



广州市番禺宝联实业有限公司

**Bao-Lian Industry Co.,Ltd**

# 规格书 Specification

品 名 Product: 霍尔感应万向游戏摇杆  
BL digital joystick

版 本 Revision: 1.0

呈 送 日 期 Issuing date: 2021.06.03



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## 型号 Ordering Information

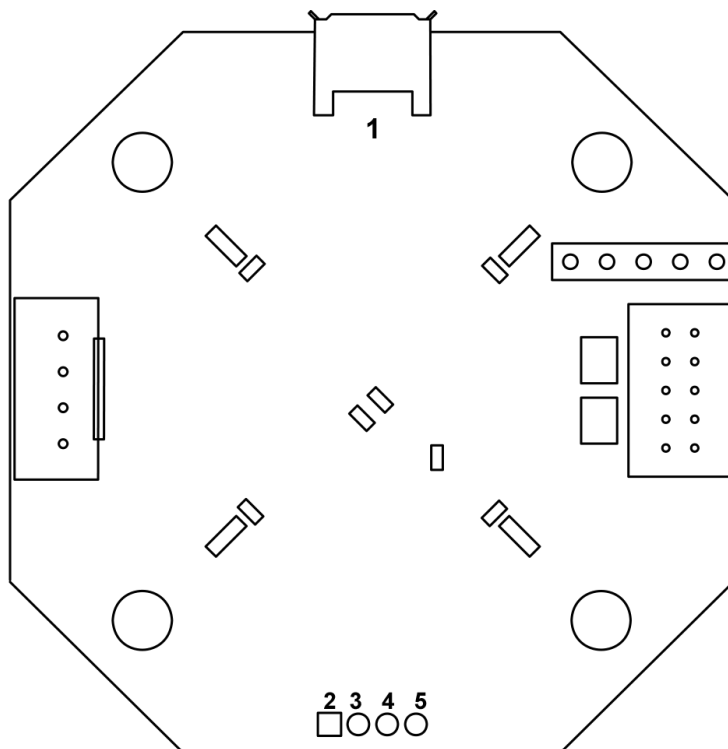
| 球头颜色<br>Knob Color | 球头尺寸<br>Knob Size | 灯板 LED PCB         |                | 主板 Mainboard               |                      | 产品号<br>Product ID |
|--------------------|-------------------|--------------------|----------------|----------------------------|----------------------|-------------------|
|                    |                   | 不带灯<br>No lighting | 带灯<br>Lighting | 含插座<br>Including Connector | 不含插座<br>No Connector |                   |
| 红色 Red             | 35mm              | √                  |                |                            | √                    | 10111305          |
| 黄色 Yellow          | 35mm              | √                  |                |                            | √                    | 10111302          |
| 蓝色 Blue            | 35mm              | √                  |                |                            | √                    | 10111303          |
| 绿色 Green           | 35mm              | √                  |                |                            | √                    | 10111304          |
| 深蓝色 Dark Blue      | 35mm              | √                  |                |                            | √                    | 10111309          |
| 透明 Clear           | 35mm              | √                  |                |                            | √                    | 10111301          |
| 透明 Clear           | 43mm              | √                  |                |                            | √                    | 10111300          |
| 透明 Clear           | 43mm              |                    | √              | √                          |                      | 10111200          |

## 功能 Features

- 此摇杆是 USB 驱动。This joystick is an USB gamepad controller device.
- 灯光效果可通过 PC 端 USB 协议控制。Customizable lighting effect controlled through USB protocol.
- 串口输出 TTL serial output
- 内置 IO 板可接入 8 个按钮信号 Built-in IO board, support up to 8 buttons input
- 可转换摇杆/鼠标模式 Switchable mouse/ joystick mode

## 控制端口说明 Connector Instruction

■ 主板不含插座 Mainboard without connector

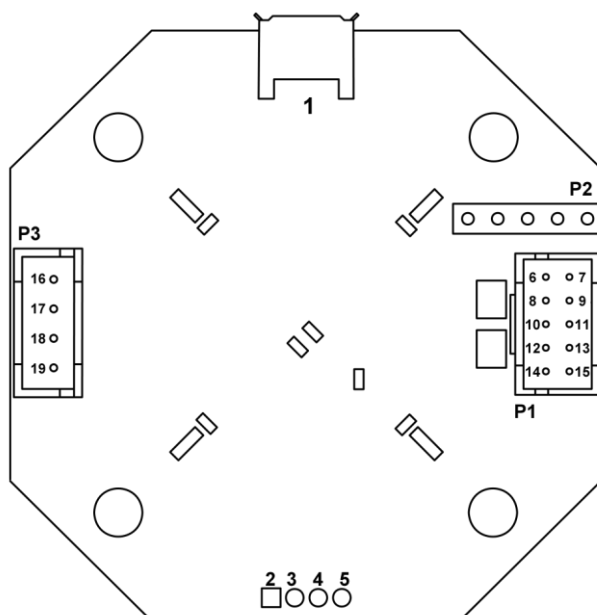


| 端口<br>Port | 序号<br>No | 端口标识 Connector<br>Or Pin Label | 描述 Description | 备注<br>Remark                                             |
|------------|----------|--------------------------------|----------------|----------------------------------------------------------|
| USB        | 1        | USB                            | MicroUSB       | 母插座, 通过 USB 线接主机 Receptor, connect to host via USB cable |
| -          | 2        | 5V                             | 5V             | 驱动灯板<br>Used for internal LED control                    |
|            | 3        | GND                            | Ground         |                                                          |
|            | 4        | NC                             | None           |                                                          |
|            | 5        | DAT                            | Data           |                                                          |



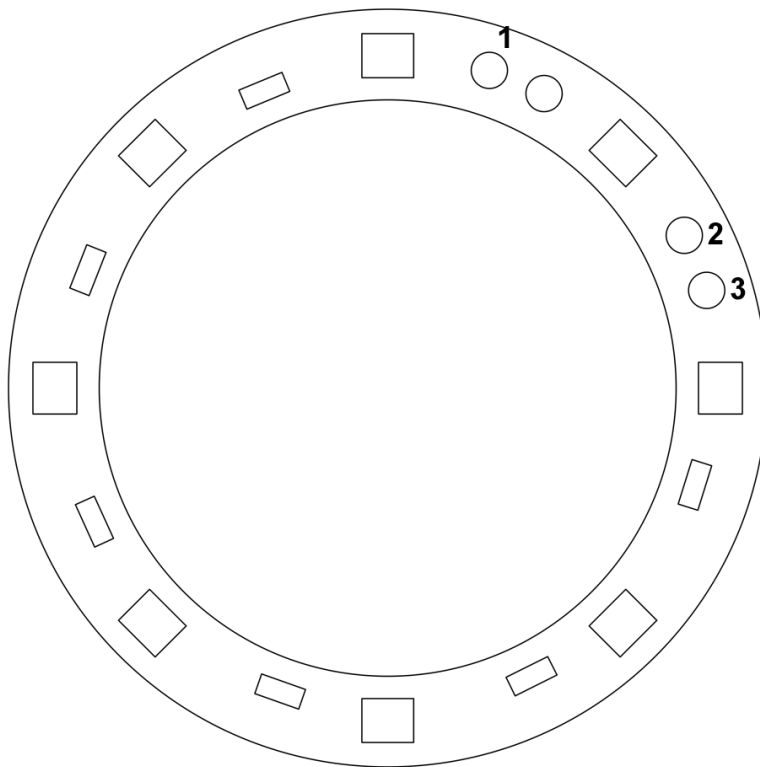
# BL digital joystick

## ■主板含插座 Mainboard with connector



| 端口<br>Port | 序号<br>No | 端口标识<br>Connector Or Pin Label | 描述 Description           | 备注 Remark                                                                                                                  |
|------------|----------|--------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| USB        | 1        | USB                            | MicroUSB 母插座             | 通过 USB 线接主机<br>MicroUSB receptor, connect to host<br>via USB cable                                                         |
| -          | 2        | 5V                             | 5V                       | 驱动灯板<br>Used for internal LED control                                                                                      |
|            | 3        | GND                            | Ground                   |                                                                                                                            |
|            | 4        | NC                             | None                     |                                                                                                                            |
|            | 5        | DAT                            | Data                     |                                                                                                                            |
| P1         | 6        | K1                             | Button1/鼠标左键 left click  | 开机前按住 K1 可进行 Joystick 或<br>Mouse 模式切换<br>Press and hold K1 before power ON<br>to switch between Joystick and<br>Mouse mode |
|            | 7        | K2                             | Button2/鼠标右键 right click |                                                                                                                            |
|            | 8        | K3                             | Button3/鼠标中间 mouse wheel |                                                                                                                            |
|            | 9        | K4                             | Button4/滚轮向上 wheel up    |                                                                                                                            |
|            | 10       | K5                             | Button5/滚轮向下 wheel down  |                                                                                                                            |
|            | 11       | K6                             | Button6                  |                                                                                                                            |
|            | 12       | K7                             | Button7                  |                                                                                                                            |
|            | 13       | K8                             | Button8                  |                                                                                                                            |
|            | 14       | GND                            | Ground                   |                                                                                                                            |
|            | 15       | GND                            | Ground                   |                                                                                                                            |
| P3         | 16       | 5V                             | 5V                       | TTL serial 用以输出校正模式坐标<br>数据<br>TTL serial used for troubleshooting<br>and calibration                                      |
|            | 17       | G                              | Ground                   |                                                                                                                            |
|            | 18       | RX                             | Receive                  |                                                                                                                            |
|            | 19       | TX                             | Transmit                 |                                                                                                                            |

灯板 LED PCB



| 序号 No | 端口标识 Connector Or Pin Label | 描述 Description |
|-------|-----------------------------|----------------|
| 1     | DAT                         | Data           |
| 2     | GND                         | Ground         |
| 3     | 5V                          | 5V             |

## 数据帧结构 Data frame structure

|           |           |           |            |            |
|-----------|-----------|-----------|------------|------------|
| 帧头<br>SOF | 帧长<br>LEN | 指令<br>CMD | 数据<br>DATA | 校验位<br>BCC |
| PID       | 1 byte    | 1 byte    | N byte     | 1 byte     |

说明 Note:

1. 帧头(SOF): PID 为帧头, 2 byte, 表示 Product ID;  
SOF: PID, 2 byte, means Product ID.



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2. 帧长(LEN): CMD 和 DATA 的长度(N+1), 1byte;  
LEN: the length of CMD and DATA (N+1), 1 byte.
3. 指令(CMD): 具体的命令, 后面详细解析, 1byte;  
CMD: Represents the specific command, detailed explanation will provide later, 1byte.
4. 数据(DATA): 根据指令不同, 数据长度不一样, Nbyte;  
DATA: According to different command, the DATA length is different, N byte.
5. 校验位(BCC): 从帧头到数据的所有数据的异或校验;  
BCC: Authentication of DATA from frame header to all data.

## 具体指令解析 Specific instruction

### 1. 彩灯控制 LED control: A1

描述: 控制彩灯效果 Description: LED control effect

HOST:

| 指令<br>CMD | 数据<br>DATA |
|-----------|------------|
| 0xA1      | 1 byte     |

DATA 解析: 0x01=红色, 0x02=绿色, 0x03=蓝色 0, 0x04 黄色, 0x05=紫色, 0x06=青色, 0x07=橙色, 0x08=白色, 0x09=七彩流水:

DATA: 0x01 = Red, 0x02 = Green, 0x03 = Blue 0, 0x04 = Yellow, 0x05 = Purple, 0x06 = Cyan, 0x07 = Orange, 0x08 = White, 0x09 = RGB Animation.

Device:

| 指令 CMD | 数据 DATA |
|--------|---------|
| 0xA1   | 1 byte  |

DATA 解析: 0xA5=成功, 0x5A=失败;

DATA: 0xA5 represents controlled successfully, 0x5A represents controlled failed.

### 2. Player number 修改: A2

#### Modify player number: A2

描述: 修改 player number

Description: modify player number

HOST:

| 指令 CMD | 数据 DATA |
|--------|---------|
| 0xA2   | 1 byte  |



Device:

|        |         |
|--------|---------|
| 指令 CMD | 数据 DATA |
| 0xA1   | 1 byte  |

DATA: 0xA5 represents controlled successfully, 0x5A represents controlled failed.

## 外观尺寸 Dimensions

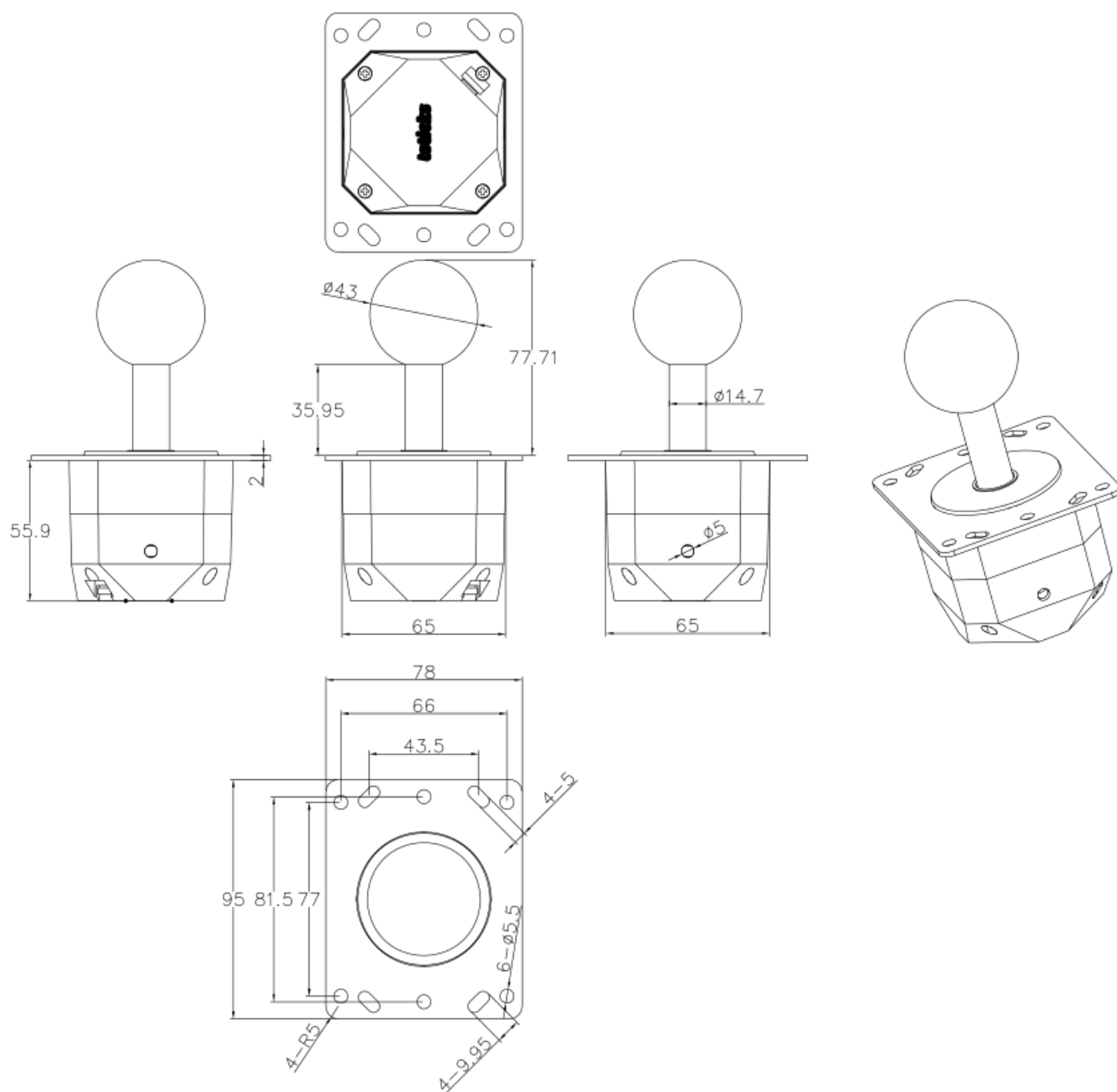
■35mm 球头, 主板不含插座 Comes with 35mm ball Knob and come with mainboard without connector:





# BL digital joystick

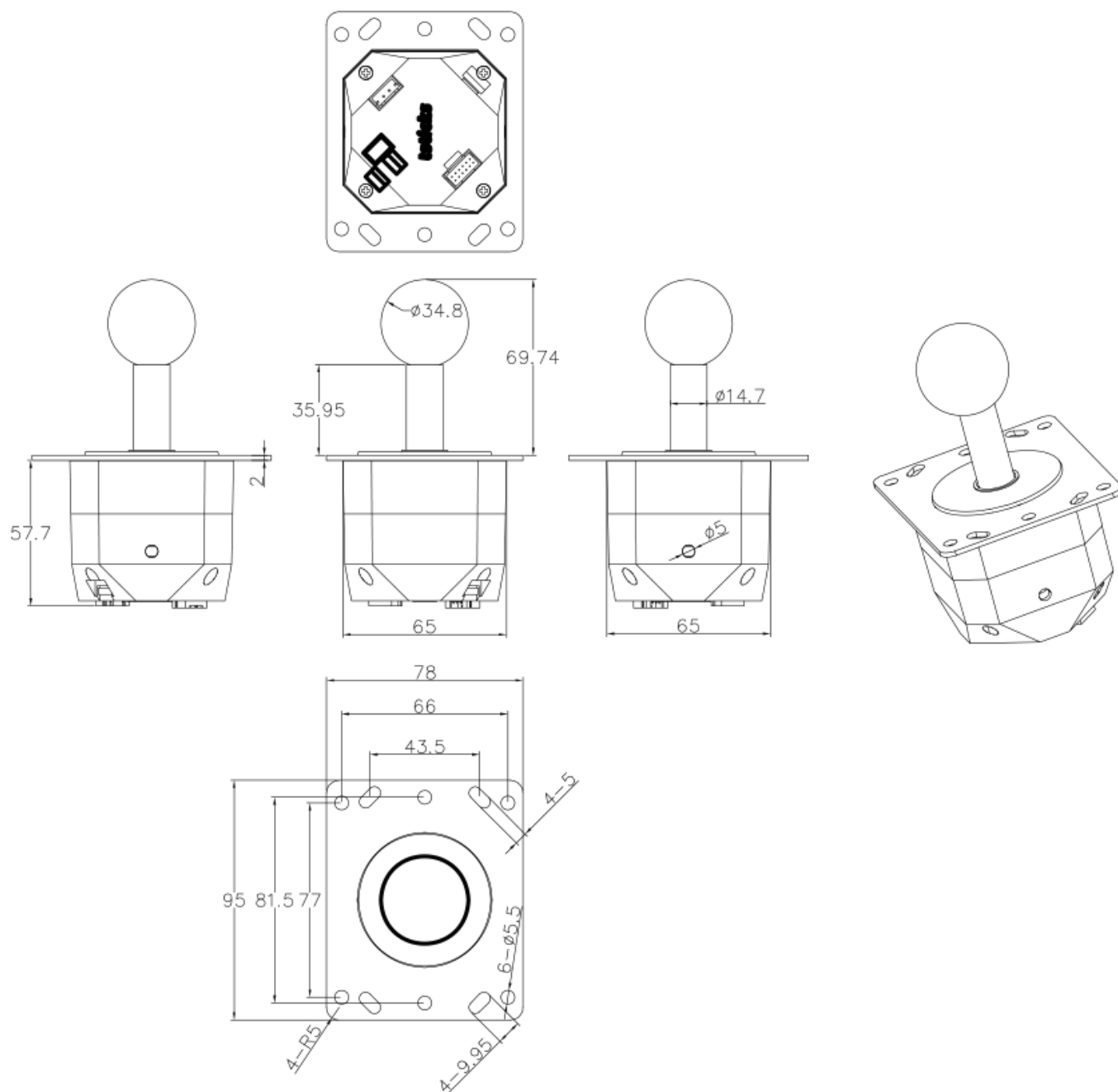
■43mm 球头，主板不含插座 Comes with 43mm ball Knob and come with mainboard without connector:





# BL digital joystick

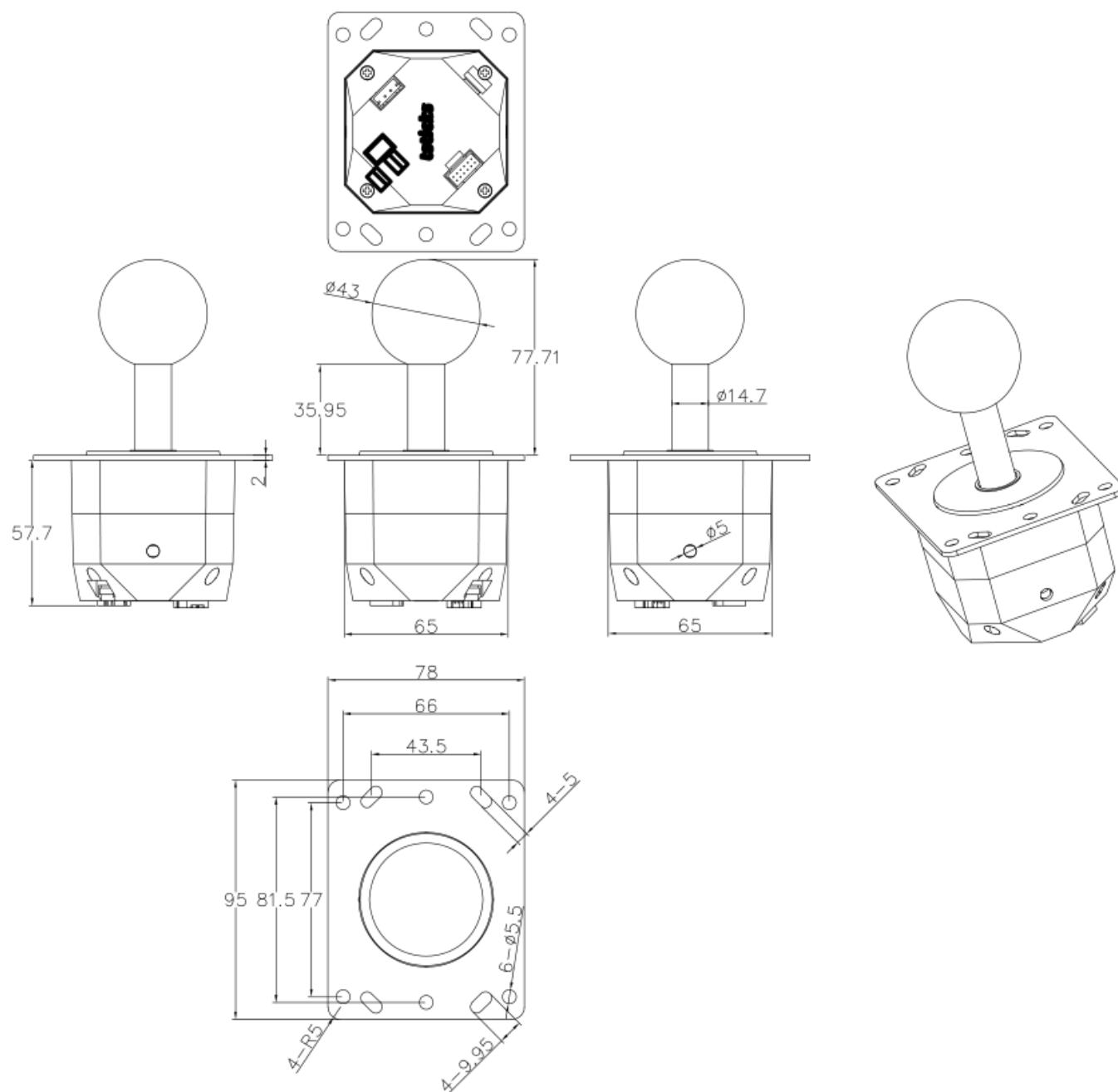
■35mm 球头，主板含插座 Come with 35mm ball Knob and come with mainboard with connector:





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■43mm 球头，主板含插座 Come with 43mm ball Knob and come with mainboard with connector:





## 使用须知 Usage guide

- 不论在任何情形下都请勿分解、改造本产品，否则可能影响正常动作。In any circumstances, do not decompose, and modify the product, otherwise it may affect the normal operation.
- 制品功能可能无法充分发挥。请勿摔落产品。此外，请勿对产品施加可能让产品变形、变质的力道。The product features may not fully function. Do not drop the product. In addition, the product can be damaged if an unusual force is applied.
- 按钮的耐久性依按钮的使用情况而有相当大的差异。使用时请务必以实际使用条件进行实机确认，在无性能上问题之按钮次数内使用。The durability of the push button maybe different in different usage conditions. Please ensure the button is used in normal operating conditions.
- 请使用额定值以下之负载电压电流。否则可能影响性能且造成破损、烧毁。Please use the button within normal load voltage and current ratings. Otherwise it may affect the performance and cause damage and burning.
- 请勿于易燃易爆气体等环境下、及存在易燃性溶剂的场所中使用。伴随开关而来的电弧或开关发热等可能成为起火或爆炸的原因。Please do not use the button in any flammable and explosive gas environment. The electric arc or heat produced by the push button may cause fire or explosion.
- 请勿于腐蚀性气体或高温多湿环境下使用。可能造成接点接触故障或是因腐蚀而破损等的功能故障。Do not use the button in corrosive gas, high temperature and humidity environment. It may cause contact failure or damage to the button.
- 请勿在油中、水中使用，并请勿用于经常有水或油泼溅的环境。水或油侵入内部将会造成故障。Do not use the button under oil, water and any water or oil spilling environment. Water or oil will damage the button.
- 请勿在以下环境使用及保管本产品 Do not use or store the product in the following conditions:
  - 温度变化剧烈的场所 Places where the temperature changes rapidly.
  - 湿度高而有可能结露的场所 Places that is in high humidity and condensation condition.
  - 震动剧烈的场所 Sharp vibration places.
  - 阳光直射的场所 Places that is exposed to direct sunlight.

## 关于使用环境 Usage environment

- 此按钮为室内规格。若在户外使用，可能会造成开关故障。This product is only for indoor usage. Outdoor usage can damage the product.
- 在有微粉尘、泥状、异物堆积的地点，及有油、水飞散的地点等使用时，请特别小心，使用前请先以实际使用条件评估后，在无问题的条件下使用。Do not set the product in locations where powders, mud, or any other substances may be piled, or subject to any splashes of oil or water. Always test the product under actual usage conditions before application.