

客户承认书

SPECIFICATION FOR APPROVAL

CUSTOMER/客户: DHM053

CUSTOMER PN/客户物料号:

MODEL NO./产品型号: PQ2001DI

PRODUCT NO./产品编号:

SAMPLE DATE/送样日期: 2025/11/14 (white/白色)

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。

Fabricate/拟制	Audit/审核	Approve/批准
乔彩红	向良冲	杨远盛

E. C. LIST/变更履历表

[illegible]

** Table Of Content/目录 **

1. SCOPE 适用范围	3
1.1. Description 描述	3
2. Input Characteristics 输入特性	3
3. Output Characteristics 输出特性	3
3.1. * Test project 测试项目	3
3.2. * Test project/测试项目	4
3.3. * Combined output /组合输出	4
3.4. Charging Protocol & Intelligent Identification 充电协议与智能识别	6
3.5. * Output Ripple 输出纹波	7
3.6. * Test project 测试项目	7
4. Environment Requirements 环境要求	8
4.1. Operating Temperature and Relative Humidity/操作温/湿度要求	8
4.2. Storage Temperature and Relative Humidity/存储温/湿度要求	8
4.3. Vibration/振动	8
4.4. * Drop/跌落	8
5. Reliability Requirements/可靠性要求	8
5.1. * Burn-in/老化	8
5.2. MTBF	8
6. EMI/EMS Standards 标准	8
6.1. EMI Standards EMI 标准	8
6.2. EMS Standards EMS 标准	9
7. * Safety Standards/安规标准	10
7.1. * Dielectric Strength(Hi-pot)/介电耐压强度(高压)	10
7.2. Leakage Current/漏电流	10
7.3. Insulation Resistance/绝缘阻抗	10
7.4. Regulatory Standards/安规标准	10
8. Outline Drawing 外观示意图	11
9. Base Schematic drawing 底座示意图	12
10. Marking Drawing 铭牌示意图	13
11. Package Drawing 包装示意图	14
12. Sample Test Report/样品测试报告	15

1. SCOPE 适用范围

This product is a consumer product. It can be used for intelligent identification and charging of Bluetooth devices, mobile phones, tablets and other digital electronic products. It is an AC to DC converter with TYPE-C travel charger.

本产品是一款消费类产品，可为蓝牙设备，手机、平板电脑等数码类电子产品进行智能识别充电.是一款 **AC to DC** 转换器，输出接口为 **TYPE-C** 旅行充电器。

1.1. Description 描述

☐ USB CHARGER /USB 充电器

☒ 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 must test items. “*” 是公司生产及 QA 必测项目。

2. Input Characteristics 输入特性

2.1 *	Input voltage range 输入电压范围	90Vac - 264Vac
2.2 *	Normal voltage range 额定输入电压范围	100Vac - 240Vac
2.3 *	Input frequency range 频率范围	47Hz-63Hz
2.4 *	Rated input frequency 额定频率	50Hz/60Hz
2.5 *	Max.input ac current 最大输入电流	3.0A max at full load condition
2.6	Inrush current(cold start)浪涌电流	160A max at 264Vac input
2.7 *	The average efficiency under load is/负载下效率平均值在 25%,50%,75%,100%: 5V3A $\geq$ 76.41% / 20V/5A, $\geq$ 86.0%	At 115/230Vac. (工作 30 分钟后测试)
2.8 *	No-load power(At 115VAC/230VAC)空载功耗.	Less than 0.3W
2.9	Built-in active PFC function/内置功率因数校正	☐ N/A ☒ PF 值: $\geq$ 0.9

3. Output Characteristics 输出特性

3.1. *Test project 测试项目

USB-C1/C2/C3/C4 100W Max	Port Output/输出	MIN (V/A)/ 最小	Standard (V/A)/标准	MAX (V/A)/最大	OCP (A)	Remark/ 备注
	5V Voltage /5V 电压	4.75	5.0	5.25		
	Current /电流	0.0	3.0		3.1-3.9	
	9V Voltage /9V 电压	8.55	9.0	9.45		
	Current /电流	0.0	3.0		3.1-3.9	
	12V Voltage /12V 电压	11.4	12.0	12.60		
	Current /电流	0.0	3.0		3.1-3.9	
	15V Voltage /15V 电压	14.25	15.0	15.75		

	Current /电流	0.0	3.0		3.1-3.9	
	20V Voltage /20V 电压	19.0	20.0	21.0		
	Current /电流	0.0	5.0		5.1-6.2	
注：输出 20V/5A 需要输出 Type-C 的线中含有 E-MARK 芯片，否则只能输出 20V/3A,						

3.2. *Test project/测试项目

A1/A2 (18W)	Port output/输出	MIN (V/A)/ 最小	Standard (V/A)/标准	MAX (V/A)/最大	OCP (A)	Remark/ 备注
	5V Voltage /5V 电压	4.75	5.0	5.25		
	Current /电流	0.0	3.0		3.1-3.9	
	9V Voltage /9V 电压	8.55	9.0	9.45		
	Current /电流	0.0	2.0		2.1-3.0	
	12V Voltage /12V 电压	11.4	12.0	12.6		
	Current /电流	0.0	1.5		1.6-2.3	

3.3. *Combined output /组合输出

NO	C1	C2	C3	C4	A1	A2	TOTAL (Max)
Single port output/ 单口输出	100W	/	/	/	/	/	100W
	/	100W	/	/	/	/	100W
	/	/	100W	/	/	/	100W
	/	/	/	100W	/	/	100W
	/	/	/	/	18W	/	18W
	/	/	/	/	/	18W	18W
Two ports are output at the same time/ 2 口同时输出	100W	100W	/	/	/	/	200W
	100W	/	100W	/	/	/	200W
	100W	/	/	100W	/	/	200W
	/	100W	100W	/	/	/	200W
	/	100W	/	100W	/	/	200W
	/	/	100W	100W	/	/	200W
	100W	/	/	/	18W	/	118W
	100W	/	/	/	/	18W	118W
	/	100W	/	/	18W	/	118W
	/	100W	/	/	/	18W	118W
	/	/	100W	/	18W	/	118W
	/	/	100W	/	/	18W	118W
	/	/	/	100W	18W	/	118W
	/	/	/	100W	/	18W	118W
	/	/	/	/	10W+10W		20W

NTC After running for/运行 30 minutes, Power reduction to /降功率: 100+100W (200W) →90W+60W (150W)								
Three ports are output at the same time/ 3 口同时输出	100W	65W	30W	/	/	/	195W	
	100W	65W	/	30W	/	/	195W	
	100W	/	65W	30W	/	/	195W	
	/	100W	65W	30W	/	/	195W	
	100W	65W	/	/	18W	/	183W	
	100W	65W	/	/	/	18W	183W	
	100W	/	65W	/	18W	/	183W	
	100W	/	65W	/	/	18W	183W	
	100W	/	/	65W	18W	/	183W	
	100W	/	/	65W	/	18W	183W	
	/	100W	65W	/	18W	/	183W	
	/	100W	65W	/	/	18W	183W	
	/	100W	/	65W	18W	/	183W	
	/	100W	/	65W	/	18W	183W	
	/	/	100W	65W	18W	/	183W	
	/	/	100W	65W	/	18W	183W	
	100W	/	/	/	10W+10W		120W	
	/	100W	/	/	10W+10W		120W	
	/	/	100W	/	10W+10W		120W	
	/	/	/	100W	10W+10W		120W	
	NTC After running for/运行 30 minutes, Power reduction to /降功率: 100W+65W+30W (195W) →60W+60W+30W (150W) 100W+65W+18W (183W) →65W+65W+18W (148W)							
	Four ports are output at the same time/ 4 口同时输出	65W	65W	45W	20W	/	/	195W
		65W	65W	45W	/	18W	/	193W
65W		65W	45W	/	/	18W	193W	
65W		65W	/	45W	18W	/	193W	
65W		65W	/	45W	/	18W	193W	
65W		/	65W	45W	18W	/	193W	
65W		/	65W	45W	/	18W	193W	
/		65W	65W	45W	18W	/	193W	
/		65W	65W	45W	/	18W	193W	
100W		65W	/	/	10W+10W		185W	
100W		/	65W	/	10W+10W		185W	
100W		/	/	65W	10W+10W		185W	
/		100W	65W	/	10W+10W		185W	
/	100W	/	65W	10W+10W		185W		

	/	/	100W	65W	10W+10W	185W
NTC After running for/运行 30 minutes, Power reduction to /降功率: 65W+65W+45W+20W (195W) → 45W+45W+35W+20W (145W) 65W+65W+45W+18W (193W) → 45W+45W+35W+18W (143W) 100W+65W+10W+10W (185W) → 60W+60W+10W+10W (140W)						

Five outputs at the same time 5 口同时输出	100W	30W	20W	20W	18W	/	188W
	100W	30W	20W	20W	/	18W	188W
	65W	45W	45W	/	10W+10W		175W
	65W	45W	/	45W	10W+10W		175W
	65W	/	45W	45W	10W+10W		175W
	/	65W	45W	45W	10W+10W		175W
	NTC After running for/运行 30 minutes, Power reduction to /降功率: 100W+30W+20W+20W+18W (188W) → 45W+30W+30W+20W+18W (143W) 65W+45W+45W+10W+10W (175W) → 45W+45W+35W+10W+10W (145W)						
Six ports output at the same time 6 口同时输出	65W	45W	45W	20W	10W+10W		195W
	NTC After running for/运行 30 minutes, Power reduction to /降功率: 65W+45W+45W+20W+10W+10W(195W)→45W+30W+30W+20W+10W+10W(145W)						
Remark/ 备注	100W: 5V3A,9V3A,12V3A,15V3A,20V5A; PPS:3.3-21V 5A 65W: 5V3A,9V3A,12V3A,15V3A,20V3.25A; PPS: 3.3-11V5A 45W: 5V3A,9V3A,12V3A,15V3A,20V2.25A; PPS: 3.3-11V 4A 30W: 5V3A,9V3A,12V2.5A,15V2A,20V1.5A; PPS: 3.3-11V 3A 20W: 5V3A,9V2.22A,12V1.67A; PPS: 3.3-11V 2A 18W: 5V3A,9V2A,12V1.5A; 10W: 5V2A						

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

C1/C2/C3/C4 (Support)	☒ QC2.0	☒ QC3.0	☐ QC4.0	☒ QC4.0+
	☒ PD2.0	☒ PD3.0	☐ PD3.1	☒ PPS
	☒ BC1.2	☒ Samsung 2.0A	☒ APPLE 2.4A	
	☒ FCP	☒ SCP	☐ SSCP	☐ VOOC
	☒ PE1.0	☒ PE2.0		
	☒ AFC	☐ UFCS	☐ 其它	
A1/A2 (Support)	☒ QC2.0	☒ QC3.0		
	☒ BC1.2	☒ Samsung 2.0A	☒ APPLE 2.4A	
	☒ FCP	☒ SCP	☐ SSCP	☐ VOOC
	☒ PE1.0	☒ PE2.0		
	☒ AFC	☐ UFCS	☐ 其它	

3.5. *Output Ripple 输出纹波

5V/9V/12/15V/20V Output voltage ripple 5V/9V/12/15V/20V 输出电压纹波	200mV	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) 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)
--	-------	---

3.6. *Test project 测试项目

port output / 输出	Remarks 备注
* Single port short circuit protection 短路保护	Short circuit will enter the burp protection mode, and will automatically recover after the short circuit disappears. 短路时将会进入打嗝保护模式, 短路消失后会自动恢复
* Start delay time 启动延迟时间	2s max at 115Vac to 230Vac input & full load 满载状态下最大 2 秒
Rise time 上升时间	40ms max at 115Vac input and max load output. 当输入 115Vac 和输出最大负载时, 最大上升时间为 40ms max
Hold time/保持时间	a. 10ms min at full load & 115Vac/60Hz input, turn off at worst case 在最差情况关机 b. 20ms min at full load & 230Vac/50Hz input, turn off at worst case 在最差情况关机
Output Overcharge/Undecharge 输出过冲/欠冲	10% max when power supply turn on/off 在电源开启或关闭的时候, 最大 10%
Output Load Transient Response 输出负载瞬态响应	Output voltage within $\pm 5\%$, load step from 25% to 50% to 25%, 50% to 75% to 50%, R/S: 0.25A/uS Transient response recovery time :200uS Dynamic response overshoot: $\pm 5\%$ 输出电压在 $\pm 5\%$ 之间, 负载变化: 从 25% 到 50% 到 25% , 50% 到 75% 到 50% , 斜率: 0.25A/uS , 动态响应恢复时间: 200uS , 动态响应过冲 $\pm 5\%$
Over voltage protection 过压保护	The output voltage shall be protected by internal clamped IC 输出电压由内部钳位 IC 保护
Over temperature protection 过温保护	IC requires built-in over-temperature protection. When IC temperature exceeds 135 degrees, it must stop output automatically. IC 需要内置过温保护, 当 IC 温度超过 135 度时候, 要能自动停止输出
* Total output short circuit power	When there is a short circuit, the output power is less than 5W and it will not damage the product. After the short circuit disappears, it

总输出短路功率	will resume automatically. 当输出短路时功率小于 5W ，但不会损坏产品，短路消失后会自动恢复正常。
---------	---

4. Environment Requirements 环境要求

4.1. Operating Temperature and Relative Humidity/操作温/湿度要求

0°C to +25°C

10%RH to 90%RH

4.2.Storage Temperature and Relative Humidity/存储温/湿度要求

-20°C to +80°C

5%RH to 95%RH non-condensing @ Sea level shall be low 2,000 meter/低于 **2,000** 米.

4.3.Vibration/振动

10 to 200Hz sweep at a constant acceleration of 1.0G(Breadth: 3.5mm) for 0.5Hour for each of the perpendicular axes X, Y, Z

扫描频率: **10 to 200Hz**, 加速度: **1.0G**(位移: **3.5mm**), X, Y, Z 三垂直坐标轴向各振动 **0.5** 小时

4.4. ★ Drop/跌落

Fall height 100 cm plus or minus 10 cm, a total of 3 times, fell onto the hardwood, after the drop test, the shell does not burst, off the shell phenomenon; The performance works properly.

跌落高度 **100** 厘米正负 **10** 厘米, 共 **3** 次, 跌落到硬木板上,跌落测试后外壳无爆裂, 离壳现象; 性能正常工作。

5. Reliability Requirements/可靠性要求

5.1. ★ Burn-in/老化

The product must undergo 100% burn-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。

5.2. MTBF

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

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
☐ UKCA	British/英国	☐ 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	☐ J55032

■ CCC	China/中国	■ GB17625.1 & GB9254
-------	----------	----------------------

6.2. EMS Standards EMS 标准

6-2-1 EN 61000-4-2,electrostatic discharge(ESD) requirement/静电抗扰度要求

Discharge characteristic/静电规格	Test Condition/测试条件	Test criteria/测试标准
Air discharge/空气放电	+/-8KV	B
Contact discharge/接触放电	+/-4KV	B

6-2-2 EN 61000-4-3, radiated electromagnetic field susceptibility(rs)/辐射骚扰场强

Test level/测试条件	Test criteria/测试标准
3V/m (r.m.s)	B
80-1000MHz,80%AM(1KHz) sine-wave	

6-2-3 EN 61000-4-4,electric fast transients(burst) immunity requirement/电快速瞬变脉冲群

Coupling/测试端口	Test level/测试条件	Test criteria/测试标准
AC-input/交流输入	0.5KV	A
AC-input/交流输入	1KV	B

6-2-4 EN 61000-4-5,surge capability requirement/浪涌抗扰度要求

Surge voltage/雷击电压	Test criteria/测试标准
Common mode/共模 +/-2KV	A
Differential mode/差模 +/-1KV	

6-2-5 EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity requirement/电源端子传导骚扰实验

Test level/测试条件	Test criteria/测试标准
3V	B
0.15-80 MHz,80%AM(1KHz)	

6-2-6 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. During the test, only the primary protective device is allowed to be damaged. the device can be restored to normal, After the damaged primary protective device is replaced, 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

7. ★ Safety Standards/安规标准

7.1. ★ Dielectric Strength(Hi-pot)/介电耐压强度(高压)

Primary to Secondary: 1500Vac / 5mA Max / 60second

初级对次级: 1500Vac / 5mA Max / 60 秒

7.2. Leakage Current/漏电流

Safety Classification/安全等级	Test condition/Test condition/测试方法
☒ Class I	3.5mA @ normal input voltage & frequency
☐ Class II	0.25mA @ normal input voltage & frequency

7.3. Insulation Resistance/绝缘阻抗

50MΩ min. at primary to secondary add 500Vdc test voltage

在初级与次级间加 500Vdc 进行测试

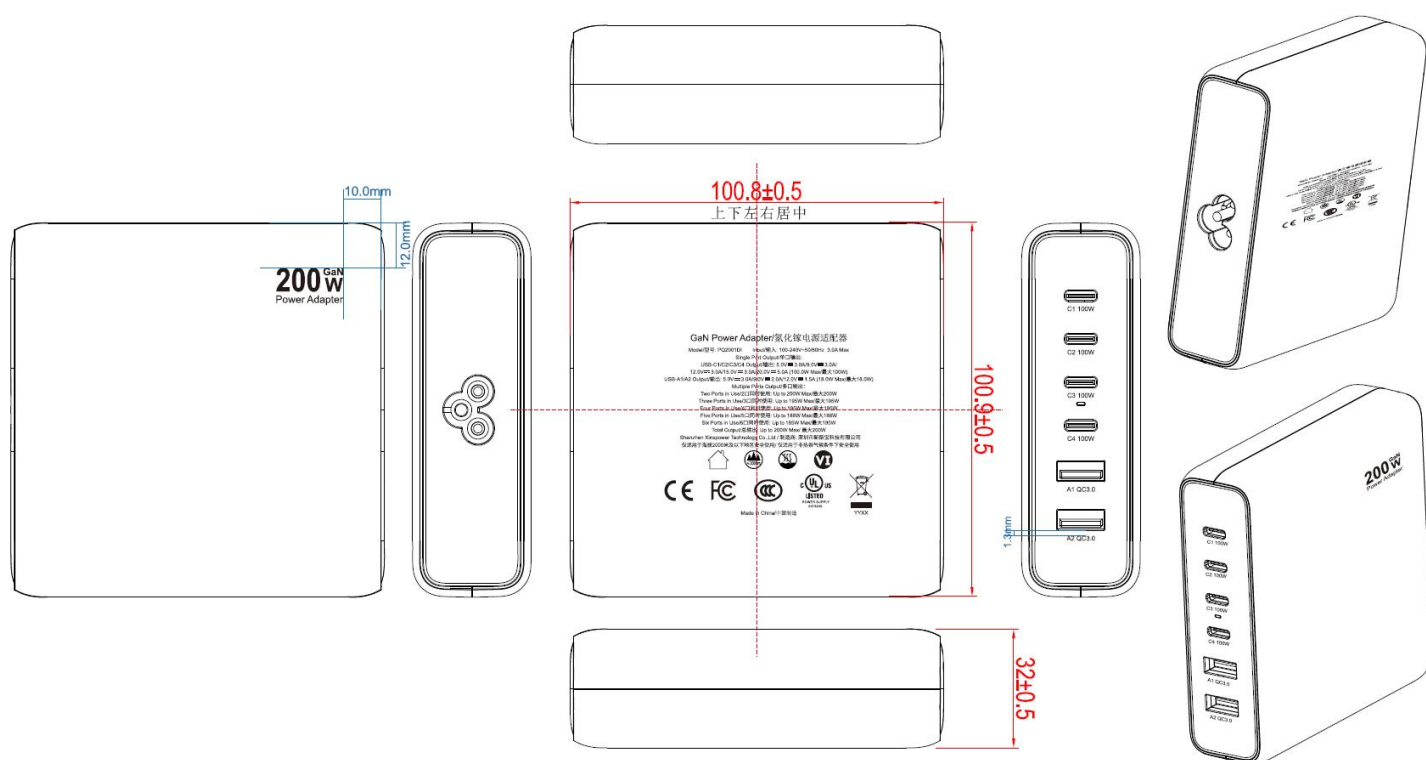
7.4. Regulatory Standards/安规标准

Certificate	Country/国家	Standard/标准
☒ UL / cUL	USA/美国	☒ UL62368-1
☐ UKCA	British/英国	☐ EN62368-1+BS1363
☒ CE	Europe/欧洲	☒ EN62368-1
☐ SAA	Australia/澳洲	☐ AS/NZS62368-1
☐ PSE	Japan/日本	☐ J62368

☐ S-Mark	Argentina/阿根廷	☐ IEC60950-1
☒ CCC	China/中国	☒ GB4943.1
☐ KC	Korea/韩国	☐ K60950-1
☐ PSB	Singapore /新加坡	☐ IEC60950-1

8. Outline Drawing 外观示意图

Plum blossom tail C6/梅花尾 Desktop/桌面式 (white/白色外壳) (A 口橙色)



外壳材质/ shell material: ☒ PC 耐温: 120℃/ temperature resistance 120℃

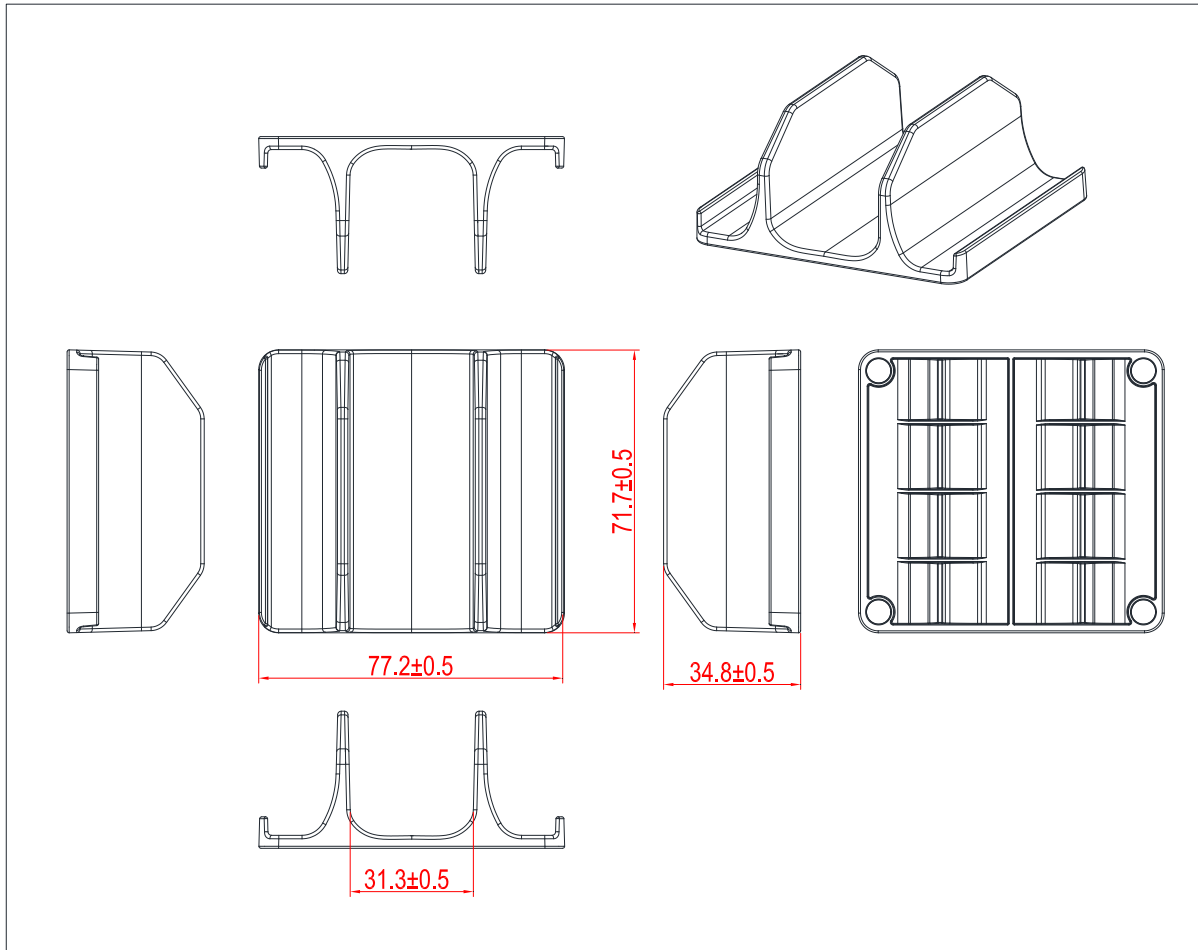
☐ PC+ABS 耐温: 95℃/ temperature resistance 95℃

备注: PC 材质符合球压测试要求/ remark:

PC material meets the requirement of spherical pressure test.

9. Base Schematic drawing 底座示意图

(white/白色)



外壳材质/ shell material: ■PC 耐温: 120°C / temperature resistance 120°C

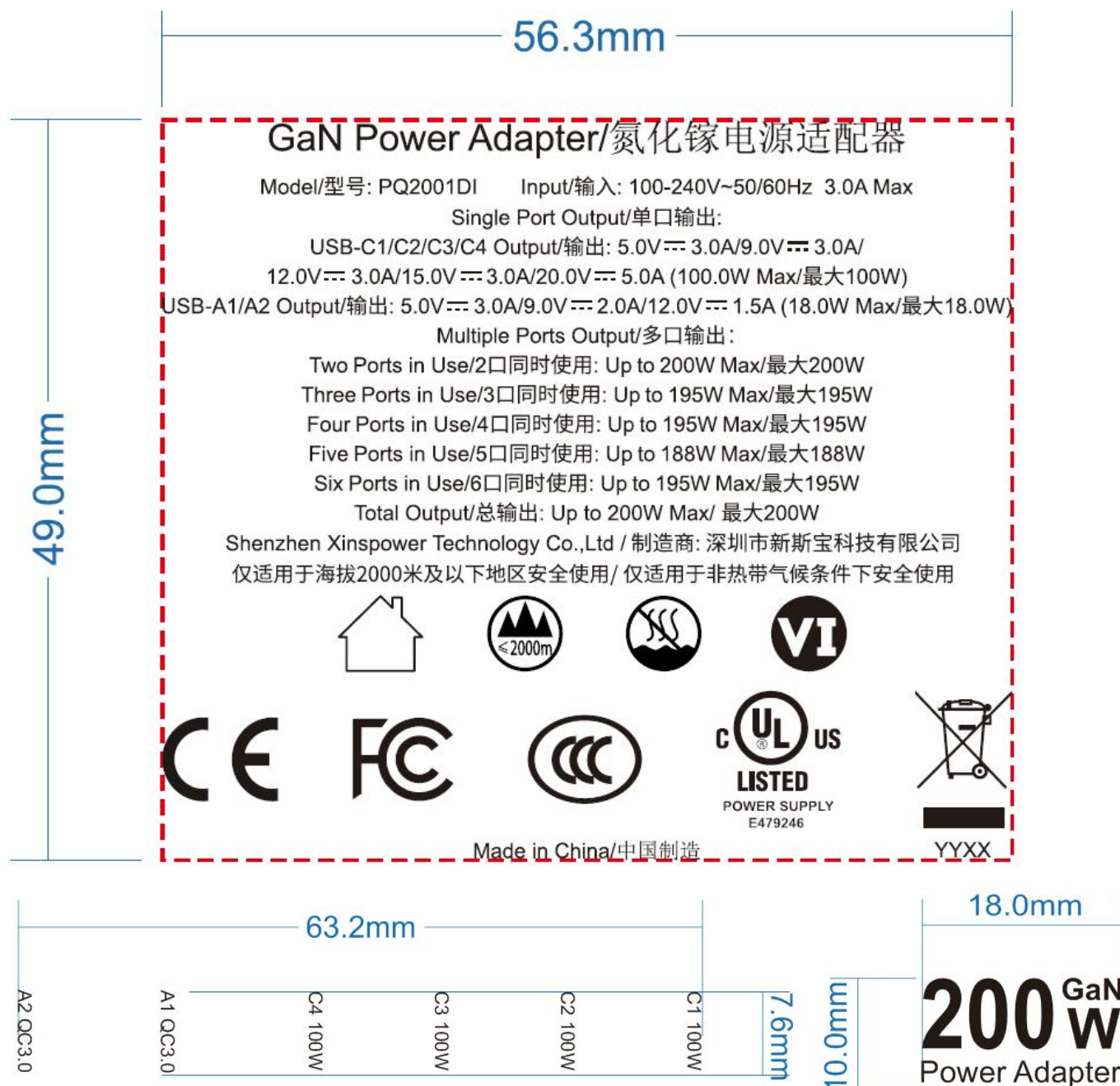
□PC+ABS 耐温: 95°C / temperature resistance 95°C

10. Marking Drawing 铭牌示意图

■ Laser etching 镭雕

□ Pad printing 移印

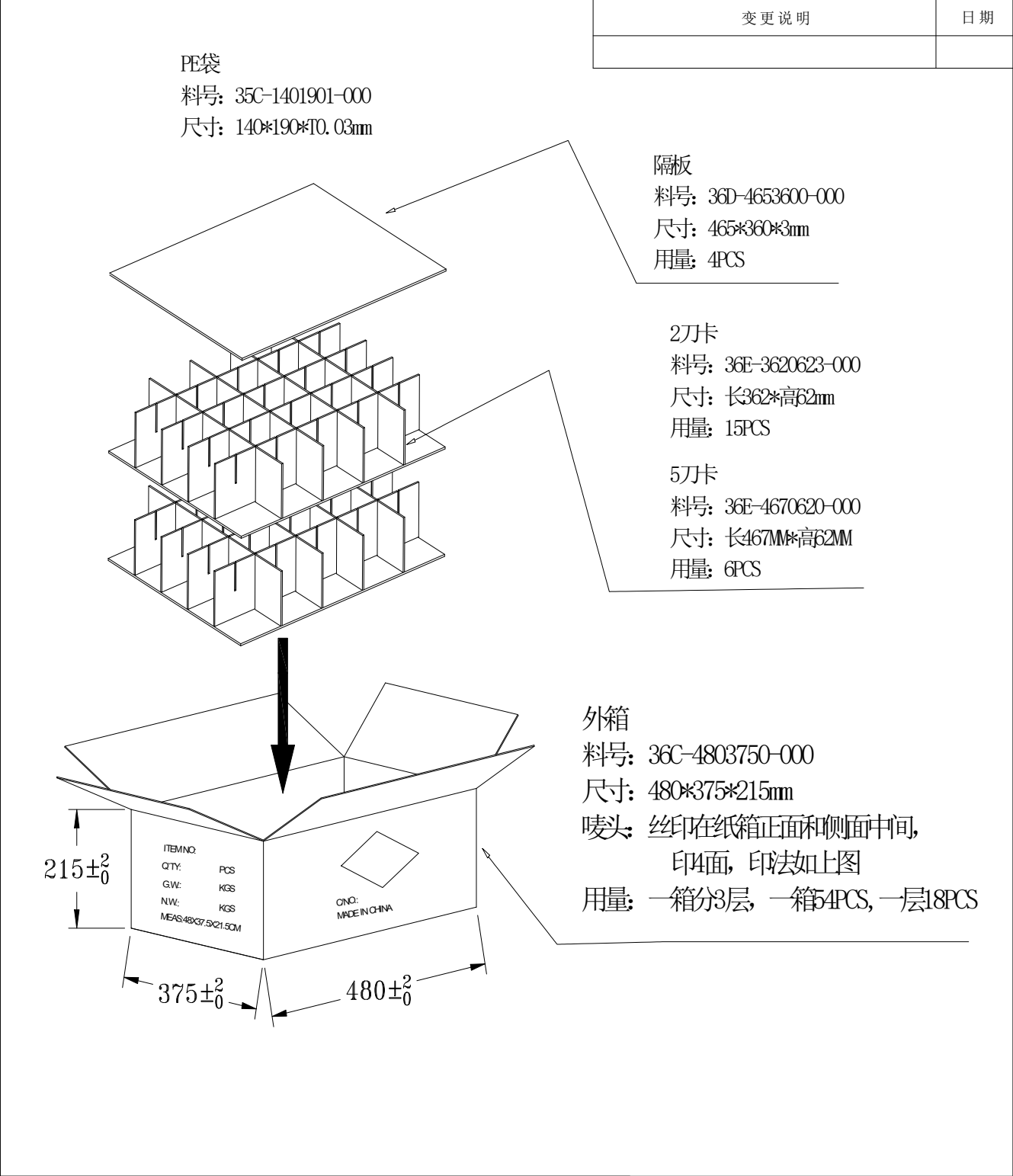
料号: 版本: 000



注: 铭牌上 YYXX 代表生产日期的年、周, 每批订单都有改动, 跟生产日期而定。
如 2546, 2025 年 46 周的意思。

11. Package Drawing 包装示意图

(包装图尺寸仅供参考，实际尺寸以入系统为准)



12. Sample Test Report/样品测试报告