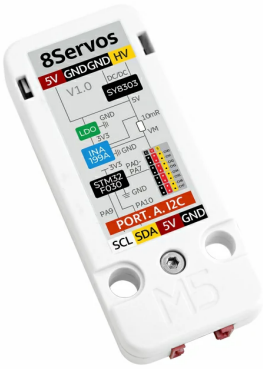
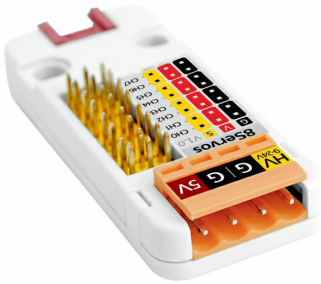
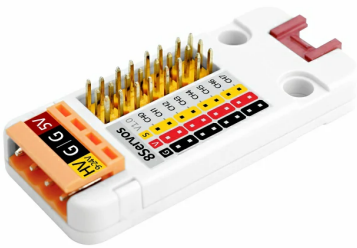
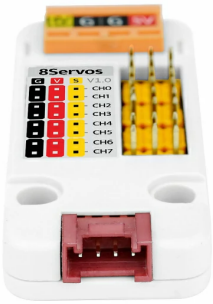
Unit 8Servos

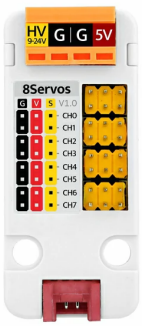
SKU:U165

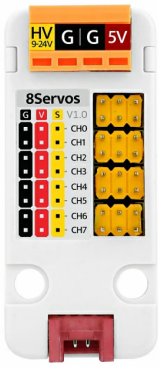


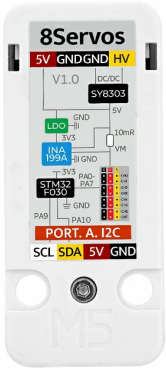












Description

Unit 8Servos is an 8-channel servo driver unit, using **STM32F030F4** as the main controller to generate multiple PWM signals for servo driving, communicating with the M5 host via I2C (addr: 0x25). It has a built-in main power MOS switch circuit, supporting programmable dynamic control of motor release/lock; a built-in total current collection circuit to obtain total circuit parameters. It supports two sets of power inputs (9 ~ 24V / 5V). This product is suitable for servo control, robot control, smart toys, etc.

Features

- 8-channel servo driving
- Programmable motor power control
- I2C protocol control (0x25)
- Power reverse protection
- Total current collection function

Includes

- 1 × Unit 8Servos
- 1 × HT3.96-4P
- 1 × HY2.0-4P Grove Cable (20cm)

Applications

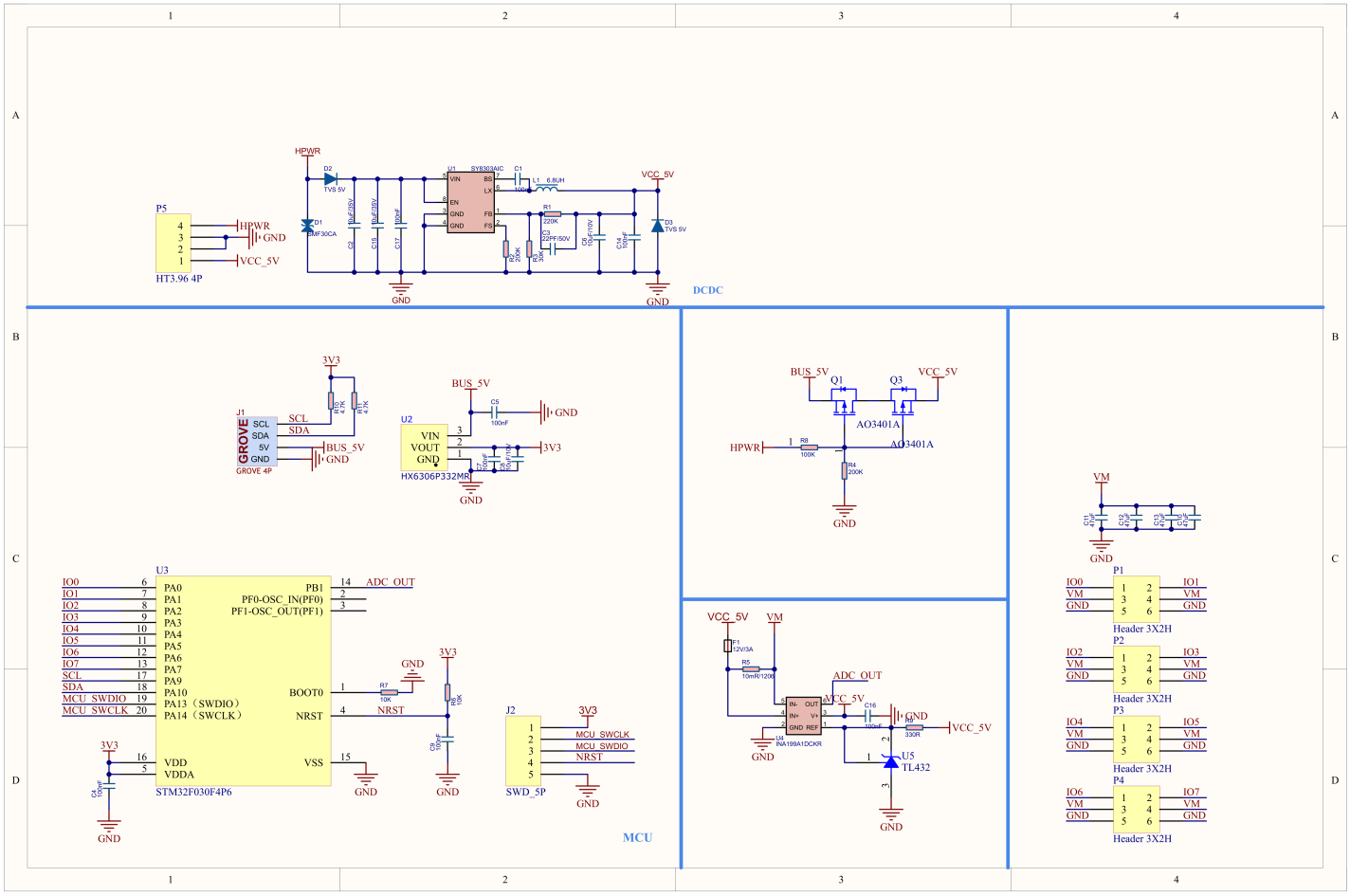
- Servo controller
- Robot control
- Smart toys

Specifications

Specification	Parameter
MCU	STM32F030F4P6
Current Collection Chip	INA199A1DCKR
Driver Servo Channels	8 channels
Driver Maximum Load Capacity	8 channels maximum load capacity: DC 5V@3A
Communication Interface	I2C @0x25
Product Size	55.0 x 24.0 x 10.5mm
Product Weight	10.0g
Package Size	138.0 x 93.0 x 11.5mm
Gross Weight	17.9g

Schematics

- Unit 8Servos Schematics PDF

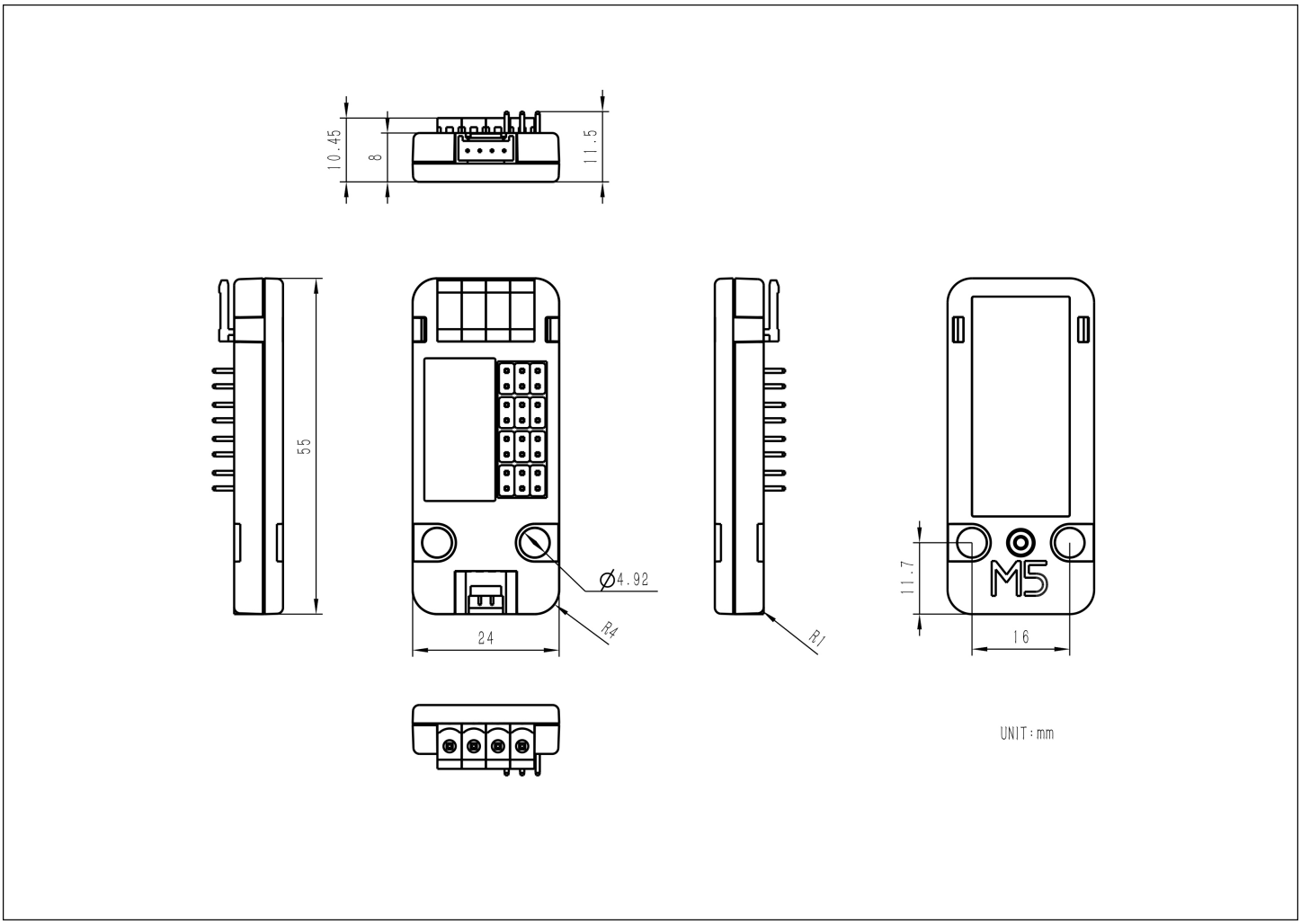


PinMap

Unit 8Servos

HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	SDA	SCL

Model Size



Datasheets

- INA199A1DCKR

Softwares

Arduino

- Unit 8Servos Arduino Library

UiFlow1

- Unit 8Servos UiFlow1 Docs
- Unit 8Servos UiFlow1 Example

UiFlow2

- coming soon...

Internal Firmware

- Unit 8Servos Internal Firmware

Protocol

M5Stack Unit 8Servo I2C Protocol

V1 (FW Version) 2023/3/24

REG MAP (Addr:0x25)			0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
MODE SETTING		0x00 W/R	IO0	IO1	IO2	IO3	IO4	IO5	IO6	IO7									Mode:0~4[1]
1	OUTPUT CTRL	0x10 W	IO0	IO1	IO2	IO3	IO4	IO5	IO6	IO7									0:LOW ; 1:HIGH
0	DIGITAL INPUT	0x20 R	IO0	IO1	IO2	IO3	IO4	IO5	IO6	IO7									0:LOW ; 1:HIGH
2	ANALOG INPUT-8Bits	0x30 R	IO0	IO1	IO2	IO3	IO4	IO5	IO6	IO7									value:0~255
	ANALOG INPUT-12Bits	0x40 R	IO0-L	IO0-H	IO1-L	IO1-H	IO2-L	IO2-H	IO3-L	IO3-H	IO4-L	IO4-H	IO5-L	IO5-H	IO6-L	IO6-H	IO7-L	IO7-H	value:0~4095
3	SERVO 8Bits	0x50 W/R	IO0	IO1	IO2	IO3	IO4	IO5	IO6	IO7									value:0~180degree
	SERVO 16Bits	0x60 W/R	IO0-L	IO0-H	IO1-L	IO1-H	IO2-L	IO2-H	IO3-L	IO3-H	IO4-L	IO4-H	IO5-L	IO5-H	IO6-L	IO6-H	IO7-L	IO7-H	value:500~2500us
4	RGB 24Bits	0x70 W/R	IO0-R	IO0-G	IO0-B	IO1-R	IO1-G	IO1-B	IO2-R	IO2-G	IO2-B	IO3-R	IO3-G	IO3-B	IO4-R	IO4-G	IO4-B	IO5-R	R/G/B:0~255
		0x80 W/R	IO5-G	IO5-B	IO6-R	IO6-G	IO6-B	IO7-R	IO7-G	IO7-B									
5	PWM DutyCycle	0x90 W/R	pwm 0	pwm1	pwm 2	pwm 3	pwm 4	pwm 5	pwm 6	pwm 7									DutyCycle:0~100 (frequency:1KHz)
Servo Current		0xA0 R	current-byte0	current-byte1	current-byte2	current-byte3													float
I2C ADDRESS SETTING		0xF0 W/R																Addr	value: 0~127 default:0x25
Firmware version		0xF0 R															Version		Version: firmware version

[1] 0: Input, 1: Output, 2: ADC, 3: Servo, 4: NeoPixel, 5: PWM

Video

- Unit 8Servos Control Case

U165.mp4

- UiFlow2