FCC RADIO TEST REPORT

FCC ID	:	**UZ7KC50E22**
Equipment	:	**KC50E22 Kiosk Computer**
Brand Name	:	**Zebra**
Model Name	:	**KC50E22**
Applicant	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
Manufacturer	:	**Zebra Technologies Corporation** **3 Overlook Point, Lincolnshire, IL 60069 USA**
Standard	:	**FCC Part 15 Subpart E §15.407**

The product was received on May 14, 2024 and testing was performed from May 14, 2024 to Aug. 04, 2024. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

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

Table of Contents

History of this test report

Report No.	Version	Description	Issue Date
FR470121E	01	Initial issue of report	Aug. 27, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Pass	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	1.24 dB under the limit at 5649.25 MHz
3.5	15.207	AC Conducted Emission	Pass	8.19 dB under the limit at 13.15 MHz
3.6	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. ECR inquiry for data referencing from UZ7KC50A22 has been approved by FCC. The ECR inquiry and the associated document are submitted in the confidential exhibit.
2. UZ7KC50E22 is different from FCC ID: UZ7KC50A22 (Reference model), in the following:
   - The only difference between UZ7KC50E22 and UZ7KC50A22 are the main board schematics, key components of BOM and NFC software and hardware.
3. All the test results are referenced from UZ7KC50A22 (Sporton Test Report FR450112F), and spot check results to justify data referencing is presented in the Appendix G.
4. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
5. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

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

Reviewed by: Yun Huang

Report Producer: Rebecca Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	KC50E22 Kiosk Computer
Brand Name	Zebra
Model Name	KC50E22
FCC ID	UZ7KC50E22
Supports Radios application	WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE

1.2 EUT Information (Referenced Model)

Product Feature	
FCC ID	UZ7KC50A22
EUT supports Radios application	NFC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
HW Version	REV:PT
SW Version	13-30-02.00-TG-U00-STD-ATH-04
OS Version	Android 13
MFD	10MAY24
EUT Stage	Identical Prototype

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

Specification of Accessories				
AC Adapter	**Brand Name**	ZEBRA	**Model Name**	PS000088A01
USB C-C Cable	**Brand Name**	ZEBRA	**Part Number**	CBL-EC5X-USBC3A-01
Stand	**Brand Name**	ZEBRA	**Part Number**	3PTY-SC-2000-CF2-01
Printer	**Brand Name**	ZEBRA	**Model Name**	ZD230t
2nd display	**Brand Name**	ZEBRA	**Model Name**	TD50-15F00
Edge scanner	**Brand Name**	ZEBRA	**Part Number**	ZFLX-SCNR-E00
Edge LED Light Bar	**Brand Name**	ZEBRA	**Part Number**	ZFLX-LTBAR-200
USB Cable	**Brand Name**	ZEBRA	**Part Number**	300283-002

1.3 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	**MIMO <Ant. 1+2>** 802.11a: 23.77 dBm / 0.2382 W 802.11n HT20: 23.52 dBm / 0.2249 W 802.11n HT40: 23.38 dBm / 0.2178 W 802.11ac VHT20: 23.62 dBm / 0.2301 W 802.11ac VHT40: 23.48 dBm / 0.2228 W 802.11ac VHT80: 20.81 dBm / 0.1205 W 802.11ax HE20: 23.72 dBm / 0.2355 W 802.11ax HE40: 23.58 dBm / 0.2280 W 802.11ax HE80: 20.91 dBm / 0.1233 W
99% Occupied Bandwidth	**MIMO <Ant. 1>** 802.11a: 16.73 802.11ac VHT20: 17.83 MHz 802.11ac VHT40: 36.36 MHz 802.11ac VHT80: 75.52 MHz 802.11ax HE20: 19.08 MHz 802.11ax HE40: 38.16 MHz 802.11ax HE80: 77.20 MHz **MIMO <Ant. 2>** 802.11a: 17.08 MHz 802.11ac VHT20: 18.13 MHz 802.11ac VHT40: 38.86 MHz 802.11ac VHT80: 75.52 MHz 802.11ax HE20: 19.28 MHz 802.11ax HE40: 38.46 MHz 802.11ax HE80: 77.32 MHz
Antenna Type / Gain	**<Ant. 1>:** PIFA Antenna with gain 3.74 dBi **<Ant. 2>:** Monopole Antenna with gain 3.21 dBi
Type of Modulation	802.11a/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax: OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)
Antenna Function Description	

	Ant. 1	Ant. 2
802.11a/n/ac/ax MIMO	V	V

Remark:

1. MIMO Ant. 1+2 Directional Gain is a calculated result from MIMO Ant. 1 and MIMO Ant. 2. The formula used in calculation is documented in section 1.2.1.
2. Power of MIMO Ant. 1 + Ant. 2 is a calculated result from sum of the power MIMO Ant. 1 and MIMO Ant. 2.
3. The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.3.1 Antenna Directional Gain

<For CDD Mode>

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

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

For power measurements on IEEE 802.11 devices,

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

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

For PSD measurements, the directional gain calculation.

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

where

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

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

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

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

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

	Ant 1 (dBi)	Ant 2 (dBi)	DG for Power (dBi)	DG for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
Band IV	3.74	3.21	3.74	6.49	0.00	0.49

Calculation example:

If a device has two antenna, G_{ANT1}= 3.74dBi; G_{ANT2}=3.21dBi

Directional gain of power measurement = max(3.74, 3.21) + 0 = 3.74 dBi

Directional gain of PSD derived from formula which is

10 x log { { [10^ (3.74 dBi / 20) + 10^ (3.21 dBi / 20)] ^ 2 } / 2 }

= 6.49 dBi

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

1.4 Modification of EUT

No modifications made to the EUT during the testing.

1.5 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	TH05-HY, CO07-HY, 03CH22-HY

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

FCC designation No.: TW3786

1.6 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 E
- FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- FCC KDB 414788 D01 Radiated Test Site v01r01.
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ANSI C63.10-2013

Remark:

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

2 Test Configuration of Equipment Under Test

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

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

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

1. The above Frequency and Channel with "*" are 802.11n HT40 and 802.11ac VHT40 and 802.11ax HE40.
2. The above Frequency and Channel with "#" are 802.11ac VHT80 and 802.11ax HE80.

2.2 Test Mode

This device support 26/52/106/242/484/996.

The PSD of partial RU is reduced to be smaller than full RU according to TCB workshop interim guidance Oct. 2022.

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

The 242-tone RU is covered by 20MHz channel, 484-tone RU is covered by 40MHz channel and 996-tone RU is covered by 80MHz channel.

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

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

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

MIMO Mode

Modulation	Data Rate
802.11a	**6 Mbps**
802.11n HT20 (Covered by VHT20)	**MCS0**
802.11n HT40 (Covered by VHT40)	**MCS0**
802.11ac VHT20	**MCS0**
802.11ac VHT40	**MCS0**
802.11ac VHT80	**MCS0**
802.11ax HE20	**MCS0**
802.11ax HE40	**MCS0**
802.11ax HE80	**MCS0**

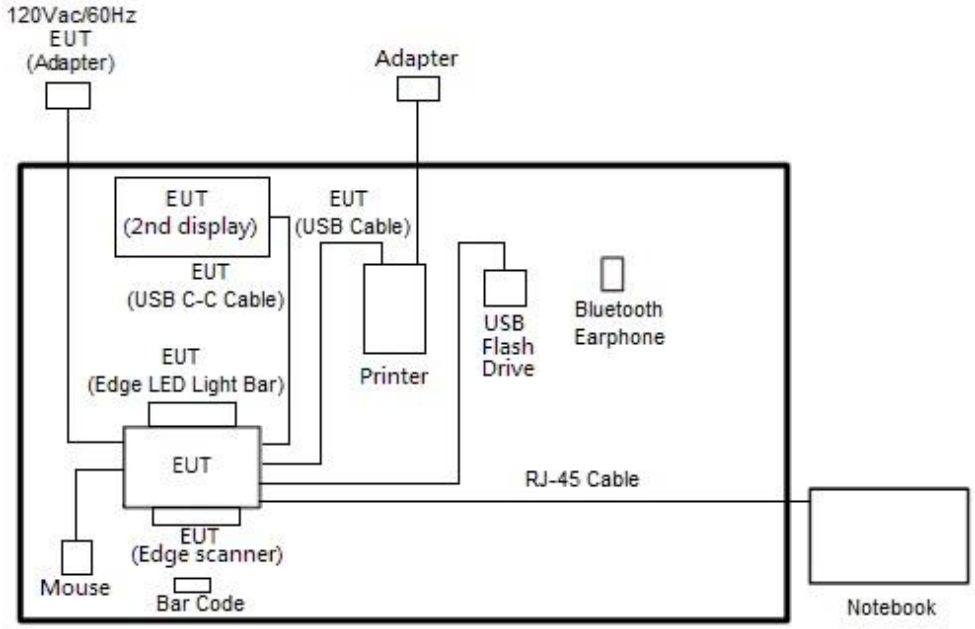
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth Link + Scan Bar Code + USB C-C Cable Display with 2nd display + USB Cable with Printer + AC Adapter + LAN Link with Notebook + Edge USB-C with (Edge scanner + (Data Link with USB Flash Drive (USB to SD Card) + Edge LED Light Bar + Mouse) + Stand
Remark: Data Link with USB Flash Drive means data application transferred mode between EUT and USB Flash Drive.	

Ch. #		Band IV：5725-5850 MHz			
		802.11a	802.11ax HE20	802.11ax HE40	802.11ax HE80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

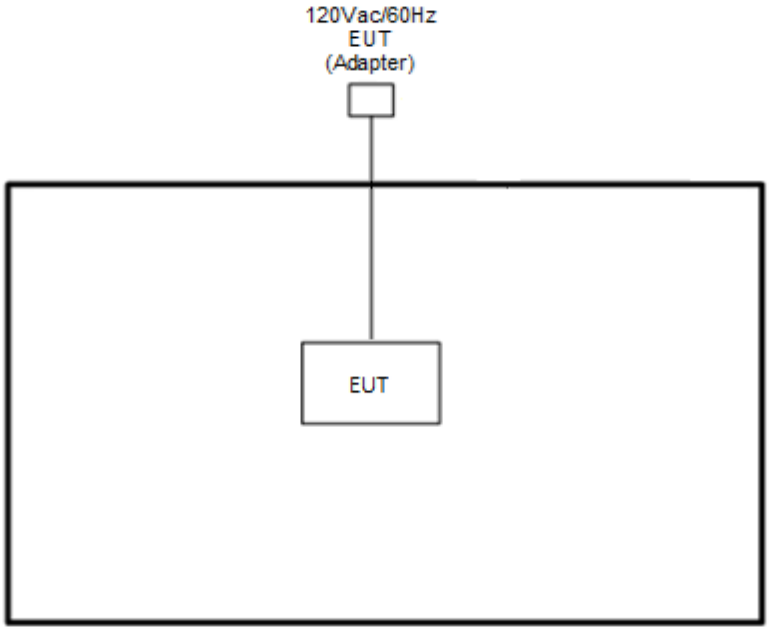
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY700A2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC52	MSQ-RTAC4A00	N/A	Unshielded, 1.8m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Mouse	ACER	MOANUOA	FCC DoC	Shielded, 1.7m	N/A
5.	Bar Code	N/A	N/A	N/A	N/A	N/A
6.	USB Flash Drive	SanDisk	E4BDC	FCC DoC	N/A	N/A
7.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

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

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

Offset = RF cable loss + attenuator factor.

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

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

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1 Description of 6dB and 26dB and 99% Occupied Bandwidth

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

26dB and 99% Occupied bandwidth are reporting only.

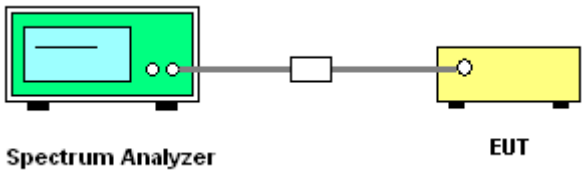
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth for the band 5.725-5.85 GHz
2. Set RBW = 100 kHz.
3. Set the VBW ≥ 3 x RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in 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.

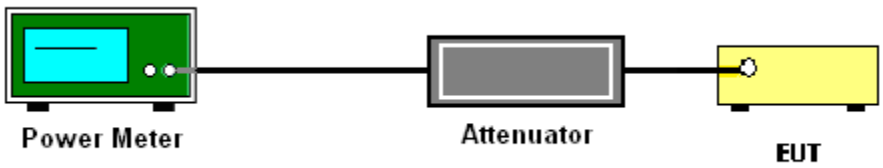
3.2.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
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 Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section F) Maximum power spectral density.

 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 300kHz.
- Set VBW ≥ 1 MHz.
- Add 10 log (500 kHz/RBW) to the measured result, whereas RBW (<500 kHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT is connected to the spectrum analyzer by a low loss cable.
2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
   Method (c): Measure and add 10 log(N_{ANT}) dB.
   With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity 10 log(N_{ANT}) dB is added to each spectrum value before comparing to the emission limit. The

addition of 10 log(N_{ANT}) dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{ANT}$ th of the PSD limit.

3.3.4 Test Setup

3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

3.4 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.4.1 Limit of Unwanted Emissions

(1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) Unwanted spurious emissions falls in restricted bands shall comply with the general field strength limits as below table,

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

Note: The following formula is used to convert the EIRP to field strength.

$$E=\frac{1000000\sqrt{30P}}{3}$$ μV/m, where P is the eirp (Watts)

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

(3) KDB789033 D02 v02r01 G)2)c)

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of −27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

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 FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.

   (1) Procedure for Unwanted Emissions Measurements Below 1000 MHz

   - RBW = 120 kHz
   - VBW = 300 kHz
   - Detector = Peak
   - Trace mode = max hold

   (2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

   (3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz

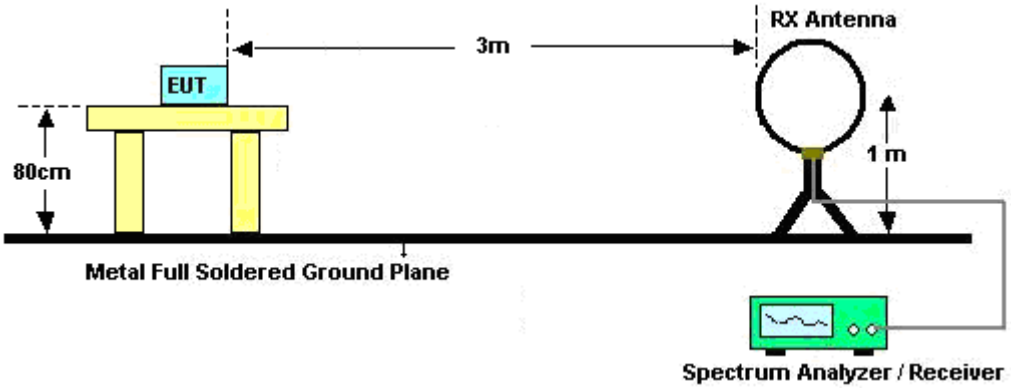
   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. 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.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
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 "-".

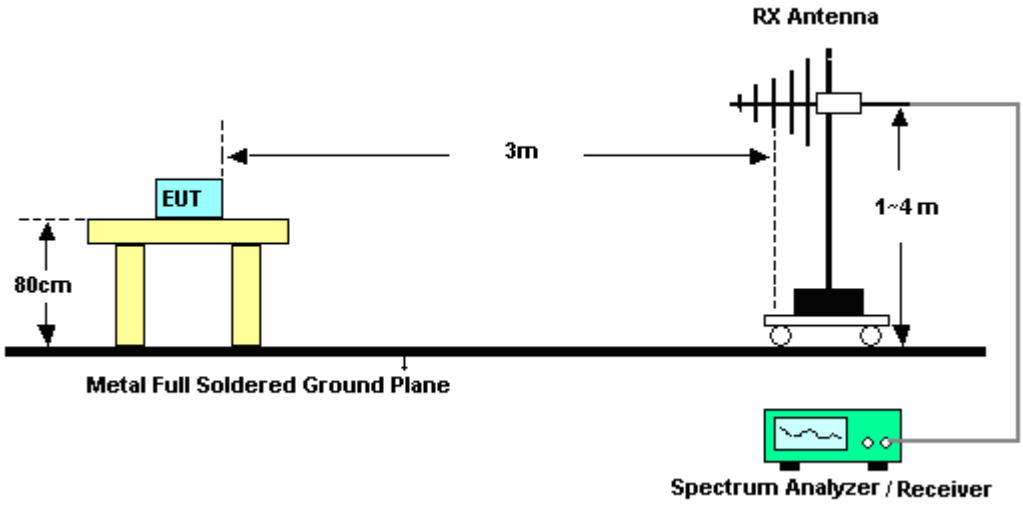
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies.
   When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as "-".

3.4.4 Test Setup

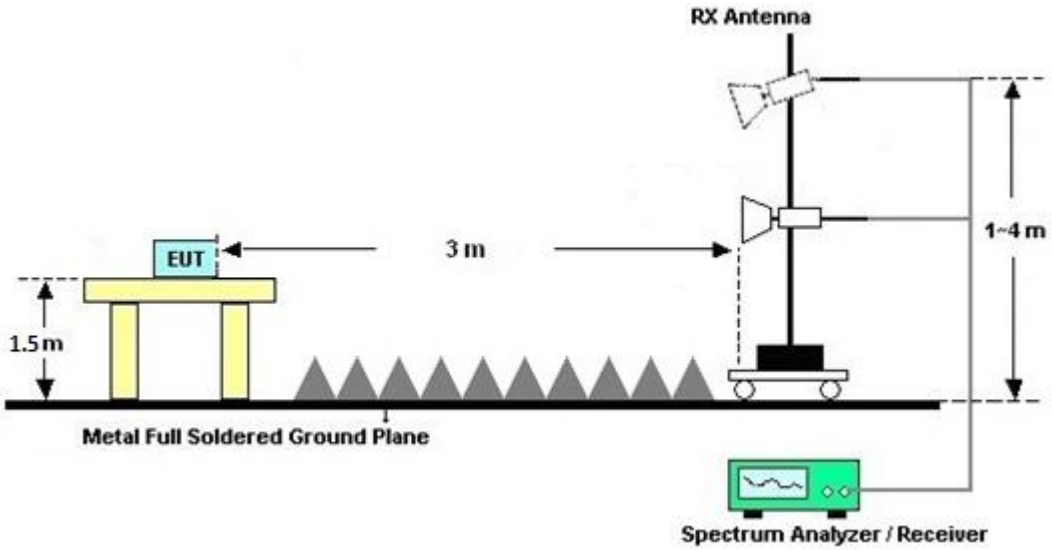
For radiated emissions below 30MHz



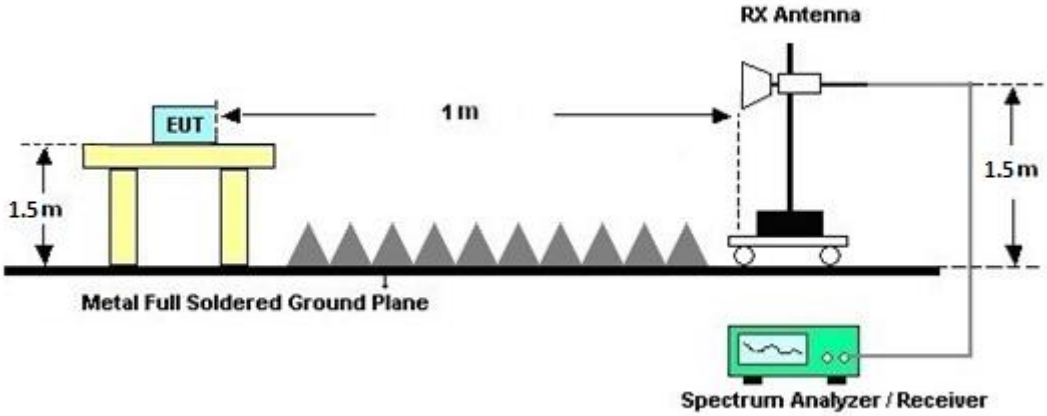
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

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 came out very similar.

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

3.4.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.5 AC Conducted Emission Measurement

3.5.1 Limit of AC Conducted Emission

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

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

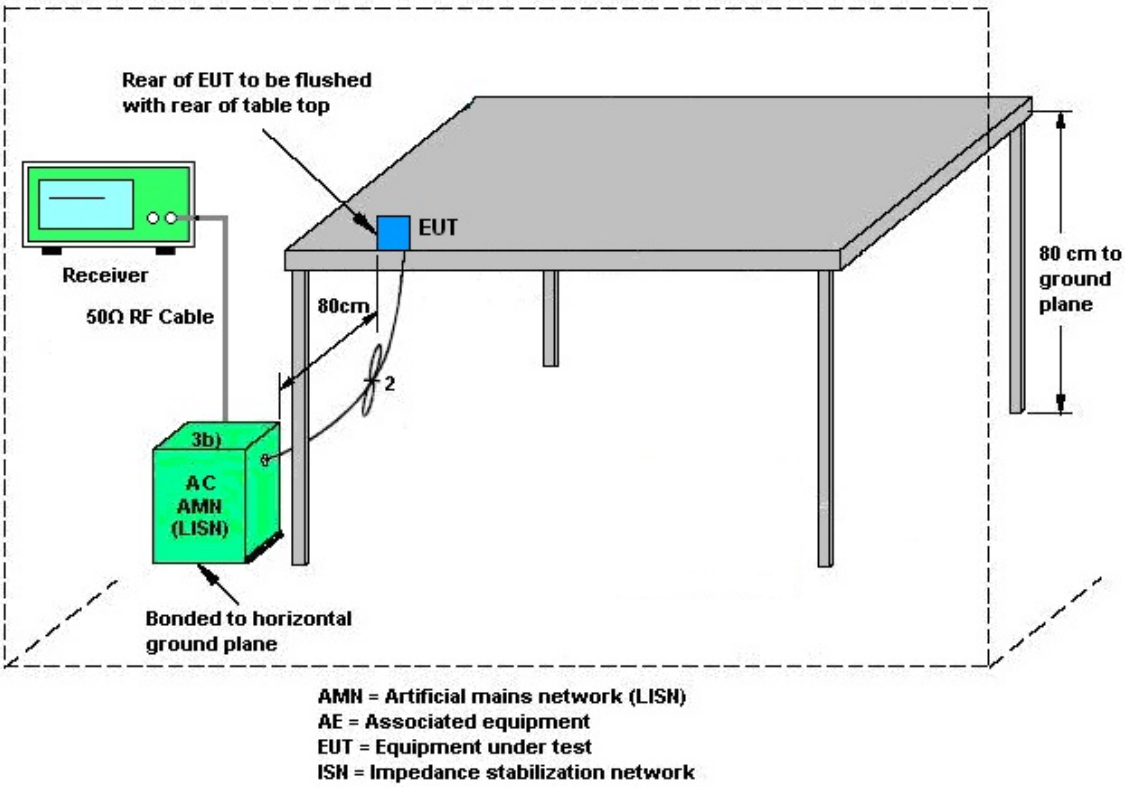
3.5.2 Measuring Instruments

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

3.5.3 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 with Maximum Hold Mode.

3.5.4 Test Setup



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

3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 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.

3.6.2 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
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Jun. 26, 2024	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 26, 2024	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 20, 2023	Jun. 26, 2024	Oct. 19, 2024	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 14, 2024	Jun. 26, 2024	Mar. 13, 2025	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 10, 2024	Jun. 26, 2024	Mar. 09, 2025	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 07, 2024	Jun. 26, 2024	Mar. 06, 2025	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 20, 2023	Jun. 26, 2024	Sep. 19, 2024	Conduction (CO07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9kHz~30MHz	Sep. 12, 2023	May 14, 2024~ Jul. 10, 2024	Sep. 11, 2024	Radiation (03CH22-HY)
Bilog Antenna with 6dB	TESEQ & WOKEN	CBL 6111D & 00802N1D-06	63304 & 002	30MHz~1GHz	Oct. 15, 2023	May 14, 2024~ Jul. 10, 2024	Oct. 14, 2024	Radiation (03CH22-HY)
Amplifier	SONOMA	310N	421581	N/A	Jul. 15, 2023	May 14, 2024~ Jul. 10, 2024	Jul. 14, 2024	Radiation (03CH22-HY)
Double Ridged Guide Horn Antenna	RFSPIN	DRH18-E	LE2C04A18EN	1GHz~18GHz	Jul. 12, 2023	May 14, 2024~ Jul. 10, 2024	Jul. 11, 2024	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jul. 10, 2023	May 14, 2024~ Jun. 17, 2024	Jul. 09, 2024	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jun. 24, 2024	Jun. 25, 2024~ Jul. 10, 2024	Jun. 23, 2025	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz-40GHz	May. 18, 2024	Jun. 17, 2024~ Jun. 25, 2024	May. 17, 2025	Radiation (03CH22-HY
Amplifier	EMEC	EM01G18GA	060877	N/A	Sep. 28, 2023	May 14, 2024~ Jul. 10, 2024	Sep. 27, 2024	Radiation (03CH22-HY)
Preamplifier	EMEC	EM18G40G	060872	18-40GHz	Sep. 06, 2023	May 14, 2024~ Jul. 10, 2024	Sep. 05, 2024	Radiation (03CH22-HY)
Signal Analyzer	Keysight	N9010B	MY62170278	10Hz~44GHz	Aug. 31, 2023	May 14, 2024~ Jul. 10, 2024	Aug. 30, 2024	Radiation (03CH22-HY)
EMI Test Receiver	Keysight	N9038B	MY62210111	20Hz~8.4GHz	Aug. 23, 2023	May 14, 2024~ Jul. 10, 2024	Aug. 22, 2024	Radiation (03CH22-HY)
Hygrometer	TECPEL	DTM-303A	TP211469	N/A	Jan. 03, 2024	May 14, 2024~ Jul. 10, 2024	Jan. 02, 2025	Radiation (03CH22-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	May 14, 2024~ Jul. 10, 2024	N/A	Radiation (03CH22-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	May 14, 2024~ Jul. 10, 2024	N/A	Radiation (03CH22-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	May 14, 2024~ Jul. 10, 2024	N/A	Radiation (03CH22-HY)
Software	Audix	E3 6.09824_2019122	RK-002347	N/A	N/A	May 14, 2024~ Jul. 10, 2024	N/A	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 06, 2024	May 14, 2024~ Jul. 10, 2024	Mar. 05, 2025	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804390/2,804611/2,804615/2	N/A	Oct. 24, 2023	May 14, 2024~ Jul. 10, 2024	Oct. 23, 2024	Radiation (03CH22-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07, 2023	May 14, 2024~ Jul. 14, 2024	Nov. 06, 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO 10 (NO:248)	10MHz~6GHz	Jan. 10, 2024	May 14, 2024~ Jul. 14, 2024	Jan. 09, 2025	Conducted (TH05-HY)
Switch Control Mainframe	Burgeon	ETF-058	EC1300485 (BOX4)	N/A	Apr. 08, 2024	May 14, 2024~ Jul. 14, 2024	Apr. 07, 2025	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101564	10Hz ~ 40GHz	Sep. 12, 2023	May 14, 2024~ Jul. 14, 2024	Sep. 11, 2024	Conducted (TH05-HY)
Software	Sporton	BTWIFI_Final_ version_240411	N/A	Conducted Other Test Item	N/A	May 14, 2024~ Jul. 14, 2024	N/A	Conducted (TH05-HY)

5 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.44 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	6.50 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.50 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.50 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	5.40 dB

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Sylvia Li and Kevin Xiao	Temperature:	21~25	°C
Test Date:	2024/05/14~2024/07/11	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

U-NII-3 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	149	5745	16.73	16.83	25.90	31.32	16.30	16.33	0.5	Pass
11a	6Mbps	2	157	5785	16.63	16.98	22.30	32.76	16.32	16.30	0.5	Pass
11a	6Mbps	2	165	5825	16.63	17.08	24.08	34.10	16.33	16.33	0.5	Pass
VHT20	MCS0	2	149	5745	17.83	17.88	27.12	28.89	16.91	17.00	0.5	Pass
VHT20	MCS0	2	157	5785	17.73	18.08	22.16	33.01	16.88	16.55	0.5	Pass
VHT20	MCS0	2	165	5825	17.73	18.13	21.51	33.89	17.26	16.93	0.5	Pass
VHT40	MCS0	2	151	5755	36.36	36.66	41.73	51.58	35.43	36.31	0.5	Pass
VHT40	MCS0	2	159	5795	36.26	36.86	40.82	67.87	35.47	35.67	0.5	Pass
VHT80	MCS0	2	155	5775	75.52	75.52	82.66	82.69	75.18	75.17	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	21.00	20.10	23.58	30.00		3.74		Pass
11a	6Mbps	2	157	5785	20.90	20.30	23.62	30.00		3.74		Pass
11a	6Mbps	2	165	5825	21.00	20.50	23.77	30.00		3.74		Pass
HT20	MCS0	2	149	5745	20.80	19.90	23.38	30.00		3.74		Pass
HT20	MCS0	2	157	5785	20.60	20.00	23.32	30.00		3.74		Pass
HT20	MCS0	2	165	5825	20.80	20.20	23.52	30.00		3.74		Pass
HT40	MCS0	2	151	5755	20.80	19.90	23.38	30.00		3.74		Pass
HT40	MCS0	2	159	5795	20.50	20.20	23.36	30.00		3.74		Pass
VHT20	MCS0	2	149	5745	20.90	20.00	23.48	30.00		3.74		Pass
VHT20	MCS0	2	157	5785	20.70	20.20	23.47	30.00		3.74		Pass
VHT20	MCS0	2	165	5825	20.90	20.30	23.62	30.00		3.74		Pass
VHT40	MCS0	2	151	5755	20.90	20.00	23.48	30.00		3.74		Pass
VHT40	MCS0	2	159	5795	20.60	20.30	23.46	30.00		3.74		Pass
VHT80	MCS0	2	155	5775	17.70	17.90	20.81	30.00		3.74		Pass

TEST RESULTS DATA
Power Spectral Density

U-NII-3 MIMO														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	10log (500kHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	149	5745	2.22		6.25	4.94	9.26	29.51		6.49		Pass
11a	6Mbps	2	157	5785	2.22		5.54	4.95	8.55	29.51		6.49		Pass
11a	6Mbps	2	165	5825	2.22		6.13	5.40	9.14	29.51		6.49		Pass
VHT20	MCS0	2	149	5745	2.22		5.66	4.63	8.67	29.51		6.49		Pass
VHT20	MCS0	2	157	5785	2.22		5.26	4.48	8.27	29.51		6.49		Pass
VHT20	MCS0	2	165	5825	2.22		5.78	5.04	8.79	29.51		6.49		Pass
VHT40	MCS0	2	151	5755	2.22		2.39	1.42	5.40	29.51		6.49		Pass
VHT40	MCS0	2	159	5795	2.22		2.20	1.63	5.21	29.51		6.49		Pass
VHT80	MCS0	2	155	5775	2.22		-4.00	-3.82	-0.81	29.51		6.49		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

U-NII-3 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
						Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2		
HE20	MCS0	2	149	5745	Full	19.08	19.18	30.13	32.14	18.55	18.57	0.5	Pass
HE20	MCS0	2	157	5785	Full	18.98	19.28	26.42	35.49	18.81	18.84	0.5	Pass
HE20	MCS0	2	165	5825	Full	19.03	19.28	28.30	38.21	18.87	18.62	0.5	Pass
HE40	MCS0	2	151	5755	Full	38.16	38.36	54.74	77.02	37.64	37.49	0.5	Pass
HE40	MCS0	2	159	5795	Full	37.96	38.46	41.92	65.42	37.42	37.33	0.5	Pass
HE80	MCS0	2	155	5775	Full	77.20	77.32	82.43	82.69	76.27	76.34	0.5	Pass

TEST RESULTS DATA
Average Power Table

U-NII-3 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HE20	MCS0	2	149	5745	Full	21.00	20.10	23.58	30.00		3.74		Pass
HE20	MCS0	2	149	5745	26/0	11.70	11.10	14.42	30.00		3.74		Pass
HE20	MCS0	2	149	5745	52/37	14.30	13.70	17.02	30.00		3.74		Pass
HE20	MCS0	2	149	5745	106/53	17.00	16.40	19.72	30.00		3.74		Pass
HE20	MCS0	2	157	5785	Full	20.80	20.30	23.57	30.00		3.74		Pass
HE20	MCS0	2	157	5785	26/4	11.00	11.30	14.16	30.00		3.74		Pass
HE20	MCS0	2	157	5785	52/38	14.50	14.30	17.41	30.00		3.74		Pass
HE20	MCS0	2	157	5785	106/53	17.10	16.70	19.91	30.00		3.74		Pass
HE20	MCS0	2	165	5825	Full	21.00	20.40	23.72	30.00		3.74		Pass
HE20	MCS0	2	165	5825	26/8	11.10	11.30	14.21	30.00		3.74		Pass
HE20	MCS0	2	165	5825	52/40	14.10	14.10	17.11	30.00		3.74		Pass
HE20	MCS0	2	165	5825	106/54	16.90	16.90	19.91	30.00		3.74		Pass
HE40	MCS0	2	151	5755	Full	21.00	20.10	23.58	30.00		3.74		Pass
HE40	MCS0	2	151	5755	242/61	18.00	17.50	20.77	30.00		3.74		Pass
HE40	MCS0	2	159	5795	Full	20.70	20.40	23.56	30.00		3.74		Pass
HE40	MCS0	2	159	5795	242/62	17.10	17.30	20.21	30.00		3.74		Pass
HE80	MCS0	2	155	5775	Full	17.80	18.00	20.91	30.00		3.74		Pass
HE80	MCS0	2	155	5775	484/65	15.00	14.60	17.81	30.00		3.74		Pass
HE80	MCS0	2	155	5775	484/66	14.60	14.60	17.61	30.00		3.74		Pass

TEST RESULTS DATA
Power Spectral Density

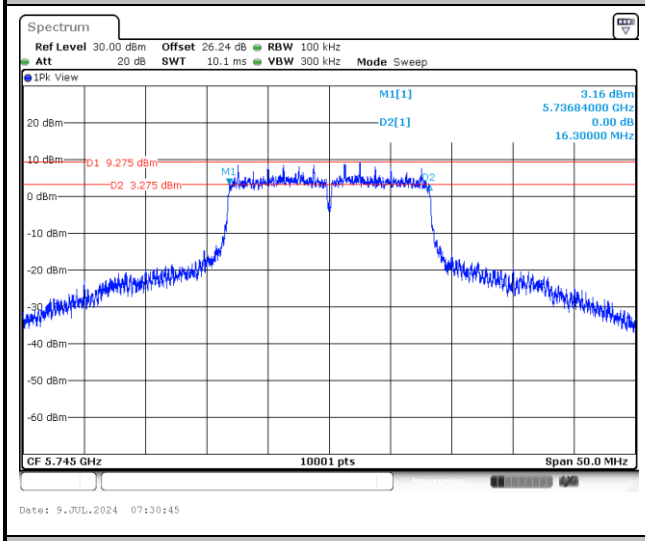
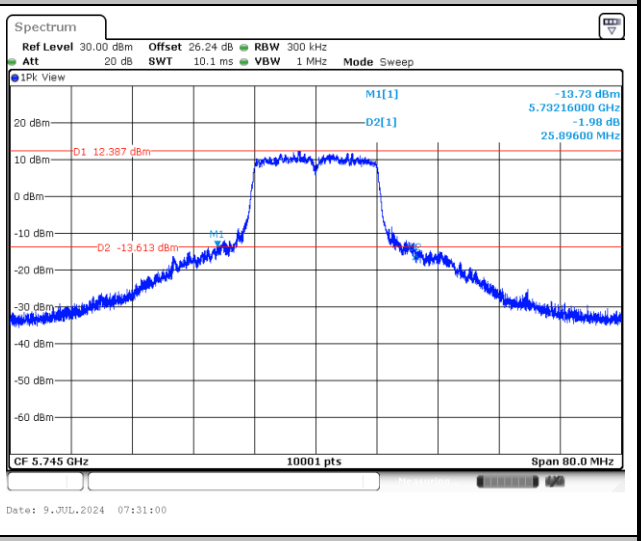
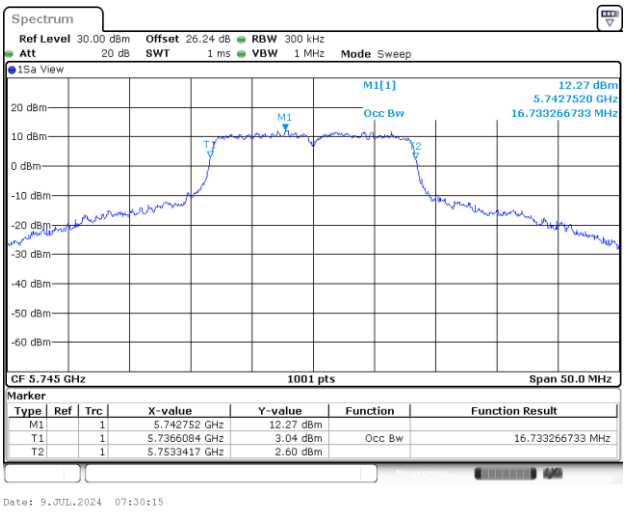
U-NII-3 MIMO														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	10log (500kHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
						Ant 1	Ant 2	Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HE20	MCS0	2	149	5745	Full	2.22		5.35	4.12	8.36	29.51		6.49		Pass
HE20	MCS0	2	149	5745	26/0	2.22		5.33	4.55	8.34	29.51		6.49		Pass
HE20	MCS0	2	149	5745	52/37	2.22		5.07	4.20	8.08	29.51		6.49		Pass
HE20	MCS0	2	149	5745	106/53	2.22		4.90	3.97	7.91	29.51		6.49		Pass
HE20	MCS0	2	157	5785	Full	2.22		4.82	4.18	7.83	29.51		6.49		Pass
HE20	MCS0	2	157	5785	26/4	2.22		4.44	4.34	7.45	29.51		6.49		Pass
HE20	MCS0	2	157	5785	52/38	2.22		4.62	4.33	7.63	29.51		6.49		Pass
HE20	MCS0	2	157	5785	106/53	2.22		4.49	4.02	7.50	29.51		6.49		Pass
HE20	MCS0	2	165	5825	Full	2.22		5.38	4.65	8.39	29.51		6.49		Pass
HE20	MCS0	2	165	5825	26/8	2.22		5.07	4.92	8.08	29.51		6.49		Pass
HE20	MCS0	2	165	5825	52/40	2.22		4.98	4.85	7.99	29.51		6.49		Pass
HE20	MCS0	2	165	5825	106/54	2.22		4.91	4.56	7.92	29.51		6.49		Pass
HE40	MCS0	2	151	5755	Full	2.22		2.26	1.00	5.27	29.51		6.49		Pass
HE40	MCS0	2	151	5755	242/61	2.22		2.22	1.24	5.23	29.51		6.49		Pass
HE40	MCS0	2	159	5795	Full	2.22		1.91	1.50	4.92	29.51		6.49		Pass
HE40	MCS0	2	159	5795	242/62	2.22		1.45	1.41	4.46	29.51		6.49		Pass
HE80	MCS0	2	155	5775	Full	2.22		-3.92	-3.78	-0.77	29.51		6.49		Pass
HE80	MCS0	2	155	5775	484/65	2.22		-4.18	-4.93	-1.17	29.51		6.49		Pass
HE80	MCS0	2	155	5775	484/66	2.22		-4.36	-4.30	-1.29	29.51		6.49		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

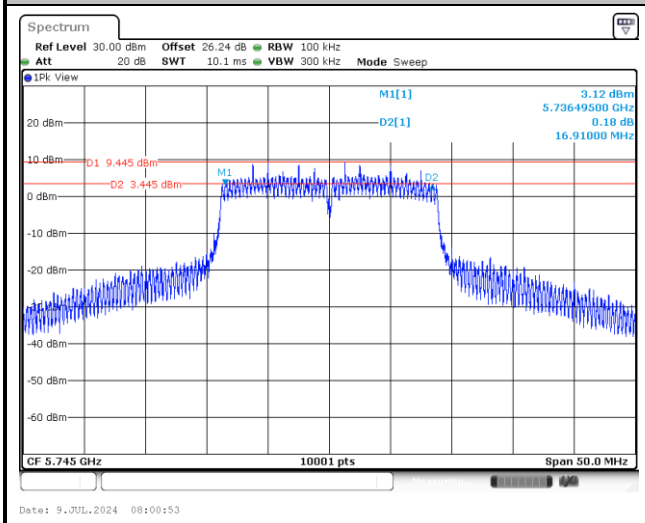
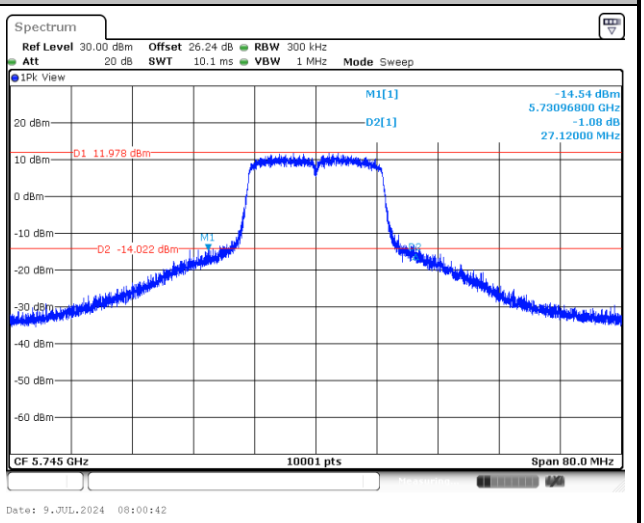
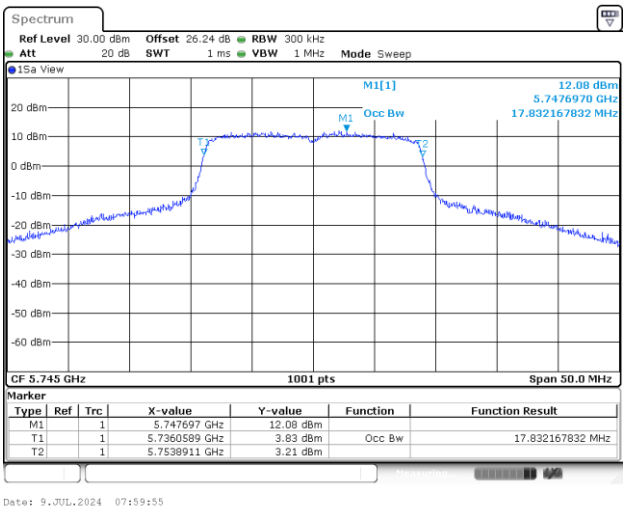
Test Result of 6dB and 26dB and 99% Occupied Bandwidth

MIMO <Ant. 1+2>

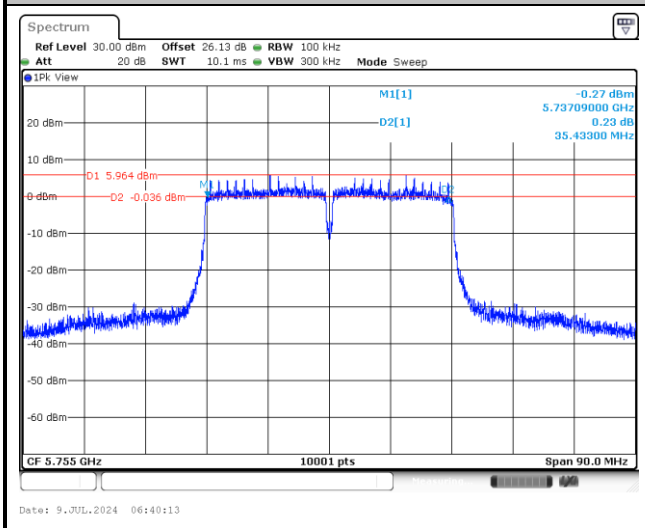
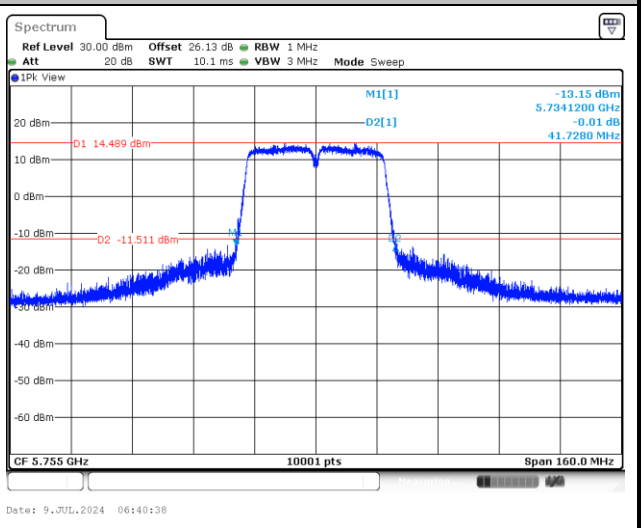
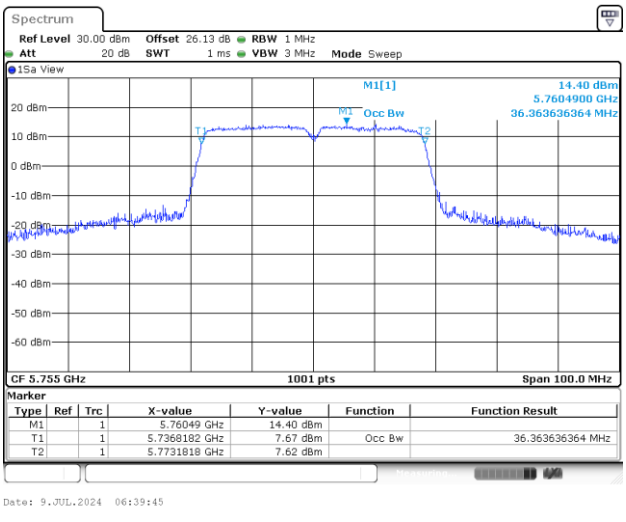
<802.11a>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

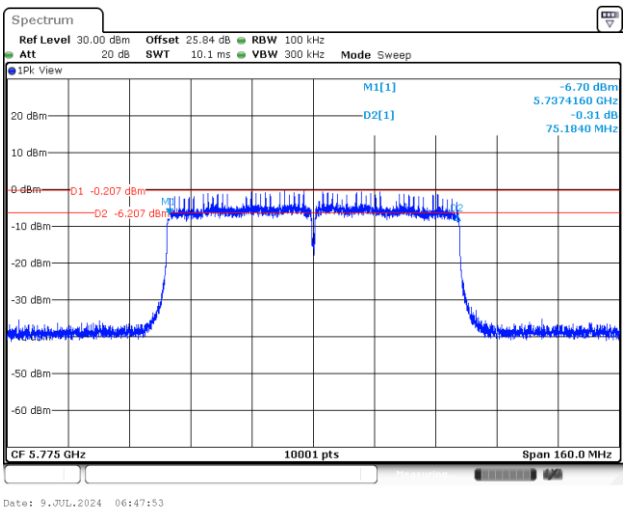
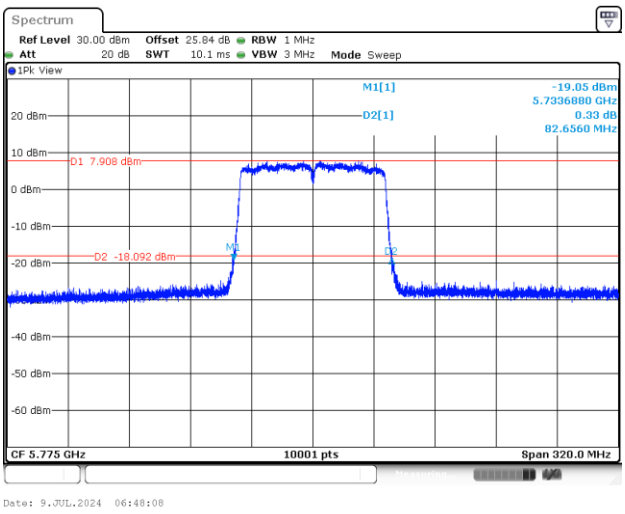
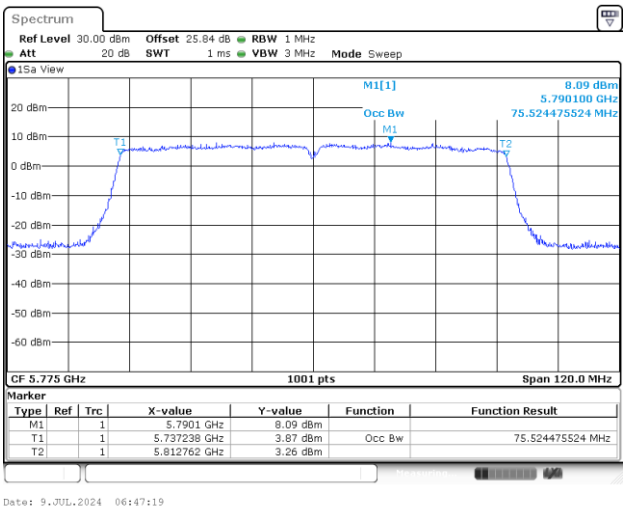
<802.11ac VHT20>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

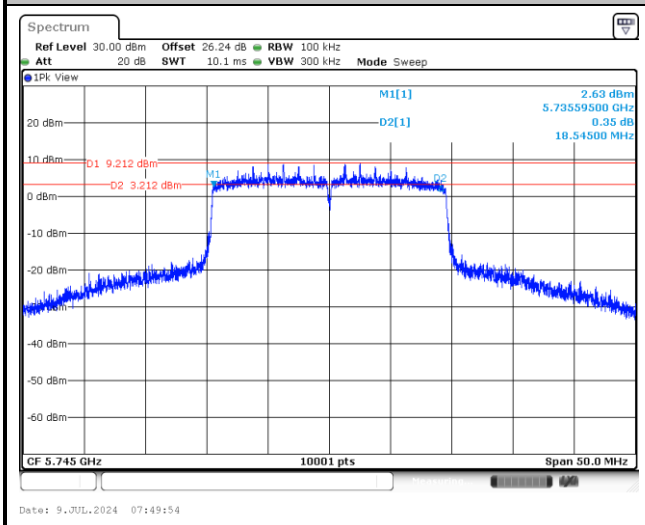
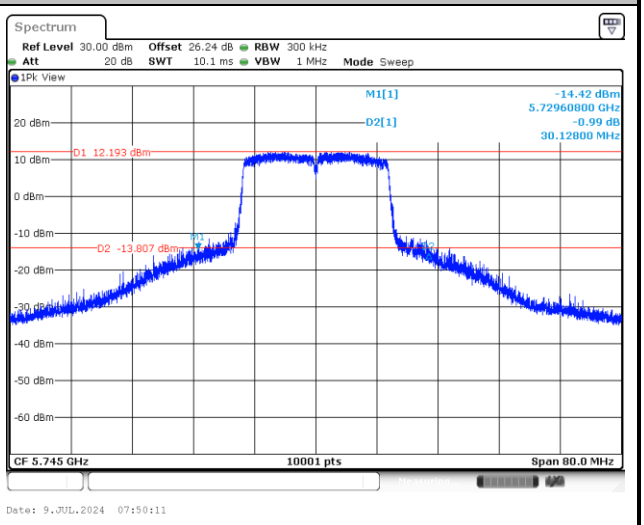
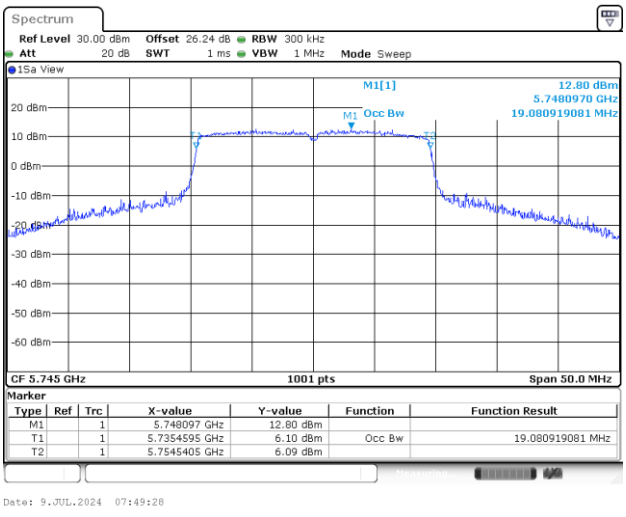
<802.11ac VHT40>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

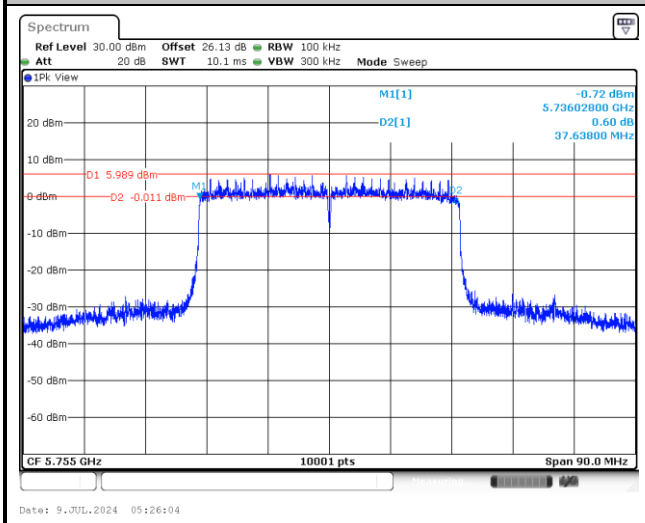
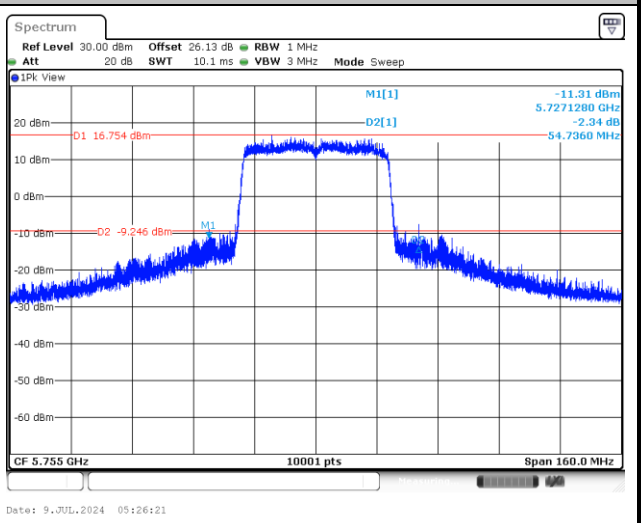
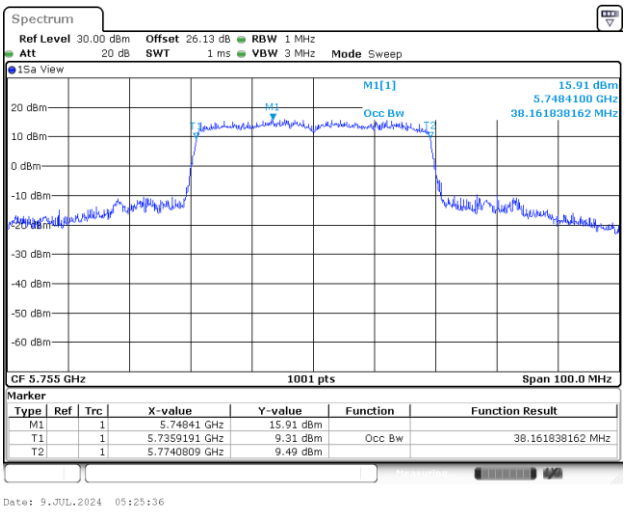
<802.11ac VHT80>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

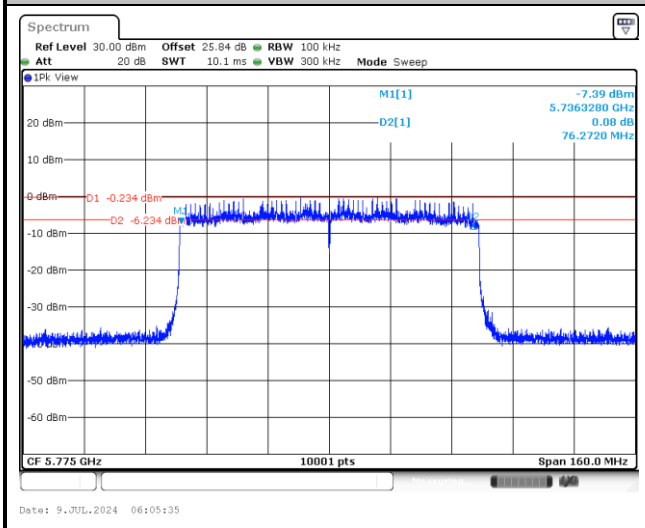
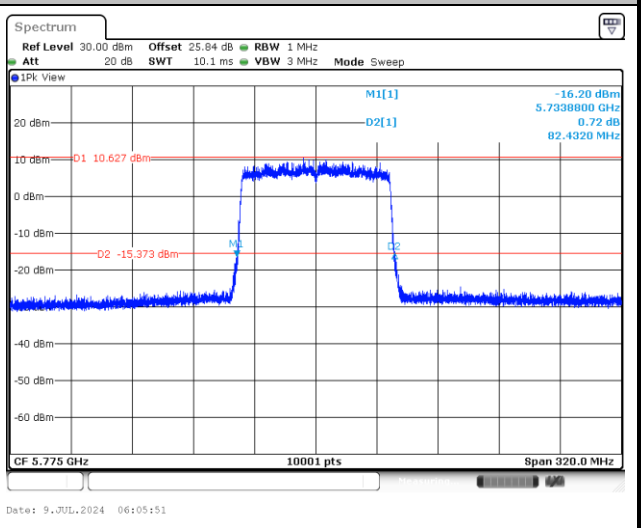
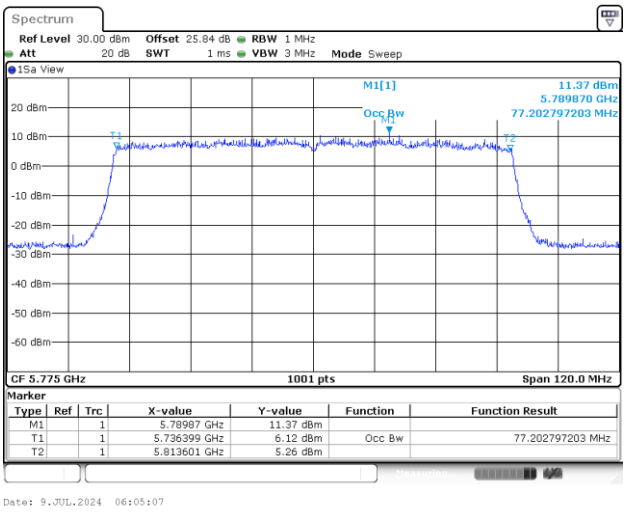
<802.11ax HE20>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

<802.11ax HE40>

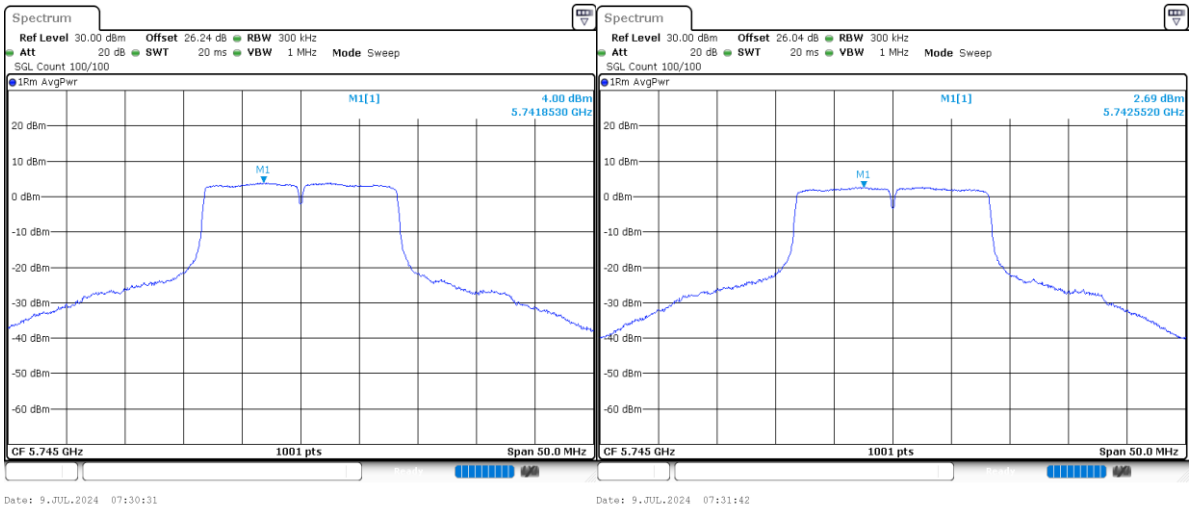
6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

<802.11ax HE80>

6dB Bandwidth	26dB Bandwidth
	
99% Occupied Bandwidth	**N/A**
	

Test Result of Power Spectral Density

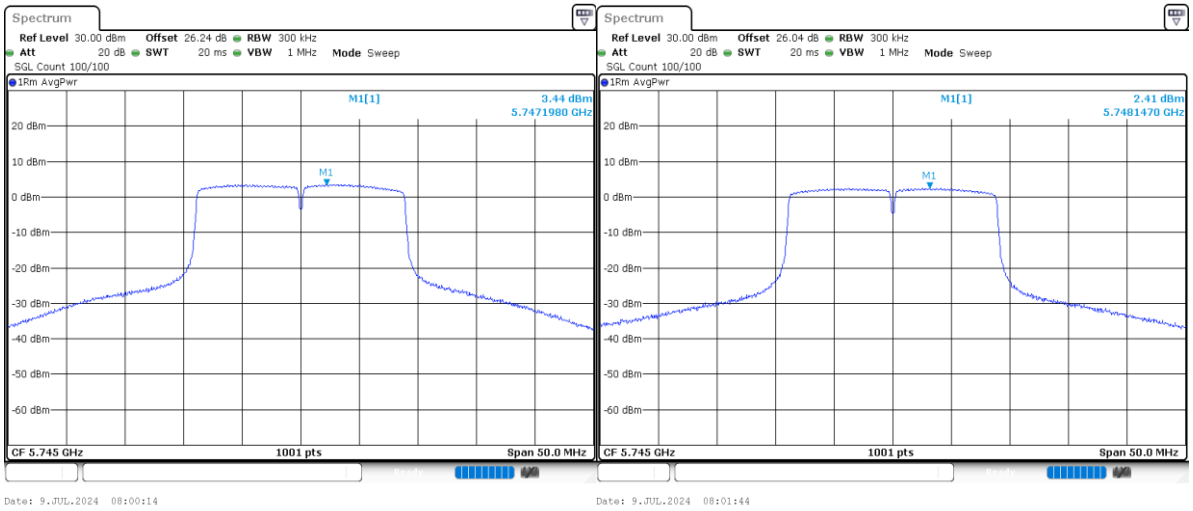
<802.11a>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

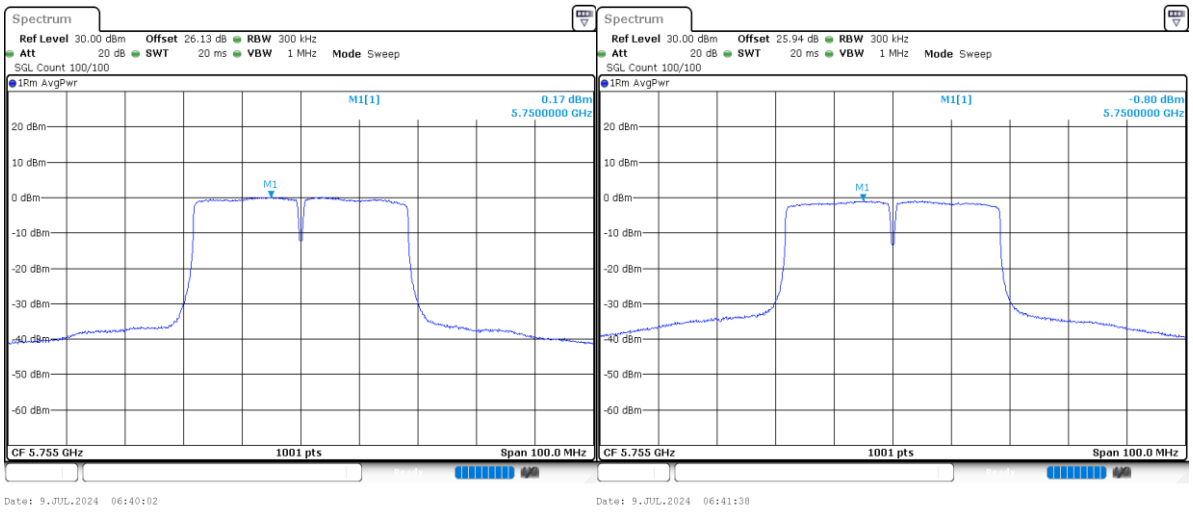
<802.11ac VHT20>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

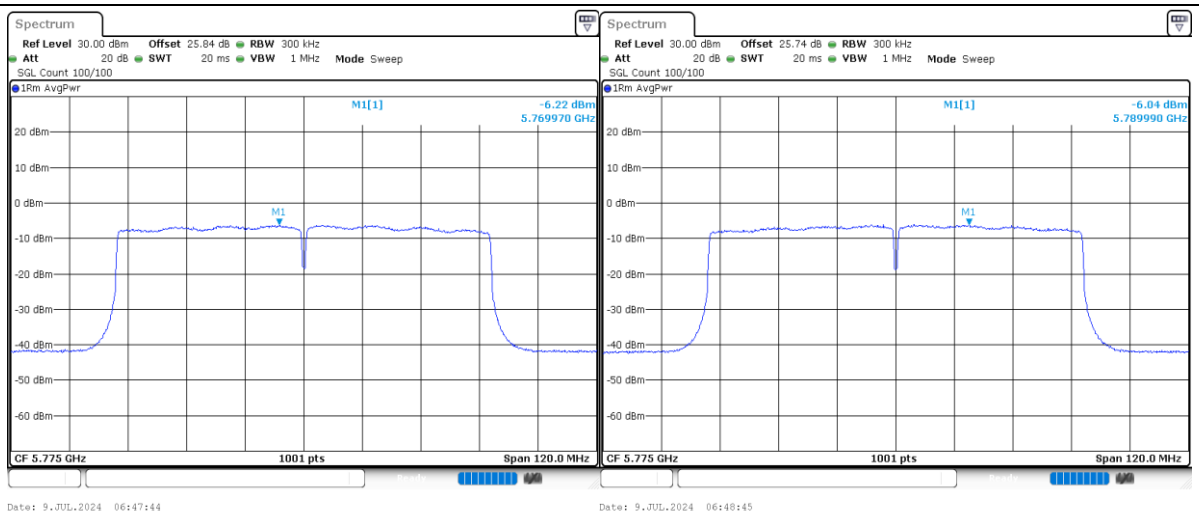
<802.11ac VHT40>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

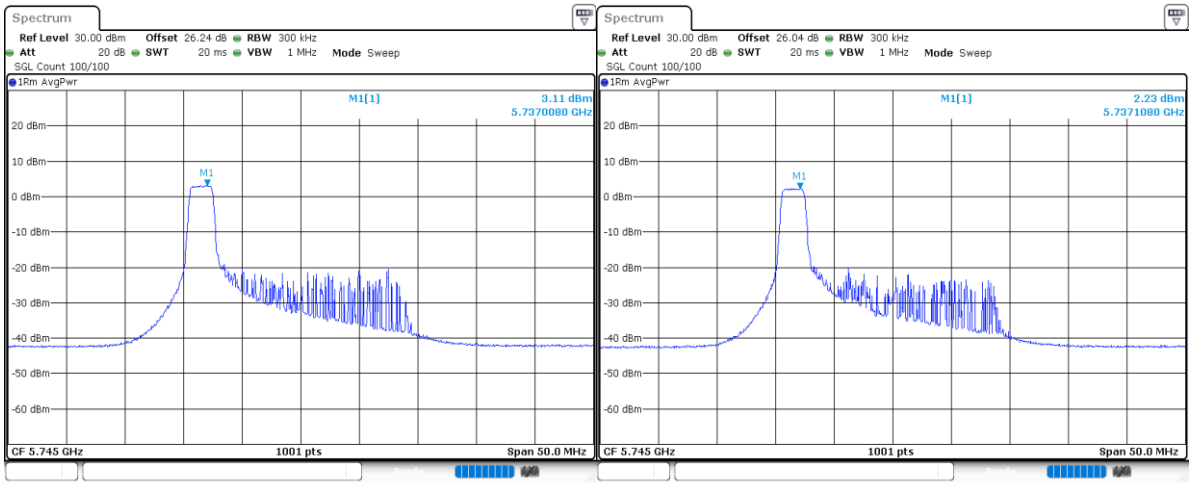
<802.11ac VHT80>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

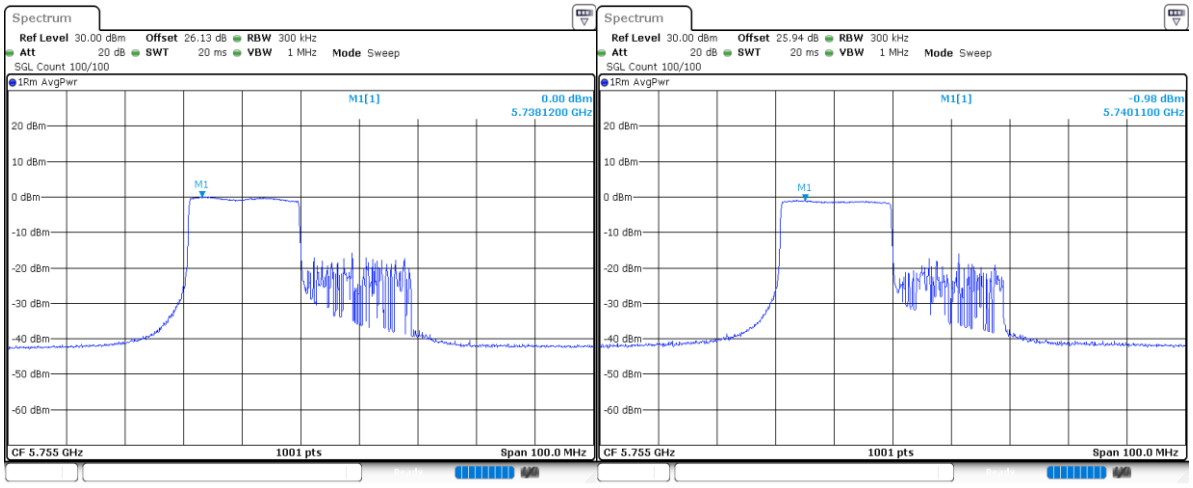
<802.11ax HE20>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

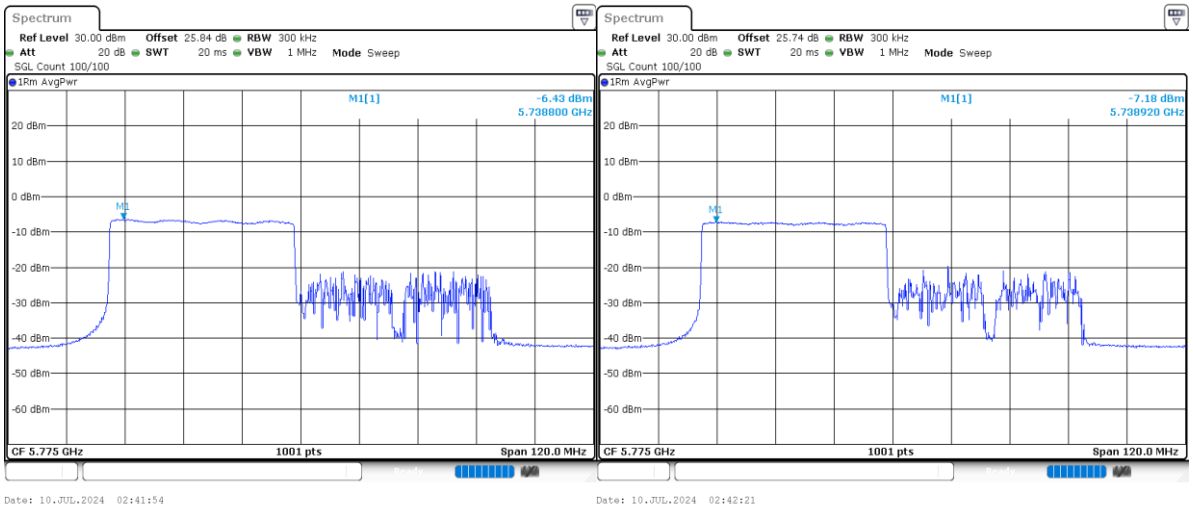
<802.11ax HE40>

Maximum Power Density Plot (dBm/MHz)


Note:

1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

<802.11ax HE80>

Maximum Power Density Plot (dBm/MHz)


Note:

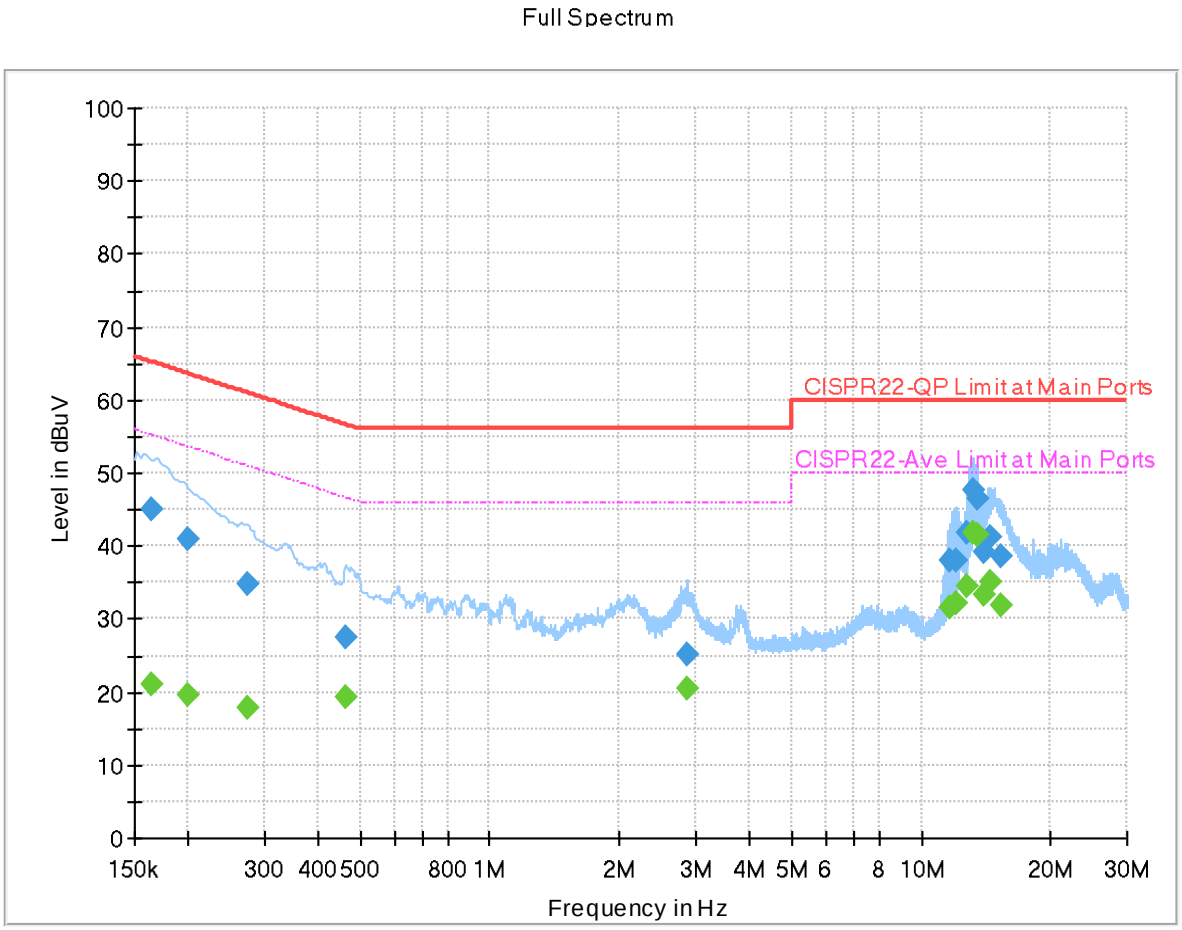
1. EIRP Power Density (dBm/MHz) = Measured value+ Duty Factor + Directional Gain
2. The test plot is showing a bin by bin combined result mathematically adds two traces.

Appendix B. AC Conducted Emission Test Results

Test Engineer :	Louis Chung	**Temperature :**	22.3~24.7℃
		Relative Humidity :	40.4~48.9%

EUT Information

Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line



Final_Result

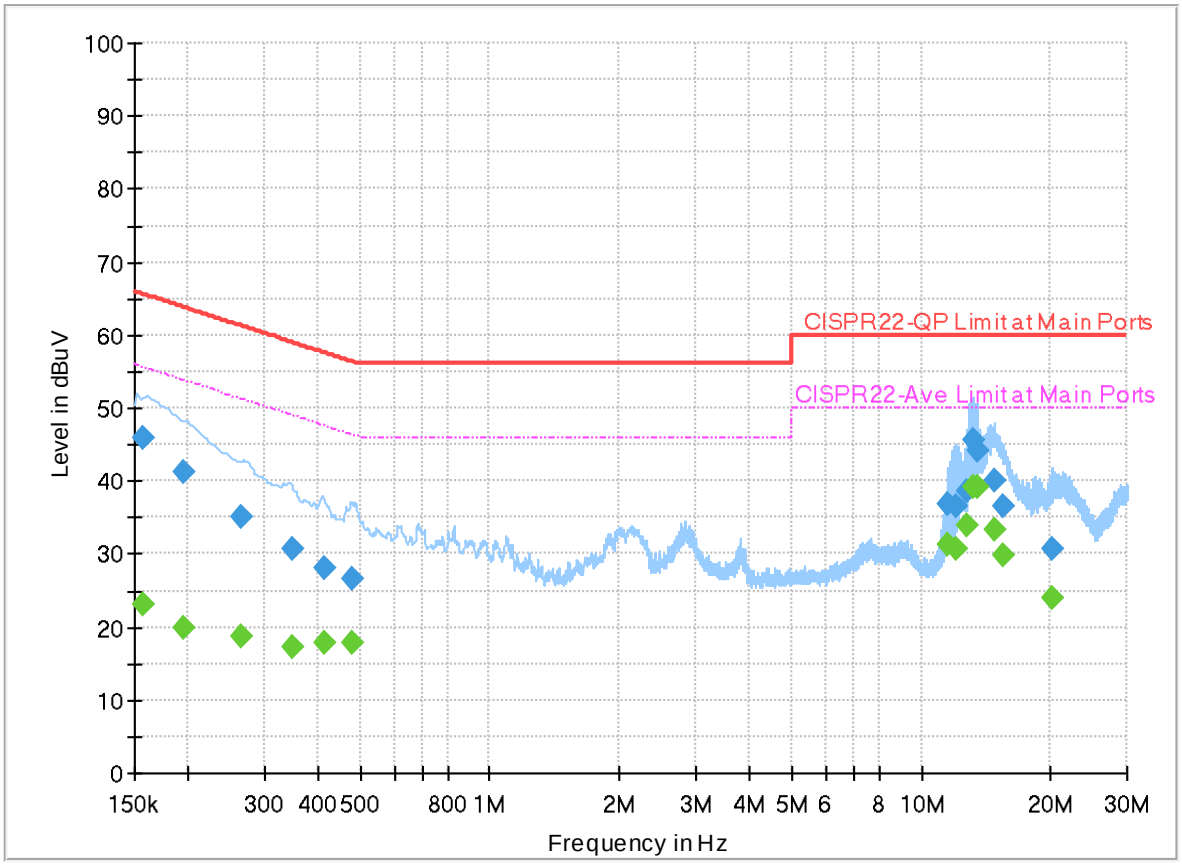
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.163500	---	21.06	55.28	34.22	L1	OFF	19.9
0.163500	45.15	---	65.28	20.13	L1	OFF	19.9
0.198330	---	19.57	53.68	34.11	L1	OFF	19.9
0.198330	40.99	---	63.68	22.69	L1	OFF	19.9
0.273030	---	17.87	51.03	33.16	L1	OFF	19.9
0.273030	34.81	---	61.03	26.22	L1	OFF	19.9
0.462660	---	19.36	46.65	27.29	L1	OFF	19.9
0.462660	27.37	---	56.65	29.28	L1	OFF	19.9
2.865750	---	20.45	46.00	25.55	L1	OFF	20.0
2.865750	25.01	---	56.00	30.99	L1	OFF	20.0
11.665050	---	31.57	50.00	18.43	L1	OFF	20.1
11.665050	37.88	---	60.00	22.12	L1	OFF	20.1
12.030000	---	32.18	50.00	17.82	L1	OFF	20.1
12.030000	38.03	---	60.00	21.97	L1	OFF	20.1
12.762600	---	34.44	50.00	15.56	L1	OFF	20.1
12.762600	41.85	---	60.00	18.15	L1	OFF	20.1
13.150500	---	41.81	50.00	8.19	L1	OFF	20.1
13.150500	47.70	---	60.00	12.30	L1	OFF	20.1
13.558560	---	41.47	50.00	8.53	L1	OFF	20.1

13.558560	**46.47**	**---**	**60.00**	**13.53**	**L1**	**OFF**	**20.1**
14.057250	**---**	**33.28**	**50.00**	**16.72**	**L1**	**OFF**	**20.1**
14.057250	**39.25**	**---**	**60.00**	**20.75**	**L1**	**OFF**	**20.1**
14.547750	**---**	**34.96**	**50.00**	**15.04**	**L1**	**OFF**	**20.1**
14.547750	**41.17**	**---**	**60.00**	**18.83**	**L1**	**OFF**	**20.1**
15.256500	**---**	**31.99**	**50.00**	**18.01**	**L1**	**OFF**	**20.1**
15.256500	**38.59**	**---**	**60.00**	**21.41**	**L1**	**OFF**	**20.1**

EUT Information

Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	---	23.10	55.63	32.53	N	OFF	19.9
0.156750	45.80	---	65.63	19.83	N	OFF	19.9
0.195000	---	19.99	53.82	33.83	N	OFF	19.9
0.195000	41.16	---	63.82	22.66	N	OFF	19.9
0.264750	---	18.62	51.28	32.66	N	OFF	19.9
0.264750	35.08	---	61.28	26.20	N	OFF	19.9
0.347730	---	17.17	49.02	31.85	N	OFF	19.9
0.347730	30.74	---	59.02	28.28	N	OFF	19.9
0.413970	---	17.96	47.57	29.61	N	OFF	19.9
0.413970	27.94	---	57.57	29.63	N	OFF	19.9
0.479580	---	17.76	46.35	28.59	N	OFF	19.9
0.479580	26.67	---	56.35	29.68	N	OFF	19.9
11.567670	---	31.25	50.00	18.75	N	OFF	20.1
11.567670	36.92	---	60.00	23.08	N	OFF	20.1
12.028020	---	30.65	50.00	19.35	N	OFF	20.1
12.028020	36.65	---	60.00	23.35	N	OFF	20.1
12.777900	---	33.96	50.00	16.04	N	OFF	20.1
12.777900	38.52	---	60.00	21.48	N	OFF	20.1
13.244640	---	39.24	50.00	10.76	N	OFF	20.1

13.244640	**45.64**	**---**	**60.00**	**14.36**	**N**	**OFF**	**20.1**
13.555140	**---**	**39.24**	**50.00**	**10.76**	**N**	**OFF**	**20.1**
13.555140	**44.27**	**---**	**60.00**	**15.73**	**N**	**OFF**	**20.1**
14.756820	**---**	**33.31**	**50.00**	**16.69**	**N**	**OFF**	**20.1**
14.756820	**39.93**	**---**	**60.00**	**20.07**	**N**	**OFF**	**20.1**
15.549000	**---**	**29.91**	**50.00**	**20.09**	**N**	**OFF**	**20.2**
15.549000	**36.65**	**---**	**60.00**	**23.35**	**N**	**OFF**	**20.2**
20.188500	**---**	**24.10**	**50.00**	**25.90**	**N**	**OFF**	**20.2**
20.188500	**30.72**	**---**	**60.00**	**29.28**	**N**	**OFF**	**20.2**

Appendix C. Radiated Spurious Emission

Test Engineer :	Ken Kuo, Bank Lin, Fred Tseng, and Karl Hou	Temperature :	20.8~24.8°C
		Relative Humidity :	52.4~63.8%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

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)
		5649.95	59.75	-8.45	68.2	47.16	33.5	13.44	34.35	173	0	P	H
		5698.775	80.79	-23.51	104.3	67.96	33.7	13.52	34.39	173	0	P	H
		5718.575	86.78	-23.62	110.4	73.83	33.81	13.55	34.41	173	0	P	H
		5722.4	89.76	-26.51	116.27	76.79	33.83	13.55	34.41	173	0	P	H
	*	5745	120.95	-	-	107.82	33.97	13.59	34.43	173	0	P	H
	*	5745	113.3	-	-	100.17	33.97	13.59	34.43	173	0	A	H
													H
802.11a													H
CH 149		5644.55	57.43	-10.77	68.2	44.87	33.47	13.44	34.35	101	0	P	V
5745MHz		5697.65	74.12	-29.35	103.47	61.3	33.69	13.52	34.39	101	0	P	V
		5719.475	83.23	-27.42	110.65	70.27	33.82	13.55	34.41	101	0	P	V
		5724.425	86.15	-34.74	120.89	73.15	33.85	13.56	34.41	101	0	P	V
	*	5745	114.77	-	-	101.64	33.97	13.59	34.43	101	0	P	V
	*	5745	107.39	-	-	94.26	33.97	13.59	34.43	101	0	A	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)
		5647	52.27	-15.93	68.2	39.7	33.48	13.44	34.35	246	0	P	H
		5698.25	60.06	-43.85	103.91	47.24	33.69	13.52	34.39	246	0	P	H
		5719.25	66.6	-43.99	110.59	53.64	33.82	13.55	34.41	246	0	P	H
		5724.25	69.29	-51.2	120.49	56.29	33.85	13.56	34.41	246	0	P	H
	*	5785	120.36	-	-	107.17	34	13.65	34.46	246	0	P	H
	*	5785	113.24	-	-	100.05	34	13.65	34.46	246	0	A	H
		5853	67.56	-47.8	115.36	54.45	33.91	13.71	34.51	246	0	P	H
		5858.25	65.68	-44.21	109.89	52.56	33.92	13.71	34.51	246	0	P	H
		5875.5	59.52	-45.31	104.83	46.38	33.95	13.72	34.53	246	0	P	H
		5928.75	54.64	-13.56	68.2	41.45	34	13.76	34.57	246	0	P	H
													H
802.11a CH 157 5785MHz													H
		5636.75	51	-17.2	68.2	38.49	33.42	13.43	34.34	400	98	P	V
		5696.75	58.24	-44.56	102.8	45.42	33.69	13.52	34.39	400	98	P	V
		5720	65.69	-45.11	110.8	52.73	33.82	13.55	34.41	400	98	P	V
		5724.25	67.16	-53.33	120.49	54.16	33.85	13.56	34.41	400	98	P	V
	*	5785	115.35	-	-	102.16	34	13.65	34.46	400	98	P	V
	*	5785	108.27	-	-	95.08	34	13.65	34.46	400	98	A	V
		5852.25	63.49	-53.58	117.07	50.39	33.9	13.71	34.51	400	98	P	V
		5855.5	60.25	-50.41	110.66	47.14	33.91	13.71	34.51	400	98	P	V
		5881.25	53.51	-47.05	100.56	40.35	33.96	13.73	34.53	400	98	P	V
		5929.75	51.99	-16.21	68.2	38.8	34	13.76	34.57	400	98	P	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)
	*	5825	118.62	-	-	105.47	33.95	13.69	34.49	132	0	P	H
	*	5825	111.84	-	-	98.69	33.95	13.69	34.49	132	0	A	H
		5852.2	74	-43.18	117.18	60.9	33.9	13.71	34.51	132	0	P	H
		5856.2	70.18	-40.28	110.46	57.07	33.91	13.71	34.51	132	0	P	H
		5876.2	53.96	-50.35	104.31	40.82	33.95	13.72	34.53	132	0	P	H
		5925.4	51.57	-16.63	68.2	38.37	34	13.76	34.56	132	0	P	H
													H
802.11a													H
CH 165	*	5825	114.76	-	-	101.61	33.95	13.69	34.49	100	4	P	V
5825MHz	*	5825	107.66	-	-	94.51	33.95	13.69	34.49	100	4	A	V
		5850.2	70.29	-51.45	121.74	57.19	33.9	13.71	34.51	100	4	P	V
		5855	67.3	-43.5	110.8	54.19	33.91	13.71	34.51	100	4	P	V
		5878.6	52.23	-50.3	102.53	39.07	33.96	13.73	34.53	100	4	P	V
		5925.2	51.78	-16.42	68.2	38.58	34	13.76	34.56	100	4	P	V
													V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11a (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)
		1264	56.42	-11.78	68.2	57.73	24.3	6.18	31.79	173	0	P	H
		1336	54.34	-19.66	74	55.37	24.44	6.33	31.8	177	60	P	H
		1336	44.59	-9.41	54	45.62	24.44	6.33	31.8	177	60	A	H
		1858	48.39	-19.81	68.2	47.67	25.28	7.48	32.04	173	0	P	H
		11490	50.2	-23.8	74	31.07	38.98	20.12	39.97	-	-	P	H
		11490	40.82	-13.18	54	21.69	38.98	20.12	39.97	-	-	A	H
		17235	50.59	-17.61	68.2	31.57	40.57	24.72	46.27	-	-	P	H
													H
													H
													H
													H
802.11a CH 149 5745MHz													H
		1264	52.57	-15.63	68.2	53.88	24.3	6.18	31.79	101	0	P	V
		1336	53.35	-20.65	74	54.38	24.44	6.33	31.8	195	188	P	V
		1336	47.08	-6.92	54	48.11	24.44	6.33	31.8	195	188	A	V
		1858	49.17	-19.03	68.2	48.45	25.28	7.48	32.04	101	0	P	V
		11490	50.4	-23.6	74	31.27	38.98	20.12	39.97	-	-	P	V
		11490	40.68	-13.32	54	21.55	38.98	20.12	39.97	-	-	A	V
		17235	50.61	-17.59	68.2	31.59	40.57	24.72	46.27	-	-	P	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)
		1264	51.61	-16.59	68.2	52.92	24.3	6.18	31.79	246	0	P	H
		1336	55.07	-18.93	74	56.1	24.44	6.33	31.8	182	57	P	H
		1336	45.07	-8.93	54	46.1	24.44	6.33	31.8	182	57	A	H
		1858	51.57	-16.63	68.2	50.85	25.28	7.48	32.04	246	0	P	H
		11570	51.52	-22.48	74	32.32	39.06	20.19	40.05	-	-	P	H
		11570	40.87	-13.13	54	21.67	39.06	20.19	40.05	-	-	A	H
		17355	49.91	-18.29	68.2	30.99	40.5	24.82	46.4	-	-	P	H
													H
													H
													H
													H
802.11a CH 157 5785MHz													H
		1264	47.96	-20.24	68.2	49.27	24.3	6.18	31.79	400	98	P	V
		1336	54.16	-19.84	74	55.19	24.44	6.33	31.8	199	189	P	V
		1336	47.85	-6.15	54	48.88	24.44	6.33	31.8	199	189	A	V
		1858	40.07	-28.13	68.2	39.35	25.28	7.48	32.04	400	98	P	V
		11570	51.34	-22.66	74	32.14	39.06	20.19	40.05	-	-	P	V
		11570	40.96	-13.04	54	21.76	39.06	20.19	40.05	-	-	A	V
		17355	50.26	-17.94	68.2	31.34	40.5	24.82	46.4	-	-	P	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)
		1264	51.82	-16.38	68.2	53.13	24.3	6.18	31.79	132	0	P	H
		1336	54.08	-19.92	74	55.11	24.44	6.33	31.8	178	54	P	H
		1336	44.42	-9.58	54	45.45	24.44	6.33	31.8	178	54	A	H
		2152	47.14	-21.06	68.2	44.87	26.4	8.08	32.21	132	0	P	H
		11650	50.82	-23.18	74	31.69	39	20.27	40.14	-	-	P	H
		11650	40.96	-13.04	54	21.83	39	20.27	40.14	-	-	A	H
		17475	50.14	-18.06	68.2	31.15	40.6	24.91	46.52	-	-	P	H
													H
													H
													H
													H
802.11a CH 165 5825MHz													H
		1264	54.24	-13.96	68.2	55.55	24.3	6.18	31.79	100	4	P	V
		1336	54.02	-19.98	74	55.05	24.44	6.33	31.8	201	184	P	V
		1336	47.23	-6.77	54	48.26	24.44	6.33	31.8	201	184	A	V
		1858	48.04	-20.16	68.2	47.32	25.28	7.48	32.04	100	4	P	V
		11650	50.68	-23.32	74	31.55	39	20.27	40.14	-	-	P	V
		11650	40.98	-13.02	54	21.85	39	20.27	40.14	-	-	A	V
		17475	51.47	-16.73	68.2	32.48	40.6	24.91	46.52	-	-	P	V
													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.

Band 4 5725~5850MHz

WIFI 802.11ax HE20_Full (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)
		5648.375	54.46	-13.74	68.2	41.88	33.49	13.44	34.35	249	0	P	H
		5699	62.11	-42.35	104.46	49.28	33.7	13.52	34.39	249	0	P	H
		5719.475	85.09	-25.56	110.65	72.13	33.82	13.55	34.41	249	0	P	H
		5723.525	85.75	-33.09	118.84	72.76	33.84	13.56	34.41	249	0	P	H
	*	5745	121.04	-	-	107.91	33.97	13.59	34.43	249	0	P	H
	*	5745	113.23	-	-	100.1	33.97	13.59	34.43	249	0	A	H
802.11ax													H
HE20 Full													H
CH 149		5613.5	51.44	-16.76	68.2	39.1	33.28	13.39	34.33	100	326	P	V
5745MHz		5699.675	56.23	-48.73	104.96	43.4	33.7	13.52	34.39	100	326	P	V
		5719.925	72.57	-38.21	110.78	59.61	33.82	13.55	34.41	100	326	P	V
		5724.875	83.11	-38.81	121.92	70.11	33.85	13.56	34.41	100	326	P	V
	*	5745	115.11	-	-	101.98	33.97	13.59	34.43	100	326	P	V
	*	5745	106.37	-	-	93.24	33.97	13.59	34.43	100	326	A	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)
		5630.5	52.31	-15.89	68.2	39.85	33.38	13.42	34.34	155	355	P	H
		5692.5	53.34	-46.33	99.67	40.55	33.67	13.51	34.39	155	355	P	H
		5711.75	55.11	-53.38	108.49	42.2	33.77	13.54	34.4	155	355	P	H
		5720.75	54.03	-58.48	112.51	41.07	33.82	13.55	34.41	155	355	P	H
	*	5785	120.73	-	-	107.54	34	13.65	34.46	155	355	P	H
	*	5785	112.11	-	-	98.92	34	13.65	34.46	155	355	A	H
		5850.75	54.54	-65.95	120.49	41.44	33.9	13.71	34.51	155	355	P	H
		5866.5	53.37	-54.21	107.58	40.24	33.93	13.72	34.52	155	355	P	H
		5886.25	52.94	-43.91	96.85	39.77	33.97	13.73	34.53	155	355	P	H
		5941.25	53.42	-14.78	68.2	40.23	34	13.77	34.58	155	355	P	H
802.11ax													H
HE20 Full													H
CH 157		5639.5	51.32	-16.88	68.2	38.8	33.44	13.43	34.35	100	11	P	V
5785MHz		5689.25	51.8	-45.47	97.27	39.02	33.66	13.5	34.38	100	11	P	V
		5702.75	52.09	-53.88	105.97	39.24	33.72	13.52	34.39	100	11	P	V
		5724	51.49	-68.43	119.92	38.5	33.84	13.56	34.41	100	11	P	V
	*	5785	115.75	-	-	102.56	34	13.65	34.46	100	11	P	V
	*	5785	107.46	-	-	94.27	34	13.65	34.46	100	11	A	V
		5851.25	52.75	-66.6	119.35	39.65	33.9	13.71	34.51	100	11	P	V
		5865.5	51.96	-55.9	107.86	38.83	33.93	13.72	34.52	100	11	P	V
		5906	52.8	-29.42	82.22	39.61	34	13.74	34.55	100	11	P	V
		5943.25	52.12	-16.08	68.2	38.93	34	13.77	34.58	100	11	P	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)
	*	5825	120.33	-	-	107.18	33.95	13.69	34.49	246	0	P	H
	*	5825	112.14	-	-	98.99	33.95	13.69	34.49	246	0	A	H
		5850.6	82.69	-38.14	120.83	69.59	33.9	13.71	34.51	246	0	P	H
		5861.6	70.38	-38.57	108.95	57.26	33.92	13.71	34.51	246	0	P	H
		5895.6	54.8	-35.12	89.92	41.61	33.99	13.74	34.54	246	0	P	H
		5937	53.59	-14.61	68.2	40.39	34	13.77	34.57	246	0	P	H
802.11ax													H
HE20 Full													H
CH 165	*	5825	115.7	-	-	102.55	33.95	13.69	34.49	400	40	P	V
5825MHz	*	5825	107.39	-	-	94.24	33.95	13.69	34.49	400	40	A	V
		5850.2	71.24	-50.5	121.74	58.14	33.9	13.71	34.51	400	40	P	V
		5858.4	65.99	-43.86	109.85	52.87	33.92	13.71	34.51	400	40	P	V
		5877.2	52.39	-51.18	103.57	39.25	33.95	13.72	34.53	400	40	P	V
		5938.6	51.47	-16.73	68.2	38.27	34	13.77	34.57	400	40	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ax HE20 Full (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)
		1264	52.35	-15.85	68.2	53.66	24.3	6.18	31.79	249	0	P	H
		1336	55.07	-18.93	74	56.1	24.44	6.33	31.8	180	53	P	H
		1336	45.12	-8.88	54	46.15	24.44	6.33	31.8	180	53	A	H
		1858	51.49	-16.71	68.2	50.77	25.28	7.48	32.04	249	0	P	H
		11490	50.74	-23.26	74	31.61	38.98	20.12	39.97	-	-	P	H
		11490	40.74	-13.26	54	21.61	38.98	20.12	39.97	-	-	A	H
		17235	51.07	-17.13	68.2	32.05	40.57	24.72	46.27	-	-	P	H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 149		1264	45.72	-22.48	68.2	47.03	24.3	6.18	31.79	100	326	P	V
5745MHz		1336	54.2	-19.8	74	55.23	24.44	6.33	31.8	196	183	P	V
		1336	46.66	-7.34	54	47.69	24.44	6.33	31.8	196	183	A	V
		1786	42.84	-25.36	68.2	42.76	24.76	7.32	32	100	326	P	V
		11490	50.11	-23.89	74	30.98	38.98	20.12	39.97	-	-	P	V
		11490	40.83	-13.17	54	21.7	38.98	20.12	39.97	-	-	A	V
		17235	50.32	-17.88	68.2	31.3	40.57	24.72	46.27	-	-	P	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)
		1264	52.2	-16	68.2	53.51	24.3	6.18	31.79	155	355	P	H
		1336	55.36	-18.64	74	56.39	24.44	6.33	31.8	179	50	P	H
		1336	44.75	-9.25	54	45.78	24.44	6.33	31.8	179	50	A	H
		1780	50.87	-17.33	68.2	50.85	24.7	7.31	31.99	155	355	P	H
		11570	50.39	-23.61	74	31.19	39.06	20.19	40.05	-	-	P	H
		11570	40.97	-13.03	54	21.77	39.06	20.19	40.05	-	-	A	H
		17355	50.53	-17.67	68.2	31.61	40.5	24.82	46.4	-	-	P	H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 157		1264	52.65	-15.55	68.2	53.96	24.3	6.18	31.79	100	11	P	V
5785MHz		1336	53.92	-20.08	74	54.95	24.44	6.33	31.8	194	181	P	V
		1336	47.62	-6.38	54	48.65	24.44	6.33	31.8	194	181	A	V
		1858	49.73	-18.47	68.2	49.01	25.28	7.48	32.04	100	11	P	V
		11570	50.78	-23.22	74	31.58	39.06	20.19	40.05	-	-	P	V
		11570	40.88	-13.12	54	21.68	39.06	20.19	40.05	-	-	A	V
		17355	50.11	-18.09	68.2	31.19	40.5	24.82	46.4	-	-	P	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)
		1264	53	-15.2	68.2	54.31	24.3	6.18	31.79	246	0	P	H
		1336	54.54	-19.46	74	55.57	24.44	6.33	31.8	177	57	P	H
		1336	43.62	-10.38	54	44.65	24.44	6.33	31.8	177	57	A	H
		1858	50.81	-17.39	68.2	50.09	25.28	7.48	32.04	246	0	P	H
		11650	50.5	-23.5	74	31.37	39	20.27	40.14	-	-	P	H
		11650	40.95	-13.05	54	21.82	39	20.27	40.14	-	-	A	H
		17475	50.71	-17.49	68.2	31.72	40.6	24.91	46.52	-	-	P	H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 165		1264	49.11	-19.09	68.2	50.42	24.3	6.18	31.79	400	40	P	V
5825MHz		1336	52.92	-21.08	74	53.95	24.44	6.33	31.8	202	187	P	V
		1336	46.97	-7.03	54	48	24.44	6.33	31.8	202	187	A	V
		1858	49.82	-18.38	68.2	49.1	25.28	7.48	32.04	400	40	P	V
		11650	51.74	-22.26	74	32.61	39	20.27	40.14	-	-	P	V
		11650	40.92	-13.08	54	21.79	39	20.27	40.14	-	-	A	V
		17475	50.38	-17.82	68.2	31.39	40.6	24.91	46.52	-	-	P	V
													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.

Band 4 5725~5850MHz

WIFI 802.11ax HE20_Partial 106 (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)
		5646.35	61.26	-6.94	68.2	48.69	33.48	13.44	34.35	205	360	P	H
		5685.95	80.29	-14.55	94.84	67.53	33.64	13.5	34.38	205	360	P	H
		5714.975	91.17	-18.22	109.39	78.24	33.79	13.54	34.4	205	360	P	H
		5722.85	86.5	-30.8	117.3	73.52	33.84	13.55	34.41	205	360	P	H
	*	5745	118.29	-	-	105.16	33.97	13.59	34.43	205	360	P	H
802.11ax	*	5745	112.39	-	-	99.26	33.97	13.59	34.43	205	360	A	H
HE20													H
Partial													H
106/53		5649.05	58.24	-9.96	68.2	45.66	33.49	13.44	34.35	400	95	P	V
CH 149		5688.65	75.98	-20.85	96.83	63.21	33.65	13.5	34.38	400	95	P	V
5745MHz		5719.475	87.3	-23.35	110.65	74.34	33.82	13.55	34.41	400	95	P	V
		5720.825	83.83	-28.85	112.68	70.87	33.82	13.55	34.41	400	95	P	V
	*	5745	116.76	-	-	103.63	33.97	13.59	34.43	400	95	P	V
	*	5745	110.33	-	-	97.2	33.97	13.59	34.43	400	95	A	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)
	*	5825	121.25	-	-	108.1	33.95	13.69	34.49	191	351	P	H
	*	5825	114.6	-	-	101.45	33.95	13.69	34.49	191	351	A	H
		5854	69.28	-43.8	113.08	56.17	33.91	13.71	34.51	191	351	P	H
		5858.4	69.93	-39.92	109.85	56.81	33.92	13.71	34.51	191	351	P	H
		5908.2	55.17	-25.43	80.6	41.97	34	13.75	34.55	191	351	P	H
802.11ax		5938	51.97	-16.23	68.2	38.77	34	13.77	34.57	191	351	P	H
HE20													H
Partial													H
106/54	*	5825	119.17	-	-	106.02	33.95	13.69	34.49	400	92	P	V
CH 165	*	5825	110.98	-	-	97.83	33.95	13.69	34.49	400	92	A	V
5825MHz		5850	65.33	-56.87	122.2	52.24	33.9	13.7	34.51	400	92	P	V
		5866.8	54.02	-53.47	107.49	40.89	33.93	13.72	34.52	400	92	P	V
		5884.8	53.5	-44.42	97.92	40.33	33.97	13.73	34.53	400	92	P	V
		5937.2	53.58	-14.62	68.2	40.38	34	13.77	34.57	400	92	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ax HE40_Full (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)
		5649.75	56.26	-11.94	68.2	43.67	33.5	13.44	34.35	239	356	P	H
		5699.75	76.11	-28.91	105.02	63.28	33.7	13.52	34.39	239	356	P	H
		5719	87.6	-22.92	110.52	74.65	33.81	13.55	34.41	239	356	P	H
		5720.5	89.37	-22.57	111.94	76.41	33.82	13.55	34.41	239	356	P	H
	*	5755	119.35	-	-	106.18	34	13.6	34.43	239	356	P	H
	*	5755	110.83	-	-	97.66	34	13.6	34.43	239	356	A	H
		5850	57.17	-65.03	122.2	44.08	33.9	13.7	34.51	239	356	P	H
		5860.5	54.42	-54.84	109.26	41.3	33.92	13.71	34.51	239	356	P	H
		5875.75	53.69	-50.95	104.64	40.55	33.95	13.72	34.53	239	356	P	H
		5942.25	51.77	-16.43	68.2	38.58	34	13.77	34.58	239	356	P	H
802.11ax													H
HE40 Full													H
CH 151		5643.25	53.02	-15.18	68.2	40.48	33.46	13.43	34.35	400	22	P	V
5755MHz		5696.5	67.85	-34.77	102.62	55.04	33.69	13.51	34.39	400	22	P	V
		5716	83.03	-26.65	109.68	70.09	33.8	13.54	34.4	400	22	P	V
		5724.5	83.99	-37.07	121.06	70.99	33.85	13.56	34.41	400	22	P	V
	*	5755	115.95	-	-	102.78	34	13.6	34.43	400	22	P	V
	*	5755	107.11	-	-	93.94	34	13.6	34.43	400	22	A	V
		5851.75	53.23	-64.98	118.21	40.13	33.9	13.71	34.51	400	22	P	V
		5859.5	52.41	-57.13	109.54	39.29	33.92	13.71	34.51	400	22	P	V
		5875.5	52.61	-52.22	104.83	39.47	33.95	13.72	34.53	400	22	P	V
		5942.75	50.87	-17.33	68.2	37.68	34	13.77	34.58	400	22	P	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)
		5640.75	52.2	-16	68.2	39.68	33.44	13.43	34.35	166	360	P	H
		5699.5	55.93	-48.9	104.83	43.1	33.7	13.52	34.39	166	360	P	H
		5720	65.34	-45.46	110.8	52.38	33.82	13.55	34.41	166	360	P	H
		5722.25	66.69	-49.24	115.93	53.72	33.83	13.55	34.41	166	360	P	H
	*	5795	119.74	-	-	106.54	34	13.66	34.46	166	360	P	H
	*	5795	111.28	-	-	98.08	34	13.66	34.46	166	360	A	H
		5852.5	72.57	-43.93	116.5	59.46	33.91	13.71	34.51	166	360	P	H
		5859.75	68.85	-40.62	109.47	55.73	33.92	13.71	34.51	166	360	P	H
		5879	61.79	-40.44	102.23	48.63	33.96	13.73	34.53	166	360	P	H
		5942.25	54.23	-13.97	68.2	41.04	34	13.77	34.58	166	360	P	H
802.11ax													H
HE40 Full													H
CH 159		5647.25	50.76	-17.44	68.2	38.19	33.48	13.44	34.35	395	20	P	V
5795MHz		5685	52.1	-42.03	94.13	39.34	33.64	13.5	34.38	395	20	P	V
		5717.5	59.56	-50.54	110.1	46.61	33.81	13.55	34.41	395	20	P	V
		5724.75	62.78	-58.85	121.63	49.78	33.85	13.56	34.41	395	20	P	V
	*	5795	114.22	-	-	101.02	34	13.66	34.46	395	20	P	V
	*	5795	106.42	-	-	93.22	34	13.66	34.46	395	20	A	V
		5854.75	63.75	-47.62	111.37	50.64	33.91	13.71	34.51	395	20	P	V
		5855.5	64.93	-45.73	110.66	51.82	33.91	13.71	34.51	395	20	P	V
		5876.75	58.35	-45.55	103.9	45.21	33.95	13.72	34.53	395	20	P	V
		5934	51.41	-16.79	68.2	38.22	34	13.76	34.57	395	20	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ax HE40_Full (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)
		1264	52.52	-15.68	68.2	53.83	24.3	6.18	31.79	239	356	P	H
		1336	55.56	-18.44	74	56.59	24.44	6.33	31.8	176	59	P	H
		1336	44.48	-9.52	54	45.51	24.44	6.33	31.8	176	59	A	H
		1858	50.29	-17.91	68.2	49.57	25.28	7.48	32.04	239	356	P	H
		11510	50.36	-23.64	74	31.2	39.02	20.13	39.99	-	-	P	H
		11510	40.8	-13.2	54	21.64	39.02	20.13	39.99	-	-	A	H
		17265	51.18	-17.02	68.2	32.14	40.6	24.74	46.3	-	-	P	H
													H
													H
													H
802.11ax													H
HE40 Full													H
CH 151		1264	50.8	-17.4	68.2	52.11	24.3	6.18	31.79	400	22	P	V
5755MHz		1336	54.38	-19.62	74	55.41	24.44	6.33	31.8	195	181	P	V
		1336	46.72	-7.28	54	47.75	24.44	6.33	31.8	195	181	A	V
		1858	50.72	-17.48	68.2	50	25.28	7.48	32.04	400	22	P	V
		11510	50.05	-23.95	74	30.89	39.02	20.13	39.99	-	-	P	V
		11510	40.9	-13.1	54	21.74	39.02	20.13	39.99	-	-	A	V
		17265	49.92	-18.28	68.2	30.88	40.6	24.74	46.3	-	-	P	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)
		1264	54.41	-13.79	68.2	55.72	24.3	6.18	31.79	166	360	P	H
		1336	54.76	-19.24	74	55.79	24.44	6.33	31.8	182	55	P	H
		1336	44.45	-9.55	54	45.48	24.44	6.33	31.8	182	55	A	H
		1858	48.41	-19.79	68.2	47.69	25.28	7.48	32.04	166	360	P	H
		11590	51.26	-22.74	74	32.1	39.02	20.22	40.08	-	-	P	H
		11590	40.9	-13.1	54	21.74	39.02	20.22	40.08	-	-	A	H
		17385	49.54	-18.66	68.2	30.63	40.5	24.84	46.43	-	-	P	H
													H
													H
													H
802.11ax													H
HE40 Full													H
CH 159		1264	51.22	-16.98	68.2	52.53	24.3	6.18	31.79	395	20	P	V
5795MHz		1336	53.59	-20.41	74	54.62	24.44	6.33	31.8	199	181	P	V
		1336	46.44	-7.56	54	47.47	24.44	6.33	31.8	199	181	A	V
		1858	52.11	-16.09	68.2	51.39	25.28	7.48	32.04	395	20	P	V
		11590	51.39	-22.61	74	32.23	39.02	20.22	40.08	-	-	P	V
		11590	40.85	-13.15	54	21.69	39.02	20.22	40.08	-	-	A	V
		17385	50.65	-17.55	68.2	31.74	40.5	24.84	46.43	-	-	P	V
													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.

Band 4 5725~5850MHz

WIFI 802.11ax HE40_Partial 242 (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)
		5642.75	63.58	-4.62	68.2	51.04	33.46	13.43	34.35	254	0	P	H
		5696.75	77.7	-25.1	102.8	64.88	33.69	13.52	34.39	254	0	P	H
		5717	94.62	-15.34	109.96	81.67	33.8	13.55	34.4	254	0	P	H
		5721.5	91.69	-22.53	114.22	78.72	33.83	13.55	34.41	254	0	P	H
	*	5755	120.97	-	-	107.8	34	13.6	34.43	254	0	P	H
	*	5755	112.86	-	-	99.69	34	13.6	34.43	254	0	A	H
		5852.5	65.86	-50.64	116.5	52.75	33.91	13.71	34.51	254	0	P	H
		5865.75	58.48	-49.31	107.79	45.35	33.93	13.72	34.52	254	0	P	H
		5878.25	59.72	-43.07	102.79	46.57	33.96	13.72	34.53	254	0	P	H
802.11ax		5939	53.13	-15.07	68.2	39.93	34	13.77	34.57	254	0	P	H
HE40													H
Partial													H
242/61		5641.5	60.27	-7.93	68.2	47.74	33.45	13.43	34.35	149	330	P	V
CH 151		5693.25	74.42	-25.8	100.22	61.63	33.67	13.51	34.39	149	330	P	V
5755MHz		5717.25	88.83	-21.2	110.03	75.89	33.8	13.55	34.41	149	330	P	V
		5721	88.46	-24.62	113.08	75.49	33.83	13.55	34.41	149	330	P	V
	*	5755	118.01	-	-	104.84	34	13.6	34.43	149	330	P	V
	*	5755	108.69	-	-	95.52	34	13.6	34.43	149	330	A	V
		5852.5	61.93	-54.57	116.5	48.82	33.91	13.71	34.51	149	330	P	V
		5862.25	55.66	-53.11	108.77	42.55	33.92	13.71	34.52	149	330	P	V
		5878	55.79	-47.18	102.97	42.64	33.96	13.72	34.53	149	330	P	V
		5944	52.24	-15.96	68.2	39.05	34	13.77	34.58	149	330	P	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)
		5627.25	55.87	-12.33	68.2	43.44	33.36	13.41	34.34	257	0	P	H
		5697.5	69.51	-33.85	103.36	56.69	33.69	13.52	34.39	257	0	P	H
		5718.25	69.48	-40.83	110.31	56.53	33.81	13.55	34.41	257	0	P	H
		5723.25	71.54	-46.67	118.21	58.56	33.84	13.55	34.41	257	0	P	H
	*	5795	119.88	-	-	106.68	34	13.66	34.46	257	0	P	H
	*	5795	112.7	-	-	99.5	34	13.66	34.46	257	0	A	H
		5852.25	74.21	-42.86	117.07	61.11	33.9	13.71	34.51	257	0	P	H
		5863.75	71.07	-37.28	108.35	57.95	33.93	13.71	34.52	257	0	P	H
		5887.75	64.91	-30.83	95.74	51.73	33.98	13.73	34.53	257	0	P	H
802.11ax		5927.75	59.17	-9.03	68.2	45.98	34	13.76	34.57	257	0	P	H
HE40													H
Partial													H
242/62		5631.5	51.8	-16.4	68.2	39.33	33.39	13.42	34.34	400	90	P	V
CH 159		5696.5	60.65	-41.97	102.62	47.84	33.69	13.51	34.39	400	90	P	V
5795MHz		5715.75	65.88	-43.73	109.61	52.95	33.79	13.54	34.4	400	90	P	V
		5724.25	56.42	-64.07	120.49	43.42	33.85	13.56	34.41	400	90	P	V
	*	5795	118.43	-	-	105.23	34	13.66	34.46	400	90	P	V
	*	5795	109.64	-	-	96.44	34	13.66	34.46	400	90	A	V
		5852	72.58	-45.06	117.64	59.48	33.9	13.71	34.51	400	90	P	V
		5861	69.49	-39.63	109.12	56.37	33.92	13.71	34.51	400	90	P	V
		5877.5	66.34	-37	103.34	53.19	33.96	13.72	34.53	400	90	P	V
		5947	52.59	-15.61	68.2	39.4	34	13.77	34.58	400	90	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ax HE80_Full (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)
		5649.25	66.96	-1.24	68.2	54.37	33.5	13.44	34.35	247	358	P	H
		5698.5	72.27	-31.82	104.09	59.45	33.69	13.52	34.39	247	358	P	H
		5717.75	76.73	-33.44	110.17	63.78	33.81	13.55	34.41	247	358	P	H
		5721.25	76.34	-37.31	113.65	63.37	33.83	13.55	34.41	247	358	P	H
	*	5775	113.51	-	-	100.33	34	13.63	34.45	247	358	P	H
	*	5775	104.46	-	-	91.28	34	13.63	34.45	247	358	A	H
		5850	69.31	-52.89	122.2	56.22	33.9	13.7	34.51	247	358	P	H
		5869.5	67	-39.74	106.74	53.86	33.94	13.72	34.52	247	358	P	H
		5880.25	64.74	-36.56	101.3	51.58	33.96	13.73	34.53	247	358	P	H
		5929.25	56.95	-11.25	68.2	43.76	34	13.76	34.57	247	358	P	H
802.11ax													H
HE80 Full													H
CH 155		5649	62.92	-5.28	68.2	50.34	33.49	13.44	34.35	400	343	P	V
5775MHz		5696.25	67.04	-35.4	102.44	54.23	33.69	13.51	34.39	400	343	P	V
		5708.25	69.78	-37.73	107.51	56.9	33.75	13.53	34.4	400	343	P	V
		5721.5	65.68	-48.54	114.22	52.71	33.83	13.55	34.41	400	343	P	V
	*	5775	109.74	-	-	96.56	34	13.63	34.45	400	343	P	V
	*	5775	100.72	-	-	87.54	34	13.63	34.45	400	343	A	V
		5851.5	63.34	-55.44	118.78	50.24	33.9	13.71	34.51	400	343	P	V
		5856.5	64.95	-45.43	110.38	51.84	33.91	13.71	34.51	400	343	P	V
		5877.25	61.09	-42.44	103.53	47.95	33.95	13.72	34.53	400	343	P	V
		5939.25	53.64	-14.56	68.2	40.44	34	13.77	34.57	400	343	P	V
													V
													V

Remark

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

Band 4 5725~5850MHz

WIFI 802.11ax HE80_Full (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)
		1264	52.49	-15.71	68.2	53.8	24.3	6.18	31.79	247	358	P	H
		1336	53.98	-20.02	74	55.01	24.44	6.33	31.8	182	51	P	H
		1336	44.13	-9.87	54	45.16	24.44	6.33	31.8	182	51	A	H
		1858	51.32	-16.88	68.2	50.6	25.28	7.48	32.04	247	358	P	H
		11550	51.36	-22.64	74	32.12	39.1	20.17	40.03	-	-	P	H
		11550	40.97	-13.03	54	21.73	39.1	20.17	40.03	-	-	A	H
		17325	50.25	-17.95	68.2	31.27	40.55	24.79	46.36	-	-	P	H
													H
													H
													H
802.11ax													H
HE80 Full													H
CH 155		1264	47.07	-21.13	68.2	48.38	24.3	6.18	31.79	400	343	P	V
5775MHz		1336	53.28	-20.72	74	54.31	24.44	6.33	31.8	199	180	P	V
		1336	46.61	-7.39	54	47.64	24.44	6.33	31.8	199	180	A	V
		1858	46.76	-21.44	68.2	46.04	25.28	7.48	32.04	400	343	P	V
		11550	51.47	-22.53	74	32.23	39.1	20.17	40.03	-	-	P	V
		11550	41.05	-12.95	54	21.81	39.1	20.17	40.03	-	-	A	V
		17325	51.2	-17	68.2	32.22	40.55	24.79	46.36	-	-	P	V
													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.

Band 4 5725~5850MHz

WIFI 802.11ax HE80_Partial 484 (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)
		5646.75	63.16	-5.04	68.2	50.59	33.48	13.44	34.35	267	0	P	H
		5663	67.6	-10.25	77.85	54.95	33.55	13.46	34.36	267	0	P	H
		5717.75	70.37	-39.8	110.17	57.42	33.81	13.55	34.41	267	0	P	H
		5723.25	72.23	-45.98	118.21	59.25	33.84	13.55	34.41	267	0	P	H
	*	5775	112.59	-	-	99.41	34	13.63	34.45	267	0	P	H
	*	5775	103.45	-	-	90.27	34	13.63	34.45	267	0	A	H
		5853.5	72.63	-41.59	114.22	59.52	33.91	13.71	34.51	267	0	P	H
		5863	69.35	-39.21	108.56	56.23	33.93	13.71	34.52	267	0	P	H
		5883.75	65.86	-32.84	98.7	52.69	33.97	13.73	34.53	267	0	P	H
802.11ax		5935.75	58.85	-9.35	68.2	45.65	34	13.77	34.57	267	0	P	H
HE80													H
Partial													H
484/65		5648	58.34	-9.86	68.2	45.76	33.49	13.44	34.35	150	331	P	V
CH 155		5667	63.66	-17.16	80.82	50.99	33.57	13.47	34.37	150	331	P	V
5775MHz		5718.25	63.78	-46.53	110.31	50.83	33.81	13.55	34.41	150	331	P	V
		5722.75	70.16	-46.91	117.07	57.18	33.84	13.55	34.41	150	331	P	V
	*	5775	108.86	-	-	95.68	34	13.63	34.45	150	331	P	V
	*	5775	99.47	-	-	86.29	34	13.63	34.45	150	331	A	V
		5852	57.38	-60.26	117.64	44.28	33.9	13.71	34.51	150	331	P	V
		5862.5	67.69	-41.01	108.7	54.57	33.93	13.71	34.52	150	331	P	V
		5877.25	62.99	-40.54	103.53	49.85	33.95	13.72	34.53	150	331	P	V
		5929.5	52.52	-15.68	68.2	39.33	34	13.76	34.57	150	331	P	V
													V
													V

Remark

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

WIFI Ant. 1+2	Note	Frequency (MHz)	Level (dBµV/m)	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)
		5647.25	66.76	-1.44	68.2	54.19	33.48	13.44	34.35	258	0	P	H
		5697.25	71.45	-31.72	103.17	58.63	33.69	13.52	34.39	258	0	P	H
		5718.5	78.42	-31.96	110.38	65.47	33.81	13.55	34.41	258	0	P	H
		5722.5	80.19	-36.31	116.5	67.22	33.83	13.55	34.41	258	0	P	H
	*	5775	112.8	-	-	99.62	34	13.63	34.45	258	0	P	H
	*	5775	104.72	-	-	91.54	34	13.63	34.45	258	0	A	H
		5852.5	74.18	-42.32	116.5	61.07	33.91	13.71	34.51	258	0	P	H
		5862.25	75.85	-32.92	108.77	62.74	33.92	13.71	34.52	258	0	P	H
		5882.75	71.27	-28.17	99.44	58.1	33.97	13.73	34.53	258	0	P	H
802.11ax		5928	63.19	-5.01	68.2	50	34	13.76	34.57	258	0	P	H
HE80													H
Partial													H
484/66		5632.5	57.74	-10.46	68.2	45.26	33.4	13.42	34.34	113	325	P	V
CH 155		5696	66.13	-36.12	102.25	53.33	33.68	13.51	34.39	113	325	P	V
5775MHz		5712.25	71.46	-37.17	108.63	58.55	33.77	13.54	34.4	113	325	P	V
	*	5725	72.82	-49.38	122.2	59.82	33.85	13.56	34.41	113	325	P	V
	*	5775	108.54	-	-	95.36	34	13.63	34.45	113	325	P	V
		5775	100.31	-	-	87.13	34	13.63	34.45	113	325	A	V
		5850.5	74.43	-46.63	121.06	61.33	33.9	13.71	34.51	113	325	P	V
		5861.25	74.67	-34.38	109.05	61.55	33.92	13.71	34.51	113	325	P	V
		5876	68.39	-36.07	104.46	55.25	33.95	13.72	34.53	113	325	P	V
		5939.75	60.95	-7.25	68.2	47.75	34	13.77	34.57	113	325	P	V
													V
													V

Remark

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

Emission above 1GHz

5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

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)
802.11ax HE80 Full SHF		24839	37.95	-36.05	74	38.61	39.46	19.7	59.82	-	-	P	H
		39745	47.52	-26.48	74	38.4	45.16	27.96	64	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		20975	38.79	-35.21	74	45.71	38.2	17.3	62.42	-	-	P	V
		38920	47.81	-26.19	74	39.43	44.38	27.5	63.5	-	-	P	V
													V
													V
													V
													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 with sufficient margin against limit line or noise floor only.

Emission below 1GHz

5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

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)
802.11ax HE80 Full LF		45.39	26.91	-13.09	40	41.35	17.12	1.16	32.72	-	-	P	H
		149.88	32.27	-11.23	43.5	45.77	17.03	2.18	32.71	-	-	P	H
		224.94	37.95	-8.05	46	52.4	15.58	2.64	32.67	-	-	P	H
		450.5	37.51	-8.49	46	43.51	22.96	3.79	32.75	-	-	P	H
		675.9	39.24	-6.76	46	41.04	26.39	4.61	32.8	-	-	P	H
		889.4	37.97	-8.03	46	35.68	28.96	5.25	31.92	-	-	P	H
													H
													H
													H
													H
													H
													H
		45.39	33.61	-6.39	40	48.05	17.12	1.16	32.72	-	-	P	V
		149.07	34.66	-8.84	43.5	48.11	17.09	2.17	32.71	-	-	P	V
		225.21	39.31	-6.69	46	53.71	15.61	2.66	32.67	-	-	P	V
		440.7	42.09	-3.91	46	48.31	22.77	3.75	32.74	100	170	Q	V
		675.2	38.63	-7.37	46	40.43	26.39	4.61	32.8	-	-	P	V
		881.7	38.78	-7.22	46	36.41	29.1	5.25	31.98	-	-	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)
802.11a CH 149 5745MHz		5650	55.45	-12.75	68.2	54.51	32.22	4.58	35.86	103	308	P	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 @ 5650MHz:

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) – 68.2(dBμV/m)

= -12.75 (dB)

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

Appendix D. Radiated Spurious Emission Plots

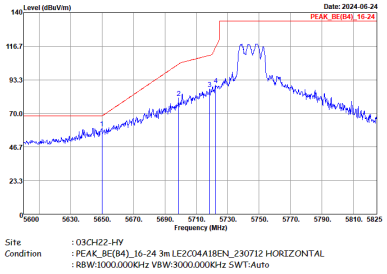
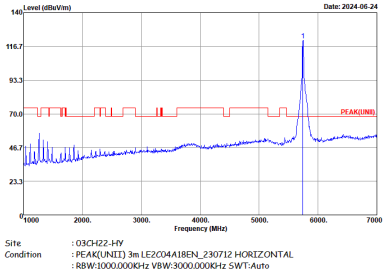
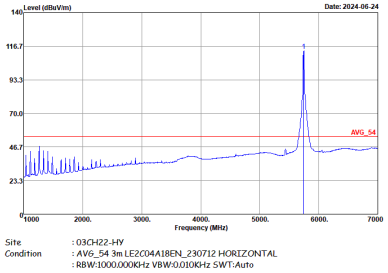
Test Engineer :	Ken Kuo, Bank Lin, Fred Tseng, and Karl Hou	**Temperature :**	20.8~24.8°C
		Relative Humidity :	52.4~63.8%

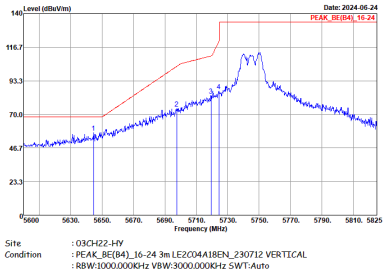
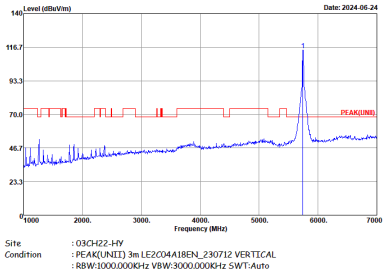
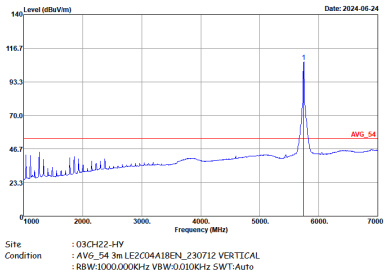
Note symbol

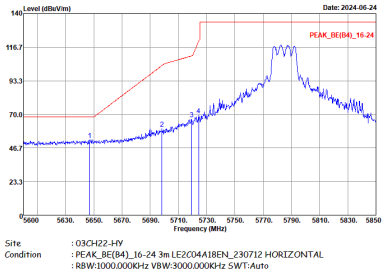
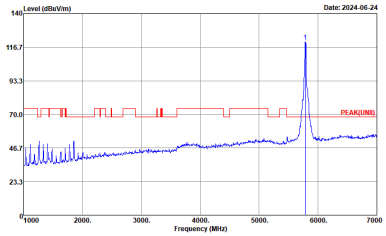
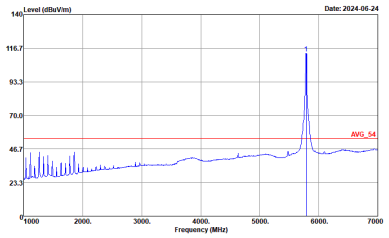
-L	**Low channel location**
-R	**High channel location**

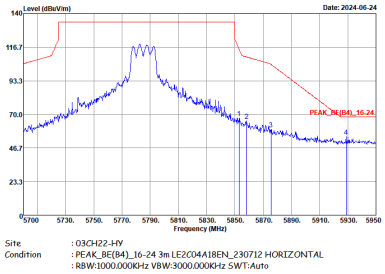
Band 4 - 5725~5850MHz

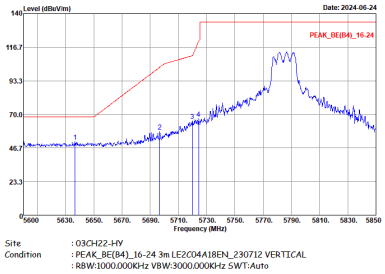
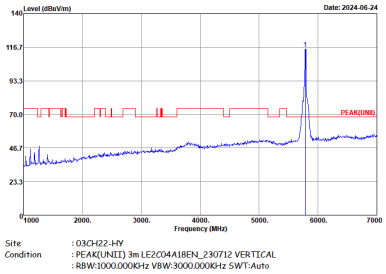
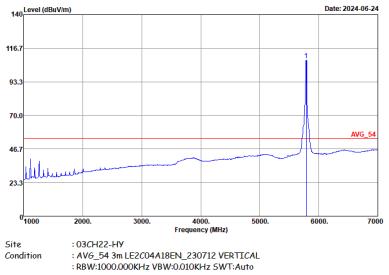
WIFI 802.11a (Band Edge @ 3m)

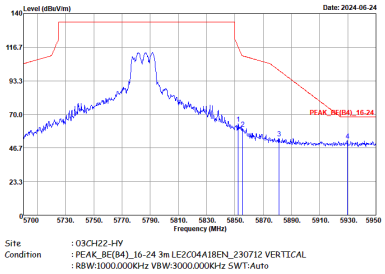
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

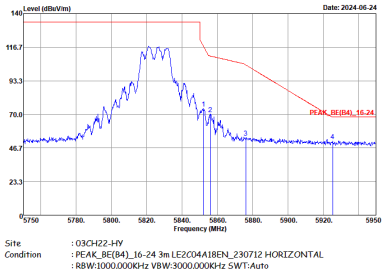
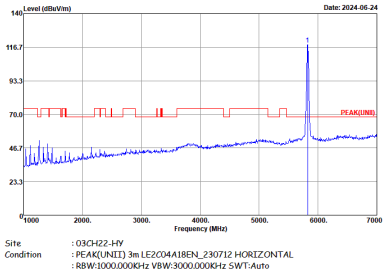
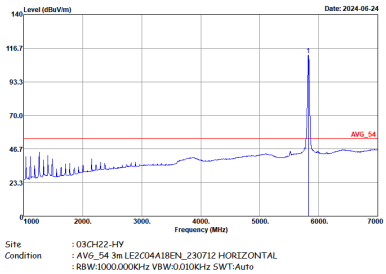
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

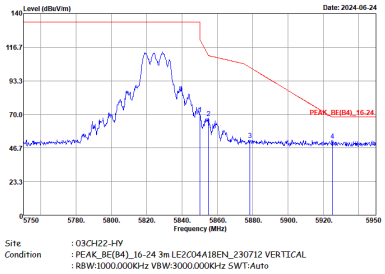
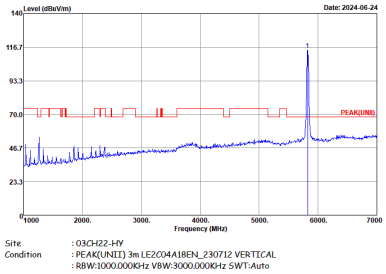
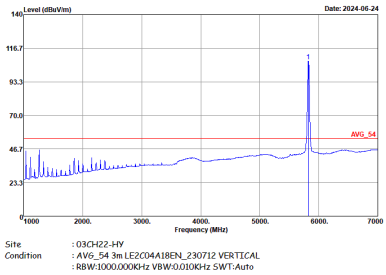
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

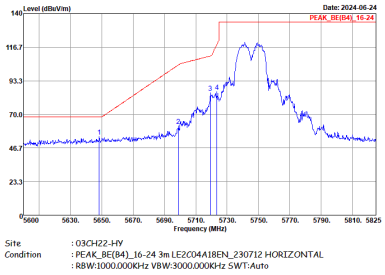
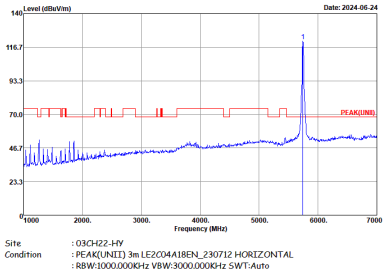
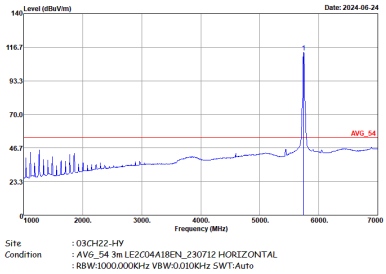
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

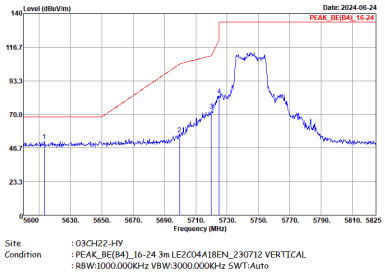
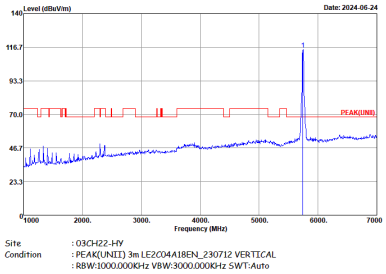
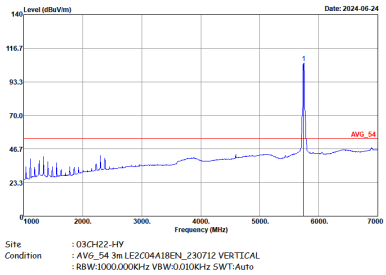
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

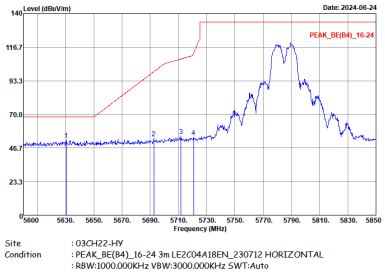
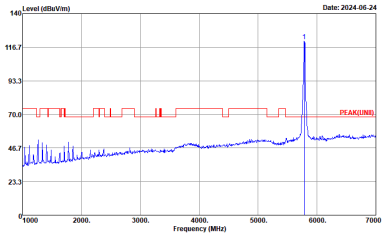
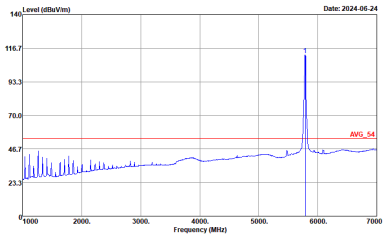
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

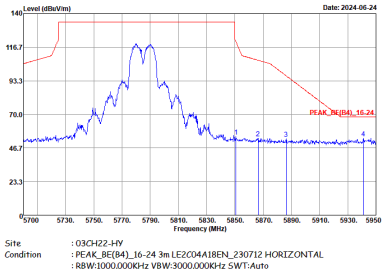
Band 4 5725~5850MHz

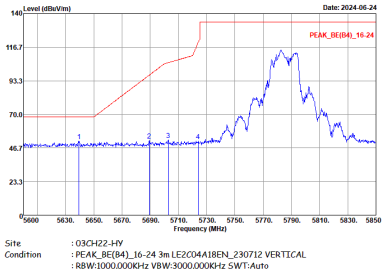
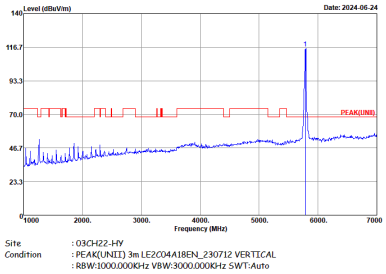
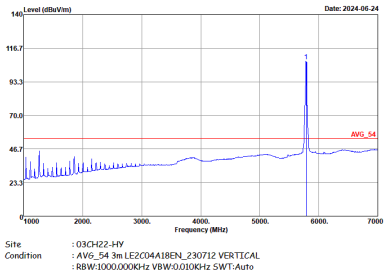
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

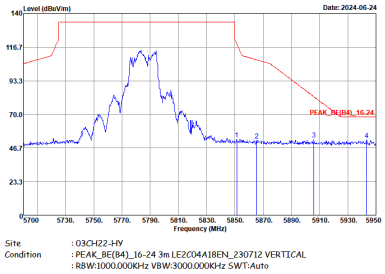
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

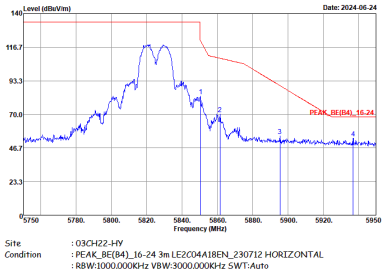
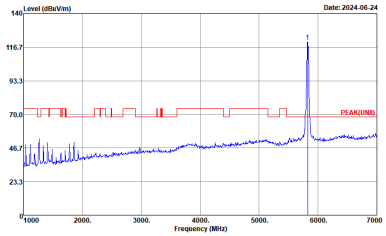
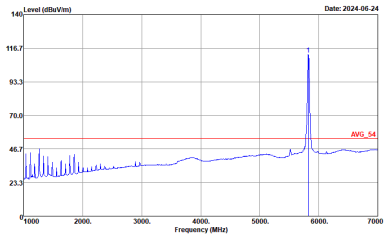
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

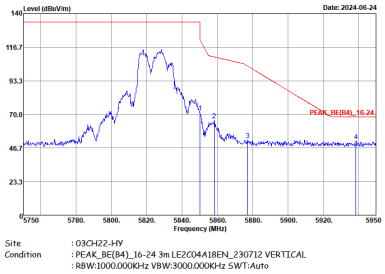
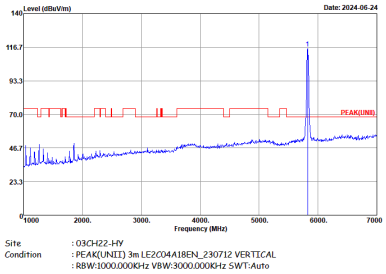
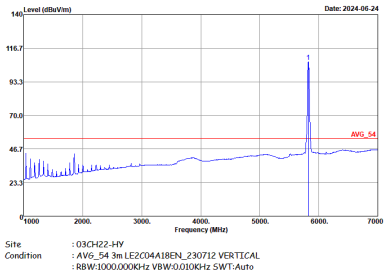
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

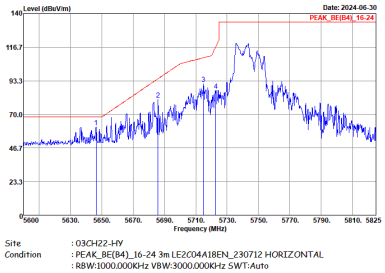
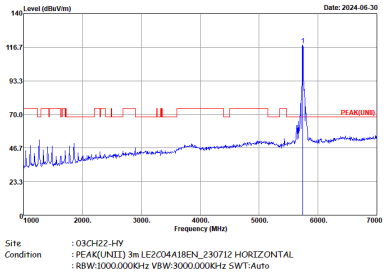
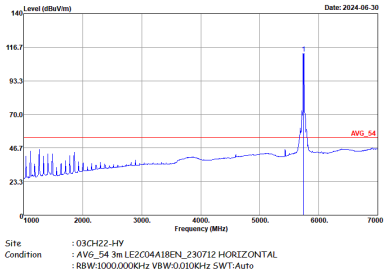
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Vertical	Fundamental
Peak		Left blank

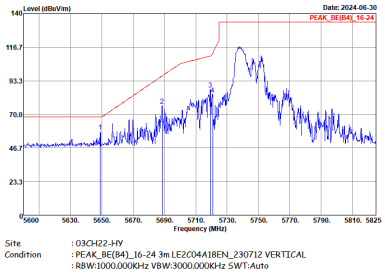
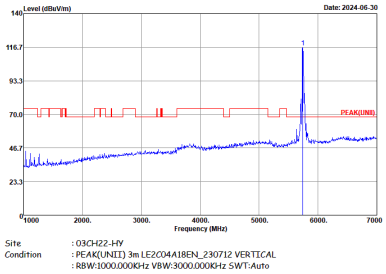
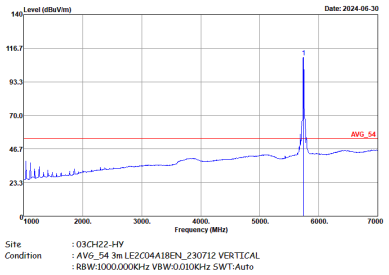
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

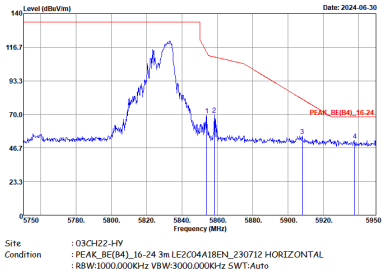
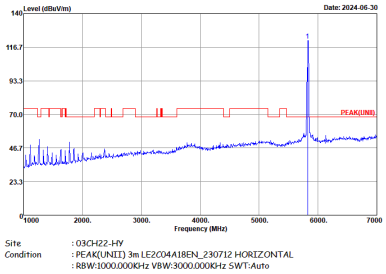
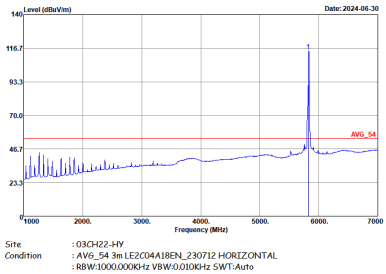
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

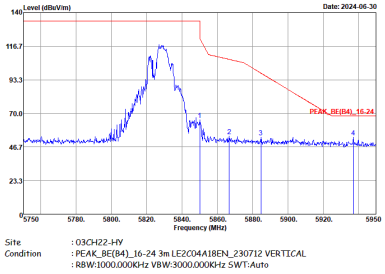
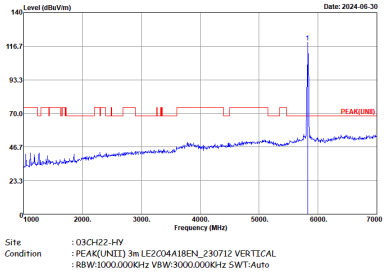
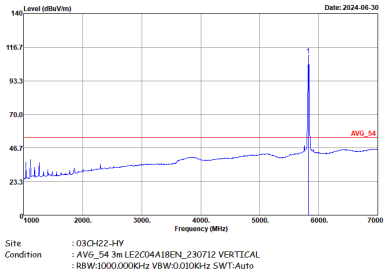
Band 4 5725~5850MHz

WIFI 802.11ax HE20 Partial 106 (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Partial 106/53 CH149 5745MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

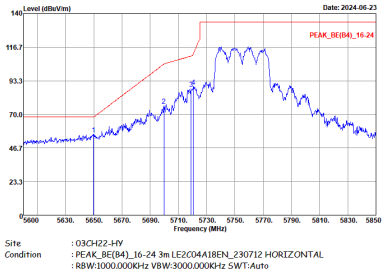
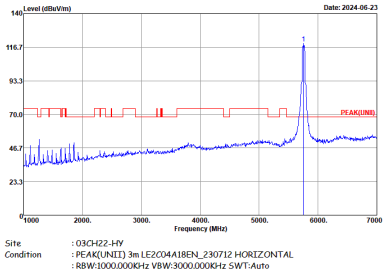
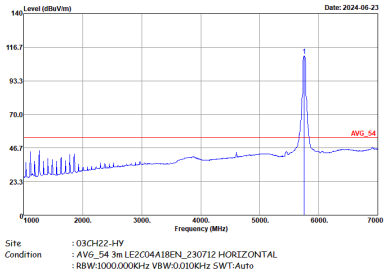
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Partial 106/53 CH149 5745MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank		

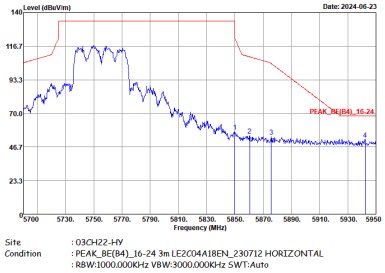
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Partial 106/54 CH165 5825MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

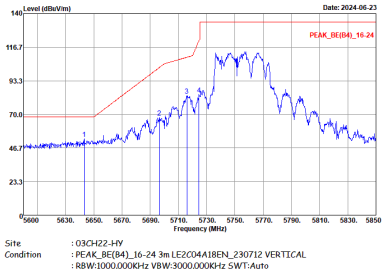
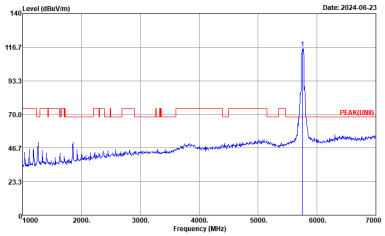
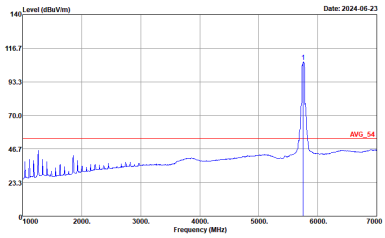
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Partial 106/54 CH165 5825MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

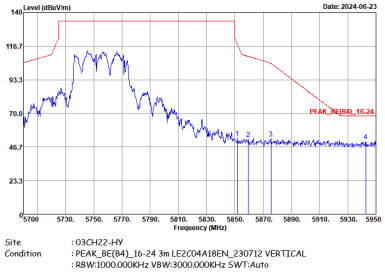
Band 4 5725~5850MHz

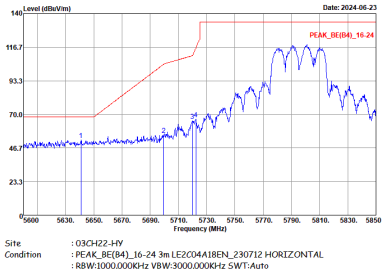
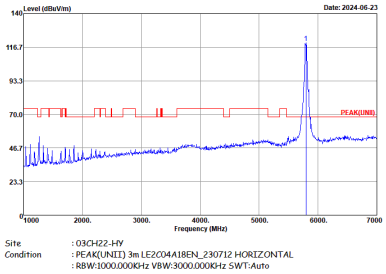
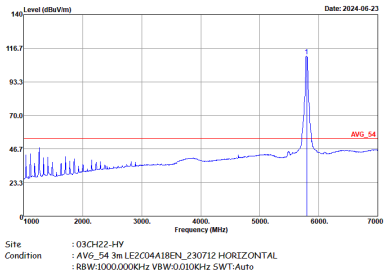
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

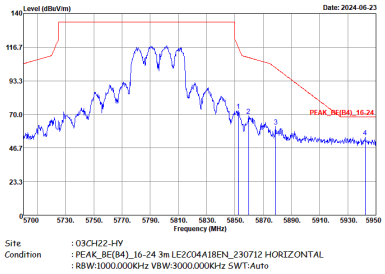
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

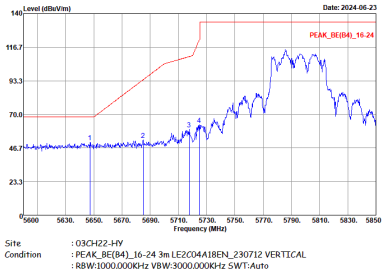
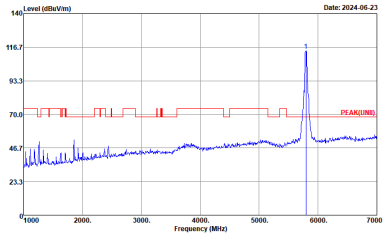
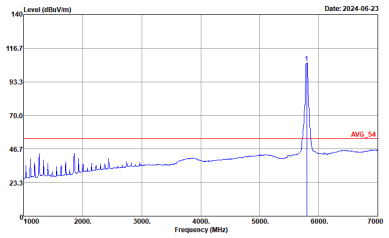
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

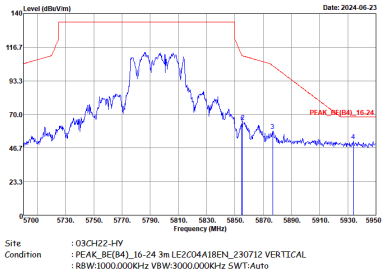
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Vertical	Fundamental
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

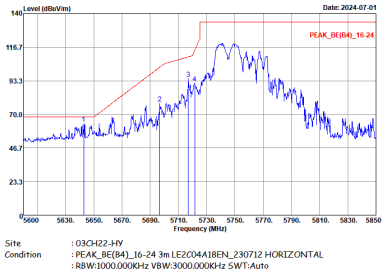
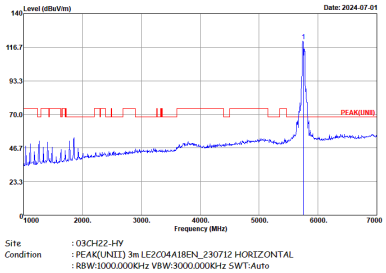
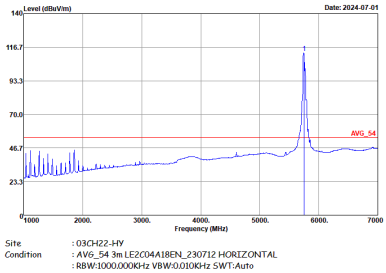
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full HT40 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

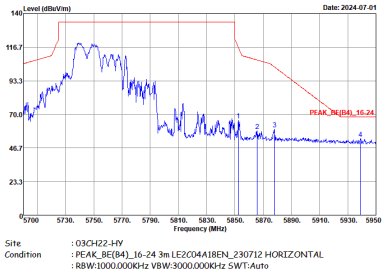
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

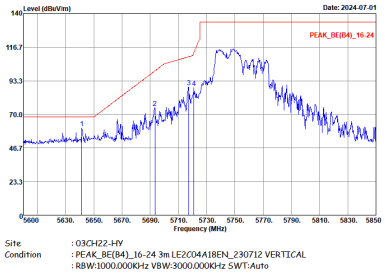
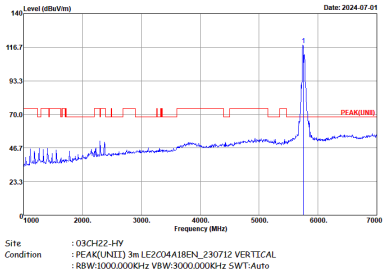
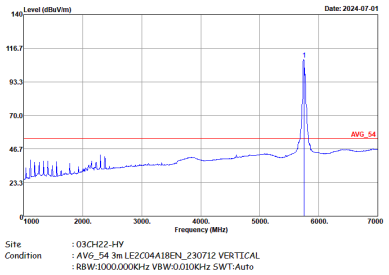
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
1+2	Vertical	Fundamental
Peak		Left blank

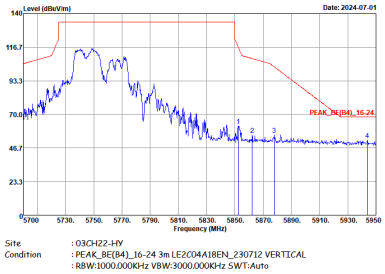
Band 4 5725~5850MHz

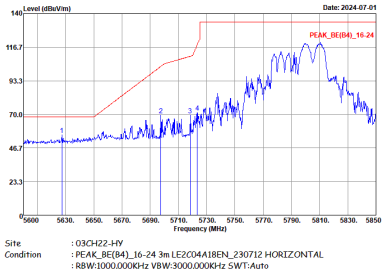
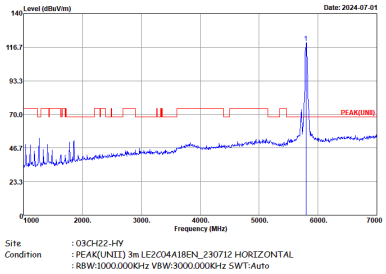
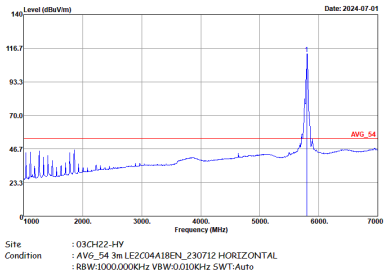
WIFI 802.11ax HE40 Partial 242 (Band Edge @ 3m)

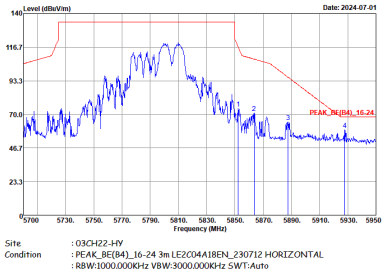
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/61 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

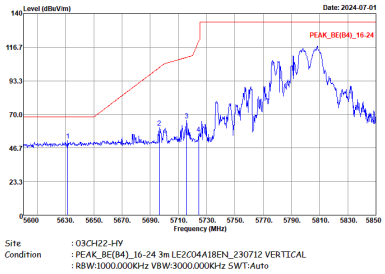
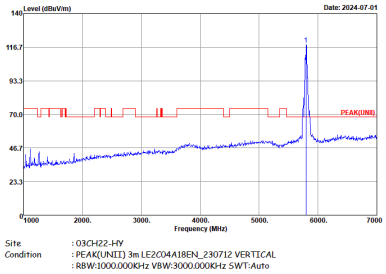
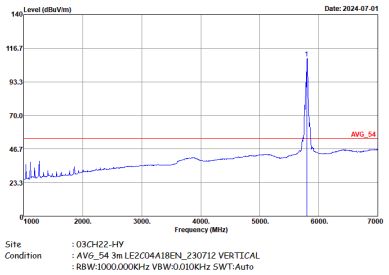
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/61 CH151 5755MHz	
1+2	Horizontal	Fundamental
Peak		Left blank

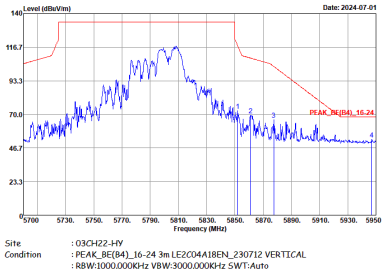
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/61 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/61 CH151 5755MHz	
1+2	Vertical	Fundamental
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/62 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

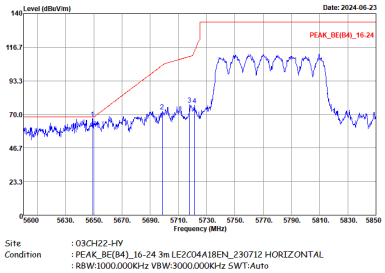
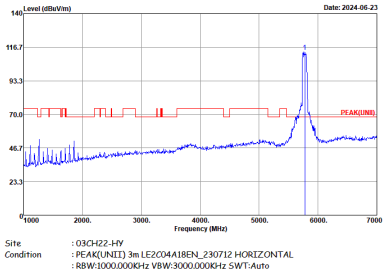
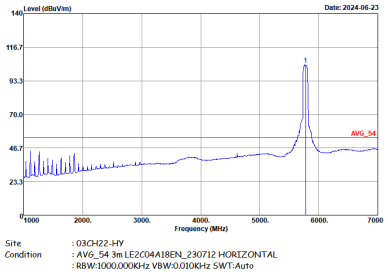
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/62 CH159 5795MHz	
1+2	Horizontal	Fundamental
Peak		Left blank

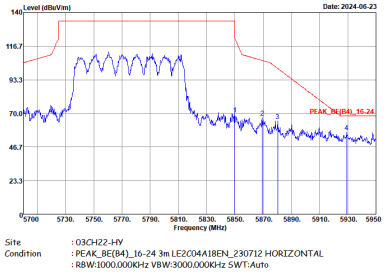
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/62 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

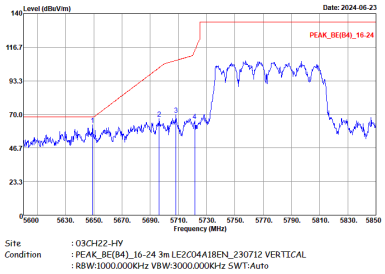
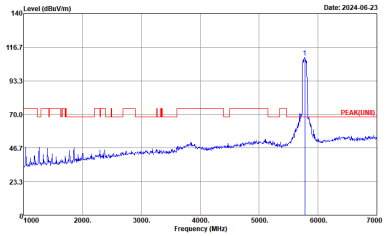
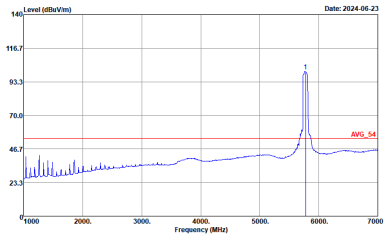
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Partial 242/62 CH159 5795MHz	
1+2	Vertical	Fundamental
Peak		Left blank

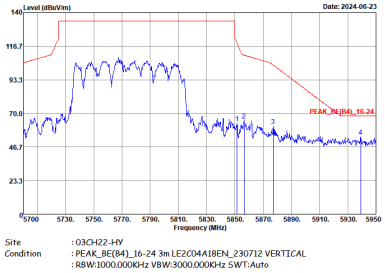
Band 4 5725~5850MHz

WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

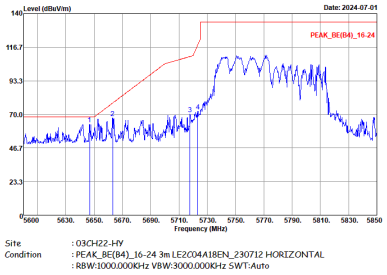
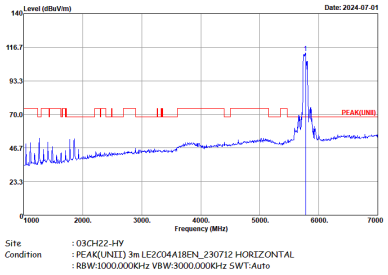
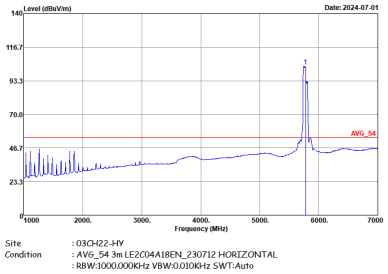
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

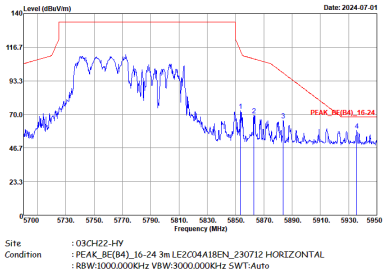
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg	Left blank	 Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

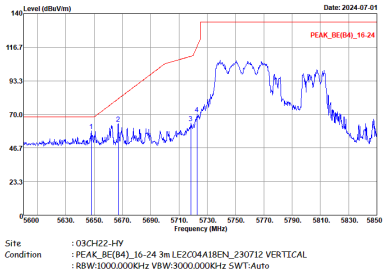
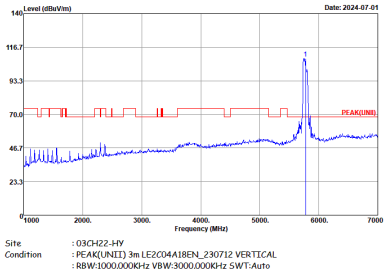
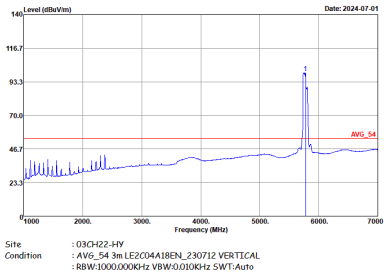
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Vertical	Fundamental
Peak	 Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

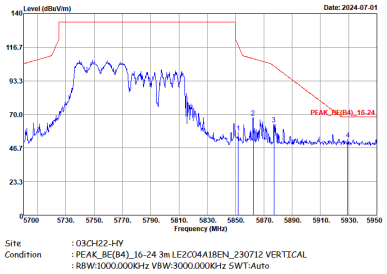
Band 4 5725~5850MHz

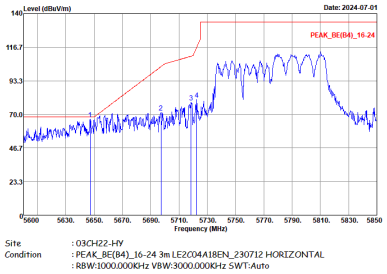
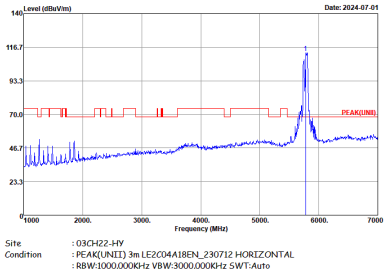
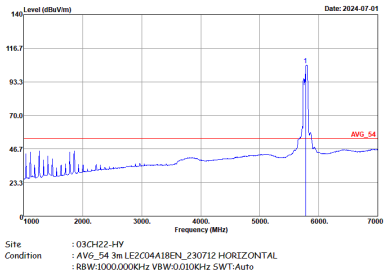
WIFI 802.11ax HE80 Partial 484 (Band Edge @ 3m)

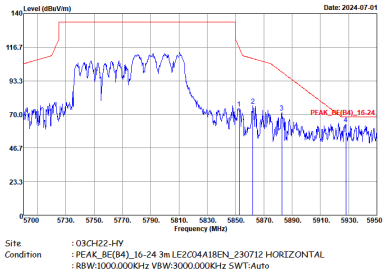
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/65 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

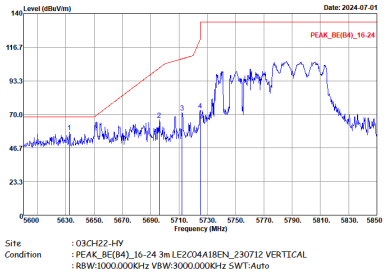
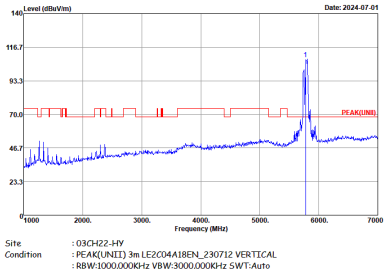
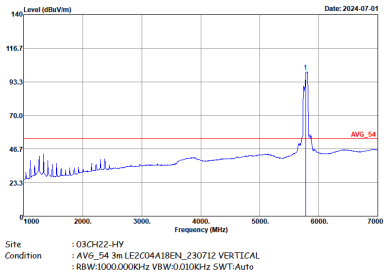
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/65 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		Left blank

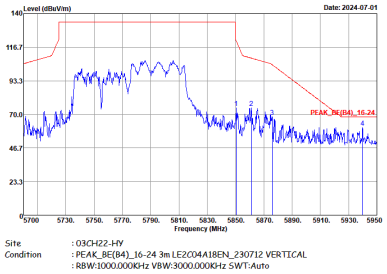
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/65 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank		

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/65 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		Left blank

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/66 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		
Avg	Left blank	

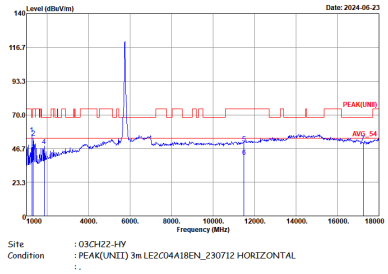
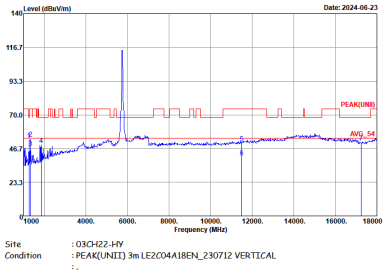
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/66 CH155 5775MHz	
1+2	Horizontal	Fundamental
Peak		Left blank

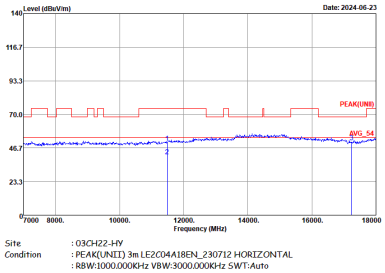
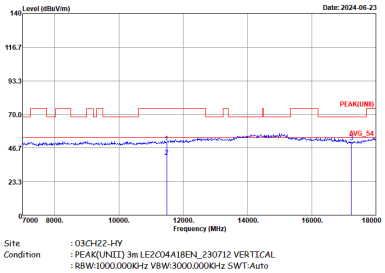
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/66 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		
Avg	Left blank	

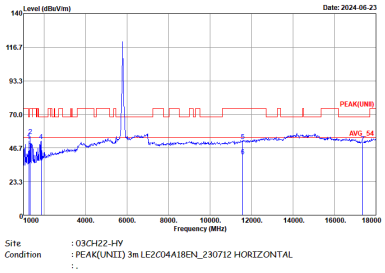
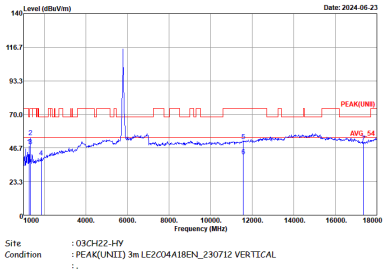
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Partial 484/66 CH155 5775MHz	
1+2	Vertical	Fundamental
Peak		Left blank

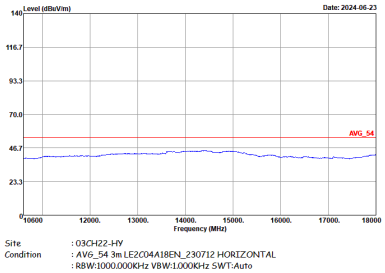
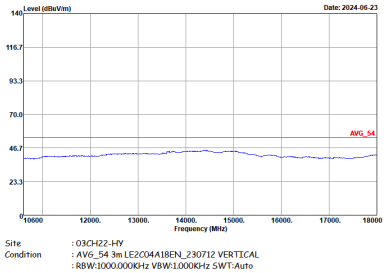
Band 4 - 5725~5850MHz

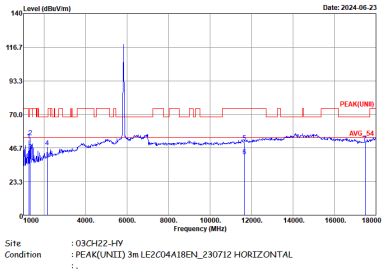
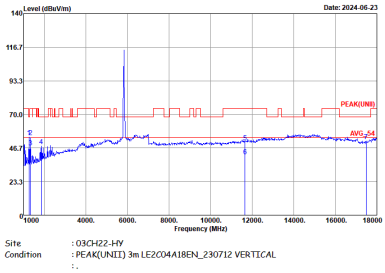
WIFI 802.11a (Harmonic @ 3m)

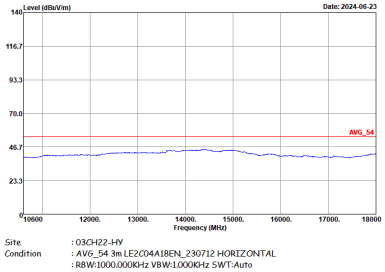
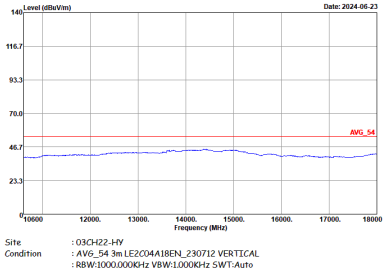
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.		

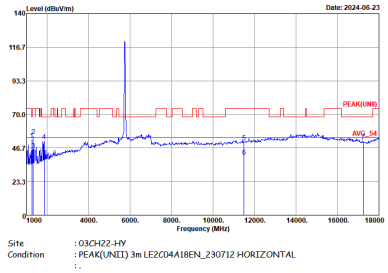
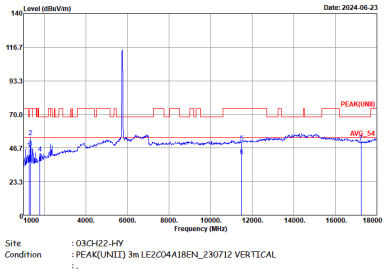
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

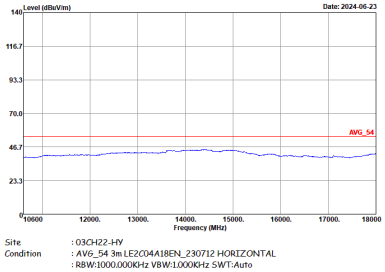
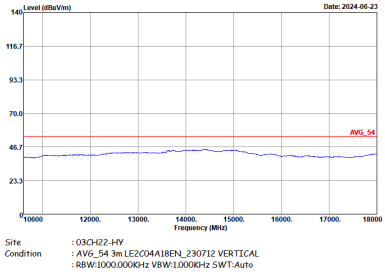
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : .	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : .

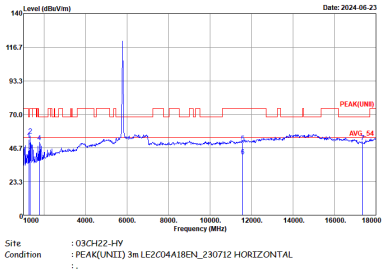
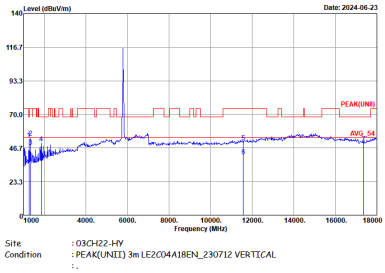
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

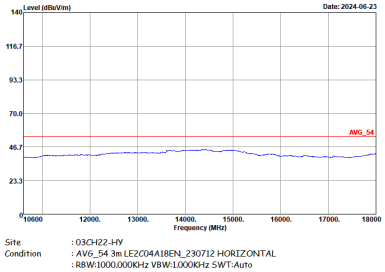
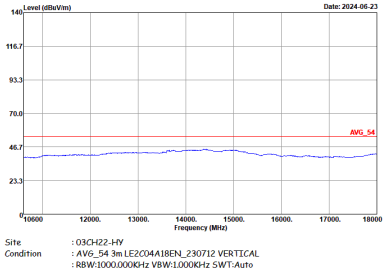
Band 4 5725~5850MHz

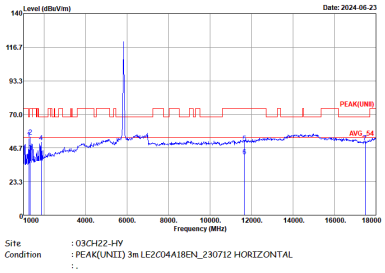
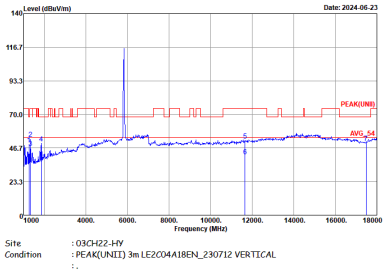
WIFI 802.11ax HE20 Full (Harmonic @ 3m)

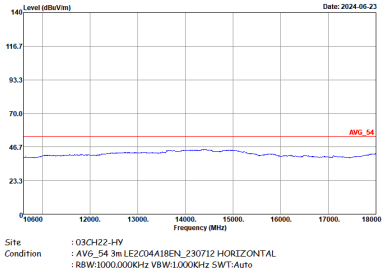
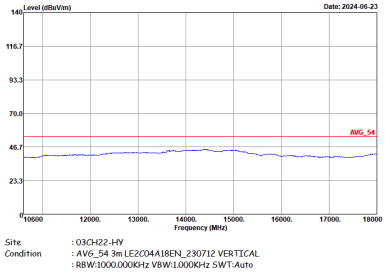
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : .	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : .

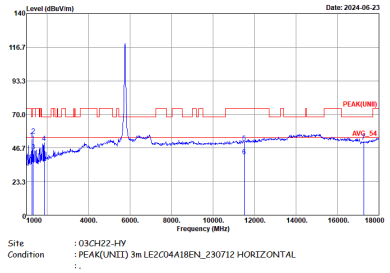
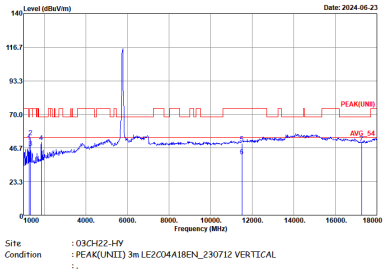
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

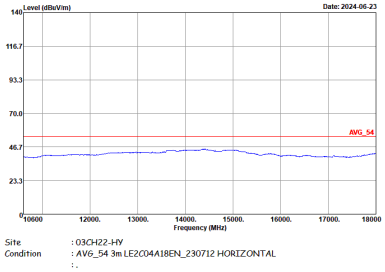
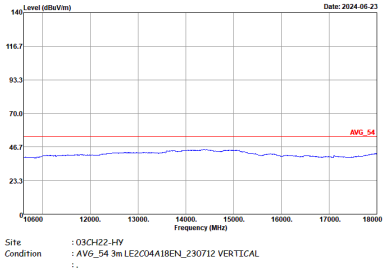
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : .	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : .

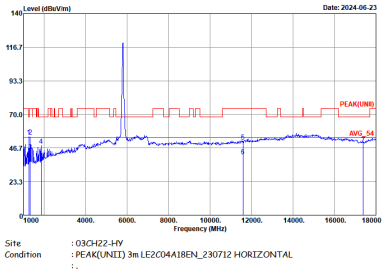
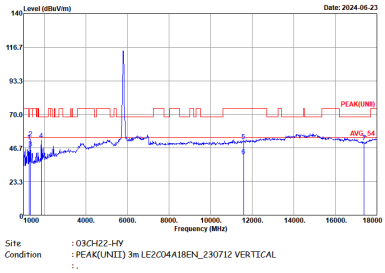
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

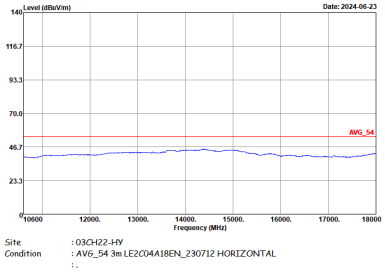
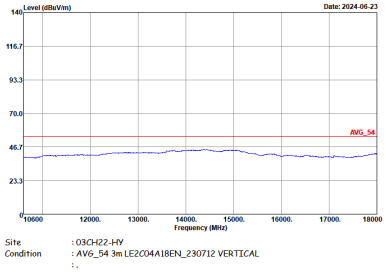
Band 4 5725~5850MHz

WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Horizontal	Vertical
Peak Avg.		

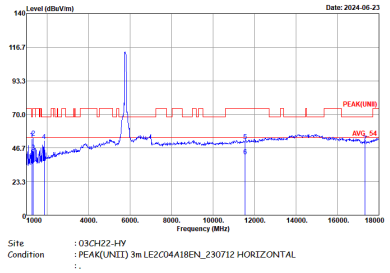
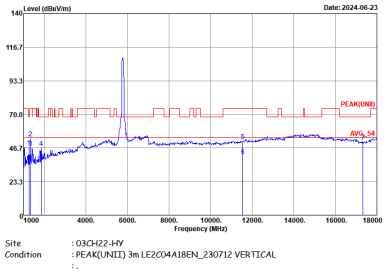
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

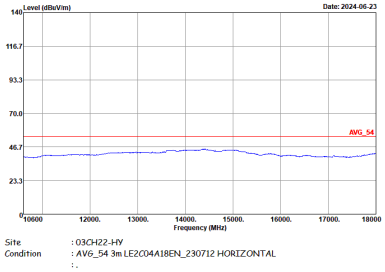
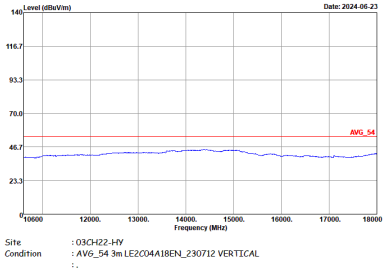
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
1+2	Horizontal	Vertical
Peak Avg.	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 HORIZONTAL : .	 Site : 03CH22-HY Condition : PEAK(UNII) 3m LE2C04A18EN_230712 VERTICAL : .

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

Band 4 5725~5850MHz

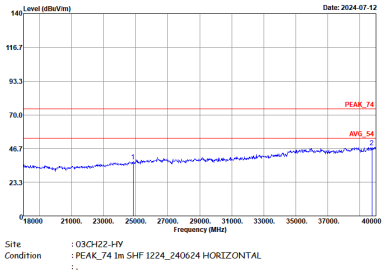
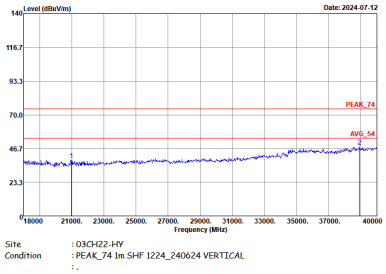
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Horizontal	Vertical
Peak Avg.		

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
1+2	Horizontal	Vertical
14.47G ~14.5G Avg.		

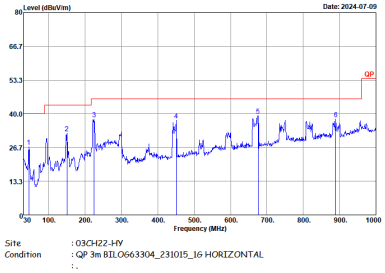
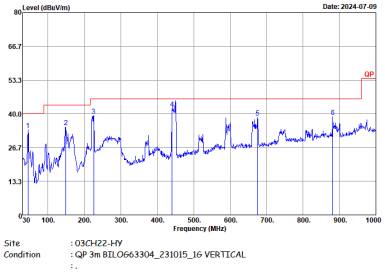
Emission above 18GHz

5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full SHF	
1+2	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

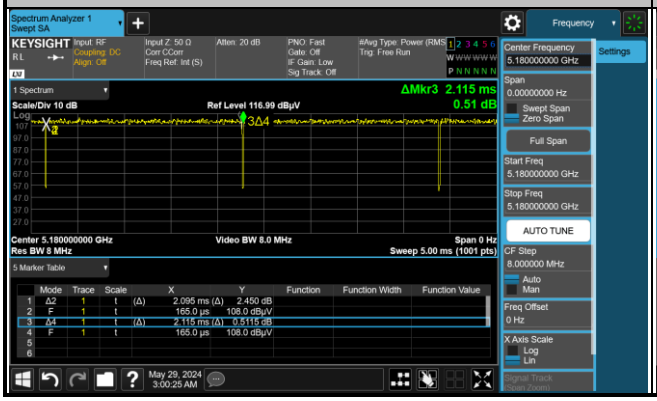
WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full LF	
1+2	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1+2	802.11a	99.05	-	-	10Hz
1+2	802.11ax HE20 Full RU	100.00	-	-	10Hz
1+2	802.11ax HE20 106 RU	99.67	-	-	10Hz
1+2	802.11ax HE40 Full RU	99.51	-	-	10Hz
1+2	802.11ax HE40 242 RU	99.47	-	-	10Hz
1+2	802.11ax HE80 Full RU	99.33	-	-	10Hz
1+2	802.11ax HE80 484 RU	99.33	-	-	10Hz
1+2	802.11ax HE160 Full RU	99.08	-	-	10Hz
1+2	802.11ax HE160 996 RU	97.93	711	1.41	1.5K

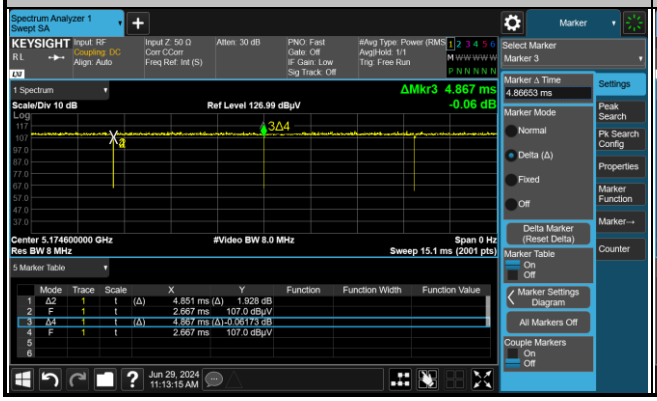
MIMO <Ant. 1+2>

802.11a

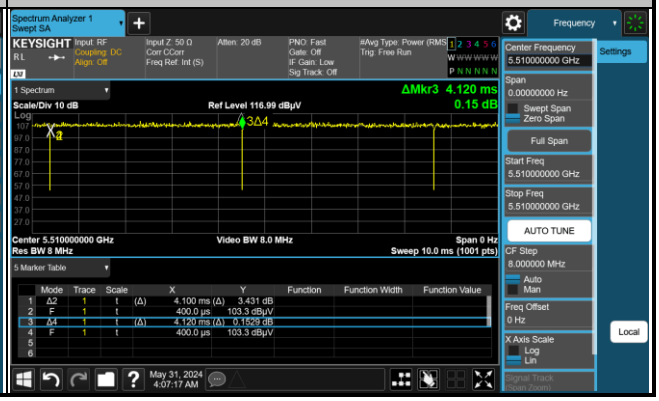


802.11ax HE20 Full RU

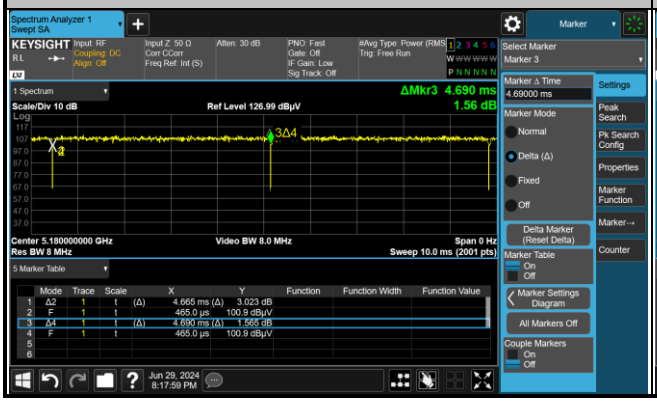
802.11ax HE20 106 RU



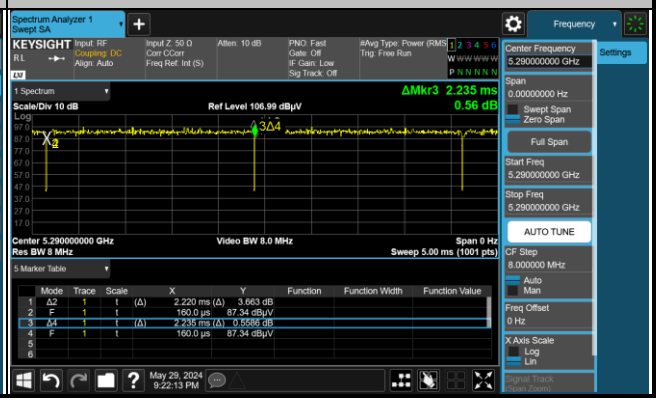
802.11ax HE40 Full RU



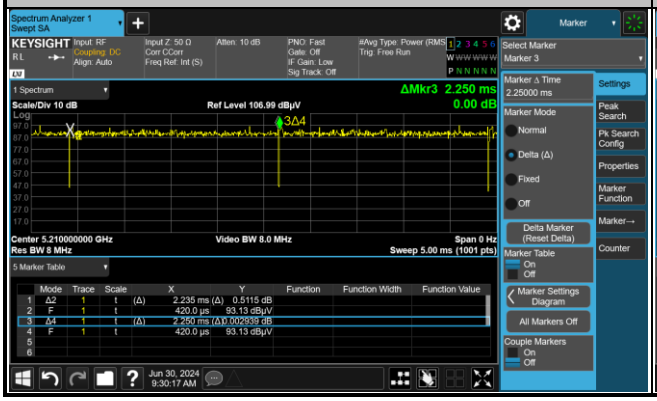
802.11ax HE40 242 RU



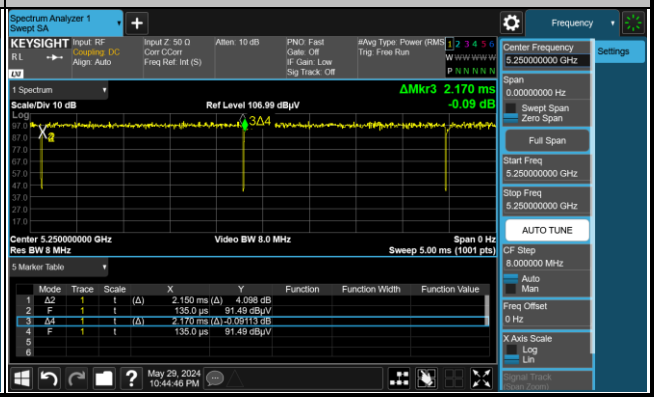
802.11ax HE80 Full RU



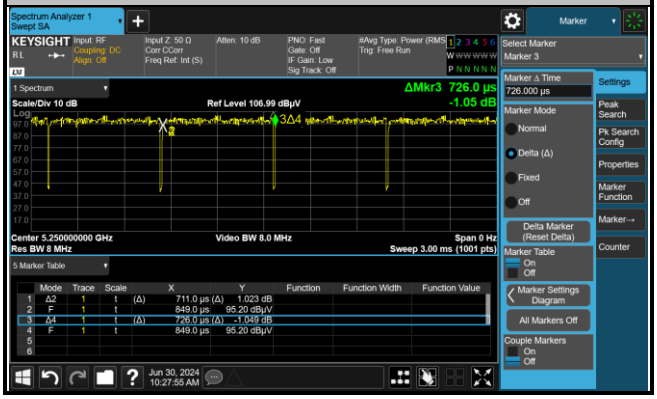
802.11ax HE80 484 RU



802.11ax HE160 Full RU



802.11ax HE160 996 RU



Appendix G. Spot Check Evaluation on KC50E22

Conducted power test and radiated spurious emission test configurations were selected from the worst cases identified in the reference model and tested to demonstrate the test data from reference model remains representative for the variant model.

The deviation between the spot check and the referenced values is within 3dB, therefore data referencing is justified according to the guidance in the ECR inquiry

Mode	Test Item	UZ7KC50A22 Reference Worst mode Test Result	UZ7KC50E22 Variant Check Test Result	Deviation	Limit (dB)
Bluetooth	Number of Channels	79	79	0	Within the authorized block
	Hopping Channel Separation	1.003	1.007	0.004	Within the authorized block
	Dwell Time of Each Channel	0.31	0.31	0	Within the authorized block
	20dB Bandwidth	0.893	0.891	0.002	Within the authorized frequency block
	99% Bandwidth	0.827	0.827	0	Within the authorized frequency block
	Conducted Band Edges	-41.22	-41.73	0.51	Deviation (ddB) < 3 dB
	Conducted Spurious Emission	-31.93	-32.30	0.37	Deviation (ddB) < 3 dB
	Peak Output Power	5.40	6.20	0.8	Deviation (ddB) < 3 dB
	Radiated Band Edges and Radiated Spurious Emission	42.16	39.94	2.22	Deviation (ddB) < 3 dB
	AC Conducted Emission	42.98	40.01	2.97	Deviation (ddB) < 3 dB
Bluetooth-LE	6dB Bandwidth	0.674	0.668	0.006	Within the authorized frequency block
	99% Bandwidth	1.019	1.019	0	Within the authorized frequency block
	Power Spectral Density	-9.55	-10.09	0.54	Deviation (ddB) < 3 dB
	Conducted Band Edges	-41.10	-42.38	1.28	Deviation (ddB) < 3 dB
	Conducted Spurious Emission	-31.69	-32.23	0.54	Deviation (ddB) < 3 dB
	Power Output Measurement	4.80	4.60	0.2	Deviation (ddB) < 3 dB
	Radiated Band Edges and Spurious Emission	42.35	39.81	2.54	Deviation (ddB) < 3 dB
	AC Conducted Emission	42.98	40.01	2.97	Deviation (ddB) < 3 dB
WIFI 2.4G	6dB Bandwidth	8.06	8.08	0.02	Within the authorized frequency block
	99% Bandwidth	13.04	13.09	0.05	Within the authorized frequency block
	Power Spectral Density	3.70	3.78	0.08	Deviation (ddB) < 3 dB
	Conducted Band Edges	-36.65	-36.24	0.41	Deviation (ddB) < 3 dB
	Conducted Spurious Emission	-42.84	-41.89	0.95	Deviation (ddB) < 3 dB
	Output Power	26.46	26.36	0.1	Deviation (ddB) < 3 dB
	Radiated Band Edges and Spurious Emission	52.24	51.35	0.89	Deviation (ddB) < 3 dB
	AC Conducted Emission	42.98	40.01	2.97	Deviation (ddB) < 3 dB

Mode	Test Item	UZ7KC50A22 Reference Worst mode Test Result	UZ7KC50E22 Variant Check Test Result	Deviation	Limit (dB)
WIFI 5G	26dB Bandwidth	165.98	165.94	0.04	Within the authorized frequency block
	99% Bandwidth	156.32	156.56	0.24	Within the authorized frequency block
	Power Spectral Density	10.52	10.38	0.14	Deviation (ddB) < 3 dB
	Maximum Conducted Output Power	23.58	23.48	0.1	Deviation (ddB) < 3 dB
	Unwanted Emissions	66.96	64.84	2.12	Deviation (ddB) < 3 dB
	AC Conducted Emission	41.81	40.50	1.31	Deviation (ddB) < 3 dB
WIFI 6G	26dB Emission Bandwidth	165.84	166.56	0.72	Within the authorized frequency block
	99% Occupied Bandwidth	156.80	157.76	0.96	Within the authorized frequency block
	Contention Based Protocol	-66.35	-68.65	2.3	Within the authorized block
	Fundamental Maximum EIRP	26.54	25.96	0.58	Deviation (ddB) < 3 dB
	Fundamental Power Spectral Density	16.81	16.71	0.1	Deviation (ddB) < 3 dB
	In-Band Emissions (Channel Mask)	-42.43	-41.04	1.39	Deviation (ddB) < 3 dB
	Unwanted Emissions	67.14	66.93	0.21	Deviation (ddB) < 3 dB
	AC Conducted Emission	41.15	40.16	0.99	Deviation (ddB) < 3 dB

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	9kHz~30MHz	Sep. 12, 2023	Aug. 02, 2024~ Aug. 04, 2024	Sep. 11, 2024	Radiation (03CH22-HY)
Bilog Antenna with 6dB	TESEQ & WOKEN	CBL 6111D & 00802N1D-06	63304 & 002	30MHz~1GHz	Oct. 15, 2023	Aug. 02, 2024~ Aug. 04, 2024	Oct. 14, 2024	Radiation (03CH22-HY)
Amplifier	SONOMA	310N	421581	N/A	Jul. 14, 2024	Aug. 02, 2024~ Aug. 04, 2024	Jul. 13, 2025	Radiation (03CH22-HY)
Double Ridged Guide Horn Antenna	RFSPIN	DRH18-E	LE2C04A18EN	1GHz~18GHz	Jul. 11, 2024	Aug. 02, 2024~ Aug. 04, 2024	Jul. 10, 2025	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jun. 24, 2024	Aug. 02, 2024~ Aug. 04, 2024	Jun. 23, 2025	Radiation (03CH22-HY)
Amplifier	EMEC	EM01G18GA	060877	N/A	Sep. 28, 2023	Aug. 02, 2024~ Aug. 04, 2024	Sep. 27, 2024	Radiation (03CH22-HY)
Preamplifier	EMEC	EM18G40G	060872	18-40GHz	Sep. 06, 2023	Aug. 02, 2024~ Aug. 04, 2024	Sep. 05, 2024	Radiation (03CH22-HY)
Signal Analyzer	Keysight	N9010B	MY62170278	10Hz~44GHz	Aug. 31, 2023	Aug. 02, 2024~ Aug. 04, 2024	Aug. 30, 2024	Radiation (03CH22-HY)
EMI Test Receiver	Keysight	N9038B	MY62210111	20Hz~8.4GHz	Aug. 23, 2023	Aug. 02, 2024~ Aug. 04, 2024	Aug. 22, 2024	Radiation (03CH22-HY)
Hygrometer	TECPEL	DTM-303A	TP211469	N/A	Jan. 03, 2024	Aug. 02, 2024~ Aug. 04, 2024	Jan. 02, 2025	Radiation (03CH22-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Aug. 02, 2024~ Aug. 04, 2024	N/A	Radiation (03CH22-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Aug. 02, 2024~ Aug. 04, 2024	N/A	Radiation (03CH22-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Aug. 02, 2024~ Aug. 04, 2024	N/A	Radiation (03CH22-HY)
Software	Audix	E3 6.09824_2019122	RK-002347	N/A	N/A	Aug. 02, 2024~ Aug. 04, 2024	N/A	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 06, 2024	Aug. 02, 2024~ Aug. 04, 2024	Mar. 05, 2025	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804390/2,804611/2,804615/2	N/A	Oct. 24, 2023	Aug. 02, 2024~ Aug. 04, 2024	Oct. 23, 2024	Radiation (03CH22-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 07. 2023	Jul. 23, 2024~ Jul. 27, 2024	Nov. 06. 2024	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO10 (NO:248)	10MHz~6GHz	Jan. 10, 2024	Jul. 23, 2024~ Jul. 27, 2024	Jan. 09, 2025	Conducted (TH05-HY)
Switch Control Mainframe	Burgeon	ETF-058	EC1300485 (BOX4)	N/A	Apr. 08, 2024	Jul. 23, 2024~ Jul. 27, 2024	Apr. 07, 2025	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101564	10Hz ~ 40GHz	Sep. 12, 2023	Jul. 23, 2024~ Jul. 27, 2024	Sep. 11, 2024	Conducted (TH05-HY)
Software	Sporton	BTWIFI_Final_version_240411	N/A	Conducted Other Test Item	N/A	Jul. 23, 2024~ Jul. 27, 2024	N/A	Conducted (TH05-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Jul. 16, 2024	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jul. 16, 2024	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 20, 2023	Jul. 16, 2024	Oct. 19, 2024	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 14, 2024	Jul. 16, 2024	Mar. 13, 2025	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Mar. 10, 2024	Jul. 16, 2024	Mar. 09, 2025	Conduction (CO07-HY)
Four-Line V-Network	TESEQ	NNB 52	36122	N/A	Mar. 07, 2024	Jul. 16, 2024	Mar. 06, 2025	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 20, 2023	Jul. 16, 2024	Sep. 19, 2024	Conduction (CO07-HY)

———THE END———