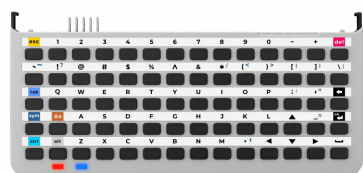
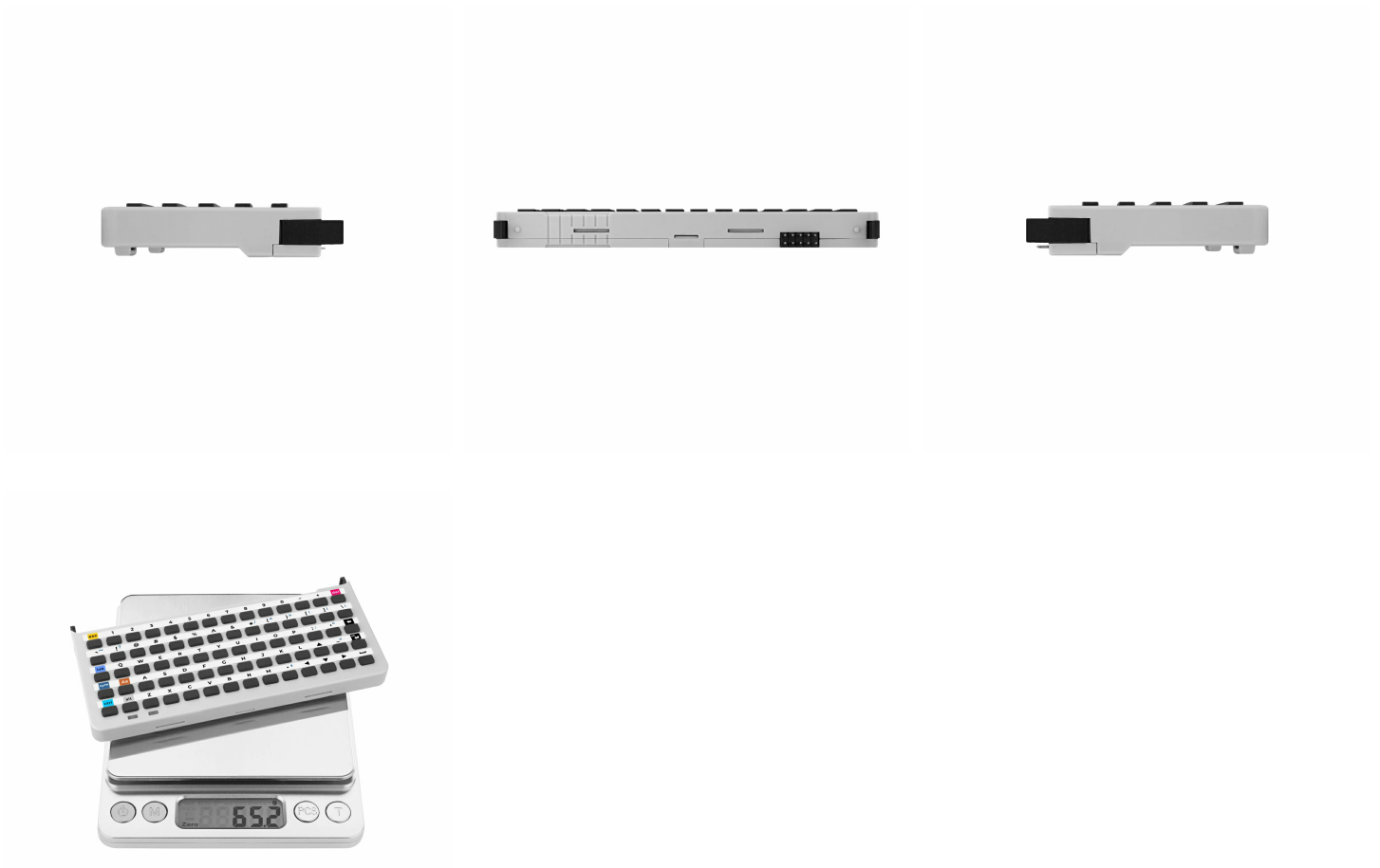


Tab5 Keyboard

SKU:A164

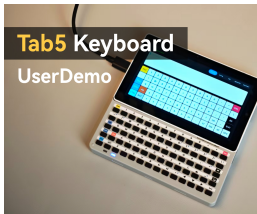




Description

Tab5 Keyboard is a 70-key physical keyboard input expansion module designed specifically for Tab5. It connects directly to the host via Tab5 Ext.Port1, enabling a plug-and-play input experience. The module integrates an STM32F030C8T6 main control chip, responsible for keyboard matrix scanning and communication processing. The preloaded firmware supports three operating modes: **Normal**, **HID**, and **Character**, adapting to different interaction requirements. The keyboard adopts a 14 x 5 matrix design, supports multiple simultaneous key presses, and provides a complete set of letters, numbers, symbols, and commonly used function keys such as Aa, Ctrl, Sym, Alt, Tab, Esc, and arrow keys. The device communicates with Tab5 via I2C and provides an independent interrupt pin for low-latency real-time reporting of key events. Two onboard RGB LEDs can be used for full-color status indication. With a compact structure and simple connection method, it is suitable for text input, command interaction, and various portable applications that require a physical keyboard.

Tutorial



User Demo Tutorial

This tutorial introduces user demo for using the Tab5 Keyboard with the Tab5, including firmware flashing methods, USB HID output, register display, and other features.

Features

- Uses STM32F030C8T6 as the main control chip
- Designed for Tab5, plug and play via direct connection to the expansion port
- Three operating modes to meet diverse requirements
- 14 x 5 matrix, supports multiple simultaneous key presses
- Complete key layout with various commonly used function keys
- I2C communication with low-latency reporting through an interrupt pin
- Onboard dual RGB LEDs for colorful status indication
- Side latches securely lock onto Tab5; two M3 screw mounting holes reserved on the back
- Compact structure with strong adaptability for portable scenarios

Includes

- 1 x Tab5 Keyboard

Applications

- Text input
- Command interaction
- Portable application scenarios
- Educational programming and maker projects

Specifications

Specification	Parameter
MCU	STM32F030C8T6
Keys	70-key keyboard
I2C Address	0x6D (default)
RGB LED	2 x WS2812E-1313
Interface	2 x 5 PIN header, 2.54mm pitch
Standby Power	DC 3.3V@14.5mA
Operating Power	RGB (white) maximum brightness: 3.3V@21.5mA
	Input (RGB off): 3.3V@14.5mA
Product Size	128.0 x 59.4 x 13.1mm
Product Weight	65.2g
Package Size	147.0 x 82.0 x 16.5mm
Gross Weight	97.4g

| Learn

| Device Connection Diagram



| Schematics

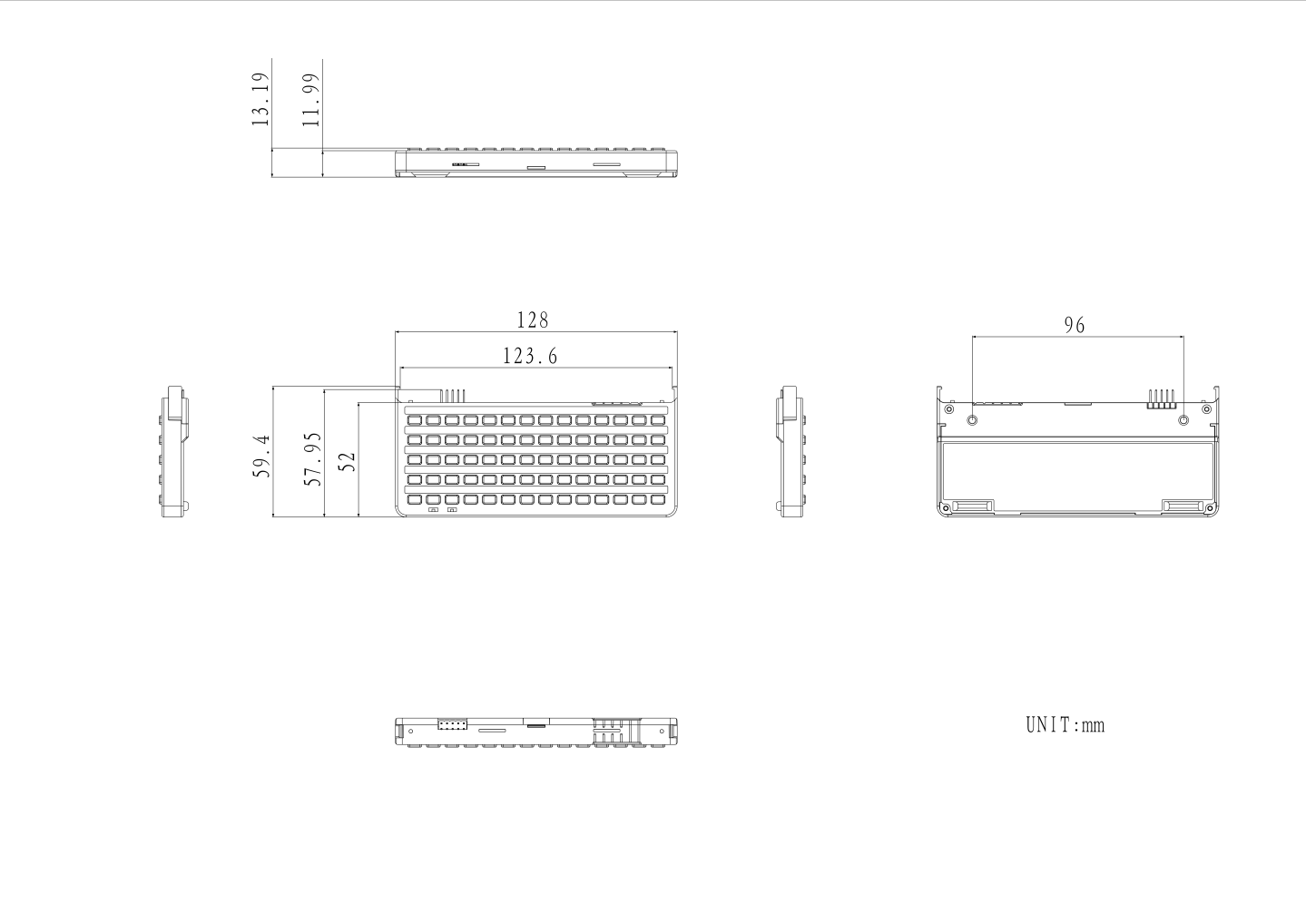
- [Tab5 Keyboard Schematics PDF](#)

PinMap

Tab5	G0	G1	G50
Tab5 Keyboard	SDA	SCL	INT

Model Size

- [Tab5 Keyboard Model Size PDF](#)



Structure

- [Tab5 Keyboard Structure Files](#)

Datasheets

- [STM32F030C8T6](#)
- [WS2812E](#)

| Softwares

| Quick Start

- [Tab5 Keyboard User Demo Introduction](#)

| Arduino

- [Tab5 Keyboard Arduino Library](#)
- [Tab5 Keyboard Arduino Quick Start](#)

| ESP-IDF

- [Tab5 Keyboard User Demo](#)

| Protocol

- [Tab5 Keyboard User Manual](#)
- [Tab5 Keyboard Protocol](#)

Tab5 Keyboard supports three data packet modes to adapt to different application scenarios.

Normal Mode: Returns the key status and its row/column coordinates
HID Mode: Returns HID reports. Combined with Tab5 USB / BLE forwarding, it can implement HID input device functionality
Character Mode: Returns the name string of the pressed standard key and the Ctrl/Alt modifier status, while Sym/Aa directly implement the corresponding functions.

M5Stack Tab5 Keyboard I2C Protocol															5/6/2026						
REG MAP (Addr: 0x6D)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note			
Sys Config	0x00 R/W	INT_CFG	INT_STAT	EVENT_NUM	Brightness													INT_CFG: Interrupt enable configuration [7:3]: Reserved [2]: Character mode interrupt enable bit [1]: HID mode interrupt enable bit [0]: Normal mode interrupt enable bit default: 0x07 Note: 1 in the corresponding position indicates enabled, 0 indicates disabled INT_STA: Interrupt trigger status [7:3]: Reserved [2]: Character mode interrupt trigger flag [1]: HID mode interrupt trigger flag [0]: Normal mode interrupt trigger flag Note: Write 0 is allowed. Writing 0 releases the interrupt signal and clears the status EVENT_NUM: Length of the queue in the current mode 0~32 default: 0 Note: This register will automatically decrement by 1 after reading a queue event. Write 0 is allowed. Writing 0 clears the queue in the current mode and releases the interrupt signal Brightness: RGB brightness 0~100 default: 20			
Config Mode	0x10R /W	Keyboard	RGB															Keyboard: Key working mode 0: Normal mode 1: HID mode 2: Character mode default: 0 Note: Switching modes will clear the queue of the previous mode and release the interrupt signal. RGB: RGB working mode 0: Binding mode 1: Custom mode default: 0			
KEY_EVENT	0x20 R	Event															Normal mode events: [7]: Press state, 1 = Press, 0 = Release [6:4]: Row (0~4) [3:0]: Column (0~13) Note: Event length is 1 byte, the data returned when the queue is empty is 0xFF				
HID_EVENT	0x30 R	Modifier	Key_code															HID Mode Events: Modifier (modifier) Key_code (key code) Note: Event length is 2 bytes; if the queue is empty, the returned data is 0xFF.			
CHAR_EVENT_LENGTH	0x40 R	Length															The string pattern is the length of the string at the head of the queue. Returns 0 if the queue is empty.				
CHAR_EVENT	0x50 R	Modifier	Char0	Char1	Char2	Char3	Char4	Char5	Char6	Char7	Char8							Character mode events: Modifier (bit 0 = 1 indicates Ctrl pressed, bit 2 = 1 indicates Alt pressed) Character for the event, maximum possible character length is 9. Note: The event length needs to be read from register 0x40 first. The event includes 1 byte of modifier + string length. The actual length to be read should be the value read from register 0x40 + 1.			
RGB Color	0x60 R/W	RGB1_B	RGB1_G	RGB1_R		RGB2_B	RGB2_G	RGB2_R										RGB: Color value: 0~255 default: 0 Note: User-defined RGB buffer, only valid in RGB custom mode.			
Firmware Version	0xF0 R															Version	Version: Software Version				
I2C Address	0xF0 R/W															Address	Address: I2C Address 0x08~0x77 default: 0x6D				
Notes: 1. The I2C address register is used to set the I2C device address. The new address takes effect immediately after being set and is stored in the internal Flash memory, remaining valid even after a power outage and restart. 2. Flash memory must be erased before writing, a time-consuming process that takes approximately 20ms. 3. To extend the lifespan of the Flash memory, please avoid frequent write operations. 4. If the value to be written is the same as the currently stored value in the Flash memory, no actual write operation will be performed, thus reducing unnecessary Flash erasure and further extending its lifespan.																					

Video

- Tab5 Keyboard Product Introduction and Feature Demonstration

A164_Tab5_keyboard_video_EN.mp4