

## 校准证书

## CALIBRATION CERTIFICATE

证书编号:

Certificate No.

J201705247611-01-0001

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委托方

Client

深圳市知用电子有限公司

委托方地址

Address

深圳市龙岗区黄阁北路天安数码城4栋A座1702

仪器名称

Description

人工电源网络

型号/规格

Model/Type

EM5040B+

制造厂

Manufacturer

CYBERTEK

出厂编号

Serial No.

E165040187

管理号

Asset No.

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校准日期

Date of Calibration

2017年08月09日

Y M D

样品接收日期

Date of Receipt

2017年08月04日

Y M D

批准人:

Approved Signatory

(主任)

审核:

Inspected by

校准:

Calibrated by

证书专用章

(Stamp)

地址: 广东省广州市黄埔大道西平云路163号

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

计量校准机构备案号 (The record number): [2012]粤量校S003号

联系电话 (Tel.): 020-38699960,66830999,400-602-0999

传真 (Fax): 020-38698685

邮政编码 (Postcode): 510656

网站 (Website): [http:// www.grgtest.com](http://www.grgtest.com)电子邮件 (E-mail): [grgtest@grgtest.com](mailto:grgtest@grgtest.com)



## 校准说明

## DIRECTIONS OF CALIBRATION

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1. 本实验室出具的数据均可溯源至国家计量基准和国际单位制(SI)。  
(All data issued by GRGTest are traced to National Primary Standards and International System of Units(SI).)
2. 本结果仅对当次被测样品有效, 如有疑问请在15个工作日内反馈。(The result is ONLY valid for the tested sample, please feedback to us within 15 working 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. 证书中如有最大允许误差、判定结果, 仅供参考, 其中“P”代表“合格”, “F”代表“不合格”。证书中结论判定是指测得值是否符合规定要求的限定值, 而使用人员还应结合实际测量要求, 评估校准结果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" represents "Pass" and "F" represents "Fail". The judgement is made on the basis of whether the measured value conforms to the limited value specified in the regulation, whereas users should evaluate the effects of measurement uncertainty of calibration results on conformity determination associated with actual measurement.)
5. 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。注: 详细的认可范围请查看CNAS网站中注册编号为L0446的证书附件。(Reference document and accredited scope by CNAS for calibration, beyond which isn't accredited. Please see the attachment of certificate No.L0446 on CNAS website for details.)  
JJF(电子) 30806-2007 人工电源网络校准规范(C.S. for Artificial Mains Network): 阻抗(0.1~180) $\Omega$  (9kHz~1000MHz); 分压系数(0~60)dB; 相位(-90~90) $^\circ$

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

名称 / 型号 Description / Model	编号 Serial No.	证书编号 Certificate No.	证书有效期 Due Date	技术特征 Technique Character
校准件 (7个) /85032F	MY53200669	J201609289353-08-0001	2017-10-07	功率: $U=0.3\text{dB}$ ; 频率: $U=1.0\text{E}-8$ ( $k=2$ )
网络分析仪/E5061B-3L5	MY49609241	J201702136245-272-0001	2018-05-19	频率5Hz~3GHz, 动态范围 120dB, 迹线噪声0.005dBrms

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

地点 Place	广州计量电子无线电室	温度 Temperature	24 $^\circ\text{C}$	相对湿度 Relative Humidity	55 %
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## 8. 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.



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	LI Port	
0.009	10.68	10.64	0.24
0.015	9.73	9.71	0.24
0.02	9.59	9.58	0.24
0.03	9.52	9.52	0.24
0.04	9.50	9.51	0.24
0.05	9.50	9.51	0.24
0.07	9.50	9.52	0.24
0.10	9.52	9.53	0.24
0.15	9.53	9.54	0.24
0.2	9.54	9.55	0.24
0.3	9.55	9.55	0.24
0.4	9.55	9.56	0.24
0.5	9.56	9.56	0.24
0.7	9.56	9.57	0.24
1	9.57	9.57	0.24
2	9.58	9.59	0.24
4	9.61	9.62	0.24
7	9.69	9.70	0.24
10	9.73	9.75	0.24
15	9.82	9.85	0.24
20	9.99	10.04	0.24
25	10.12	10.22	0.24
30	10.37	10.47	0.24



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## 3、阻抗:

Impedance

频 率	标称值	实测值		不确定度	允许值	结 论
Frequency	Nominal	Measured		$U_{rel}(k=2)$	Limit	Conclusion
(MHz)	( $\Omega$ )	N Port ( $\Omega$ )	LI Port	(%)	( $\Omega$ )	(Pass/Fail)
0.009	5.22	6.04	6.11	1.3	4.18 ~ 6.26	P
0.03	9.56	8.15	8.42	1.3	7.65 ~ 11.47	P
0.05	14.41	11.83	12.29	1.3	11.53 ~ 17.29	P
0.07	19.04	15.52	16.11	1.3	15.23 ~ 22.85	P
0.1	25.12	20.64	21.35	1.3	20.10 ~ 30.14	P
0.2	39.12	32.89	33.63	1.3	31.30 ~ 46.94	P
0.5	47.65	44.80	45.10	1.3	38.12 ~ 57.18	P
0.7	48.76	46.77	46.96	1.3	39.01 ~ 58.51	P
1	49.38	47.97	48.08	1.3	39.50 ~ 59.26	P
2	49.84	48.95	49.00	1.3	39.87 ~ 59.81	P
4	49.96	49.28	49.34	1.3	39.97 ~ 59.95	P
7	49.99	49.56	49.69	1.3	39.99 ~ 59.99	P
10	49.99	49.65	49.68	2.5	39.99 ~ 59.99	P
15	50.00	43.98	50.07	2.5	40.00 ~ 60.00	P
20	50.00	51.08	51.53	2.5	40.00 ~ 60.00	P
25	50.00	52.37	53.20	2.5	40.00 ~ 60.00	P
30	50.00	56.29	54.88	2.5	40.00 ~ 60.00	P

## 4、相位:

Phase

频 率	标称值	实测值		不确定度	允许值	结 论
Frequency	Nominal	Measured		$U_{rel}(k=2)$	Limit	Conclusion
(MHz)	( $^{\circ}$ )	N( $^{\circ}$ )	L( $^{\circ}$ )	(%)	( $^{\circ}$ )	(Pass/Fail)
0.01	26.55	22.28	21.94	1.3	$\pm 11.5$	P
0.1	51.22	53.00	52.36	1.3	$\pm 11.5$	P
0.2	38.51	41.67	40.63	1.3	$\pm 11.5$	P
0.5	17.66	21.89	21.14	1.3	$\pm 11.5$	P
0.7	12.81	16.39	15.84	1.3	$\pm 11.5$	P
1	9.04	12.01	11.65	1.3	$\pm 11.5$	P
2	4.55	6.91	6.87	1.3	$\pm 11.5$	P
4	4.55	5.03	5.29	1.3	$\pm 11.5$	P
7	1.30	5.23	5.83	1.3	$\pm 11.5$	P
10	0.91	6.32	7.14	1.3	$\pm 11.5$	P
15	0.61	9.42	9.27	2.5	$\pm 11.5$	P
20	0.46	11.89	11.69	2.5	$\pm 11.5$	P
30	0.30	8.08	10.06	2.5	$\pm 11.5$	P



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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)

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