

产品说明书

FCC ID:2A4G4XM-BT-16

PART SHEET FOR APPROVAL

制造商名称: Manufacturer:	深圳西米通信有限公司 Shenzhen Xeme Communication Co., Ltd
供应商名称 Supplier::	深圳西米通信有限公司 Shenzhen Xeme Communication Co., Ltd
产品名称: Part Description:	蓝牙语音遥控器 Bluetooth voice remote controller
规格型号: Model No:	XM-BT-16
客户型号 Customer Model:	
客户料号: Customer item No:	110400735
软件版本: Software version:	HXD_K16X_B037_D1001
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供应商确认 Supplier confirmation

承办 Made By	审核 Engineer	批准 Approver

华曦达确认 SDMC confirmation

承认原因: Approval Reason:	☐ 新物料 New Part ☐ 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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BT-16-HXD-735 产品规格书

BT-16-HXD-735 Product Specification

1 产品规格 Product specifications

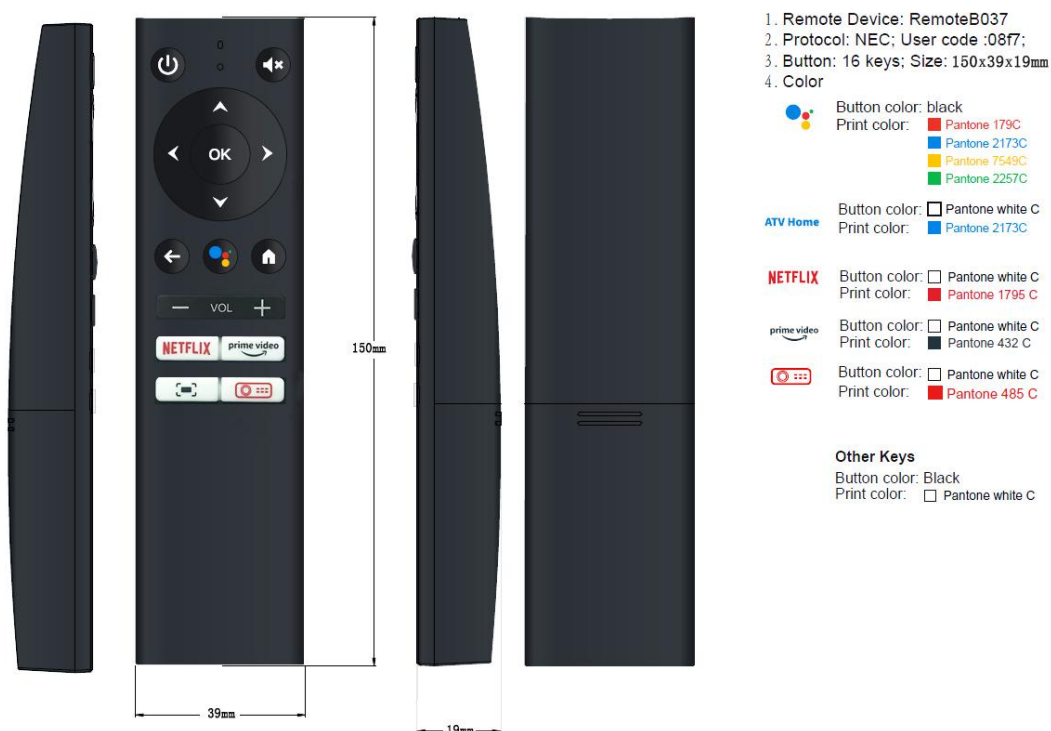
序号 No.	说明 illustrate	技术规格 Technical specifications
1	按键数 Number of keys	16 键 16 keys
2	产品尺寸 Product Size	150mm*39mm*19mm
3	按键自由高度 Free height of keys	≤2mm
4	外壳塑胶材质 Shell plastic material	ABS 原料 ABS raw material
5	外壳颜色 Shell color	塑胶本色, 黑色 Plastic natural color, black
6	丝印要求 Silk screen requirements	耐酸耐醇耐磨 Acid and alcohol resistant
7	PCB 电路板材质 PCB circuit board material	双面板, FR-4 板材, 绿油白字, 碳油 OSP 工艺 Double-sided board, FR-4 board, green white lettering, carbon oil and OSP
8	表面涂敷处理 Surface coating treatment	遥控器外壳表面做 ABS 表面处理 The surface of the remote control shell is made of ABS surface treatment
		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, and no scratches, spots, sagging, falling off and damage are allowed
9	电路板制作要求 Circuit board production requirement	无飞线, 无零欧姆跳线 No flying lead, no zero ohm jumper
		焊点饱满, 无虚焊、脱焊、连锡 Full solder joints, no false soldering, desoldering, or even tin
		所有印刷电路板均应防腐蚀 All printed circuit boards should be corrosion resistant
10	按键要求 Button requirements	P+R 按键。塑胶外壳和硅胶内衬。 P+R button. Plastic shell and silicone lining

11	导电胶材质 Conductive glue material	使用硅胶原料（不加粉），无刺激性气味，导电胶底下做锅仔片工艺 Using silica gel raw materials (no powder), no irritating odor, the process of making pot slices under the conductive glue
12	锅仔片 Pot slices	遥控器所有按键寿命≥30 万次 The service life of all keys on the remote control is ≥ 300,000 times

2 功能规格 Functional specifications

2.1 按键说明 Key Description

2.1.1 遥控器外观 Remote control appearance



2.1.2 按键键值 Key value

红外协议：NEC，用户码：0x08F7

infrared protocol: NEC, user code: 0x08F7

序号 No.	键名 Key name	红外键值 Infrared key	HID 键码值表 HID key code value table		说明 illustrate
			Usage Page	Usage ID	

1	Power	0x0A	NA	NA	按下，只发 IR 码。若在 BT 模式下，按下后 RC 切成 IR 模式。
2	Mute	0x0D	0x0C	0x00E2	
3	Back	0x1C	0x0C	0x0224	
4	Home	0x2E	0x0C	0x0223	按下，IR 模式下，发 IR 码，然后切成 BT 模式；BT 模式下，发 BT 码。
5	Google Assistant	0x2E	0x0C	0x0221	按下，IR 模式下，先发 IR 码，然后切成 BT 模式，再发 BT 码。
6	OK	0x1F	0x0C	0x0041	
7	Up	0x00	0x0C	0x0042	
8	Down	0x01	0x0C	0x0043	
9	Left	0x03	0x0C	0x0044	
10	Right	0x02	0x0C	0x0045	
11	Vol+	0x58	0x0C	0x00E9	
12	Vol-	0x5D	0x0C	0x00EA	
13 	Projector Focus (调整聚焦窗口)	0x74	NA	NA	按下，只发 IR 码。若在 BT 模式下，按下后 D-pad OK/right/lift Back 这 4 个键切成 IR 模式，若有按下 OK/Back 则立刻切换这 4 个键为 BT，若没有按下 OK/Back 则在停止按键 15s 后切换这 4 个键为 BT。
14 	Projector Home (投影主界面)	0x08	NA	NA	按下，只发 IR 码。若在 BT 模式下，按下后 RC 切成 IR 模式。
15	Netflix	0x4E	0x0C	0x0008	按下，IR 模式下，先发 IR 码，然后切成 BT 模

					式，再发 BT 码。
16	Prime Video	0x2E	0x07	0x003E	按下，IR 模式下，先发 IR 码，然后切成 BT 模式，再发 BT 码。

2.2 供电说明 Power supply instructions

2.2.1 电池规格 Battery specifications

采用 2 节 7 号（AAA）电池供电。Powered by 2 AAA batteries

2.2.2 工作模式 Operating mode

遥控器插入电池后开始工作。

The remote control starts to work after inserting the batteries.

遥控器根据按键发码格式分为红外模式和蓝牙模式，当遥控器与主机端未连接或已配对未连接时，遥控器处于红外模式，按键后，发出的是红外键值码；当遥控器与主机端蓝牙连接时，按键后，发出的是蓝牙键值码。

The remote control is divided into infrared mode and bluetooth mode according to the key code format. When the remote control is not connected to the host or paired and not connected, the remote control is in infrared mode. After the key is pressed, the infrared key value code is emitted; when the remote control is When connecting with the host's Bluetooth, after pressing the key, the Bluetooth key value code is sent out.

2.2.3 休眠机制 Hibernation mechanism

红外模式下，当遥控器无操作 15s 后，遥控器进入休眠状态。

In infrared mode, when the remote control is not operated for 15s, the remote

control enters the sleep state.

蓝牙连接时，当遥控器无操作 15s 后，遥控器进入休眠状态。（休眠模式下，每隔 1s 发送一次蓝牙心跳包）

When Bluetooth is connected, when the remote control is not operated for 15s, the remote control enters the sleep state. (In sleep mode, a Bluetooth heartbeat packet is sent every 1s)

在休眠模式下，遥控器按键操作可唤醒系统进入正常工作状态。

In the sleep mode, the remote control button operation can wake up the system and enter the normal working state.

2.3 配对说明 Pairing instructions

蓝牙设备名称: RemoteB037

Bluetooth device name: RemoteB037

2.3.1 配对组合键 Paired key combination

配对组合键：【确定】+【音量-】

Pairing key combination: [OK] + [Volume -]

取消配对组合键：【确定】+【音量+】

Unpairing key combination: [OK] + [Volume +]

2.3.2 自动配对 Automatic pairing

按语音键，机顶盒弹出配对提示界面；

Press the voice button, the set-top box will pop up the pairing prompt interface;

同时按下遥控器上的【确定】+【音量-】键 3s 以上，当遥控器指示灯闪烁时，松开配对组合按键；

Press the [OK] + [Volume -] buttons on the remote control at the same time for more than 3 seconds. When the remote control indicator flashes, release the pairing combination button;

机顶盒的配对提示界面会显示当前配对状态，配对成功后，提示界面消失；

The pairing prompt interface of the set-top box will display the current pairing status. After the pairing is successful, the prompt interface disappears;

2.3.3 手工配对步骤 Manual pairing steps

机顶盒开机进入 launcher 界面

Boot the STB into the launcher interface.

使用遥控器打开机顶盒设置界面，点击蓝牙设置，打开蓝牙搜索按钮；或者按语音键直接进入配对界面

Use the remote control to open the set-top box setting interface, click Bluetooth settings to open the Bluetooth search button; or press the voice key to directly enter the pairing interface.

同时按下遥控器上的【确定】+【音量-】键 3s 以上，当遥控器指示灯闪烁时，松开配对组合按键

Press the [OK] + [Volume -] buttons on the remote control at the same time for more than 3 seconds, when the remote control indicator flashes, release the pairing combination button.

在机顶盒的蓝牙设备列表选择 RemoteB037 设备，点击连接，完成遥控器配对绑定

Select the RemoteB037 device in the Bluetooth device list of the set-top box, click connect to complete the remote control pairing and binding.

当遥控器配对成功时，遥控器指示灯慢闪 2 次后熄灭

When the remote control is successfully paired, the remote control indicator flashes slowly for 2 times and then goes out

2.3.4 取消配对 Unpair

同时按下【确定】+【音量+】键 3s 以上，取消蓝牙配对。

Press [OK] + [Volume +] keys at the same time for more than 3 seconds to cancel Bluetooth pairing.

2.3.5 上报功能 Report function

同时按下【OK】+【返回】，提供上报功能

Press [OK] + [Return] at the same time to provide the reporting function

2.3.6 回连机制 Back-connection mechanism

当遥控器与机顶盒完成配对后，在遥控器与机顶盒端断开蓝牙连接状态下，每次按键，遥控器会在发送按键红外键值码后，发送一次回连广播，当机顶盒端接收到回连广播后，遥控器与机顶盒重新建立连接关系，从红外模式转换到蓝牙模式。

After the remote control and the set-top box are paired, when the remote control and the set-top box are disconnected from the Bluetooth connection state, each time you press a key, the remote control will send a loopback broadcast after sending the infrared key value code of the button. When the set-top box receives the response After the broadcast is connected, the remote control and the set-top

box re-establish the connection relationship and switch from infrared mode to Bluetooth mode.

2.4 语音说明 Voice description

遥控器通过麦克风进行语音采集，采样率为 16KHz，采样精度为 16bit，采样声道为单声道；

The remote control uses a microphone for voice collection, the sampling rate is 16KHz, the sampling accuracy is 16bit, and the sampling channel is mono;

遥控器与主机内置的蓝牙建立蓝牙连接；

The remote control establishes a Bluetooth connection with the built-in Bluetooth of the host;

采样的语音数据使用 google voice 标准进行编码；

The sampled voice data is encoded using the google voice standard;

语音超时 30s 保护，强制退出录音，盒子软件可以控制 MIC 打开以及关闭；

The voice timeout is protected for 30s, the recording is forced to exit, and the box software can control the MIC to open and close;

支持遥控器 MIC 和其他 MIC（如手机 APK 上的录音键）交替、切换语音输入

Support the remote control MIC and other MIC (such as the recording key on the mobile phone APK) to alternate and switch voice input

	Transmission O/P power	Voice	D-Pad	Voice Operation Range	D-Pad Operation Range
TICC2541	2 dBm	25 mA	1200 uA	7m	10m
TICC2560	5 dBm	11 mA	300 uA	10m	15m

2.5 指示灯说明 Indicator light description

2.5.1 红外模式 Infrared mode

按键按下时，指示灯红灯亮 0.2s 后熄灭

When the button is pressed, the red indicator light turns on for 0.2s and then goes out

2.5.2 蓝牙模式 Bluetooth mode

按键按下时，指示灯蓝灯亮 0.2s 后熄灭

When the button is pressed, the blue indicator light is on, when the button is lifted, the indicator light is off

2.5.3 配对状态 Pairing status

进入配对状态时，指示红灯快速闪烁 (0.2s 间隔 ON/OFF)

When entering the pairing state, the red indicator light flashes quickly (0.2s interval ON/OFF)

配对成功时，指示蓝灯快闪两次再长亮 1s 熄灭;

When paired successful, the blue light flashes twice and then turns off for 1s;

配对超时或配对失败时，指示灯直接熄灭

When pairing timeout or pairing fails, the indicator light will go out directly

2.5.4 录音状态 Recording status

当按下遥控器语音键且开始录音时，指示蓝灯常亮；松开语音键且停止录音时，指示灯熄灭

When the remote control voice key is pressed and the recording is started, the blue indicator light is always on; when the voice key is released and the recording is stopped, the indicator light is off.

3 材料清单 BOM

序号 No.	类别 category	名称 name	规格 specification	数量 quantity	元件位号 Component tag no.
1	片状电阻 0402 Chip resistor 0402	片状电阻 0R Chip resistance 0R	SMT-0402 $\pm 5\%$ 0R (ROHS)	1	R1
2	片状电阻 0402 Chip resistor 0402	片状电阻 100R Chip resistance 100R	SMT-0402 $\pm 5\%$ 100R (ROHS)	1	R15
3	片状电阻 0402 Chip resistor 0402	片状电阻 1K Chip resistance 1K	SMT-0402 $\pm 5\%$ 1K (ROHS)	5	R5,R8,R10, R11,R18
4	片状电阻 0402 Chip resistor 0402	片状电阻 2.2K Chip resistance 2.2K	SMT-0402 $\pm 5\%$ 2.2K (ROHS)	2	R3, R4
5	片状电阻 0402 Chip resistor 0402	片状电阻 4.7K Chip resistance 4.7K	SMT-0402 $\pm 5\%$ 4.7K (ROHS)	1	R9
6	片状电阻 0402 Chip resistor 0402	片状电阻 10K Chip resistance 10K	SMT-0402 $\pm 5\%$ 10K (ROHS)	2	R6,R13
7	片状电阻 0402 Chip resistor 0402	片状电阻 20K Chip resistance 20K	SMT-0402 $\pm 5\%$ 20K (ROHS)	1	R16
8	片状电阻 0805 Chip resistor 0805	片状电阻 2.2R Chip resistance 2.2R	SMT-0805 $\pm 5\%$ 2.2R (ROHS)	1	R14
9	片状电阻 0805 Chip resistor 0805	片状电阻 0R Chip resistance 0R	SMT-0805 $\pm 5\%$ 0R (ROHS)	1	R2
10	片状电容 0402 Chip capacitors 0402	片状电容 0.5PF Chip capacitor 0.5PF	SMT-0402 50V $\pm 5\%$ 0.5pF NPO(ROHS)	1	C8
11	片状电容 0402 Chip capacitors 0402	片状电容 100NF Chip capacitor 100NF	SMT-0402 10V $\pm 10\%$ 100pF X7R(ROHS)	5	C10, C11,C15,C16,C20

12	片状电容 0402 Chip capacitors 0402	片状电容 470NF Chip capacitor 470NF	SMT-0402 6.3V $\pm 10\%$ 470NF X5R (ROHS)	1	C19
13	片状电容 0603 Chip capacitors 0603	片状电容 4.7UF Chip capacitor 4.7UF	SMT-0402 6.3V $\pm 20\%$ 4.7UF X5R (ROHS)	2	C18, C17
14	片状电容 0402 Chip capacitors 0402	片状电容 1UF Chip capacitor 1UF	SMT-0402 6.3V $\pm 20\%$ 1UF X5R (ROHS)	3	C9, C13, C14
15	片状电容 0603 Chip capacitor 0603	片状电容 10UF Chip capacitor 10UF	SMT-0603 6.3V $\pm 10\%$ 10UF X5R (ROHS)	2	C5,C6
16	片状电容 0805 Chip capacitor 0805	片状电容 22UF Chip capacitor 22UF	SMT-0805 6.3V $\pm 20\%$ 22UF X5R(ROHS)	1	C2
17	高频电感 0402 High frequency inductor 0402	高频电感 1.8nH High frequency inductance 1.8nH	SMT-0402 300MA $\pm 5\%$ 1.8nH (ROHS)	1	C3
18	高频电感 0402 High frequency inductor 0402	高频电感 2nH High frequency inductance 2nH	SMT-0402 300MA $\pm 5\%$ 2nH (ROHS)	1	C7
19	片状电感 0805 Chip inductor 0805	片状电感 10uH Chip inductor 10uH	SMT-0805 400mA $\pm 5\%$ 10uH (ROHS)	1	L1
20	BT 芯片	XM8620V2.1	XEME LOGO- XM8620V2.1	1	U1
21	贴片 LED 灯-1210 SMD LED lights- 1210	贴片 LED 灯 SMD LED lights	SMT-红蓝双色灯(反编带) 封装尺 寸: 3.2x2.7mm (ROHS) SMT-red and blue double color lamp (reverse taping) package size: 3.2x2.7mm (ROHS)	1	D3
22	驻极体麦克风 Electret microphone	驻极体麦克风 4013 Electret microphone 4013	SMT-4013 驻极体电容式麦克 风, 灵敏度: -42+/-3dB; RL2.2K; 6 个拾音孔, 尺寸: 4.0 $\times$ 1.3mm SMT-4013 electret condenser microphone, sensitivity: -42+/- 3dB; RL2.2K; 6 pickup holes, size: 4.0 $\times$ 1.3mm	1	M2
23	晶振 Crystal	晶振 32M Crystal 32M	SMT 32MHz, ± 10 ppm, CL=9pF; 工作温度: -20°C到 70°C; 封装: SMD3225; 内阻小 于等于 40 欧姆	1	Y1

			SMT 32MHz, $\pm 10\text{ppm}$, CL=9pF; Operating temperature: -20°C to 70°C ; Package: SMD3225; Internal resistance is less than or equal to 40 ohms		
24	贴片三极管 SMD transistor	贴片三极管 NPN SMD transistor NPN	SMT-S8050, 封装: SOT-23 NPN MAK:J3Y; IC=0.5A SMT-S8050, package: SOT-23 NPN MAK: J3Y; IC=0.5A	1	Q1
25	遥控器弹簧 Remote control spring	弹簧正极 BT-16 Spring positive BT-16	镀镍钢 $\phi 0.6\text{mm}$ /盐雾测试 12H Nickel-plated steel $\phi 0.6\text{mm}$ / salt spray test 12H	1	J1
26	遥控器弹簧 Remote control spring	弹簧负极 BT-16 Spring negative BT-16	镀镍钢 $\phi 0.6\text{mm}$ /盐雾测试 12H Nickel-plated steel $\phi 0.6\text{mm}$ / salt spray test 12H	1	J2
27	红外发射管 Infrared emission tube	遥控器红外发射管 Remote control infrared emission tube	DIP-LIRB20I413Z, 8 米处上下 左右 45 度.插件 $\phi 3\text{mm}$. 波长 940nm DIP-LIRB20I413Z, 45 degrees up, down, left and right at 8 meters. Plug-in ϕ 3mm. Wavelength 940nm	1	IR1
28	遥控器锅仔片 Remote control pot slice	XM-BT-16E 锅仔片 XM-BT-16E pot slices	5 点腰形 $\phi 5\text{mm}$,130g+/-20 5 point waist $\phi 5\text{mm}$,130g+/- 20	1	
29	XM 方案 XM solution	XM20-XM-K16E- V1.0	型号: XM20-XM-V4.0 双面板, FR-4 板材, 绿油白字, 碳油 OSP 工艺, 尺寸: 91.5X32X1.2mm Model: XM20-XM-V4.2 double-sided board, FR-4 board, green oil white lettering, carbon oil and OSP, size: 91.5X32X1.2mm	1	

4 性能规格 Performance specifications

4.1 性能 Performance

语音支持 $\geq 10\text{m}$ 使用, 不得存在语音通话卡顿, 丢失及遥控器按键卡顿、丢码或连键等问题

Voice support $\geq 10m$ use, there must be no voice call jam, loss, and remote control button freeze, lost code or continuous key issues, etc.

红外遥控距离 $\geq 10M$, 响应 $\leq 20ms$.

Infrared remote control distance $\geq 10M$, response $\leq 20ms$.

蓝牙遥控器距离 $\geq 10M$, 响应 $\leq 20ms$, 唤醒连接响应(回连)时间 $< 2s$.

Bluetooth remote control distance $\geq 10M$, response $\leq 20ms$, wake-up connection response(Reconnect) $< 2s$.

遥控器功耗可连续使用至少 3 个月以上。

The power consumption of the remote control can be used continuously for at least 3 months.

配对功能: 不存在扫描不到蓝牙设备或配对连接不上(包括短时间内连续按配对键)的问题, 连续 50 次以上无问题

Pairing function: There is no problem that the Bluetooth device cannot be scanned or the pairing connection (including pressing the pairing key continuously for a short period of time) is not present, and there is no problem for more than 50 consecutive times.

回连功能: 不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, 连续 50 次以上无问题

Reconnection function: There is no problem of failure to reconnect, including the box power failure and reconnection, the remote control power failure reconnection, standing for 2 hours to reconnect, etc., no problem for more than 50 consecutive times.

4.2 麦克风参数 Microphone parameters

序号 No.	项目 Project	指标要求 Index requirements
1	灵敏度 Sensitivity	-38±5dB (f=1KHz,Pin=1Pa)
2	信噪比 Signal to Noise Ratio	≥58dB(94dB SPL@1KHz,A-weighted)
3	总谐波失真 Total Harmonic Distortion	≤1%(100dB SPL@1KHz)
4	采样率 Sampling rate	≥16K
5	频率响应 Frequency Response	300Hz-6kHz, 平坦度±3dB
6	动态范围 Dynamic Range	> 60dB

4.3 电气参数 Electrical parameters

序号 No.	项目 Project	指标要求 Index requirements
1	工作温度 Operating temperature	-20°C-55°C
2	存储温度 Storage temperature	-25°C-60°C
3	相对湿度 Relative humidity	≤93%
4	工作电压 Operating Voltage	2.2-3.6V
5	动态电流 (蓝牙) Dynamic current (BLE)	短按按键平均电流: 小于 10mA Short press the button average current: less than 10mA 长按按键平均电流: 小于 10mA Long press button average current: less than

		10mA 短按语音键平均电流: 小于 10mA Short press the voice button average current: less than 10mA 长按语音键平均电流: 小于 15mA Long press the voice button average current: less than 15mA
6	动态电流 (红外) Dynamic current (Infrared)	短按按键平均电流: 小于 30mA Short press the button average current: less than 30mA 长按按键平均电流: 小于 25mA Long press button average current: less than 25mA
7	静态电流 Quiescent Current	蓝牙连接$\leq 65\mu A$ 蓝牙断开$\leq 8\mu A$ Bluetooth connection$\leq 65\mu A$ Bluetooth disconnection$\leq 8\mu A$
8	红外波长 Infrared wavelength	940 $\pm$ 50nm
9	红外载波频率 Infrared carrier frequency	37.9 $\pm$ 0.6KHz
10	蓝牙工作频率 Bluetooth operating frequency	2400~2483.5MHz
11	蓝牙频率偏差 Bluetooth frequency deviation	± 30 KHz
12	蓝牙发射功率 Bluetooth TX power	+4dBm
13	接收灵敏度 (典型值) Receiving sensitivity (typical)	-92.5dBm
14	静电放电(ESD) Electrostatic discharge(ESD)	接触放电± 4KV, 空气放电± 8KV Contact discharge ± 4KV, air discharge ± 8KV

4.4 可靠性测试 Reliability test

序号 No.	检测项目 Test items	检测仪器 Testing equipment	检测方法 Detection method
1	高温储存测试 High temperature storage test	恒温恒湿机 Constant temperature and humidity machine	遥控器在不包装、不装电池的状态下，放入室温的试验箱中，然后以 0.7-1.0℃/分钟的平均速率逐渐升温到 60±3℃后，保持 24 小时，再以 0.7-1.0℃/分钟的平均速率逐渐减低到室温范围，取出遥控器，并将遥控器在室温下搁置 2 小时后，测试遥控器的各项功能和性能情况；要求各项功能和性能正常 The remote control is placed in a test box at room temperature without packaging and batteries, and then gradually heating up to 60±3℃ at an average rate of 0.7-1.0℃ per minute, and then maintaining it for 24 hours, and then at 0.7-1.0℃. The average rate of °C per minute is gradually reduced to the room temperature range, take out the remote control, and leave the remote control at room temperature for 2 hours, then test the functions and performance of the remote control; all functions and performance are required to be normal.
2	低温储存测试 Low temperature storage test	恒温恒湿机 Constant temperature and humidity machine	遥控器在不包装、不装电池的状态下，放入室温的试验箱中（为防止结露，可使用塑料薄膜密封）。然后以 0.5-1.0℃/分钟的平均速率逐渐降温到-25±3℃后，保持 24 小时，再以 0.5-1.0℃/分钟的平均速率逐渐上升到室温范围，取出遥控器，并将遥控器在室温下搁置 2 小时后，测试遥控器的各项功能和性能情况；要求各项功能和性能正常 The remote control should be placed in a test box at room temperature without packaging and batteries (to prevent condensation, it can be sealed with a plastic film). Then gradually cool down to -25±3℃ at an average rate of 0.5-1.0℃ per minute, keep it for 24 hours, and then gradually rise to the room temperature range at an average rate of 0.5-1.0℃ per minute, take out the remote control, and place the remote control After leaving it at room temperature for 2 hours, test the functions and performance of the remote control; all functions and performance are required to be normal.

3	恒定温湿储存测试 Constant temperature and humidity storage test	恒温恒湿机 Constant temperature and humidity machine	遥控器放入室温的试验箱中。然后将温度调整至 $40\pm 2^{\circ}\text{C}$，在温度稳定后，调整湿度到相对湿度 $(93+2/-3)\%$，在此条件下放置 96 小时。测试结束，先在 0.5 小时内降低相对湿度到 $75\%\pm 3\%$，再在 0.5 小时内将温度降低到室温环境，取出遥控器，恢复 2 小时后，测试遥控器各项功能和性能；要求各项功能和性能正常；（如在测试后，遥控器上有水珠或结露，应待其消失后再测试） The remote control is placed in a test chamber at room temperature. Then adjust the temperature to $40\pm 2^{\circ}\text{C}$. After the temperature stabilizes, adjust the humidity to $(93+2/-3)\%$ of the relative humidity, and leave it under this condition for 96 hours. At the end of the test, first reduce the relative humidity to $75\%\pm 3\%$ within 0.5 hours, then reduce the temperature to room temperature within 0.5 hours, take out the remote control, and after recovering for 2 hours, test the functions and performance of the remote control; The function and performance of the item are normal; (if there is water droplets or condensation on the remote control after the test, you should wait for it to disappear before testing).
4	温度变化测试 Temperature change test	恒温恒湿机 Constant temperature and humidity machine	遥控器在不包装、不装电池的状态下，放入室温的试验箱中。然后以 $1\pm 0.5^{\circ}\text{C}$ 每分钟的速率调整温度至 $-25\pm 3^{\circ}\text{C}$，恒温 3 小时后，以 $1\pm 0.2^{\circ}\text{C}$ 每分钟的速率调整温度至 $60\pm 2^{\circ}\text{C}$，恒温 3 小时后，以 $1\pm 0.2^{\circ}\text{C}$ 每分钟的速率调整温度至室温环境，以上为一次循环。以上述方式依次连续循环 5 个试验循环。试验结束后，遥控器各项功能和性能正常。（如在测试后，遥控器上有水珠或结露，应待其消失后再测） The remote control is placed in a test box at room temperature without packaging and batteries. Then adjust the temperature to $-25\pm 3^{\circ}\text{C}$ at a rate of $1\pm 0.5^{\circ}\text{C}$ per minute. After 3 hours of constant temperature, adjust the temperature to $60\pm 2^{\circ}\text{C}$ at a rate of $1\pm 0.2^{\circ}\text{C}$ per minute. After constant temperature for 3 hours, Adjust the temperature to room temperature at a rate of $1\pm 0.2^{\circ}\text{C}$ per minute, the above is one cycle. Repeat 5 test cycles successively in the above manner. After the test,

			the functions and performance of the remote control were normal. (If there is water droplets or condensation on the remote control after the test, you should wait for it to disappear before testing).
5	盐雾测试 Salt spray test	盐雾试验机 Salt spray test machine	将金属部件放入盐水浓度(质量百分比)5%±0.1%，试验室温度 35℃±2℃,饱和空气桶温度 47℃,喷雾气压 1KG/CM 的试验箱内测试 8 小时。要求测试后，金属部件无氧化、生锈现象。 Put the metal parts into the salt water concentration (mass percentage) 5% ± 0.1%, the temperature of the test room Test for 8 hours in a test box with a temperature of 35°C ± 2°C, a saturated air barrel temperature of 47°C, and a spray air pressure of 1KG/CM. After the test is required, the metal parts shall be free of oxidation and rust.
6	按键复位测试 Button reset test	测力计 Dynamometer	在遥控器按键的约 1/4 的位置的左端、右端以及按键的左右前后 侧，加以 10N 的力，按压 2min。要求测试后被测  按键无断裂，能正常复位，该键功能正常。 检验图示： On the left and right ends of the remote control button about 1/4 of the position, and the left and right front and back of the button  On the side, apply a force of 10N and press for 2 minutes. It is required that the tested key is not broken after the test, can be reset normally, and the key function is normal. Inspection icon:
7	按键负荷力测试 Button load test	测力计 Dynamometer	按压按键，遥控器工作时，导电胶大四方向键的按压力为 310± 50g，其他按键为 235±50g，综合手感判定。 Press the button, when the remote control is working, the pressing force of the conductive adhesive big four direction button is 310± 50g, other keys are 235 ± 50g, judged by comprehensive hand feeling.
8	按键按压强度测试 Key press	测力计 Dynamometer	在遥控器按键平面中央，垂直加 30N 的按压力，按压 3min； 要求测试后，各键应无破损，各键功能正常 In the center of the remote control key plane, apply a

	strength test		vertical pressure of 30N and press for 3 minutes; after the test is required, the keys should not be damaged and the keys function normally.
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4.5 遥控器升级 Remote control upgrade

遥控器支持 OTA 升级功能。

Support OTA upgrade function.

5 包装规格 Packing Specification

5.1 标签说明 Label description

5.1.1 仓内标签 Warehouse label

仓内标签尺寸：30*5mm 80g 铜版纸不干胶，哑膜，白底黑字，贴于仓内右侧。

信息为“产品型号及其 SN 号”

The size of the label in the warehouse: 30*5mm 80g coated paper stickers, dumb film, black letters on a white background, affixed to the right side of the warehouse. The information is "product model and SN"



5.1.2 PE 袋标签 PE Bag label

遥控器机身标签：如下图所示，30mm*5mm；80g 铜版纸不干胶，哑膜，贴于电池仓指定位置。内容为图示固定内容。

Remote control PE bag label: as shown in the figure below, 30mm*5mm;

80g coated paper sticker, dumb film, affixed to the designated position of the battery compartment. The content is the fixed content of the icon.



5.1.3 SN 规则 SN Rule

16 位纯数字，例如：1156111031200001.

第 1、2 位：物料类别，遥控器=11(固定)。

第 3、4、5 位：物料编码的后三位

第 6 位：物料生产厂遥控器代码，西米=4（固定）

第 7 位：生产时间年 1=2021，2=2022，3=2023，以此类推。

第 8, 9 位：生产月份 01=1 月，02=2 月，03=3 月，以此类推。

第 10, 11 位：生产日期 01=1 号，02=2 号，.....31=31 号，以此类推，这个需要根据日期自动生成

12, 13, 14, 15, 16: 每天的流水号，例如第一个产品就是 00001，这个需要自动生成，，按照十进制递增，不能重复

16-bit pure number, for example: 1156111031200001.

No. 1 and 2: material category, remote control = 11 (fixed).

The 3rd, 4th and 5th digits: the last three digits of the material code

6th digit: remote control code of material manufacturer, sago=4 (fixed)

7th place: Production time year 1=2021, 2=2022, 3=2023, and so on.

8th and 9th: Production month 01=January, 02=February, 03=March,

and so on.

The 10th and 11th digits: production date 01=No. 1, No. 02=No. 2,.....31=No. 31, and so on, this needs to be automatically generated according to the date

12, 13, 14, 15, 16: the serial number of each day, for example, the first product is 00001, which needs to be automatically generated, incremented in decimal, and cannot be repeated

5.2 外包箱说明 Out box description

外包箱包含 4*3 刀卡, 每个卡孔放置 7 个遥控器, 一箱共 140 个遥控器。

The outer box contains 4*3 knife cards, each card hole is placed 7 remote controllers, a box has a total of 140 remote controllers.

5.2.1 外包箱尺寸 Outer box size

外箱尺寸:520×300×210mm,材质 K=K

Carton size: 520×300×210mm, material K=K

5.2.2 外包箱标签 Out box label

外包箱标签尺寸: 100*150MM, 材质: 80g 铜版纸不干胶贴纸。内容如下:

Outer box label size: 100*150MM, material: 80g coated paper sticker. The content is as follows:

客户名称	深圳市华曦达科技股份有限公司
型 号	(客户指定型号)
工厂型号	(工厂产品型号)
颜 色	黑色
数 量	140 PCS
生产日期	2021-11-1
箱 号	 202107072001
生 产 商	深圳西米通信有限公司

贴于外包箱明显位置。

Stick it on the obvious position of the outer box.

Federal Communications Commission Notice

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.

Any 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.