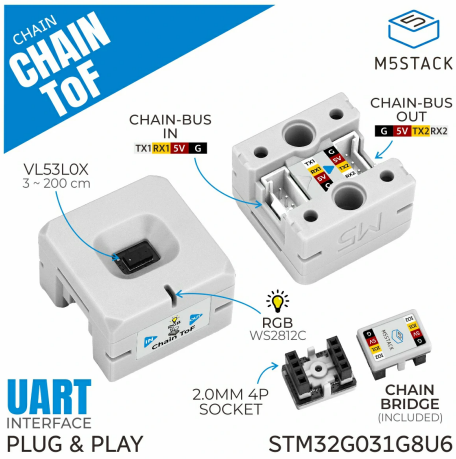
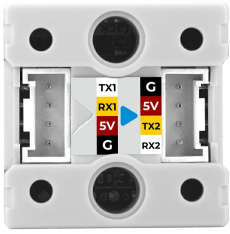
Chain ToF

SKU:U209





Description

Chain ToF is a laser ranging sensor node in the M5Stack Chain series. The device integrates a VL53L0C laser ranging module, supporting a distance measurement range of 3 ~ 200cm with an accuracy of ±3%. It is suitable for short-range non-contact distance measurement and object proximity detection applications. Chain ToF integrates an STM32G031G8U6 core MCU and adopts a UART daisy-chain communication protocol. With two HY2.0-4P expansion interfaces, it can be extended with additional Chain series devices to build richer interactive applications.

Features

- M5Stack Chain series
- VL53L0C laser ranging module
- 3 ~ 200cm measurement range
- STM32G031G8U6 core MCU
- UART serial daisy-chain communication protocol
- 2 x HY2.0-4P expansion interfaces for extending Chain series devices

Includes

- 1 x Chain ToF
- 1 x Chain Bridge

Applications

- Proximity detection
- Distance measurement

Specifications

Specification	Parameter
MCU	STM32G031G8U6
Laser Module	VL53L0C
Measurement Range	3 ~ 200cm
Measurement Accuracy	±3%
Input Power	DC 5V
Communication Interface	UART
Interface Type	2 x HY2.0-4P
RGB LED	1 x WS2812C
Power Consumption	Stop mode (white RGB on): DC 5V@21.27mA Default mode single measurement: DC 5V@20.26mA Default mode continuous measurement: DC 5V@24.75mA
Operating Temperature	0 ~ 40°C
Product Size	23.9 x 23.9 x 16.0mm
Product Weight	5.8g
Package Size	138.0 x 93.0 x 14.0mm
Gross Weight	9.0g

Learn

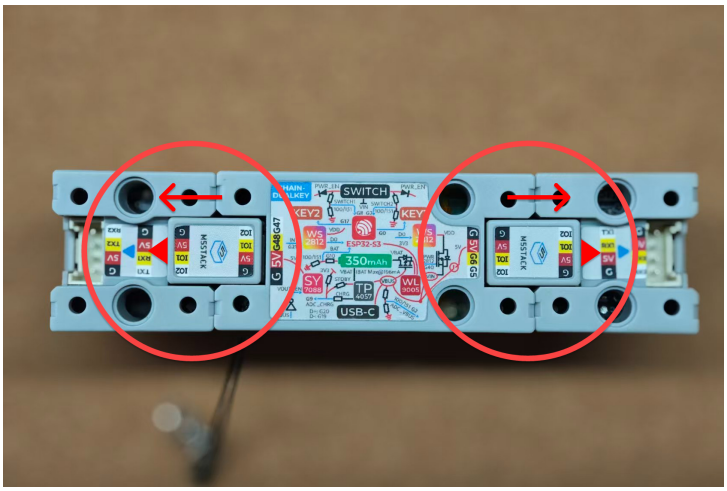
Test Distance

Measurement Environment

Under normal conditions, the maximum test distance is 120cm. To reach 200cm, Long Range mode must be enabled and the measurement must be performed in a dark environment without infrared interference.

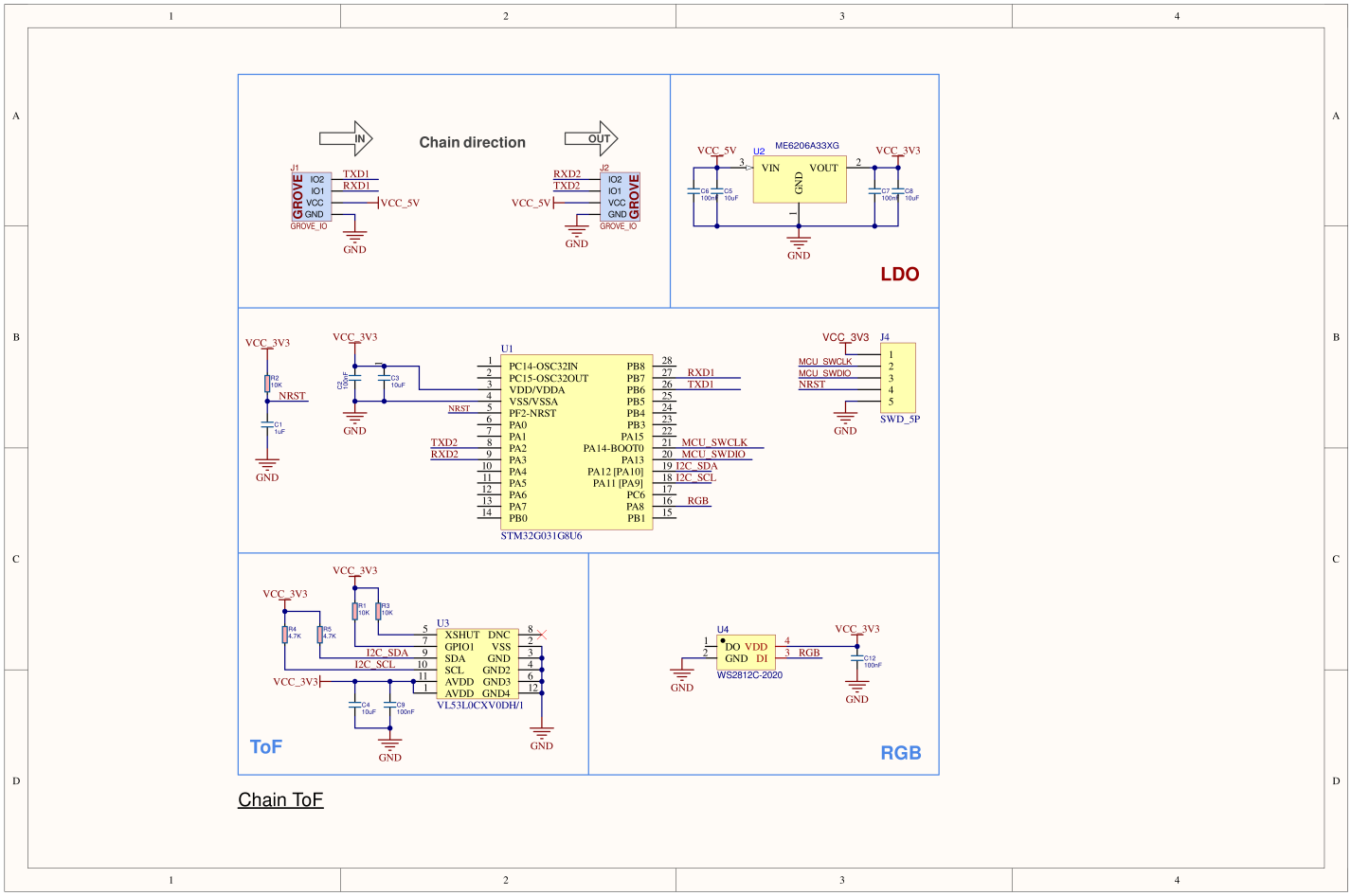
Connection Instructions

Use the Chain Bridge connector to connect the main controller Chain DualKey and each Chain series input device. Pay attention to the connection direction: the triangular arrow should point from the Chain DualKey main controller outward, as shown below:



Schematics

- Chain ToF Schematics PDF



Chain ToF

PinMap

RGB LED

STM32G031	PA8
WS2812C	RGB

ToF

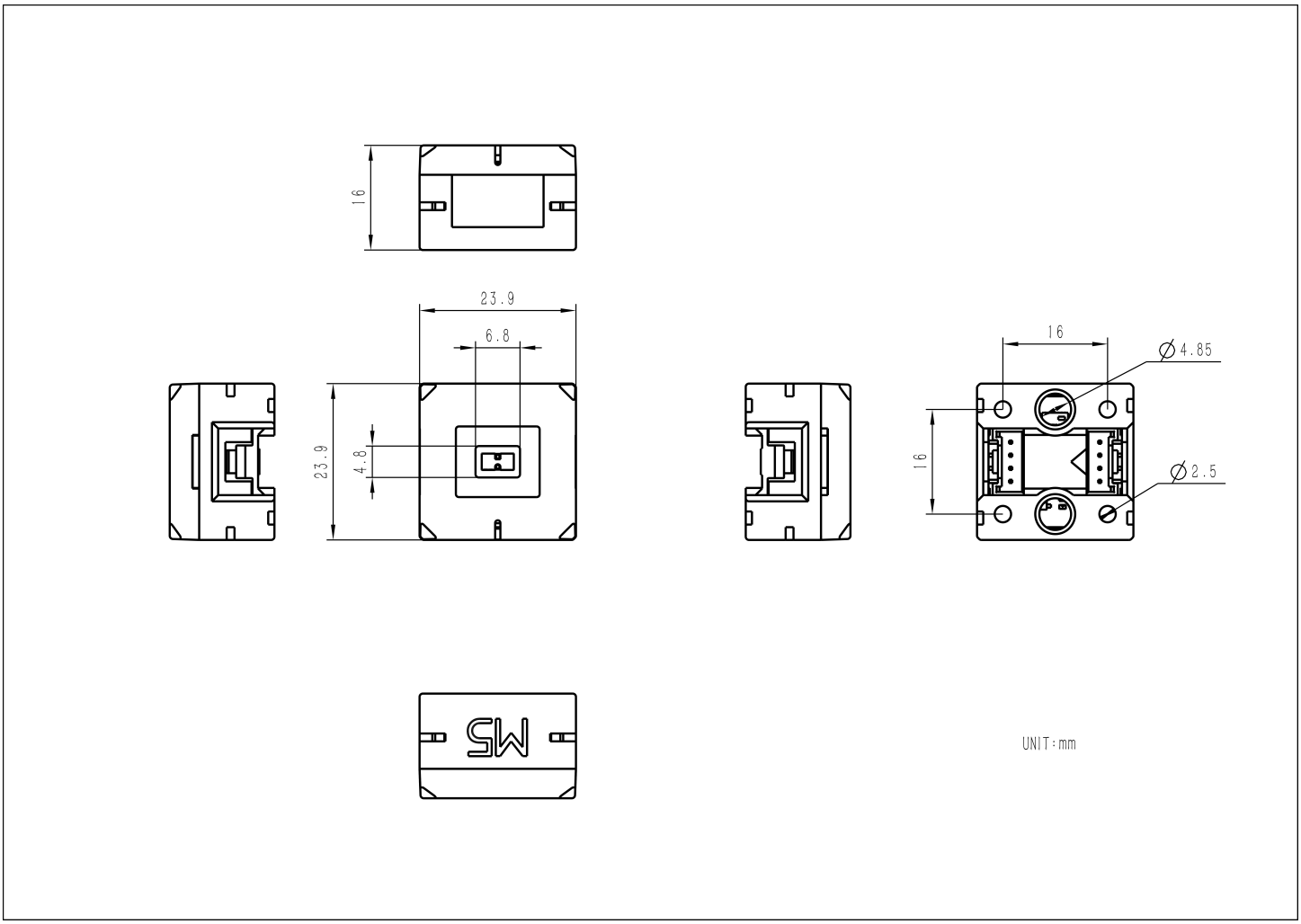
STM32G031	PA11	PA12
VL53L0C	SCL	SDA

UART

STM32G031	PB6	PB7	PA2	PA3
UART1	TXD1	RXD1		
UART2			TXD2	RXD2

Model Size

- Chain ToF Model Size PDF



Softwares

Arduino

- Chain ToF Arduino Quick Start
- Chain Series Driver Library

UiFlow2

- Chain ToF UiFlow2 Docs

Internal Firmware

- Chain ToF Internal Firmware

Protocol

- Chain ToF Communication Protocol

Videos

- Chain ToF Product Introduction and Feature Demonstration

U209-Chain-ToF-video-EN.mp4