

MEASUREMENT REPORT

FCC Part 15 Subpart B / ICES-003

Applicant: HAN Networks Co., Ltd.

Address: 101-A16, 1st Floor, Building 3, No.9 compound,
Yongfeng Road, Haidian District, Beijing, P.R. China

Product: HAN Access Point

Model No.: AP311H

Brand Name: HANNETWORKS; HAN NETWORKS

FCC Rule Part(s): FCC Part 15 Subpart B: 2021

Test Procedure(s): ANSI C63.4: 2014

Test Date: August 08 ~ November 12, 2021

Reviewed By:

Approved By:



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 ANSI C63.4-2014. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date	Note
2108RSU004-U1	Rev. 01	Initial Report	11-17-2021	Valid

Note: This is a copy report based on MRT original report (report No.: 2108RSU003-U1). It only changed the information of the applicant and the product. The hardware and software of the product are the same.

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1. General Information

1.1. Applicant

HAN Networks Co., Ltd.

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

1.2. Manufacturer

HAN Networks Co., Ltd.

101-A16, 1st Floor, Building 3, No.9 compound, Yongfeng Road, Haidian District, Beijing, P.R. China

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: L3261-190725
	FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	HAN Access Point
Model No.	AP311H
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	v5.0 Single mode
Power Type	AC Power Adapter or PoE Injector Input
Operating Environment	Indoor Use
Operating Temperature	0°C ~ 50°C
Accessories	
AC Power Adapter 1#	Model: PPL65U-480 Input: 100-240V ~ 50/60Hz, 1.4A Output: 48.0V, 1.36A, 65.28W MAX
AC Power Adapter 2#	Model: ADP-50GR B Input: 100-240V ~ 50/60Hz, 1.3A Output: 48.0V, 1.042A, 50.1W MAX
PoE Injector	Model: PD-9001GR/AT/AC Input: 100-240V ~ 0.67A, 50/60Hz Output: 55.0V, 0.6A
Remark:	
1. AC Power Adapter and PoE Injector are not sold with the product.	
2. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

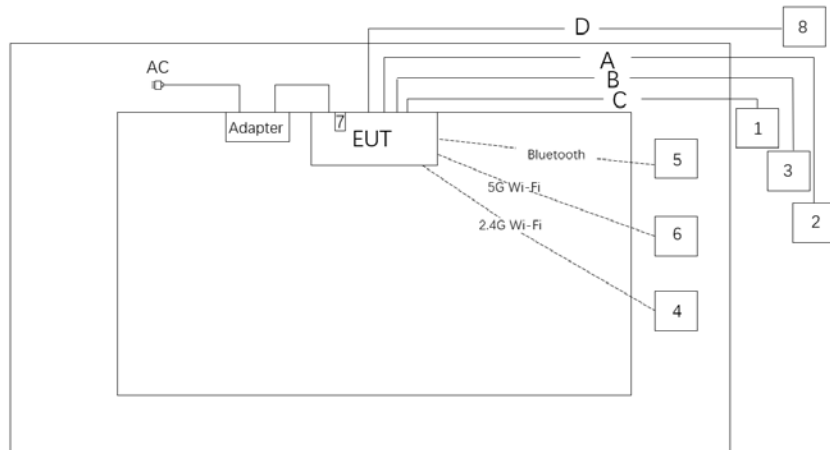
1.5. Test Mode

Test Mode
Mode 1: Power on EUT by AC Power Adapter 1# & LAN Ports communicate with Notebook & Insert USB Flash Disk & 2.4G/5G Wi-Fi communicate with Phone & BLE communicate with Phone & PSE output.
Mode 2: Power on EUT by AC Power Adapter 2# & LAN Ports communicate with Notebook & Insert USB Flash Disk & 2.4G/5G Wi-Fi communicate with Phone & BLE communicate with Phone & PSE output.
Mode 3: Power on EUT by PoE Injector & LAN Ports communicate with Notebook & Insert USB Flash Disk & 2.4G/5G Wi-Fi communicate with Phone & BLE communicate with Phone & PSE output.

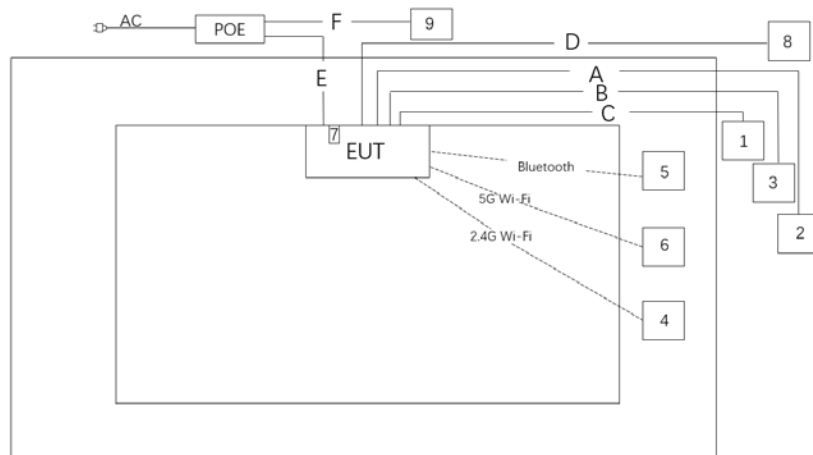
1.6. Configuration of Tested System

The measurement procedures and appropriate EUT setup described in the American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2014) was used in the measurement.

Mode 1 ~ 2



Mode 3



Cable Type		Cable Description
A ~ E	LAN Cable	Non-Shielding, >10m
F	LAN Cable	Non-Shielded, >1m

1.7. Test System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.
1	Notebook	Lenovo	ThinkPad X301
2	Notebook	Lenovo	ThinkPad X301
3	Notebook	HP	487D6PA#AB2
4	Mobile Phone	Apple	iPhone 8
5	Mobile Phone	OPPO	X9009
6	Mobile Phone	Apple	iPhone 8
7	USB Flash Disk	SanDisk	NA
8	Access Point	ALE	OAW-AP1221-RW
9	Notebook	HP	487D6PA#AB2

1.8. Test Procedure

- Make EUT power by AC adapter or PoE Injector.
- Two notebooks connect to EUT's Ethernet port via switch by Lan cable, notebooks execute "ping" function to communicate with EUT.
- Two mobile phones connect to EUT by 2.4G Wi-Fi at channel 2412MHz and 5G Wi-Fi at channel 5745MHz respectively.
- Mobile Phone connect to EUT by Bluetooth via the app "nRF-Connect"
- AP1221-RW power by EUT's PSE port, Notebooks execute "ping" function to communicate with AP-1221-RW.

1.9. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2. TEST EQUIPMENT CALIBRATION DATE

No.	Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
1	EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022/1/4	WZ-AC1
2	Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2022/6/8	WZ-SR2
3	Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2022/6/8	SIP-SR2
4	TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2022/5/24	WZ-AC2
5	Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2022/9/16	WZ-AC1
6	Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2021/11/14	WZ-AC1
7	EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2022/6/24	WZ-AC2
8	Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2021/12/8	WZ-AC2
9	Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2022/10/21	WZ-AC2
10	TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2022/8/5	WZ-AC1
11	Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2021/11/14	WZ-AC2
12	Thermohygrometer	Yuhuaze	HTC-2	MRTSUE06178	1 year	2022/8/10	WZ-AC2
13	Thermohygrometer	Yuhuaze	HTC-2	MRTSUE06184	1 year	2022/8/10	WZ-AC1
14	Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2022/4/29	WZ-AC1
15	Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2022/4/29	WZ-AC2
16	Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	/	/	WZ-SR2
17	Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2022/6/28	WZ-AC1
18	Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2022/6/28	WZ-SR2
19	Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2022/1/6	WZ-AC1
20	EMI Test Receiver	R&S	ESR3	MRTSUE06612	1 year	2022/6/24	SIP-SR2
21	Thermohygrometer	testo	608-H1	MRTSUE06621	1 year	2021/12/3	SIP-SR2
22	EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2021/11/22	WZ-SR2
23	Shielding Room	MIX-BEP	SIP-SR2	MRTSUE06949	/	/	SIP-SR2

Software	Version	Function
EMI Software	V3	EMI Test Software

3. 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 $k = 2$.

Conducted Emission Measurement
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB

4. TEST RESULT

4.1. Summary

FCC Part Section(s)	ICES-003 Section(s)	Test Description	Test Result
15.107	3.2.1	Conducted Emission	Pass
15.109	3.2.2	Radiated Emission	Pass

4.2. Conducted Emission Measurement

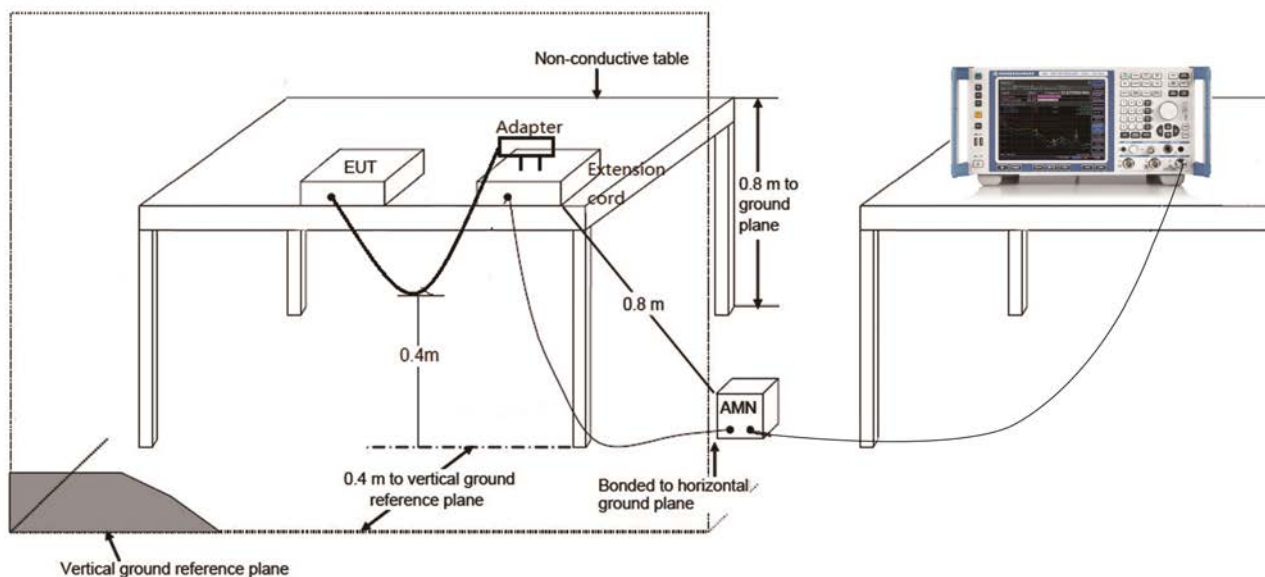
4.2.1. Test Limit

FCC Part 15.107 / ICES-003 Issue 7 Class B Limits		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
0.15 ~ 0.50	66 ~ 56	56 ~ 46
0.50 ~ 5.0	56	46
5.0 ~ 30	60	50

Note 1: The lower limit shall apply at the transition frequencies.

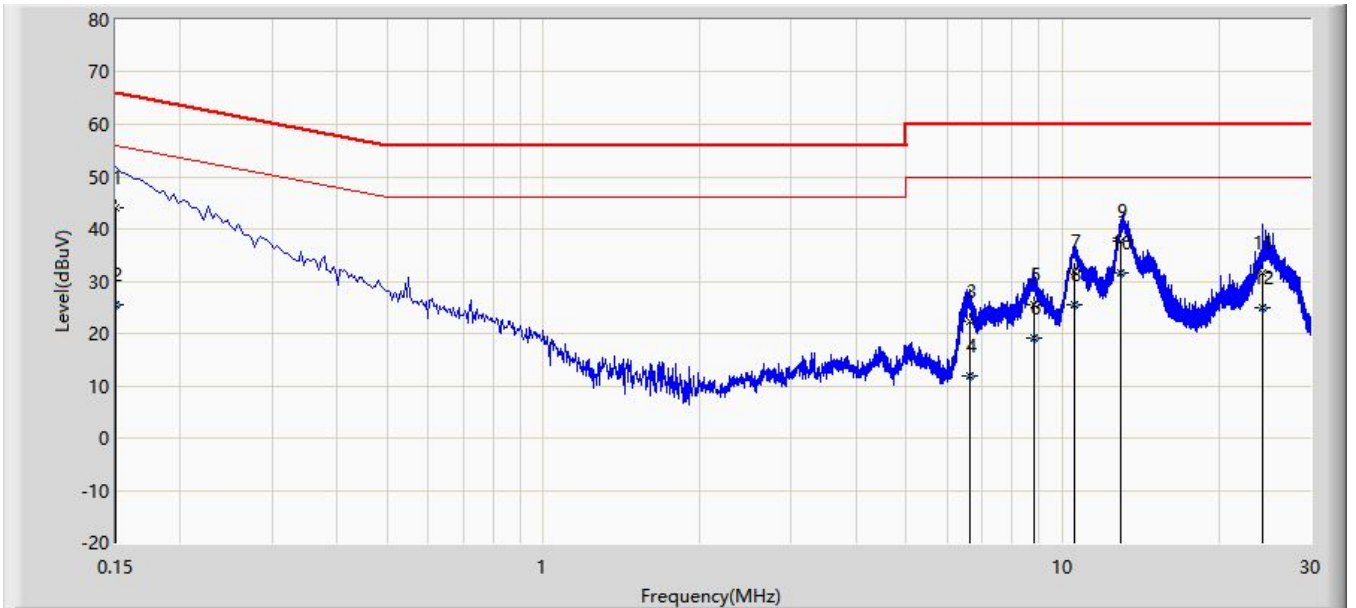
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

4.2.2. Test Setup



4.2.3. Test Result

Site: WZ-SR2	Time: 2021/08/08
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Messiah Li
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	

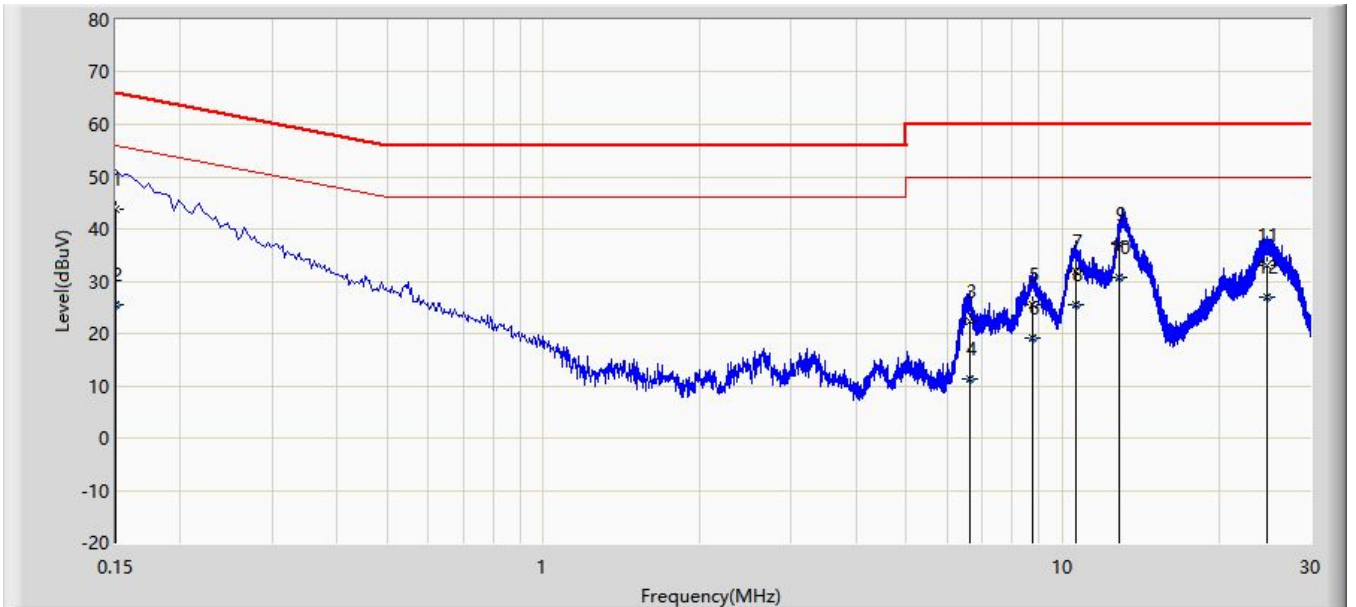


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.150	44.029	34.399	-21.971	66.000	9.630	QP
2			0.150	25.419	15.789	-30.581	56.000	9.630	AV
3			6.618	22.275	11.953	-37.725	60.000	10.322	QP
4			6.618	11.760	1.437	-38.240	50.000	10.322	AV
5			8.782	25.515	15.091	-34.485	60.000	10.425	QP
6			8.782	19.207	8.783	-30.793	50.000	10.425	AV
7			10.510	31.740	21.262	-28.260	60.000	10.478	QP
8			10.510	25.467	14.989	-24.533	50.000	10.478	AV
9			12.979	37.762	27.294	-22.238	60.000	10.468	QP
10		*	12.979	31.601	21.133	-18.399	50.000	10.468	AV
11			24.258	31.467	20.617	-28.533	60.000	10.851	QP
12			24.258	24.959	14.109	-25.041	50.000	10.851	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: WZ-SR2	Time: 2021/08/08
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Messiah Li
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	

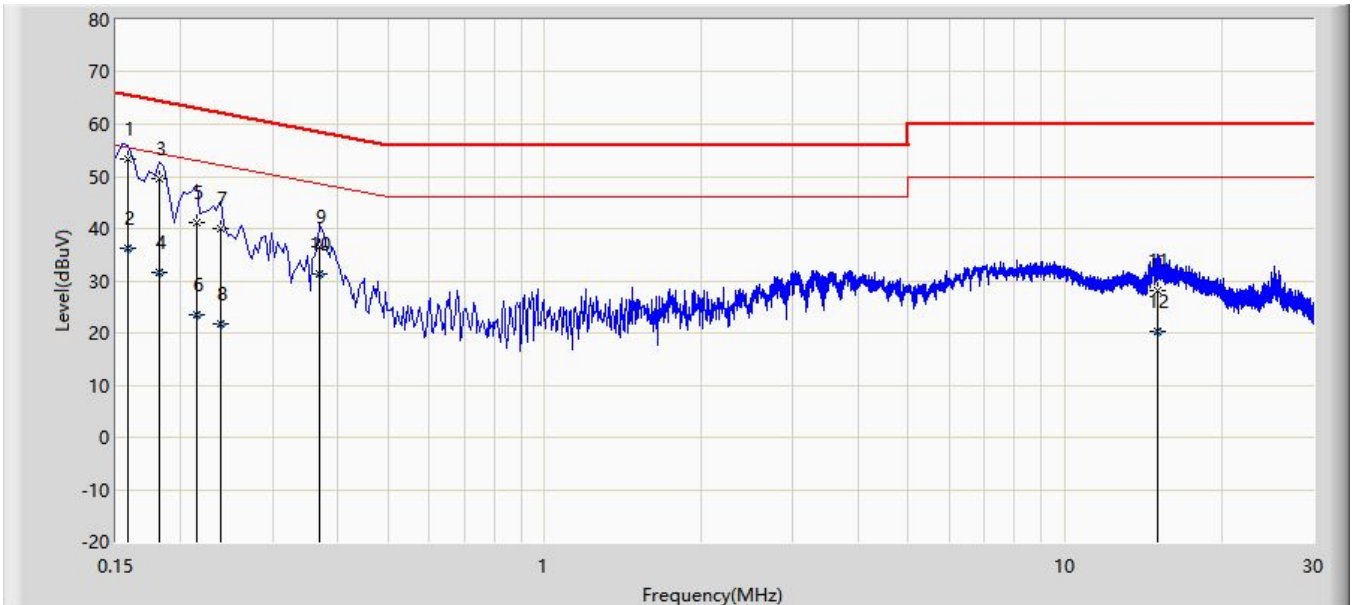


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.150	43.903	34.273	-22.097	66.000	9.630	QP
2			0.150	25.585	15.955	-30.415	56.000	9.630	AV
3			6.614	22.275	11.943	-37.725	60.000	10.332	QP
4			6.614	11.401	1.069	-38.599	50.000	10.332	AV
5			8.778	25.442	15.002	-34.558	60.000	10.439	QP
6			8.778	19.152	8.713	-30.848	50.000	10.439	AV
7			10.606	31.970	21.470	-28.030	60.000	10.500	QP
8			10.606	25.632	15.132	-24.368	50.000	10.500	AV
9			12.873	37.079	26.579	-22.921	60.000	10.500	QP
10		*	12.873	30.814	20.314	-19.186	50.000	10.500	AV
11			24.754	33.182	22.253	-26.818	60.000	10.929	QP
12			24.754	27.045	16.115	-22.955	50.000	10.929	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: WZ-SR2	Time: 2021/11/11
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Messiah Li
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	

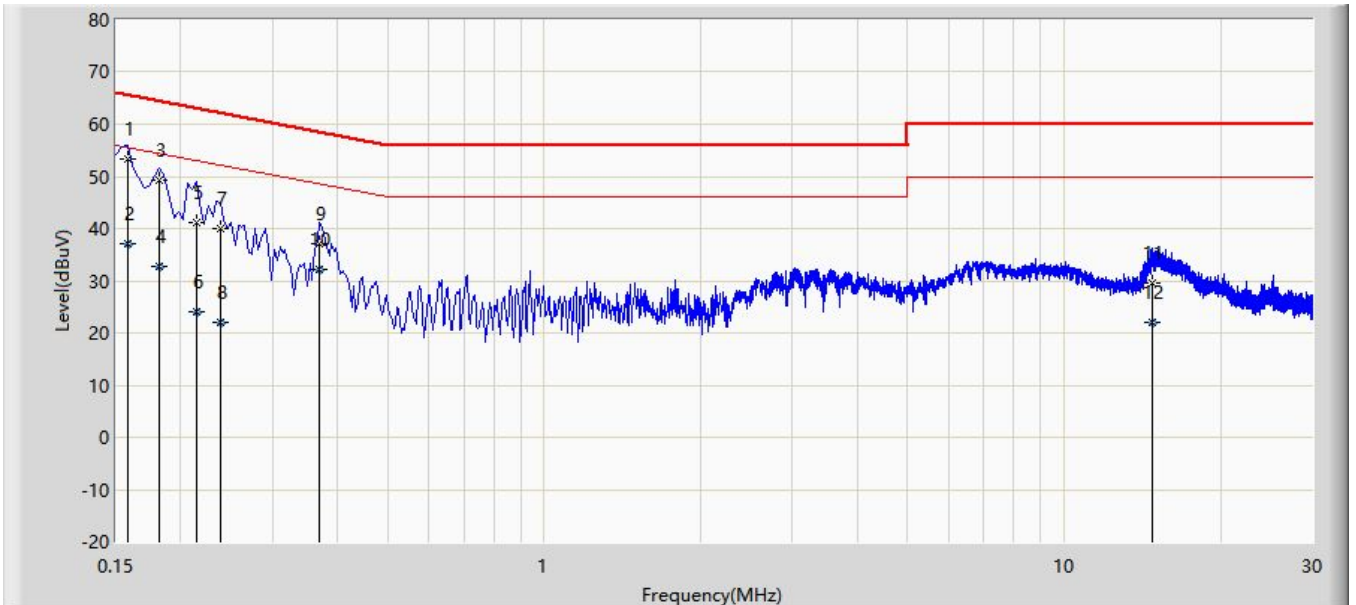


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		*	0.158	53.420	43.372	-12.149	65.568	10.048	QP
2			0.158	36.321	26.272	-19.248	55.568	10.048	AV
3			0.182	49.467	39.424	-14.927	64.394	10.043	QP
4			0.182	31.659	21.615	-22.735	54.394	10.043	AV
5			0.214	41.091	31.046	-21.958	63.049	10.045	QP
6			0.214	23.395	13.351	-29.653	53.049	10.045	AV
7			0.238	40.039	29.988	-22.127	62.166	10.050	QP
8			0.238	21.873	11.823	-30.292	52.166	10.050	AV
9			0.370	36.602	26.516	-21.899	58.501	10.085	QP
10			0.370	31.444	21.358	-17.057	48.501	10.085	AV
11			15.054	28.012	17.159	-31.988	60.000	10.854	QP
12			15.054	20.335	9.481	-29.665	50.000	10.854	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: WZ-SR2	Time: 2021/11/11
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Messiah Li
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	

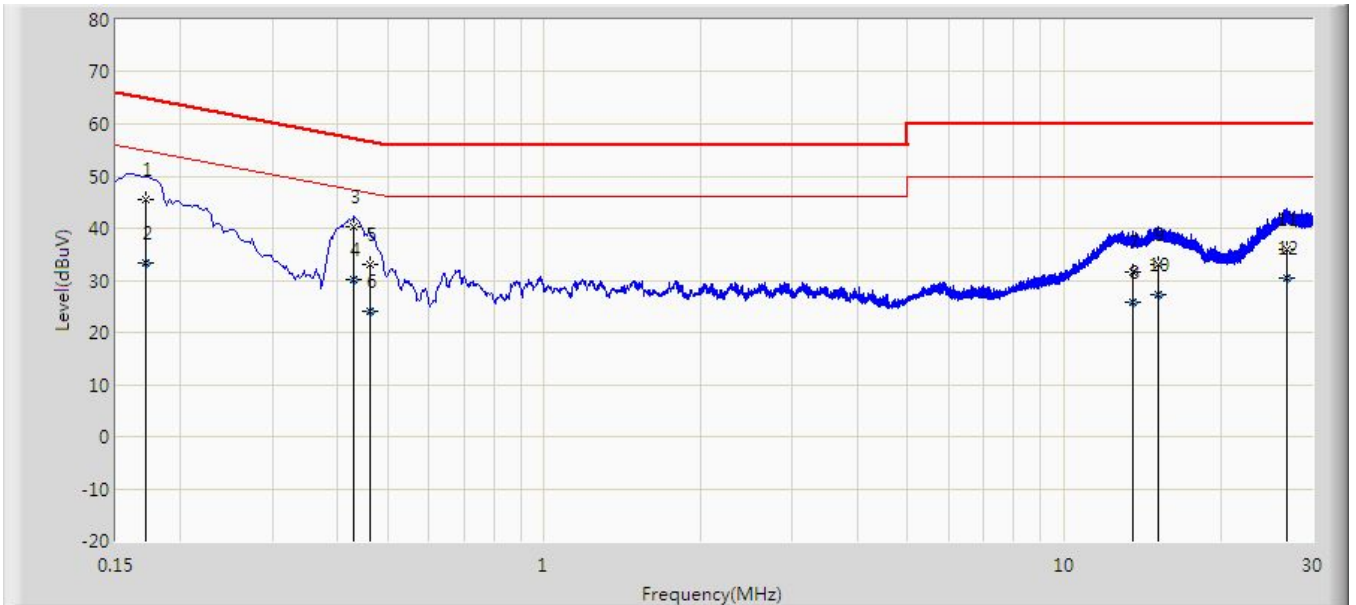


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1		*	0.158	53.418	43.054	-12.150	65.568	10.365	QP
2			0.158	37.093	26.729	-18.475	55.568	10.365	AV
3			0.182	49.415	39.070	-14.979	64.394	10.345	QP
4			0.182	32.658	22.313	-21.736	54.394	10.345	AV
5			0.214	41.149	30.815	-21.900	63.049	10.334	QP
6			0.214	24.106	13.772	-28.942	53.049	10.334	AV
7			0.238	40.051	29.715	-22.115	62.166	10.336	QP
8			0.238	22.094	11.757	-30.072	52.166	10.336	AV
9			0.370	36.987	26.629	-21.514	58.501	10.358	QP
10			0.370	32.302	21.943	-16.199	48.501	10.358	AV
11			14.726	29.648	18.518	-30.352	60.000	11.130	QP
12			14.726	22.083	10.953	-27.917	50.000	11.130	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SIP-SR2	Time: 2021/10/17
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Andy Zhu
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 3	

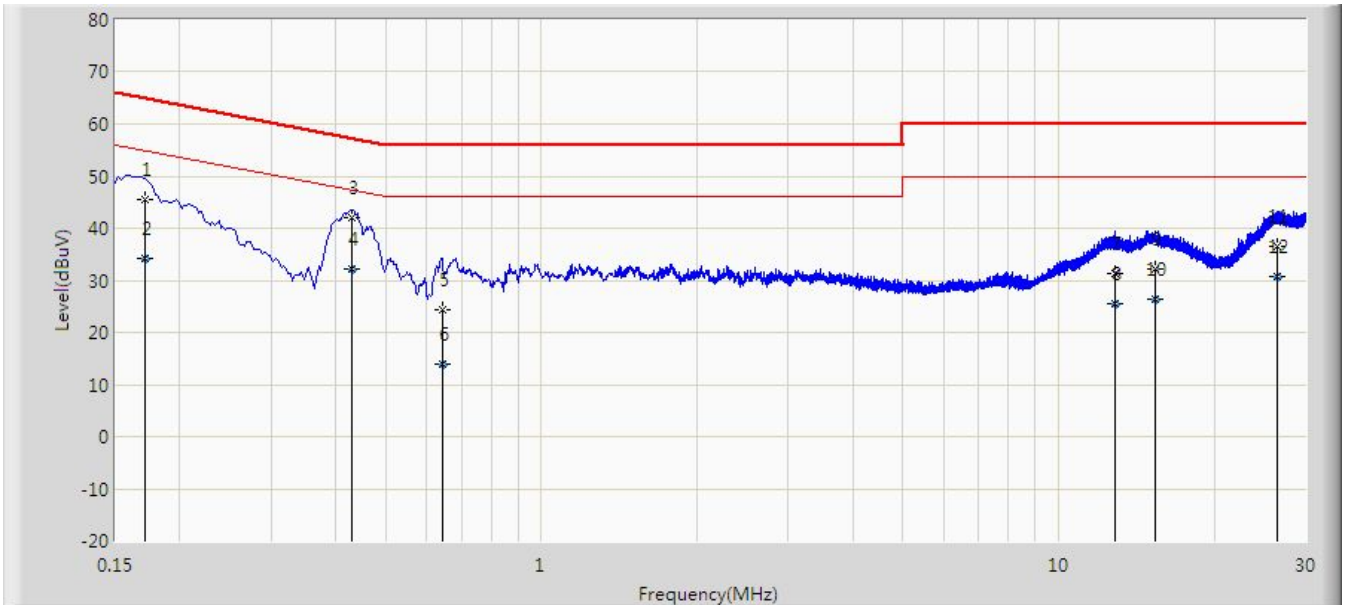


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.171	45.386	35.741	-19.525	64.912	9.646	QP
2			0.171	33.460	23.815	-21.451	54.912	9.646	AV
3		*	0.431	40.382	30.662	-16.846	57.229	9.720	QP
4			0.431	30.255	20.535	-16.974	47.229	9.720	AV
5			0.461	33.152	23.432	-23.532	56.684	9.720	QP
6			0.461	23.952	14.232	-22.732	46.684	9.720	AV
7			13.562	31.522	21.386	-28.478	60.000	10.136	QP
8			13.562	25.706	15.571	-24.294	50.000	10.136	AV
9			15.180	32.958	22.782	-27.042	60.000	10.176	QP
10			15.180	27.223	17.047	-22.777	50.000	10.176	AV
11			26.828	35.988	25.560	-24.012	60.000	10.428	QP
12			26.828	30.302	19.873	-19.698	50.000	10.428	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: SIP-SR2	Time: 2021/10/17
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Andy Zhu
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 3	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.171	45.497	35.861	-19.419	64.917	9.636	QP
2			0.171	34.272	24.636	-20.645	54.917	9.636	AV
3		*	0.431	42.081	32.371	-15.147	57.229	9.710	QP
4			0.431	32.033	22.323	-15.195	47.229	9.710	AV
5			0.643	24.362	14.652	-31.638	56.000	9.710	QP
6			0.643	13.977	4.267	-32.023	46.000	9.710	AV
7			12.883	31.259	21.134	-28.741	60.000	10.125	QP
8			12.883	25.465	15.340	-24.535	50.000	10.125	AV
9			15.392	32.222	22.039	-27.778	60.000	10.183	QP
10			15.392	26.456	16.273	-23.544	50.000	10.183	AV
11			26.392	36.397	25.951	-23.603	60.000	10.447	QP
12			26.392	30.746	20.299	-19.254	50.000	10.447	AV

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

Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

4.3. Radiated Emission Measurement

4.3.1. Test Limit

FCC Part 15.109 / ICES-003 Issue 7 Class B Limit		
Frequency (MHz)	Distance (m)	Level (dB μ V/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

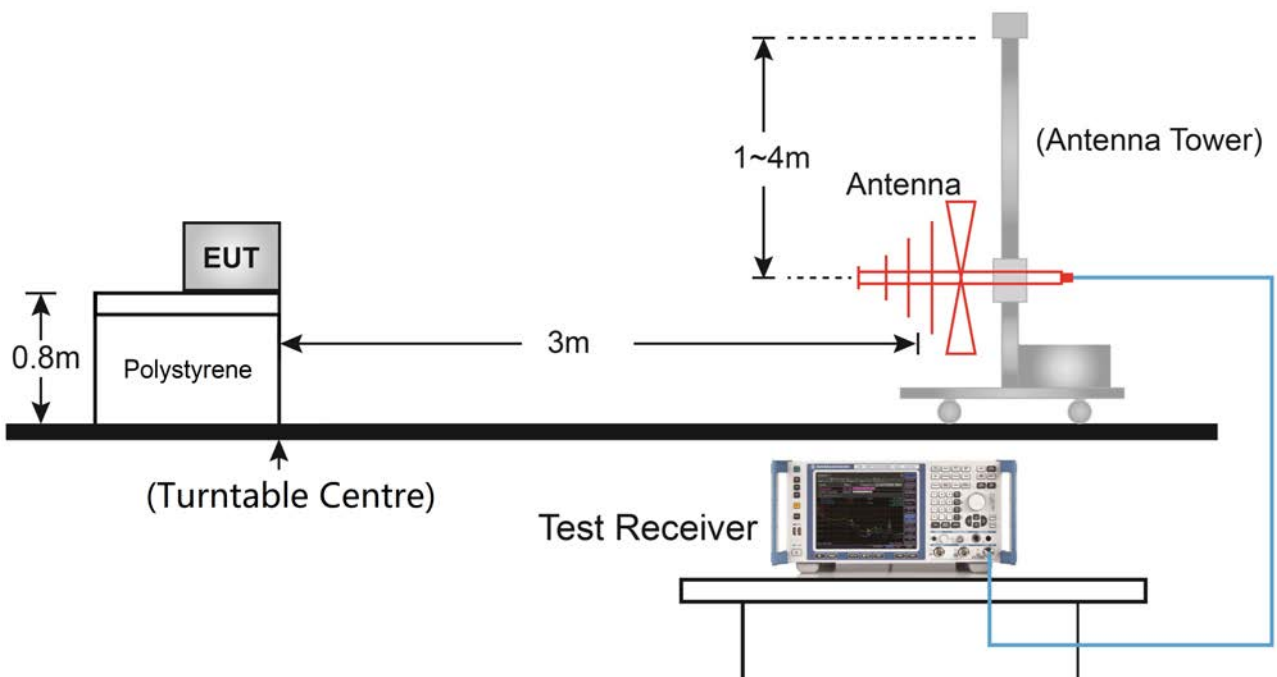
Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dB μ V/m) = 20 log E field strength (μ V/m)

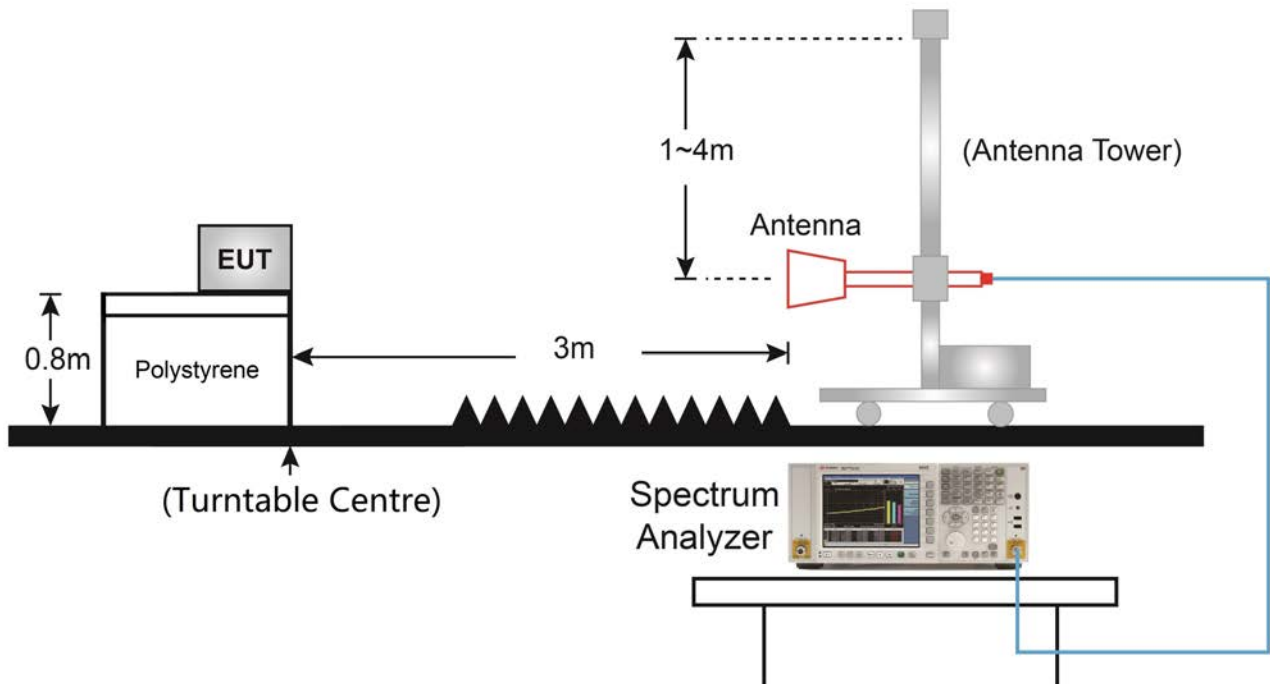
Note 4: For the range of 216MHz to 960MHz, the limit of FCC Part 15.109 is more stringent than the limit of ICES-003 Issue 7, so only the limit of FCC Part 15.109 is shown in the test data.

4.3.2. Test Setup

Below 1GHz Test Setup:

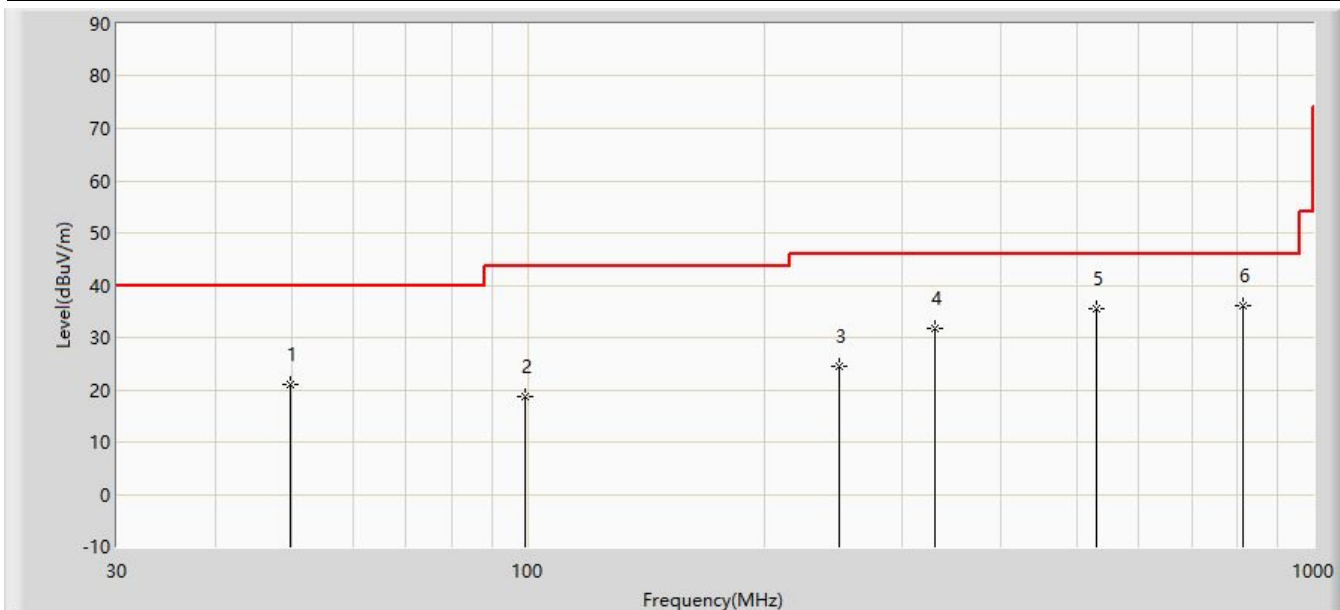


Above 1GHz Test Setup:



4.3.3. Test Result

Site: WZ-AC2	Time: 2021/08/09
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Lucas Wang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	



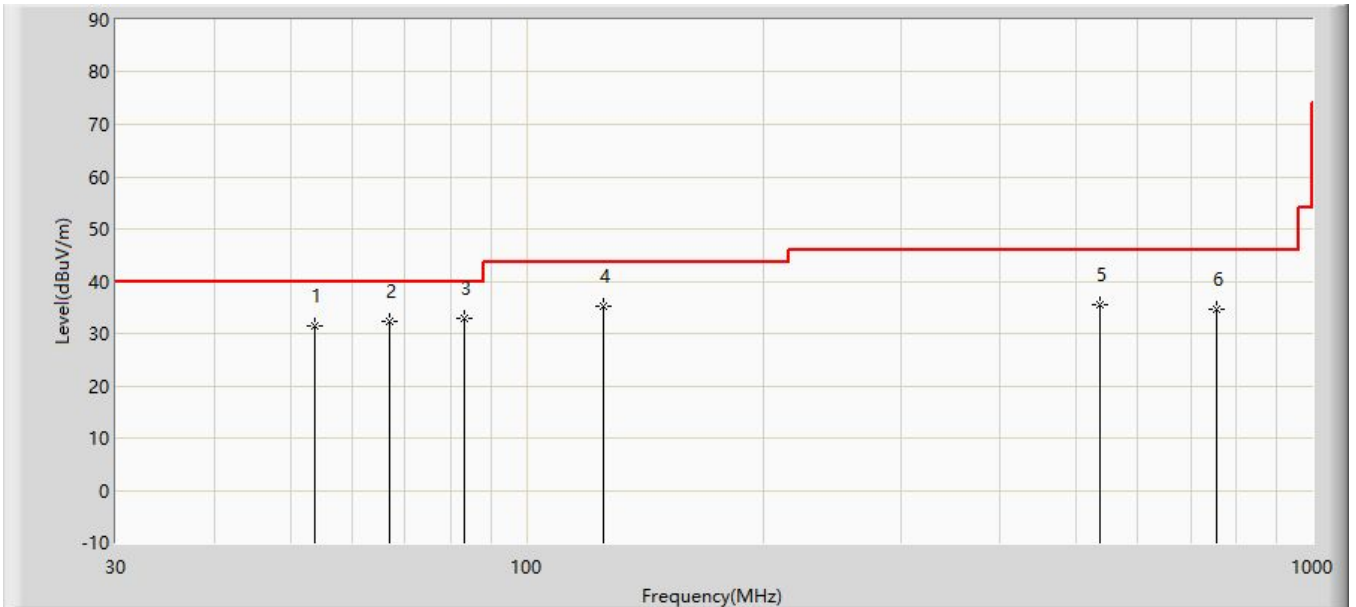
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1			49.885	21.083	0.487	-18.917	40.000	20.596	PK
2			99.355	18.708	0.214	-24.792	43.500	18.494	PK
3			249.705	24.607	4.746	-21.393	46.000	19.861	PK
4			330.215	31.772	9.936	-14.228	46.000	21.836	PK
5			529.065	35.594	10.184	-10.406	46.000	25.410	PK
6		*	815.215	36.156	5.955	-9.844	46.000	30.202	PK

Note 1: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC2	Time: 2021/08/09
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Lucas Wang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	



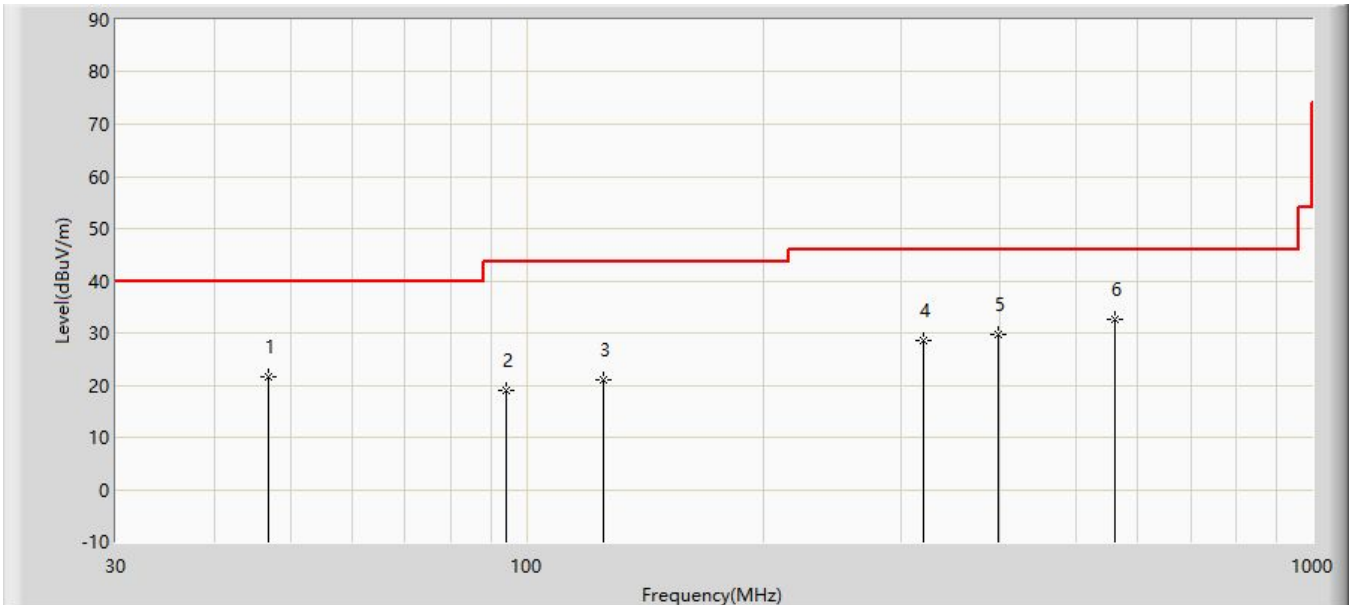
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			53.765	31.379	11.101	-8.621	40.000	20.278	PK
2			66.860	32.392	14.958	-7.608	40.000	17.434	PK
3		*	83.350	32.842	18.256	-7.158	40.000	14.585	PK
4			125.060	35.340	19.192	-8.160	43.500	16.148	PK
5			537.795	35.552	9.894	-10.448	46.000	25.658	PK
6			757.015	34.678	4.903	-11.322	46.000	29.775	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC2	Time: 2021/11/11
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	



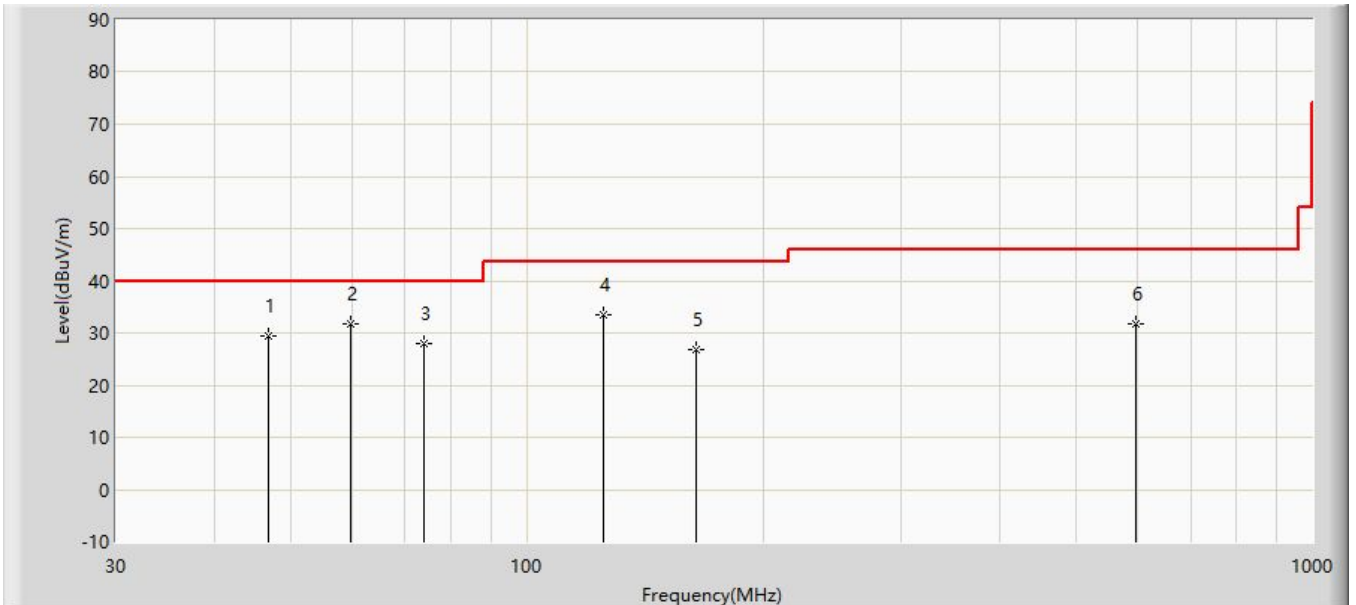
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			46.975	21.603	0.978	-18.397	40.000	20.625	PK
2			94.020	18.864	1.108	-24.636	43.500	17.756	PK
3			125.060	21.119	4.809	-22.381	43.500	16.310	PK
4			320.030	28.478	6.918	-17.522	46.000	21.561	PK
5			399.085	29.568	6.097	-16.432	46.000	23.471	PK
6		*	559.620	32.657	6.343	-13.343	46.000	26.314	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC2	Time: 2021/11/11
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC2_VULB9162_0.03-7GHz	Polarity: Vertical
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	



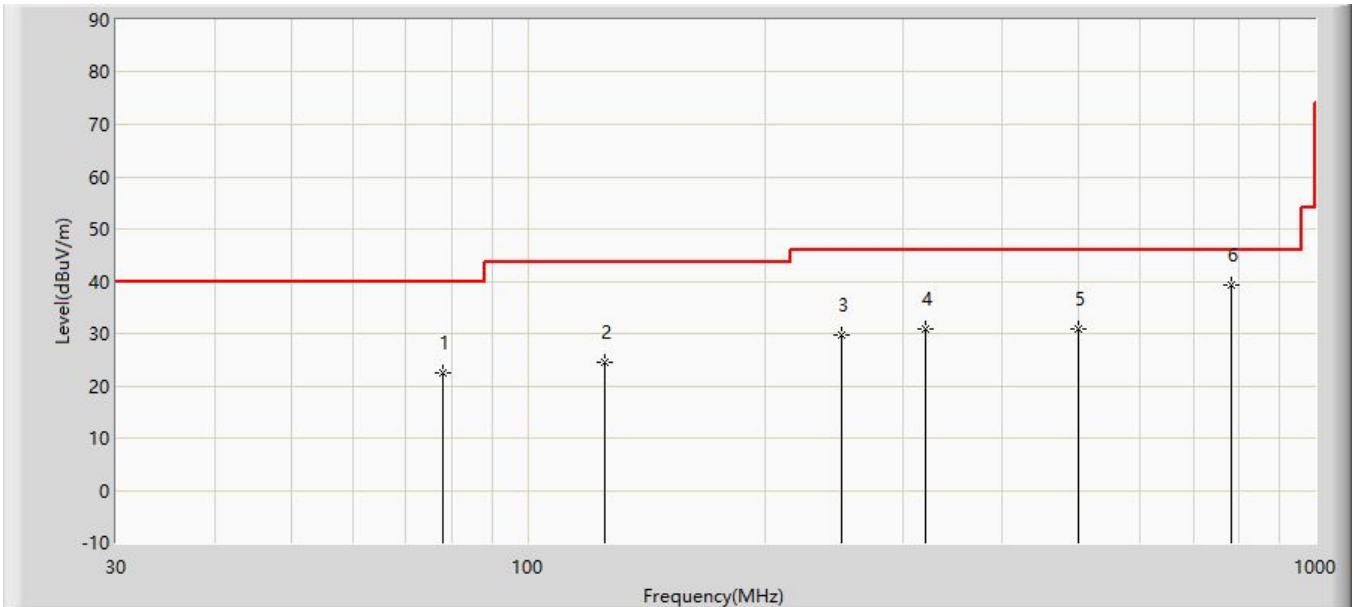
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			46.975	29.353	8.728	-10.647	40.000	20.625	PK
2		*	59.585	31.613	12.100	-8.387	40.000	19.513	PK
3			74.135	27.977	12.688	-12.023	40.000	15.289	PK
4			125.060	33.593	17.283	-9.907	43.500	16.310	PK
5			164.345	26.819	10.753	-16.681	43.500	16.067	PK
6			595.510	31.772	4.221	-14.228	46.000	27.551	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC1	Time: 2021/08/12
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC1_VULB 9168 _30-1000MHz	Polarity: Horizontal
EUT: HAN Access Point	Power: By PoE
Test Mode 3	



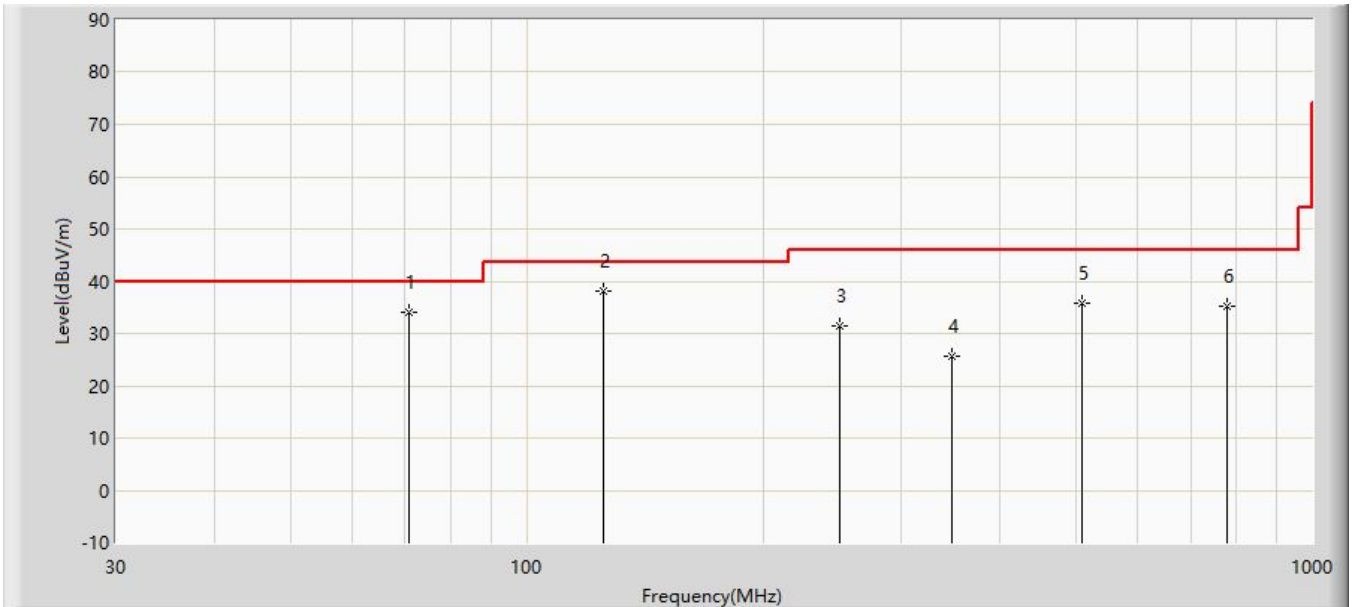
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			78.015	22.418	8.282	-17.582	40.000	14.136	PK
2			125.060	24.457	8.393	-19.043	43.500	16.064	PK
3			250.190	29.667	13.097	-16.333	46.000	16.570	PK
4			320.030	30.846	11.894	-15.154	46.000	18.952	PK
5			499.965	30.922	7.811	-15.078	46.000	23.111	PK
6		*	782.720	39.260	10.928	-6.740	46.000	28.332	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC1	Time: 2021/08/12
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC1_VULB 9168 _30-1000MHz	Polarity: Vertical
EUT: HAN Access Point	Power: By PoE
Test Mode 3	



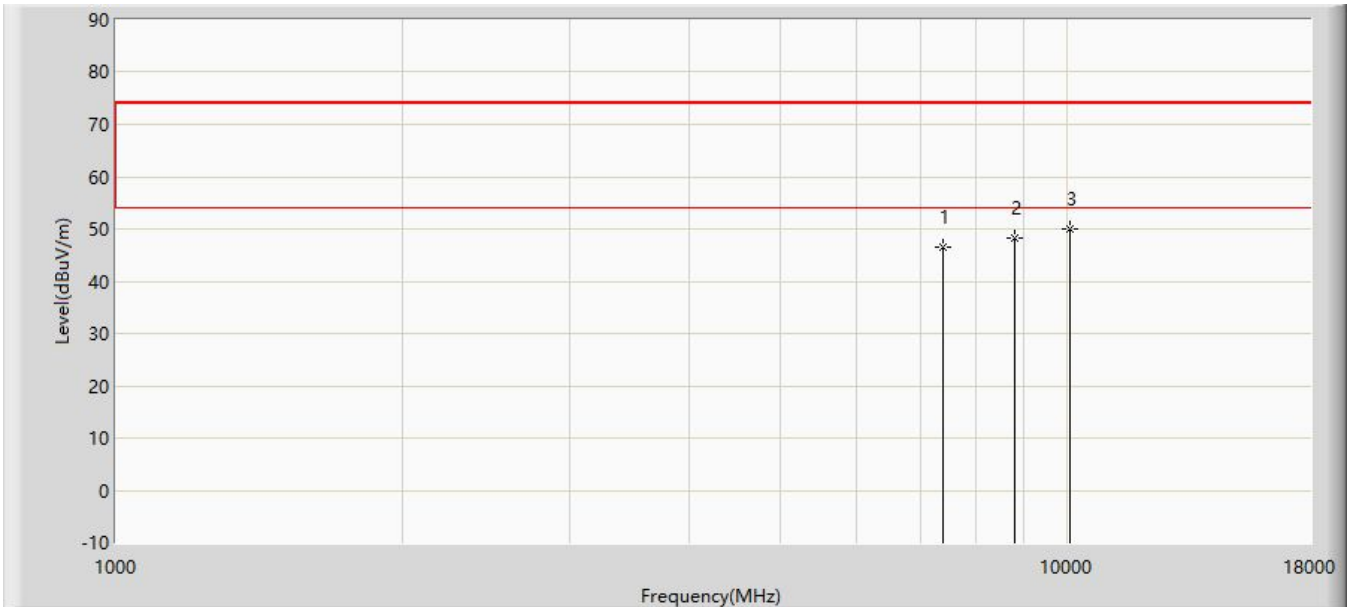
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			70.740	34.121	18.476	-5.879	40.000	15.645	PK
2		*	125.060	38.158	22.094	-5.342	43.500	16.064	PK
3			250.190	31.324	14.754	-14.676	46.000	16.570	PK
4			348.160	25.777	6.360	-20.223	46.000	19.417	PK
5			510.150	35.730	12.404	-10.270	46.000	23.326	PK
6			779.325	35.292	6.964	-10.708	46.000	28.328	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: If the peak detected signals are below the quasi-peak limit, then no further investigation of the quasi-peak readings is required.

Site: WZ-AC2	Time: 2021/08/09
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Lucas Wang
Probe: WZ-AC2_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			7400.500	46.411	34.160	-27.589	74.000	12.252	PK
2			8794.500	48.131	34.014	-25.869	74.000	14.116	PK
3		*	10044.000	49.965	34.501	-24.035	74.000	15.464	PK

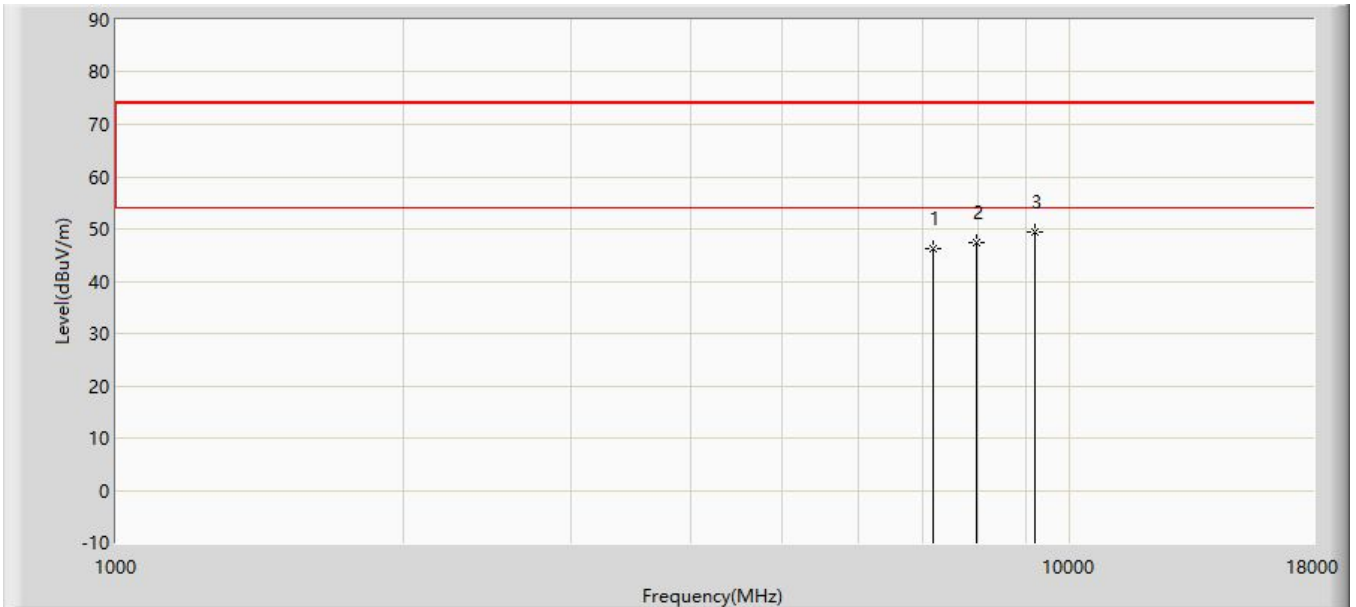
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

Site: WZ-AC2	Time: 2021/08/09
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Lucas Wang
Probe: WZ-AC2_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			7179.500	46.100	34.022	-27.900	74.000	12.078	PK
2			7995.500	47.472	34.794	-26.528	74.000	12.678	PK
3		*	9202.500	49.490	34.074	-24.510	74.000	15.416	PK

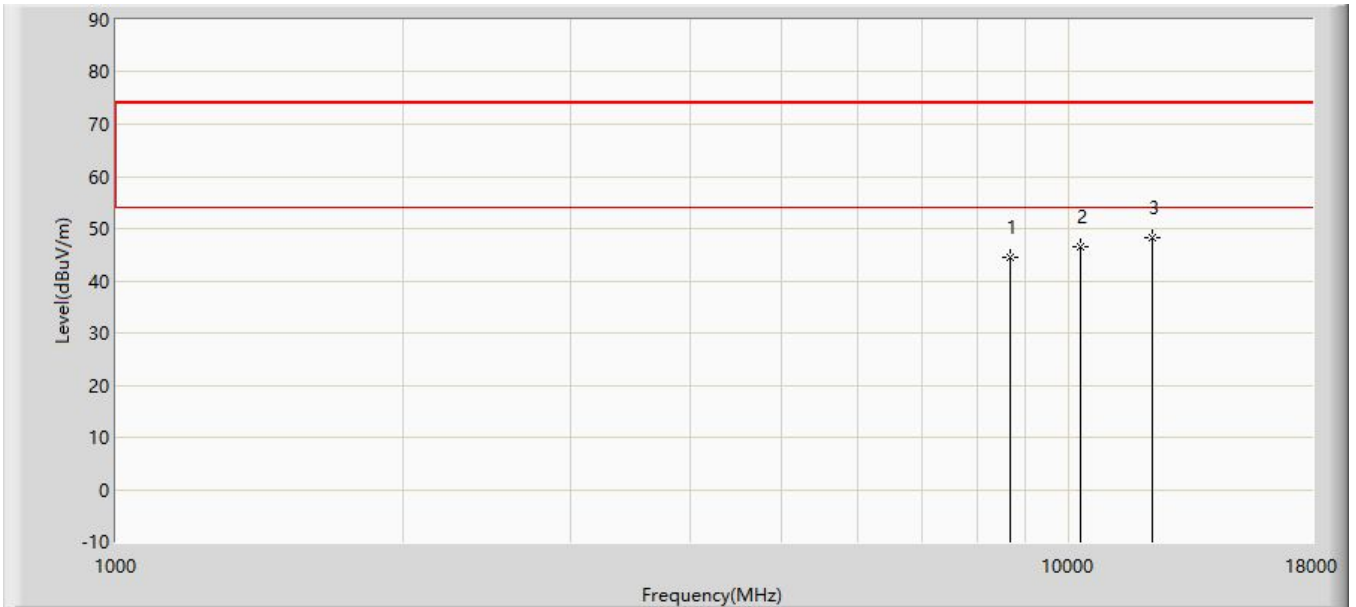
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

Site: WZ-AC2	Time: 2021/11/11
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC2_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			8667.000	44.631	32.963	-29.369	74.000	11.668	PK
2			10299.000	46.441	32.772	-27.559	74.000	13.669	PK
3		*	12237.000	48.345	31.044	-25.655	74.000	17.301	PK

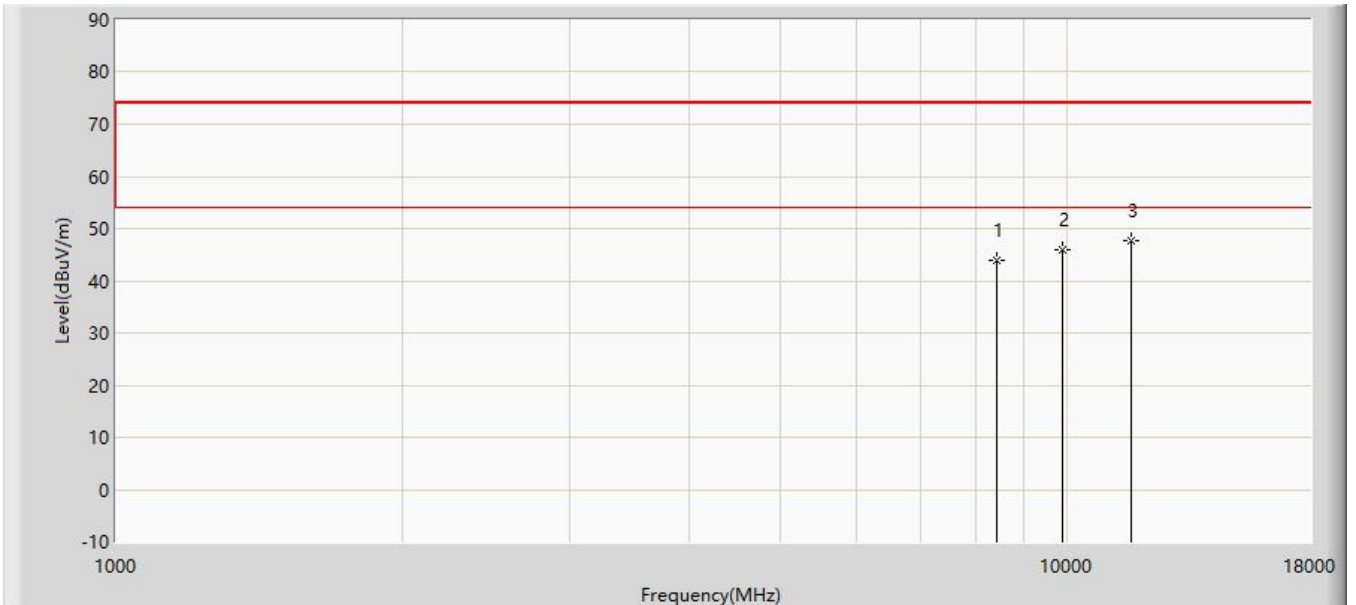
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

Site: WZ-AC2	Time: 2021/11/11
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC2_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: AC 120V/60Hz
Test Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			8437.500	43.942	32.979	-30.058	74.000	10.963	PK
2			9874.000	45.944	33.464	-28.056	74.000	12.480	PK
3		*	11667.500	47.624	30.906	-26.376	74.000	16.718	PK

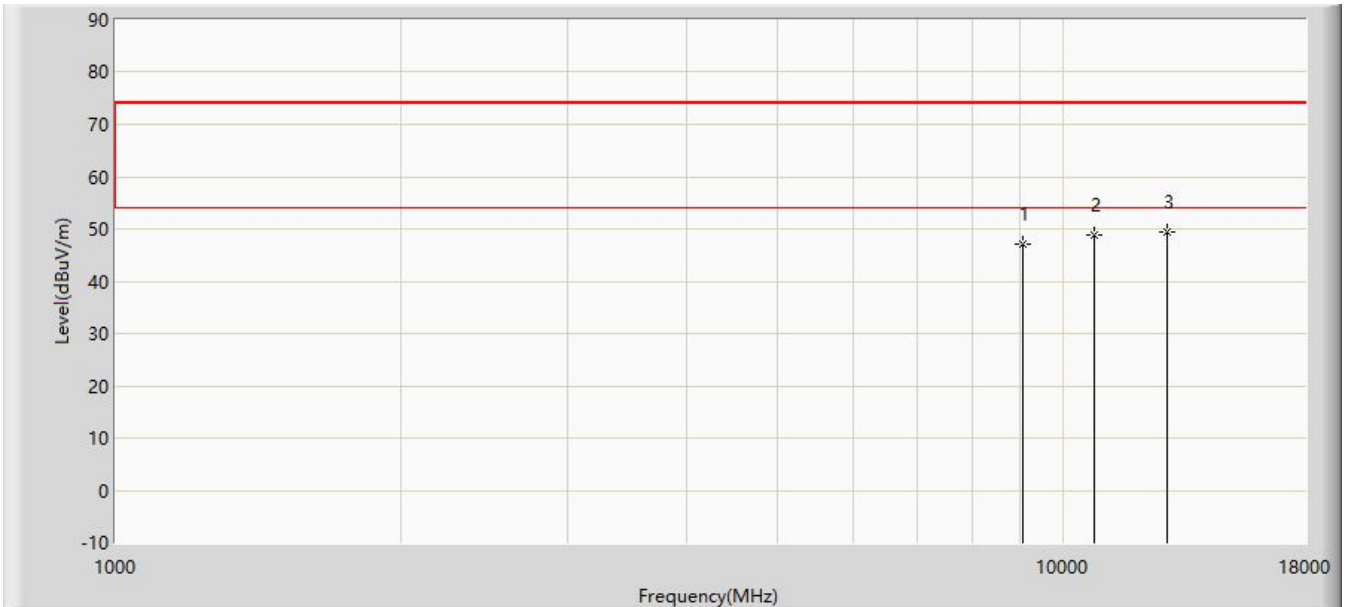
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

Site: WZ-AC1	Time: 2021/08/12
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: HAN Access Point	Power: By PoE
Test Mode 3	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			9075.000	47.042	35.596	-26.958	74.000	11.446	PK
2			10758.000	48.938	35.235	-25.062	74.000	13.703	PK
3		*	12874.500	49.469	35.669	-24.531	74.000	13.800	PK

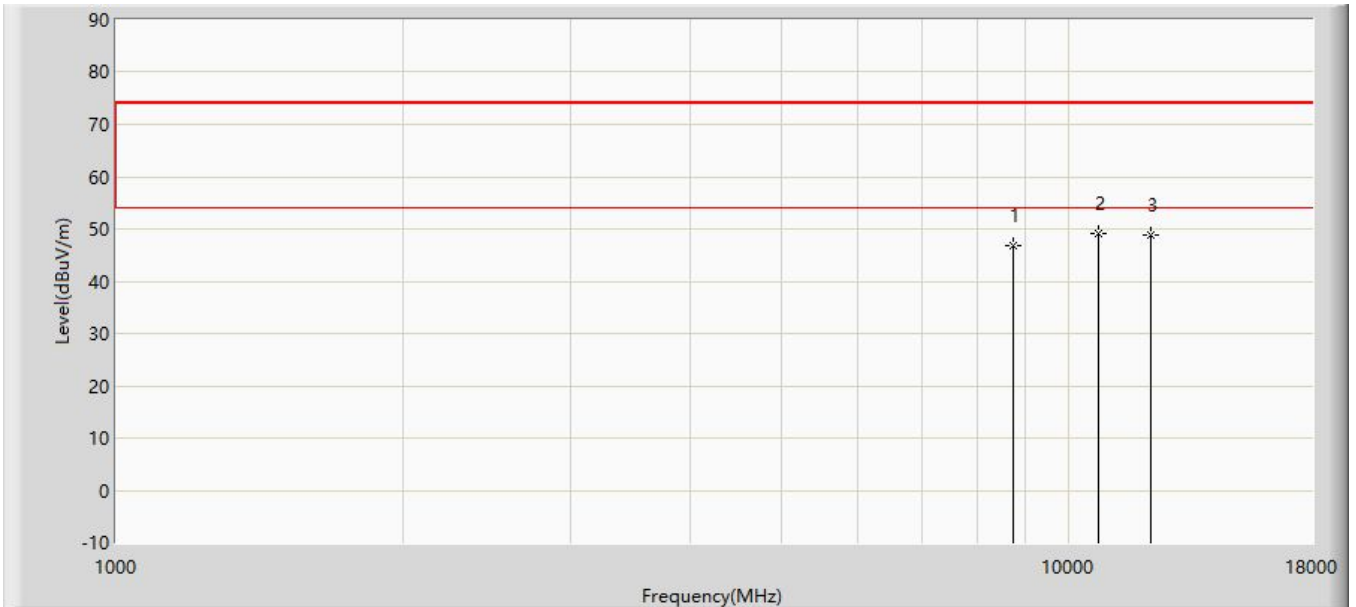
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

Site: WZ-AC1	Time: 2021/08/12
Limit: FCC_Part15.109_RE(3m)_Class B	Engineer: Tommy Tang
Probe: WZ-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: HAN Access Point	Power: By PoE
Test Mode 3	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Over Limit (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			8726.500	46.698	35.751	-27.302	74.000	10.948	PK
2		*	10749.500	49.035	35.354	-24.965	74.000	13.681	PK
3			12194.500	48.756	35.681	-25.244	74.000	13.075	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: The amplitude of radiated emissions (frequency range from 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.

Note 3: If the peak detected signals are below the average limit, then no further investigation of the average readings is required.

5. CONCLUSION

The data collected relate only the item(s) tested and show that the device has been tested to comply with the requirements specified in §15.107 and §15.109 of the FCC Rules.

The End

Appendix A - Test Setup Photograph

Refer to "2108RSU004-UT" file.

Appendix B - EUT Photograph

Refer to "AP311H Photo" file.