

FCC Test Report

Report No.: AGC01559220303FE02

FCC ID	: 2AANZEBSK-S
APPLICATION PURPOSE	: Original Equipment
PRODUCT DESIGNATION	: 2-IN-1 Wireless Speaker & Earbuds
BRAND NAME	: EDGEWOOD
MODEL NAME	NOR-EBSK-GRN, NOR-EBSK, NOR-EBSK-XXX, EW-EBSK-GRN, EW-EBSK, EW-EBSK-XXX
APPLICANT	: DGL Group LTD.
DATE OF ISSUE	: Mar. 14, 2022
STANDARD(S)	: FCC Part 15.247
REPORT VERSION	: V1.0
<u>Attestation of (</u>	Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar. 14, 2022	Valid	Initial Release



TABLE OF CONTENTS

1. VERIFICATION OF COMPLIANCE	5
2. GENERAL INFORMATION	6
2.1. PRODUCT DESCRIPTION	6
2.2. TABLE OF CARRIER FREQUENCYS	6
2.3. RELATED SUBMITTAL(S)/GRANT(S)	7
2.4. TEST METHODOLOGY	7
2.5. SPECIAL ACCESSORIES	
2.6. EQUIPMENT MODIFICATIONS	
2.7. ANTENNA REQUIREMENT	7
3. MEASUREMENT UNCERTAINTY	8
4. DESCRIPTION OF TEST MODES	
5. SYSTEM TEST CONFIGURATION	10
5.1. CONFIGURATION OF TESTED SYSTEM	10
5.2. EQUIPMENT USED IN TESTED SYSTEM	10
5.3. SUMMARY OF TEST RESULTS	10
6. TEST FACILITY	11
7. PEAK OUTPUT POWER	12
7. PEAK OUTPUT POWER 7.1. MEASUREMENT PROCEDURE	
	12
7.1. MEASUREMENT PROCEDURE	
7.1. MEASUREMENT PROCEDURE 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	12 12 13
7.1. MEASUREMENT PROCEDURE 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) 7.3. LIMITS AND MEASUREMENT RESULT	
 7.1. MEASUREMENT PROCEDURE	



10.1. MEASUREMENT PROCEDURE	
10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
10.3. MEASUREMENT EQUIPMENT USED	
10.4. LIMITS AND MEASUREMENT RESULT	26
11. RADIATED EMISSION	
11.1. MEASUREMENT PROCEDURE	
11.2. TEST SETUP	29
11.3. LIMITS AND MEASUREMENT RESULT	30
11.4. TEST RESULT	30
12. LINE CONDUCTED EMISSION TEST	40
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST	40
12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST	40
12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	41
12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	41
12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST	42
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	44
APPENDIX B: PHOTOGRAPHS OF EUT	



1. VERIFICATION OF COMPLIANCE

Applicant	DGL Group LTD.	
Address	195 Raritan Center Parkway, Edison, NJ 08837, United States	
Manufacturer	DGL Group LTD.	
Address	195 Raritan Center Parkway, Edison, NJ 08837, United States	
Product Designation	2-IN-1 Wireless Speaker & Earbuds	
Brand Name	EDGEWOOD	
Test Model	NOR-EBSK-GRN	
Series Model	NOR-EBSK, NOR-EBSK-XXX, EW-EBSK-GRN, EW-EBSK, EW-EBSK-XXX	
Declaration of Difference	(Only the appearance of the color is different, everything else is completely the same. X is just a letter.)	
Date of test	Mar. 03, 2022 to Mar. 14, 2022	
Deviation	No any deviation from the test method	
Condition of Test Sample	Normal	
Test Result	Pass	
Report Template	AGCRT-US-BLE/RF	

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC part 15.247.

Bibo zhay Prepared By Bibo Zhang Mar. 14, 2022 (Project Engineer) **Reviewed By** Calvin Liu Mar. 14, 2022 (Reviewer) Approved By Max Zhang Mar. 14, 2022 (Authorized Officer)



2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as a "2-IN-1 Wireless Speaker & Earbuds". It is designed by way of utilizing the GFSK technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power 2.989dBm (Max)	
Bluetooth Version V5.0	
Modulation	BR □GFSK, EDR □π /4-DQPSK, □8DPSK BLE ⊠GFSK 1Mbps □GFSK 2Mbps
Number of channels 40 Channel	
Antenna DesignationPCB Antenna (Comply with requirements of the FCC part 15.203)	
Antenna Gain	1.3dBi
Hardware Version	V1.1
Software Version	V1.0
Power Supply	DC 3.7V by battery or DC 5V by adapter

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHz	0	2402 MHz
	1	2404 MHz
	:	:
	38	2478 MHz
	39	2480 MHz



2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for FCC ID: 2AANZEBSK-S filing to comply with the FCC Part 15.247 requirements.

2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.7. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device. For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.



3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y $\pm U$, 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	$U_c = \pm 3.1 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.0 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.8 \text{ dB}$
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	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$



4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION	
1	Low channel TX	
2	Middle channel TX	
3	High channel TX	

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.
- 3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

	Software Setting	
RC FCCAssist 2.4		– 🗆 X
BR/EDR BLE		
Command Type TX_TEST_CMD V len of test data ch_index (0 - 2402) V Package Payload		
Transmit Power : 10 Packet type: 2-DH5 Send configuration information successfully 2022-03-07_09:19:44 Channel: 78 Data Types: Pn9 Transmit Power : 10 Packet type: 1-DH5 Send configuration information successfully 2022-03-07_09:27:13 TX_TEST_CMD ch_index: (0 - 2402) len of test data:255 package payload: PRBS9 [ERROR] replay data error Reply BYTE: 0x20 0x0 0x4 0xe 0x4 0x1 0x1e	 Serial Port COM2 ~ (?) Description: 1 Channel: range 0-78, corresponding f 2 Transmit Power range 0-10, 0 is the 	



5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:

EUT

Conducted Emission Configure:

EUT	AE

5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	2-IN-1 Wireless Speaker & Earbuds	NOR-EBSK-GRN	2AANZEBSK-S	EUT
2	Adapter	ZL-PCB0100020502000	N\A	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(3)	Peak Output Power	Compliant
15.247 (a)(2)	6 dB Bandwidth	Compliant
15.247 (d)	Conducted Spurious Emission	Compliant
15.247 (e)	Maximum Conducted Output Power Density	Compliant
15.209	Radiated Emission	Compliant
15.207	Conducted Emission	Compliant



6. TEST FACILITY

Test software

Test Site	Attestation of C	Attestation of Global Compliance (Shenzhen) Co., Ltd				
Location		1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China				
Designation Number	CN1259					
FCC Test Firm Registration Number	975832	975832				
A2LA Cert. No.	5054.02	5054.02				
Description	Attestation of C	Global Compliance (S	Shenzhen) Co., L	td is accredited t	by A2LA	
TEST EQUIPMENT OF	CONDUCTED E	MISSION TEST				
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due	
TEST RECEIVER	R&S	ESPI	101206	May 11, 2021	May 10, 2022	
LISN	R&S	ESH2-Z5	100086	Jun. 09, 2021	Jun. 08, 2022	

ES-K1(Ver.V1.71)

N/A

N/A

N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

R&S

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due		
TEST RECEIVER	R&S	ESCI	10096	May 15, 2021	May 14, 2022		
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Nov. 17, 2021	Nov. 16, 2022		
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022		
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022		
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023		
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022		
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2021	Apr. 22, 2022		
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022		
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 08, 2021	Jan. 07, 2023		
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A		



7. PEAK OUTPUT POWER

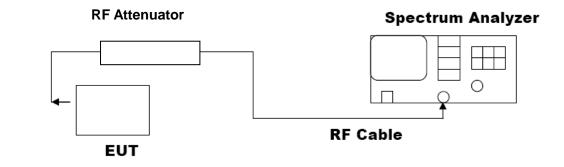
7.1. MEASUREMENT PROCEDURE

For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. RBW≥DTS bandwidth
- 3. VBW≥3*RBW.
- 4. SPAN≥VBW.
- 5. Sweep: Auto.
- 6. Detector function: Peak.
- 7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

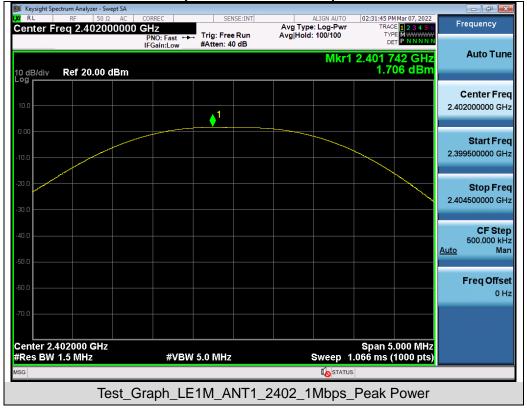
7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) PEAK POWER TEST SETUP





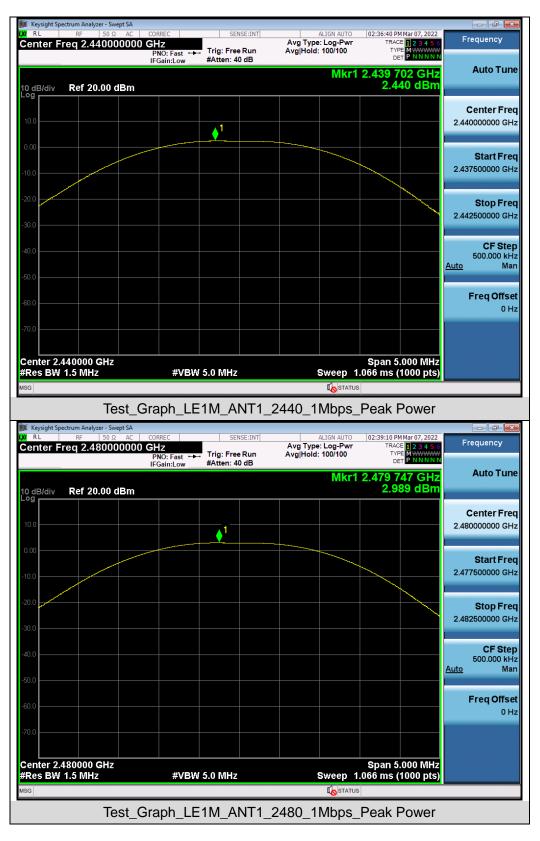
7.3. LIMITS AND MEASUREMENT RESULT

Test Data of Conducted Output Power					
Test Mode	Test Channel (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail	
	2402	1.706	≪30	Pass	
GFSK 1M	2440	2.440	≪30	Pass	
	2480	2.989	≤30	Pass	



Test Graphs of Conducted Output Power







8. BANDWIDTH

8.1. MEASUREMENT PROCEDURE

6dB bandwidth:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 kHz, VBW≥3×RBW.
- 4. Set SPA Trace 1 Max hold, then View.

Occupied bandwidth:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hoping channel The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak

4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

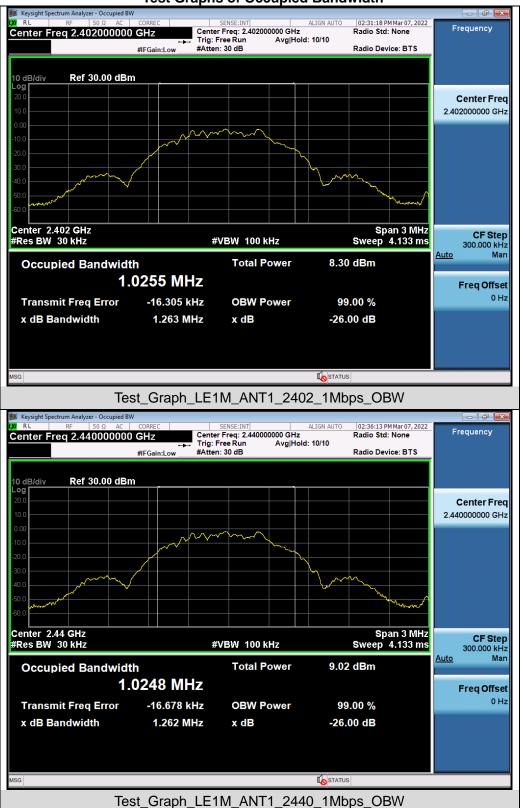
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

8.3. LIMITS AND MEASUREMENT RESULTS

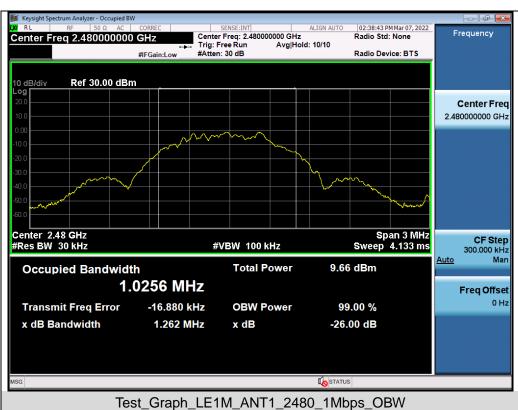
Test Data of Occupied Bandwidth and DTS Bandwidth						
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-6dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail	
	2402	1.026	0.670	≥0.5	Pass	
GFSK 1M	2440	1.025	0.670	≥0.5	Pass	
	2480	1.026	0.669	≥0.5	Pass	



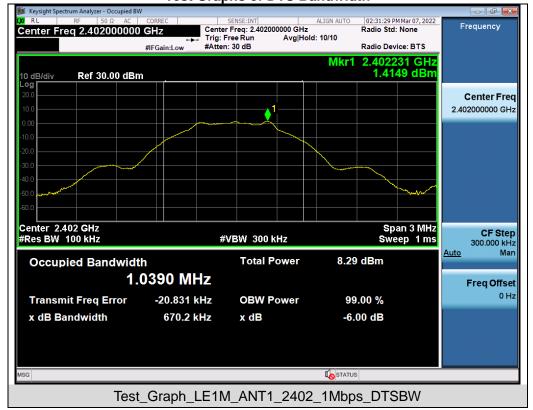


Test Graphs of Occupied Bandwidth

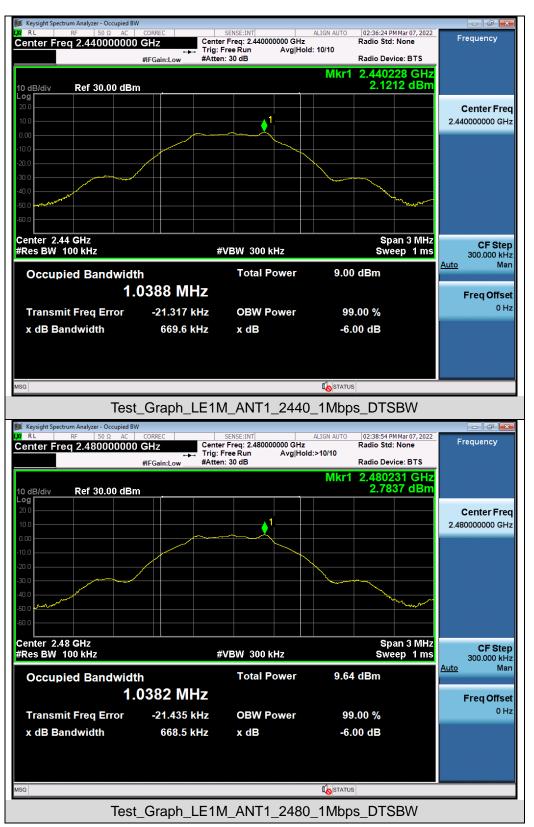




Test Graphs of DTS Bandwidth









9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

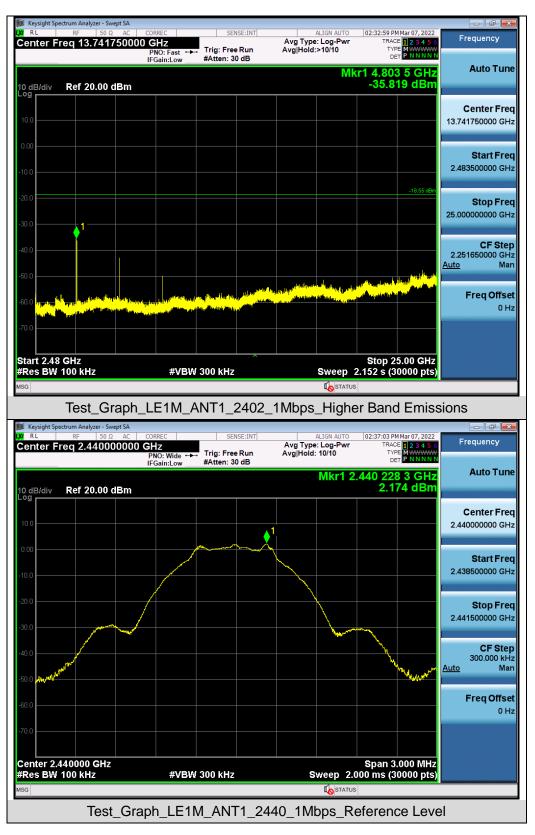
LIMITS AND MEASUREMENT RESULT					
Angliaghta Limita	Measurement Result				
Applicable Limits	Test Data	Criteria			
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS			



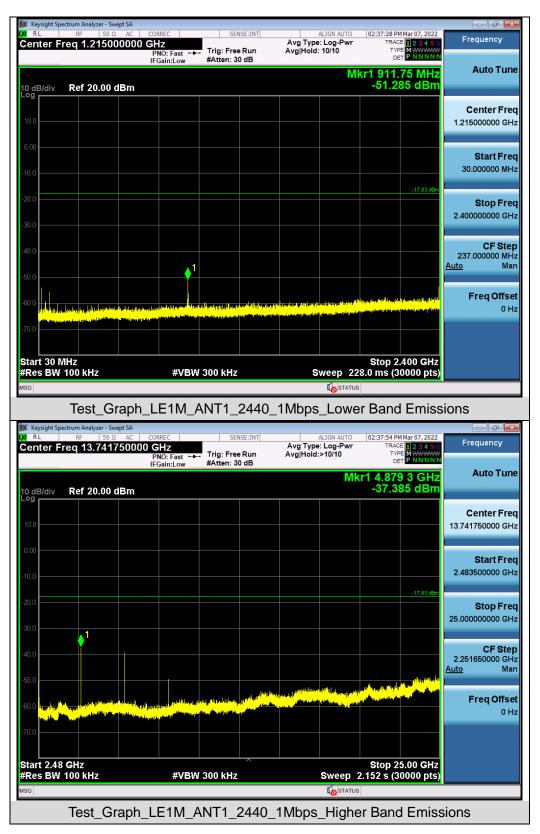


Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands





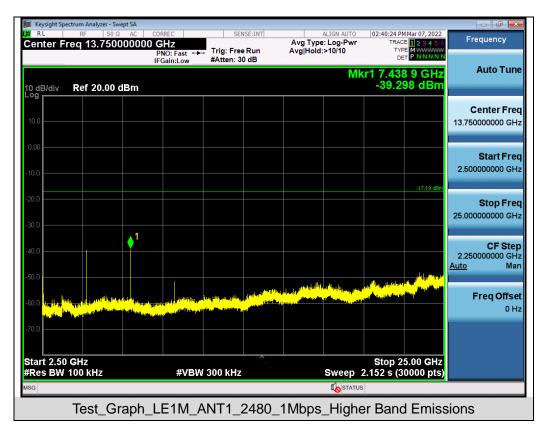




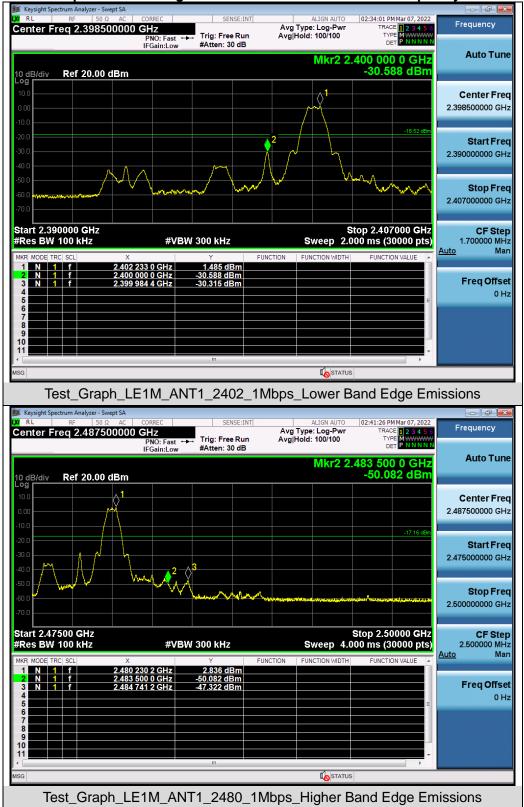












Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1. MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set the SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 8.4 was used in this testing.

10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer to Section 7.2.

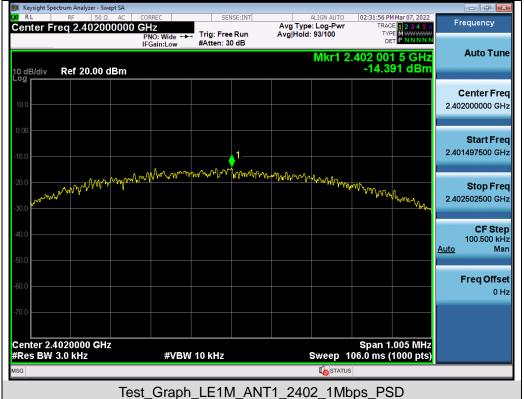
10.3. MEASUREMENT EQUIPMENT USED

Refer to Section 6.

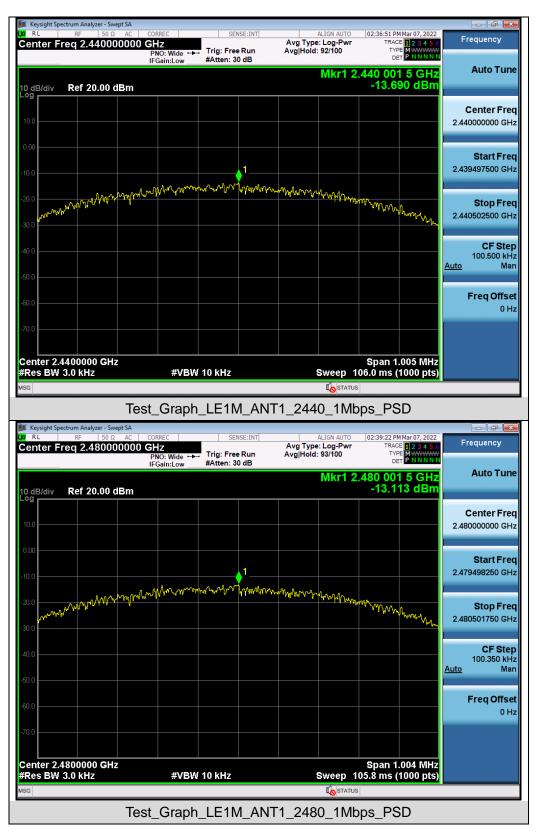
10.4. LIMITS AND MEASUREMENT RESULT

Test Data of Conducted Output Power Spectral Density						
Test Mode	Test Channel (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail		
	2402	-14.391	≤8	Pass		
GFSK 1M	2440	-13.690	≪8	Pass		
	2480	-13.113	≪8	Pass		

Test Graphs of Conducted Output Power Spectral Density









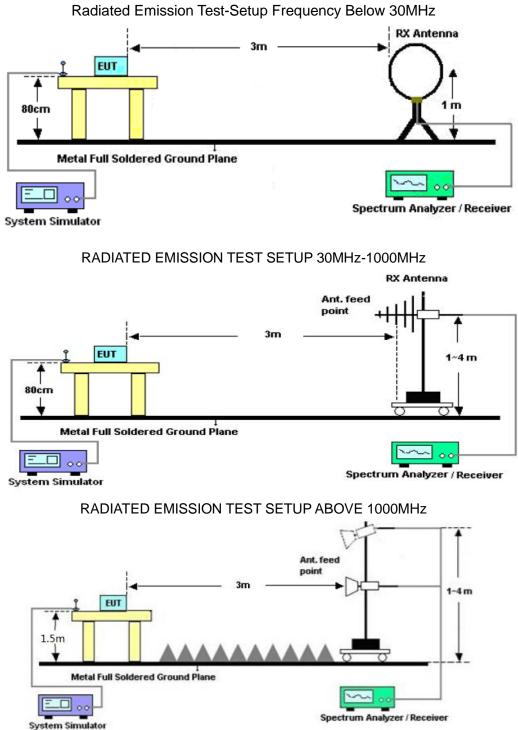
11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

- 1. 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.



11.2. TEST SETUP





11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

11.4. TEST RESULT

Radiated emission below 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.



EUT	2-IN-1 Wireless Spea Earbuds	2-IN-1 Wireless Speaker & Earbuds			NOR-E	BSK-GRN
Temperature	25° C		Relative H	lumidity	55%	
Pressure	960hPa		Test Volta	ge	Norma	I Voltage
Test Mode	Mode 3		Antenna		Horizo	ntal
80.0 dBuV/m						
					Limit: Margin:	
		ſ				F
40		~~~~	. Jan and a start a st		man 5	,****
		www				
0.0	50 60 70	(MHz)	300	400 500	600 700	1000.000
No. Mk.	Reading Freq. Level	Correct I Factor	Measure- ment	Limit	Over	
	MHz dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1 6	65.6494 14.13	11.84	25.97	40.00	-14.03	peak
2 12	25.3833 15.01	12.88	27.89	43.50	-15.61	peak
3 36	64.6500 15.76	17.89	33.65	46.00	-12.35	peak

Radiated emission from 30MHz to 1000MHz

2-IN-1 Wireless Speaker &

RESULT: PASS

4

5

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17.99

18.61

22.86

34.07

34.21

38.27

46.00

46.00

46.00

-11.93

-11.79

-7.73

peak

peak

peak

Attestation of Global Compliance(Shenzhen)Co., Ltd

414.7667

736.4833

899.7667

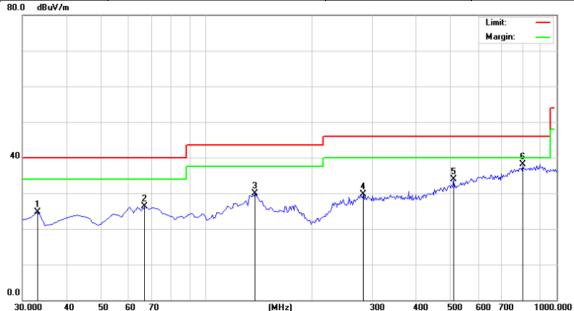
16.08

15.60

15.41



EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		33.2333	17.51	7.27	24.78	40.00	-15.22	peak
2		67.1833	14.24	12.04	26.28	40.00	-13.72	peak
3		138.3167	16.60	13.21	29.81	43.50	-13.69	peak
4		282.2000	14.90	14.89	29.79	46.00	-16.21	peak
5		508.5333	16.76	17.24	34.00	46.00	-12.00	peak
6	*	802.7667	15.77	22.42	38.19	46.00	-7.81	peak

RESULT: PASS Note:

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

2. All test modes had been tested. The mode 3 is the worst case and recorded in the report.

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Radiated emission above 1GHz

EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4804.000	43.44	0.08	43.52	74	-30.48	peak
4804.000	35.39	0.08	35.47	54	-18.53	AVG
7206.000	38.65	2.21	40.86	74	-33.14	peak
7206.000	31.27	2.21	33.48	54	-20.52	AVG
emark:						

EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4804.000	44.36	0.08	44.44	74	-29.56	peak
4804.000	34.84	0.08	34.92	54	-19.08	AVG
7206.000	38.25	2.21	40.46	74	-33.54	peak
7206.000	30.67	2.21	32.88	54	-21.12	AVG
emark:						



EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880.000	44.67	0.14	44.81	74	-29.19	peak
4880.000	35.73	0.14	35.87	54	-18.13	AVG
7320.000	39.75	2.36	42.11	74	-31.89	peak
7320.000	31.51	2.36	33.87	54	-20.13	AVG
Remark:						
actor = Anter	nna Factor + Cabl	e Loss – Pre-a	amplifier.			

EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4880.000	45.15	0.14	45.29	74	-28.71	peak
4880.000	38.07	0.14	38.21	54	-15.79	AVG
7320.000	40.47	2.36	42.83	74	-31.17	peak
7320.000	32.43	2.36	34.79	54	-19.21	AVG
emark:						
actor = Anter	nna Factor + Cable	e Loss – Pre-	amplifier.			



EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4960.000	44.64	0.22	44.86	74	-29.14	peak
4960.000	35.43	0.22	35.65	54	-18.35	AVG
7440.000	38.78	2.64	41.42	74	-32.58	peak
7440.000	29.45	2.64	32.09	54	-21.91	AVG
Remark:						
actor = Anter	nna Factor + Cable	e Loss – Pre-	amplifier.			

EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4960.000	42.97	0.22	43.19	74	-30.81	peak
4960.000	34.04	0.22	34.26	54	-19.74	AVG
7440.000	38.67	2.64	41.31	74	-32.69	peak
7440.000	29.75	2.64	32.39	54	-21.61	AVG
lemark:						
actor = Anter	nna Factor + Cable	e Loss – Pre-	amplifier.			

RESULT: PASS

Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Margin=Level-Limit. The "Factor" value can be calculated automatically by software of measurement system.

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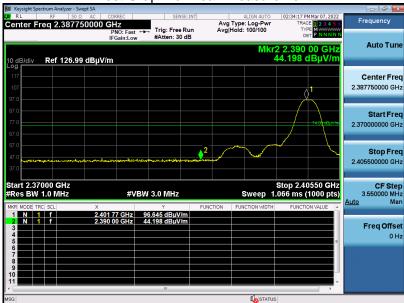
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EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

r hand edge emission at restricted hands مه داده

Test Graph for Peak Measurement



Test Graph for Average Measurement

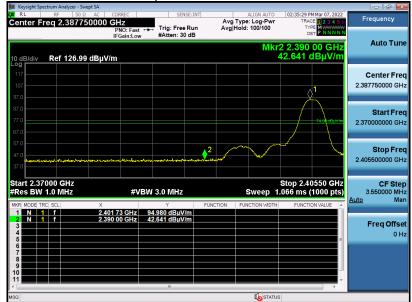


RESULT: PASS



EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

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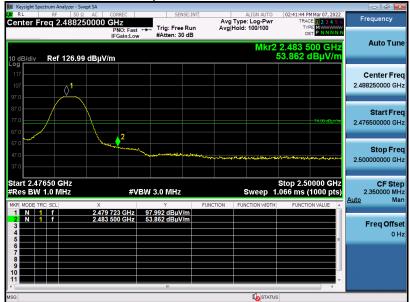
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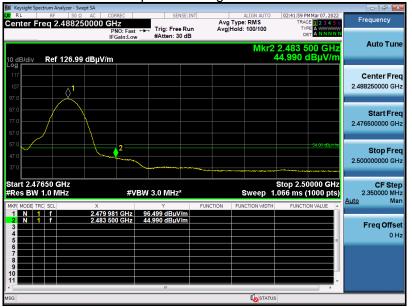
Report No.: AGC01559220303FE02 Page 38 of 44

EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

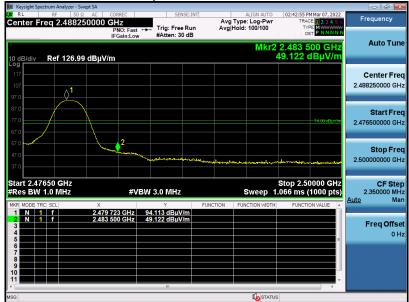
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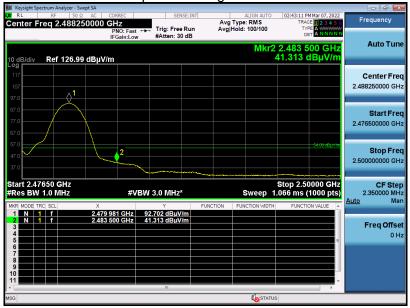


EUT	2-IN-1 Wireless Speaker & Earbuds	Model Name	NOR-EBSK-GRN
Temperature	25° C	Relative Humidity	55%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Test Graph for Peak Measurement



Test Graph for Average Measurement



RESULT: PASS

Note: The factor had been edited in the "Input Correction" of the Spectrum Analyzer.

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12. LINE CONDUCTED EMISSION TEST

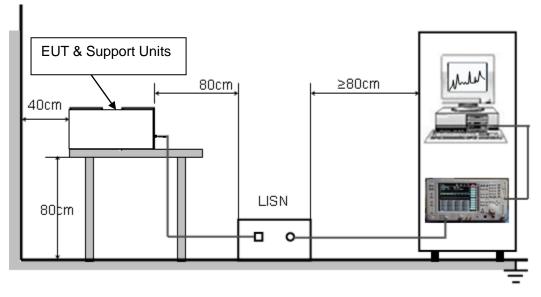
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage				
Frequency	Q.P.(dBuV)	Average(dBuV)			
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.

12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

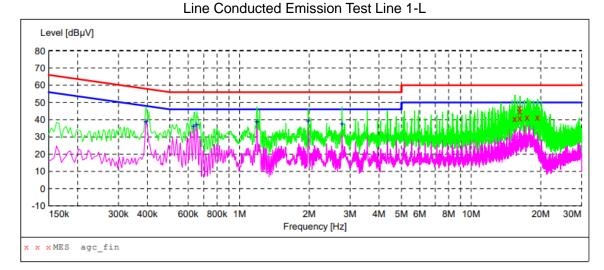
- 1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground 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 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.

12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 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.





12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

MEASUREMENT RESULT: "agc fin"

2022/3/10 13:44

022/3/10 13:	44					
Frequency	Level			-	Detector	Line
MHz	dBµV	dB	dBµV	dB		
15.454000	40.50	8.4	60	19.5	QP	L1
16.210000	46.90	8.4	60	13.1	QP	L1
16.266000	44.60	8.5	60	15.4	QP	L1
16.274000	40.90	8.5	60	19.1	QP	L1
17.494000	41.10	8.6	60	18.9	QP	L1
19.378000	41.30	8.7	60	18.7	QP	L1

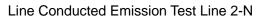
MEASUREMENT RESULT: "agc_fin2"

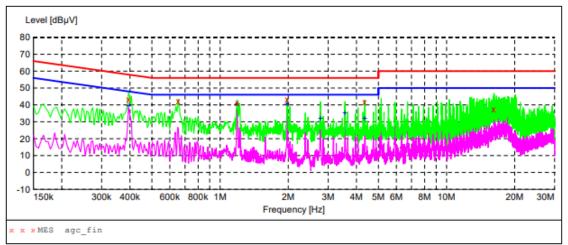
2022/3/10 13:44							
Frequen	су	Level	Transd	Limit	Margin	Detector	Line
М	Hz	dBµV	dB	dBµV	dB		
0.3940	00	38.70	5.7	48	9.3	AV	L1
0.6340	00	36.00	5.4	46	10.0	AV	L1
0.6540	00	37.00	5.4	46	9.0	AV	L1
1.1860	00	38.90	5.7	46	7.1	AV	L1
1.9780	00	39.30	6.5	46	6.7	AV	L1
2.7700	00	37.50	6.5	46	8.5	AV	L1

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MEASUREMENT RESULT: "agc_fin"

2022/3/10 13:41

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.394000	43.00	5.7	58	15.0	QP	N
0.654000		5.4	56	13.8	QP	N
1.190000	40.90	5.7	56	15.1	QP	N
1.978000	43.40	6.5	56	12.6	QP	N
4.350000	41.40	6.5	56	14.6	QP	N
16.186000	37.10	8.4	60	22.9	QP	N

MEASUREMENT RESULT: "agc fin2"

2022/3/10	13:41					
Frequen	cy Lev	vel Transo	d Limit	Margin	Detector	Line
M	Hz di	BµV di	3 dBµV	dB		
0.3940	00 39	.50 5.	7 48	8.5	AV	N
1.1860	00 40	.60 5.7	7 46	5.4	AV	Ν
1.9780	00 40	.40 6.	5 46	5.6	AV	Ν
2.7740	00 31	.80 6.	5 46	14.2	AV	Ν
3.5620	00 35	.50 6.5	5 46	10.5	AV	Ν
4.3540	00 31	.80 6.	5 46	14.2	AV	Ν

RESULT: PASS

All test modes had been pre-tested. The mode 3 is the worst case and recorded in the report.

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APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Refer to the Report No.: AGC01559220303AP01

APPENDIX B: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC01559220303AP02

----END OF REPORT----



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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.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

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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.