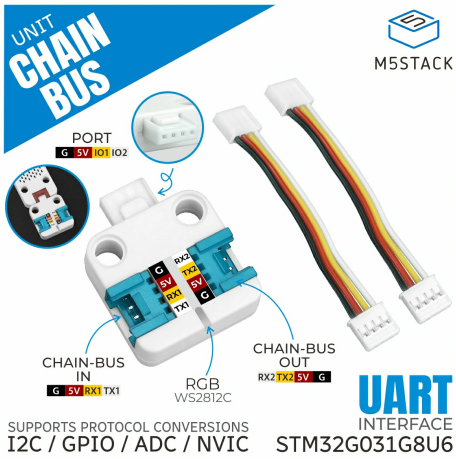
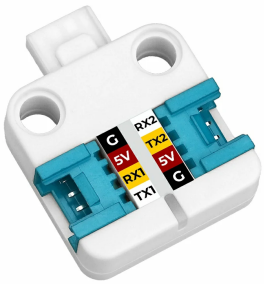
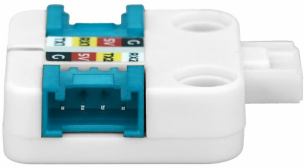
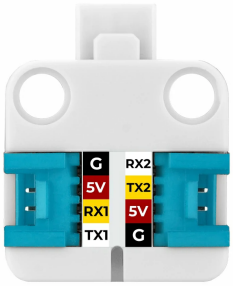
Unit ChainBus

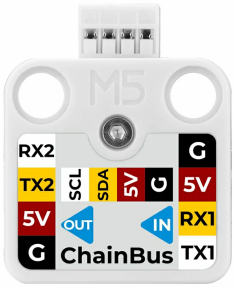
SKU:U212

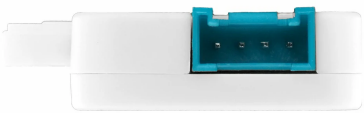


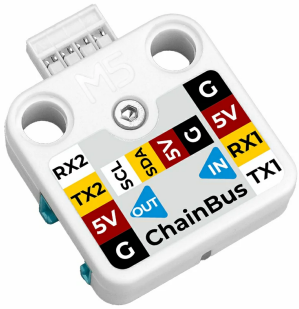












Description

Unit ChainBus is a Chain series communication protocol conversion unit. It integrates an STM32G031G8U6 chip and uses a UART daisy-chain communication protocol to enable **chained connections** of multiple devices. It supports multiple protocol interface conversions, allowing various peripherals to be expanded on the same bus, and integrates hardware control and data interaction capabilities.

The UART interfaces on the left and right sides are used to connect Chain series devices, supporting device UID query, version query, link device enumeration, heartbeat communication, and more. The top multifunction expansion interface can be used to extend Unit series devices, supporting I2C communication control, GPIO management (input and output), ADC sampling, and NVIC interrupt management. It is suitable for industrial control, IoT, smart home, and other application scenarios, providing an effective solution for unified control and data interaction of multiple devices.

Features

- STM32G031G8U6 core controller
- UART daisy-chain communication protocol, supporting single / multiple Chain series devices in a chained connection
- 1 x RGB LED for status indication
- 1 x HY2.0-4P multifunction expansion interface for extending Unit series devices
- 2 x HY2.0-4P UART interfaces for extending Chain series devices
- Development Platform
  - UiFlow2
  - Arduino

Includes

- 1 x Unit ChainBus
- 2 x HY2.0-4P Grove Cable (5cm)

Applications

- Chain bus device expansion
- Industrial control
- IoT
- Smart home

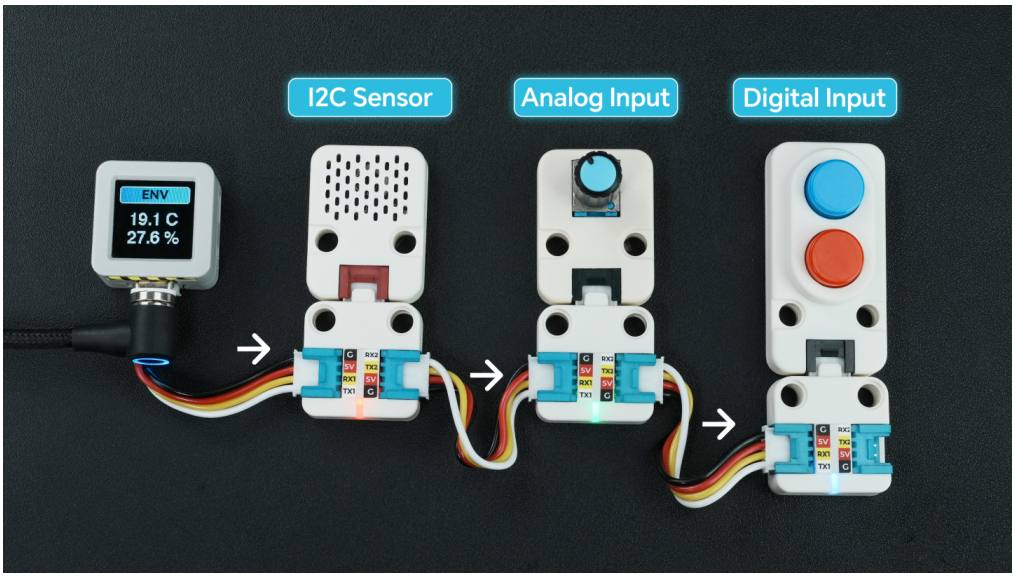
Specifications

Specification	Parameter
MCU	STM32G031G8U6
Interface	2 x HY2.0-4P UART Interfaces, 1 x HY2.0-4P Multifunction Expansion Interface
RGB LED	1 x WS2812
Communication	UART 115200bps @ 8N1
Chain Protocol	Chain Bus UART daisy-chain communication protocol
Chain Features	Device UID query, version query, link device enumeration, heartbeat, etc.
Expansion I/O	I2C communication control, GPIO management (including interrupt configuration and status query), ADC sampling, NVIC interrupt management
Power Consumption	RGB white light max brightness 3.3V@17.72mA
Product Size	29.8 x 24.0 x 8.0mm
Product Weight	3.9g
Package Size	138.0 x 93.0 x 10.0mm
Gross Weight	8.7g

Learn

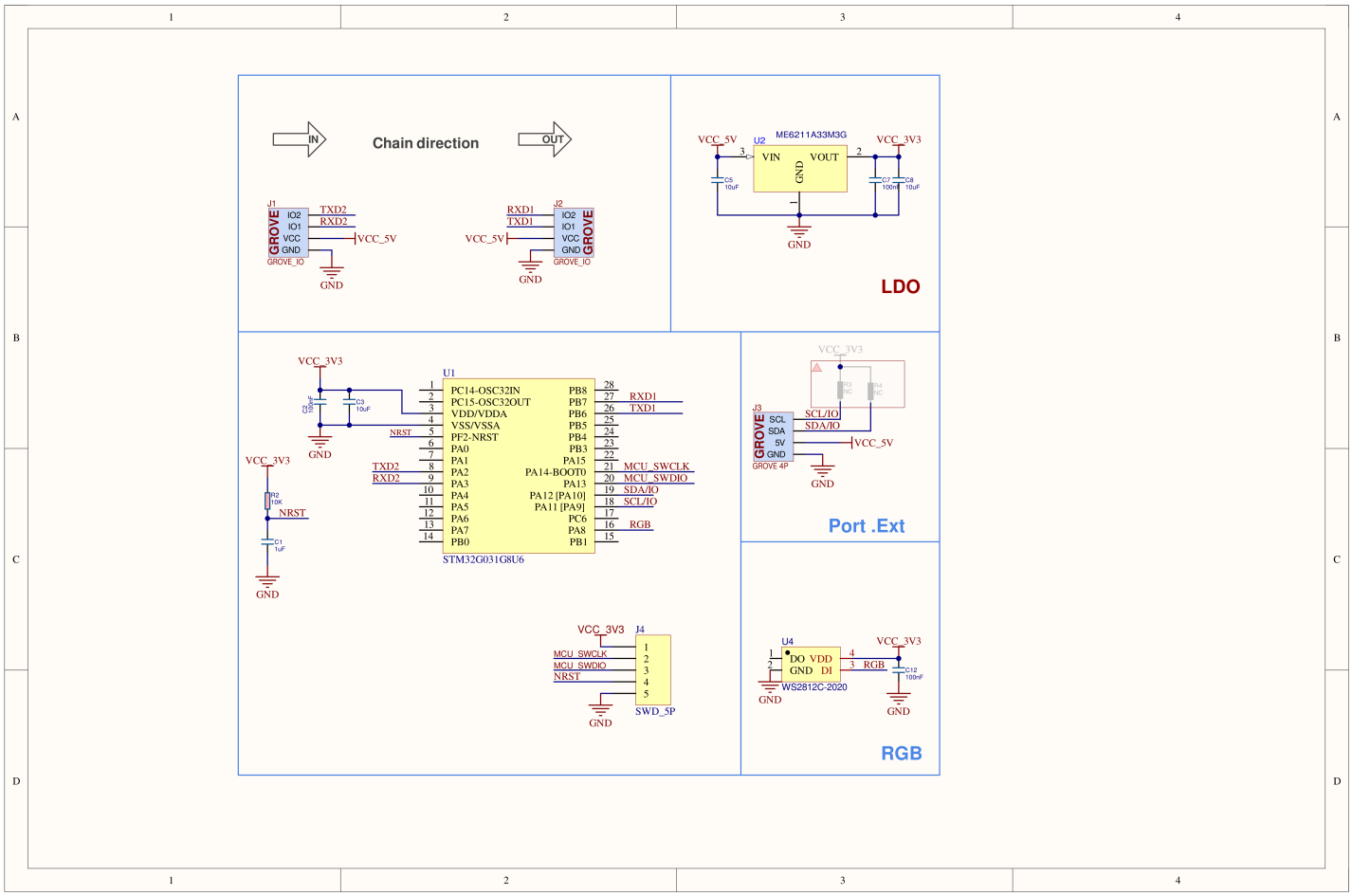
The left and right HY2.0-4P interfaces of Unit ChainBus are used for Chain Bus input and output respectively, while the top expansion connector is used to connect Unit series devices.

Unit ChainBus adopts the same UART daisy-chain protocol as other Chain series expansion devices (such as Chain Angle, Chain Encoder, etc.). It can serve as a custom functional node and be connected to the Chain Bus. Multiple Unit ChainBus devices can be expanded on the same bus. Through interface function configuration, different types of hardware peripheral controls can also be integrated on the same bus.



Schematics

- Unit ChainBus Schematics PDF



PinMap

RGB LED

STM32G031G8U6	PA8
WS2812C	RGB

UART

STM32G031G8U6	PA2	PA3	PB6	PB7
UART1			TXD1	RXD1
UART2	TXD2	RXD2		

External Connection

- Top HY2.0-4P Grove Interface - Expansion Interface

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

- Left HY2.0-4P Grove Interface - IN

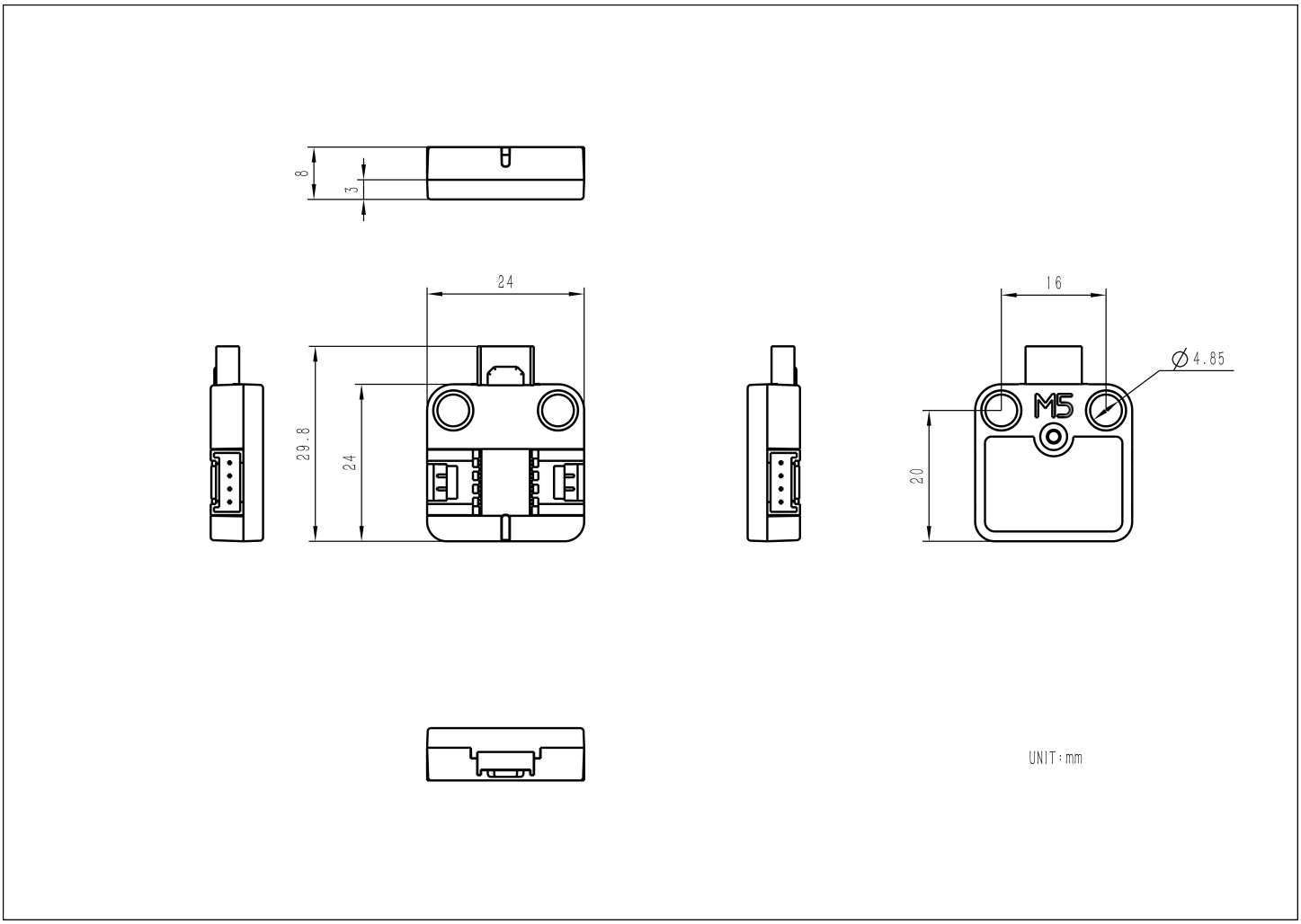
HY2.0-4P	Black	Red	Yellow	White
PORT.IN	GND	5V	UART1_RX	UART1_TX

- Right HY2.0-4P Grove Interface - OUT

HY2.0-4P	Black	Red	Yellow	White
PORT.OUT	GND	5V	UART2_TX	UART2_RX

Model Size

- Unit ChainBus Model Size PDF



Softwares

Arduino

- Unit ChainBus Arduino Library
- Unit ChainBus Arduino Quick Start

UiFlow2

- Unit Chain Bus UiFlow2 Docs

Internal Firmware

- Unit ChainBus Internal Firmware

Protocol

Note

The blue sections in the protocol represent the top Grove interface control functions, and the pink sections represent the UART serial communication functions of the left and right Grove interfaces.

- Unit ChainBus Protocol

Video

- Unit ChainBus product introduction and feature demonstration

U212-Unit-ChainBus-video-EN.mp4