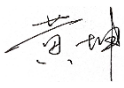
TEST REPORT

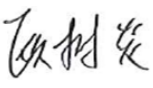
Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
EUT Description:	Electronic Blood Pressure Monitor
Model:	JPD-HA100
FCC ID:	2ADYL-JPDHA100
Standards:	FCC 47 CFR Part 15 Subpart B
Date of Receipt:	2024/07/09
Date of Test:	2024/07/09 to 2024/10/28
Date of Issue:	2024/11/05

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



Huang Kun
Approved By:



Ou Shuyan
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2024/11/05	Original	Ou Shuyan

Summary of Test Results

Clause	Test Items	Test Standard	Result
4.1	AC Conducted Emissions	§15.107	PASS
4.2	Radiated Emissions	§15.109	PASS
Test Method: ANSI C63.4-2014 Remark: Pass is EUT meets standard requirements.			

Table of Contents

1 General Description

1.1 Lab Information

1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014
Tel.: +86-755-27212361
Contact Email: info@towewireless.com

1.1.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

ISED CAB identifier: CN0152
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0152
Company Number: 31000

1.2 Client Information

1.2.1 Applicant

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan,Shenzhen, Guangdong 518103, China

1.2.2 Manufacturer

Manufacturer:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan,Shenzhen, Guangdong 518103, China

1.3 Product Information

EUT Description:	Electronic Blood Pressure Monitor		
Model No.:	JPD-HA100		
Hardware Version:	V1.2		
Software Version:	V1.5		
IMEI.:	863251072017259		
Frequency Bands:	Frequency Bands:	Tx Frequency (MHz)	Rx Frequency (MHz)
	GSM 850	824 ~ 849 MHz	869 ~ 894 MHz
	PCS 1900	1850 ~ 1910 MHz	1930 ~ 1990 MHz
	LTE Cat M1 Band 2	1850 ~ 1910 MHz	1930 ~ 1990 MHz
	LTE Cat M1 Band 4	1710 ~ 1755 MHz	2110 ~ 2155 MHz
	LTE Cat M1 Band 5	824 ~ 849 MHz	869 ~ 894 MHz
	LTE Cat M1 Band 12	699 ~ 716 MHz	729 ~ 746 MHz
	LTE Cat M1 Band 13	777 ~ 787 MHz	746 ~ 756 MHz
	LTE Cat M1 Band 25	1850 ~ 1915 MHz	1930 ~ 1995 MHz
	LTE Cat M1 Band 26	814 ~ 849MHz	859 ~ 894MHz
	LTE Cat M1 Band 66	1710 ~ 1780 MHz	2110 ~ 2200 MHz
	LTE Cat M1 Band 85	698 ~ 716 MHz	728 ~ 746 MHz
	NB-IoT Band 2	1850 ~ 1910 MHz	1930 ~ 1990 MHz
	NB-IoT Band 4	1710 ~ 1755 MHz	2110 ~ 2155 MHz
	NB-IoT Band 5	824 ~ 849 MHz	869 ~ 894 MHz
	NB-IoT Band 12	699 ~ 716 MHz	729 ~ 746 MHz
	NB-IoT Band 13	777 ~ 787 MHz	746 ~ 756 MHz
	NB-IoT Band 25	1850 ~ 1915 MHz	1930 ~ 1995 MHz
	NB-IoT Band 66	1710 ~ 1780 MHz	2110 ~ 2200 MHz
	NB-IoT Band 71	663 ~ 698 MHz	617 ~ 652 MHz
	NB-IoT Band 85	698 ~ 716 MHz	728 ~ 746 MHz
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.			

2 Test Configuration During Test

2.1 Support Unit used in test

Description	Manufacturer	Model	Serial Number
Adapter	HUAWEI	HW-090200UH0	N/A

2.2 Accessory

N/A

2.3 Test Environment

Temperature:	Normal: 22℃ ~ 27℃
Humidity:	40-75 % RH Ambient
Test Voltage:	AC 120V/60Hz
Remark: The testing environment is within the scope of the EUT user manual and meets the requirements of the standard testing environment.	

2.4 Modifications

No modifications were made during testing.

2.5 EUT Test Mode

Test Items	Test mode
Radiated Emissions	Mode1: Measuring + Radio idle mode(Worst case) Mode2: LTE Cat M1 Band 5 Idle Mode3: LTE Cat M1 Band 12 Idle Mode4: LTE Cat M1 Band 13 Idle Mode5: LTE Cat M1 Band 26 Idle Mode6: LTE Cat M1 Band 85 Idle Mode7: NB-IoT Band 5 Idle Mode8: NB-IoT Band 12 Idle Mode9: NB-IoT Band 13 Idle Mode10 NB-IoT Band 71 Idle Mode11 NB-IoT Band 85 Idle Mode12 GSM 850 Idle
Conducted Emissions	Mode1: Measuring + Radio idle mode(Worst case) Mode2: LTE Cat M1 Band 5 Idle Mode3: LTE Cat M1 Band 12 Idle Mode4: LTE Cat M1 Band 13 Idle Mode5: LTE Cat M1 Band 26 Idle Mode6: LTE Cat M1 Band 85 Idle Mode7: NB-IoT Band 5 Idle Mode8: NB-IoT Band 12 Idle Mode9: NB-IoT Band 13 Idle Mode10 NB-IoT Band 71 Idle Mode11 NB-IoT Band 85 Idle Mode12 GSM 850 Idle
NOTE	All modes of operation were investigated, and only the worst case emissions are reported.

3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

3.1 Test Equipment List

Radiated Emission					
Description	**Manufacturer**	**Model**	**S.N.**	**Last Due**	**Cal Due**
Biconic Logarithmic Periodic Antennas	Schwarzbeck	VULB9163	1643	2023/06/25	2025/06/24
Double-Ridged Horn Antennas	Schwarzbeck	BBHA 9120D	2809	2023/06/25	2025/06/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	1290	2023/06/25	2025/06/24
Wideband Radio Communication Tester	R&S	CMW500	150645	2024/03/25	2025/03/24
Radio Communication Analyzer	Anritsu	MT8821C	6262170463	2024/03/25	2025/03/24
Signal Analyzer	Keysight	N9020A	MY49100252	2024/03/25	2025/03/24
EMI Tester Receiver	Rohde & Schwarz	ESR7	102719	2024/05/31	2025/05/30
Low Noise Amplifier	Tonscend	TAP9K3G40	AP23A8060273	2023/04/08	2025/04/07
Low Noise Amplifier	Tonscend	TAP01018050	AP22G806258	2023/04/08	2025/04/07
Low Noise Amplifier	Tonscend	TAP18040048	AP22G806247	2023/04/08	2025/04/07
Band Reject Filter Group	Townshend	JS0806-F	23A806F0652	N/A	N/A
Test Software	Tonscend	TS+	Version: 5.0.0	N/A	N/A
N/A: Not applicable, confirmed internally by the laboratory					

Conducted Emission					
Description	**Manufacturer**	**Model**	**S.N.**	**Last Due**	**Cal Due**
EMI Tester Receiver	Rohde & Schwarz	ESR3	103108	2024/05/31	2025/05/30
LISN	Rohde & Schwarz	ENV 216	102836	2024/01/10	2025/01/09
Test software	Rohde & Schwarz	ELEKTRA v4.61	N/A	N/A	N/A
N/A: Not applicable, confirmed internally by the laboratory					

3.2 Measurement Uncertainty

Parameter	U_{lab}
Conducted Emissions(150KHz~30MHz)	2.43dB
Radiated Emissions(30MHz~1000MHz)	4.66dB
Radiated Emissions(1GHz~18GHHz)	5.42dB
Radiated Emissions(18GHz~40GHHz)	5.46dB

Uncertainty figures are valid to a confidence level of 95%

4 Test Results

4.1 AC Conducted Emissions

Limits

Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

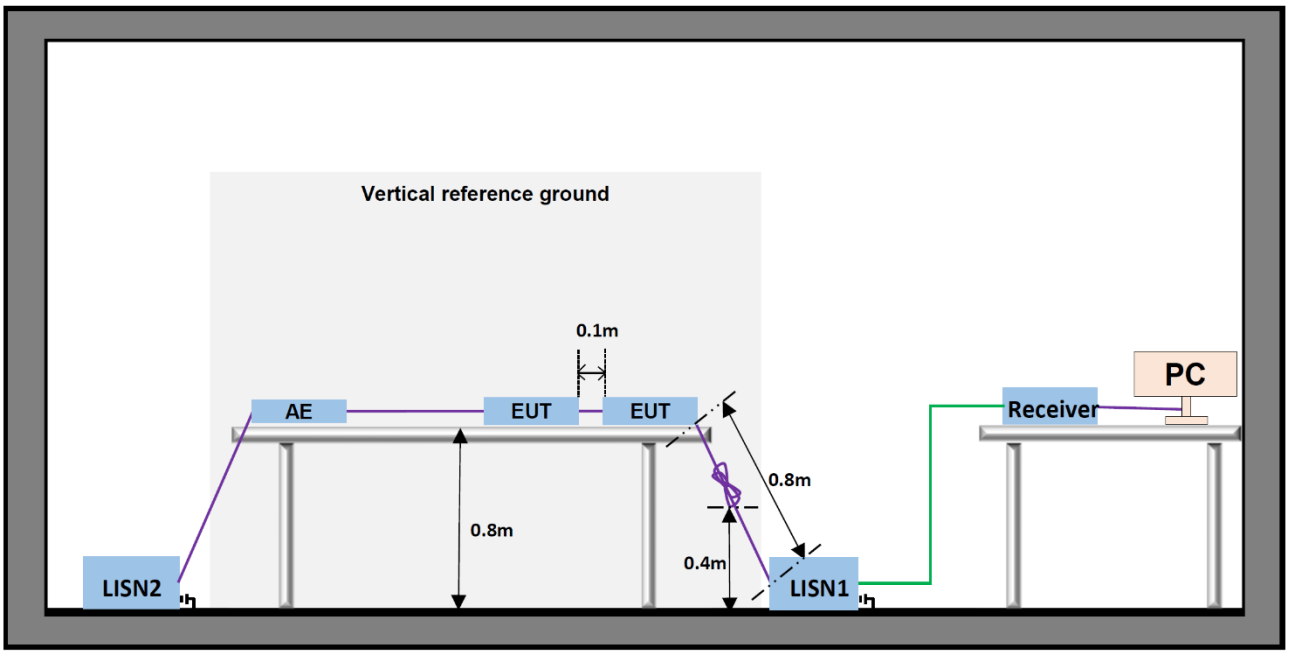
Test Procedure

ANSI C63.4-2014.

Test Settings

1. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
2. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.
3. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
4. Set the test-receiver system to Peak detect function and specified bandwidth (if bandwidth =9kHz) with maximum hod mode. Then measurement is also conducted by average detector and Quasi-Peak detector function respectively.
5. Both sides of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.

Test Setup

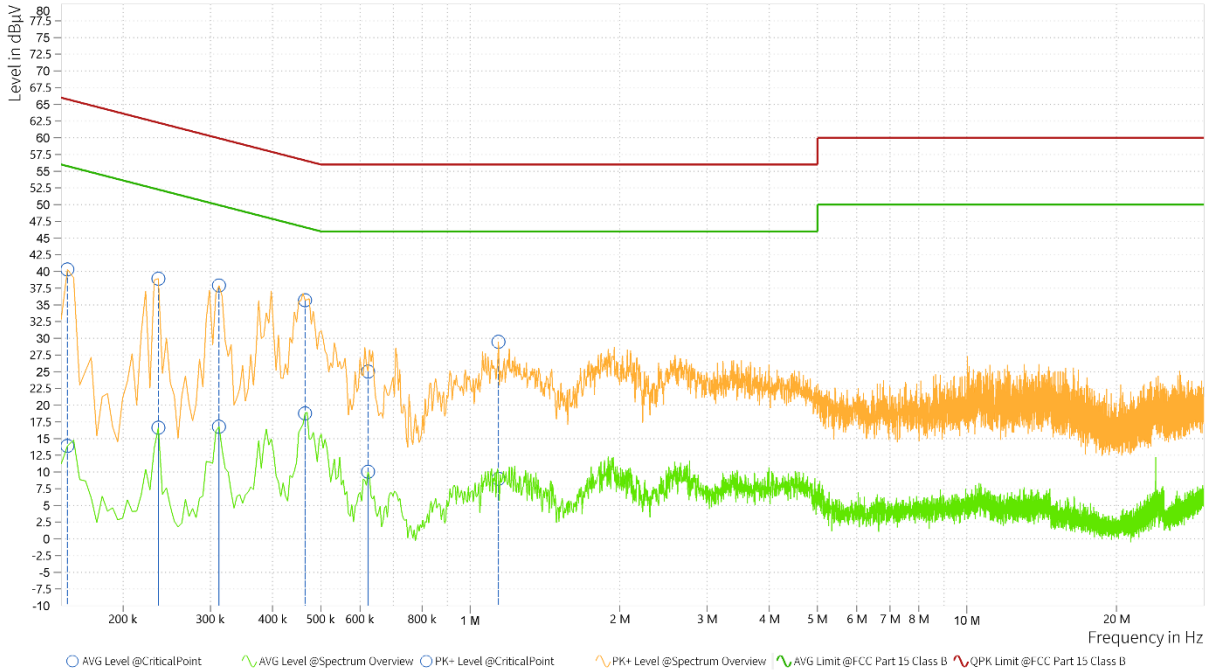


Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result:

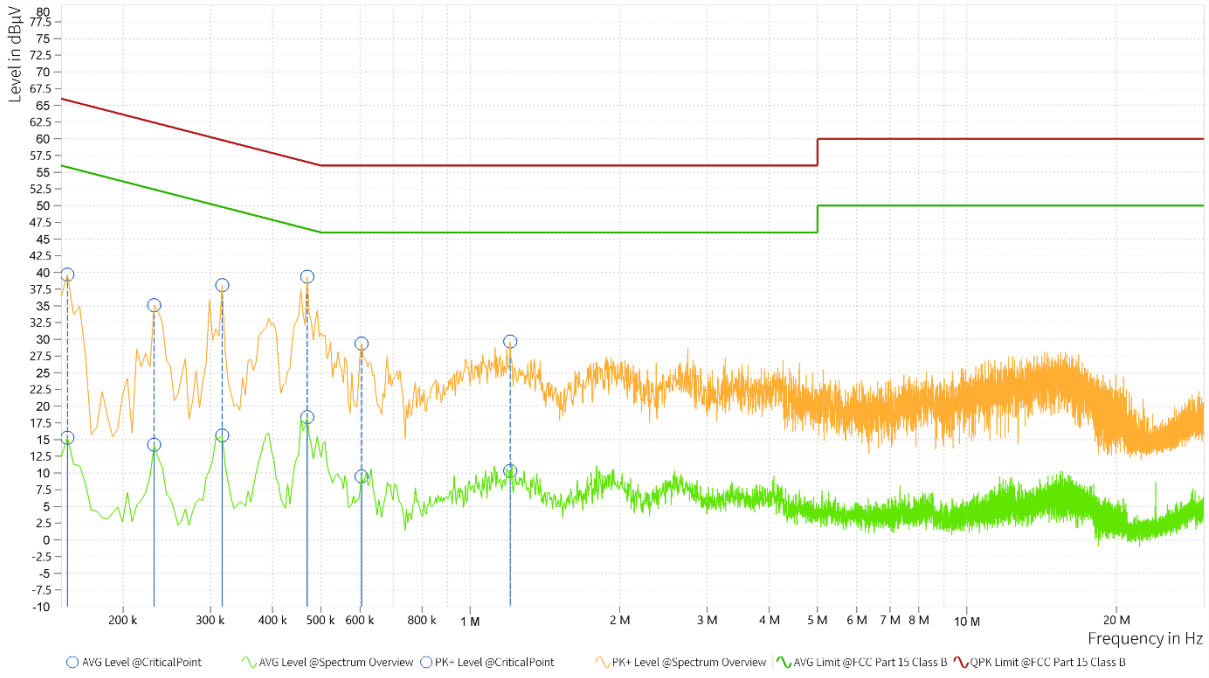
Final Test mode:	Mode 1		
Test Voltage:	AC 120V / 60Hz	Phase:	Line



Frequency [MHz]	PK+ Level [dBµV]	PK+: QPK Limit [dBµV]	PK+ Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line
0.155	40.32	65.75	25.44	13.91	55.75	41.85	9.30	L1
0.236	38.93	62.25	23.32	16.64	52.25	35.61	9.69	L1
0.312	37.89	59.92	22.03	16.78	49.92	33.13	9.81	L1
0.465	35.70	56.60	20.91	18.76	46.60	27.84	9.60	L1
0.623	25.03	56.00	30.97	10.04	46.00	35.96	9.53	L1
1.140	29.47	56.00	26.53	8.99	46.00	37.01	9.85	L1

Note:
1. Margin=Limit - Level

Final Test mode:	Mode 1		
Test Voltage:	AC 120V / 60Hz	Phase:	Neutral



Frequency [MHz]	PK+ Level [dBµV]	PK+: QPK Limit [dBµV]	PK+ Margin [dB]	AVG Level [dBµV]	AVG Limit [dBµV]	AVG Margin [dB]	Correction [dB]	Line
0.155	39.67	65.75	26.09	15.28	55.75	40.48	9.49	N
0.231	35.10	62.41	27.31	14.24	52.41	38.17	9.55	N
0.317	38.09	59.80	21.71	15.63	49.80	34.16	9.58	N
0.470	39.38	56.52	17.14	18.34	46.52	28.18	9.59	N
0.605	29.38	56.00	26.62	9.47	46.00	36.53	9.62	N
1.203	29.65	56.00	26.35	10.28	46.00	35.72	9.68	N

Note:
1. Margin=Limit - Level

4.3 Radiated Emissions

Limits

Frequency	Field strength (μV/m)	Limit (dBμV/m)	Remark	Measurement distance (m)
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	74.0	Peak	3
		54.0	Average	

Test Procedure

ANSI C63.4:2014

Test Settings

1. For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
2. For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the ground plane.
3. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
4. For each suspected emission, the EUT was ranged to its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) to find the maximum reading. Preamplifier and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Exploratory radiated emissions testing of handheld and/or body-worn devices shall include0rotation of the EUT through three orthogonal axes (X/YIZ Plane) to determine the orientation(attitude) that maximizes the emissions.
6. For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for Quasi-peak detection measurements in the 30~1000MHz range.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported for frequency range below 1GHz.
8. For measurements above 1GHz the resolution bandwidth is set to 1MHz and the video resolution is set to 3MHz, the peak emission measurement will be measured by the peak detector, the average emission measurement will be measured by the average detector.
9. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:

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

   AF = Antenna Factor(dB/m)

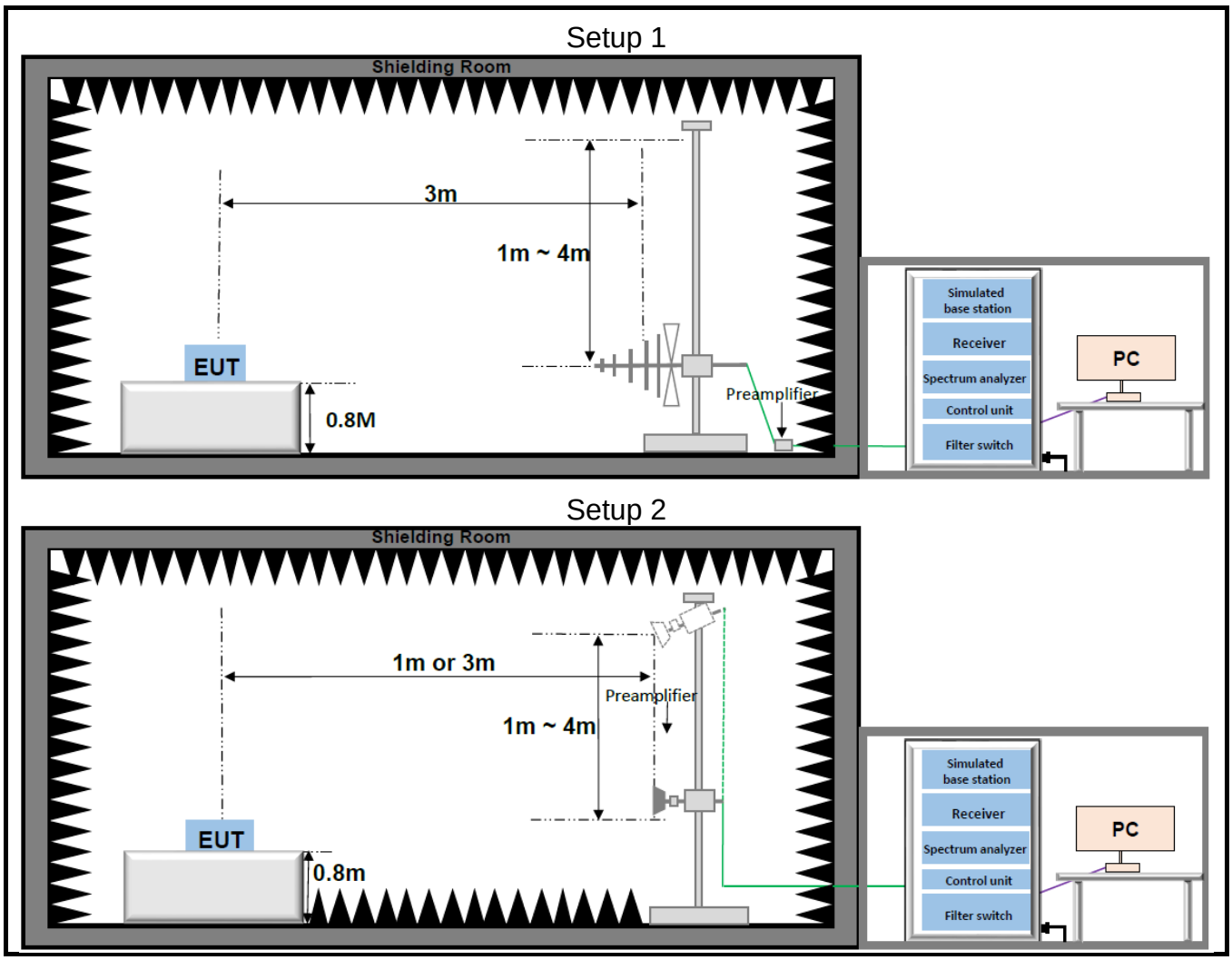
   Factor = Cable Factor(dB) - Preamplifier gain(dB)

   Margin = Limit(dBμV/m) – Level(dBμV/m)
10. Measure and record the results in the test report.

Test notes

1. Radiated emissions were measured from 30MHz - 40GHz to ensure that the provisions of 15.33(b)(1) are satisfied with respect to the upper frequency scanning range. No Spurious emissions were detected above 18GHz.

Test Setup

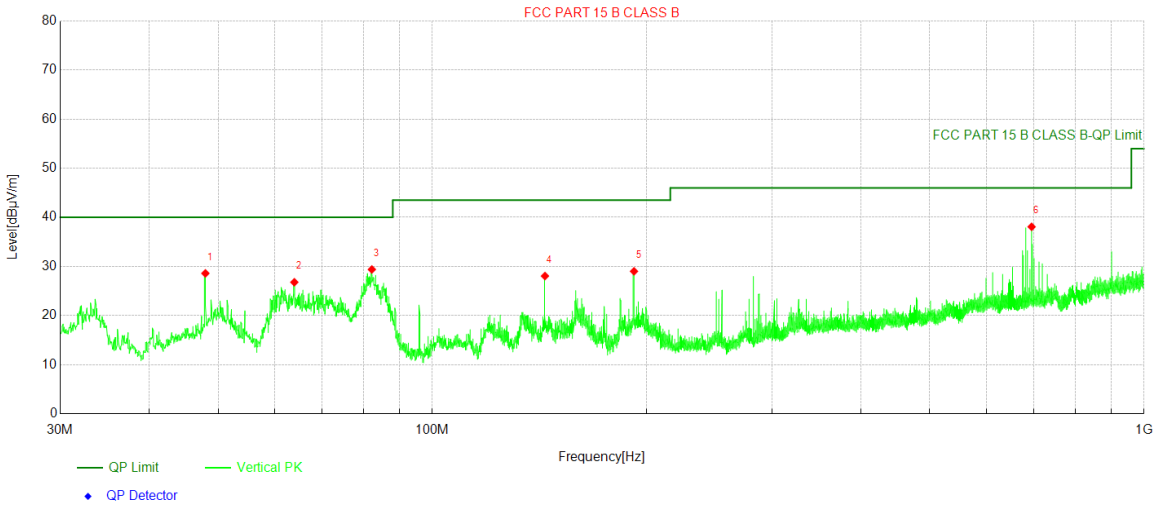


Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result:

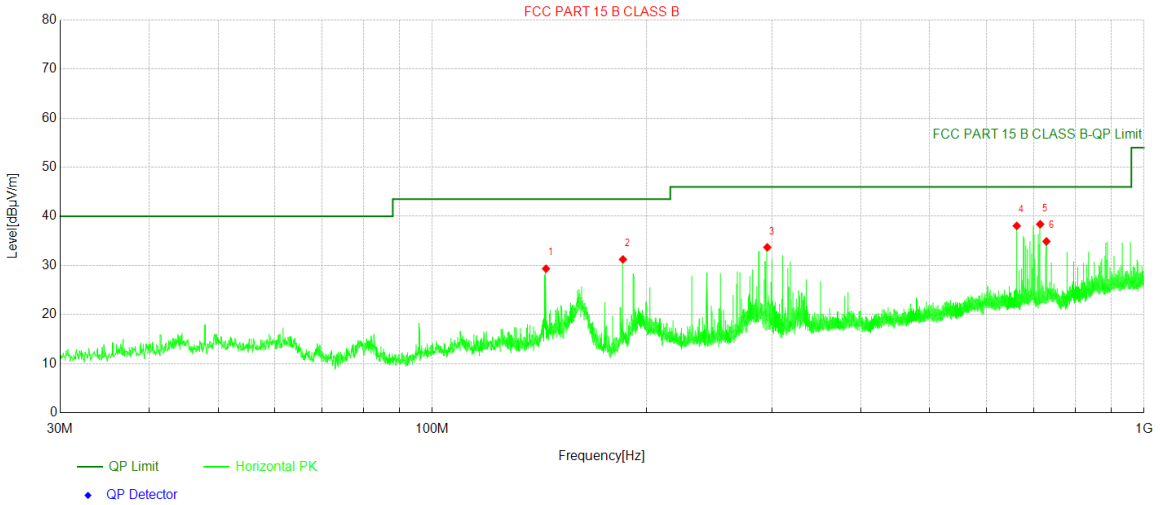
Test Frequency	Below 1000MHz	Final Test mode:	Mode1
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical



NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity	Verdict
1	47.9935	51.97	-23.39	28.58	40.00	11.42	PK	Vertical	PASS
2	63.9985	51.02	-24.24	26.78	40.00	13.22	PK	Vertical	PASS
3	82.2345	55.32	-25.94	29.38	40.00	10.62	PK	Vertical	PASS
4	143.975	53.51	-25.47	28.04	43.50	15.46	PK	Vertical	PASS
5	192.0385	53.74	-24.74	29.00	43.50	14.50	PK	Vertical	PASS
6	695.0805	50.09	-12.02	38.07	46.00	7.93	PK	Vertical	PASS

Note:
1. Level = Reading(dBμV) + Factor(dB):
2. Factor = Cable Factor(dB) + AF(dB/m) - Preamplifier gain(dB)
3. AF = Antenna Factor(dB/m)
4. Margin = Limit(dBμV/m) - Value(dBμV/m)

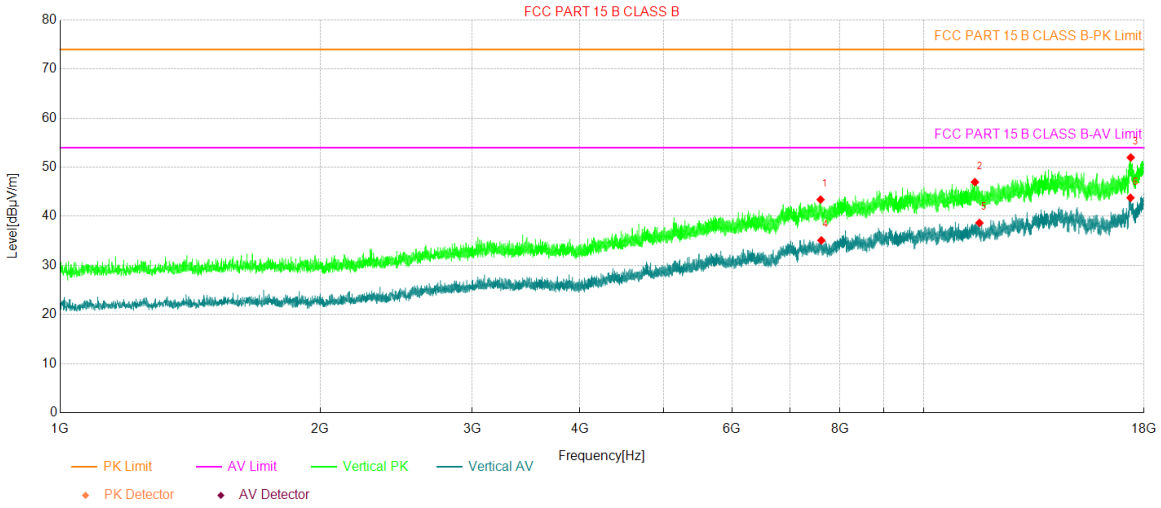
Test Frequency	Below 1000MHz	Final Test mode:	Mode1
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal



NO	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Trace
1	144.46	55.37	-26.04	29.33	43.50	14.17	PK	Horizontal	PASS
2	185.297	56.13	-24.90	31.23	43.50	12.27	PK	Horizontal	PASS
3	295.586	54.43	-20.75	33.68	46.00	12.32	PK	Horizontal	PASS
4	662.44	50.53	-12.47	38.06	46.00	7.94	PK	Horizontal	PASS
5	714.6745	50.54	-12.15	38.39	46.00	7.61	PK	Horizontal	PASS
6	729.2245	46.70	-11.81	34.89	46.00	11.11	PK	Horizontal	PASS

Note:
1. Level = Reading(dBµV) + Factor(dB):
2. Factor = Cable Factor(dB) + AF(dB/m) - Preamplifier gain(dB)
3. AF = Antenna Factor(dB/m)
4. Margin = Limit(dBµV/m) - Value(dBµV/m)

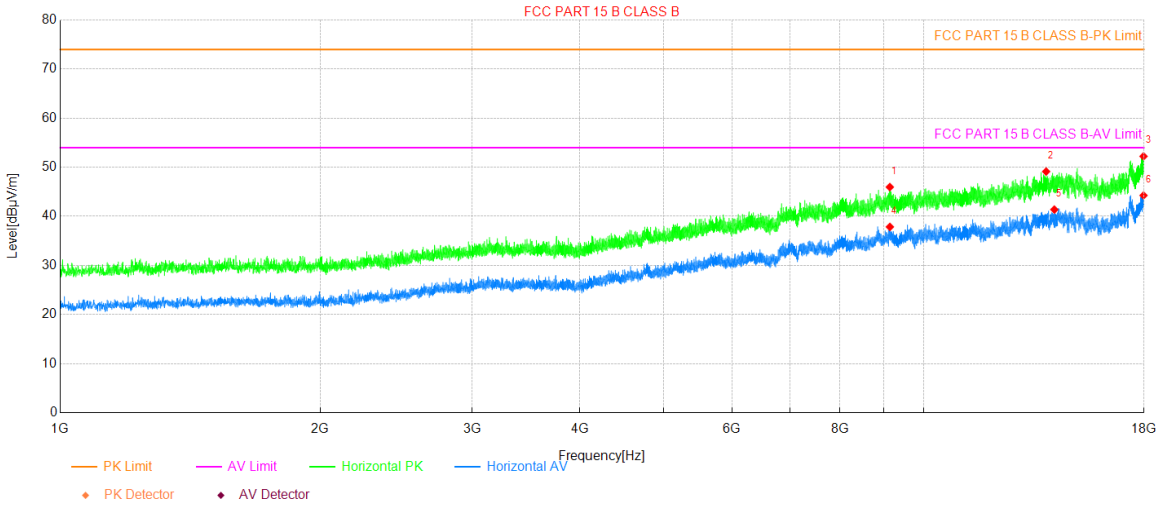
Test Frequency	Above 1000MHz	Final Test mode:	Mode1
Test Voltage:	AC 120V/60Hz	Polarization:	Vertical



NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity	Verdict
1	7597.133333	44.64	-1.23	43.41	74.00	30.59	PK	Vertical	PASS
2	11465.766667	42.58	4.39	46.97	74.00	27.03	PK	Vertical	PASS
3	17372.133333	40.20	11.78	51.98	74.00	22.02	PK	Vertical	PASS
4	7613.566667	36.38	-1.28	35.10	54.00	18.90	AV	Vertical	PASS
5	11605.166667	33.92	4.74	38.66	54.00	15.34	AV	Vertical	PASS
6	17360.8	31.85	11.93	43.78	54.00	10.22	AV	Vertical	PASS

Note:
1. Level = Reading(dBµV) + Factor(dB):
2. Factor = Cable Factor(dB) + AF(dB/m) - Preamplifier gain(dB)
3. AF = Antenna Factor(dB/m)
4. Margin = Limit(dBµV/m) - Value(dBµV/m)

Test Frequency	Above 1000MHz	Final Test mode:	Mode1
Test Voltage:	AC 120V/60Hz	Polarization:	Horizontal



NO.	Freq. [MHz]	Reading [dBuV]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity	Verdict
1	9137.333333	43.60	2.36	45.96	74.00	28.04	PK	Horizontal	PASS
2	13863.9	41.43	7.69	49.12	74.00	24.88	PK	Horizontal	PASS
3	17976.766667	39.12	13.10	52.22	74.00	21.78	PK	Horizontal	PASS
4	9139.033333	35.43	2.42	37.85	54.00	16.15	AV	Horizontal	PASS
5	14170.466667	33.88	7.50	41.38	54.00	12.62	AV	Horizontal	PASS
6	17976.2	31.16	13.09	44.25	54.00	9.75	AV	Horizontal	PASS

Note:
1. Level = Reading(dBµV) + Factor(dB):
2. Factor = Cable Factor(dB) + AF(dB/m) - Preamplifier gain(dB)
3. AF = Antenna Factor(dB/m)
4. Margin = Limit(dBµV/m) - Value(dBµV/m)

5 Test Setup Photos

The detailed test setup see: **Appendix B-Test Setup Photos**

~The End~