

ODROID-GO



To celebrate ODROID’s 10th anniversary, we present to you the **ODROID-GO** Game Kit! With a special anniversary board and with all the parts to put together your own game kit and see the workings behind such a device, it is not only a fun assembly project, it can be an educational tool to learn about all the hardware and software that goes into building such a device.

[Where to buy](#)

Specifications

MCU	Custom ESP32-WROVER(16 MB Flash Memory)	
	CPU & RAM	80MHz - 240MHz(Adjustable), 4MB PSRAM
	Wi-Fi	802.11 b/g/n 2.4GHz - 2.5GHz
	Bluetooth	Bluetooth v4.2 BR/EDR, BLE
Display	2.4inch 320×240 TFT LCD (SPI interface)	
Battery	Li-Polymer 3.7V/1200mAh, Up to 10 hours of continuous game playing time	
Speaker	0.5Watt 8Ω Mono	
Micro SD card slot	20Mhz SPI interface	
Micro USB port	Battery charging(500mA) and USB-UART data communication	
Expansion Port	10Pin port(I2C, GPIO, IRQ at 3.3Volt)	
Input Buttons	Menu, Volume, Select, Start, A, B, Direction Pad	
Power consumption	Game emulation: 100~115mA, Sleep mode: 5.3~5.8mA, Power off: 0.1mA	

Tutorials

Preparation

- [Building with ODROID-GO kit](#)
- [Making a SD card for importing roms](#)

When you receive the product for the first time, the Go-Play App is basically written. So you can play games right away after you put the ROM on your SD card.

Play games

- [How to use game emulators](#)

Write the other Applications (MicroPython, Doom, Arduino)

- [Update Go-Play to the latest version | Write the other Apps.](#)

Advanced

- [ODROID-GO device firmware update](#)
- [Extracting esp32 image with esp32img tool](#)
- [Hardware tuning for silent the sound volume of ODROID-GO](#)

Go-Play



There are currently six emulators available.

Game Boy (GB), Game Boy Color (GBC), Game Gear(GG), Nintendo Entertainment System (NES), Sega Master System (SMS), ColecoVision (COL)

- [How to use game emulators](#)
- [Update Go-Play to the latest version | Write the other Apps.](#)

Arduino

- [Getting started with Arduino](#)
- How to write a code?
 - [Hello World - Welcome to Arduino on ODROID-GO](#)
- References for control the board.
 - [Blue LED and PWM](#)
 - [Buttons](#)
 - [Battery](#)
 - [Speaker](#)
 - [Bluetooth Serial communication](#)
 - [WiFi AP server to toggle the status LED remotely](#)
 - [I2C with a 16x2 LCD](#)
- Application notes.
 - [Weather Station - Make your portable weather station with our Weather board 2](#)
 - [Ultrasonic Distance Meter - How to measure the distance with an Ultrasonic Sensor](#)
 - [Game - FlappyBird](#)
 - [Game - Tetris](#)

MicroPython

- [Getting started with MicroPython](#)
- How to write a code?
 - [Hello World - Welcome to MicroPython on ODROID-GO](#)
- References for control the board.
 - [Blue LED and PWM](#)
 - [Buttons](#)
 - [Battery](#)
 - [Speaker](#)

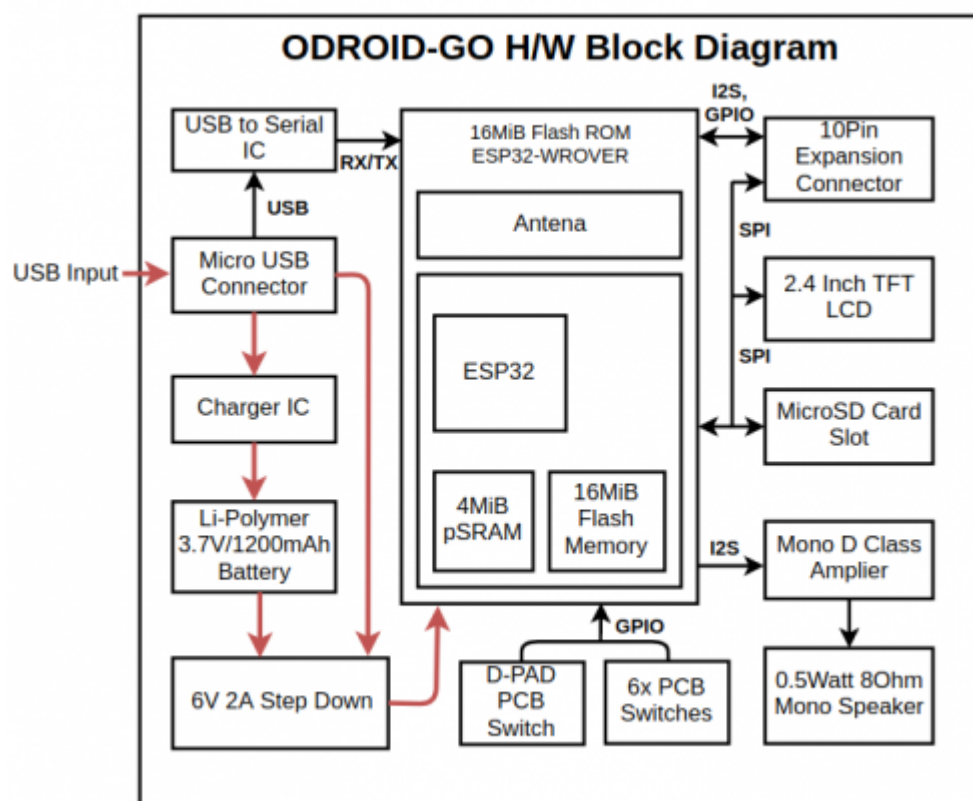
Trouble shooting: Force exit emulator or recover from a non-responsive emulator

When emulator keeps crashing due to the ROM compatibility issue, there is no display on the screen even though the LCD backlight is on.

In that case, you have to use "Menu" button to exit.

Power Switch Off, Hold Menu, Power switch On, Release Menu when Main Menu appears

Hardware



Documentations

ODROID-GO Schematic : [ODROID-GO_REV0.1_20180518.pdf](#)

ESP32 core datasheet : [esp32_datasheet_en.pdf](#)

ESP32-WROVER datasheet : [esp32-wrover_datasheet_en-1223875.pdf](#)

ODROID-GO GPIO Pin Mapping

ODROID-GO	GPIO	ESP32 Pin #	GPIO	ODROID-GO
GND		1 38		GND
3V3		2 37	IO23	LCD/uSD/EXT-Pin #8 (VSPI-MOSI)

ODROID-GO	GPIO	ESP32 Pin #	GPIO	ODROID-GO
MCU/LCD Reset		3 36	IO22	uSD (VSPI-CS1)
Battery ADC	IO36	4 35	IO1	TXD0
BTN-START	IO39	5 34	IO3	RXD0
BTN-AXIS-X	IO34	6 33	IO21	
BTN-AXIS-Y	IO35	7 32		
BTN-A	IO32	8 31	IO19	uSD/EXT-Pin #7 (VSPI-MISO)
BTN-B	IO33	9 30	IO18	LCD/uSD/EXT-Pin #2 (VSPI-SCK)
SPEAKER-IN(-)	IO25	10 29	IO5	LCD (VSPI-CS0)
SPEAKER-IN(+)	IO26	11 28	IO17	
BTN-SELECT	IO27	12 27	IO16	
LCD-Backlight PWM	IO14	13 26	IO4	EXT-Pin #5
EXT-Pin #3	IO12	14 25	IO0	BTN-VOLUME
GND		15 24	IO2	Blue(STATUS) LED
BTN-MENU	IO13	16 23	IO15	EXT-Pin #4
		17 22	IO8	
		18 21	IO7	
		19 20	IO6	

ODROID-GO Header(P2) Description

Pin #	GPIO	Type	Function
1	GND	POWER	GND(0V)
2	*1) VSPI.SCK(IO18)	OUT	GPIO18, VSPICLK
3	IO12	OUT	GPIO
4	IO15	IN/OUT	GPIO15, ADC2_CH3
5	IO4	IN/OUT	GPIO4, ADC2_CH0
6	P3V3	POWER	3.3 V
7	*1) VSPI.MISO(IO19)	IN/OUT	GPIO19, VSPIQ
8	*1) VSPI.MOSI(IO23)	OUT	GPIO23, VSPID
9	N.C	-	Not connect
10	*2) VBUS	POWER	USB VBUS (5V)

*1) This SPI is shared with the ODROID-GO's 2.4Inch LCD and microSD slot.

*2) It can be used only when external USB power is connected.

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