



深圳市创荣发电子有限公司
SHENZHEN C&D ELECTRONICS CO., LTD.

红外+蓝牙遥控器产品规格书

IR + BT Remote Control Product Specification

文件编号：Document No.:

产品名称 Project Name	RF422A
产品型号 Product model	Universal IR + BT Remote Control
批准 Approval	
审核 Check	
拟制 Draw up	

客户确认（盖章）

Customer confirm (stamp here)

客户名称 Customer	审核 Check	批准 Approval
Nexus Engineering Solutions, LLC		

2、目录 Index

NO.	Appellation
1	规格书封面 (Approval Sheet Cover)
2	目录 (Index)
3	检验内容及要求 (Verification content & Requirement)
4	主要功能 (Main functions)
5	产品效果图 (Product Cosmetics drawing)
6	原理图(Schematic diagram)
7	爆炸图 (Explosion drawing)
8	产品尺寸图 (Dimension drawing)
9	包装尺寸图 (Packagingdrawing)

3、检验内容及要求 (Verification content & Requirement)

3.1 一般项目 General items

- A. 适用范围: RC25F 遥控器
B. 工作环境 0℃~40℃、45%~90% RH、86~106Kpa
C. 存储温度-25℃~60℃
D. 试验环境 5℃~35℃、45%~75% RH、86~106Kpa
E. 额定电压 DC3.0V
F. 适用电池 AAA/UM-4/LR03*2 节
G. 尺寸: 159.55*40.1*13.99mm
- A. Scope of application: RF422a remote control
B. Working environment: 0 °C ~ 40 °C, 45% ~ 90% RH, 86 ~ 106kpa
C. Storage temperature - 25 °C ~ 60 °C
D. Test environment: 5 °C ~ 35 °C, 45% ~ 75% RH, 86 ~ 106kpa
E. Rated voltage DC3.0V
F. Applicable batteries: AAA / um-4 / LR03 * 2
G. Size: 159.55 * 40.1 * 13.99mm

3.2 可视检测项目 Visual inspection items

测试条件 Test conditions

- A: 正面在标准光源下 30CM 距离 10 秒以内目测
B: 其余面标准光源下 50CM 距离 5 秒以内目测

- A: Front face - 30 cm under standard light source, visual inspection for 10 seconds
B: Other surfaces - 50cm under standard light source, visual inspection for 5 seconds

No	测试项目 Test items	测试要求 Test requirements
1	划伤、沾污、割裂、变形 Scratch, stain, split and deformation	无上述各现象 None of the above
2	印刷图形及文字 Printed graphics and text	内容正确、清晰、均匀、整齐 The content must be correct, clear, even and tidy
3	壳体配合 Shell coincidence	无翘起、变形、开裂、断差 No warping, deformation, cracking or fault
4	表面 Surface technology	材质正确、颜色一致 Correct material and consistent color

3.3 电气性能

Electrical performance

No	测试项目 Test items	测试要求 Test requirements
1	工作频率 working frequency	2.402~2.480GHz±50KHz
2	工作电压 working voltage	DC2.2V~3.6V
3	休眠电流 Sleep current	≤ 5 uA
4	工作电流 Working current	≤ 30 mA
5	BT 通信距离 BT Communication distance	可达 10 米 Up to 10 meters
6	IR 发射角度和距离 (工作电压 3.0V)	有效操作距离必须在 8M 以上，有效操作角度要求为接收器中心线上、下、左、右≥15 度±5 度，直线有效操作距离必须在 12M 以上

3.4 机械性能

Mechanical properties

NO	测试项目 Test items	测试要求 Test requirements
1	按键操作力度 Key operation force	锅仔片的力度 160g ± 30g，产品力度 250 g ± 50g Strength of Metaldome: 160g ± 30g, product strength: 250g ± 50g
2	按键强度 Key strength	50N 力直径 4MM 柱中心垂直接压 5S 后正常 Normal after 50N force diameter 4mm column center is pressed vertically for 5S
3	按键使用寿命 Key service life	5N 力直径 4MM 柱, 按压 20 万次后, 功能正常. 5N force diameter 4mm column, press 200000 times, the function is normal
4	按键手感 Key touch	按压松开后快速回弹(返还力度>40g)，感觉清晰 After pressing and releasing, it rebounds quickly (return force > 40g), feeling clear
5	按键行程 Key stroke	0.23mm ~0.80mm
6	跌落测试 Drop Test	80CM 高度 6 面各一次，自由跌落至木地板上，再行检测：a、接受电池和卡套与产品分离 b、重装电池后功能正常 c、结构无损伤 d、上述电气性能正常 Drop 6 sides at a height of 80cm to the wood floor, and then test: A. acceptable: the battery and ferrule are separated from the product; B. the function is normal after the battery is reinstalled; C. The structure is undamaged; D. the above electrical performance is normal

7	振动测试 Vibration test	水平和垂直方向，每个方向两种频率各 5 个循环：a、频率 10~30~10Hz 位移距离 0.75mm b、频率 30~55~30Hz 位移距离 0.15mm，测试后检测结构无损伤，电气性能正常 In horizontal and vertical directions, there are 5 cycles for each frequency in each direction: A. displacement distance of frequency 10-30-10hz is 0.75mm B. displacement distance of frequency 30-55-30hz is 0.15mm. After the test, the structure is free of damage and the electrical performance is normal
8	喷油丝印附着力测试 Adhesion test of oil injection screen printing	1. 3M 胶纸（600）5 次无脱落现象 2. RCA 测试:以 225gf 力测试纸带长度 100CM 无脱落现象. 1. 3M gummed paper (600) without falling off 5 times 2. RCA test: 225 GF force is used to test the paper tape length of 100cm without falling off
9	喷油丝印耐腐蚀测试 Surface hardness test (except for high gloss surface)	用棉布浸泡 95%工业酒精 1min,500gf 来回 20 次擦试无脱落现象 Soak 95% industrial alcohol in cotton cloth for 1min, wipe it back and forth for 20 times with 500gf without falling off
10	表面硬度测试(高光面除外) Surface hardness test (except for high gloss surface)	2H 铅笔倾斜 45°,300gf 作业于产品表面均匀移动 1CM 无凹痕 2H pencil inclines 45 °, 300gf works on the product surface and moves evenly 1cm without dent

3.5 环境测试

Environmental testing

NO	测试项目 Test items	测试要求 Test requirements
1	高温测试 High temperature test	60℃±3℃放置 48H，常温下冷却 2H 功能正常 Place it at 60 °C ± 3 °C for 48h, and cool it for 2h at room temperature. The function is normal
2	低温测试 Low temperature test	40℃±3℃放置 48H，常温下冷却 2H 功能正常 Place it at 40 °C ± 3 °C for 48h, cool it for 2h at room temperature, and the function is normal
3	高低温循环测试 High and low temperature cycle test	遥控器在 40℃的环境下，放置 2H，低温-20℃放置 2H，3 个循环恢复 2H 后测试。The remote controller is placed for 2h at 40 °C, 2h at - 20 °C, and 2h after 3 cycles of recovery.

4、主要功能 Main functions

4.1 配对: Pairing method:

- A、 长按 “Power” + “OK” 键 3s 后遥控器进入广播模式。
- B、 遥控器进入广播模式 1 分钟后还未进入配对模式，超时退出广播。
- C、 配对成功，绿灯常亮 3s，失败绿灯直接熄灭，回连时绿灯闪烁，直至回连成功，最长 5s。
- D、 清除配对：长按 “Power” + “Mute” 按键 3s，清除配对信息。

A. Press “Power” and “OK” key for 3 seconds and the remote will enter broadcast mode.

B. If the remote control is in the pairing mode after entering the broadcast mode within 1 minute, it will exit broadcast mode.

C. When the pair is successfully paired, the green light is always on 3S; when the green light fails, it is directly extinguished. The green light flashes when the backconnection is successful, and the longest time is 5s.

D. Clear pairing: Press "Power" + "Mute" 3s to clear the pairing information.

4.2 蓝牙设备名: RF422 RCU

Bluetooth device name: RF422 RCU

4.3 睡眠: Sleep mode:

断链下，遥控器即可进入低电量休眠状态；

链路下，无按键操作 5min 后，遥控器进入低电量休眠状态；

When the remote is disconnected from the device, the remote controller can enter a low power sleep state;

When the remote controller is connected with the device, After 5min of keyless operation, the remote control enters low power sleep state;

4.4 唤醒: Wake up sleep mode:

按任意键均能唤醒遥控器

Press any key to wake up the remote control

4.5 LED 指示灯状态说明

LED indicator status description

A、 蓝牙广播：配对广播 LED 200ms 闪烁，回连广播 LED 600ms 闪烁。

A. Bluetooth broadcast: Paired broadcast LED flashes 200ms, while back broadcast LED flashes 600ms.

B、 按键： 每次按键按下，红灯闪烁一下，蓝牙按键每次按下，若未配对过，则绿灯保持熄灭状态；若配对过且处于连接状态则绿灯闪烁一下；若配对过但处于断开状态则绿灯闪烁直至回连成功，最长 5s。。

B. When pressing the key of the remote control: each time you press the key, the Red LED will flash once, and Each time the Bluetooth button is pressed, if it has not been matched, the green light will remain off. If the pair is overmatched and connected, the green light flashes. If the pair is overmatched but disconnected, the green light flashes until the reconnection is successful, with a maximum length of 5s

C、 低电压提示： 连接状态低电报警，电压低于 2.2V，按任意键 LED 快闪 6 次，10s 内不再提示；

C. Low voltage prompt: low power alarm in connection state, if voltage is lower than 2.2V, press any key led, LED flash 6 times, No more prompts within 10s.

D、截止状态提示：电压低于 2.0V, 暂停红外、蓝牙功能，按任意键红、绿 LED 交替快闪 6 次 10s 内不再提示；

D. Cut-off status prompt: when the voltage is lower than 2.0V, pause the infrared and Bluetooth functions, and press any key to alternately flash red and green LED for 6 times, No more prompts within 10s.

4.6 长按按键保护：

Long press the button for protection:

按键长按超过 8s 会停止红外发射，LED 熄灭。

If the key is pressed for longer than 8s, the infrared emission will be stopped and the LED will be extinguished.

4.7 蓝牙按键功能

Functions of Bluetooth button:

A、发码协议：BT4.2 BLE Protocol: BT4.2 BLE

B、 按键名与键值如下：

Keys	Usage page	Usage ID
Menu	0x07	0x76
Power + IR	0x07	0x66
Mute → IR	0x07	0x7F
VOL → IR	0x0C	0xEA
VOL+ → IR	0x0C	0xE9
Up	0x07	0x52
Down	0x07	0x51
Left	0x07	0x50
Right	0x07	0x4F
ENTER	0x07	0x28
Rew	0x0C	0xB4
Play	0x0C	0xCD
FF	0x0C	0xB3
1	0x07	0x1E
2	0x07	0x1F
3	0x07	0x20
4	0x07	0x21
5	0x07	0x22
6	0x07	0x23
7	0x07	0x24
8	0x07	0x25
9	0x07	0x26
0	0x07	0x27
.	0x07	0x37
Return	0x07	0x29

POWER 键将同时传输 BT 和 IR。

POWER key will transmit BT and IR simultaneously.

4.8 IR Function:

HOW TO SET UP THE RCU By entering Device Code

- You may setup the URC by following the code entering instructions.
- Referring to the DEVICE CODE LIST, look up the 3-digit Device Code which corresponds to the brand of your TV. If there is more than one Device Code listed under your brand, start from the first code.
- Hold down “ POWER ” and “ VOL+ ” on the URC simultaneously for 2 seconds until the indicator lights up.
- Use the number keys 0-9 to enter your 3 digit Device Code, the indicator should go out immediately.
- Turn on your device (TV), then try the function keys on the URC. If your device responds to your activated function correctly, you have entered the right Device Code. Otherwise, repeat the above step with the next available Device Codes until your device responds to your activated function, and most keys work correctly.

Category	Brand	codes									
TV	HITACHI	031	211	381	081	571	541	251	041		
TV	JVC	261	251	171	341	501					
TV	LG	061	571	541	461	271	081	381			
TV	MAGNAVOX	211	201	831	511	491	151	131	121	001	
TV	MITSUBISHI	321	311	301	271	061	681	661	571		
TV	PANASONIC	221	231	241	771	141					
TV	PHILIPS	201	211	331	421	371	491	131	121	641	571
TV		521									
TV	PHILIPS-MAGNAVOX	211	511	001							
TV	PIONEER	041	741	691	061						
TV	RCA	281	051	351	531	411	171	161	081	071	061
TV		041	021	011	001	721	751				
TV	SAMSUNG	171	811	701	631	781	591	581	271	141	011
TV	SHARP	061	001	791	731						
TV	SONY	011									
TV	SYLVANIA	181	131	541	761	521	491	481	381	211	191
TV		121									
TV	TOSHIBA	141	361	291	631	431	401	391	801	691	621
TV		571	471	461							
TV	VIZIO	061	111	101	091						
TV	ZENITH	671	851	841	821	711	651	631	611	561	551
TV		541	511	441	381	251	061	601	451	001	

Note:

- If the indicator flashes 6 times in step 3, a wrong Device Code has been entered. You are required to repeat step 2 to 3 again.
- If there is no any input for 10seconds, the remote will exit the code setup mode automatically and the LED turns off.
- For future reference you are recommended to take a note of your Device Codes in the space provided on the product's back label after setting up the URC correctly.

Reset to Factory Settings (IR + BLE)

- Hold down “ POWER ” and “ VOL+ ” on the URC simultaneously for 2 seconds until the indicator lights up
- Enter ‘9’, ‘9’, ‘9’, 3-digital to Reset to Factory Settings, the Red + Green LED indicator will turn on 1.5s then off after completed the process.
- TV default code: 011 (Sony); BLE will be unpaired.

Keys	IR data
Power	uPD6124: 1010100 10000 [15 01]
Mute	uPD6124: 0010100 10000 [14 01]
VOL-	uPD6124: 1100100 10000 [13 01]
VOL+	uPD6124: 0100100 10000 [12 01]

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.

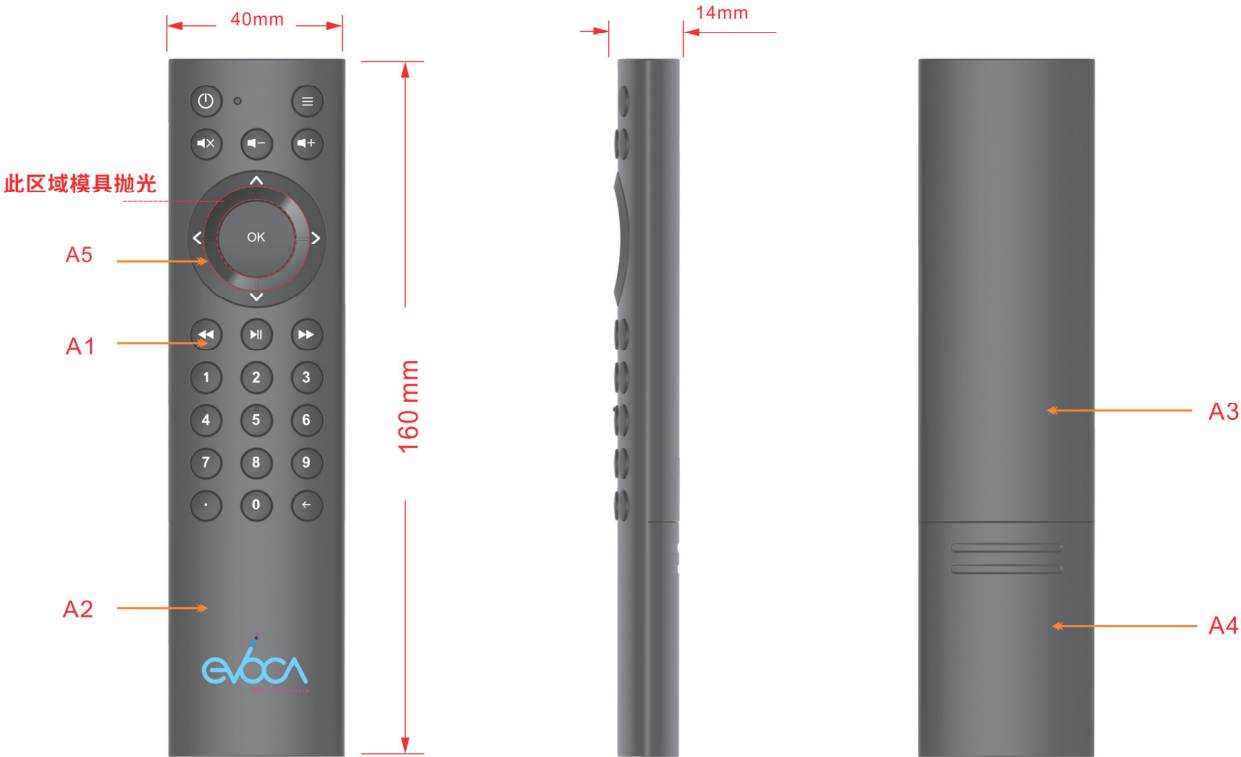
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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 correct the interference by one or more of the following measures:

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

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

5、产品效果图 (Product Cosmetics drawing)

工艺丝印图 Process description



NO.	A1	A2	A3	A4	A5
Component 组件	Keypad 按键	Top cover 面壳	Bottom cover 底壳	Battery cover 电池盖	Keypad 按键
Material 材质	Rubber 硅压	ABS	ABS	ABS	ABS
Process 处理	Oil Pressure 油压	Injection 注塑	Injection 注塑	Injection 注塑	Injection 注塑
Surface effect 表面处理	Graphic 丝印	Matte 亚光	Matte 亚光	Matte 亚光	Polishing 光抛
Color	rubber color:Pantone Black C Graphic color: ☐ Pantone White C	Injection:Pantone Black C Graphic color: ☒ PANTONE 319C ☐ PANTONE 312C ☐ PANTONE 292C ☐ PANTONE 2144C	Injection:Pantone Black C	Injection:Pantone Black C	Injection:Pantone Black C Graphic color: ☐ Pantone White C

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Client model No. 客户型号		Version No. 版本	1.0
C&D Model No. 内部型号	RF422A	Scale 比例	1:1
Design by. 设计师	刘巨平	Date 日期	2020/09/02

丝印面壳

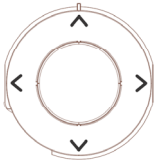


导电胶



Graphic color:
□ Pantone White C

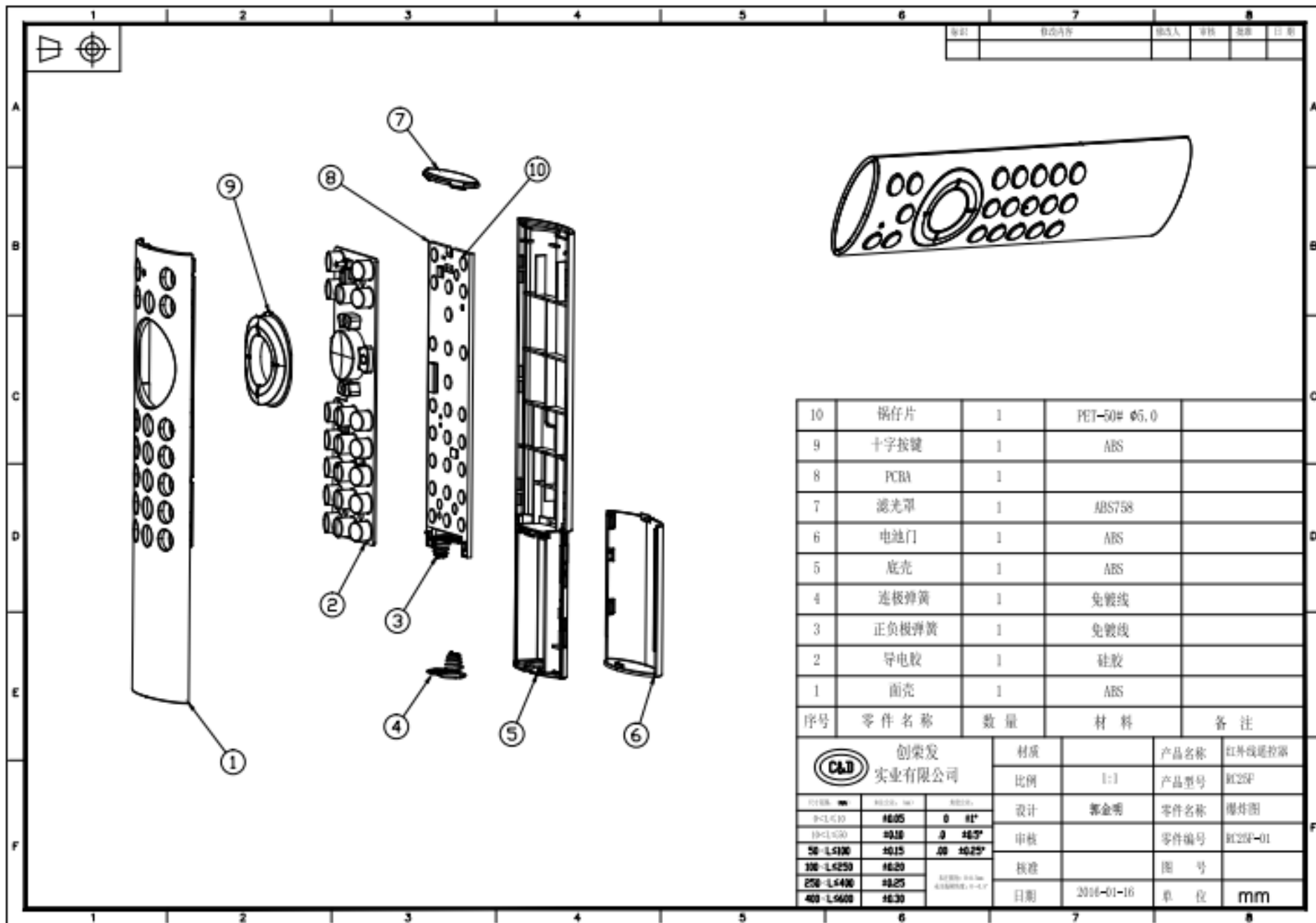
丝印按键



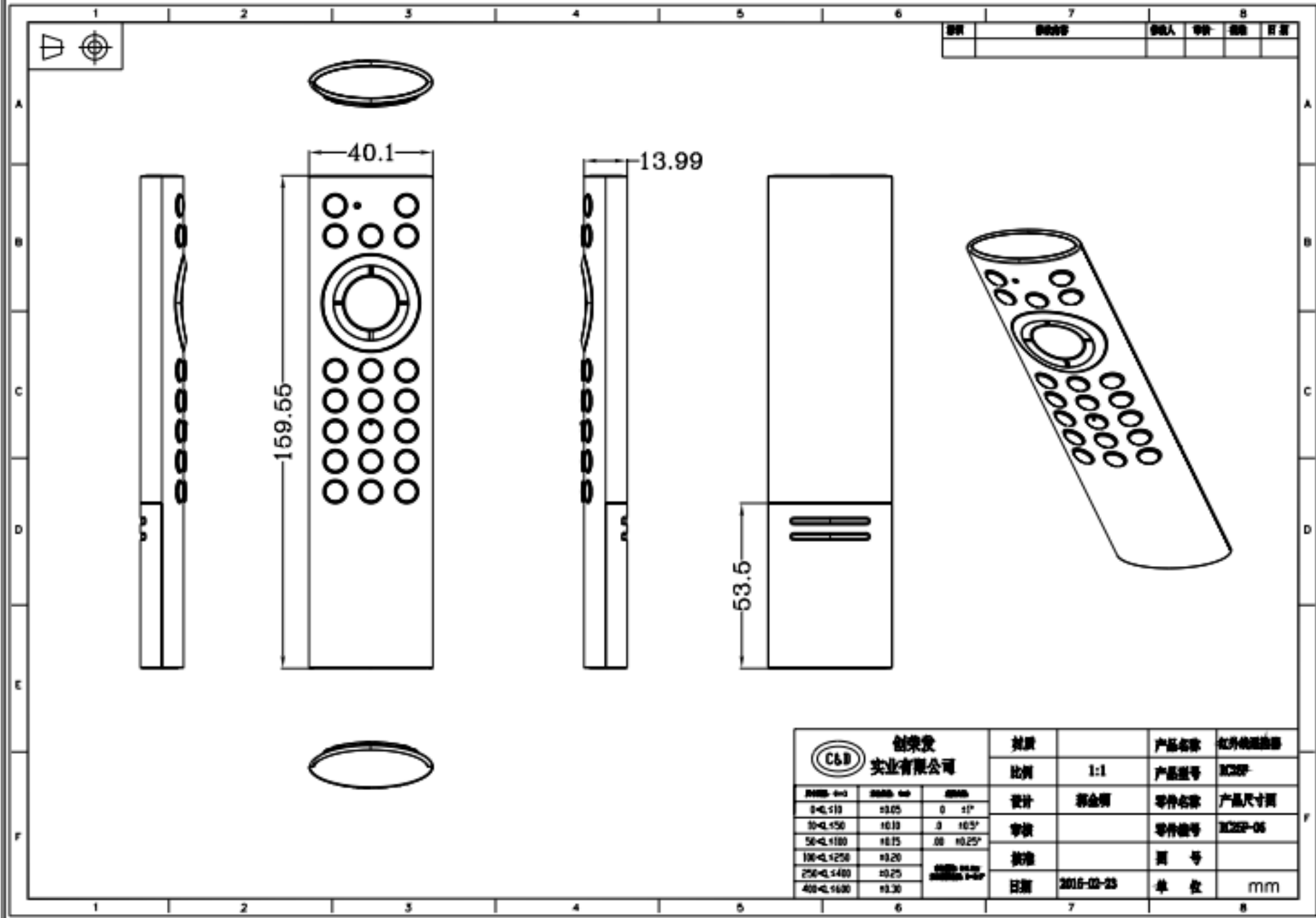
Graphic color:
□ Pantone White C

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Design by. 设计师	刘巨平	Date 日期	2020/09/02

7、爆炸图 (Explosion drawing)



8、产品尺寸图 (Dimension drawing)



9. 包装尺寸图 (Packaging drawing)(参照 RC25F)



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包材尺寸图:

Package material size photos:

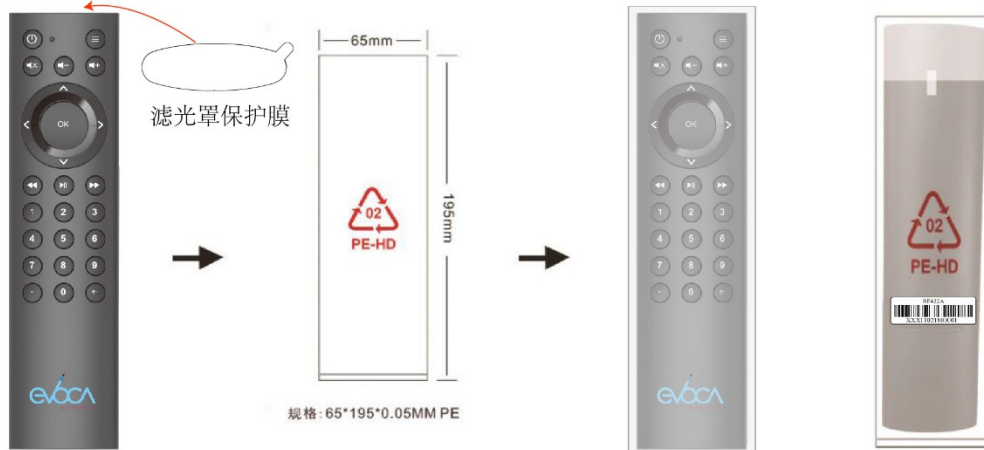
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Number

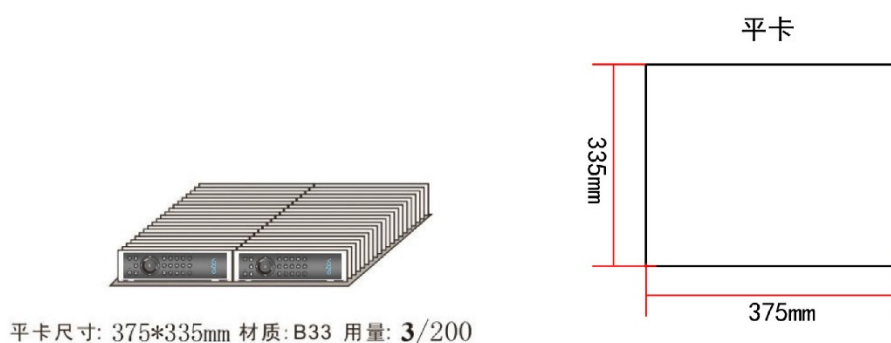
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Date

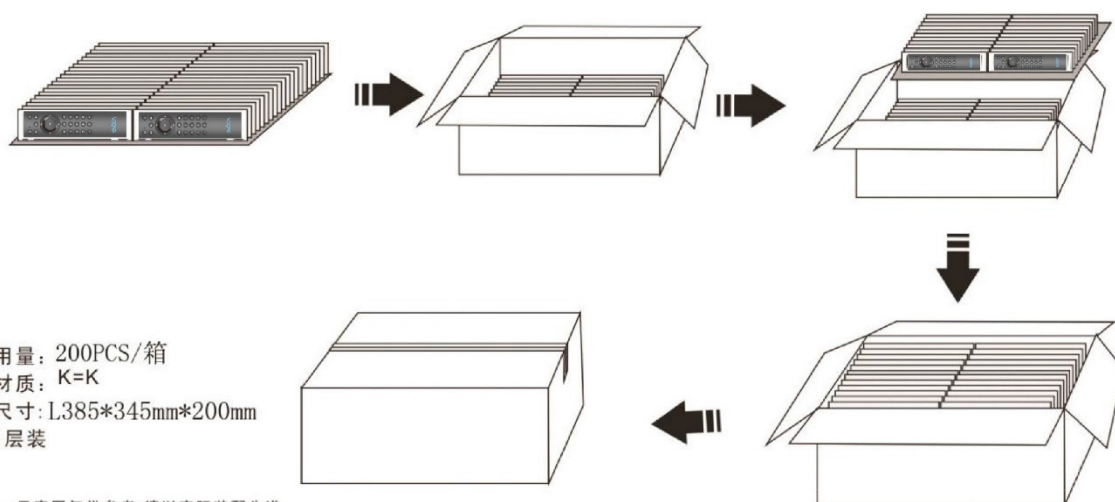
1.



2.



3.



注: 示意图仅供参考, 请以实际装配为准

制定:
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Checked

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