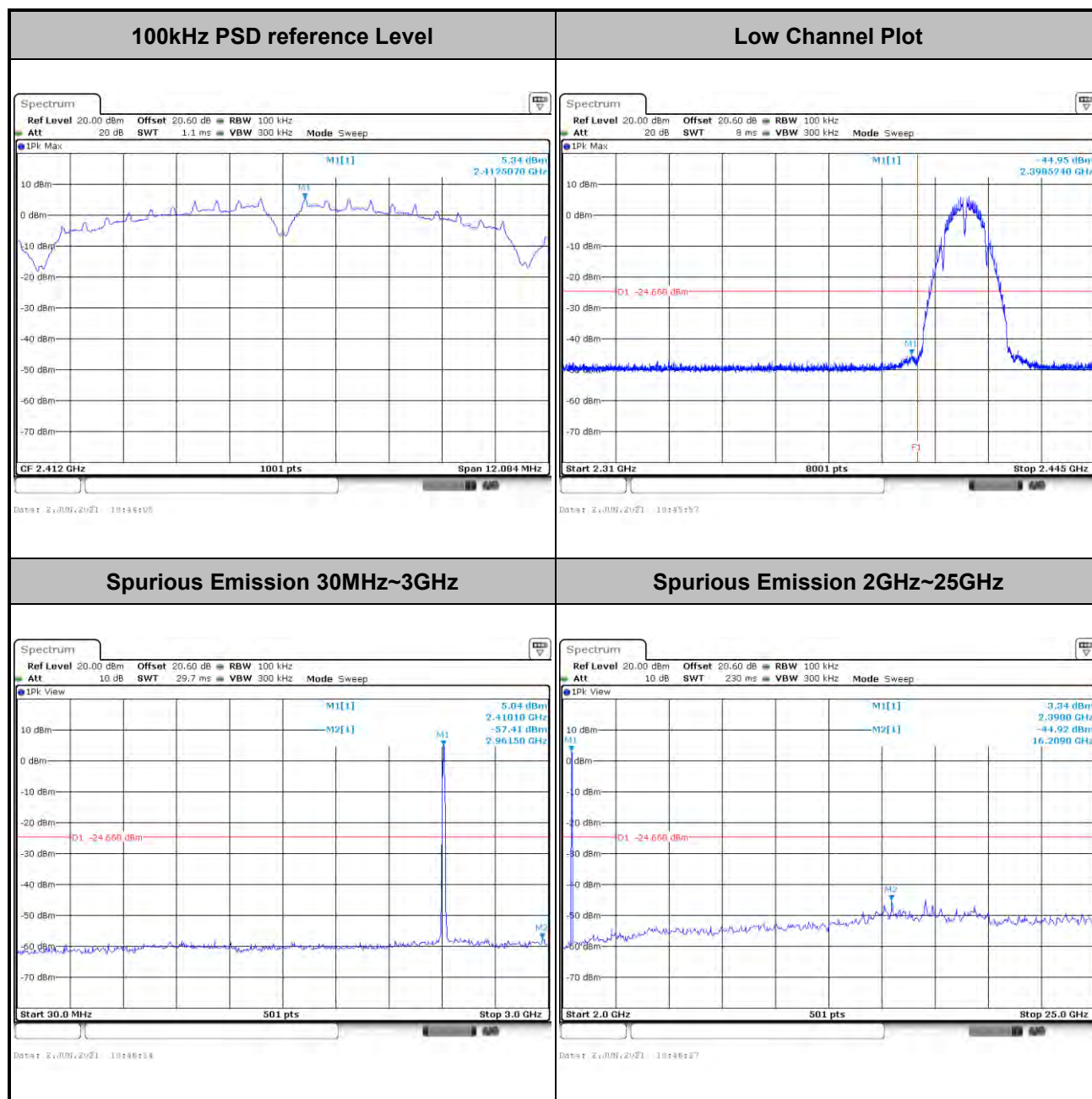


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Richard Qiu	Temperature :	21.3~24.5°C
		Relative Humidity :	49.6~55.5%

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

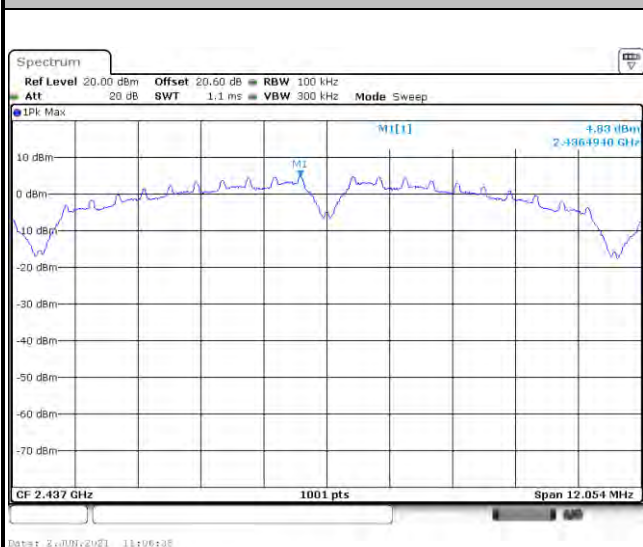
Test Mode :	802.11b	Test Channel :	01
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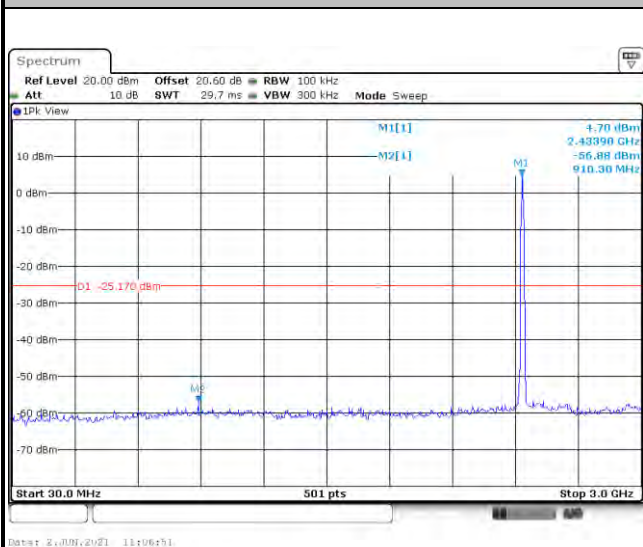
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100kHz PSD reference Level

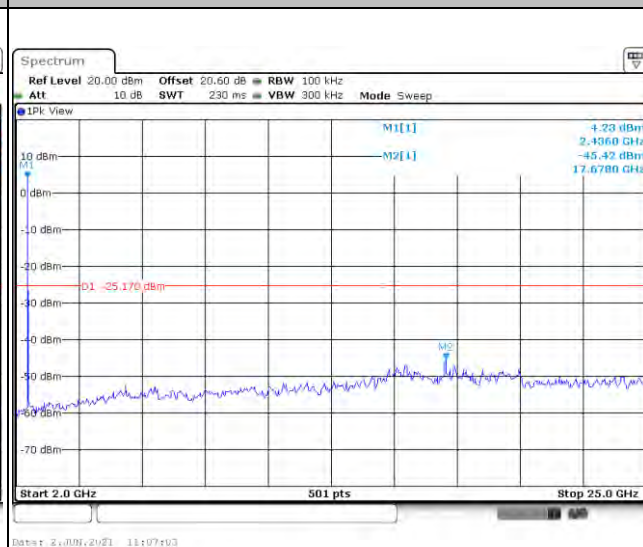


Mid Channel Plot

Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

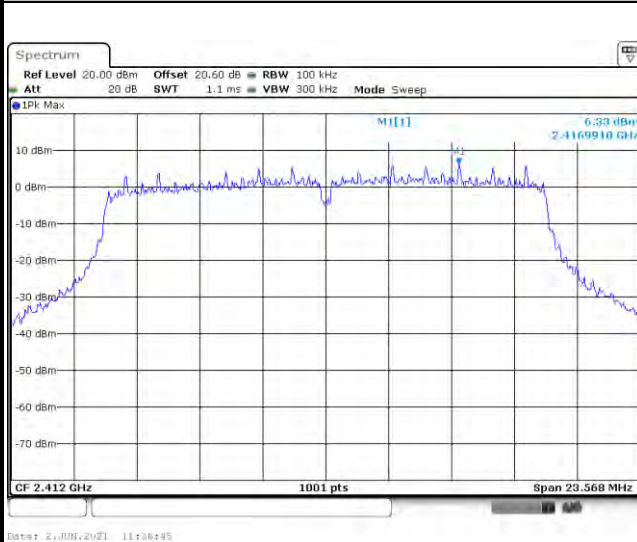




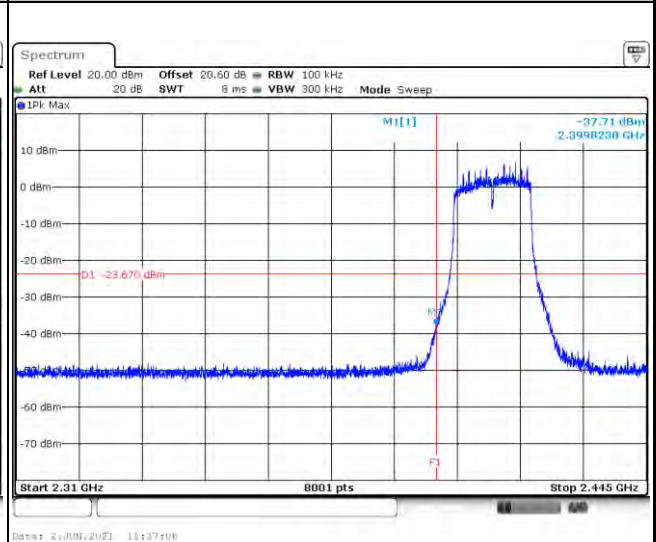


Test Mode :	802.11g	Test Channel :	01
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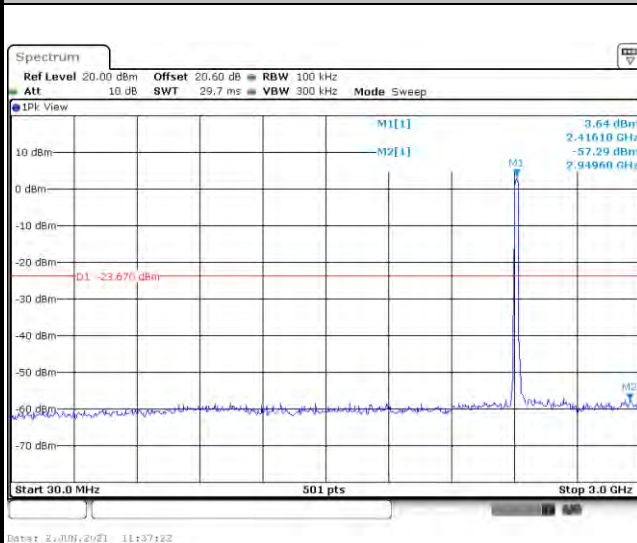
100kHz PSD reference Level



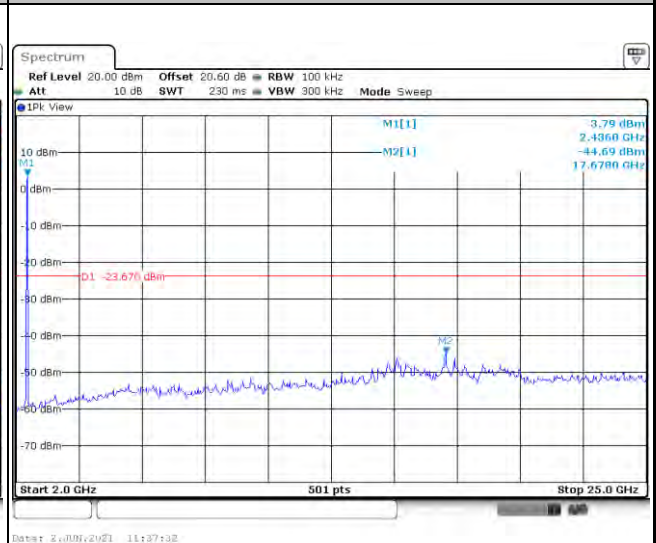
Low Channel Plot



Spurious Emission 30MHz~3GHz



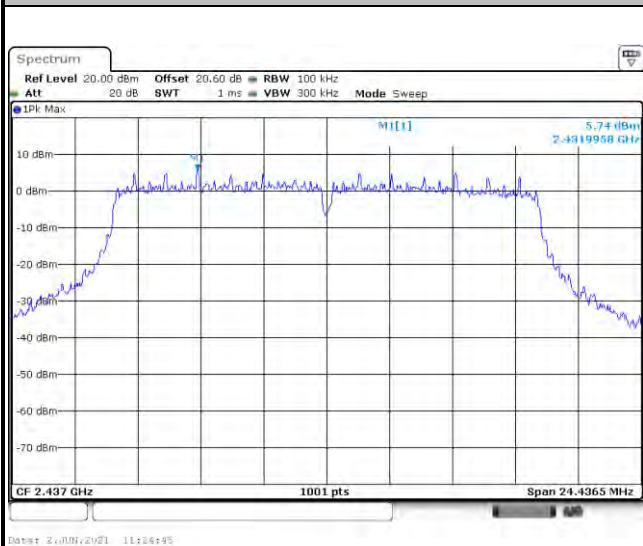
Spurious Emission 2GHz~25GHz





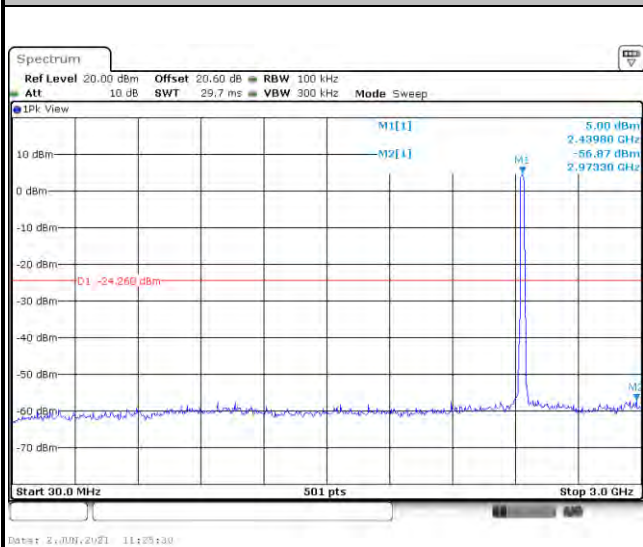
Test Mode :	802.11g	Test Channel :	06
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100kHz PSD reference Level

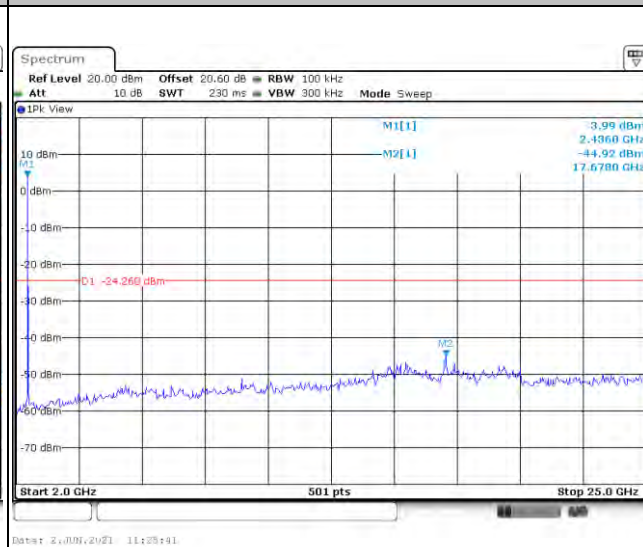


Mid Channel Plot

Spurious Emission 30MHz~3GHz



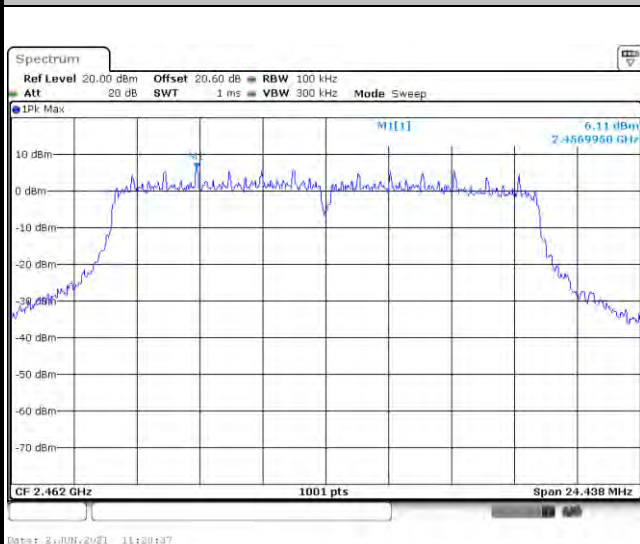
Spurious Emission 2GHz~25GHz



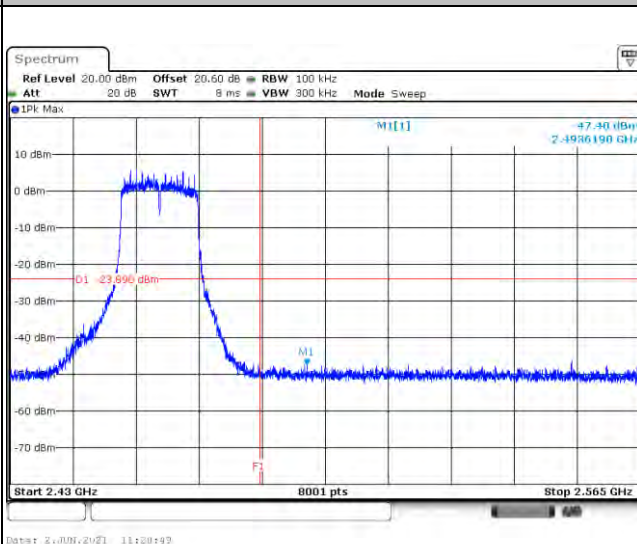


Test Mode :	802.11g	Test Channel :	11
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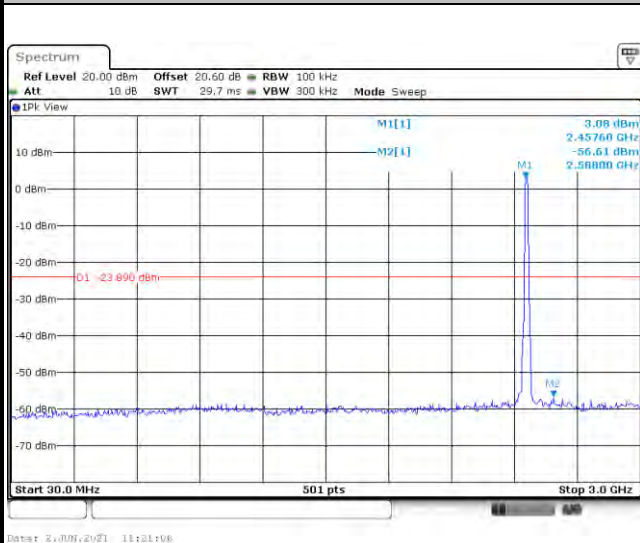
100kHz PSD reference Level



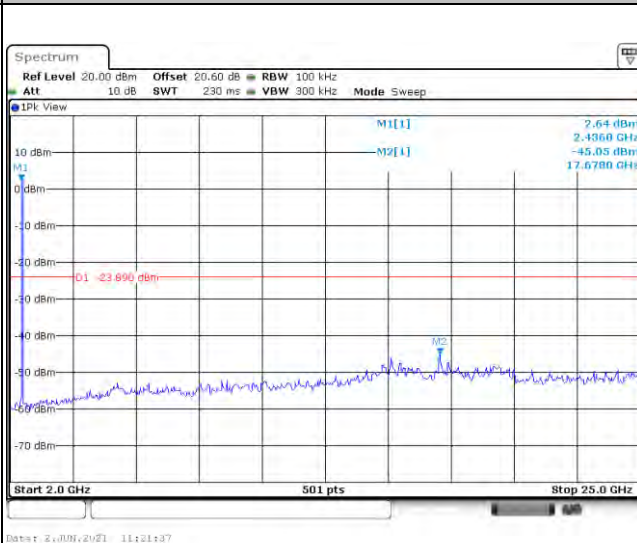
High Channel Plot



Spurious Emission 30MHz~3GHz



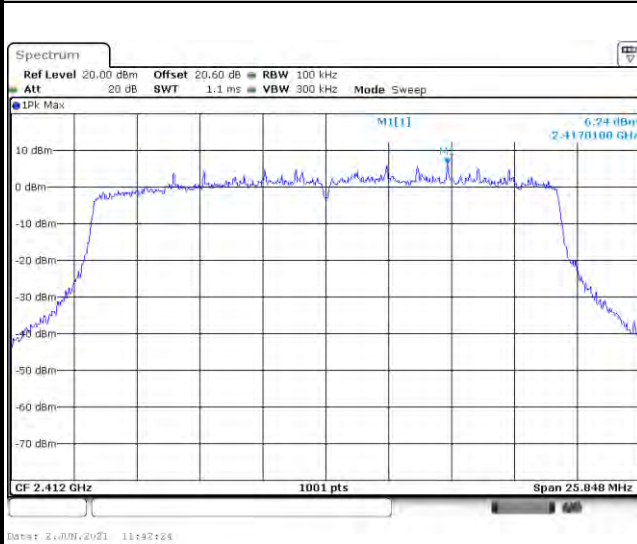
Spurious Emission 2GHz~25GHz



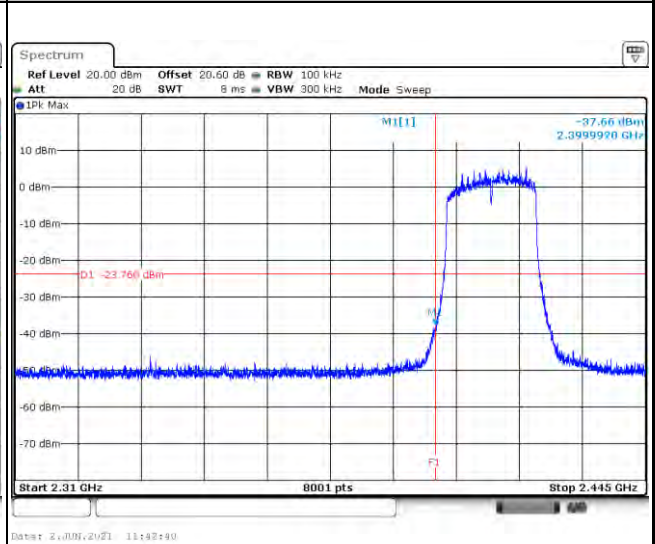


Test Mode :	802.11ax HE20	Test Channel :	01 Full RU
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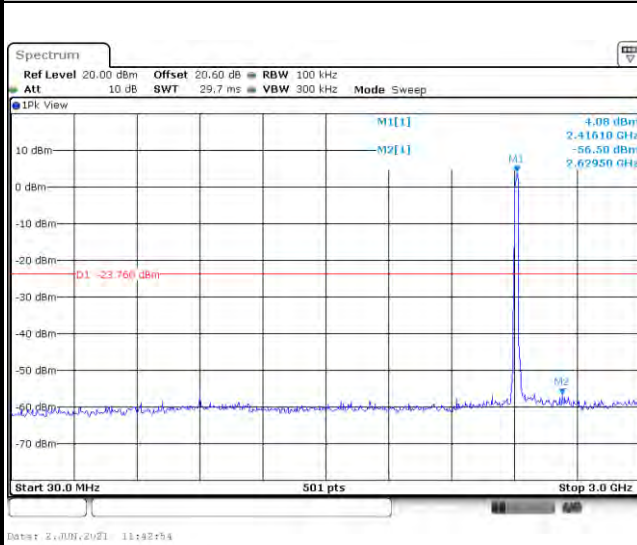
100kHz PSD reference Level



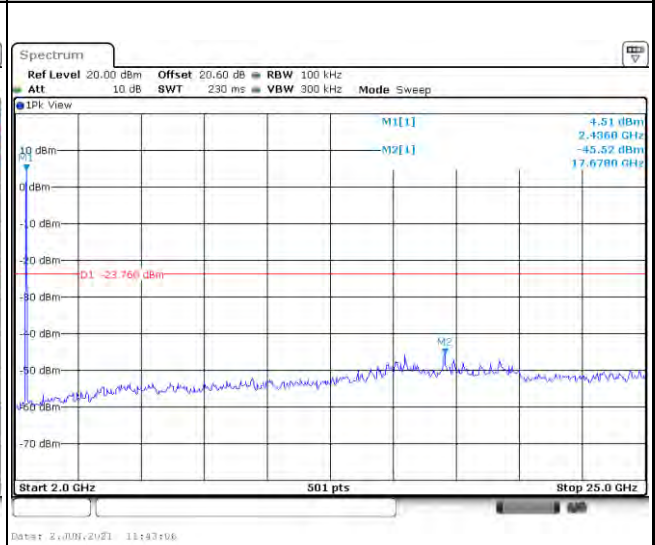
Low Channel Plot

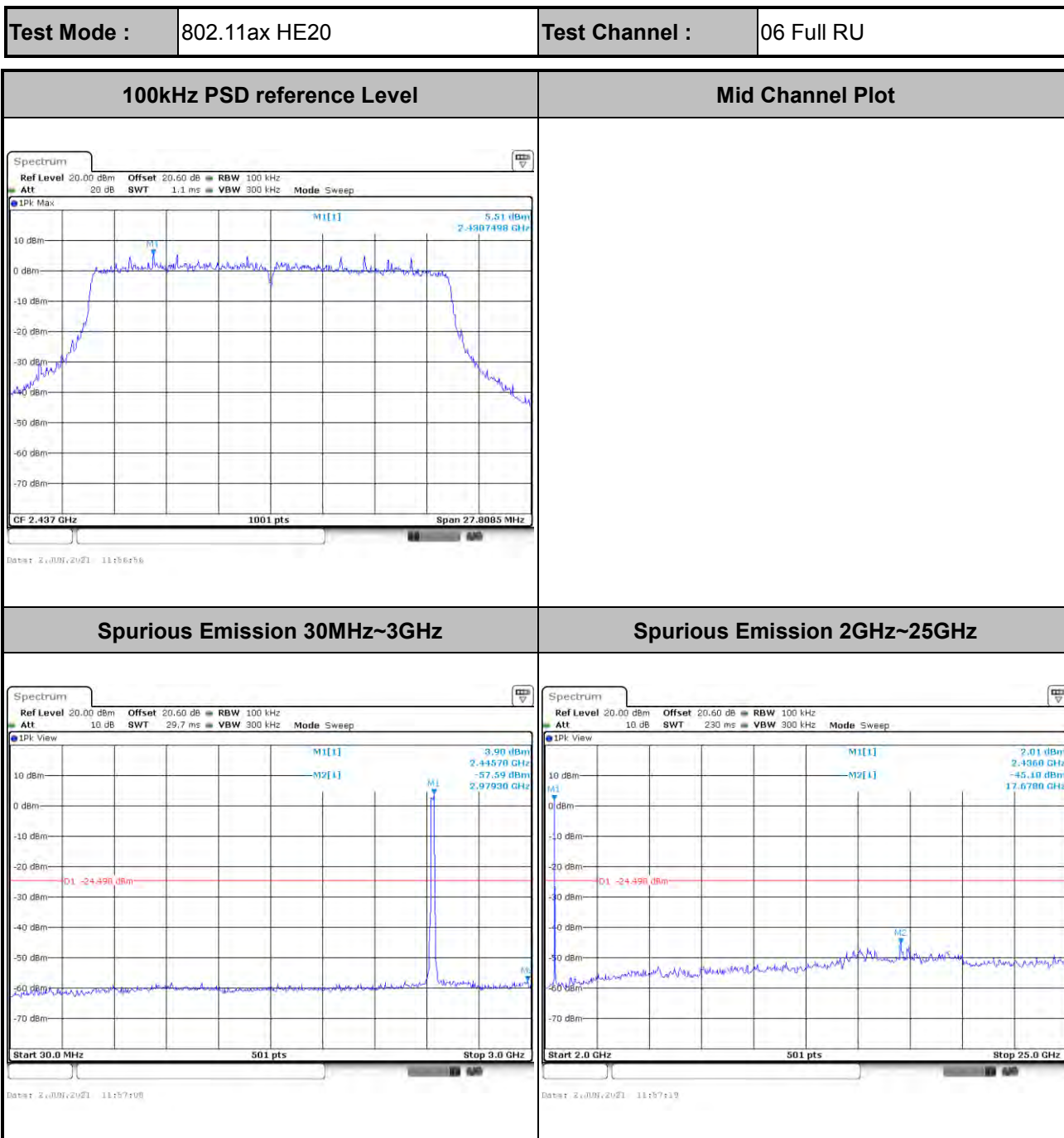


Spurious Emission 30MHz~3GHz



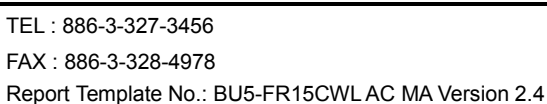
Spurious Emission 2GHz~25GHz







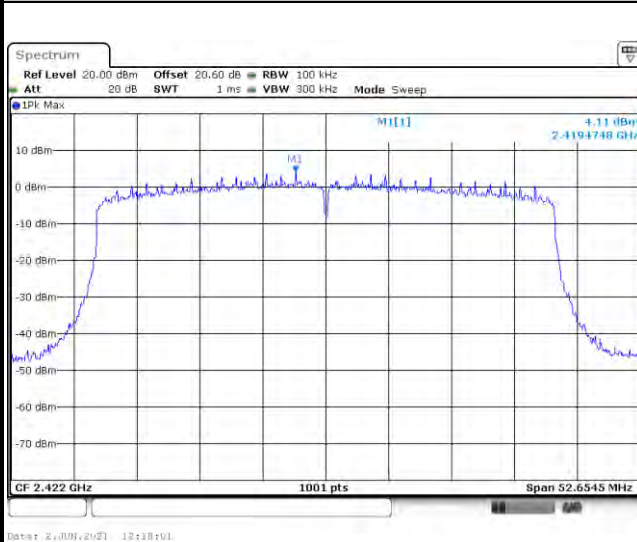
Test Mode :	802.11ax HE20	Test Channel :	11 Full RU
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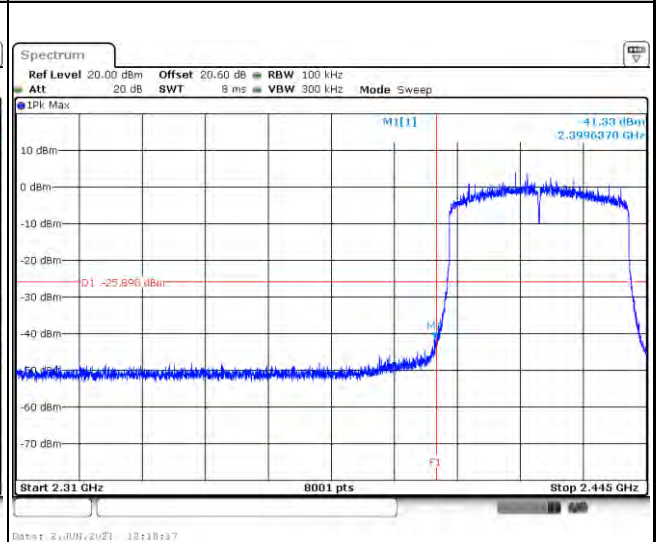


Test Mode :	802.11ax HE40	Test Channel :	03 Full RU
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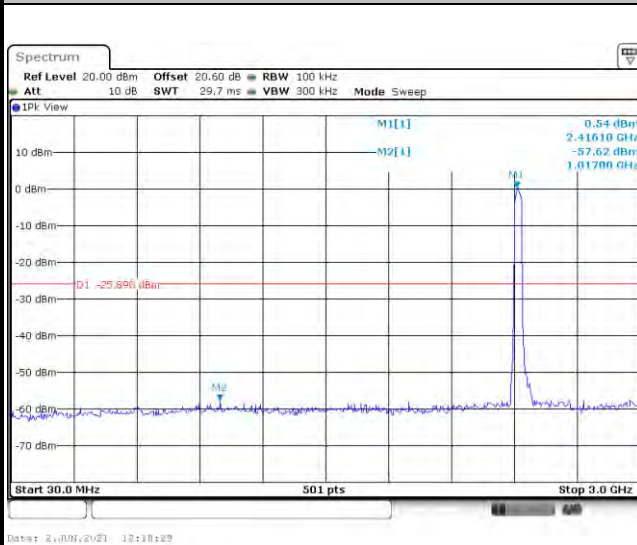
100kHz PSD reference Level



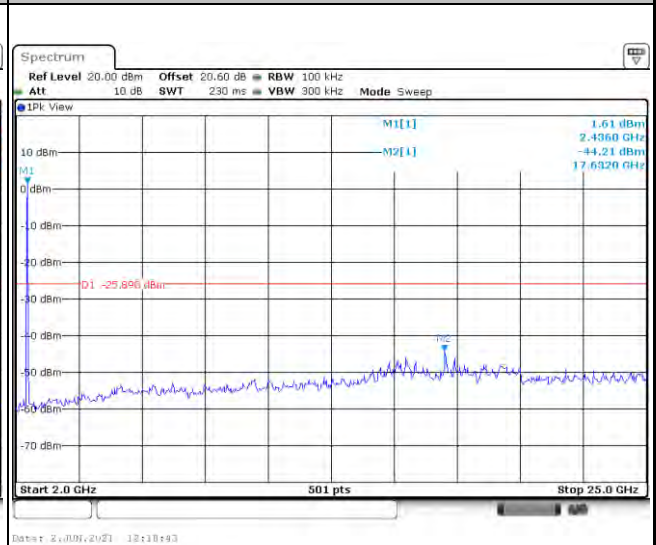
Low Channel Plot

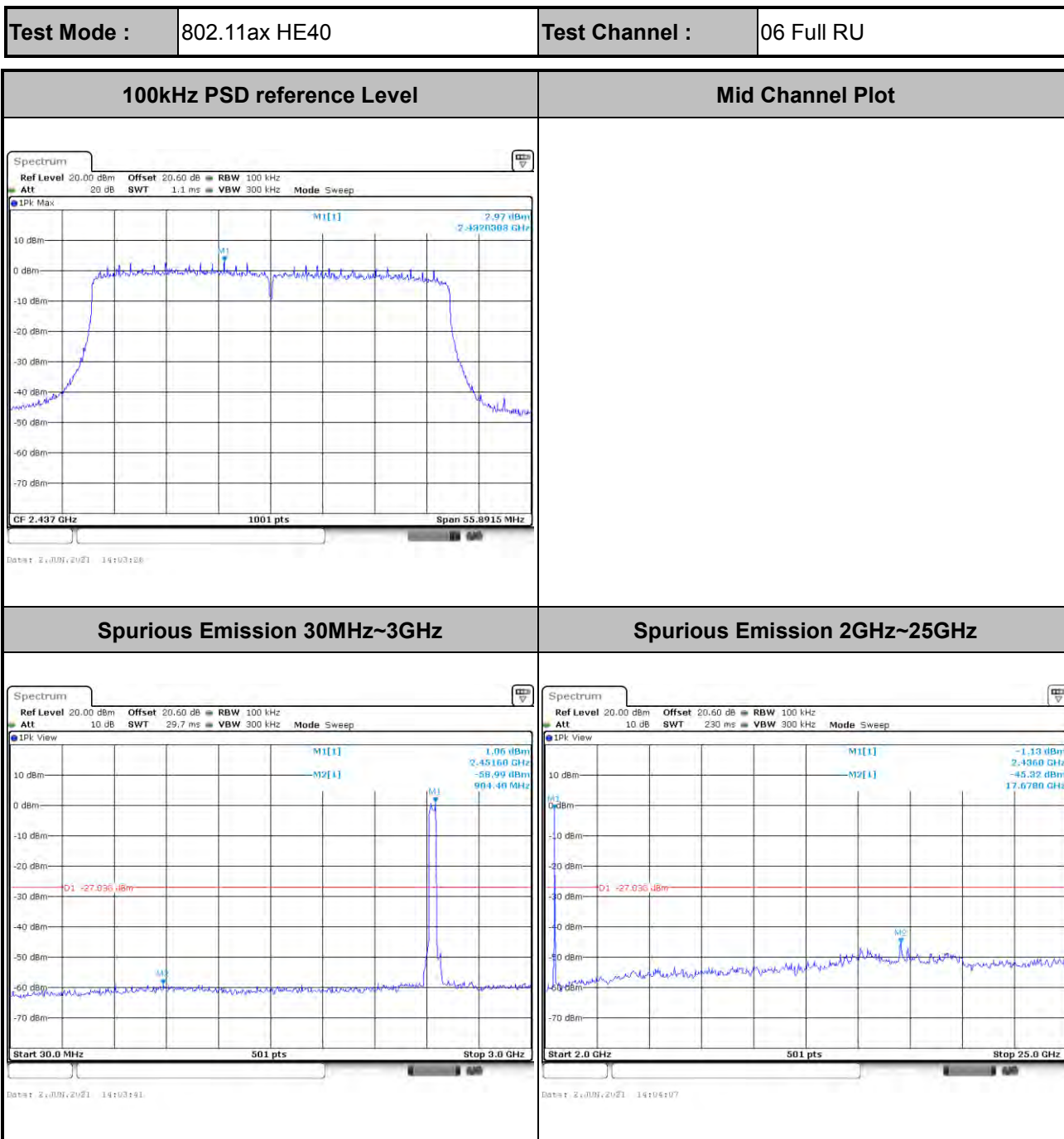


Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz

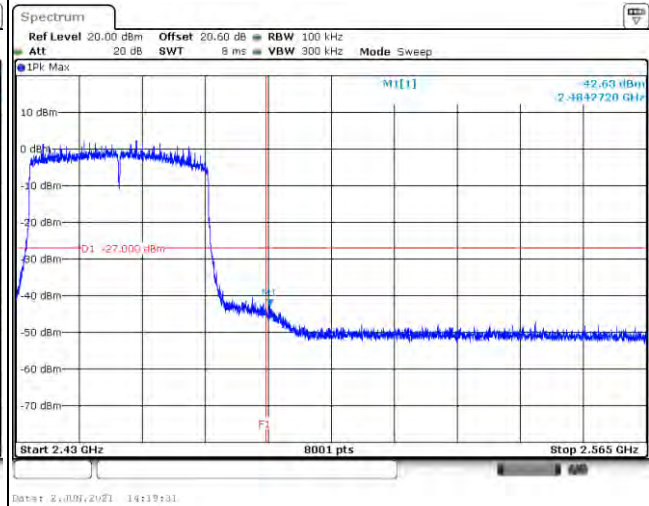




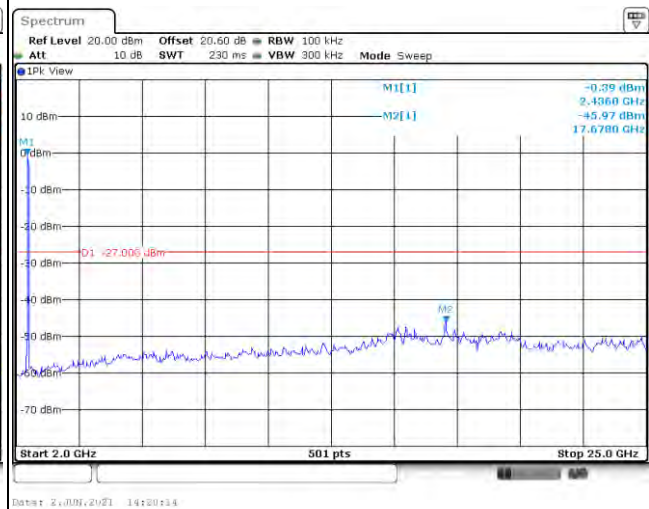


Test Mode :	802.11ax HE40	Test Channel :	09 Full RU
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High Channel Plot



Spurious Emission 2GHz~25GHz

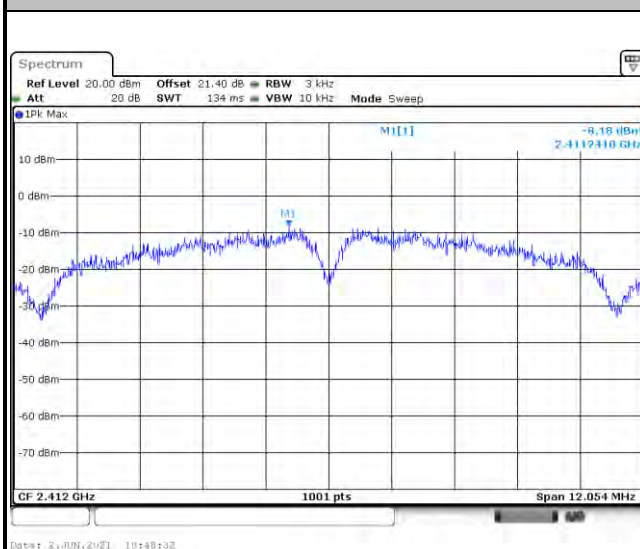




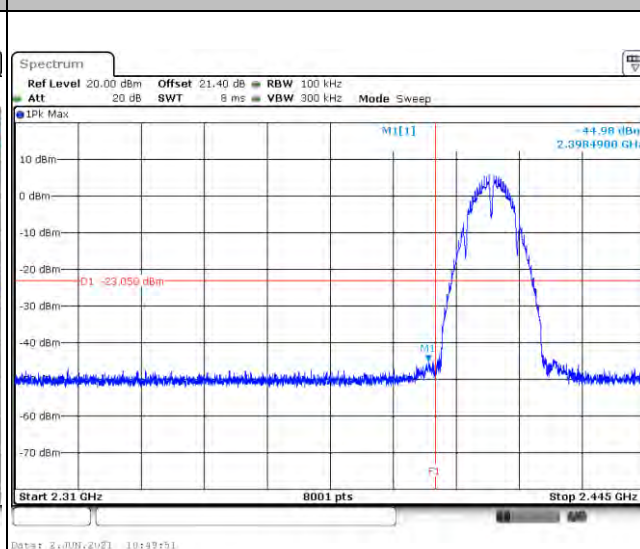
Number of TX = 2, Ant. 2 (Measured)

Test Mode :	802.11b	Test Channel :	01
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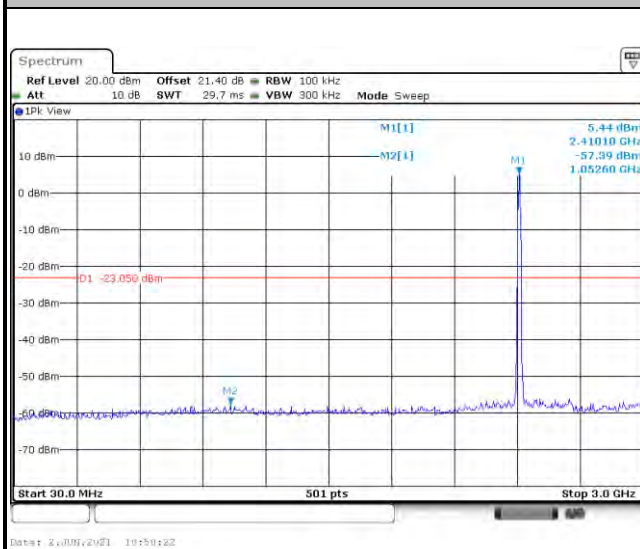
100kHz PSD reference Level



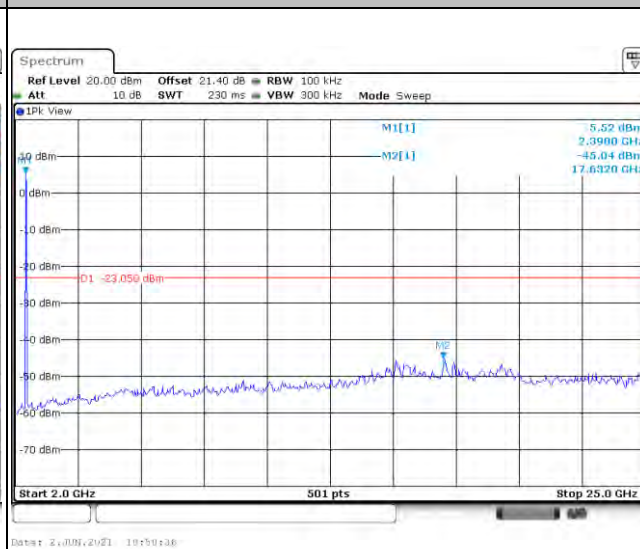
Low Channel Plot



Spurious Emission 30MHz~3GHz



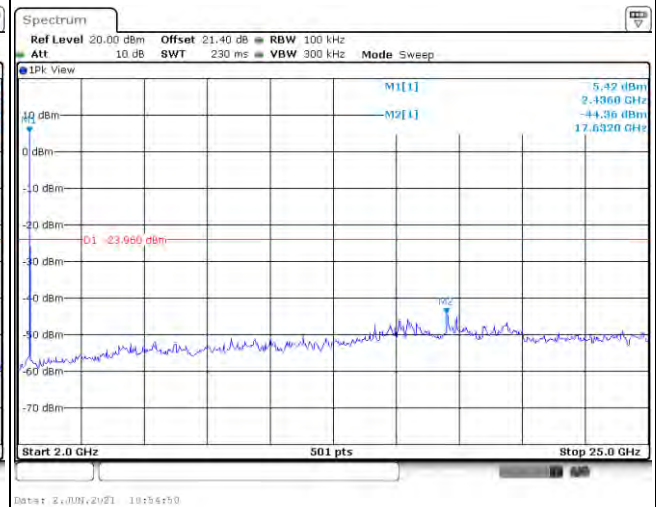
Spurious Emission 2GHz~25GHz





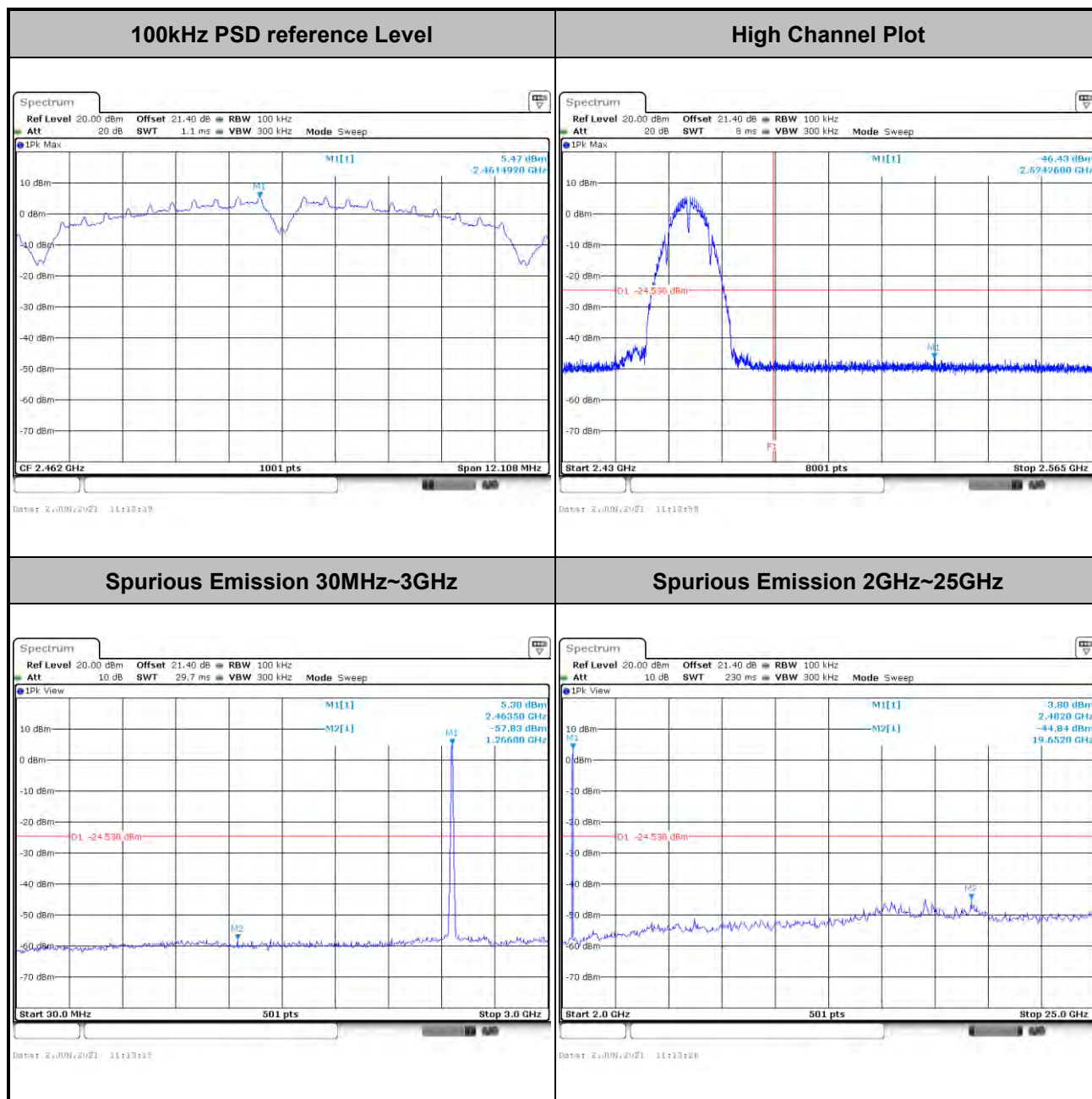
Mid Channel Plot

Spurious Emission 2GHz~25GHz





Test Mode :	802.11b	Test Channel :	11
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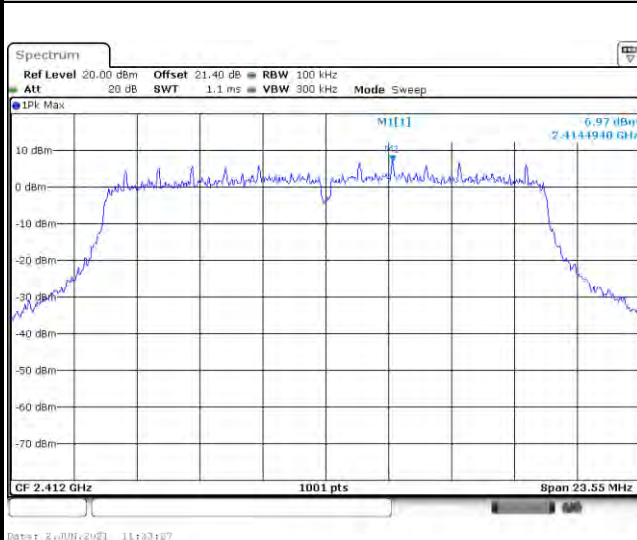




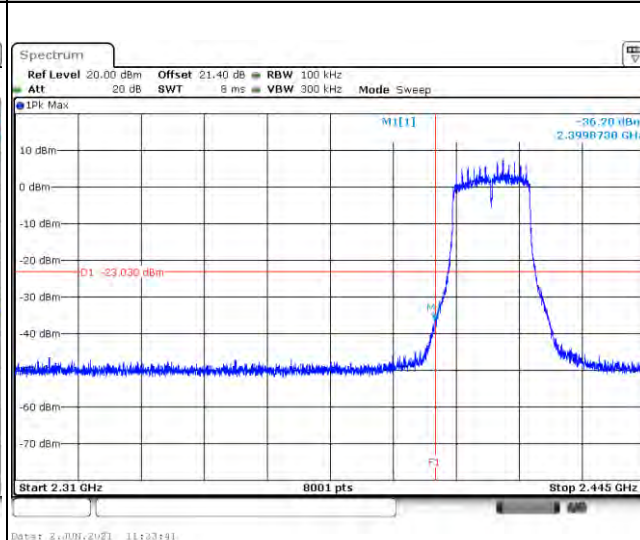
Test Mode : 802.11g

Test Channel : 01

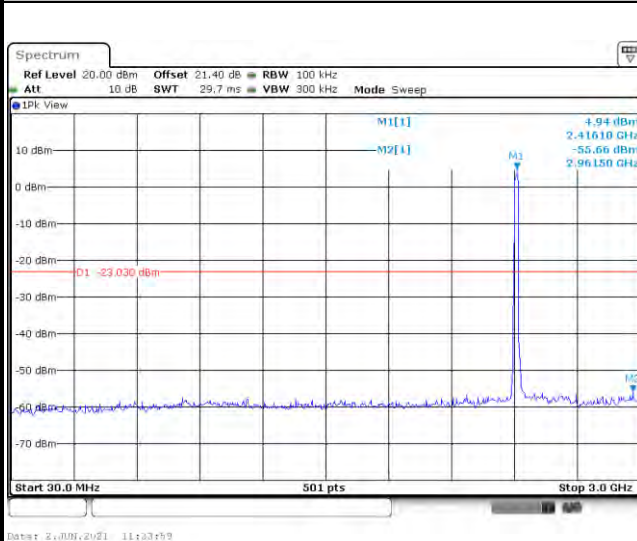
100kHz PSD reference Level



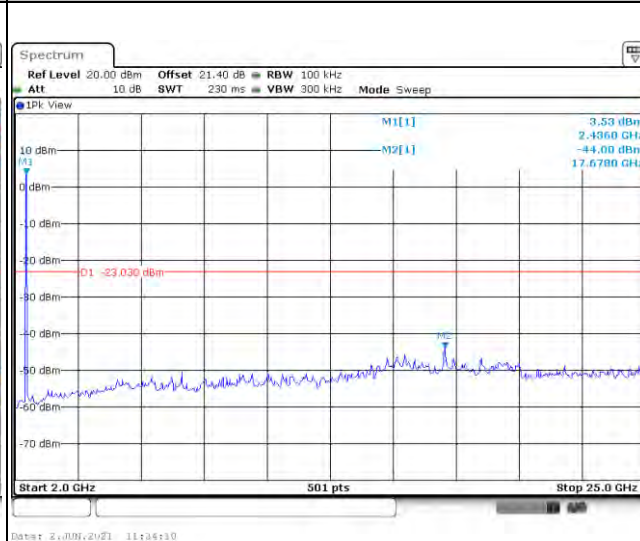
Low Channel Plot



Spurious Emission 30MHz~3GHz



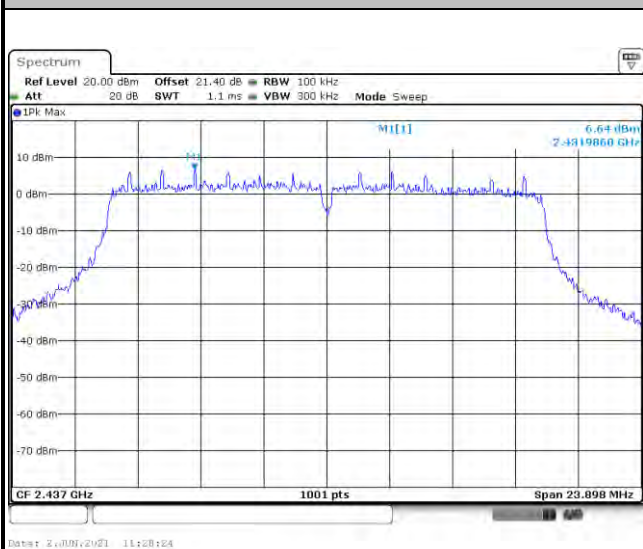
Spurious Emission 2GHz~25GHz





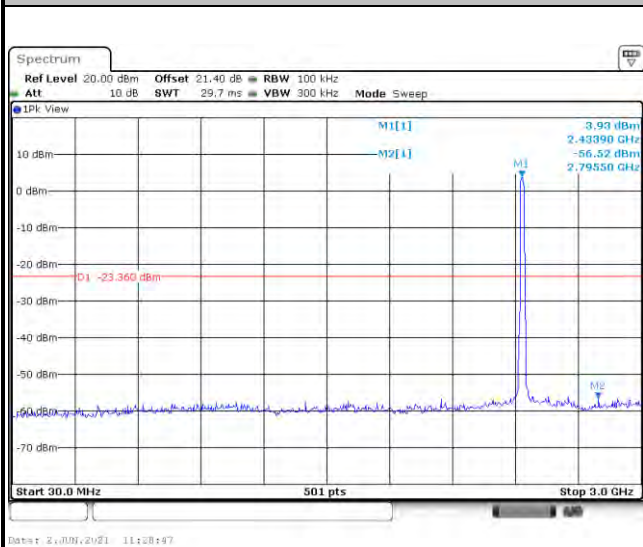
Test Mode :	802.11g	Test Channel :	06
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100kHz PSD reference Level

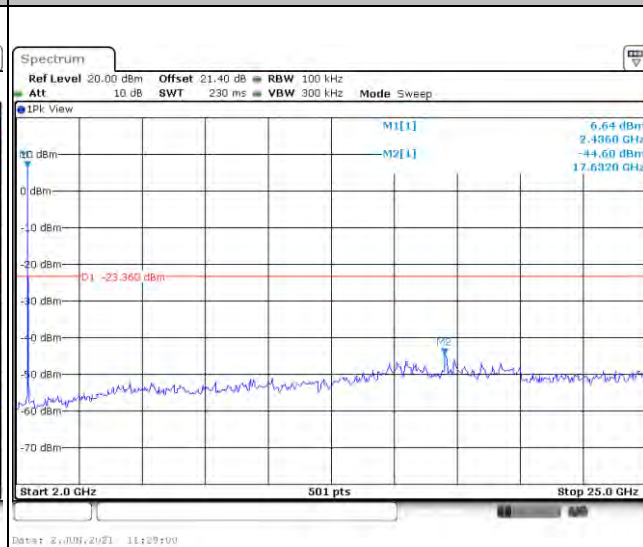


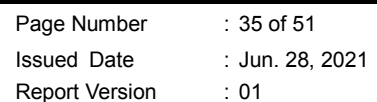
Mid Channel Plot

Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz



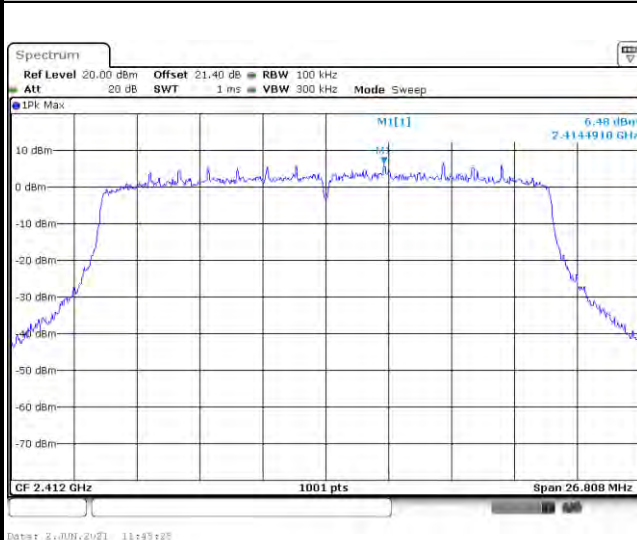




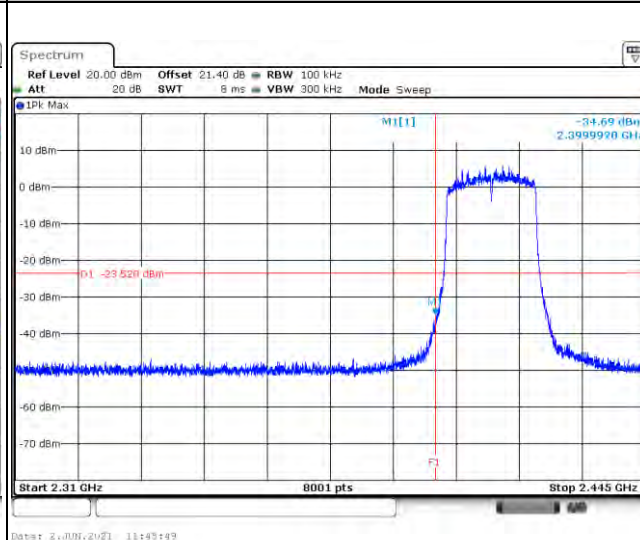
Test Mode : 802.11ax HE20

Test Channel : 01 Full RU

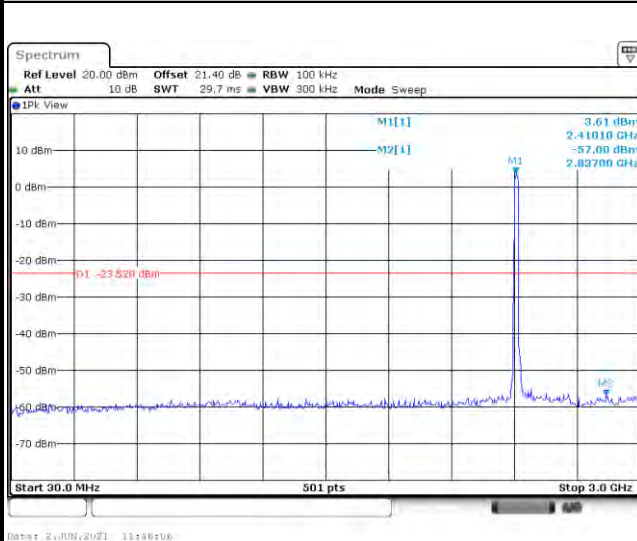
100kHz PSD reference Level



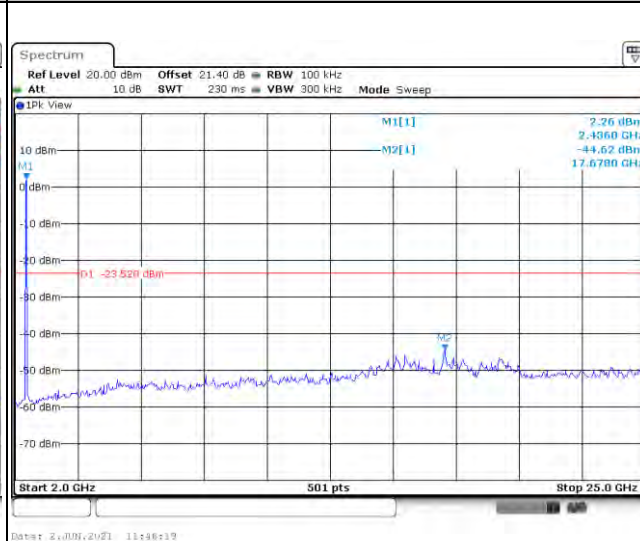
Low Channel Plot



Spurious Emission 30MHz~3GHz

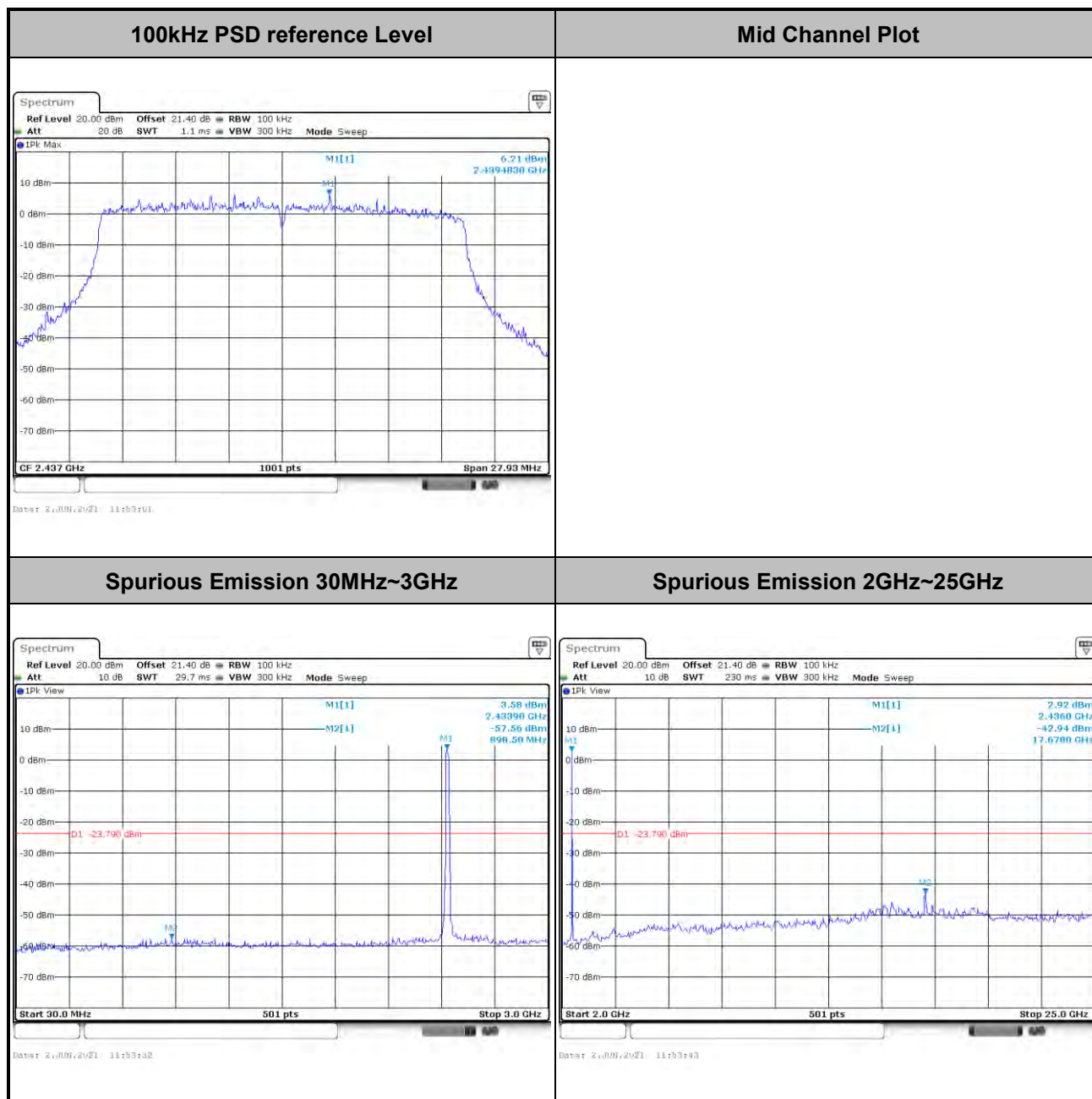


Spurious Emission 2GHz~25GHz





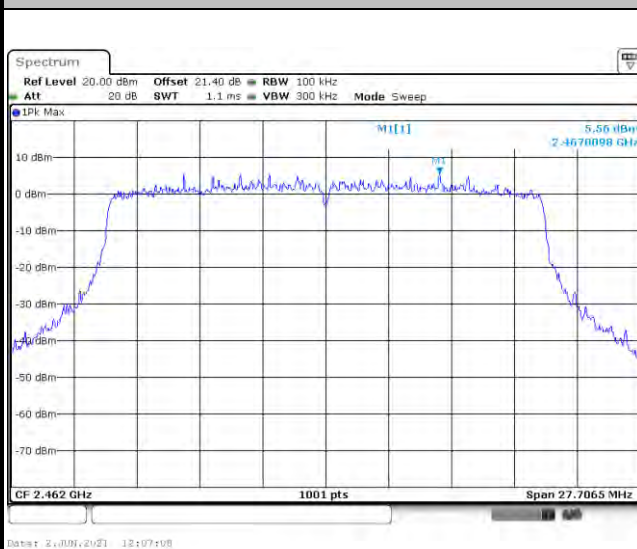
Test Mode :	802.11ax HE20	Test Channel :	06 Full RU
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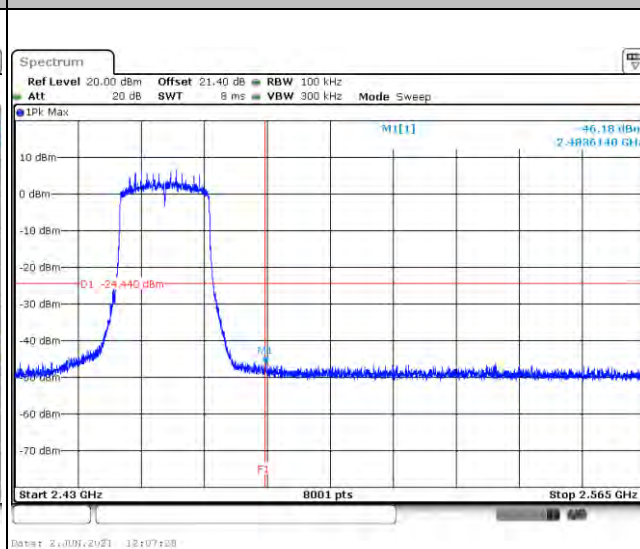


Test Mode :	802.11ax HE20	Test Channel :	11 Full RU
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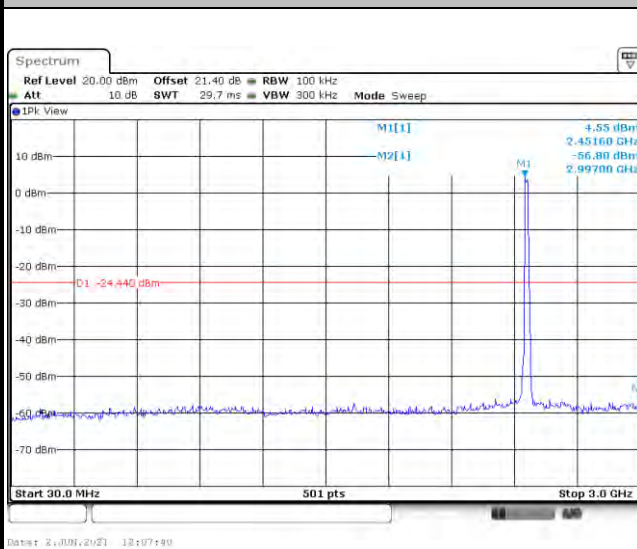
100kHz PSD reference Level



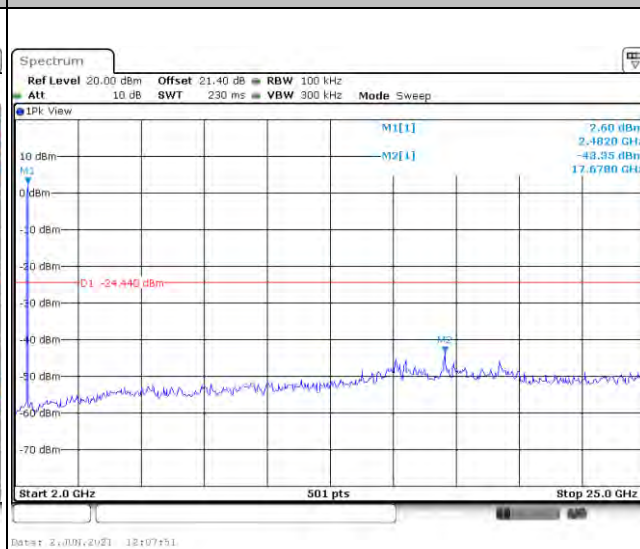
High Channel Plot



Spurious Emission 30MHz~3GHz



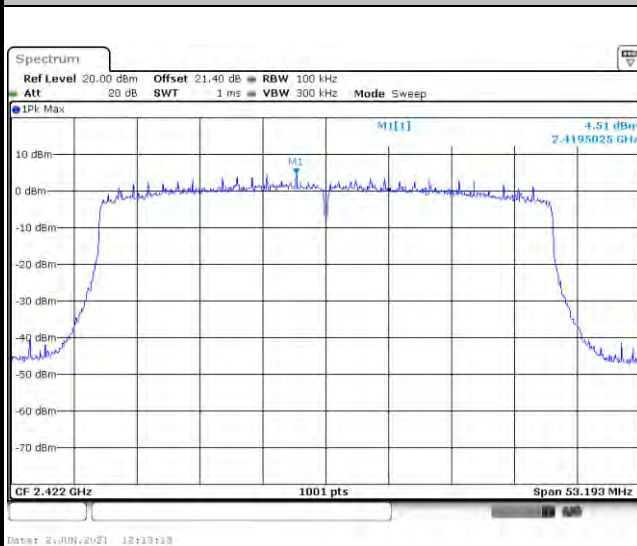
Spurious Emission 2GHz~25GHz



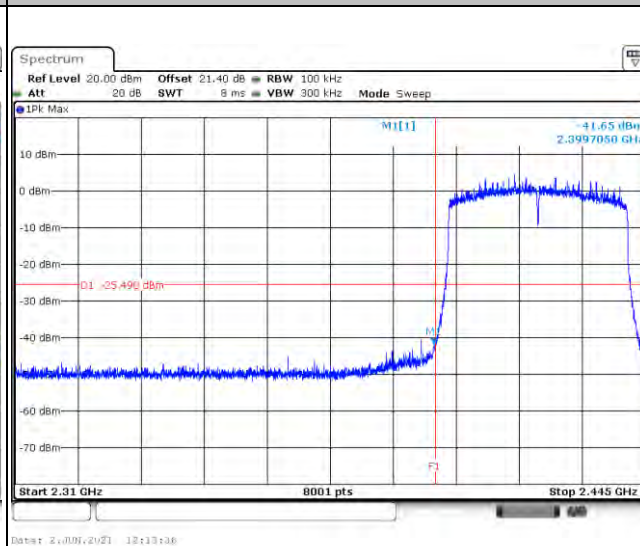


Test Mode :	802.11ax HE40	Test Channel :	03 Full RU
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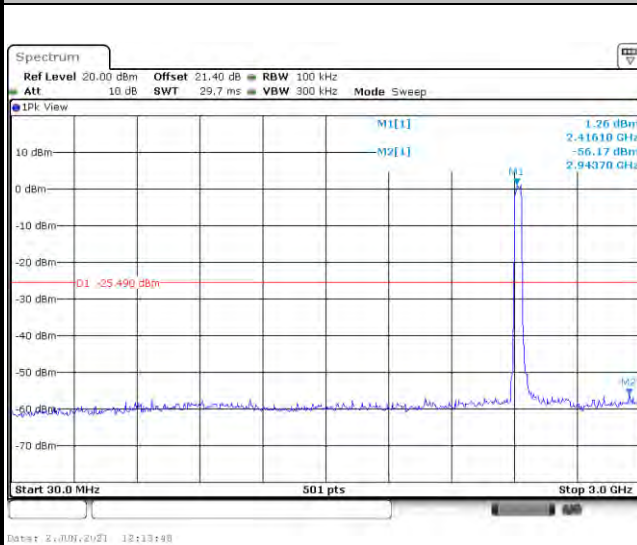
100kHz PSD reference Level



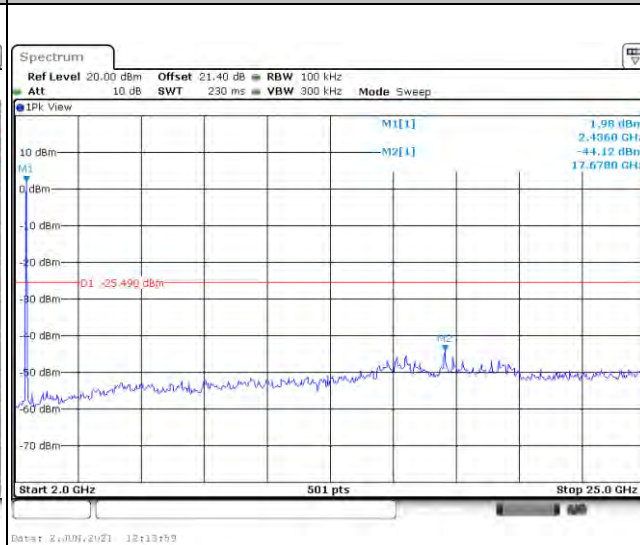
Low Channel Plot

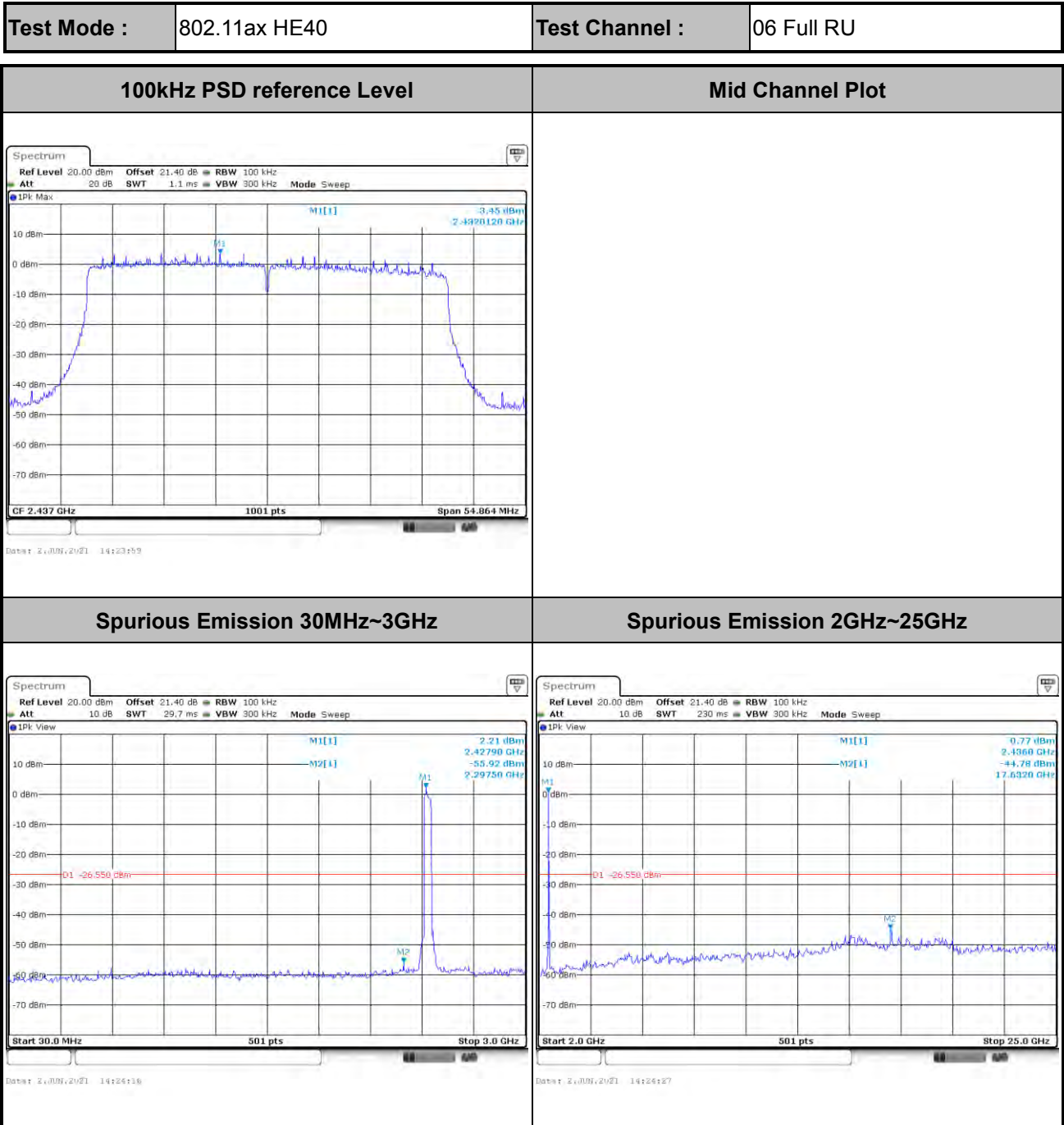


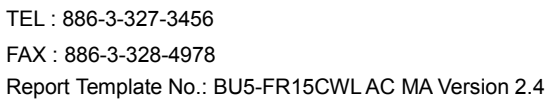
Spurious Emission 30MHz~3GHz



Spurious Emission 2GHz~25GHz







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 was 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

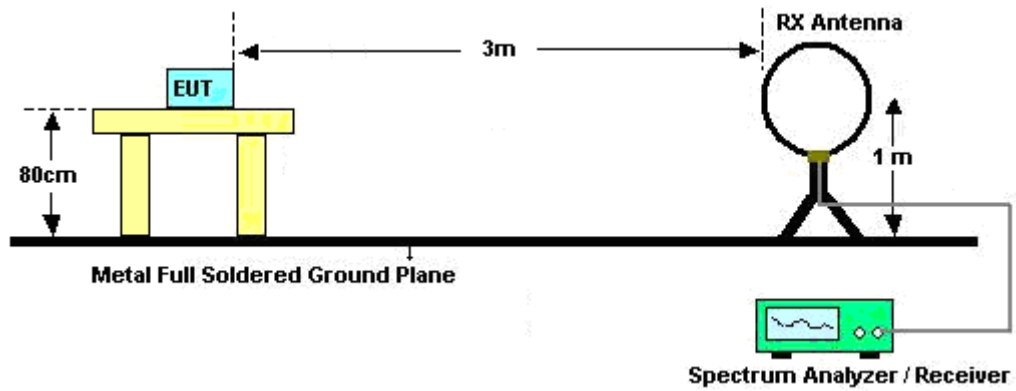
See list of measuring equipment of this test report.

3.5.3 Test Procedures

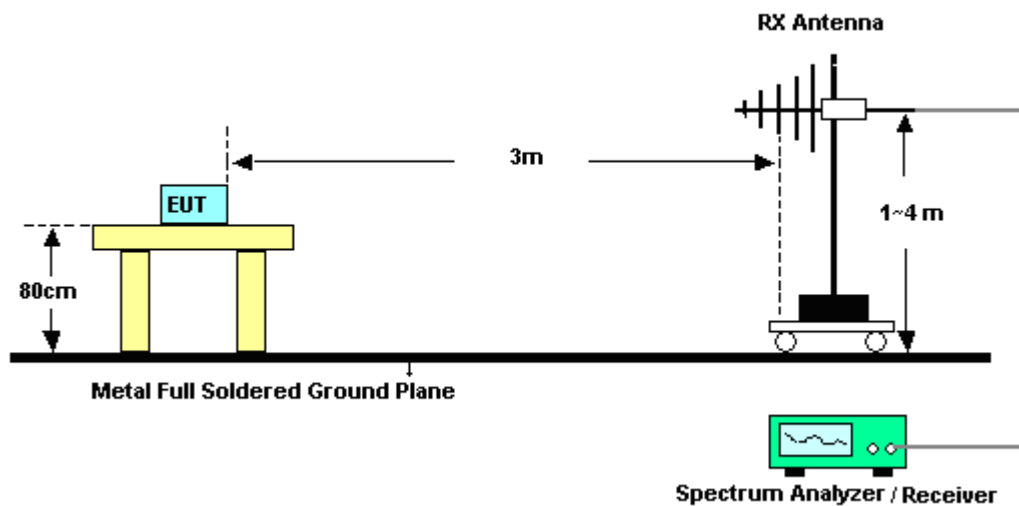
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was 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 was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1 GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW = 100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3 MHz for $f \geq 1$ GHz for peak measurement.
For average measurement:
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - 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

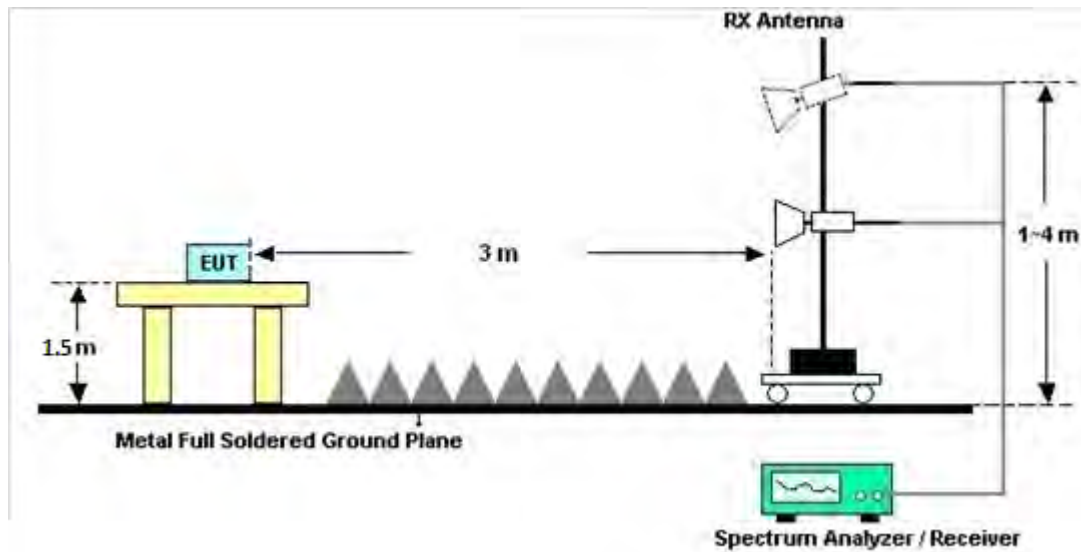
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated test above 1GHz



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

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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 came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of Emission (MHz)	Conducted Limit (dB μ 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.

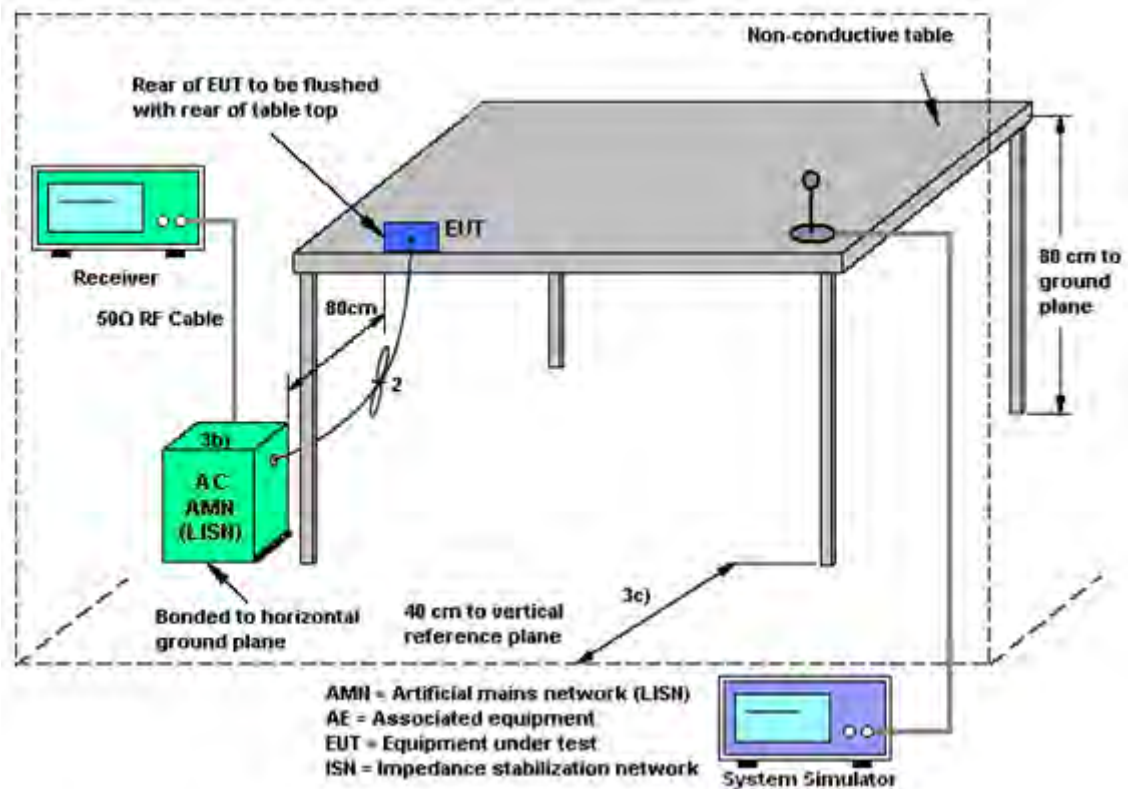
3.6.2 Measuring Instruments

See list of measuring equipment of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was 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 sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
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

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

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

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1)$ dB.

For power measurements on IEEE 802.11 devices,

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

Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

<CDD Modes>						
	Ant. 1	Ant. 2	DG for Power	DG for PSD	Power Limit Reduction	PSD Limit Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4 GHz	2.21	1.39	2.21	4.82	0.00	0.00

Power Limit Reduction = $DG(\text{Power}) - 6\text{dBi}$, (min = 0)

PSD Limit Reduction = $DG(\text{PSD}) - 6\text{dBi}$, (min = 0)



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	TR-32	HE17XB2468	N/A	Mar. 09, 2021	May 26, 2021~Jun. 03, 2021	Mar. 08, 2022	Conducted (TH02-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO12	10MHz~6GHz	Dec. 16, 2020	May 26, 2021~Jun. 03, 2021	Dec. 15, 2021	Conducted (TH02-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz ~ 40GHz	Jul. 22, 2020	May 26, 2021~Jun. 03, 2021	Jul. 21, 2021	Conducted (TH02-HY)
Switch Box & RF Cable	Burgeon	ETF058	EC1300484	N/A	Nov. 19, 2020	May 26, 2021~Jun. 03, 2021	Nov. 18, 2021	Conducted (TH02-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 24, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	May 24, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	May 24, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	May 24, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	May 24, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	May 24, 2021	Feb. 24, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	May 24, 2021	Dec. 30, 2021	Conduction (CO05-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 23, 2020	May 29, 2021~ May 31, 2021	Oct. 22, 2021	Radiation (03CH20-HY)
EMI Test Receiver	Keysight	N9038A	MY59053012	N/A	Nov. 18, 2020	May 29, 2021~ May 31, 2021	Nov. 17, 2021	Radiation (03CH20-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jul. 14, 2020	May 29, 2021~ May 31, 2021	Jul. 13, 2021	Radiation (03CH20-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55606 & 08	30MHz~1GHz	Oct. 22, 2020	May 29, 2021~ May 31, 2021	Oct. 21, 2021	Radiation (03CH20-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	002360	1GHz-18GHz	Nov. 03, 2020	May 29, 2021~ May 31, 2021	Nov. 02, 2021	Radiation (03CH20-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz~40GHz	Nov. 19, 2020	May 29, 2021~ May 31, 2021	Nov. 18, 2021	Radiation (03CH20-HY)
Preamplifier	COM-POWER	PAM-103	18020201	1MHz-1000MHz	Jan. 04, 2021	May 29, 2021~ May 31, 2021	Jan. 03, 2022	Radiation (03CH20-HY)
Amplifier	EMCI	EMC118A45SE	980792	N/A	Nov. 16, 2020	May 29, 2021~ May 31, 2021	Nov. 15, 2021	Radiation (03CH20-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 15, 2020	May 29, 2021~ May 31, 2021	Jun. 14, 2021	Radiation (03CH20-HY)
Filter	Wainwright	WLK4-1000-1 530-8000-40SS	SN27	1.53GHz Low Pass Filter	May 25, 2021	May 29, 2021~ May 31, 2021	May 24, 2022	Radiation (03CH20-HY)
Filter	Wainwright	WHKX8-6090 -7000-18000- 40SS	SN99	N/A	Nov. 05, 2020	May 29, 2021~ May 31, 2021	Nov. 04, 2021	Radiation (03CH20-HY)
Filter	Wainwright	WHKX12-270 0-3000-18000 -60ST	SN8	N/A	Mar. 26, 2021	May 29, 2021~ May 31, 2021	Mar. 25, 2022	Radiation (03CH20-HY)
Hygrometer	TECEPIL	DTM-303B	TP200728	N/A	Mar. 09, 2021	May 29, 2021~ May 31, 2021	Mar. 08, 2022	Radiation (03CH20-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519229/2,8 04015/2,80 4027/2	N/A	Jan. 20, 2021	May 29, 2021~ May 31, 2021	Jan. 19, 2022	Radiation (03CH20-HY)
Software	Audix	E3 6.2009-8-24	RK-00215 6	N/A	N/A	May 29, 2021~ May 31, 2021	N/A	Radiation (03CH20-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 29, 2021~ May 31, 2021	N/A	Radiation (03CH20-HY)
Antenna Mast	EMEC	AM-BS-4500- B	N/A	1m~4m	N/A	May 29, 2021~ May 31, 2021	N/A	Radiation (03CH20-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	May 29, 2021~ May 31, 2021	N/A	Radiation (03CH20-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	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% ($U = 2U_c(y)$)	3.9dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.8dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.5dB
--	-------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Richard Qiu	Temperature:	21.3~24.5	°C
Test Date:	2021/5/26~2021/6/3	Relative Humidity:	49.6~55.5	%

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	12.94	12.89	8.06	8.04	0.50	Pass
11b	1Mbps	2	6	2437	12.99	13.14	8.04	8.05	0.50	Pass
11b	1Mbps	2	11	2462	13.14	13.04	8.06	8.07	0.50	Pass
11g	6Mbps	2	1	2412	16.28	16.33	15.71	15.70	0.50	Pass
11g	6Mbps	2	6	2437	16.33	16.43	16.29	15.93	0.50	Pass
11g	6Mbps	2	11	2462	16.33	16.33	16.29	16.27	0.50	Pass

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	-9.21	-8.18	-5.17	4.82		8.00		Pass
11b	1Mbps	2	6	2437	-9.02	-8.01	-5.00	4.82		8.00		Pass
11b	1Mbps	2	11	2462	-8.59	-8.14	-5.13	4.82		8.00		Pass
11g	6Mbps	2	1	2412	-9.74	-8.89	-5.88	4.82		8.00		Pass
11g	6Mbps	2	6	2437	-10.18	-8.07	-5.06	4.82		8.00		Pass
11g	6Mbps	2	11	2462	-9.62	-8.29	-5.28	4.82		8.00		Pass

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

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	14.40	15.30	17.88	30.00		2.21		20.09		36.00		Pass
11b	1Mbps	2	6	2437	14.30	15.00	17.67	30.00		2.21		19.88		36.00		Pass
11b	1Mbps	2	11	2462	14.40	15.30	17.88	30.00		2.21		20.09		36.00		Pass
11g	6Mbps	2	1	2412	17.10	17.70	20.42	30.00		2.21		22.63		36.00		Pass
11g	6Mbps	2	6	2437	17.10	17.50	20.31	30.00		2.21		22.52		36.00		Pass
11g	6Mbps	2	11	2462	16.90	17.70	20.33	30.00		2.21		22.54		36.00		Pass
HT20	MCS0	2	1	2412	16.80	17.40	20.12	30.00		2.21		22.33		36.00		Pass
HT20	MCS0	2	6	2437	16.70	17.20	19.97	30.00		2.21		22.18		36.00		Pass
HT20	MCS0	2	11	2462	16.50	17.40	19.98	30.00		2.21		22.19		36.00		Pass
HT40	MCS0	2	3	2422	17.20	17.80	20.52	30.00		2.21		22.73		36.00		Pass
HT40	MCS0	2	6	2437	17.10	17.60	20.37	30.00		2.21		22.58		36.00		Pass
HT40	MCS0	2	9	2452	16.90	17.90	20.44	30.00		2.21		22.65		36.00		Pass
VHT20	MCS0	2	1	2412	16.80	17.40	20.12	30.00		2.21		22.33		36.00		Pass
VHT20	MCS0	2	6	2437	16.70	17.20	19.97	30.00		2.21		22.18		36.00		Pass
VHT20	MCS0	2	11	2462	16.50	17.40	19.98	30.00		2.21		22.19		36.00		Pass
VHT40	MCS0	2	3	2422	17.20	17.80	20.52	30.00		2.21		22.73		36.00		Pass
VHT40	MCS0	2	6	2437	17.10	17.60	20.37	30.00		2.21		22.58		36.00		Pass
VHT40	MCS0	2	9	2452	16.90	17.90	20.44	30.00		2.21		22.65		36.00		Pass

Note: Measured power (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	18.78	18.83	17.23	17.87	0.50	Pass
HE20	MCS0	2	6	2437	Full	18.88	18.88	18.54	18.62	0.50	Pass
HE20	MCS0	2	11	2462	Full	18.88	18.88	18.55	18.47	0.50	Pass
HE40	MCS0	2	3	2422	Full	37.56	37.66	35.10	35.46	0.50	Pass
HE40	MCS0	2	6	2437	Full	37.86	37.76	37.26	36.58	0.50	Pass
HE40	MCS0	2	9	2452	Full	37.76	37.96	36.42	37.58	0.50	Pass

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO													
Mod.	Data Rate	N _{TX}	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	-9.87	-7.69	-4.68	4.82		8.00		Pass
HE20	MCS0	2	6	2437	Full	-9.72	-8.99	-5.98	4.82		8.00		Pass
HE20	MCS0	2	11	2462	Full	-9.54	-8.77	-5.76	4.82		8.00		Pass
HE40	MCS0	2	3	2422	Full	-11.99	-10.11	-7.10	4.82		8.00		Pass
HE40	MCS0	2	6	2437	Full	-13.45	-12.09	-9.08	4.82		8.00		Pass
HE40	MCS0	2	9	2452	Full	-12.73	-11.99	-8.98	4.82		8.00		Pass

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

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	16.80	17.50	20.17	30.00		2.21		22.38		36.00		Pass
HE20	MCS0	2	6	2437	Full	16.70	17.30	20.02	30.00		2.21		22.23		36.00		Pass
HE20	MCS0	2	11	2462	Full	16.60	17.40	20.03	30.00		2.21		22.24		36.00		Pass
HE40	MCS0	2	3	2422	Full	17.20	17.90	20.57	30.00		2.21		22.78		36.00		Pass
HE40	MCS0	2	6	2437	Full	17.10	17.70	20.42	30.00		2.21		22.63		36.00		Pass
HE40	MCS0	2	9	2452	Full	17.00	17.90	20.48	30.00		2.21		22.69		36.00		Pass

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



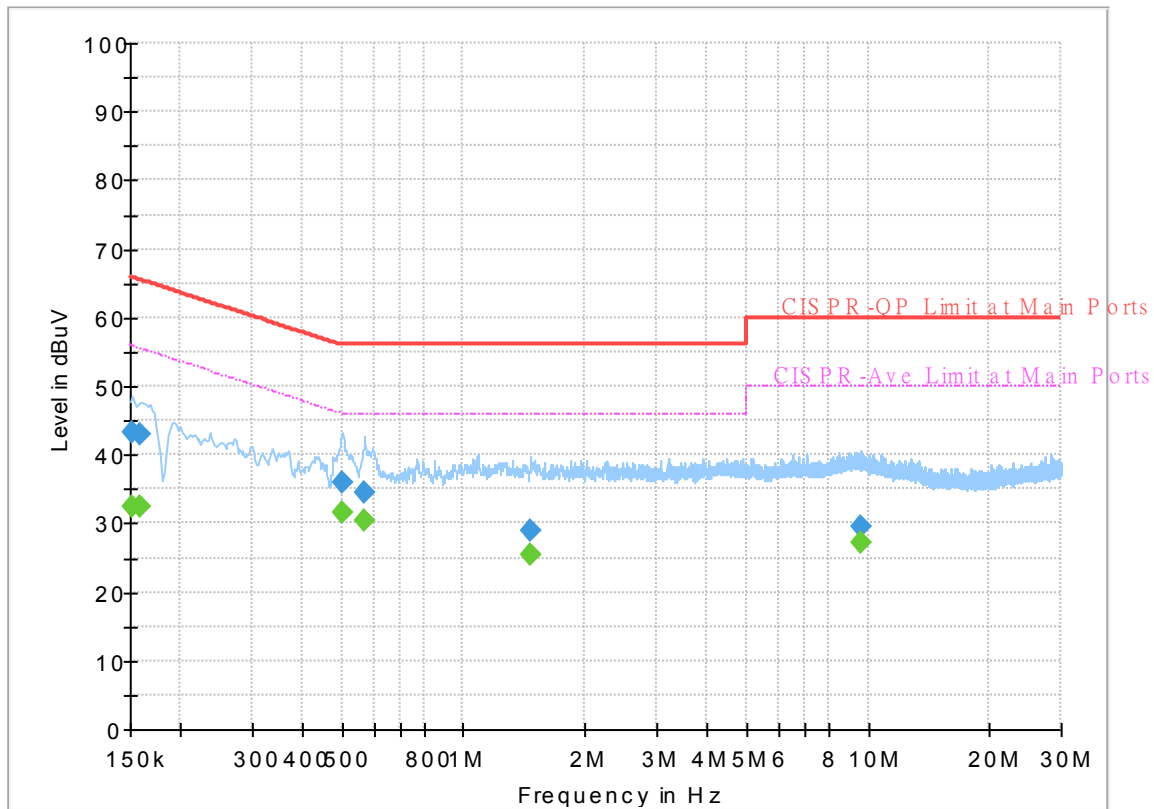
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26℃
		Relative Humidity :	40~50%

EUT Information

Report NO : 151401
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



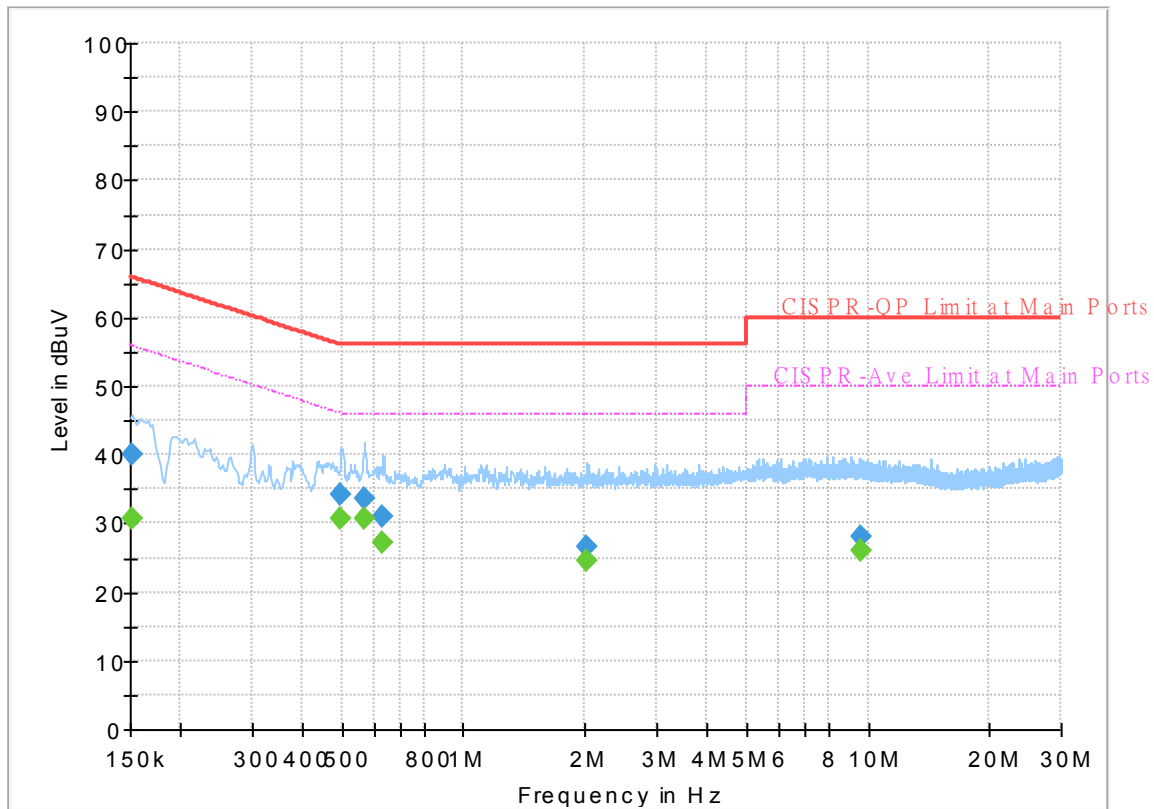
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	32.36	55.88	23.52	L1	OFF	19.5
0.152250	43.21	---	65.88	22.67	L1	OFF	19.5
0.159000	---	32.36	55.52	23.16	L1	OFF	19.5
0.159000	42.88	---	65.52	22.64	L1	OFF	19.5
0.503250	---	31.68	46.00	14.32	L1	OFF	19.7
0.503250	35.85	---	56.00	20.15	L1	OFF	19.7
0.568500	---	30.43	46.00	15.57	L1	OFF	19.7
0.568500	34.55	---	56.00	21.45	L1	OFF	19.7
1.464000	---	25.50	46.00	20.50	L1	OFF	20.0
1.464000	29.05	---	56.00	26.95	L1	OFF	20.0
9.633750	---	27.11	50.00	22.89	L1	OFF	20.0
9.633750	29.46	---	60.00	30.54	L1	OFF	20.0

EUT Information

Report NO : 151401
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)
0.152250	---	30.64	55.88	25.24	N	OFF	19.5
0.152250	40.12	---	65.88	25.76	N	OFF	19.5
0.498750	---	30.71	46.02	15.31	N	OFF	19.7
0.498750	34.21	---	56.02	21.81	N	OFF	19.7
0.568500	---	30.66	46.00	15.34	N	OFF	19.8
0.568500	33.69	---	56.00	22.31	N	OFF	19.8
0.633750	---	27.25	46.00	18.75	N	OFF	19.8
0.633750	30.90	---	56.00	25.10	N	OFF	19.8
2.022000	---	24.62	46.00	21.38	N	OFF	20.0
2.022000	26.70	---	56.00	29.30	N	OFF	20.0
9.546000	---	26.13	50.00	23.87	N	OFF	20.0
9.546000	28.00	---	60.00	32.00	N	OFF	20.0



Appendix C. Radiated Spurious Emission

Test Engineer :	JC Liang and Steven Wu	Temperature :	20~22°C
		Relative Humidity :	66~70%

<Sample 1>

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		2388.015	49.47	-24.53	74	39.99	27.25	18.42	36.19	214	344	P	H
		2390	39.42	-14.58	54	29.93	27.26	18.42	36.19	214	344	A	H
	*	2412	108.3	-	-	98.69	27.35	18.46	36.2	214	344	P	H
	*	2412	105.26	-	-	95.65	27.35	18.46	36.2	214	344	A	H
													H
		2348.43	48.54	-25.46	74	39.28	27.1	18.34	36.18	110	111	P	V
		2389.8	38.37	-15.63	54	28.88	27.26	18.42	36.19	110	111	A	V
	*	2412	107.64	-	-	98.03	27.35	18.46	36.2	110	111	P	V
	*	2412	104.61	-	-	95	27.35	18.46	36.2	110	111	A	V
													V
802.11b CH 06 2437MHz		2359.76	48.66	-25.34	74	39.34	27.14	18.37	36.19	241	346	P	H
		2389.52	38.02	-15.98	54	28.53	27.26	18.42	36.19	241	346	A	H
	*	2437	108.6	-	-	98.86	27.45	18.5	36.21	241	346	P	H
	*	2437	105.45	-	-	95.71	27.45	18.5	36.21	241	346	A	H
		2499.6	49.5	-24.5	74	39.42	27.7	18.61	36.23	241	346	P	H
		2484.24	38.63	-15.37	54	28.62	27.64	18.59	36.22	241	346	A	H
		2337.52	49.17	-24.83	74	39.95	27.08	18.32	36.18	124	110	P	V
		2389.84	37.95	-16.05	54	28.46	27.26	18.42	36.19	124	110	A	V
	*	2437	108.55	-	-	98.81	27.45	18.5	36.21	124	110	P	V
	*	2437	104.79	-	-	95.05	27.45	18.5	36.21	124	110	A	V
		2486.56	50.06	-23.94	74	40.05	27.65	18.59	36.23	124	110	P	V
		2492.8	38.51	-15.49	54	28.47	27.67	18.6	36.23	124	110	A	V



802.11b CH 11 2462MHz	*	2462	107.3	-	-	97.42	27.55	18.55	36.22	315	346	P	H
	*	2462	104.46	-	-	94.58	27.55	18.55	36.22	315	346	A	H
		2489.16	49.21	-24.79	74	39.18	27.66	18.6	36.23	315	346	P	H
		2483.84	39.17	-14.83	54	29.16	27.64	18.59	36.22	315	346	A	H
													H
													H
	*	2462	106.92	-	-	97.04	27.55	18.55	36.22	259	105	P	V
	*	2462	103.15	-	-	93.27	27.55	18.55	36.22	259	105	A	V
		2485.4	49.72	-24.28	74	39.72	27.64	18.59	36.23	259	105	P	V
		2483.88	38.88	-15.12	54	28.87	27.64	18.59	36.22	259	105	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	45.31	-28.69	74	37.88	32.14	12.73	37.44	100	0	P	H
													H
													H
													H
		4824	43.52	-30.48	74	36.09	32.14	12.73	37.44	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	42.78	-31.22	74	35.19	32.3	12.77	37.48	100	0	P	H
		7311	48.67	-25.33	74	34.88	36.76	15.38	38.35	100	0	P	H
													H
													H
		4874	43.28	-30.72	74	35.69	32.3	12.77	37.48	100	0	P	V
		7311	47.41	-26.59	74	33.62	36.76	15.38	38.35	100	0	P	V
													V
													V
802.11b CH 11 2462MHz		4924	43.87	-30.13	74	36.11	32.49	12.79	37.52	100	0	P	H
		7386	47.99	-26.01	74	34.48	36.46	15.46	38.41	100	0	P	H
													H
													H
		4924	43.19	-30.81	74	35.43	32.49	12.79	37.52	100	0	P	V
		7386	46.98	-27.02	74	33.47	36.46	15.46	38.41	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



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

WIFI Ant. 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		2389.59	55.85	-18.15	74	46.36	27.26	18.42	36.19	131	342	P	H
		2390	45.1	-8.9	54	35.61	27.26	18.42	36.19	131	342	A	H
	*	2412	115.27	-	-	105.66	27.35	18.46	36.2	131	342	P	H
	*	2412	108.04	-	-	98.43	27.35	18.46	36.2	131	342	A	H
													H
													H
		2389.905	54.19	-19.81	74	44.7	27.26	18.42	36.19	263	315	P	V
		2390	44.04	-9.96	54	34.55	27.26	18.42	36.19	263	315	A	V
	*	2412	112.55	-	-	102.94	27.35	18.46	36.2	263	315	P	V
	*	2412	105.33	-	-	95.72	27.35	18.46	36.2	263	315	A	V
													V
													V
802.11g CH 06 2437MHz		2338.32	49.95	-24.05	74	40.72	27.08	18.33	36.18	162	343	P	H
		2390	38.6	-15.4	54	29.11	27.26	18.42	36.19	162	343	A	H
	*	2437	115.4	-	-	105.66	27.45	18.5	36.21	162	343	P	H
	*	2437	107.96	-	-	98.22	27.45	18.5	36.21	162	343	A	H
		2488	49.76	-24.24	74	39.75	27.65	18.59	36.23	162	343	P	H
		2483.52	39.09	-14.91	54	29.09	27.63	18.59	36.22	162	343	A	H
		2360.4	49.48	-24.52	74	40.16	27.14	18.37	36.19	301	317	P	V
		2390	38.29	-15.71	54	28.8	27.26	18.42	36.19	301	317	A	V
	*	2437	112.54	-	-	102.8	27.45	18.5	36.21	301	317	P	V
	*	2437	104.93	-	-	95.19	27.45	18.5	36.21	301	317	A	V
		2498.08	50.13	-23.87	74	40.06	27.69	18.61	36.23	301	317	P	V
		2483.84	38.7	-15.3	54	28.69	27.64	18.59	36.22	301	317	A	V



802.11g CH 11 2462MHz	*	2462	114.38	-	-	104.5	27.55	18.55	36.22	112	343	P	H
	*	2462	106.75	-	-	96.87	27.55	18.55	36.22	112	343	A	H
		2484.16	59.42	-14.58	74	49.41	27.64	18.59	36.22	112	343	P	H
		2483.72	45.42	-8.58	54	35.42	27.63	18.59	36.22	112	343	A	H
													H
													H
	*	2462	112.39	-	-	102.51	27.55	18.55	36.22	290	317	P	V
	*	2462	104.43	-	-	94.55	27.55	18.55	36.22	290	317	A	V
		2483.56	57.67	-16.33	74	47.67	27.63	18.59	36.22	290	317	P	V
		2483.64	44.24	-9.76	54	34.24	27.63	18.59	36.22	290	317	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	44.96	-29.04	74	37.53	32.14	12.73	37.44	100	0	P	H
													H
													H
													H
		4824	43.43	-30.57	74	36	32.14	12.73	37.44	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	43.01	-30.99	74	35.42	32.3	12.77	37.48	100	0	P	H
		7311	48.5	-25.5	74	34.71	36.76	15.38	38.35	100	0	P	H
													H
													H
		4874	45.35	-28.65	74	37.76	32.3	12.77	37.48	100	0	P	V
		7311	47.61	-26.39	74	33.82	36.76	15.38	38.35	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	44.92	-29.08	74	37.16	32.49	12.79	37.52	100	0	P	H
		7386	48.41	-25.59	74	34.9	36.46	15.46	38.41	100	0	P	H
													H
													H
		4924	43.83	-30.17	74	36.07	32.49	12.79	37.52	100	0	P	V
		7386	47.96	-26.04	74	34.45	36.46	15.46	38.41	100	0	P	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 (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		2389.905	54.81	-19.19	74	45.32	27.26	18.42	36.19	324	360	P	H
		2390	44.96	-9.04	54	35.47	27.26	18.42	36.19	324	360	A	H
	*	2412	113.89	-	-	104.28	27.35	18.46	36.2	324	360	P	H
	*	2414	104.78	-	-	95.16	27.36	18.46	36.2	324	360	A	H
													H
													H
		2388.225	53.29	-20.71	74	43.81	27.25	18.42	36.19	100	7	P	V
		2390	42.4	-11.6	54	32.91	27.26	18.42	36.19	100	7	A	V
	*	2412	114.29	-	-	104.68	27.35	18.46	36.2	100	7	P	V
	*	2412	103.79	-	-	94.18	27.35	18.46	36.2	100	7	A	V
													V
													V
802.11ax HE20 Full CH 06 2437MHz		2386.32	49.93	-24.07	74	40.46	27.25	18.41	36.19	354	342	P	H
		2390	38.19	-15.81	54	28.7	27.26	18.42	36.19	354	342	A	H
	*	2437	114.68	-	-	104.94	27.45	18.5	36.21	354	342	P	H
	*	2437	104.34	-	-	94.6	27.45	18.5	36.21	354	342	A	H
		2488.48	50.37	-23.63	74	40.36	27.65	18.59	36.23	354	342	P	H
		2484	38.8	-15.2	54	28.79	27.64	18.59	36.22	354	342	A	H
		2339.92	48.92	-25.08	74	39.69	27.08	18.33	36.18	100	8	P	V
		2390	38.28	-15.72	54	28.79	27.26	18.42	36.19	100	8	A	V
	*	2437	114.44	-	-	104.7	27.45	18.5	36.21	100	8	P	V
	*	2437	103.92	-	-	94.18	27.45	18.5	36.21	100	8	A	V
		2493.76	49.71	-24.29	74	39.66	27.68	18.6	36.23	100	8	P	V
		2483.92	38.72	-15.28	54	28.71	27.64	18.59	36.22	100	8	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)
8802.11ax HE20 Full CH 11 2462MHz	*	2462	114.38	-	-	104.5	27.55	18.55	36.22	386	344	P	H
	*	2462	104.3	-	-	94.42	27.55	18.55	36.22	386	344	A	H
		2483.76	56.49	-17.51	74	46.48	27.64	18.59	36.22	386	344	P	H
		2483.52	45.09	-8.91	54	35.09	27.63	18.59	36.22	386	344	A	H
													H
													H
	*	2462	113.6	-	-	103.72	27.55	18.55	36.22	139	55	P	V
	*	2462	102.54	-	-	92.66	27.55	18.55	36.22	139	55	A	V
		2484.2	54.54	-19.46	74	44.53	27.64	18.59	36.22	139	55	P	V
		2483.52	41.85	-12.15	54	31.85	27.63	18.59	36.22	139	55	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**2.4GHz 2400~2483.5MHz****WIFI 802.11 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 06 2437MHz		4874	42.97	-31.03	74	35.38	32.3	12.77	37.48	100	0	P	H
		7311	48.69	-25.31	74	34.9	36.76	15.38	38.35	100	0	P	H
													H
													H
		4874	43.48	-30.52	74	35.89	32.3	12.77	37.48	100	0	P	V
		7311	47.89	-26.11	74	34.1	36.76	15.38	38.35	100	0	P	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 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		2388.24	57.54	-16.46	74	48.06	27.25	18.42	36.19	361	342	P	H
		2390	47.83	-6.17	54	38.34	27.26	18.42	36.19	361	342	A	H
	*	2422	111.37	-	-	101.71	27.39	18.48	36.21	361	342	P	H
	*	2422	102.1	-	-	92.44	27.39	18.48	36.21	361	342	A	H
		2483.84	50.14	-23.86	74	40.13	27.64	18.59	36.22	361	342	P	H
		2483.52	39.25	-14.75	54	29.25	27.63	18.59	36.22	361	342	A	H
		2389.68	58.98	-15.02	74	49.49	27.26	18.42	36.19	114	8	P	V
		2390	47.8	-6.2	54	38.31	27.26	18.42	36.19	114	8	A	V
	*	2422	110.68	-	-	101.02	27.39	18.48	36.21	114	8	P	V
	*	2422	101.4	-	-	91.74	27.39	18.48	36.21	114	8	A	V
		2487.76	49.95	-24.05	74	39.94	27.65	18.59	36.23	114	8	P	V
		2483.6	39	-15	54	29	27.63	18.59	36.22	114	8	A	V
802.11ax HE40 Full CH 06 2437MHz		2388.88	53.98	-20.02	74	44.49	27.26	18.42	36.19	360	340	P	H
		2390	45.13	-8.87	54	35.64	27.26	18.42	36.19	360	340	P	H
	*	2437	112.84	-	-	103.1	27.45	18.5	36.21	360	340	P	H
	*	2437	101.33	-	-	91.59	27.45	18.5	36.21	360	340	A	H
		2485.68	55.81	-18.19	74	45.81	27.64	18.59	36.23	360	340	P	H
		2483.52	43.66	-10.34	54	33.66	27.63	18.59	36.22	360	340	A	H
		2388.56	56.95	-17.05	74	47.47	27.25	18.42	36.19	114	7	P	V
		2390	45.54	-8.46	54	36.05	27.26	18.42	36.19	114	7	A	V
	*	2437	112.41	-	-	102.67	27.45	18.5	36.21	114	7	P	V
	*	2437	101.15	-	-	91.41	27.45	18.5	36.21	114	7	A	V
		2483.6	54.16	-19.84	74	44.16	27.63	18.59	36.22	114	7	P	V
		2483.52	42.96	-11.04	54	32.96	27.63	18.59	36.22	114	7	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		2381.2	49.43	-24.57	74	39.99	27.22	18.41	36.19	400	343	P	H
		2390	38.51	-15.49	54	29.02	27.26	18.42	36.19	400	343	A	H
	*	2452	110.75	-	-	100.92	27.51	18.53	36.21	400	343	P	H
	*	2452	101.19	-	-	91.36	27.51	18.53	36.21	400	343	A	H
		2486.08	58.55	-15.45	74	48.55	27.64	18.59	36.23	400	343	P	H
		2483.52	47.5	-6.5	54	37.5	27.63	18.59	36.22	400	343	A	H
		2390	51.49	-22.51	74	42	27.26	18.42	36.19	108	56	P	V
		2390	39.25	-14.75	54	29.76	27.26	18.42	36.19	108	56	A	V
	*	2452	112.15	-	-	102.32	27.51	18.53	36.21	108	56	P	V
	*	2452	100.79	-	-	90.96	27.51	18.53	36.21	108	56	A	V
		2484.32	59.17	-14.83	74	49.16	27.64	18.59	36.22	108	56	P	V
		2483.52	47.92	-6.08	54	37.92	27.63	18.59	36.22	108	56	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 06 2437MHz		4874	42.76	-31.24	74	35.17	32.3	12.77	37.48	100	0	P	H
		7311	48.05	-25.95	74	34.26	36.76	15.38	38.35	100	0	P	H
													H
													H
		4874	42.32	-31.68	74	34.73	32.3	12.77	37.48	100	0	P	V
		7311	47.34	-26.66	74	33.55	36.76	15.38	38.35	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11ax HE40 (LF)

[illegible]



<Sample 2>

2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE40 Full (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)
802.11ax HE40 Full CH 09 2452MHz		2389.04	50.89	-23.11	74	41.4	27.26	18.42	36.19	240	4	P	H
		2390	39.65	-14.35	54	30.16	27.26	18.42	36.19	240	4	A	H
	*	2452	110.58	-	-	100.75	27.51	18.53	36.21	240	4	P	H
	*	2452	100.4	-	-	90.57	27.51	18.53	36.21	240	4	A	H
		2484.24	60.59	-13.41	74	50.58	27.64	18.59	36.22	240	4	P	H
		2483.52	48.03	-5.97	54	38.03	27.63	18.59	36.22	240	4	A	H
		2346.96	48.62	-25.38	74	39.37	27.09	18.34	36.18	108	68	P	V
		2390	38.77	-15.23	54	29.28	27.26	18.42	36.19	108	68	A	V
	*	2452	109.77	-	-	99.94	27.51	18.53	36.21	108	68	P	V
	*	2452	100.19	-	-	90.36	27.51	18.53	36.21	108	68	A	V
		2484.32	53.09	-20.91	74	43.08	27.64	18.59	36.22	108	68	P	V
		2483.52	43.19	-10.81	54	33.19	27.63	18.59	36.22	108	68	A	V
Remark	1. No other spurious found. 2. All results are PASS against 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	44.08	-29.92	74	36.47	32.33	12.78	37.5	100	0	P	H
		7356	47.26	-26.74	74	33.64	36.58	15.43	38.39	100	0	P	H
													H
													H
		4904	42.87	-31.13	74	35.26	32.33	12.78	37.5	100	0	P	V
		7356	47.75	-26.25	74	34.13	36.58	15.43	38.39	100	0	P	V
													V
													V
Remark	3. No other spurious found. 4. All results are PASS against limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11ax HE40 (LF)

[illegible]

Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical

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

Test Engineer :	JC Liang and Steven Wu	Temperature :	20~22°C
		Relative Humidity :	66~70%

Note symbol

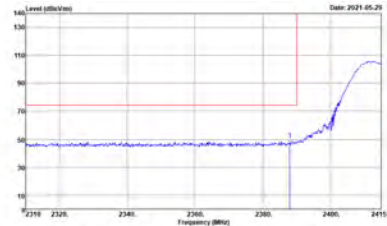
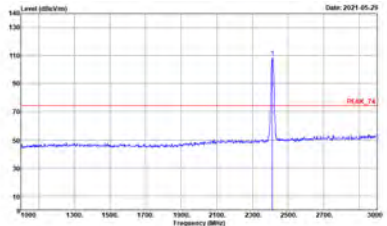
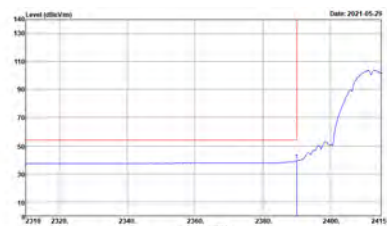
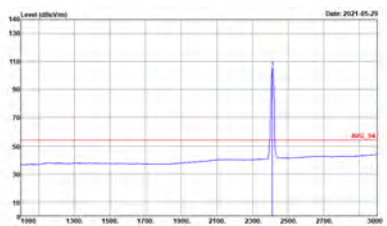
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-R	High channel location

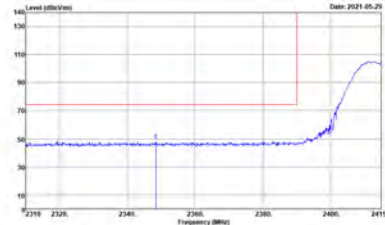
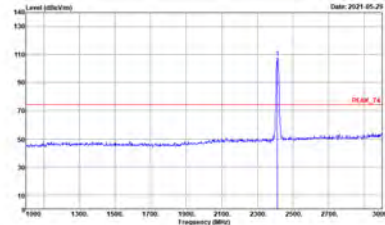
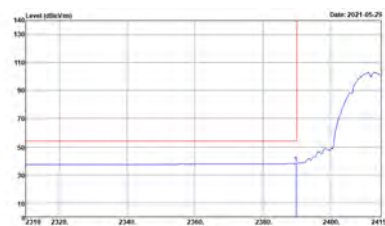
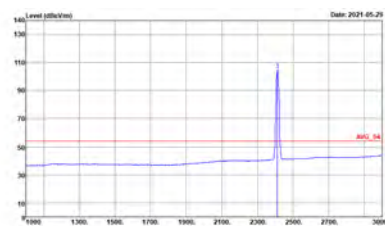


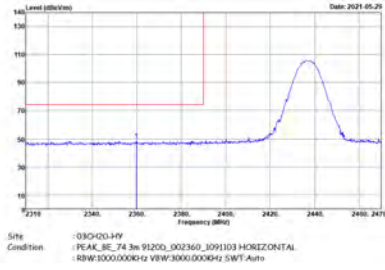
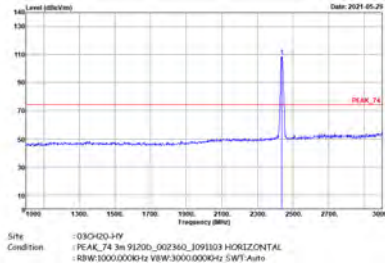
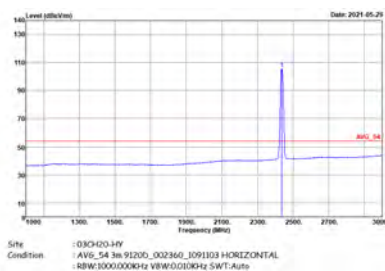
<Sample 1>

2.4GHz 2400~2483.5MHz

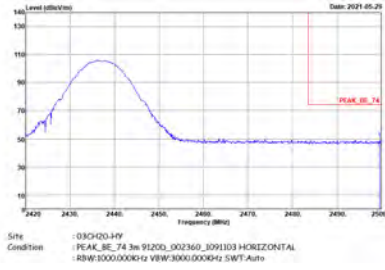
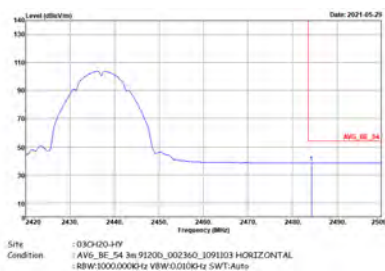
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-14Y Condition : PEAK_BE_74 3m 91200_002360_3091103 HORIZONTAL RBW:1000.0000Hz VFW:3000.0000Hz SWT:Auto	 Site : 03CH20-14Y Condition : PEAK_F4 3m 91200_002360_3091103 HORIZONTAL RBW:1000.0000Hz VFW:3000.0000Hz SWT:Auto
Avg.	 Site : 03CH20-14Y Condition : AVG_BE_54 3m 91200_002360_3091103 HORIZONTAL RBW:1000.0000Hz VFW:0.0100Hz SWT:Auto	 Site : 03CH20-14Y Condition : AVG_F4 3m 91200_002360_3091103 HORIZONTAL RBW:1000.0000Hz VFW:0.0100Hz SWT:Auto

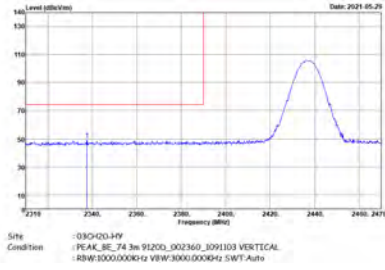
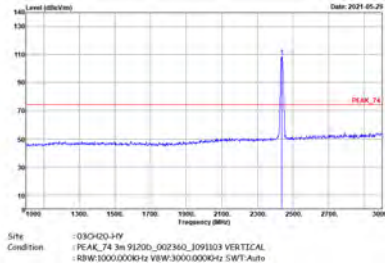
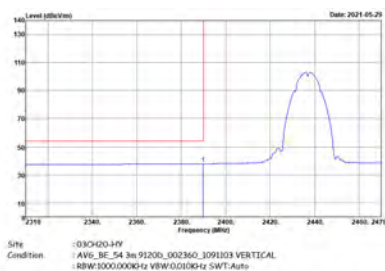
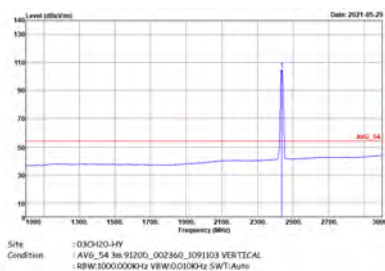
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site: :03CH00-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH00-14Y Condition: : PEAK_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH00-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH00-14Y Condition: : AVG_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

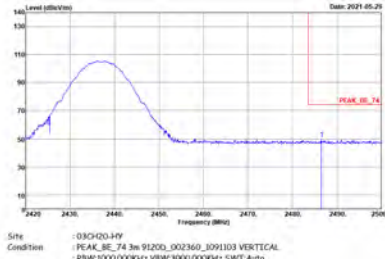
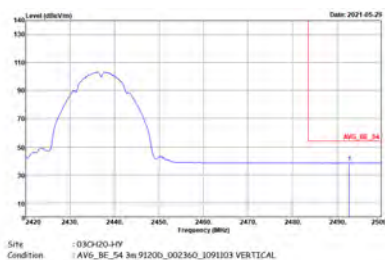
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

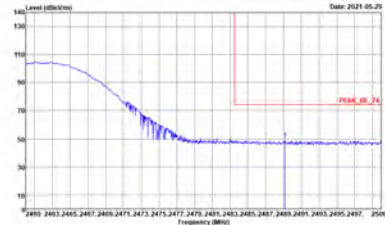
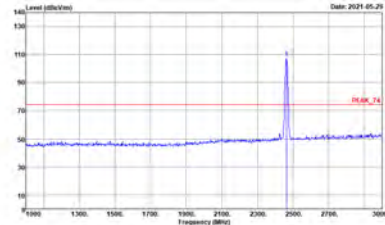
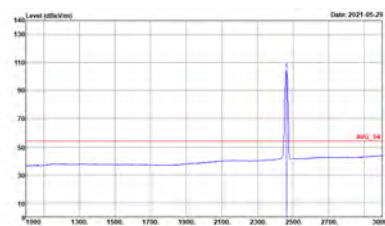


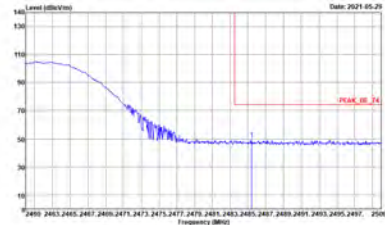
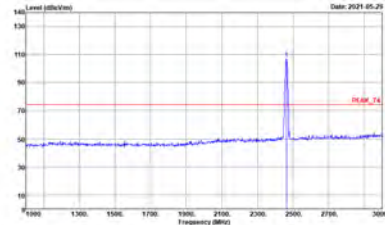
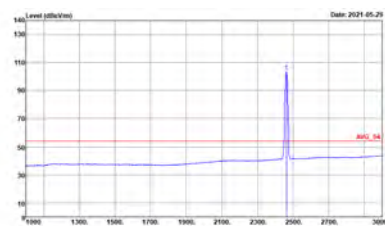
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



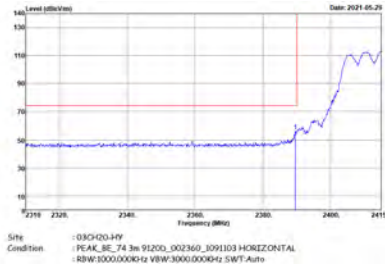
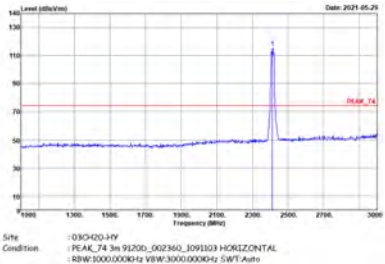
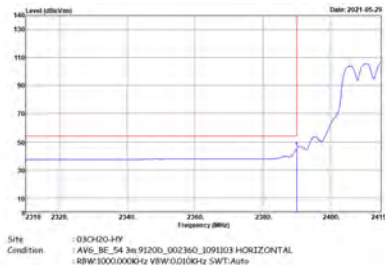
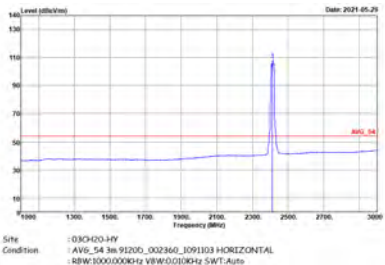
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

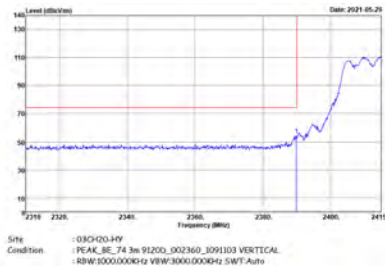
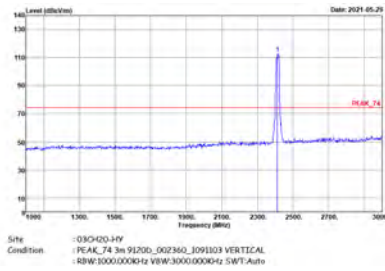
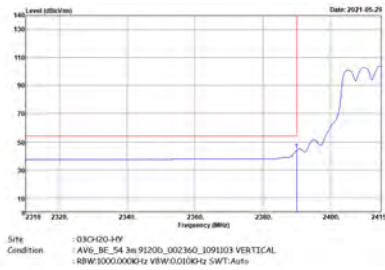
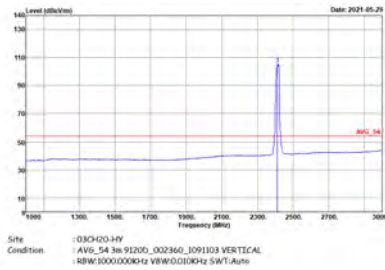
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VEW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VEW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VEW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VEW:0.0100Hz SWT:Auto

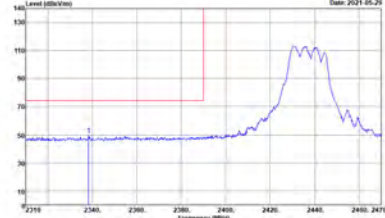
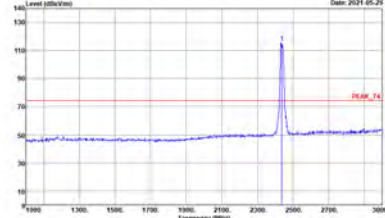
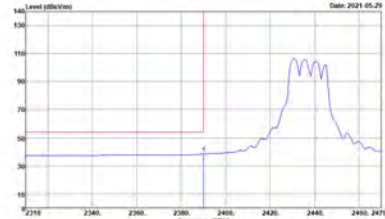
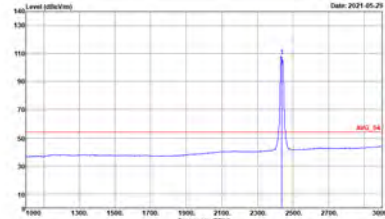
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: :PEAK_BE_74 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: :PEAK_74 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: :AVG_BE_54 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: :AVG_54 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

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

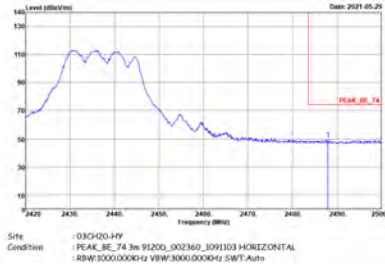
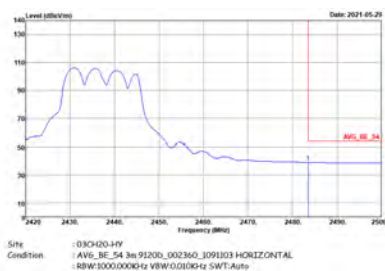
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak		
Avg.		

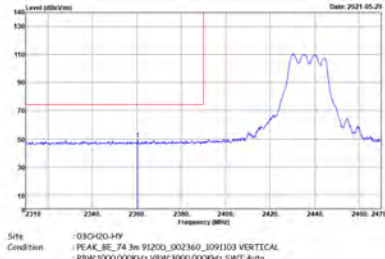
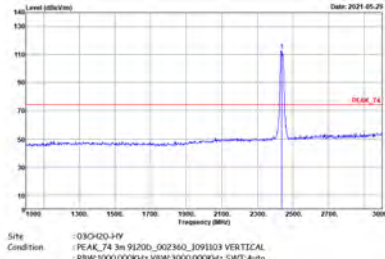
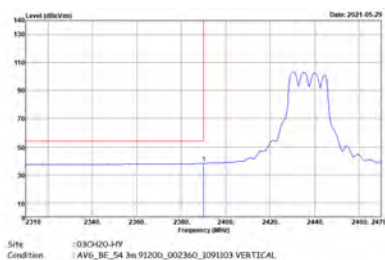
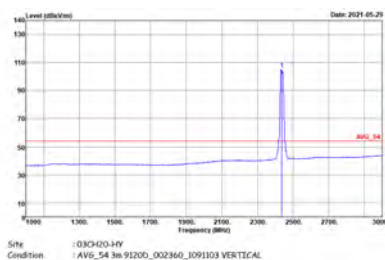


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Vertical	Fundamental
Peak		
Avg.		

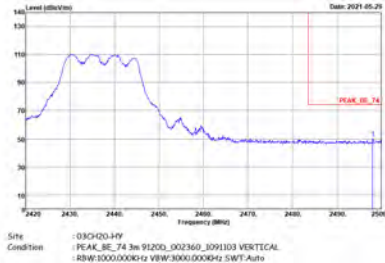
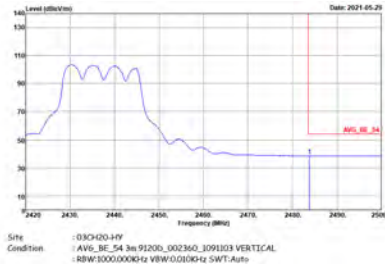
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site: 03CH02-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: 03CH02-14Y Condition: : PEAK_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: 03CH02-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: 03CH02-14Y Condition: : AVG_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

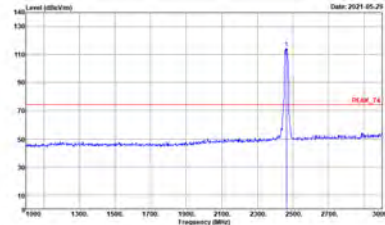
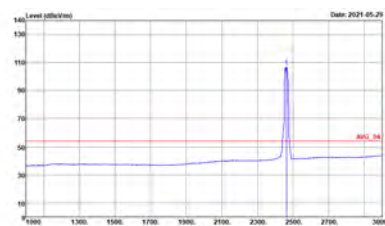


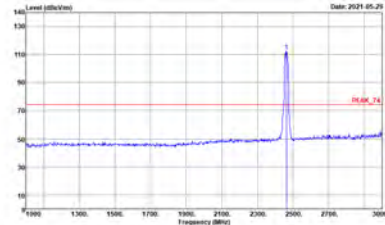
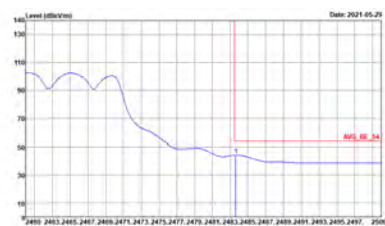
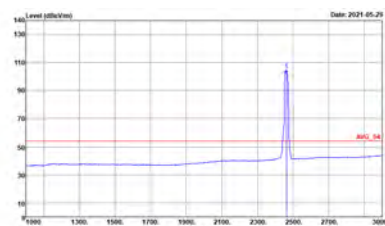
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_F4 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

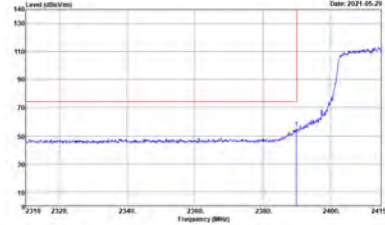
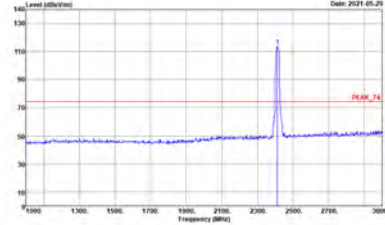
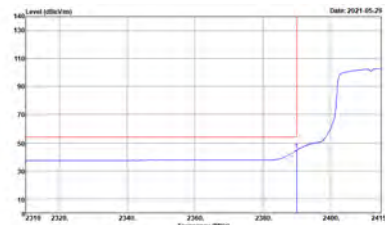
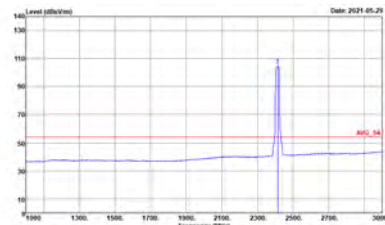
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_T4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_T4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_T4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_T4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

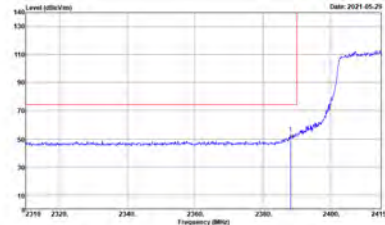
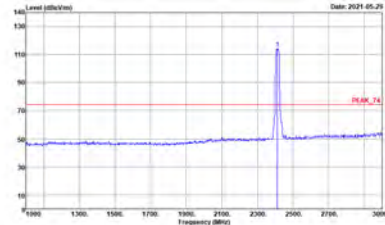
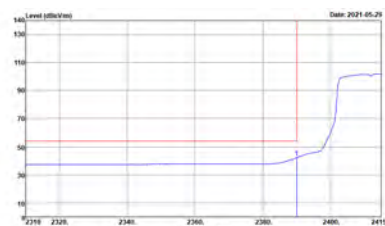
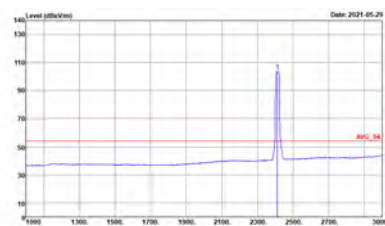
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: :PEAK_BE_74 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: :PEAK_74 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: :AVG_BE_54 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: :AVG_54 3m 91200_002360_1091103 VERTICAL :RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

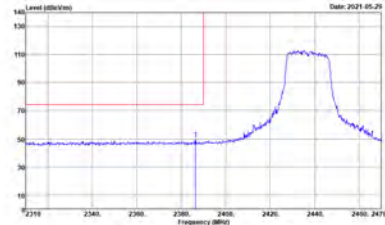
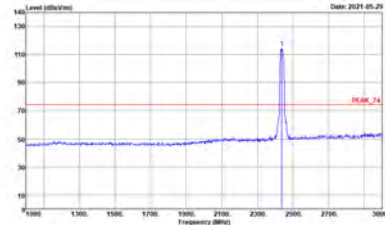
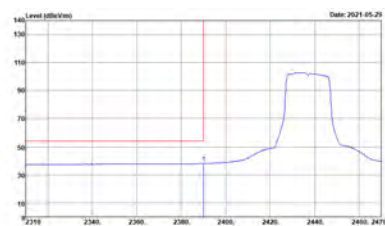
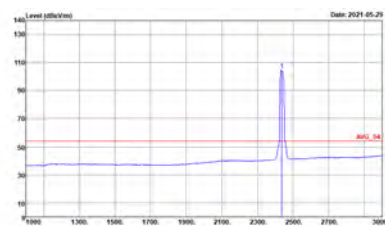


2.4GHz 2400~2483.5MHz

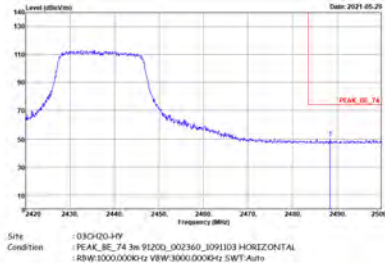
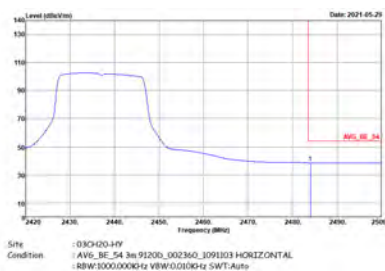
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH00-14Y Condition : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VIEW:3000.0000Hz SWT:Auto	 Site : 03CH00-14Y Condition : PEAK_F4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VIEW:3000.0000Hz SWT:Auto
Avg.	 Site : 03CH00-14Y Condition : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VIEW:0.0100Hz SWT:Auto	 Site : 03CH00-14Y Condition : AVG_F4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VIEW:0.0100Hz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site: :03CH00-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH00-14Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH00-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH00-14Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-11Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-11Y Condition: : PEAK_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-11Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-11Y Condition: : AVG_F4 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

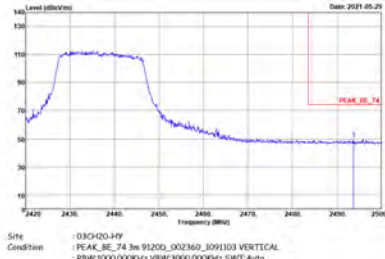
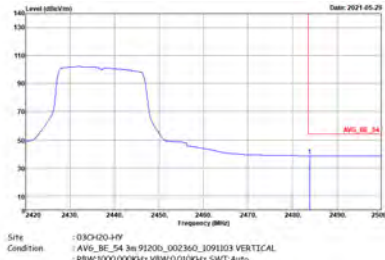


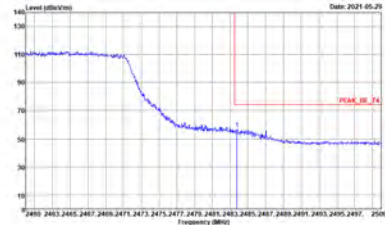
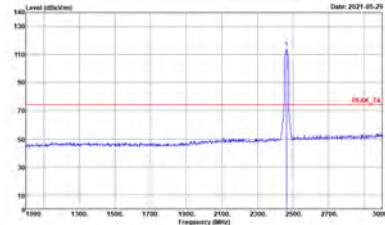
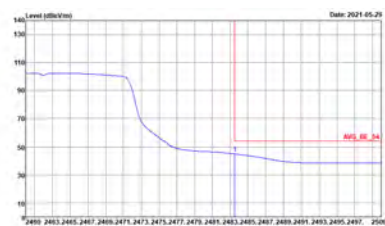
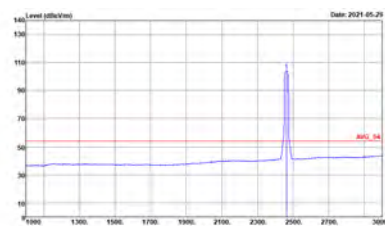
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

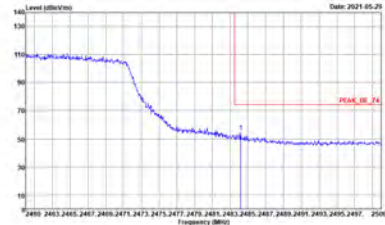
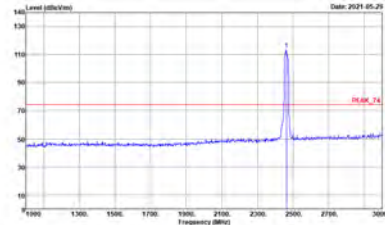
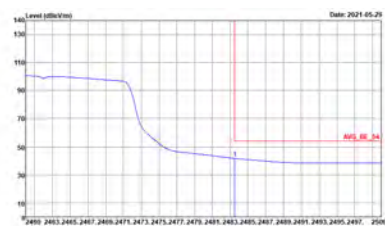
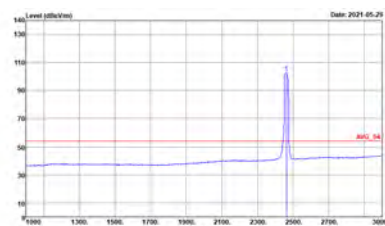


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	Site: :03CH02-11Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Site: :03CH02-11Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	Site: :03CH02-11Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	Site: :03CH02-11Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

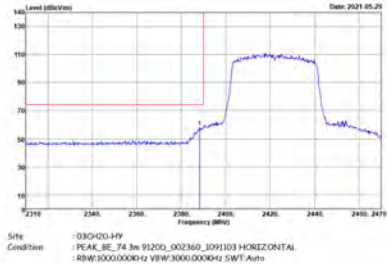
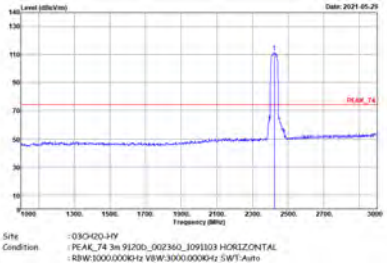
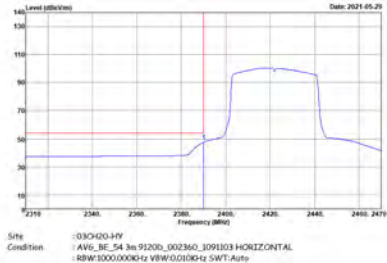
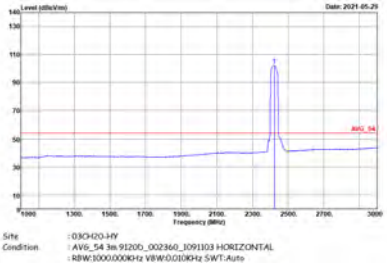
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

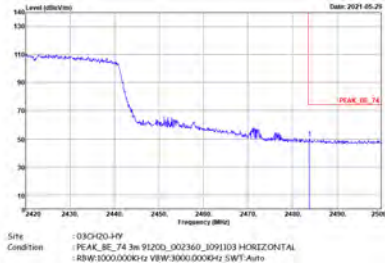
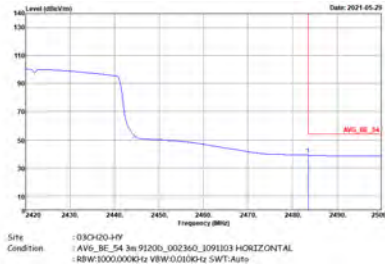


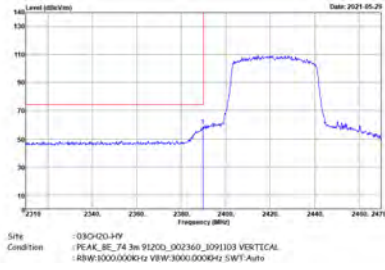
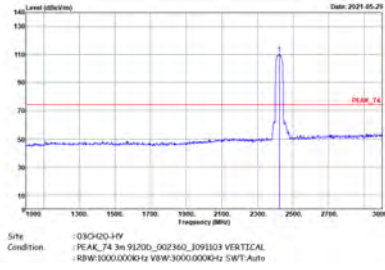
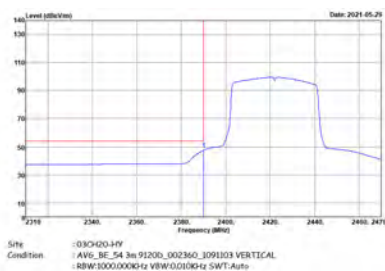
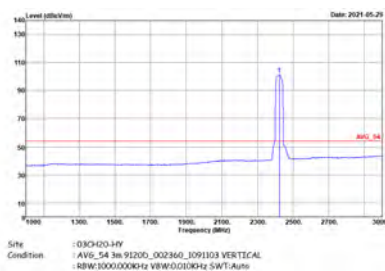
2.4GHz 2400~2483.5MHz

WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH20-14Y Condition : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VFW:3000.0000Hz SWT:Auto	 Site : 03CH20-14Y Condition : PEAK_F4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VFW:3000.0000Hz SWT:Auto
Avg.	 Site : 03CH20-14Y Condition : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VFW:0.0100Hz SWT:Auto	 Site : 03CH20-14Y Condition : AVG_F4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VFW:0.0100Hz SWT:Auto

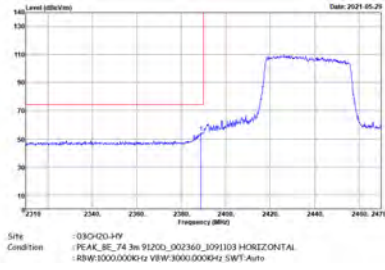
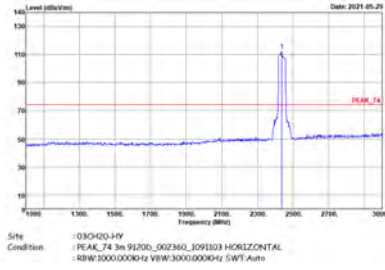
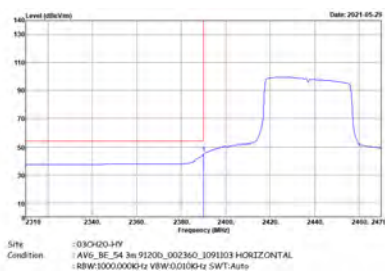
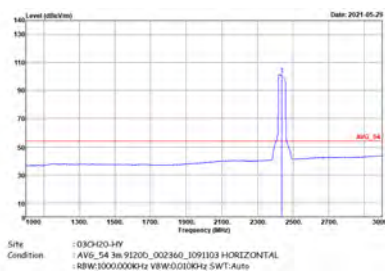


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

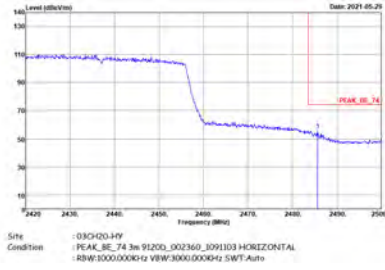
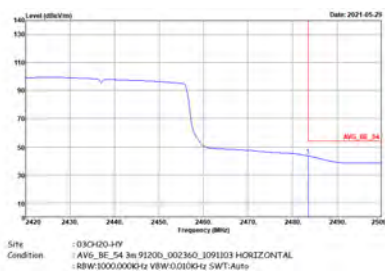
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak	 Site: 03CH03-11Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: 03CH03-11Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: 03CH03-11Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: 03CH03-11Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

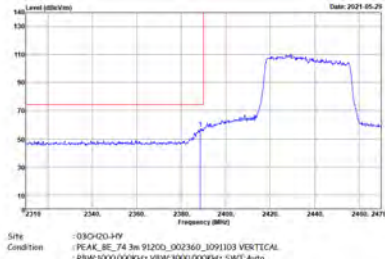
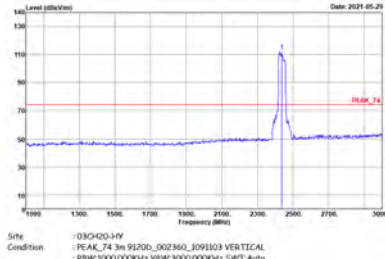
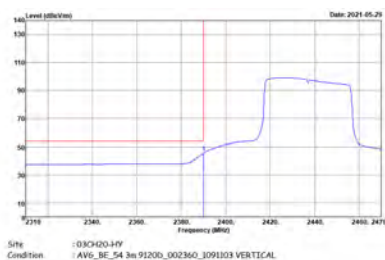
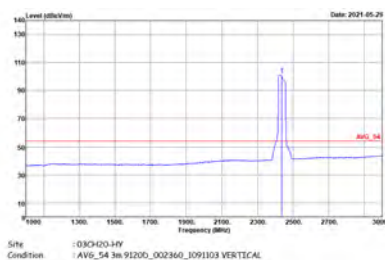


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

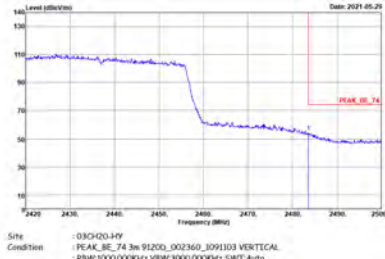
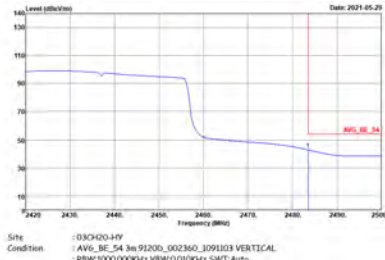
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak		
Avg.		

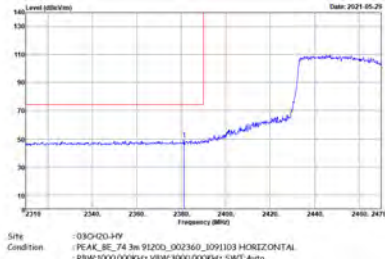
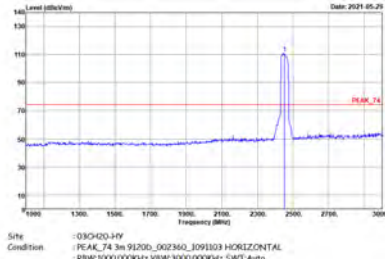
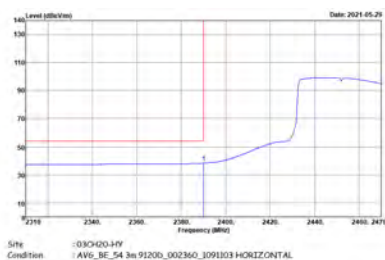
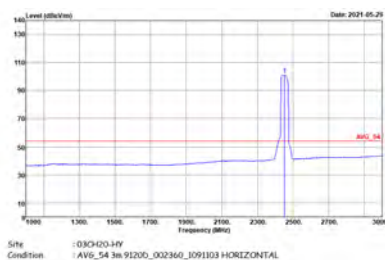


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH020-109 Condition : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Left blank
Avg.	 Site : 03CH020-109 Condition : AVG_BE_84 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	Left blank

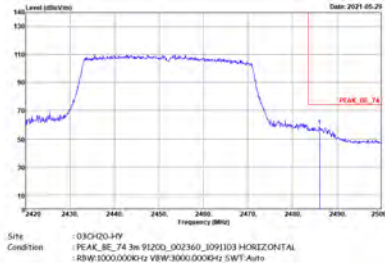
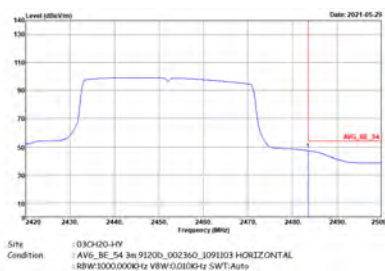
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto



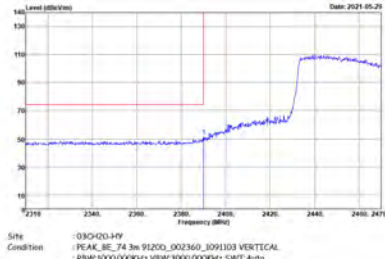
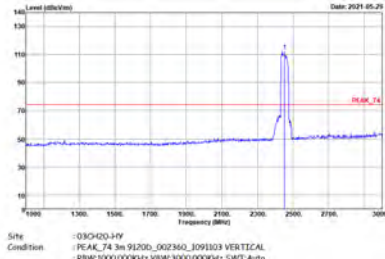
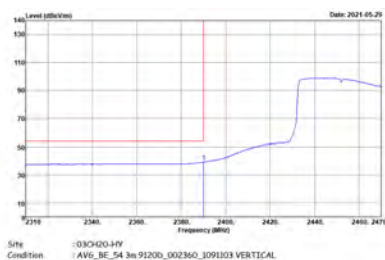
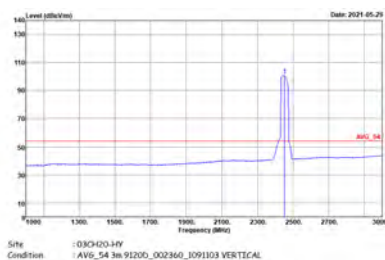
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site: :03CH20-14Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-14Y Condition: : PEAK_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-14Y Condition: : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-14Y Condition: : AVG_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto

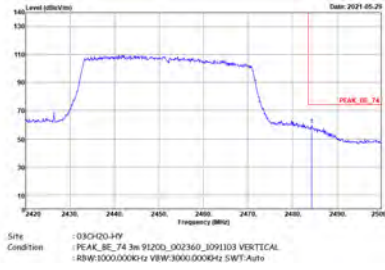
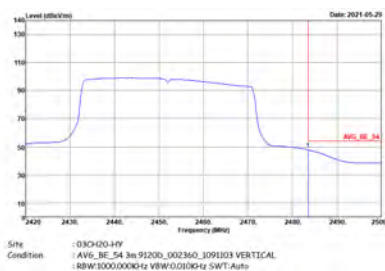


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH020-109 Condition : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Left blank
Avg.	 Site : 03CH020-109 Condition : AVG_BE_54 3m 91200_002360_1091103 HORIZONTAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	Left blank



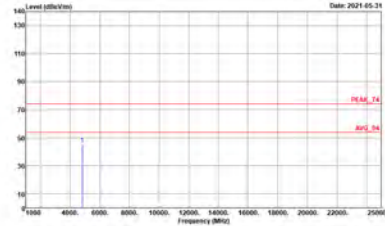
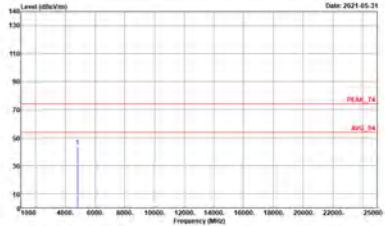
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak	 Site: :03CH20-11Y Condition: : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site: :03CH20-11Y Condition: : PEAK_74 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site: :03CH20-11Y Condition: : AVG_BE_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	 Site: :03CH20-11Y Condition: : AVG_54 3m 91200_002360_1091103 VERTICAL : RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto



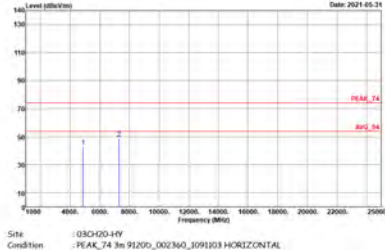
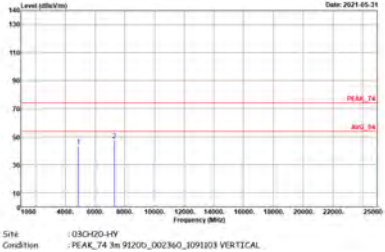
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : 03CH020-109 Condition : PEAK_BE_74 3m 91200_002360_1091103 VERTICAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Left blank
Avg.	 Site : 03CH020-109 Condition : AVG_BE_54 3m 91200_002360_1091103 VERTICAL RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	Left blank

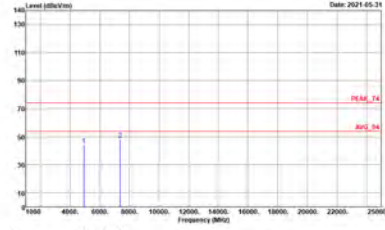
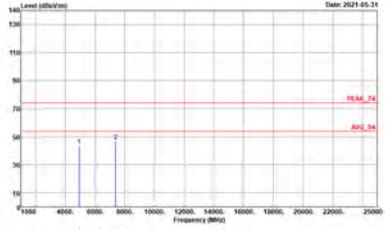


2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : -PEAK_T4 3m 91200_002360_1091203 HORIZONTAL	 Site : 03CH20-HY Condition : -PEAK_T4 3m 91200_002360_1091203 VERTICAL

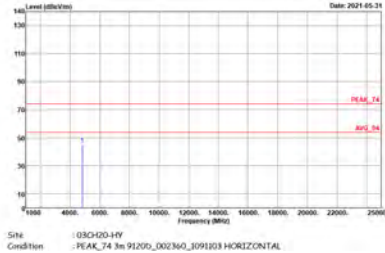
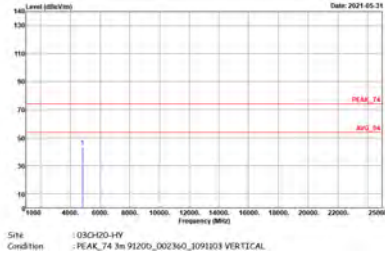


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-HY Condition : PEAK_T4 3m 91200_002360_1091203 HORIZONTAL	 Site : 03CH20-HY Condition : PEAK_T4 3m 91200_002360_1091203 VERTICAL

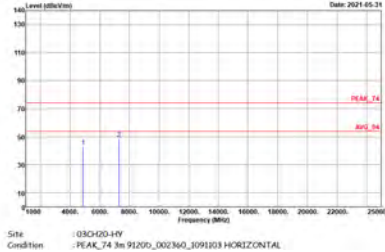
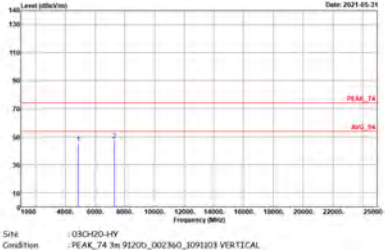
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH20-4Y Condition : -PEAK_T4 3m 91200_002360_1091203 HORIZONTAL	 Site : 03CH20-4Y Condition : -PEAK_T4 3m 91200_002360_1091203 VERTICAL



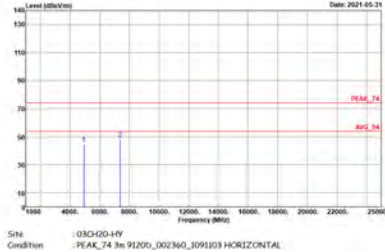
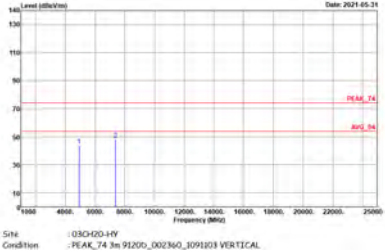
2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site: 03CH20-HY Condition: -PEAK_74 3m 91200_002360_1091203 HORIZONTAL	 Site: 03CH20-HY Condition: -PEAK_74 3m 91200_002360_1091203 VERTICAL



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Horizontal spectrum plot showing Level (dBm/Hz) vs Frequency (MHz) from 4000 to 25000. Two peaks are visible at approximately 4500 MHz and 6000 MHz. The plot is titled "Date: 2021-05-31" and "Site: 03CH20-4Y". The condition is "PEAK_T4 3m 91200_002360_1091203 HORIZONTAL".	 Vertical spectrum plot showing Level (dBm/Hz) vs Frequency (MHz) from 4000 to 25000. Two peaks are visible at approximately 4500 MHz and 6000 MHz. The plot is titled "Date: 2021-05-31" and "Site: 03CH20-4Y". The condition is "PEAK_T4 3m 91200_002360_1091203 VERTICAL".

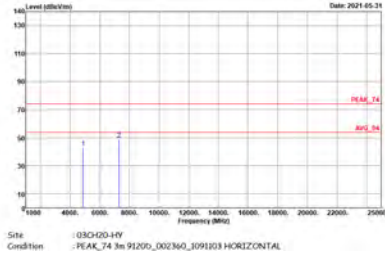
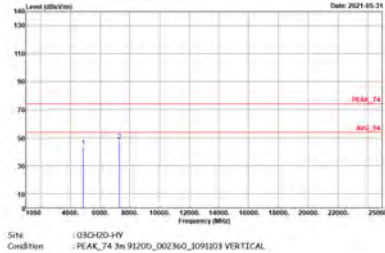


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Horizontal spectrum plot showing Level (dBm/Hz) vs Frequency (MHz) from 4000 to 25000. Two peaks are visible at approximately 4500 MHz and 5000 MHz. The plot is titled "Date: 2021-05-31" and "Site: 03CH20-17V". The condition is "PEAK_T4 3m 91200_002360_1091203 HORIZONTAL".	 Vertical spectrum plot showing Level (dBm/Hz) vs Frequency (MHz) from 4000 to 25000. Two peaks are visible at approximately 4500 MHz and 5000 MHz. The plot is titled "Date: 2021-05-31" and "Site: 03CH20-17V". The condition is "PEAK_T4 3m 91200_002360_1091203 VERTICAL".



2.4GHz 2400~2483.5MHz

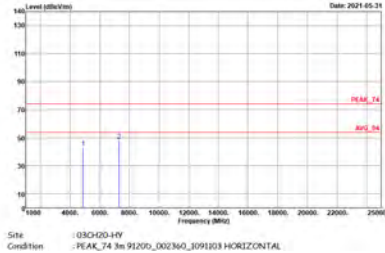
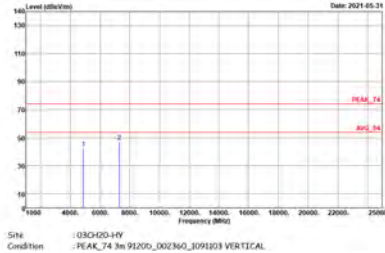
WIFI 802.11 ax HE20 Full (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11 ax HE20 Full CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site: 03CH20-4FY Condition: PEAK_T4 3m 91200_002360_1091203 HORIZONTAL	 Site: 03CH20-4FY Condition: PEAK_T4 3m 91200_002360_1091203 VERTICAL

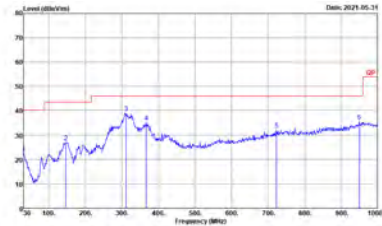
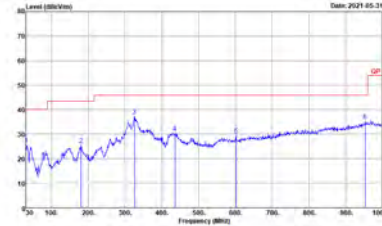


2.4GHz 2400~2483.5MHz

WIFI 802.11 ax HE40 Full (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11 ax HE40 Full CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site: 03CH20-HY Condition: PEAK_T4 3m 91200_002360_1091203 HORIZONTAL	 Site: 03CH20-HY Condition: PEAK_T4 3m 91200_002360_1091203 VERTICAL

Emission below 1GHz
2.4GHz WIFI 802.11ax HE40 Full (LF)

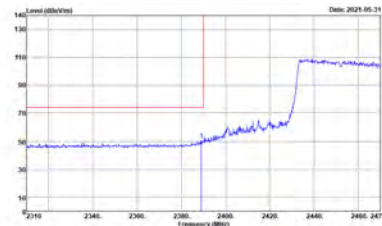
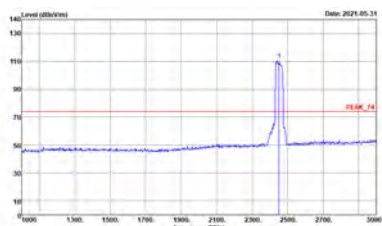
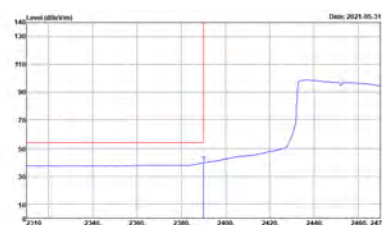
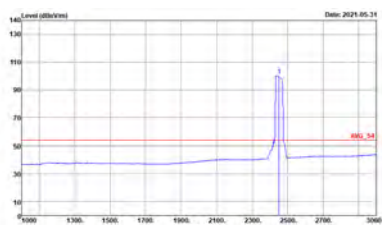
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11ax HE40 Full LF	
1+2	Horizontal	Vertical
QP / Peak	 Site: 03CH20-HY Condition: QP 3m LF_55606A08_3093022 HORIZONTAL	 Site: 03CH20-HY Condition: QP 3m LF_55606A08_3093022 VERTICAL



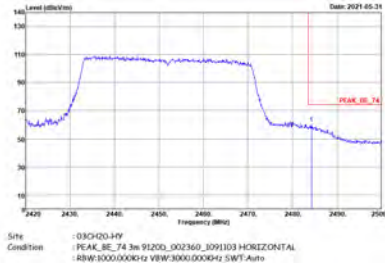
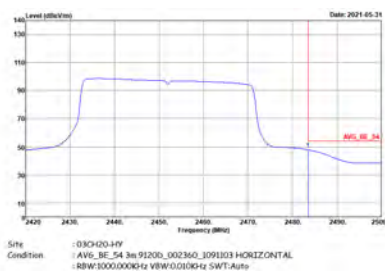
<Sample 2>

2.4GHz 2400~2483.5MHz

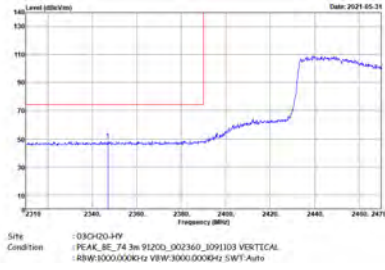
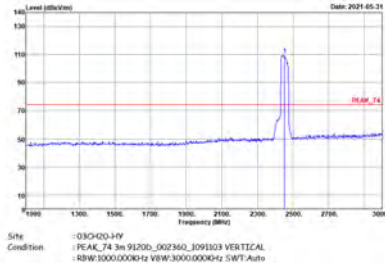
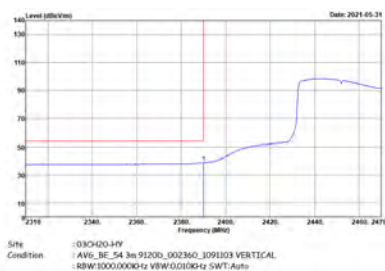
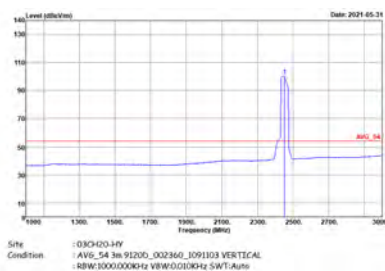
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH02-HY Condition : PEAK_BE_T4 1m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site : 03CH02-HY Condition : PEAK_T4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto
Avg.	 Site : 03CH02-HY Condition : AVG_BE_T4 1m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	 Site : 03CH02-HY Condition : AVG_T4 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto

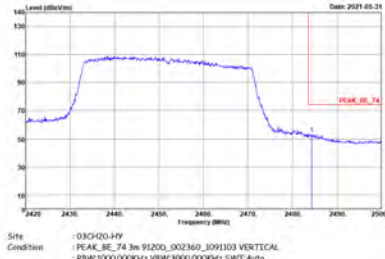
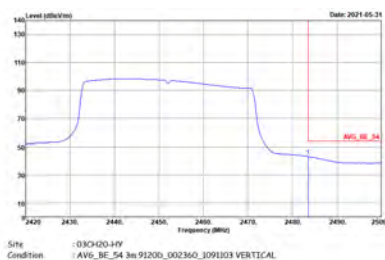


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH020-109 Condition : PEAK_BE_74 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:3000.0000Hz SWT:Auto	Left blank
Avg.	 Site : 03CH020-109 Condition : AVG_BE_84 3m 91200_002360_1091103 HORIZONTAL RBW:1000.0000Hz VBW:0.0100Hz SWT:Auto	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

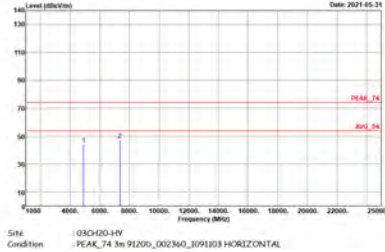
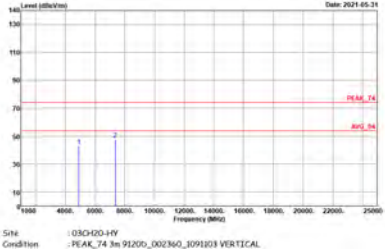


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

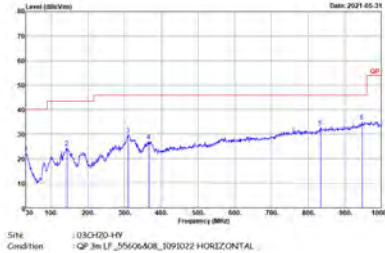
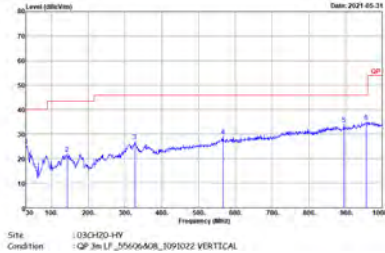
2.4GHz 2400~2483.5MHz

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.		

Emission below 1GHz
2.4GHz WIFI 802.11ax HE40 Full (LF)

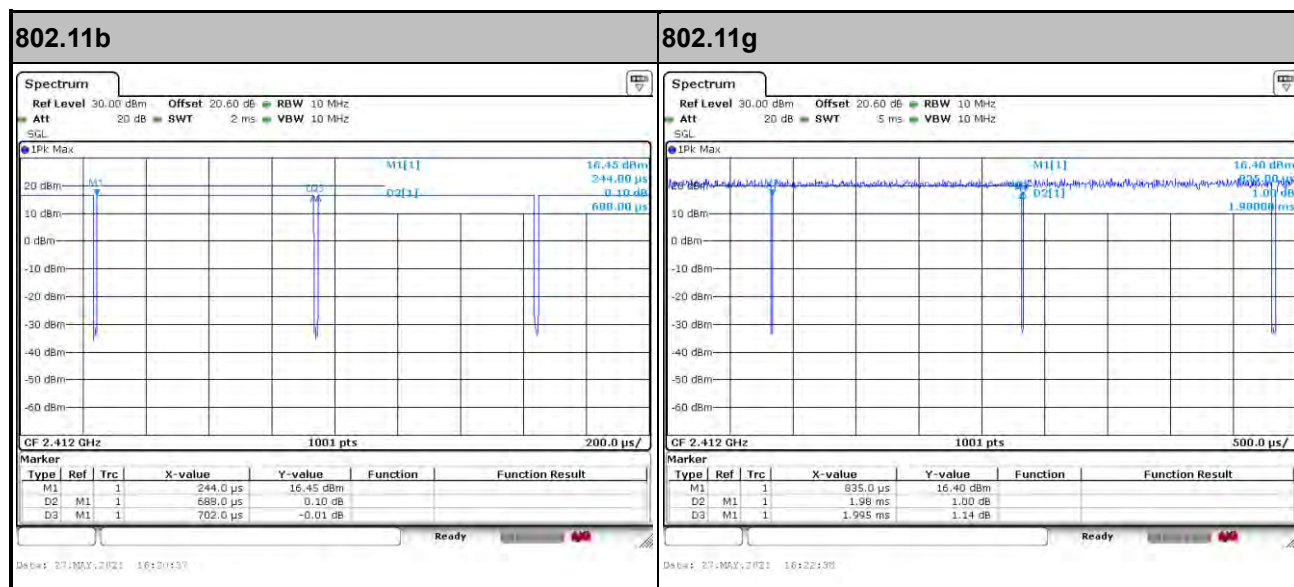
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11ax HE40 Full LF	
1+2	Horizontal	Vertical
QP / Peak	 Site : 03CH20-4Y Condition : QP_3m_LF_35606A08_3093022 HORIZONTAL	 Site : 03CH20-4Y Condition : QP_3m_LF_35606A08_3093022 VERTICAL



Appendix E. Duty Cycle Plots

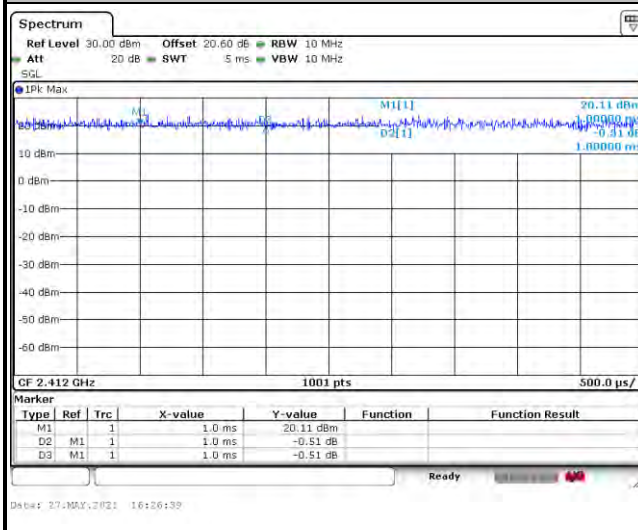
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
1+2	802.11b for Ant1	98.28	-	-	10Hz	0.08
1+2	802.11b for Ant2	98.01	-	-	10Hz	0.09
1+2	802.11g for Ant1	99.25	-	-	10Hz	0.03
1+2	802.11g for Ant2	98.51	-	-	10Hz	0.07
1+2	802.11ax20 for Ant1 Full RU	100.00	-	-	10Hz	0.00
1+2	802.11ax20 for Ant2 Full RU	100.00	-	-	10Hz	0.00
1+2	802.11ax40 for Ant1 Full RU	100.00	-	-	10Hz	0.00
1+2	802.11ax40 for Ant2 Full RU	100.00	-	-	10Hz	0.00

MIMO <Ant. 1>

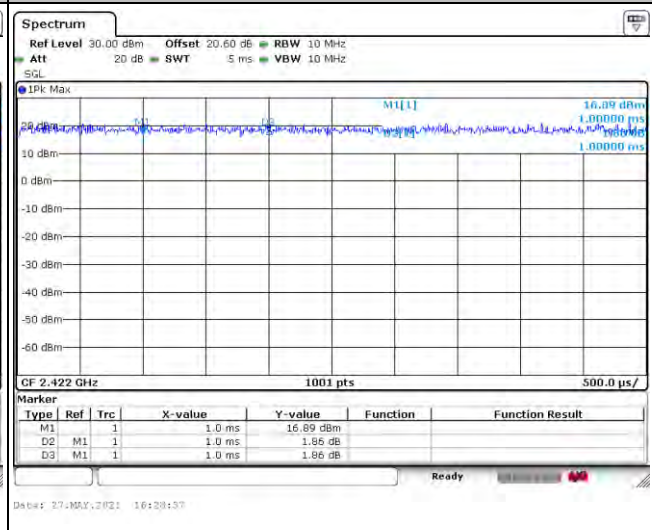




802.11ax HE20

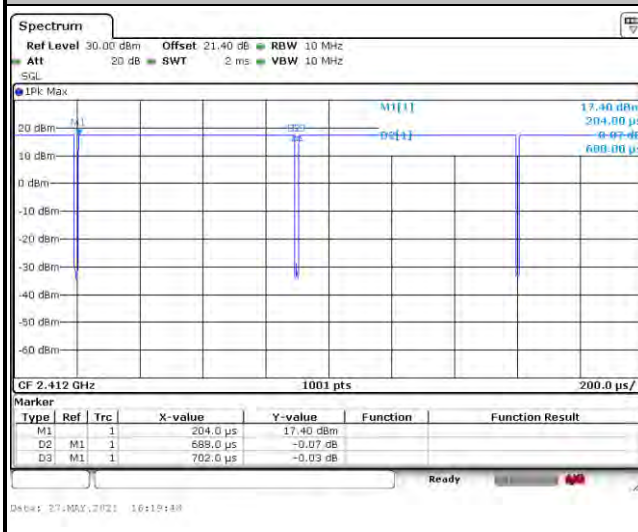


802.11ax HE40



MIMO <Ant. 2>

802.11b



802.11g

