TEST REPORT

Report No. :	NTEK-2015NT0602047S
Product :	EARPHONE
Model No. :	E260, Spiro
Applicant :	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address :	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Issued by :	Shenzhen NTEK Testing Technology Co., Ltd.
Lab Location :	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China
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TEST REPORT

EN 50332-2: 2013

Sound system equipment – Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Matching of sets with headphones if either or both are offered separately

Report reference No. ..... :	NTEK-2015NT0602047S
Tested by (printed name and signature) ..... :	Sam Zhu
Verified by (printed name and signature) ..... :	Coco Li
Date of issue ..... :	June 17, 2015
Testing laboratory ..... :	Shenzhen NTEK Testing Technology Co., Ltd.
Address ..... :	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen P.R. China
Testing location & address ..... :	As above
Applicant's Name ..... :	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Address ..... :	Fenda Hi-Tech Park, Zhoushi Road, Shiyan Town, Baoan District, Shenzhen City, Guangdong, China
Test specification	
Standard ..... :	EN 50332-2: 2013
Test procedure ..... :	Type Approval
Non-standard test method ..... :	N.A.
Test item description ..... :	EARPHONE
Trademark ..... :	F&D
Manufacturer ..... :	SHENZHEN FENDA TECHNOLOGY CO., LTD.
Model/type reference ..... :	E260, Spiro
Model Difference ..... :	only appearance colour is different
Serial number ..... :	Test sample without serial numbers
Rating(s) ..... :	N/A

Summary of testing .....:	The sample(s) tested complies with the requirements of EN 50332-2: 2013.

Test items particulars	
Player:	
Input signal ..... :	A programmed simulation noise, as defined in IEC 60268-1.
Power supply voltage tolerance (± 3%)..... :	1.5%
Operating conditions ..... :	Controls setting: - noise reduction system: OFF; - volume control: Maximum; - tone control: adjust in order to maximise the sound pressure level. The EUT output port is loaded with a resistive load of 32Ω.
Headphone/earphone:	
Input signal ..... :	A programmed simulation noise, as defined in IEC 60268-1.
Source impedance ..... :	The output impedance of the test signal source shall be≤2Ω
HATS used ..... :	YES
Headphone/earphones fit..... :	YES
Measurement and evaluation ..... :	See EN50332-1:2000,subclause 6.4
Test case verdicts	
Test case does not apply to the test object :	N(/A)
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement .. :	F(ail)
Testing	
Date of receipt of test item ..... :	June 02, 2015
Date(s) of performance of test ..... :	June 15, 2015 to June 17, 2015
General remarks This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. ”(see attachment #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	
General product information: 1. The EUT is a earphones for MID or similar device.	

EN 50332-2: 2013			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
4	**Basic conditions for specifications and measurements**		P
	For basic conditions on measurements of the maximum sound pressure level, reference is made to EN 50332-1.		P
5	**Player characteristics and methods of measurement**		N
5.1	Maximum output voltage V_m		N
	The maximum output voltage of the player is a wide band value measured at the headphone output under the conditions given in 5.2.		N
5.2	Method of measurement and conditions		N
5.2.1	Input signal		N
	The player input signal shall be as specified in Part 1, Clause 5 recorded on the relevant medium with the specified level.		N
5.2.2	Operating conditions		N
	Devices under test shall be powered by a stabilised power supply, at their nominal supply voltage with a tolerance of ± 3 %.		N
	When testing, all controls shall be adjusted to the maximum sound pressure level. For example: - noise reduction system : OFF; - volume control : maximum; - tone control : adjusted in order to maximise the sound pressure level. Player output shall be loaded with a resistive load of 32 Ω.		N
5.2.3	Method of measurement		N
	The measuring instruments shall conform to EN 60804, class 1. The maximum output voltage V_m shall be defined as unweighted true r.m.s. voltage at the load, using an averaging time of 30 s or more.		N
6	**Headphone/Earphone characteristics and methods of measurement**		P
6.1	Wide band characteristic voltage (WBCV)		P
	This characteristic is defined in 3.3. NOTE The limit value of WBCV corresponds with the SPL limit LA_{eqmax} and the maximum output voltage V_{max} by the equation: $V_{WBCV} = V_{max} / [10 \exp ((L_{Aeqmax} - 94)/20)]$.		P
6.2	Method of measurement arrangement and conditions		P

EN 50332-2: 2013			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
6.2.1	Input signal		P
	The test signals shall be program simulation noise as defined in IEC 60268-1. Further details are given in EN 50332-1:2000, subclause 5.1.		P
6.2.2	Source impedance		P
	The output impedance of the test signal source shall be ≤ 2 Ω.		P
6.2.3	Head and Torso Simulator (HATS)		P
	The acoustical measurements are preferably done by using a suitable HATS (see also EN 50332-1:2000, subclause 6.1). For reasons to change to other devices see Clause 4.		P
6.2.4	Headphones/earphones fit		P
	Headphones/earphones shall be positioned on the HATS correctly, so that the measured sound pressure level is maximised. The manufacturer.s instructions for correct use have to be taken into account.		P
6.2.5	Measurement and evaluation		P
	See EN 50332-1:2000, subclause 6.4. The characteristic voltage WBCV is the input signal voltage when sound pressure level reaches 94 dB SPL. Within guaranteed linear operation of the headphone the value can be calculated from results with other SPL output.		P
7	**Limits**		P
	The values given in Table 1 are as well given for defined operation of headphones at battery operated sources as for a limitation of the maximum sound pressure level at the ear.		P
	Player: Maximum output voltage: ≤ 150 mV		N
	Headphone Wide band characteristic voltage: ≥ 75 mV		P
8	**Classification of the characteristics to be specified**		P
	Data which shall be labelled on the product or in the accompanying manualare given in Table 2.		P
	Subclause 5.1 Players: Maximum output voltage		N
	Subclause 6.1 Headphones: Wide band characteristic voltage		P

Test equipment:

Instrument	Model	Manufacturer	Cal. Last Date	Cal. Due Date
Head and Torso Simulator	TYPE-4128-C-002	Br el & Kjaer	2014-07-24	2015-07-23
Power Amplifier	2176C	Br el & Kjaer	2014-07-24	2015-07-23
4ch Input 2ch Output Generator Module 50Hz	3160-A-042	Br el & Kjaer	2014-07-24	2015-07-23

Measuring result:

5.1	Measuring result (Wide band characteristics voltage)	P
Model No.: E260		
No. of Measurement	Left Channel	Right Channel
1	80.9	83.0
2	81.4	83.3
3	81.3	82.6
4	81.2	82.2
5	81.1	82.4
Maximum value	81.2	82.7
Note: The Wide band characteristics voltage ≥75Mv, Complied with the standard EN 50332-2.		

Product Photos

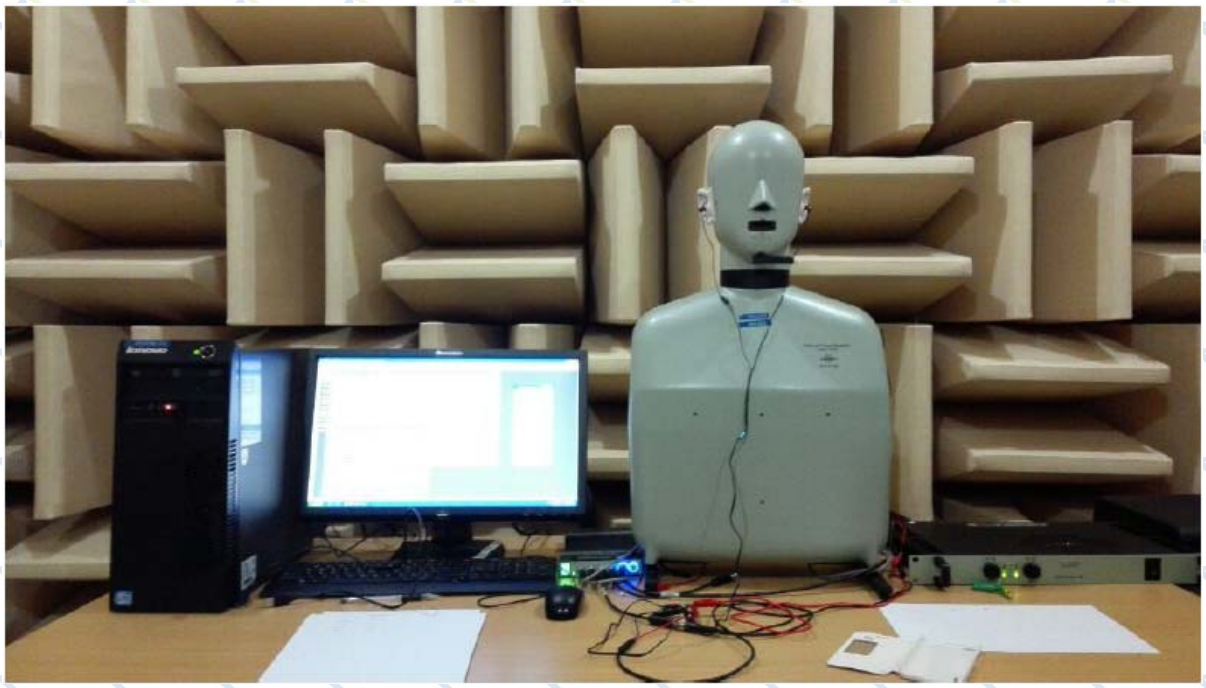

FIG.1

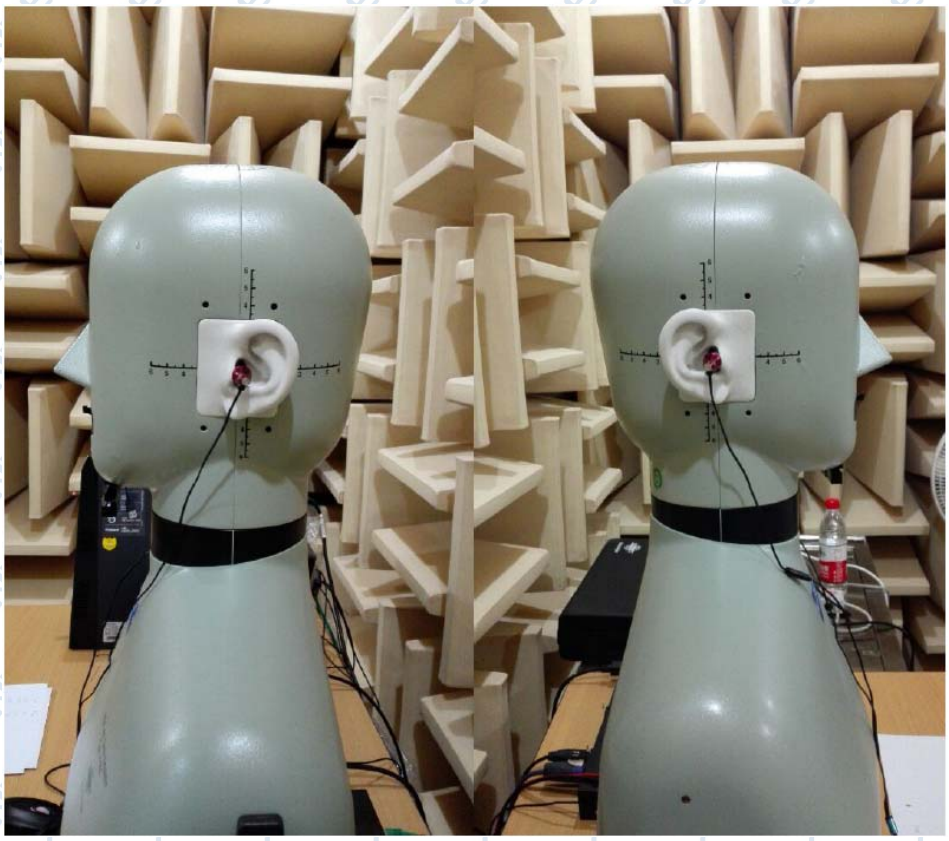

FIG.2

*****END OF TEST REPORT*****