

客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/客户: _____

CUSTOMER P.N./客户物料号: _____

MODEL NO./产品型号: PB505

SAMPLE DATE/送样日期: _____

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核		

Please return to us one copy of “SPECIFICATION FOR APPROVAL” with your approved signature./客户确认签字，盖章后请回传一份承认书给我司.

ADD:B4-601, 602, 603, 604, 702, 704, SXC, No. 1 Fusheng West Road, Dafuji Community,
Ronggui Street, Shunde District, Foshan City, Guangdong Province, China
地址:广东省佛山市 顺德区容桂街道大福基社区福胜西路 1 号 SXC 顺芯城 B4-601、
602、603、604、702、704 号
TEL:86-0757-28989789 FAX: WEBSITE:

Prepared by/拟制	Checked by/审核	Approved by/批 准
韦嘉欢	王华飞	



佛 山 市 劲 电 科 技 有 限 公 司
Foshan Jindian Technology Co.,Ltd.

E. C. LIST/变更履历表

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1. SCOPE 适用范围

This product is a consumer product, which can provide intelligent identification and charging for Bluetooth devices, various mobile phones, tablets and other digital electronic products. It is a DC to DC converter with an output interface for TYPE-C&Wireless charging travel intelligent fast charging bank. 本产品是一款消费类产品，可为蓝牙设备，各种手机、平板等数码类电子产品进行智能识别充电.是一款 DC to DC 转换器，输出接口为 TYPE-C&Wireless charging 旅行智能快速充电宝。

1.1. Description 描述

- ☒ USB POWER BANK /USB 充电宝 ☐ SMPS Adaptor(Desk-top) /桌面型适配器
☐ Open Frame /开放式结构 ☐ Others /其他

“*”is the company's production and QA dept must test items. “*”是公司生产及 QA 部必测项目。

2. Input Characteristics AC-DC 输入特性

2.2.1	Input voltage range 输入电压范围	5Vdc - 12Vdc	(支持 5V/3A,9V/2A, 12V/1.5A)
2.2.2	Charge input current 充电输入电流	1.2A-3.2A	
2.2.3	Charge conversion efficiency 充电转换效率	>80%	
2.2.4	Charging cutoff current 充电截止电流	<200mA±20mA	
2.2.5	Nominal capacity 标称容量	4100mAh	GP685972P 3.8V 15.5WH
2.2.6	Static current 静态电流	<300uA	
2.2.7	Charge limit voltage 充电限制电压	4.35±0.1V	
2.2.8	过充电保护 Over charge protect	4.35V±0.1V	
2.2.9	Over discharge protect 过放电保护	2.7V±0.1V	
2.2.10	Cycle life 循环寿命	在 23℃±2℃的环境温度下，用 0.2C 充电和 0.2C 放电，每次循环之间搁置 35~45 分钟，循环 600 次	
2.2.11	Capacity retention 容量保持能力	循环 600 次后剩余容量≥80%标称容量	

3. Output Characteristics 输出特性

3.1 * Test project 测试项目(Type-c ports PD C1 口快充模式 20W)				
Port output/输出	MIN (V/A)/最小	Standard (V/A)/标准	MAX (V/A)/最大	Remark/备注
5Voltage /5V 电压	4.95	5.0	5.25	
Current /电流	0.0	3.0	3.9	



9Voltage /9V 电压	8.55	9.0	9.45	
Current /电流	0.0	2.22	2.9	
12Voltage /12V 电压	11.4	12.0	12.6	
Current /电流	0.0	1.67	2.1	

LCD screen display 液晶屏显示	Key switch 按键开关	yes 有	Press the button to open all port output at the same time, and display the power. 按按键可同时开启所有端口输出，同时显示电量。
	Discharge while charging 边充边放	Support 支持	
	Power instructions 电量指示	LCD 液晶屏	
	Charging display 充电显示	LCD screen display power indicator from 0% to 100% : When the product is charging, the LCD screen will display the voltage, current, power and battery capacity 液晶屏显示电量指示从 0%~100%: 在产品充电时液晶屏会显示电压电流还有功率和电量。	
	Discharge display 放电显示	When the product discharges, the LCD screen will display the voltage, current, power and battery capacity 在产品放电时液晶屏会显示电压电流还有功率和电量	

4. Reliability Requirements 可靠性要求

4.1 * Test project 测试项目	
* Single port short circuit protection 短路保护	The output is closed when the output is short circuit. The bug can be removed and recovered by recharging activation or pressing the bottom. (Load meter) 输出短路时，输出关闭，解除故障按按键或者充电激活可恢复
* Total output power 总输出功率	Total output power≤20W 总输出功率≤20W
* Turn on delay time 启动延迟时间	Maximum 3 seconds when fully loaded 满载状态下最大 3 秒
Over voltage protection 过压保护	Product protection with output voltage exceeding 14V 输出电压超过 14V 保护
Over temperature protection 过温保护	IC requires built-in over-temperature protection. When the battery temperature exceeds 85 degrees, it must stop output automatically. IC 需要内置过温保护，当电池温度超过 60 度时候，要能自动停止输出

High temperature discharge test 高温放电	Put the fully charged product into the test chamber at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 4h, visually test its appearance, and then work with a single port of the product with rated load until automatic shutdown to record the effective output energy of the product. Note: After the test is completed, leave it at room temperature for at least 4h before carrying out other content tests. 将充满电的产品放入 $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 试验箱中搁置 4h，目测其外观，然后以产品单个端口带额定负载工作至自动关机，记录产品的有效输出能量。 注：试验完成后在室温环境中至少搁置 4h 再进行其它内容测试。
Low temperature discharge test 低温放电	Put the fully charged product into the $-10^{\circ}\text{C} \pm 2^{\circ}\text{C}$ test chamber for 4h, visually test its appearance, and then work with a single port of the product with rated load until automatic shutdown to record the effective output energy of the product. Note: After the test is completed, leave it at room temperature for at least 4h before carrying out other content tests. 将充满电的产品放入 $-10^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 试验箱中搁置 4h，目测其外观，然后以产品单个端口带额定负载工作至自动关机，记录产品的有效输出能量。 注：试验完成后在室温环境中至少搁置 4h 再进行其它内容测试。
High temperature charging test 高温充电	Put the 0% power product into the test chamber at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 4h, and then charge with the standard input of the product until the power is full and stop charging, and record the full voltage of the product. Note: After the test is completed, leave it at room temperature for at least 4h before carrying out other content tests. 将 0%电量的产品放入 $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 的试验箱中搁置 4h，然后以产品标准输入进行充电，直至电量充满并停止充电，记录产品的充满电压。 注：试验完成后在室温环境中至少搁置 4h 再进行其它内容测试。
Low temperature charging test 低温充电	Put the 0% power product into the test chamber at $5^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 4h, and then charge with the standard input of the product until the power is full and stop charging, and record the full voltage of the product. Note: After the test is completed, leave it at room temperature for at least 4h before carrying out other content tests. 将 0%电量的产品放入 $5^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 的试验箱中搁置 4h，然后以产品标准输入进行充电，直至电量充满并停止充电，记录产品的充满电压。 注：试验完成后在室温环境中至少搁置 4h 再进行其它内容测试。

Temperature cycle test 温度循环	Put the fully charged product into the $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ test chamber, raise the temperature of the test chamber to $75^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($1^{\circ}\text{C}/\text{min}$ temperature variability) for 6h, then lower the temperature of the test chamber to $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($1^{\circ}\text{C}/\text{min}$ temperature variability) for 6h, and then raise the temperature to $75^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for 6h ($1^{\circ}\text{C}/\text{min}$ temperature variability); Cycle 10 times. Note: After the test is completed, leave it at room temperature for at least 4h before carrying out other content tests. 将充满电的产品放入 $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 试验箱内，将试验箱温度升至 $75^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($1^{\circ}\text{C}/\text{min}$ 温变率) 保持 6h，然后再将试验箱温度降为 $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ($1^{\circ}\text{C}/\text{min}$ 温变率) 保持 6h，然后再将温度升至 $75^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 保持 6h ($1^{\circ}\text{C}/\text{min}$ 温变率)；循环 10 次。 注：试验完成后在室温环境中至少搁置 4h 再进行其它内容测试。
Burn-in 老化	The product must undergo 100% burning-in before shipment to ensure the quality. 产品在出货前必须经过 100% 的煲机，以保证产品的品质。
MTBF 平均故障间隔时间	The MTBF shall be at least 30,000 hours at 25°C max and normal input condition 在正常输入和环境温度最高为 25 摄氏度的情况下，平均故障间隔时间至少是 30000 小时

4.2 Charging Protocol & Intelligent Identification 充电协议与智能识别

C 口协议

☒ Support PD3.0 or PD2.0

☒ Support AFC

☒ Support SCP ($10\text{V}2.25\text{A}-22.5\text{W}$) 降功率前有，降功率后没有

☐ Support SSCP

☐ Support directly charging at low voltage 支持低压直充

☒ Support QC3.0/QC2.0

☒ Support FCP

☒ Support DCP-1.5A

☒ Support Apple 2.4A

功率分配:

USB-C: 20W 5V3A, 9V/2.22A, 12V/1.67A.

**无线充: BPP:5W 5V1A; IPHONE:15W 11V1.37A; MPP:15W 11V1.37A; Samsung:10W 9V1.12A
EPP:15W 9V1.67A**

边充边放: USB-C 充电无线充放电: BPP:5W 5V1A.



AI 智能控温功率分配 (USB-C MAX 20W) 放电 10 分钟 ± 2 分钟后降功率 (USB-C MAX 13W) :

USB-C: 13W 5V2.4A, 9V/1.5A, 12V/1.11A.

无线充: BPP:5W 5V1A; IPHONE:7.5W 5V1.5A; Samsung:10W 9V1.12A

边充边放: USB-C 充电无线充放电: BPP:5W 5V1A.

4.3 * Output Ripple 输出纹波

output voltage ripple 输出电压纹波	纹波值 (mV)	Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (Under the condition of rated input and rated output)
5V	≤200	量测时示波器选用 20MHz 带宽限制, 输出端要并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容. (在额定输入及输出的条件下检测)
9V	≤200	
12V	≤200	
REMARK 备注		Unless otherwise specification, output load must set at CR mode. 除非另有说明输出负载必须设置在 CR 模式

5. Environment Requirements 环境要求

5.1. Operating Temperature and Humidity 操作温/湿度

-10°C to 40°C

10%RH to 90%RH

5.2. Storage Temperature and Humidity 存储温/湿度

-40°C to 70°C

5%RH to 95%RH non-condensing, 2000 meters below sea level 低于海拔 2000 米

5.3. Vibration 振动

Sweep frequency: 10 to 300Hz, acceleration: 1.0G(breadth: 3.5mm). Vibrate for 1 hour along the X, Y, and Z perpendicular axes

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时

5.4. * Drop in 跌落

Test method: 6 surfaces, height: 100cm, once for each test, falling onto hardwood board.

Requirement: the plug can be bended, scratch can be existed, but the structure should not be damaged, and can work normally.

测试方法: 6 面, 跌落高度 100 厘米, 各 2 次, 跌落到硬木板上

判定标准: 插脚可以弯曲, 外壳可以有伤, 但外观不能有结构性损毁, 且能正常工作



6. EMI/EMS Standards 标准

6.1. EMI Standards EMI 标准

Certificate	Country 国家	Standard 标准
☒ FCC	USA 美国	☒ FCC PART 15B
☐ CE	Europe 欧洲	☐ EN55032 EN55024 EN61000-3-2 EN61000-3-3
☐ C-Tick	Australia 澳洲	☐ AS/NZS CISPR22
☐ KCC	Korea 韩国	☐ K32/K35
☐ PSE	Japan 日本	☐ J55022
☐ CCC	China 中国	☐ GB17625.1

6.2. Assessment criteria /评估标准

Acceptance criteria 可接受标准	Performance 性能
A	Agreed operational behavior within the specified limits 性能不允许变化；如果性能会发生变化，则变化的范围在产品规格书规定的范围内。
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests. 设备在测试过程中,性能降低允许在产品规格书要求范围内,干扰消除后,设备能恢复正常,不允许出现复位和任何方式的人工干预。
C	Malfunction is permitted. The function can be reactivated either by reconnection to the mains or by operator intervention. 在测试过程中，设备允许出现业务中断，测试完毕后允许自行恢复或者人工干预恢复（包括硬件上干预）；测试中只允许初级防护器件损坏，并且更换损坏的初级防护器件后，设备能恢复正常

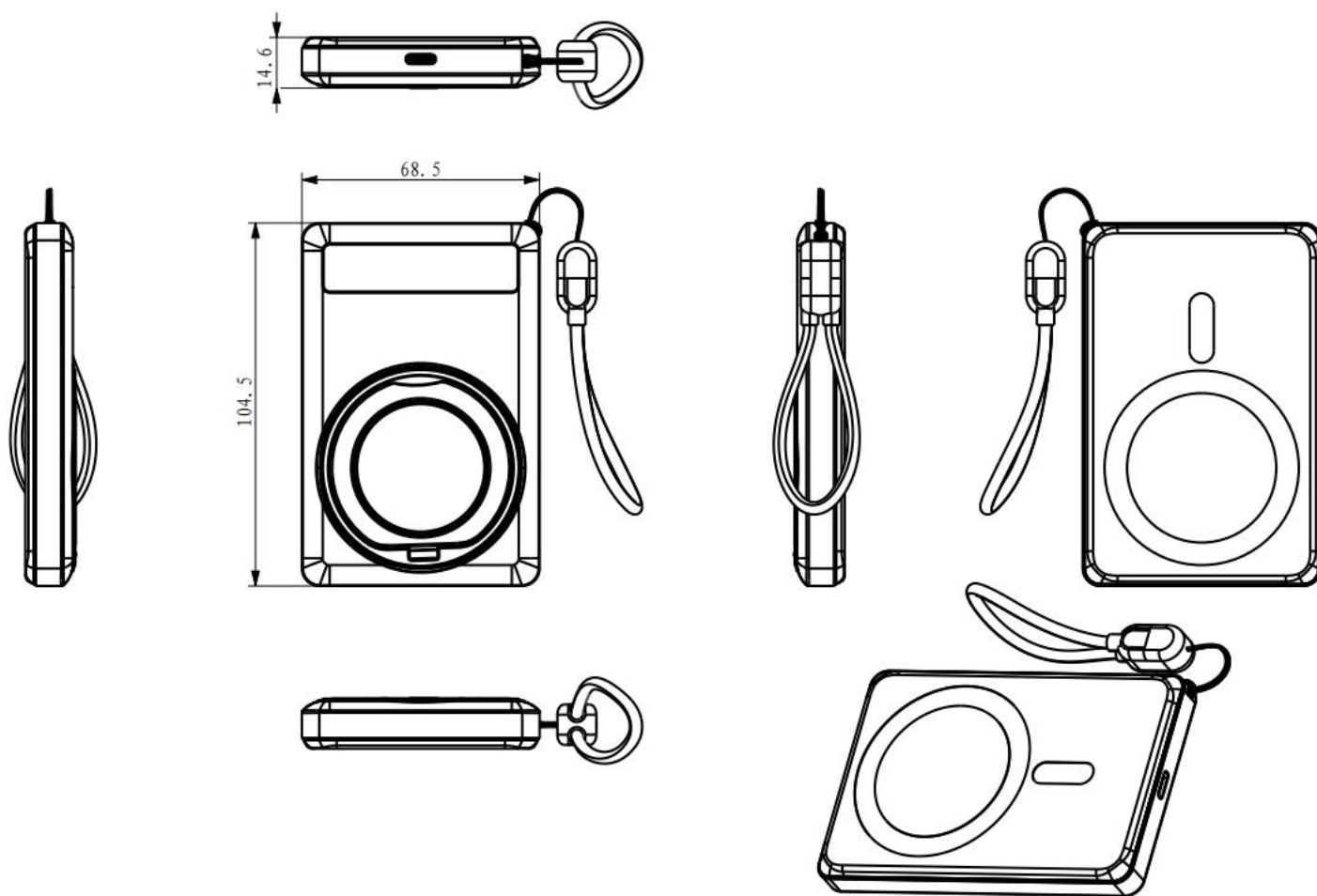
6.3. Regulatory Standards/安规标准

Certificate	Country/国家	Standard / 标准
☒ ETL	USA 美国	☒ UL62368-1
☐ CE+BS1363	British 英国	☐ EN60950-1+BS1363
☐ CE /GS	Europe 欧洲	☐ EN60950-1
☐ SAA	Australia 澳洲	☐ AS/NZS60950-1
☐ PSE	Japan 日本	☐ J60950-1



☐ CCC	China 中国	☐ GB4943
☐ KC	Korea 韩国	☐ K60950-1
☐ PSB	Singapore 新加坡	☐ IEC60950-1

7. Outline Drawing 外观示意图



Shell material: ■PC Temperature resistance: 120°C

Shell material: □PC+ABS Temperature resistance: 95°C

外壳材质: ■PC 耐温: 120°C □PC+ABS 耐温: 95°C

Remark: PC material meets the requirement of spherical pressure test.

备注: PC 材质符合球压测试要求



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8. Marking Drawing 铭牌示意图

- ☒ Laser etching 镭雕
- ☐ Pad printing 丝印



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9. Package Drawing 包装示意图

10. Sample Test Report 样品测试报告