

POWER BUDGET

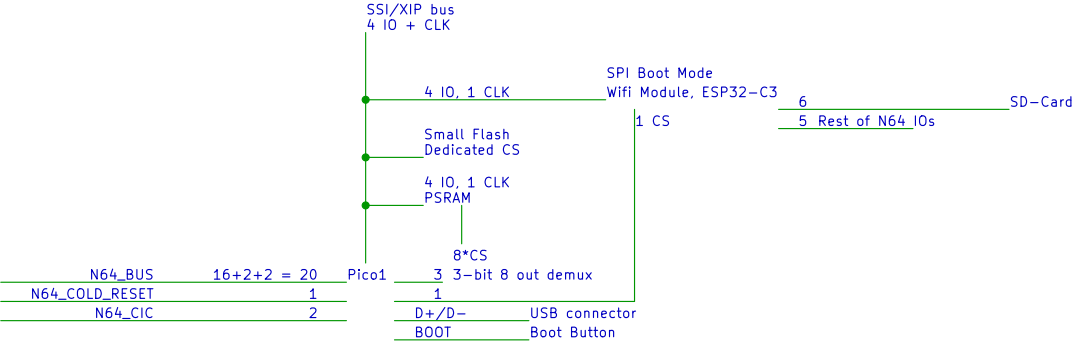
1x RP2040 1*100(?) = 100mA (let's use max rating @133MHz)
8x PSRAM ly68l6400slit 1 * 40 = 40mA (only draws I during read/write)
1x ESP32 8 * 1 = 8mA (idle current)
1x SDCard (SPI mode) 345 mA (!) during wifi tx
150mA

Total: 100+40+8+345+150 = 643 mA

Need _at least_ 750mA supply, 1A recommended.

BOM: @ qty 1 (will be cheaper when producing 100x +)
1x RP2040 = \$1
WiFi Module (ESP32) = \$3
MC74AC138 = \$1
SDCard slot = \$0.5
4 x LY68L6400SLIT = \$11
USB conn. = \$0.5
SPI Flash (16MB) = \$1.1 W25Q128JVSIIQ
SPI Flash (2MB) = \$0.5 W25Q16JVSSIIQ
1 x Crystal 12MHz = \$0.5 XYDBPCNANF-12MHZ / C521567
5V -> 3.3V 1A LDO = \$0.34 SSP1117-3.3V / C277892
TBD 5V/3.3V switch = \$1 BSS84 is too weak
PCB = \$1
Total 2+3+1+0.5+11+0.5+1.1+0.5+0.5+0.34+1+1 = 22.44

Customer price = 3 * BOM = \$67.32



Pico1 Pin Count = 20+1+2+1+3 = 27

Pico SRAM = 264 kB
Let's use 128kB dedicated
for save game SRAM

PSRAM = 4 I/O + CLK
CE = 1 per chip
CE demux 3 bit -> 8 CE

MC74AC138 fast 3-bit 8 output demultiplexer (active LOW)
Alternative demux
sn74lvc138a-q1

PSRAM alternative to ly68l6400slit:
APS6404L-35QR-SN

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KiCad E.D.A. kicad (6.0.6)

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