

校准证书
CALIBRATION CERTIFICATE

证书编号:

Certificate No.



J202607176839A-0002

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委托方

Client

UNIAO BRASILEIRA DE EDUCACAO E ASSISTENCIA -
UBEA/PUCRS

联络信息

Contact Inf.

AV.IPIRANGA 6681, PREDIO 1, SALA 107, CEP 90619-900
PORTO ALEGRE/RS - BRASIL

仪器名称

Description

ARTIFICIAL MAINS NETWORK

制造厂

Manufacturer

LISUN GROUP

型号/规格

Model/Type

LISN-C

接收日期

Receipt Date

2026年07月28日

Y M D

出厂编号

Serial No.

LS26LISNC01

校准日期

Cal. Date

2026年07月28日

Y M D

管理号

Asset No.

发布日期

Issued Date

2026年07月30日

Y M D

批准

Approved by

李文兴

李文兴

审核

Inspected by

张勇

张勇

校准

Calibrated by

蔡超群

蔡超群

证书专用章

(Stamp)

总部地址(Headquarters Add.): 广东省广州市番禺区石碁镇创运路8号

No.8, Chuangyun Road, Shiqi Town, Panyu District, Guangzhou, Guangdong, China

实验室地址(Add.of the Lab): 广东省广州市番禺区石碁镇创运路8号

No.8, Chuangyun Road, Shiqi Town, Panyu District, Guangzhou, Guangdong, China

联系电话(Tel.):400-602-0999

邮政编码(Postcode):511450

网站(Website):http:// www.grgtest.com

电子邮件(E-mail):grgtest@grgtest.com



扫一扫验真伪

校验码: 576292

校准说明 DIRECTIONS OF CALIBRATION

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- 1.本实验室的质量管理体系符合ISO/IEC 17025:2017标准的要求,校准结果均可溯源至国际单位制(SI)单位。
(The quality system is in accordance with ISO/IEC 17025:2017,the calibration results are traceable to the International System of Units (SI).)
- 2.本结果仅对本次校准样品有效。未经实验室批准,不得部分复制。如有疑问请在15个工作日内反馈。
(The result is only valid for the calibrated sample.The certificate shall not be reproduced except in full,without the written approval of our laboratory .please feedback to us within 15 days if you have any question.)
- 3.本证书编号具有唯一性,后缀若带有“-Gx”的证书为替换证书,自发出后原证书即刻作废,修改后的证书以客户端内容为准。(Each certificate has a unique number. The suffix of "-Gx" will be added to the number as a replacement of the old version. The original certificate will be officially invalid once the new certificate number is issued.The modified certificate shall be based on the client content.)
- 4.证书中最大允许误差、判定结果仅供参考,其中“P”代表“合格”,“F”代表“不合格”,“N/A”代表“不适用”。使用人员应结合实际测量需求,评估测量不确定度对符合性评定的影响。(MPE & judgement result in the datasheet is only for reference , "P" is "Pass" , "F" is "Fail" and "N/A" is "Not Applicable".Whereas users should evaluate the effects of MU of calibration results on conformance assessment by actual measurement.)
- 5.该仪器的溯源日期为本证书的“校准日期”。(The traceability date of this instrument is the calibration date on this certificate.)

6.校准地点、环境条件(Place and environmental conditions of the calibration):

地点: 杭州市西湖区益乐路223号A幢三楼实验室
Place

温度: (21.3~21.5) °C 相对湿度: (54~56) %
Temperature Relative Humidity

7.建议复校时间间隔: 1年,送校单位也可按实际使用情况自主决定。

Suggested calibration interval is 1 year or it can be altered depending on the actual usage of the user.

8.本次校准的技术依据及CNAS认可范围,超出范围的内容未被认可。详细认可范围请查看CNAS网站证书附件。(Reference document and accredited scope by CNAS for calibration, beyond which isn't accredited. Please see the attachment of certificate on CNAS website for details.)

JJF1705-2018人工电源网络校准规范(C.S. for Artificial Mains Networks) 阻抗: (0.1~180) Ω(9kHz~1000MHz) 分压系数: (0~60) dB 相位: (-90~90) °隔离度: (0~120)dB

CISPR 16-1-2:2017无线电骚扰和抗扰度测量仪器和方法规范 第1-2部分:无线电骚扰和抗扰度测量设备 传导骚扰测量的耦合装置(人工电源网络)Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-2: Radio disturbance and immunity measuring apparatus - Coupling devices for conducted disturbance measurement(Artificial mains network) 阻抗: (0.1~180) Ω(9kHz~1000MHz) 分压系数: (0~60) dB 相角: (-90~90) °(9kHz~1000MHz) 隔离度: (0~120)dB

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9. 本次校准使用的主要测量标准(Main Standards of Measurement Used in the Calibration.):

名称	编 号	证书号/有效期	溯源机构	技术特征
Description	Serial No.	Certificate No./ Due Date	Traceability Institute	Technique Character
矢量网络分析仪 vector network analyzer	MY58100490	J202601051921-02- 0022 2027-01-21	广电计量检测集 团股份有限公司	频率 ± 7 ppm, 电平 ± 1.5 dB
3.5mm网分校准件 3.5mm network calibration parts	MY53402407	J202605124167-19- 0001 2027-06-02	广电计量检测集 团股份有限公司	$U=0.020(k=2)$
温湿度表 Temperature and humidity meter	2038794	J202605124167-35- 0001 2027-06-14	广电计量检测集 团股份有限公司	温度MPE: $\pm 2.0^{\circ}\text{C}$, 湿度MPE: $\pm (5\sim 7)\% \text{RH}$

10. 计量溯源性声明(Measurement traceability declaration.):

矢量网络分析仪/vector network analyzer(MY58100490)→3.5mm校准件(MY53402408)→网络分析仪/network analyzer(US61255200)→检验件件Verification(中国计量科学研究院NIM);
3.5mm网分校准件/3.5mm network calibration parts(MY53402407)→3.5mm校准件/Calibration Kit(MY53401786)→3674H矢量网络分析仪/vector network analyzer(QZMJ000733)→2.4mm校准件/Calibration Kit(MY53400472)→网络分析仪/ Network Analyzer(MY57181549)→S 参数标准装置S-parameter standard device(中国计量科学研究院NIM);
温湿度表/Temperature and humidity meter(2038794)→温湿度检定箱/Temperature and humidity calibration box(6100220010009)→温湿度试验设备检定系统/Verification system(76195)→二等标准铂电阻温度计/Second class standard platinum resistance thermometer(221313)→标准铂电阻温度计(上海市计量测试技术研究院);温湿度表/Temperature and humidity meter(2038794)→温湿度检定箱/Temperature and humidity calibration box(6100220010009)→实时无线多通道温湿度采集系统/Real time wireless multi-channel temperature and humidity acquisition system(28601)→高精度冷镜露点仪/High precision cold mirror dew point meter(21-0507)→精密露点仪标准装置、一等铂电阻温度计标准装置(中国计量科学研究院);温湿度表/Temperature and humidity meter(2038794)→温湿度检定箱/Temperature and humidity calibration box(6100220010009)→实时无线多通道温湿度采集系统/Real time wireless multi-channel temperature and humidity acquisition system(28602)→高精度冷镜露点仪/High precision cold mirror dew point meter(21-0507)→精密露点仪标准装置、一等铂电阻温度计标准装置(中国计量科学研究院);

校准结果
RESULTS OF CALIBRATION

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1、外观以及一般性检查: 正常
In view of External and Generality check : Pass

2、电压分压系数
Voltage Division Factor

频率 Frequency (MHz)	分压系数 Division Factor		不确定度 $U(k=2)$ (dB)
	N Port	L1 Port	
0.009	3.27	3.44	0.24
0.015	2.56	2.53	0.24
0.02	1.80	1.71	0.24
0.03	1.00	0.90	0.24
0.05	0.46	0.38	0.24
0.07	0.28	0.22	0.24
0.10	0.18	0.14	0.24
0.15	0.14	0.11	0.24
0.2	0.13	0.11	0.24
0.3	0.14	0.13	0.24
0.5	0.15	0.15	0.24
0.7	0.16	0.17	0.24
1	0.17	0.18	0.24
2	0.19	0.20	0.24
3	0.20	0.21	0.24
5	0.20	0.22	0.24
7	0.22	0.24	0.24
10	0.22	0.23	0.24
15	0.23	0.23	0.24
20	0.20	0.19	0.24
30	0.42	0.41	0.24

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3、阻抗

Impedance

频率 Frequency (MHz)	标称值 Nominal (Ω)	实测值 Measured N Port (Ω) L1 Port		不确定度 $U_{rel}(k=2)$ (%)	允许值 Limit (Ω)	结论 Conclusion (Pass/Fail)
0.009	5.22	4.97	5.09	1.3	4.18 ~ 6.26	P
0.015	6.22	6.39	6.57	1.3	4.98 ~ 7.46	P
0.02	7.25	7.44	7.77	1.3	5.80 ~ 8.70	P
0.03	9.56	9.69	9.88	1.3	7.65 ~ 11.47	P
0.05	14.41	14.16	14.39	1.3	11.53 ~ 17.29	P
0.07	19.04	18.42	18.60	1.3	15.23 ~ 22.85	P
0.10	25.11	24.15	24.45	1.3	20.09 ~ 30.13	P
0.15	32.72	31.18	31.44	1.3	26.18 ~ 39.26	P
0.2	39.12	35.76	36.16	1.3	31.30 ~ 46.94	P
0.3	44.17	41.05	41.53	1.3	35.34 ~ 53.00	P
0.5	47.65	44.21	45.76	1.3	38.12 ~ 57.18	P
0.7	48.76	46.98	46.41	1.3	39.01 ~ 58.51	P
1	49.38	46.87	47.33	1.3	39.50 ~ 59.26	P
2	49.84	48.09	48.04	1.3	39.87 ~ 59.81	P
3	49.93	47.96	47.45	1.3	39.94 ~ 59.92	P
5	49.98	47.55	47.82	1.3	39.98 ~ 59.98	P
7	49.99	47.52	47.96	1.3	39.99 ~ 59.99	P
10	49.99	47.68	47.65	2.5	39.99 ~ 59.99	P
15	50.00	47.50	47.77	2.5	40.00 ~ 60.00	P
20	50.00	46.13	46.44	2.5	40.00 ~ 60.00	P
30	50.00	46.98	46.86	2.5	40.00 ~ 60.00	P

校准结果
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4、阻抗相角

Impedance Phase

频率 Frequency (MHz)	标称值 Nominal (Ω)	实测值 Measured N Port (Ω) L1 Port		不确定度 $U (k=2)$ (Ω)	允许误差 MPE (Ω)	结论 Conclusion (Pass/Fail)
0.009	26.55	22.9	22.8	3.5	± 11.5	P
0.015	38.41	35.0	35.0	3.5	± 11.5	P
0.02	44.97	41.1	40.0	3.5	± 11.5	P
0.03	52.33	47.9	47.4	3.5	± 11.5	P
0.05	56.40	52.7	52.0	3.5	± 11.5	P
0.07	55.40	52.5	52.0	3.5	± 11.5	P
0.10	51.22	48.8	48.0	3.5	± 11.5	P
0.15	43.35	41.9	41.3	3.5	± 11.5	P
0.20	38.51	35.7	35.1	3.5	± 11.5	P
0.3	27.95	26.6	26.1	3.5	± 11.5	P
0.5	17.66	17.4	16.7	3.5	± 11.5	P
0.7	12.81	12.3	12.4	3.5	± 11.5	P
1	9.04	8.9	8.8	3.5	± 11.5	P
2	4.55	4.5	4.5	3.5	± 11.5	P
3	3.04	3.1	3.1	3.5	± 11.5	P
5	1.82	2.0	2.0	3.5	± 11.5	P
7	1.30	1.5	1.6	3.5	± 11.5	P
10	0.91	1.2	1.3	3.5	± 11.5	P
15	0.61	0.9	1.1	3.5	± 11.5	P
20	0.46	1.3	1.4	3.5	± 11.5	P
30	0.30	4.8	5.1	3.5	± 11.5	P

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5、隔离度校准

Calibration of Isolation

频率 Frequency (MHz)	隔离度 Isolation		不确定度 $U(k=2)$ (dB)
	N Port (dB)	L1 Port	
0.009	22.46	22.63	0.24
0.015	25.63	24.97	0.24
0.02	27.50	26.67	0.24
0.03	30.73	29.65	0.24
0.05	33.66	32.43	0.24
0.07	35.69	36.34	0.24
0.10	43.25	43.23	0.24
0.15	47.62	48.70	0.24
0.2	52.10	52.37	0.24
0.3	55.88	54.62	0.24
0.5	58.73	56.56	0.24
0.7	58.96	56.35	0.24
1	58.93	57.36	0.24
2	57.76	56.22	0.24
3	56.75	55.89	0.24
5	56.59	55.29	0.24
7	56.25	55.38	0.24
10	52.64	52.18	0.24
15	50.54	50.81	0.24
20	43.83	44.06	0.24
30	31.86	31.07	0.24

备注:

Notes:

结论 (Conclusion): 所校项目符合技术要求 (The calibration project meets the technical requirements)

1.本报告中的扩展不确定度是由标准不确定度乘以包含概率约为95%时的包含因子 k 。

The expanded uncertainty is given in the report by the standard uncertainty multiplied by the probability of about 95% when the factor k .

2.依据(Reference document)

JJF 1059.1-2012 测量不确定度评定与表示

(JJF 1059.1-2012 Evaluation and Expression of Uncertainty in Measurement)

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