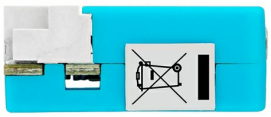
NanoC6

SKU:C125



Description

NanoC6 is a micro and **low-power** IoT development board in the M5Stack development kit series. It is equipped with an ESP32-C6FH4 SoC, supporting wireless communication technologies such as Wi-Fi 6 and Zigbee, and features a built-in infrared transmitter for convenient control of infrared IoT devices. The onboard ceramic antenna ensures a stable wireless communication connection.

Additionally, the device is equipped with programmable RGB LEDs, allowing for personalized visual effects in projects. The inclusion of a Grove interface enables flexible expansion with various M5 devices (customizable to connect different types of devices, such as those following UART/I2C communication protocols), providing developers with rich hardware expansion possibilities.

This development board is suitable for smart homes, industrial automation, health monitoring, and IoT devices, offering a comprehensive development solution for innovative projects.

Note

WiFi 6

M5NanoC6 is the first core control board to support WiFi 6, supporting the 2.4 GHz Wi-Fi 6 protocol (802.11ax) and backward compatibility with 802.11 b/g/n.
WiFi 6 offers higher speeds, greater capacity, lower latency, and enhanced security compared to previous WiFi protocols.

Tutorial

Arduino IDE

This tutorial will guide you on how to program and control the M5NanoC6 device using the Arduino IDE

Features

- Supports (2.4GHz) Wi-Fi 6, Zigbee, and Thread, Matter wireless protocols
- Built-in infrared LED and RGB
- Equipped with Grove interface
- Ceramic antenna

- Compact size
- Development Platform
  - UiFlow2
  - Arduino IDE
  - ESP-IDF
  - PlatformIO

Includes

- 1 x NanoC6

Applications

- Smart home systems
- Industrial control systems
- Environmental monitoring systems
- Agricultural IoT systems
- Healthcare
- Consumer electronics
- Service robots

Specifications

Specification	Parameter
SoC	ESP32-C6FH4@RISC-V single-core, main frequency 160MHz, supports CDC
Flash	4MB
Wi-Fi	2.4 GHz Wi-Fi 6 (802.11ax), backward compatible with 802.11b/g/n
Zigbee	Zigbee 3.0
Thread	Thread 1.3
Matter	Supported
RGB	WS2812
IR Remote Parameters	IR transmission distance at ∠0°: 632CM IR transmission distance at ∠45°: 83CM IR transmission distance at ∠90°: 29CM
Grove Maximum Output Current	DC 5V@600mA (Output capability depends on USB power supply capacity)
Standby Current (Deep Sleep Mode)	USB Type-C power supply: DC 5V@125.5uA Grove power supply: DC 5V@50uA
Standby Current (ULP Mode)	USB Type-C power supply: DC 5V@252uA Grove power supply: DC 5V@201.5uA
Operating Current	In Wi-Fi mode: DC 5V@106.2mA
Wi-Fi Range Test (Antenna facing up, back facing the test)	54.9m
Operating Temperature	0 ~ 40°C
Product Size	23.5 x 12.0 x 9.5mm
Product Weight	2.7g
Package Size	100.6 x 80.0 x 10.5mm
Gross Weight	11.4g

Learn

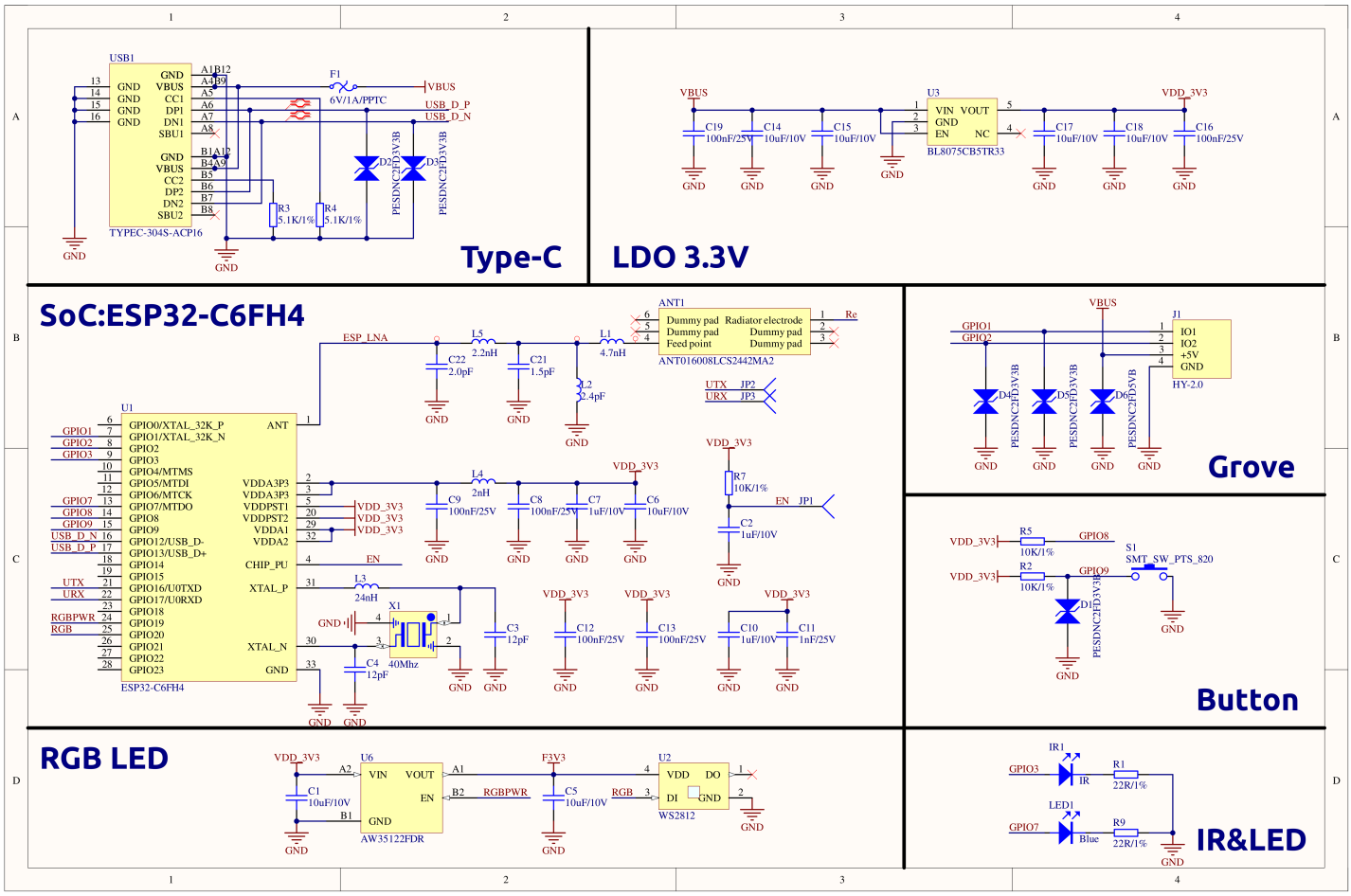
Download Mode

How to Enter Download Mode

To enter download mode for programming, hold down the GPIO9 button and then connect the data cable.

Schematics

- NanoC6 Schematics PDF



PinMap

IR & RGB & Button & LED

ESP32-C6FH4	G3	G20	G19	G9	G7
IR	IR				
WS2812		WS2812	EN(RGBPWR)		
BUTTON				BUTTON	
LED(Blue)					LED(Blue)

RGB Light Usage Notice:

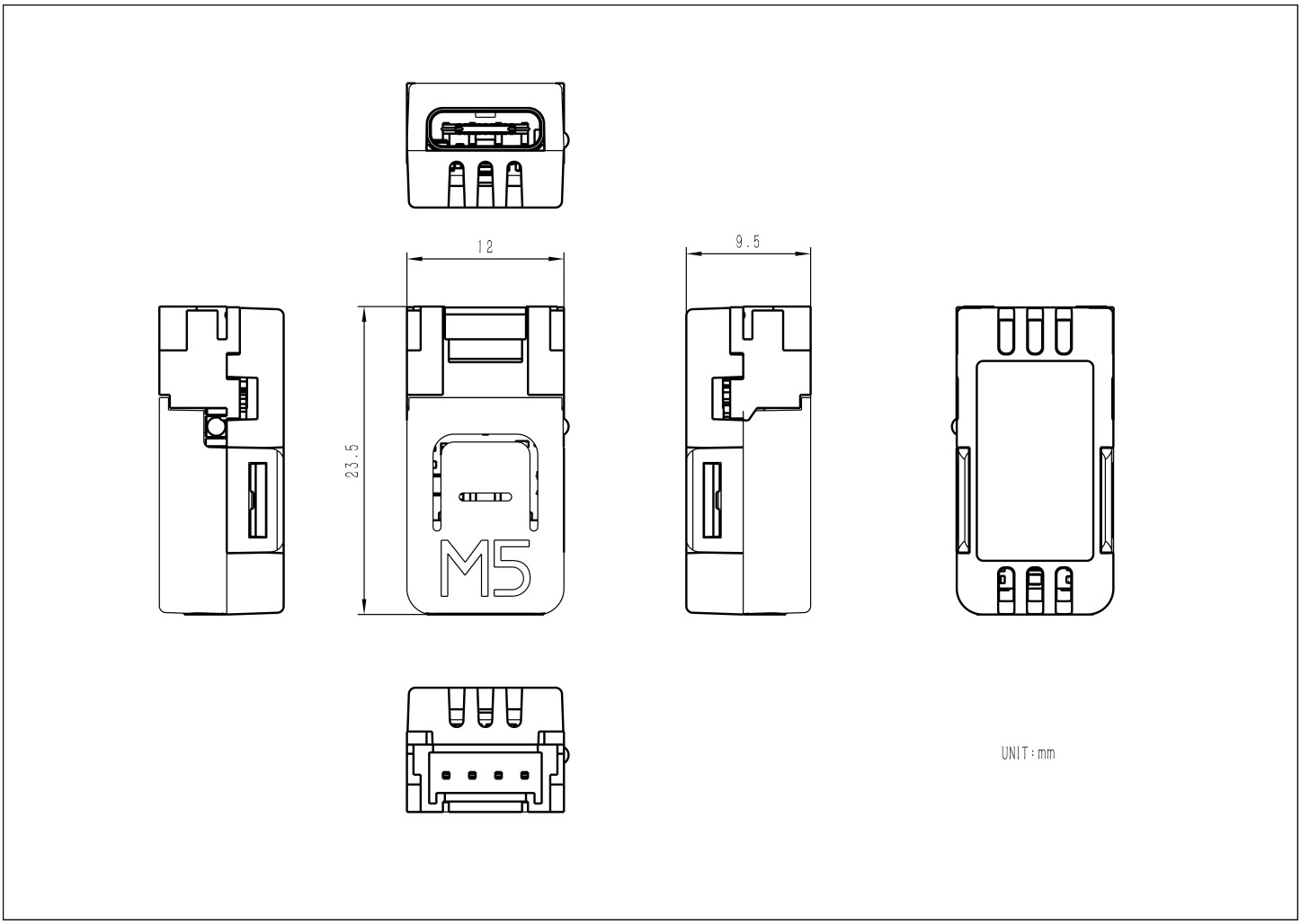
When using the RGB function, set pin G19 to a high level to enable power supply.

HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.CUSTOM	GND	5V	G2	G1

Model Size

- NanoC6 Model Size PDF



Structure

- NanoC6 Structure Files

Datasheets

- ESP32-C6 Datasheet

Softwares

Arduino

- NanoC6 Arduino Quick Start
- NanoC6 Button Example
- NanoC6 IR NEC Example
- NanoC6 LED Example
- NanoC6 RGB LED Example

PlatformIO

```
[env:m5stack-nanoc6]
platform = https://github.com/pioarduino/platform-espressif32/archive/refs/heads/develop.zip
board = esp32-c6-devkitc-1
framework = arduino
upload_speed = 1500000
monitor_speed = 115200
build_flags =
    -D ARDUINO_USB_MODE=1
    -DARDUINO_USB_CDC_ON_BOOT=1
    -DCONFIG_ARDUHAL_LOG_COLORS=1
    -DCORE_DEBUG_LEVEL=5
lib_deps =
    M5Unified=https://github.com/m5stack/M5Unified
```

Video

- NanoC6 Product Introduction and Applications

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