



Test report No:
2340775R-RF-US-P06V01

FCC TEST REPORT

Product Name	Universal Cup
Trademark	Honeywell
Model and /or type reference	1962 Cup
FCC ID	HD5-1962CUP
Applicant's name / address	HONEYWELL INTERNATIONAL INC Honeywell Safety and Productivity Solutions 9680 OLD BAILES RD FORT MILL SC 29707-7539,USA
Test method requested, standard	CFR 47, FCC Part 15 C ANSI C63.10: 2013
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Jun Xu/ Project Engineer 
Approved by (name / position & signature)	Jack Zhang/ Manager 
Date of issue	2023-06-05
Report Version	V1.0
Report template No	Template_FCC Part 15C-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Apr. 27, 2023
Date (start test)	Apr. 28, 2023
Date (finish test)	May. 14, 2023

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2340775R-RF-US-P06V01	V1.0	Initial issue of report.	2023-06-05

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with CFR 47, FCC Part 15 C .
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
 - Chapter 1.1 General Description of the Item(s);
 - Chapter 1.2 Antenna Informaion;
 - Chapter 1.3 Channel List.

USED EQUIPMENT

AC Power Line Conducted Emission / TR1

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESR7	102086	2023.02.25	2024.02.24
Two-Line V-Network	R&S	ENV216	101190	2023.01.07	2024.01.06
Two-Line V-Network	R&S	ENV216	101044	2023.01.07	2024.01.06
Current Probe	R&S	EZ-17	100678	2023.01.13	2024.01.12
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	N/A	N/A
Temperature/Humidity Meter	RTS	RTS-8S	TR1-TH	2022.07.07	2023.07.06
Coaxial Cable	Suhner	RG 223	TR1-C1	2023.03.15	2024.03.14
Dekra test software	Dekra	-	-	-	-

Radiated Emission(9KHz-1GHz) / AC3

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2022.09.17	2023.09.16
Bilog Antenna	Teseq GmbH	CBL6112D	27613	2022.08.28	2023.08.27
Temperature/Humidity Meter	RTS	RTS-8S	AC2-TH	2022.07.07	2023.07.06
Coaxial Cable	Huber+Suhner	RG 214	AC2-C	2023.03.15	2024.03.14
Loop Antenna	R&S	HFH2-Z2	833799/003	2023.02.25	2024.02.24
Dekra test software	Dekra	-	-	-	-

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95% .

Test item	Uncertainty
AC Power Line Conducted Emission	150kHz~30MHz: 2.40dB
Radiated Emission(9KHz~30MHz)	Horizontal: 9KHz~30MHz: 2.10 dB Vertical: 30MHz~200MHz: 2.30 dB
Radiated Emission(30MHz~1GHz)	Horizontal: 30MHz~200MHz: 3.50 dB 300MHz~1GHz: 3.60 dB Vertical: 30MHz~200MHz: 3.60 dB 300MHz~1GHz: 3.50 dB
Occupied Bandwidth	$\pm 150\text{Hz}$

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Product Name	Universal Cup
Model No.	1962 Cup
Trademark	Honeywell
FCC ID	HD5-1962CUP
Hardware Version	1962 CUP ver 01
Software Version	1962 CUP ver02
Manufacturer	HONEYWELL INTERNATIONAL INC Honeywell Safety and Productivity Solutions
Manufacturer address	9680 OLD BAILES RD FORT MILL SC 29707-7539,USA
Factory	Metro(Suzhou)Technologies Co.,Ltd
address.....	No.221 Xinghai street China-Singapore Suzhou Industrial Park

Operating Frequency Range.....	140-148.5KHz
Type of Modulation.....	ASK
Number of Channel	1

Rated power supply	Voltage and Frequency	
	<input type="checkbox"/>	AC: 220 – 240 V, 50 / 60 Hz,
	<input type="checkbox"/>	AC: 100 – 240 V, 50 / 60 Hz
	<input type="checkbox"/>	DC: 12 V
	<input type="checkbox"/>	Battery: 12 Vdc
	<input checked="" type="checkbox"/>	Adapter:
Adapter.....	Model: ADS-25SGP-06 05015E INPUT: 100-240V~50-60Hz Max.0.7A OUTPUT: 5.0V ,3.0A, 15.0W	
Mounting position	<input checked="" type="checkbox"/>	Table top equipment
	<input type="checkbox"/>	Wall/Ceiling mounted equipment
	<input type="checkbox"/>	Floor standing equipment
	<input type="checkbox"/>	Hand-held equipment
	<input type="checkbox"/>	Other: vehicle-mounted equipment
Test perimeter	Product Name: Barcode Scanner Model: 1962	

1.2 Antenna Information

Antenna model / type number	N/A		
Antenna serial number	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX	
	<input type="checkbox"/>	2TX + 2RX	
	<input type="checkbox"/>	Others:.....	
Antenna technology	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> CDD
			<input type="checkbox"/> Beam-forming
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole
			<input type="checkbox"/> Sectorized
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/> Ceramic Chip
			<input type="checkbox"/> PIFA
			<input type="checkbox"/> PCB
			<input checked="" type="checkbox"/> Others: Coil antenna
Antenna Gain	N/A		

1.3 Channel List

Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	145.7 kHz	--	--	--	--	--	--

Note: The General Description of the Item , antenna information and Channel List for the EUT in clause 1 are provided and confirmed by the client.

2 DESCRIPTION OF TEST SETUP

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

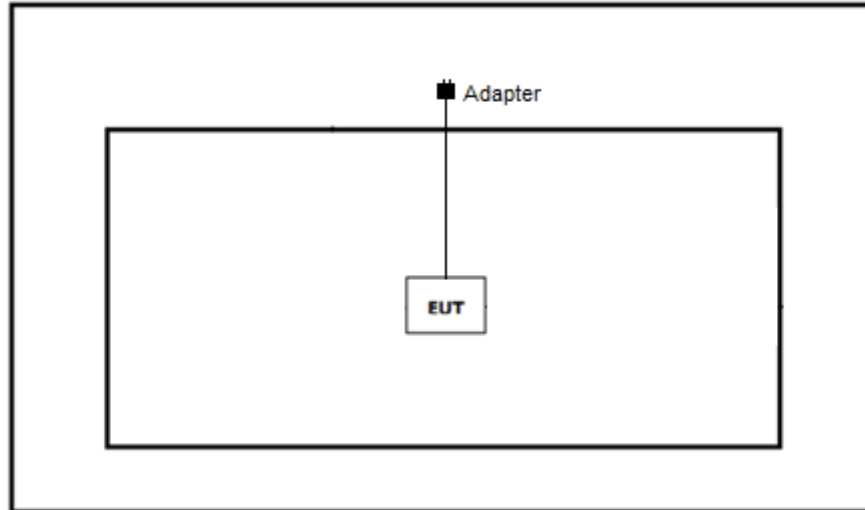
Test Mode For WPT	Mode 1: Transmit
-------------------	------------------

2.2 Auxiliary equipment / Test software for the EUT

Auxiliary equipment	Type / Version	Manufacturer	Supplied by
N/A	N/A	N/A	N/A
software	Type / Version	Manufacturer	Supplied by
N/A	N/A	N/A	N/A

2.3 Test Configuration / Block diagram used for tests

Test setup Diagram- Radiated Test



2.4 Testing process

1	Setup the EUT as shown in Section 2.3.
2	Turn on the power of equipment.
3	Verify that the EUT works properly.

Note: We use the Barcode Scanner provided by the customer as the load, we have verified the charging test under each power, and the worst state is placed in the report.

3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
CFR 47, FCC Part 15 C	2023	Intentional Radiators
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

(Please define the deviations from the standard(s) if applicable)

3.3 Overview of results

Requirement – Test case	Basic standard(s)	Verdict	Remark
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C Section 15.207	PASS	---
Field Strength of Spurious	FCC CFR Title 47 Part 15 Subpart C Section 15.209	PASS	---
Channel Bandwidth	FCC CFR Title 47 Part 15 Subpart C Section 15.215(c)	PASS	---
Antenna Requirement	FCC CFR Title 47 Part 15 Subpart C: Section 15.203	PASS	---

3.4 Test Facility

USA : FCC Designation Number: CN1199

4 TEST RESULTS

4.1 AC Power Line Conducted Emission

VERDICT: PASS

4.1.1 Limit

Standard	FCC Part 15 Subpart C Paragraph 15.207	
Frequency range [MHz]	Limit: QP [dB(μV) ¹⁾	Limit: AV [dB(μV) ¹⁾
0,15 - 0,50	66 - 56 ²⁾	56 - 46 ²⁾
0,50 - 5,0	56	46
5,0 - 30	60	50

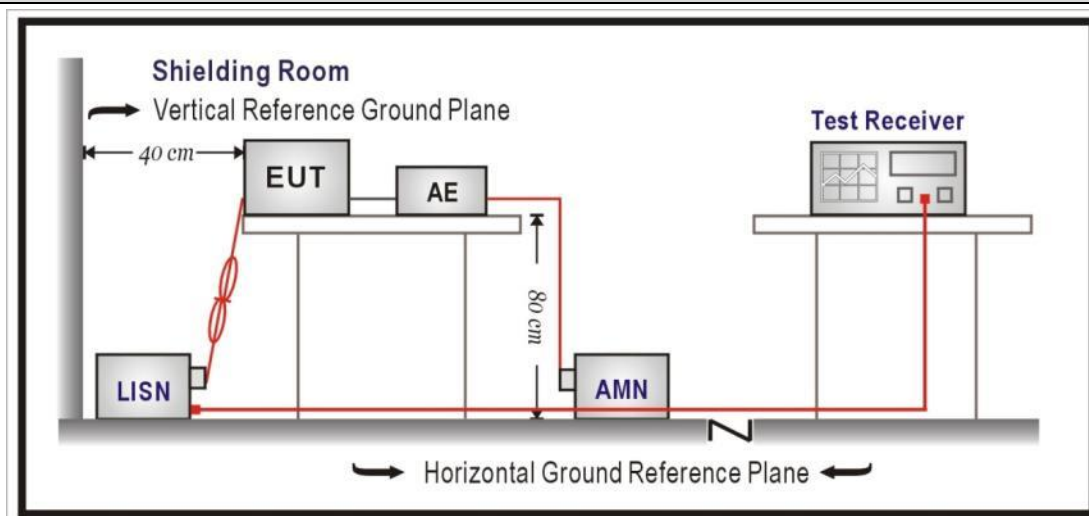
¹⁾ At the transition frequency, the lower limit applies.

²⁾ The limit decreases linearly with the logarithm of the frequency.

NOTE 1: The exclusion band for transmitters shall be considered for transmitters operating at frequencies below 30 MHz.

NOTE 2: Where the AC output port is directly connected (or via a circuit breaker) to the AC power input port of the EUT the AC power output port need not to be tested.

4.1.2 Test Setup

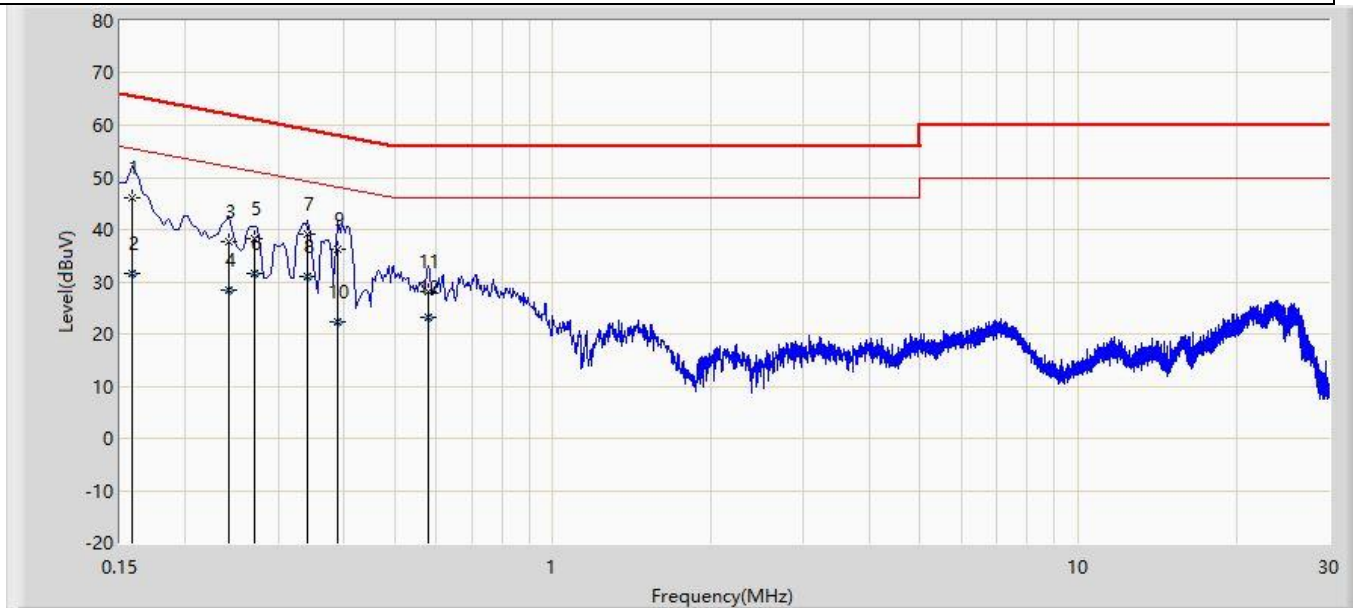


4.1.3 Test Procedure

References Rule	Chapter	Item
<input checked="" type="checkbox"/> ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted emissions from unlicensed wireless devices

4.1.4 Test Data

Profile: 2340775R	Page No.: 1
Engineer: YuLiu	
Site: TR1	Time: 2023/05/08 - 14:53
Limit: FCC_Part15.207	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Line
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	

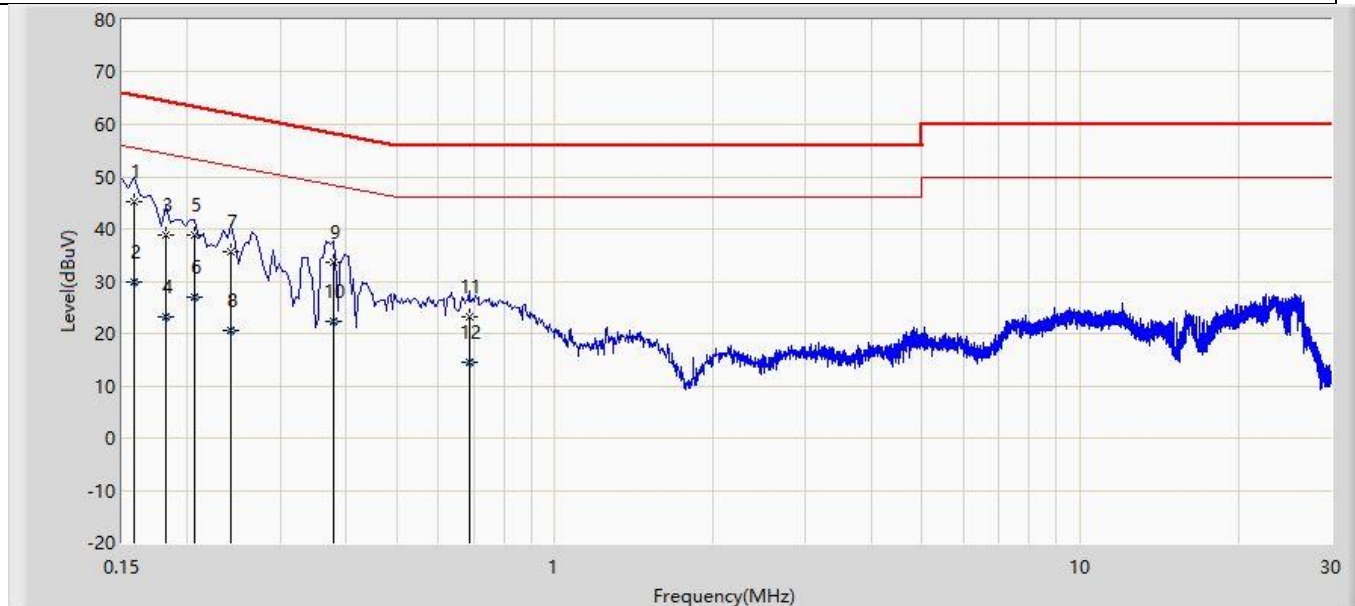


No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1		0.158	46.194	36.614	-19.374	65.568	9.552	0.028	0.000	QP
2		0.158	31.561	21.981	-24.007	55.568	9.552	0.028	0.000	AV
3		0.242	37.762	28.169	-24.265	62.027	9.563	0.031	0.000	QP
4		0.242	28.359	18.765	-23.668	52.027	9.563	0.031	0.000	AV
5		0.270	38.240	28.643	-22.878	61.118	9.564	0.033	0.000	QP
6		0.270	31.482	21.885	-19.636	51.118	9.564	0.033	0.000	AV
7		0.342	39.143	29.542	-20.012	59.155	9.569	0.031	0.000	QP
8	*	0.342	30.893	21.293	-18.261	49.155	9.569	0.031	0.000	AV
9		0.390	36.156	26.544	-21.908	58.064	9.572	0.040	0.000	QP
10		0.390	22.407	12.795	-25.656	48.064	9.572	0.040	0.000	AV
11		0.578	28.249	18.613	-27.751	56.000	9.584	0.052	0.000	QP
12		0.578	23.110	13.474	-22.890	46.000	9.584	0.052	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

Profile: 2340775R	Page No.: 2
Engineer: YuLiu	
Site: TR1	Time: 2023/05/08 - 15:00
Limit: FCC_Part15.207	Margin: 0
Probe: ENV216_101190(0.009-30MHz)	Polarity: Neutral
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Probe (dB)	Cable (dB)	Amp (dB)	Type
1	*	0.158	45.274	35.704	-20.295	65.568	9.542	0.028	0.000	QP
2		0.158	29.777	20.207	-25.791	55.568	9.542	0.028	0.000	AV
3		0.182	38.759	29.182	-25.635	64.394	9.547	0.030	0.000	QP
4		0.182	23.241	13.665	-31.152	54.394	9.547	0.030	0.000	AV
5		0.206	38.745	29.168	-24.620	63.365	9.550	0.027	0.000	QP
6		0.206	26.968	17.391	-26.397	53.365	9.550	0.027	0.000	AV
7		0.242	35.568	25.982	-26.460	62.027	9.554	0.031	0.000	QP
8		0.242	20.461	10.875	-31.567	52.027	9.554	0.031	0.000	AV
9		0.378	33.554	23.952	-24.769	58.323	9.568	0.034	0.000	QP
10		0.378	22.241	12.639	-26.082	48.323	9.568	0.034	0.000	AV
11		0.686	23.200	13.565	-32.800	56.000	9.580	0.055	0.000	QP
12		0.686	14.485	4.849	-31.515	46.000	9.580	0.055	0.000	AV

Note:

1. " * ", means this data is the worst emission level.
2. Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

4.2 Radiated emission	VERDICT: PASS
------------------------------	----------------------

4.2.1 Limit			
Standard	FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Measurement distance (m)
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)
1.705 - 30	30	29.5	30 _(Note 1)
30 - 88	100	40	3 _(Note 2)
88 - 216	150	43.5	3 _(Note 2)
216 - 960	200	46	3 _(Note 2)
Above 960	500	54	3 _(Note 2)

Note 1: The tighter limits apply at the band edges.

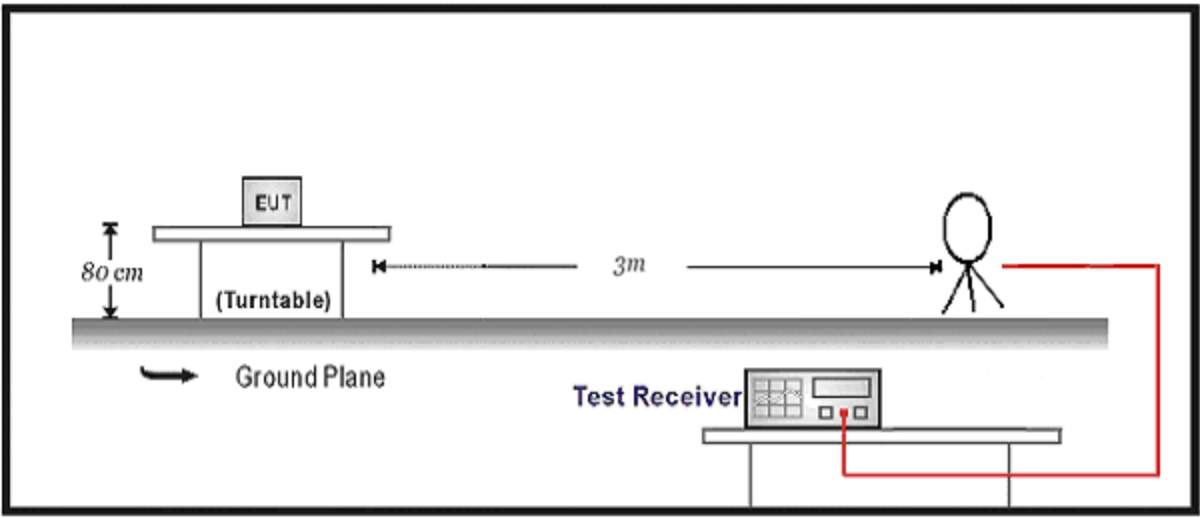
Note 2: Measurements were performed at 10m and the data was extrapolated to the specified measurement distance of 300m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)(2).
 Extrapolation Factor = $40 \log_{10}(300/10) = 59\text{dB}$ for example.

Measurements were performed at 10m and the data was extrapolated to the specified measurement distance of 30m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)(2).
 Extrapolation Factor = $40 \log_{10}(30/10) = 19\text{dB}$ for example.

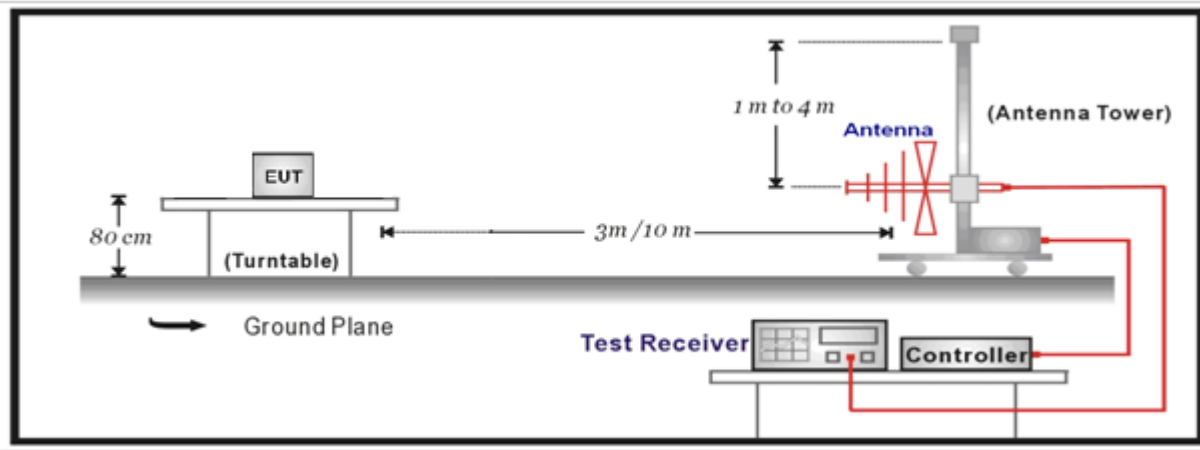
Note 3: All measurements were performed using a loop antenna. The antenna was positioned in three orthogonal positions (X front, Y side, Z top) and the position with the highest emission level was recorded.

4.2.2 Test Setup

Below 30MHz Test Setup:



30MHz-1GHz Test Setup:

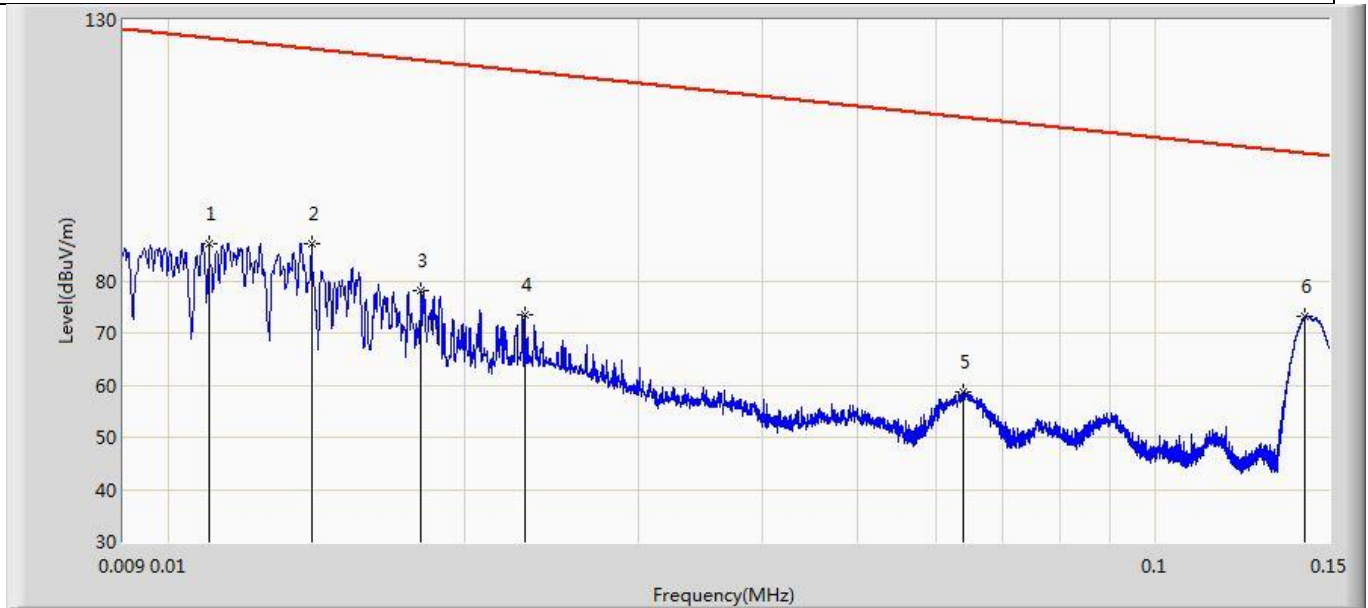


4.2.3 Test Procedure

	References Rule	Chapter	Description
<input checked="" type="checkbox"/>	ANSI C63.10	11.12	Emissions in restricted frequency bands
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.1	Radiated emission measurements
	<input checked="" type="checkbox"/> ANSI C63.10	11.12.2.7	Radiated spurious emission test
	<input checked="" type="checkbox"/> ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
	<input checked="" type="checkbox"/> ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
	<input type="checkbox"/> ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

4.2.4 Test Data

Profile: 2340775R	Page No.: 1
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 20:46
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: X
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	

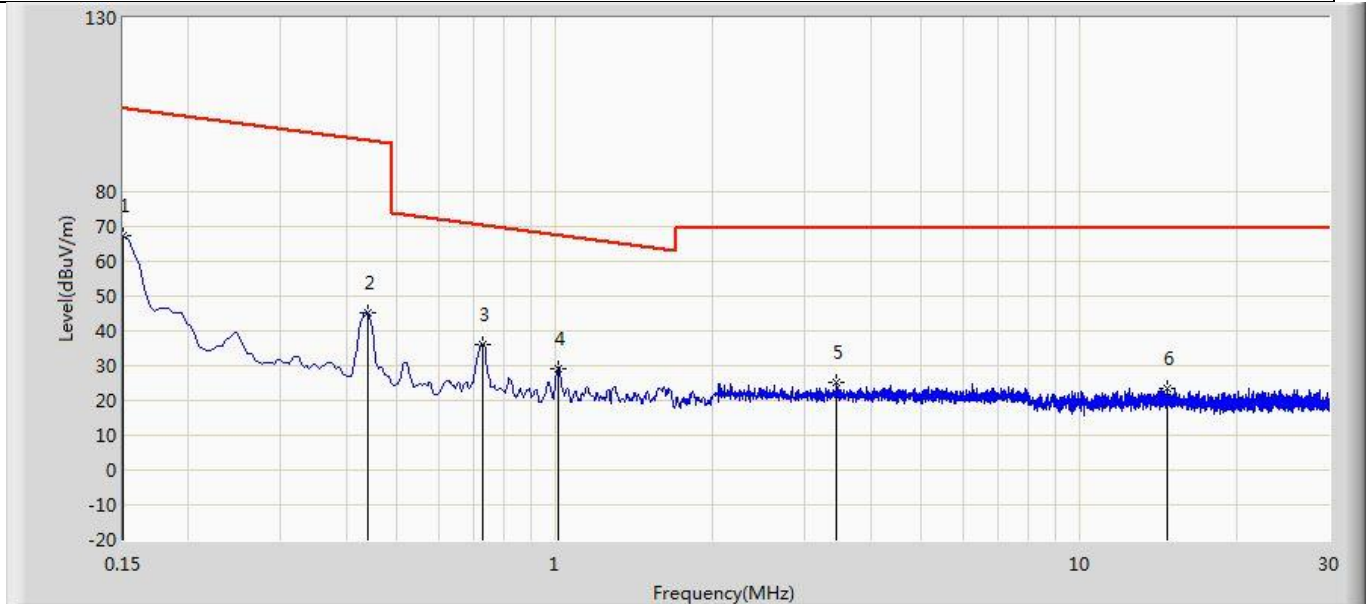


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.011	87.137	66.044	-39.520	126.658	21.094	PK
2		0.014	87.215	66.028	-37.350	124.564	21.187	PK
3		0.018	78.056	56.745	-44.327	122.383	21.311	PK
4		0.023	73.363	51.897	-46.892	120.255	21.466	PK
5		0.064	58.729	36.794	-52.642	111.371	21.935	PK
6	*	0.142	73.331	51.481	-31.121	104.452	21.850	PK

Note 1. Mark 6 is the fundamental emission.

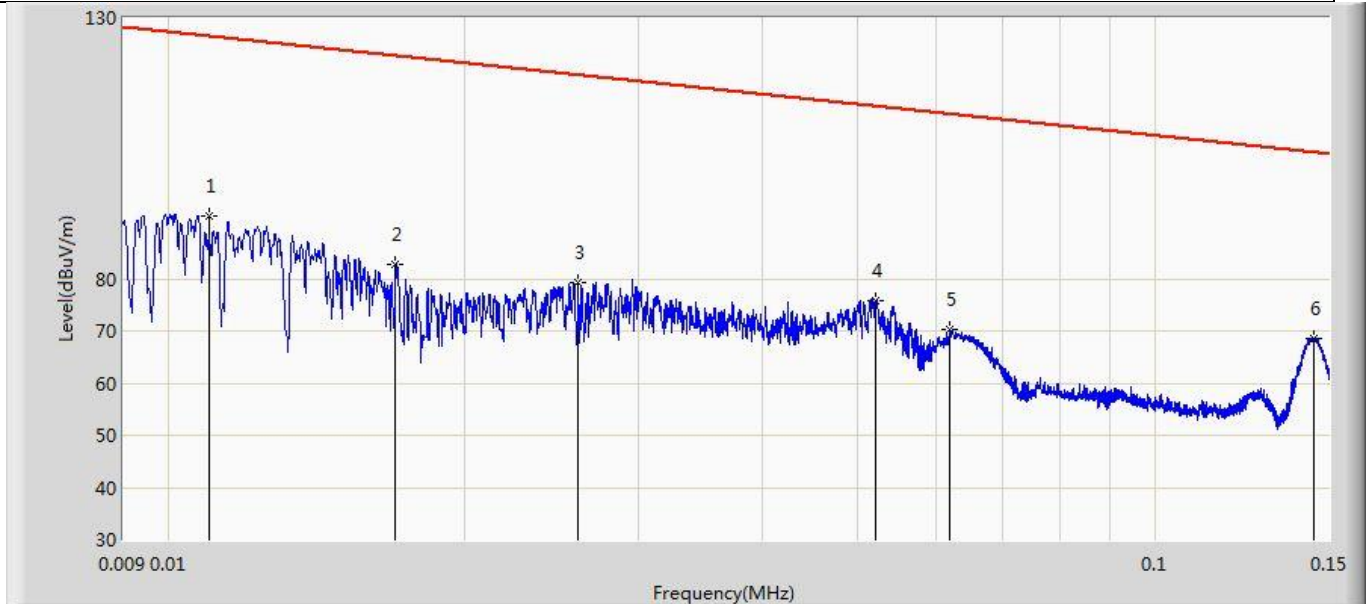
2. Except Main frequency, others are noise floor.

Profile: 2340775R	Page No.: 2
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 20:48
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: X
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.150	67.440	45.596	-36.537	103.976	21.844	PK
2		0.441	45.165	23.616	-49.449	94.615	21.550	PK
3	*	0.728	36.272	15.497	-33.999	70.271	20.774	PK
4		1.012	29.172	9.218	-38.246	67.418	19.954	PK
5		3.452	25.069	4.292	-44.331	69.400	20.777	PK
6		14.721	23.647	2.438	-45.753	69.400	21.209	PK

Profile: 2340775R	Page No.: 3
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 20:51
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: Y
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	

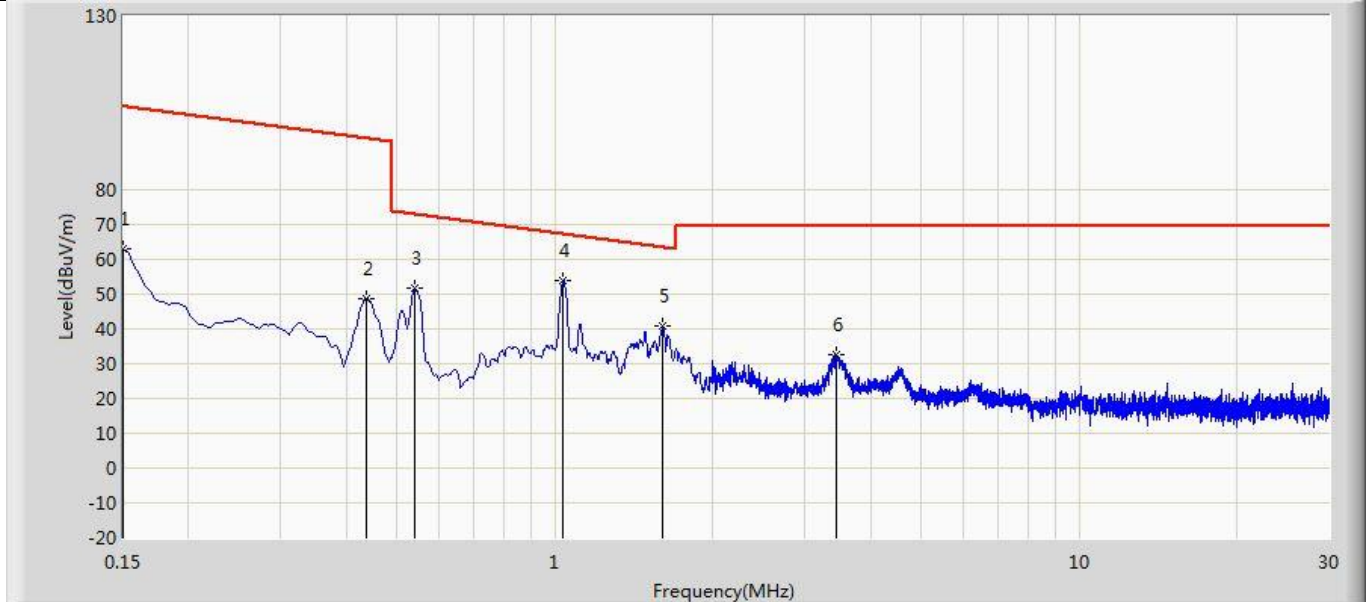


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	*	0.011	92.032	71.439	-34.625	126.658	20.594	PK
2		0.017	82.781	62.001	-40.098	122.879	20.780	PK
3		0.026	79.328	58.269	-39.862	119.190	21.059	PK
4		0.052	75.865	54.417	-37.308	113.173	21.448	PK
5		0.062	70.431	48.994	-41.215	111.646	21.437	PK
6		0.145	68.693	47.345	-35.578	104.271	21.348	PK

Note 1. Mark 6 is the fundamental emission.

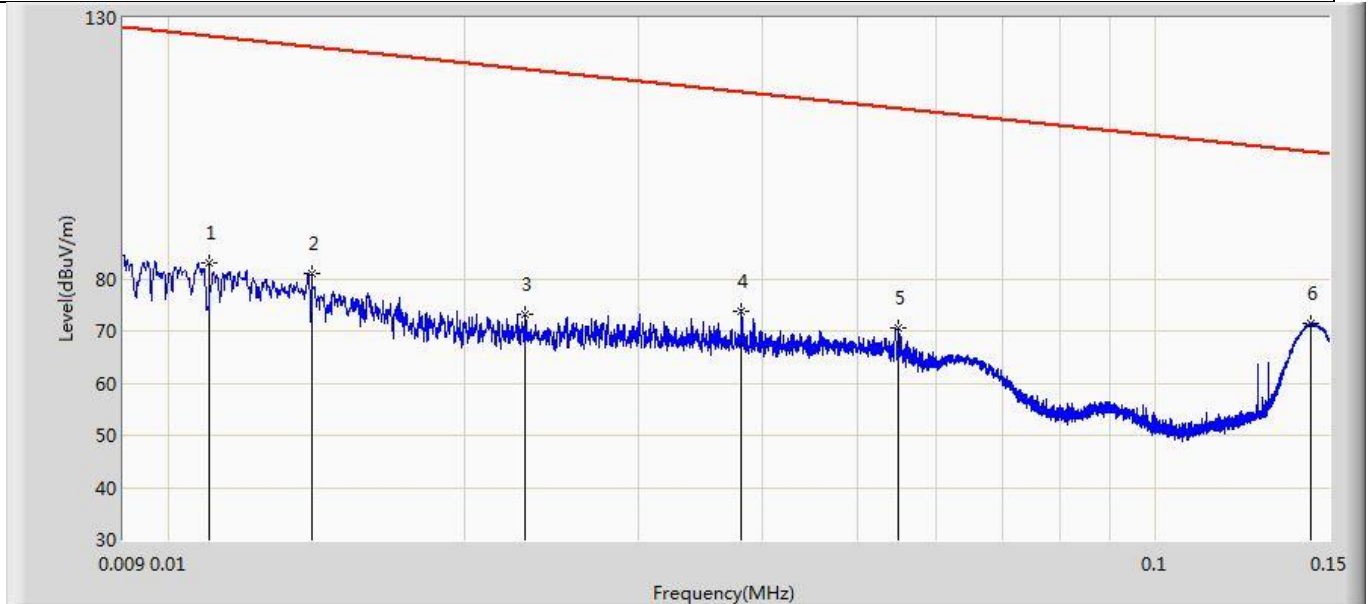
2. Except Main frequency, others are noise floor.

Profile: 2340775R	Page No.: 4
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 20:55
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: Y
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.150	62.911	41.567	-41.066	103.976	21.344	PK
2		0.437	48.741	27.688	-45.952	94.694	21.053	PK
3		0.542	51.529	30.678	-21.297	72.826	20.851	PK
4	*	1.038	54.043	34.569	-13.155	67.198	19.474	PK
5		1.605	40.868	20.819	-22.555	63.424	20.049	PK
6		3.452	32.736	12.459	-36.664	69.400	20.277	PK

Profile: 2340775R	Page No.: 5
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 20:59
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: Z
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	

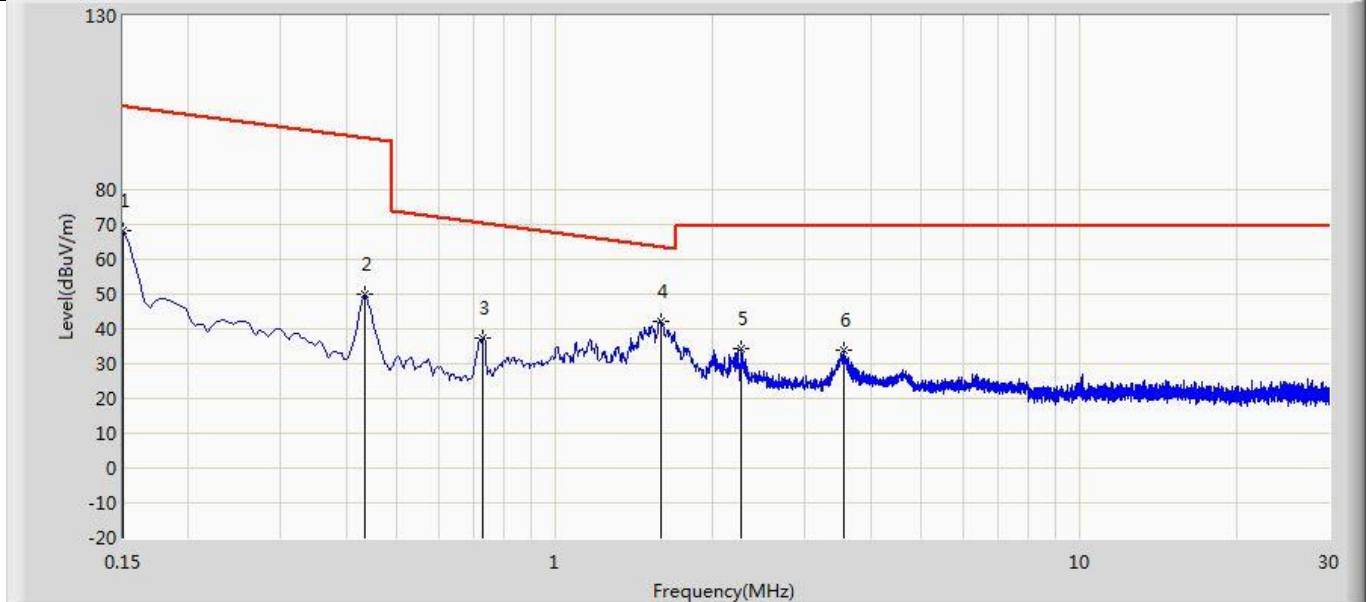


No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.011	83.127	62.534	-43.530	126.658	20.594	PK
2		0.014	80.905	60.218	-43.660	124.564	20.687	PK
3		0.023	73.091	52.125	-47.164	120.255	20.966	PK
4		0.038	73.911	52.480	-41.985	115.896	21.431	PK
5		0.055	70.559	49.114	-42.127	112.686	21.445	PK
6	*	0.144	71.476	50.127	-32.855	104.331	21.349	PK

Note 1. Mark 6 is the fundamental emission.

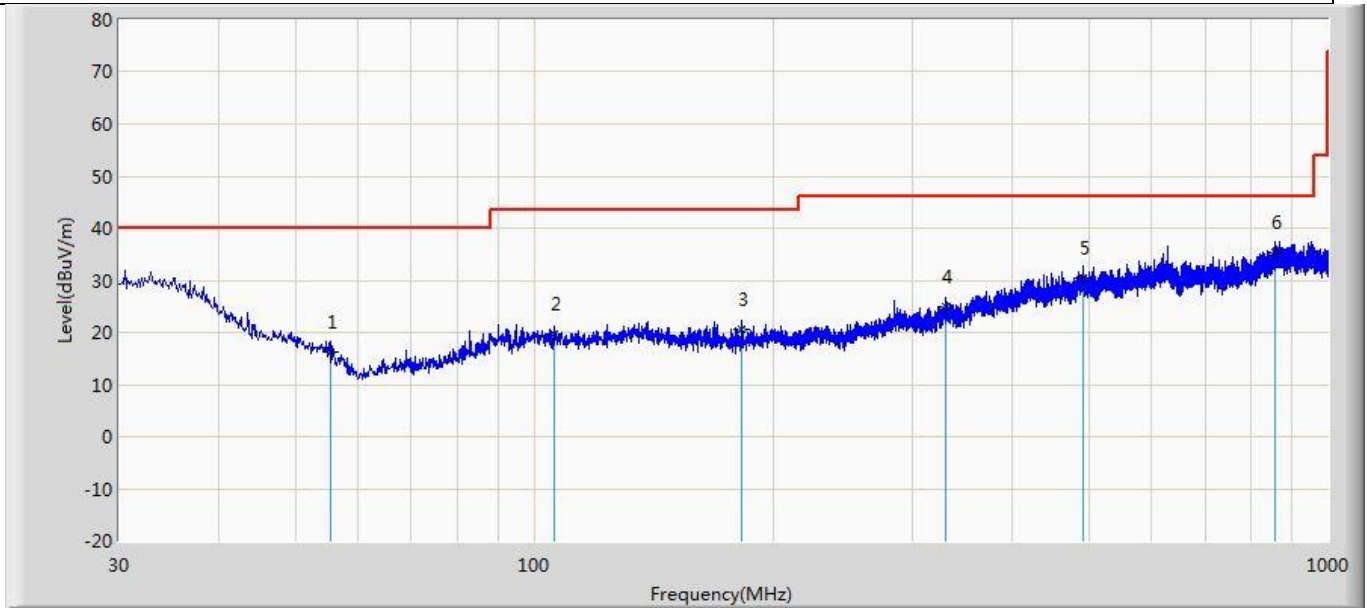
2. Except Main frequency, others are noise floor.

Profile: 2340775R	Page No.: 6
Engineer: Yuliu	
Site: AC3	Time: 2023/05/09 - 21:03
Limit: 15.209	Margin: 0
Probe: RF(0.009-30MHz)	Polarity: Z
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



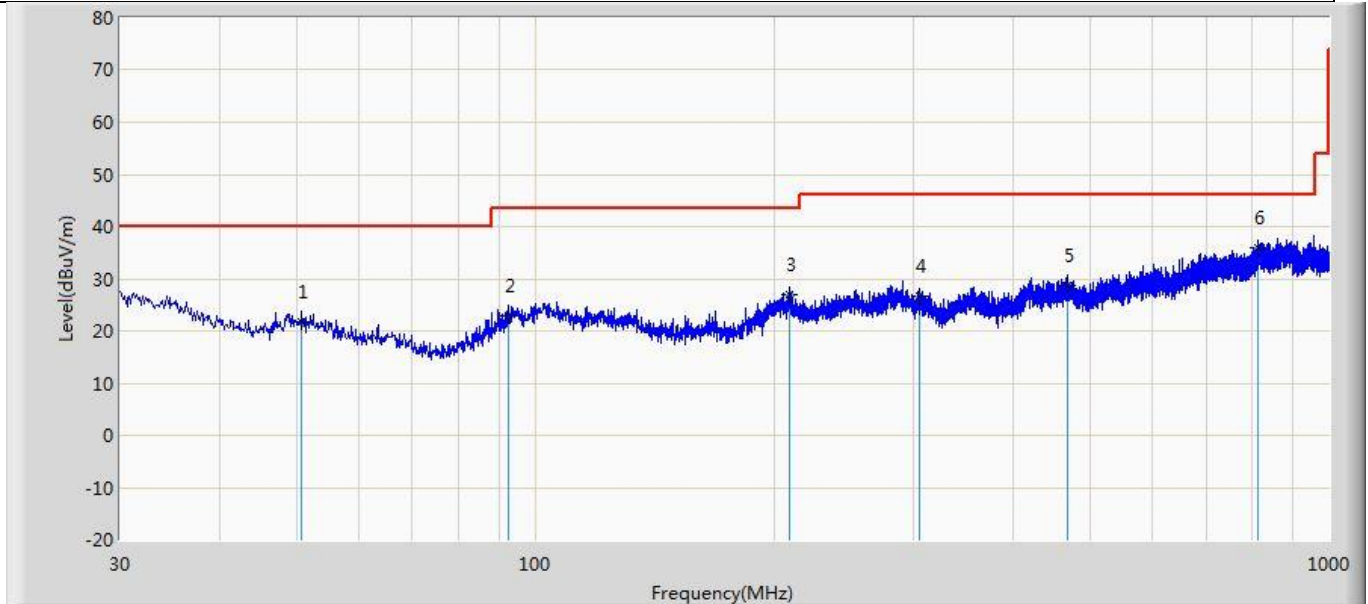
No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		0.150	68.332	46.988	-35.645	103.976	21.344	PK
2		0.434	49.802	28.746	-44.951	94.754	21.056	PK
3		0.728	37.220	16.945	-33.051	70.271	20.274	PK
4	*	1.590	41.994	21.963	-21.510	63.505	20.031	PK
5		2.266	34.281	13.860	-35.119	69.400	20.421	PK
6		3.549	33.853	13.587	-35.547	69.400	20.267	PK

Profile: 2340775R	Page No.: 3
Engineer: Yuliu	
Site: AC3	Time: 2023/05/19 - 16:11
Limit: FCC_Part 15.209	Margin: 0
Probe: AC3_3M (30-1000M)	Polarity: Horizontal
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		55.341	16.291	3.072	-23.709	40.000	13.219	QP
2		105.781	19.637	2.934	-23.863	43.500	16.703	QP
3		182.896	20.633	3.837	-22.867	43.500	16.796	QP
4		330.094	24.814	2.006	-21.186	46.000	22.807	QP
5		492.205	30.461	2.363	-15.539	46.000	28.098	QP
6	*	856.076	35.449	3.170	-10.551	46.000	32.280	QP

Profile: 2340775R	Page No.: 4
Engineer: Yuliu	
Site: AC3	Time: 2023/05/19 - 16:11
Limit: FCC_Part 15.209	Margin: 0
Probe: AC3_3M (30-1000M)	Polarity: Vertical
EUT: Universal Cup	Power: 120 Vac / 60 Hz
Note: Mode 1: Transmit	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		50.855	21.817	2.578	-18.183	40.000	19.238	QP
2		92.565	22.768	4.442	-20.732	43.500	18.326	QP
3		209.571	26.944	3.699	-16.556	43.500	23.245	QP
4		305.237	26.669	2.600	-19.331	46.000	24.069	QP
5		468.198	28.664	1.928	-17.336	46.000	26.736	QP
6	*	813.639	35.810	3.165	-10.190	46.000	32.645	QP

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

Note 2: Measurement Level = Reading Level + Factor(Probe+Cable-Amp).

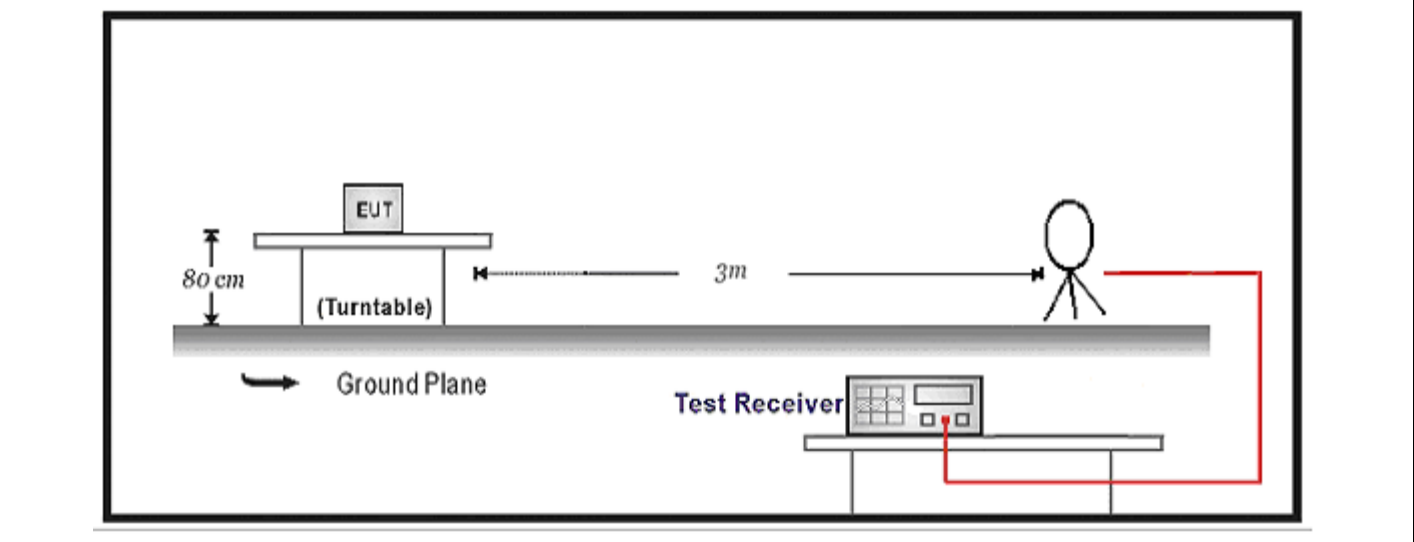
Note 3: $\text{dB}\mu\text{A/m} = \text{dB}\mu\text{V/m} - 51.5$

4.3 20dB Bandwidth	VERDICT: PASS
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4.3.1 Limit

Standard	FCC Part 15 Subpart C
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.215(c), must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.	

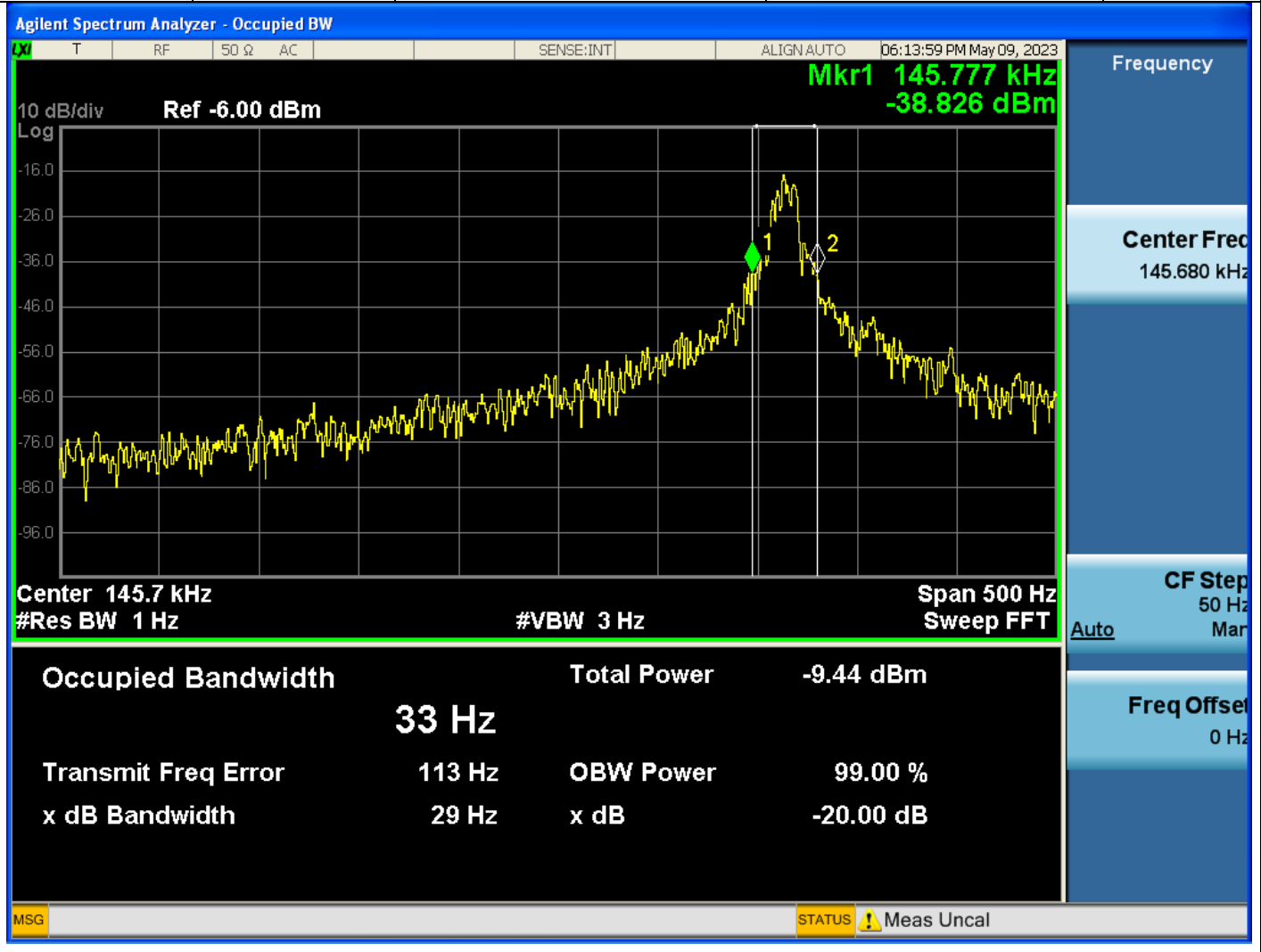
4.3.2 Test Setup



4.3.3 Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with the RBW 1%~5% of 20dBc bandwidth and the VBW three times of the RBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3.4 Test Data				
Mode	Test Freq. (kHz)	20dB Occupied Bandwidth (Hz)	99% Occupied Bandwidth (Hz)	Result
1	145.7	29	33	Pass



4.4 Antenna Requirement	VERDICT: PASS
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4.4.1 Limit:	
Standard	FCC Part 15 Subpart C Paragraph 15.203
<p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible LE party shall 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 manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or any electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed by LE, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible LE for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.</p>	

4.4.2 Antenna Connector Construction:	
<input checked="" type="checkbox"/>	The use of a permanently attached antenna
<input type="checkbox"/>	The antenna use of a unique coupling to the intentional radiator
<input type="checkbox"/>	The use of a nonstandard antenna jack or any electrical connector
Please refer to the attached document "Internal Photograph" to show the antenna connector.	

5 TEST SETUP PHOTO AND EUT PHOTO

Remark: The test setup photo and EUT Photo please see appendix.

_____ The End _____