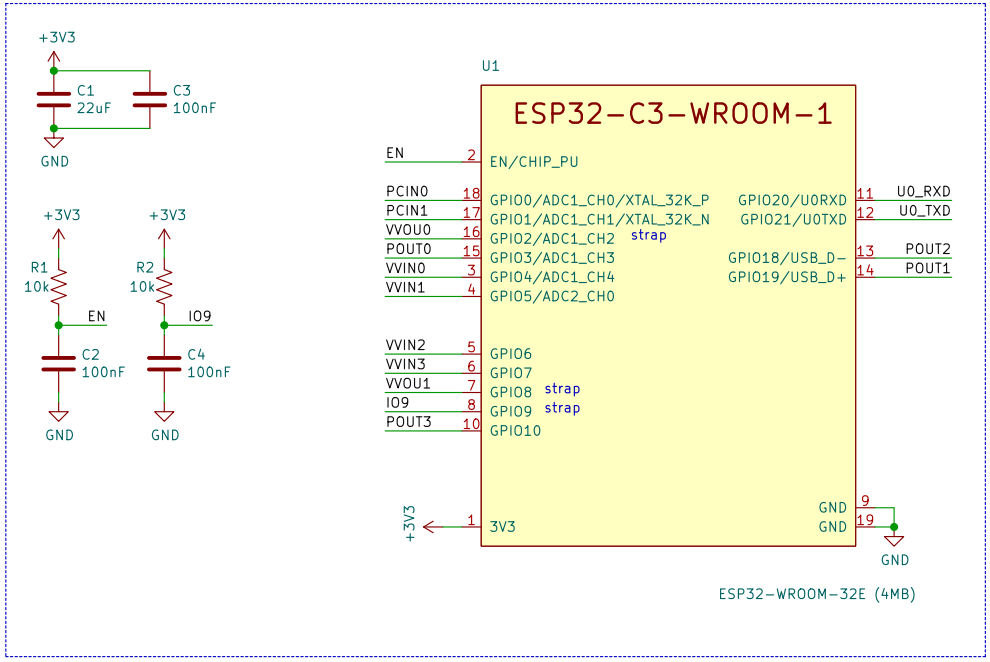
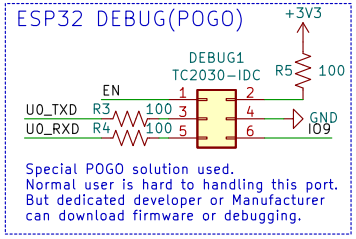
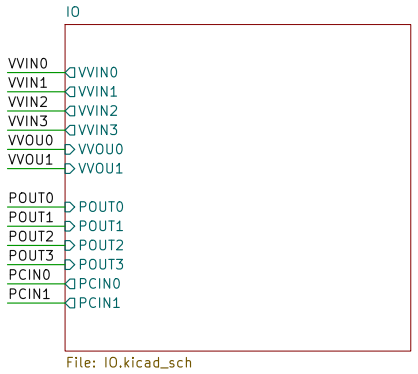
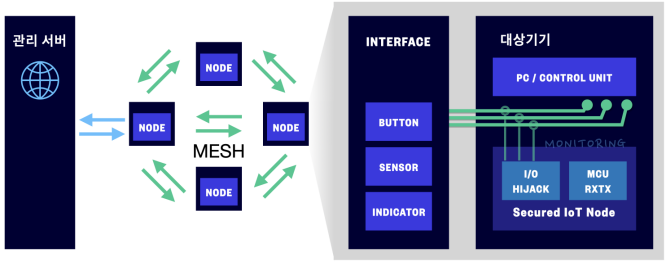
MCU+TXRX Module (ESP32-C3 RISC-V Powered)









LambdaEE_Logo

Symbol_Extended:LamudaEE-12.3x7.6mm

Symbol_Extended:LamudaEE-12.3x7.6mm

Symbol:OSHW-Logo2_9.8x8mm_SilkScreen

CERN-OHL-S-2.0 CERN-OHL-S-2.0

CERN-OHL-S-2.0 CERN-OHL-S-2.0

H1 MountingHole

H3 MountingHole

H2 MountingHole

H4 MountingHole

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Jinwoo Park, pmnxis@gmail.com

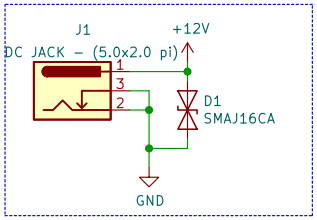
Sheet: /
File: LambdaTail-HW.kicad_sch

Title: Main Block

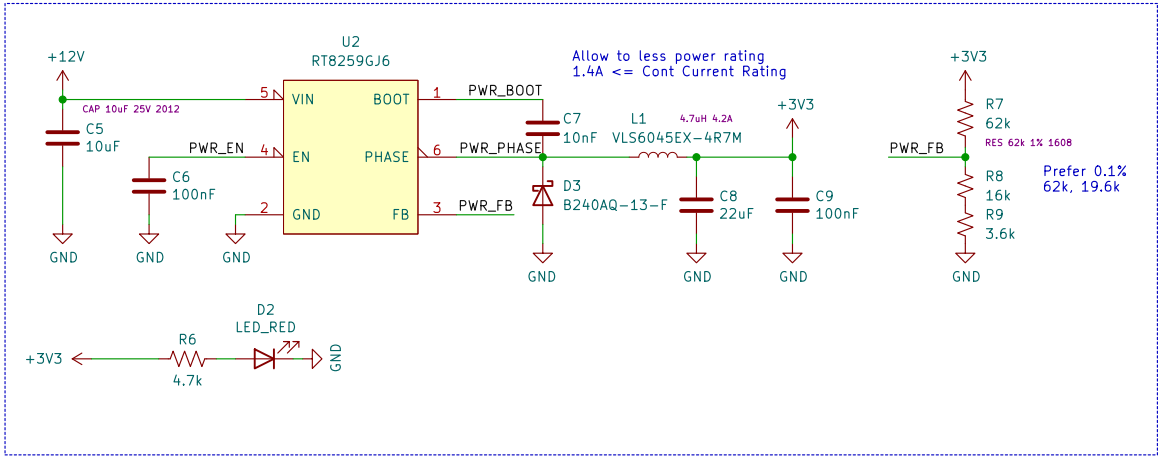
Size: A4	Date: 2021-07-20	**Rev: 0.1**
KiCad E.D.A. kicad (5.99.0-11235-g27fd8d4ccb)		Id: 1/5

Power Domain

12V Input Jack



12V to 3V3 : Switching Regulator



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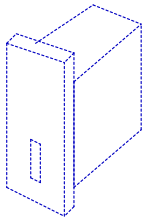
Sheet: /Power/
File: Power.kicad_sch

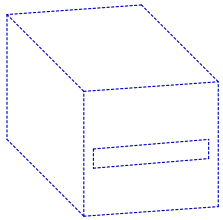
Title:

Size: A4	Date: 2021-07-20	**Rev: 0.1**
KiCad E.D.A. kicad (5.99.0-11235-g27fd8d4ccb)		Id: 2/5

Transducer ...
Sensor ...
Switch ...

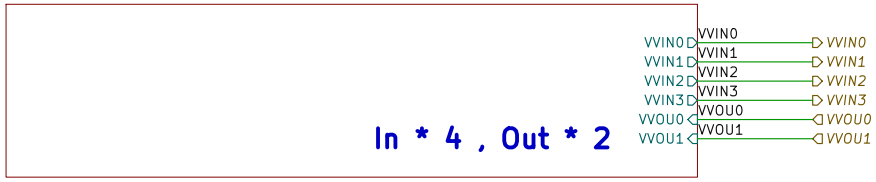


Coin Acceptor



Paper Acceptor

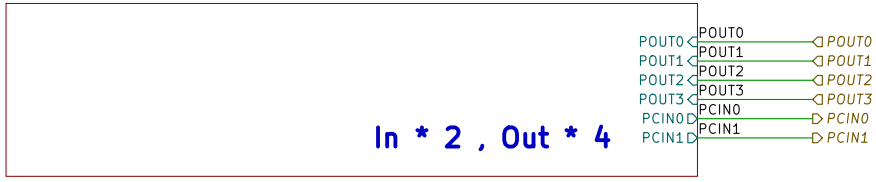
VendSide



File: VendSide.kicad_sch

Vending Machine (Coin and bill-paper acceptor) side
VVIN : Vending Machine Output / Tap Board Input signals.
VVOU : Vending Machine Input or External 12V or 5V Control.
Tap Board Input signals. (4.7kΩ) Signal Also you can configure VendSide pull-up and power supplying voltage.

HostSide

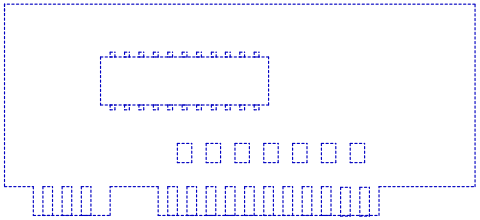


File: HostSide.kicad_sch

GAME PCB or I/O Board Side
POUT : Game PCB Input / Tap Board output signals.
PCIN : Game PCB Output / Tap Board input signals

PCIN uses 74HC4049, and it borrow VVIN 's 74HC4049.
So, only one 74HC4049 exist.

PCB ...
IO Board ...



Game IO Board

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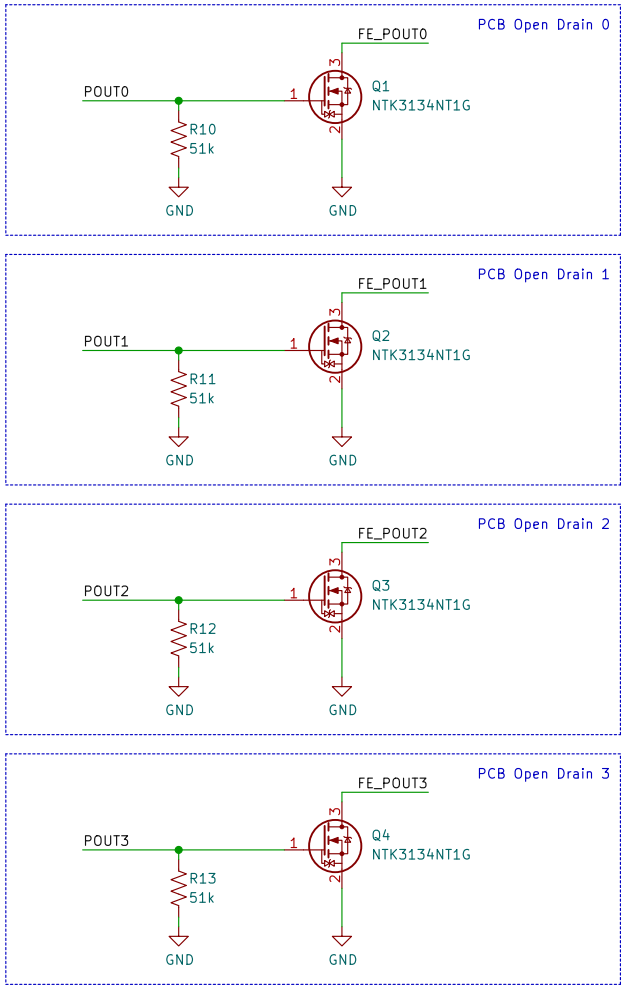
Sheet: /IO/
File: IO.kicad_sch

Title: IO

Size: A4	Date: 2021-07-20	**Rev: 0.1**
KiCad E.D.A. kicad (5.99.0-11235-g27fd8d4ccb)		Id: 3/5

PCB Side Open Drain Output

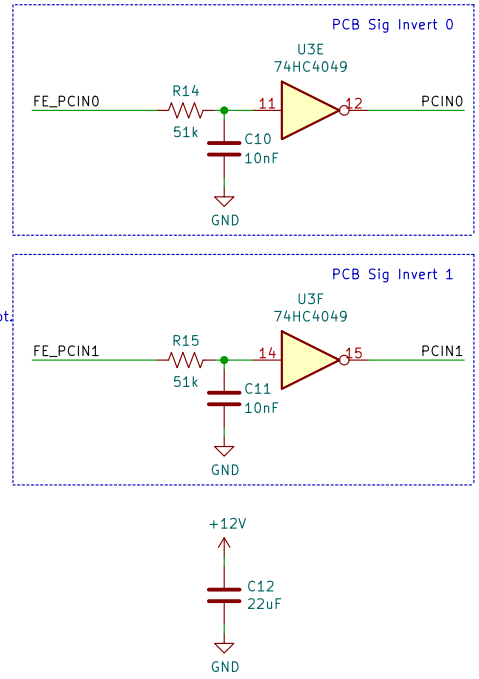


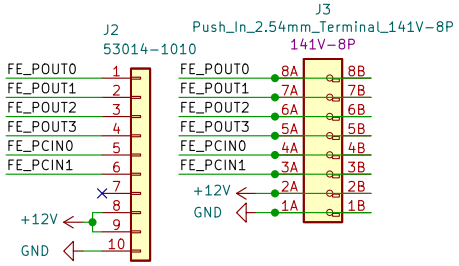
CHANGE LOG

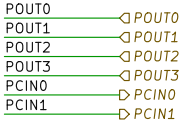
Formal arcade system use Game PCB have pull up line on input, and this domain make drop to 0V very safely, even each pin's voltage level is different.

ULN2003AIDR has some issue COM line is shared. so we didn't used for seperate voltage level.
Q4:7 was changed to PMV100ENEA from IRFL014PBF. Because IRFL014PBF was obsoleted JLCPCB type. JLCPCB Assembly service don't have stock or option for PMV100.
DMN100 and PESD__ is alternation for this assembly system.
2020-07-20 : DMN100 or PMV100 NMOS reduce to dual channel NMOS.
Recommend is DMN3190LDW and
Alternative is DMN2004DWK
Requirements : high desity, high current , Volt accept Gate,D-S Protection.

PCB Side extSignal Invert Input







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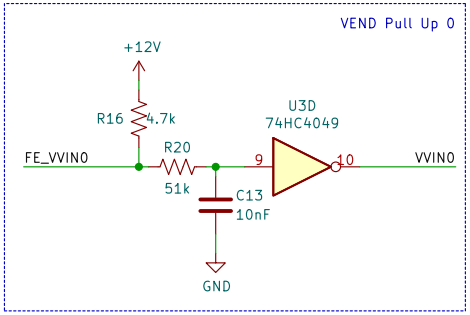
Jinwoo Park, pmnxis@gmail.com

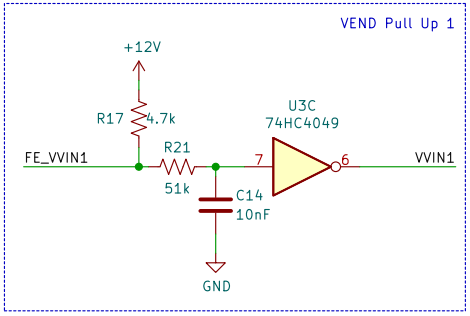
Sheet: /IO/HostSide/
File: HostSide.kicad_sch

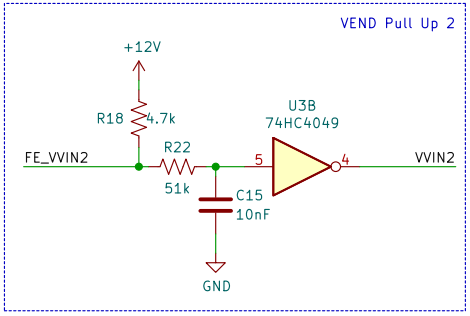
Title: Host Side

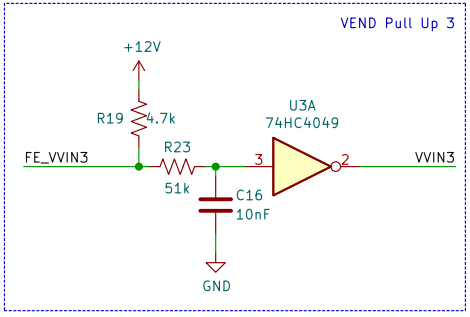
Size: A4	Date: 2021-07-20	**Rev: 0.1**
KiCad E.D.A. kicad (5.99.0-11235-g27fd8d4ccb)		Id: 4/5

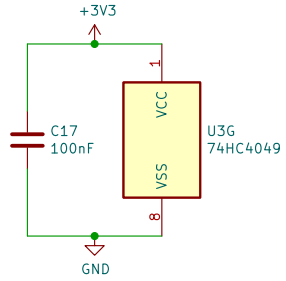
Vend Side Pull Up Input









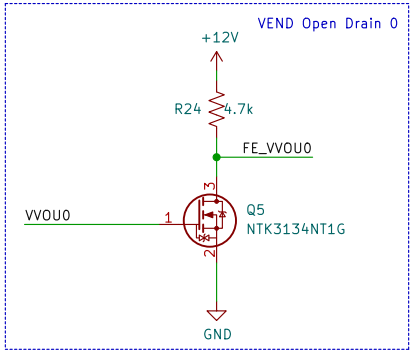


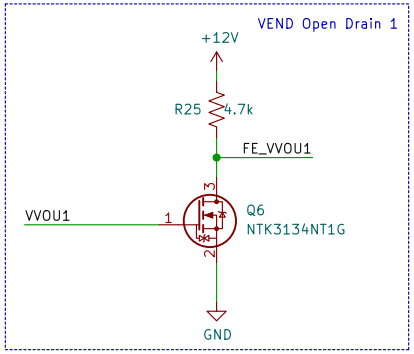
CHANGE LOG

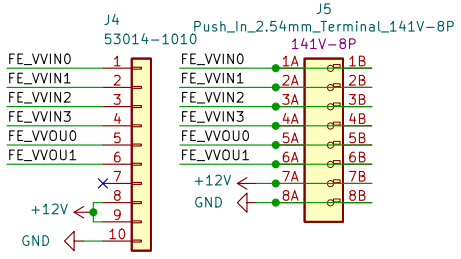
2020-07-16 : LTV217 Optocopuler is removed.
Replaced to high voltage input hex inverter.
Ti CD4049UBDR recommend 1uA input.
Ti require too few input current. So this design use
"ONSemi MC14049UBDR2G" , "Nxp HEF4049BT"

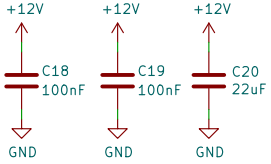
2020-07-20 : DMN100 or PMV100 NMOS reduce
to dual channel NMOS. DMN3190LDW or DMN2004DWK
Recommend is DMN3190LDW , Alternative is DMN2004DWK
Requirements : high desity, high current and voltage accept.
Gate,D-S Protection.

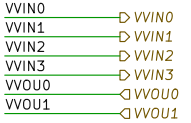
Vend Side Pull Up Input











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Sheet: /IO/VendSide/
File: VendSide.kicad_sch

Title: Vend Side

Size: A4	Date: 2021-07-20	**Rev: 0.1**
KiCad E.D.A. kicad (5.99.0-11235-g27fd8d4ccb)		Id: 5/5