

# Radio Test Report

## FCC ID:2A4MJ-JX-80

### Original Grant

**Report No.** : TBR-C-202304-0072-3  
**Applicant** : Jiaxing Yuejia Trading Co., Ltd  
**Equipment Under Test (EUT)**  
**EUT Name** : True wireless stereo Earphone  
**Model No.** : JX-80  
**Series Model No.** : S19, S03, TWST20, MY14, Q80, C19, S518, S29, X20, G700, S99, M30, T25  
**Brand Name** : ----  
**Sample ID** : 202304-0072-1-1# & 202304-0072-1-2#  
**Receipt Date** : 2023-04-27  
**Test Date** : 2023-04-27 to 2023-05-11  
**Issue Date** : 2023-05-11  
**Standards** : FCC Part 15 Subpart C 15.247  
**Test Method** : ANSI C63.10: 2013  
KDB 558074 D01 15.247 Meas Guidance v05r02  
**Conclusions** : **PASS**

In the configuration tested, the EUT complied with the standards specified above.

**Witness Engineer** : *Camille Li*

**Engineer Supervisor** : *Ivan Su*

**Engineer Manager** : *Ray Lai*



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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## Revision History

Report No.	Version	Description	Issued Date
TBR-C-202304-0072-3	Rev.01	Initial issue of report	2023-05-11

# 1. General Information about EUT

## 1.1 Client Information

<b>Applicant</b>	:	Jiaxing Yuejia Trading Co., Ltd
<b>Address</b>	:	Room 1201-A3, Suyin Building, No. 999, Hongxing Road Jiaxing City Economic-Technological Development Area Zhejiang Province 314000 CN
<b>Manufacturer</b>	:	Jiaxing Yuejia Trading Co., Ltd
<b>Address</b>	:	Room 1201-A3, Suyin Building, No. 999, Hongxing Road Jiaxing City Economic-Technological Development Area Zhejiang Province 314000 CN

## 1.2 General Description of EUT (Equipment Under Test)

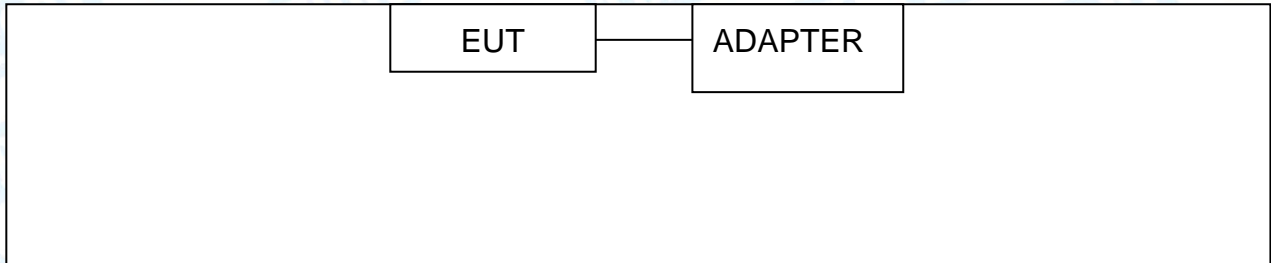
<b>EUT Name</b>	:	True wireless stereo Earphone	
<b>Model(s) No.</b>	:	JX-80, S19, S03, TWST20, MY14, Q80, C19, S518, S29, X20, G700, S99, M30, T25	
<b>Model Difference</b>	:	All PCB boards and circuit diagrams are the same, the only difference is that appearance.	
<b>Product Description</b>	:	Operation Frequency:	Bluetooth V5.3: 2402MHz~2480MHz
		Number of Channel:	79 channels
		Antenna Gain:	2.7dBi Ceramic Antenna
		Modulation Type:	GFSK $\pi$ /4-DQPSK
<b>Power Supply (Earphone)</b>	:	DC 3.7V by 25mAh Rechargeable Li-ion battery	
<b>Power Supply (Charge box)</b>	:	Input: DC 5V DC 3.7V by 400mAh Rechargeable Li-ion battery	
<b>Software Version</b>	:	V1.0	
<b>Hardware Version</b>	:	V5.0	
<b>Remark:</b>			
(1) The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.			
(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.			
(3) Antenna information provided by the applicant.			

(4) Channel List:

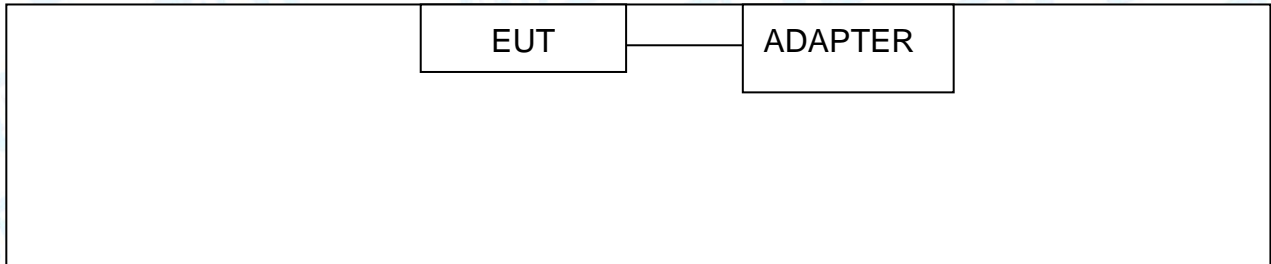
Bluetooth Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

### 1.3 Block Diagram Showing the Configuration of System Tested

#### Conducted Test



#### Radiated Test



### 1.4 Description of Support Units

Equipment Information				
Name	Model	FCC ID/VOC	Manufacturer	Used “√”
Adapter	----	----	HUAWEI	√
Cable Information				
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	----	----	0.2M	Accessory
<b>Remark:</b> The USB Cable provided by the Applicant, the adapter provided by TOBY test lab.				



## 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging + TX GFSK Mode Channel 00
For Radiated Test	
Final Test Mode	Description
Mode 1	TX GFSK Mode Channel 00
Mode 2	TX Mode (GFSK) Channel 00/39/78
Mode 3	TX Mode ( $\pi/4$ -DQPSK) Channel 00/39/78
Mode 4	Hopping Mode (GFSK)
Mode 5	Hopping Mode ( $\pi/4$ -DQPSK)

**Note:**

- (1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: GFSK (1 Mbps)

TX Mode:  $\pi/4$ -DQPSK (2 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

## 1.6 Description of Test Software Setting

During testing channel & Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

Test Software Version	FCC_-tool-assist		
	Frequency	2402 MHz	2441MHz
GFSK	DEF	DEF	DEF
$\pi/4$ -DQPSK	DEF	DEF	DEF

## 1.7 Measurement Uncertainty

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

Test Item	Parameters	Expanded Uncertainty ( $U_{Lab}$ )
Conducted Emission	Level Accuracy: 9kHz~150kHz	$\pm 3.50$ dB
	150kHz to 30MHz	$\pm 3.10$ dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	$\pm 4.60$ dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	$\pm 4.50$ dB
Radiated Emission	Level Accuracy: Above 1000MHz	$\pm 4.20$ dB

## 1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1/F., Building 6, Rundongsheng Industrial Zone, Longzhu, Xixiang, Bao'an District, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

### **A2LA Certificate No.: 4750.01**

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.FCC Accredited Test Site Number: 854351. Designation Number: CN1223.

### **IC Registration No.: (11950A)**

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A. CAB identifier: CN0056.

## 2. Test Summary

Standard Section	Test Item	Test Sample(s)	Judgment	Remark
FCC				
FCC 15.207(a)	Conducted Emission	202304-0072-1-1#	PASS	N/A
FCC 15.209 & 15.247(d)	Radiated Unwanted Emissions	202304-0072-1-1#	PASS	N/A
FCC 15.203	Antenna Requirement	202304-0072-1-2#	PASS	N/A
FCC 15.247(a)	99% Occupied Bandwidth & 20dB Bandwidth	202304-0072-1-2#	PASS	N/A
FCC 15.247(b)(1)	Peak Output Power	202304-0072-1-2#	PASS	N/A
FCC 15.247(a)(1)	Carrier frequency separation	202304-0072-1-2#	PASS	N/A
FCC 15.247(a)(1)	Time of occupancy	202304-0072-1-2#	PASS	N/A
FCC 15.247(a)(1)	Number of Hopping Frequency	202304-0072-1-2#	PASS	N/A
FCC 15.247(d)	Band Edge	202304-0072-1-2#	PASS	N/A
FCC 15.207(a)	Conducted Unwanted Emissions	202304-0072-1-2#	PASS	N/A
FCC 15.205	Emissions in Restricted Bands	202304-0072-1-2#	PASS	N/A
/	On Time and Duty Cycle	202304-0072-1-2#	/	N/A

**Note:** N/A is an abbreviation for Not Applicable.

## 3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFTest	V2.0.0.0
RF Test System	JS1120	Tonscend	V2.6.88.0336

## 4. Test Equipment

Conducted Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jun. 23, 2022	Jun. 22, 2023
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jun. 23, 2022	Jun. 22, 2023
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jun. 22, 2022	Jun. 21, 2023
LISN	Rohde & Schwarz	ENV216	101131	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM 8131	8131-193	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT3 8158	cat3 5158-0094	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	NTFM5158	NTFM5158 0145	Jun. 22, 2022	Jun. 21, 2023
ISN	SCHWARZBECK	CAT 8158	cat5 8158-179	Jun. 22, 2022	Jun. 21, 2023
Radiation Emission Test (B Site)					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep.01.2022	Aug. 31, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
EMI Test Receiver	Rohde & Schwarz	ESU-8	100472/008	Feb. 23, 2023	Feb.22, 2024
Bilog Antenna	SCHWARZBECK	VULB 9168	1225	Dec. 05, 2021	Dec. 04, 2023
Horn Antenna	SCHWARZBECK	BBHA 9120 D	2463	Feb. 26, 2022	Feb.25, 2024
Horn Antenna	SCHWARZBECK	BBHA 9170	1118	Jun. 26, 2022	Jun.25, 2024
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jun. 26, 2022	Jun.25, 2024
HF Amplifier	Tonscend	TAP9E6343	AP21C806117	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP051845	AP21C806141	Sep.01.2022	Aug. 31, 2023
HF Amplifier	Tonscend	TAP0184050	AP21C806129	Sep.01.2022	Aug. 31, 2023
Antenna Conducted Emission					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jun. 23, 2022	Jun. 22, 2023
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jun. 23, 2022	Jun. 22, 2023
MXA Signal Analyzer	KEYSIGHT	N9020B	MY60110172	Sep.01.2022	Aug. 31, 2023
MXA Signal Analyzer	Agilent	N9020A	MY47380425	Sep.01.2022	Aug. 31, 2023
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep.01.2022	Aug. 31, 2023
Analog Signal Generator	Agilent	N5181A	MY48180463	Sep.01.2022	Aug. 31, 2023