



RF MEASUREMENT REPORT

FCC ID: 2ALS8-KS0007

Applicant: Ninebot (Changzhou) Tech Co., Ltd.

Product: Segway KickScooter

Model No.: P65U

Brand Name: Segway

FCC Classification: Part 15 Low Power Communication Device Transmitter (DXX)

FCC Rule Part(s): Part 15 Subpart C (Section 15.225)

Result: Complies

Test Date: 2022-05-09 ~ 2022-05-27

Reviewed By:

Vincent Yu

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.

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
2204RSU045-U2	Rev. 01	Initial Report	2022-05-31	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.....	6
2. Test Configuration.....	7
2.1. Test Mode	7
2.2. Test System Connection Diagram	7
2.3. Applied Standards	8
2.4. Test Environment Condition	8
3. Antenna Requirements	9
4. Measuring Instrument.....	10
5. Measurement Uncertainty	11
6. Test Result	12
6.1. Summary	12
6.2. In-band Emission.....	13
6.2.1. Test Limit	13
6.2.2. Test Procedure	13
6.2.3. Test Setting.....	13
6.2.4. Test Setup	14
6.2.5. Test Result.....	14
6.3. Out-band Emission.....	15
6.3.1. Test Limit	15
6.3.2. Test Procedure	15
6.3.3. Test Setting.....	15
6.3.4. Test Setup	16
6.3.5. Test Result.....	17
6.4. Occupied Bandwidth	18
6.4.1. Test Limit	18
6.4.2. Test Procedure	18
6.4.3. Test Setting.....	18
6.4.4. Test Setup	19
6.4.5. Test Result.....	19

6.5.	Frequency Tolerance	20
6.5.1.	Test Limit	20
6.5.2.	Test Procedure	20
6.5.3.	Test Setting.....	20
6.5.4.	Test Setup	21
6.5.5.	Test Result.....	21
6.6.	AC Conducted Emissions	22
6.6.1.	Test Limit	22
6.6.2.	Test Setup	22
6.6.3.	Test Result.....	22
Appendix A - Test Result		23
A.1	In-band Emission Test Result	23
A.2	Out-Band Emission Test Result.....	25
A.3	Occupied Bandwidth Test Result	29
A.4	Frequency Tolerance Test Result	31
A.5	AC Conducted Emissions Test Result.....	32
Appendix B - Test Setup Photograph.....		36
Appendix C - EUT Photograph.....		37

1. General Information

1.1. Applicant

Ninebot (Changzhou) Tech Co., Ltd.

16F-17F, Block A, Building 3, Changwu Mid Road 18#, Wujin Dist., Changzhou, Jiangsu, China

1.2. Manufacturer

Ninebot (Changzhou) Tech Co., Ltd.

16F-17F, Block A, Building 3, Changwu Mid Road 18#, Wujin Dist., Changzhou, Jiangsu, 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	Segway KickScooter
Model No.	P65
EUT Identification No.	20220424Sample#09
Bluetooth Specification	V4.1 single mode for BLE
NFC Specification	13.56MHz
Antenna Information	Refer to Section 1.5
Accessories	
Battery	Model No.: NCAF4813A / NCAF4812D Nominal Voltage: 46.8VDC Max. Charging Voltage: 54.6VDC Nominal Energy: 561Wh Nominal Capacity: 12 Ah
Remark: 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

Frequency Range	13.56MHz
Type of modulation	ASK
Antenna Type	Loop Antenna

Note: For other features of this EUT, test report will be issued separately.

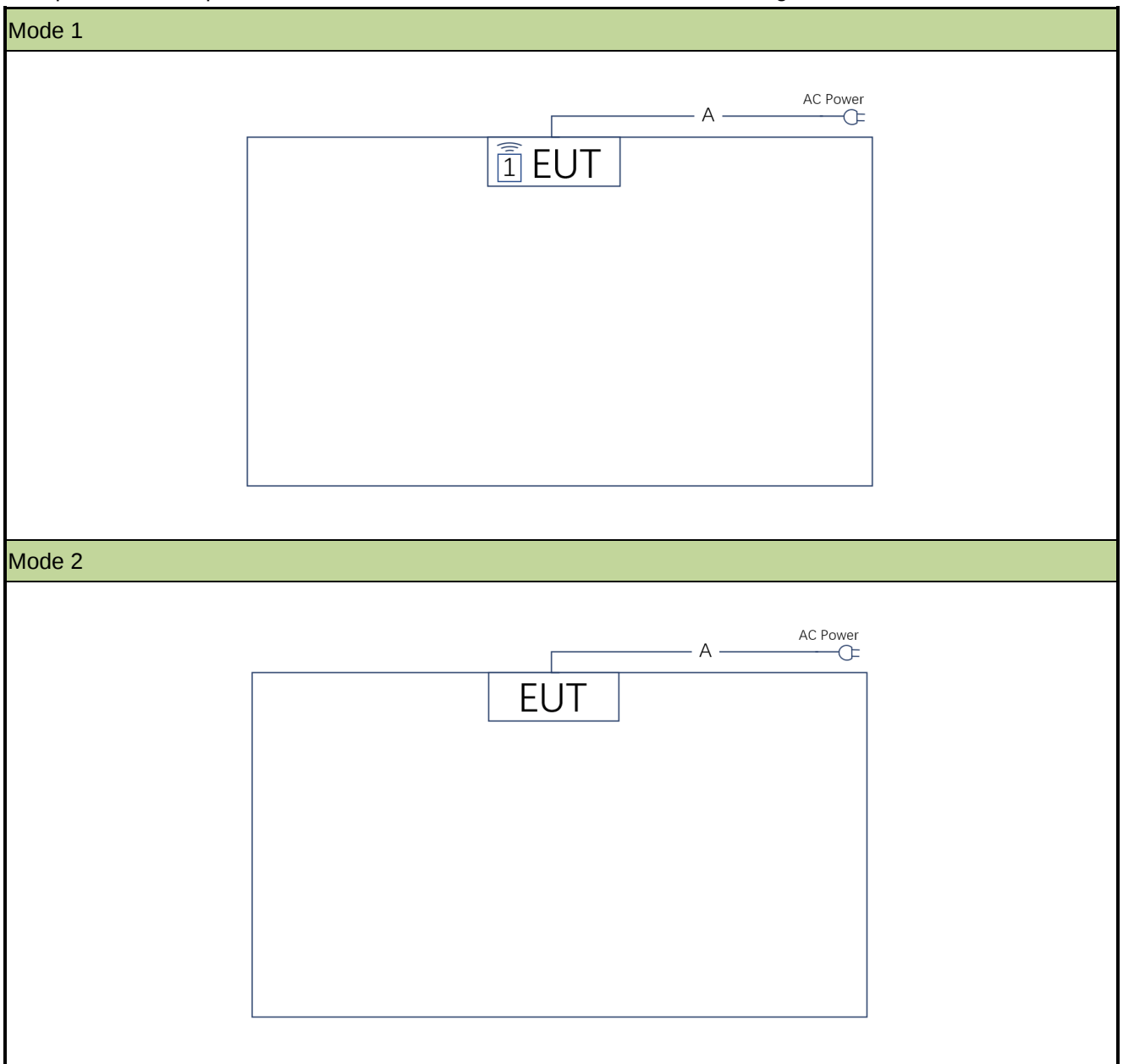
2. Test Configuration

2.1. Test Mode

Test Mode
Mode 1: Transmit by NFC (NFC function on and Swiping NFC Card)
Mode 2: Transmit by NFC (NFC function on and Standby Mode)

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10-2013 that was used to reference the appropriate EUT setup for radiated spurious emissions and AC line conducted emission testing.



No.	Cable Type	Cable Spec.	Length
A	Power Cable	Non-Shielding	1.8m
No.	Product	Manufacturer	Model No.
1	NFC Card	Ninebot (Changzhou) Tech Co., Ltd.	N/A

2.3. Applied Standards

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

- FCC Part 15.225
- ANSI C63.10-2013

2.4. 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 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

Instrument Name	Manufacturer	Model No.	Asset No.	Cali. Interval	Cal. Due Date	Test Site
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2022-12-29	WZ-AC1/WZ-AC2
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2022-08-05	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2023-04-21	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2022-06-28	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2022-12-29	WZ-AC1
Thermohygrometer	testo	Testo 608-H1	MRTSUE11039	1 year	2022-11-11	WZ-AC1
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2022-10-28	WZ-AC1/WZ-AC2/ WZ-TR3
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2022-06-24	WZ-AC2
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2023-05-20	WZ-AC2
					2022-05-24	
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2022-12-01	WZ-AC2
Thermohygrometer	testo	Testo 608-H1	MRTSUE11038	1 year	2022-11-11	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2023-04-21	WZ-AC2
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2022-06-08	WZ-SR2
Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	5 years	2026-12-20	WZ-SR2
Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2022-06-28	WZ-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2022-11-01	WZ-SR2/WZ-TR3
Temperature Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2022-10-10	WZ-TR3
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2022-06-28	WZ-TR3

Software	Version	Function
EMI V3	V 3.0.0	EMI Test Software
Controller_MF 7802BS	V1.02	RE Antenna & turntable

5. 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 $k = 2$.

AC Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Disturbance
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): Horizontal: 9kHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 9kHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB

6. Test Result

6.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result
15.225 (a), (b), (c)	In-Band Emission	Radiated	Pass
15.225(d)	Out-Band Emission		Pass
15.215(c)	20dB Bandwidth		Pass
15.225(e)	Frequency Tolerance		Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

6.2. In-band Emission

6.2.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.225		
Frequency (MHz)	Distance (m)	Level (μV/m)
13.553 ~13.567	30	15848
13.410 ~13.553, 13.567 ~13.710	30	334
13.110 ~13.410, 13.710 ~14.010	30	106
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 (dBμV/m) = 20 log E field strength (μV/m)		

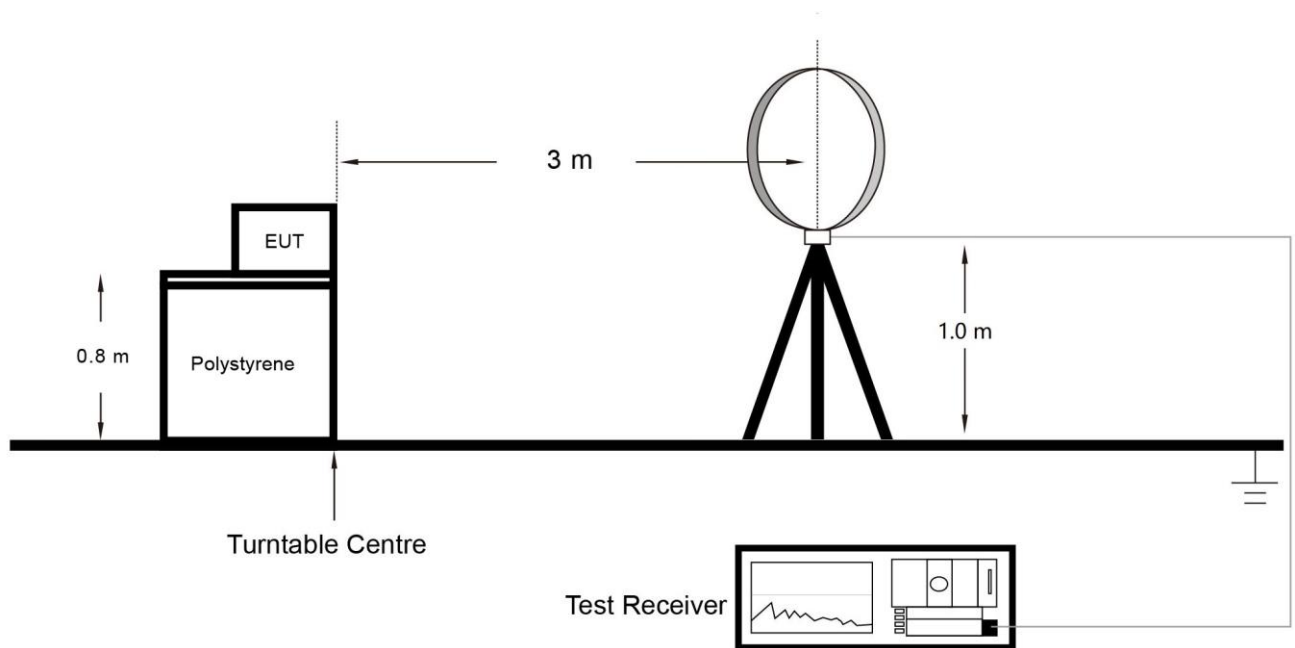
6.2.2. Test Procedure

ANSI C63.10-2013 - Section 6.4.7

6.2.3. Test Setting

1. RBW = 9kHz
2. VBW = 3 * RBW
3. Detector = Peak
4. Trace mode = Max hold
5. Sweep = Auto couple
6. Allow the trace to stabilize

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.1.

6.3. Out-band Emission

6.3.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (μ V/m)
0.009 - 0.490	300	2400/F (kHz)
0.490 - 1.705	30	24000/F (kHz)
1.705 - 30	30	30
30 - 88	3	100
88 - 216	3	150
216 - 960	3	200
Above 960	3	500

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)

6.3.2. Test Procedure

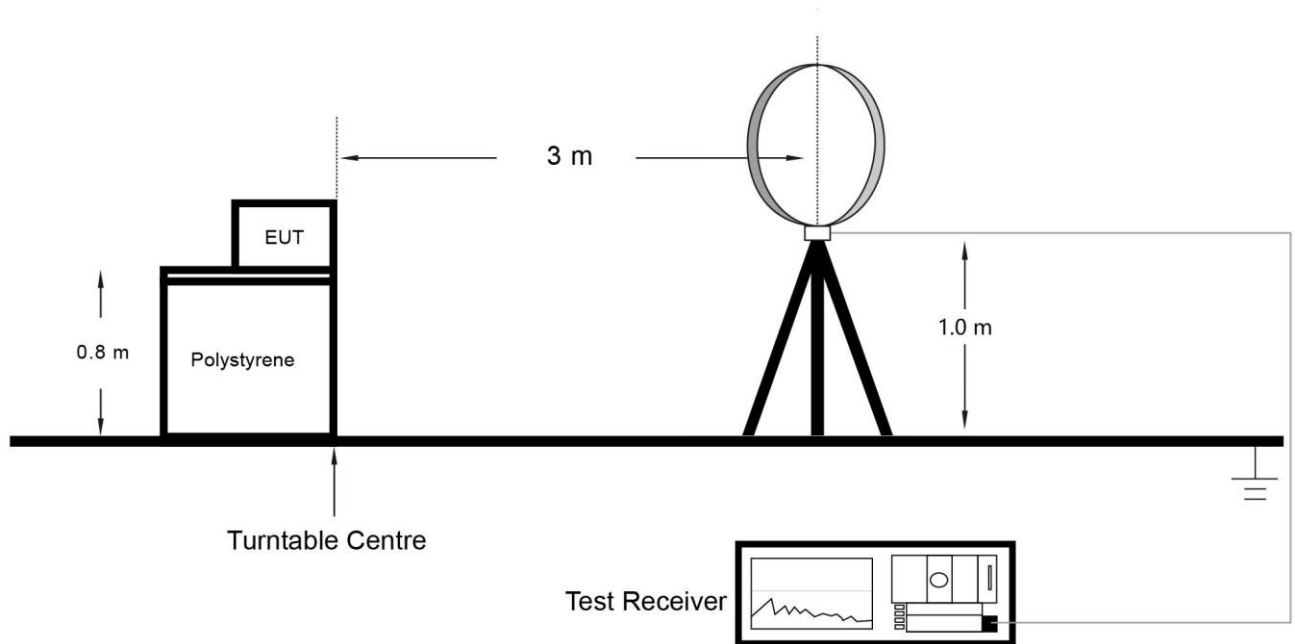
ANSI C63.10-2013 - Section 6.5.4

6.3.3. Test Setting

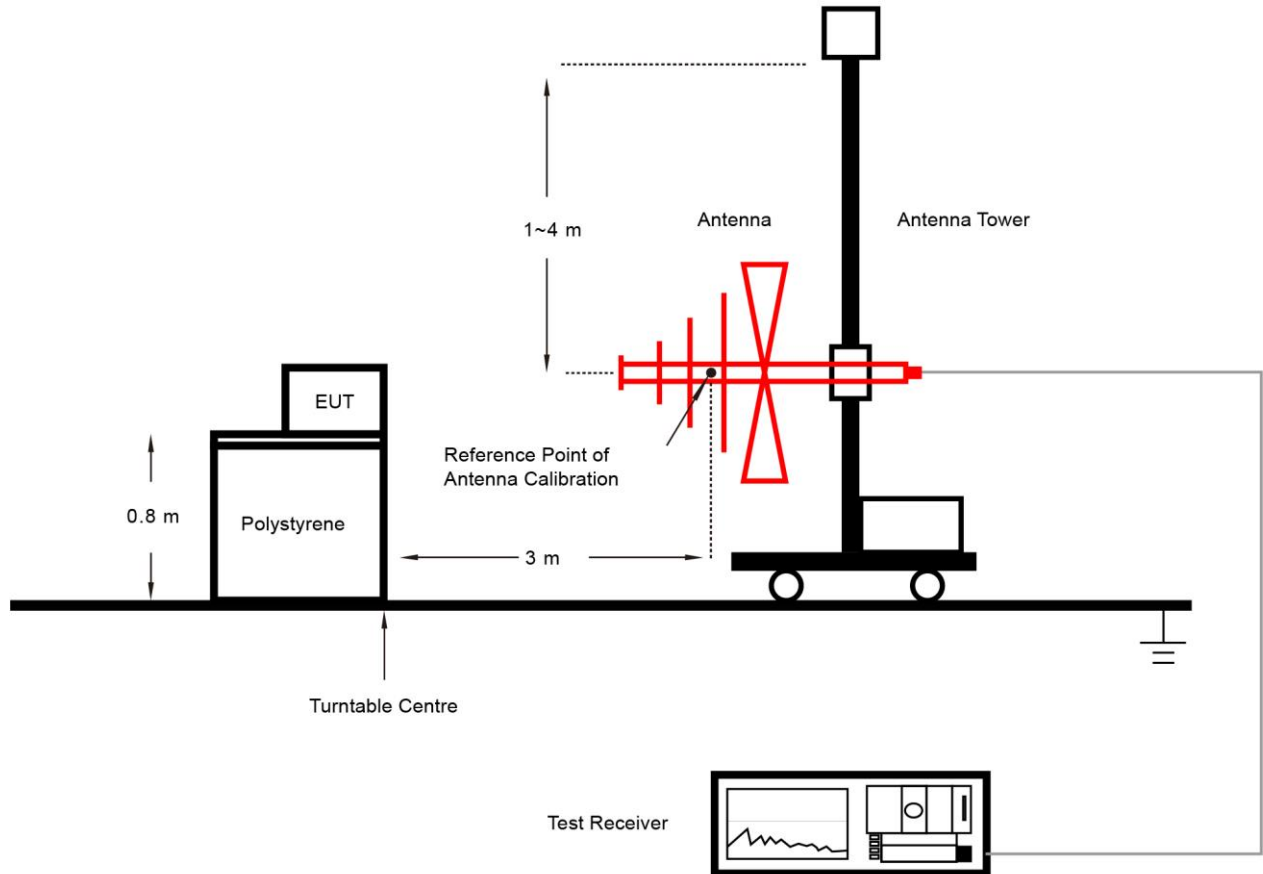
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 9kHz for emission below 30MHz and 100kHz for emission between 30MHz and 1GHz
3. VBW = 3 * RBW
4. Detector = Peak
5. Trace mode = Max hold
6. Sweep = Auto couple
7. Allow the trace to stabilize

6.3.4. Test Setup

9kHz ~ 30MHz Test Setup:



30MHz ~ 1GHz Test Setup:



6.3.5. Test Result

Refer to Appendix A.2.

6.4. Occupied Bandwidth

6.4.1. Test Limit

Within the operating frequency band (13.110 ~ 14.010 MHz).

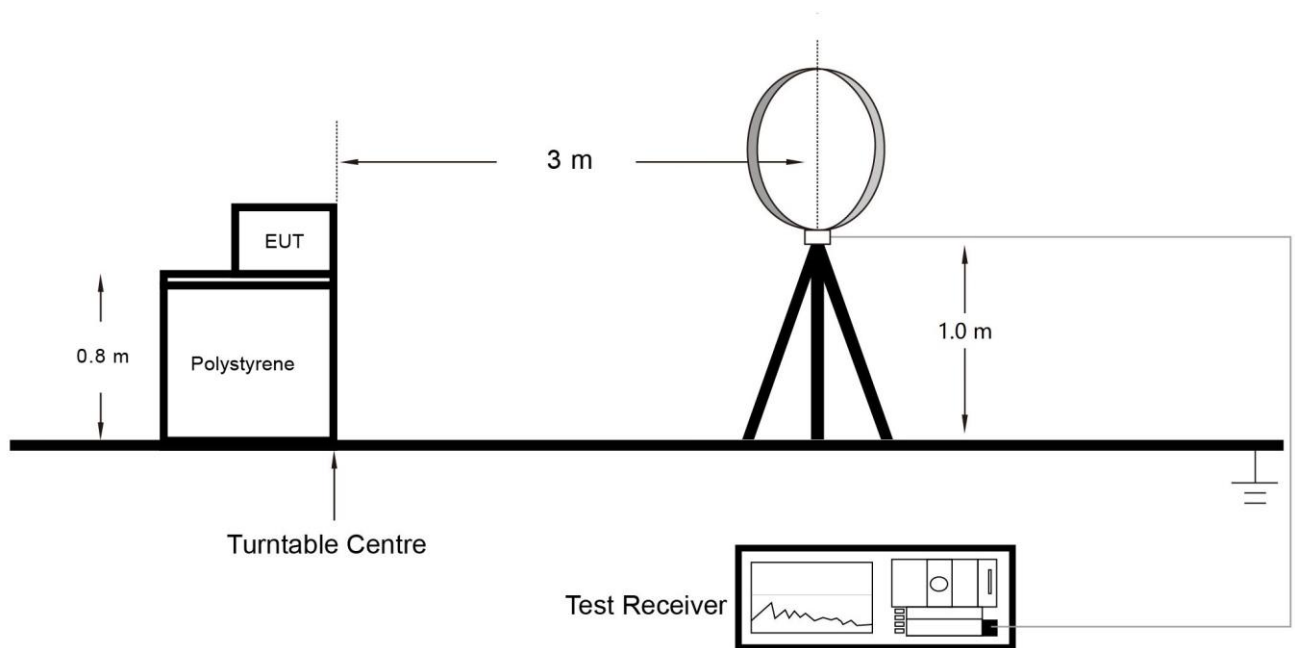
6.4.2. Test Procedure

ANSI C63.10-2013 - Section 6.9.2

6.4.3. Test Setting

1. Set RBW $\geq$ 1% to 5% of the 20dB bandwidth
2. VBW = approximately three times RBW
3. Span = approximately 2 to 5 times the 20dB bandwidth
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. Allow the trace to stabilize
8. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.3.

6.5. Frequency Tolerance

6.5.1. Test Limit

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency.

6.5.2. Test Procedure

ANSI C63.10-2013 - Section 6.8

6.5.3. Test Setting

Frequency Stability Under Temperature Variations:

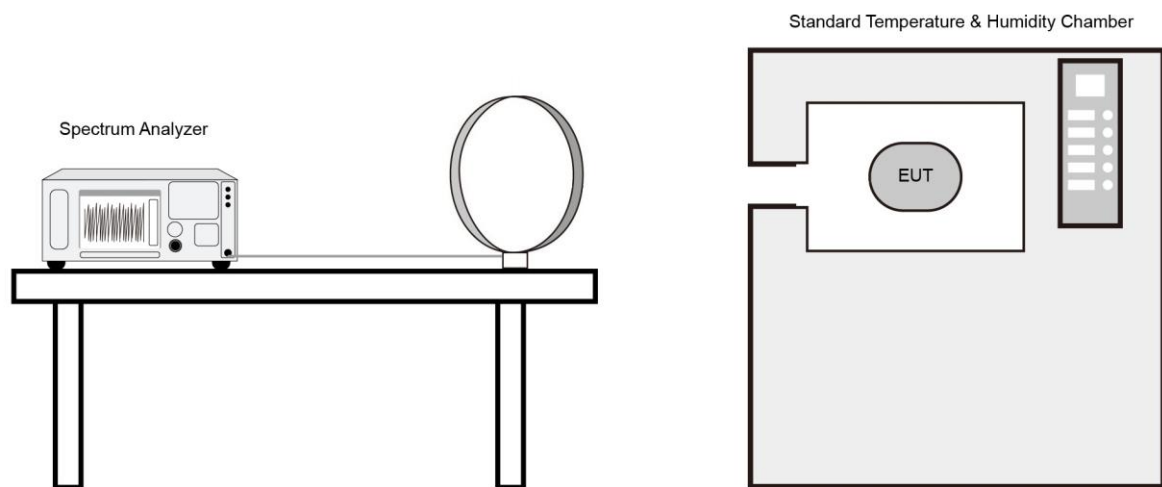
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change. For hand-carried battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

6.5.4. Test Setup



6.5.5. Test Result

Refer to Appendix A.4.

6.6. AC Conducted Emissions

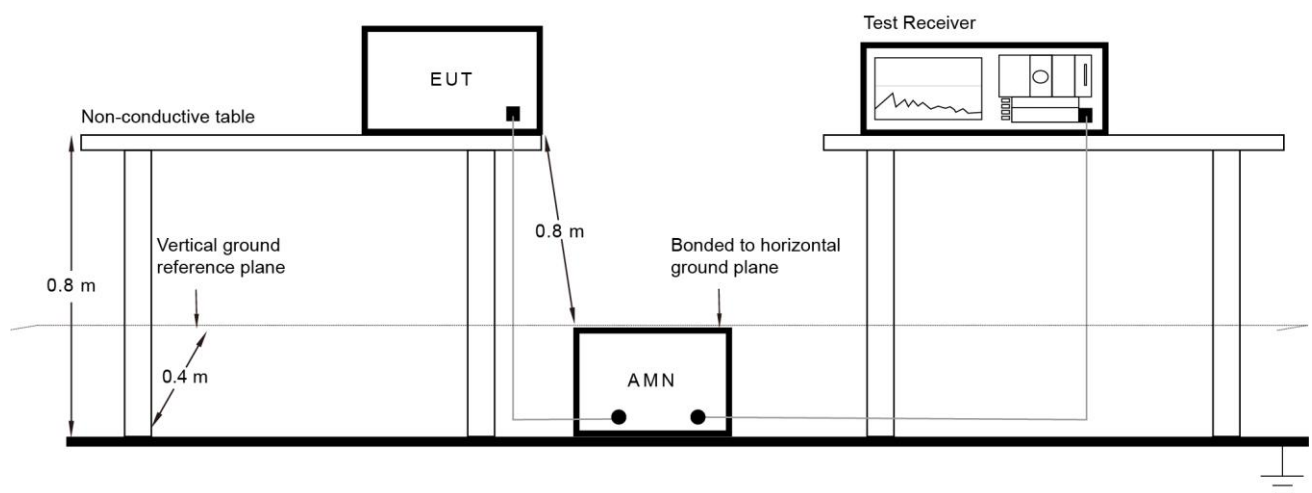
6.6.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207		
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.

6.6.2. Test Setup



6.6.3. Test Result

Refer to Appendix A.5.

Appendix A - Test Result

A.1 In-band Emission Test Result

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin [dB]	Detector	Polarization
13.110	4.274	17.056	21.330	80.506	-59.176	PK	Coaxial
13.410	5.454	17.051	22.505	80.506	-58.001	PK	Coaxial
13.553	30.600	17.049	47.649	90.488	-42.839	PK	Coaxial
13.560	36.433	17.049	53.482	123.999	-70.517	PK	Coaxial
13.567	26.341	17.049	43.390	90.488	-47.098	PK	Coaxial
13.710	5.880	17.047	22.927	80.506	-57.579	PK	Coaxial
14.010	5.445	17.042	22.487	80.506	-58.019	PK	Coaxial
13.110	4.801	17.056	21.857	80.506	-58.649	PK	Coplanar
13.410	5.694	17.051	22.745	80.506	-57.761	PK	Coplanar
13.553	25.033	17.049	42.082	90.488	-48.406	PK	Coplanar
13.560	30.649	17.049	47.698	123.999	-76.301	PK	Coplanar
13.567	21.019	17.049	38.068	90.488	-52.420	PK	Coplanar
13.710	6.032	17.047	23.079	80.506	-57.427	PK	Coplanar
14.010	5.377	17.042	22.419	80.506	-58.087	PK	Coplanar

Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)
3. Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).
Extrapolation Factor = 40*Log (30/3) = 40 dB
For example, Limit @3m = 20*log (106) + 40 = 80.506 dBμV/m
4. All measurements were recorded using an EMI test receiver employing a peak detector.

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 2

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin [dB]	Detector	Polarization
13.110	8.292	17.056	25.348	80.506	-55.158	PK	Coaxial
13.410	5.393	17.051	22.444	80.506	-58.062	PK	Coaxial
13.553	29.012	17.049	46.061	90.488	-44.427	PK	Coaxial
13.560	34.719	17.049	51.768	123.999	-72.231	PK	Coaxial
13.567	24.730	17.049	41.779	90.488	-48.709	PK	Coaxial
13.710	6.461	17.047	23.508	80.506	-56.998	PK	Coaxial
14.010	4.687	17.042	21.729	80.506	-58.777	PK	Coaxial
13.110	5.784	17.056	22.840	80.506	-57.666	PK	Coplanar
13.410	4.987	17.051	22.038	80.506	-58.468	PK	Coplanar
13.553	24.123	17.049	41.172	90.488	-49.316	PK	Coplanar
13.560	29.637	17.049	46.686	123.999	-77.313	PK	Coplanar
13.567	20.468	17.049	37.517	90.488	-52.971	PK	Coplanar
13.710	4.511	17.047	21.558	80.506	-58.948	PK	Coplanar
14.010	6.737	17.042	23.779	80.506	-56.727	PK	Coplanar

Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)
3. Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).
Extrapolation Factor = $40 \times \log(30/3) = 40$ dB
For example, Limit @3m = $20 \times \log(106) + 40 = 80.506$ dBμV/m
4. All measurements were recorded using an EMI test receiver employing a peak detector.

A.2 Out-Band Emission Test Result

Test Site	WZ-AC1	Test Date	2022/05/21
Test Engineer	Hyde Yu	Test Mode	Mode 1
Remark	Out-Band Emission below 30MHz		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)	Detector	Polarization
0.150	30.775	17.072	47.847	104.082	-56.235	PK	Coaxial
0.329	25.844	17.147	42.991	97.260	-54.269	PK	Coaxial
0.523	21.086	17.316	38.402	73.234	-34.832	PK	Coaxial
2.269	13.821	17.488	31.309	69.542	-38.233	PK	Coaxial
5.523	11.998	17.171	29.169	69.542	-40.373	PK	Coaxial
27.120	7.790	16.795	24.585	69.542	-44.957	PK	Coaxial
0.150	29.891	17.072	46.963	104.082	-57.119	PK	Coplanar
0.329	22.544	17.147	39.691	97.260	-57.569	PK	Coplanar
0.657	16.911	17.406	34.317	71.253	-36.936	PK	Coplanar
1.538	14.842	17.493	32.335	63.865	-31.530	PK	Coplanar
6.866	12.450	17.055	29.505	69.542	-40.037	PK	Coplanar
27.120	6.417	16.795	23.212	69.542	-46.330	PK	Coplanar

Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)
3. Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).
Extrapolation Factor = $40 \cdot \log(300/3) = 80$ dB for range 0.009 ~ 0.490MHz,
Extrapolation Factor = $40 \cdot \log(30/3) = 40$ dB for range 0.490 ~ 30MHz,
For example, Limit @3m = $20 \cdot \log(30) + 40 = 69.542$ dBμV/m for 1.705 ~ 30MHz.

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 1
Remark	Out-Band Emission above 30MHz		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)	Detector	Polarization
163.375	16.227	16.080	32.307	43.500	-11.193	PK	Horizontal
180.835	16.403	17.072	33.475	43.500	-10.025	PK	Horizontal
193.930	15.080	18.621	33.701	43.500	-9.799	PK	Horizontal
243.885	13.659	19.935	33.594	46.000	-12.406	PK	Horizontal
256.010	14.629	20.301	34.930	46.000	-11.070	PK	Horizontal
954.895	4.224	31.377	35.601	46.000	-10.399	PK	Horizontal
32.910	18.900	17.620	36.520	40.000	-3.480	QP	Vertical
57.645	11.068	19.976	31.044	40.000	-8.956	PK	Vertical
159.980	17.899	15.885	33.784	43.500	-9.716	PK	Vertical
195.870	13.304	18.944	32.248	43.500	-11.252	PK	Vertical
256.010	15.818	20.301	36.119	46.000	-9.881	PK	Vertical
852.560	4.606	30.808	35.414	46.000	-10.586	PK	Vertical

Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

Test Site	WZ-AC1	Test Date	2022/05/21
Test Engineer	Hyde Yu	Test Mode	Mode 2
Remark	Out-Band Emission below 30MHz		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)	Detector	Polarization
0.150	28.415	17.072	45.487	104.082	-58.595	PK	Coaxial
0.329	25.514	17.147	42.661	97.260	-54.599	PK	Coaxial
0.523	20.394	17.316	37.710	73.234	-35.524	PK	Coaxial
0.762	17.906	17.452	35.358	69.965	-34.607	PK	Coaxial
6.284	12.301	17.079	29.380	69.542	-40.162	PK	Coaxial
27.120	8.250	16.795	25.045	69.542	-44.497	PK	Coaxial
0.150	30.848	17.121	47.969	104.082	-56.113	PK	Coplanar
0.389	21.050	17.188	38.238	95.805	-57.567	PK	Coplanar
1.105	14.643	17.501	32.144	66.737	-34.593	PK	Coplanar
3.508	12.713	17.305	30.018	69.542	-39.524	PK	Coplanar
7.016	12.477	17.049	29.526	69.542	-40.016	PK	Coplanar
27.120	8.017	16.795	24.812	69.542	-44.730	PK	Coplanar

Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)
3. Measurements were tested at 3m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear extrapolation factor (40 dB/decade) as specified in &15.31(f)(2).
Extrapolation Factor = $40 \cdot \log(300/3) = 80$ dB for range 0.009 ~ 0.490MHz,
Extrapolation Factor = $40 \cdot \log(30/3) = 40$ dB for range 0.490 ~ 30MHz,
For example, Limit @3m = $20 \cdot \log(30) + 40 = 69.542$ dBμV/m for 1.705 ~ 30MHz.

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 2
Remark	Out-Band Emission above 30MHz		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)	Detector	Polarization
191.990	11.532	18.298	29.830	43.500	-13.670	PK	Horizontal
243.885	11.988	19.935	31.923	46.000	-14.077	PK	Horizontal
256.010	15.312	20.301	35.613	46.000	-10.387	PK	Horizontal
325.365	7.427	21.831	29.258	46.000	-16.742	PK	Horizontal
384.050	8.151	23.122	31.273	46.000	-14.727	PK	Horizontal
959.745	4.306	31.419	35.725	46.000	-10.275	PK	Horizontal
54.250	5.445	20.395	25.840	40.000	-14.160	PK	Vertical
191.990	11.463	18.298	29.761	43.500	-13.739	PK	Vertical
243.885	9.477	19.935	29.412	46.000	-16.588	PK	Vertical
256.010	16.386	20.301	36.687	46.000	-9.313	PK	Vertical
384.050	8.473	23.122	31.595	46.000	-14.405	PK	Vertical
907.850	3.993	31.237	35.230	46.000	-10.770	PK	Vertical

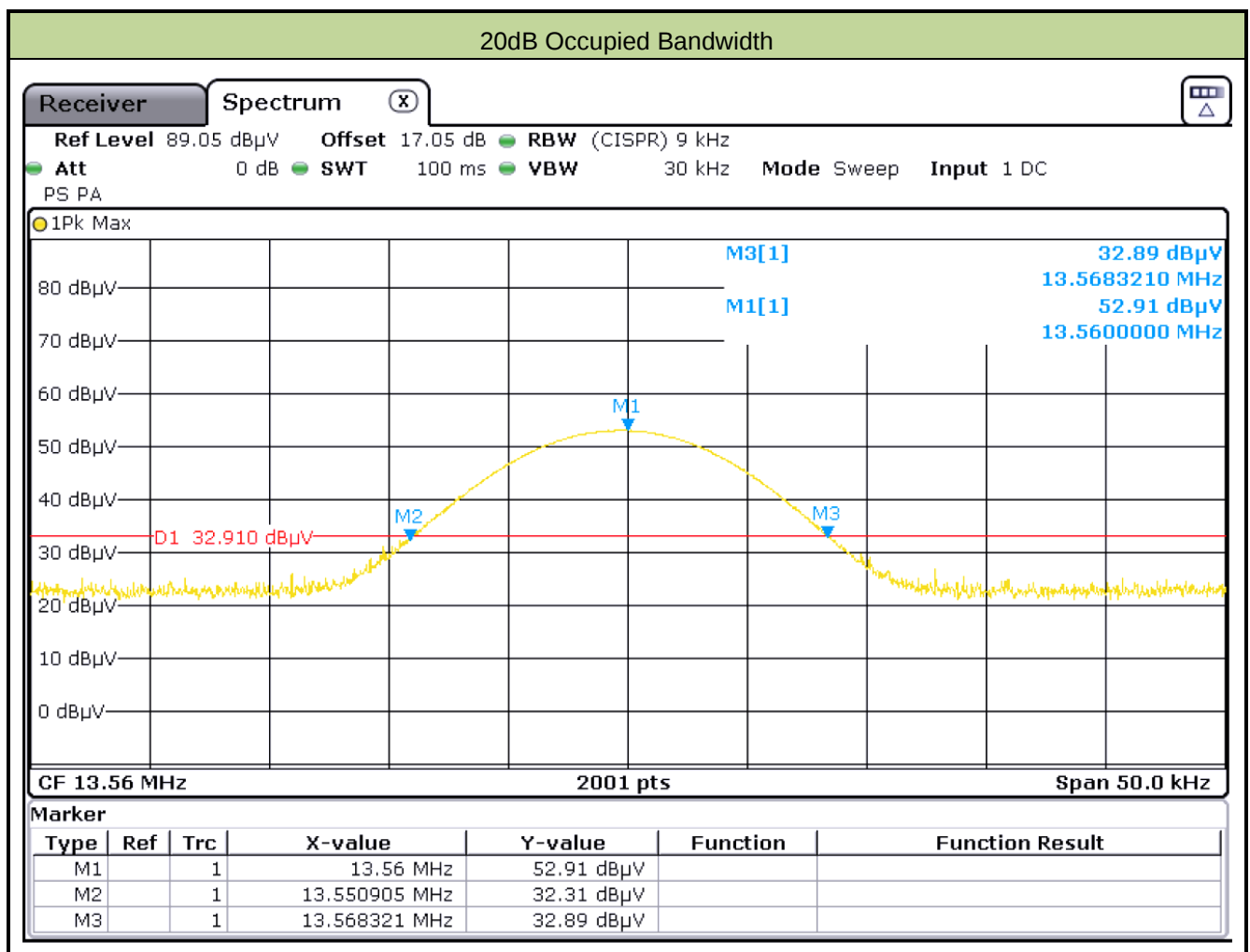
Note:

1. Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)
2. Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m)

A.3 Occupied Bandwidth Test Result

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 1

Frequency (MHz)	20dB Occupied Bandwidth (kHz)
13.56	17.416

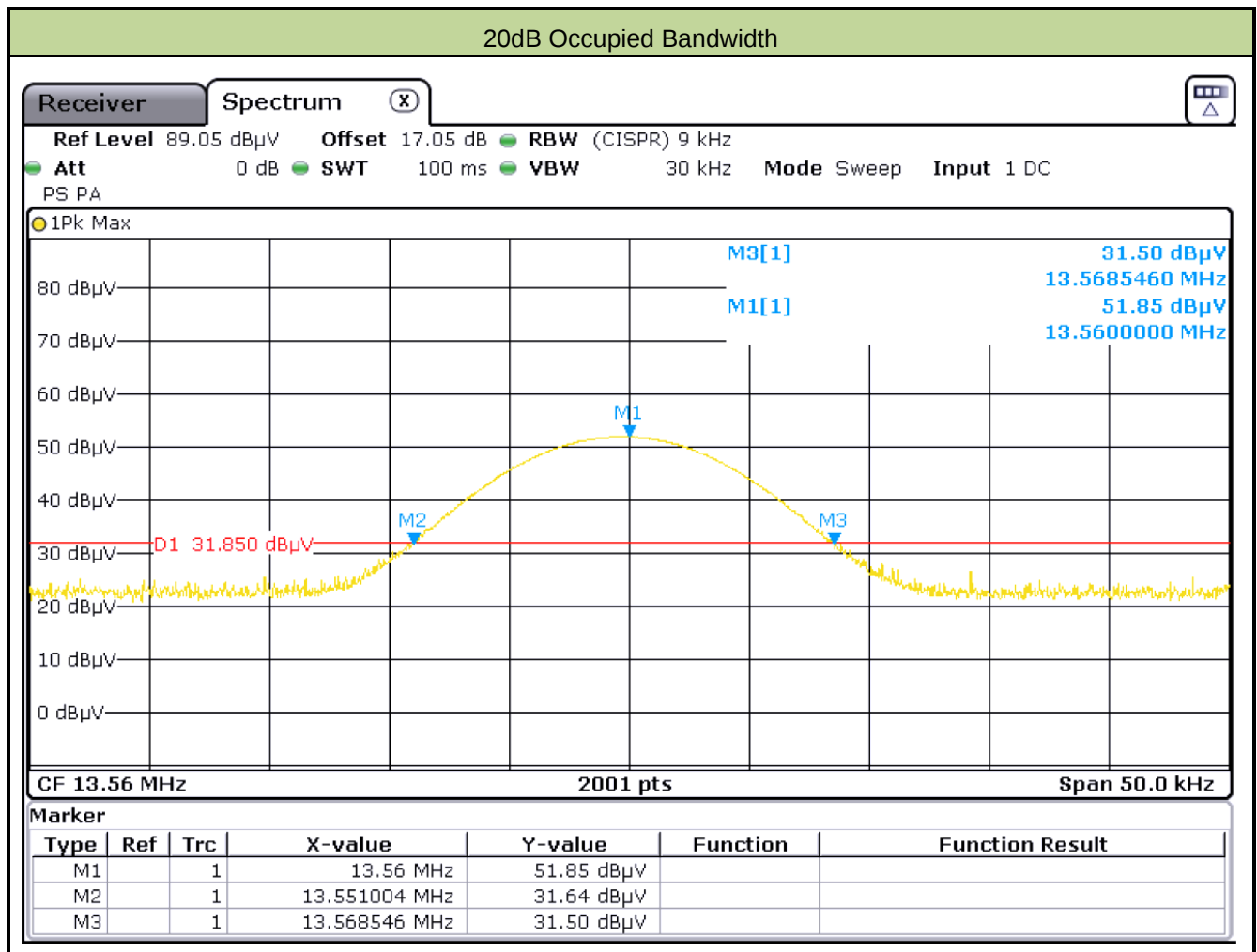


Note:

- Because the measured signal is CW or CW-like, adjusting the RBW per ANSI C63.10-2013 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW. RBW was set to 9kHz for final testing.
- $F_L = 13.551\text{MHz} > 13.110\text{MHz}$
 $F_H = 13.568\text{MHz} < 14.010\text{MHz}$

Test Site	WZ-AC2	Test Date	2022/05/25
Test Engineer	Bob Zhang	Test Mode	Mode 2

Frequency (MHz)	20dB Occupied Bandwidth (kHz)
13.56	17.542



Note:

- Because the measured signal is CW or CW-like, adjusting the RBW per ANSI C63.10-2013 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW. RBW was set to 9kHz for final testing.
- $F_L = 13.551\text{MHz} > 13.110\text{MHz}$
 $F_H = 13.569\text{MHz} < 14.010\text{MHz}$

A.4 Frequency Tolerance Test Result

Test Site	WZ-TR3	Test Date	2022/05/27
Test Engineer	Bruce Wang	Test Mode	Mode 2

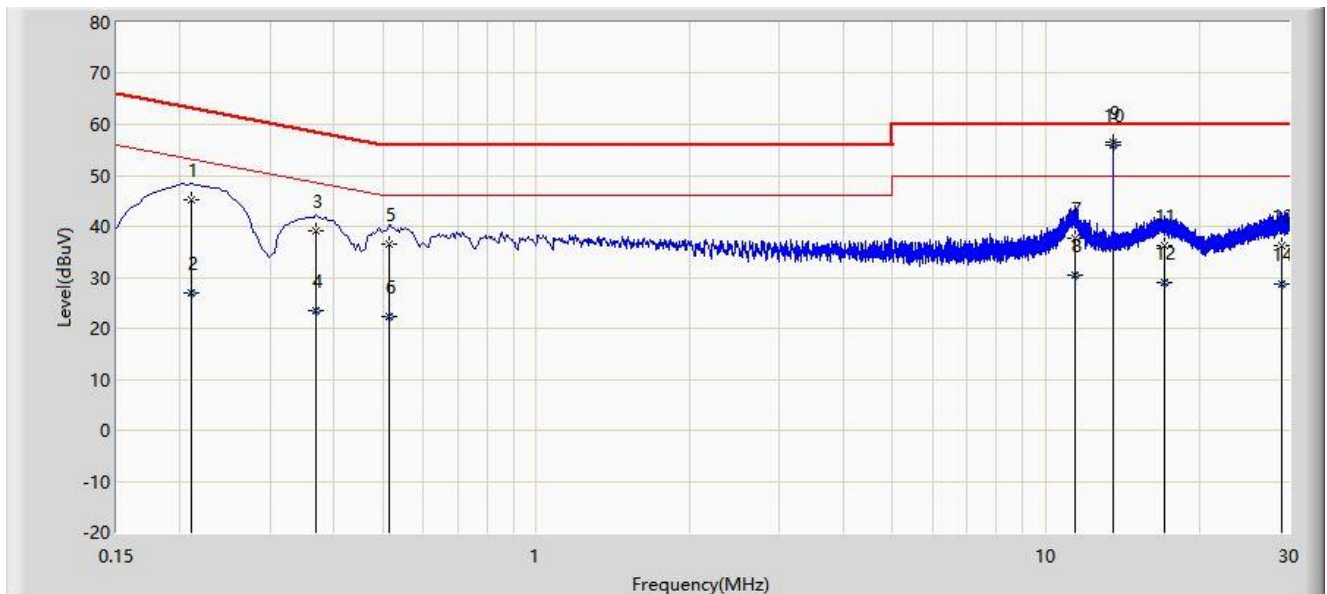
Frequency (MHz)	Voltage (%)	Voltage (V _{dc})	Temperature (°C)	Measure Frequency (MHz)	Tolerance (%)	Limit (%)
13.56	100%	46.8	-20	13.55976	-0.0018	-0.01 ~ +0.01
			-10	13.55978	-0.0016	-0.01 ~ +0.01
			0	13.55978	-0.0016	-0.01 ~ +0.01
			+10	13.55979	-0.0015	-0.01 ~ +0.01
			+20	13.55978	-0.0016	-0.01 ~ +0.01
			+30	13.55979	-0.0015	-0.01 ~ +0.01
			+40	13.55976	-0.0018	-0.01 ~ +0.01
			+50	13.55977	-0.0017	-0.01 ~ +0.01
	85%	39.78	+20	13.55978	-0.0016	-0.01 ~ +0.01
	115%	53.82	+20	13.55979	-0.0015	-0.01 ~ +0.01

Note:

1. Tolerance = (Measurement Frequency - Frequency) / Frequency * 100%
2. During the test, only the parts with NFC radio components were placed in the temperature chamber.
3. Because the measured signal is CW or CW-like, so only mode 2 was selected for frequency tolerance test.

A.5 AC Conducted Emissions Test Result

Site: WZ-SR2	Time: 2022/05/09 - 10:05
Temperature: 24.1°C	Humidity: 48.4%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off_C	Polarity: Line
EUT: Segway KickScooter	Power: AC 120V/60Hz
Test Mode: Transmit by NFC at 13.56MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1	*	0.210	45.229	35.185	-17.976	63.205	10.044	QP
2		0.210	26.944	16.900	-26.261	53.205	10.044	AV
3		0.370	39.093	29.008	-19.408	58.501	10.085	QP
4		0.370	23.529	13.444	-24.972	48.501	10.085	AV
5		0.514	36.395	26.271	-19.605	56.000	10.124	QP
6		0.514	22.388	12.264	-23.612	46.000	10.124	AV
7		11.370	37.821	26.949	-22.179	60.000	10.872	QP
8		11.370	30.468	19.596	-19.532	50.000	10.872	AV
9		13.558	56.443	45.584	N/A	N/A	10.859	QP
10		13.558	56.051	45.192	N/A	N/A	10.859	AV
11		17.106	36.169	25.167	-23.831	60.000	11.002	QP
12		17.106	28.888	17.886	-21.112	50.000	11.002	AV
13		29.010	36.101	24.643	-23.899	60.000	11.458	QP
14		29.010	28.784	17.326	-21.216	50.000	11.458	AV

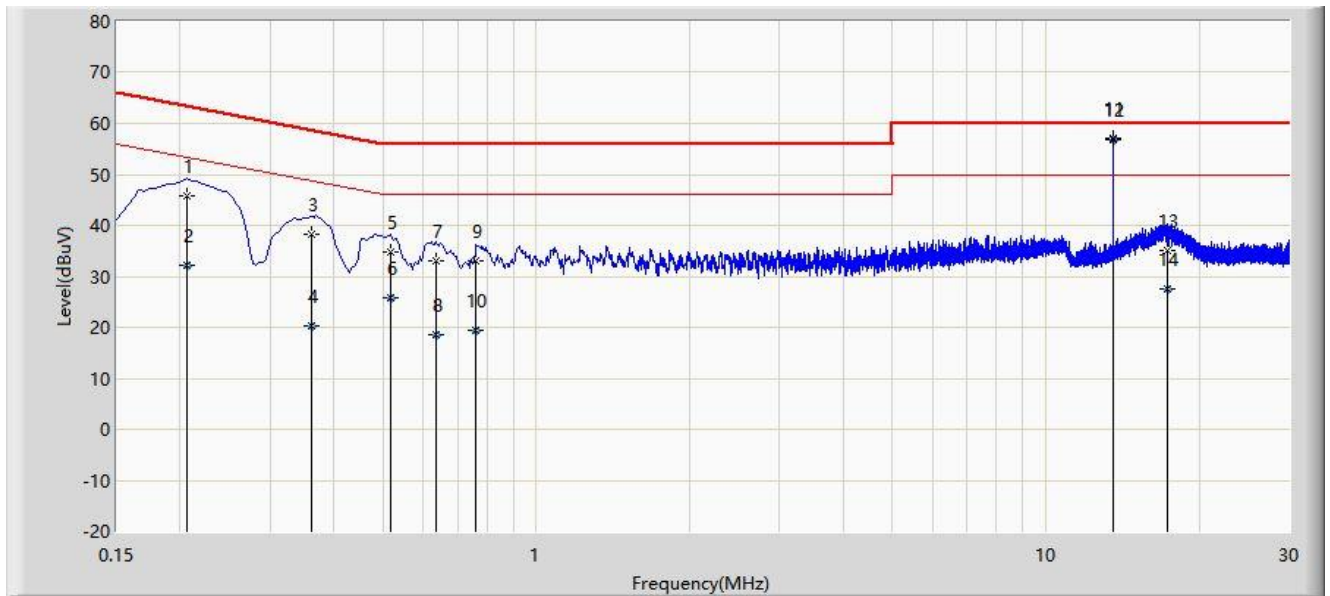
Note 1: " * ", means this data is the worst emission level.

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

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Note 4: It is authenticated that the points (9,10) are NFC signals, so we don't take them into account.

Site: WZ-SR2	Time: 2022/05/09 - 10:11
Temperature: 24.1°C	Humidity: 48.4%
Limit: FCC_Part15.207_CE_AC Power	Engineer: Helen Han
Probe: ENV216_101683_Filter Off_C	Polarity: Neutral
EUT: Segway KickScooter	Power: AC 120V/60Hz
Test Mode: Transmit by NFC at 13.56MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1	*	0.206	45.853	35.518	-17.512	63.365	10.336	QP
2		0.206	32.214	21.878	-21.151	53.365	10.336	AV
3		0.362	38.401	28.044	-20.282	58.682	10.357	QP
4		0.362	20.212	9.855	-28.471	48.682	10.357	AV
5		0.518	34.789	24.405	-21.211	56.000	10.384	QP
6		0.518	25.813	15.429	-20.187	46.000	10.384	AV
7		0.634	33.027	22.621	-22.973	56.000	10.406	QP
8		0.634	18.473	8.068	-27.527	46.000	10.406	AV
9		0.762	33.060	22.631	-22.940	56.000	10.428	QP
10		0.762	19.360	8.931	-26.640	46.000	10.428	AV
11		13.558	57.149	46.019	N/A	N/A	11.130	QP
12		13.558	56.784	45.654	N/A	N/A	11.130	AV
13		17.274	35.174	23.944	-24.826	60.000	11.230	QP
14		17.274	27.608	16.378	-22.392	50.000	11.230	AV

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

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

Note 3: Factor (dB) = Cable Loss (dB) + LISN Factor (dB).

Note 4: It is authenticated that the points (9,10) are NFC signals, so we don't take them into account.

Appendix B - Test Setup Photograph

Refer to “2204RSU045-UT” file.

Appendix C - EUT Photograph

Refer to “2204RSU045-UE” file.

The End
