

校准证书

CALIBRATION CERTIFICATE

证书编号:

Certificate No.



J202404094556A-0001

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委托方

Client

INTERTEK DO BRASIL INSPECOES LTDA

联络信息

Contact Inf.

Endereco: Rua Doutor Cochrane n°07 - Edifício Almares - térreo, 1° e 2° andar – Paquetá - Santos/SP - CEP 11013-100

仪器名称

Description

Three Loop Antenna

型号/规格

Model/Type

VVLA-30M

制造厂

Manufacturer

LISUN GROUP

出厂编号

Serial No.

SOLS20230449

管理号

Asset No.

接收日期

Receipt Date

2024年04月19日

Y M D

校准日期

Cal. Date

2024年04月19日

Y M D

发布日期

Issued Date

2024年05月17日

Y M D

批准

Approved by

李文兴

李文兴

审核

Inspected by

何刚

何刚

校准

Calibrated by

李元博

李元博

证书专用章

(Stamp)

总部地址(Headquarters Add.): 广东省广州市黄埔大道西平云路163号

No.163.Pingyun Rd, West of HuangPu Ave.Guangzhou Guangdong China

实验室地址(Add.of the Lab): 广东省广州市黄埔大道西平云路163号

No.163.Pingyun Rd,West of HuangPu Ave.Guangzhou,Guangdong,China

联系电话(Tel.):400-602-0999

邮政编码(Postcode):510656

网站(Website):http:// www.grgtest.com

电子邮件(E-mail):grgtest@grgtest.com



扫一扫验真伪

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。(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.)

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

地点: 客户一楼实验室
Place

温度: 23°C 相对湿度: 52%
Temperature Relative Humidity

6.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.

7.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.)

JJF(电子)0035-2019 三环天线系统校准规范(C.S. of Triple-loop Antenna Systems) 确认系数:
(50~100) dB(Ω) (9kHz~30MHz)

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8. 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
网络分析仪 network analyzer	MY49811665	J202309206083- 0001 2024-09-19	广电计量检测集 团股份有限公司	频率5Hz~3GHz
三环天线校准装置	00295	J202311294973- 0031 2024-12-10	广电计量检测集 团股份有限公司	$U=1.0\text{dB}$ ($k=2$)

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

网络分析仪(MY49811665)→N型校准件(MY61410091)→网络分析仪(中国计量科学研究院/NIM)
三环天线校准装置(00295)→3GHz网络分析仪(MY49811664)→50G功率计探头(101354)→功率计探
头(MY59260005)(中国计量科学研究院/NIM)

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、确认系数

Validation Factor

2.1、X扫向

频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		1(0°)	2(45°)	3(90°)	4(135°)			
0.009	74.2	74.0	74.3	74.6	74.4	± 2.0	1.4	P
0.01	74.1	73.8	74.0	74.3	74.2	± 2.0	1.4	P
0.02	73.9	73.0	73.2	73.4	73.3	± 2.0	1.4	P
0.04	73.9	72.7	72.9	73.2	73.1	± 2.0	1.4	P
0.06	73.9	72.6	72.9	73.1	73.0	± 2.0	1.4	P
0.08	73.9	72.5	72.8	73.0	72.9	± 2.0	1.4	P
0.1	74.0	72.5	72.8	73.1	73.0	± 2.0	1.4	P
0.2	74.1	72.6	72.8	73.1	73.0	± 2.0	1.4	P
0.4	74.1	72.7	72.9	73.2	73.0	± 2.0	1.4	P
0.6	74.2	72.8	73.0	73.3	73.2	± 2.0	1.4	P
0.8	74.4	72.9	73.2	73.4	73.3	± 2.0	1.4	P
1	74.5	73.0	73.3	73.5	73.4	± 2.0	1.4	P
2	75.2	74.1	74.3	74.5	74.4	± 2.0	1.4	P
4	77.9	76.9	77.0	77.2	77.1	± 2.0	1.4	P
6	80.0	79.1	79.2	79.4	79.3	± 2.0	1.4	P
8	82.0	80.9	81.1	81.2	81.1	± 2.0	1.4	P
10	83.4	82.8	82.7	83.0	83.0	± 2.0	1.4	P
20	88.4	88.8	88.4	88.0	88.1	± 2.0	1.4	P
30	91.3	92.9	91.3	90.7	90.8	± 2.0	1.4	P

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频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		5(180°)	6(225°)	7(270°)	8(315°)			
0.009	74.2	74.2	74.2	74.1	73.6	± 2.0	1.4	P
0.01	74.1	74.0	74.0	73.8	73.3	± 2.0	1.4	P
0.02	73.9	73.2	73.1	72.9	72.5	± 2.0	1.4	P
0.04	73.9	72.9	72.8	72.7	72.2	± 2.0	1.4	P
0.06	73.9	72.8	72.8	72.6	72.1	± 2.0	1.4	P
0.08	73.9	72.8	72.7	72.6	72.1	± 2.0	1.4	P
0.1	74.0	72.8	72.7	72.6	72.1	± 2.0	1.4	P
0.2	74.1	72.8	72.7	72.6	72.1	± 2.0	1.4	P
0.4	74.1	72.9	72.8	72.7	72.2	± 2.0	1.4	P
0.6	74.2	73.0	72.9	72.8	72.3	± 2.0	1.4	P
0.8	74.4	73.1	73.0	72.9	72.8	± 2.0	1.4	P
1	74.5	73.3	73.2	73.0	72.5	± 2.0	1.4	P
2	75.2	74.3	74.2	74.0	73.5	± 2.0	1.4	P
4	77.9	77.0	76.9	76.7	76.3	± 2.0	1.4	P
6	80.0	79.2	79.1	78.9	78.4	± 2.0	1.4	P
8	82.0	81.2	80.8	80.6	80.1	± 2.0	1.4	P
10	83.4	82.9	82.4	82.1	81.7	± 2.0	1.4	P
20	88.4	88.7	87.1	87.3	87.3	± 2.0	1.4	P
30	91.3	92.2	89.5	89.6	89.6	± 2.0	1.4	P

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2.2、Y扫向

频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		1(0°)	2(45°)	3(90°)	4(135°)			
0.009	74.2	73.7	74.1	74.5	74.4	± 2.0	1.4	P
0.01	74.1	73.5	73.9	74.4	74.1	± 2.0	1.4	P
0.02	73.9	72.6	73.0	73.5	73.3	± 2.0	1.4	P
0.04	73.9	72.3	72.8	73.2	73.1	± 2.0	1.4	P
0.06	73.9	72.3	72.7	73.2	73.0	± 2.0	1.4	P
0.08	73.9	72.3	72.7	73.1	72.9	± 2.0	1.4	P
0.1	74.0	72.3	72.7	73.1	73.0	± 2.0	1.4	P
0.2	74.1	72.3	72.7	73.2	73.0	± 2.0	1.4	P
0.4	74.1	72.4	72.8	73.2	73.1	± 2.0	1.4	P
0.6	74.2	72.5	72.8	73.4	73.2	± 2.0	1.4	P
0.8	74.4	72.6	73.0	73.5	73.4	± 2.0	1.4	P
1	74.5	72.7	73.1	73.6	73.4	± 2.0	1.4	P
2	75.2	73.6	74.2	74.6	74.4	± 2.0	1.4	P
4	77.9	76.4	76.9	77.4	77.2	± 2.0	1.4	P
6	80.0	78.6	79.1	79.6	79.6	± 2.0	1.4	P
8	82.0	80.4	80.9	81.6	81.3	± 2.0	1.4	P
10	83.4	82.0	82.5	83.3	83.2	± 2.0	1.4	P
20	88.4	86.9	87.2	89.1	88.8	± 2.0	1.4	P
30	91.3	89.4	89.7	92.1	90.5	± 2.0	1.4	P

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频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		5(180°)	6(225°)	7(270°)	8(315°)			
0.009	74.2	73.6	74.2	74.5	74.0	± 2.0	1.4	P
0.01	74.1	73.4	74.0	74.2	73.8	± 2.0	1.4	P
0.02	73.9	72.5	73.2	73.4	73.0	± 2.0	1.4	P
0.04	73.9	72.3	72.9	73.2	72.7	± 2.0	1.4	P
0.06	73.9	72.2	72.9	73.1	72.7	± 2.0	1.4	P
0.08	73.9	72.2	72.9	73.1	72.6	± 2.0	1.4	P
0.1	74.0	72.2	72.9	73.1	72.6	± 2.0	1.4	P
0.2	74.1	72.2	72.9	73.1	72.7	± 2.0	1.4	P
0.4	74.1	72.3	73.0	73.2	72.8	± 2.0	1.4	P
0.6	74.2	72.4	73.1	73.3	72.8	± 2.0	1.4	P
0.8	74.4	72.5	73.2	73.5	72.9	± 2.0	1.4	P
1	74.5	72.6	73.3	73.5	73.1	± 2.0	1.4	P
2	75.2	73.7	74.3	74.6	74.1	± 2.0	1.4	P
4	77.9	76.4	77.1	77.3	76.8	± 2.0	1.4	P
6	80.0	78.7	79.4	79.6	79.1	± 2.0	1.4	P
8	82.0	80.6	81.3	81.3	80.9	± 2.0	1.4	P
10	83.4	82.4	82.9	83.0	82.4	± 2.0	1.4	P
20	88.4	88.7	89.5	88.5	87.7	± 2.0	1.4	P
30	91.3	91.5	91.2	91.3	90.1	± 2.0	1.4	P

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频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		1(0°)	2(45°)	3(90°)	4(135°)			
0.009	74.2	74.7	74.8	74.9	74.8	± 2.0	1.4	P
0.01	74.1	74.5	74.5	74.7	74.6	± 2.0	1.4	P
0.02	73.9	73.5	73.7	73.9	73.7	± 2.0	1.4	P
0.04	73.9	73.3	73.5	73.6	73.4	± 2.0	1.4	P
0.06	73.9	73.2	73.4	73.5	73.4	± 2.0	1.4	P
0.08	73.9	73.2	73.3	73.5	73.3	± 2.0	1.4	P
0.1	74.0	73.2	73.5	73.5	73.4	± 2.0	1.4	P
0.2	74.1	73.3	73.4	73.5	73.3	± 2.0	1.4	P
0.4	74.1	73.3	73.5	73.5	73.4	± 2.0	1.4	P
0.6	74.2	73.4	73.6	73.7	73.6	± 2.0	1.4	P
0.8	74.4	73.6	73.7	73.8	73.7	± 2.0	1.4	P
1	74.5	73.7	73.8	74.0	73.8	± 2.0	1.4	P
2	75.2	74.7	74.9	74.9	74.8	± 2.0	1.4	P
4	77.9	77.4	77.5	77.7	77.6	± 2.0	1.4	P
6	80.0	79.7	79.8	79.8	79.8	± 2.0	1.4	P
8	82.0	81.5	81.8	81.8	81.7	± 2.0	1.4	P
10	83.4	82.9	83.1	83.4	83.4	± 2.0	1.4	P
20	88.4	88.7	89.0	90.1	89.5	± 2.0	1.4	P
30	91.3	91.8	91.4	92.4	93.1	± 2.0	1.4	P

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频率 Frequency (MHz)	标称值 Nominal (dB(Ω))	确认系数 Validation Factor (dB(Ω))				允许误差 MPE (dB)	不确定度 $U(k=2)$ (dB)	结论 Conclusion (Pass/Fail)
		5(180 γ)	6(225 γ)	7(270 γ)	8(315 γ)			
0.009	74.2	74.8	74.9	75.0	74.7	± 2.0	1.4	P
0.01	74.1	74.5	74.7	74.7	74.5	± 2.0	1.4	P
0.02	73.9	73.7	73.9	73.8	73.7	± 2.0	1.4	P
0.04	73.9	73.5	73.6	73.5	73.5	± 2.0	1.4	P
0.06	73.9	73.4	73.5	73.5	73.3	± 2.0	1.4	P
0.08	73.9	73.4	73.5	73.5	73.4	± 2.0	1.4	P
0.1	74.0	73.4	73.5	73.5	73.3	± 2.0	1.4	P
0.2	74.1	73.4	73.5	73.4	73.4	± 2.0	1.4	P
0.4	74.1	73.5	73.5	73.6	73.5	± 2.0	1.4	P
0.6	74.2	73.6	73.8	73.7	73.5	± 2.0	1.4	P
0.8	74.4	73.7	73.8	73.8	73.7	± 2.0	1.4	P
1	74.5	73.8	73.9	73.9	73.8	± 2.0	1.4	P
2	75.2	74.9	75.0	74.9	74.8	± 2.0	1.4	P
4	77.9	77.6	77.7	77.7	77.5	± 2.0	1.4	P
6	80.0	79.8	79.9	79.9	79.8	± 2.0	1.4	P
8	82.0	81.5	81.7	81.7	81.6	± 2.0	1.4	P
10	83.4	83.4	83.2	83.2	83.3	± 2.0	1.4	P
20	88.4	88.9	88.5	88.5	88.6	± 2.0	1.4	P
30	91.3	90.7	89.6	90.0	90.7	± 2.0	1.4	P

校准结果 RESULTS OF CALIBRATION

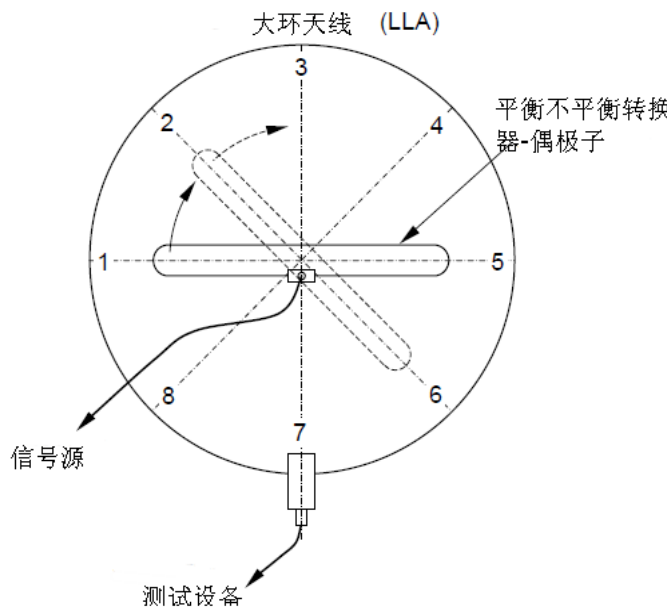
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附: 确认系数校准位置图



备注:

Notes:

结论 (Conclusion): 所校项目符合技术要求(The calibrated items meet 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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