Hat Mini JoyC

SKU:U156

Description

Hat Mini JoyC is a joystick controller base designed for StickC/StickC-Plus products. It integrates an XY-axis joystick with a built-in button function and comes with an I2C HY2.0 standard connector for easy expansion with other peripherals. Inside, it houses a 200 mAh lithium-polymer battery and an SK6812 RGB LED. This product can be used for remote control of drones or cars, as well as remote operation of robotic joints, etc.

Features

- Maximum joystick angle in each direction: 23°
- Total resistance: 10 kΩ
- Center button
- SK6812 programmable RGB LED
- 200 mAh battery
- HY2.0-4P connector

Includes

- 1 x Hat Mini JoyC
- 1 x Lanyard
- 1 x Hex Key L-Shape 1.5 mm (For M2 Screw)
- 2 x M2 * 8 mm Screws (pan head, self-tapping)

Applications

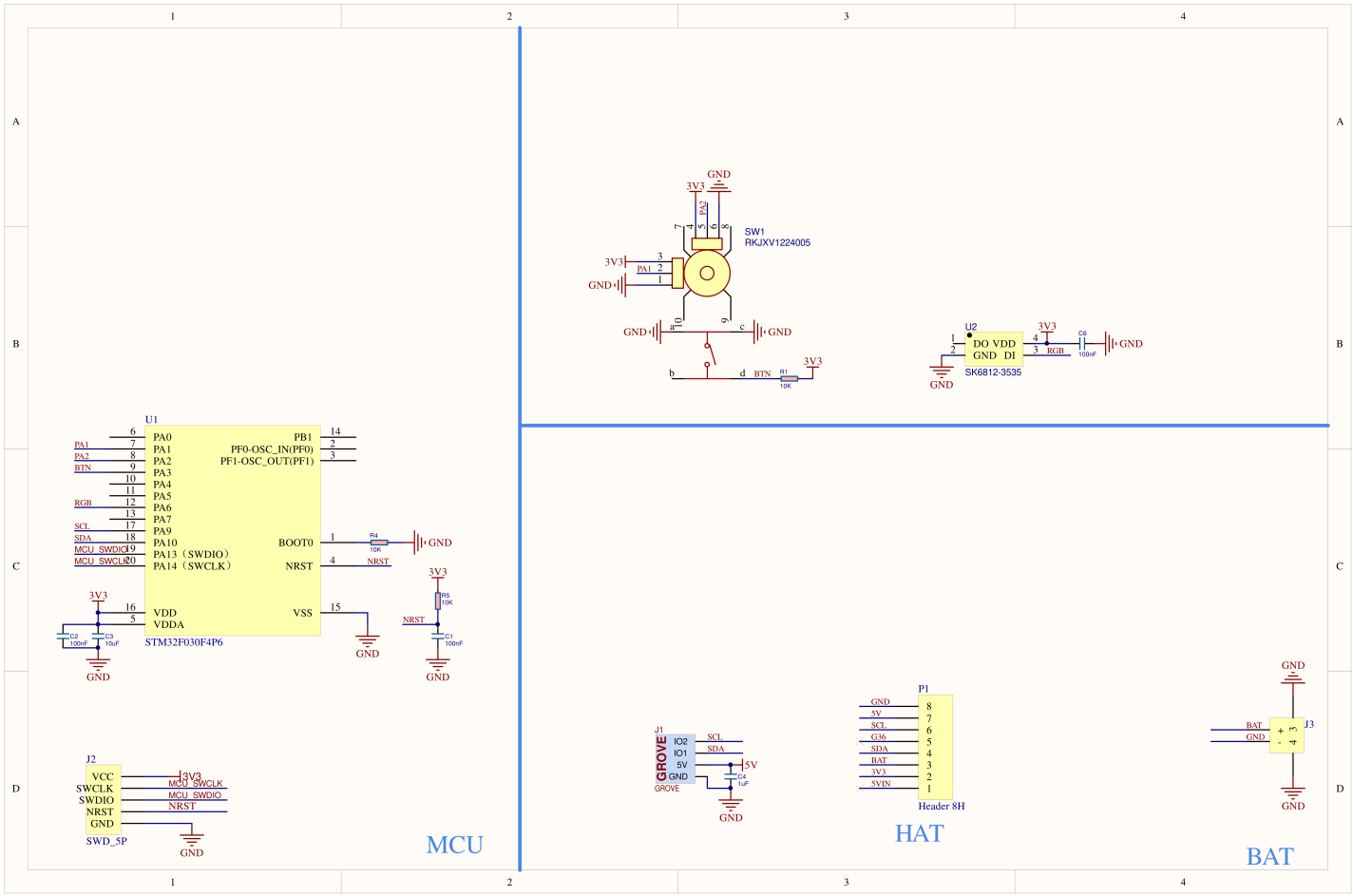
- Drone remote control
- Robotic joint control
- Light dimmer
- Car remote control

Specifications

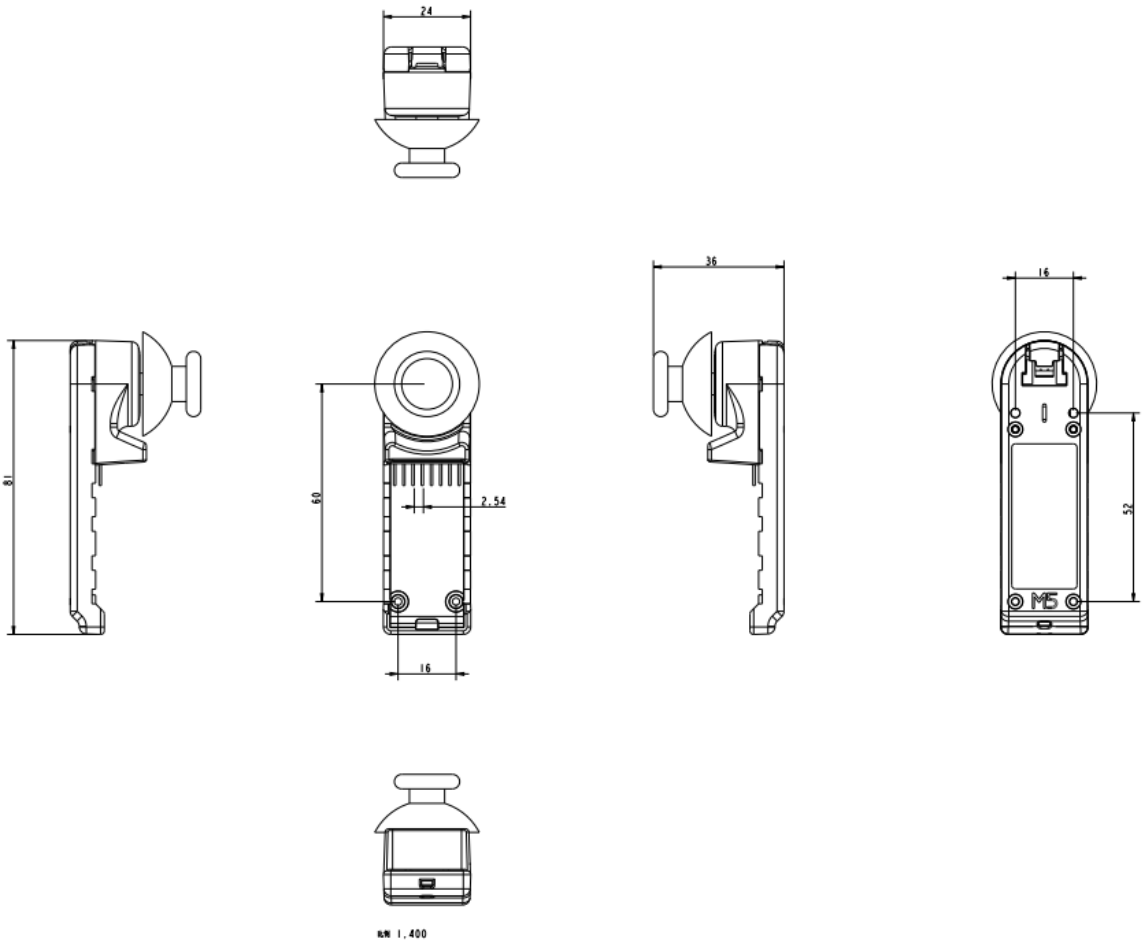
Specification	Parameter
MCU	STM32F030F4P6
Communication	I2C @0x54
RGB	SK6812-3535
Power Supply	3.3V
Battery Capacity	200mAh
Joystick Max Angle	23° max in each direction
Total Resistance	10kΩ
Center Button	Yes
Product Size	81.1 x 36.0 x 24.0mm
Product Weight	20.6g
Package Size	101.0 x 27.0 x 22.0mm
Gross Weight	31.2g

Schematics

- Hat Mini JoyC Schematics PDF


MCU
HAT
BAT
U1
STM32F030F4P6
SW1
RKJXV1224005
U2
SK6812-3535
P1
Header 8H
J1
J2
SWD_5P
J3

Model Size



UNIT:mm

Datasheets

- STM32F030F4P6

Softwares

Arduino

- Hat Mini JoyC Arduino Library
- Hat Mini JoyC Arduino Tutorial

UiFlow1

- Hat Mini JoyC UiFlow1 Docs

UiFlow2

- Hat Mini JoyC UiFlow2 Docs

Internal Firmware

- Hat Mini JoyC Internal Firmware

Protocol

- Hat Mini JoyC I2C Protocol

M5Stack HAT MiniJoyC I2C Protocol																	V1 (FW Version) 11/1/2022
REG MAP (Addr:0x54)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
Raw ADC Value	0x00 R	ADC-X-Value-L	ADC-X-Value-H	ADC-Y-Value-L	ADC-Y-Value-H													ADC: 0~4095
Int10 Value (with offset)[1]	0x10 R	X-L	X-H	Y-L	Y-H													Position: -512-511
Int8 Value (with offset)	0x20 R	X-L	Y-L															Position: -128-127
Button Value	0x30 R	BNT																BNT: 0~1
RGB	0x40 R/W	LED-R	LED-G	LED-B														R/G/B: 0~255
Calibration	0x50 R/W	X-Min-Cal-Value-L	X-Min-Cal-Value-H	X-Max-Cal-Value-L	X-Max-Cal-Value-H	Y-Min-Cal-Value-L	Y-Min-Cal-Value-H	Y-Max-Cal-Value-L	Y-Max-Cal-Value-H	X-Center-Cal-Value-L	X-Center-Cal-Value-H	Y-Center-Cal-Value-L	Y-Center-Cal-Value-H					
Firmware Version	0xF0 R															Version		Version: firmware version number
I2C Address	0xF0 R/W																Address	Address: 1~127

[1] ADC Mapping formula

$$\text{adc}\_out = \frac{(adc\_raw - \text{Min\_Cal\_Va lue}) \times (ADC\_Out\_Max - ADC\_Out\_Min)}{(\text{Max\_Cal\_V alue - Min\_Cal\_Va lue}) + ADC\_Out\_Min}$$