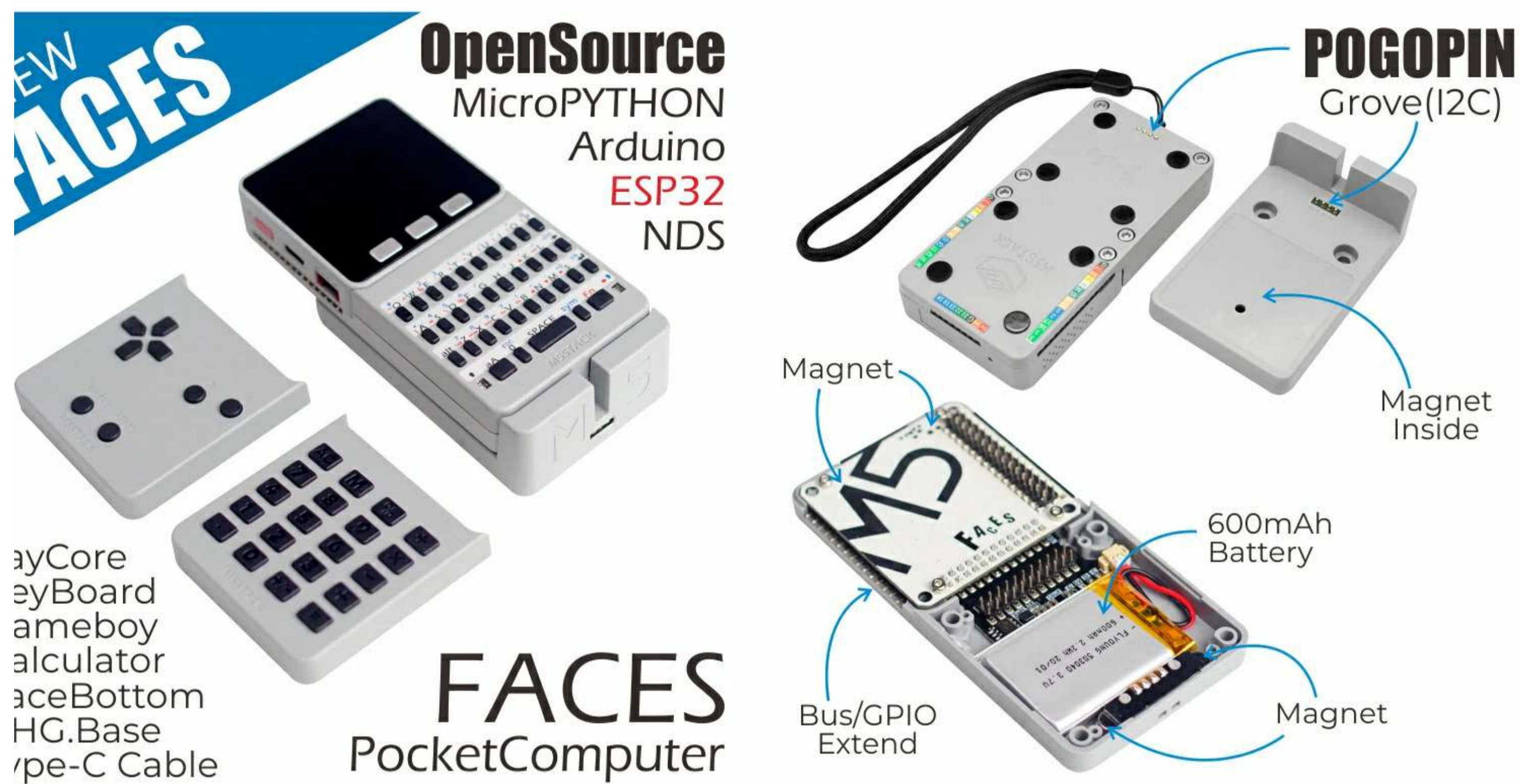


FACES Kit

U:K005



Tutorial & Quick-Start

Use the development platform you want to use, view the corresponding tutorial & quick-start.

Flow [Arduino](#)

Description

The **FACES Kit** is a series of functional panels integration containing three most commonly used panels integration containing three most commonly used panels: 'GameBoy', 'Calculator' and 'QWERTY'. With **MEGA328** processor built inside, it works under slave mode through I2C communication protocol. With 3 different panels, it will be very easy to support keyboard interaction with your M5Core.

Power on/off:

Power on: click the red power button on the left

Power off: Quickly double-click the red power button on the left

Note: By default, when USB is powered, it cannot be shut down**

Product Features

ESP32-based

Built-in 6-axis IMU

Speaker, 3 Buttons, LCD

TF card slot (16G Maximum size)

Battery Socket & Lipo Battery

Replaceable multifunction panel

Extendable Pins & Holes

I2C-Bus Socket & Pins

Include

- x GRAY
- x FACES Charger table
- x FACES sling
- x panel sticker
- x FACES Keyboard(GameBoy, Calculator, QWERTY)
- 0x Femal-male dupont
- x M3x12 screw
- x hexagon screw key
- x Type-C USB(100cm)

Applications

- Gameboy
- Calculator
- Input peripherals
- Internet of things terminal controller
- DIY creation

Specification

Resources	Parameter
ESP32	240MHz dual core, 600 DMIPS, 520KB SRAM, Wi-Fi, dual mode Bluetooth
Flash Memory	16MB
Power Input	5V @ 500mA
Port	TypeC x 1, GROVE(I2C+I/O+UART) x 1
IPS Screen	2 inch, 320x240 Colorful TFT LCD, ILI9342C, max brightness 853nit
Speaker	1W-0928
Button	Custom button x 1
Core bottom port	PIN (G1,G2,G3,G16, G17, G18, G19, G21, G22, G23, G25, G26, G35, G36)
MEMS	BMM150 + MPU6886
Battery	600 mAh @ 3.7V
Antenna	2.4G 3D Antenna
Operating Temperature	0°C to 60°C
Net weight	94g
Gross weight	264g
Product Size	58.2mm x 54.2mm x 18.7mm
Package Size	120mm x 85mm x 65mm

Case Material

Plastic (PC)

string values

Key	AC	M	%	÷	0-9	X	-
Val	A	M	%	/	0-9	*	-

SP32 Chip	GPIO23	GPIO19	GPIO18	GPIO14	GPIO27	GPIO33	GPIO32
ILI9342C	MOSI/MISO	/	CLK	CS	DC	RST	BL
TF Card	MOSI	MISO	CLK				

Int Values (Int values are the ASCII value of each key)

Key	AC	M	%	÷	0-9	X	-
Val	65	77	37	47	48-57	42	45

EasyLoader

EasyLoader is a concise and fast program writer, which has a built-in case program related to the product. It can be burned to the main control by simple steps to perform a series of function verification.

[Download Windows Version Easyloader](#)

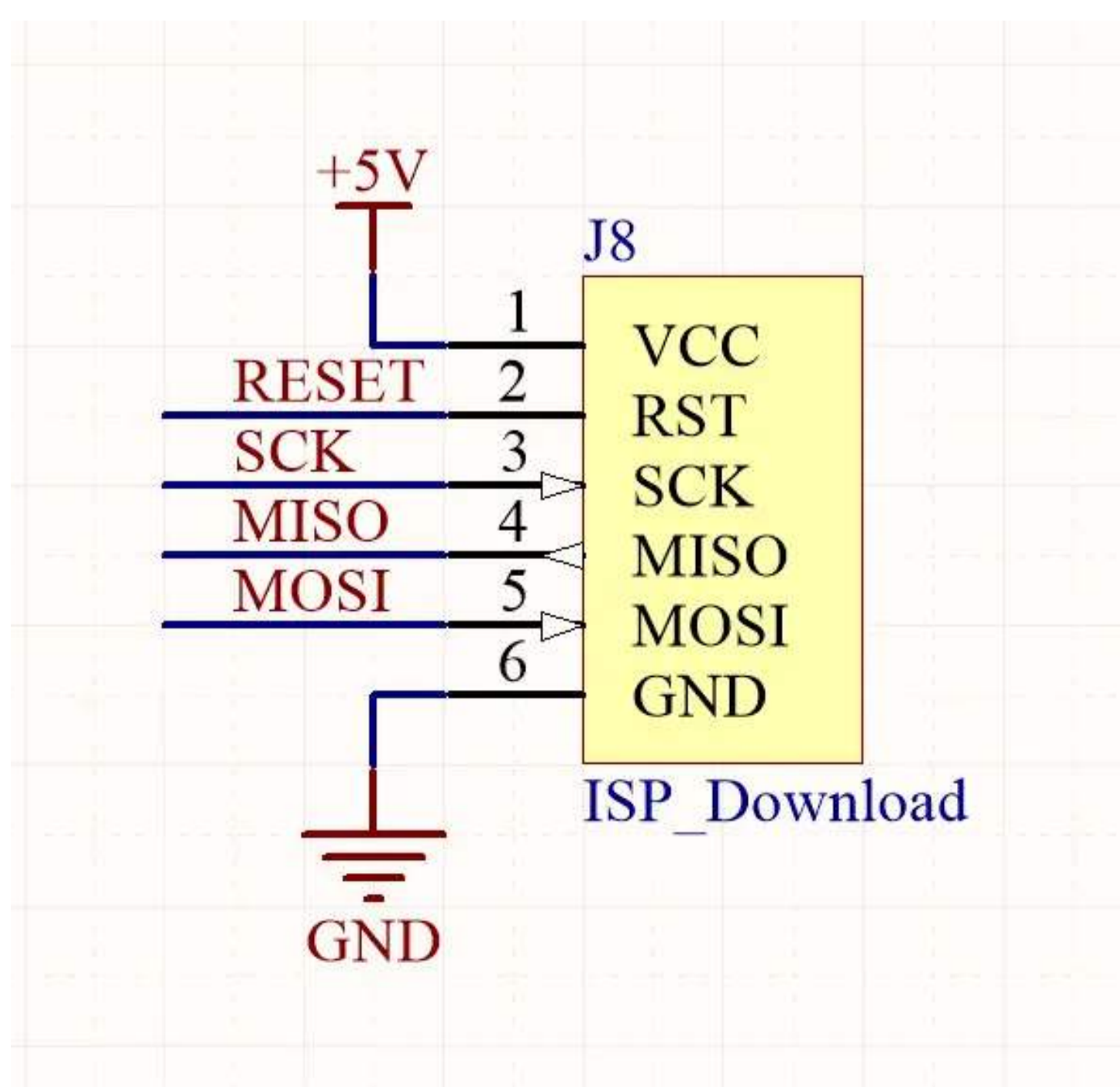
[Download MacOS Version Easyloader](#)

Description:

This case will run the FACES keyboard input test program by default. Restart the selected program list to switch between different panel test items.

PinMap

a328 ISP Download interface Pin foot definition



06 charging/discharging, Voltage parameter

charging	discharging
0.00 ~ 3.40V -> 0%	4.20 ~ 4.07V -> 100%
3.40 ~ 3.61V -> 25%	4.07 ~ 3.81V -> 75%
3.61 ~ 3.88V -> 50%	3.81 ~ 3.55V -> 50%
3.88 ~ 4.12V -> 75%	3.55 ~ 3.33V -> 25%
4.12 ~ / -> 100%	3.33 ~ 0.00V -> 0%

15PORT EXPLAIN

PORT	PIN	Note:
PORT-A(Red)	G21/22	I2C
PORT-B(Black)	G26/36	DAC/ADC
PORT-C(Blue)	G16/17	UART

SP32 ADC/DAC

ADC1	ADC2	DAC1	DAC2
8 channels	10 channels	2 channels	2 channels
G32-39	G0/2/4/12-15/25-27	G25	G26

I-BUS

Analog Function	M-BUS		Analog Function	GPIO TYPE
	LINE 0	LINE 1		
	GND	ADC	G35	ADC1_CH7 I
	GND	ADC	G36	ADC1_CH0 I
	GND	RST	EN	
	G23 MOSI	DAC/SPK	G25	ADC2_CH8 I/o/T
	G19 MISO	DAC	G26	ADC2_CH9 I/o/T
	G18 SCK	3.3V		
	G3 RXD1	TXD1	G1	I/o/T
	G16 RXD2	TXD2	G17	I/o/T
	G21 SDA	SCL	G22	I/o/T
ADC2_CH2/T2	G2 GPIO	GPIO	G5	I/o/T
ADC2_CH5	G12 IIS_SK	IIS_WS	G13	ADC2_CH4/T4 I/o/T
ADC2_CH3/T3	G15 IIS_OUT	IIS_MK	G0	ADC2_CH1/T1 I/o/T
	HPWR	IIS_IN	G34	ADC1_CH6 I
	HPWR	5V		
	HPWR	BATTERY		

more information about Pin assignment and Pin Remapping, Please refer to [ESP32 Datasheet](#)

related Link

Datasheet

- [ESP32](#)
- [MPU6886](#)

- BMM150
- IP5306

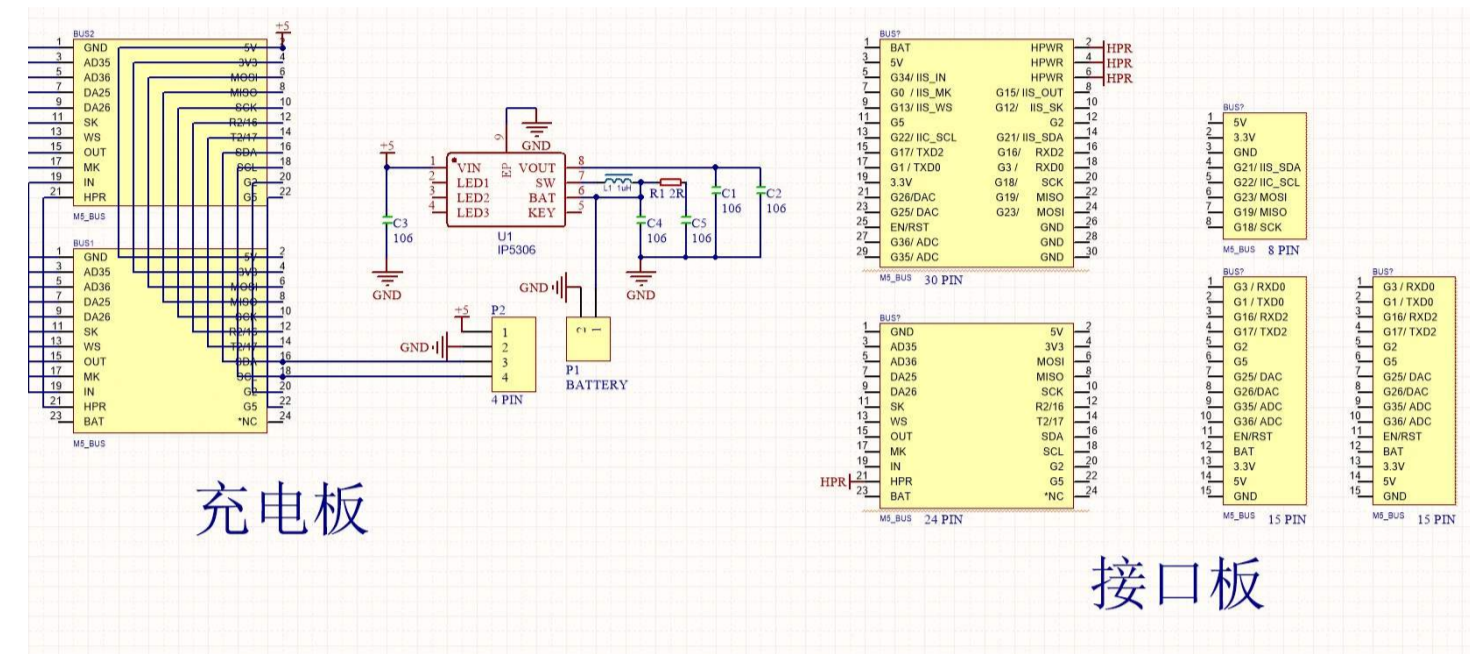
API

- Arduino API

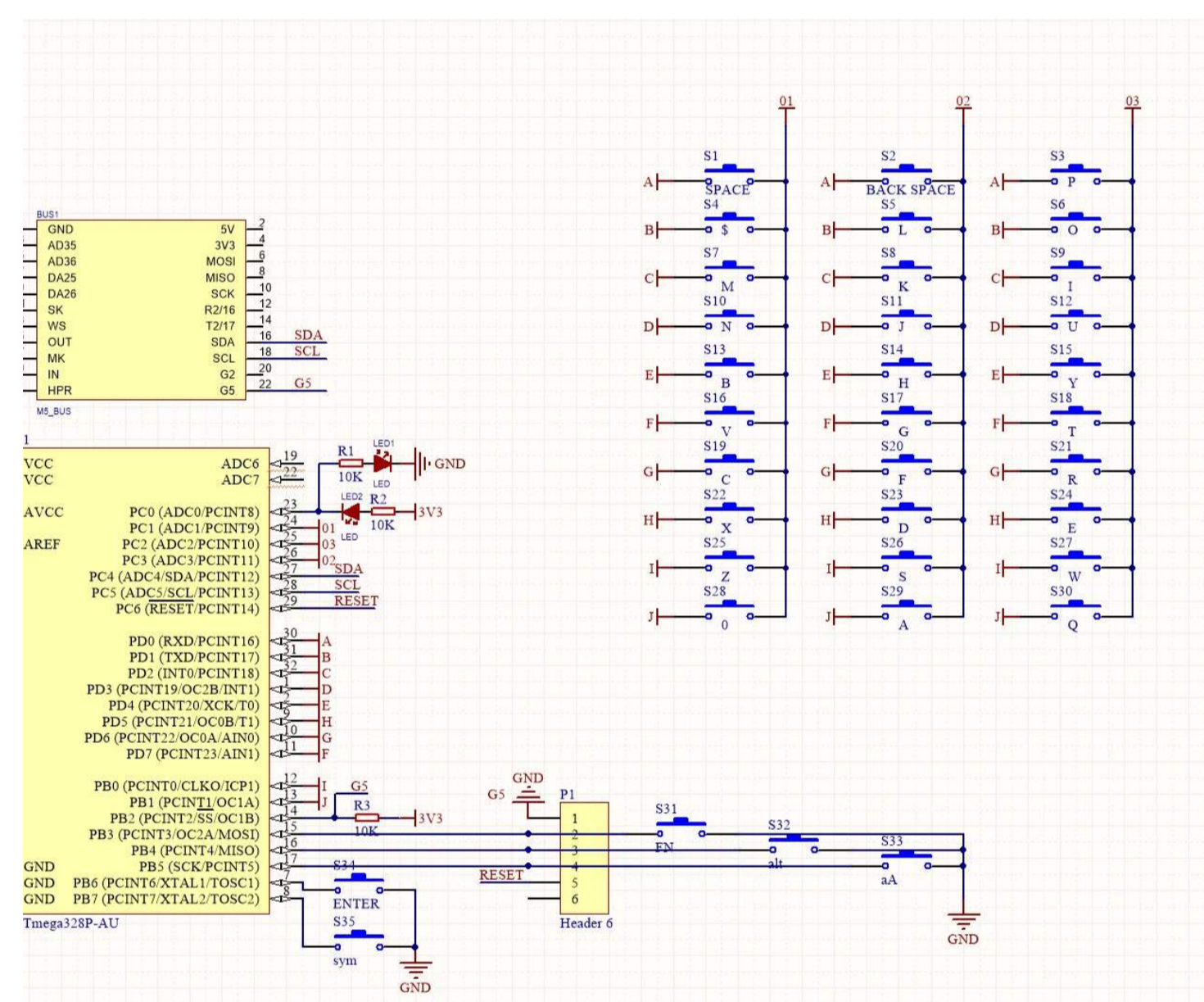
chematic

chematic

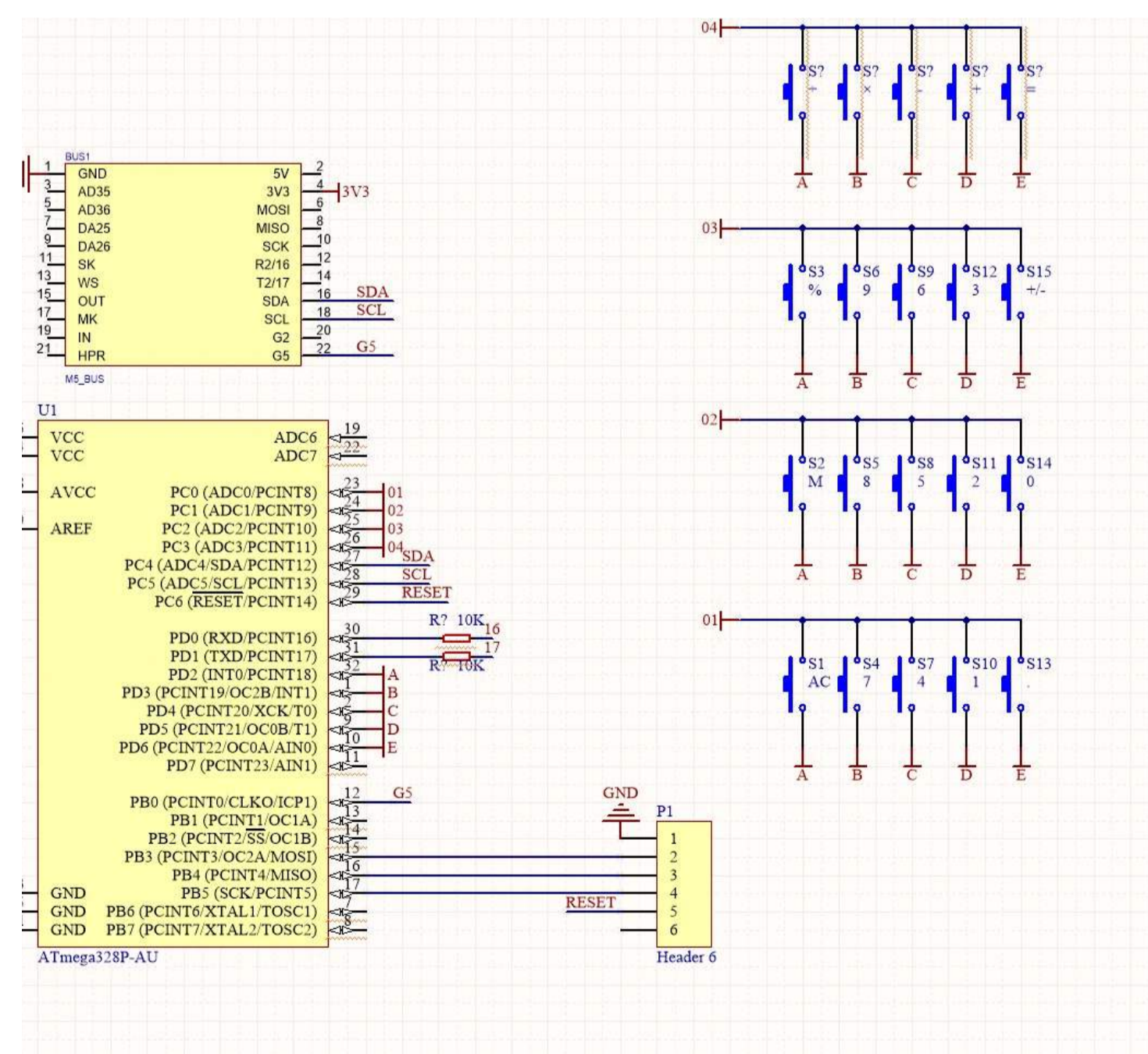
tom



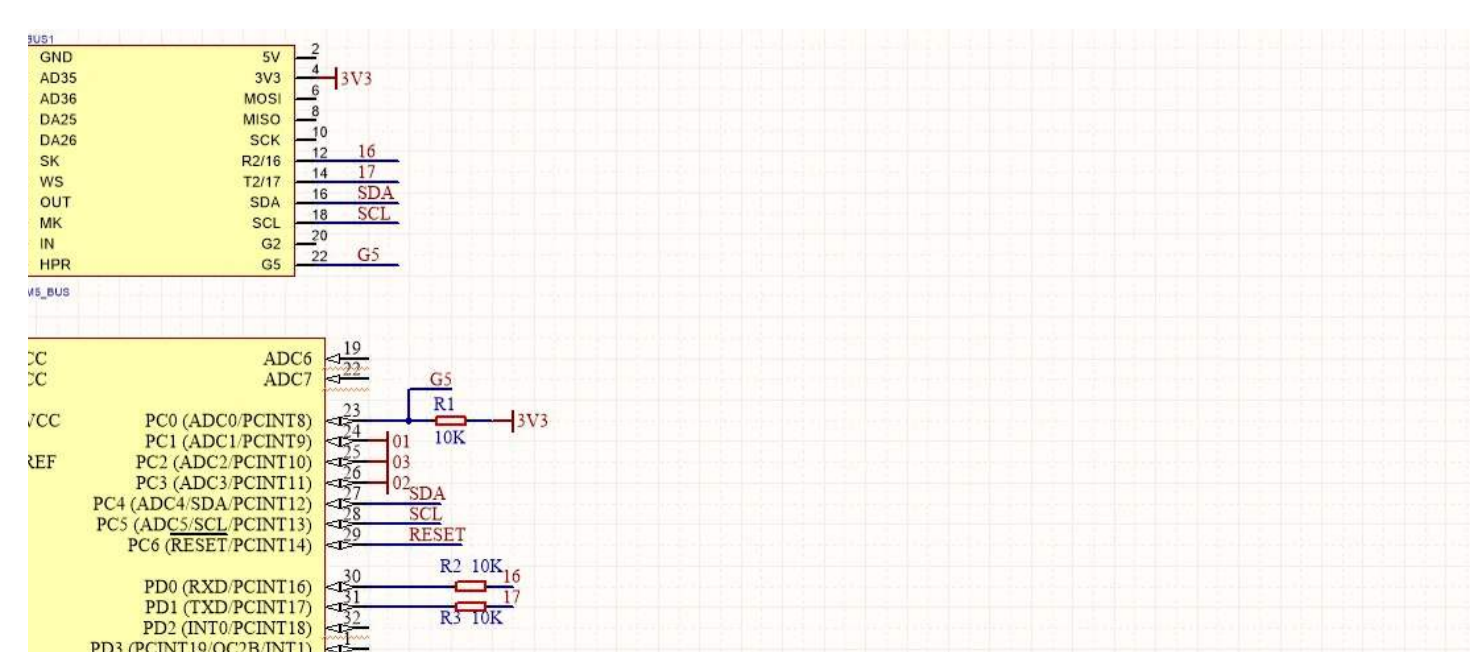
board

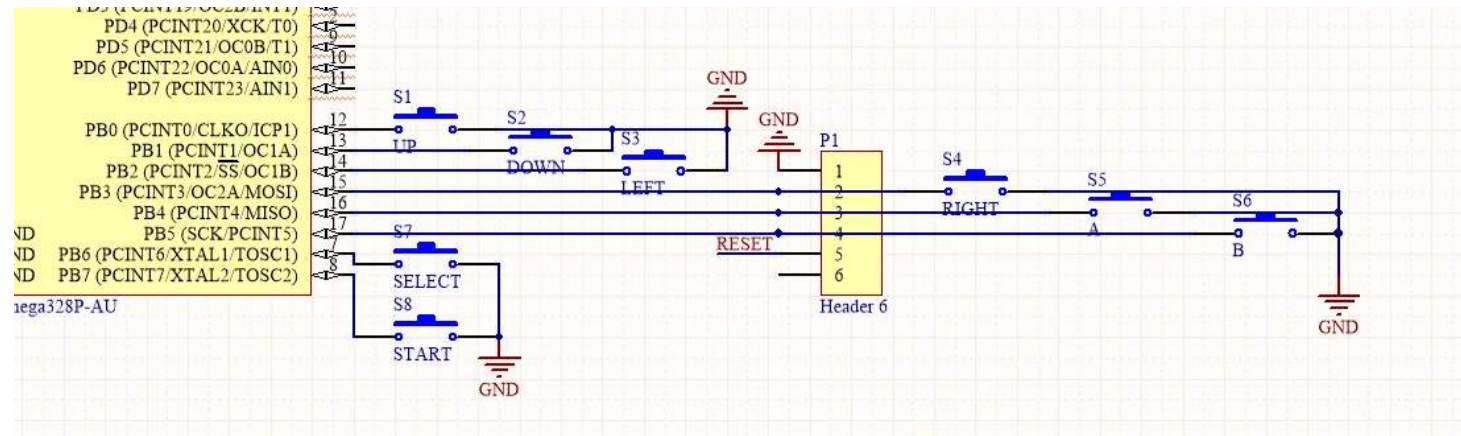


culator



neboy





earn



M5Stack x Raspberry Pi Pocket Computer

M5Stack user Yama-chan combined a Raspberry Pi Zero with the Faces Keyboard kit to make an awesome lin pocket computer.

xample

Click [here](#) to download Arduino code

neBoy Keyboard

If you are up for some classic video games, GameBoy panel plus M5Core is the perfect combination. All you need to do is to upload an emulator onto the M5Stack and attach the GameBoy panel underneath. This is how it will be like:

ESPTool to burn game tutorial: https://docs.m5stack.com/#/en/quick_start/faces/gameboy_burn_a_nes_game

[Click here to download the testing game program](#)

Other panels are Calculator, Keyboard, Encoder, Joystick, Fingerprint, RFID and QWERTY Keyboard. You can apply them to those situations which are difficult to input information and hard to control.

To reduce the difficulty of disassembly when removing the replacement panel, it is recommended to remove the M5Core and then disassemble the panel.

Version Change

Release Date	Product Change
2017.12	Initial public release
2019.6	MPU9250 changed to MPU6886+BMM150
2019.7	TN screen changed to IPS screen