Glass Unit

SKU:U158

Description

`Unit Glass` is a `1.51-inch transparent OLED` expansion screen unit. It adopts `STM32+SSD1309` driver scheme, `resolution is 128*64`, monochrome display, `transparent area is 128*56`. The MCU adopts `STM32F030F4P6`, which integrates `two input buttons` and `one way buzzer` to facilitate user interaction with the screen, and supports control and firmware upgrade through I2C (addr: `0x3C`) communication interface.

This transparent OLED screen extension is suitable for embedding in various `home products` or `various control devices as a display panel`.

Features

- 128x56 transparent pixels (128x64 total pixels)
- Display area 35.5 x 18mm
- Glass area 42mm x 27.16mm
- 1-bit color depth
- I2C operation
- I2C Addresses: 0x3C
- Support for programming platforms：Arduino、UIFlow

Includes

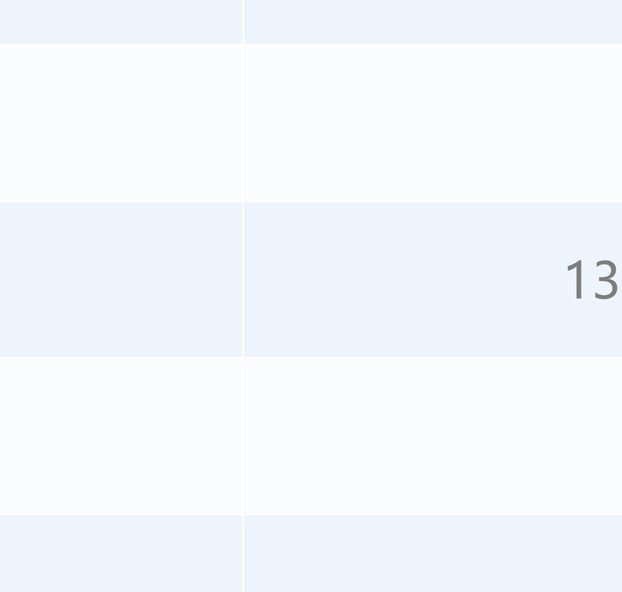
- 1x Unit Glass

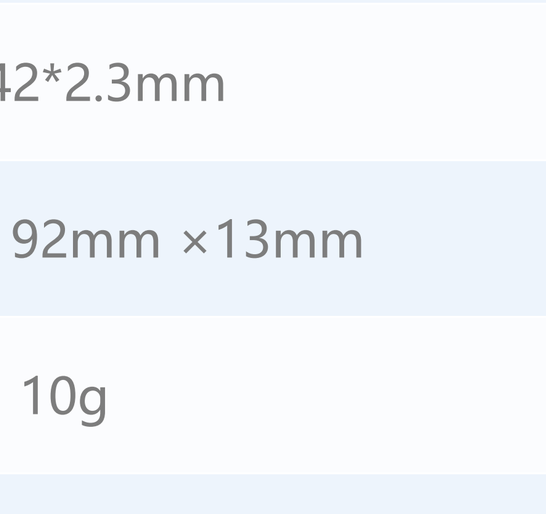
Applications

- Home products
- DIY toys

Specification

Resources	Parameters
MCU	STM32F030F4P6
Screen	1.51 inch transparent OLED
resolution	128*64
Display color	blue
Display area	35.05*18（mm）
Panel size	42.04*27.16*1.25（mm）
Perspective direction	Full view
Operating temperature	0-40°C
Logic voltage	3.3V
I2C address	0x3C
Product Size	53*42*2.3mm
Package Size	136mm × 92mm ×13mm
Product Weight	10g
Package Weight	15.2g

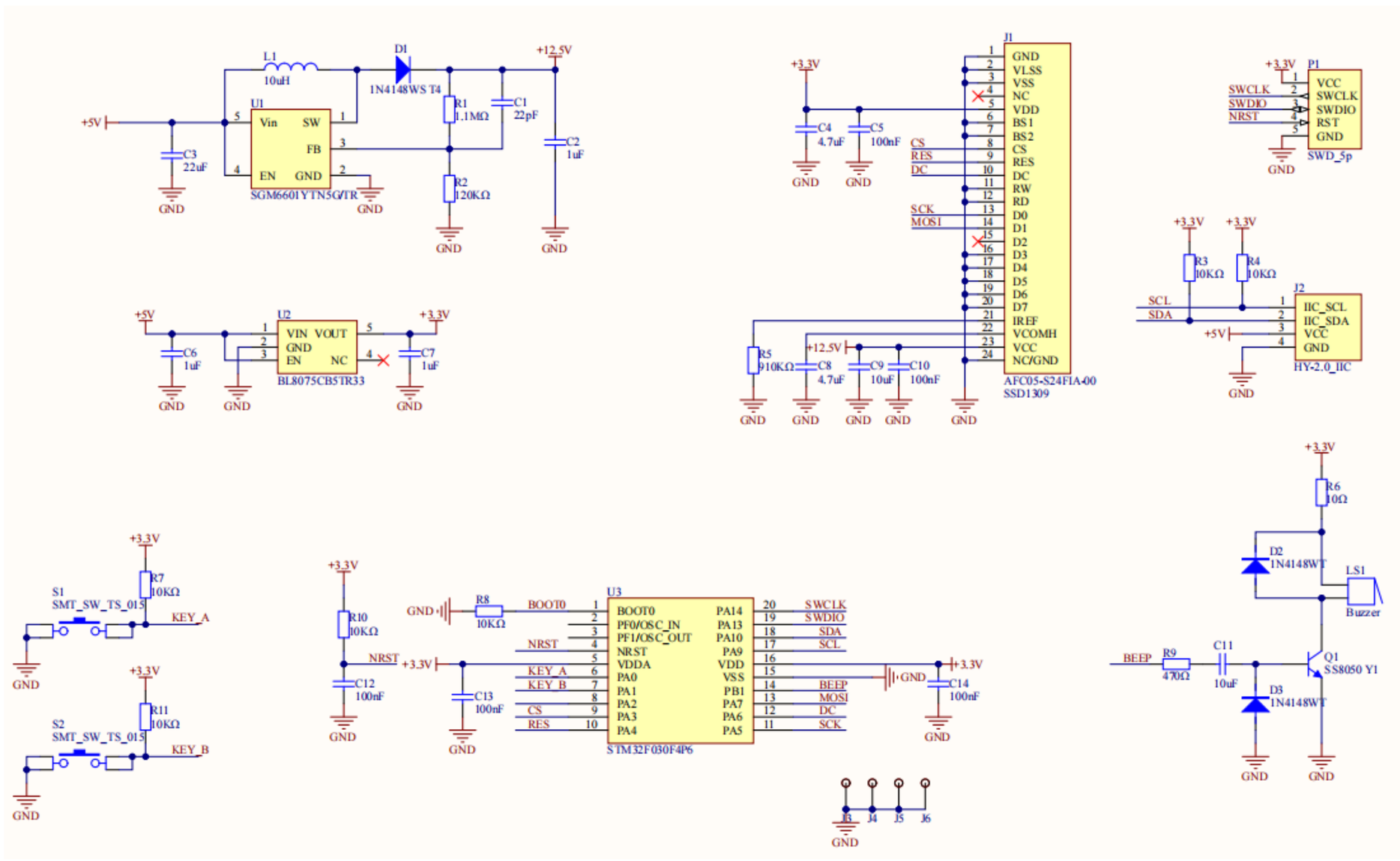




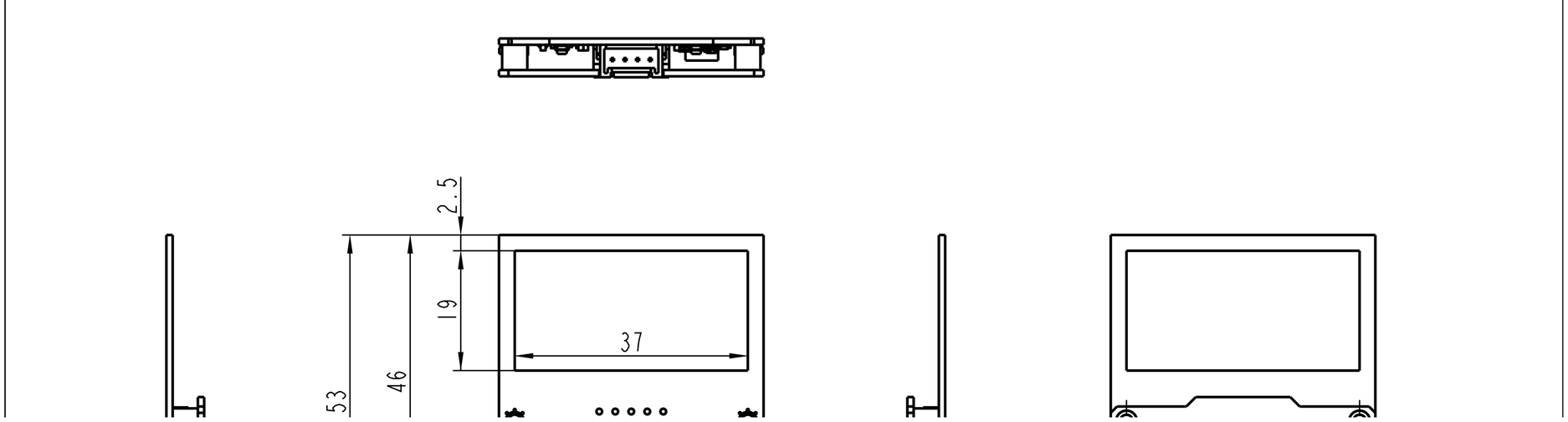
Related Link

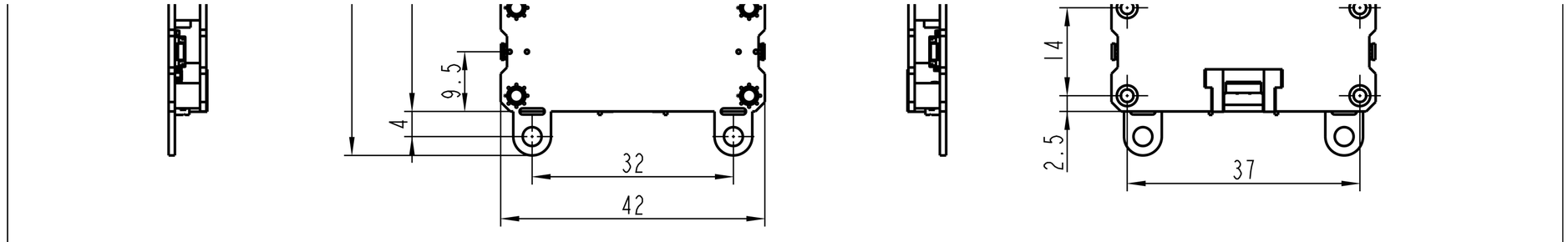
- STM32F030F4P6 Datasheet
- SSD1309 Driver
- 12864 Transparent OLED

Schematic



Module Size





Examples

Arduino

- Unit Glass Arduino Example
- Unit Glass Firmware

M5Stack Unit GLASS I2C Protocol

V2 (FW Version)
2022/12/7

REG MAP (Addr:0x3D)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	note
Clear	**0x00 W**	Clear																**Clear:** Write 1 to clear OLED
Show	**0x10 W**	Show																**Show:** Write 1 to show OLED
Draw String	**0x20 W**	pos-x	pos-y	text size	mode[1]													**text size:** There are 3 fonts in total, 8, 16, 24
Draw Point	**0x30 W**	pos-x	pos-y	mode														
Draw Line	**0x40 W**	pos-x1	pos-y1	pos-x2	pos-y2	mode[1]												
Draw Circle	**0x50 W**	pos-x	pos-y	radius	mode[1]													
Invert	**0x60 W**	Invert																**Invert:** 0, front display; 1, front display, flip 180 degrees; 2, reverse display; 3, reverse display, flip 180 degrees
Display ON/OFF	**0x70 W**	ON/OFF																**ON/OFF:** 1:Display on; 0:Display off
String Buffer Array[2]	**0x80 W**	Index-L	Index-H	data														
Picture Buffer Array[3]	**0x90 W**	Index-L	Index-H	data														
Color reverse	**0xA0 W**	color reverse																**color turn:** 0: Normal; 1: reverse color display
Draw Picture	**0xB0 W**	pos-x	pos-y	size-x	size-y	mode[1]												
Buzz	**0xC0 W**	Buzz-Freq-L	Buzz-Freq-H	Buzz Duty	Buzz Control													**Buzz Freq[4], Buzz Duty[5]** **Buzz Control:** 0, disable; 1, enable
Key	**0xD0 R**	Key-A	Key-B															**Key:** 0 or 1
Firmware Version	**0xF0 R**															Version		**Version:** firmware version number

[1] mode: 1, filling; 0, clear

[2] String buffer: For example, to write "Hi" to buffer, we need to write two bytes. The first byte, index-L = 0, index-H = 0, data = 'H'. The second byte, index-L = 1, index-H = 0, data = 'i'.
(The maximum length of character buffer is 64 bytes)

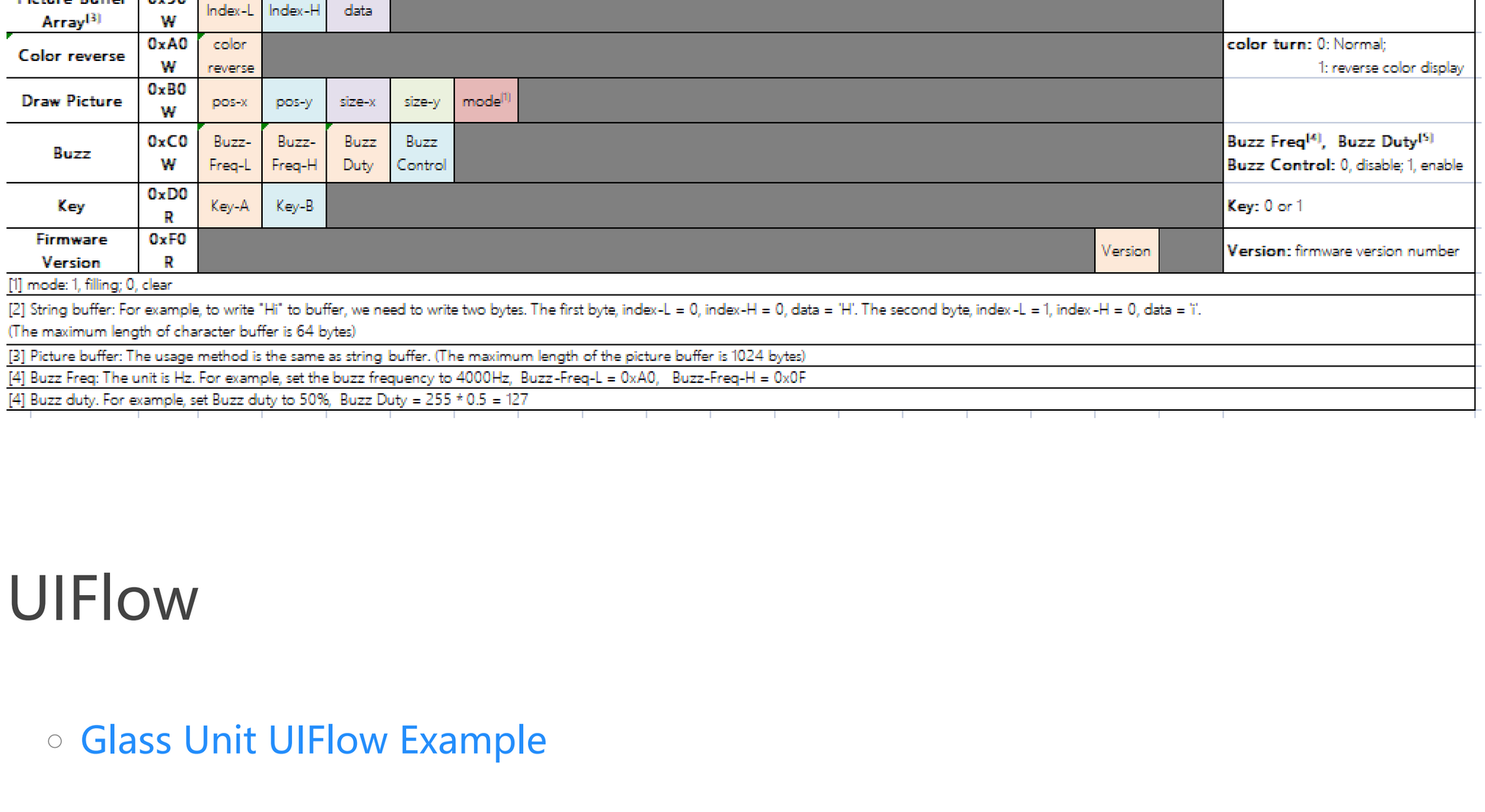
[3] Picture buffer: The usage method is the same as string buffer. (The maximum length of the picture buffer is 1024 bytes)

[4] Buzz Freq: The unit is Hz. For example, set the buzz frequency to 4000Hz, Buzz-Freq-L = 0xA0, Buzz-Freq-H = 0x0F

[4] Buzz duty. For example, set Buzz duty to 50%, Buzz Duty = 255 * 0.5 = 127

UIFlow

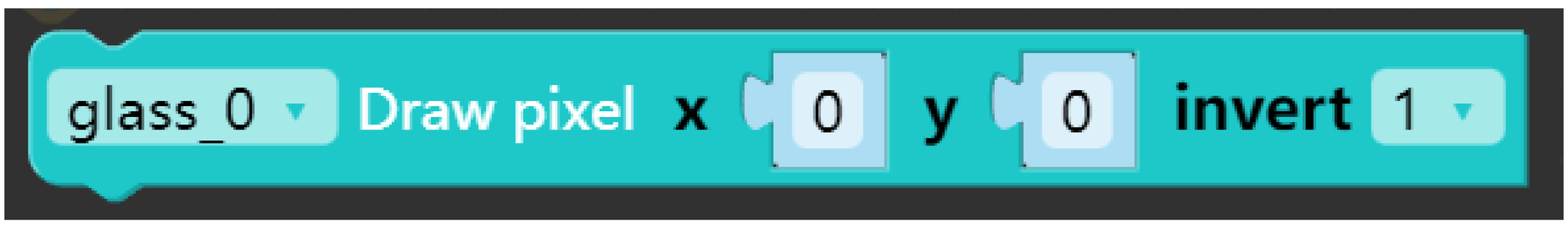
- Glass Unit UIFlow Example



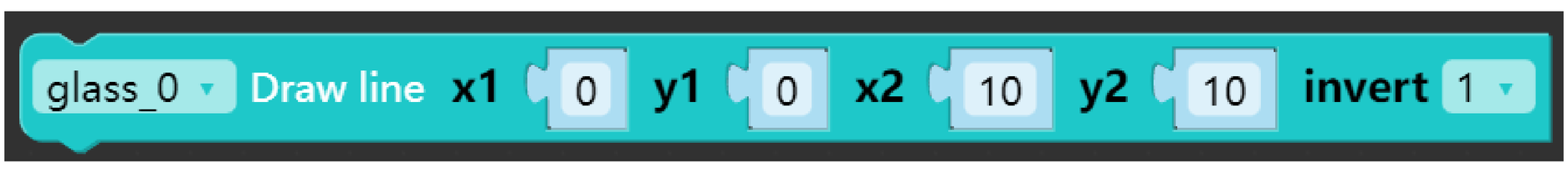
UIFlow Blocks

- Draw text

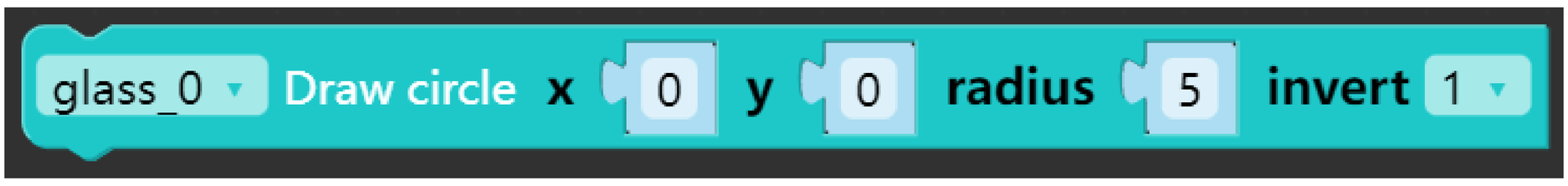
- Draw pixel



- Draw line

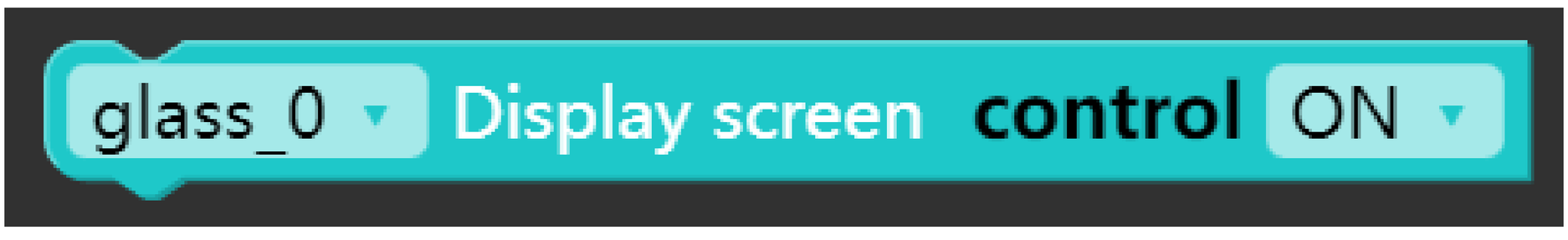


- Draw circle

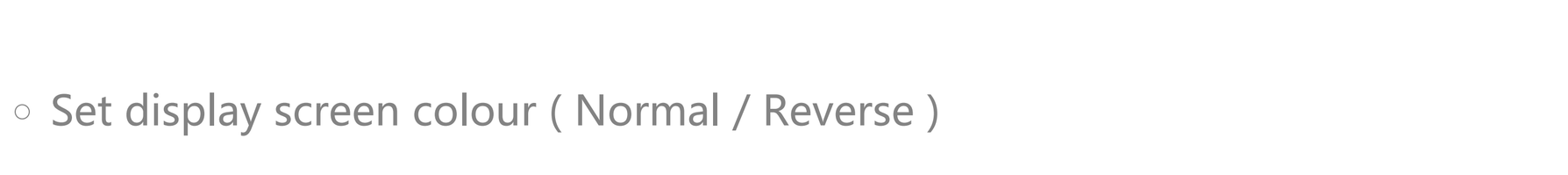


- Set display show (Normal / Reverse)

- Set display screen control (ON / OFF)



- Set display screen colour (Normal / Reverse)

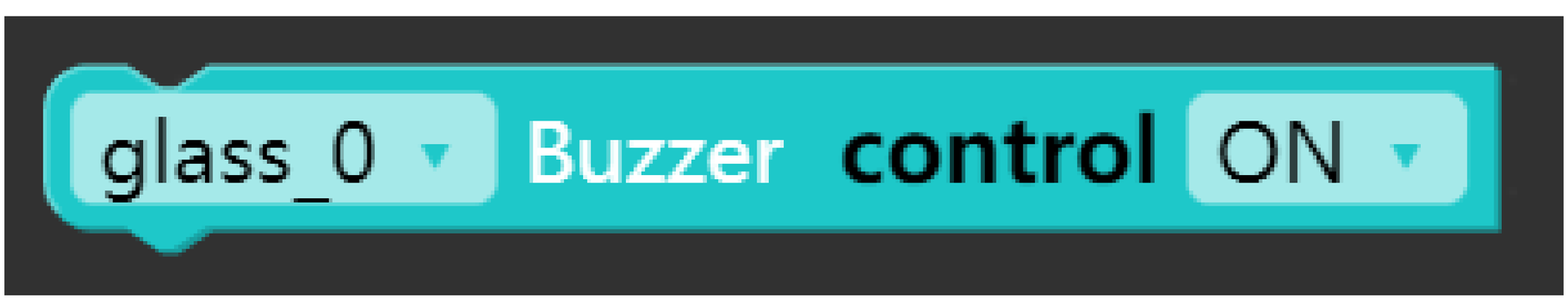


- Screen show on

- Screen clear on

- Set buzzer frequency and duty cycle

- Set buzzer control (ON / OFF)



- Get button status

- Get firmware version