PORT DETECTION

It is required that detection pins be connected in one of the following ways when using HW2:
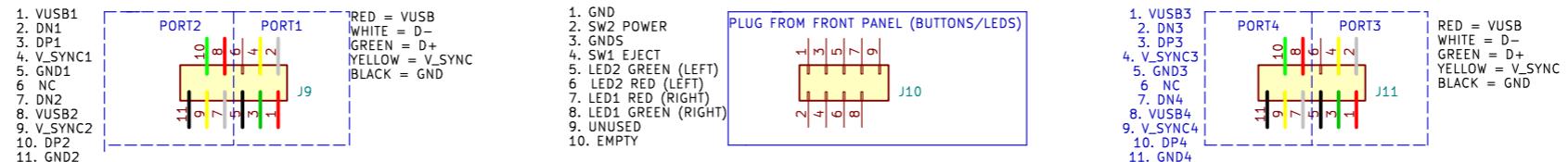
1. Using a current mirror circuit — dynamic/hotplug port detection.
   Requires a few extra components, more wiring, and more effort,
   but is generally safer and more stable.

2. Using port GND isolation — dynamic/hotplug port detection.
   Requires one 10kΩ resistor per port.
   Pull out the ground wire (black) from the mainboard plug for every gameport
   that is going to be used, and connect it together with the corresponding
   port detection wire, plus a 10k pull-up resistor.

3. Pullup only — no detection, static port count.
   Pullup to ESP_3.3V power rail via resistor,
   To enable a port for BT devices, a 10kΩ resistor per port is needed.
   Note: Wired gamepad support on all ports enabled in this way will be permanently disabled.

IF DETECTION PINS ARE NOT PULLED UP USING ONE OF THE METHODS ABOVE,
   THE BT CONTROLLER CANNOT BE USED ON THE CORESPONDING PORT!

4. PULLLDOWN — NO DETECTION PORT DISABLED FOR BT.
   NOT USED DETECTION PINS MUST BE PULLED DOWN THRU 10k RESISTOR TO GND

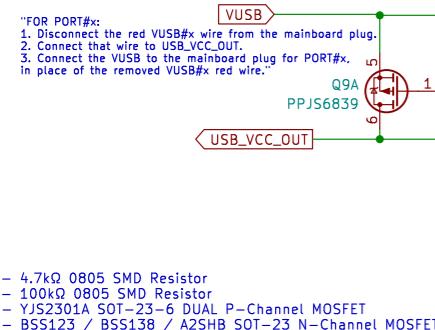## GAMEPORTS PLUGS FROM FRONT PANEL — TOP VIEW AT MAINBOARD

1. VUSB1
2. DN1
3. DP1
4. V_SYNC1
5. GND1
6. NC
7. DN2
8. VUSB2
9. V_SYNC2
10. DP2
11. GND2

PORT2   PORT1

J9

RED = VUSB
WHITE = D−
GREEN = D+
YELLOW = V_SYNC
BLACK = GND

1. GND
2. SW2 POWER
3. GNDS
4. SW1 EJECT
5. LED2 GREEN (LEFT)
6. LED2 RED (LEFT)
7. LED1 RED (RIGHT)
8. LED1 GREEN (RIGHT)
9. UNUSED
10. EMPTY

PLUG FROM FRONT PANEL (BUTTONS/LEDS)

J10

1. VUSB3
2. DN3
3. DP3
4. V_SYNC3
5. GND3
6. NC
7. DN4
8. VUSB4
9. V_SYNC4
10. DP4
11. GND4

PORT4   PORT3

J11

RED = VUSB
WHITE = D−
GREEN = D+
YELLOW = V_SYNC
BLACK = GND

PLAYER1=PORT1/GPIO35
PLAYER2=PORT2/GPIO36
PLAYER3=PORT3/GPIO32
PLAYER4=PORT4/GPIO33

1.CURRENT MIRROR CIRCUIT DYNAMIC DETECTION
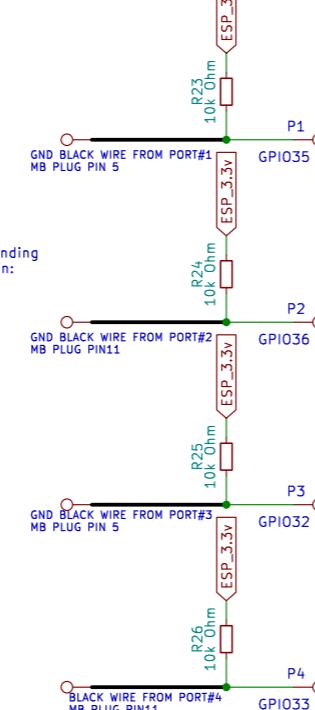
Design by ManCloud at https://github.com/ManCloud/CurrentTrigger
Instalation examples at https://github.com/nostalgic-indulgences/BlueRetro_Internal_Installation
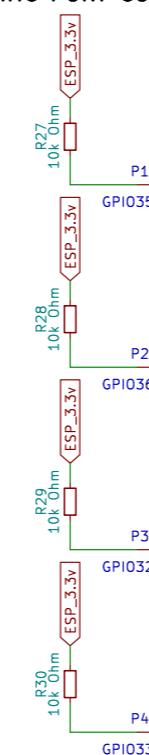
One circuit for one port.

TODO: working but
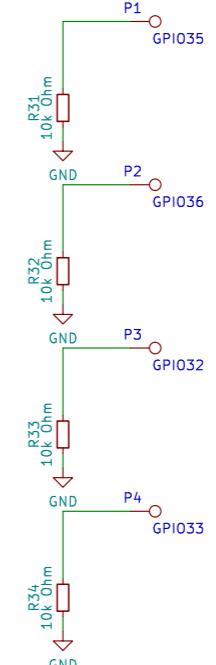probably lower pullups needed
investigate i2c bus

VUSB

"FOR PORT#x:
1. Disconnect the red VUSB#x wire from the mainboard plug.
2. Connect that wire to USB_VCC_OUT.
3. Connect the VUSB to the mainboard plug for PORT#x,
in place of the removed VUSB#x red wire."

USB_VCC_OUT

Q9A
PPJS6839

Q9B
PPJS6839

R21
100k

R20
4k7

Q10
BSS138

R22
200k

GND   GND   GND

Sense

SENSE pin goes to coresponding
player/port detection pin:
PORT1/GPIO35
PORT2/GPIO36
PORT3/GPIO32
PORT4/GPIO33

R1 − 4.7kΩ 0805 SMD Resistor
R2 − 100kΩ 0805 SMD Resistor
Q1 − YJS2301A SOT−23−6 DUAL P−Channel MOSFET
Q2 − BSS123 / BSS138 / A2SHB SOT−23 N−Channel MOSFET

2.PORT GND ISOLATION DYNAMIC DETECTION

ESP_3.3v

R23
10k Ohm

GND BLACK WIRE FROM PORT#1
MB PLUG PIN 5

P1

GPIO35

ESP_3.3v

R24
10k Ohm

GND BLACK WIRE FROM PORT#2
MB PLUG PIN11

P2

GPIO36

ESP_3.3v

R25
10k Ohm

GND BLACK WIRE FROM PORT#3
MB PLUG PIN 5

P3

GPIO32

ESP_3.3v

R26
10k Ohm

BLACK WIRE FROM PORT#4
MB PLUG PIN11

P4

GPIO33

3. PULLUP ONLY / NO DETECTION STATIC PORT COUNT

ESP_3.3v

R27
10k Ohm

P1

GPIO35

ESP_3.3v

R28
10k Ohm

P2

GPIO36

ESP_3.3v

R29
10k Ohm

P3

GPIO32

ESP_3.3v

R30
10k Ohm

P4

GPIO33

4.PULLDOWN / NO DETECTION PORT DISABLED FOR BT

P1

GPIO35

R31
10k Ohm

GND

P2

GPIO36

R32
10k Ohm

GND

P3

GPIO32

R33
10k Ohm

GND

P4

GPIO33

R34
10k Ohm

GND

Title: BROGX

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