Prüfbericht-Nr.: *Test report no.*:	**CN241N7B 004**	**Auftrags-Nr.:** *Order no.*:	**168460654**	**Seite 1 von 18** *Page 1 of 18*
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatum:** *Order date:*	2024-01-02	
Auftraggeber: *Client*:	**ARKON ELECTRONICS (HUIZHOU) CO., LIMITED** NO.4 Taihao Road, High-tech Industrial Park,Sandong Town, Huicheng District, Huizhou, Guangdong, China			
Prüfgegenstand: *Test item*:	2.4GHz Digital Wireless Headphone			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	BH1080J、BH1080、DB100 (Trademark: ARKON; ARTISTE;DAYSNEW)			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	FCC CFR Title 47, Part 15, Subpart C, Section 15.249 ANSI C63.10: 2013			

Wareneingangsdatum: *Date of sample receipt*:	2024-01-04	Please refer to Photo Document
Prüfmuster-Nr.: *Test sample no:*	HS2401040003 HS2401040004	
Prüfzeitraum: *Testing period*:	2024-01-04 - 2024-01-13	
Ort der Prüfung: *Place of testing*:	Hwa-Hsing (Dongguan) Testing Co., Ltd.	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result**:	Pass	

geprüft von: tested by:	x Breeze Jiang	**genehmigt von:** *authorized by*:	x Bell Hu
Datum: *Date:* 2024-03-14	Signed by: Breeze Jiang	**Ausstellungsdatum:** *Issue date:* 2024-03-14	Signed by: Bell Hu
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*: FCC ID: 2APBSBH1081J-001T

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*: Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TUV Rheinland (Shenzhen) Co., Ltd., 1601-1604, 17-18F, Tower A Building 2, Shenzhen International Innovation Valley, Dashi 1st Road, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P. R. China
Mail: service-gc@tuv.com · Web: www.tuv.com

Anmerkungen
Remarks

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4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 FIELD STRENGTH OF FUNDAMENTAL AND HARMONICS
RESULT: Pass

5.1.3 20DB AND 99% BANDWIDTH
RESULT: Pass

5.1.4 BAND EDGE
RESULT: Pass

5.1.5 CONDUCTED EMISSION ON AC MAINS
RESULT: Pass

Table of Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results

Appendix B: Photographs of the Test Set-up

2 Test Sites

2.1 Test Facilities

Hwa-Hsing (Dongguan) Testing Co., Ltd.
No.101, Building N1, Yuyuan 2 Road, Yuyuan Industrial Park, HuangJiang Town, Dongguan City, People's Republic of China

FCC Registration No.: 915896

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
Spectrum	Keysight	N9020A	MY51240612	2024-08-06
Power Meter 10Hz~18GHz	Tonscend	JS0806-2	188060126	2024-08-06
Spectrum Analyzer	Rohde&Schwarz	FSV-40N	101783	2024-12-17
Signal generator	Keysight	E4421	GB40051020	2024-03-15
Universal Switch Control Unit	Rohde&Schwarz	CMW500	12010002k50	2024-12-17
Humidity tester	Jingchuang	GSP-8A	CMA22B000592	2024-12-17
Test Software	Tonscend	JS0806-2	NA	NA
Unwanted Emission Testing				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	Rohde&Schwarz	ESPI 7	101978	2024-12-17
Broadband antenna	Schwarzbeck	VULB 9168	00937	2024-08-18
Signal Amplifier	Com-power	PAM-103	18020051	2024-08-06
Attenuator	Rohde&Schwarz	TS2GA-6dB	18101101	N/A
Test software	FARAD	FARAD	EZ_EMCV1.1.4.2	N/A
Horn Antenna	Schwarzbeck	BBHA 9170	979	2024-05-03*
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	25	2024-08-06
Spectrum	Rohde&Schwarz	FSV40-N	101783	2024-12-17
Conducted Emission				
Equip.	**Description**	**Model**	**Manufacturer**	**Due Date**
EMI Test Receiver(10kHz~7GHz)	R&S	ESR 7	101961	2024-12-17
2 Line V-Network LISN	R&S	ENV216	3560.6550.15	2024-12-17
Test software	FARAD	EZ_EMC V1.1.4.2	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	±1.06 x 10-8
RF Power (conducted)	±1.371 dB
Radiated Emission of Transmitter, valid up to 26.5 GHz	±3.294 dB
Radiated Emission of Receiver, valid up to 26.5 GHz	±3.294 dB
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	±2.66 dB
Temperature	±1 °C
Humidity	±5 %
Voltage (DC)	±1 %
Voltage (AC, <10kHz)	±2 %

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) Co., Ltd. file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The **Hwa-Hsing (Dongguan) Testing Co., Ltd.** Test facility located at No.101, Building N1, Yuyuan 2 Road, Yuyuan Industrial Park, HuangJiang Town, Dongguan City, People's Republic of China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a 2.4GHz Digital Wireless Headphone which supports SRD wireless 2.4G.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	**Value**
Kind of Equipment:	2.4GHz Digital Wireless Headphone
Type Designation:	BH1080J、BH1080、DB100
Deviation of models:	Except for the different colors of trademark and model screen printing, its function and PCB are the same
Trademark:	ARKON、ARTISTE、DAYSNEW
FCC ID:	2APBSBH1081J-001T
Testing Voltage:	DC 5V from adapter
Antenna Type:	PCB Layout Antenna
Antenna Gain:	0 dBi
Technical Specification	
Frequency Range:	2402 MHz to 2480 MHz
Type of Modulation:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	0 dBi (Provided by the Client)

40 channels are provided to this EUT:

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

3.3 Independent Operation Modes

The basic operation modes are:

A. On, SRD2.4G transmitting mode (1Mbps & 2Mbps mode)
    1) Low Channel
    2) Middle Channel
    3) High Channel
B. On, Normal Operation (SRD Link)
C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Bill of Material
- Circuit Diagram
- PCB Layout
- Instruction Manual
- Photo Document
- Rating Label

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model BH1080J in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 4: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N
Laptop	Lenovo	ThinkPad X280	SL10P97665
Laptop	HUAWEI	NbD-WFH9	EUEPM21725002655

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

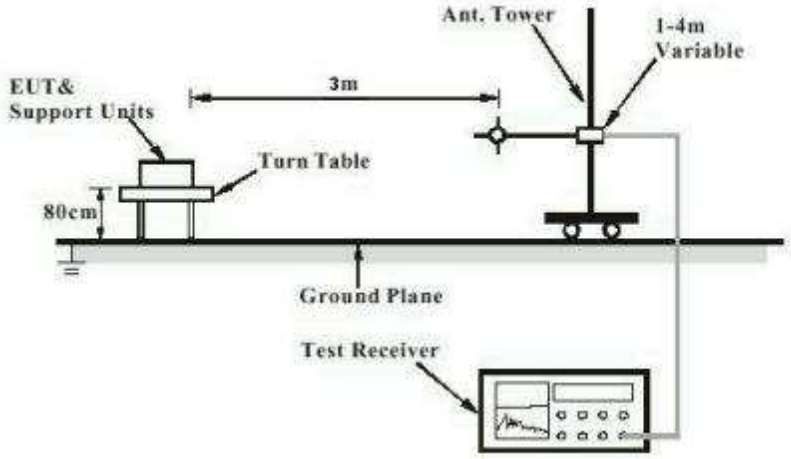


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

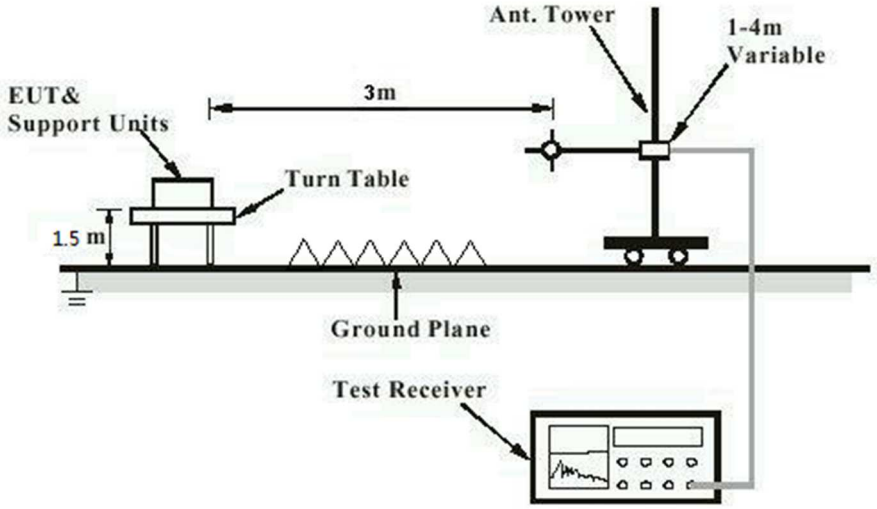


Diagram of Measurement Configuration for Conducted Transmitter Measurement

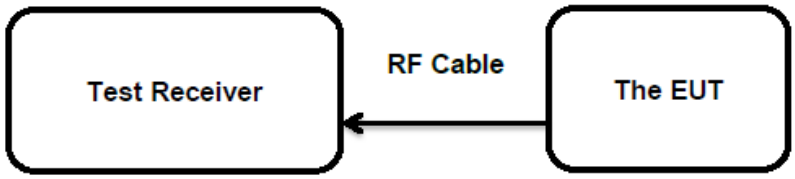
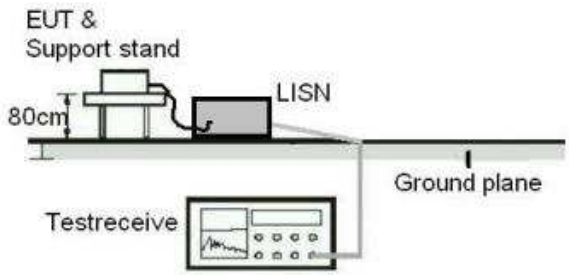


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard : FCC Part 15.203
RSS-Gen Section 6.8

According to the manufacturer declared, the EUT has a PCB antenna, the gain of antenna is 0 dBi, which that permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Field Strength of Fundamental and Harmonics

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.249(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	FCC Part 15.249(a) (d) (e) & 15.209(a)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2024-01-11
Input voltage	:	DC 5V from adapter
Operation mode	:	A
Test channel	:	2402/2440/2480 MHz
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Note: Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A.

5.1.3 20dB and 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.249 RSS-Gen Section 6.7
Basic standard	:	ANSI C63.10: 2013
Limits	:	Within assigned band
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-11
Input voltage	:	DC 5V from adapter
Operation mode	:	A
Test channel	:	2402/2440/2480 MHz
Ambient temperature	:	25.8 ℃
Relative humidity	:	35 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.4 Band Edge

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.249(d) & 15.209(a) & 15.205(a)
Basic standard	:	ANSI C63.10: 2013
Limits	:	FCC Part 15.249(d) & 15.209(a) & 15.205(a)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2024-01-11
Input voltage	:	DC 5V from adapter
Operation mode	:	A
Test channel	:	2402/2440/2480 MHz
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

5.1.5 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.207(a)
Basic standard	:	ANSI C63.10: 2013
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.207(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-01-11
Input voltage	:	DC 5V from adapter
Operation mode	:	B
Ambient temperature	:	22.5 ℃
Relative humidity	:	50.8 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix B.

7 List of Tables