中国赛宝实验室计量检测中心
(工业和信息化部电子第五研究所计量检测中心)
CHINA CEPREI LABORATORY CALIBRATION & TESTING CENTRE

校准证书
CALIBRATION CERTIFICATE

证书编号: 1JA24006636-0001
Certificate No.

中国认可
国际互认
校准
CALIBRATION
CNAS L13344

委托单位: Client	昆山浩兴电子科技有限公司/Sporton international(Kunshan)Inc.
委托方地址: Address	昆山经济技术开发区蓬溪北路1098号/No.1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu province, China
仪器名称: Description	多通道信号分析仪
型号规格: Model/Type	labCORE
制造商: Manufacturer	HEAD acoustics
机身号: Serial No.	77000544
接收日期: Rec. Date	2024-10-11
校准日期: Cal. Date	2024-10-11
签发日期: App. Date	2024-10-14
建议校准周期: Reference Cal. Period	12个月(12 months)
结论: Conclusion	所校准项目符合技术要求(The calibrated items meet the technical requirements)

校准: Calibrated by 徐乐 徐乐

核验: Inspected by 徐俊 徐俊

签发: Approved by 田立丰 田立丰

印章: Stamp

扫一扫查真伪

赛宝计量检测中心
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实验室地址：江苏省苏州市高新区泰山路601号
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邮件：service-hd@ceprei.com
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说　明
DIRECTIONS

1. 本机构是国家市场监管总局授权建立的法定计量检定机构："国家环境综合试验设备计量站"，国家国防科工局授权建立的"国防科技工业4412二级计量站"，本机构质量管理体系符合ISO/IEC 17025:2017标准的要求。

This laboratory is the legal metrological institute authorized by the State Administration for Market Regulation. It is the "Nation Metrology Station of Combined Environmental Testing Equipment". It is the "No. 4412 Class 2 Metrology Station of Science, Technology and Industry for National Defense" authorized by the State Administration of Science, Technology and Industry for National Defense. The quality management system of this laboratory is in accordance with the ISO/IEC 17025:2017.

2. 本证书中的数据可溯源到国际单位制（SI）单位和/或社会公用计量标准。

The data of the certificate is traceable to the International system of Units（SI）and/or the public metrological standards.

3. 本次校准的技术依据及CNAS认可范围(Reference documents and CNAS accredited scopes)**：**

- JJF 1288-2011 多通道声分析仪校准规范：Sound pressure level:(20～130)dB;Voltage:1mV～100V;Frequency:1Hz～30kHz;Total distortion:(0.01～100)%

✱ 详细内容请查看CNAS网站中注册编号为L13344的证书附件，超出范围的内容未被认可，其结果/结论所依据的合格评定活动不在认可范围内。(Please see the attachment of certificate No. L13344 at CNAS website for details, beyond which is not accredited, the conformity assessment activities on which the results/conclusions are based are outside the scope of accreditation.)

4. 本次校准所使用的主要测量标准及溯源性声明(The main measurement standards used during the calibration and traceability declaration)**：**

名　称 (Description)	证书号/有效期/溯源单位 (Certificate No./Due Date/Traceability to)	技术指标 (Specification)	测量范围 (Measuring Range)
PULSE分析系统(3160-107274)	4JC23000611-0001/2024-12-13/赛宝(苏州)	频率:U_{rel}=0.001%,k=2;电压:U_{rel}=0.04%,k=2	频率:0.001Hz~51.2kHz,电压:(1×10^{-5}～30)V

计量溯源性声明(Metrological Traceability Declaration)**：**

被校准器具 Instrument	设备名称 Standard Name	外部机构/溯源证书编号 Institute/Certificate No.
多通道信号分析仪	PULSE分析系统	广东计量院/DBN202260767

5. 校准地点(The calibration place)**：**

江苏省昆山经济开发区蓬溪北路1098号3楼实验室

6. 环境条件(Environmental conditions)**：**

温度(Temperature)：21.5　　相对湿度(Relative Humidity)：51%　　其它(Other)：/

7. 本证书中给出的扩展不确定度依据JJF1059.1-2012《测量不确定度评定与表示》评定，由合成标准不确定度乘以包含概率约为95%时对应的包含因子*k*得到。

The extended uncertainty given in this certificate is evaluated according to JJF1059.1-2012 "Evaluation and Expression of Uncertainty in Measurement", and is calculated by multiplying the combined standard uncertainty by the coverage factor *k* which corresponding to the coverage probability about 95%.

8. 证书中"P"、"合格"代表"测量结果在允许范围内"，"F"、"不合格"代表"测量结果不在允许范围内"，"N/A"代表"不适用或技术指标暂时无法确认等"。本证书报告的结论仅供参考，使用人员应结合实际测量的要求合理使用，如考虑测量结果测量不确定度的影响等。

"P" and "Pass" in this certificate stand for "Low Limit≤the measured value ≤High Limit", "F" and "Fail" stand for "the measured value＜Low Limit or the measured value＞High Limit", "N/A" stands for "Not Applicable or The technical specification has not been confirmed etc".The conclusions of this certificate are for reference only. Users should use them reasonably according to the actual measurement requirements, such as considering the impact of measurement uncertainty, etc.

9. 建议校准周期是本实验室依据本证书报告的技术依据和仪器设备常规使用条件给出的建议，供委托方参考。委托方可以根据实际使用情况自行决定样品的校准周期。

The reference calibration period is based on the reference documents and normal operating conditions of the calibrated instrument. It is only for reference. The client may decide the calibration period of the instrument according to the actual use.

注: 1.本证书未经本机构书面授权，不得部分复制。(The certificate shall not be partly reproduced without written approval of the laboratory.)

2.本次校准结果仅与被校物有关。(The results are only related to the items calibrated.)

3.“委托方”、“委托方联络信息”由委托方提供，“制造厂”、“型号规格”、“出厂编号”以及“设备编号”为仪器上标注，委托方对上面内容如有异议，须在收到证书后二十个工作日内提出。
The information Client and Contact Information are provided by client, and the Manufacurer, Model/Type, Serial No. and Equipment No. are marked on the items.Client shall submit any objection within 20 working days after receiving the certificate for the information above.

证书编号(Certificate No.)：1JA24006636-0001

1 外观与工作正常性检查（Appearance and Function Check）

无影响证书中测量结果准确度的因素和缺陷。

There are no factor and defect that affect the measurement result accuracy of the certificate.

2 线性度(Linearity) 频率(Frequency): 1000 Hz

通道（Channel）	标准值 (Reference) (dB)	示值 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	*U* (*k*=2) (dB)
CH2	94.0	94.0	0.0	±1.1	P	0.2
	84.0	84.0	0.0	±1.1	P	0.2
	74.0	74.0	0.0	±1.1	P	0.2
	64.0	64.0	0.0	±1.1	P	0.2
	54.0	54.0	0.0	±1.1	P	0.2
	44.0	44.0	0.0	±1.1	P	0.2
	34.0	34.0	0.0	±1.1	P	0.2

证书编号(Certificate No.)：1JA24006636-0001

3 A计权特性(A-Weighting Characteristic)

通道2（CH2）

频率 (Frequency) (Hz)	标准值 (Reference) (dB)	示值 (Indication) (dB)	误差 (Error) (dB)	允许误差 (Limit) (dB)	结论 (Pass/Fail) (P/F)	*U* (*k*=2) (dB)
20	-50.5	-50.6	-0.1	±2.5	P	0.2
25	-44.7	-44.7	0.0	+2.5; -2.0	P	0.2
31.5	-39.4	-39.4	0.0	±2.0	P	0.2
40	-34.6	-34.6	0.0	±1.5	P	0.2
50	-30.2	-30.2	0.0	±1.5	P	0.2
63	-26.2	-26.2	0.0	±1.5	P	0.2
80	-22.5	-22.4	0.1	±1.5	P	0.2
100	-19.1	-19.1	0.0	±1.5	P	0.2
125	-16.1	-16.1	0.0	±1.5	P	0.2
160	-13.4	-13.4	0.0	±1.5	P	0.2
200	-10.9	-10.9	0.0	±1.5	P	0.2
250	-8.6	-8.6	0.0	±1.4	P	0.2
315	-6.6	-6.6	0.0	±1.4	P	0.2
400	-4.8	-4.8	0.0	±1.4	P	0.2
500	-3.2	-3.2	0.0	±1.4	P	0.2
630	-1.9	-1.9	0.0	±1.4	P	0.2
800	-0.8	-0.8	0.0	±1.4	P	0.2
1000(Ref.)	0.0	0.0	0.0	±1.1	P	0.2
1250	0.6	0.6	0.0	±1.4	P	0.2
1600	1.0	1.0	0.0	±1.6	P	0.2
2000	1.2	1.2	0.0	±1.6	P	0.2
2500	1.3	1.3	0.0	±1.6	P	0.2
3150	1.2	1.2	0.0	±1.6	P	0.2
4000	1.0	1.0	0.0	±1.6	P	0.2
5000	0.5	0.6	0.1	±2.1	P	0.2
6300	-0.1	-0.1	0.0	+2.1; -2.6	P	0.2
8000	-1.1	-1.2	-0.1	+2.1; -3.1	P	0.2
10000	-2.5	-2.5	0.0	+2.6 ; -3.6	P	0.2
12500	-4.3	-4.3	0.0	+3.0 ; -6.0	P	0.2
16000	-6.6	-6.7	-0.1	+3.5 ; -17.0	P	0.2
20000	-9.3	-9.5	-0.2	+4.0 ; -∞	P	0.2

以下空白/No data hereafter

校准证书编号：2024D51-10-5612738001
Calibration certificate series No.

上海市计量测试技术研究院
SHANGHAI INSTITUTE OF MEASUREMENT AND TESTING TECHNOLOGY

华东国家计量测试中心
NATIONAL CENTER OF MEASUREMENT AND TESTING FOR EAST CHINA

校准证书
Calibration Certificate

委托者 Customer	Sporton
联络信息 Contact information	/
器具名称 Name of Instrument	声学用头和躯干模拟器 Head and Torso Simulator used in acoustical measurement
制造厂 Manufacturer	Head Acoustic
型号/规格 Model/Specification	HMS II.3
器具编号 No. of instrument	12306242
器具准确度 Instrument accuracy	/

（机构校准专用章）

批准人/职务 Approved by / Functions	姜志华	项目负责人
核验员 Checked by	杨易宁	
校准员 Calibrated by	邓峥	

发布日期 Issue date 2024 年 Year 11 月 Month 20 日 Day

地址：上海市张衡路1500号(总部) Address No.1500 Zhangheng Road，Shanghai(headquarter)
电话：021-38839800 Tel.
传真：021-50798390 Fax
邮编：201203 PostCode
客户咨询电话：800-820-5172 Inquire line
投诉电话：021-50798262 Complaints line

未经本院/中心批准，部分采用本证书内容无效。
Partly using this certificate will not be admitted unless allowed by SIMT.

校准证书编号：
Calibration certificate series No.

2024D51-10-5612738001

国家法定计量检定机构计量授权证书号(中心/院)：(国)法计(2022)01039号/(2022)01019号
The number of the Certificate of Metrological Authorization to The Legal Metrological Verification Institution is No.（2022）01039/ No.（2022）01019

本次校准所依据的技术规范（代号、名称）：
Reference documents for the calibration (code 、name)

JJF 1520-2015《声学用头和躯干模拟器校准规范》

JJF 1520-2015《Calibration Specification for Head and Torso Simulator Used in Acoustical Measurement》

本次校准所使用的主要计量标准器具：
Main measurement standards used in this calibration

名称 Name	型号规格 Model	编号 Number	测量范围 Measurement range	不确定度或准确度等级或最大允许误差 Uncertainty/Accuracy Class/Maximum Permissible Error	溯源机构名称 Name of traceability institution	证书编号/有效期限 Certificate No./Due date
多通道声分析仪 Multi-channel sound analyzers	3560D	2505776	10Hz～20kHz;-10dB～160dB	MPE:±0.2dB	SIMT	2023D51-10-5001881001/ 2024-12-19
多通道声分析仪 Mutil-channels sound analyzers	3160-A-042	3160-107018	10Hz～50kHz;-10dB～160dB	MPE:±0.1dB	SIMT	2024D51-10-5436451001/ 2025-08-12
/	/	/	/	/	/	/

以上计量标准器具的量值溯源至国家基准/测量标准。
Quantity values of above measurement standards used in this calibration are traced to the national primary standards of P.R. China / national measurement standards.

其他校准信息：
Calibration Information

地点：张衡路1500号声学楼全消声室/
Location

温度：20.6℃ Ambient temperature　湿度：49.8%RH Humidity　其他：气压（kPa):100.5 Others

受样日期 2024年 11月 18日 Received date　校准日期 2024年 11月 18日 Date for calibration

备注：/
Note:

本证书提供的结果仅对本次被校的器具有效。
The data are valid only for the instrument(s).

校准证书续页专用
Continued page of calibration certificate

校准证书编号：
Calibration certificate series No.
2024D51-10-5612738001

校准结果/说明：
Results of calibration and additional explanation

一、耳自由场频率响应（Ear free-field frequency response）

右耳（Right ear)

频率(Frequency)/	100	125	160	200	250	315
频率响应	0.4	0.4	0.4	0.3	0.0	0.7

频率(Frequency)/	400	500	630	800	1000	1250
频率响应	1.6	3.0	3.6	3.8	4.4	4.2

频率(Frequency)/	1600	2000	2500	3150	4000	5000
频率响应	4.5	12.6	16.7	16.0	14.2	12.6

频率(Frequency)/	6300	8000	10000
频率响应	8.1	6.1	5.5

耳自由场频率响应校准值的扩展不确定度U=1.0 dB(k=2)
The expanded uncertainty of ear free-field frequency response calibration value U=1.0 dB(k=2)

校准结果内容结束(The end of the calibration result)