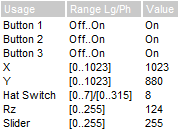
数据格式(7字节)：

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 描述 | X低  8位 | Y低  6位 | X高  2位 | Hat Switch | Y高  4位 | RZ | 按键  5~8 | 按键  1~4 | Slider | 0 | 按键  9~12 |
| 位数 | 8 | 8 | | 4 | 4 | 8 | 4 | 4 | 8 | 4 | 4 |



如数据



|  |  |
| --- | --- |
| **Connection Status** | Device connected |
| **Current Configuration** | 1 |
| **Speed** | Low (1.5 Mbit/s) |
| **Device Address** | 14 |
| **Number Of Open Pipes** | 1 |

**Device Descriptor** Logitech Extreme 3D

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Offset | Field | Size | Value | Description |
| 0 | bLength | 1 | 12h |  |
| 1 | bDescriptorType | 1 | 01h | Device |
| 2 | bcdUSB | 2 | 0110h | USB Spec 1.1 |
| 4 | bDeviceClass | 1 | 00h | Class info in Ifc Descriptors |
| 5 | bDeviceSubClass | 1 | 00h |  |
| 6 | bDeviceProtocol | 1 | 00h |  |
| 7 | bMaxPacketSize0 | 1 | 08h | 8 bytes |
| 8 | idVendor | 2 | 046Dh | Logitech, Inc. |
| 10 | idProduct | 2 | C215h |  |
| 12 | bcdDevice | 2 | 0204h | 2.04 |
| 14 | iManufacturer | 1 | 01h | "Logitech" |
| 15 | iProduct | 1 | 02h | "Logitech Extreme 3D" |
| 16 | iSerialNumber | 1 | 00h |  |
| 17 | bNumConfigurations | 1 | 01h |  |

**Configuration Descriptor 1** Bus Powered, 30 mA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Offset | Field | Size | Value | Description |
| 0 | bLength | 1 | 09h |  |
| 1 | bDescriptorType | 1 | 02h | Configuration |
| 2 | wTotalLength | 2 | 0022h |  |
| 4 | bNumInterfaces | 1 | 01h |  |
| 5 | bConfigurationValue | 1 | 01h |  |
| 6 | iConfiguration | 1 | 00h |  |
| 7 | bmAttributes | 1 | 80h | Bus Powered |
|  | 4..0: Reserved |  | ...00000 |  |
|  | 5: Remote Wakeup |  | ..0..... | No |
|  | 6: Self Powered |  | .0...... | No, Bus Powered |
|  | 7: Reserved (set to one) (bus-powered for 1.0) |  | 1....... |  |
| 8 | bMaxPower | 1 | 0Fh | 30 mA |

**Interface Descriptor 0/0** HID, 1 Endpoint

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Offset | Field | Size | Value | Description |
| 0 | bLength | 1 | 09h |  |
| 1 | bDescriptorType | 1 | 04h | Interface |
| 2 | bInterfaceNumber | 1 | 00h |  |
| 3 | bAlternateSetting | 1 | 00h |  |
| 4 | bNumEndpoints | 1 | 01h |  |
| 5 | bInterfaceClass | 1 | 03h | HID |
| 6 | bInterfaceSubClass | 1 | 00h |  |
| 7 | bInterfaceProtocol | 1 | 00h |  |
| 8 | iInterface | 1 | 00h |  |

**HID Descriptor**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Offset | Field | Size | Value | Description |
| 0 | bLength | 1 | 09h |  |
| 1 | bDescriptorType | 1 | 21h | HID |
| 2 | bcdHID | 2 | 0110h | 1.10 |
| 4 | bCountryCode | 1 | 21h | US |
| 5 | bNumDescriptors | 1 | 01h |  |
| 6 | bDescriptorType | 1 | 22h | Report |
| 7 | wDescriptorLength | 2 | 007Ah | 122 bytes |

**Endpoint Descriptor 81** 1 In, Interrupt, 10 ms

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Offset | Field | Size | Value | Description |
| 0 | bLength | 1 | 07h |  |
| 1 | bDescriptorType | 1 | 05h | Endpoint |
| 2 | bEndpointAddress | 1 | 81h | 1 In |
| 3 | bmAttributes | 1 | 03h | Interrupt |
|  | 1..0: Transfer Type |  | ......11 | Interrupt |
|  | 7..2: Reserved |  | 000000.. |  |
| 4 | wMaxPacketSize | 2 | 0007h | 7 bytes |
| 6 | bInterval | 1 | 0Ah | 10 ms |

**Interface 0 HID Report Descriptor** Joystick

|  |  |
| --- | --- |
| Item Tag (Value) | Raw Data |
| Usage Page (Generic Desktop) | 05 01 |
| Usage (Joystick) | 09 04 |
| Collection (Application) | A1 01 |
| Collection (Logical) | A1 02 |
| Report Count (2) | 95 02 |
| Report Size (10) | 75 0A |
| Logical Minimum (0) | 15 00 |
| Logical Maximum (1023) | 26 FF 03 |
| Physical Minimum (0) | 35 00 |
| Physical Maximum (1023) | 46 FF 03 |
| Usage (X) | 09 30 |
| Usage (Y) | 09 31 |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,NNul,Bit) | 81 02 |
| Report Size (4) | 75 04 |
| Report Count (1) | 95 01 |
| Logical Maximum (7) | 25 07 |
| Physical Maximum (315) | 46 3B 01 |
| Unit (Eng Rot: Degree) | 66 14 00 |
| Usage (Hat Switch) | 09 39 |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,Null,Bit) | 81 42 |
| Unit (None) | 65 00 |
| Report Size (8) | 75 08 |
| Logical Maximum (255) | 26 FF 00 |
| Physical Maximum (255) | 46 FF 00 |
| Usage (Rz) | 09 35 |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,NNul,Bit) | 81 02 |
| Push | A4 |
| Report Count (8) | 95 08 |
| Report Size (1) | 75 01 |
| Logical Maximum (1) | 25 01 |
| Physical Maximum (1) | 45 01 |
| Usage Page (Button) | 05 09 |
| Usage Minimum (Button 1) | 19 01 |
| Usage Maximum (Button 8) | 29 08 |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,NNul,Bit) | 81 02 |
| Pop | B4 |
| Usage (Slider) | 09 36 |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,NNul,Bit) | 81 02 |
| Report Count (4) | 95 04 |
| Report Size (1) | 75 01 |
| Logical Maximum (1) | 25 01 |
| Physical Maximum (1) | 45 01 |
| Usage Page (Button) | 05 09 |
| Usage Minimum (Button 9) | 19 09 |
| Usage Maximum (Button 12) | 29 0C |
| **Input** (Data,Var,Abs,NWrp,Lin,Pref,NNul,Bit) | 81 02 |
| Report Count (4) | 95 04 |
| **Input** (Cnst,Ary,Abs) | 81 01 |
| End Collection | C0 |
| Collection (Logical) | A1 02 |
| Report Count (4) | 95 04 |
| Report Size (8) | 75 08 |
| Logical Maximum (255) | 26 FF 00 |
| Physical Maximum (255) | 46 FF 00 |
| Usage Page (Vendor-Defined 1) | 06 00 FF |
| Usage (Vendor-Defined 1) | 09 01 |
| **Feature** (Data,Var,Abs,NWrp,Lin,Pref,NNul,NVol,Bit) | B1 02 |
| End Collection | C0 |
| End Collection | C0 |