

FCC RADIO TEST REPORT

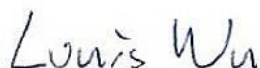
FCC ID : U8G-P1MT01
Equipment : Peplink Pepwave Wireless Product
Brand Name :



Model Name : PEPWAVE
MAX BR1 Mini
MAX-BR1-MINI-LTE-US-T-PRM
MAX-BR1-MINI-LTEA-W-T-PRM
MAX-BR1-MINI-LTEA-US-T-PRM
MAX-BR1-MINI-LTE-US-DC-T-PRM
MAX-BR1-MINI-LTEA-W-DC-T-PRM
MAX-BR1-MINI-LTEA-US-DC-T-PRM
AP One Rugged
APO-AC-RUG
Applicant : PISMO LABS TECHNOLOGY LIMITED
A8, 5/F, HK Spinners Industrial Building, Phase 6, 481
Castle Peak Road, Cheung Sha Wan, Hong Kong
Manufacturer : PISMO LABS TECHNOLOGY LIMITED
A8, 5/F, HK Spinners Industrial Building, Phase 6, 481
Castle Peak Road, Cheung Sha Wan, Hong Kong
Standard : FCC Part 15 Subpart C §15.247

The product was received on May 06, 2022 and testing was performed from May 25, 2022 to Oct. 08, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No. 58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR250205A	01	Initial issue of report	Oct. 20, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	1.27 dB under the limit at 2388.960 MHz
3.6	15.207	AC Conducted Emission	Pass	14.42 dB under the limit at 0.152 MHz
3.7	15.203	Antenna Requirement	Pass	-

Declaration of Conformity:

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

Comments and Explanations:

- The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.
- The purpose of different model name is for marketing segmentation.

Reviewed by: Lewis Ho

Report Producer: Cindy Liu



1 General Description

1.1 Product Feature of Equipment Under Test

WCDMA/LTE, Wi-Fi 2.4GHz 802.11b/g/n, WiFi 5GHz 802.11a/n/ac, and GPS.

Product Feature	
Integrated WWAN Module 1	Brand Name: Sierra Model Name: EM7411 FCC ID: N7NEM74B
Integrated WWAN Module 2	Brand Name: Sierra Model Name: MC7455 FCC ID: N7NMC7455
Integrated WWAN Module 3	Brand Name: Telit Model Name: LE910C4-NF FCC ID: RI7LE910CXNF
Sample 1	EUT with WWAN Module 1 (EM7411) + GPS
Sample 2	EUT with WWAN Module 2 (MC7455) + GPS
Sample 3	EUT with WWAN Module 3 (LE910C4-NF) + GPS
Sample 4	EUT without WWAN Module + GPS
Antenna Type	WWAN <For EM7411>: Omni-directional Antenna <For MC7455>: Omni-directional Antenna <For LE910C4-NF >: Omni-directional Antenna WLAN: <Ant. 1>: Omni-directional Antenna <Ant. 2>: Omni-directional Antenna GPS: Directional Antenna

Antenna information		
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	Ant. 1: 3.15 Ant. 2: 3.15

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

1.1.1 Antenna Gain

<For CDD Mode>

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F2)f)ii)

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

For power measurements on IEEE 802.11 devices,

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

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

For PSD measurements, the directional gain calculation.

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

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

where

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

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

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;
 G_k is the gain in dBi of the k th antenna.

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

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

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

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

			DG	DG	Power	PSD
	Ant 1	Ant 2	for	for	Limit	Limit
	(dBi)	(dBi)	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
2.4GHz	3.15	3.15	3.15	6.16	0.00	0.16

Calculation example:

If a device has two antenna, $G_{ANT1} = 3.15\text{dBi}$; $G_{ANT2} = 3.15\text{dBi}$

Directional gain of power measurement = $\max(3.15, 3.15) + 0 = 3.15\text{ dBi}$

Directional gain of PSD derived from formula which is

$$10 \times \log \left\{ \left[10^{\frac{3.15\text{ dBi}}{20}} + 10^{\frac{3.15\text{ dBi}}{20}} \right]^2 \right\} / 2$$

$$= 6.16\text{ dBi}$$

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

PSD limit reduction = Composite gain + PSD Array gain – 6dBi, (min = 0)

1.2 Modification of EUT

No modifications made to the EUT during the testing.

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. CO05-HY (TAF Code: 1190)
Remark	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH12-HY

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

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

Remark:

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

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two antenna polarization (Horizontal and Vertical), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

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

2.2 Test Mode

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

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

MIMO Antenna

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (2.4GHz) Link + LAN Link + WAN Link + Adapter for Sample 1 Mode 2 : WLAN (2.4GHz) Link + LAN Link + WAN Link + Adapter for Sample 2 Mode 3 : WLAN (2.4GHz) Link + LAN Link + WAN Link + Adapter for Sample 3 Mode 4 : WLAN (2.4GHz) Link + LAN Link + WAN Link + Adapter for Sample 4
Remark: The worst case of Conducted Emission is mode 3; only the test data of it was reported.	

<Sample 1>

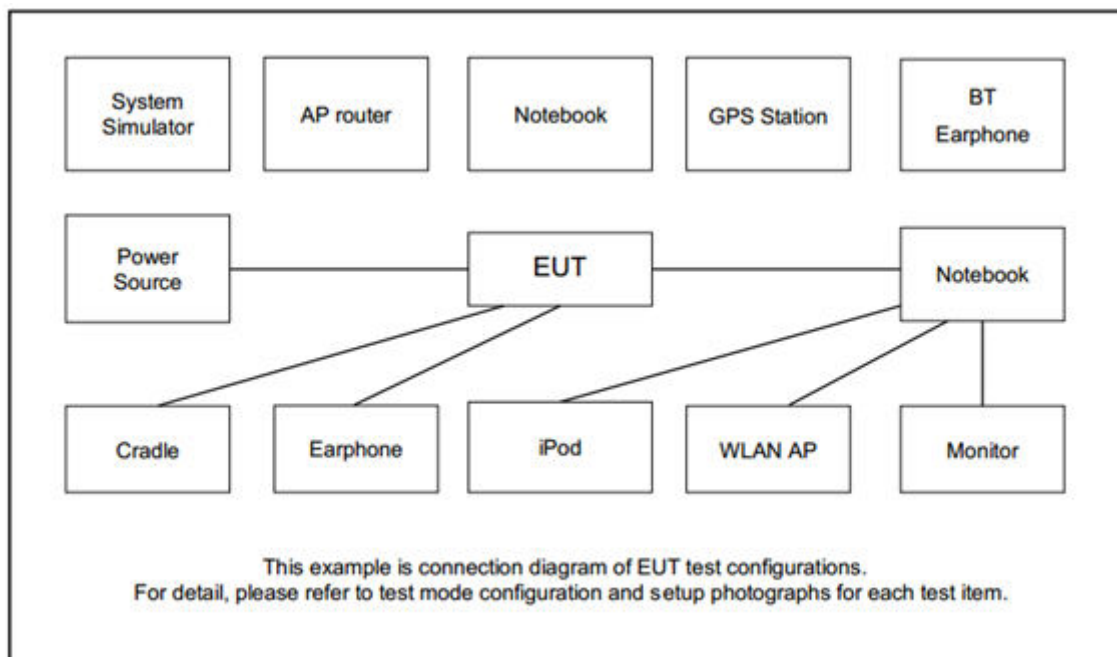
Ch. #	2400-2483.5 MHz			
	802.11b	802.11g	802.11n HT20	802.11n HT40
Low	01	01	01	03
Middle	06	06	06	06
High	11	11	11	09

<Sample 4>

Ch. #	2400-2483.5 MHz
	802.11n HT40
Low	-
Middle	06
High	-

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

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	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 “MT7615 QA 0.0.2.0” 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.

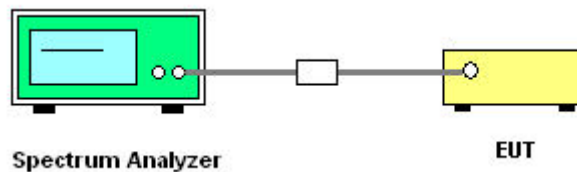
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

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

3.1.4 Test Setup

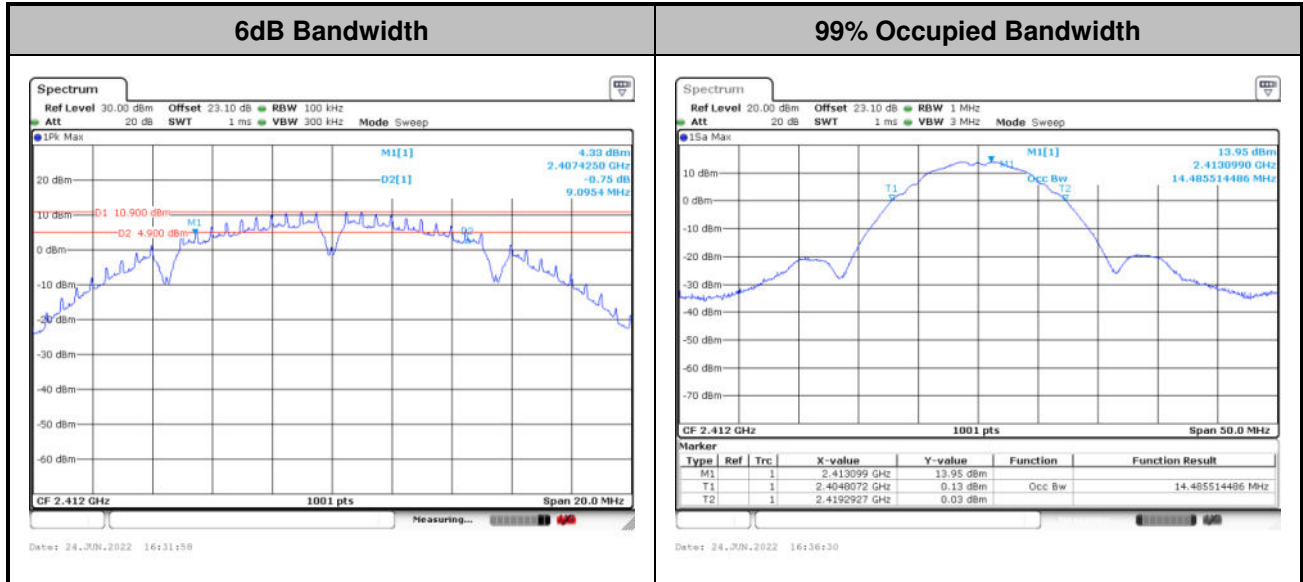




3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

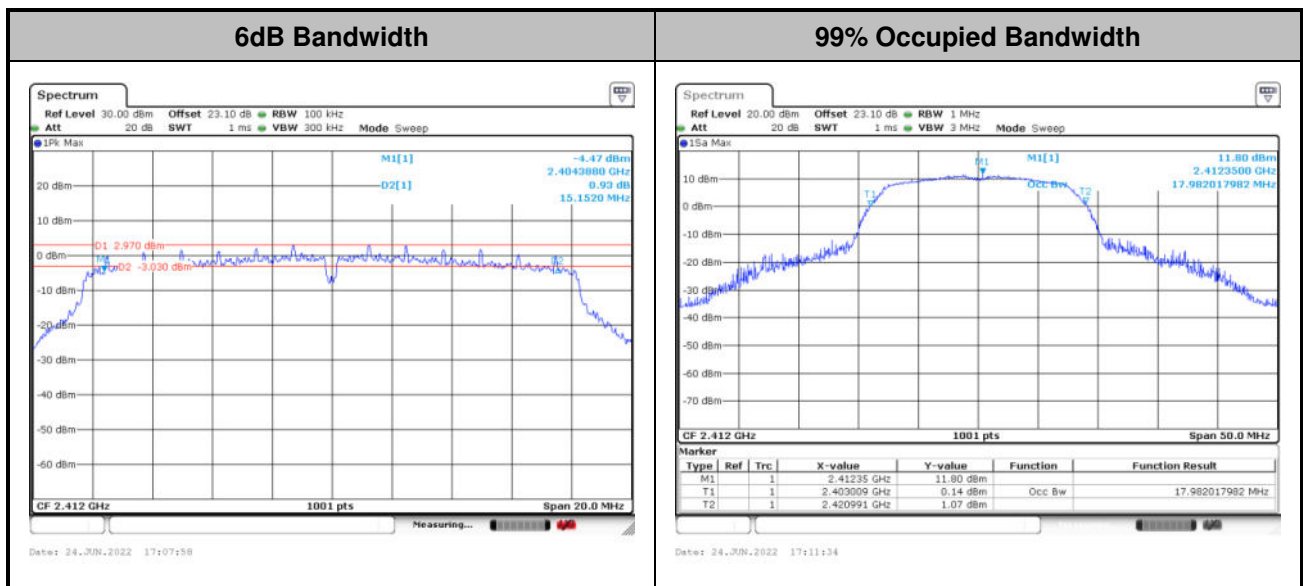
Please refer to Appendix A.

<802.11b>



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

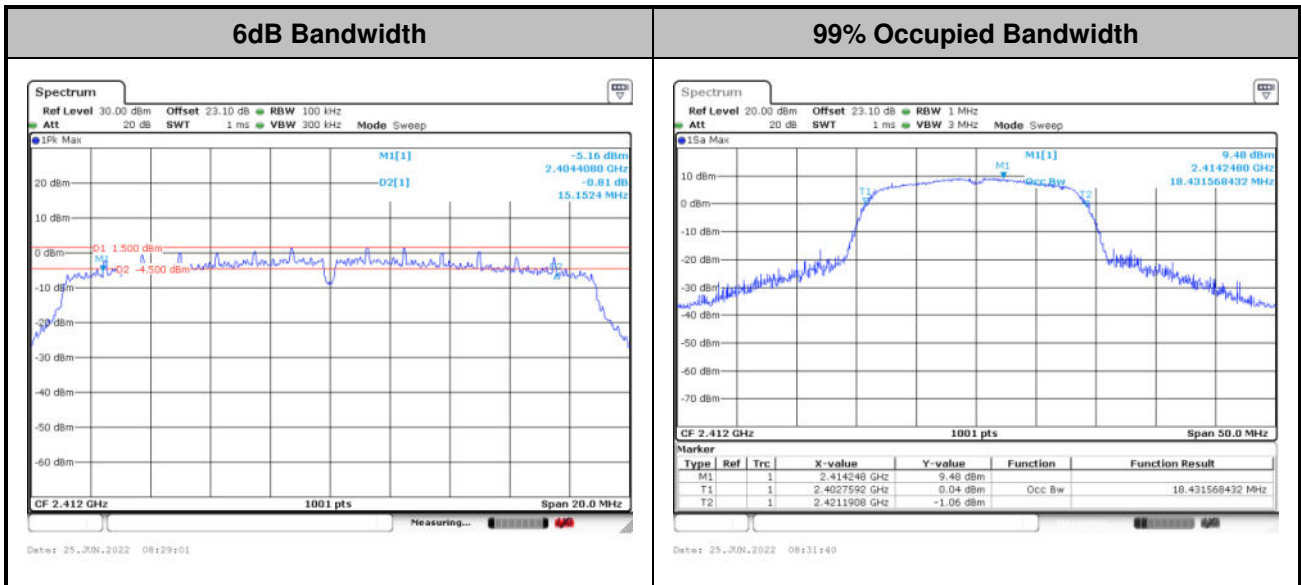
<802.11g>



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

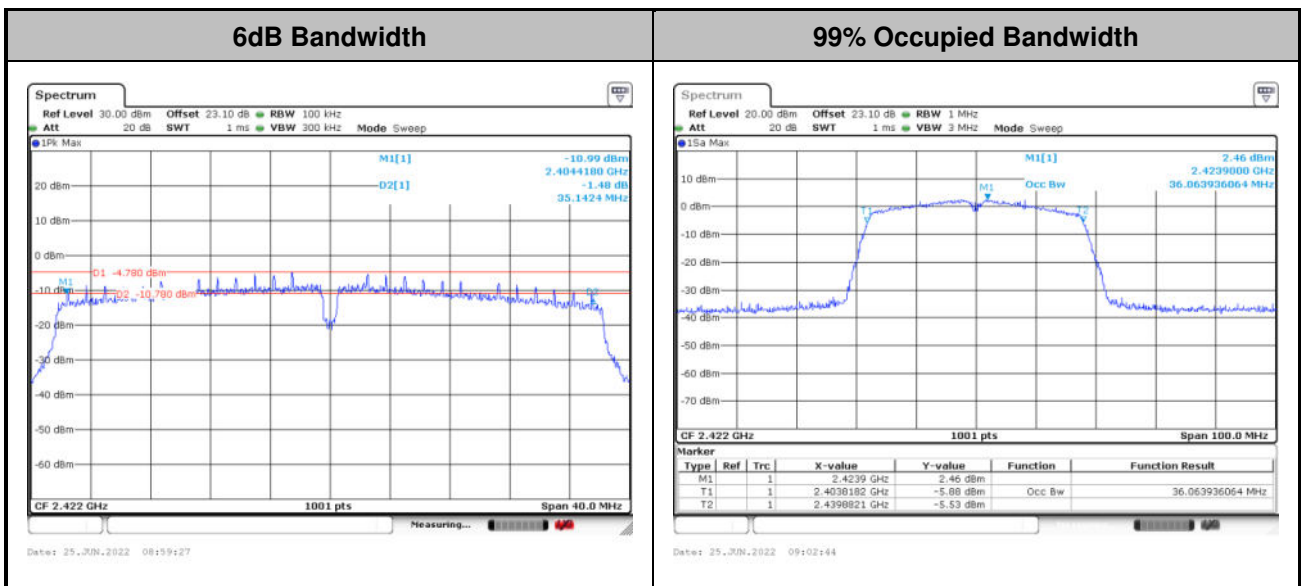


<802.11n HT20>



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

<802.11n HT40>



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

3.2 Output Power Measurement

3.2.1 Limit of Output Power

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

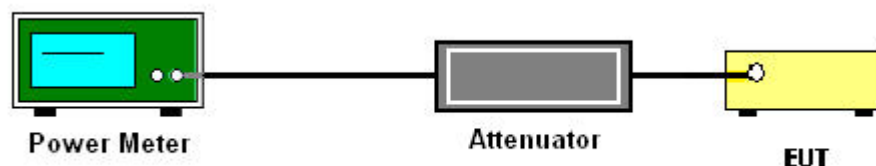
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

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

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

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

3.3.2 Measuring Instruments

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

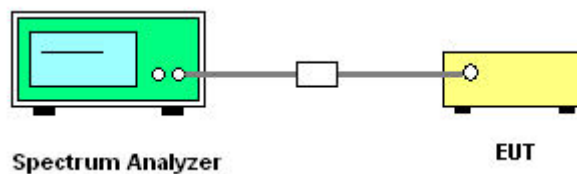
3.3.3 Test Procedures

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

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

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

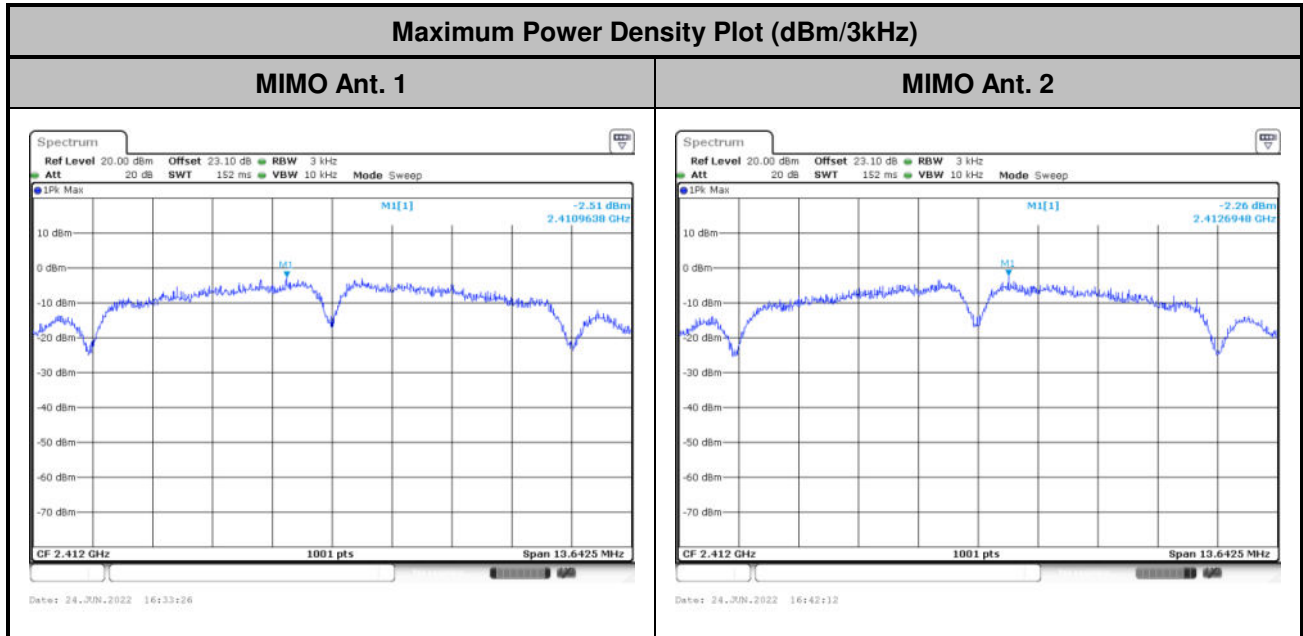
3.3.4 Test Setup



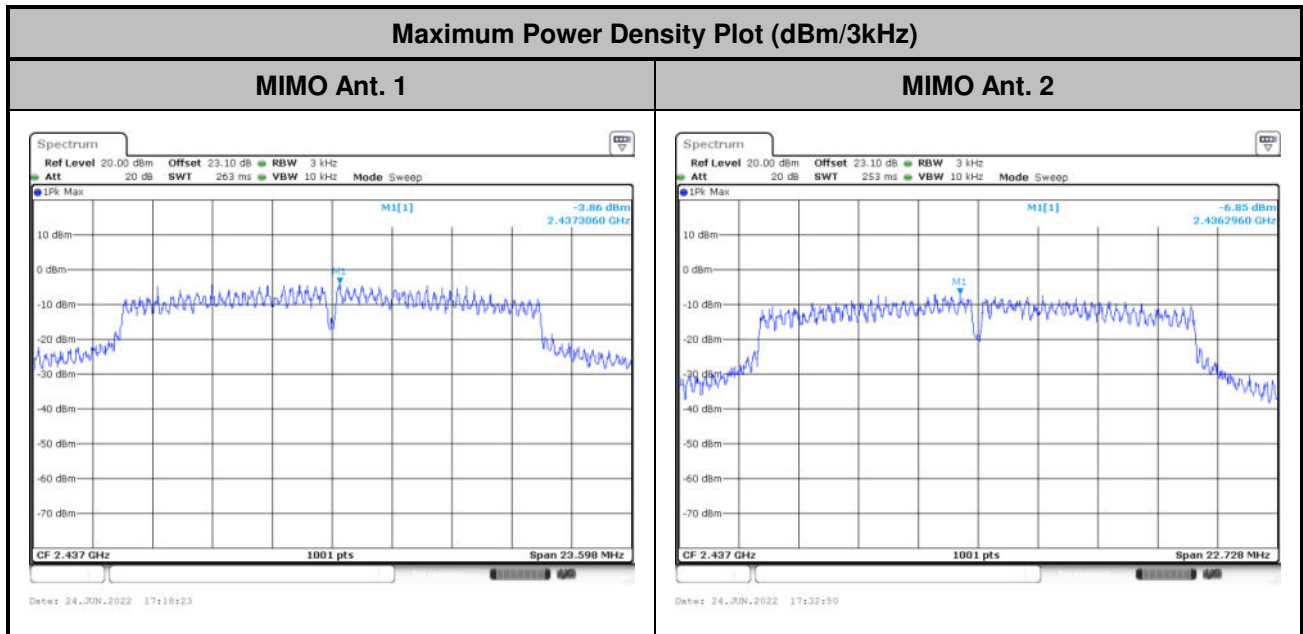
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11b>

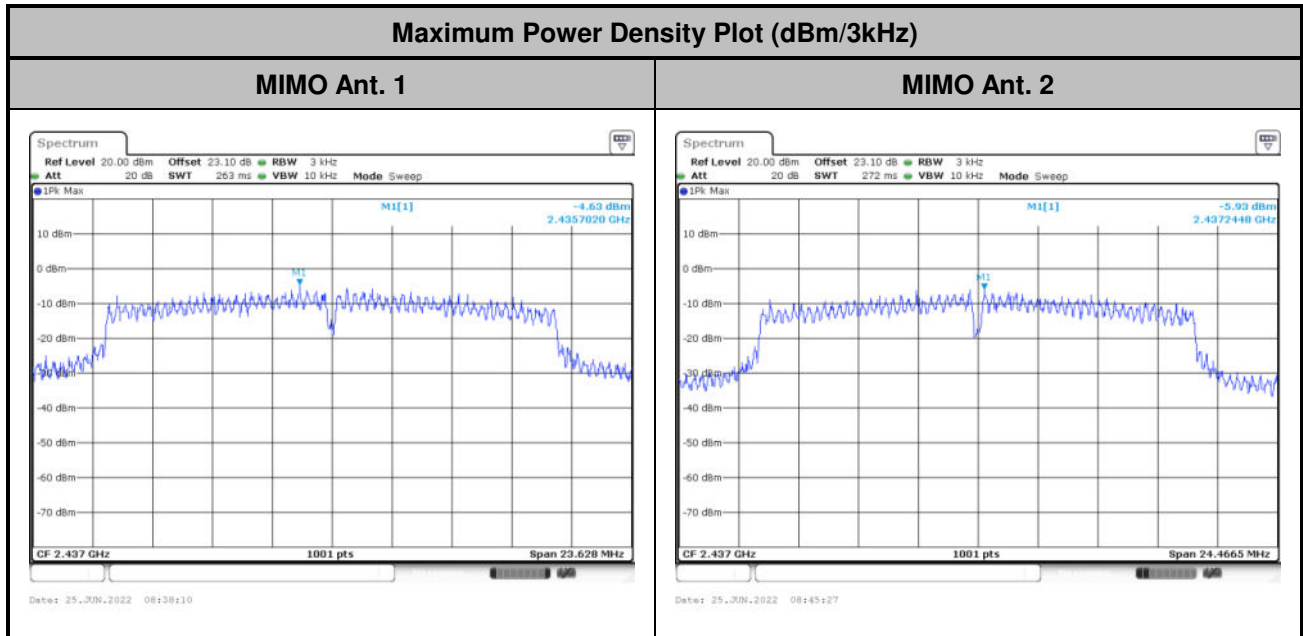


<802.11g>

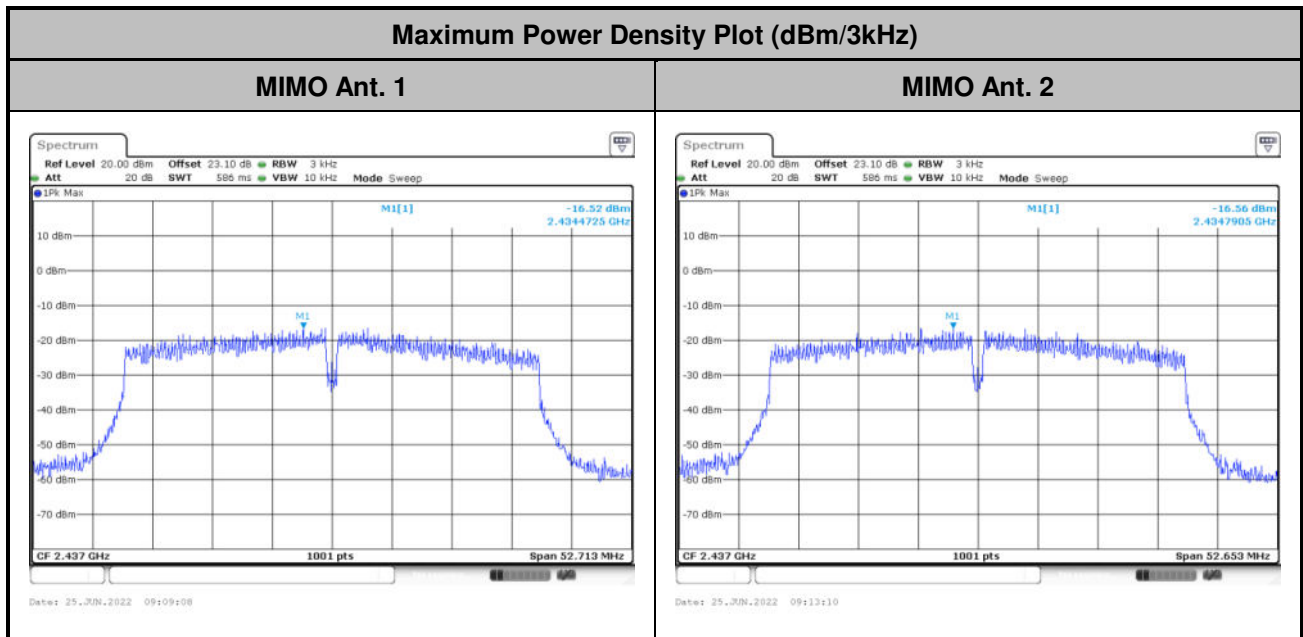




<802.11n HT20>



<802.11n HT40>



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

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

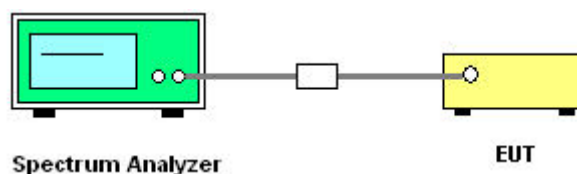
3.4.2 Measuring Instruments

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

3.4.3 Test Procedures

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

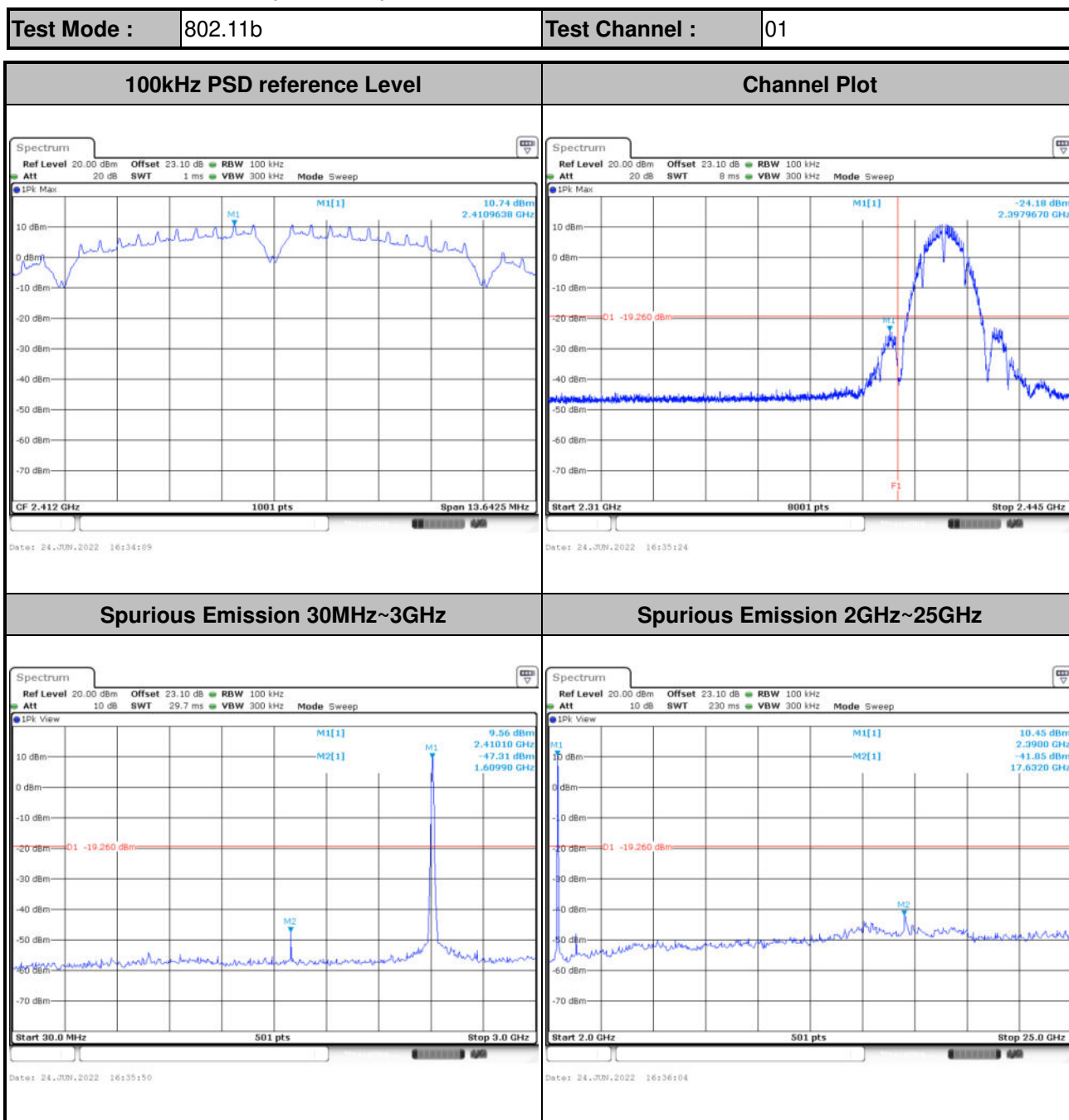
3.4.4 Test Setup





3.4.5 Test Result of Conducted Band Edges and Spurious Emission

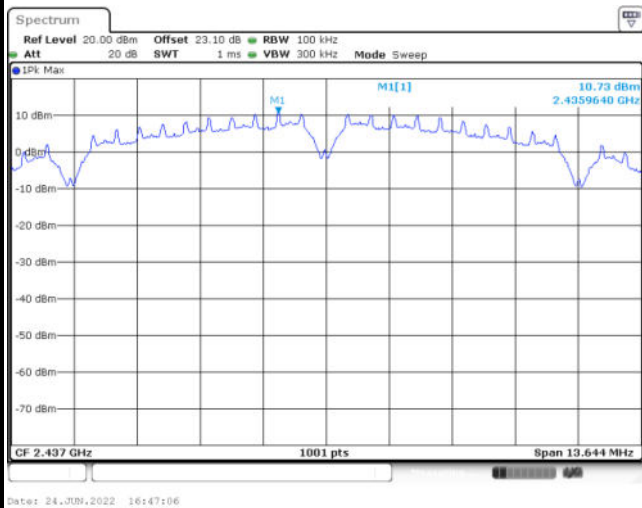
Number of TX = 2, Ant. 1 (Measured)





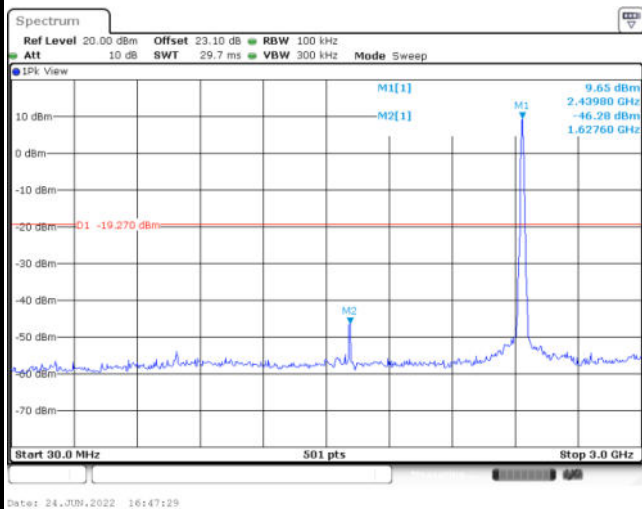
Test Mode :	802.11b	Test Channel :	06
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100kHz PSD reference Level

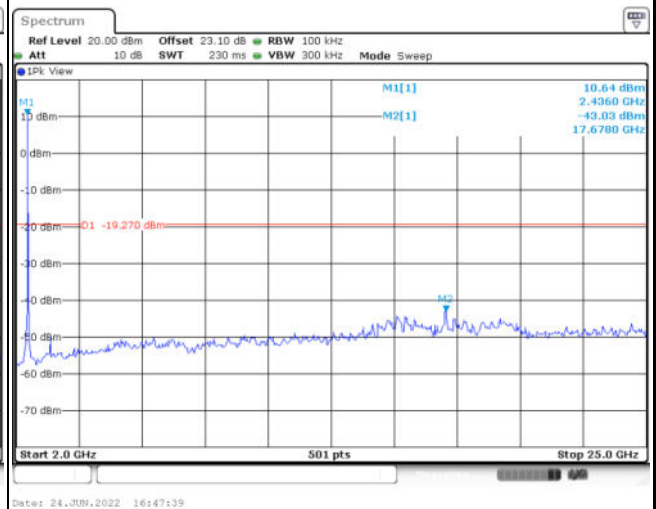


Channel Plot

Spurious Emission 30MHz~3GHz

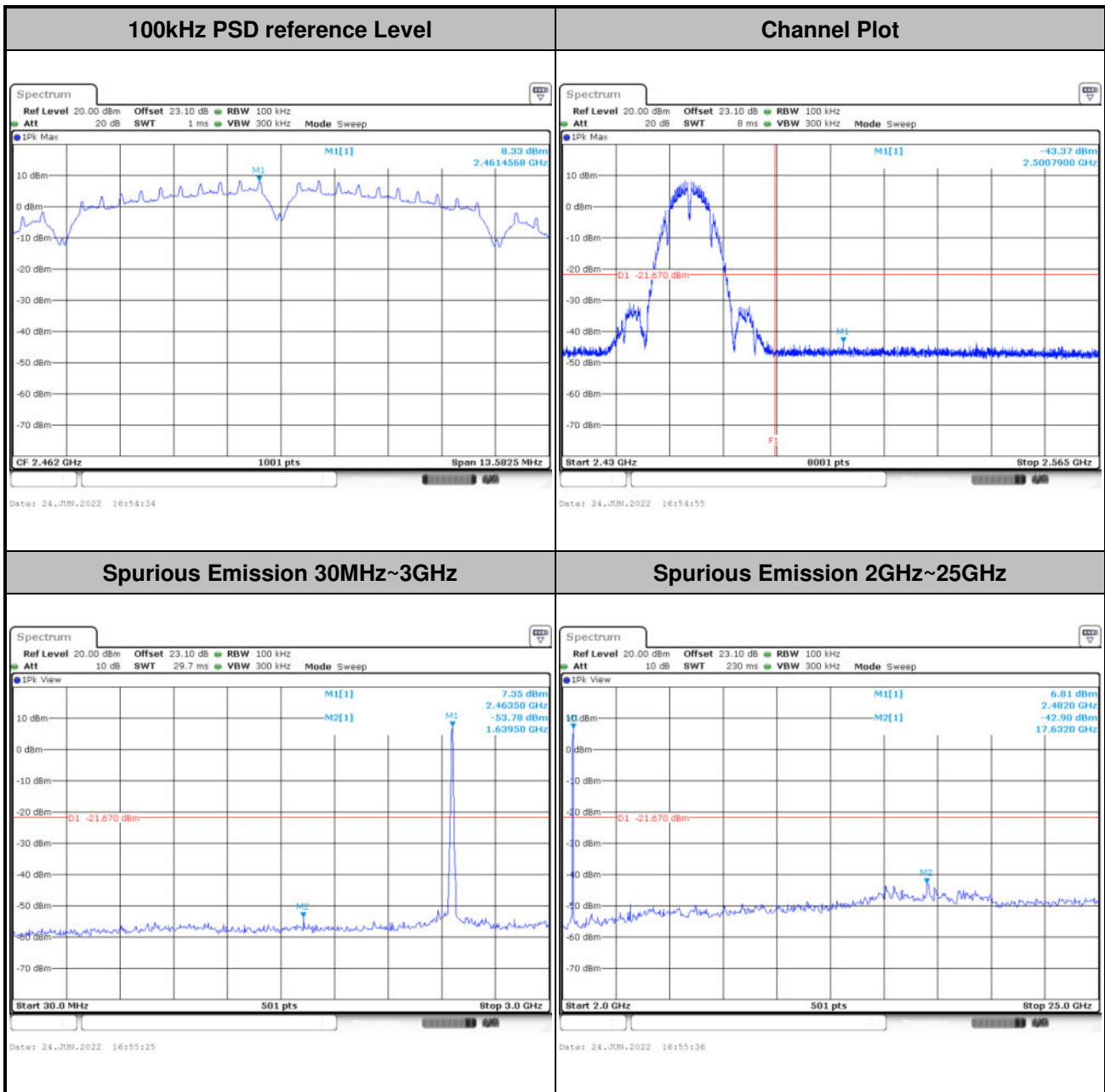


Spurious Emission 2GHz~25GHz



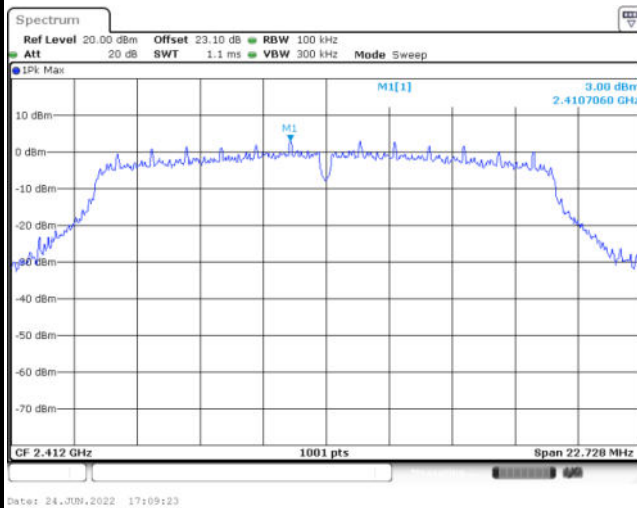
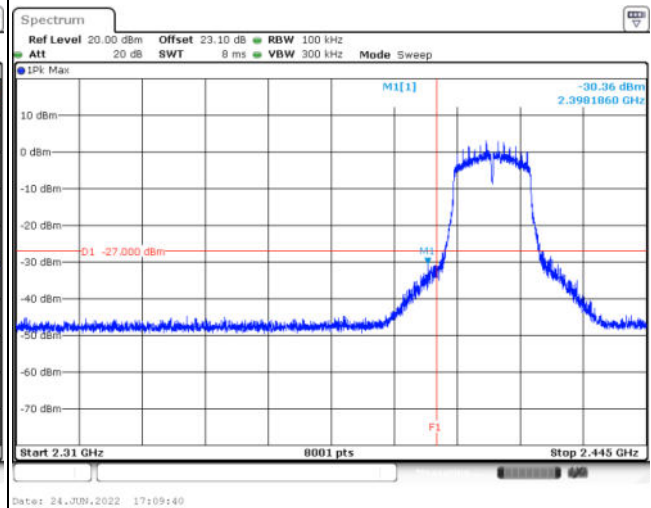
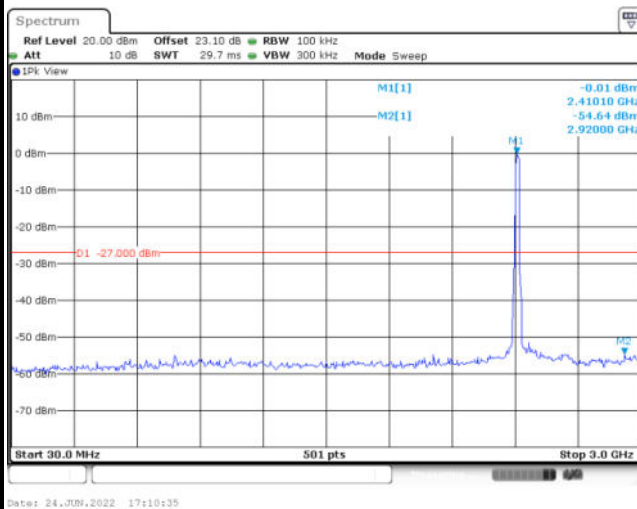
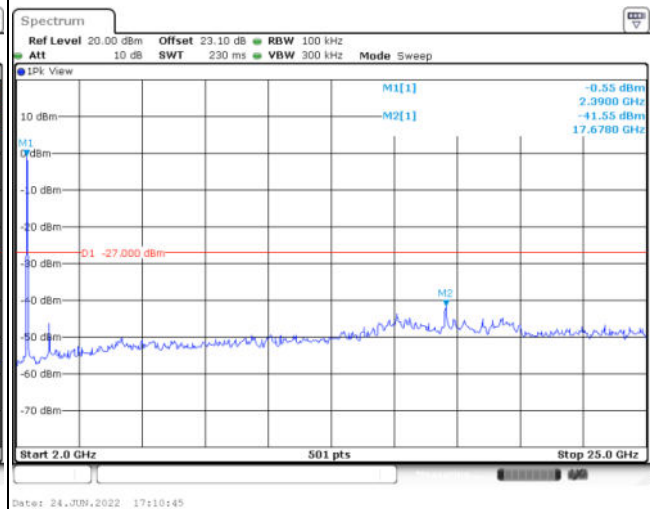


Test Mode :	802.11b	Test Channel :	11
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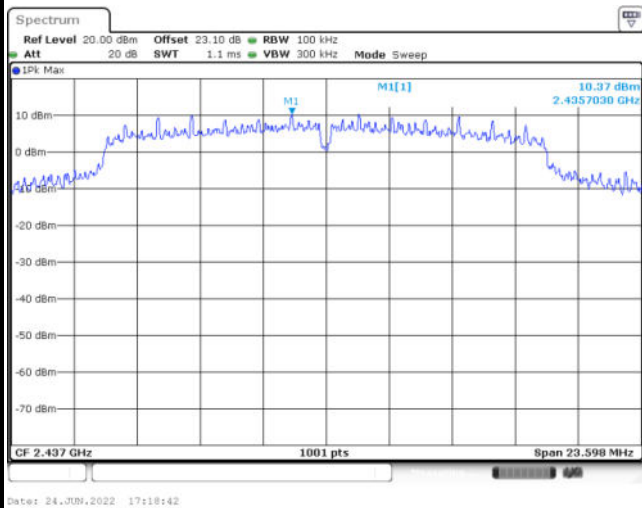
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**



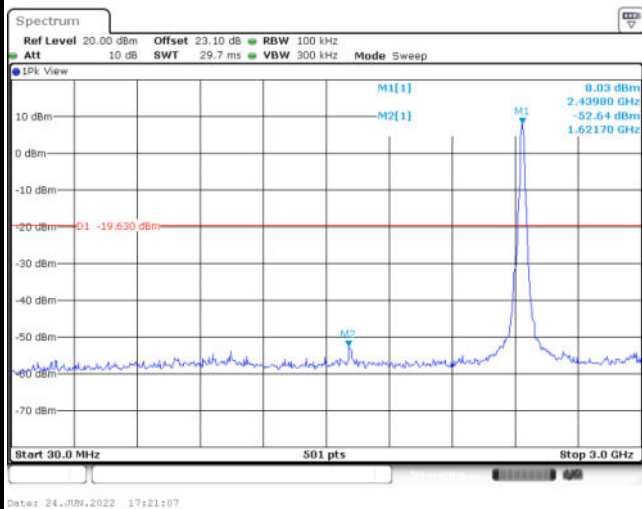
Test Mode :	802.11g	Test Channel :	06
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100kHz PSD reference Level

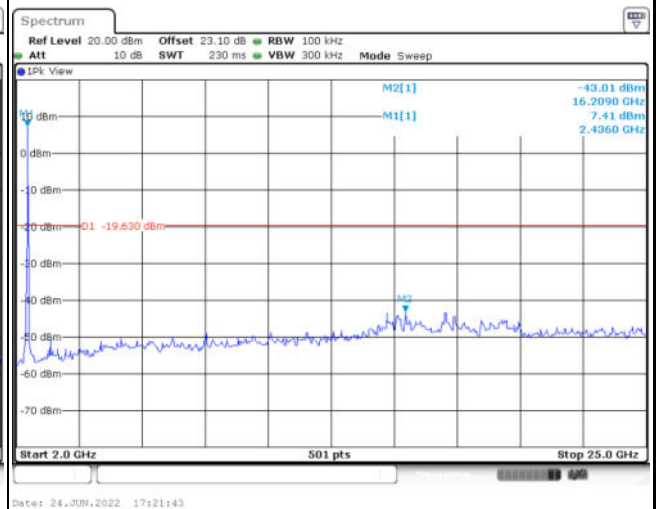


Channel Plot

Spurious Emission 30MHz~3GHz



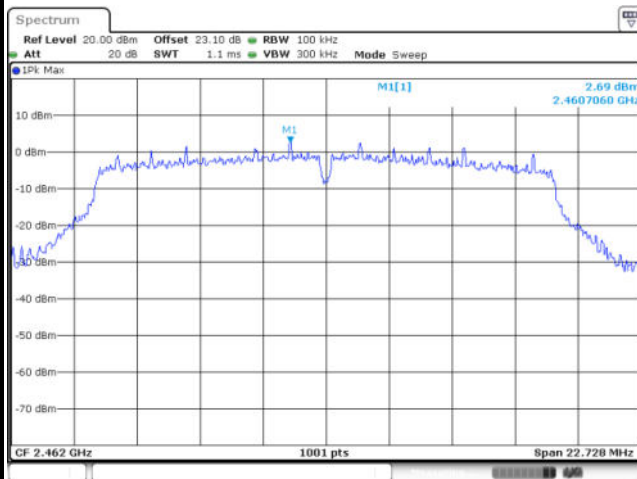
Spurious Emission 2GHz~25GHz



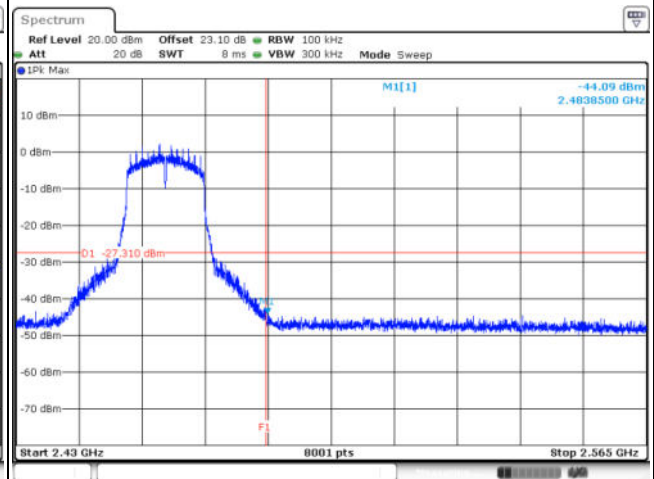


Test Mode :	802.11g	Test Channel :	11
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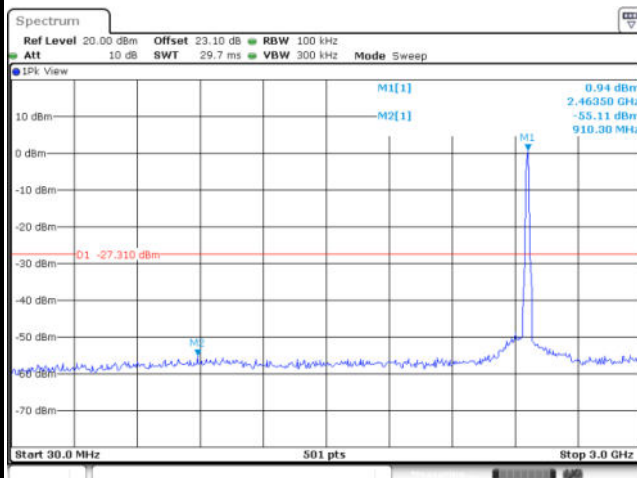
100kHz PSD reference Level



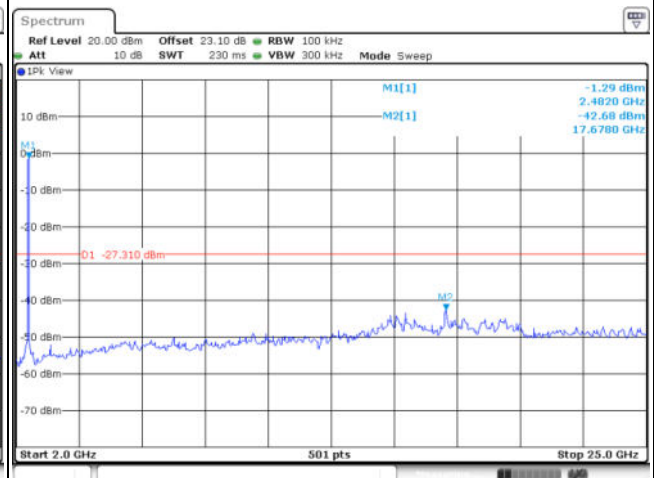
Channel Plot



Spurious Emission 30MHz~3GHz

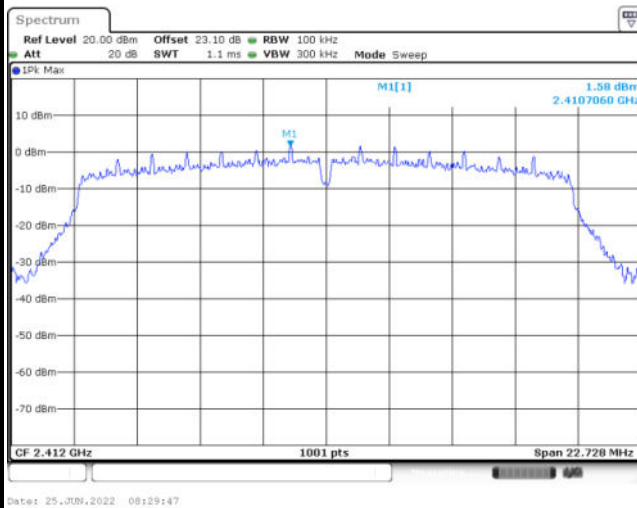
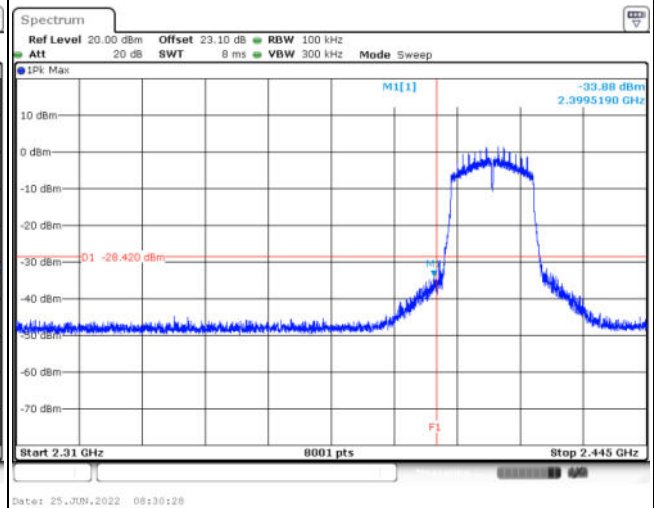
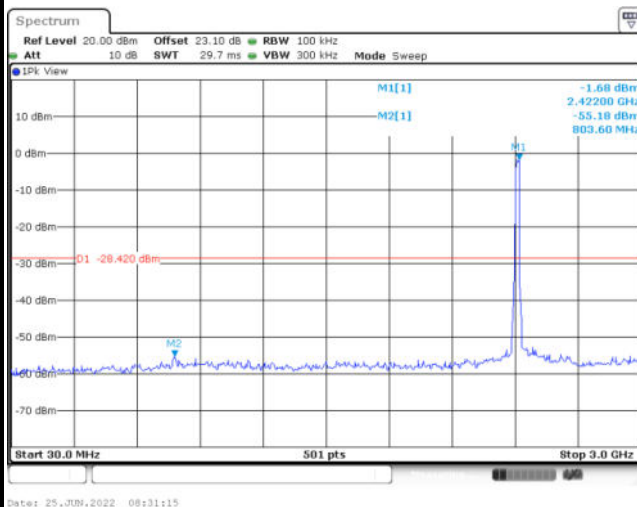
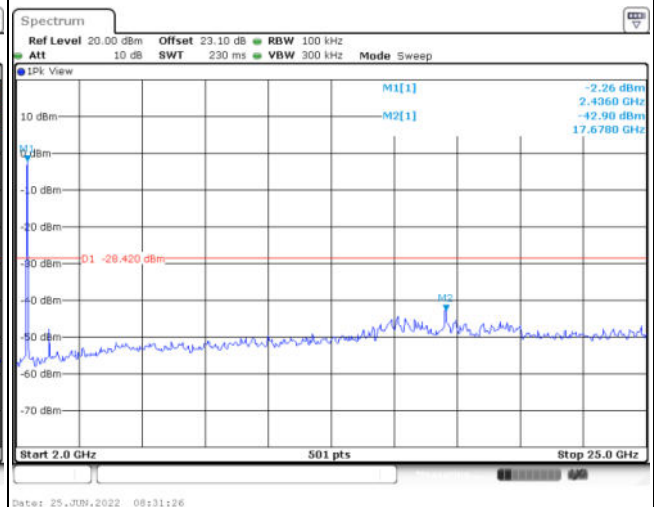


Spurious Emission 2GHz~25GHz



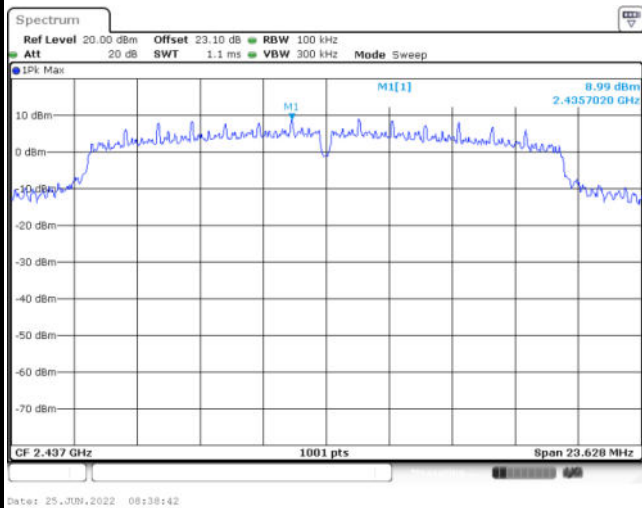
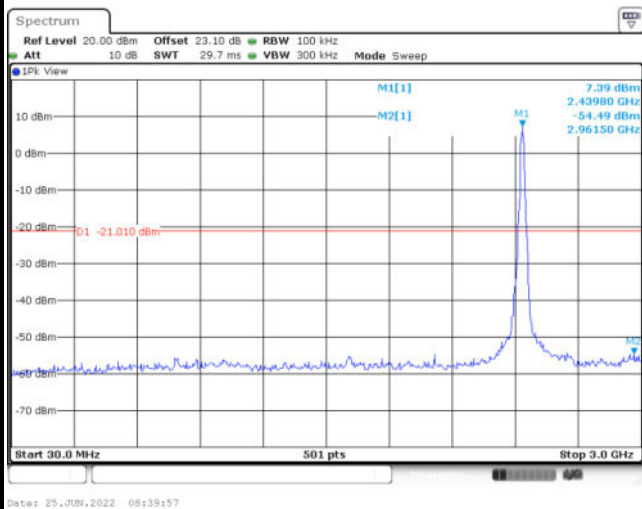
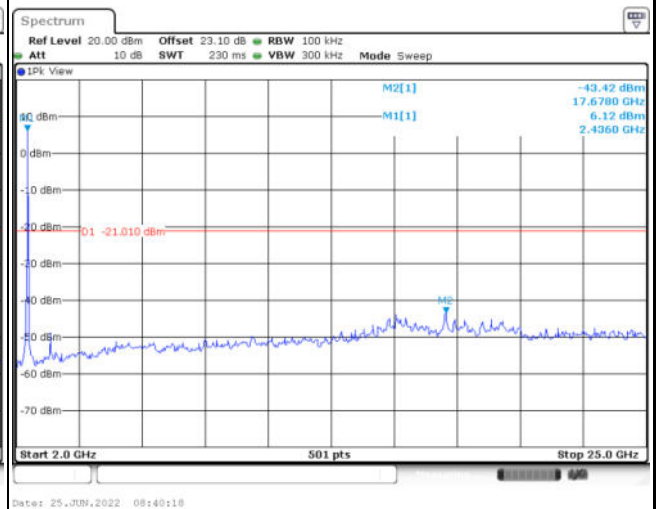


Test Mode :	802.11n HT20	Test Channel :	01
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

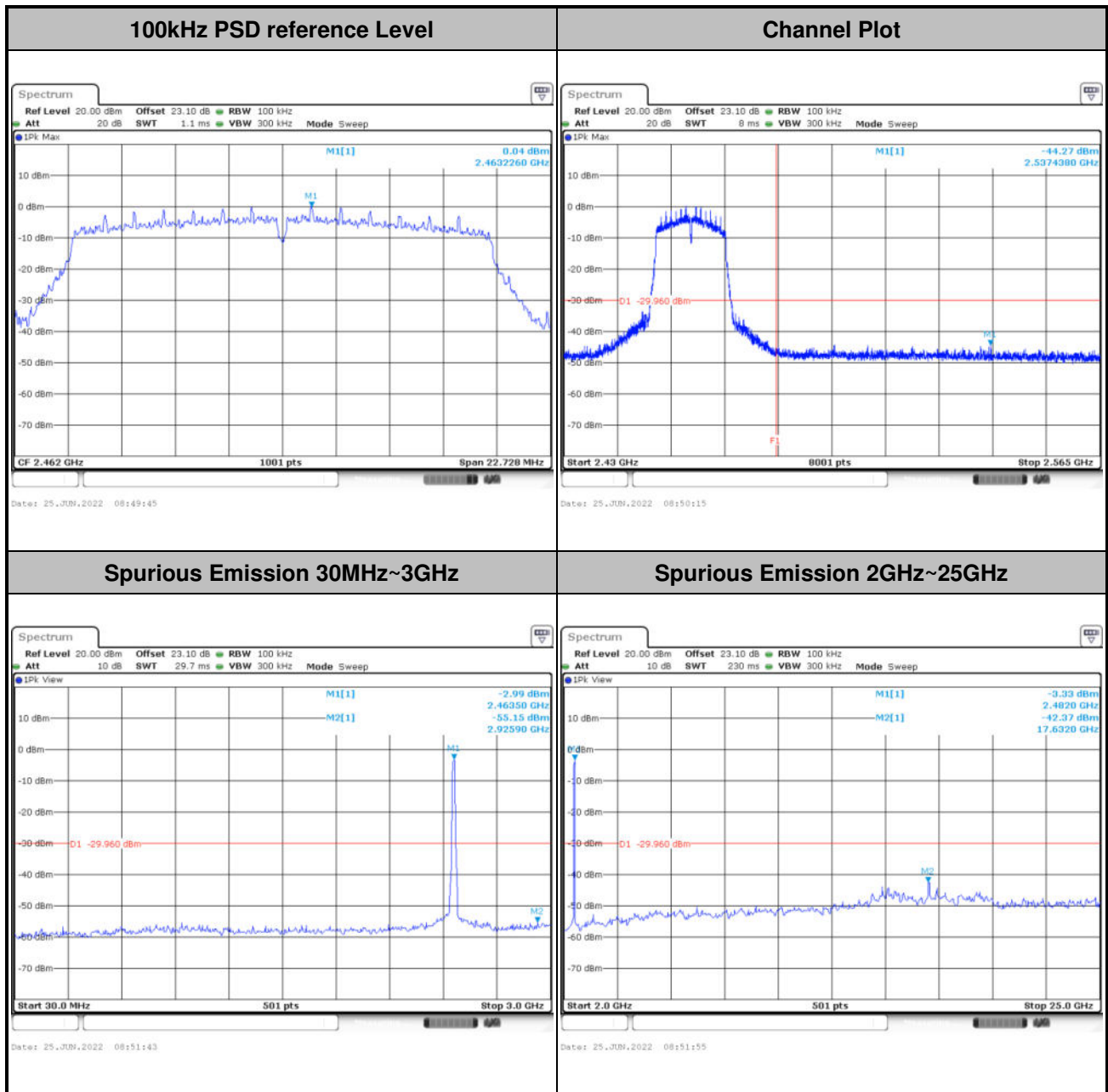


Test Mode :	802.11n HT20	Test Channel :	06
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

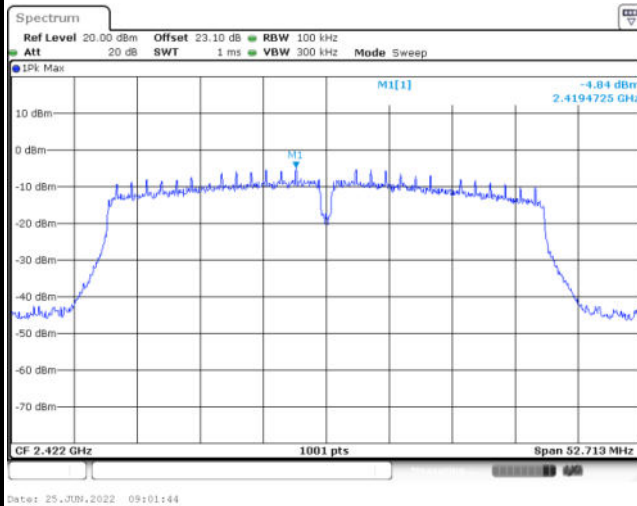
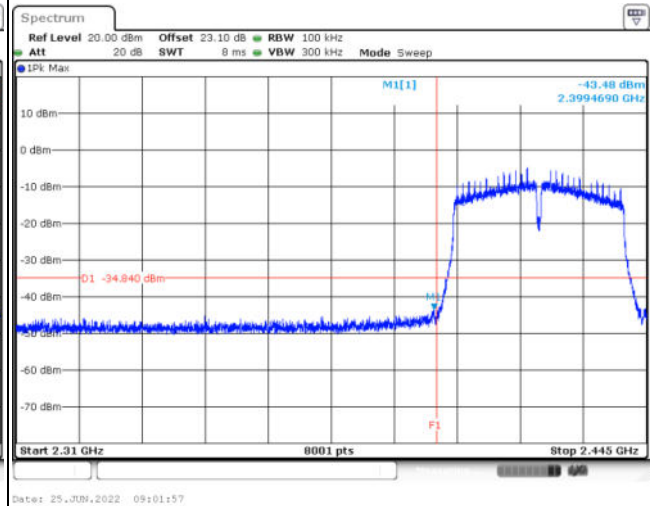
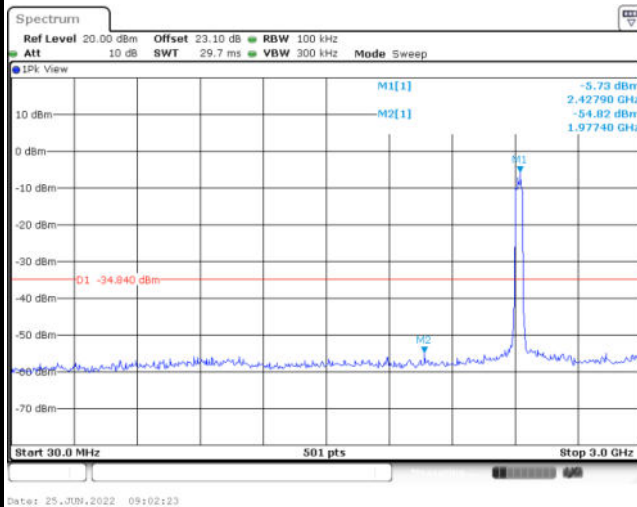
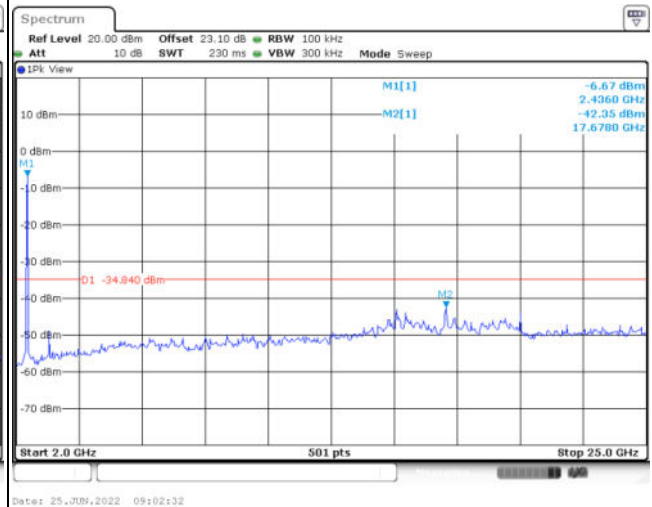


Test Mode :	802.11n HT20	Test Channel :	11
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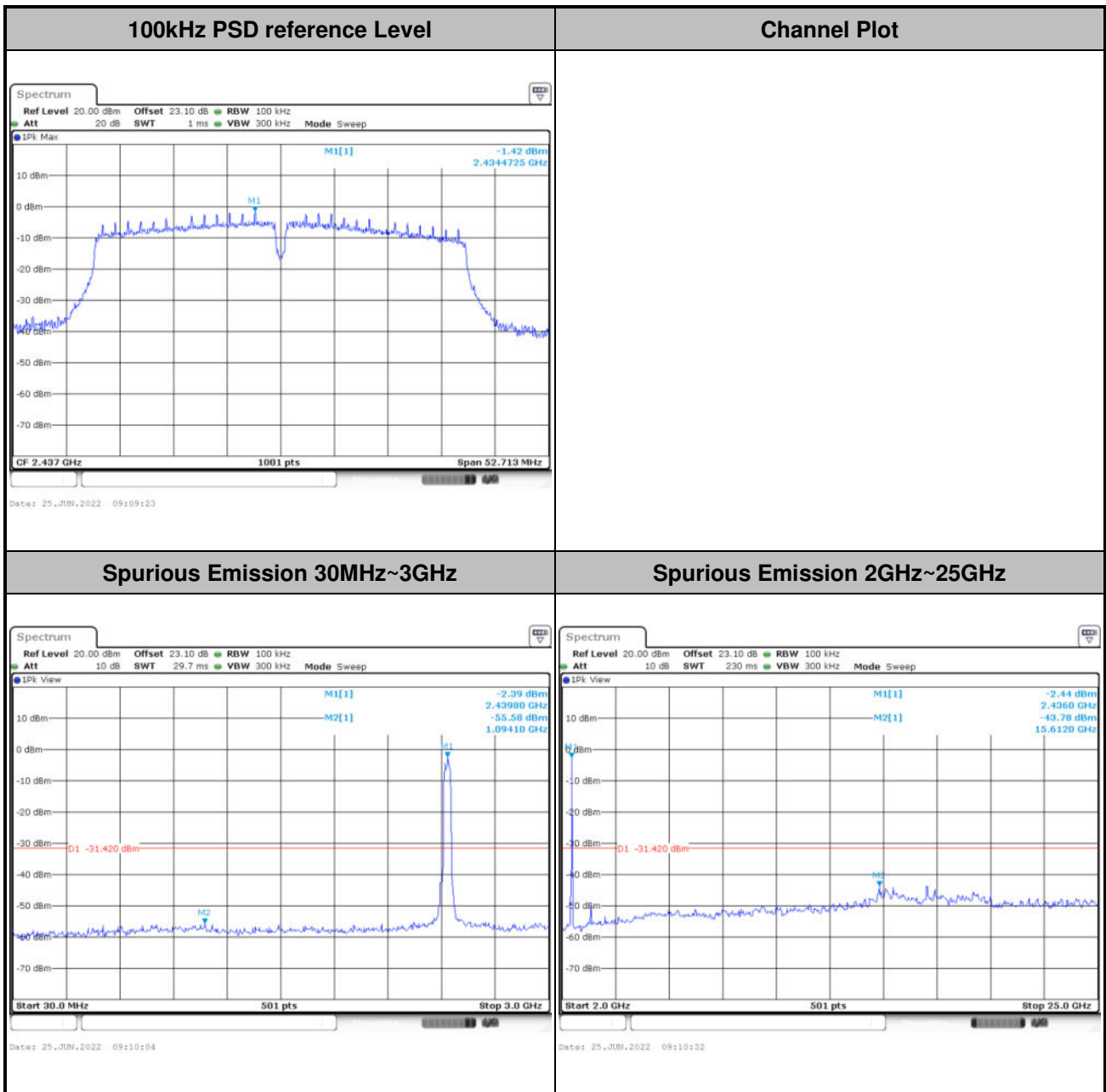


Test Mode :	802.11n HT40	Test Channel :	03
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**



Test Mode :	802.11n HT40	Test Channel :	06
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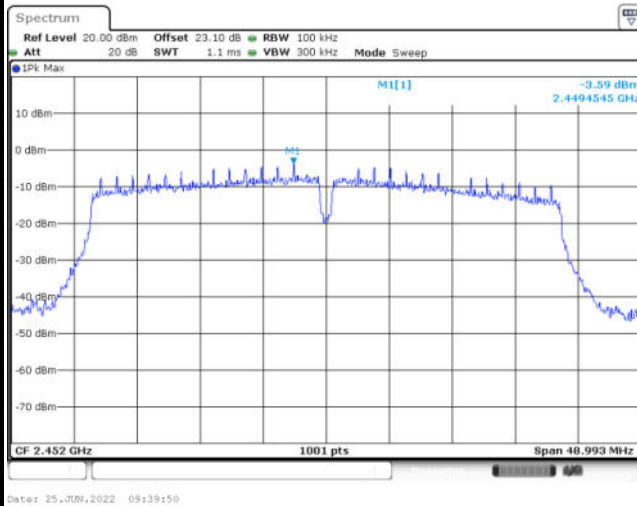




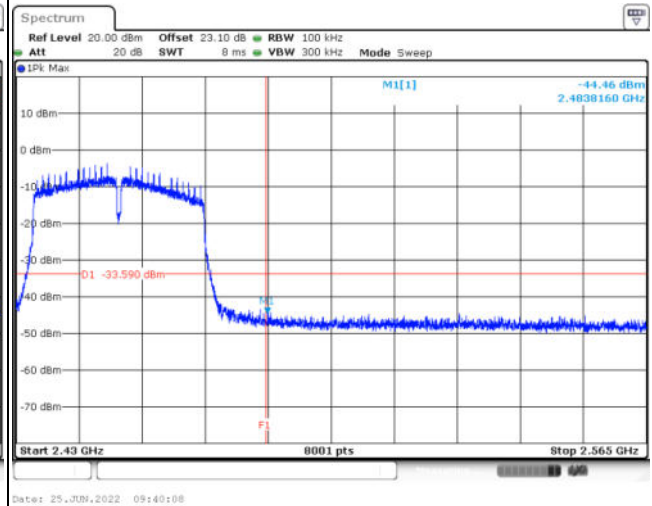
Test Mode : 802.11n HT40

Test Channel : 09

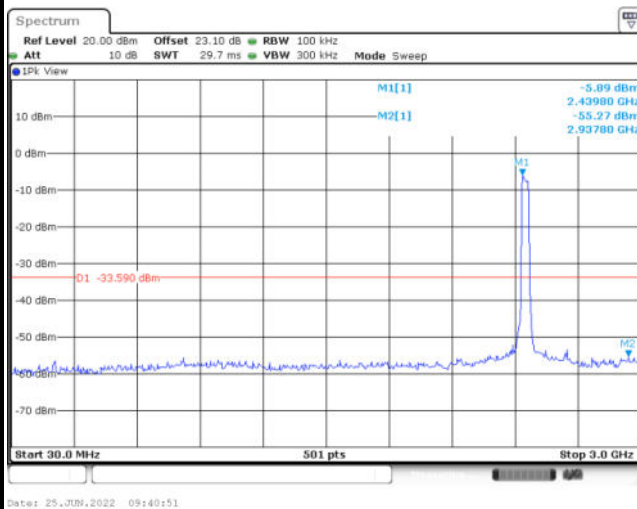
100kHz PSD reference Level



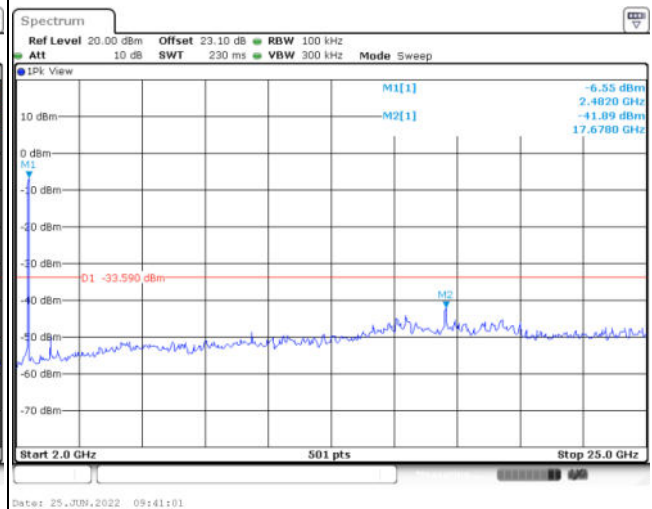
Channel Plot



Spurious Emission 30MHz~3GHz



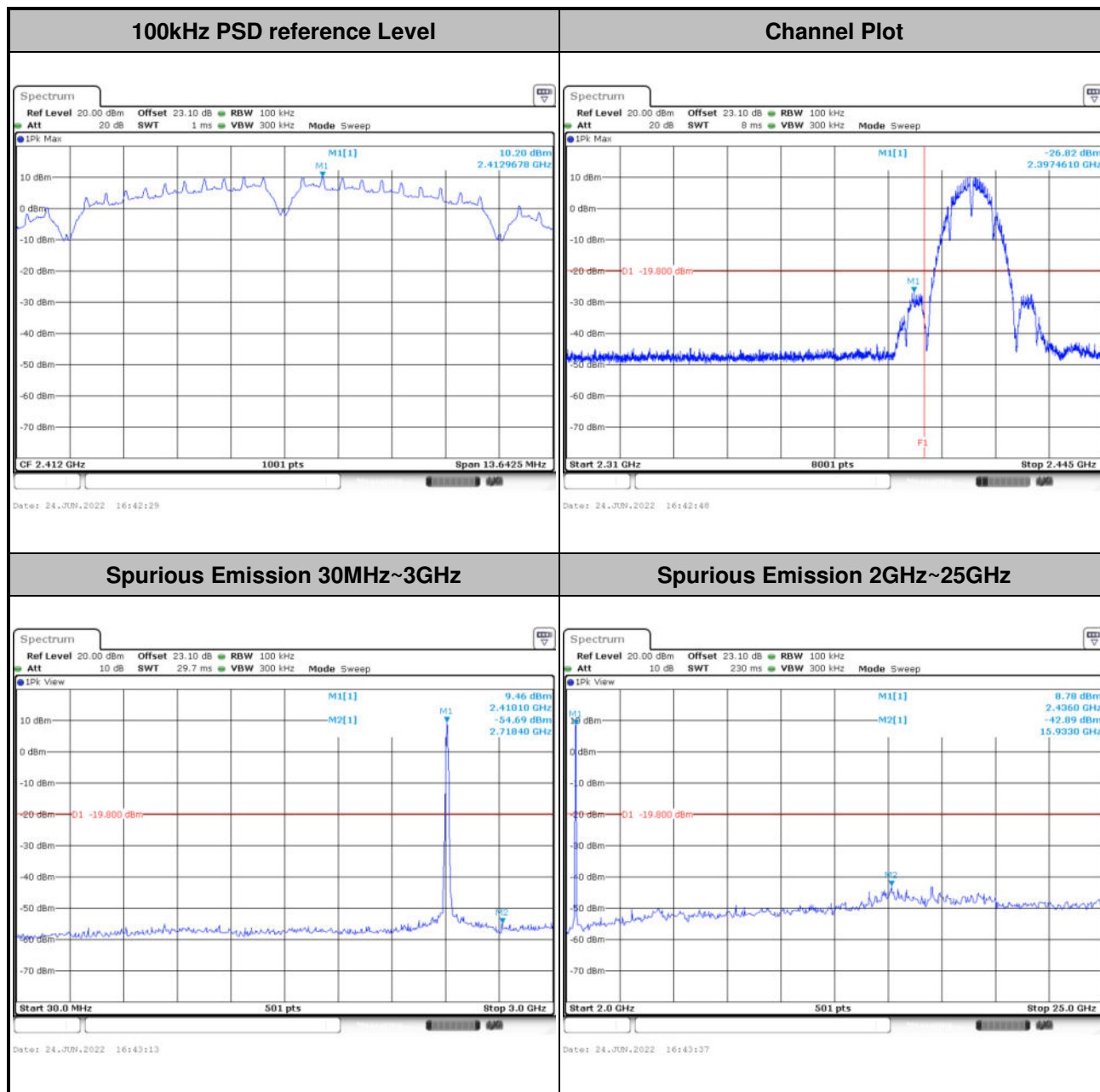
Spurious Emission 2GHz~25GHz





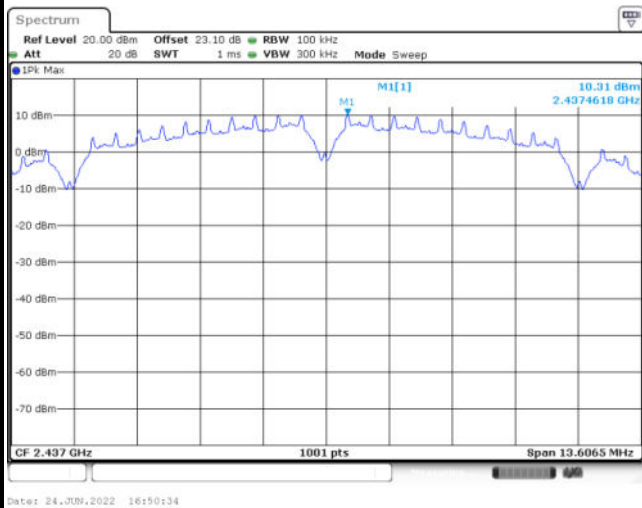
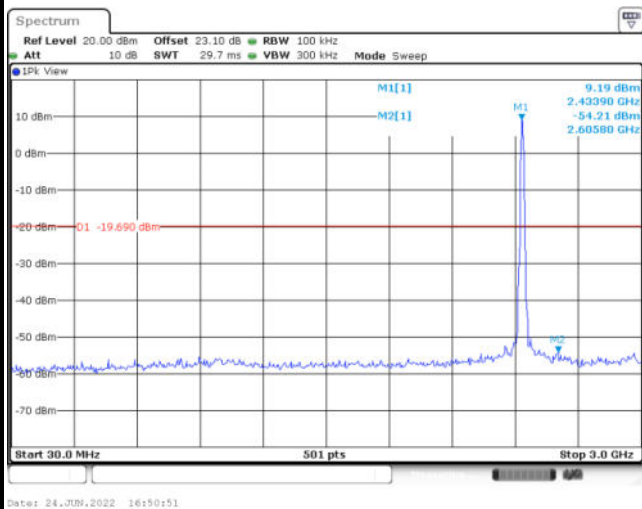
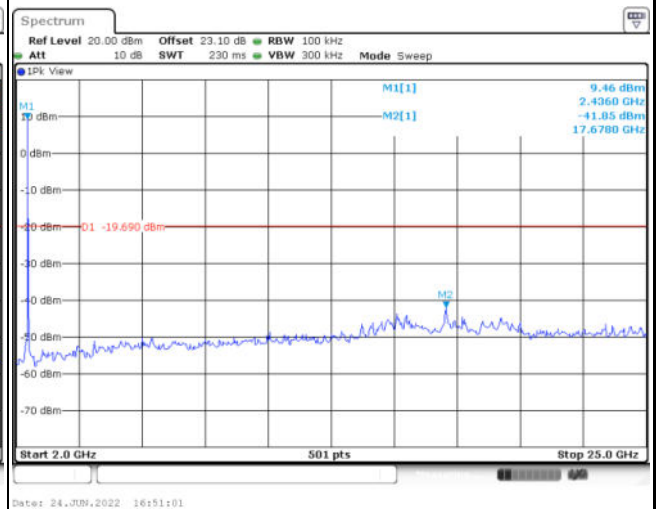
Number of TX = 2, Ant. 2 (Measured)

Test Mode :	802.11b	Test Channel :	01
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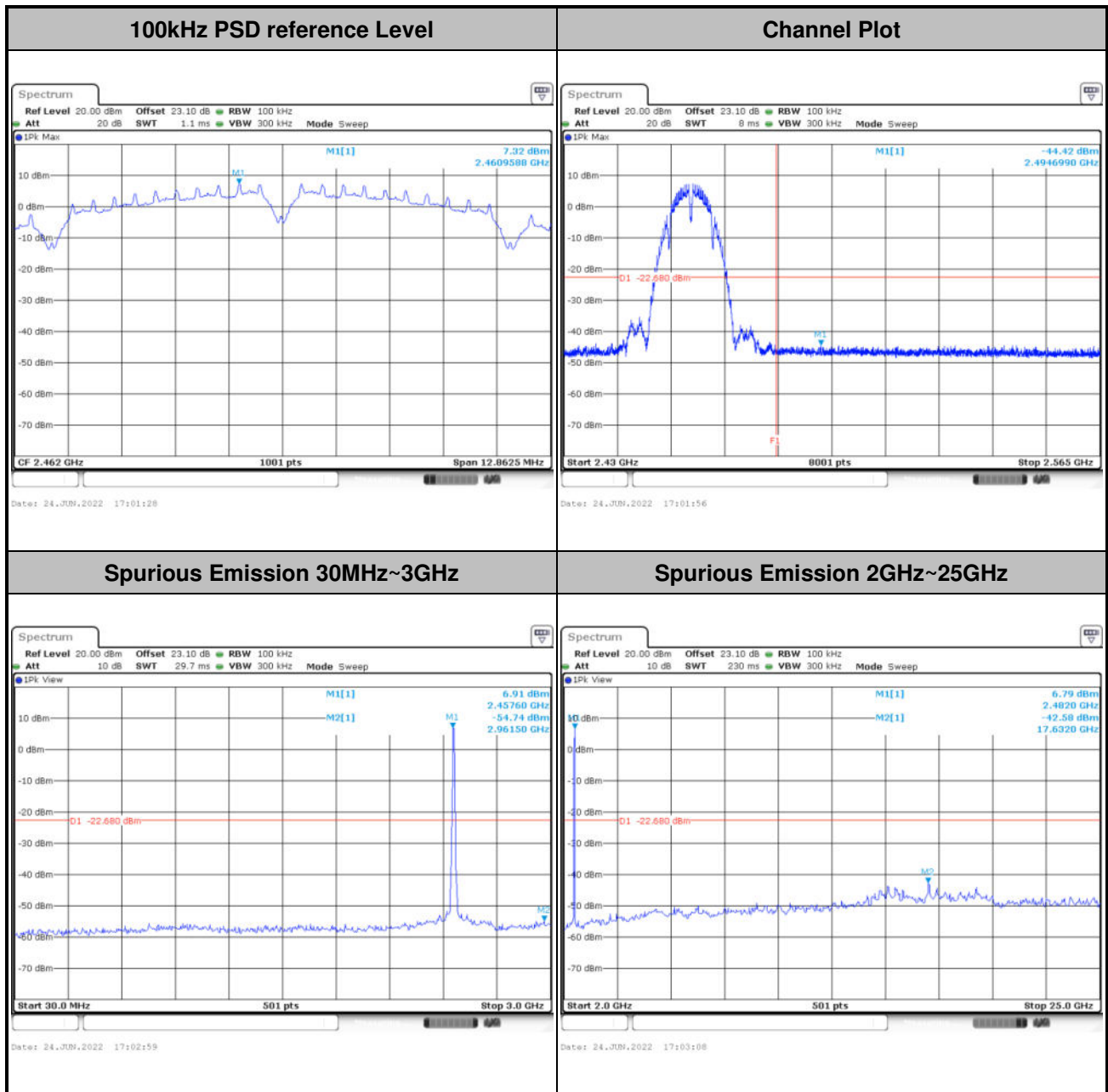


Test Mode :	802.11b	Test Channel :	06
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

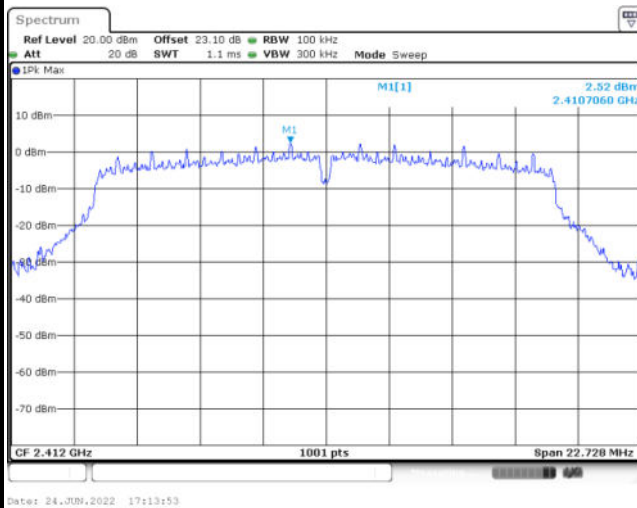
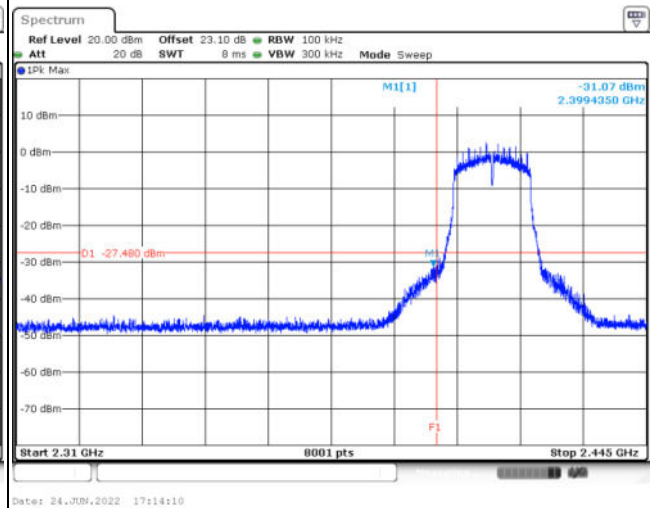
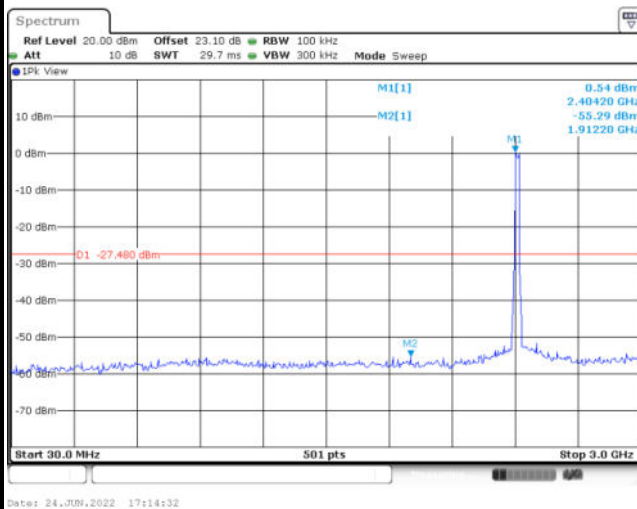
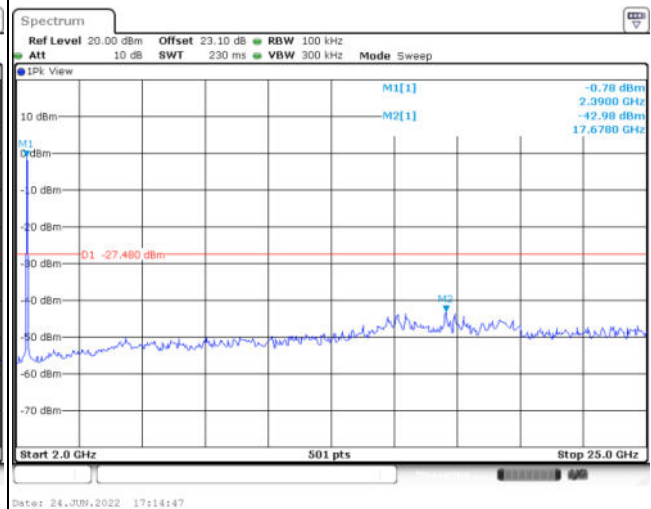


Test Mode :	802.11b	Test Channel :	11
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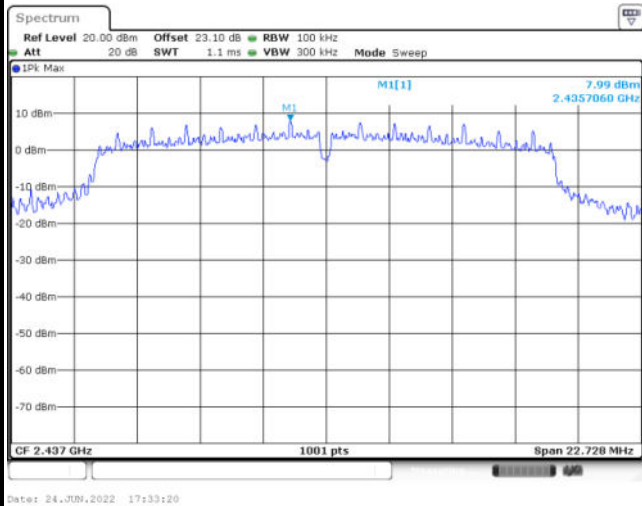
Test Mode :	802.11g	Test Channel :	01
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**



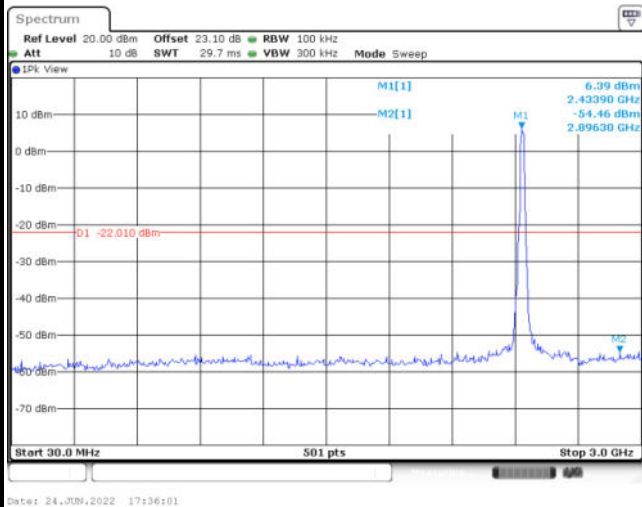
Test Mode :	802.11g	Test Channel :	06
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100kHz PSD reference Level

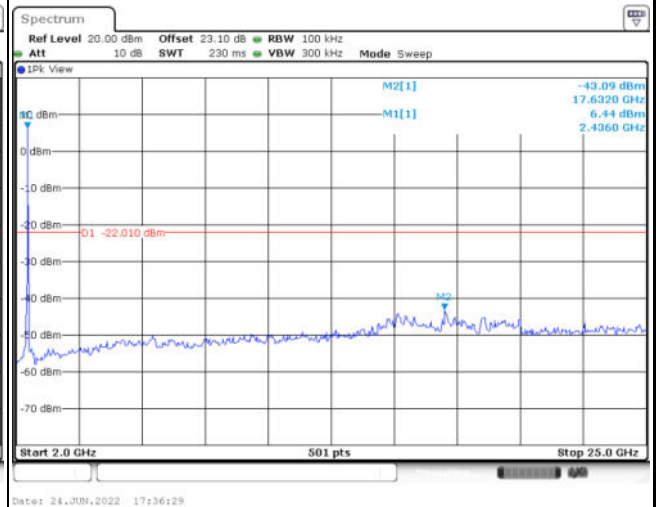


Channel Plot

Spurious Emission 30MHz~3GHz

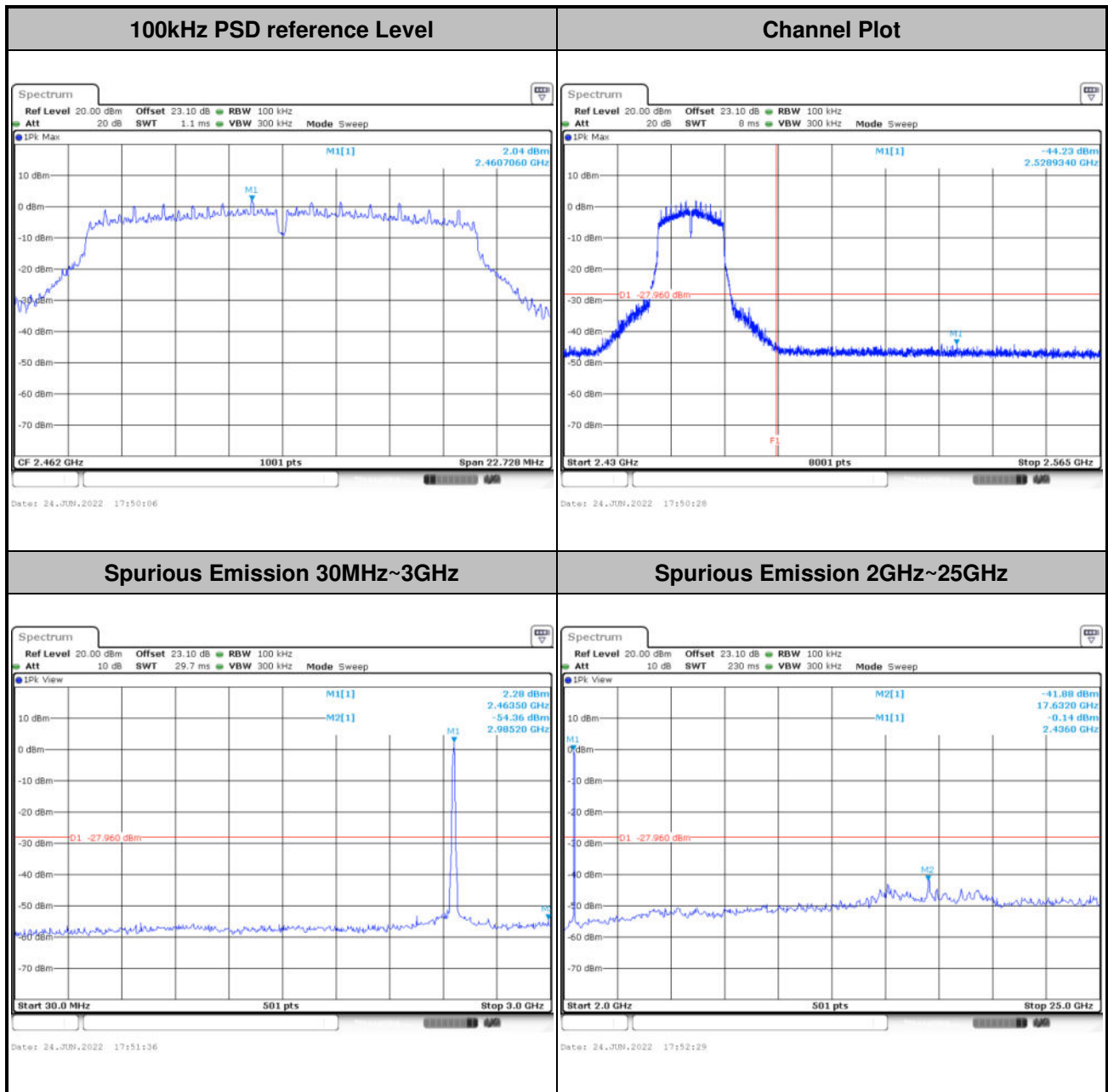


Spurious Emission 2GHz~25GHz





Test Mode :	802.11g	Test Channel :	11
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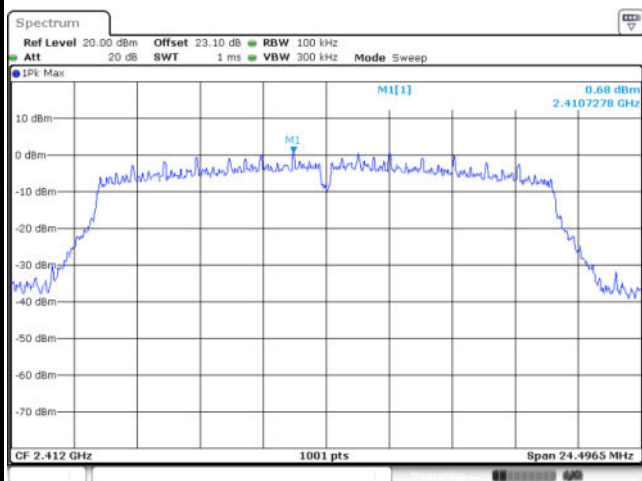




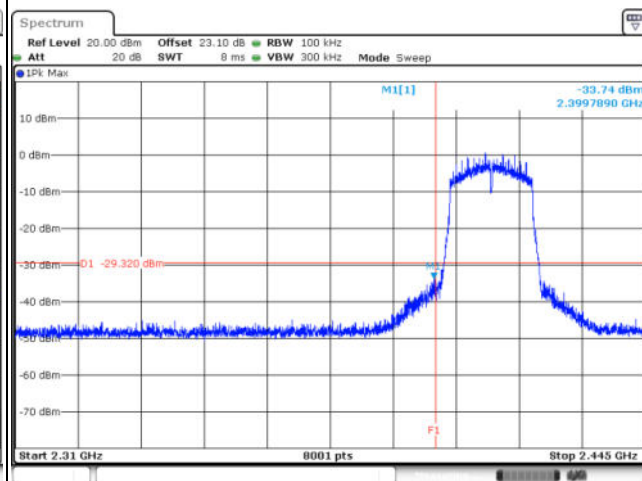
Test Mode : 802.11n HT20

Test Channel : 01

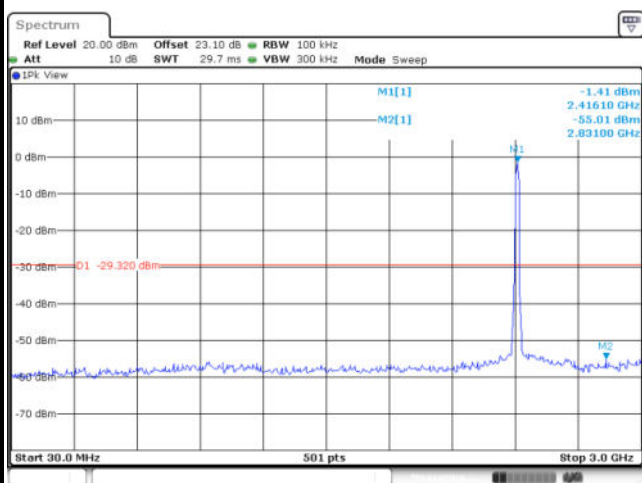
100kHz PSD reference Level



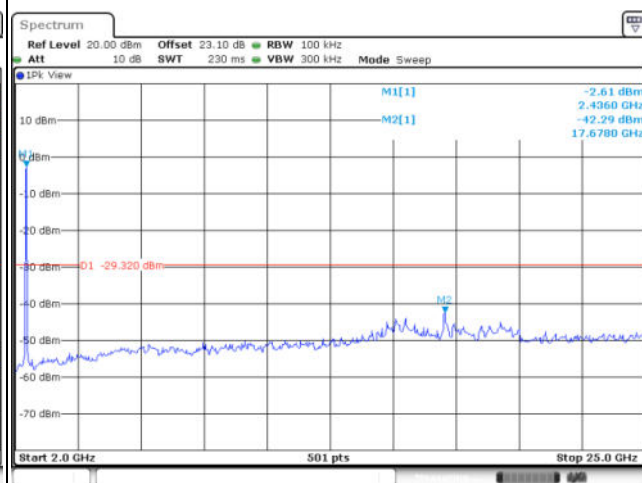
Channel Plot



Spurious Emission 30MHz~3GHz

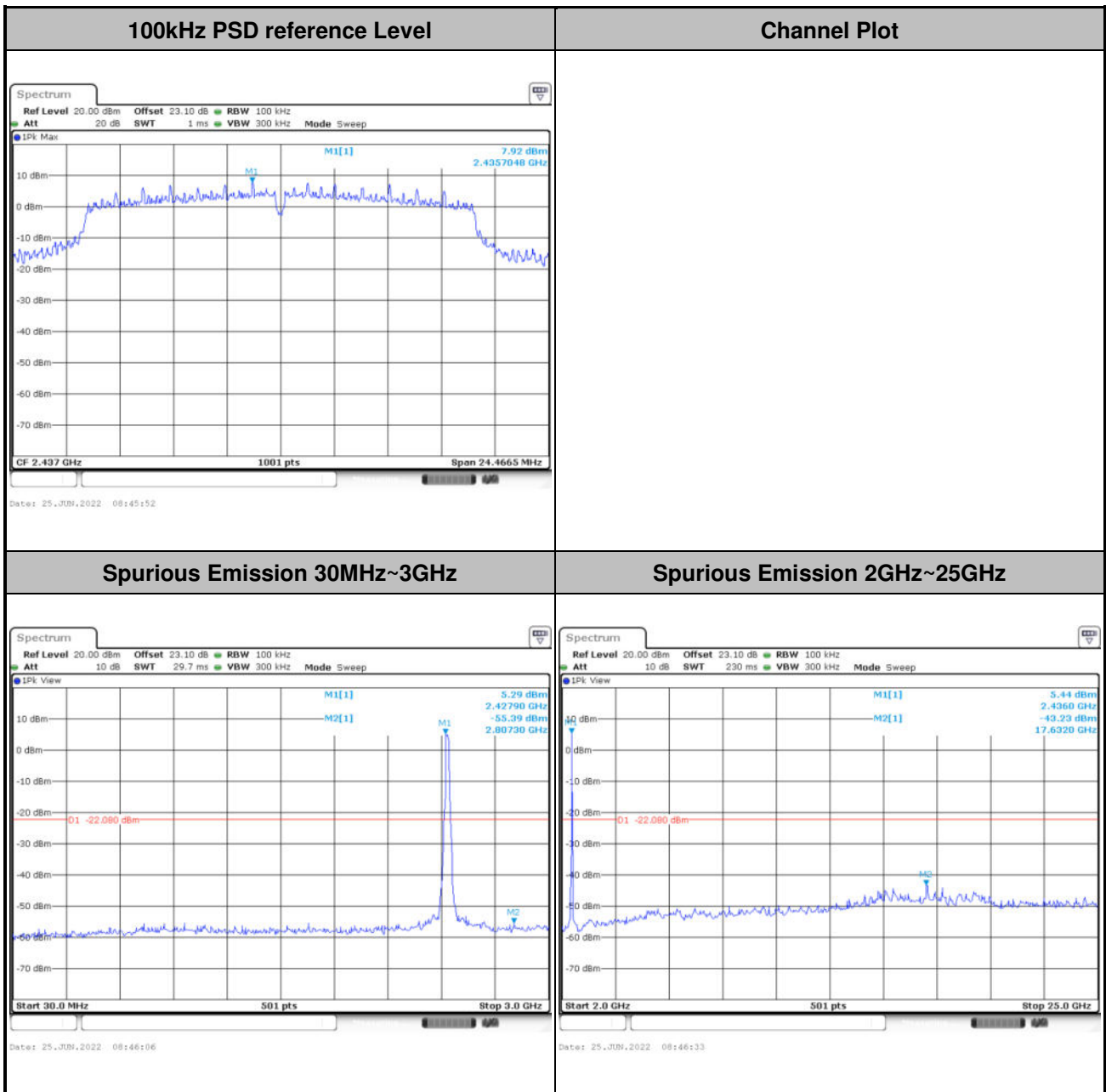


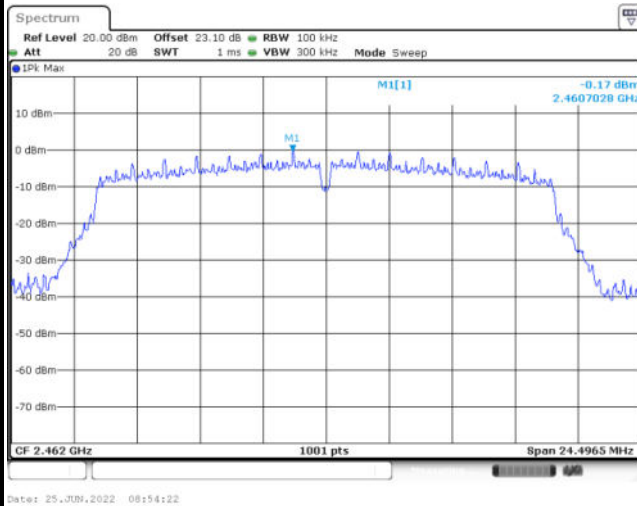
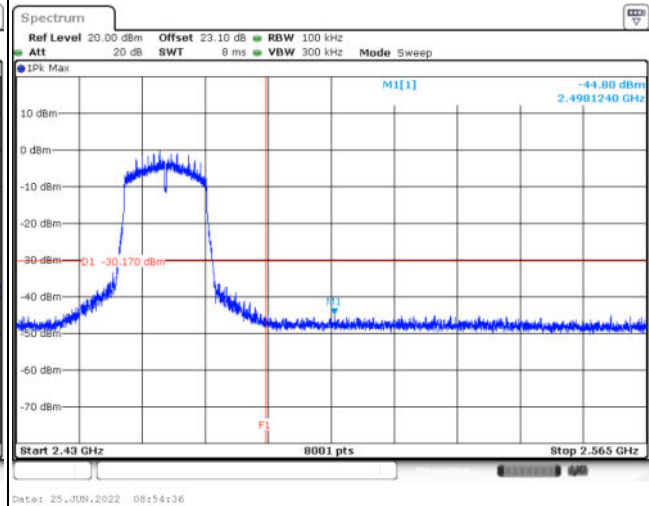
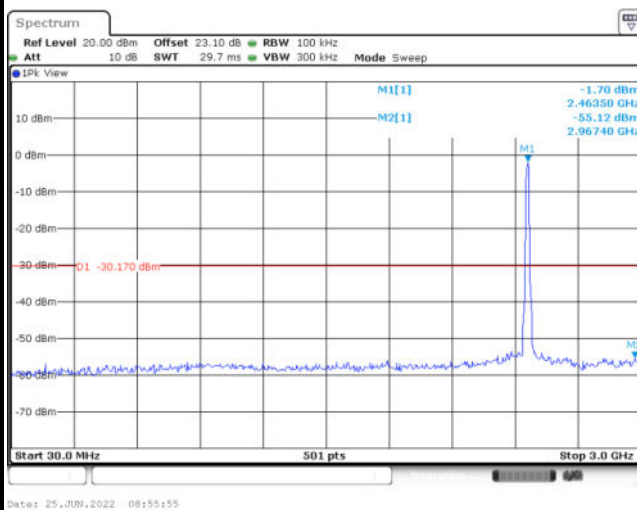
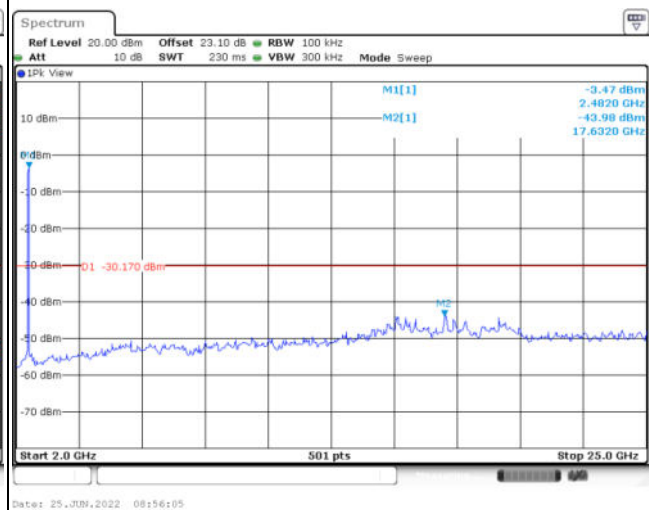
Spurious Emission 2GHz~25GHz





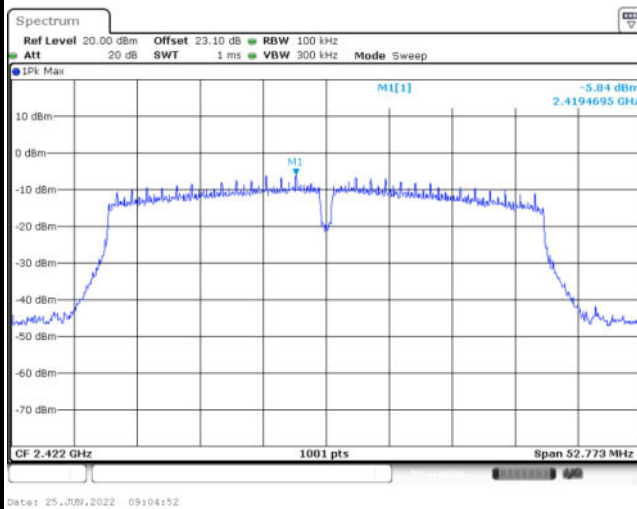
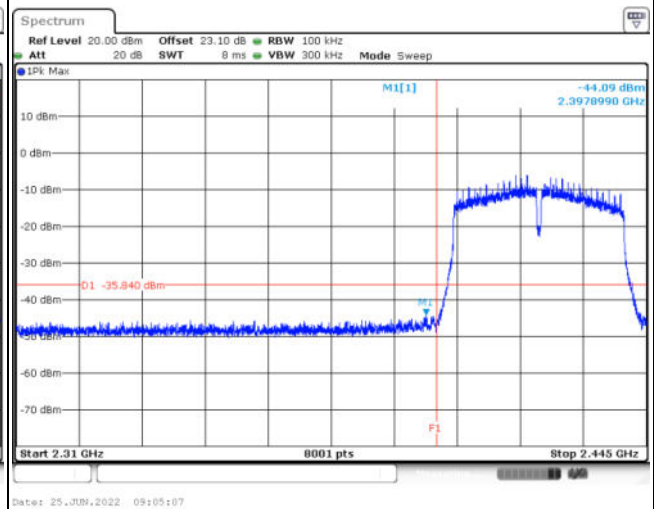
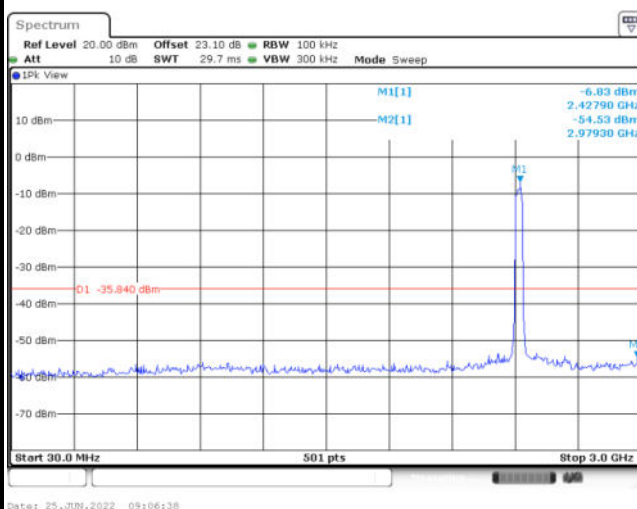
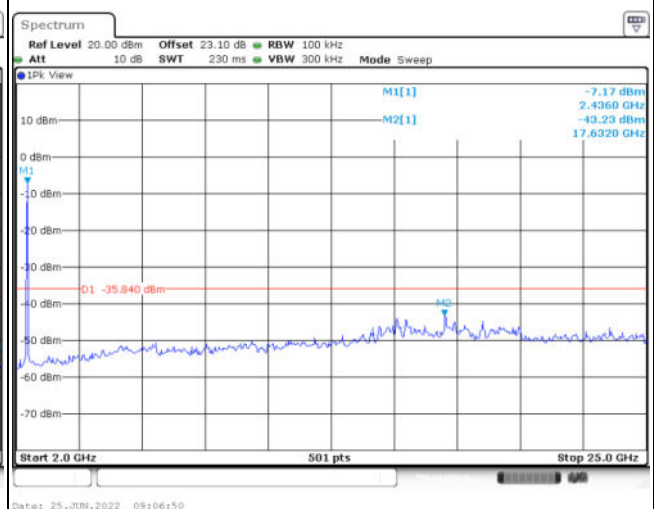
Test Mode :	802.11n HT20	Test Channel :	06
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**Test Mode :** 802.11n HT20**Test Channel :** 11**100kHz PSD reference Level****Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

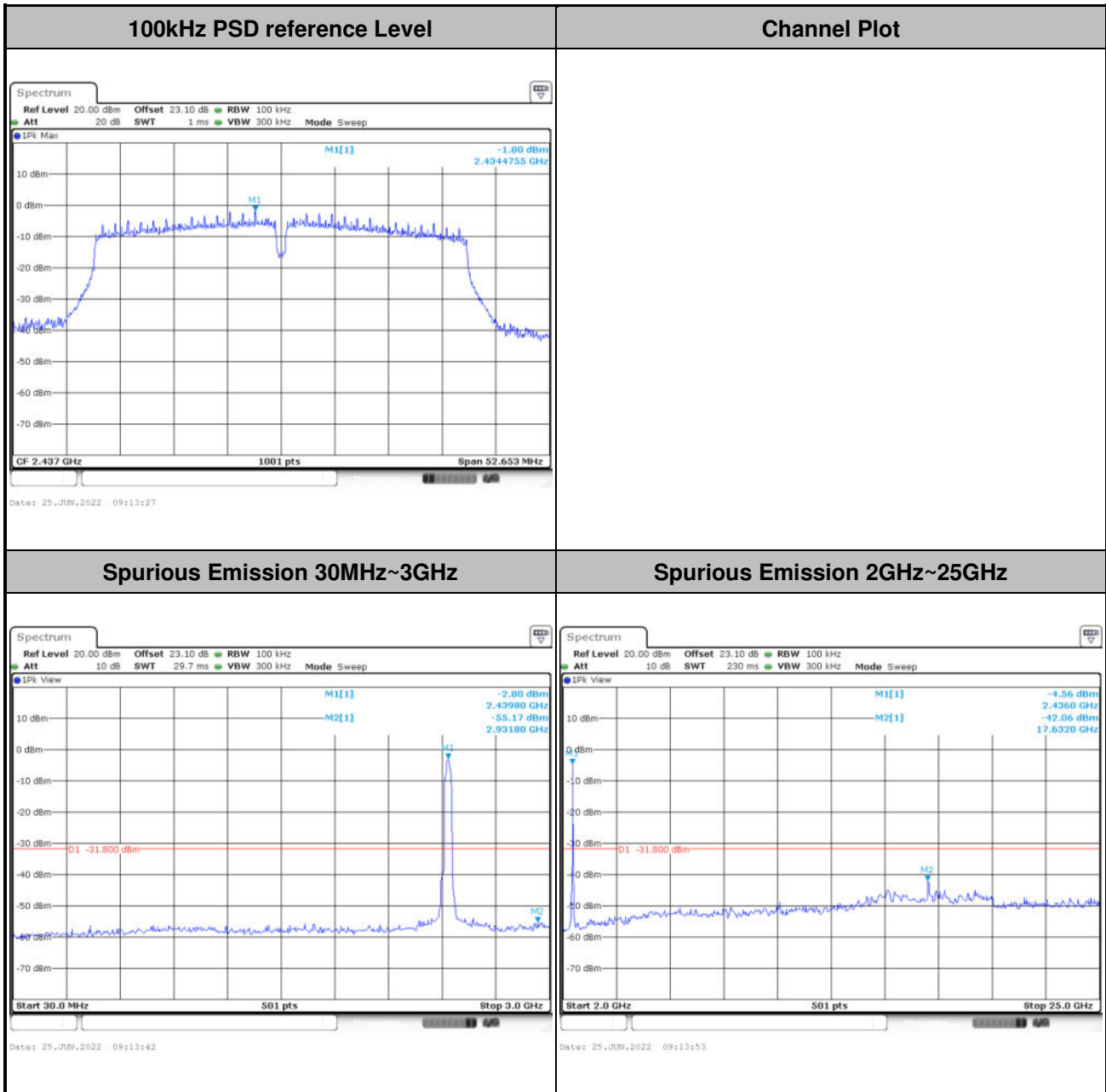


Test Mode :	802.11n HT40	Test Channel :	03
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

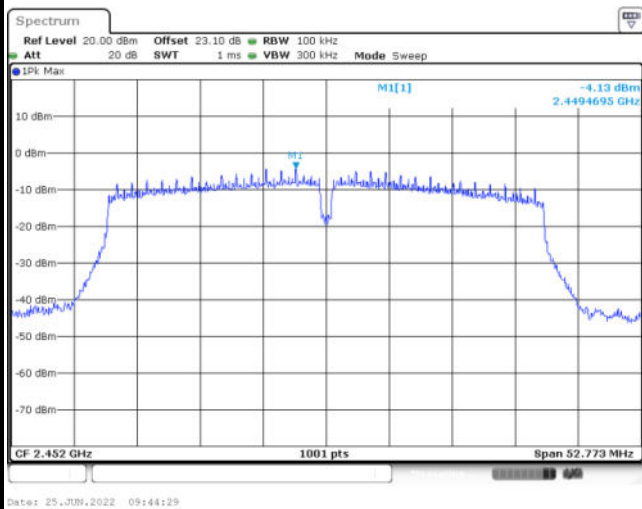
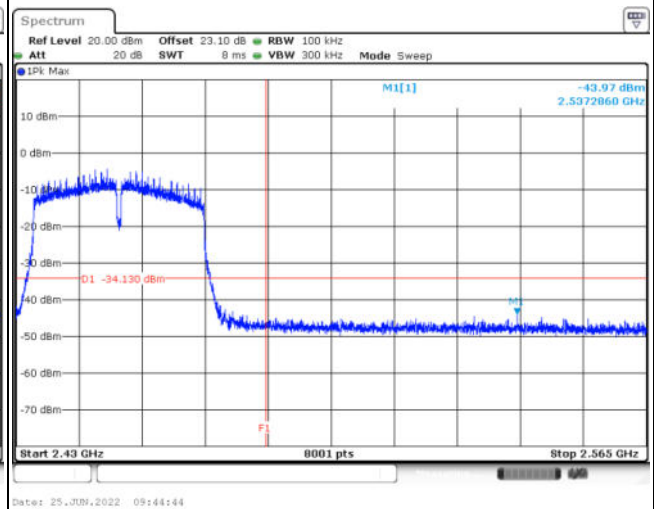
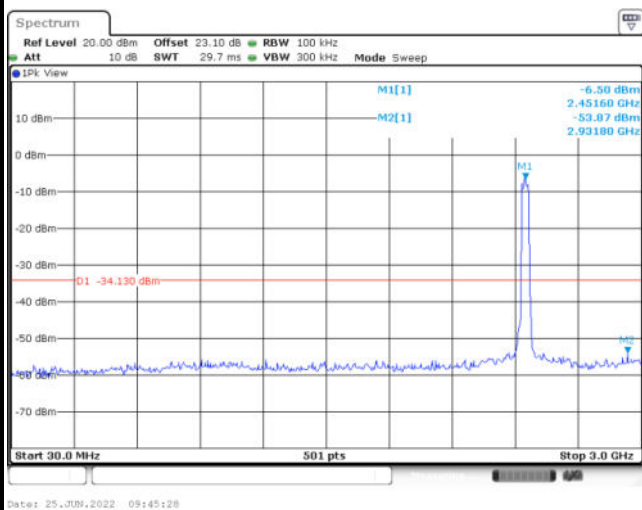
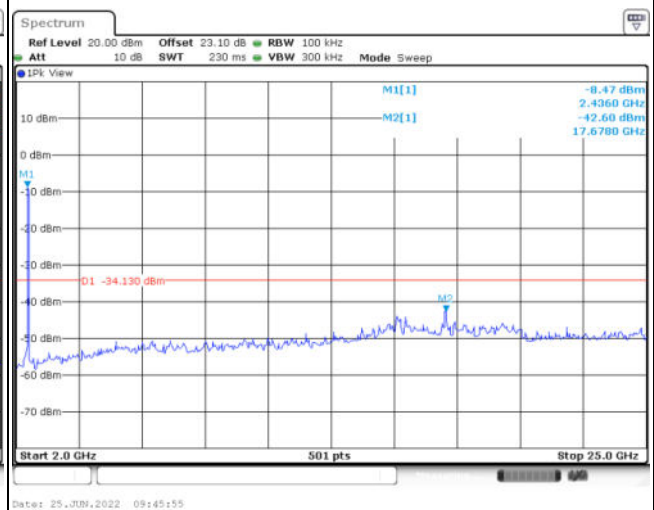


Test Mode :	802.11n HT40	Test Channel :	06
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Test Mode :	802.11n HT40	Test Channel :	09
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100kHz PSD reference Level**Channel Plot****Spurious Emission 30MHz~3GHz****Spurious Emission 2GHz~25GHz**

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 is measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

3.5.2 Measuring Instruments

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

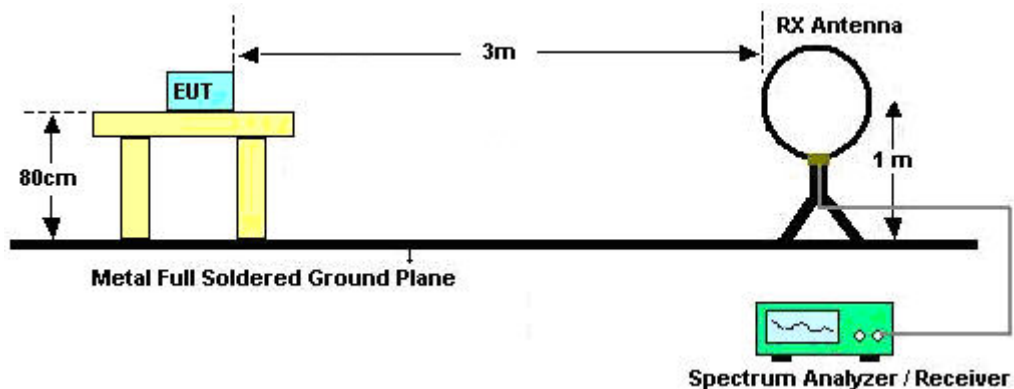
3.5.3 Test Procedures

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

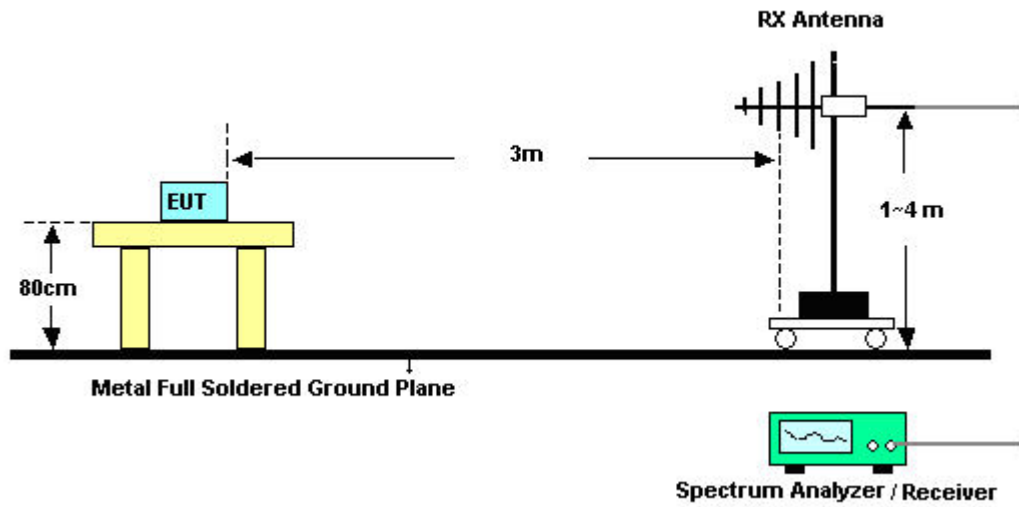
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW = 100 kHz for $f < 1$ GHz; VBW $\geq$ 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

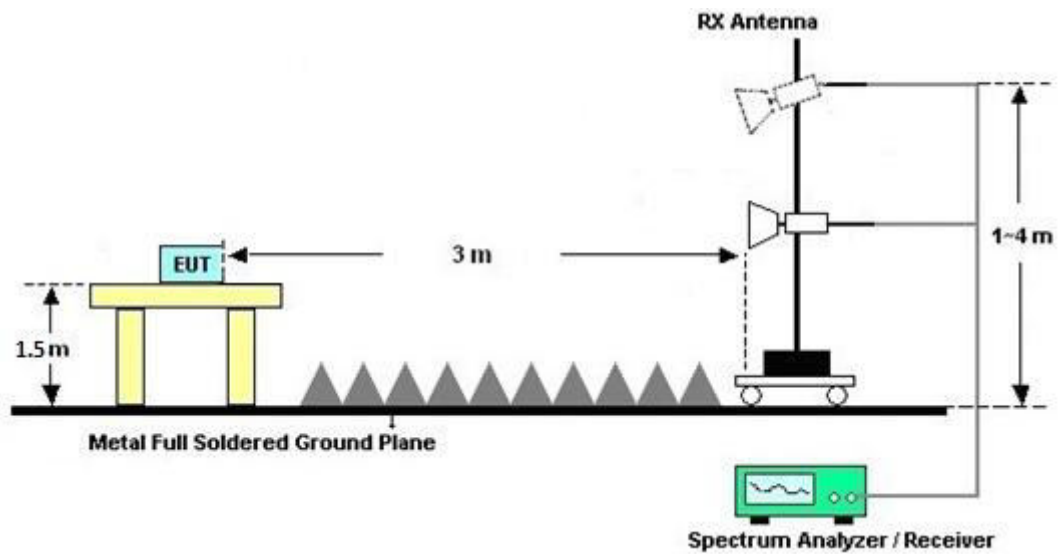
For radiated emissions below 30MHz



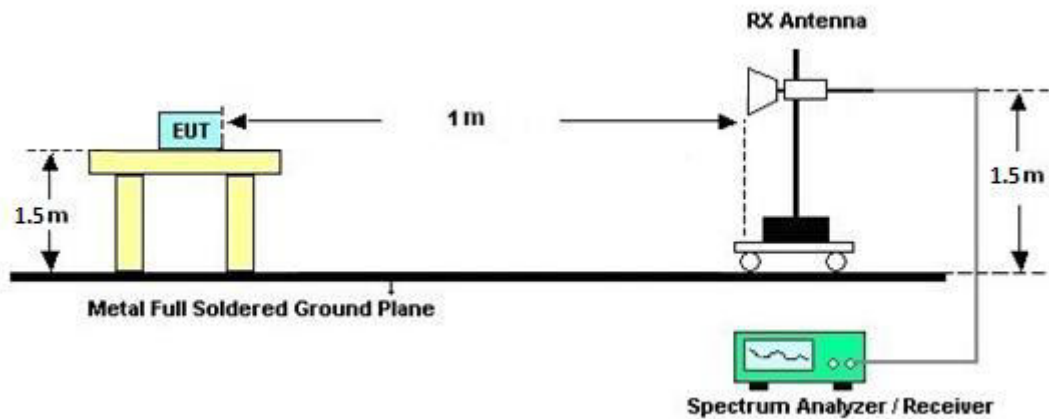
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

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

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

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

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

Frequency of Emission (MHz)	Conducted Limit (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.

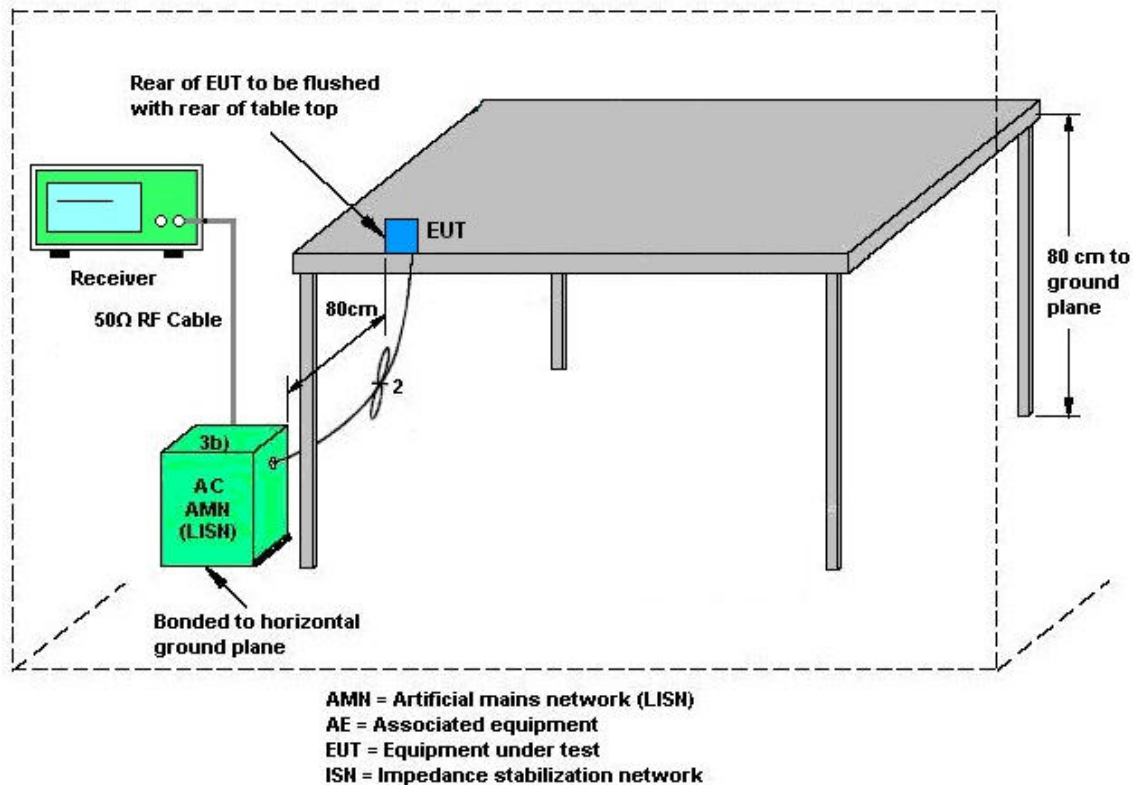
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

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

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

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

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	May 13, 2022	Jun. 09, 2022~ Oct. 08, 2022	May 12, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	40103 & 07	30MHz~1GHz	Apr. 24, 2022	Jun. 09, 2022~ Oct. 08, 2022	Apr. 23, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Dec. 03, 2021	Jun. 09, 2022~ Oct. 08, 2022	Dec. 02, 2022	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA9170	00993	18GHz~40GHz	Nov. 30, 2021	Jun. 09, 2022~ Oct. 08, 2022	Nov. 29, 2022	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 23, 2022	Jun. 09, 2022~ Oct. 08, 2022	Mar. 22, 2023	Radiation (03CH12-HY)
Preamplifier	Aglient	8449B	3008A02375	1GHz~26.5GHz	May 24, 2022	Jun. 09, 2022~ Oct. 08, 2022	May 23, 2023	Radiation (03CH12-HY)
Preamplifier	E-INSTRUME NT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900249	1GHz-18GHz	Dec. 22, 2021	Jun. 09, 2022~ Oct. 08, 2022	Dec. 21, 2022	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 24, 2021	Jun. 09, 2022~ Oct. 08, 2022	Dec. 23, 2022	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 12, 2022	Jun. 09, 2022~ Oct. 08, 2022	Jan. 11, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12 SS	SN2	1.2GHz Low Pass Filter	Mar. 15, 2022	Jun. 09, 2022~ Oct. 08, 2022	Mar. 14, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 OST	SN2	3GHz High Pass Filter	Jul. 12, 2021	Jun. 09, 2022~ Jul. 10, 2022	Jul. 11, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 OST	SN2	3GHz High Pass Filter	Jul. 11, 2022	Jul. 11, 2022~ Oct. 08, 2022	Jul. 10, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY9837/4PE	9kHz~30MHz	Mar. 10, 2022	Jun. 09, 2022~ Oct. 08, 2022	Mar. 09, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 10, 2021	Jun. 09, 2022~ Oct. 08, 2022	Dec. 09, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 21, 2022	Jun. 09, 2022~ Oct. 08, 2022	Feb. 20, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz~40GHz	Feb. 21, 2022	Jun. 09, 2022~ Oct. 08, 2022	Feb. 20, 2023	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP200728	N/A	Mar. 22, 2022	Jun. 09, 2022~ Oct. 08, 2022	Mar. 21, 2023	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 09, 2022~ Oct. 08, 2022	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 09, 2022~ Oct. 08, 2022	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 09, 2022~ Oct. 08, 2022	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jun. 09, 2022~ Oct. 08, 2022	N/A	Radiation (03CH12-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 25, 2022~ Aug. 29, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	May 25, 2022~ Aug. 29, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	May 25, 2022~ Aug. 29, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	May 25, 2022~ Aug. 29, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	May 25, 2022~ Aug. 29, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	May 25, 2022	Jul. 27, 2022	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Aug. 01, 2022	Aug. 29, 2022	Jul. 31, 2023	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	May 25, 2022~ Aug. 29, 2022	Dec. 29, 2022	Conduction (CO05-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	May 28, 2022~ Jun. 25, 2022	Nov. 15, 2022	Conducted (TH05-HY)
USB Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	May 28, 2022~ Jun. 25, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	May 28, 2022~ Jun. 25, 2022	Aug. 29, 2022	Conducted (TH05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	5.8 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	5.4 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	5.9 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Sylvia Li	Temperature:	21~25	°C
Test Date:	2022/5/28~2022/06/25	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band MIMO										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant1	Ant2	Ant1	Ant2		
11b	1Mbps	2	1	2412	14.49	14.34	9.10	9.10	0.50	Pass
11b	1Mbps	2	6	2437	14.84	14.44	9.10	9.07	0.50	Pass
11b	1Mbps	2	11	2462	14.09	13.89	9.06	8.58	0.50	Pass
11g	6Mbps	2	1	2412	17.98	17.43	15.15	15.15	0.50	Pass
11g	6Mbps	2	6	2437	26.17	19.98	15.73	15.15	0.50	Pass
11g	6Mbps	2	11	2462	17.83	17.53	15.15	15.15	0.50	Pass
HT20	MCS0	2	1	2412	18.43	18.28	15.15	16.33	0.50	Pass
HT20	MCS0	2	6	2437	25.77	21.33	15.75	16.31	0.50	Pass
HT20	MCS0	2	11	2462	18.38	18.18	15.15	16.33	0.50	Pass
HT40	MCS0	2	3	2422	36.06	36.16	35.14	35.18	0.50	Pass
HT40	MCS0	2	6	2437	36.26	36.26	35.14	35.10	0.50	Pass
HT40	MCS0	2	9	2452	36.36	36.06	32.66	35.18	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band MIMO																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	19.30	18.60	21.97	30.00		3.15		25.12		36.00		Pass
11b	1Mbps	2	6	2437	19.30	18.80	22.07	30.00		3.15		25.22		36.00		Pass
11b	1Mbps	2	11	2462	16.50	15.80	19.17	30.00		3.15		22.32		36.00		Pass
11g	6Mbps	2	1	2412	13.60	13.10	16.37	30.00		3.15		19.52		36.00		Pass
11g	6Mbps	2	6	2437	20.50	18.10	22.47	30.00		3.15		25.62		36.00		Pass
11g	6Mbps	2	11	2462	13.20	12.80	16.01	30.00		3.15		19.16		36.00		Pass
HT20	MCS0	2	1	2412	12.10	11.70	14.91	30.00		3.15		18.06		36.00		Pass
HT20	MCS0	2	6	2437	19.40	18.30	21.90	30.00		3.15		25.05		36.00		Pass
HT20	MCS0	2	11	2462	10.90	10.50	13.71	30.00		3.15		16.86		36.00		Pass
HT40	MCS0	2	3	2422	8.30	7.20	10.80	30.00		3.15		13.95		36.00		Pass
HT40	MCS0	2	6	2437	11.60	11.10	14.37	30.00		3.15		17.52		36.00		Pass
HT40	MCS0	2	9	2452	9.50	8.60	12.08	30.00		3.15		15.23		36.00		Pass

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant1	Ant2	Worse + 3.01	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	2	1	2412	-2.51	-2.26	0.75	6.16		7.84		Pass
11b	1Mbps	2	6	2437	-3.08	-3.50	-0.07	6.16		7.84		Pass
11b	1Mbps	2	11	2462	-5.45	-6.27	-2.44	6.16		7.84		Pass
11g	6Mbps	2	1	2412	-11.20	-11.94	-8.19	6.16		7.84		Pass
11g	6Mbps	2	6	2437	-3.86	-6.85	-0.85	6.16		7.84		Pass
11g	6Mbps	2	11	2462	-10.64	-11.75	-7.63	6.16		7.84		Pass
HT20	MCS0	2	1	2412	-12.36	-12.38	-9.35	6.16		7.84		Pass
HT20	MCS0	2	6	2437	-4.63	-5.93	-1.62	6.16		7.84		Pass
HT20	MCS0	2	11	2462	-12.93	-13.79	-9.92	6.16		7.84		Pass
HT40	MCS0	2	3	2422	-19.63	-21.43	-16.62	6.16		7.84		Pass
HT40	MCS0	2	6	2437	-16.52	-16.56	-13.51	6.16		7.84		Pass
HT40	MCS0	2	9	2452	-17.77	-18.84	-14.76	6.16		7.84		Pass

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



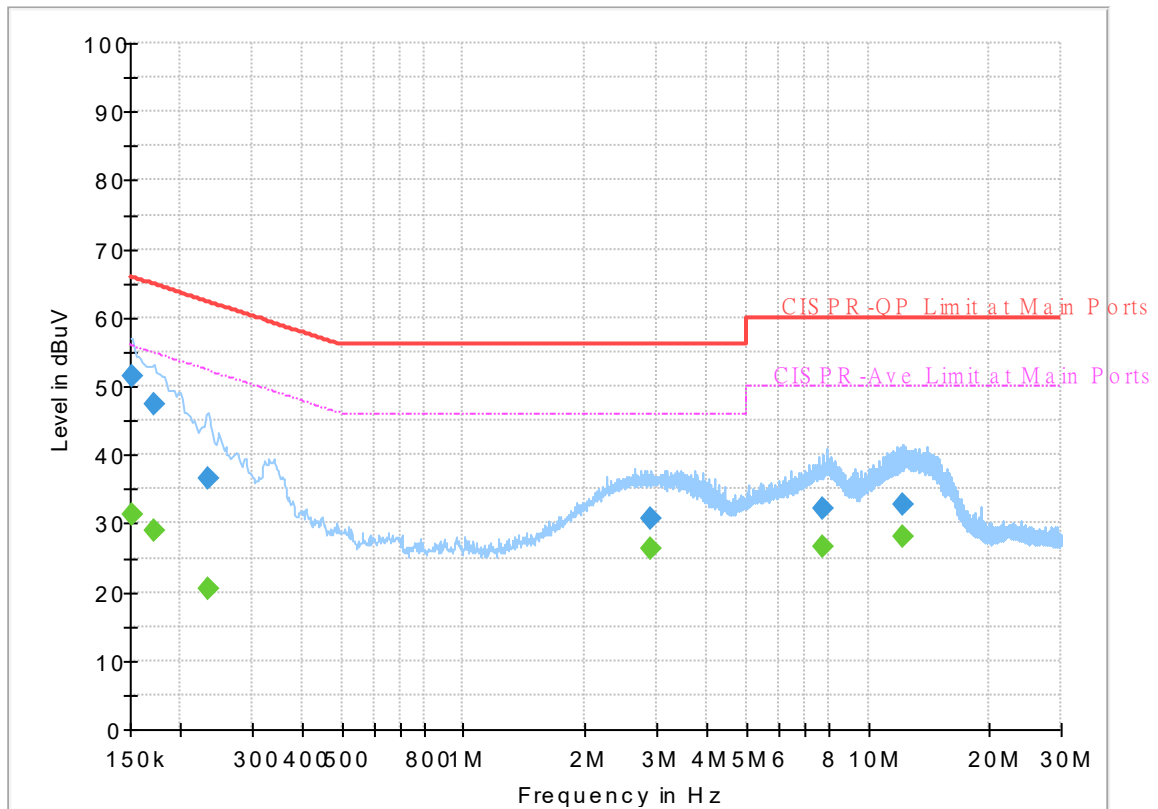
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang and Tom Lee	Temperature :	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO : 250205
Test Mode : Mode 3
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



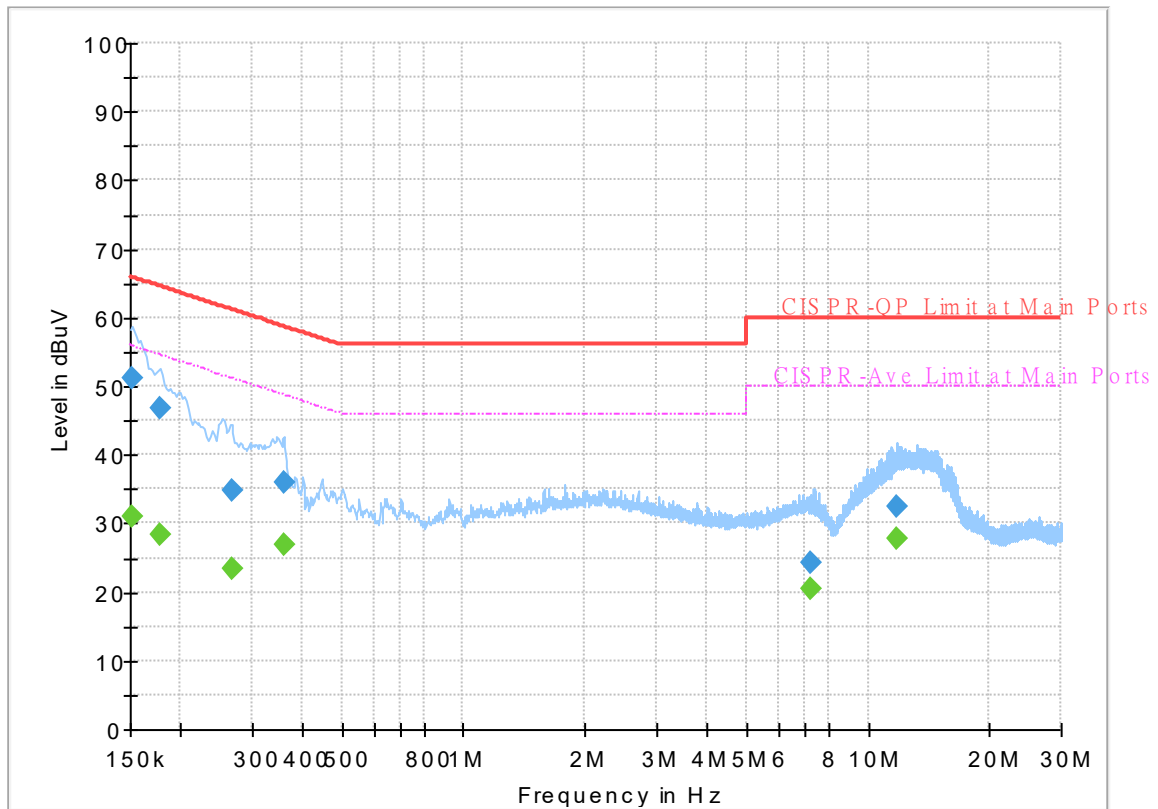
Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	51.46	---	65.88	14.42	L1	OFF	19.6
0.152250	---	31.38	55.88	24.50	L1	OFF	19.6
0.172500	47.51	---	64.84	17.33	L1	OFF	19.6
0.172500	---	28.91	54.84	25.93	L1	OFF	19.6
0.233250	36.62	---	62.33	25.71	L1	OFF	19.6
0.233250	---	20.61	52.33	31.72	L1	OFF	19.6
2.913000	30.62	---	56.00	25.38	L1	OFF	19.6
2.913000	---	26.40	46.00	19.60	L1	OFF	19.6
7.737000	32.06	---	60.00	27.94	L1	OFF	19.7
7.737000	---	26.55	50.00	23.45	L1	OFF	19.7
12.250500	32.68	---	60.00	27.32	L1	OFF	19.8
12.250500	---	28.07	50.00	21.93	L1	OFF	19.8

EUT Information

Report NO : 250205
Test Mode : Mode 3
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	51.11	---	65.88	14.77	N	OFF	19.6
0.152250	---	31.09	55.88	24.79	N	OFF	19.6
0.177000	46.81	---	64.63	17.82	N	OFF	19.6
0.177000	---	28.43	54.63	26.20	N	OFF	19.6
0.267000	34.79	---	61.21	26.42	N	OFF	19.6
0.267000	---	23.50	51.21	27.71	N	OFF	19.6
0.359250	35.95	---	58.75	22.80	N	OFF	19.6
0.359250	---	26.78	48.75	21.97	N	OFF	19.6
7.219500	24.30	---	60.00	35.70	N	OFF	19.7
7.219500	---	20.38	50.00	29.62	N	OFF	19.7
11.841000	32.44	---	60.00	27.56	N	OFF	19.8
11.841000	---	27.69	50.00	22.31	N	OFF	19.8



Appendix C. Radiated Spurious Emission

Test Engineer :	Jack Cheng, Tim Lee and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

<Sample 1>

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2389.905	58.04	-15.96	74	47.58	27.34	16.61	33.49	120	98	P	H
		2385.6	49.34	-4.66	54	38.87	27.36	16.6	33.49	120	98	A	H
	*	2412	107.99	-	-	97.57	27.28	16.64	33.5	120	98	P	H
	*	2412	104.98	-	-	94.56	27.28	16.64	33.5	120	98	A	H
													H
		2387.07	61.11	-12.89	74	50.65	27.35	16.6	33.49	268	135	P	V
		2387.07	52.68	-1.32	54	42.22	27.35	16.6	33.49	268	135	A	V
	*	2412	116.14	-	-	105.72	27.28	16.64	33.5	268	135	P	V
	*	2412	113.07	-	-	102.65	27.28	16.64	33.5	268	135	A	V
													V
802.11b CH 06 2437MHz		2363.62	55.58	-18.42	74	45.04	27.45	16.57	33.48	252	130	P	H
		2357.74	45.58	-8.42	54	35.03	27.47	16.56	33.48	252	130	A	H
	*	2437	108.36	-	-	97.98	27.23	16.67	33.52	252	130	P	H
	*	2437	105.32	-	-	94.94	27.23	16.67	33.52	252	130	A	H
		2486	56.08	-17.92	74	45.61	27.27	16.74	33.54	252	130	P	H
		2488.31	44.35	-9.65	54	33.87	27.28	16.74	33.54	252	130	A	H
		2357.32	58.11	-15.89	74	47.56	27.47	16.56	33.48	285	113	P	V
		2357.74	49.81	-4.19	54	39.26	27.47	16.56	33.48	285	113	A	V
	*	2437	117.36	-	-	106.98	27.23	16.67	33.52	285	113	P	V
	*	2437	114.41	-	-	104.03	27.23	16.67	33.52	285	113	A	V
		2485.3	58.17	-15.83	74	47.7	27.27	16.74	33.54	285	113	P	V
		2488.1	48.16	-5.84	54	37.68	27.28	16.74	33.54	285	113	A	V



802.11b CH 11 2462MHz	*	2462	105.81	-	-	95.41	27.22	16.71	33.53	269	140	P	H
	*	2462	102.88	-	-	92.48	27.22	16.71	33.53	269	140	A	H
		2487.56	55.2	-18.8	74	44.72	27.28	16.74	33.54	269	140	P	H
		2487.44	44.71	-9.29	54	34.24	27.27	16.74	33.54	269	140	A	H
													H
													H
	*	2462	114.88	-	-	104.48	27.22	16.71	33.53	279	113	P	V
	*	2462	111.9	-	-	101.5	27.22	16.71	33.53	279	113	A	V
		2487.6	59.27	-14.73	74	48.79	27.28	16.74	33.54	279	113	P	V
		2487.44	48.98	-5.02	54	38.51	27.27	16.74	33.54	279	113	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)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	43.47	-30.53	74	68.07	31.25	11.09	66.94	-	-	P	H
		10950	51.62	-22.38	74	61.1	40.5	16.88	66.86	-	-	P	H
		10950	41.57	-12.43	54	51.05	40.5	16.88	66.86	-	-	A	H
		14490	53.43	-20.57	74	58.36	41.67	19.57	66.17	-	-	P	H
		14490	43.35	-10.65	54	48.28	41.67	19.57	66.17	-	-	A	H
		17985	61.46	-12.54	74	59.14	49.6	21.96	69.24	-	-	P	H
		17985	46.38	-7.62	54	44.06	49.6	21.96	69.24	-	-	A	H
													H
													H
													H
													H
													H
		4824	52.21	-21.79	74	76.81	31.25	11.09	66.94	256	182	P	V
		4824	49.98	-4.02	54	74.58	31.25	11.09	66.94	256	182	A	V
		10890	51.32	-22.68	74	60.86	40.55	16.83	66.92	-	-	P	V
		10890	41.24	-12.76	54	50.89	40.55	16.72	66.92	-	-	A	V
		14490	53.55	-20.45	74	58.48	41.67	19.57	66.17	-	-	P	V
		14490	43.43	-10.57	54	48.36	41.67	19.57	66.17	-	-	A	V
		17955	61.82	-12.18	74	60.27	48.78	21.94	69.17	-	-	P	V
		17955	46.7	-7.3	54	45.15	48.78	21.94	69.17	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 06 2437MHz		4874	44.06	-29.94	74	68.64	31.2	11.1	66.88	-	-	P	H
		7311	45.08	-28.92	74	61.05	36.34	13.63	65.94	-	-	P	H
		10890	51.23	-22.77	74	60.77	40.55	16.83	66.92	-	-	P	H
		10890	41.14	-12.86	54	50.68	40.55	16.83	66.92	-	-	A	H
		14490	52.27	-21.73	74	57.2	41.67	19.57	66.17	-	-	P	H
		14490	42.22	-11.78	54	47.15	41.67	19.57	66.17	-	-	A	H
		18000	62.71	-11.29	74	60.02	50	21.97	69.28	-	-	P	H
		18000	47.81	-6.19	54	45.12	50	21.97	69.28	-	-	A	H
													H
													H
													H
													H
		4874	54.32	-19.68	74	78.9	31.2	11.1	66.88	248	202	P	V
		4874	52.51	-1.49	54	77.09	31.2	11.1	66.88	248	202	A	V
		7311	44.69	-29.31	74	60.66	36.34	13.63	65.94	-	-	P	V
		10965	51.29	-22.71	74	60.78	40.47	16.89	66.85	-	-	P	V
		10965	41.2	-12.8	54	50.69	40.47	16.89	66.85	-	-	A	V
		14475	52.13	-21.87	74	57.14	41.62	19.56	66.19	-	-	P	V
		14475	42.08	-11.92	54	47.09	41.62	19.56	66.19	-	-	A	V
		18000	62.28	-11.72	74	59.59	50	21.97	69.28	-	-	P	V
		18000	47.22	-6.78	54	44.53	50	21.97	69.28	-	-	A	V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 11 2462MHz		4924	43.46	-30.54	74	67.98	31.2	11.11	66.83	-	-	P	H
		7386	46.7	-27.3	74	62.38	36.64	13.72	66.04	-	-	P	H
		10950	51.62	-22.38	74	61.1	40.5	16.88	66.86	-	-	P	H
		10950	41.57	-12.43	54	51.05	40.5	16.88	66.86	-	-	A	H
		14490	53.38	-20.62	74	58.31	41.67	19.57	66.17	-	-	P	H
		14490	43.31	-10.69	54	48.24	41.67	19.57	66.17	-	-	A	H
		17985	61.57	-12.43	74	59.25	49.6	21.96	69.24	-	-	P	H
		17985	46.49	-7.51	54	44.17	49.6	21.96	69.24	-	-	A	H
													H
													H
													H
													H
		4924	54	-20	74	78.52	31.2	11.11	66.83	270	155	P	V
		4924	51.99	-2.01	54	76.51	31.2	11.11	66.83	270	155	A	V
		7386	46.44	-27.56	74	62.12	36.64	13.72	66.04	-	-	P	V
		10935	51.32	-22.68	74	60.8	40.53	16.87	66.88	-	-	P	V
		10935	41.24	-12.76	54	50.72	40.53	16.87	66.88	-	-	A	V
		14490	52.29	-21.71	74	57.22	41.67	19.57	66.17	-	-	P	V
		14490	42.21	-11.79	54	47.14	41.67	19.57	66.17	-	-	A	V
		18000	62.2	-11.8	74	59.51	50	21.97	69.28	-	-	P	V
		18000	47.25	-6.75	54	44.56	50	21.97	69.28	-	-	A	V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.905	64.16	-9.84	74	53.7	27.34	16.61	33.49	360	38	P	H
		2390	50.67	-3.33	54	40.21	27.34	16.61	33.49	360	38	A	H
	*	2412	107.29	-	-	96.87	27.28	16.64	33.5	360	38	P	H
	*	2412	99.98	-	-	89.56	27.28	16.64	33.5	360	38	A	H
													H
													H
		2389.8	63.03	-10.97	74	52.57	27.34	16.61	33.49	101	92	P	V
		2390	52.44	-1.56	54	41.98	27.34	16.61	33.49	101	92	A	V
	*	2412	111.91	-	-	101.49	27.28	16.64	33.5	101	92	P	V
	*	2412	104.88	-	-	94.46	27.28	16.64	33.5	101	92	A	V
													V
													V
802.11g CH 06 2437MHz		2386.44	62.93	-11.07	74	52.47	27.35	16.6	33.49	400	37	P	H
		2389.94	49.1	-4.9	54	38.64	27.34	16.61	33.49	400	37	A	H
	*	2437	111.29	-	-	100.91	27.23	16.67	33.52	400	37	P	H
	*	2437	103.9	-	-	93.52	27.23	16.67	33.52	400	37	A	H
		2484.46	56.51	-17.49	74	46.04	27.27	16.74	33.54	400	37	P	H
		2483.97	46.23	-7.77	54	35.76	27.27	16.74	33.54	400	37	A	H
		2383.22	68.98	-5.02	74	58.5	27.37	16.6	33.49	100	105	P	V
		2389.24	51.88	-2.12	54	41.43	27.34	16.6	33.49	100	105	A	V
	*	2437	118.92	-	-	108.54	27.23	16.67	33.52	100	105	P	V
	*	2437	111.07	-	-	100.69	27.23	16.67	33.52	100	105	A	V
		2483.97	64.74	-9.26	74	54.27	27.27	16.74	33.54	100	105	P	V
		2483.55	52.19	-1.81	54	41.72	27.27	16.74	33.54	100	105	A	V



802.11g CH 11 2462MHz	*	2462	105.53	-	-	95.13	27.22	16.71	33.53	386	39	P	H
	*	2462	97.56	-	-	87.16	27.22	16.71	33.53	386	39	A	H
		2483.92	60.09	-13.91	74	49.62	27.27	16.74	33.54	386	39	P	H
		2483.92	47.71	-6.29	54	37.24	27.27	16.74	33.54	386	39	A	H
													H
													H
	*	2462	114.38	-	-	103.98	27.22	16.71	33.53	100	87	P	V
	*	2462	106.45	-	-	96.05	27.22	16.71	33.53	100	87	A	V
		2484.04	65.07	-8.93	74	54.6	27.27	16.74	33.54	100	87	P	V
		2484.8	51.95	-2.05	54	41.48	27.27	16.74	33.54	100	87	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)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	39.33	-34.67	74	63.93	31.25	11.09	66.94	-	-	P	H
		11400	52.04	-21.96	74	61.3	40	17.21	66.47	-	-	P	H
		11400	42.04	-11.96	54	51.3	40	17.21	66.47	-	-	A	H
		14490	52.61	-21.39	74	57.54	41.67	19.57	66.17	-	-	P	H
		14490	42.6	-11.4	54	47.53	41.67	19.57	66.17	-	-	A	H
		17985	62.15	-11.85	74	59.83	49.6	21.96	69.24	-	-	P	H
		17985	50.42	-3.58	54	48.1	49.6	21.96	69.24	-	-	A	H
													H
													H
													H
													H
													H
		4824	39.12	-34.88	74	63.72	31.25	11.09	66.94	-	-	P	V
		10965	51.27	-22.73	74	60.76	40.47	16.89	66.85	-	-	P	V
		10965	41.28	-12.72	54	50.77	40.47	16.89	66.85	-	-	A	V
		14490	53.17	-20.83	74	58.1	41.67	19.57	66.17	-	-	P	V
		14490	43.16	-10.84	54	48.09	41.67	19.57	66.17	-	-	A	V
		17985	62.63	-11.37	74	60.31	49.6	21.96	69.24	-	-	P	V
		17985	50.61	-3.39	54	48.29	49.6	21.96	69.24	-	-	A	V
													V
													V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 06 2437MHz		4874	40.76	-33.24	74	65.34	31.2	11.1	66.88	-	-	P	H
		7311	44.83	-29.17	74	60.8	36.34	13.63	65.94	-	-	P	H
		11400	51.22	-22.78	74	60.48	40	17.21	66.47	-	-	P	H
		11400	41.22	-12.78	54	50.48	40	17.21	66.47	-	-	A	H
		14490	53.84	-20.16	74	58.77	41.67	19.57	66.17	-	-	P	H
		14490	43.83	-10.17	54	48.76	41.67	19.57	66.17	-	-	A	H
		18000	61.96	-12.04	74	59.27	50	21.97	69.28	-	-	P	H
		18000	50.46	-3.54	54	47.77	50	21.97	69.28	-	-	A	H
													H
													H
													H
													H
		4875	46.92	-27.08	74	71.5	31.2	11.1	66.88	-	-	P	V
		7311	44.83	-29.17	74	60.8	36.34	13.63	65.94	-	-	P	V
		10875	51.57	-22.43	74	61.21	40.47	16.82	66.93	-	-	P	V
		10875	41.57	-12.43	54	51.21	40.47	16.82	66.93	-	-	A	V
		14490	52.75	-21.25	74	57.68	41.67	19.57	66.17	-	-	P	V
		14490	26.73	-27.27	54	31.66	41.67	19.57	66.17	-	-	A	V
		18000	62.12	-11.88	74	59.43	50	21.97	69.28	-	-	P	V
		18000	50.12	-3.88	54	47.43	50	21.97	69.28	-	-	A	V
													V
													V
													V
													V

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	(dB)	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2					(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 11 2462MHz		4924	40.1	-33.9	74	64.62	31.2	11.11	66.83	-	-	P	H
		7386	45.4	-28.6	74	61.08	36.64	13.72	66.04	-	-	P	H
		11085	50.84	-23.16	74	60.62	39.98	16.98	66.74	-	-	P	H
		11085	40.84	-13.16	54	50.62	39.98	16.98	66.74	-	-	A	H
		14475	53.06	-20.94	74	58.07	41.62	19.56	66.19	-	-	P	H
		14475	43.06	-10.94	54	48.07	41.62	19.56	66.19	-	-	A	H
		18000	62.21	-11.79	74	59.52	50	21.97	69.28	-	-	P	H
		18000	50.21	-3.79	54	47.52	50	21.97	69.28	-	-	A	H
													H
													H
													H
													H
		4924	39.63	-34.37	74	64.15	31.2	11.11	66.83	-	-	P	V
		7386	45.03	-28.97	74	60.71	36.64	13.72	66.04	-	-	P	V
		10860	51.61	-22.39	74	61.36	40.4	16.8	66.95	-	-	P	V
		10860	41.61	-12.39	54	51.36	40.4	16.8	66.95	-	-	A	V
		14475	52.87	-21.13	74	57.88	41.62	19.56	66.19	-	-	P	V
		14475	42.87	-11.13	54	47.88	41.62	19.56	66.19	-	-	A	V
		17970	62.05	-11.95	74	60.12	49.19	21.95	69.21	-	-	P	V
		17970	50.45	-3.55	54	48.52	49.19	21.95	69.21	-	-	A	V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2388.54	58.78	-15.22	74	48.32	27.35	16.6	33.49	360	40	P	H
		2388.96	47.43	-6.57	54	36.98	27.34	16.6	33.49	360	40	A	H
	*	2412	104.97	-	-	94.55	27.28	16.64	33.5	360	40	P	H
	*	2412	97.69	-	-	87.27	27.28	16.64	33.5	360	40	A	H
													H
													H
		2389.065	64.77	-9.23	74	54.32	27.34	16.6	33.49	102	91	P	V
		2389.38	51.83	-2.17	54	41.38	27.34	16.6	33.49	102	91	A	V
	*	2412	109.99	-	-	99.57	27.28	16.64	33.5	102	91	P	V
	*	2412	102.74	-	-	92.32	27.28	16.64	33.5	102	91	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2381.54	59.59	-14.41	74	49.12	27.37	16.59	33.49	400	36	P	H
		2388.82	47.31	-6.69	54	36.86	27.34	16.6	33.49	400	36	A	H
	*	2437	110.12	-	-	99.74	27.23	16.67	33.52	400	36	P	H
	*	2437	103.31	-	-	92.93	27.23	16.67	33.52	400	36	A	H
		2489.01	55.28	-18.72	74	44.8	27.28	16.74	33.54	400	36	P	H
		2484.88	45.87	-8.13	54	35.4	27.27	16.74	33.54	400	36	A	H
		2388.68	66.05	-7.95	74	55.59	27.35	16.6	33.49	171	97	P	V
		2389.94	51.35	-2.65	54	40.89	27.34	16.61	33.49	171	97	A	V
	*	2437	117.57	-	-	107.19	27.23	16.67	33.52	171	97	P	V
	*	2437	110.75	-	-	100.37	27.23	16.67	33.52	171	97	A	V
		2485.72	64.44	-9.56	74	53.97	27.27	16.74	33.54	171	97	P	V
		2483.5	52.56	-1.44	54	42.09	27.27	16.74	33.54	171	97	A	V



802.11n HT20 CH 11 2462MHz	*	2462	103.15	-	-	92.75	27.22	16.71	33.53	389	38	P	H
	*	2462	95.4	-	-	85	27.22	16.71	33.53	389	38	A	H
		2483.6	56.25	-17.75	74	45.78	27.27	16.74	33.54	389	38	P	H
		2483.56	46.47	-7.53	54	36	27.27	16.74	33.54	389	38	A	H
													H
													H
	*	2462	110.02	-	-	99.62	27.22	16.71	33.53	100	87	P	V
	*	2462	103.55	-	-	93.15	27.22	16.71	33.53	100	87	A	V
		2484.16	65.39	-8.61	74	54.92	27.27	16.74	33.54	100	87	P	V
		2483.76	51.85	-2.15	54	41.38	27.27	16.74	33.54	100	87	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 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	39.79	-34.21	74	64.39	31.25	11.09	66.94	-	-	P	H
		10890	51.66	-22.34	74	61.2	40.55	16.83	66.92	-	-	P	H
		10890	41.66	-12.34	54	51.2	40.55	16.83	66.92	-	-	A	H
		14490	52.81	-21.19	74	57.74	41.67	19.57	66.17	-	-	P	H
		14490	42.8	-11.2	54	47.73	41.67	19.57	66.17	-	-	A	H
		17970	62.71	-11.29	74	60.78	49.19	21.95	69.21	-	-	P	H
		17970	50.71	-3.29	54	48.78	49.19	21.95	69.21	-	-	A	H
													H
													H
													H
													H
													H
		4824	40.39	-33.61	74	64.99	31.25	11.09	66.94	-	-	P	V
		10995	51.41	-22.59	74	60.89	40.41	16.92	66.81	-	-	P	V
		10995	41.4	-12.6	54	50.88	40.41	16.92	66.81	-	-	A	V
		14490	53.37	-20.63	74	58.3	41.67	19.57	66.17	-	-	P	V
		14490	43.36	-10.64	54	48.29	41.67	19.57	66.17	-	-	A	V
		18000	62.5	-11.5	74	59.81	50	21.97	69.28	-	-	P	V
		18000	50.5	-3.5	54	47.81	50	21.97	69.28	-	-	A	V
													V
													V
													V
													V
													V



WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 06 2437MHz		4874	40.92	-33.08	74	65.5	31.2	11.1	66.88	-	-	P	H
		7311	44.62	-29.38	74	60.59	36.34	13.63	65.94	-	-	P	H
		10860	51.42	-22.58	74	61.17	40.4	16.8	66.95	-	-	P	H
		10860	41.42	-12.58	54	51.17	40.4	16.8	66.95	-	-	A	H
		14490	52.84	-21.16	74	57.77	41.67	19.57	66.17	-	-	P	H
		14490	42.83	-11.17	54	47.76	41.67	19.57	66.17	-	-	A	H
		18000	62.18	-11.82	74	59.49	50	21.97	69.28	-	-	P	H
		18000	50.83	-3.17	54	48.14	50	21.97	69.28	-	-	A	H
													H
													H
													H
													H
		4874	47.16	-26.84	74	71.74	31.2	11.1	66.88	-	-	P	V
		7311	44.95	-29.05	74	60.92	36.34	13.63	65.94	-	-	P	V
		11010	51.14	-22.86	74	60.66	40.35	16.93	66.8	-	-	P	V
		11010	41.14	-12.86	54	50.66	40.35	16.93	66.8	-	-	A	V
		14490	52.91	-21.09	74	57.84	41.67	19.57	66.17	-	-	P	V
		14490	42.9	-11.1	54	47.83	41.67	19.57	66.17	-	-	A	V
		17985	62.35	-11.65	74	60.03	49.6	21.96	69.24	-	-	P	V
		17985	50.34	-3.66	54	48.02	49.6	21.96	69.24	-	-	A	V
													V
													V
													V
													V

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	(dB)	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2					(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 11 2462MHz		4924	40.78	-33.22	74	65.3	31.2	11.11	66.83	-	-	P	H
		7386	46.52	-27.48	74	62.2	36.64	13.72	66.04	-	-	P	H
		10875	51.31	-22.69	74	60.95	40.47	16.82	66.93	-	-	P	H
		10875	41.31	-12.69	54	50.95	40.47	16.82	66.93	-	-	A	H
		14490	52.8	-21.2	74	57.73	41.67	19.57	66.17	-	-	P	H
		14490	42.79	-11.21	54	47.72	41.67	19.57	66.17	-	-	A	H
		18000	62.11	-11.89	74	59.42	50	21.97	69.28	-	-	P	H
		18000	50.81	-3.19	54	48.12	50	21.97	69.28	-	-	A	H
													H
													H
													H
													H
		4924	41.35	-32.65	74	65.87	31.2	11.11	66.83	-	-	P	V
		7386	46.23	-27.77	74	61.91	36.64	13.72	66.04	-	-	P	V
		10965	51.92	-22.08	74	61.41	40.47	16.89	66.85	-	-	P	V
		10965	41.93	-12.07	54	51.42	40.47	16.89	66.85	-	-	A	V
		14475	53.01	-20.99	74	58.02	41.62	19.56	66.19	-	-	P	V
		14475	43.01	-10.99	54	48.02	41.62	19.56	66.19	-	-	A	V
		17985	62.25	-11.75	74	59.93	49.6	21.96	69.24	-	-	P	V
		17985	50.24	-3.76	54	47.92	49.6	21.96	69.24	-	-	A	V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		2388.54	55.13	-18.87	74	44.67	27.35	16.6	33.49	121	97	P	H
		2389.94	46.67	-7.33	54	36.21	27.34	16.61	33.49	121	97	A	H
	*	2422	95.31	-	-	84.91	27.26	16.65	33.51	121	97	P	H
	*	2422	88.34	-	-	77.94	27.26	16.65	33.51	121	97	A	H
		2490.97	54.56	-19.44	74	44.08	27.28	16.75	33.55	121	97	P	H
		2486.49	45.64	-8.36	54	35.17	27.27	16.74	33.54	121	97	A	H
		2389.66	61.32	-12.68	74	50.86	27.34	16.61	33.49	299	84	P	V
		2389.52	52.06	-1.94	54	41.61	27.34	16.6	33.49	299	84	A	V
	*	2422	103.59	-	-	93.19	27.26	16.65	33.51	299	84	P	V
	*	2422	96.6	-	-	86.2	27.26	16.65	33.51	299	84	A	V
		2493	56.21	-17.79	74	45.72	27.29	16.75	33.55	299	84	P	V
		2496.08	47.05	-6.95	54	36.56	27.29	16.75	33.55	299	84	A	V
802.11n HT40 CH 06 2437MHz		2312.52	54.75	-19.25	74	43.91	27.8	16.49	33.45	400	0	P	H
		2361.8	45.85	-8.15	54	35.32	27.45	16.56	33.48	400	0	A	H
	*	2437	94.94	-	-	84.56	27.23	16.67	33.52	400	0	P	H
	*	2437	87.54	-	-	77.16	27.23	16.67	33.52	400	0	A	H
		2485.44	54.96	-19.04	74	44.49	27.27	16.74	33.54	400	0	P	H
		2488.66	45.83	-8.17	54	35.35	27.28	16.74	33.54	400	0	A	H
		2389.52	63	-11	74	52.55	27.34	16.6	33.49	291	101	P	V
		2388.96	52.73	-1.27	54	42.28	27.34	16.6	33.49	291	101	A	V
	*	2437	107.97	-	-	97.59	27.23	16.67	33.52	291	101	P	V
	*	2437	101.34	-	-	90.96	27.23	16.67	33.52	291	101	A	V
		2484.11	57.05	-16.95	74	46.58	27.27	16.74	33.54	291	101	P	V
		2483.5	48.83	-5.17	54	38.36	27.27	16.74	33.54	291	101	A	V



802.11n HT40 CH 09 2452MHz		2358.72	54.62	-19.38	74	44.07	27.47	16.56	33.48	120	96	P	H
		2368.1	46.16	-7.84	54	35.64	27.43	16.57	33.48	120	96	A	H
	*	2452	94.6	-	-	84.24	27.2	16.69	33.53	120	96	P	H
	*	2452	87.43	-	-	77.07	27.2	16.69	33.53	120	96	A	H
		2496.78	55.02	-18.98	74	44.52	27.29	16.76	33.55	120	96	P	H
		2484.18	45.9	-8.1	54	35.43	27.27	16.74	33.54	120	96	A	H
		2381.4	56.09	-17.91	74	45.62	27.37	16.59	33.49	289	97	P	V
		2383.92	46.84	-7.16	54	36.37	27.36	16.6	33.49	289	97	A	V
	*	2452	104.56	-	-	94.2	27.2	16.69	33.53	289	97	P	V
	*	2452	97.89	-	-	87.53	27.2	16.69	33.53	289	97	A	V
		2484.18	61.39	-12.61	74	50.92	27.27	16.74	33.54	289	97	P	V
		2483.76	52.53	-1.47	54	42.06	27.27	16.74	33.54	289	97	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 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 03 2422MHz		4844	39.4	-34.6	74	63.93	31.29	11.1	66.92	-	-	P	H
		7266	44.32	-29.68	74	60.39	36.23	13.58	65.88	-	-	P	H
		11010	51.44	-22.56	74	60.96	40.35	16.93	66.8	-	-	P	H
		11010	41.44	-12.56	54	50.96	40.35	16.93	66.8	-	-	A	H
		14475	52.41	-21.59	74	57.42	41.62	19.56	66.19	-	-	P	H
		14475	42.41	-11.59	54	47.42	41.62	19.56	66.19	-	-	A	H
		17985	62.79	-11.21	74	60.47	49.6	21.96	69.24	-	-	P	H
		17985	50.78	-3.22	54	48.46	49.6	21.96	69.24	-	-	A	H
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													H
		4844	39.19	-34.81	74	63.72	31.29	11.1	66.92	-	-	P	V
		7266	43.49	-30.51	74	59.56	36.23	13.58	65.88	-	-	P	V
		11070	51.97	-22.03	74	61.7	40.05	16.97	66.75	-	-	P	V
		11070	41.97	-12.03	54	51.7	40.05	16.97	66.75	-	-	A	V
		14490	52.75	-21.25	74	57.68	41.67	19.57	66.17	-	-	P	V
		14490	42.74	-11.26	54	47.67	41.67	19.57	66.17	-	-	A	V
		17970	61.32	-12.68	74	59.39	49.19	21.95	69.21	-	-	P	V
		17970	50.32	-3.68	54	48.39	49.19	21.95	69.21	-	-	A	V
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WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 06 2437MHz		4874	40.79	-33.21	74	65.37	31.2	11.1	66.88	-	-	P	H
		7311	44.58	-29.42	74	60.55	36.34	13.63	65.94	-	-	P	H
		10875	51.71	-22.29	74	61.35	40.47	16.82	66.93	-	-	P	H
		10875	41.71	-12.29	54	51.35	40.47	16.82	66.93	-	-	A	H
		14475	52.28	-21.72	74	57.29	41.62	19.56	66.19	-	-	P	H
		14475	42.28	-11.72	54	47.29	41.62	19.56	66.19	-	-	A	H
		17940	62.62	-11.38	74	61.44	48.38	21.93	69.13	-	-	P	H
		17940	50.16	-3.84	54	48.98	48.38	21.93	69.13	-	-	A	H
													H
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													H
													H
		4874	44.45	-29.55	74	69.03	31.2	11.1	66.88	-	-	P	V
		7311	44.79	-29.21	74	60.76	36.34	13.63	65.94	-	-	P	V
		10965	51.04	-22.96	74	60.53	40.47	16.89	66.85	-	-	P	V
		10965	41.05	-12.95	54	50.54	40.47	16.89	66.85	-	-	A	V
		14490	52.85	-21.15	74	57.78	41.67	19.57	66.17	-	-	P	V
		14490	42.84	-11.16	54	47.77	41.67	19.57	66.17	-	-	A	V
		18000	62.53	-11.47	74	59.84	50	21.97	69.28	-	-	P	V
		18000	50.53	-3.47	54	47.84	50	21.97	69.28	-	-	A	V
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WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant. 1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)
802.11n HT40 CH 09 2452MHz		4904	41.03	-32.97	74	65.65	31.12	11.11	66.85	-	-	P	H
		7356	45.36	-28.64	74	61.15	36.52	13.69	66	-	-	P	H
		10920	51.62	-22.38	74	61.1	40.56	16.85	66.89	-	-	P	H
		10920	41.62	-12.38	54	51.1	40.56	16.85	66.89	-	-	A	H
		14475	53.54	-20.46	74	58.55	41.62	19.56	66.19	-	-	P	H
		14475	43.54	-10.46	54	48.55	41.62	19.56	66.19	-	-	A	H
		17970	62.34	-11.66	74	60.41	49.19	21.95	69.21	-	-	P	H
		17970	50.34	-3.66	54	48.41	49.19	21.95	69.21	-	-	A	H
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		4904	40.29	-33.71	74	64.91	31.12	11.11	66.85	-	-	P	V
		7356	45.06	-28.94	74	60.85	36.52	13.69	66	-	-	P	V
		10950	51.65	-22.35	74	61.13	40.5	16.88	66.86	-	-	P	V
		10950	41.65	-12.35	54	51.13	40.5	16.88	66.86	-	-	A	V
		14490	52.73	-21.27	74	57.66	41.67	19.57	66.17	-	-	P	V
		14490	42.72	-11.28	54	47.65	41.67	19.57	66.17	-	-	A	V
		18000	62.41	-11.59	74	59.72	50	21.97	69.28	-	-	P	V
		18000	50.41	-3.59	54	47.72	50	21.97	69.28	-	-	A	V
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Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

2.4GHz WIFI 802.11n HT40 (SHF)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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)
2.4GHz 802.11n HT40 SHF		23922	44.09	-29.91	74	45.74	38.8	12.77	53.22	-	-	P	H
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Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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)
2.4GHz 802.11n HT40 LF		30	23.68	-16.32	40	28.02	24.53	0.77	29.64	-	-	P	H
		127.97	23.37	-20.13	43.5	34	17.42	1.58	29.63	-	-	P	H
		245.34	26.61	-19.39	46	35.93	17.91	2.18	29.41	-	-	P	H
		558.65	30.33	-15.67	46	29.59	26.13	3.46	28.85	-	-	P	H
		833.16	33.95	-12.05	46	29.59	28.55	4.23	28.42	-	-	P	H
		976.72	36.19	-17.81	54	28.82	30.8	4.65	28.08	-	-	P	H
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													H
													H
													H
		80.44	24.83	-15.17	40	39.67	13.6	1.23	29.67	-	-	P	V
		127.97	20.87	-22.63	43.5	31.5	17.42	1.58	29.63	-	-	P	V
		245.34	23.36	-22.64	46	32.68	17.91	2.18	29.41	-	-	P	V
		559.62	30.48	-15.52	46	29.68	26.18	3.47	28.85	-	-	P	V
		940.83	37.25	-8.75	46	30.62	30.23	4.55	28.15	-	-	P	V
		972.84	36.09	-17.91	54	28.65	30.89	4.64	28.09	-	-	P	V
													V
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												V	
												V	
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Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												



<Sample 4>

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 06 2437MHz		2387	55.87	-18.13	74	45.41	27.35	16.6	33.49	253	114	P	H
		2388.54	46.6	-7.4	54	36.14	27.35	16.6	33.49	253	114	A	H
	*	2437	93.17	-	-	82.79	27.23	16.67	33.52	253	114	P	H
	*	2437	86.4	-	-	76.02	27.23	16.67	33.52	253	114	A	H
		2488.17	54.4	-19.6	74	43.92	27.28	16.74	33.54	253	114	P	H
		2487.4	45.98	-8.02	54	35.51	27.27	16.74	33.54	253	114	A	H
		2388.82	62.71	-11.29	74	52.26	27.34	16.6	33.49	303	88	P	V
		2389.24	52.23	-1.77	54	41.78	27.34	16.6	33.49	303	88	A	V
	*	2437	107.69	-	-	97.31	27.23	16.67	33.52	303	88	P	V
	*	2437	101.3	-	-	90.92	27.23	16.67	33.52	303	88	A	V
		2485.37	57.65	-16.35	74	47.18	27.27	16.74	33.54	303	88	P	V
		2483.55	48.75	-5.25	54	38.28	27.27	16.74	33.54	303	88	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 802.11n HT40 (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT40 CH 06 2437MHz		4874	43.18	-30.82	74	67.76	31.2	11.1	66.88	-	-	P	H
		7311	46.41	-27.59	74	62.38	36.34	13.63	65.94	-	-	P	H
		10860	51.62	-22.38	74	61.37	40.4	16.8	66.95	-	-	P	H
		10860	41.62	-12.38	54	51.37	40.4	16.8	66.95	-	-	A	H
		14490	53.14	-20.86	74	58.07	41.67	19.57	66.17	-	-	P	H
		14490	43.13	-10.87	54	48.06	41.67	19.57	66.17	-	-	A	H
		17985	62.5	-11.5	74	60.18	49.6	21.96	69.24	-	-	P	H
		17985	50.49	-3.51	54	48.17	49.6	21.96	69.24	-	-	A	H
													H
													H
													H
													H
		4874	45.79	-28.21	74	70.37	31.2	11.1	66.88	-	-	P	V
		7311	45.33	-28.67	74	61.3	36.34	13.63	65.94	-	-	P	V
		10950	51.29	-22.71	74	60.77	40.5	16.88	66.86	-	-	P	V
		10950	41.29	-12.71	54	50.77	40.5	16.88	66.86	-	-	A	V
		14490	52.49	-21.51	74	57.42	41.67	19.57	66.17	-	-	P	V
		14490	42.48	-11.52	54	47.41	41.67	19.57	66.17	-	-	A	V
		17985	61.83	-12.17	74	59.51	49.6	21.96	69.24	-	-	P	V
		17985	50.82	-3.18	54	48.5	49.6	21.96	69.24	-	-	A	V
												V	
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												V	
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

2.4GHz WIFI 802.11n HT40 (SHF)

[illegible]

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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)
2.4GHz 802.11n HT40 LF		30	23.66	-16.34	40	28	24.53	0.77	29.64	-	-	P	H
		166.77	21.94	-21.56	43.5	33.73	15.95	1.81	29.55	-	-	P	H
		399.57	29.7	-16.3	46	34.07	21.97	2.86	29.2	-	-	P	H
		729.37	34.32	-11.68	46	31.51	27.45	3.95	28.59	-	-	P	H
		939.86	35.78	-10.22	46	29.2	30.18	4.55	28.15	-	-	P	H
		972.84	36.42	-17.58	54	28.98	30.89	4.64	28.09	-	-	P	H
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		80.44	24.27	-15.73	40	39.11	13.6	1.23	29.67	-	-	P	V
		91.11	21.86	-21.64	43.5	35.21	15	1.31	29.66	-	-	P	V
		253.1	23.35	-22.65	46	31.59	18.94	2.21	29.39	-	-	P	V
		577.08	30.53	-15.47	46	30.03	25.85	3.51	28.86	-	-	P	V
		729.37	35.15	-10.85	46	32.34	27.45	3.95	28.59	-	-	P	V
		987.39	36.59	-17.41	54	29.51	30.45	4.68	28.05	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												

**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 Margin 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	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					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. Margin (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. Margin(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. Margin(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 :	Jack Cheng, Tim Lee and Wilson Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

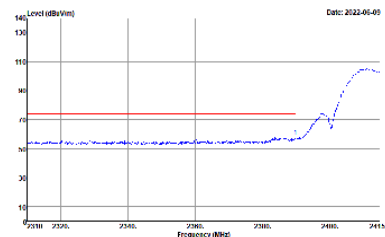
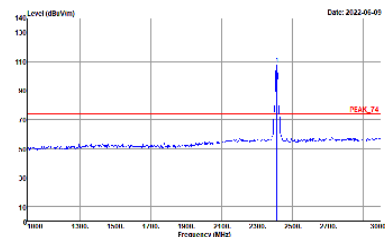
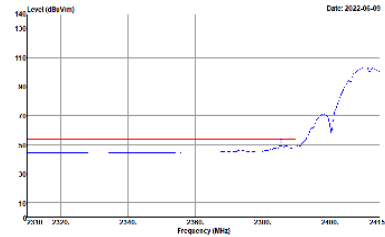
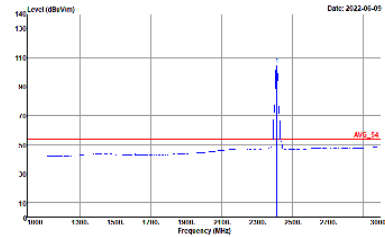
Note symbol

-L	Low channel location
-R	High channel location

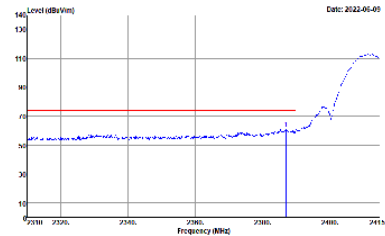
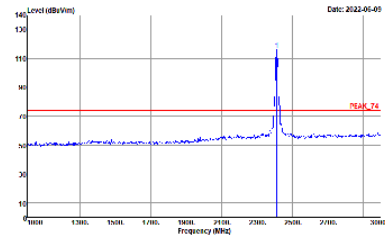
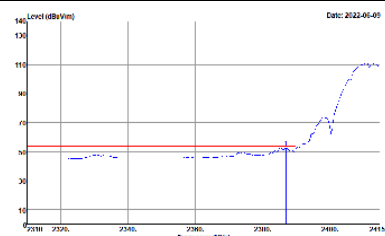
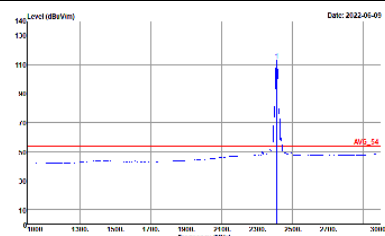


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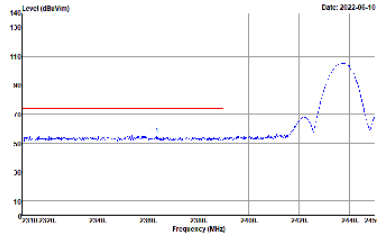
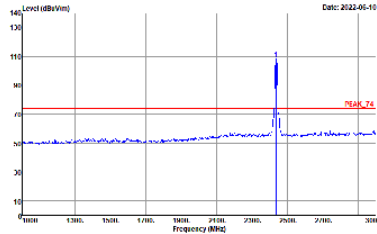
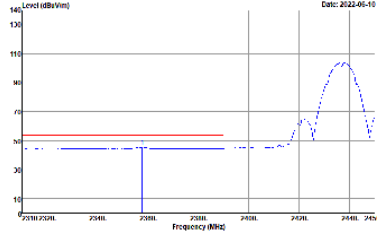
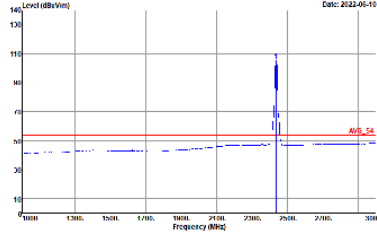
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 0302417-44Y Condition : 15dB 16" 14.3m HORN 15200 13278 HORN / ON1A1 : 88W30K0000047 VIEW:80000047 SW1:Auto	 Site : 0302417-44Y Condition : 15dB 16" 14.3m HORN 15200 13278 HORN / ON1A1 : 88W30K0000047 VIEW:80000047 SW1:Auto
Avg.	 Site : 0302417-44Y Condition : 15dB 16" 14.3m HORN 15200 13278 HORN / ON1A1 : 88W30K0000047 VIEW:80000047 SW1:Auto	 Site : 0302417-44Y Condition : 15dB 16" 14.3m HORN 15200 13278 HORN / ON1A1 : 88W30K0000047 VIEW:80000047 SW1:Auto

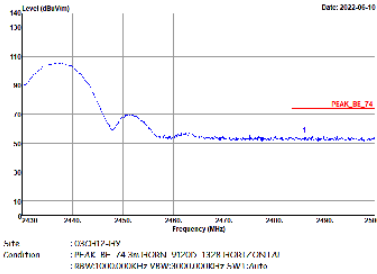
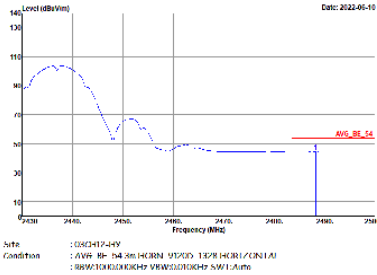


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 05C2412-44Y Condition : PPAE 14 3m HORN 91200 1328 VHB11CAI : 88W30K00K04P VIEW30K00K04P SW1:Auto	 Site : 05C2412-44Y Condition : PPAE 14 3m HORN 91200 1328 VHB11CAI : 88W30K00K04P VIEW30K00K04P SW1:Auto
Avg.	 Site : 05C2412-44Y Condition : AWR 14 3m HORN 91200 1328 VHB11CAI : 88W30K00K04P VIEW30K00K04P SW1:Auto	 Site : 05C2412-44Y Condition : AWR 14 3m HORN 91200 1328 VHB11CAI : 88W30K00K04P VIEW30K00K04P SW1:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 08C2417-44Y Condition : PPAE 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto	 Site : 08C2417-44Y Condition : PPAE 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto
	 Site : 08C2417-44Y Condition : AWR 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto	 Site : 08C2417-44Y Condition : AWR 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto

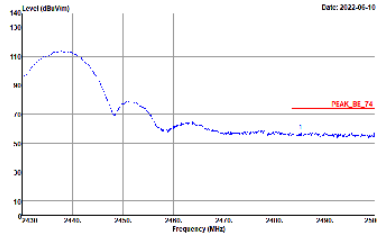
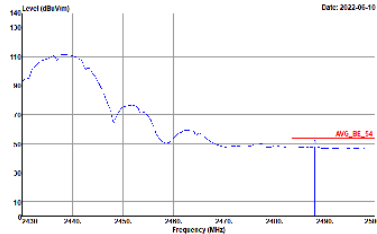


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

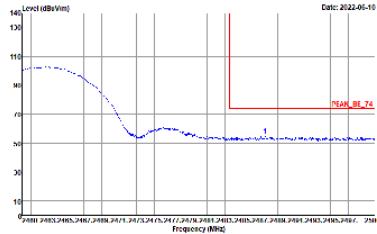
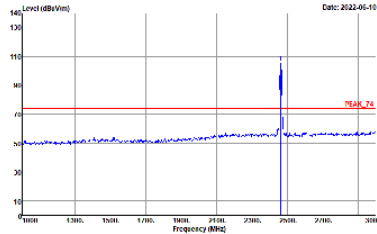
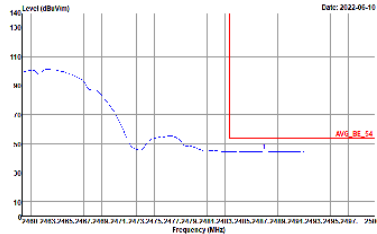
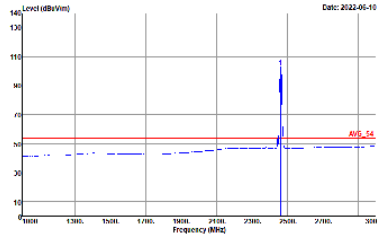


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		

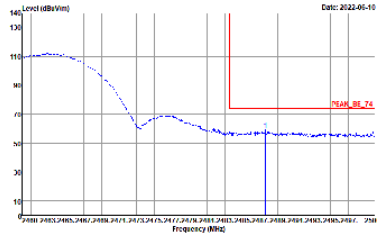
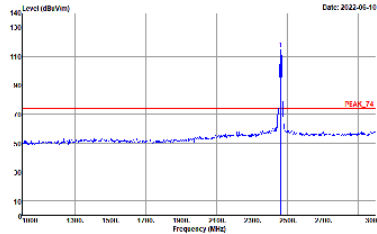
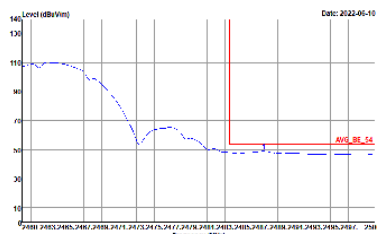
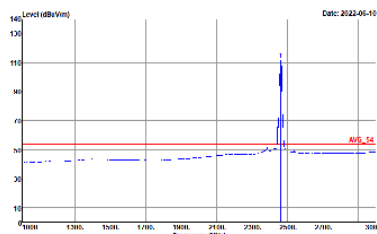


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak	 Date: 2022-05-10 Site : GSKCH17-4HY Condition : FREQ: RF: 24.36514000M VTX: 13.00V VBI: 11.00V : 802.11b CH06 2437MHz - R	Left blank
Avg.	 Date: 2022-05-10 Site : GSKCH17-4HY Condition : FREQ: RF: 24.36514000M VTX: 13.00V VBI: 11.00V : 802.11b CH06 2437MHz - R	Left blank



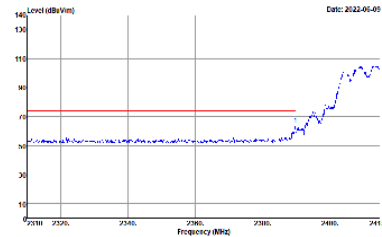
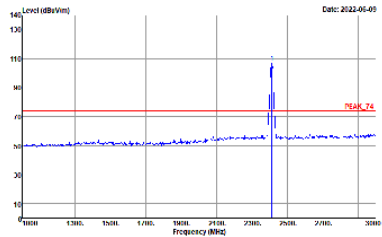
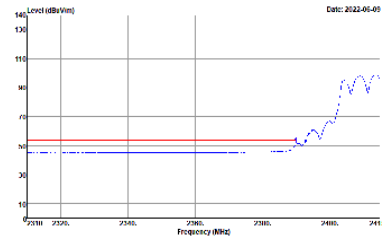
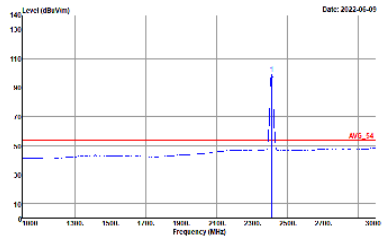
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Date: 2022-05-10 Site : 05C2417-44Y Condition : 1P/1K 16 14.9m HORN 91200 1309 HORN / CON1A1 : 88W30K0000CH VIEW:80K000CH SW1:Auto	 Date: 2022-05-10 Site : 05C2417-44Y Condition : 1P/1K 16 14.9m HORN 91200 1309 HORN / CON1A1 : 88W30K0000CH VIEW:80K000CH SW1:Auto
	 Date: 2022-05-10 Site : 05C2417-44Y Condition : 1P/1K 16 14.9m HORN 91200 1309 HORN / CON1A1 : 88W30K0000CH VIEW:80K000CH SW1:Auto	 Date: 2022-05-10 Site : 05C2417-44Y Condition : 1P/1K 16 14.9m HORN 91200 1309 HORN / CON1A1 : 88W30K0000CH VIEW:80K000CH SW1:Auto
Avg.		



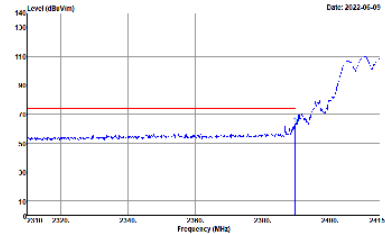
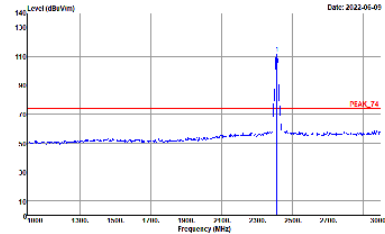
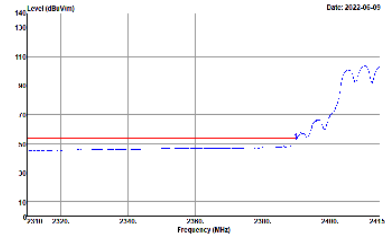
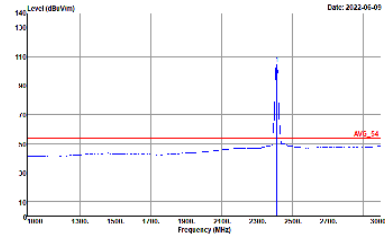
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 PEAK_BI_76 Site : 05C2417-44Y Condition : 1P/1K 16 14.8m HORN 91200 1328 VHB11CAI : 88W30K0000CH VIEW:80K000CH SW1:Auto	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 PEAK_FI_76 Site : 05C2417-44Y Condition : 1P/1K 16 14.8m HORN 91200 1328 VHB11CAI : 88W30K0000CH VIEW:80K000CH SW1:Auto
	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 AVG_BI_14 Site : 05C2417-44Y Condition : 1P/1K 16 14.8m HORN 91200 1328 VHB11CAI : 88W30K0000CH VIEW:80K000CH SW1:Auto	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 AVG_FI_14 Site : 05C2417-44Y Condition : 1P/1K 16 14.8m HORN 91200 1328 VHB11CAI : 88W30K0000CH VIEW:80K000CH SW1:Auto
Avg.		



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	 Site : 0302417-449 Condition : 15-16 8m 14.3m HORN 15200 13278 HORN / ON / AI : 88W30K00K004P VIEW:30K00K04P SW1:Auto	 Site : 0302417-449 Condition : 15-16 8m 14.3m HORN 15200 13278 HORN / ON / AI : 88W30K00K004P VIEW:30K00K04P SW1:Auto
Avg.	 Site : 0302417-449 Condition : 15-16 8m 14.3m HORN 15200 13278 HORN / ON / AI : 88W30K00K004P VIEW:30K00K04P SW1:Auto	 Site : 0302417-449 Condition : 15-16 8m 14.3m HORN 15200 13278 HORN / ON / AI : 88W30K00K004P VIEW:30K00K04P SW1:Auto

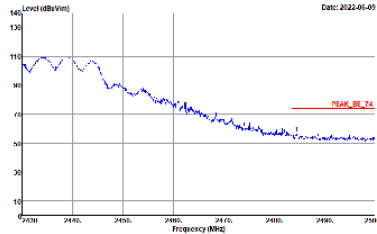
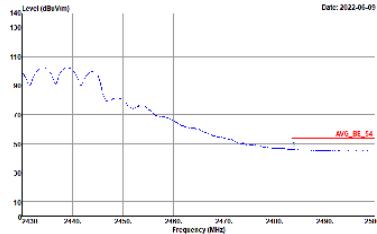


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 05C2412-44Y Condition : 1) F/A/E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K00K0CHP VIEW:8100K0CHP SW1:Auto	 Site : 05C2412-44Y Condition : 1) F/A/E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K00K0CHP VIEW:8100K0CHP SW1:Auto
	 Site : 05C2412-44Y Condition : 1) F/A/E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K00K0CHP VIEW:8100K0CHP SW1:Auto	 Site : 05C2412-44Y Condition : 1) F/A/E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K00K0CHP VIEW:8100K0CHP SW1:Auto
Avg.		

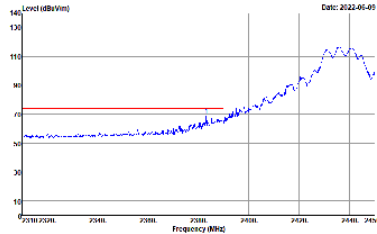
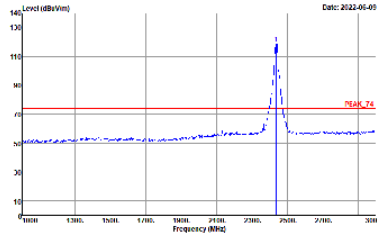
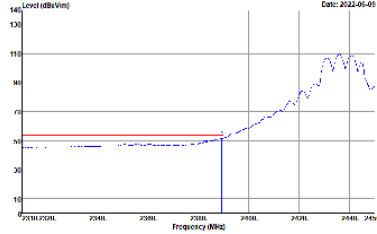
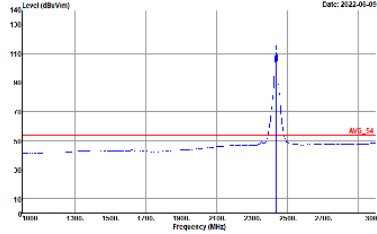


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	Horizontal Peak Spectrum Plot showing Level (dBV/m) vs Frequency (MHz) from 2380 to 2460 MHz. The plot shows a rising signal level starting around 2400 MHz, peaking at approximately 110 dBV/m near 2440 MHz. A red horizontal line is drawn at 70 dBV/m. Metadata: Site: :08C2417-44Y, Condition: :PFAK: 14 3m HORN: 91200: 1329 HORN/CON1A1, :88W:1000000000 VIEW:3000000000 SW1:Auto, Date: 2022-05-09.	Fundamental Peak Spectrum Plot showing Level (dBV/m) vs Frequency (MHz) from 2380 to 3000 MHz. A sharp peak is visible at 2437 MHz, reaching approximately 110 dBV/m. A red horizontal line is drawn at 70 dBV/m. Metadata: Site: :08C2417-44Y, Condition: :PFAK: 14 3m HORN: 91200: 1329 HORN/CON1A1, :88W:1000000000 VIEW:3000000000 SW1:Auto, Date: 2022-05-09.
Avg.	Horizontal Average Spectrum Plot showing Level (dBV/m) vs Frequency (MHz) from 2380 to 2460 MHz. The plot shows a rising signal level starting around 2400 MHz, peaking at approximately 110 dBV/m near 2440 MHz. A red horizontal line is drawn at 70 dBV/m. Metadata: Site: :08C2417-44Y, Condition: :AVR: 14 3m HORN: 91200: 1329 HORN/CON1A1, :88W:1000000000 VIEW:3000000000 SW1:Auto, Date: 2022-05-09.	Fundamental Average Spectrum Plot showing Level (dBV/m) vs Frequency (MHz) from 2380 to 3000 MHz. A sharp peak is visible at 2437 MHz, reaching approximately 110 dBV/m. A red horizontal line is drawn at 70 dBV/m. Metadata: Site: :08C2417-44Y, Condition: :AVR: 14 3m HORN: 91200: 1329 HORN/CON1A1, :88W:1000000000 VIEW:3000000000 SW1:Auto, Date: 2022-05-09.



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : GSKCH174HY Condition : 19.4dB 16- 14.2dB HORN VIDEO 1308 HORN / CON1A1 : 88W30G0000HY VIEW:800000HY SW1:Auto	Left blank
Avg.	 Site : GSKCH174HY Condition : AVG 16- 14.2dB HORN VIDEO 1308 HORN / CON1A1 : 88W30G0000HY VIEW:800000HY SW1:Auto	Left blank

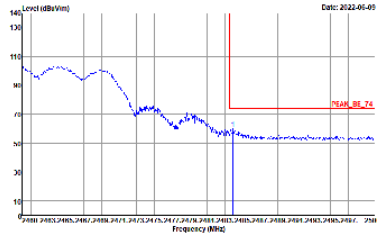
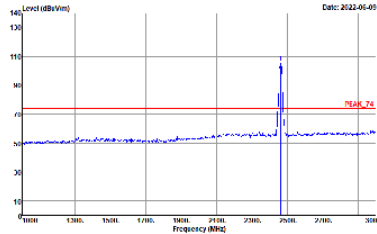
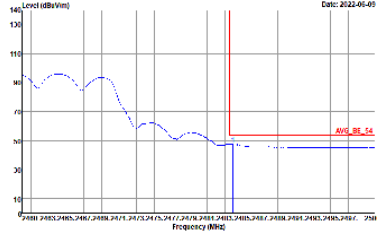
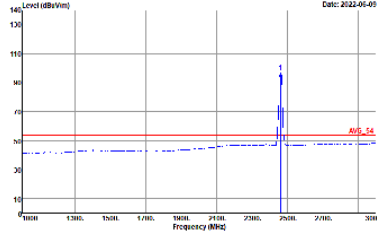


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 05G2417-44Y Condition : 197dB 16 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto	 Site : 05G2417-44Y Condition : 197dB 16 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto
	 Site : 05G2417-44Y Condition : 197dB 16 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto	 Site : 05G2417-44Y Condition : 197dB 16 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto
Avg.		

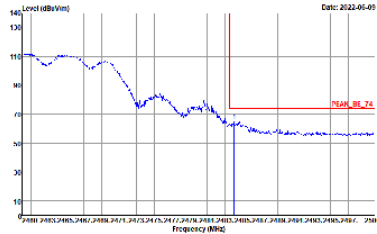
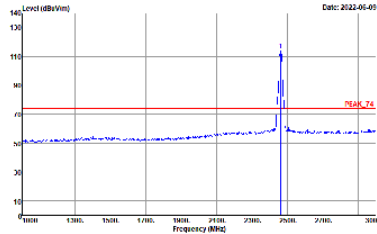
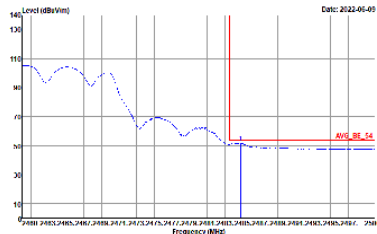
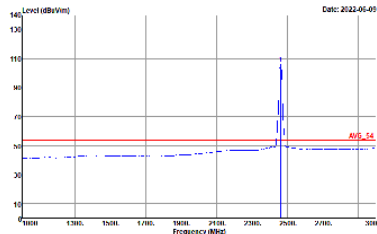


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank



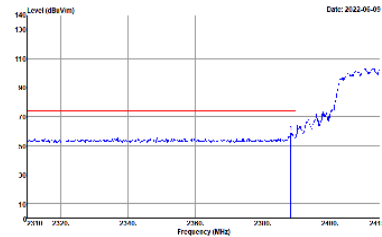
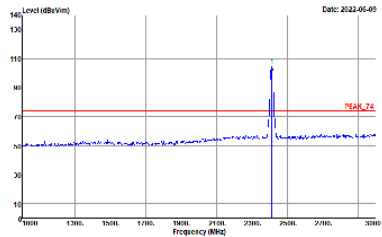
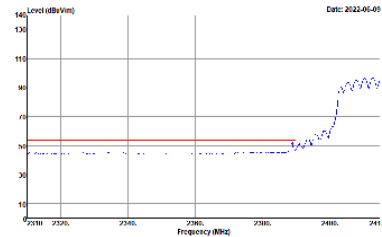
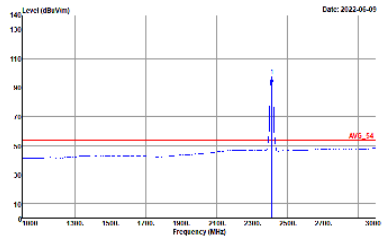
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 05C2417-44Y Condition : 1974K 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0000049 VIEW:310000049 SW1:Auto	 Site : 05C2417-44Y Condition : 1974K 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0000049 VIEW:310000049 SW1:Auto
	 Site : 05C2417-44Y Condition : 1974K 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0000049 VIEW:310000049 SW1:Auto	 Site : 05C2417-44Y Condition : 1974K 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K0000049 VIEW:310000049 SW1:Auto



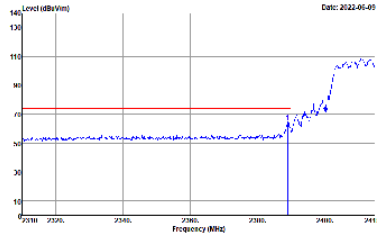
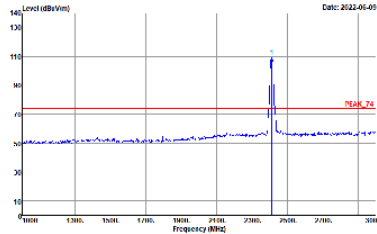
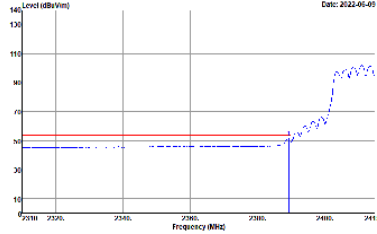
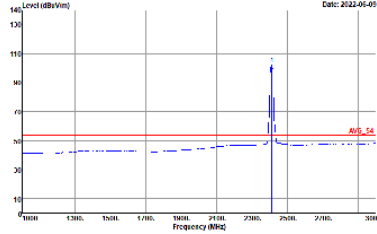
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto
	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.26m HORN 91200 13278 VHF111CAI : 88W10K0K0K04Y VIEW:810K0K04Y SW1:Auto
Avg.		



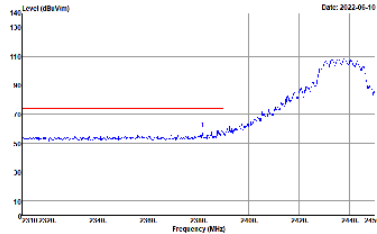
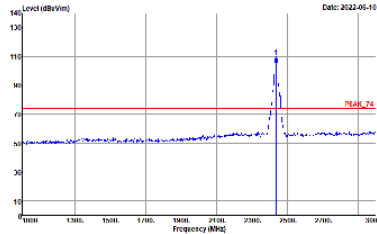
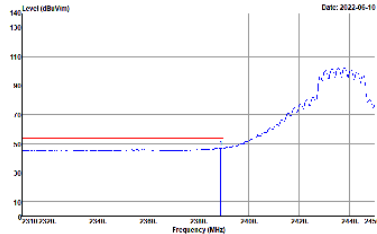
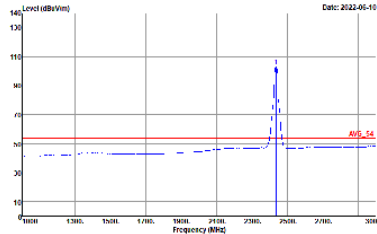
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Fundamental
Peak	 Date: 2022-06-09 Site : 0302417-449 Condition : 15m 14 3m HORN 15200 15208 HORN / ON / AI : 88W10K00K0049 VIEW:30K0049 SW1:Auto	 Date: 2022-06-09 Site : 0302417-449 Condition : 15m 14 3m HORN 15200 15208 HORN / ON / AI : 88W10K00K0049 VIEW:30K0049 SW1:Auto
Avg.	 Date: 2022-06-09 Site : 0302417-449 Condition : 15m 14 3m HORN 15200 15208 HORN / ON / AI : 88W10K00K0049 VIEW:30K0049 SW1:Auto	 Date: 2022-06-09 Site : 0302417-449 Condition : 15m 14 3m HORN 15200 15208 HORN / ON / AI : 88W10K00K0049 VIEW:30K0049 SW1:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Vertical	Fundamental
Peak	 Site : 05C2412-4HY Condition : PPAE 16 14.9m HORN 91200 1328 VHB11CA : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2412-4HY Condition : PPAE 16 14.9m HORN 91200 1328 VHB11CA : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto
	 Site : 05C2412-4HY Condition : AWR 16 14.9m HORN 91200 1328 VHB11CA : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2412-4HY Condition : AWR 16 14.9m HORN 91200 1328 VHB11CA : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto

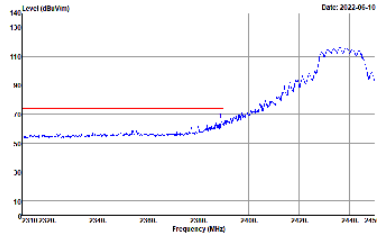
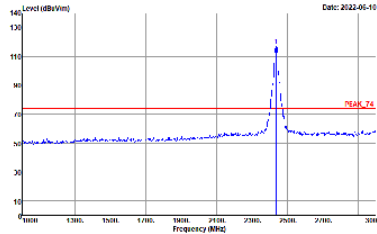
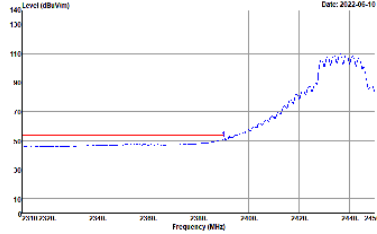
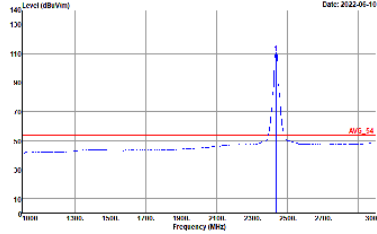


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1328 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1328 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto
Avg.	 Site : 05C2417-44Y Condition : AVE 14 3m HORN 91200 1328 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : AVE 14 3m HORN 91200 1328 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto

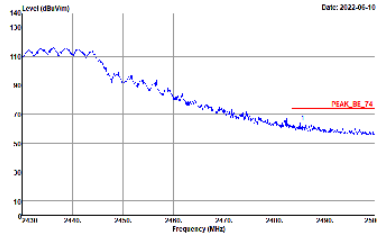
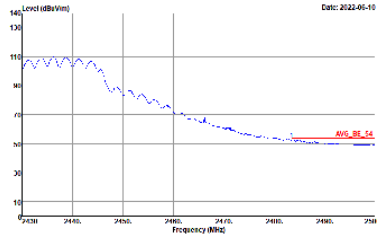


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	Level (dBm) Frequency (MHz) Date: 2022-05-10 Site : 050417-447 Condition : 1: Peak BW=14.0MHz CH06 15725 13.97MHz (CH06) 1A1 2: BW=14.0MHz CH06 15725 13.97MHz (CH06) 1A1	Left blank
Avg.	Level (dBm) Frequency (MHz) Date: 2022-05-10 Site : 050417-447 Condition : 1: Avg BW=14.0MHz CH06 15725 13.97MHz (CH06) 1A1 2: BW=14.0MHz CH06 15725 13.97MHz (CH06) 1A1	Left blank

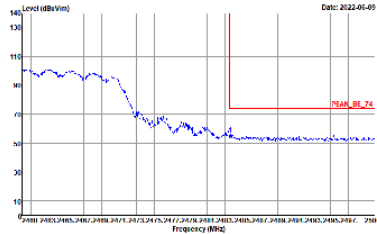
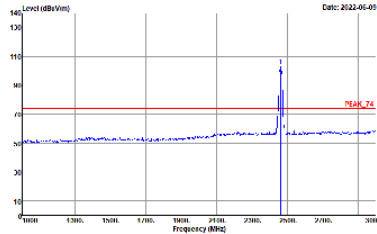
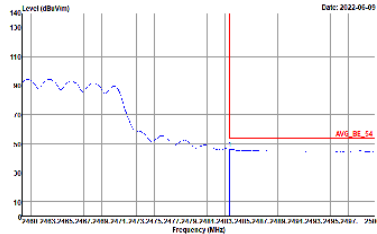
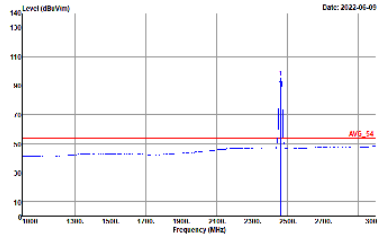


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1328 VHB11CA : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1328 VHB11CA : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto
	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 Site : 05C2417-44Y Condition : AWR 14 3m HORN 91200 1328 VHB11CA : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto	 Level (dBV/m) Frequency (MHz) Date: 2022-05-10 Site : 05C2417-44Y Condition : AWR 14 3m HORN 91200 1328 VHB11CA : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto
Avg.		

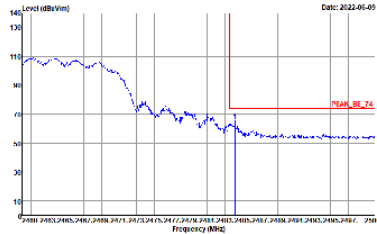
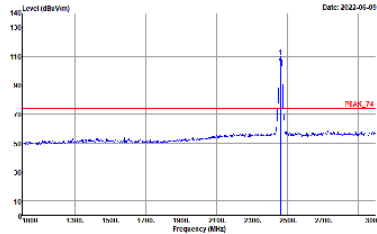
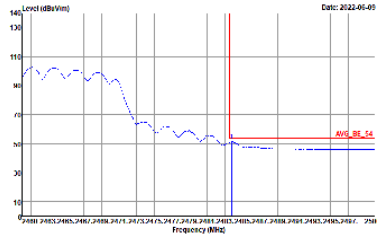
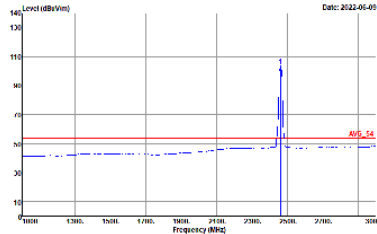


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : GSKCH174HY Condition : FREQ: RF: 24.36514000M VIDEO: 120K VERTICAL : BW: 300KHZ VIEW: SPECTRUM SW: 1.0000	Left Blank
Avg.	 Site : GSKCH174HY Condition : FREQ: RF: 24.36514000M VIDEO: 120K VERTICAL : BW: 300KHZ VIEW: SPECTRUM SW: 1.0000	Left Blank



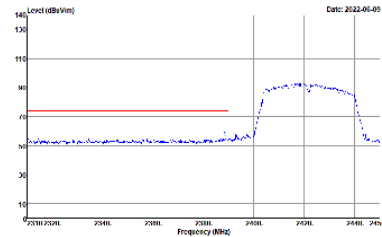
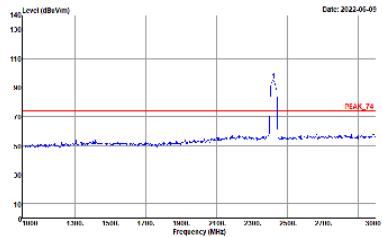
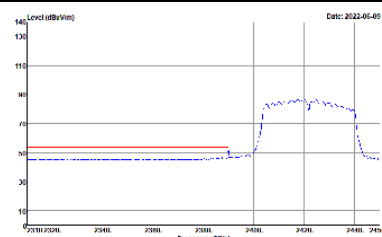
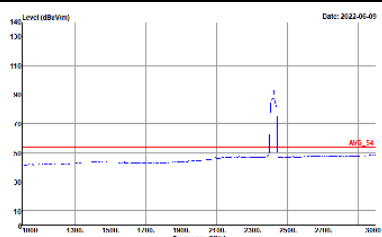
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 05C2417-44Y Condition : PPAE 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto	 Site : 05C2417-44Y Condition : PPAE 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto
	 Site : 05C2417-44Y Condition : AVF 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto	 Site : 05C2417-44Y Condition : AVF 16 14.9m HORN 91200 1329 HORN / ON1A1 : 88W10K00K0CH VIEW:3K00K0CH SW1:Auto
Avg.		



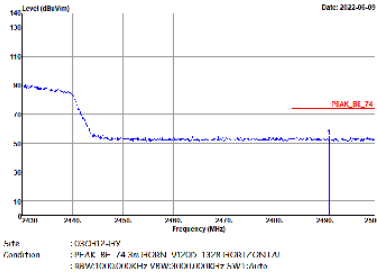
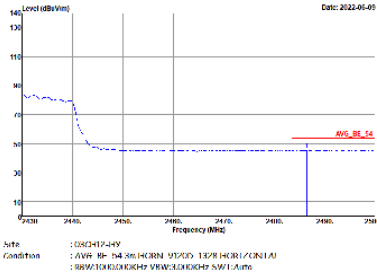
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Vertical	Fundamental
Peak	 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1578 VHB11CAI : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1578 VHB11CAI : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto
	 Site : 05C2417-44Y Condition : AVE 14 3m HORN 91200 1578 VHB11CAI : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : AVE 14 3m HORN 91200 1578 VHB11CAI : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto



2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W 1000000000 VIEW: 3000000000 SW: 1.0 Auto	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W 1000000000 VIEW: 3000000000 SW: 1.0 Auto
Avg.	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W 1000000000 VIEW: 3000000000 SW: 1.0 Auto	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W 1000000000 VIEW: 3000000000 SW: 1.0 Auto

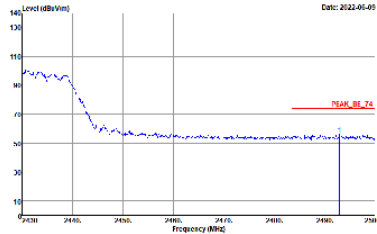
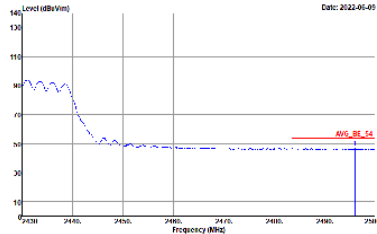


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Horizontal	Fundamental
Peak		Left Blank
Avg.		Left Blank

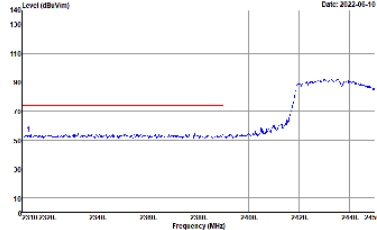
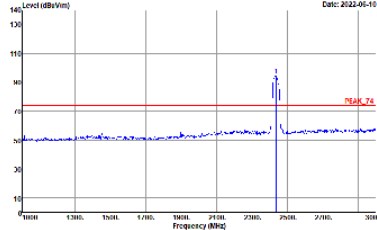
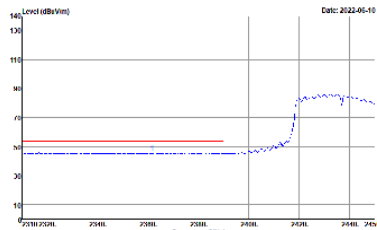
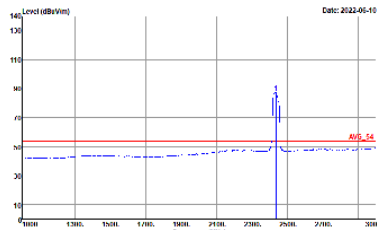


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - L	
1+2	Vertical	Fundamental
Peak	Date: 2022-05-09 File : 0802417-449 Condition : PPAE 16 14.9m HORN 91200 1329 VHF11CA : 88W30K0000CH VIEW:30K000CH SW1:Auto	Date: 2022-05-09 File : 0802417-449 Condition : PPAE 16 14.9m HORN 91200 1329 VHF11CA : 88W30K0000CH VIEW:30K000CH SW1:Auto
	Date: 2022-05-09 File : 0802417-449 Condition : AWR 16 14.9m HORN 91200 1329 VHF11CA : 88W30K0000CH VIEW:30K000CH SW1:Auto	Date: 2022-05-09 File : 0802417-449 Condition : AWR 16 14.9m HORN 91200 1329 VHF11CA : 88W30K0000CH VIEW:30K000CH SW1:Auto
Avg.		

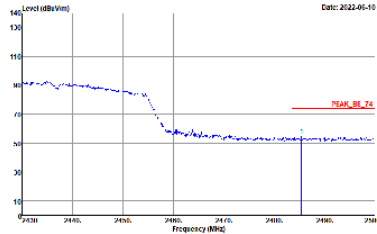
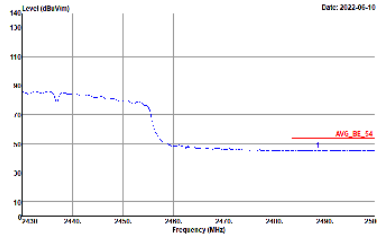


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH03 2422MHz - R	
1+2	Vertical	Fundamental
Peak	 Site : GSC01724HY Condition : PPM: B- 14.26MHz VISO: 120V VBI: 11.11GHz : 88W/100000000V VISO: 120V VBI: 11.11GHz	Left blank
Avg.	 Site : GSC01724HY Condition : AVG: B- 14.26MHz VISO: 120V VBI: 11.11GHz : 88W/100000000V VISO: 120V VBI: 11.11GHz	Left blank

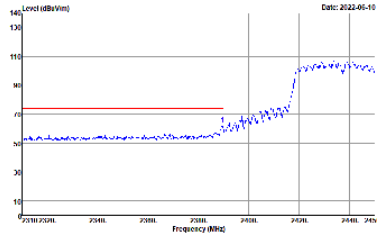
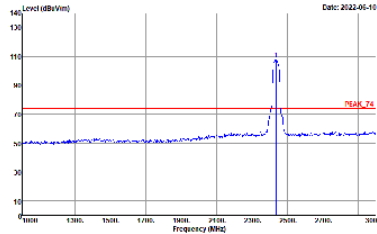
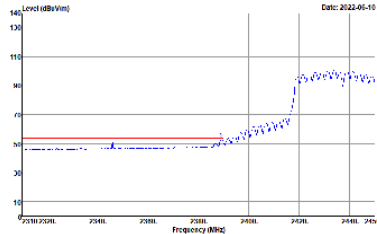
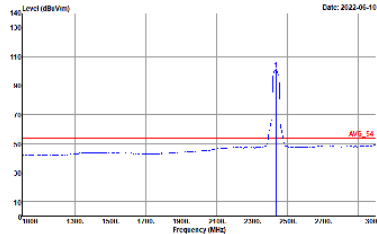


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Graph showing Peak Level (dBm) vs Frequency (MHz) for Horizontal polarization. The plot shows a sharp peak at 2437 MHz, reaching approximately 130 dBm. The x-axis ranges from 2380 to 2460 MHz, and the y-axis ranges from 10 to 140 dBm. A red horizontal line is drawn at approximately 70 dBm. Site : 0502417-449 Condition : PPAE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04 VIEW:3K0K0K04 SW1:Auto	 Graph showing Peak Level (dBm) vs Frequency (MHz) for Fundamental polarization. The plot shows a sharp peak at 2437 MHz, reaching approximately 130 dBm. The x-axis ranges from 2380 to 2460 MHz, and the y-axis ranges from 10 to 140 dBm. A red horizontal line is drawn at approximately 70 dBm. Site : 0502417-449 Condition : PPAE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04 VIEW:3K0K0K04 SW1:Auto
Avg.	 Graph showing Avg Level (dBm) vs Frequency (MHz) for Horizontal polarization. The plot shows a broad peak at 2437 MHz, reaching approximately 130 dBm. The x-axis ranges from 2380 to 2460 MHz, and the y-axis ranges from 10 to 140 dBm. A red horizontal line is drawn at approximately 70 dBm. Site : 0502417-449 Condition : AVE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04 VIEW:3K0K0K04 SW1:Auto	 Graph showing Avg Level (dBm) vs Frequency (MHz) for Fundamental polarization. The plot shows a broad peak at 2437 MHz, reaching approximately 130 dBm. The x-axis ranges from 2380 to 2460 MHz, and the y-axis ranges from 10 to 140 dBm. A red horizontal line is drawn at approximately 70 dBm. Site : 0502417-449 Condition : AVE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04 VIEW:3K0K0K04 SW1:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak	 Site : GSKCH17-4H Condition : PPAE BP-14.26m HORN VTX/D 1328 HORN/CON1A1 : 88W/3000000000 VIEW:3000000000 SW1:Auto	Left blank
Avg.	 Site : GSKCH17-4H Condition : AVG BP-14.26m HORN VTX/D 1328 HORN/CON1A1 : 88W/3000000000 VIEW:3000000000 SW1:Auto	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.9m HORN 91200 1328 VHF11CAI : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.9m HORN 91200 1328 VHF11CAI : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto
	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.9m HORN 91200 1328 VHF11CAI : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 16- 14.9m HORN 91200 1328 VHF11CAI : 88W10K0K0K04P VIEW:80K0K04P SW1:Auto
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Horizontal	Fundamental
Peak	Horizontal Peak Spectrum Plot showing Level (dBm) vs Frequency (MHz) for 2400~2483.5MHz. The plot shows a sharp peak at 2452MHz. The Y-axis ranges from 10 to 140 dBm, and the X-axis ranges from 2390 to 2490 MHz. The peak level is approximately 135 dBm. Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	Fundamental Peak Spectrum Plot showing Level (dBm) vs Frequency (MHz) for 2400~2483.5MHz. The plot shows a sharp peak at 2452MHz. The Y-axis ranges from 10 to 140 dBm, and the X-axis ranges from 2390 to 2490 MHz. The peak level is approximately 135 dBm. Site : 05C2417-44Y Condition : PPAE 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto
Avg.	Horizontal Avg. Spectrum Plot showing Level (dBm) vs Frequency (MHz) for 2400~2483.5MHz. The plot shows a broad peak at 2452MHz. The Y-axis ranges from 10 to 140 dBm, and the X-axis ranges from 2390 to 2490 MHz. The average level is approximately 135 dBm. Site : 05C2417-44Y Condition : AVER 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto	Fundamental Avg. Spectrum Plot showing Level (dBm) vs Frequency (MHz) for 2400~2483.5MHz. The plot shows a broad peak at 2452MHz. The Y-axis ranges from 10 to 140 dBm, and the X-axis ranges from 2390 to 2490 MHz. The average level is approximately 135 dBm. Site : 05C2417-44Y Condition : AVER 14 3m HORN 91200 1329 HORN / ON1A1 : 88W10K0K0K04P VIEW:3K0K0K04P SW1:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Horizontal	Fundamental
Peak	Date: 2022-05-09 Site : DSDH17-HY Condition : PPAE BP-TA 3m HORN UTDG TSP HORN / CNL LA : BW=30KHZ KICK VIEW=RELATIVE SWI:Auto	Left blank
Avg.	Date: 2022-05-09 Site : DSDH17-HY Condition : AWP BP-TA 3m HORN UTDG TSP HORN / CNL LA : BW=30KHZ KICK VIEW=RELATIVE SWI:Auto	Left blank



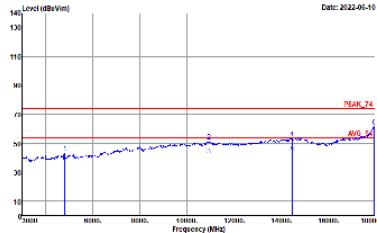
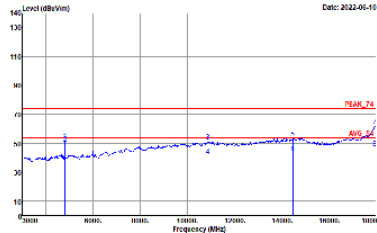
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - L	
1+2	Vertical	Fundamental
Peak		
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH09 2452MHz - R	
1+2	Vertical	Fundamental
Peak	Date: 2022-05-09 Site: 050417-447 Condition: 1: PPAE BP-74.3m HORN 92500 1300 V-B111/GA 2: BW=300000000 VIEW=000000000 SW1:0000	Left blank
Avg.	Date: 2022-05-09 Site: 050417-447 Condition: 1: AWP BP-74.3m HORN 92500 1300 V-B111/GA 2: BW=300000000 VIEW=000000000 SW1:0000	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.	 File : 0502412-4HY Condition : PH-AE / 4.3m HORN 91210 1329 HORN / CON1.0	 File : 0502412-4HY Condition : PH-AE / 4.3m HORN 91210 1329 VORN / CON1.0



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 050217-44Y Condition : PEAK / 4.3m HORIZ 91700 150% HORIZ/CON1.0	Site : 050217-44Y Condition : PEAK / 4.3m HORIZ 91700 150% VERT/1.0CA

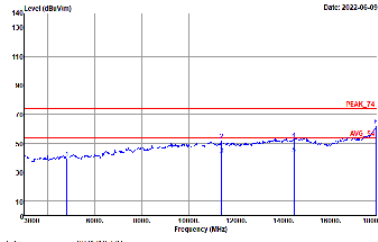
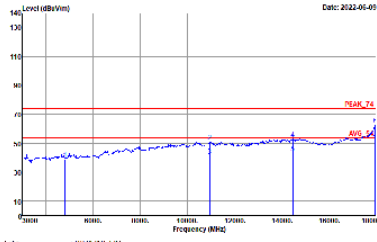


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	Site : 05C0417-4HY Condition : PEAK / 4.3m HORN 91210 150% HORN / CON1.01	Site : 05C0417-4HY Condition : PEAK / 4.3m HORN 91210 150% VORN / CON1.01

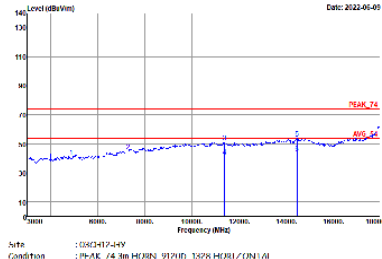
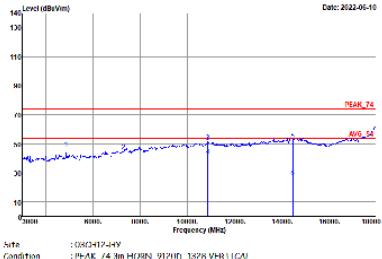


2.4GHz 2400~2483.5MHz

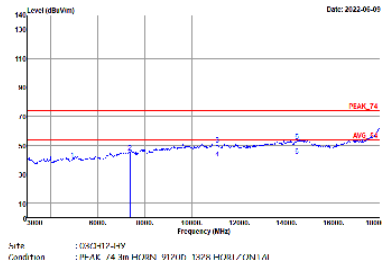
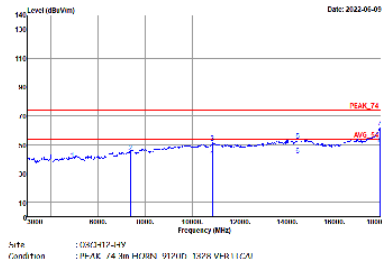
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 File : 0502412-4HY Condition : PH-AE / 4.3m HORN 91210 1329 HORN / CON1.01	 File : 0502412-4HY Condition : PH-AE / 4.3m HORN 91210 1329 VPR11.0A1



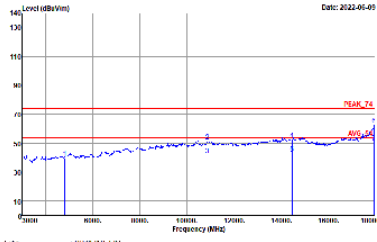
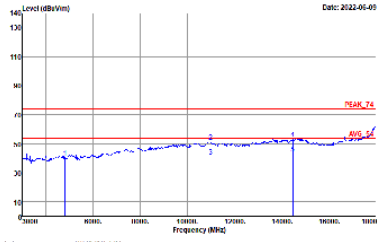
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0562417-4HY Condition : PEAK / 4.3m HORIZ 912MHz 1.5076 HORIZ 11CAU	 Site : 0562417-4HY Condition : PEAK / 4.3m HORIZ 912MHz 1.5076 VERT 11CAU



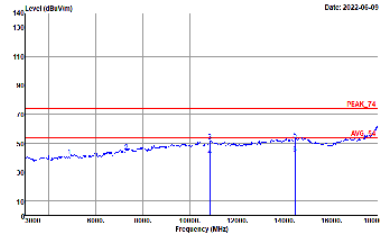
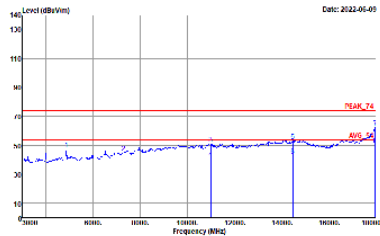
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362117-4HY Condition : P-AC / 4.3m HORN 91210 1.576 HORN / CON1.01	 Site : 0362117-4HY Condition : P-AC / 4.3m HORN 91210 1.576 VORN / CAU



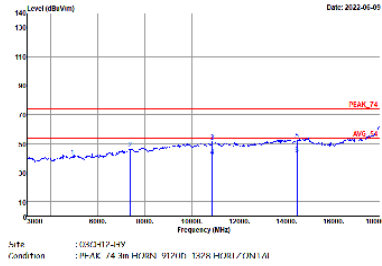
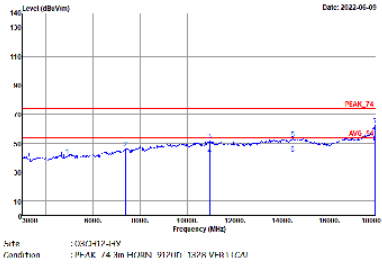
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1+2	Horizontal	Vertical
Peak Avg.	 File : 0562412-4HY Condition : PH-AE / 4.3m HORIZN 912105 13076 HORIZ / CON1.01	 File : 0562412-4HY Condition : PH-AE / 4.3m HORIZN 912105 13076 VHR111CA1



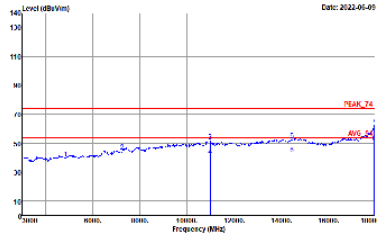
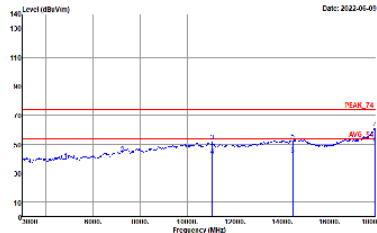
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362417-4HY Condition : PEAK / 4.3m HORIZN 91700 TSPR HORIZ/CONT/01	 Site : 0362417-4HY Condition : PEAK / 4.3m HORIZN 91700 TSPR VHR/11CAU



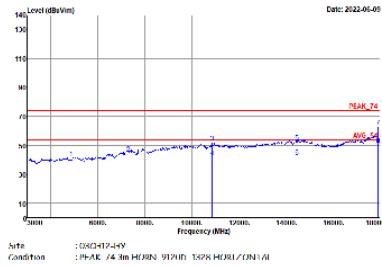
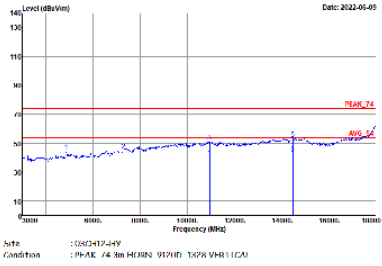
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362H17-4HY Condition : PEAK / 4.9m HORN 91700 150% HORN / CON1.01	 Site : 0362H17-4HY Condition : PEAK / 4.9m HORN 91700 150% VORN / 1.01



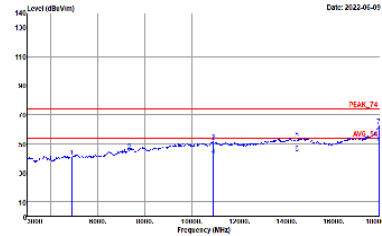
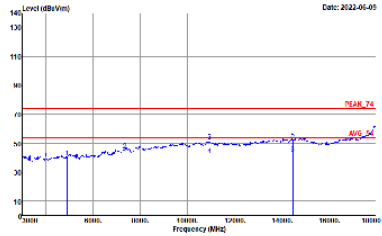
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH03 2422MHz	
1+2	Horizontal	Vertical
Peak Avg.	 File : 0562417-4HY Condition : PEAK /4.3m HORIZN 912100 13076 HORIZ/CONT/01	 File : 0562417-4HY Condition : PEAK /4.3m HORIZN 912100 13076 VERT/1/CAU



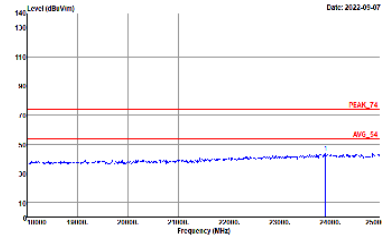
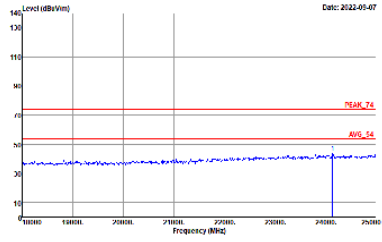
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362H17-4HY Condition : PEAK / 4.3m HORIZN 91210D 1529K HORIZ/CON1.01	 Site : 0362H17-4HY Condition : PEAK / 4.3m HORIZN 91210D 1529K VHR111CA1



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH09 2452MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362H17-4HY Condition : PEAK / 4.3m HORN 91700 1529 HORN / CON1.01	 Site : 0362H17-4HY Condition : PEAK / 4.3m HORN 91700 1529 VORN / CON1.01

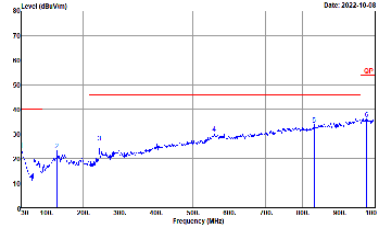
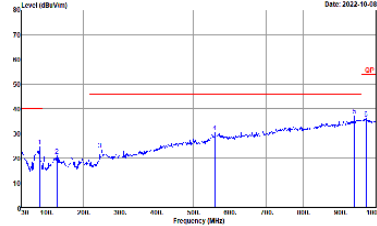


Emission above 18GHz
2.4GHz WIFI 802.11n HT40 (SHF @ 1m)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 SHF	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362417-44Y Condition : PP-AE / 4 1m SHF (HORN 86H401/0095 HORN/EN11A)	 Site : 0362417-44Y Condition : PP-AE / 4 1m SHF (HORN 86H401/0095 VHR112AU)

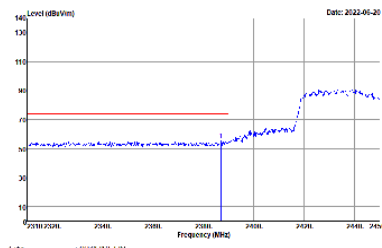
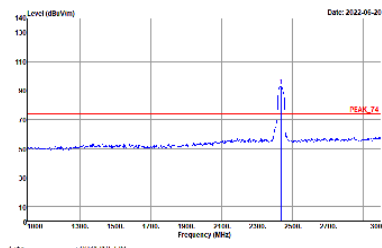
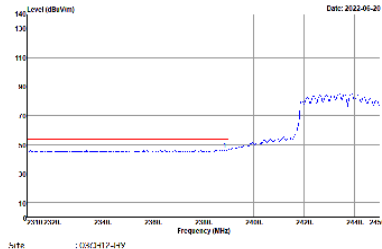
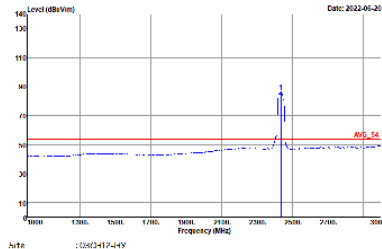


Emission below 1GHz
2.4GHz WIFI 802.11n HT40 (LF)

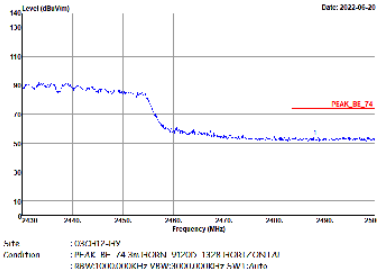
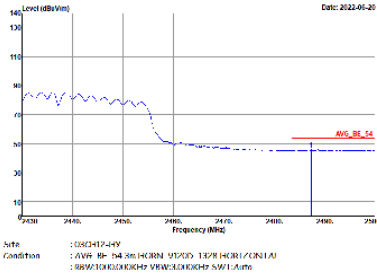
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak	 Auto : 080317-44V Condition : QP 5m R11 C9 61110 40000 H001/1001/0	 Auto : 080317-44V Condition : QP 5m R11 C9 61110 40000 V001/1001/0

<Sample 4>

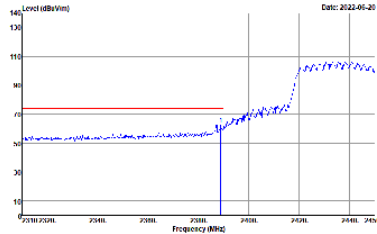
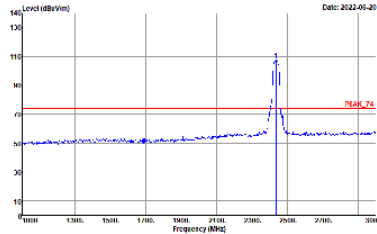
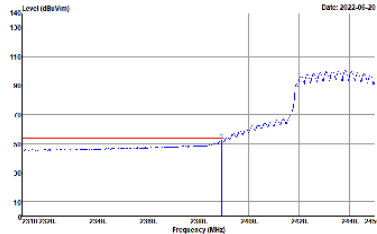
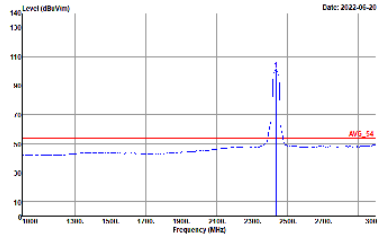
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Horizontal	Fundamental
Peak	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W30K00K0047 VIEW:30K0047 SW1:Auto	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W30K00K0047 VIEW:30K0047 SW1:Auto
Avg.	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W30K00K0047 VIEW:30K0047 SW1:Auto	 Site : 0302417-44Y Condition : 15dB 14 3m HORN 15200 13278 HORN / ON / AI : 88W30K00K0047 VIEW:30K0047 SW1:Auto

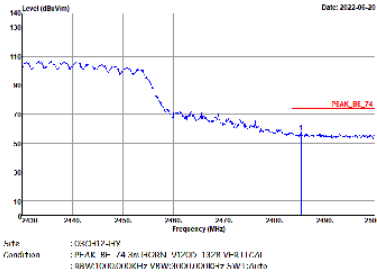
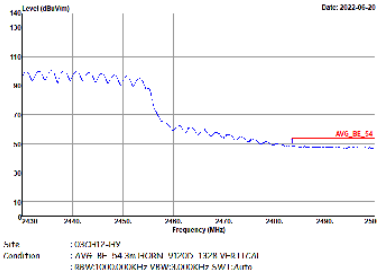


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



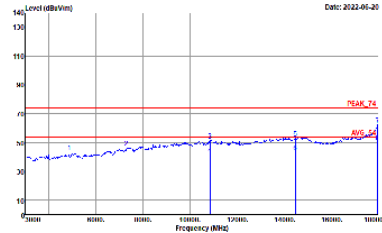
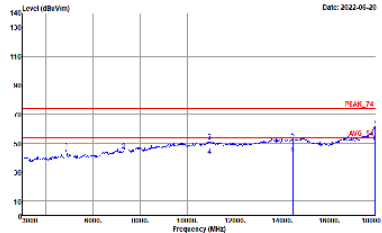
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - L	
1+2	Vertical	Fundamental
Peak	 Site : 05C2417-44Y Condition : 1P/1E 1E-14.3m HORN 15200 1328 VHF11CA1 : 88W30K0K0K04Y VIEW:30K0K04Y SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 1E-14.3m HORN 15200 1328 VHF11CA1 : 88W30K0K0K04Y VIEW:30K0K04Y SW1:Auto
	 Site : 05C2417-44Y Condition : 1P/1E 1E-14.3m HORN 15200 1328 VHF11CA1 : 88W30K0K0K04Y VIEW:30K0K04Y SW1:Auto	 Site : 05C2417-44Y Condition : 1P/1E 1E-14.3m HORN 15200 1328 VHF11CA1 : 88W30K0K0K04Y VIEW:30K0K04Y SW1:Auto
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT40 CH06 2437MHz - R	
1+2	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

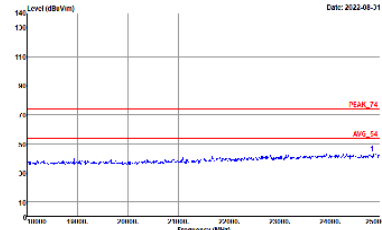
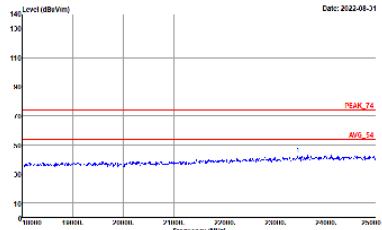


2.4GHz 2400~2483.5MHz
WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT40 CH06 2437MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 0362417-44Y Condition : PH-AE / 4.3m HORN 9170D 1.52% HORN / CON1.0	 Site : 0362417-44Y Condition : PH-AE / 4.3m HORN 9170D 1.52% VORN / CON1.0



Emission above 18GHz
2.4GHz WIFI 802.11n HT40 (SHF @ 1m)

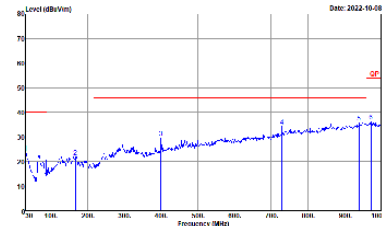
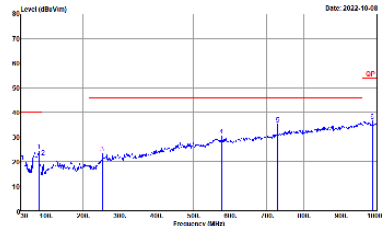
WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 SHF	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03C2412-44Y Condition : PP-AE / 4 Tm SHF (HORN 86H401/0098 HORN) / EN1.01	 Site : 03C2412-44Y Condition : PP-AE / 4 Tm SHF (HORN 86H401/0098 VHR) / 1.01



2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11n HT40 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT40 LF	
1+2	Horizontal	Vertical
QP / Peak	 Auto : 0302417-44V Condition : QP 200 MHz CW 631105 400000 MHz/1000000	 Auto : 0302417-44V Condition : QP 200 MHz CW 631105 400000 MHz/1000000

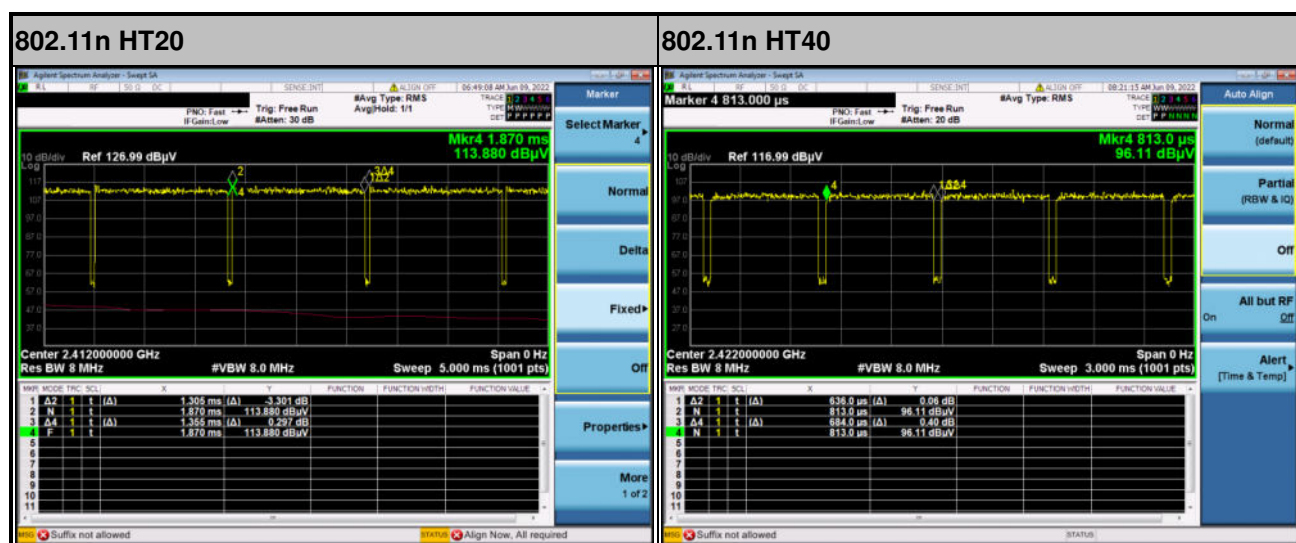
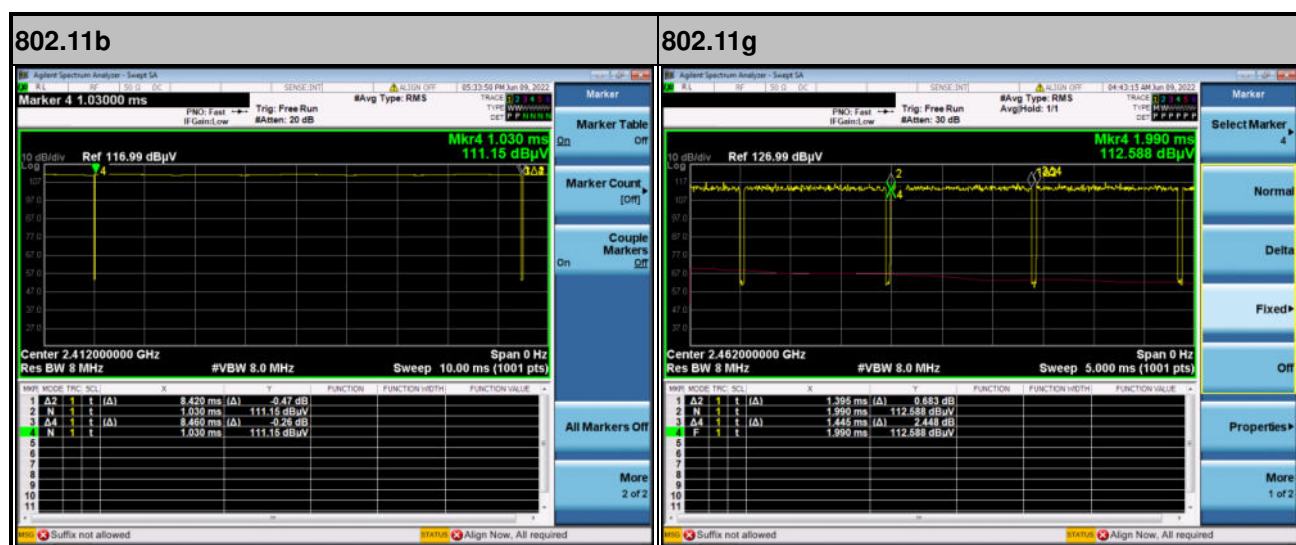


Appendix E. Duty Cycle Plots

<Sample 1>

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1+2	802.11b	99.53	-	-	10Hz
1+2	802.11g	96.54	1395	0.72	1kHz
1+2	2.4GHz 802.11n HT20	96.31	1305	0.77	1kHz
1+2	2.4GHz 802.11n HT40	92.98	636	1.57	3kHz

MIMO <Ant. 1+2>





<Sample 4>

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1+2	2.4GHz 802.11n HT40	91.88	634	1.58	3kHz

MIMO <Ant. 1+2>

