

校准证书

CALIBRATION CERTIFICATE

证书编号: 2SB16000478-0001
Certificate No.



委托单位: 深圳市知用电子有限公司/Shenzhen ZhiYong Electronic Co.,Ltd
Client

委托方地址: 深圳市龙岗区黄阁北路天安数码新城四号大厦A1702
Address

仪器名称: LISN
Description

型号规格: EM5040C
Model/Type

制造商: CYBERTEK
Manufacturer

机身号: E155040C19
Serial No.

校准日期: 2016 年 04 月 07 日
Cal. Date

建议再校日期: 2017 年 04 月 07 日
Next Cal. Date

结论: 所校准项目合格(Passed at Calibration Items)
Conclusion

校准:
Calibrated by

霍华

核验:
Inspected by

张成

签发:
Approved by

魏武

室主任
Department
Supervisor

印章:
Stamp

说 明

DIRECTIONS

证书编号(Certificate No.): 2SB16000478-0001

1. 本机构是国家质量监督检验检疫总局授权的国家法定计量技术机构, 授权证编号: (国)法计(2012)00068号。质量管理体系符合ISO/IEC 17025的要求, 获得中国合格评定国家认可委员会(CNAS)认可, 认可证书号为: CNAS L0462。

This laboratory is the legal metrological institute authorized by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, No. (国)法计(2012)00068. Its quality management system meets the ISO/IEC 17025 and is accredited by the China National Accreditation Service for Conformity Assessment, No. CNAS L0462.

2. 本机构出具的数据均可溯源到国家计量基准和国际单位制(SI)。

The data issued by this laboratory is traceable to national primary standards and International system of Units (SI).

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

▪ JJF (电子) 30806-2007 人工电源网络校准规范 阻抗: $(1 \sim 180)\Omega @ (9\text{kHz} \sim 108\text{MHz})$; 电压分压系数: $(-20 \sim 20)\text{dB} @ (9\text{kHz} \sim 108\text{MHz})$; 相位: $(-90^\circ \sim 90^\circ) @ (9\text{kHz} \sim 108\text{MHz})$; 隔离度: $(9\text{kHz} \sim 108\text{MHz})$

4. 本次校准所使用的主要测量标准(The main measurement standards used during the calibration):

名 称 (Description)	技术指标 (Specification)	证书编号 (Certificate No.)	有效期至 (Due Date)
网络分析仪/ENA Series Network Analyzer	f: $\pm 1 \times 10^{-7}$; Output Level Flatness: $\pm 1\text{dB}$; Output Level Linearity: $\pm 0.75\text{dB}$; Receiver Magnitude Dynamic: $\pm 0.035\text{dB}$	4GC15000343-0010	2016-10-09

5. 校准地点(The calibration place): 赛宝计量检测中心广州实验室

6. 环境条件(Environmental conditions): 温度(Temperature): 20°C 相对湿度(Relative Humidity): 60%

7. 证书数据页中"P"代表"合格", "F"代表"不合格", "N/A"代表"不适用"。

In the data sheet, "P" stands for "Pass", "F" stands for "Fail", "N/A" stands for "Not applicable".

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.)



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

结论
(Pass/Fail)
P

2 电压分压系数(Voltage Division factor)

频率 (Frequency) (MHz)	标准值 (Reference) (dB)
0.15	-0.48
0.2	-0.35
0.3	-0.24
0.4	-0.19
0.5	-0.18
0.7	-0.15
1	-0.14
1.5	-0.14
2	-0.13
2.5	-0.13
3	-0.13
4	-0.13
5	-0.14
7	-0.14
10	-0.16
15	-0.21
20	-0.24
30	-0.35
50	-0.63
100	-0.89
108	-1.12
150	-1.57
200	-2.22



3 阻抗(Impedance)

频率 (Frequency)	标称值 (Nominal)	标准值 (Reference)	误差 (Error)	允许误差 (Limit)	结论 (Pass/Fail)
(MHz)	(Ω)	(Ω)	(Ω)	(Ω)	
0.15	4.70	4.23	0.47	± 0.94	P
0.2	6.19	5.62	0.57	± 1.24	P
0.3	9.14	8.36	0.78	± 1.83	P
0.4	12.00	11.02	0.98	± 2.40	P
0.5	14.75	13.54	1.21	± 2.95	P
0.7	19.82	18.24	1.58	± 3.96	P
1	26.24	24.33	1.91	± 5.25	P
1.5	33.94	31.90	2.04	± 6.79	P
2	38.83	36.86	1.97	± 7.77	P
2.5	41.94	40.05	1.89	± 8.39	P
3	43.98	42.02	1.96	± 8.80	P
4	46.33	44.88	1.45	± 9.27	P
5	47.56	46.30	1.26	± 9.51	P
7	48.71	47.68	1.03	± 9.74	P
10	49.35	48.47	0.88	± 9.87	P
15	49.71	49.10	0.61	± 9.94	P
20	49.84	49.17	0.67	± 9.97	P
30	49.93	49.42	0.51	± 9.99	P
50	49.97	49.06	0.91	± 9.99	P
100	49.99	49.38	0.61	± 10.00	P
108	49.99	47.81	2.18	± 10.00	P
150	50.00	55.20	-5.20	(N/A)	
200	50.00	56.94	-6.94	(N/A)	



4 相位(Phase)

频率 (Frequency) (MHz)	标称值 (Nominal) (°)	标准值 (Reference) (°)	误差 (Error) (°)	允许误差 (Limit) (°)	结论 (Pass/Fail)
0.15	72.74	83.90	-11.16	±11.50	P
0.2	73.93	82.74	-8.81	±11.50	P
0.3	73.47	79.74	-6.27	±11.50	P
0.4	71.61	76.78	-5.17	±11.50	P
0.5	69.24	73.52	-4.28	±11.50	P
0.7	64.07	67.77	-3.7	±11.50	P
1	56.54	59.99	-3.45	±11.50	P
1.5	46.05	49.30	-3.25	±11.50	P
2	38.15	41.12	-2.97	±11.50	P
2.5	32.27	34.86	-2.59	±11.50	P
3	27.81	30.47	-2.66	±11.50	P
4	21.63	24.08	-2.45	±11.50	P
5	17.62	19.78	-2.16	±11.50	P
7	12.8	14.65	-1.85	±11.50	P
10	9.04	10.73	-1.69	±11.50	P
15	6.06	7.37	-1.31	±11.50	P
20	4.55	6.15	-1.6	±11.50	P
30	3.04	4.91	-1.87	±11.50	P
50	1.82	4.35	-2.53	±11.50	P
100	0.91	8.87	-7.96	±11.50	P
108	0.84	7.91	-7.07	±11.50	P
150		14.16		(N/A)	
200		12.36		(N/A)	



5 隔离度(Insulation)

频率 (Frequency) (MHz)	标准值 (Reference) (dB)	允许范围 (Limit) (dB)	
0.15	19.59	≥ 0	P
0.2	19.64	≥ 3.8	P
0.3	19.86	≥ 9.3	P
0.4	20.26	≥ 13.1	P
0.5	20.75	≥ 16.1	P
0.7	21.98	≥ 20.6	P
1	26.17	≥ 25.3	P
1.5	32.13	≥ 30.7	P
2	34.88	≥ 34.6	P
2.5	39.29	≥ 37.6	P
3	40.62	≥ 40	P
4	51.65	≥ 40	P
5	54.83	≥ 40	P
7	46.63	≥ 40	P
10	44.10	≥ 40	P
15	43.17	≥ 40	P
20	42.72	≥ 40	P
30	41.94	≥ 40	P
50	40.17	≥ 40	P
100	43.75	≥ 40	P
108	48.08	≥ 40	P
150	45.54		
200	37.09		



附(Appendix):

关于测量结果不确定度的说明

(Directions of measurement uncertainty in the calibration)

1 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)

2 本次测量结果的扩展不确定度(The measurement expanded uncertainties)($k=2$)

2.1 电压分压系数(Voltage Division factor) 0.24dB

2.2 阻抗(Impedance) 3.2%

2.3 相位(Phase) 4.0%

以下空白/No data hereafter