



RF MEASUREMENT REPORT

FCC ID: R68NTC551
Applicant: Lantronix, Inc.
Product: 5G Industrial IOT Router
Model No.: NTC-551
Brand Name: Lantronix
FCC Classification: Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s): Part 15 Subpart E (Section 15.407)
Result: Complies
Received Date: 2023-11-30
Test Date: 2023-12-14 ~ 2023-12-15

Reviewed By:

Sunny Sun

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB789033. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2310RSU045-U5	V01	Initial Report	2024-01-25	Invalid
2310RSU045-U5	V02	Modify applicant & manufacturer information	2025-06-17	Valid

CONTENTS

Description	Page
1. General Information	5
1.1. Applicant	5
1.2. Manufacturer	5
1.3. Testing Facility	5
1.4. Product Information	6
1.5. Radio Specification under Test	7
1.6. Working Frequencies	7
1.7. Antenna Details	8
2. Test Configuration	9
2.1. Test Mode	9
2.2. Test System Connection Diagram	9
2.3. Test Software	10
2.4. Applied Standards	10
2.5. Test Environment Condition	10
3. Antenna Requirements	11
4. Measuring Instrument	12
5. Decision Rules and Measurement Uncertainty	13
5.1. Decision Rules	13
5.2. Measurement Uncertainty	13
6. Test Result	14
6.1. Summary	14
6.2. Radiated Spurious Emission Measurement	15
6.2.1. Test Limit	15
6.2.2. Test Procedure	15
6.2.3. Test Setting	15
6.2.4. Test Setup	17
6.2.5. Test Result	18
6.3. Radiated Restricted Band Edge Measurement	19
6.3.1. Test Limit	19
6.3.2. Test Procedure	21
6.3.3. Test Setting	21
6.3.4. Test Setup	22
6.3.5. Test Result	22
Appendix A – Test Result	23
A.1 Radiated Spurious Emission Test Result	23

A.2	Radiated Restricted Band Edge Test Result	32
Appendix B – Test Setup Photograph		58
Appendix C – EUT Photograph		59

1. General Information

1.1. Applicant

Lantronix, Inc.

48 Discovery, Suite 250, Irvine, California, 92618, United States

1.2. Manufacturer

Lantronix, Inc.

48 Discovery, Suite 250, Irvine, California, 92618, United States

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China Laboratory Accreditations A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: ☐ R-20025 ☐ G-20034 ☐ C-20020 ☐ T-20020 ☐ R-20141 ☐ G-20134 ☐ C-20103 ☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China Laboratory Accreditations A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Laboratory Accreditations TAF: 3261 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	5G Industrial IOT Router
Model No.	NTC-551
EUT Identification No.	20231130Sample#09
Bluetooth Specification	V4.0 Bluetooth-LE
GNSS Specification	GPS/Galileo/GLONASS/BDS
Wi-Fi Specification	802.11a/b/g/n/ac/ax
3GPP Specification	LTE Band 2/4/5/7/12/13/14/17/25/26/29/30/38/41/42/43/46/48/66/71 NR SA/NSA Band n2/5/7/12/13/14/25/26/29/30/38/41/48/66/70/71/77/78
Operating Temp.	-30 ~ 70 °C
Working Voltage	DC 8V ~ 40V
Power Type	AC/DC adapter
Integrated WWAN Modular Information	
Modular Name	5G Sub-6 GHz LGA Module
Mode No.	RG520N-NA
FCC ID	XMR2023RG520NNA
Manufacturer	QUECTEL
Integrated Wi-Fi Modular Information	
Modular Name	Wi-Fi & Bluetooth Module
Mode No.	FC64E
FCC ID	XMR202208FC64E
Manufacturer	QUECTEL
Accessory	
AC/DC adapter	Model: AD0361-1203000F Input: 100-240V ~ 50/60Hz 1.0A Max Output: 12.0V, 3.0A 36W
Note 1: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. Note 2: This device is based on the certification modular to assess the radiated spurious emission. Note 3: The Bluetooth BLE function of the device is implemented by ESP32-D0WDQ6-V3 chipset.	

1.5. Radio Specification under Test

Frequency Range	For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310MHz, 5510~5670MHz, 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz, 5530MHz, 5610 MHz, 5775MHz	
Type of Modulation	802.11a/n/ac: OFDM 802.11ax: OFDMA	
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps 802.11ax: up to 1201Mbps	
Channel Puncturing Function	☐ Supported	☒ Unsupported
Support RU	☒ Full RU	☐ Partial RU

1.6. Working Frequencies

802.11a/n-HT20/ac-VHT20/ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz
48	5240 MHz	52	5260 MHz	56	5280 MHz
60	5300 MHz	64	5320 MHz	100	5500 MHz
104	5520 MHz	108	5540 MHz	112	5560 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz
128	5640 MHz	132	5660 MHz	136	5680 MHz
140	5700 MHz	149	5745 MHz	153	5765 MHz
157	5785 MHz	161	5805 MHz	165	5825 MHz

802.11n-HT40/ac-VHT40/ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz
62	5310 MHz	102	5510 MHz	110	5550MHz
118	5590 MHz	126	5630 MHz	134	5670 MHz
151	5755 MHz	159	5795 MHz	--	--

802.11ac-VHT80/ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530 MHz
122	5610 MHz	155	5775 MHz	--	--

1.7. Antenna Details

Antenna Type	Frequency Band (MHz)	Antenna Gain (dBi)		Directional Gain (dBi)
		Ant 0	Ant 0	
Wi-Fi Antenna (2.4GHz & 5GHz 2*2 MIMO)				
Omni-Directional Antenna	2400 ~ 2483.5	9.0	9.0	12.0
	5150 ~ 5850	9.0	9.0	12.0
Note 1: The antenna gain and directional gain refer to manufacturer’s antenna specification. Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode for 802.11a/b/g/n/ac/ax. Note 3: Software automatically backs power down based on CDD power for beamforming operation.				

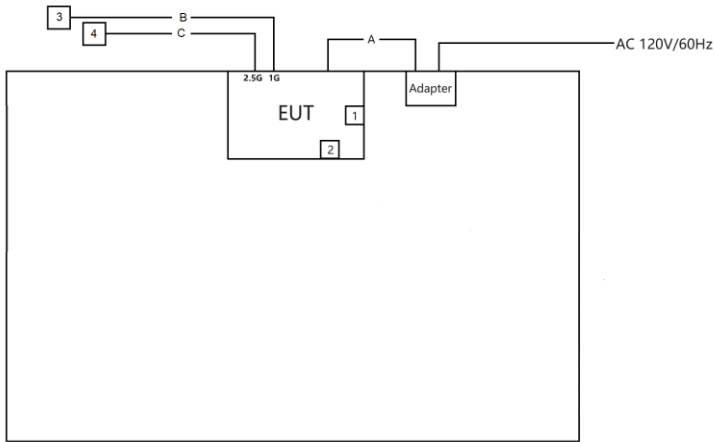
2. Test Configuration

2.1. Test Mode

CDD Mode
Mode 1: Transmit by 802.11a (6Mbps)
Mode 2: Transmit by 802.11n-HT20 (MCS0)
Mode 3: Transmit by 802.11n-HT40 (MCS0)
Mode 4: Transmit by 802.11ac-VHT80 (MCS0)
Mode 5: Transmit by 802.11ax-HE20 (MCS0)
Mode 6: Transmit by 802.11ax-HE40 (MCS0)
Mode 7: Transmit by 802.11ax-HE80 (MCS0)

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing.

Connection Diagram – Radiated Emission testing			
			
Cable Type	Cable Description		Length
A	Power Cable	Non-Shielded	1.5m
B	LAN Cable	Non-Shielded, Cat.5e	>10m
C	LAN Cable	Non-Shielded, Cat.5e	>10m
Product	Manufacturer		Model No.
1	SD Card	SanDisk	32GB
2	SIM card	Leeb	N/A
3	Notebook	Lenovo	E495
4	Notebook	Lenovo	E431

2.3. Test Software

The test utility software used during testing was “QRCT”, and the version was 4.0.00203.0.

2.4. Applied Standards

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

- FCC Part 15.407
- KDB 789033 D02v02r01
- KDB 662911 D01v02r01
- ANSI C63.10-2013

2.5. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. 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 provisions of this section.”

- The antenna of the device is **unique coupling**.

Conclusion:

The unit complies with the requirement of §15.203.

4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2023-12-28	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2024-10-23	WZ-AC1
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2024-09-17	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2024-06-09	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2024-08-09	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06024	1 year	2024-10-11	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2024-05-07	WZ-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2024-01-12	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2024-05-31	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2024-10-25	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2024-04-20	WZ-AC1

Software	Version	Function
EMI V3	V3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Emission Measurement

The maximum measurement uncertainty is evaluated as:

Coaxial: 9kHz~30MHz: 2.61dB

Coplanar: 9kHz~30MHz: 2.62dB

Horizontal: 30MHz~200MHz: 3.79dB

200MHz~1GHz: 3.91dB

1GHz~40GHz: 4.99dB

Vertical: 30MHz~200MHz: 4.06dB

200MHz~1GHz: 5.21dB

1GHz~40GHz: 4.90dB

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.407(b)(1), (2), (3), (4)(i)	Undesirable Emissions	Radiated	Pass
15.205, 15.209 15.407(b)(8), (9), (10)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Radiated	Pass

Note: For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

6.2. Radiated Spurious Emission Measurement

6.2.1. Test Limit

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.2.2. Test Procedure

KDB 789033 D02v02r01- Section II)G)

6.2.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000MHz	1MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1GHz

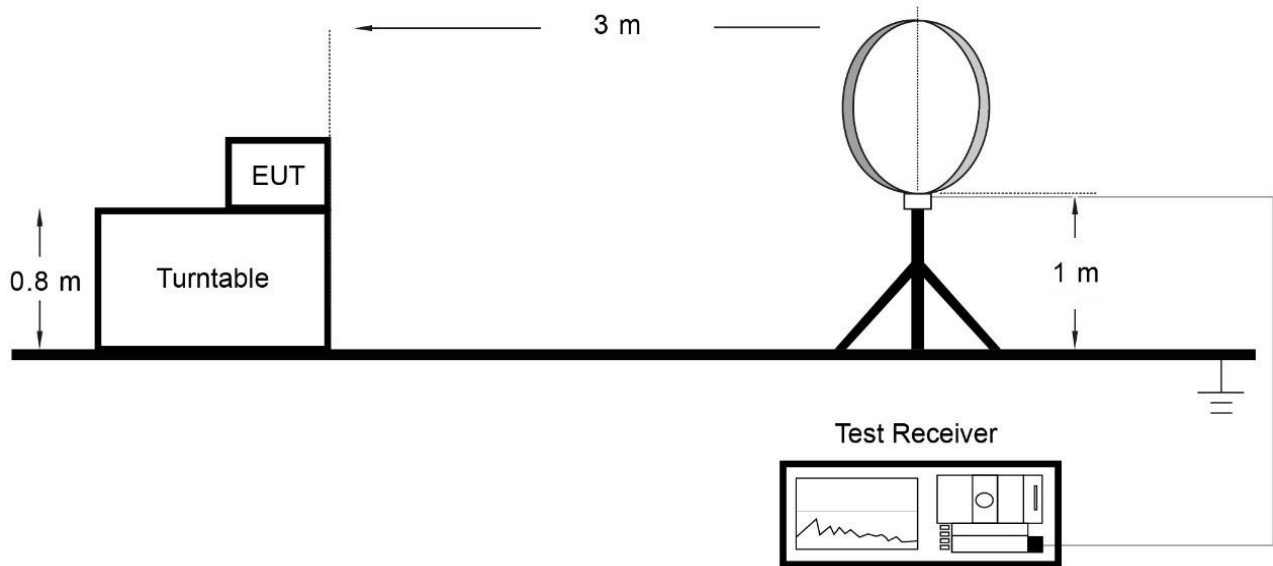
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

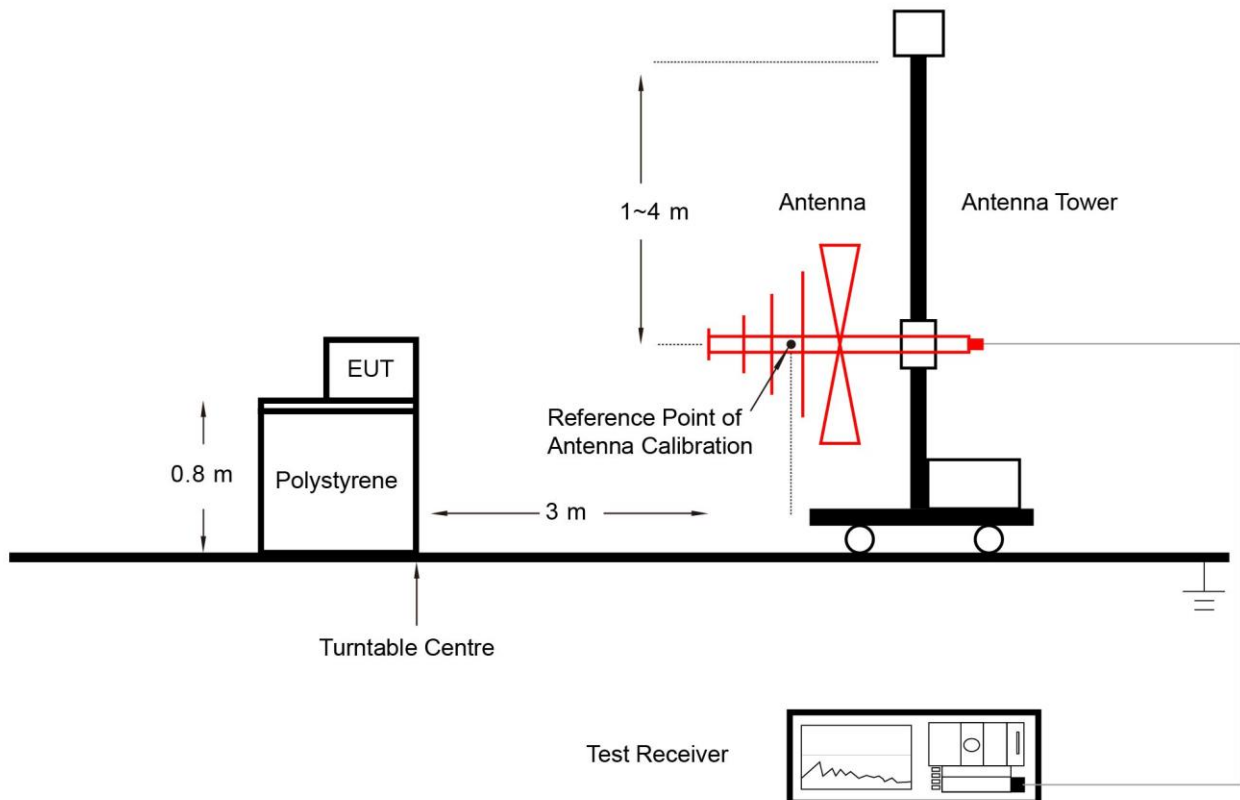
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set $\text{VBW} \geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

6.2.4. Test Setup

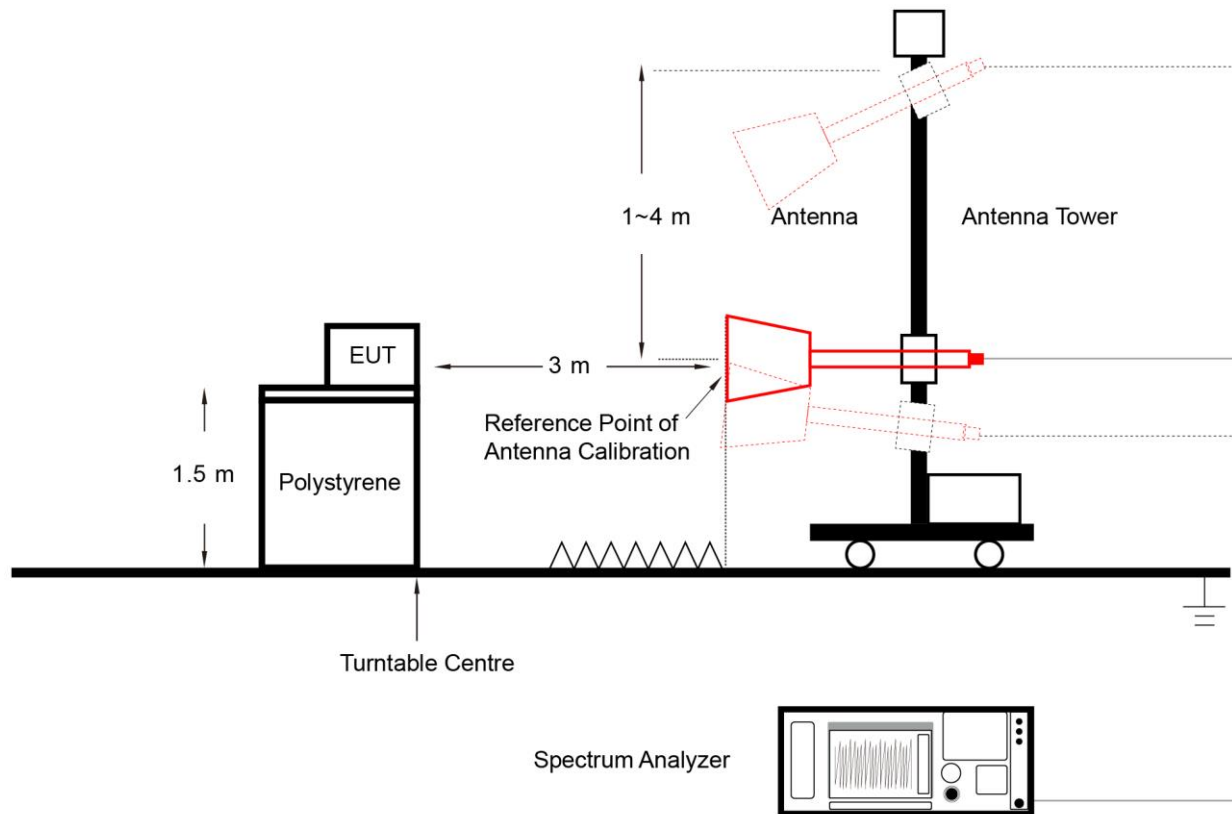
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.2.5. Test Result

Refer to Appendix A.1.

6.3. Radiated Restricted Band Edge Measurement

6.3.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

For 15.407(b) requirement:

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band: 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.

Refer to KDB 789033 D02v02r01 G)2)c), as specified in § 15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in § 15.407(b)(4)). However, an out-of-band emission that complies with both the peak and average limits of § 15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.3.2. Test Procedure

KDB 789033 D02v02r01- Section II)G)

6.3.3. Test Setting

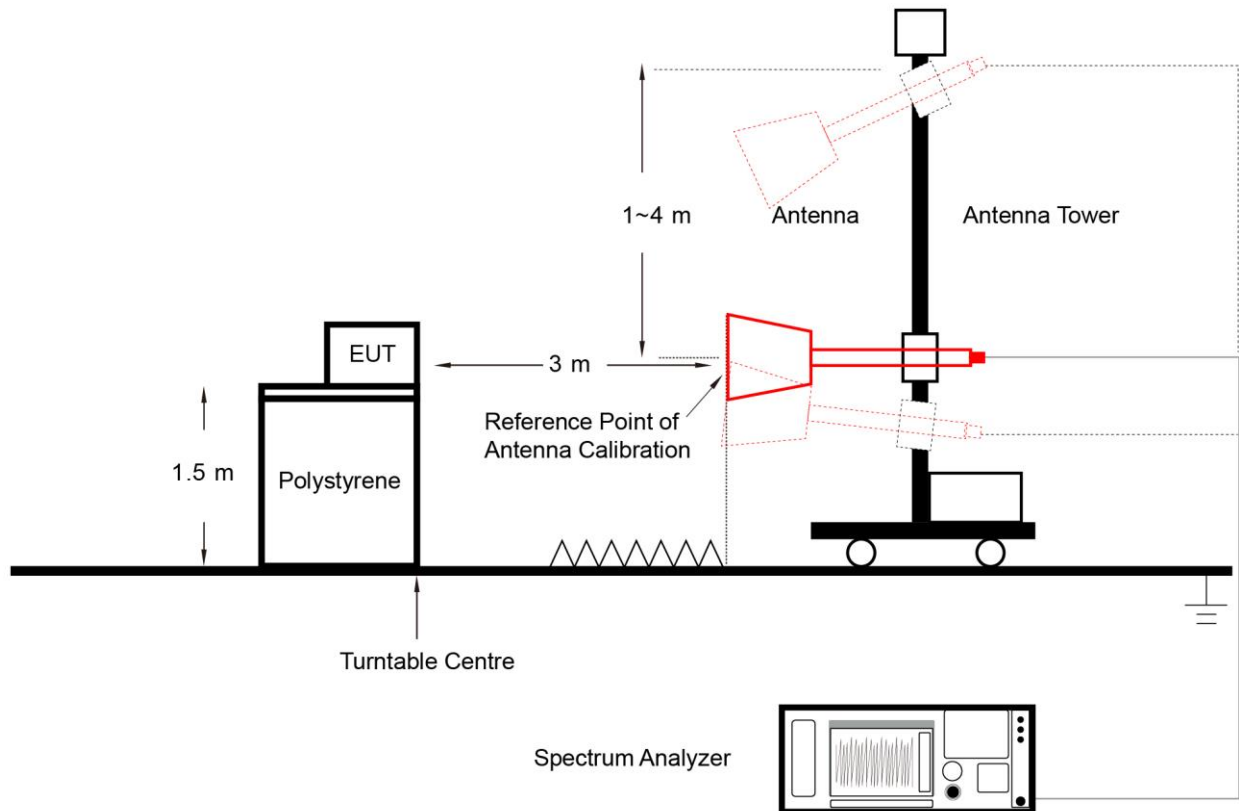
Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; if the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10Hz
4. If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration
5. Detector = Peak
6. Sweep time = Auto
7. Trace mode = Max hold
8. Trace was allowed to stabilize

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.2.

Appendix A – Test Result

A.1 Radiated Spurious Emission Test Result

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11a – Channel 48
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	7978.5	38.2	9.2	47.4	68.2	-20.8	Peak	Horizontal
*	9262.0	35.6	12.0	47.6	68.2	-20.6	Peak	Horizontal
	10800.5	34.9	14.1	49.0	74.0	-25.0	Peak	Horizontal
	11429.5	34.9	13.6	48.5	74.0	-25.5	Peak	Horizontal
*	7978.5	41.0	9.2	50.2	68.2	-18.0	Peak	Vertical
*	9891.0	35.6	13.1	48.7	68.2	-19.5	Peak	Vertical
	10656.0	35.8	14.3	50.1	74.0	-23.9	Peak	Vertical
	11523.0	34.9	13.6	48.5	74.0	-25.5	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11n-HT20 – Channel 48
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	7706.5	37.3	8.3	45.6	74.0	-28.4	Peak	Horizontal
*	7970.0	36.9	9.2	46.1	68.2	-22.1	Peak	Horizontal
*	9908.0	36.0	13.0	49.0	68.2	-19.2	Peak	Horizontal
	11489.0	35.0	13.8	48.8	74.0	-25.2	Peak	Horizontal
*	7970.0	38.7	9.2	47.9	68.2	-20.3	Peak	Vertical
	8488.5	36.9	9.1	46.0	74.0	-28.0	Peak	Vertical
*	10460.5	36.8	13.7	50.5	68.2	-17.7	Peak	Vertical
	11565.5	35.8	13.3	49.1	74.0	-24.9	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11n-HT40 – Channel 46
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	8004.0	36.2	9.3	45.5	68.2	-22.7	Peak	Horizontal
*	10231.0	35.8	13.3	49.1	68.2	-19.1	Peak	Horizontal
	10639.0	34.9	14.3	49.2	74.0	-24.8	Peak	Horizontal
	11497.5	35.3	13.7	49.0	74.0	-25.0	Peak	Horizontal
*	7995.5	38.4	9.2	47.6	68.2	-20.6	Peak	Vertical
	8250.5	36.2	8.7	44.9	74.0	-29.1	Peak	Vertical
*	10596.5	35.0	14.2	49.2	68.2	-19.0	Peak	Vertical
	11599.5	35.5	13.2	48.7	74.0	-25.3	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11ac-VHT80 – Channel 58
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	7995.5	37.1	9.2	46.3	68.2	-21.9	Peak	Horizontal
*	10571.0	35.0	14.1	49.1	68.2	-19.1	Peak	Horizontal
	10877.0	35.4	13.9	49.3	74.0	-24.7	Peak	Horizontal
	11497.5	34.6	13.7	48.3	74.0	-25.7	Peak	Horizontal
*	7978.5	40.3	9.2	49.5	68.2	-18.7	Peak	Vertical
	9457.5	36.0	12.1	48.1	74.0	-25.9	Peak	Vertical
*	10579.5	36.0	14.1	50.1	68.2	-18.1	Peak	Vertical
	11506.0	35.3	13.6	48.9	74.0	-25.1	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11ax-HE20 – Channel 52
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	9245.0	36.2	11.8	48.0	68.2	-20.2	Peak	Horizontal
*	9925.0	36.0	13.0	49.0	68.2	-19.2	Peak	Horizontal
	10792.0	34.4	14.3	48.7	74.0	-25.3	Peak	Horizontal
	11548.5	35.3	13.5	48.8	74.0	-25.2	Peak	Horizontal
*	7970.0	40.3	9.2	49.5	68.2	-18.7	Peak	Vertical
	9177.0	36.1	11.4	47.5	74.0	-26.5	Peak	Vertical
*	10409.5	35.9	13.6	49.5	68.2	-18.7	Peak	Vertical
	11463.5	35.1	13.5	48.6	74.0	-25.4	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11ax-HE40 – Channel 54
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
	7324.0	37.4	8.2	45.6	74.0	-28.4	Peak	Horizontal
*	8004.0	37.6	9.3	46.9	68.2	-21.3	Peak	Horizontal
*	9780.5	35.9	13.0	48.9	68.2	-19.3	Peak	Horizontal
	11982.0	36.5	12.3	48.8	74.0	-25.2	Peak	Horizontal
	7494.0	36.7	8.6	45.3	74.0	-28.7	Peak	Vertical
*	7995.5	39.5	9.2	48.7	68.2	-19.5	Peak	Vertical
*	9959.0	36.1	12.9	49.0	68.2	-19.2	Peak	Vertical
	11514.5	35.5	13.6	49.1	74.0	-24.9	Peak	Vertical

Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-12-15	Test Mode	802.11ax-HE80 – Channel 58
Remark	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

Mark	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
*	8590.5	36.2	9.5	45.7	68.2	-22.5	Peak	Horizontal
*	10197.0	35.3	13.4	48.7	68.2	-19.5	Peak	Horizontal
	11540.0	35.5	13.5	49.0	74.0	-25.0	Peak	Horizontal
	12254.0	36.4	12.4	48.8	74.0	-25.2	Peak	Horizontal
*	7987.0	38.7	9.2	47.9	68.2	-20.3	Peak	Vertical
	8497.0	36.6	9.1	45.7	74.0	-28.3	Peak	Vertical
*	10265.0	35.5	13.5	49.0	68.2	-19.2	Peak	Vertical
	11591.0	35.5	13.2	48.7	74.0	-25.3	Peak	Vertical

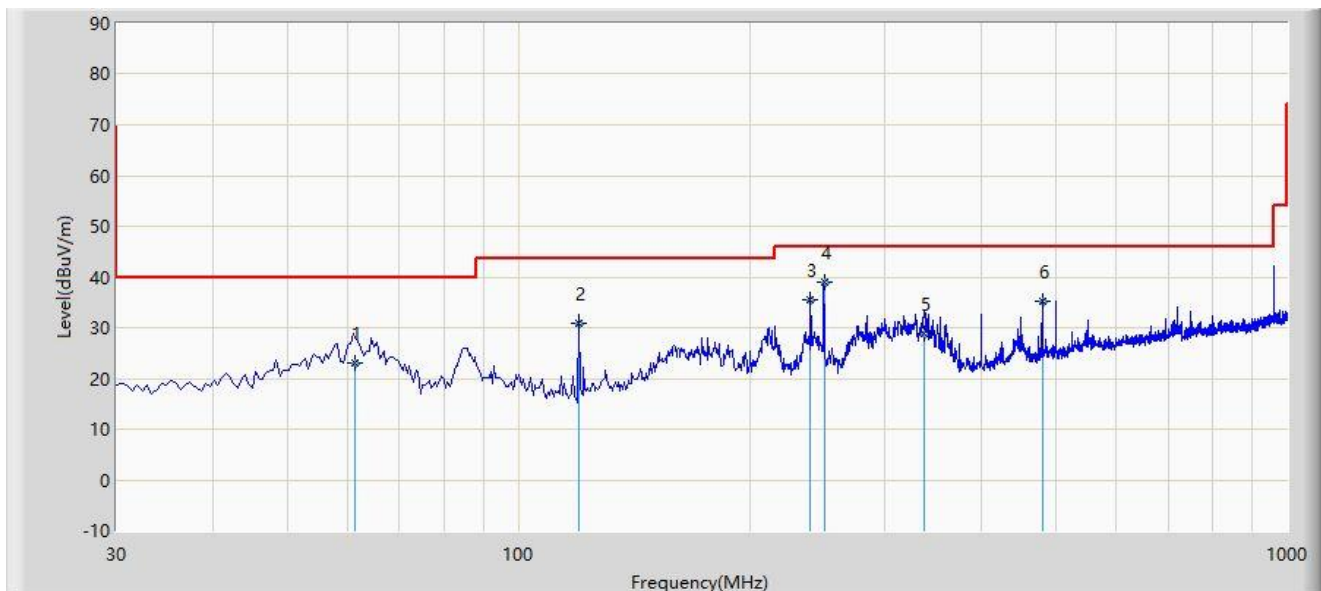
Note 1: “*” is not in restricted band, its limit is -27dBm/MHz. At a distance of 3 meters, the field strength limit in dBμV/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Result of Radiated Emission below 1GHz:

Site: WZ-AC1	Test Date: 2023-12-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5230MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		61.350	23.101	5.300	-16.899	40.000	17.802	QP
2		120.000	31.010	15.100	-12.490	43.500	15.910	QP
3		240.000	35.484	19.200	-10.516	46.000	16.284	QP
4	*	250.000	39.066	22.300	-6.934	46.000	16.766	QP
5		337.600	28.869	9.300	-17.131	46.000	19.569	QP
6		480.000	35.248	12.300	-10.752	46.000	22.948	QP

Note 1: " * ", means this data is the worst emission level.

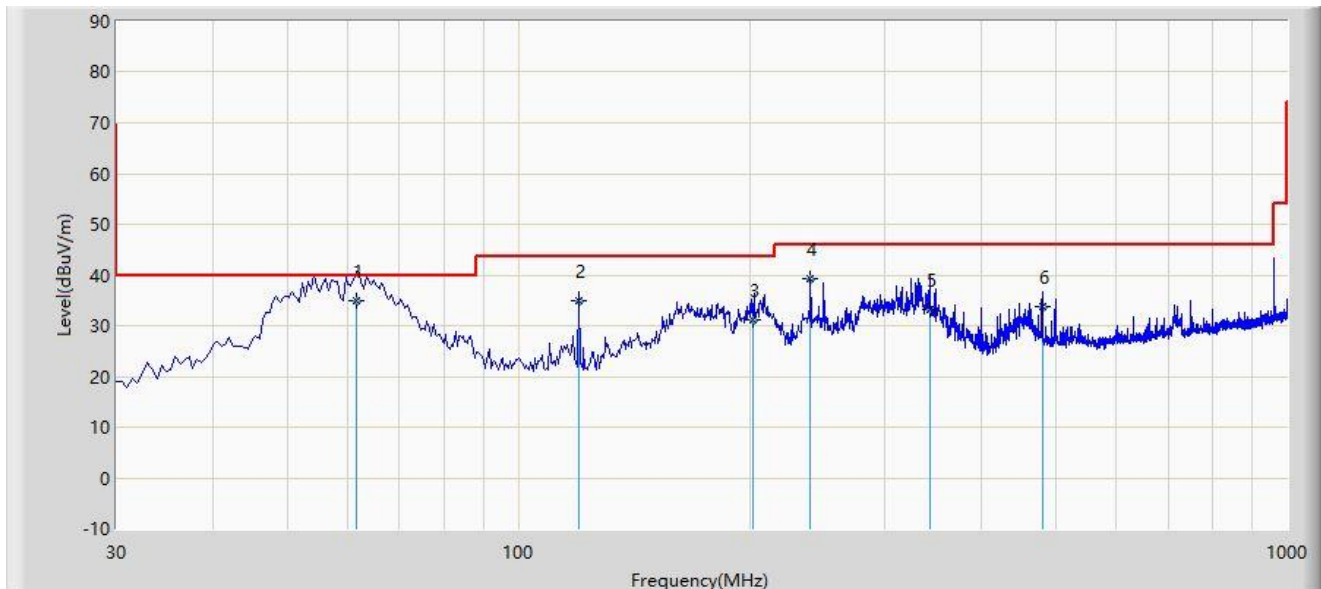
Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

Site: WZ-AC1	Test Date: 2023-12-14
Limit: FCC_Part15.209_RSE(3m)	Engineer: Carl Jiang
Probe: VULB 9168_25-2000MHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5230MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	61.690	35.058	17.300	-4.942	40.000	17.758	QP
2		120.000	35.010	19.100	-8.490	43.500	15.910	QP
3		201.950	31.040	16.100	-12.460	43.500	14.940	QP
4		240.000	39.284	23.000	-6.716	46.000	16.284	QP
5		343.780	33.175	13.600	-12.825	46.000	19.574	QP
6		480.000	33.848	10.900	-12.152	46.000	22.948	QP

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

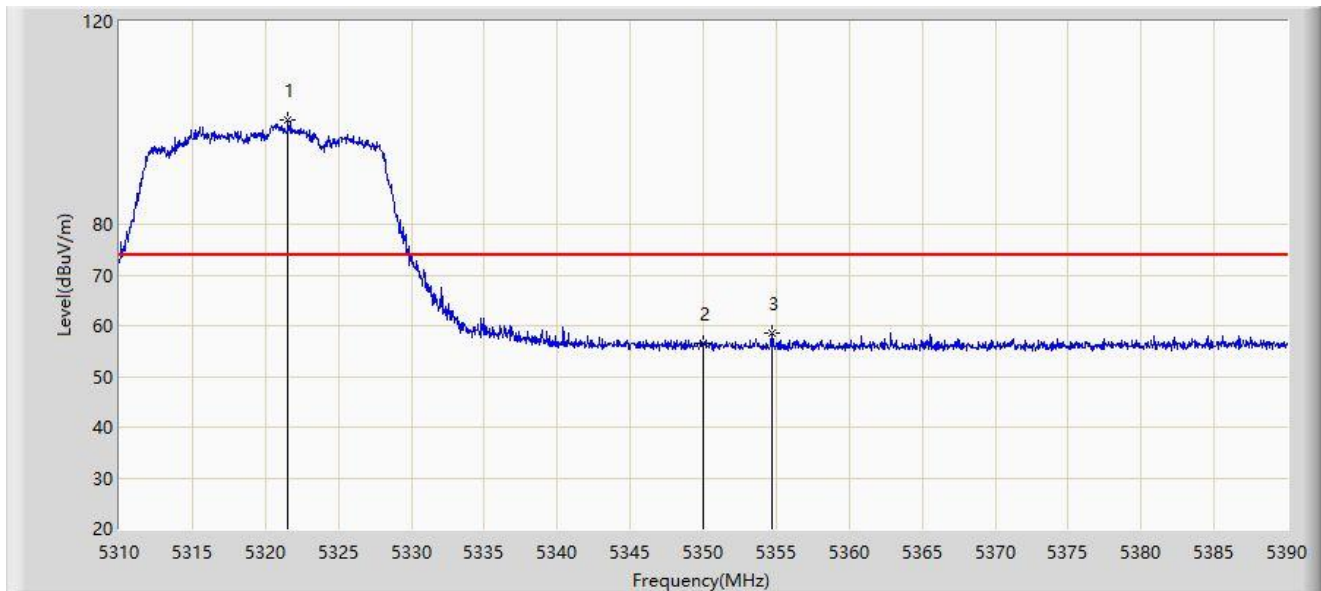
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 40GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

A.2 Radiated Restricted Band Edge Test Result

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at 5320MHz	



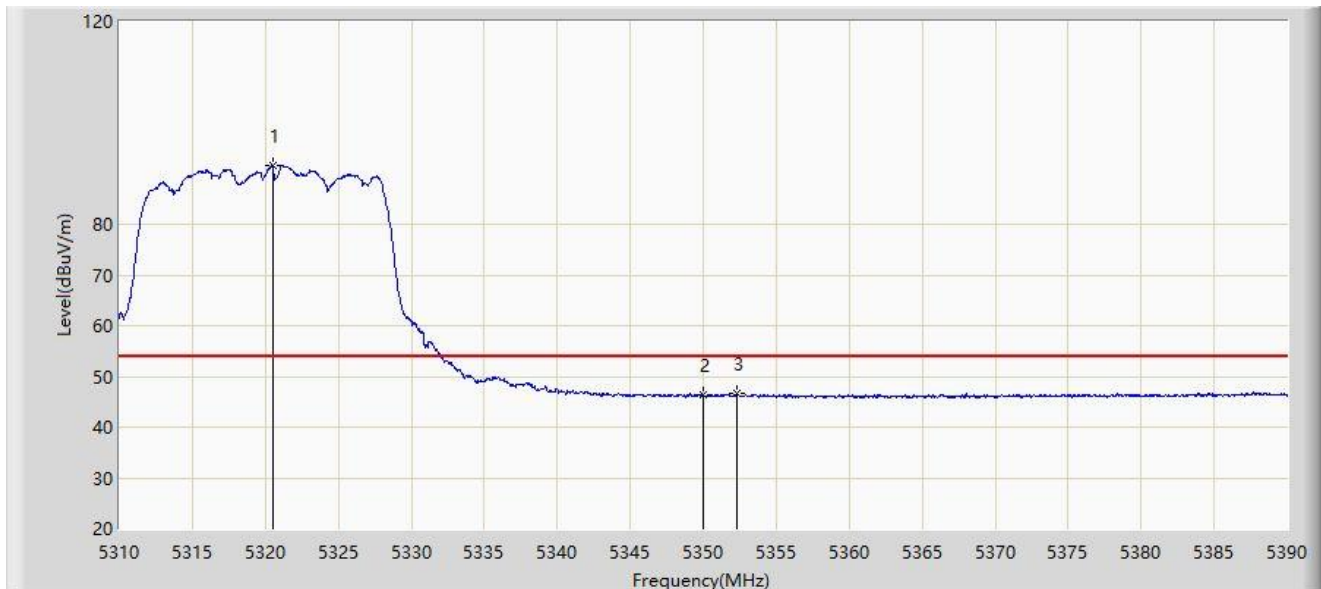
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5321.560	100.444	96.795	N/A	N/A	3.649	PK
2		5350.000	56.450	52.916	-17.550	74.000	3.534	PK
3	*	5354.680	58.461	54.963	-15.539	74.000	3.498	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at 5320MHz	



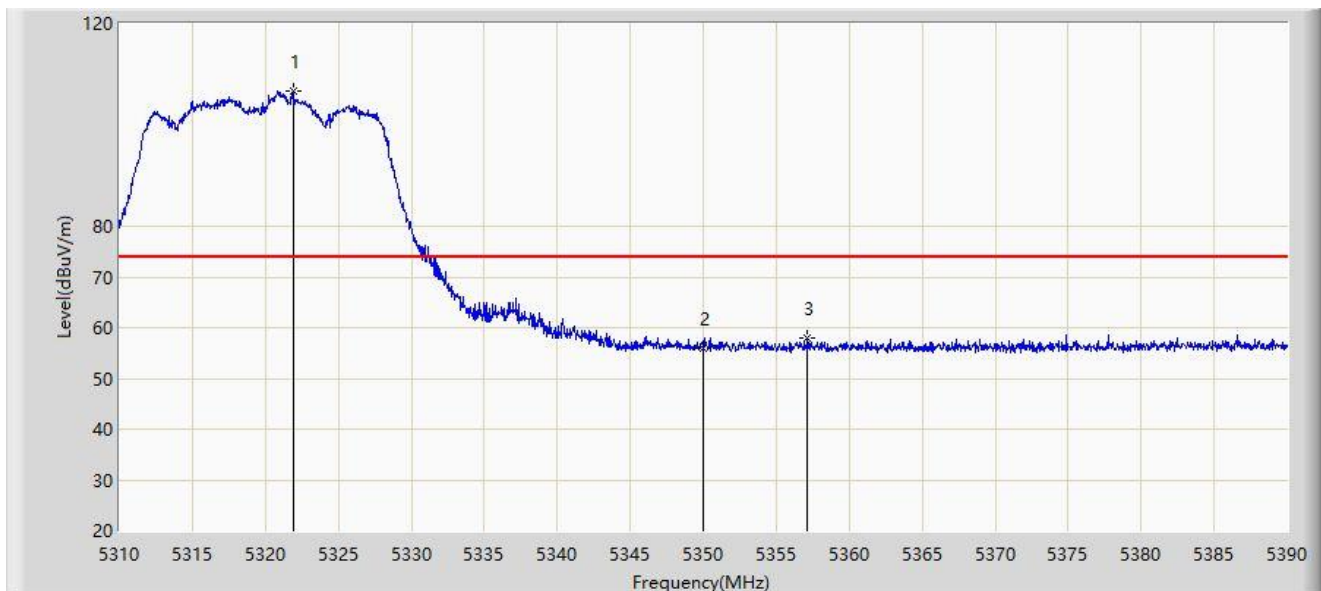
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5320.520	91.643	87.987	N/A	N/A	3.656	AV
2		5350.000	46.319	42.785	-7.681	54.000	3.534	AV
3	*	5352.320	46.540	43.022	-7.460	54.000	3.518	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at 5320MHz	



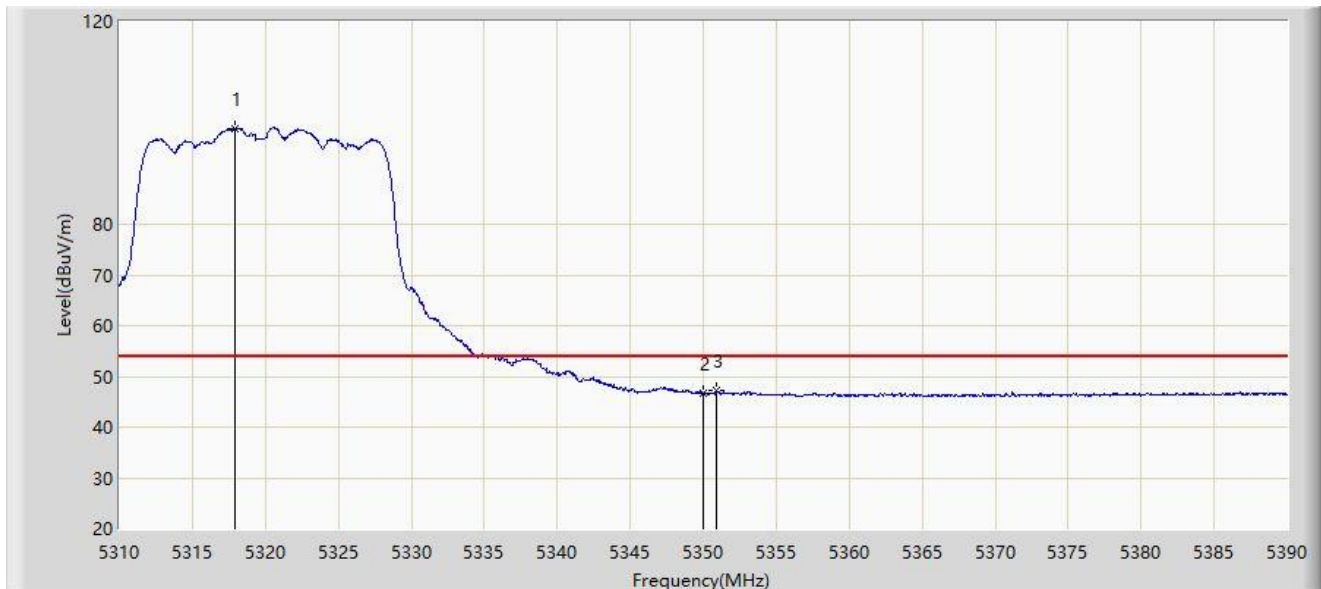
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5321.880	106.651	103.004	N/A	N/A	3.647	PK
2		5350.000	55.978	52.444	-18.022	74.000	3.534	PK
3	*	5357.160	58.102	54.625	-15.898	74.000	3.477	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11a at 5320MHz	



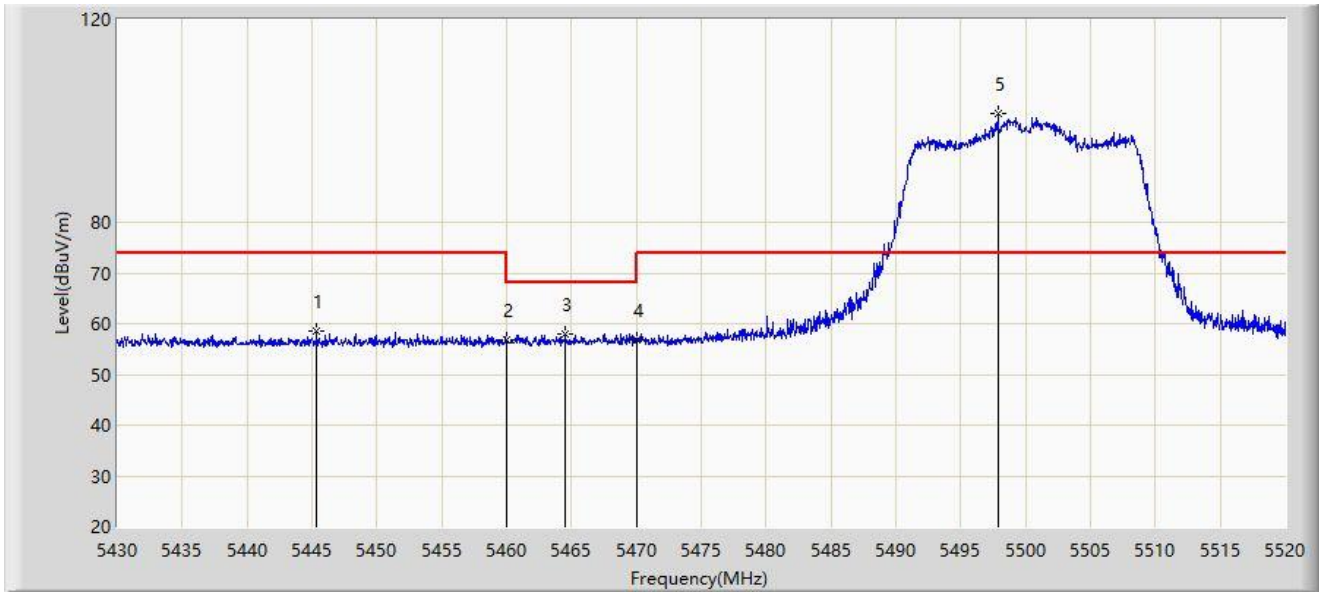
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5317.920	98.736	95.065	N/A	N/A	3.671	AV
2		5350.000	46.552	43.018	-7.448	54.000	3.534	AV
3	*	5350.920	47.108	43.580	-6.892	54.000	3.529	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at 5500MHz	



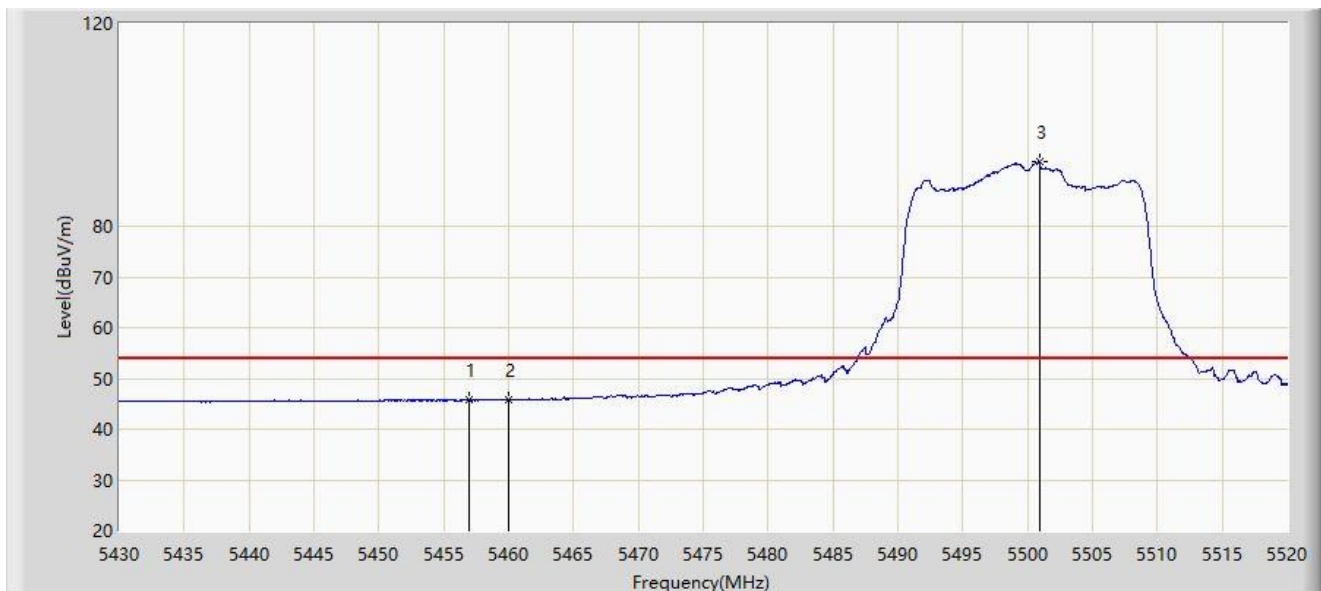
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		5445.390	58.562	54.826	-15.438	74.000	3.737	PK
2		5460.000	56.704	52.923	-17.296	74.000	3.782	PK
3	*	5464.560	58.106	54.306	-10.094	68.200	3.799	PK
4		5470.000	56.858	53.036	-11.342	68.200	3.822	PK
5		5497.905	101.466	97.377	N/A	N/A	4.090	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at 5500MHz	



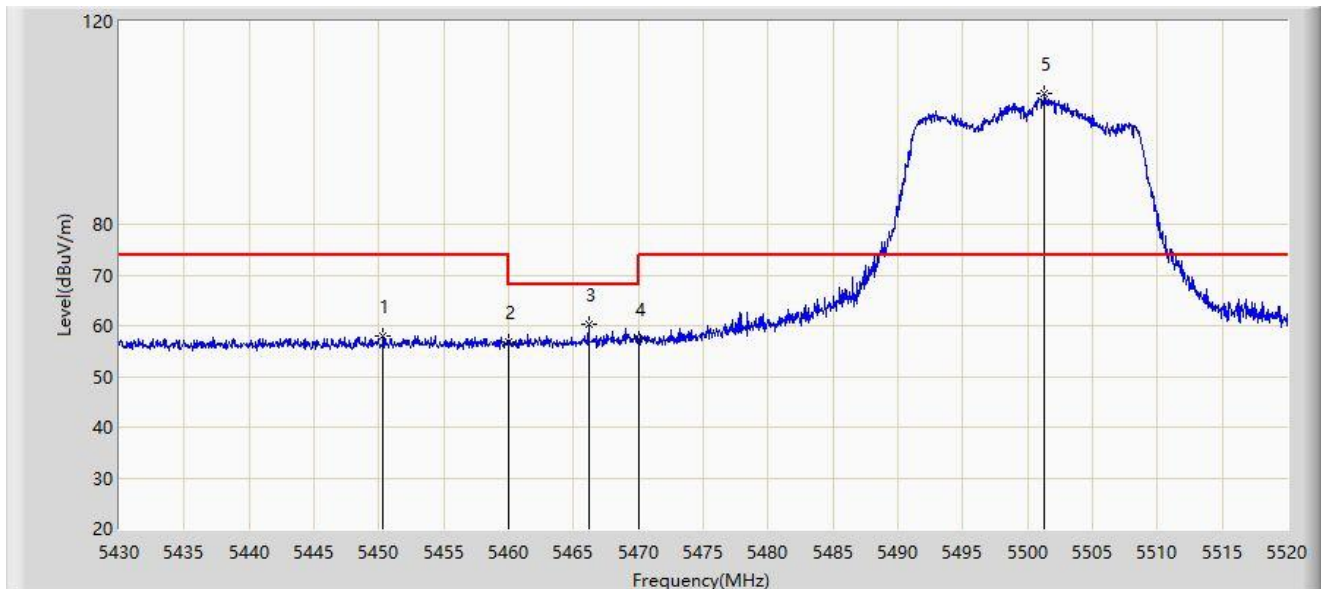
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5456.910	45.915	42.146	-8.085	54.000	3.768	AV
2		5460.000	45.770	41.989	-8.230	54.000	3.782	AV
3		5500.920	92.667	88.571	N/A	N/A	4.096	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at 5500MHz	



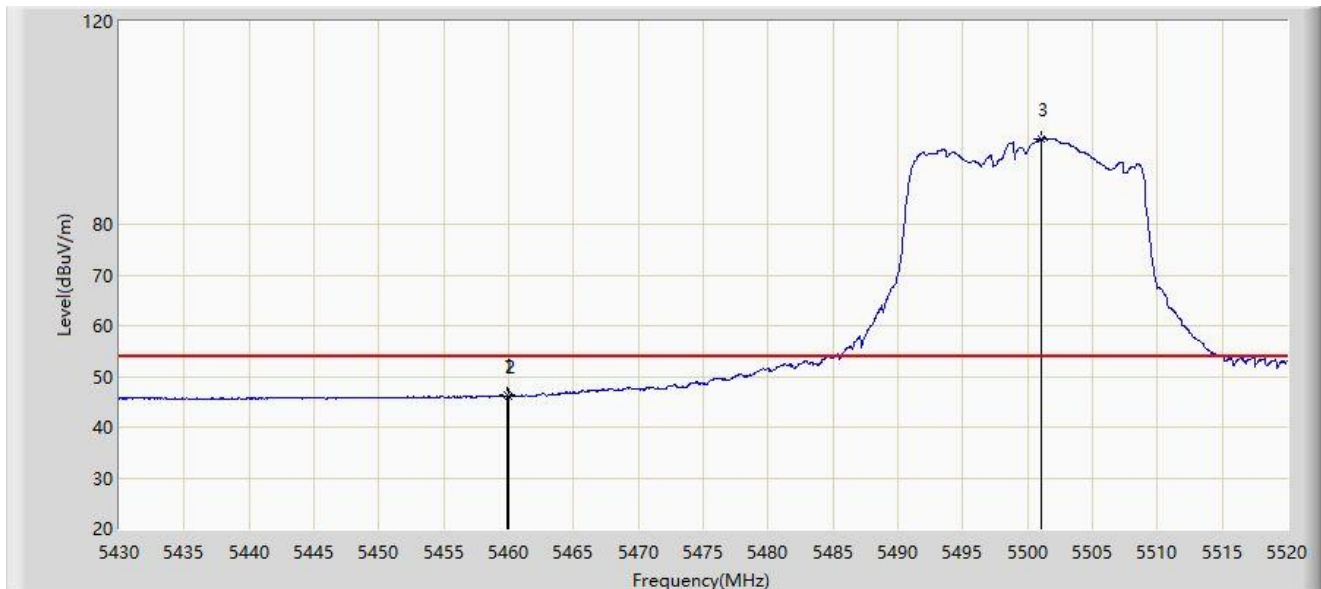
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5450.340	57.897	54.159	-16.103	74.000	3.738	PK
2		5460.000	56.731	52.950	-17.269	74.000	3.782	PK
3	*	5466.180	60.327	56.520	-7.873	68.200	3.806	PK
4		5470.000	57.476	53.654	-10.724	68.200	3.822	PK
5		5501.325	105.658	101.561	N/A	N/A	4.097	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT20 at 5500MHz	



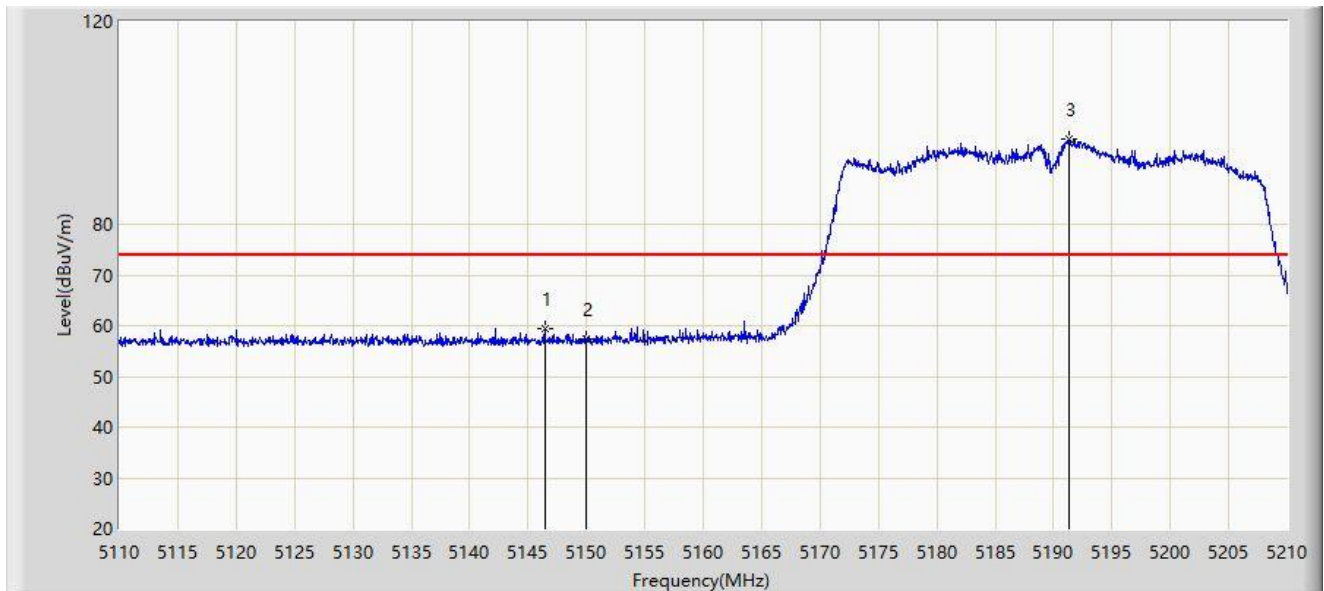
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5459.925	46.262	42.481	-7.738	54.000	3.781	AV
2		5460.000	46.140	42.359	-7.860	54.000	3.782	AV
3		5501.010	96.882	92.786	N/A	N/A	4.096	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5190MHz	



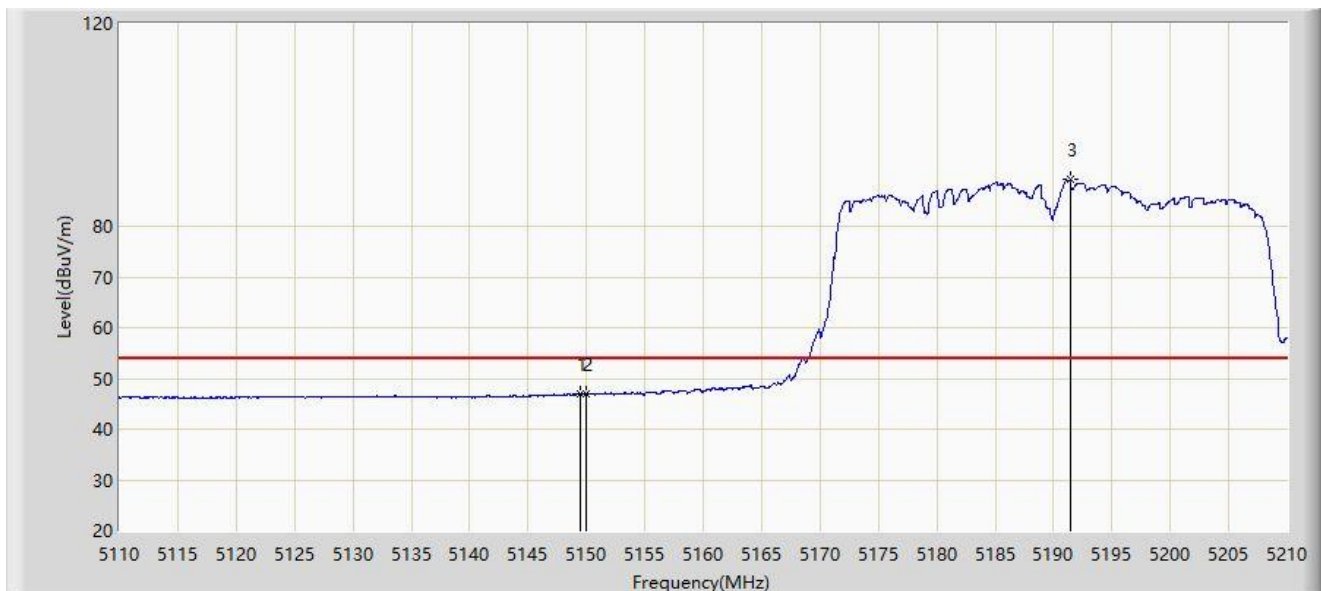
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5146.450	59.527	55.647	-14.473	74.000	3.880	PK
2		5150.000	57.409	53.534	-16.591	74.000	3.876	PK
3		5191.350	96.771	93.204	N/A	N/A	3.568	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5190MHz	



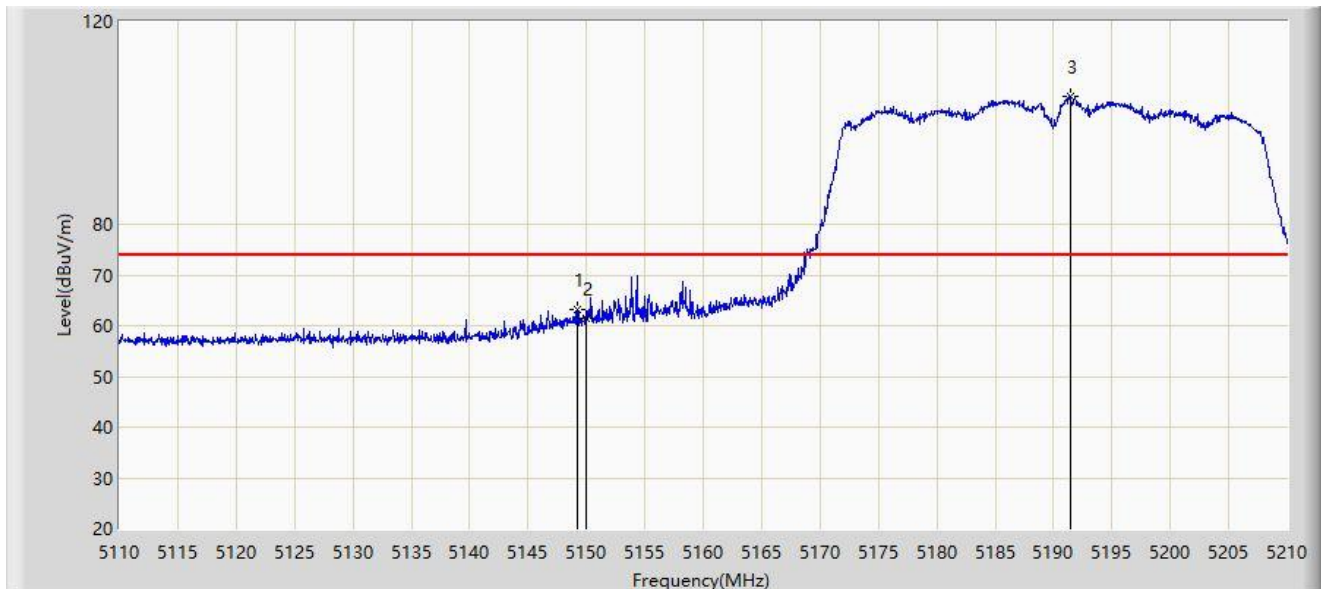
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.500	47.056	43.180	-6.944	54.000	3.875	AV
2		5150.000	46.830	42.955	-7.170	54.000	3.876	AV
3		5191.450	89.177	85.610	N/A	N/A	3.567	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5190MHz	



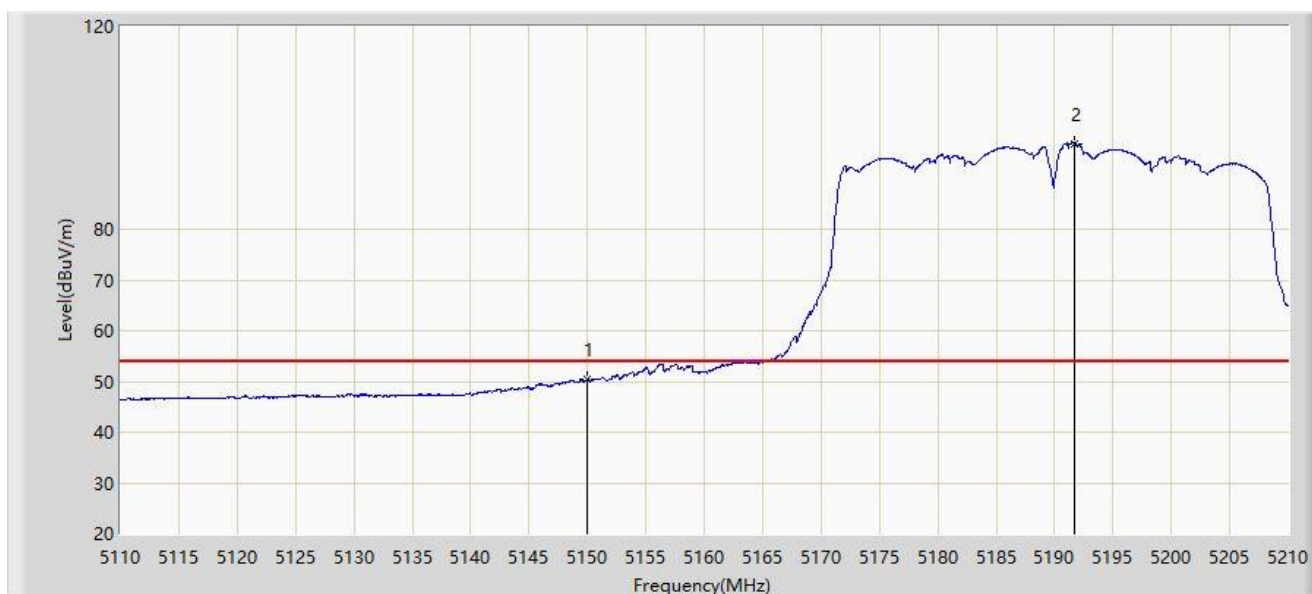
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.250	63.268	59.392	-10.732	74.000	3.875	PK
2		5150.000	61.487	57.612	-12.513	74.000	3.876	PK
3		5191.450	105.079	101.512	N/A	N/A	3.567	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11n-HT40 at 5190MHz	



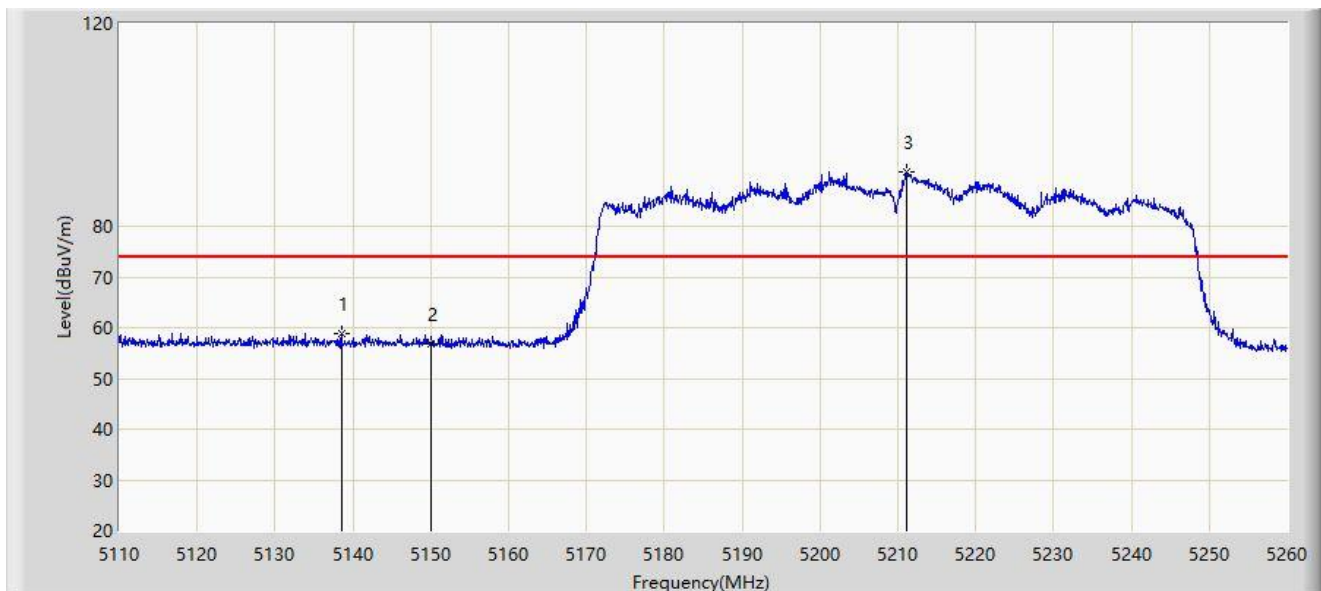
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5150.000	50.365	46.490	-3.635	54.000	3.876	AV
2		5191.750	96.866	93.301	N/A	N/A	3.565	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ac-VHT80 at 5210MHz	



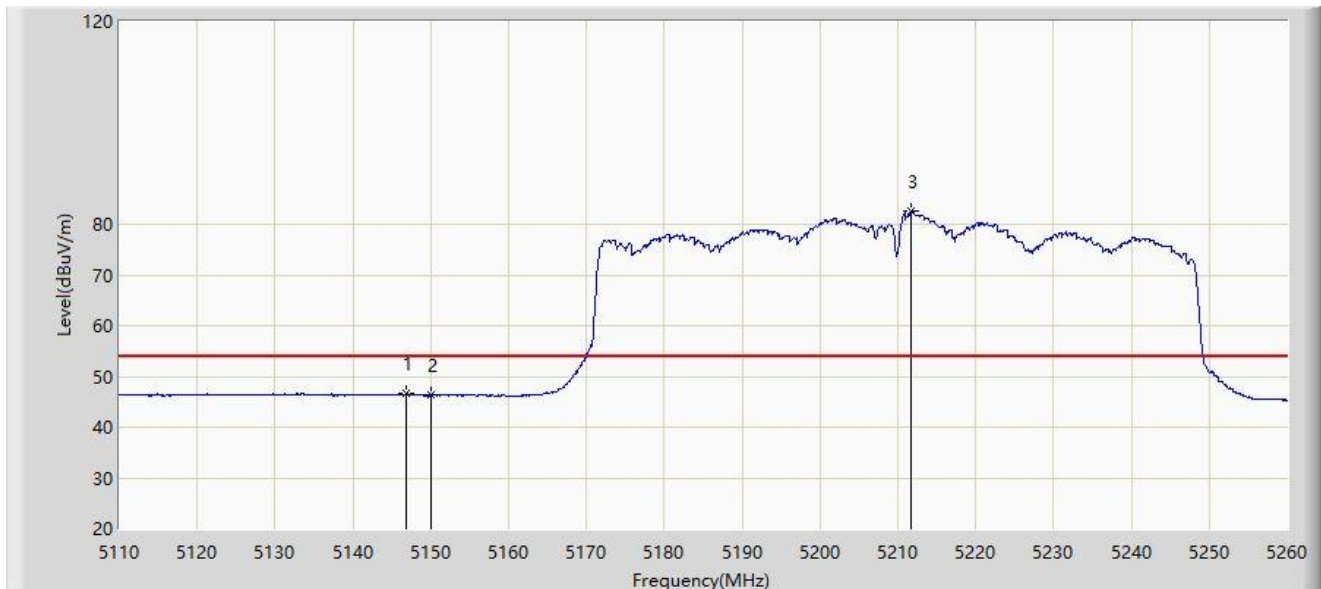
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5138.575	58.701	54.804	-15.299	74.000	3.897	PK
2		5150.000	56.848	52.973	-17.152	74.000	3.876	PK
3		5211.175	90.611	87.039	N/A	N/A	3.573	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ac-VHT80 at 5210MHz	



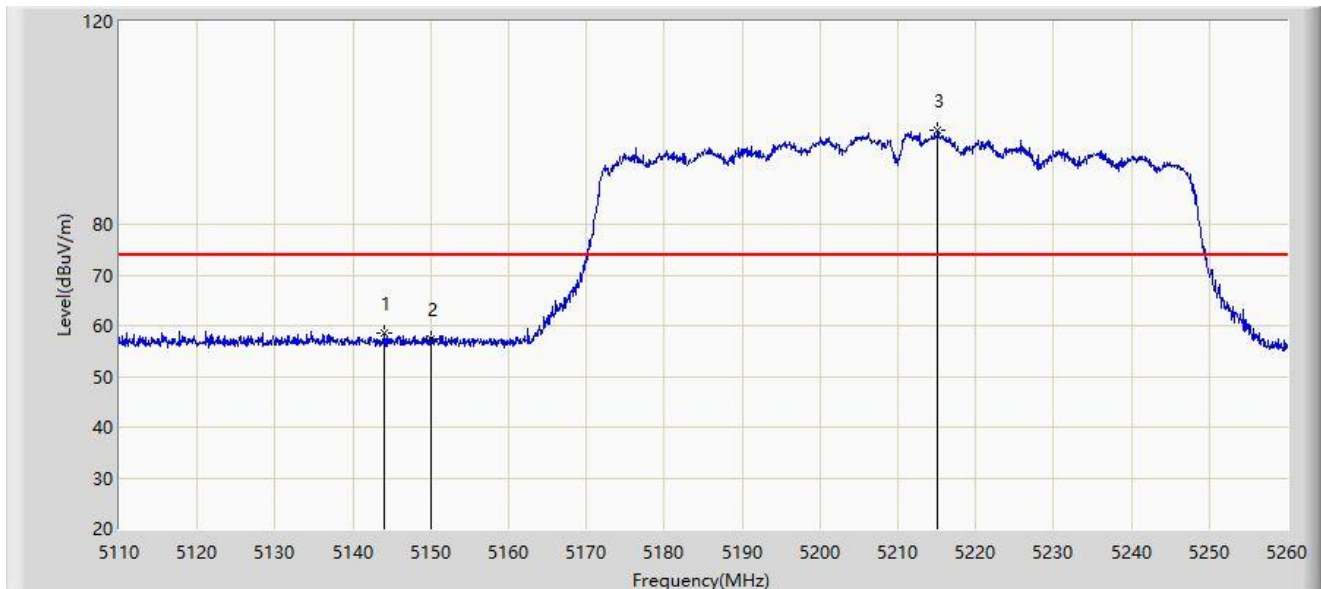
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5146.900	46.587	42.708	-7.413	54.000	3.879	AV
2		5150.000	46.245	42.370	-7.755	54.000	3.876	AV
3		5211.775	82.668	79.093	N/A	N/A	3.575	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ac-VHT80 at 5210MHz	



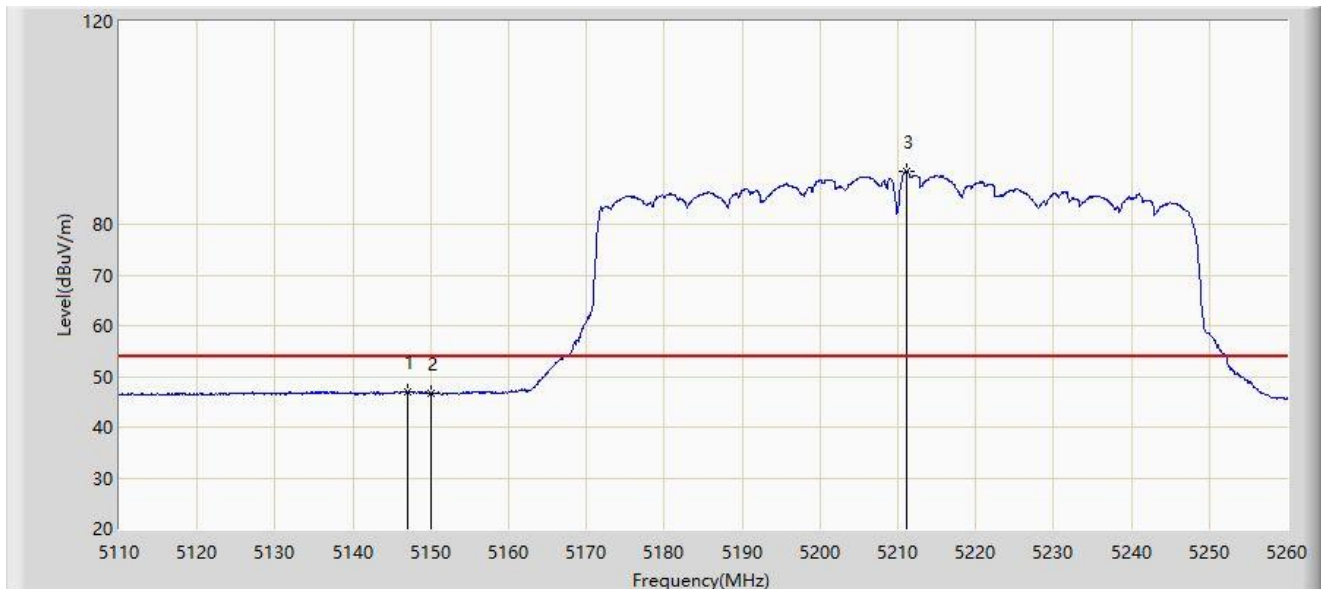
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5144.050	58.573	54.688	-15.427	74.000	3.884	PK
2		5150.000	57.397	53.522	-16.603	74.000	3.876	PK
3		5215.075	98.448	94.859	N/A	N/A	3.589	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ac-VHT80 at 5210MHz	



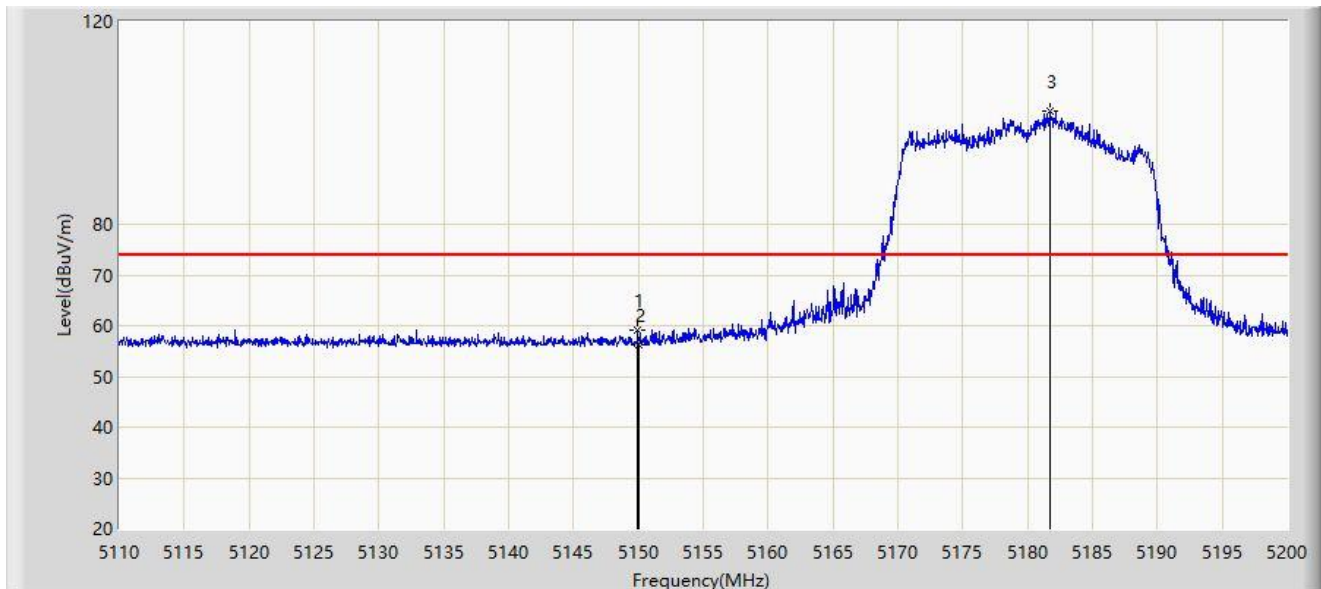
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5147.050	47.032	43.153	-6.968	54.000	3.879	AV
2		5150.000	46.636	42.761	-7.364	54.000	3.876	AV
3		5211.175	90.509	86.937	N/A	N/A	3.573	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at 5180MHz	



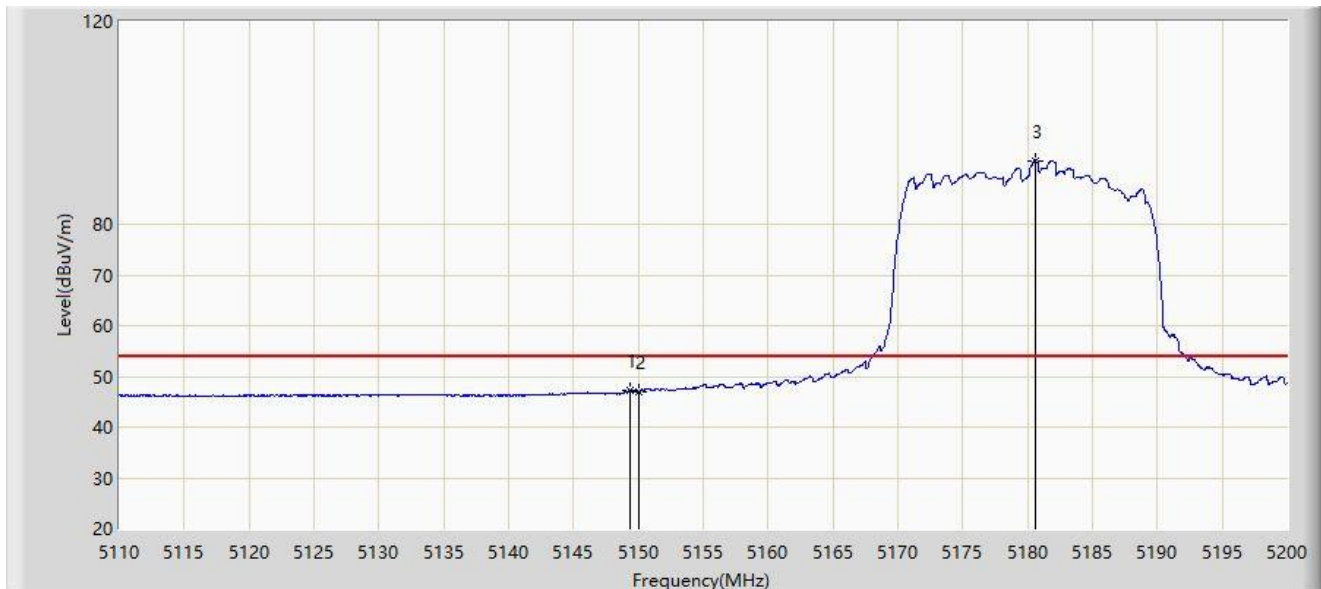
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.915	59.241	55.366	-14.759	74.000	3.876	PK
2		5150.000	56.356	52.481	-17.644	74.000	3.876	PK
3		5181.775	102.282	98.697	N/A	N/A	3.584	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at 5180MHz	



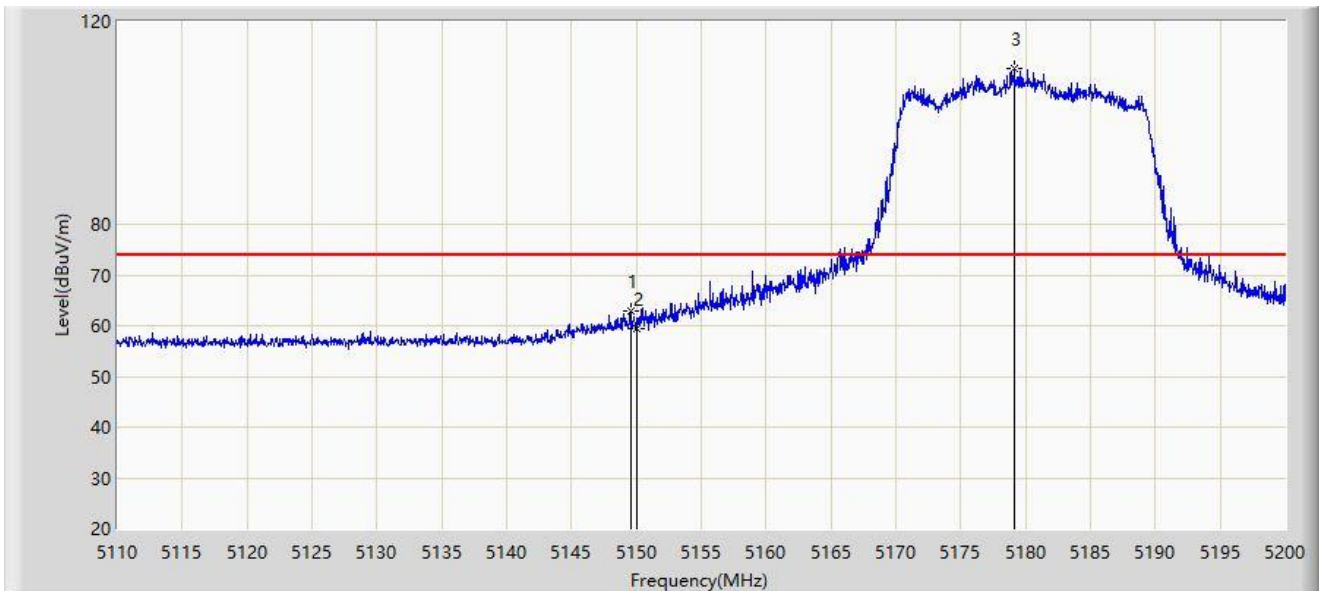
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.330	47.163	43.287	-6.837	54.000	3.876	AV
2		5150.000	47.016	43.141	-6.984	54.000	3.876	AV
3		5180.605	92.564	88.966	N/A	N/A	3.598	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at 5180MHz	



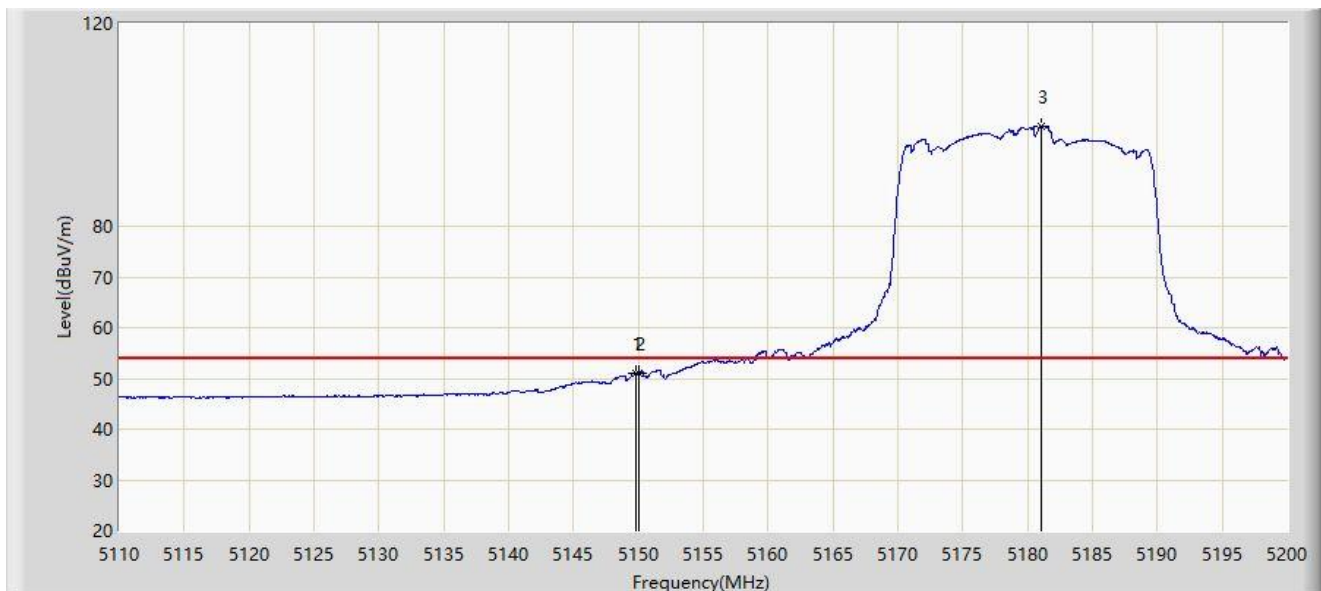
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.555	62.951	59.075	-11.049	74.000	3.875	PK
2		5150.000	59.360	55.485	-14.640	74.000	3.876	PK
3		5179.120	110.764	107.150	N/A	N/A	3.614	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE20 at 5180MHz	



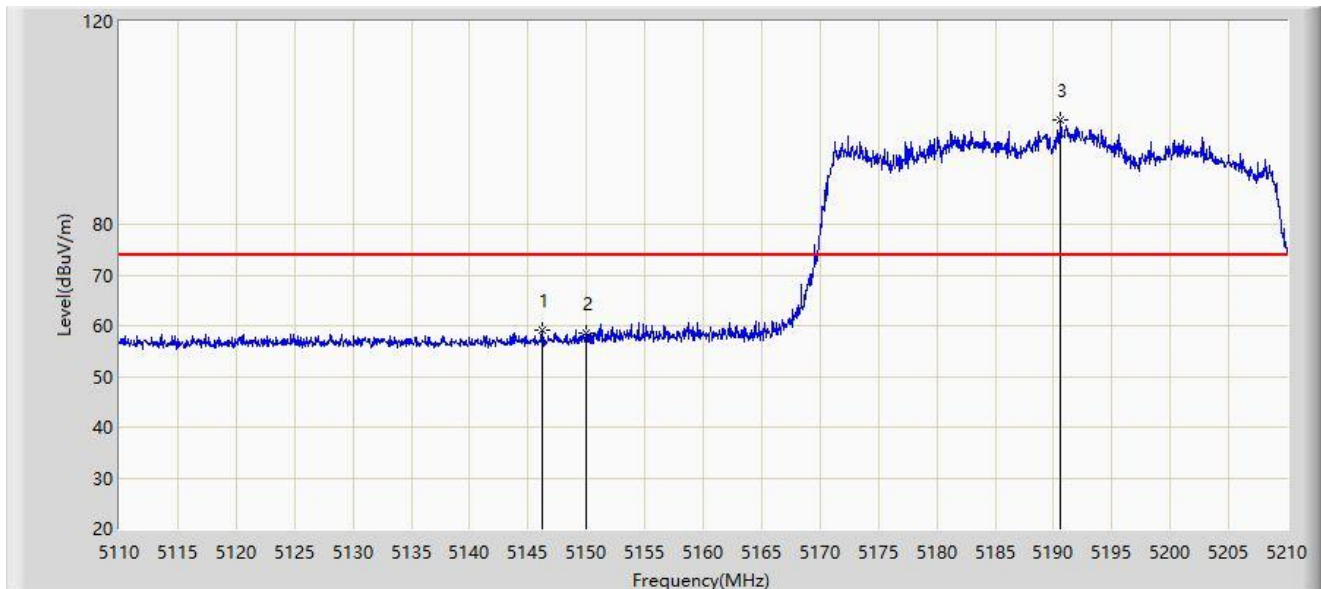
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.780	50.943	47.068	-3.057	54.000	3.875	AV
2		5150.000	50.914	47.039	-3.086	54.000	3.876	AV
3		5181.055	99.732	96.139	N/A	N/A	3.593	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at 5190MHz	



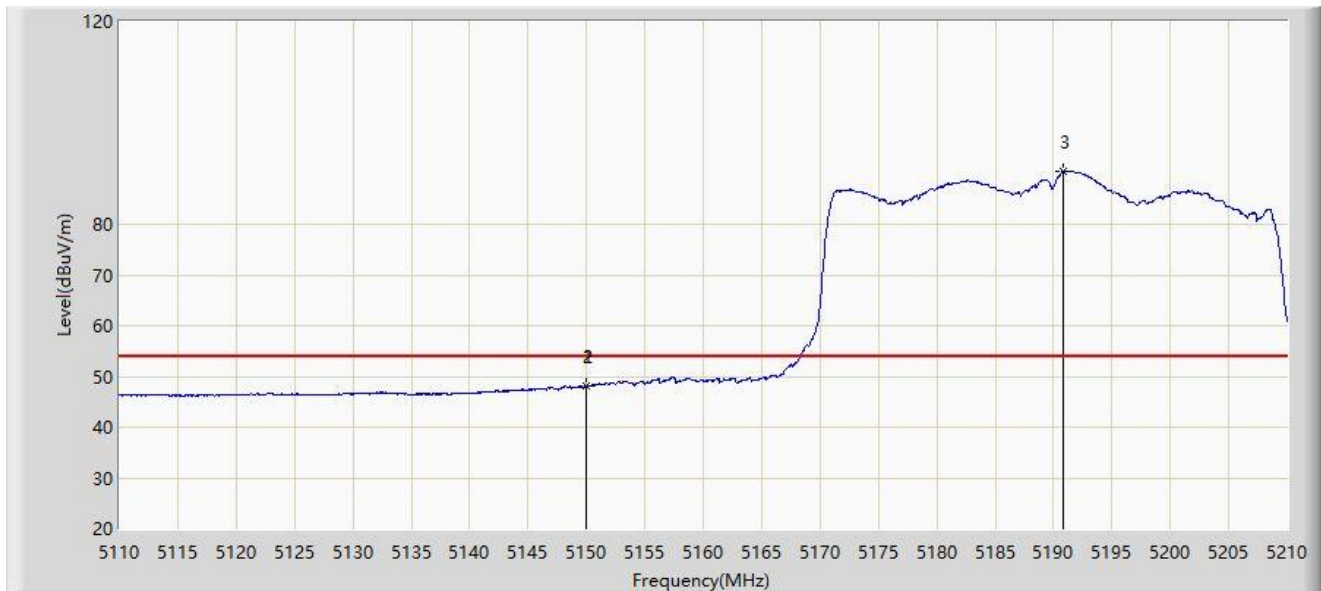
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5146.200	59.037	55.157	-14.963	74.000	3.881	PK
2		5150.000	58.590	54.715	-15.410	74.000	3.876	PK
3		5190.600	100.568	96.996	N/A	N/A	3.572	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at 5190MHz	



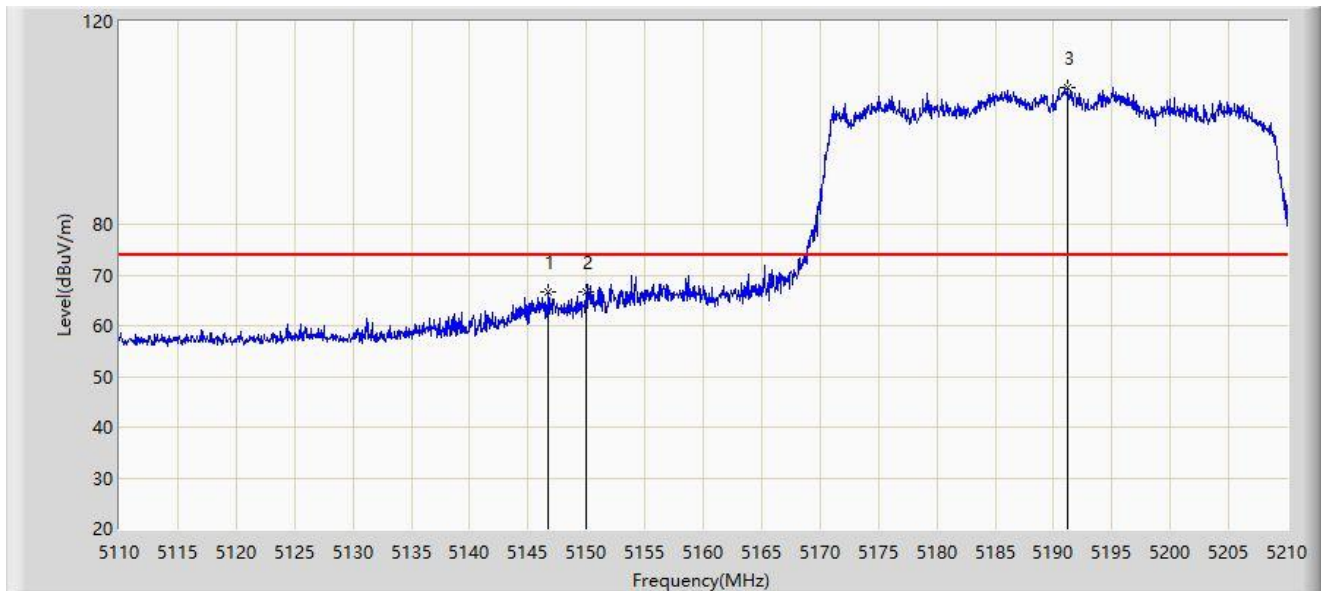
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.950	48.163	44.288	-5.837	54.000	3.876	AV
2		5150.000	48.141	44.266	-5.859	54.000	3.876	AV
3		5190.800	90.383	86.812	N/A	N/A	3.571	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at 5190MHz	



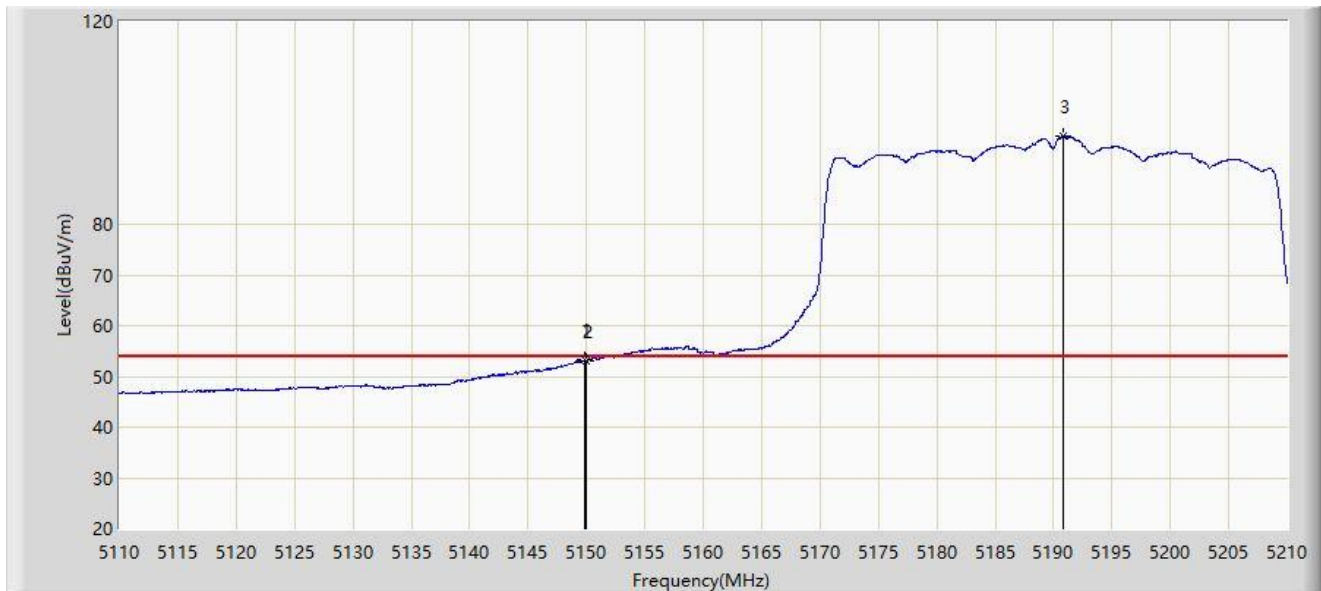
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5146.750	66.673	62.794	-7.327	74.000	3.880	PK
2		5150.000	66.671	62.796	-7.329	74.000	3.876	PK
3		5191.200	107.049	103.481	N/A	N/A	3.568	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE40 at 5190MHz	



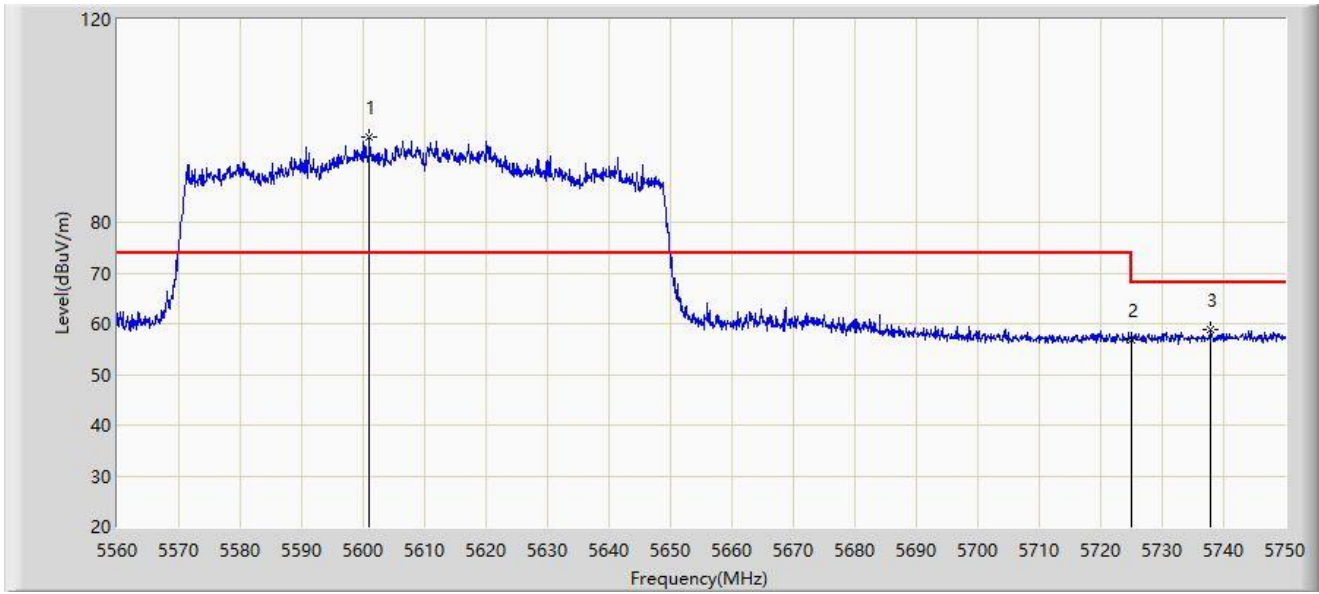
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	5149.850	53.229	49.354	-0.771	54.000	3.875	AV
2		5150.000	53.055	49.180	-0.945	54.000	3.876	AV
3		5190.800	97.494	93.923	N/A	N/A	3.571	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Horizontal
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE80 at 5610MHz	



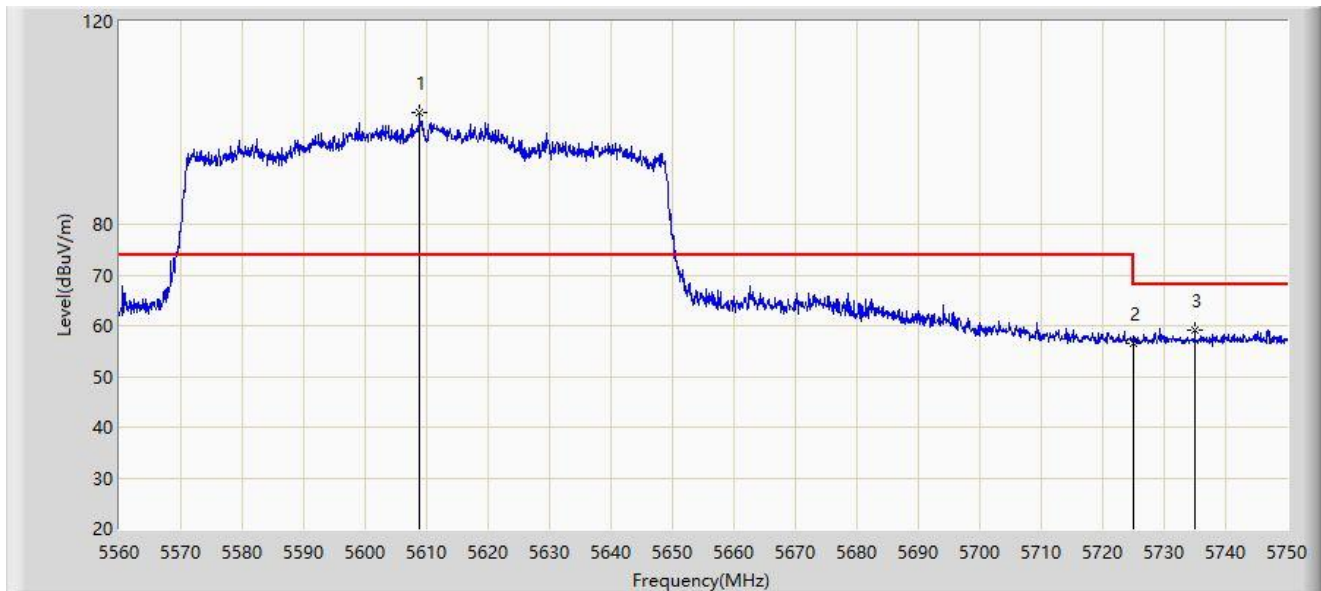
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5601.040	96.687	92.506	N/A	N/A	4.181	PK
2		5725.000	56.667	52.436	-11.533	68.200	4.231	PK
3	*	5737.935	58.915	54.573	-9.285	68.200	4.341	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Site: WZ-AC1	Test Date: 2023-12-15
Limit: FCC_5G_RE(3m)	Engineer: Carl Jiang
Probe: BBHA9120D_1167_1-18GHz	Polarity: Vertical
EUT: 5G Industrial IOT Router	Power: AC 120V/60Hz
Test Mode: Transmit by 802.11ax-HE80 at 5610MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		5608.830	101.928	97.849	N/A	N/A	4.079	PK
2		5725.000	56.439	52.208	-11.761	68.200	4.231	PK
3	*	5734.990	59.032	54.719	-9.168	68.200	4.313	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Appendix B – Test Setup Photograph

Refer to “2310RSU045-UT” file.

Appendix C – EUT Photograph

Refer to “2310RSU045-UE” file.

The End
