

# FCC Test Report

## Report No.: AGC01110240519FR01

FCC ID	:	2AOKB-A3876L
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Wireless Headphone
BRAND NAME	:	soundcore
MODEL NAME	:	A3876L
APPLICANT	:	Anker Innovations Limited
DATE OF ISSUE	:	May 28, 2024
STANDARD(S)	:	FCC Part 15 Subpart C §15.247
REPORT VERSION	:	V1.0







## **Report Revise Record**

<b>Report Version</b>	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 28, 2024	Valid	Initial Release



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## **1. General Information**

Applicant	Anker Innovations Limited
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, HongKong
Manufacturer	Anker Innovations Limited
Address	Room 1318-19, Hollywood Plaza, 610 Nathan Road, Mongkok, Kowloon, Hongkong
Factory	N/A
Address	N/A
Product Designation	Wireless Headphone
Brand Name	soundcore
Test Model	A3876L
Series Model(s)	N/A
Difference Description	N/A
Date of receipt of test item	May 17, 2024
Date of Test	May 17, 2024 - May 28, 2024
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Test Report Form No	AGCER-FCC-BLE-V1

Note: The test results of this report relate only to the tested sample identified in this report.

Cool chen Prepared By Cool Cheng May 28, 2024 (Project Engineer) **Reviewed By** sin . Calvin Liu May 28, 2024 (Reviewer) Approved By Max Zhang

Max Zhang Authorized Officer

May 28, 2024



## 2. Product Information

## 2.1 Product Technical Description

Frequency Band	2400MHz-2483.5MHz
Operation Frequency Range	2402MHz-2480MHz
Bluetooth Version	V5.4
Modulation Type	BLE GFSK 1Mbps GFSK 2Mbps
Number of channels	40
Carrier Frequency of Each Channel	40 Channels (37 Data channels + 3 advertising channels)
Channel Separation	2 MHz
Maximum Transmitter Power	0.787dBm
Hardware Version	V1.5
Software Version	V1.18
Antenna Designation	FPC Antenna
Antenna Gain	-4.29dBi
Power Supply	DC 3.85V by battery
Adapter Information	N/A

#### 2.2 Test Frequency List

Frequency Band	Channel Number	Frequency		
	0	2402 MHz		
	1	2404 MHz		
	:	:		
2400~2483.5MHz	19	2440MHz		
	:	:		
	38	2478 MHz		
	39	2480 MHz		
Note: $f = 2402 + 2^{k}$ MHz, $k = 0,, 39$ f is the operating frequency (MHz); k is the operating channel.				



## 2.3 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: 2AOKB-A3876L, 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
4	KDB 558074 D01 15.247 Meas Guidance v05r02	Guidance for compliance measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum system, and Hybrid system devices operating under Section 15.247 of the FCC rules

#### 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 antenna that uses a unique coupling to the intentional radiator, 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 electrical connector is prohibited.

#### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi

#### EUT Antenna:

The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is -4.29dBi.



## 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 follow 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 follow 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.



#### **3.3 Environmental Conditions**

	Normal Conditions
Temperature range (°C)	15 - 35
Relative humidity range	20 % - 75 %
Pressure range (kPa)	86 - 106
Power supply	DC 3.85V by battery

#### **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 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
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 <sub>c</sub> = ±2 %
Uncertainty of Occupied Channel Bandwidth	U <sub>c</sub> = ±2 %



#### 3.5 List of Equipment Use

• R	RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
$\square$	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023-06-01	2024-05-31	
$\boxtimes$	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2024-02-01	2025-01-31	
$\boxtimes$	AGC-ER-E063	Power Sensor	Agilent	U2021XA	MY54110009	2024-02-01	2025-01-31	
$\boxtimes$	AGC-EM-A152	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08	
$\boxtimes$	AGC-ER-E083	Signal Generator	Agilent	E4421B	US39340815	2023-06-01	2024-05-31	
$\boxtimes$	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A	
$\boxtimes$	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A	

• F	Radiated Spurious Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	10096	2024-02-01	2025-01-31	
$\boxtimes$	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2023-06-03	2024-06-02	
$\boxtimes$	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2023-06-01	2024-05-31	
$\boxtimes$	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04	
$\boxtimes$	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2023-05-11	2025-05-10	
$\square$	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2024-03-31	2025-03-30	
$\square$	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2023-09-24	2025-09-23	
$\square$	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2022-08-04	2024-08-03	
$\square$	AGC-EM-A119	2.4G Filter	SongYi	N/A	N/A	2023-06-01	2024-05-31	
$\square$	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08	
	AGC-EM-A139	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2023-06-09	2024-06-08	

• A	AC Power Line Conducted Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)	
	AGC-EM-E045	EMI Test Receiver	R&S	ESPI	101206	2023-06-03	2024-06-02	
	AGC-EM-A130	6dB Attenuator	Eeatsheep	LM-XX-6-5W	DC-6GZ	2023-06-09	2024-06-08	
	AGC-EM-E023	AMN	R&S	100086	ESH2-Z5	2023-06-03	2024-06-02	



• Te	Test Software							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information			
	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71			
	AGC-EM-S003	RE Test System	FARA	EZ-EMC	VRA-03A			
$\boxtimes$	AGC-ER-S012	BT/WIFI Test System	Tonscend	JS1120-2	2.6			
	AGC-EM-S011	RSE Test System	Tonscend	TS+-Ver2.1(JS36-RSE)	4.0.0.0			



## **4.System Test Configuration**

#### **4.1 EUT Configuration**

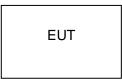
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 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:



#### 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

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable		
1	Control Box		USB-TTL				
	Test Accessories Come From The Manufacturer						
No.	Equipment	Manufacturer	Model No.	Specification Information	Cable		
1							



#### 4.5 Summary of Test Results

Item	FCC Rules	Description of Test	Result
1	§15.203&15.247(b)(4)	Antenna Equipment	Pass
2	§15.247 (b)(3)	RF Output Power	Pass
3	§15.247 (a)(2)	6 dB Bandwidth	Pass
4	§15.247 (e)	Power Spectral Density	Pass
4	§15.247 (d)	Conducted Band Edge and Out-of-Band Emissions	Pass
5	§15.209	Radiated Emission& Band Edge	Pass
6	§15.207	AC Power Line Conducted Emission	Not applicable

Note: The BT function cannot transmit when charging.



## 5. Description of Test Modes

Test Item         Data Rate / Modulation           Test Item         Bluetooth – LE(1Mbps/2Mbps) / GFSK           Radiated & Conducted Test Cases         Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps(Battery powered)           Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps(Battery powered)	Summary Table of Test Cases				
Radiated & Conducted Test Cases       Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps(Battery powered) Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps(Battery powered)		n			
Radiated & Conducted Test Cases Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps(Battery powered)	Test Item	s) / GFSK			
Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps(Battery powered)		Abps(Battery powered)			
AC Conducted Emission N/A	Conducted Emission				

Note:

- Only the result of the worst case was recorded in the report, if no other cases. 1.
- 2. 3. The battery is full-charged during the test.
- For Radiated Emission, 3axis were chosen for testing for each applicable mode.
- 4. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
  - Software Setting Diagram

串口设置	设备[COM3]打开成功	
串口 COM3(USB-SERIAL CH340) 🗸	周二 5月 28 16:08:50 2024	
	TEST BLE	
波特室 115200	Command_Type: TX_TEST_CMD	
数据位 8 ▼	ch_index: (0 - 2402)	
校验位 None ▼		
停止位 1 🗸 🗸 🗸	Package_Payload: PRBS9	
流 控 NoFlow ▼	reply data: 04 0E 04 01 1E 20 00 return status: 0x0	
	」	
关闭	周二 5月 28 16:10:24 2024	
BR/EDR BLE	TEST BLE	
	Command_Type: TX_TEST_CMD	
Command_Type TX_TEST_CMD -	ch_index: (19 - 2440)	
ch_index (39 - 2480) 🔻	len_of_test_data: 0x0 Package Payload: PRBS9	
len_of_test_data 0x0 🔻	reply data: 04 0E 04 01 1E 20 00	
Package_Payload PRBS9 -	return status: 0x0	
PHY LE 1M PHY	发送成功!	
	周二 5月 28 16:11:47 2024	
Modulation_Index standard 🗸	TEST BLE	
Send configuration	Command_Type: TX_TEST_CMD ch_index: (39 - 2480)	
Send Configuration	len_of_test_data: 0x0	
	Package Payload: PRBS9	
	reply data: 04 0E 04 01 1E 20 00	
	return status: 0x0	
	发送成功!	
	清除曰志	



## 6. Duty Cycle Measurement

The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Operating mode	T(µs)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)
BLE_1Mbps	150	23.70	6.25	6.67
BLE_2Mbps	N/A	N/A	N/A	N/A

Remark:

2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value

Bluetooth – LE for 1Mbps	Bluetooth – LE for 2Mbps
Keysigle Systems         Auge Auto         Carlet F Freq 2.40200000 GHz         Stop E correct         Auge Auto         Trace Tra	N/A

The test plots as follows:

<sup>1.</sup> Duty Cycle factor = 10 \* log (1/ Duty cycle)



## 7. RF Output Power Measurement

#### 7.1 Provisions Applicable

For DTSs employing digital modulation techniques operating in the bands 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W.

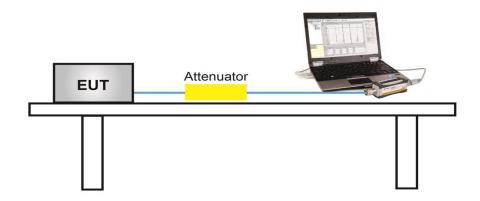
#### 7.2 Measurement Procedure

For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.1 Method Max peak power:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the RBW > DTS bandwidth
- 3. Set the VBW  $\geq$  [3 x RBW].
- 4. Span≥[3 x RBW].
- 5. Sweep= auto couple.
- 6. Detector Function= Peak.
- 7. Trace mode= Max hold.
- 8. 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.
- For Average power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G:
- 1. The RF output of EUT was connected to the power meter by RF cable and attenuator.
- 2. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power and record the results in the test report.

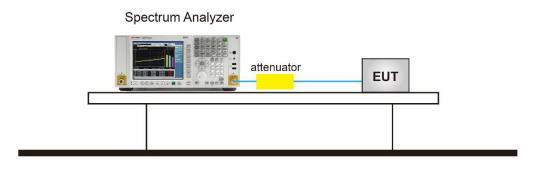
#### 7.3 Measurement Setup (Block Diagram of Configuration)

For Average power test setup





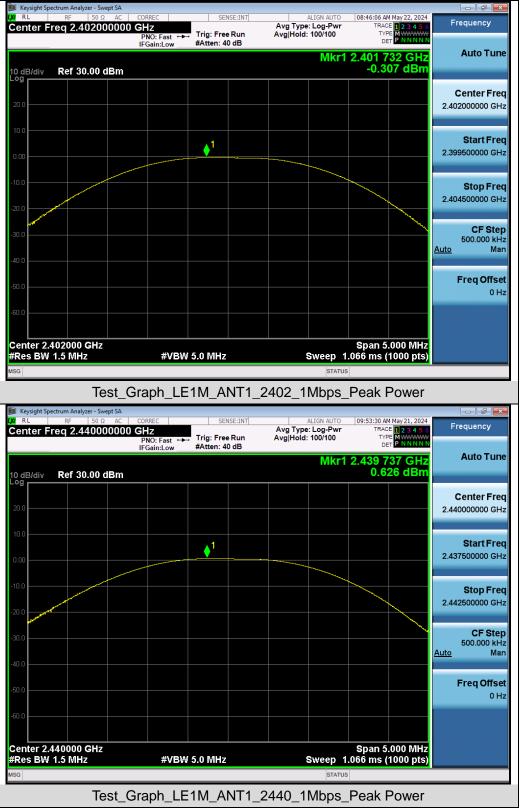
## For peak power test setup



#### 7.4 Measurement Result

Test Data of Conducted Output Power						
Test Mode	Test Frequency (MHz)	Peak Power (dBm)	Limits (dBm)	Pass or Fail		
	2402	-0.307	≪30	Pass		
GFSK_1Mbps	2440	0.626	≪30	Pass		
	2480	0.787	≪30	Pass		





#### Test Graphs of Conducted Output Power



🗱 Keysight Spectrum Analyzer - Swept SA						
Center F	RF 50 Ω AC req 2.480000000		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	09:54:14 AM May 21, 2024 TRACE 1 2 3 4 5 6	Frequency
10 dB/div	Ref 30.00 dBm	PNO: Fast	Trig: Free Run #Atten: 40 dB	Avg Hoid:>100/100 Mkr1	2.479 762 GHz 0.787 dBm	Auto Tune
20.0						Center Freq 2.480000000 GHz
0.00			<b>∮</b> 1			Start Freq 2.477500000 GHz
-10.0						<b>Stop Freq</b> 2.482500000 GHz
-30.0						CF Step 500.000 kHz <u>Auto</u> Man
-50.0						Freq Offset 0 Hz
-60.0	480000 GHz				Span 5.000 MHz	
#Res BW		#VBW	5.0 MHz	Sweep 1	.066 ms (1000 pts)	
	Test_Graph_LE1M_ANT1_2480_1Mbps_Peak Power					



## 8. 6dB Bandwidth Measurement

#### 8.1 Provisions Applicable

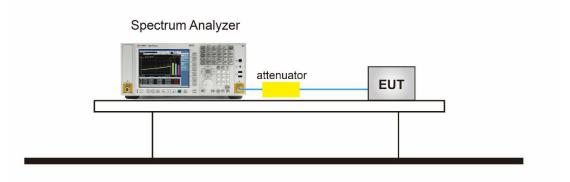
The minimum 6 dB bandwidth shall be 500 kHz.

#### 8.2 Measurement Procedure

The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).

- 1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
- For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the OBW and set the Video bandwidth (VBW) ≥ 3 \* RBW.
- 5. Measure and record the results in the test report.

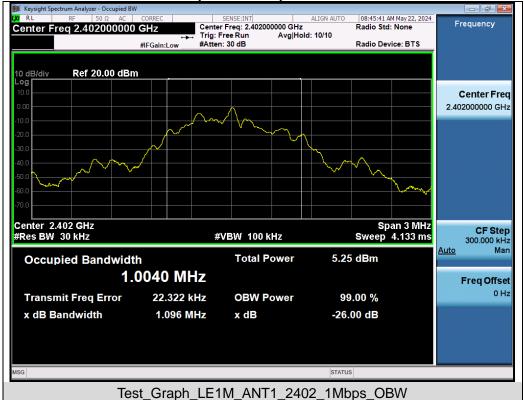
#### 8.3 Measurement Setup (Block Diagram of Configuration)





#### **8.4 Measurement Results**

Test Data of Occupied Bandwidth and DTS Bandwidth						
Test Mode	Test Frequency (MHz)	Occupied Bandwidth (MHz)	DTS BW (MHz)	DTS BW Limits	Pass or Fail	
GFSK_1Mbps	2402	1.004	0.509	≥0.5	Pass	
	2440	1.003	0.507	≥0.5	Pass	
	2480	1.004	0.507	≥0.5	Pass	

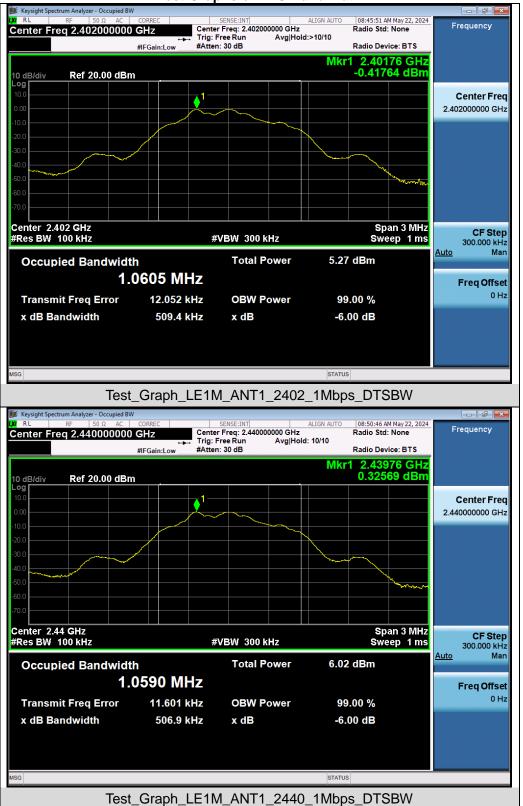


## Test Graphs of Occupied Bandwidth



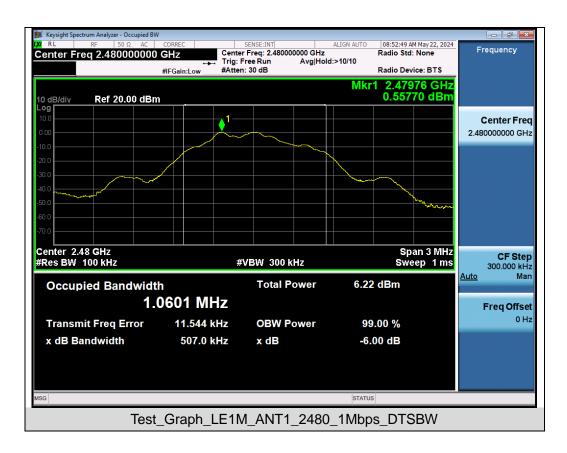






#### Test Graphs of DTS Bandwidth







## 9. Power Spectral Density Measurement

#### 9.1 Provisions Applicable

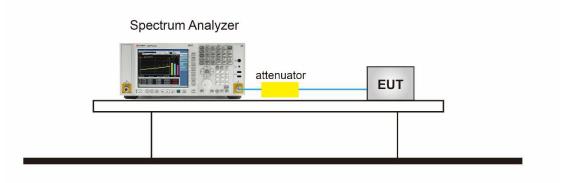
The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

#### 9.2 Measurement Procedure

The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.

- 1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2. Set to the maximum power setting and enable the EUT transmit continuously.
- Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz in order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
- 4. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
- 5. Measure and record the results in the test report.
- The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

#### 9.3 Measurement Setup (Block Diagram of Configuration)

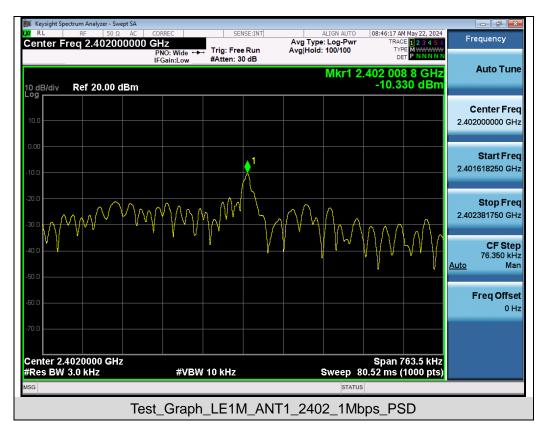




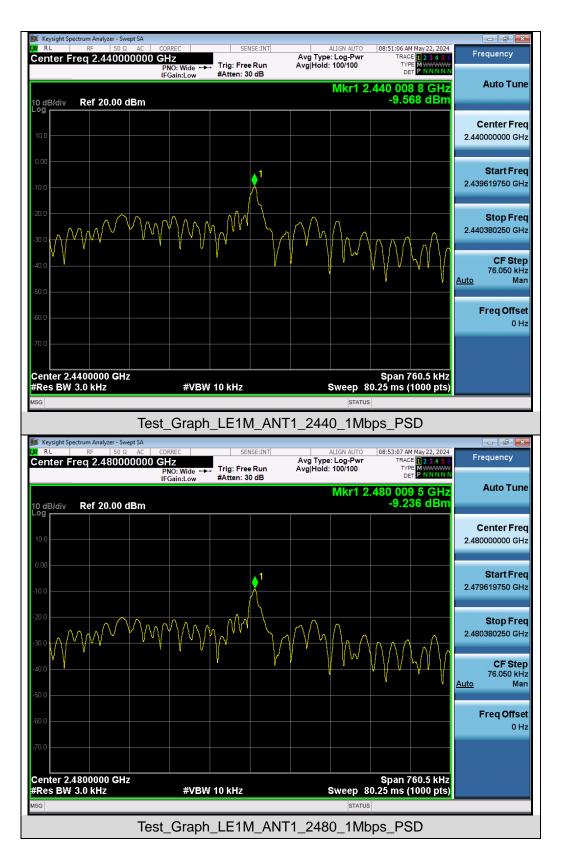
#### 9.4 Measurement Results

Test Data of Conducted Output Power Spectral Density						
Test Mode	Test Frequency (MHz)	Power density (dBm/3kHz)	Limit (dBm/3kHz)	Pass or Fail		
	2402	-10.330	≪8	Pass		
GFSK_1Mbps	2440	-9.568	≪8	Pass		
	2480	-9.236	≤8	Pass		

#### Test Graphs of Conducted Output Power Spectral Density









## 10. Conducted Band Edge and Out-of-Band Emissions

#### **10.1 Provisions Applicable**

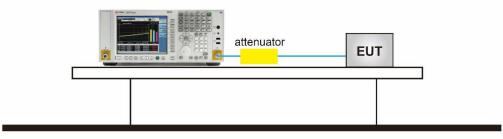
The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth per the PSD procedure.

#### **10.2 Measurement Procedure**

- Reference level measurement
- 1. Set instrument center frequency to DTS channel center frequency
- 2. Set the span to  $\geq$  1.5 times the DTS bandwidth
- 3. Set the RBW = 100 kHz
- 4. Set the VBW  $\geq$  3 x RBW
- 5. Detector = peak
- 6. Sweep time = auto couple
- 7. Trace mode = max hold
- 8. Allow trace to fully stabilize
- Emission level measurement
- 1. Set the center frequency and span to encompass frequency range to be measured
- 2. RBW = 100kHz
- 3. VBW = 300kHz
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep time = auto couple
- 7. The trace was allowed to stabilize

#### 10.3 Measurement Setup (Block Diagram of Configuration)

Spectrum Analyzer



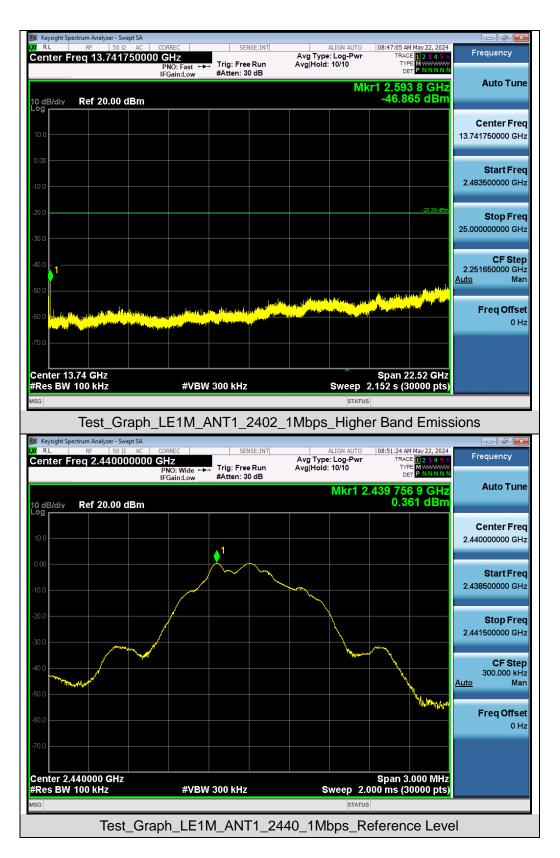


#### **10.4 Measurement Results**

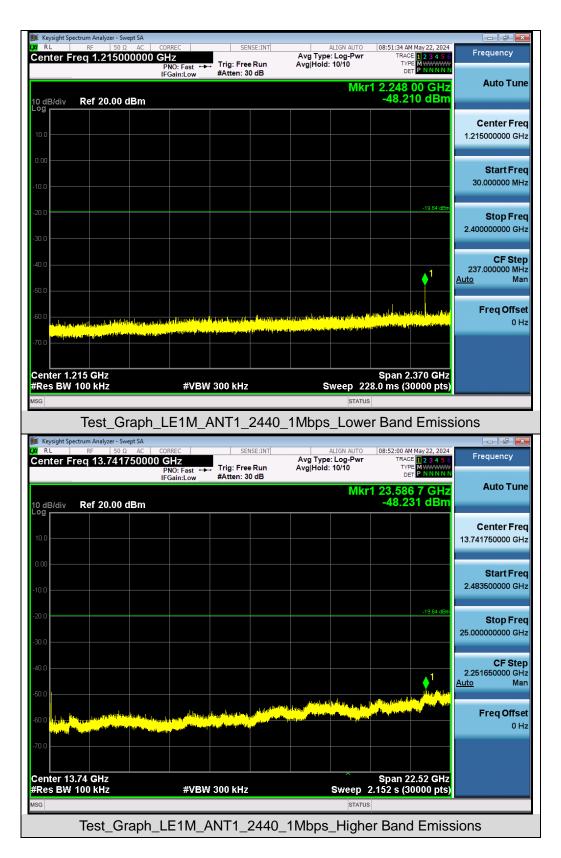


#### Test Graphs of Spurious Emissions in Non-Restricted Frequency Bands





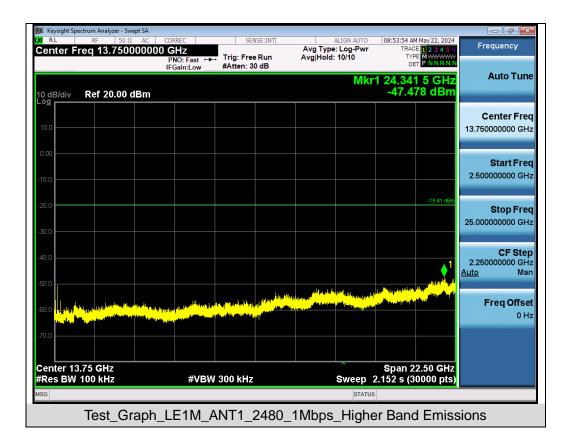




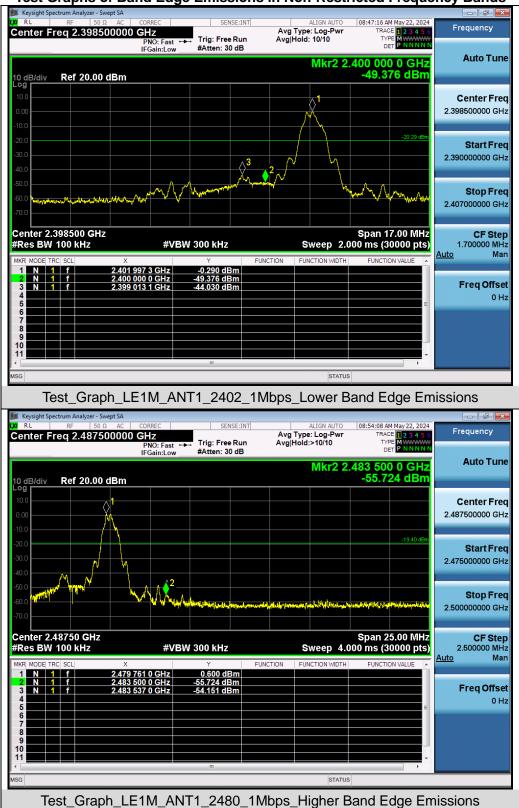












#### Test Graphs of Band Edge Emissions in Non-Restricted Frequency Bands



## 11. Radiated Spurious Emission

## **11.1 Measurement Limit**

#### FCC Part 15.209 Limit in the below table 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.

#### **11.2 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.

Spectrum Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average

The following table is the setting of spectrum analyzer and receiver.

Receiver Parameter	Setting
Start ~Stop Frequency	9kHz~150kHz/RB 200Hz for QP
Start ~Stop Frequency	150kHz~30MHz/RB 9kHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120kHz for QP



#### • Quasi-Peak Measurements below 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. Span was set greater than 1MHz
- 3. RBW = as shown in the table above
- 4. Detector = CISPR quasi-peak
- 5. Sweep time = auto couple
- 6. Trace was allowed to stabilize

#### Peak Measurements above 1GHz

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW = 3MHz
- 4. Detector = peak
- 5. Sweep time = auto couple
- 6. Trace mode = max hold
- 7. Trace was allowed to stabilize

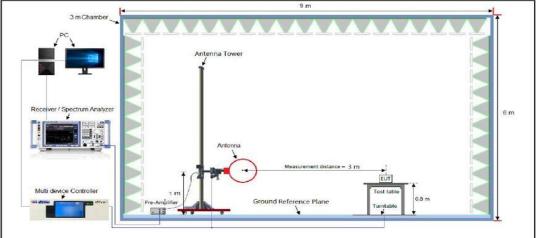
### <u>Average Measurements above 1GHz</u>

- 1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
- 2. RBW = 1MHz
- 3. VBW ≥ [3 × RBW]
- 4. Detector = Power averaging (rms)
- 5. Averaging type = power (i.e., rms)
- 6. Sweep time = auto
- 7. Perform a trace average of at least 100 traces.
- 8. The applicable correction factor is [10\*log (1 / D)], where D is the duty cycle. The factor had been edited in the "Input Correction" of the Spectrum Analyzer.

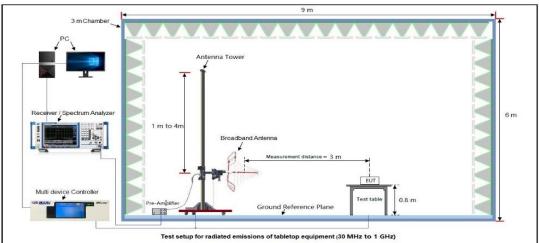


### 11.3 Measurement Setup (Block Diagram of Configuration)

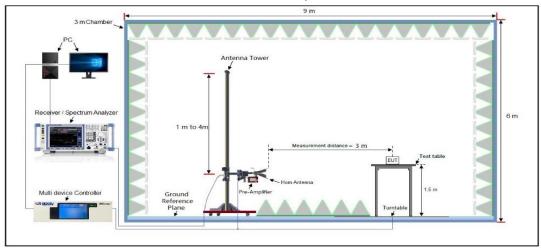




Radiated Emission Test Setup 30MHz-1000MHz



#### Radiated Emission Test Setup Above 1000MHz



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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agccert.com

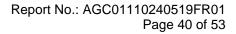


#### **11.4 Measurement Result**

### 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.

		Radiat	ted Emiss	ion Test R	esults at	30MHz-1	IGHz		
EUT Name	Wireles	ss Headphor	ne		Мо	del Nam	е	A387	ï6L
Temperature	<b>22.1</b> ℃				Rel	Relative Humidity 5			%
Pressure	960hP	960hPa			Tes	t Voltag	е	DC 3	.85V by battery
Test Mode	Mode 3	3			Ant	enna Po	olarity	Horiz	ontal
72.0	dBu¥/m								
								Limit: Margin:	
32	umannigan	~ndatularitan M		markyn strebeler	an ang ang ang ang ang ang ang ang ang a	and the second	<u></u>		
						300	400 500	600 700	
-8		50 60 70		۲۰۰۰ (MHz) Correct Factor	Measure- ment		400 500 Over	5 500 700	
-8	0 40	50 60 70 Mk. Freq. MHz	80 Reading	(MH2)	Measure-		Over	600 700 Detector	
-8	0 40	50 60 70 Mk. Freq.	80 Reading Level	(MHz) Correct Factor	Measure- ment	Limit	Over		
-8	0 <u>10</u> No. N	50 60 70 Mk. Freq. MHz 110.5687 383.9318	Reading Level dBuV 5.80 8.39	(MH2) Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB -21.39 -18.98	Detector	
-8	0 40 No. N	50 60 70 Mk. Freq. MHz 110.5687	Reading Level dBuV 5.80	(MHz) Correct Factor dB 16.31	Measure- ment dBuV/m 22.11	Limit dBuV/m 43.50	Over dB -21.39	Detector peak	
-8	0 40 No. N 1 2	50 60 70 Mk. Freq. MHz 110.5687 383.9318	Reading Level dBuV 5.80 8.39	(MHz) Correct Factor dB 16.31 18.63	Measure- ment dBuV/m 22.11 27.02	Limit dBuV/m 43.50 46.00	Over dB -21.39 -18.98	Detector peak peak	
-8	0 10 No. 1 1 2 3	50 60 70 Mk. Freq. MHz 110.5687 383.9318 440.1963	Reading Level dBuV 5.80 8.39 5.69	(MHz) Correct Factor dB 16.31 18.63 25.09	Measure- ment dBuV/m 22.11 27.02 30.78	Limit dBuV/m 43.50 46.00 46.00	Over dB -21.39 -18.98 -15.22	Detector peak peak peak	





			Rac	diate	ed Emissi	ion Test R	esults a	t 30MHz	-1GHz		
EUT Name	Wirel	Wireless Headphone						odel Nar	ne	A38	76L
Temperature	22.1°	<b>22.1</b> ℃					R	Relative Humidity 59.			3%
Pressure	960h	960hPa					Те	Test Voltage			DC 3.85V by battery
Test Mode	Mode	93					A	ntenna F	Polarity	Vert	ical
72.0	dBu¥∕m										
										Limit: Margin:	
											<b>_</b> _
											<b>F</b>
-										4 5	s X
32									3	anter philas	approximation and the
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-set-	NYAN WANNA	Withmore	- HAR WING BOUND	Imo	in much plant to the	2 ninininini Nationalista Nationalista	And Martin Part	Manageration			
- sector	n server and a server	Withmore	- Although and and	line	innere ang inditioned	en an Andrea an Angelana	ana ana ang ang ang ang ang ang ang ang	RAMP AND MARK			
-8	NY MARKA	W.Ware	- setter - far about	har	in the second second		an a	Advine and the second			
		уллан 50		/mm 70 8	0	(MHz)		300	400 500	600 700	1000.000
-8	0 40	50	60	70 8	Reading	[MH2] Correct	Measur	300 E-	400 500	600 700	) 1000.000
-8	0 40		د Fre	70 8 eq.	Reading	(MH2) Correct Factor	Measur	300 Pe- Limit	400 500		_
-8	0 40 No.	50 Mk.	б0 Fre MH	70 8 eq.	® Reading Level dBuV	(MH2) Correct Factor dB	Measur ment dBuV/m	300 Bullinit	400 500 Cover m dB	Detector	_
-8	0 40 No.	50 Mk.	60 Fre МН 69.35	70 8 eq. 12 68	Reading Level dBuV 12.43	(MHz) Correct Factor dB 17.01	Measur ment dBuV/m 29.44	300 300 e- Limit dBuV// 40.00	400 500 : Over m dB -10.56	Detector peak	_
-8	0 40 No.	50 Mk.	60 Fre MH 69.35 48.44	eq. z 68	Reading Level dBuV 12.43 6.63	(MH₂) Correct Factor dB 17.01 18.20	Measur ment dBuV/m 29.44 24.83	300 re- Limit dBuV/r 40.00 43.50	400 500 0 Ver m dB -10.56 -18.67	Detector peak peak	_
-8	0 40 No. 1 2 3	50 Mk. 1	б0 Fre МН 69.35/ 48.44 38.65	eq. 2 68 10 54	Reading Level dBuV 12.43 6.63 6.77	(MHz) Correct Factor dB 17.01 18.20 25.88	Measur ment dBuV/m 29.44 24.83 32.65	300 re- Limit dBuV// 40.00 43.50 46.00	400 500 COver m dB -10.56 -18.67 -13.35	Detector peak peak peak	_
-8	0 40 No. 1 2 3 4	50 Mk. 1 4 5	60 Fre MH 69.350 48.44 38.650 45.180	eq. iz 68 10 54 26	Reading Level dBuV 12.43 6.63 6.77 9.01	(MHz) Correct Factor dB 17.01 18.20 25.88 24.67	Measur ment dBuV/m 29.44 24.83 32.65 33.68	300 300 Te- Limit 40.00 43.50 46.00 46.00	400 500 0 Ver m dB -10.56 -18.67 -13.35 -12.32	Detector peak peak peak peak	_
-8	0 40 No. 1 2 3	50 Mk. 1 4 5 7	б0 Fre МН 69.35/ 48.44 38.65	ro 8 eq. iz 68 10 54 26 99	Reading Level dBuV 12.43 6.63 6.77	(MHz) Correct Factor dB 17.01 18.20 25.88	Measur ment dBuV/m 29.44 24.83 32.65	300 e- Limit dBuV/r 40.00 43.50 46.00 46.00	400 500 0 Ver m dB -10.56 -18.67 -13.35 -12.32 -9.87	Detector peak peak peak peak	_

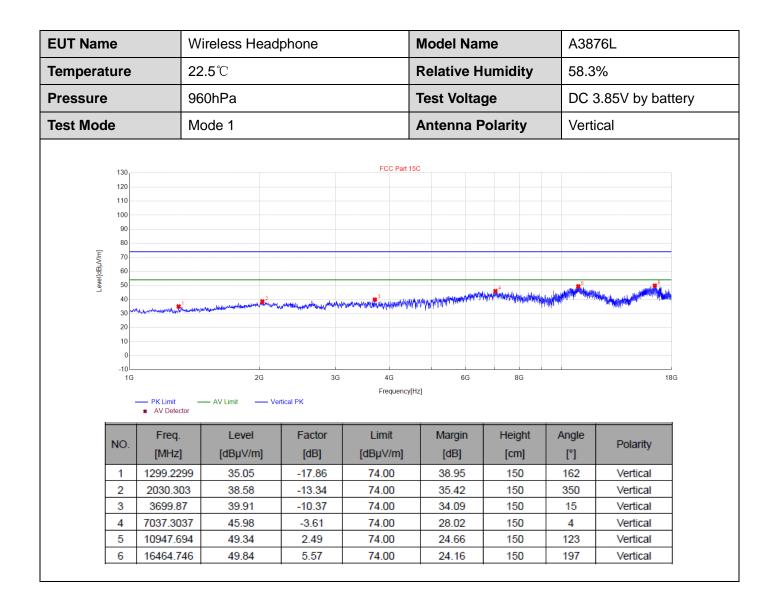
Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.



EUT Nan	ne	N	Vireless Head	lphone		Model Nar	ne	A38	76L		
Tempera	ture		<b>22.5℃</b>			Relative H	lumidity	58.3	58.3%		
Pressure	•	ę	960hPa			Test Volta	ge	DC :	DC 3.85V by battery		
Test Moc	le	1	Mode 1			Antenna F	Polarity	Hori	zontal		
	130 <sub>(*</sub>				FCC Part	15C					
	120										
	110										
	100 90										
	80										
Level[dBµV/m]	70										
vel[dE	60 50							5	<b>-6</b>		
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	30	Hammond	which have been a second and the second	and and an	4.3mm, 13. de Andre Mildan, de	an hhim.		l alt			
	20 10										
	0										
	-10 10		2G	3G	4G		8G				
					Frequency						
		PK Limit     AV Detector	— AV Limit — Ho	orizontal PK							
		Freq.	Level	Factor	Limit	Margin	Height	Angle	Data		
	NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	Polarity		
	1	1020.402	36.55	-18.31	74.00	37.45	150	90	Horizontal		
	2	2064.3064	39.33	-13.25	74.00	34.67	150	61	Horizontal		
	3	4454.7455	_	-8.07	74.00	33.10	150	90	Horizontal		
	4	6450.7451		-4.58	74.00	28.04	150	33	Horizontal		
	-		40 50	2.48	74.00	24.50	150	130	Horizontal		
	5	10945.994 16566.756		5.69	74.00	24.16	150	298	Horizontal		

## Radiated Emissions Test Results for Above 1GHz







EUT Nar	me		Wireless	Head	lphone		N	Nodel N	Varr	ne		A387	'6L	
Tempera	ature	Э	<b>22.5</b> ℃				F	Relative	e Hu	umidi	ty	58.39	58.3%	
Pressur	е		960hPa				٦	est Vo	Itag	je		DC 3.85V by battery		
Test Mo	de		Mode 2			ŀ	ntenn	a P	olarit	у	Horiz	contal		
Levei[dBJt//m]	130 120 110 100 90 80 70 60 50 40			2		FCC	Part 15C			//************/		5		
	30 20 10 0												P.	
	20 10	PK Limit     AV Detector	- AV Limit	2G — Hor	3G izontal PK	46	ency[Hz	6	GG	81			18	
ſ	20 10 -10 1G		AV Limit	— Hor	3G	46		6	G		G	Angle		
	20 10 0 -10	AV Detector		— Hor	izontal PK	4G Frequ	iency[Hz	6	G n	81	G G	Angle	Polarity	
	20 10 -10 1G	AV Detector     Freq.	Leve [dBµV/	— Hor I m]	3G izontal PK Factor	4G Frequ	iency[Hz	6 Margin	n	80 Heiç	G ght n]			
	20 10 -10 16 NO.	<ul> <li>AV Detector</li> <li>Freq.</li> <li>[MHz]</li> </ul>	Leve [dBμV/ 3 35.40	— Hor I m]	3G izontal PK Factor [dB]	4G Frequ Limit [dBµV/I	n]	6 Margin [dB]	n )	8ª Heių [cn	ght n] O	[°]	Polarity	
-	20 10 -10 1G NO.	* AV Detector Freq. [MHz] 1333.2333	Leve [dBμV/ 3 35.40 38.70	— Hor I m] )	3G izontal PK Factor [dB] -17.81	4G Frequ [dBµV/I 74.00	n]	6 Margin [dB] 38.60	n ) 1	8/ Heiç [cn 15	ght n] 0	[°] 208	Polarity Horizontal	
-	20	* AV Detector Freq. [MHz] 1333.2333 2089.809	Leve [dBµV/ 3 35.40 38.70 2 39.2	— Hor I m] ) 5	3G izontal PK Factor [dB] -17.81 -13.19	4G Frequ [dBµV/r 74.00 74.00	n]	6 Margin [dB] 38.60 35.24	n ) 1	84 Heių [cn 15 15	ght n] 0 0 0	[°] 208 354	Polarity Horizontal Horizontal	
	20 10 -10 1G NO. 1 2 3	<ul> <li>AV Detector</li> <li>Freq.</li> <li>[MHz]</li> <li>1333.2333</li> <li>2089.809</li> <li>3451.6452</li> </ul>	Leve [dBµV/ 3 35.4( 38.7( 2 39.2) 2 46.5	— Hor m] D 5 1	36 izontal PK Factor [dB] -17.81 -13.19 -10.77	4G Frequ [dBµV/I 74.00 74.00 74.00	n]	6 Margin [dB] 38.60 35.24 34.79	n )) 14 ))	8/ Heių [cn 15 15 15	ght n] 0 0 0 0	[°] 208 354 128	Polarity Horizontal Horizontal Horizontal	

### **Radiated Emissions Test Results for Above 1GHz**



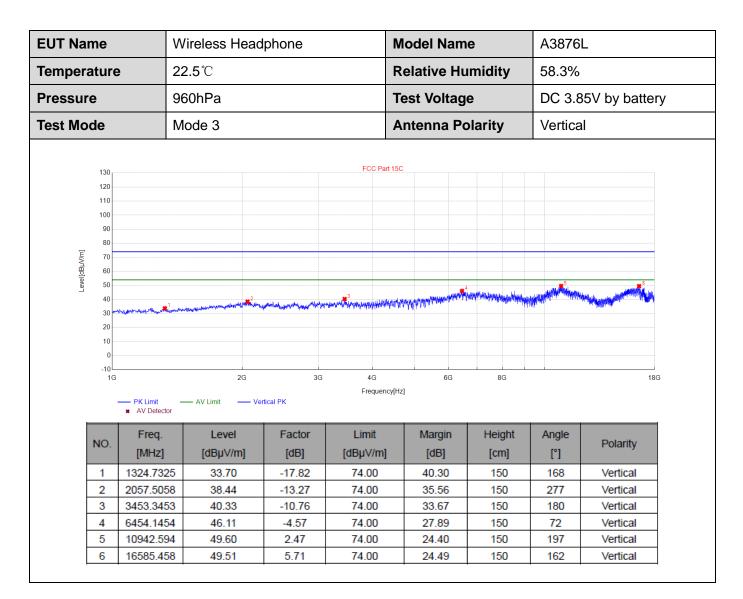
	T Name Wireless Headphone					Model Na	me	A387	A3876L		
emp	eratur	e	<b>22.5℃</b>	Relative H	lumidity	58.3%	58.3%				
ress	ure		960hPa			Test Volta	ge	DC 3	DC 3.85V by battery		
est N	lode		Mode 2			Antenna F	Polarity	Vertical			
					500 B-4450						
	130				FCC Part 15C						
	120										
	100										
	90										
F	80										
BµV/n	70 60										
Level[dBµV/m]	50							<b>*</b> <sup>5</sup>	<u>6</u>		
_	40	<b>"</b> 1		مالى المراجعة المعادية والمحاصين المحاصين المحاصين المحاصين المحاصين المحاصين المحاصين المحاصين المحاصين المحاص	ANT AND	-	Weiner with the property print of the second s	A CONTRACTOR OF	and the state of the		
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	30		and an and the second	an a	*** <sup>**</sup> *******************************	an la faith ann an tha ann an tha faith ann an tha ann a	salaran in Laboritza (Applica)				
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Γ	30	**************************************	2G	3G	4G	6G	8G		186		
٢	30 20 10 0 -10 1G		2G AV Limit — Vertical F	3G					18G		
Γ	30 20 10 0 -10 1G	PK Limit /	AV Limit — Vertical F	3G XK	4G Frequency[Hz]	663	8G		18G		
Γ	30			3G	4G			Angle			
Γ	30 20 10 0 -10 1G	AV Detector	AV Limit — Vertical F	3G XK	4G Frequency[Hz]	663	8G	Angle [°]	18G Polarity		
ſ	30	AV Detector	AV Limit — Vertical F	3G YK Factor	4G Frequency[Hz] Limit	6G Margin	8G Height				
1	30	AV Detector Freq. [MHz]	V Limit	3G Factor [dB]	4G Frequency[Hz] Limit [dBµ√/m]	6G Margin [dB]	8G Height [cm]	[°]	Polarity		
	30	AV Detector Freq. [MHz] 1346.8347	4V Limit − Vertical F Level [dBμV/m] 34.50	3G Factor [dB] -17.79	4G Frequency[Hz] Limit [dBµ∨/m] 74.00	6G Margin [dB] 39.50	8G Height [cm] 150	[°] 275	Polarity Vertical		
1	30	AV Detector Freq. [MHz] 1346.8347 2161.2161	V Limit	3G Factor [dB] -17.79 -13.02	4G Frequency[Hz] Limit [dBµV/m] 74.00 74.00	6G Margin [dB] 39.50 35.08	8G Height [cm] 150 150	[°] 275 358	Polarity Vertical Vertical		
1	30	AV Detector Freq. [MHz] 1346.8347 2161.2161 3574.0574	AV Limit         ── Vertical F           Level         [dBµV/m]           34.50         38.92           39.18	36 Factor [dB] -17.79 -13.02 -10.54	4G Frequency[Hz] Limit [dBµV/m] 74.00 74.00 74.00	6G Margin [dB] 39.50 35.08 34.82	8G Height [cm] 150 150 150	[°] 275 358 348	Polarity Vertical Vertical Vertical		



EUT Nan	ne		Wireless He	eadphone		Model Nam	ne	A3876	5L	
empera	ature	•	<b>22.5</b> ℃			Relative Hu	umidity	58.3%	58.3%	
Pressure	e	960hPa <b>Test Voltage</b> DC 3.85V b			35V by batter					
est Mod	de		Mode 3			Antenna Po	olarity	Horizo	ontal	
[m]/h]	130 120 110 100 90 80 70 60				FCC Part					
Leve	50 40 30 20 10 0	Jely Jelmonie manufanting and an and a start and a	an a	2 	alun Manga pagan pagan baharak	nyn an yn	Y i i marini i mana kang kang kang kang kang kang kang k			
Leve	40 30 20 10	he server and the	20		4G	6G	8G		180	
Leve	40 30 20 10 - -10	- PK Limit	20			6G			180	
	40 30 20 10 - -10		20	3 3G Horizontal PK Factor	4G	6G		Angle	Polarity	
	40 30 20 -10 -10 1G	PK Limit     AV Detector     Freq.	AV Limit – Level [dBµV/m]	3 3G Horizontal PK Factor	4G Frequenc Limit	6G sy(Hz) Margin	8G Height	Angle		
	40 30 20 -10 -10 1G	PK Limit * AV Detector Freq. [MHz]	20 	B 3G - Horizontal PK Factor [dB]	4G Frequenc Limit [dBµV/m]	6G cy(Hz) Margin [dB]	8G Height [cm]	Angle [°]	Polarity	
	40 30 20 10 -10 16 NO.	PK Limit * AV Detector Freq. [MHZ] 1331.5332	20 	3 36 Horizontal PK   [dB]   -17.81	4G Frequenc Limit [dBµV/m] 74.00	6G (y[Hz] Margin [dB] 37.37	8G Height [cm] 150	Angle [°] 217	Polarity Horizontal	
	40 30 20 -10 -10 10 10 10 10 10 10 10 10 10 10 10 10 1	<ul> <li>PK Limit</li> <li>AV Detector</li> <li>Freq.</li> <li>[MHz]</li> <li>1331.5332</li> <li>2064.3064</li> </ul>	20 AV Limit Level [dBµV/m] 2 36.63 4 38.68 5 39.23	- Horizontal PK Factor [ [dB] -17.81 -13.25	4G Frequenc [dBμV/m] 74.00 74.00	6G (Hz) Margin [dB] 37.37 35.32	8G Height [cm] 150 150	Angle [°] 217 286	Polarity Horizontal Horizontal	
	40 30 20 10 0 -10 1G NO. 1 2 3	<ul> <li>PK Limit</li> <li>AV Detector</li> <li>Freq.</li> <li>[MHZ]</li> <li>1331.5332</li> <li>2064.3064</li> <li>3364.9365</li> </ul>	20 AV Limit [dBµV/m] 2 36.63 38.68 39.23 7 46.12	3 3G - Horizontal PK Factor [dB] -17.81 -13.25 -11.00	4G Frequence [dBμV/m] 74.00 74.00 74.00	eg(Hz) Margin [dB] 37.37 35.32 34.77	8G Height [cm] 150 150 150	Angle [°] 217 286 212	Polarity Horizontal Horizontal Horizontal	

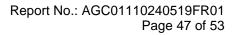
## **Radiated Emissions Test Results for Above 1GHz**





#### Note:

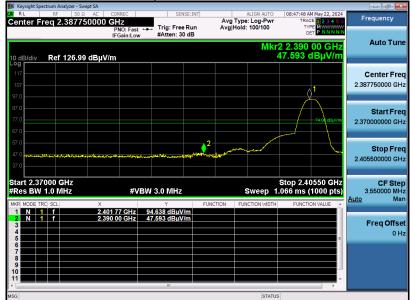
- 1. The amplitude of other spurious emissions from 18G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.
- 2. Factor = Antenna Factor + Cable loss Pre-amplifier gain, Margin = Emission Level-Limit.
- 3. The "Factor" value can be calculated automatically by software of measurement system.





EUT Name	Wireless Headphone	Model Name	A3876L
Temperature	<b>25.9</b> ℃	Relative Humidity	53%
Pressure	960hPa	Test Voltage	DC 3.85V by battery
Test Mode	Mode 1	Antenna Polarity	Horizontal

#### Test Graph for Peak Measurement



Test Graph for Average Measurement



## **RESULT: Pass**



EUT Name	Wireless Headphone	Model Name	A3876L
Temperature	<b>25.9</b> ℃	Relative Humidity	53%
Pressure	960hPa	Test Voltage	DC 3.85V by battery
Test Mode	Mode 1	Antenna Polarity	Vertical



#### Test Graph for Peak Measurement

Test Graph for Average Measurement



## **RESULT: Pass**



EUT Name	Wireless Headphone	Model Name	A3876L
Temperature	<b>25.9℃</b>	Relative Humidity	53%
Pressure	960hPa	Test Voltage	DC 3.85V by battery
Test Mode	Mode 3	Antenna Polarity	Horizontal

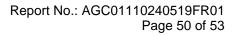


## Test Graph for Peak Measurement

Test Graph for Average Measurement



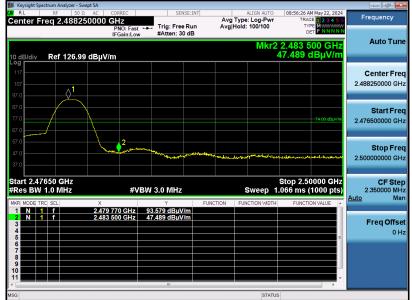
## **RESULT: Pass**



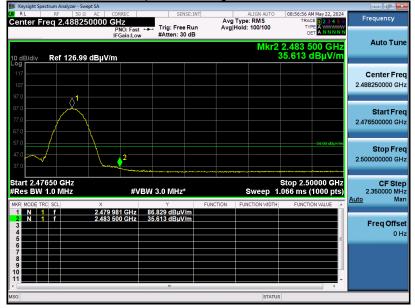


EUT Name	Wireless Headphone	Model Name	A3876L
Temperature	<b>25.9</b> ℃	Relative Humidity	53%
Pressure	960hPa	Test Voltage	DC 3.85V by battery
Test Mode	Mode 3	Antenna Polarity	Vertical

#### 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.



## 12. AC Power Line Conducted Emission Test

## 12.1 Measurement Limit

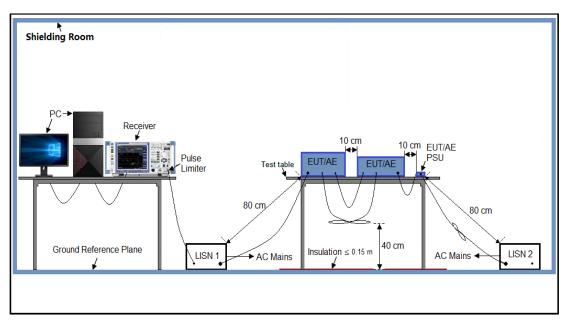
<b>Framman</b>	Maximum RF Line Voltage				
Frequency	Q.P. (dBµV)	Average (dBµV)			
150kHz~500kHz	66-56	56-46			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

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

## 12.2 Measurement Setup (Block Diagram of Configuration)





## 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 Measurement Results**

N/A

Note: The BT function cannot transmit when charging



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# Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC01110240519AP01

# Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC01110240519AP02

-----End of Report-----



## Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

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.

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.