

CALIBRATION CERTIFICATE

Certificate No.



J202609020240A-0001-G2

Page 1 of 6

Client

Servico Nacional de Aprendizagem Industrial

Contact Inf.

Av. Assis Brasil, 8787 Bairro Sarandi, ZIP CODE 91140-001, Porto Alegre -RS, Brasil

Description

BURST CALIBRATION KIT

Manufacturer

LISUN GROUP

Model/Type

VFTC-CAL

Receipt Date

2026-09-04

Y M D

Serial No.

SO20260331A14

Cal. Date

2026-09-04

Y M D

Asset No.

Issued Date

2026-09-29

Y M D

Approved by

李文兴

li wen xing

Inspected by

张勇

zhang yong

Calibrated by

曾德胜

zeng de sheng



Headquarters Add.:

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

Add.of the Lab:

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

Tel.:400-602-0999

Postcode:511450

Website:http:// www.grgtest.com

E-mail:grgtest@grgtest.com



Scan

CheckCode: 986416

DIRECTIONS OF CALIBRATION

Certificate No.: J202609020240A-0001-G2

Page 2 of 6

1.The quality system is in accordance with ISO/IEC 17025:2017,the calibration results are traceable to the International System of Units (SI).

2.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.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.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.The traceability date of this instrument is the calibration date on this certificate.

6.Place and environmental conditions of the calibration:

Place: 客户4楼实验室

Temperature: 23.3℃

Relative Humidity: 64%

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

8.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(军工)76-2022 微波二端口器件校准规范 (C.S.for Two-port Microwave Devices) 电压驻波比:

1.00~3.00,9kHz~67GHz 插入损耗、衰减、频响、隔离度: (0~110)dB,9kHz~67GHz 耦合度、方向性、幅度一致性: (0~80)dB,9kHz~67GHz

DIRECTIONS OF CALIBRATION

Certificate No.: J202609020240A-0001-G2

Page 3 of 6

9. Main Standards of Measurement Used in the Calibration.:

Description	Serial No.	Certificate No./ Due Date	Traceability Institute	Technique Character
Digital Multimeter	MY47067825	J202601203614- 0016 2027-01-30	广电计量检测集 团股份有限公司	DCV: $\pm 0.005\%$ ACV: $\pm 0.06\%$ DCI: $\pm 0.05\%$ ACI: $\pm 0.1\%$ R: $\pm 0.01\%$ Freq: $\pm 0.01\%$
Network analyzer	MY49812157	J202605220046- 0054 2027-06-11	广电计量检测集 团股份有限公司	频率: 5Hz~3GHz; 动态范围 120dB; 迹线噪声0.005dB

10.Measurement traceability declaration.:

数字多用表/Digital Multimeter(MY47067825)→数字多用表/ Digital multimeter(456175079)→精密交直流同轴分流器/AC/DC coaxial shunt(05155847)→直流电阻副基准装置(中国计量科学研究院/NIM);
网络分析仪(MY49812157)→网络分析仪校准件(MY53202900)→网络分析仪/ Network Analyzer(MY49609241)→检验件(2815A00996)→S参数标准装置(中国计量科学研究院/NIM);

校准结果
RESULTS OF CALIBRATION

证书编号: J202609020240A-0001-G2

第 4 页 共 6 页

Certificate No.

Page of

1、外观以及一般性检查: 正常

In view of External and Generality check : Pass

2.1、插入损耗的校准 (50Ω):

(Calibration of Insertion Loss at 50Ω)

频率 Frequency (MHz)	标称值 Nominal (dB)	实测值 Measured (dB)	误差 Error (dB)	不确定度 U (k=2) (dB)	允许误差 MPE (dB)	结论 Conclusion (Pass/Fail)
0.009	54	53.98	0.02	0.24	± 1.0	P
0.1	54	53.99	0.01	0.24	± 1.0	P
0.2	54	53.98	0.02	0.24	± 1.0	P
0.4	54	53.97	0.03	0.24	± 1.0	P
0.8	54	53.99	0.01	0.24	± 1.0	P
1	54	53.99	0.01	0.24	± 1.0	P
2	54	53.98	0.02	0.24	± 1.0	P
4	54	53.97	0.03	0.24	± 1.0	P
8	54	53.96	0.04	0.24	± 1.0	P
10	54	53.94	0.06	0.24	± 1.0	P
20	54	53.86	0.14	0.24	± 1.0	P
40	54	53.70	0.30	0.24	± 1.0	P
60	54	53.54	0.46	0.24	± 1.0	P
80	54	53.44	0.56	0.24	± 1.0	P
100	54	53.32	0.68	0.24	± 3.0	P
200	54	52.85	1.15	0.24	± 3.0	P
300	54	52.35	1.65	0.24	± 3.0	P
400	54	52.02	1.98	0.24	± 3.0	P

校准结果
RESULTS OF CALIBRATION

证书编号: J202609020240A-0001-G2

第 5 页 共 6 页

Certificate No.

Page of

2.2、插入损耗的校准（1000Ω）：

(Calibration of Insertion Loss at 1000Ω)

频率 Frequency (MHz)	标称值 Nominal (dB)	实测值 Measured (dB)	误差 Error (dB)	不确定度 U (k=2) (dB)	允许误差 MPE (dB)	结论 Conclusion (Pass/Fail)
0.009	54	54.64	-0.64	0.24	± 1.0	P
0.1	54	54.62	-0.62	0.24	± 1.0	P
0.2	54	54.64	-0.64	0.24	± 1.0	P
0.4	54	54.65	-0.65	0.24	± 1.0	P
0.8	54	54.65	-0.65	0.24	± 1.0	P
1	54	54.63	-0.63	0.24	± 1.0	P
2	54	54.64	-0.64	0.24	± 1.0	P
4	54	54.64	-0.64	0.24	± 1.0	P
8	54	54.65	-0.65	0.24	± 1.0	P
10	54	54.65	-0.65	0.24	± 1.0	P
20	54	54.66	-0.66	0.24	± 1.0	P
40	54	54.68	-0.68	0.24	± 1.0	P
60	54	54.70	-0.70	0.24	± 1.0	P
80	54	54.74	-0.74	0.24	± 1.0	P
100	54	54.82	-0.82	0.24	± 3.0	P
200	54	55.22	-1.22	0.24	± 3.0	P
300	54	55.79	-1.79	0.24	± 3.0	P
400	54	56.44	-2.44	0.24	± 3.0	P

3、输入阻抗的校准

(Calibration of Input Impedance)

标称值 Nominal Value (Ω)	实测值 Measured (Ω)	误差 Error (Ω)	不确定度 U (k=2) (Ω)	允许误差 MPE (Ω)	结论 Conclusion (Pass/Fail)
50	50.6	-0.6	0.2	± 1.0	P
1000	1000.7	-0.7	2.0	± 20.0	P

校准结果
RESULTS OF CALIBRATION

证书编号: J202609020240A-0001-G2

Certificate No.

第 6 页 共 6 页

Page of

备注:

Notes:

结论 (Conclusion): 所校项目符合技术要求

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)

3.输入阻抗不在CNAS认可范围内

(以下空白)

(The below is blank)

七限八三