RF MEASUREMENT REPORT

FCC ID:	2A5R6AASA-2B-2C
Applicant:	AXEND, Inc.
Product:	AeroSense Assure Home Care Assistant
Model No.:	AASA-2B, AASA-2C, AASA-2B/N, AASA-2C/N
Brand Name:	AEROSENSE
FCC Classification:	Part 15 Low Power Communication Device Transmitter (DXX)
FCC Rule Part(s):	FCC PART 15.255
Test Date:	February 10 ~ March 10, 2022

Reviewed By: Jame Yuan

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 ANSI C63.10-2013. Test results reported herein relate only to the item(s) tested.

Revision History

Report No.	Version	Description	Issue Date	Note
2201RSU057-U2	Rev. 01	Initial Report	04-18-2022	Valid

CONTENTS

1. General Information

1.1. Applicant

AXEND, Inc.

12045 E. Waterfront Drive, Ste 450 Los Angeles CA 90094

1.2. Manufacturer

Time Varying Transmission Co. Ltd

No.9 Venture Road, High-tech District, Xiangtan, Hunan, 411102, 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. Equipment Description

Product Name	AeroSense Assure Home Care Assistant
Model No.	AASA-2B, AASA-2C, AASA-2B/N, AASA-2C/N
Serial No.	0860047219080007
Wi-Fi Specification	802.11b/g/n
Radar Specification	60-64GHz
Power Type	By Adapter
Antenna Information	Refer to Clause 1.5
Accessorie	
Adapter	MODEL: XSC-0502000SWCNU INPUT: 100-240V ~ 50/60Hz 0.4A OUTPUT: 5V ⎓ 2A
Remark: 1. The models (AASA-2B and AASA-C) use the different software algorithms, but the same hardware. The difference between AASA-2B and AASA-2B/N only external packing. AASA-2B was selected to perform test. 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. Radio Specification under test

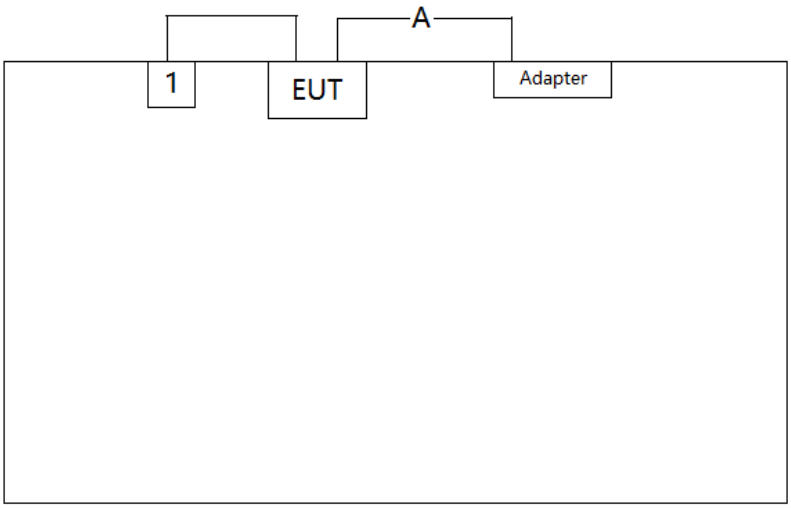
Frequency Range	60-64GHz
Modulation Type	FMCW
Antenna Type	Patch antenna
Antenna Gain Tx	3.5 dBi

2. Test Configuration

2.1. Test Mode

Mode 1: Transmit at 60 ~ 64 GHz

2.2. Test System Connection Diagram



Cable Type		Cable Description
A	Power Cable	Non shielded, < 2m

Product		Manufacturer	Model No.
1	Notebook	Lenovo	E495

2.3. Test Software

The test utility software used during testing was “UI_mptool.exe”, and the version was 1v15.

2.4. Applied Standards

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

- FCC Part 15.255
- 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 this device is **permanently attached.**
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. Measuring Instrument

Conducted Emission (SIP-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2022/06/24
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2022/06/08
Thermal Hygrometer	testo	608-H1	MRTSUE06621	1 year	2022/11/28

Radiated Emission (SIP-AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2022/12/29
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2022/12/23
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2022/6/24
Preamplifier	EMCI	EMC051845SE	MRTSUE06600	1 year	2022/11/8
Horn Antenna	R&S	HF907	MRTSUE06610	1 year	2022/8/5
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2022/11/2
Thermohygrometer	testo	608-H1	MRTSUE06620	1 year	2022/11/28
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2022/8/26

Radiated Emission (SIP-AC2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2022/10/20
Signal Analyzer	Keysight	N9010B	MRTSUE06603	1 year	2022/10/31
EMI Test Receiver	R&S	ESR3	MRTSUE06613	1 year	2022/6/24
Thermohygrometer	testo	608-H1	MRTSUE06623	1 year	2022/11/28
Thermohygrometer	testo	608-H1	MRTSUE06624	1 year	2022/11/28
Preamplifier	EMCI	EMC051845SE	MRTSUE06644	1 year	2022/11/8
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2022/12/23
Loop Antenna	Schwarzbeck	FMZB 1519 B	MRTSUE06937	1 year	2022/3/9

Radiated Emission / Emission Bandwidth / Peak EIRP & Output Power (SIP-TR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Waveguide Harmonic Mixer	Keysight	M1970V	MRTSUE06271	/	/
Waveguide Harmonic Mixer	Keysight	M1970W	MRTSUE06272	/	/
mmWave Antenna	MI-WWAVE	261U-25/383	MRTSUE06273	/	/
mmWave Antenna	MI-WWAVE	261G/387	MRTSUE06274	/	/
mmWave Antenna	MI-WWAVE	261F/387	MRTSUE06275	/	/
mmWave Antenna	MI-WWAVE	261E-25/387	MRTSUE06276	/	/

mmWave Antenna	VDI	WR3/4	MRTSUE06277	/	/
mmWave Antenna	VDI	WR2/2	MRTSUE06278	/	/
mmWave Extension Module	Keysight	N9029AV03	MRTSUE06366	/	/
mmWave Extension Module	Keysight	N9029AV05	MRTSUE06367	/	/
mmWave Extension Module	Keysight	N9029AV06	MRTSUE06368	/	/
mmWave Extension Module	Keysight	N9029AV02	MRTSUE06369	/	/
mmWave Antenna	A-INFO	LB-15-25-A	MRTSUE06409	/	/
mmWave Antenna	A-INFO	LB-10-25-A	MRTSUE06410	/	/
USB Power Sensor	Keysight	U8489A	MRTSUE06448	/	/
mmWave Extension Module	Keysight	E8257DV15	MRTSUE06456	/	/
mmWave Extension Module	Keysight	E8257DV10	MRTSUE06458	/	/
Thermohygrometer	testo	622	MRTSUE06628	1 year	2023/1/6
Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2022/8/8

Frequency Stability (SIP-TR1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
mmWave Antenna	A-INFO	LB-15-25-A	MRTSUE06409	/	/
Waveguide Harmonic Mixer	Keysight	M1970V	MRTSUE06271	/	/
Temperature Chamber	BAOYT	BYG-408CS	MRTSUE06847	1 year	2022/2/23
Signal Analyzer	Keysight	N9030B	MRTSUE06395	1 year	2022/8/8

Software	Version	Function
EMI Software	V3.0.0	EMI Test Software

5. Measurement Uncertainity

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.

AC Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Disturbance
Measurement Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 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

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.215(c)	Emission Bandwidth	Radiated	Pass
15.255(c)(3)	Peak EIRP & Output Power		Pass
15.255(d)	Transmitter Spurious Emissions		Pass
15.255(f)	Frequency stability		Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

Notes:

1. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case data is shown in the report.
2. This device can be defined as field disturbance sensors installed in fixed equipment refer to user manual.

6.2. Emission Bandwidth

6.2.1. Test Limit

Within 57~71GHz

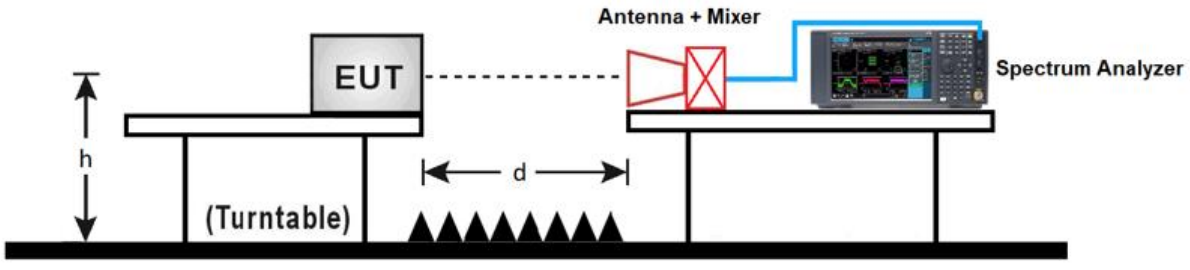
6.2.2. Test Procedure used

ANSI C63.10-2013 Section 9.3

6.2.3. Test Setting

1. Span = approximately two times to three times the EBW, centered on the carrier frequency
2. RBW, as specified in the requirement.
3. VBW, as specified in the requirement, or VBW ≥ RBW if not specified.
4. Detector function = Peak
5. Sweep time = auto
6. Trace mode = max hold.
7. The EUT shall be transmitting at its maximum data rate. Allow the trace to stabilize.
8. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure the specified dB down one side of the emission.
9. Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker- delta frequency reading at this point is the specified emission bandwidth.

6.2.4. Test Setup



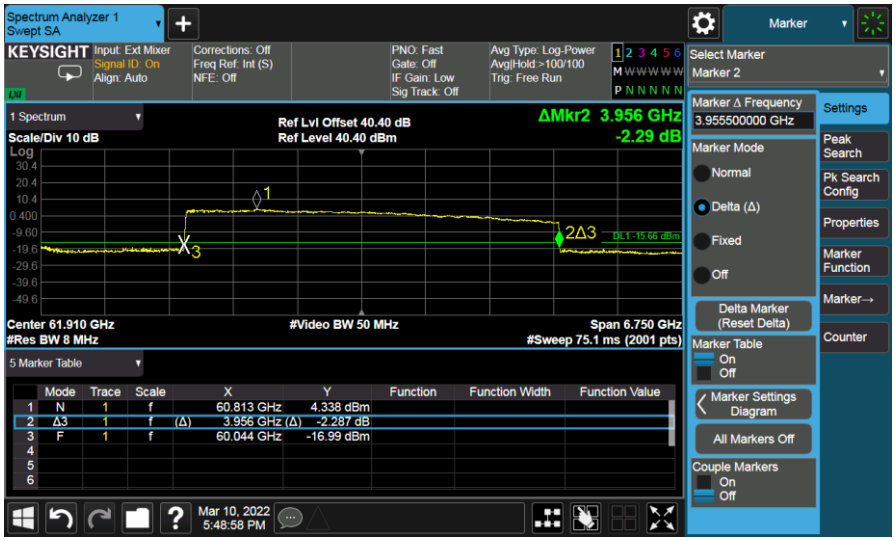
h=1.25m, d=0.75m

6.2.5. Test Result

Test Site	SIP-TR2	Test Engineer	Chase Zhu
Test Date	2022/03/10		

Frequency (GHz)	Modulation Type	20dB Bandwidth (GHz)	Limit (GHz)	Result
60 - 64	FMCW	3.956	57 ~ 71	Pass

20dB Bandwidth



6.3. Peak EIRP & Output Power

6.3.1. Test Limit

According to FCC §15.255 (c) (3), for fixed field disturbance sensors other than those operating under the provisions of paragraph (c)(2) of this section, and short-range devices for interactive motion sensing, the peak transmitter conducted output power shall not exceed −10 dBm and the peak EIRP level shall not exceed 10 dBm.

6.3.2. Test Procedure used

ANSI C63.10-2013 Section 9.11 & 9.7

Note: Far-field boundary calculation as below.

According to ANSI C63.10-2013, Clause 9, for mm-wave measurements, L >> λ and a more suitable formula for the far-field boundary distance: $R_{(Far\ Field)} = 2L^2/\lambda$

- L is the largest antenna dimension of the transmit antenna in m
- λ is the wavelength of the emission under investigation [$300/f_{MHz}$], in m

Far-field boundary calculation			
Frequency (GHz)	λ (m)	L (m)	$R_{(Far\ Field)}$ (m)
64	0.0047	0.03	0.383

The measurement was performed at a minimum distance of 0.75m > $R_{(Far\ Field)}$

6.3.3. Test Setting

For EIRP measurement

1. Connect the test antenna for the fundamental frequency band to the mm-wave RF detector. Place the test horn in the main beam of the EUT at 0.3m. Connect the video output of the detector to the 50Ω input of a DSO. Set the sampling rate of the DSO to at least twice the cutoff frequency of any LPF used or to at least twice the signal bandwidth without a LPF. Adjust the memory depth, the triggering, and the sweep speed to obtain a display that is representative of the signal considering the type of modulation.
2. Record the average and peak voltages from the DSO.
3. Replace the EUT with mm-wave source to the RF input port of the instrumentation system. The mm-wave source shall be unmodulated.
4. Adjust the frequency of the mm-wave source to the center of the frequency range occupied by the

transmitter. Adjust the amplitude of the mm-wave source such that the DSO indicates a voltage equal to the peak voltage recorded in step 2.

5. Without changing any settings, replace the DSO with the mm-wave power meter. Measure and note the power.

6. Repeat step 4 and step 5 for the average voltage recorded in step 2.

Calculate the peak conducted output power from the peak EIRP using below equation:

$$P_{cond} = EIRP_{Linear} / G_{EUT}$$

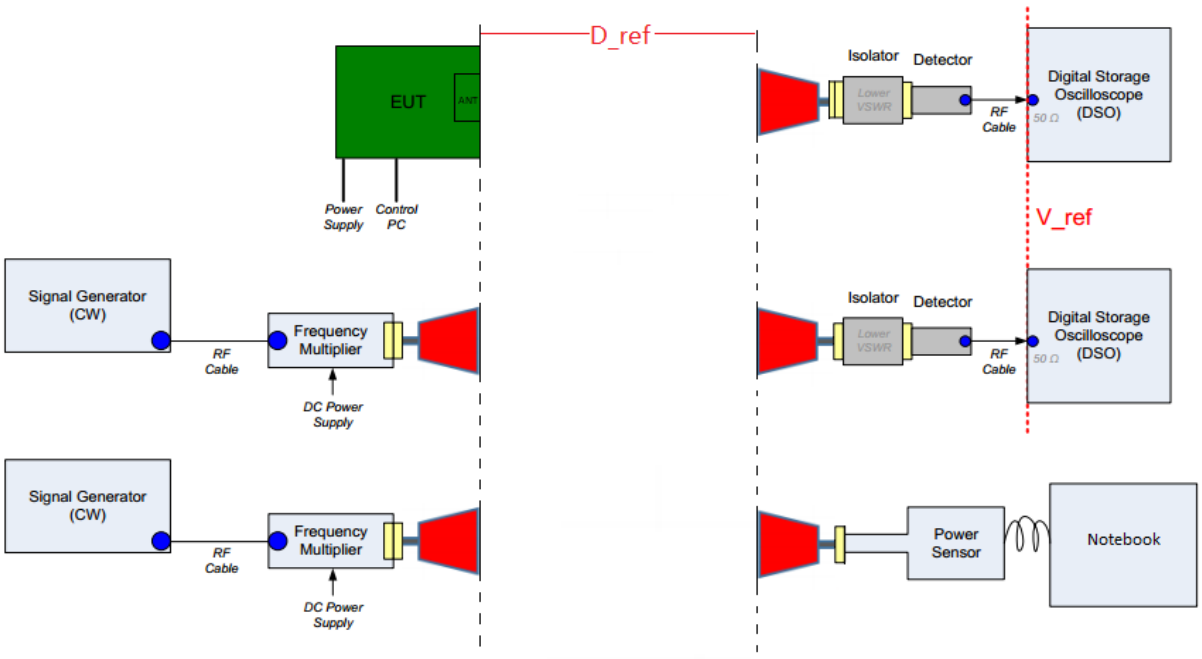
Where

P_{cond} is the conducted output power, in W

$EIRP_{Linear}$ is the equivalent isotropically radiated power, in W

G_{EUT} is numeric gain of the EUT radiating element (antenna)

6.3.4.Test Setup



6.3.5.Test Results

Test Site	SIP-TR2	Test Engineer	Chase Zhu
Test Date	2022/03/09		

Frequency (GHz)	Peak EIRP (dBm)	Peak EIRP Limit (dBm)	Antenna Gain (dBi)	Output Power (dBm)	Conducted Power Limit (dBm)	Result
60-64	-9.71	10	3.5	-13.21	-10	Pass

Output Power (dBm)=Peak EIRP (dBm)-Antenna Gain (dBi)

6.4. Transmitter Spurious Emissions

6.4.1. Test Limit

According to FCC §15.255 (d), limits on spurious emissions:

1. The power density of any emissions outside the 57-71 GHz band shall consist solely of spurious emissions.

2. Radiated emissions below 40 GHz shall not exceed the general limits in §15.209.

3. Between 40 GHz and 200 GHz, the level of these emissions shall not exceed 90pW/cm^2 at a distance of 3 meters.

4. The levels of the spurious emissions shall not exceed the level of the fundamental emission.

FCC Part 15.209 Limit		
Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 80	100**	3
80 ~ 216	150**	3
216 ~ 960	200**	3
Above 960	500	3
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 (dBuV/m) = 20 log E field strength (uV/m).		

6.4.2. Test Procedure used

ANSI C63.10-2013 Section 9.12~ 9.13 and Section 6.3 ~ 6.6

6.4.3.Test Procedure

Measurement of harmonic and spurious emissions above 40 GHz

1. Connect the test antenna covering the appropriate frequency range to a spectrum analyzer via an external mixer.
2. Set spectrum analyzer RBW = 1MHz, VBW = 3MHz, average detector.
3. Maximize all observed emissions. Note the maximum power indicated on the spectrum analyzer. Adjust this reading, if necessary, by the conversion loss of the external mixer used at the frequency under investigation and the external mixer IF cable loss.
4. Calculate the maximum field strength of the emission at the measurement distance
5. Calculate the power density at the distance specified by the limit from the field strength at the distance specified by the limit
6. Repeat the preceding sequence for every emission observed in the frequency band under investigation.

Measurement of harmonic and spurious emissions below 40 GHz

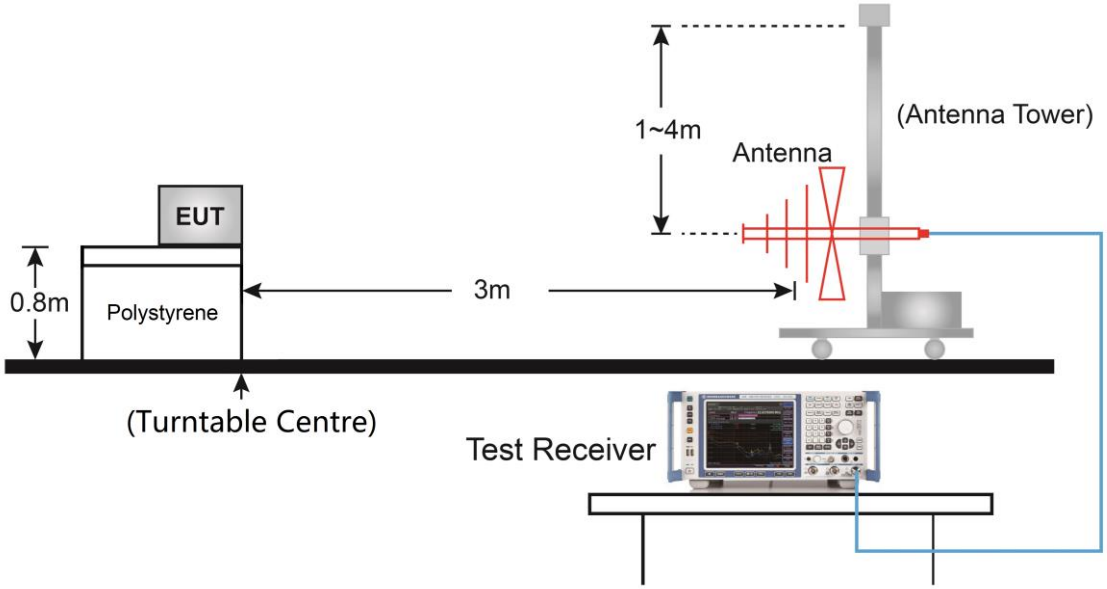
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = as specified in Table 1
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Table 1 - RBW as a function of frequency

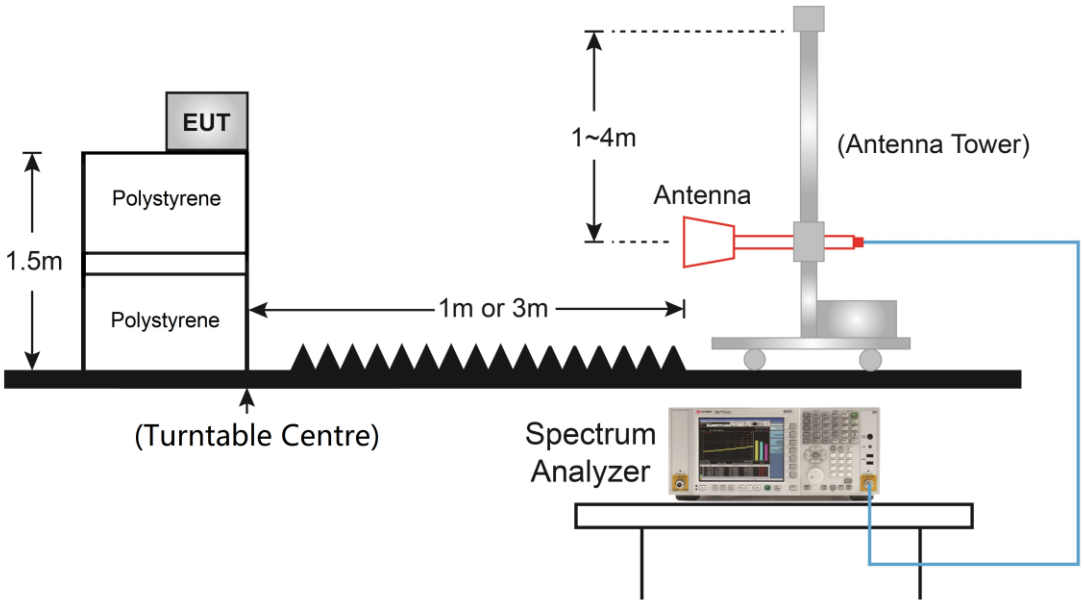
Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000 MHz	1 MHz

6.4.4.Test Setup

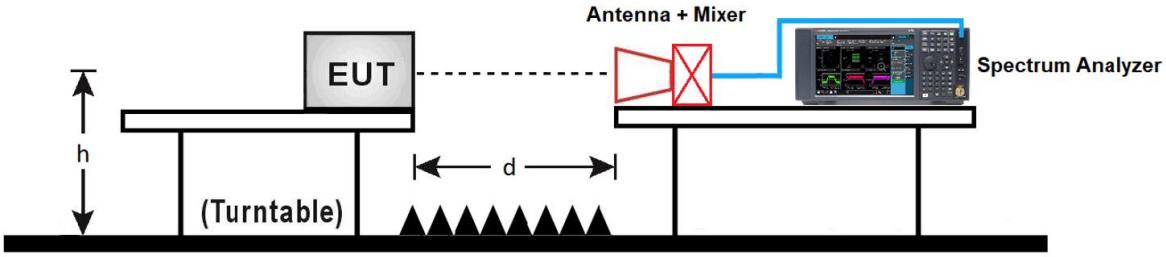
Below 1GHz Test Setup:



1GHz ~ 40GHz Test Setup:



Above 40GHz Test Setup:



h=1.25m, d=0.75m

6.4.5.Test Result

Test Site	SIP-AC1	Test Engineer	Kyrie Xie
Test Date	20202/02/15	Test Range	Below 18GHz

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
7307.0	54.5	-7.0	47.5	74.0	-26.5	Peak	Horizontal
11370.0	47.4	-2.6	44.8	74.0	-29.2	Peak	Horizontal
13852.0	44.6	0.2	44.8	68.2	-23.4	Peak	Horizontal
15433.0	44.6	3.8	48.4	74.0	-25.6	Peak	Horizontal
7315.5	53.8	-6.9	46.9	74.0	-27.1	Peak	Vertical
9746.5	50.3	-4.1	46.2	68.2	-22.0	Peak	Vertical
10979.0	48.2	-3.3	44.9	74.0	-29.1	Peak	Vertical
16929.0	42.9	7.2	50.1	68.2	-18.1	Peak	Vertical

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)

2. Average measurement was not performed when the peak level lower than average limit.

Test Site	SIP-AC1	Test Engineer	Kyrie Xie
Test Date	2022/02/15	Test Range	18GHz ~ 40GHz

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
22763.0	55.6	-9.9	45.7	74.0	-28.3	Peak	Horizontal
31574.0	58.6	-10.1	48.5	74.0	-25.5	Peak	Horizontal
33763.0	58.5	-8.3	50.2	68.2	-18.0	Peak	Horizontal
35127.0	58.0	-6.8	51.2	68.2	-17.0	Peak	Horizontal
23929.0	55.7	-9.4	46.3	74.0	-27.7	Peak	Vertical
28802.0	58.7	-9.3	49.4	68.2	-18.8	Peak	Vertical
31310.0	58.0	-10.0	48.0	74.0	-26.0	Peak	Vertical
34599.0	58.5	-7.8	50.7	68.2	-17.5	Peak	Vertical

Note:

3. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

4. Average measurement was not performed when the peak level lower than average limit.

Test Site	SIP-TR2	Test Engineer	Chase Zhu
Test Date	2022/02/10	Test Range	40GHz ~ 200GHz

Frequency (GHz)	Reading Level @ 0.75m (dBµV)	Factor (dB)	Measure Level @ 0.75m (dBµV/m)	Measure Level @ 3m (dBµV/m)	Power Density (pW/cm^2)	Limit (pW/cm^2)	Result
49.1	-5.0	46.3	41.3	29.3	0.0003	90.0	Pass
61.0	27.8	42.7	70.5	58.5	0.2081	90.0	Pass
83.3	25.7	44.8	70.5	58.5	0.2081	90.0	Pass
110.3	-7.4	57.4	50.0	38.0	0.0019	90.0	Pass
161.2	-8.5	60.0	51.5	39.5	0.0026	90.0	Pass

Note:

1. Measure Level @ 0.75m = Reading Level @0.75m + Factor

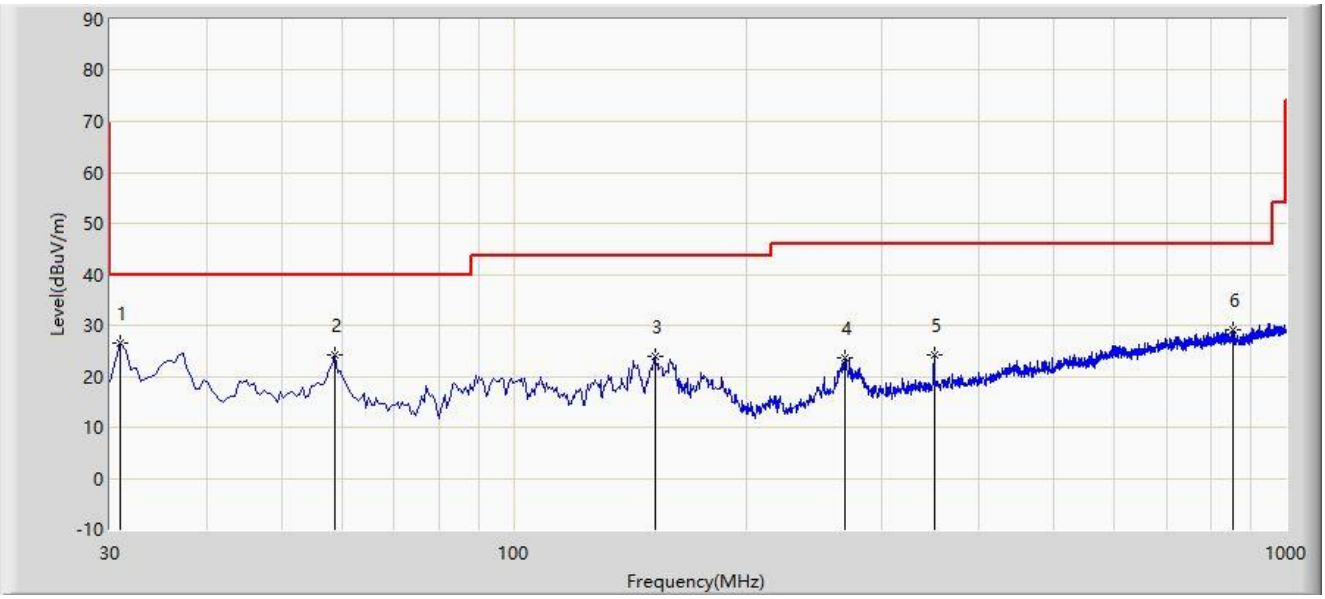
Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) + Mixer Conversion Loss (dB)

2. Measure Level @ 3m = Measure Level @ 0.75m + 20 * log(0.75m / 3m)

3. Power Density = $(10^8 / 377) * \{10^{[(\text{Measure Level @3m } -120) / 20]}\}^2$

The Result of Radiated Emission below 1GHz:

Site: SIP-AC1	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Kyrie Xie
Probe: SIP-AC1_VULB 9168 _30-1000MHz	Polarity: Horizontal
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	

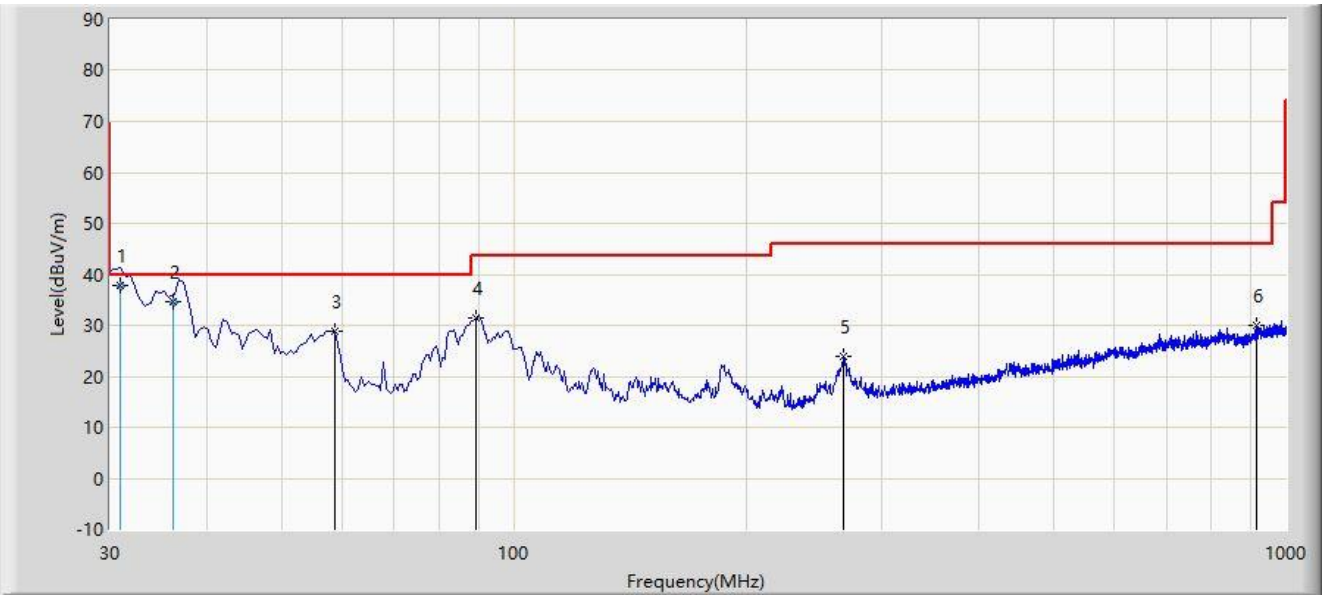


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		*	30.970	26.419	9.950	-13.581	40.000	16.469	PK
2			58.615	24.296	6.750	-15.704	40.000	17.546	PK
3			152.220	23.869	5.606	-19.631	43.500	18.263	PK
4			268.135	23.668	6.470	-22.332	46.000	17.198	PK
5			350.100	24.236	4.935	-21.764	46.000	19.301	PK
6			855.470	29.053	0.391	-16.947	46.000	28.662	PK

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

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

Site: SIP-AC1	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Kyrie Xie
Probe: SIP-AC1_VULB 9168 _30-1000MHz	Polarity: Vertical
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	

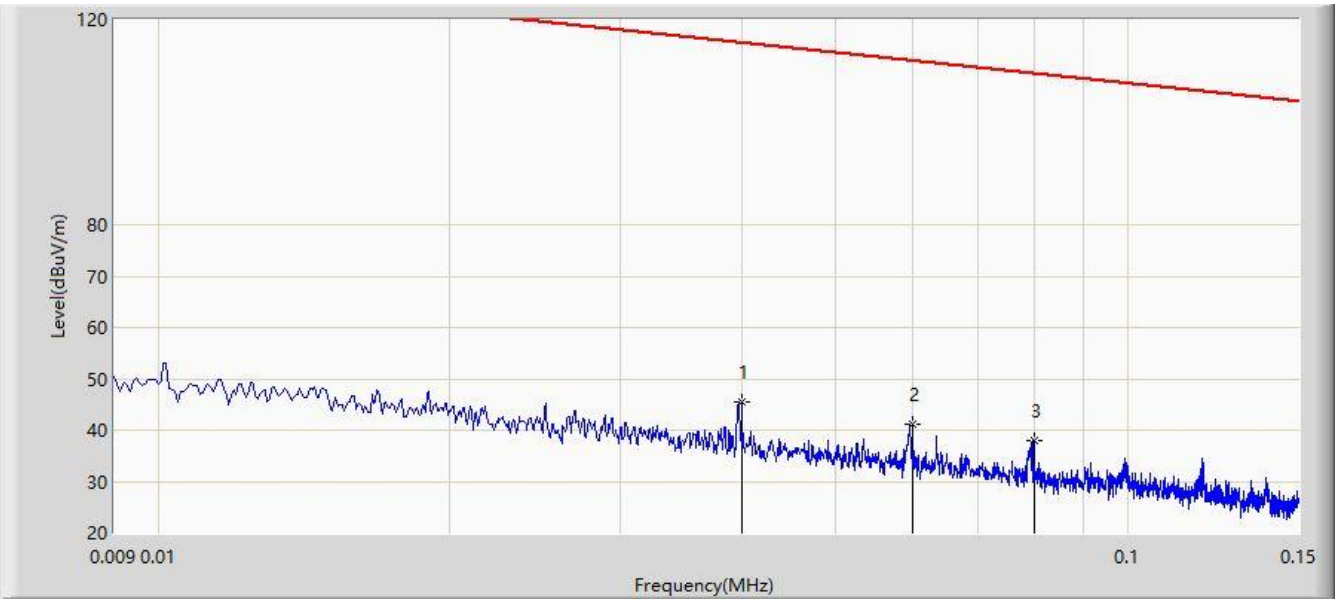


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		*	30.940	37.762	21.300	-2.238	40.000	16.462	QP
2			36.280	34.601	17.600	-5.399	40.000	17.000	QP
3			58.615	28.962	11.416	-11.038	40.000	17.546	PK
4			89.170	31.540	19.439	-11.960	43.500	12.101	PK
5			267.650	23.827	6.656	-22.173	46.000	17.171	PK
6			917.065	30.006	0.509	-15.994	46.000	29.496	PK

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

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

Site: SIP-AC2	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Stephen Dong
Probe: SIP-FMZB1519_0.009-30MHz	Polarity: Face On
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		*	0.040	45.540	25.244	-70.011	115.551	20.296	PK
2			0.060	41.118	21.272	-70.913	112.031	19.846	PK
3			0.080	38.018	18.195	-71.516	109.533	19.823	PK

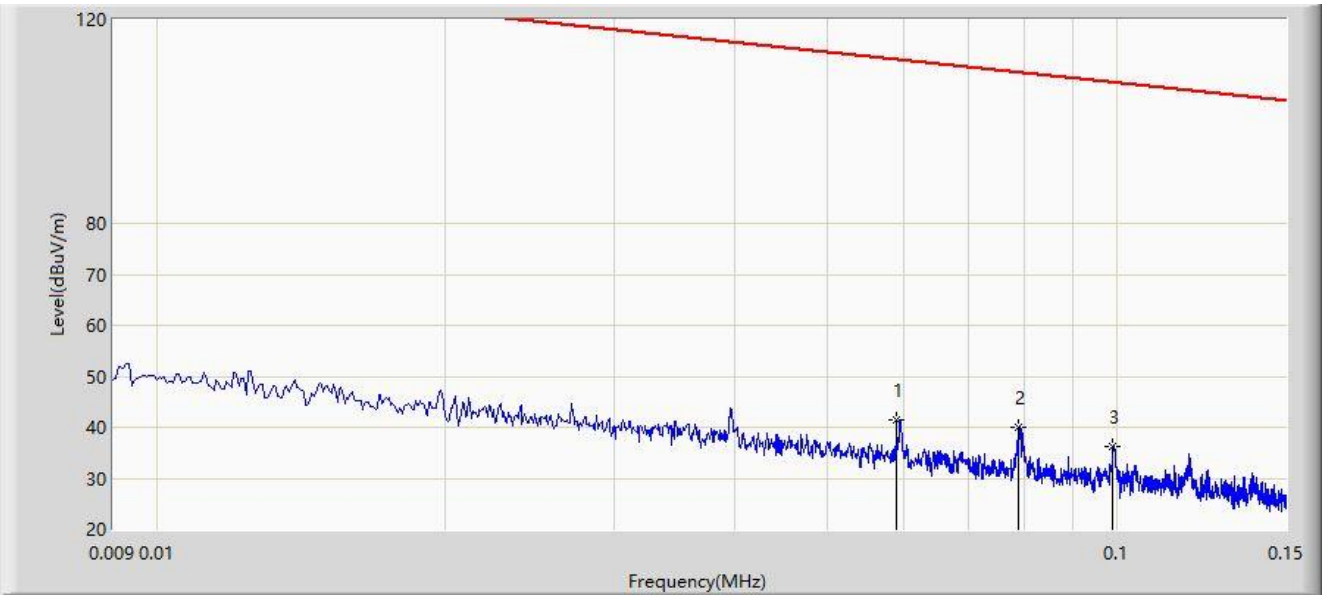
Note 1: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB/m)

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

Note 2: “Face On” means that loop plane perpendicular to the ground plane and to the measurement axis.

“Face Off” means that loop plane perpendicular to the ground plane and coplanar with the measurement axis.

Site: SIP-AC2	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Stephen Dong
Probe: SIP-FMZB1519_0.009-30MHz	Polarity: Face Off
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1			0.059	41.316	21.468	-70.861	112.177	19.848	PK
2		*	0.079	40.093	20.270	-69.549	109.643	19.823	PK
3			0.099	36.251	16.442	-71.432	107.684	19.809	PK

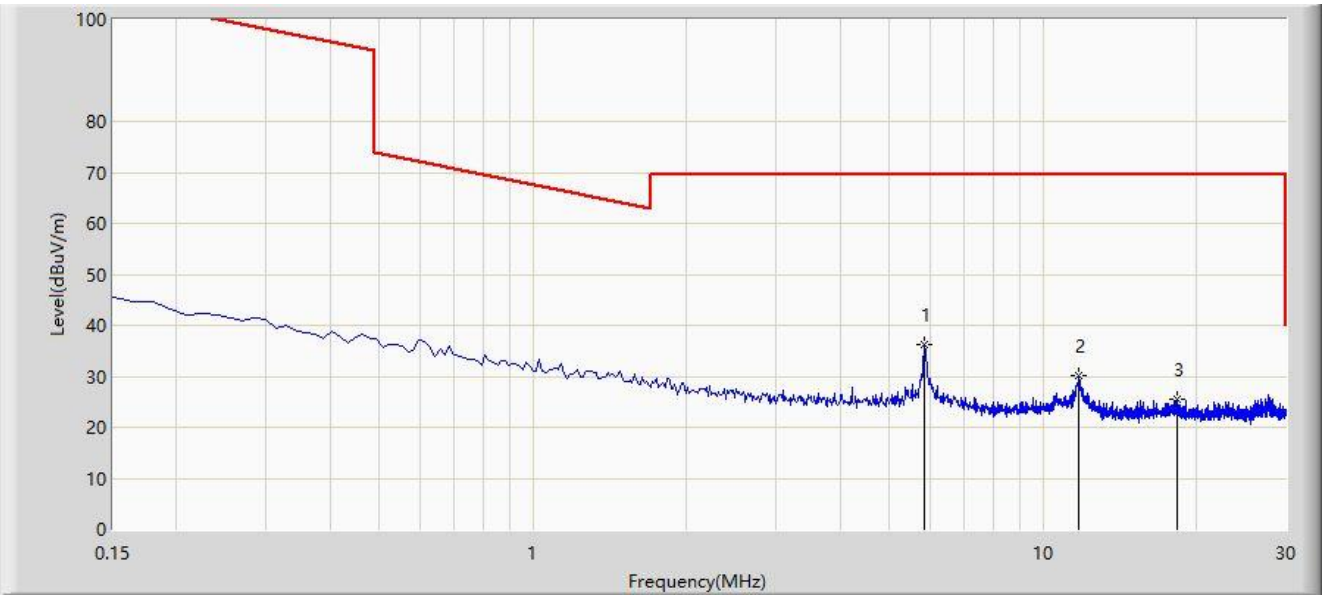
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: “Face On” means that loop plane perpendicular to the ground plane and to the measurement axis.

“Face Off” means that loop plane perpendicular to the ground plane and coplanar with the measurement axis.

Site: SIP-AC2	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Stephen Dong
Probe: SIP-FMZB1519_0.009-30MHz	Polarity: Face Off
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		*	5.866	36.193	16.099	-33.307	69.500	20.094	PK
2			11.792	30.230	10.439	-39.270	69.500	19.791	PK
3			18.403	25.449	5.964	-44.051	69.500	19.485	PK

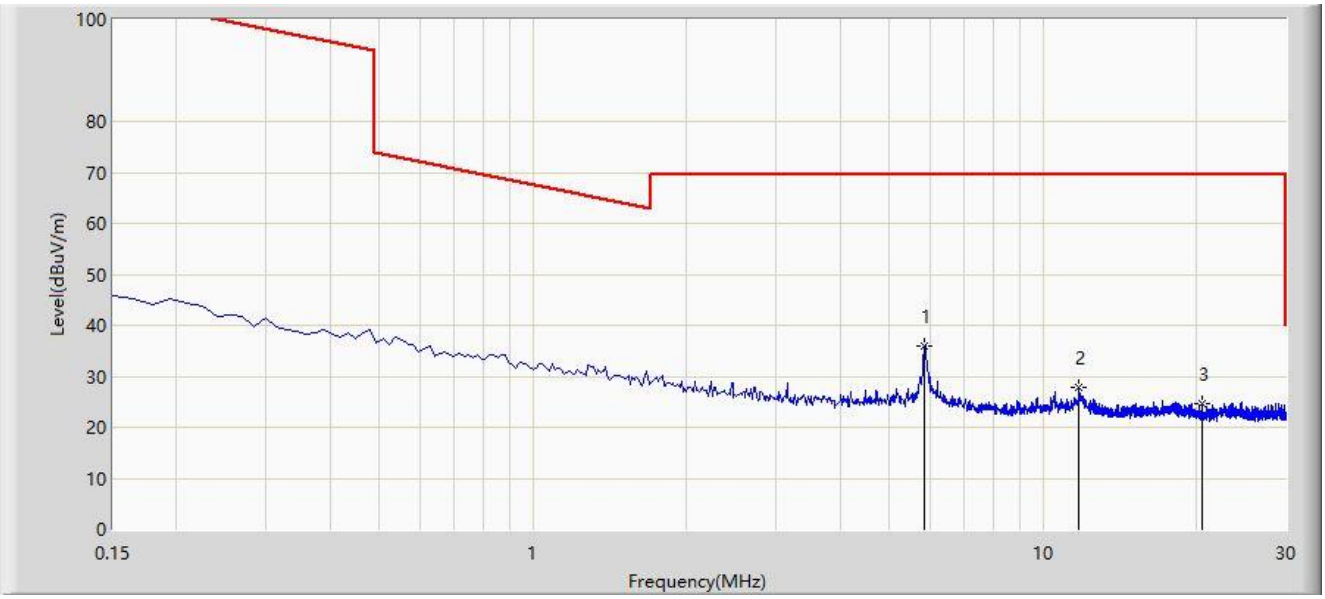
Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

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

Note 2: “Face On” means that loop plane perpendicular to the ground plane and to the measurement axis.

“Face Off” means that loop plane perpendicular to the ground plane and coplanar with the measurement axis.

Site: SIP-AC2	Time: 2022/02/15
Limit: FCC_Part15.209_RE(3m)	Engineer: Stephen Dong
Probe: SIP-FMZB1519_0.009-30MHz	Polarity: Face On
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB/m)	Type
1		*	5.866	36.001	15.907	-33.499	69.500	20.094	PK
2			11.792	27.698	7.907	-41.802	69.500	19.791	PK
3			20.552	24.710	5.316	-44.789	69.500	19.394	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: “Face On” means that loop plane perpendicular to the ground plane and to the measurement axis.

“Face Off” means that loop plane perpendicular to the ground plane and coplanar with the measurement axis.

6.5. Frequency Stability

6.5.1. Test Limit

According to FCC §15.255 (f), fundamental emissions must be contained within the frequency bands 57 - 71GHz during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees Celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

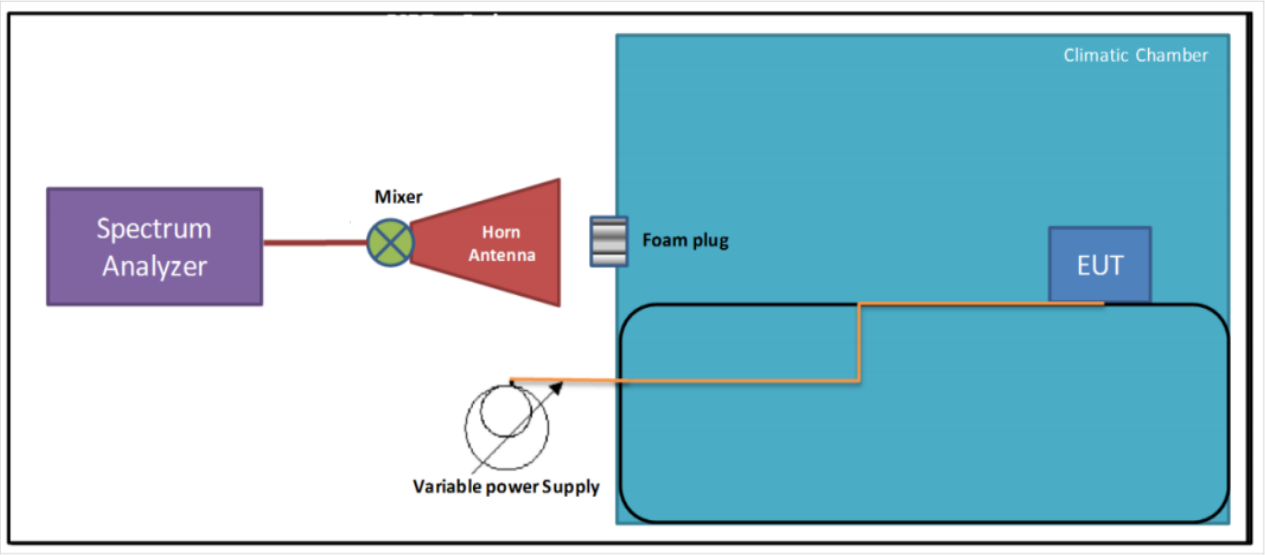
6.5.2. Test Procedure used

ANSI C63.10-2013 Section 9.14

6.5.3. Test Procedure

1. Arrange EUT and test equipment according to Section 6.6.4.
2. With the EUT at ambient temperature and voltage source set to the EUT nominal operating voltage (100%), record the spectrum mask of the EUT emission on the spectrum analyzer.
3. Vary EUT power supply between 85% and 115% of nominal and record the frequency excursion of the EUT emission mask.
4. Set the power supply to 100% nominal setting, and raise EUT operating temperature to 50 °C.
5. Record the frequency excursion of the EUT emission mask.
6. Repeat step 5 at each 10°C increment down to -20 °C.

6.5.4. Test Setup



6.5.5. Test Result

Test Site	SIP-TR1	Test Engineer	Chase Zhu
Test Mode	Modulated Mode	Test Date	2022/02/19

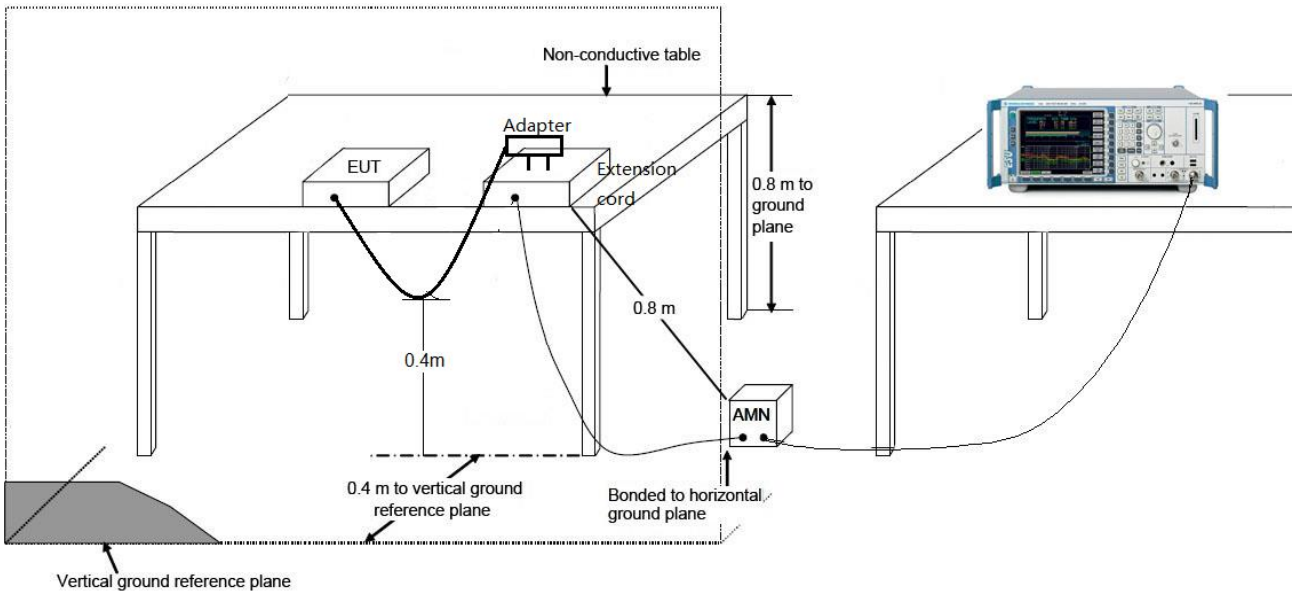
Voltage (%)	Power (V)	Temp (℃)	Low Frequency (GHz)	High Frequency (GHz)	Limit (GHz)	Result
100	120	- 20	59.99500	63.85275	57 ~ 71	Pass
		- 10	59.99025	63.85275	57 ~ 71	Pass
		0	59.99025	63.85275	57 ~ 71	Pass
		+ 10	59.99025	63.84800	57 ~ 71	Pass
		+ 20	59.99500	63.84800	57 ~ 71	Pass
		+ 30	59.99025	63.84325	57 ~ 71	Pass
		+ 40	59.99025	63.84800	57 ~ 71	Pass
		+ 50	59.99025	63.85000	57 ~ 71	Pass
115	138	+ 20	59.99500	63.84800	57 ~ 71	Pass
85	102	+ 20	59.99025	63.85275	57 ~ 71	Pass

6.6. AC Conducted Emissions Measurement

6.6.1. Test Limit

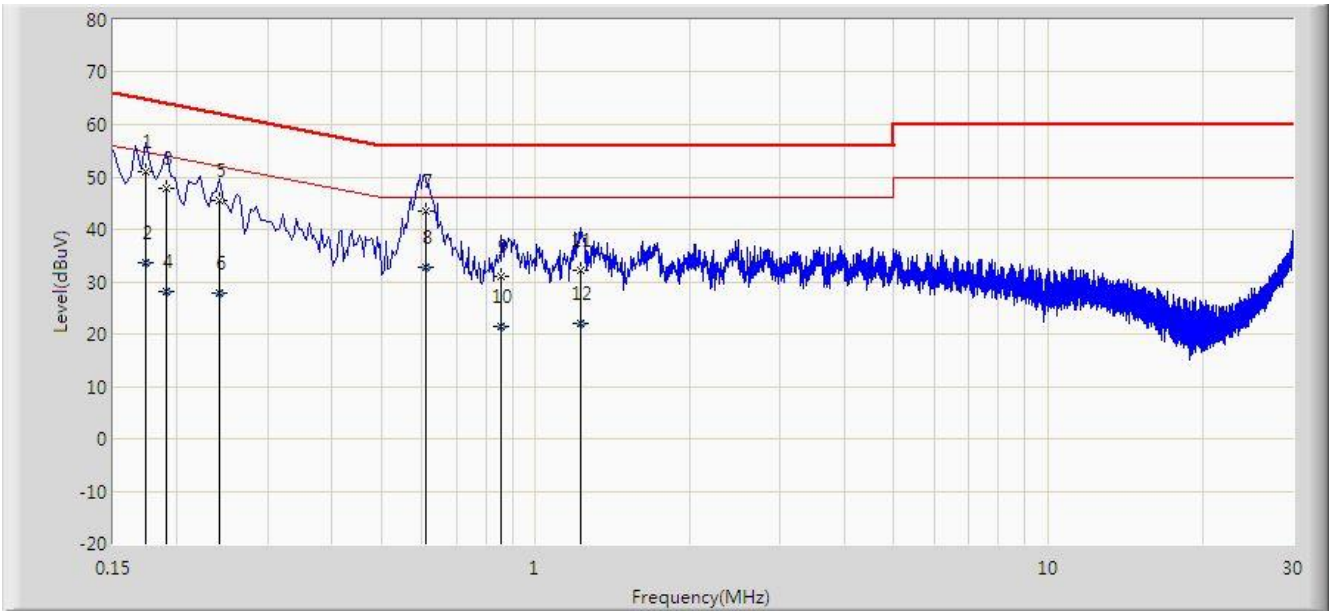
FCC 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 ~ 0.50	66 ~ 56	56 ~ 46
0.50 ~ 5.0	56	46
5.0 ~ 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

6.6.2. Test Setup



6.6.3. Test Result

Site: SIP-SR2	Time: 2022/02/11 - 10:19
Limit: FCC_Part15.207_CE_AC Power	Engineer: Augleo Wang
Probe: SIP-SR2-ENV216_101684_E	Polarity: Line
EUT: AeroSense Assure Home Care Assistant	Power: AC 120V/60Hz
Test Mode 1	

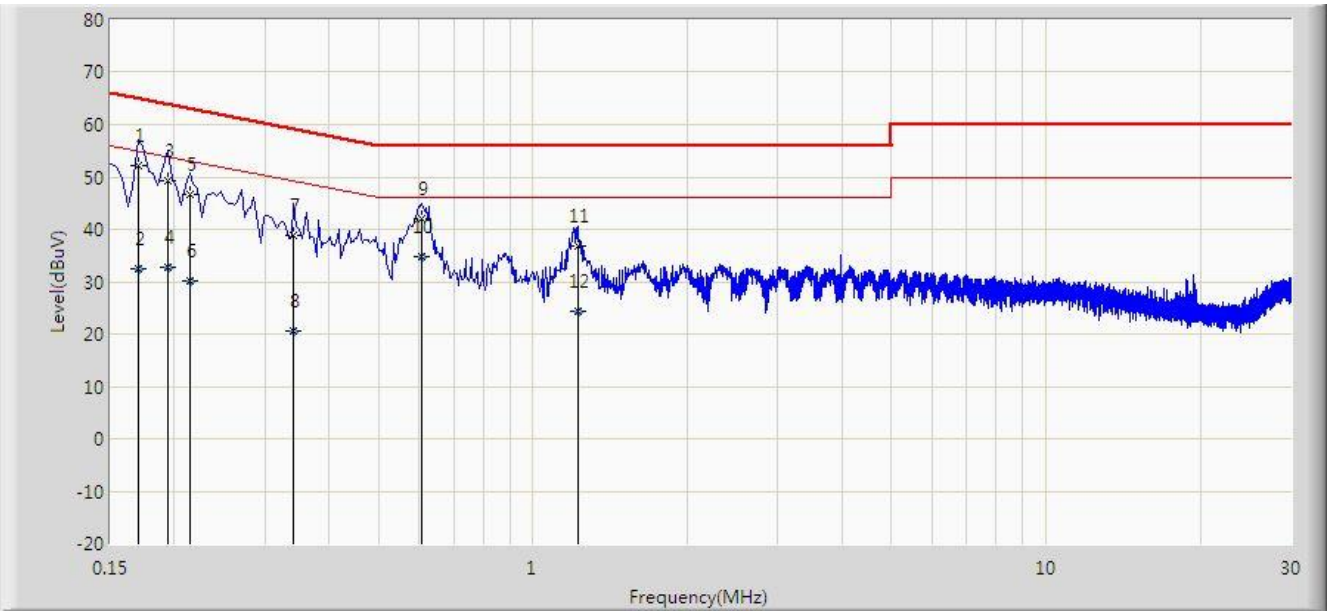


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1			0.174	50.973	41.238	-13.794	64.767	9.735	QP
2			0.174	33.610	23.875	-21.157	54.767	9.735	AV
3			0.190	47.730	37.981	-16.307	64.037	9.749	QP
4			0.190	27.975	18.226	-26.062	54.037	9.749	AV
5			0.242	45.532	35.735	-16.495	62.027	9.797	QP
6			0.242	27.882	18.085	-24.146	52.027	9.797	AV
7		*	0.610	43.434	33.600	-12.566	56.000	9.834	QP
8			0.610	32.779	22.945	-13.221	46.000	9.834	AV
9			0.858	31.100	21.252	-24.900	56.000	9.848	QP
10			0.858	21.384	11.536	-24.616	46.000	9.848	AV
11			1.222	32.245	22.369	-23.755	56.000	9.876	QP
12			1.222	22.138	12.262	-23.862	46.000	9.876	AV

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

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

Site: SIP-SR2	Time: 2022/02/11 - 10:26
Limit: FCC_Part15.207_CE_AC Power	Engineer: Augleo Wang
Probe: SIP-SR2-ENV216_101684_E	Polarity: Neutral
EUT: AeroSense Assure Home Care Assistant	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			0.170	52.141	42.405	-12.819	64.960	9.736	QP
2			0.170	32.582	22.847	-22.378	54.960	9.736	AV
3			0.194	49.295	39.545	-14.568	63.864	9.751	QP
4			0.194	32.652	22.901	-21.212	53.864	9.751	AV
5			0.214	46.568	36.794	-16.481	63.049	9.774	QP
6			0.214	30.100	20.326	-22.949	53.049	9.774	AV
7			0.342	38.952	29.141	-20.203	59.155	9.811	QP
8			0.342	20.441	10.631	-28.713	49.155	9.811	AV
9			0.606	41.992	32.167	-14.008	56.000	9.825	QP
10		*	0.606	34.877	25.052	-11.123	46.000	9.825	AV
11			1.222	36.715	26.841	-19.285	56.000	9.873	QP
12			1.222	24.272	14.398	-21.728	46.000	9.873	AV

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

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

Appendix A – Test Setup Photograph

Refer to “2201RSU057-UT” file.

Appendix B – EUT Photograph

Refer to “2201RSU057-UE” file.

The End