

样品承认规格书

PART SHEET FOR APPROVAL

制造商名称: Manufacturer:	无锡威达智能电子股份有限公司 Wuxi Weida Intelligent Electronics Co., Ltd.
供应商名称 Supplier::	无锡威达智能电子股份有限公司 Wuxi Weida Intelligent Electronics Co., Ltd.
产品名称: Part Description:	蓝牙语音遥控器 Remote Control
规格型号: Model No:	WH-6749_BLE
物料编码: Cust P/N:	110400618
日期: Issued Date:	2021.6.26

供应商确认 Supplier confirmation

承办 Made By	审核 Engineer	批准 Approver
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承认原因: Approval Reason:	<input type="checkbox"/> 新物料 New Part <input type="checkbox"/> 替代料 Substitute Part		
承办 Made By	审核 Engineer		批准 Approver
	品质 Quality	研发 R&D	业务 Sales

备注：签名表明提交样品获得承认，图纸规格已经受控。Note: Signature indicates that the submitted sample is approved and the drawing/specification is now the controlling document.

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无锡威达智能电子股份有限公司

Wuxi Weida Intelligent Electronics Co., Ltd.

产 品 规 格 书

Product Specification

蓝牙遥控器产品规格书

BLE remote control product specification

客户单位: 深圳华曦达科技股份有限公司
Client unit
客户料号: 110400618
Customer Material Num.
威达料号: WH-6749 BLE
WeiDa Material NO.
产品类型: 蓝牙+IR+Voice
Product Type
日期: 2021-06-26
Day period
拟制: Nick
Proposed
批准: _____
Batch registration

承制方: 无锡威达智能电子股份有限公司

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规格书变更履历表

Change of specification book resume

日期 Date	版本 Version	修改章节 Modify Chapter	描述 Describe	拟制 Proposed	备注 Note
2021-06-26	V1.0		创建	Nick	
2022-01-11	V1.1		增加遥控器 固件版本	Nick	
2022-01-12	V1.2		增加华曦达 封面	Nick	
2022-04-22	V1.3	第二、三 章	修改效果图	Nick	

遥控器版本信息表

	型号 Model	版本 Version	日期 Date	拟制 Proposed
软件 S W	SDMC_NEBULA_RC2153_RC_BURN_TEST_WNF171_F956_V0003_2 0211022_YX.bin	V003	21-10-22	Nick
硬件 H W	WH-5537_BLE	V1.0	19-03-27	Nick

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一、遥控器测试条件及参数

Remote Control test conditions and parameters

1、 硬件要求

Hardware requirements

序号 NO.	说明项目 Description Project	技术规格 Technical Specifications	备注 Note
1	按键数 Number of keys	12 键 12 Keys	
2	遥控器尺寸 Remote control size	150*39*19mm	
3	按键自由高度 Button Free Height	$\leq 2\text{mm}$	
4	按键作用后高度 The height after the key action	$\geq 0.15\text{mm}$	
5	按键作用力 Key force	参照按键荷重分布图 Refer to keystroke load distribution map	
6	外壳塑胶材质 Shell Plastic Material	ABS 原料（无味、不掺回料），厚度 $\geq 2.0\text{mm}$ ABS raw material (tasteless, no blending), thickness $\geq 2.0\text{mm}$	
7	外壳颜色 Shell Color	实色注塑黑色， Solid color injection black,	
8	丝印 Screen printing	耐酸耐醇耐磨 Acid-resistant and alcohol-resistant	
9	PCB 电路板材质 PCB Circuit	环氧玻铅板	

	board Material		
10	PCB 布线线宽及 间距 PCB Cabling line width and spacing	$\geq 0.3\text{mm}$	
11	表面涂敷处理 Surface Coating Treatment	详细见遥控器《外观及工艺要求》 See the remote control 《appearance and process requirements》 in detail	
		表面应平整牢固，不允许有划痕， 斑疵、流挂、脱落和破损 Surface should be flat and firm, not allowed to have scratches, spot defects, flow hanging, peeling and breakage	
12	电路板制作要求 Board Production requirements	所有印刷电路板均应防腐蚀 All printed circuit boards shall be corrosion resistant	
		不允许有飞线 No flying lines are allowed	
		焊点饱满，无虚焊、脱焊、连锡 Solder joints full, no virtual welding, off welding, Lianxi	
13	按键要求 Key requirements	按键胶边缘结构需增加“防水墙”，以达到按键装配后，用手指扣时不能脱出胶壳按键孔；按键面定位过孔采用硅胶包塑胶设计，使整个硅胶按键面没有破孔，以保证长时间使用板面整洁，硅胶按键需 偏硬 Key adhesive edge structure should be added "waterproof wall", in	

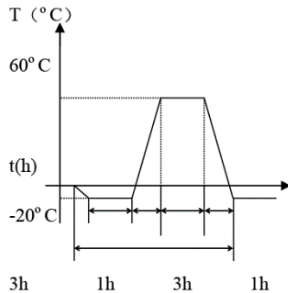
		order to achieve the key assembly, the finger buckle can not be out of the plastic shell button hole, key surface positioning through the hole using silicone rubber bag plastic design, so that the entire silicone button surface has no holes to ensure that the use of a long plate surface neat, silicone key need to be hard	
14	导电胶材质 Conductive adhesive Material	必须使用硅胶原料（不加粉），并且没有刺激性气味 Must use silicone material (no powder) and no pungent odor	
15	Metal dome（锅仔片） Metal Dome (pot slices)	遥控器所有按键采用 metal dome 按键，并且寿命必须 ≥ 50 万次，连续按压测试次数 ≥ 30 万次，可恢复到原荷重 Remote control all keys to use the metal Dome button, and the life must be ≥ 5 million times, continuous press test number ≥ 3 million times, can restore to the original load	

2、 产品规格

Product Specifications

序号 NO.	项目 Project	规格参数 Specification parameter	备注] Note
1	工作温度 Operating temperature	-20~60℃	
2	相对湿度 Relative humidity	$\leq 95\%$	
3	大气压力 Atmospheric pressure	86~106Kpa	

4	环境照度 Ambient illumination	自然光或荧光灯 200±50LX Natural light or fluorescent lights 200± 50LX	
5	主控 MCU	WNF171	
6	外壳材料 Shell material	ABS	
7	样品颜色 Sample Color	参考客户需求规格 Reference Customer Requirements Specifications	
8	电池规格 Battery specification	AAA 1.5*2	
9	自由跌落试验 Free Drop test	从 0.8 米高度，六面依次自由跌落在不小于 3cm 厚木制地板，三个循环。 From a height of 0.8 m, the floor is free to fall in a wooden floor of not less than 3 cm in sequence, and three cycles.	
10	静电环境试验 Electrostatic environment test	±8KV	
11	高温储存试验 High Temperature Storage test	60℃	
12	低温储存试验 Low Temperature storage test	-20℃	
13	恒定湿热试验 Constant damp heat test	40℃相对湿度 90±2% 40℃ Relative Humidity 90± 2%	

<p>14</p>	<p>温度循环变化试验 Temperature Cycle Change Test</p>		
<p>15</p>	<p>验收标准 Acceptance criteria MIL-STD-105E- LEVEL (II) AQL</p>	<p>重缺陷 (A类) AQL=0.65 Heavy defects (A Class) aql=0.65 轻缺陷 (C类) AQL=1.5 Light defect (C Class) aql=1.5</p>	
<p>16</p>	<p>遥控器运输及储存条件 Remote control transport and storage conditions</p>	<p>运输途中应避免雨雪直接侵袭或者强烈冲击。</p> <p>遥控器应储存在环境温度-20°C~+60°C，相对湿度不大于80%，周围没有强磁场、腐蚀物质和其它有害气体的库房中，储存期为一年。超过一年的产品经重新评估合格后，方可流入市场。</p> <p>In transit should avoid direct attack of rain or snow or strong impact.</p> <p>The remote control should be stored at ambient temperature-20°C~+60°C, the relative humidity is not greater than the 80%, with no strong magnetic field, corrosive substances and other harmful gases in the storehouse, the storage period is one year. After the product has been</p>	

		reassessed for more than one year, it can be brought into the market.	
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3、产品规格（蓝牙部分）

Product Specifications (BLE Part)

序号 No.	项目 Project	描述 Describe	备注 Note
1	使用电池 Use battery	碱性环保电池 Alkaline Environmental Protection Battery	
2	供电电压 Supply voltage	2.2-3.6V	
3	电流描述 Current description	$\leq 3\text{mA}$ 待机功耗（与机顶盒链接） $\leq 3\text{mA}$ standby power (Link to box) $\leq 5\text{mA}$ 发射功耗（常规按键） $\leq 5\text{mA}$ emission power consumption (general key) $\leq 25\text{mA}$ 录音功能（语音功能） $\leq 25\text{mA}$ recording feature (voice function)	
4	音频输出 Audio output	单声道、16K 采样率、16bit 精度音频输出 Mono, 16K sampling rate, 16bit Precision Audio output	（需遥控器支持）
5	传输距离 （蓝牙） Transmission Distance (Bluetooth)	$\geq 12\text{m}$ （周围无遮挡物） $\geq 12\text{m}$ (no shelter around)	
6	蓝牙协议	蓝牙 5.0 协议	

	(蓝牙) Bluetooth protocol (Bluetooth)	Bluetooth 5.0 protocol	
7	信号要求 (蓝牙) Signal requirements (Bluetooth)	满足通信传输距离要求, 同时符合蓝牙 BQB 认证要求 Meet the communication transmission distance requirements, while complying with the Bluetooth BQBCertification Requirements	
8	语音要求 (蓝牙) Voice requirements (Bluetooth)	语音软件识别率 $\geq 90\%$ (句), 有干扰情况下: 语音识别率 $\geq 85\%$ (句) (需要确认和机顶盒和软件正常状态) The speech software recognition rate $\geq 90\%$ (sentence), has the interference case: the speech recognition rate $\geq 85\%$ (needs to confirm and the set-top box and the software normal state)	(需遥控器支持)
9	连接响应 (蓝牙) Connection response (Bluetooth)	$\leq 200\text{ms}$, 这里是指恢复连接速度, 通过遥控器端测试开始广播到被连接上的时间间隔 $\leq 200\text{ms}$, this refers to the speed at which the connection is restored, the time interval at which the test begins broadcasting to the connected	
10	其他通用蓝牙设备影响 Other common Bluetooth device impact	HOST 端适配的驱动, 要不影响原有的蓝牙通用设备支持, 如蓝牙耳机/音响 (HSP/HFP, A2DP 等), 蓝牙键盘, 蓝牙鼠标, 游戏手柄等。 HOST End Adapter driver, or affect the original Bluetooth universal device support, such as Bluetooth headset /Audio (HSP/HFP, A2DP , etc.), Bluetooth keyboard, Bluetooth mouse, game	

		handles and so on.	
11	音频传输要求 Audio Transmission Requirements	音频传输无异常，无明显干扰、丢数据、截幅等现象 No abnormal audio transmission, no obvious interference, loss of data, cutting amplitude and other phenomena	
12	麦克风灵敏度 Microphone Sensitivity	灵敏度 $-42 \pm 3\text{dB}$ Sensitivity $-42 \pm 3\text{dB}$	
13	麦克风信噪比 Microphone Signal-to-noise ratio	不能低于 58dB cannot be less than 58dB	

二、遥控器产品效果图

Effect picture of remote controller product

序号	变更内容	标识	日期	制定	审核
1	修正Egoogle语音助手颜色		22.4.22	Nick	

1.外壳颜色
 PT Black C (实色注塑)

2.外壳丝印颜色
 PT CoolGray 7 C
 PT 2173 C
 PT 7549 C
 PT 179 C
 PT 2257 C

3.logo尺寸

尺寸范围	公差	无锡威达智能电子股份有限公司					
0-10mm	±0.03	客户	*	图名	WH-6749_BLE效果图	图幅	A4
10-50mm	±0.05	品名	*	模号	-	单位	MM
50-100mm	±0.08	版本	A01	设计	Nick	日期	2021-06-26
100-150mm	±0.1	材质	-	审核		比例	1:1
150-200mm	±0.15	缩水	-	批准		张次	1/1
>200mm	±0.2	角度	±1°	尺寸	-	路径	-

三、遥控器键值

Remote control key value

序号	变更内容	标识	日期	制定	审核
1	修正google语音助手颜色		22.4.22	Nick	

红外

用户码: 08F7
载波: 38K
协议: NEC
占空比: 1/3

蓝牙

Usage Page: 0X0C

尺寸范围	公差	无锡威达智能电子股份有限公司					
0-10mm	±0.03	客户	*	图名	WH-6749_BLE键值表	图幅	A4
10-50mm	±0.05	品名	*	模号	-	单位	MM
50-100mm	±0.08	版本	A01	设计	Nick	日期	2021-06-26
100-150mm	±0.1	材质	-	审核		比例	1:1
150-200mm	±0.15	缩水	-	批准		张次	1/1
>200mm	±0.2	角度	±1°	尺寸	-	路径	-

四、遥控器按键操作说明

Remote Control key action Description

- 1、 当遥控器未连接上机顶盒时，发送红外键值；连上机顶盒蓝牙，遥控器发蓝牙键值；

When the remote control is not connected to the set-top box, the infrared key value is sent; when the set-top box Bluetooth is connected, the remote control sends the Bluetooth key value;

- 2、 指示灯状态：遥控器上电后，按键按一下指示灯闪烁一次，直到按键抬起或 30s 后停止闪烁。

Infrared State: After the remote control is powered on, press the button once and the indicator flashes once, until the button is raised or stops flashing after 30s.

- 3、 配对功能：当同时按住 “OK” 和 “Vol-” 键并持续三秒，同时指示灯闪烁；

Pairing function: When the "OK" and " Vol- " keys are kept down for three seconds, while the LED are blinking; During pairing, 遥控器距离>10m;

Remote control distance >10m;

- 4、 支持蓝牙遥控器在线升级，盒子上电时自动检测遥控器版本，版本低于服务器推送版本时自动升级；

Bluetooth remote control to support the online upgrade, box on the power automatically detect the version of the remote, version less than the server push version automatically upgrade;

- 5、 蓝牙设备名：NEBULA Remote。

Bluetooth device Name: NEBULA Remote.

- 6、 ATV9.0：同时按住 “OK” + “Back 调出 Bug report;

ATV9.0: Press and hold "OK" + "Back at the same time to call up the Bug report.

- 7、 遥控器其他要求：

other remote control requirements:

- 1、 配对功能要求：不得存在扫描不到蓝牙设备或配对不上（包括短时间

内连续按配对键)的问题,请验证 50 次确保无问题;

The pairing feature requires that no Bluetooth devices be scanned or not paired up (including a continuous press pairing key for a short period of time), verify that ensure no problem;

- 2、BT 长连接: 遥控器不主动断开蓝牙连接, 断开连接后若回连超时则进入深度休眠模式, 待下次按键唤醒回连; 不得存在回连不上的问题, 包括盒子断电回连, 遥控器断电回连, 静置 2 小时回连等, 请验证 50 次确保无问题;

BT Long connection: The remote does not actively disconnect the Bluetooth connection, disconnect if the return timeout to enter the deep sleep mode, the Next button to wake up the connection, no return to the problem, including the box power back, remote control power back, static 2 hour back, please verify that times to ensure no problems;

- 3、抗干扰功能要求: 不得存在非常影响主机 WIFI 吞吐量的问题, 请确保连接遥控器时主机端 WIFI 吞吐量正常;

anti-jamming features require: there must be no problem with a very strong host WiFi throughput, make sure that the host side WiFi throughput is normal when the remote is connected;

- 4、性能要求: 要求支持 $\leq 10m$, 不得存在语音通话卡顿, 丢失以及遥控器按键卡顿、丢码或连键等问题;

Performance requirements: Require support $\leq 10m$, there must be no voice calls Cotton, lost and the remote control button cotton, missing code or even key problems;

- 5、功耗要求: 遥控器可持续使用至少 6 个月以上。

Power Requirements: Remote control can be used consistently for at least 6 months or more.

- 6、谐波 (THD) 必须小于 5% @ 1KHz; 在 200Hz 到 8KHz 的频率范围内, 振幅为 $\pm 5dB$; 94dB SPL 参考声压级 1KHz

THD must be less than 5% @ 1 KHz; in the frequency range of 200 Hz to 8 KHz, the amplitude is ± 5 dB; the 94 dB SPL reference sound pressure level is 1 KHz.

8、语音控制:

Speech Control:

- 1、按语音键开始录音，遥控器收到语音引擎下发的停止录音指令后停止录音；

Press the Voice key to start recording, the remote control receives the voice engine issued stop recording instructions after stop recording;

- 2、进入语音模式后，超过 30S 之后遥控器主动退出语音模式（此操作主要为了省电）。

After entering speech mode, the remote control actively quits speech mode after 30S (this is mainly to save power).

- 3、语音协议：方案私有语音协议；

Voice protocol: Program private voice protocol.

9、指示灯状态:

LEDs Status:

- 1、按键:

Keys:

红外按键：红灯

IR keys: red light,

蓝牙按键：红灯，亮 100ms，灭 100ms，长按长闪烁；

BT keys: Red light, bright 100ms, out of 100ms, long press and long flash;

- 2、配对状态:

Pairing Status:

配对状态：红灯，亮 250ms，灭 250ms，蓝牙连接成功或失败结束，发现时间 30S。

Pairing status: Red light, bright 250ms, out of 250ms, BT connection successful or failed end, The discovery time was 30s.

配对成功：红灯，快速闪烁 3s 后熄灭；

Pairing successful: Red light, Blinking quickly for 3s and then off;

配对失败：红灯，亮 500ms，灭 500ms，闪烁 3 次；

Pairing fail: Red light, bright 500ms, out of 500ms, flashing 3 times;

- 3、低电状态:

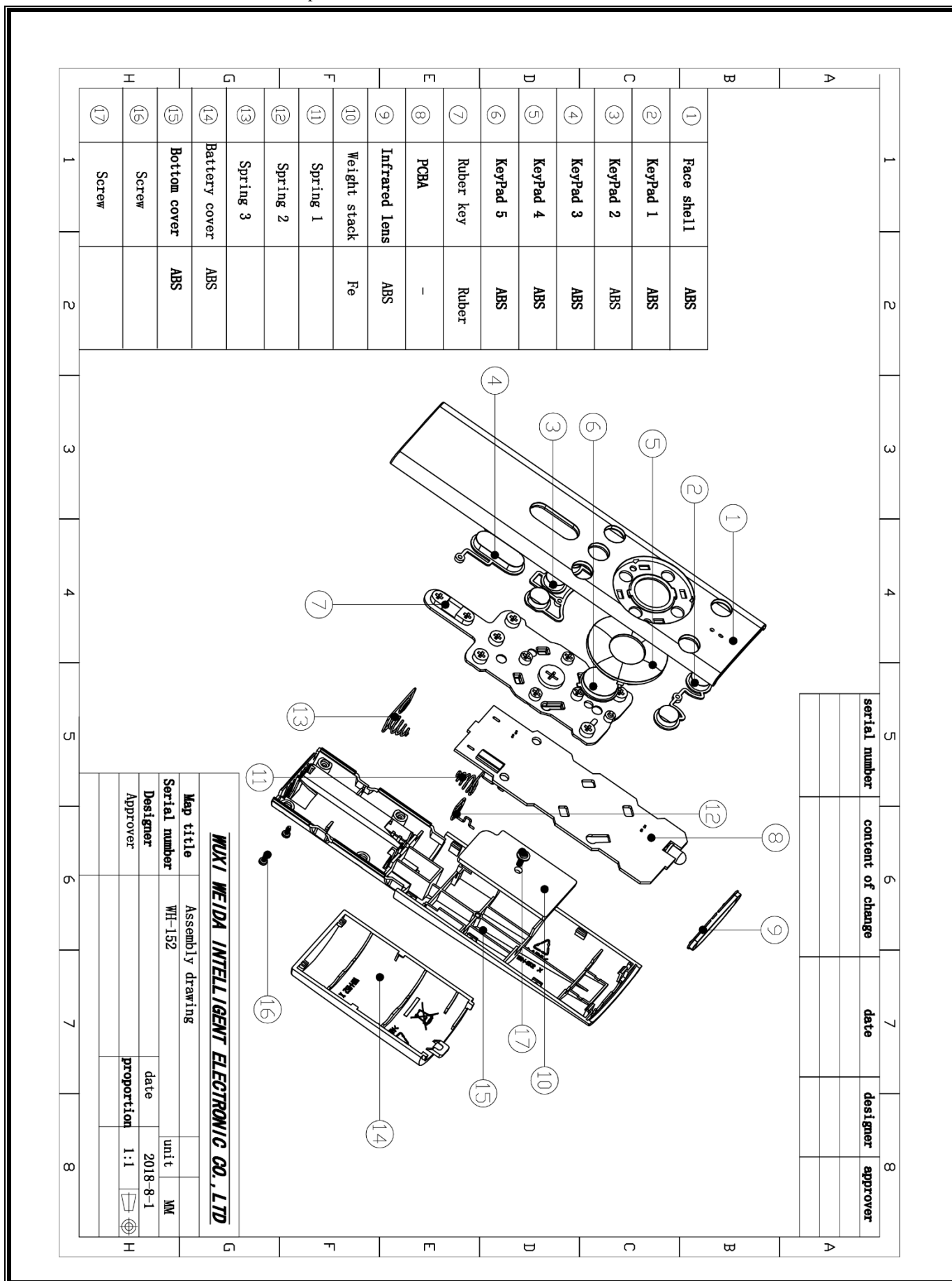
Low Power Status:

低电状态：红灯，亮 300ms，灭 300ms，闪烁 5 次，低电电压 2.4V；

Low power Status: Red light, bright 300ms, out of 300ms, flashing 5 times, Low electrical voltage of 2.4 V.

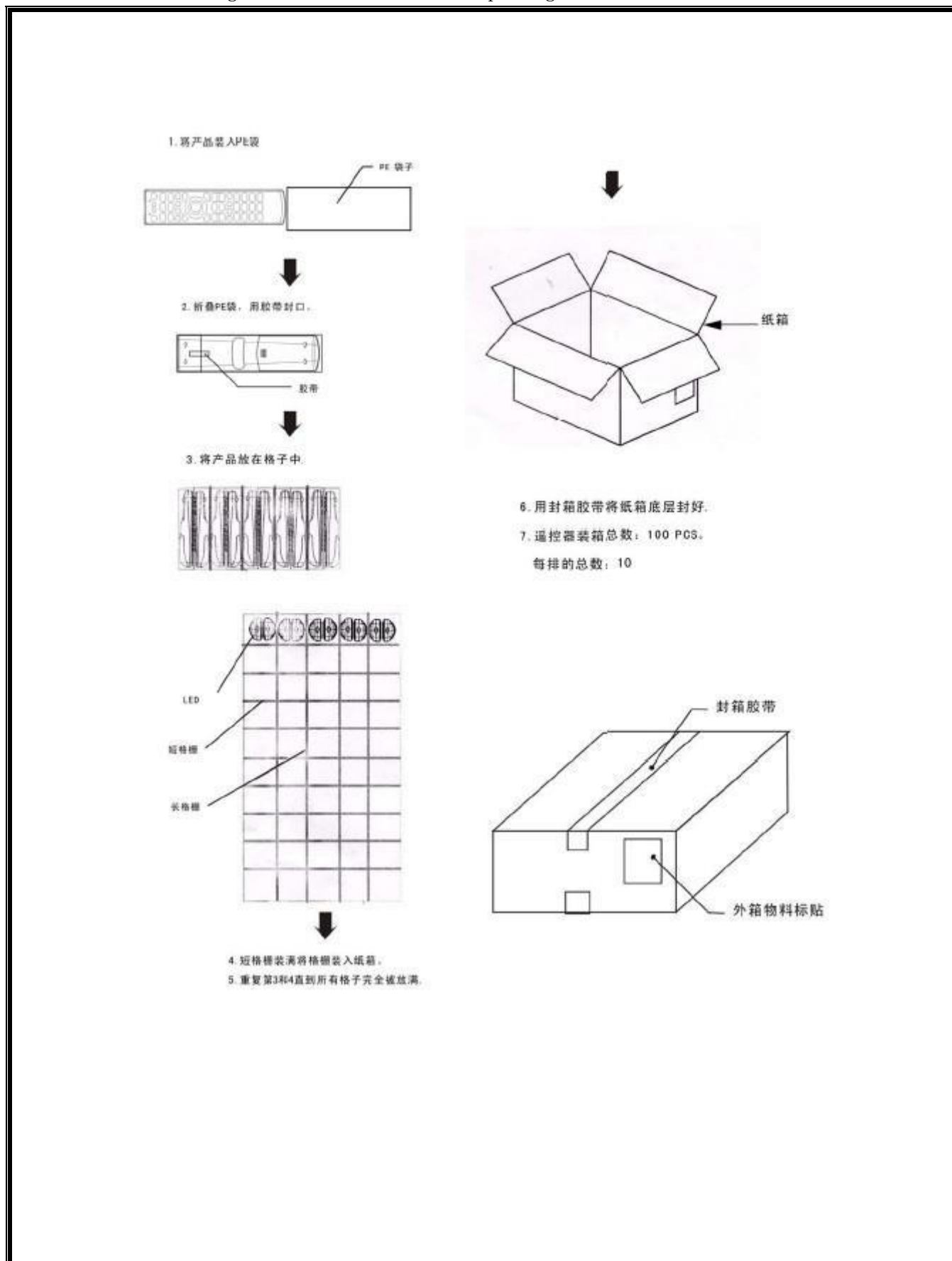
九、遥控器爆炸图

Remote detonation map



十、遥控器包装示意图

Schematic diagram of remote control package



FCC Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

ISED Statement

English: This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

The digital apparatus complies with Canadian CAN ICES-3 (B)/NMB-3(B).

French: Cet appareil contient des émetteurs/récepteurs exempts de licence qui sont conformes aux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada.

L'exploitation est soumise aux deux conditions suivantes :

- (1) Cet appareil ne doit pas provoquer d'interférences.
- (2) Cet appareil doit accepter toute interférence, y compris les interférences susceptibles de provoquer un fonctionnement indésirable de l'appareil.

l'appareil numérique du ciem conforme canadien peut - 3 (b) / nmb - 3 (b).

This device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS 102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

cet appareil est conforme à l'exemption des limites d'évaluation courante dans la section 2.5 du cnr - 102 et conformité avec rss 102 de l'exposition aux rf, les utilisateurs peuvent obtenir des données canadiennes sur l'exposition aux champs rf et la conformité.

The device has been evaluated to meet general RF exposure requirement. This equipment should be installed and operated with minimum distance 0mm between the radiator & your body.

L'appareil a été évalué pour répondre aux exigences générales d'exposition aux RF. Cet équipement doit être installé et utilisé avec une distance minimale de 0 mm entre le radiateur et votre corps.