Welcome to gCore - Peripherals and Expansion
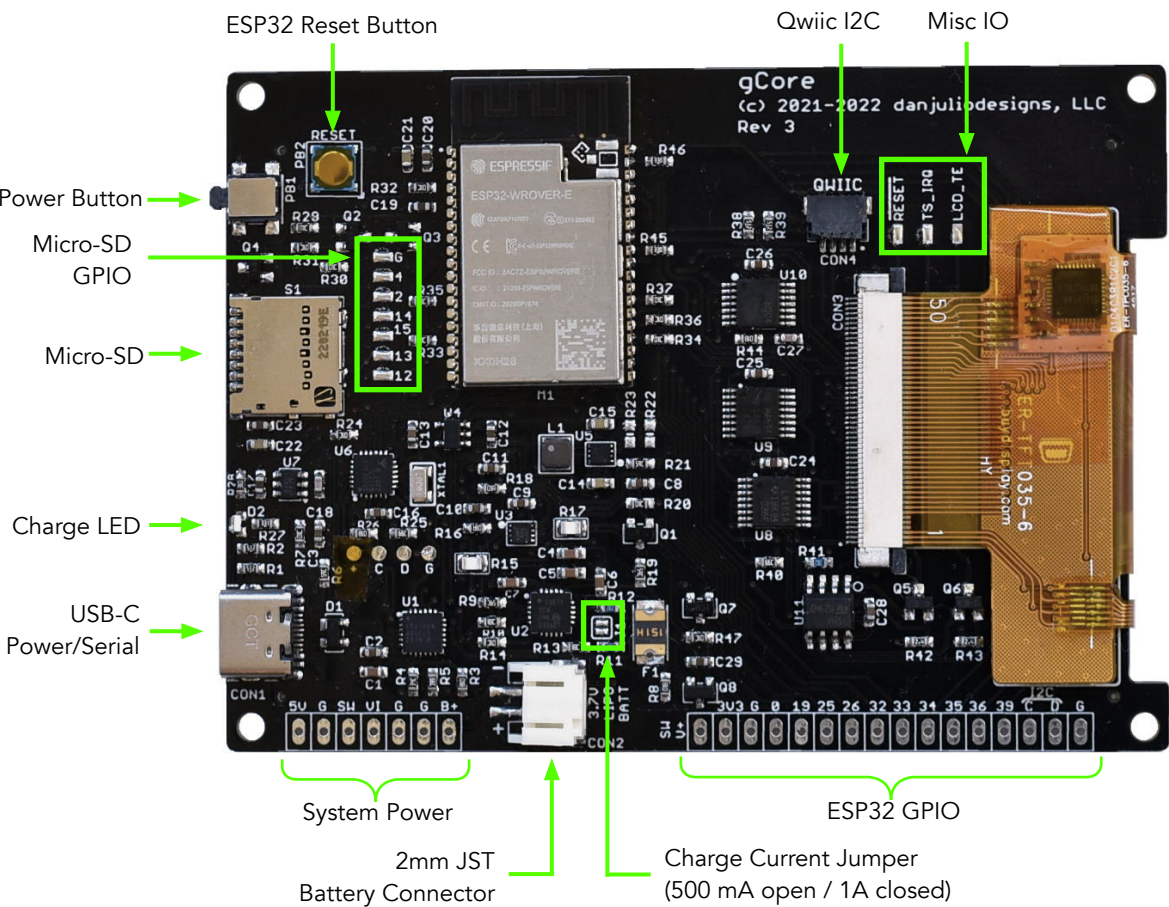

Quick Notes

1. LCD Controller: ILI9488
2. Touchscreen controller: FT6236
3. USB UART: CP2102N
4. Battery Charger: MCP73871-2CA
5. Internal 7-bit I2C addresses
   PMIC/RTC : 0x12
   FT6236 : 0x38
6. Max LCD VSPI clock frequency: 80 MHz
7. Max I2C clock frequency: 100 kHz
8. Internally monitored: V-USB, I-USB, V-BATTERY, I-LOAD
9. Battery connector polarity compatible with Sparkfun and Adafruit single cell LiPo and Li-Ion batteries. Protected by a 1.5A PTC fuse. 500 mA or 1 A charge.
10. Power button on press time: default 100 mSec, programmable between 20 mSec - 2.55 seconds.
11. Power button hard off press time : 5 seconds
12. Low-battery shutdown voltage: 3.3V
13. Minimum turn-on battery voltage: 3.5V
14. Charge LED operation

Off	No USB power / Battery powering
Solid	Battery Charged / USB powering
Pulsing	Battery Charging / USB powering
Blinking	Charge Fault / USB powering

ESP32 GPIO

SW V+	Switched Battery Power (500 mA max)
3V3	Switched 3.3V Power (500 mA max)
G	Ground
0	GPIO 0 (Shared with serial boot circuit)
19	GPIO 19
25	GPIO 25 (DAC Channel 1)
26	GPIO 26 (DAC Channel 2)
32	GPIO 32
33	GPIO 33
34	GPIO 34 (Input only)
35	GPIO 35 (Input only)
36	GPIO 36 (Input only)
39	GPIO 39 (Input only)
C	I2C SCL (GPIO 22)
D	I2C SDA (GPIO 21)
G	Ground

System Power

5V	USB 5V Power
G	Ground
SW	Power Button (pulled high, ground to close)
VI	Always on internal 3.3V power (50 mA max)
G	Ground
G	Ground
B+	Battery Positive terminal

Micro-SD GPIO (available when not using card)

G	Ground
4	GPIO 4 / SD D1 (10 k-ohm pullup)
2	GPIO 2 / SD D2 (10 k-ohm pullup)
14	GPIO 14 / SD CLK (10 k-ohm pullup)
15	GPIO 15 / SD CMD (10 k-ohm pullup)
13	GPIO 13 / SD D3 (10 k-ohm pullup)
12	GPIO 12 / SD D2 (ESP32 internal pullup)

Sparkfun Qwiic / Adafruit STEMMA QT

G	Ground (pin 1, denoted by the dot)
3V3	Switched 3.3V power (500 mA max)
SDA	I2C SDA (GPIO 21)
SCL	I2C SCL (GPIO 22)

Misc IO

RESETn	ESP32 reset (pulled high, ground to reset)
TS_IRQ	Touchscreen controller interrupt
LCD_TE	LCD controller TE (sync) output

ILI9488 LCD Controller SPI Interface (VSPI HS)

CSn	GPIO 5
DC	GPIO 27
SCK	GPIO 18
MOSI	GPIO 23