

FCC Test Report

Report No.: AGC01165230402FE10

FCC ID : 2A5K5-MBS2

APPLICATION PURPOSE Original Equipment

PRODUCT DESIGNATION: Mooas Classic Dial Wireless Charging Radio Speaker

BRAND NAME : N/A

MODEL NAME : MBS2

APPLICANT: mooas Inc.

DATE OF ISSUE : Apr. 26, 2023

STANDARD(S) : FCC Part 15 Subpart C

REPORT VERSION: V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr. 26, 2023	Valid	Initial Release



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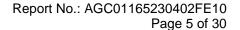
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1. GENERAL INFORMATION

Applicant	mooas Inc.
Address C-819~822, Munjeong Hyundai Knowledge Industry Center, 7, Beob Songpa-gu, Seoul, Korea (05836)	
Manufacturer	Shenzhen Ihold Technology Co., Ltd
Address	4th Floor, Building D, Huafeng No.1 Technology Park, Sanwei, Xi'xiang, Bao'an, Shenzhen, Guangdong 518102, China
Factory	Shenzhen Ihold Technology Co., Ltd
Address 4th Floor, Building D, Huafeng No.1 Technology Park, Sanwei, Xi'xii Shenzhen, Guangdong 518102, China	
Product Designation Mooas Classic Dial Wireless Charging Radio Speaker	
Brand Name	N/A
Test Model	MBS2
Date of receipt of test item	Apr. 20, 2023
Date of test	Apr. 20, 2023 to Apr. 24, 2023
Deviation from Standard	No any deviation from the test method
Test Result	Pass
Test Report Form No	AGCTR-ER-FCC-WPTV1.0

Prepared By	Alan Duan	
	Alan Duan (Project Engineer)	Apr. 26, 2023
Reviewed By	Calin Lin	
	Calvin Liu (Reviewer)	Apr. 26, 2023
Approved By	Max Zhang	
	Max Zhang (Authorized Officer)	Apr. 26, 2023



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2. PRODUCT INFORMATION

2.1 PRODUCT TECHNICAL DESCRIPTION

Hardware Version	V1.0
Software Version	V1.0
Operation Frequency	110.8KHz-205KHz
Modulation Type	ASK
Number of channels	1 Channel
Field Strength of Fundamental	70.70dBuV/m (Max)
Antenna Designation	Coil Antenna
Antenna Gain	0dBi
Power Supply	Type-C Input:DC 5V/2A, DC 9V/2A Wireless Output:5W/7.5W/10W Capacity:DC 3.7V/2200MAh/8.14Wh
Adapter Information	N/A

2.2 TEST FREQUENCY LIST

Frequency Band	Channel Number	Frequency
110.8KHz-205KHz	01	119.6KHz



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2.3 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID**: **2A5K5-MBS2** filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

2.4 TEST METHODOLOGY

The tests were performed according to following standards:

No.	Identity	Document Title		
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations		
2	FCC 47 CFR Part 15	Radio Frequency Devices		
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices		

2.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.7 ANTENNA REQUIREMENT

Standard Requirement

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antennathat uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a brokenantenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 0 dBi.



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3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.



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3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS		
Temperature range (°C)	15 - 35	-20 - 50		
Relative humidty range	20 % - 75 %	20 % - 75 %		
Pressure range (kPa)	86 - 106	86 - 106		
Power supply	DC 3.7V	LV DC 3.33/HV DC 4.07		

Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.

3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 150kHz	$U_c = \pm 4.2 \text{ dB}$
Uncertainty of Radiated Emission below 30MHz	$U_c = \pm 3.8 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.0 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2.7 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$



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3.5 LIST OF EQUIPMENT USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Test Receiver	R&S	ESPI	101206	Aug. 04, 2022	Aug. 03, 2023
Artificial power network	R&S	ESH2-Z5	100086	Jun. 08, 2022	Jun. 07, 2023
Test Software	R&S	ES-K1 (Ver.V1.71)	N/A	N/A	N/A
Test Receiver	RS	ESCI	100034	Aug. 03, 2022	Aug. 02, 2023
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Aug. 04, 2022	Aug. 03, 2023
Active Loop Antenna (9K-30Mhz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Wideband Antenna	SCHWARZBECK	VULB9168	D69250	Apr. 28, 2021	Apr. 27, 2023
Test Software	FARA	EZ-EMC (Ver.RA-03A)	N/A	N/A	N/A



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4.SYSTEM TEST CONFIGURATION

4.1 EUT CONFIGURATION

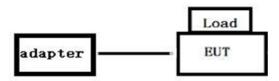
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

4.2 EUT EXERCISE

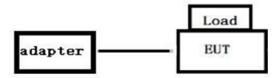
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:



Conducted Emission Configure:



4.4 EQUIPMENT USED IN TESTED SYSTEM

The Following Peripheral Devices And Interface Cables Were Connected During The Measurement:

☐ Test Accessories Come From The Laboratory

Item	Equipment	Model No.	Identifier	Note
1	Adapter	HW-050200C01	N/A	Accessories
2	Wireless charging load	N/A	N/A	Accessories
3	Charger line	N/A	N/A	Accessories

☐ Test Accessories Come From The Manufacturer

Item	Equipment	Model No.	Identifier	Note
1	Mooas Classic Dial Wireless Charging Radio Speaker	MBS2	2A5K5-MBS2	EUT



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4.5 SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.209(a)(f)	Radiated Spurious Emission	Pass
3	§15.215(c)	20dB Bandwidth	Pass
4	§15.205(a)	Restricted Bands of Operation	Pass
5	§15.207	AC Power Line Conducted Emission	Pass



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5. DESCRIPTION OF TEST MODES

Summary table of Test Cases							
Test Item	Equipment type / Modulation						
rest item	WPT_(TX:119.6KHz)/ ASK						
	Mode 1: Charging+Wireless 10W						
Radiated&Conducted	Mode 2: Charging+Wireless 7.5W						
Test Cases	Mode 3: Charging+Wireless 5W						
	Mode 4: Charging+Wireless Null						
	Mode 1: Charging+Wireless 10W						
	Mode 2: Charging+Wireless 7.5W						
AC Conducted Emission	Mode 3: Charging+Wireless 5W						
	Mode 4: Charging+Wireless Null						

Note:

- 1. Only the result of the worst case was recorded in the report, if no other cases.
- 2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.



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6. FIELD STRENGTH OF FUNDAMENTAL

6.1 PROVISIONS APPLICABLE

Test Requirement:	FCC Part15 C Section 15.209								
Test Method:	ANSI C63.10:2013								
Test Frequency Range:	9kHz to 1GHz								
Test site:	Measurement Distar	nce: 3m							
	Frequency	Detector	RBW	VBW	Value				
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak				
Receiver setup:	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak				
iteceiver setup.	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak				
	Above 1CHz	Peak	1MHz	3MHz	Peak				
	Above 1GHz	Peak	1MHz	10Hz	Average				

Limits for frequency below 30MHz

Frequency	Limit (uV/m)	Measurement Distance(m)	Remark
0.009-0.490	2400/F(kHz)	300	Quasi-peak Value
0.490-1.705	24000/F(kHz)	30	Quasi-peak Value
1.705-30	30	30	Quasi-peak Value

Limits for frequency Above 30MHz

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.00	Quasi-peak Value
88MHz-216MHz	43.50	Quasi-peak Value
216MHz-960MHz	46.00	Quasi-peak Value
960MHz-1GHz	54.00	Quasi-peak Value
Above 1GHz	54.00	Average Value
Above IGHZ	74.00	Peak Value

Remark: (1) Emission level dB μ V = 20 log Emission level μ V/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



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6.2 MEASUREMENT PROCEDURE

- The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.



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6.3 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG - AV

where $FS = Field Strength in dB\mu V/m$

RA = Receiver Amplitude (including preamplifier) in dBµV

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB/m AG = Amplifier Gain in dB AV = Average Factor in dB

In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows:

FS = RR + LF where FS = Field Strength in $dB\mu V/m$ RR = RA - AG - AV in $dB\mu V$ LF = CF + AF in dB

Assume a receiver reading of $52.0 \text{ dB}\mu\text{V}$ is obtained. The antenna factor of 7.4 dB/m and cable factor of 1.6 dB are added. The amplifier gain of 29 dB and average factor of 5 dB are subtracted, giving a field strength of 27 dB $\mu\text{V/m}$.

This value in dBµV/m was converted to its corresponding level in µV/m.

 $RA = 52.0 dB\mu V/m$

 $AF = 7.4 \text{ dB/m} \qquad \qquad RR = 18.0 \text{ dB}\mu\text{V}$ $CF = 1.6 \text{ dB} \qquad \qquad LF = 9.0 \text{ dB}$

AG = 29.0 dB

AV = 5.0 dB

FS = RR + LF

 $FS = 18 + 9 = 27 dB\mu V/m$

Level in μ V/m = Common Antilogarithm [(27 dB μ V/m)/20] = 22.4 μ V/m

Magnetic field strength calculation (9 kHz – 30 MHz)

When the limit is in terms of magnetic field, the following equation applies:

 $H[dB(\mu A/m)] = V[dB(\mu V)] + LC[dB] - GPA[dB] + AFH[dB(S/m)]$

Where,

H is the magnetic field strength (to be compared with the limit),

V is the voltage level measured by the receiver or spectrum analyzer,

LC is the cable loss,

GPA is the gain of the preamplifier (if used), and

AFH is the magnetic antenna factor.

If the "electrical" antenna factor is used instead, the above equation becomes:

 $H[dB(\mu A/m)] = V[dB(\mu V)] + LC[dB] - GPA[dB] + AFE[dB(m-1)] - 51.5[dB\Omega]$

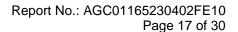
where AFE is the "electric" antenna factor, as provided by the antenna calibration laboratory.

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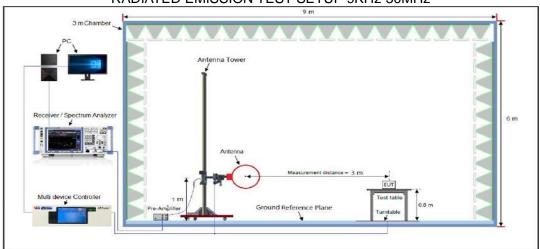
Tel: +86-755 2523 4088 E-mail: agc@agccert.com Web: http://www.agccert.com/



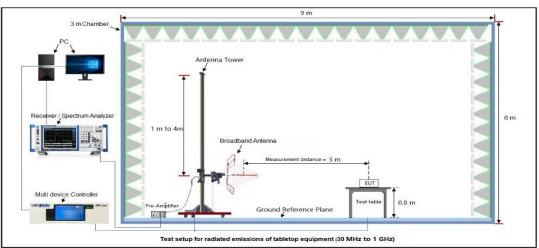


6.4 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

RADIATED EMISSION TEST SETUP 9KHz-30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.205 limits.

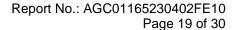


6.5 MEASUREMENT RESULTS

ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 9KHz-150KHz

EUT		sic Dial Wirele		Model Name		MBS2		
Temperature	22.7°C	таго органия		Relative Hum	idity	59.3%		
Pressure	985hPa			Test Voltage		Normal V	oltage	
Test Mode	Mode 1			Antenna		Face		
132.0 dBuV/m	1					Limit		
72	wer with the stay of the stay	What Mark Millet Larren	aldam	Margin: S X				
12.0 0.009			(MHz)				0.150	
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	
1	0.0161	8.03	27.88	35.91	123.2	-87.38	peak	
2	0.0223	7.60	27.42	35.02	120.4	-85.45	peak	
3	0.0366	4.84	26.35	31.19	116.2	-85.01	peak	
4	0.0956	11.50	21.95	33.45	107.9	-74.46	peak	
5 *	0.1188	47.99	21.59	69.58	106.0	-36.45	peak	
6	0.1433	12.82	21.54	34.36	104.4	-70.05	peak	

RESULT: PASS

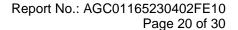




ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 9KHz-150KHz

			sic Dial Wirel		QUENCY RAI	NGE 9KHZ	2-15UKHZ		
EUT			adio Speaker	ess 	Model Name		MBS2 59.3%		
Temperature		22.7°C			Relative Hur	nidity			
Pressure		985hPa			Test Voltage		Normal V	'oltage	
Test Mode		Mode 1			Antenna		Side		
72	dBuV/m		34 Mm			3	Limi	- 11	
0.009				(MHz)				0.150	
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	
1		0.0092	6.94	28.40	35.34	128.1	-92.78	peak	
2		0.0245	8.67	27.26	35.93	119.6	-83.73	peak	
3		0.0623	8.40	24.44	32.84	111.6	-78.76	peak	
4		0.1011	13.19	21.62	34.81	107.4	-72.61	peak	
5	*	0.1188	49.11	21.59	70.70	106.0	-35.33	peak	
6		0.1491	16.45	21.53	37.98	104.0	-66.09	peak	

RESULT: PASS

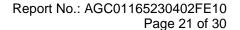




ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 150KHz-30MHz

	EL				QUENCY RAN	GE 150KF	Hz-30MHz		
EUT			sic Dial Wirel adio Speaker		Model Name		MBS2		
Temperature		22.7°C			Relative Hun	nidity	59.3%		
Pressure		985hPa			Test Voltage		Normal V	oltage	
Test Mode		Mode 1			Antenna		Face		
62	BuV/m		Viet viet in the second	galain y water and a state of the state of t		Address of the sealing of	Limit Marg	in:	
0.150		0.9	5	(MHz)	5			30.000	
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector	
1		0.1500	41.61	21.53	63.14	104.0	-40.91	peak	
2		0.2893	22.06	21.27	43.33	98.36	-55.03	peak	
3		0.4351	24.09	21.00	45.09	94.83	-49.74	peak	
4		0.5047	22.18	20.88	43.06	73.54	-30.48	peak	
5		0.8803	17.29	21.19	38.48	68.71	-30.23	peak	
6	*	13.4792	20.42	24.63	45.05	69.54	-24.49	peak	

RESULT: PASS





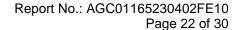
ELECTRIC FIELD TEST IN THE FREQUENCY RANGE 150KHz-30MHz

					QUENCY RANG	GE 150KH	tz-30MHz			
EUT		Mooas Classic Dial Wireless Charging Radio Speaker Model Name						MBS2		
Temperature		22.7°C			Relative Hum	idity	59.3%			
Pressure		985hPa			Test Voltage		Normal V	oltage		
Test Mode		Mode 1			Antenna		Side			
62	1-g-hypotosis	A CONTRACTOR OF THE PARTY OF TH	War of a Reserve to the same	ahdus da sulfah su sust	of the second of	we should be shown that	Limit: Marg	in: —		
2.0 0.150		0.5		641-2	5			30.000		
	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	30.000		
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector		
1		0.1500	37.16	21.53	58.69	104.0	-45.33	peak		
2		0.2878	20.38	21.27	41.65	98.39	-56.74	peak		
3		0.4786	21.21	20.92	42.13	94.00	-51.87	peak		
4	*	1.6713	12.97	21.84	34.81	63.14	-28.33	peak		
5		8.5463	14.15	23.98	38.13	69.54	-31.41	peak		
6		17.8493	14.18	24.95	39.13	69.54	-30.41	peak		

RESULT: PASS

NOTES:

- 1. Quasi-Peak detector is used for frequency below 30MHz.
- 2. Negative value in the margin column shows emission below limit.
- 3. All measurements were made with 0.6m loop antenna at 3m distance. All emissions are below the QP limit.
- 4. Corr. Factor= Antenna Factor (dB/m) + Cable Loss (dB).
- 5. Loop antenna is used for the emission under 30MHz.

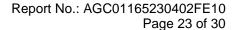




RADIATED EMISSION BELOW 1GHz

					N BELOW 1GF	łz		
EUT			s Classic D ging Radio S	ial Wireless Speaker	Model Nar	ne	MBS2	
Temperature		22.7°	С		Relative H	lumidity	59.3%	
Pressure		985hF	Pa		Test Voltag	ge	Normal	Voltage
Test Mode		Mode	: 1		Antenna		Horizon	tal
32 -8	Andre (NA)-ser-jejek	ion-to-the defendant	*	and the contract of the contra	All Many and a second of the s	3	Limit: Margin:	
30.000	40 50	60	70 80	(MHz)	300	400	500 600 700	1000.000
No. N	lk. F	req.	Reading Level	g Correct Factor	Measure- ment	Limit	Over	
	ı	ИНz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	74.1	1351	13.12	12.80	25.92	40.00	-14.08	peak
2	299.3	3158	12.84	17.45	30.29	46.00	-15.71	peak
3	422.0	0577	7.50	24.73	32.23	46.00	-13.77	peak
4	607.7	7867	6.47	25.14	31.61	46.00	-14.39	peak
5	724.2	2611	6.33	25.97	32.30	46.00	-13.70	peak
6 *	896.9	9965	6.17	31.42	37.59	46.00	-8.41	peak

RESULT: PASS





RADIATED EMISSION BELOW 1GHz

		D EMISSION E	SELOW IGH	<u> </u>		
EUT	Mooas Classic Dia Charging Radio Sp		Model Nar	ne	MBS2	
Temperature	22.7°C		Relative H	umidity	59.3%	
Pressure	985hPa		Test Voltag	ge	Normal	Voltage
Test Mode	Mode 1		Antenna		Vertical	
72.0 dBuV/m			at the form of the state of the	and the state of the same of t	Limit: Margin:	
30.000 40 50	60 70 80	(MHz)	300	400 50	0 600 700	1000.000
No. Mk. F	Reading req. Level	Correct Factor	Measure- ment	Limit	Over	
N	MHz dBuV	dB	dBuV/m	dB/m	dB	Detector
1 30.6	378 19.61	13.81	33.42	40.00	-6.58	peak
2 * 42.7	7496 18.10	16.93	35.03	40.00	-4.97	peak
3 52.2	2079 12.35	17.02	29.37	40.00	-10.63	peak
4 72.8	3465 16.53	16.97	33.50	40.00	-6.50	peak
5 116.5	16.93	17.09	34.02	43.50	-9.48	peak
6 151.5	5971 13.24	18.20	31.44	43.50	-12.06	peak

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Over=Measurement-Limit.

- 2. All test modes had been pre-tested. The mode 1 is the worst case and recorded in the report.
- 3. The "Factor" value can be calculated automatically by software of measurement system.



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7. 20 dB BANDWIDTH

7.1 PROVISIONS APPLICABLE

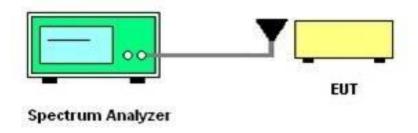
N/A

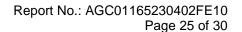
7.2 MEASUREMENT PROCEDURE

Set the parameters of SPA as below:

- 1. The spectrum analyzer connected via a receive antenna placed near the EUT in peak Max hold mode.
- 2. Centre frequency = Operation Frequency
- 3. The resolution bandwidth of 300 Hz and the video bandwidth of 1 kHz were used.
- 4. Span: 3kHz, Sweep time: Auto
- 5. Set the EUT to continue transmitting mode. Allow the trace to stabilize. Use the "N dB down" function of SPA to define the bandwidth.
- 6. Measured the spectrum width with power higher than 20dB below carrier.
- 7. Measured the 99% OBW.
- 8. Record the plots and Reported.

7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



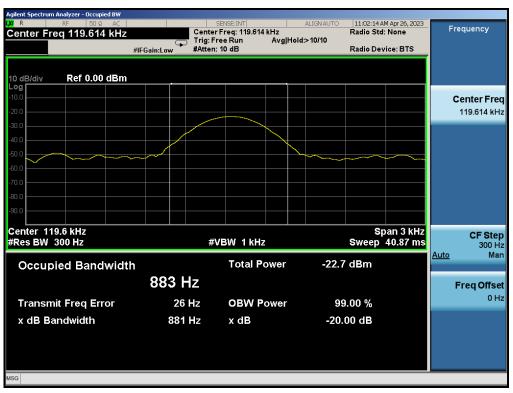


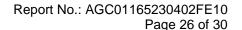


7.4 MEASUREMENT RESULTS

	Tes	t Data of Occupied Bandwi	dth and -20dB Bandwid	ith	
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (kHz)	-20dB Bandwidth (kHz)	Limits (MHz)	Pass or Fail
ASK	0.1196	0.883	0.881	N/A	Pass

Test Graphs of Occupied Bandwidth & - 20dB Bandwidth







8. AC POWER LINE CONDUCTED EMISSION TEST

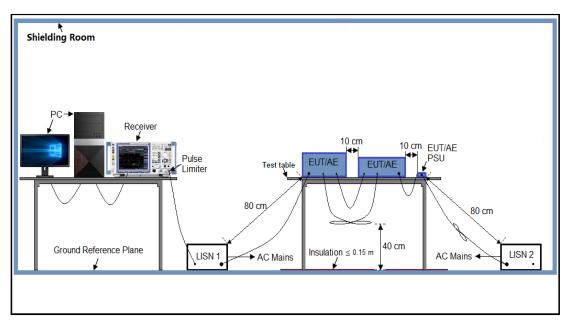
8.1 LIMITS OF LINE CONDUCTED EMISSION TEST

Francisco	Maximum RF	Line Voltage
Frequency	Q.P. (dBμV)	Average (dBμV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

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

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

8.2 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)





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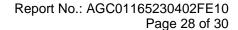
8.3 PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipment received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received DC 9V/5V power from adapter which received AC120V/60Hz power from a LISN.
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

8.4 FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.





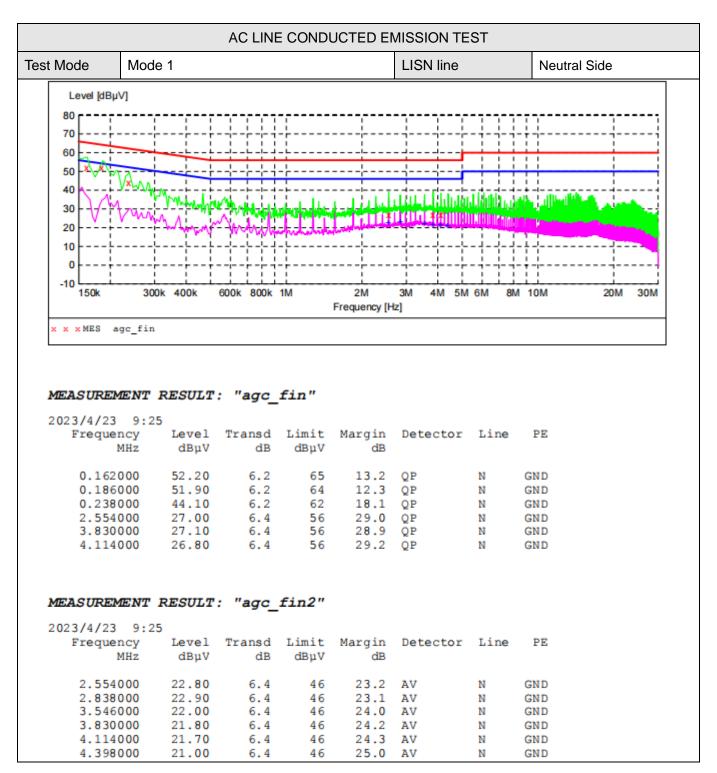
		AC LINE	CONDU	JCTED EN	MISSION TE	ST		
st Mode	Mode 1				LISN line		Hot Side	
Level [dBµ\	1							
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i						-1-1-1	1	
-10 L	300k 400k	600k 800k 1	IM	2M	3M 4M 5M	6M 8N	1 10M 20M	30M
				Frequency [H	łz]			
x x x MES as	c_fin							
MEASUREMEN	T RESULT: "a	gc_fin"						
2023/4/23 Frequer	9:23 cy Level	gc_fin" Transd	Limit dBµV	Margin dB	Detector	Line	PE	
2023/4/23 Frequer	9:23 cy Level Hz dBµV	Transd dB	dΒμV	dB				
2023/4/23 Frequer 0.1580	9:23 ccy Level Hz dBµV	Transd dB	dBμV 66	dB 10.2	QP	L1	GND	
2023/4/23 Frequer 0.1580 0.1860	9:23 cy Level dBµV 00 55.40 00 52.10	Transd dB 6.2 6.2	dBμV 66 64	dB 10.2 12.1	QP QP	L1 L1	GND GND	
2023/4/23 Frequer 0.1580 0.1860 0.2820	9:23 Acy Level Hz dBµV 00 55.40 00 52.10 00 39.80	Transd dB	dBμV 66	dB 10.2 12.1 21.0	QP	L1	GND	
2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260 3.7860	9:23 CCY Level HZ dBµV 00 55.40 00 52.10 00 39.80 00 29.10 00 28.60	Transd dB 6.2 6.2 6.2 6.2 6.4 6.4	dBμV 66 64 61 56 56	dB 10.2 12.1 21.0 26.9 27.4	QP QP QP	L1 L1 L1 L1	GND GND GND GND GND	
2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260	9:23 CCY Level HZ dBµV 00 55.40 00 52.10 00 39.80 00 29.10 00 28.60	Transd dB 6.2 6.2 6.2 6.4	dBμV 66 64 61 56	dB 10.2 12.1 21.0 26.9	QP QP QP QP	L1 L1 L1	GND GND GND GND	
2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260 3.7860 4.9220	9:23 CCY Level HZ dBµV 00 55.40 00 52.10 00 39.80 00 29.10 00 28.60	Transd dB 6.2 6.2 6.2 6.4 6.4 6.4	dBμV 66 64 61 56 56	dB 10.2 12.1 21.0 26.9 27.4	QP QP QP QP QP	L1 L1 L1 L1	GND GND GND GND GND	
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2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260 3.7860 4.9220 MEASUREMEN 2023/4/23 Frequer 2.8060	9:23 acy Level Hz dBµV 000 55.40 000 52.10 000 39.80 000 29.10 000 28.60 000 27.60 TRESULT: "a 9:23 acy Level Hz dBµV 000 22.30	Transd dB 6.2 6.2 6.2 6.4 6.4 6.4 Transd dB 6.4	dBµV 66 64 61 56 56 56 56	dB 10.2 12.1 21.0 26.9 27.4 28.4 Margin dB 23.7	QP QP QP QP QP QP	L1 L1 L1 L1 L1 L1 L1	GND GND GND GND GND	
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2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260 3.7860 4.9220 MEASUREMEN 2023/4/23 Frequer 2.8060 3.2260 3.5060	9:23 acy Level dBµV 000 55.40 000 52.10 000 39.80 000 29.10 000 28.60 000 27.60 TRESULT: "a 9:23 acy Level dBµV 000 22.30 000 23.20 000 22.90	Transd dB 6.2 6.2 6.2 6.4 6.4 6.4 Transd dB 6.4 6.4 6.4	dBµV 66 64 61 56 56 56 46 46 46	dB 10.2 12.1 21.0 26.9 27.4 28.4 Margin dB 23.7 22.8 23.1	QP QP QP QP QP QP QP AV	L1 L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND GND GND GND	
2023/4/23 Frequer 0.1580 0.1860 0.2820 3.2260 3.7860 4.9220 MEASUREMEN 2023/4/23 Frequer 2.8060 3.2260	9:23 acy Level Hz dBµV 000 55.40 000 52.10 000 39.80 000 29.10 000 28.60 000 27.60 TRESULT: "a 9:23 acy Level Hz dBµV 000 22.30 000 23.20 000 23.00	Transd dB 6.2 6.2 6.2 6.4 6.4 6.4 Transd dB 6.4 6.4	dBµV 66 64 61 56 56 56 56	dB 10.2 12.1 21.0 26.9 27.4 28.4 Margin dB 23.7 22.8	QP QP QP QP QP QP QP AV	L1 L1 L1 L1 L1 L1	GND GND GND GND GND GND	

RESULT: PASS

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RESULT: PASS

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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC01165230402AP01

APPENDIX B: PHOTOGRAPHS OF TEST EUT

Refer to the Report No.: AGC01165230402AP02

----END OF REPORT----



Conditions of Issuance of Test Reports

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- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
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- 6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.