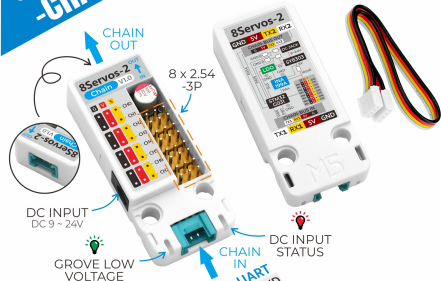


Unit 8Servos2-Chain

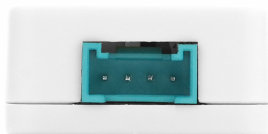
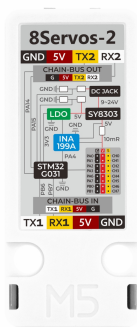
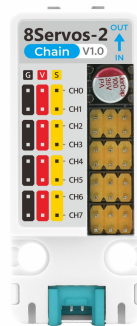
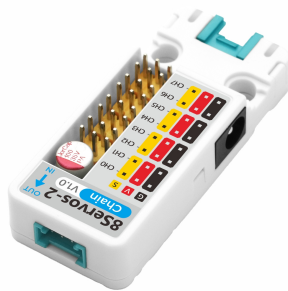
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UNIT
8SERVOS2-CHAIN



STM32G031
CHAIN PROTOCOL
SERVO / IO / ADC / RGB / PWM

UART
INTERFACE





Description

Unit 8Servos2-Chain is an 8-channel servo cascade control unit with an integrated **STM32G031G8U6** core controller. It adopts a UART communication interface and is compatible with the Chain series UART serial cascade communication protocol. It provides 8x configurable IO channels that support configuring multiple operating modes: servo control, digital input/output, ADC input, RGB LED control, and PWM mode.

Two onboard HY2.0-4P interfaces serve as the input and output interfaces of the Chain series protocol, enabling chained connections of multiple devices.

This unit supports DC 9 ~ 24V input and integrates an SY8303AIC step-down circuit to provide a 5V supply, with a maximum total output current of 3A. An onboard INA199A1DCKR current detection circuit can sample the total servo current, and input voltage and 5V supply voltage sampling circuits, a DC power interface status indicator, and a HY2.0-4P interface undervoltage status indicator are also provided, making it suitable for application scenarios such as multi-servo control, robot joint drive, and smart toys.

Features

- STM32G031G8U6 core controller
- 8x configurable IO channels supporting multiple operating modes:
 - Servo control
 - Digital input/output
 - ADC input
 - RGB LED control
 - PWM mode
- Communication interface
 - Adopts the Chain series UART serial cascade communication protocol
 - 2x HY2.0-4P interfaces support multi-device cascade
- Power and detection
 - DC 9 ~ 24V power input, with an integrated 5V@3A step-down circuit (peripheral drive + HY2.0-4P output to power the controller)
 - Integrated total servo current detection
 - DC input voltage detection
 - 5V supply voltage detection
- Status indication
 - Red indicator: DC power interface status indicator (lights up when the interface voltage is higher than 8.5V)
 - Green indicator: HY2.0-4P interface undervoltage status indicator (lights up when the interface voltage is lower than 4.5V)

Includes

- 1 x Unit 8Servos2-Chain
- 1 x HY2.0-4P Grove Cable (20cm)

Applications

- Multi-servo control
- Robot joint drive
- Smart toys
- STEAM education

Specifications

Specification	Parameter
MCU	STM32G031G8U6
Configurable IO Channels	8, supports operating modes: servo control, digital input/output, ADC input, RGB LED, PWM mode
IO Channel Interface	8 x 2.54-3P
Communication Interface	UART @ Chain Series Communication Protocol (IN / OUT)
DC Power Input Interface	Input voltage: DC 9 ~ 24V, spec: 5.5 x 2.1mm, polarity: center positive, outer negative
Step-Down Chip	SY8303AIC
Power Output	DC 5V, max 3A (shared by all onboard loads)
Current Detection Circuit	INA199A1DCKR, paired with a 10mΩ sampling resistor
Indicator	Red DC input monitoring indicator, green undervoltage monitoring indicator
Standby Power Consumption	DC 12V@5.71mA
Operating Power Consumption	DC 12V@1.6A (8 servo loads)
Product Size	56.0 x 24.0 x 11.5mm
Product Weight	11.7g
Package Size	138.0 x 93.0 x 14.0mm
Gross Weight	17.1g

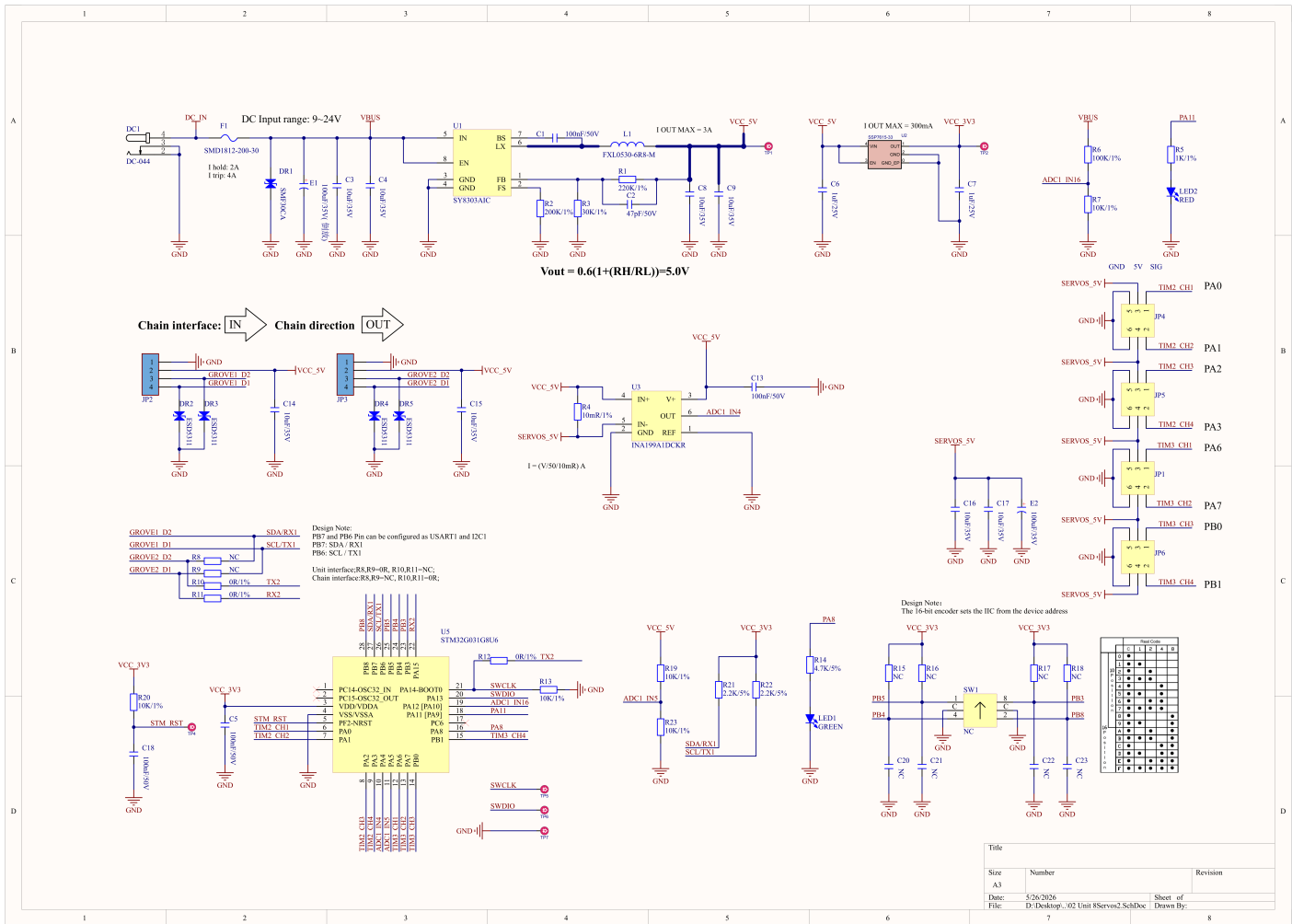
Learn

Cascade Connection

Please connect the OUT interface of the previous device to the IN interface of the next device. Chain IN/OUT and the onboard step-down output share the same 5V power network. When powering multiple devices, avoid directly connecting multiple independent 5V power supplies in parallel.

Schematics

- [Unit 8Servos2-Chain Schematic PDF](#)



PinMap

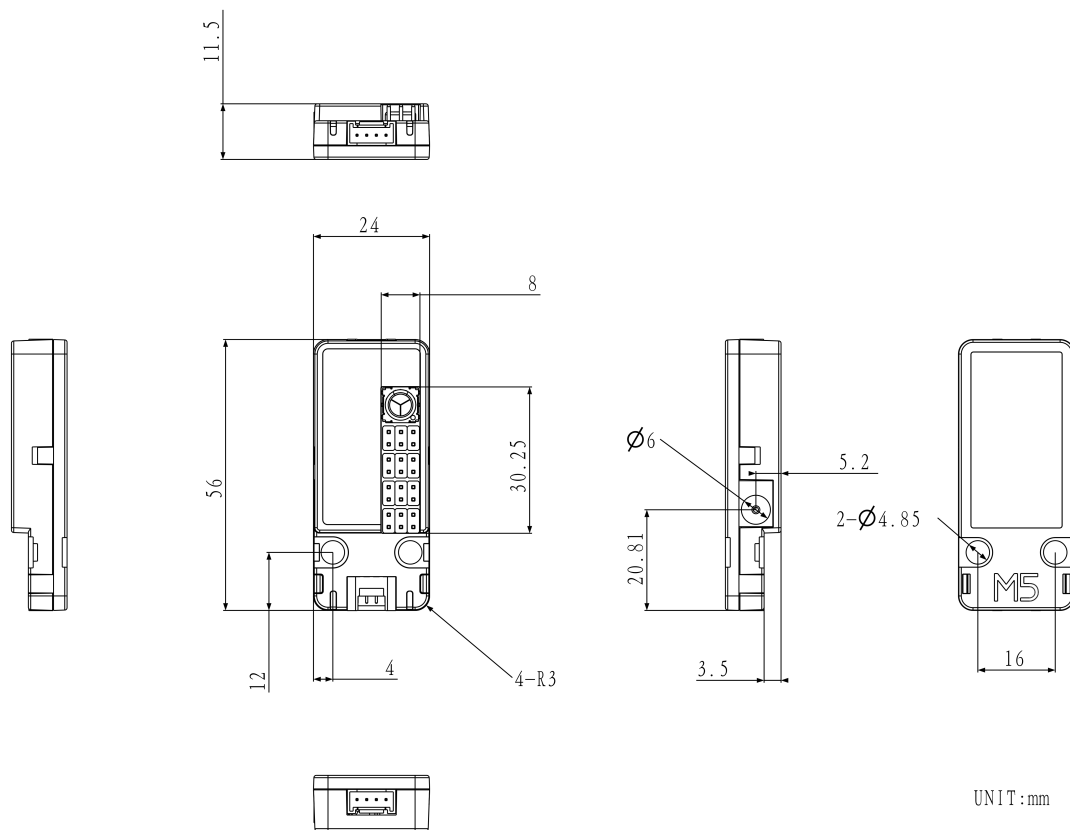
UART

TX2 of UART2 is connected to PA14 via R12 (0Ω), and RX2 is connected to PA15.

STM32G031G8U6	PB7	PB6	PA14	PA15
UART1	RXD1	TXD1		
UART2			TXD2	RXD2

Model Size

- Unit 8Servos2-Chain Model Size PDF



Datasheets

- [INA199A1DCKR Datasheet](#)

Softwares

Arduino

- [Unit 8Servos2-Chain Arduino Driver Library](#)
- [Unit 8Servos2-Chain Arduino Tutorial](#)

Internal Firmware

- [Unit 8Servos2-Chain Internal Firmware](#)

Protocol

[View Protocol](#)

Video

Product Comparison

Product Compare		
	Unit 8Servos2-I2C	Unit 8Servos2-Chain
Communication Interface	I2C	UART (Chain Protocol)
Node Expansion	I2C address: 0x25 ~ 0x34	Chain cascade
Channel Count	8	8
Operating Modes	Digital input/output / Servo / ADC / RGB / PWM	Digital input/output / Servo / ADC / RGB / PWM
Power Input	DC 9 ~ 24V	DC 9 ~ 24V
Servo Power Supply	DC 5V	DC 5V
Current Detection	INA199	INA199
Core Chip	STM32G031G8U6	STM32G031G8U6