无锡威达智能电子股份有限公司
Wuxi Weida Intelligent Electronics Co., Ltd.

遥控器规格书

客户名称： Client's name:	
客户料号： Customer Part Number:	
威达料号： WeiDa Part Number:	WH-7257_BLE
类型： Types of:	蓝牙+红外 Bluetooth + infrared
日期： date:	2022-7-5
拟制： Drafting:	厉林玉 LiLinyu
审核： Review:	黄伟 Gause Huang
批准： Approve:	郑文戈 ZhengWenge

承制方名称： 无锡威达智能电子股份有限公司
Name of contractor: Wuxi Weida Intelligent Electronics Co., Ltd.
地址： 无锡市南长区南湖大道 789 号 A 栋 2-3 楼（扬名数字产业园传感网高端制造基地）
Address: Floor 2-3, Building A, No.789, Nanhu Avenue, Nanchang District, Wuxi City
电话**(TEL)：** 0510-85421878
传真**(FAX)：** 0510-85388557
网址**(Web)：** http://www.cnwddz.com

修订记录

Revision record

日期 Date	版本 Version	修改章节 Modify chapter	修改描述 Modify description	作者 Author
2022-7-5	V1.0		创建 create	厉林玉 LiLinyu

遥控器配置 Remote control configuration	语音传输协议： Voice Transmission Protocol：	无
	主芯片型号： Main chip model：	WNF173
	硬件型号： Main chip model：	WH-7181-T_BLE V1.0
	MAC 地址管控： MAC address control：	不需要 Not needed
	软件版本： Software version：	V0100

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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 Serial number	说明项目 Description item	技术规格 Technical specifications	备注 Remarks
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 Free height of keys	≤2mm	
4	按键作用后高度 Height after key press	≥0.5mm	
5	按键作用力 Button force	160g±30gf	
6	外壳塑胶材质 Shell plastic material	ABS 原料（无味、不掺回料），厚度≥2.0mm ABS raw material (odorless, no regrind), thickness ≥2.0mm	
7	外壳颜色 Shell color	塑胶本色，黑色 Plastic natural color, black	
8	丝印 Silk screen	耐酸耐醇耐磨 Acid and alcohol resistant	
9	PCB 电路板材质 PCB circuit board material	环氧玻纤基板（FR-4） Epoxy glass fiber substrate (FR-4)	
10	PCB 布线线宽及间距 PCB wiring line width and spacing	≥7mil	
11	表面涂敷处理 Surface coating treatment	详细见遥控器《外观及工艺要求》 For details, see the remote control "Appearance and Process Requirements" 表面应平整牢固，不允许有划痕，斑疵、流挂、脱落和破损 The surface should be flat and firm, no scratches, spots, sagging, shedding and damage are allowed	
12	电路板制作要求 Circuit board production requirements	所有印刷电路板均应防腐蚀 All printed circuit boards should be corrosion resistant 不允许有飞线 No flying leads allowed 焊点饱满，无虚焊、脱焊、连锡 Full solder joints, no false soldering, desoldering, or even tin	
13	按键要求 Button 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 The edge structure of the button glue needs to add a "waterproof wall" to ensure that after the button is	

		assembled, the button hole of the plastic shell cannot be removed when you use your fingers to buckle; The surface of the board is clean and tidy when used for a long time, and the silicone keys need to be hard	
14	导电胶材质 Conductive glue material	必须使用硅胶原料（不加粉），并且没有刺激性气味 Must use silica gel raw material (no powder), and no pungent odor	
15	锅仔片 Metal dome	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 All buttons on the remote control adopt metal dome buttons, and their lifespan must be ≥500,000 times, and the number of continuous pressing tests ≥ 300,000 times can be restored to the original load	

2、**产品规格** Product specifications

序号 Serial number	项目 Project	规格参数 Specifications	备注 Remarks
1	工作温度 Operating temperature	0～50℃	
2	相对湿度 Relative humidity	≤95%	
3	大气压力 Atmospheric pressure	86～106Kpa	
4	环境照度 Environmental illumination	自然光或荧光灯 200±50LX Natural light or fluorescent light 200±50LX	
5	主控 MCU Master MCU	WNF173	
6	电路板材质 Circuit board material	FR-4	
7	外壳材料 Shell material	ABS	
8	样品颜色 Sample color	参考客户需求规格 Refer to customer requirements specifications	
9	电池规格 Battery specifications	AAA　　1.5*2	
10	红外波长 Infrared wavelength	950±50nm	红外 Infrared
11	红外载波频率 Infrared carrier frequency	38.0±0.5KHz	红外 Infrared
12	蓝牙载波频率 Bluetooth carrier frequency	2.400GHz～2.4835GHz	蓝牙 Bluetooth
13	平均工作电流 Average working current	≤20mA	
14	平均静态电流	≤3μA	

		Average quiescent current	
15	工作电压范围 Operating voltage range	2.2～3.6V	
16	遥控距离 Remote control distance	L≥10M(红外) L≥10M (infrared)	红外 Infrared
17	按键自由高度 Free height of keys	≤2mm	
18	按键作用后高度 Height after key press	≥0.5mm	
19	按键作用力 Button force	200gf±20gf	
20	按键负荷寿命 Button load life	≥50 万次 ≥500,000 times	
21	自由跌落试验 Free drop test	从 80cm 高度，六面依次自由跌落在不小于 3cm 厚木地板，三个循环。 From the height of 80cm, the six sides will fall freely on the wooden floor not less than 3cm thick in three cycles.	
22	静电环境试验 Electrostatic environment test	±8KV	
23	高温储存试验 High temperature storage test	60℃	
24	低温储存试验 Low temperature storage test	-20℃	
25	恒定湿热试验 Constant humidity test	40℃相对湿度 90±2% 40℃ relative humidity 90±2%	
26	温度循环变化试验 Temperature cycle change test		
27	验 收 标 准 MIL-STD-105E-LEVEL(Ⅱ)AQL Acceptance standard MIL-STD-105E-LEVEL(Ⅱ)AQL	重缺陷（A 类）AQL=0.65 轻缺陷（C 类）AQL=1.5 Serious defects (Class A) AQL=0.65 Minor defects (Class C) AQL=1.5	
28	遥控器运输及储存条件 Remote control transportation and storage conditions	运输途中应避免雨雪直接侵袭或者强烈冲击。遥控器应储存在环境温度-20℃～+60℃，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。	
		Avoid direct rain or snow or strong impact during transportation.	
		The remote control should be stored in a warehouse where the ambient temperature is -20℃～+60℃, the relative humidity is not more than 80%, and there is no strong magnetic field, corrosive substances and other harmful gases around. The storage period is one year. Products older than one year may enter the market only after being re-evaluated and qualified.	

3、**规格要求** Specification requirements

序号 Serial number	项目 Project	描述 Description	备注 Remarks
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	≤5μA@休眠功耗 ≤3mA@待机功耗 ≤30mA@发射功耗（常规按键） ≤25mA@录音功能（语音功能） ≤5μA@sleep power consumption ≤3mA@standby power consumption ≤ 30mA@transmission power consumption (conventional button) ≤25mA@Recording function (voice function)	蓝牙 Bluetooth
4	传输距离 Transmission distance	≥12m（周围无遮挡物） ≥12m (no obstructions around)	蓝牙 Bluetooth
5	蓝牙协议 Bluetooth protocol	蓝牙 5.0 协议 Bluetooth 5.0 protocol	蓝牙 Bluetooth
6	信号要求 Signal requirements	满足通信传输距离要求，同时符合蓝牙 BQB 认证要求 Meet the requirements of communication transmission distance and meet the requirements of Bluetooth BQB certification	蓝牙 Bluetooth
7	连接响应 Connection response	≤200ms，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 ≤200ms, here refers to the time interval from the time when the connection speed is restored and the broadcast is started to be connected through the remote control test	蓝牙 Bluetooth
8	其他通用蓝牙设备影响 Impact of other general Bluetooth devices	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。 The driver adapted to the HOST end will not affect the original Bluetooth universal device support, such as Bluetooth headset/audio (HSP/HFP, A2DP, etc.), Bluetooth keyboard, Bluetooth mouse, game controller, etc.	蓝牙 Bluetooth

二、遥控器效果图 Remote control renderings

Button color: black
Print color: ■ Pantone Orange 021C

Button color: ■ Pantone Orange 021C
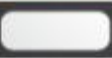Print color: □ Pantone white C

Other Keys
Button color: Black
Print color: □ Pantone white C

Button color: White C

三、遥控器功能需求描述 Description of remote control function requirements

1、遥控器键值 Remote control key value

系统码： System code:	0X08F7
码格式： Code format:	NEC

NO.	ICON	Key Name	IR Code	Usage	Usage ID
1		Power	0x0A	0x0C	0x0030
2		Mute	0x0D	0x0C	0x00E2
3		OK	0x1F	0x0C	0x0041
4		D-pad up	0x00	0x0C	0x0042
5		D-pad down	0x01	0x0C	0x0043
6		D-pad right	0x02	0x0C	0x0045
7		D-pad left	0x03	0x0C	0x0044
8		Back	0x1C	0x0C	0x0224
9		Home	0x0C	0x0C	0x0223
10	▦	APPs	0x66	0x0C	0x01A2
11		VOL +	0x58	0x0C	0x00E9
12		VOL -	0x5D	0x0C	0x00EA
13	STRIDE GYM		0x08	0x07	0x0041
14			0x21	0x07	0x0071
15			0x05	0x07	0x006A

2、遥控器操作说明 Remote control instructions

1. 遥控器基本要求 Basic requirements for remote control

   1).当连上蓝牙，遥控器发送蓝牙键值；未连接上蓝牙，则发送红外键值。

   1). When Bluetooth is connected, the remote control sends the Bluetooth key value; when Bluetooth is not connected, the infrared key value is sent.

   2).指示灯：红色，每按一次按键，指示灯闪一下。

   2). Indicator light: red, each time you press the button, the indicator light flashes.

   3). 低电压提醒：电量低于 2.4V 时，指示灯快速闪烁，只要还在操作，就一直保持闪耀状态，当不再对遥控器进行操作后，闪烁 5 次或闪烁 3 秒后，停止并熄灭。

   3). Low voltage reminder: When the battery is lower than 2.4V, the indicator light flashes quickly, as long as it is still in operation, it will keep flashing. When the remote control is no longer operated, it flashes 5 times or flashes for 3 seconds and then stops And goes out.

   4).配对方法：

   　　a.同时按住"OK"+"VOL-"键 3 秒，指示灯闪烁，配对成功指示灯常亮 3 秒后熄灭。

   　　b.没配对成功时，如果还在按 OK+VOL-键就要一直发配对广播，以便用户可以配对。

   　　c.按一次 OK+VOL-键就要能配对成功，不要反复清除配对再配对。一次按键配对成功后可以不再发配对广播，直到下次重新按键。

   　　d. Connection interval＜12ms

   4). Pairing method:

   　　a. Press and hold the "OK" + "VOL-" keys at the same time for 3 seconds, the indicator light flashes, and the pairing success indicator light is always on for 3 seconds and then goes out.

   　　b. When the pairing is not successful, if you still press the OK+VOL- key, you must keep sending the pairing broadcast so that the user can pair.

   　　c. Press the OK+VOL- button once to be able to pair successfully, do not clear the pairing repeatedly and then pair. After a key pairing is successful, the pairing broadcast can no longer be sent until the key is pressed again next time.

   　　d. Connection interval＜12ms

   5).遥控距离：≥10m

   5). Remote control distance: ≥10m

   6). 蓝牙设备名称：RemoteB016

   6). Bluetooth device name: RemoteB016

   7).支持 OK+Back 上报功能。

   7). Support OK+Back reporting .

   8).支持连接蓝牙版本为 5.0 的设备

   8). Support to connect to devices with Bluetooth version 5.0

   9）同时按下"OK+音量+"取消蓝牙配对

   9）Press "OK+Volume+" at the same time to cancel Bluetooth pairing

10).唤醒包

10). Wake-up package

Keys	Manufacturer Data	Company ID	Vendor info	key	Mac addr	Key index
Power key	0xff	0xff0xff	0x41,0x6d,0x6c,0x6f,0x67,0x69,0x63	0x01	host mac addr	累加

11).蓝牙回连时不能存在闪屏

11).There must be no splash screen during Bluetooth connection

2. 遥控器其他要求 Remote control other 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；

1). Pairing function requirements: there must be no problems that the Bluetooth device cannot be scanned or paired (including continuous pressing of the pairing key within a short period of time), please verify 50 times to ensure that there is no problem;

2). 回连功能要求: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；

2). Reconnection function requirements: there must be no problems with the connection failure, including the box power failure and the connection, the remote control power failure and the connection, stand for 2 hours to reconnect, etc., please verify 50 times to ensure that there is no problem;

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；

3). Anti-interference function requirements: there must be no problems that greatly affect the host's WIFI throughput, please ensure that the host's WIFI throughput is normal when connecting the remote control;

4).性能要求：要求支持≥10m，不得存在遥控器按键卡顿、丢码或连键等问题；

4). Performance requirements: It is required to support ≥10m, and there must be remote control button jams, missing codes, or continuous keys;

5).功耗要求：遥控器可持续使用至少 6 个月以上

5). Power consumption requirements: the remote control can be used continuously for at least 6 months

四、遥控器零部件图档 Remote control parts drawings

1、遥控器结构图档 Remote control structure drawing file

2、遥控器 PCB 图档 Remote control PCB drawing file
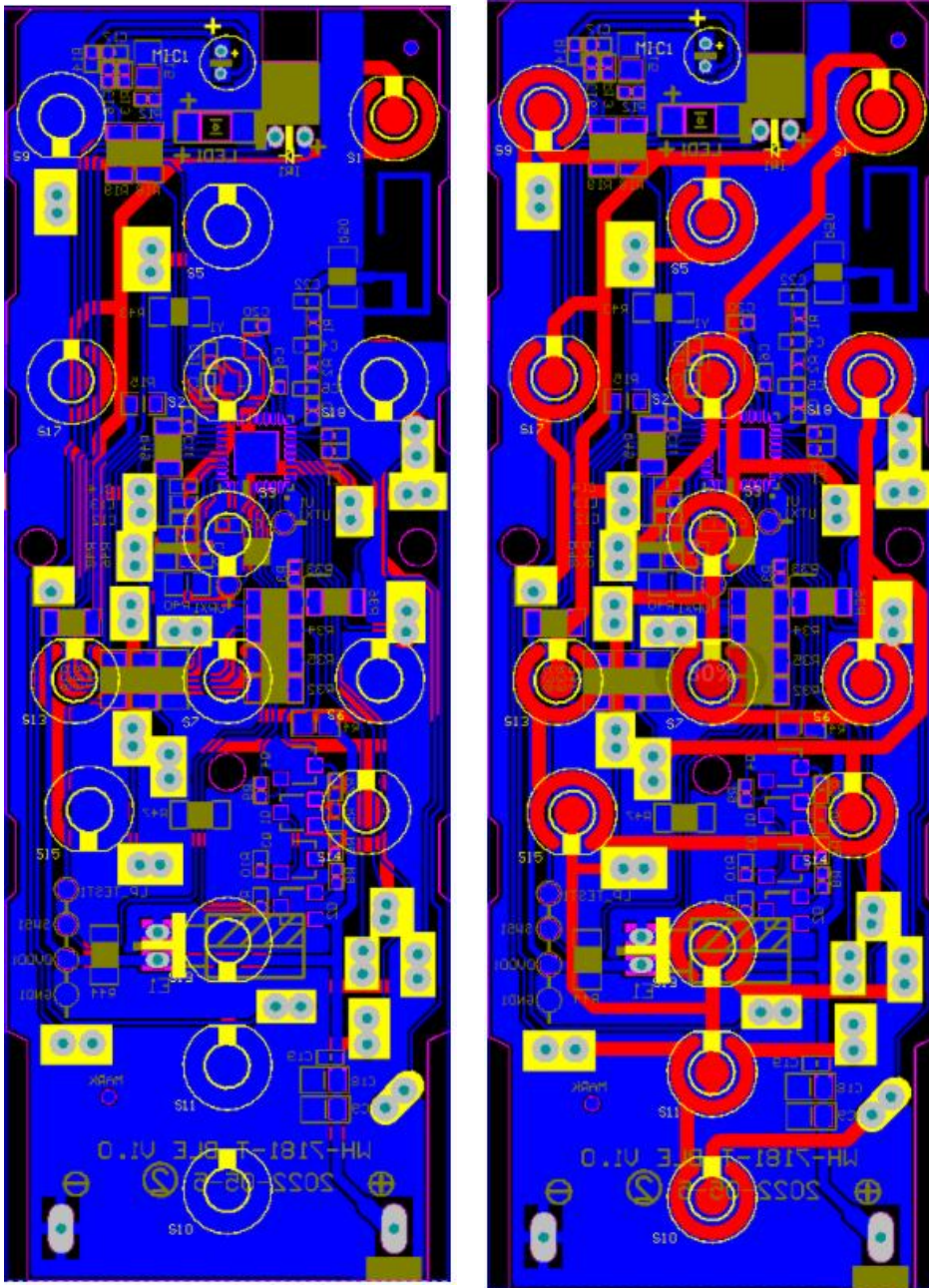
FCC STATEMENT :

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.

Warning: 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.

RF warning statement:

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