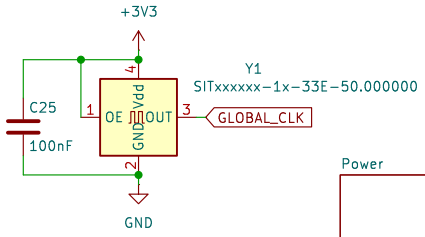
Icepi Zero

FR000026

40MHz Clock

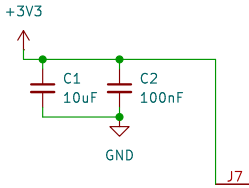


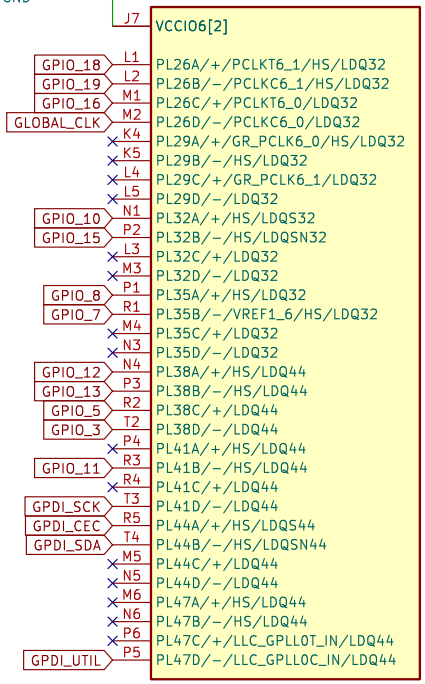
H1 MountingHole
H2 MountingHole
H3 MountingHole
H4 MountingHole

TestPoint TP1 GND
TestPoint TP2 GND

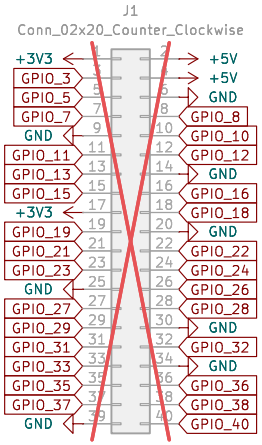
+5V TP3 TestPoint
+3V3 TP4 TestPoint
+2V5 TP5 TestPoint
+1V1 TP6 TestPoint

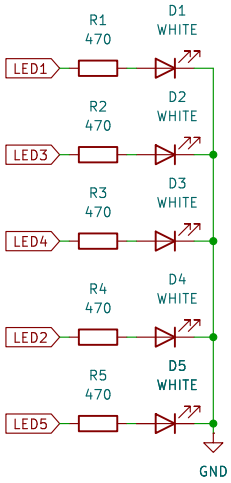
Power — File: power.kicad_sch
GPIO — File: gpio.kicad_sch
USB — File: usb.kicad_sch
SDRAM — File: sdram.kicad_sch
Flash — File: flash.kicad_sch
ECP5 — File: ecp5.kicad_sch

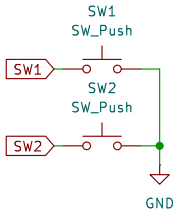




U1F
ECP5U_25F_CABGA256





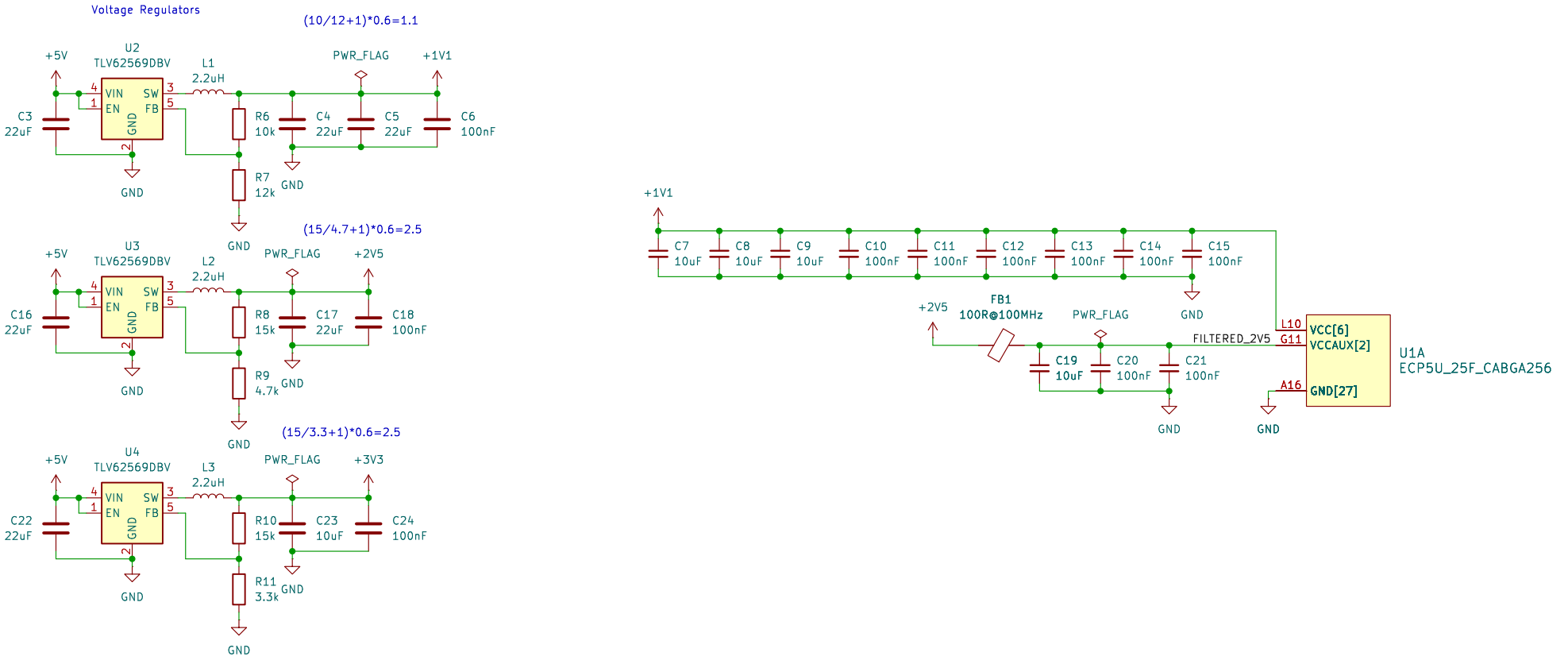


https://github.com/cheyao/icepi-zero
Chengyin Yao (cheyao)

Sheet: /
File: icepi-zero.kicad_sch

Title: Icepi zero

Size: A4	Date: 2025-06-11	**Rev: v1.1**
KiCad E.D.A. 9.0.2		Id: 1/7



https://github.com/cheyao/icepi-zero

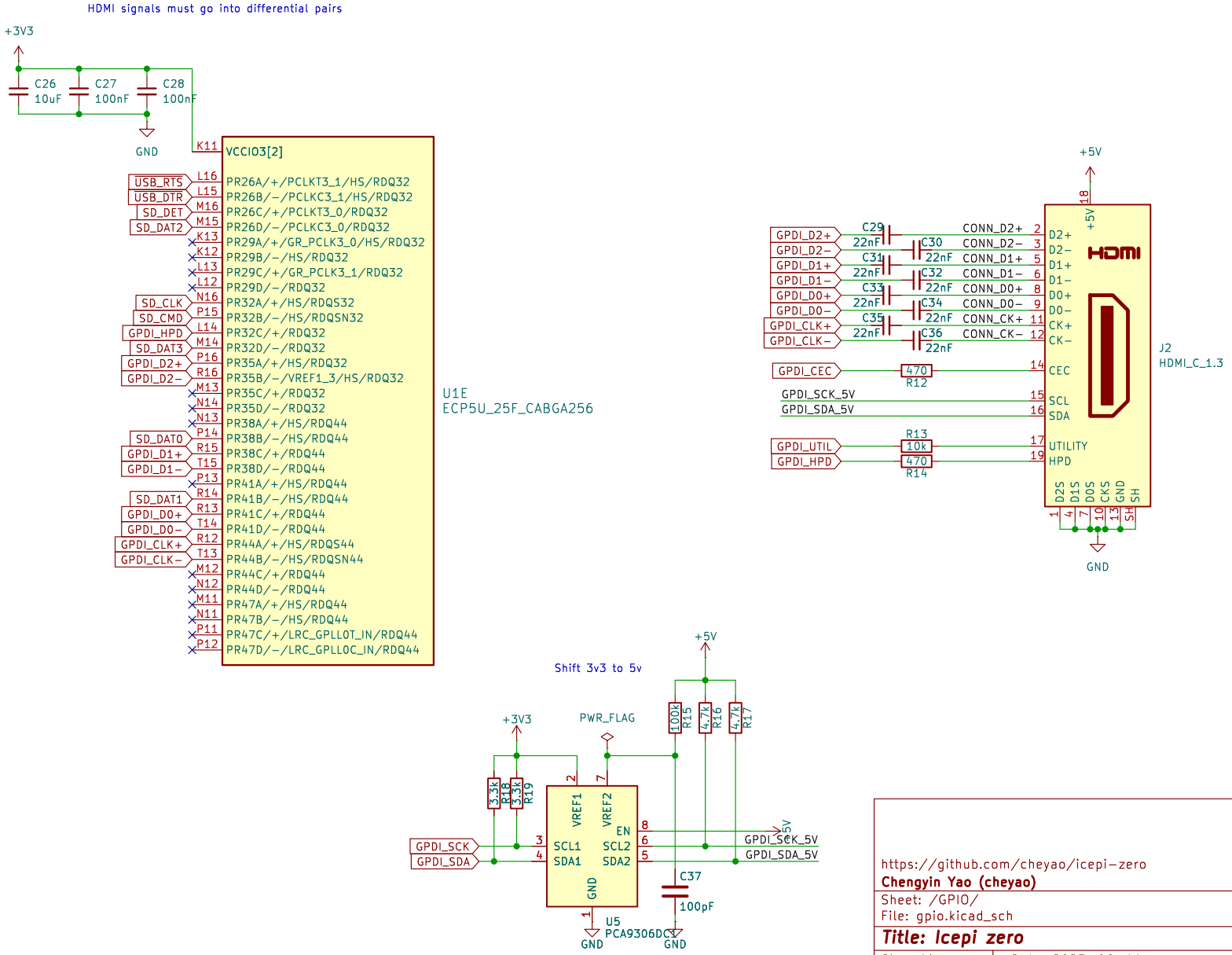
Chengyin Yao (cheyao)

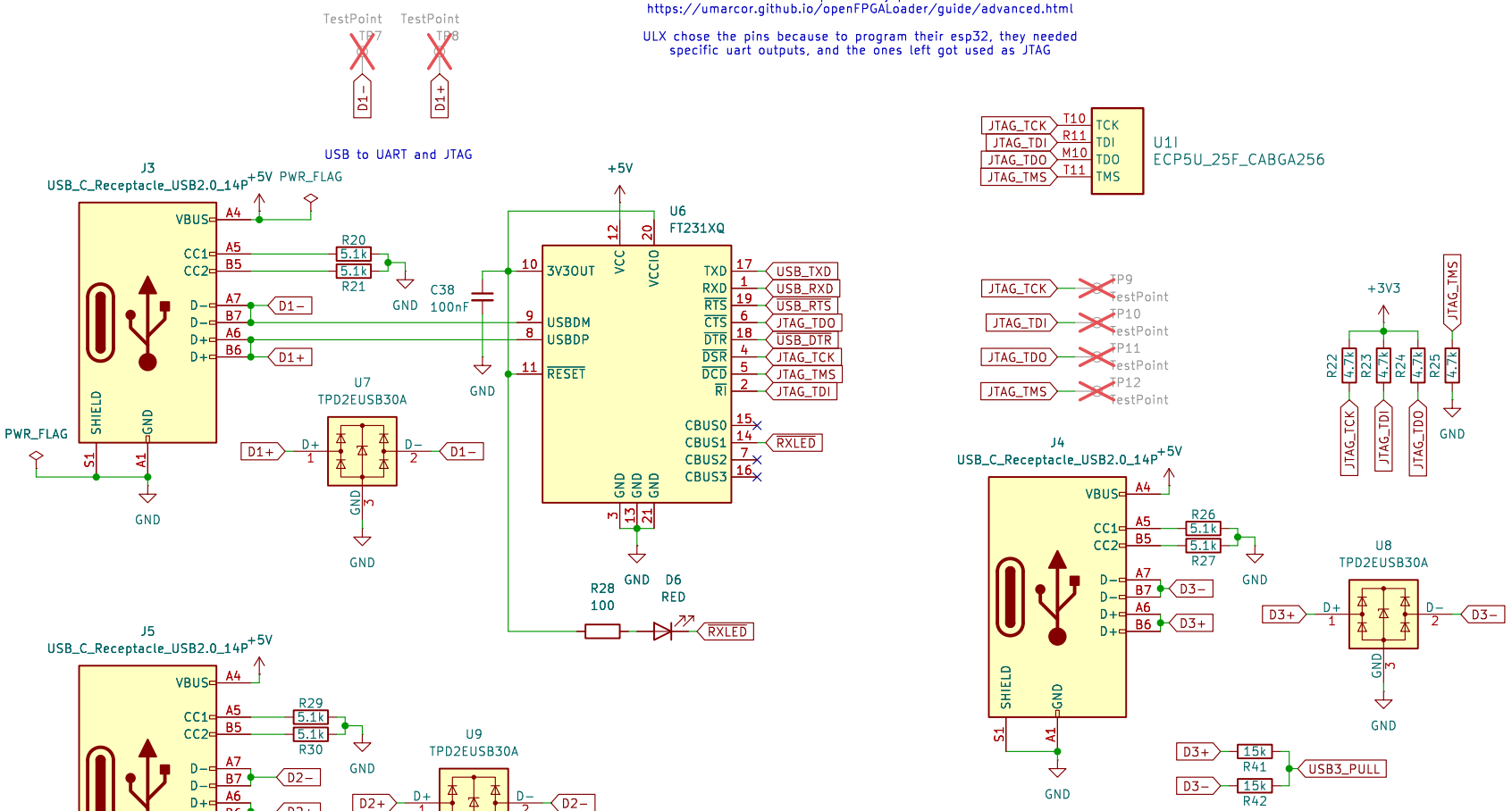
Sheet: /Power/

File: power.kicad_sch

Title: Icepi zero

Size: A4	Date: 2025-06-11	**Rev: v1.1**
KiCad E.D.A. 9.0.2		Id: 2/7


HDMI signals must go into differential pairs
+3V3
C26
10uF
C27
100nF
C28
100nF
GND
K11
VCCIO3[2]
USB_RTS
L16
PR26A/+/PCLKT3_1/HS/RDQ32
USB_DTR
L15
PR26B/−/PCLKC3_1/HS/RDQ32
SD_DET
M16
PR26C/+/PCLKT3_0/RDQ32
SD_DAT2
M15
PR26D/−/PCLKC3_0/RDQ32
K13
PR29A/+/GR_PCLK3_0/HS/RDQ32
K12
PR29B/−/HS/RDQ32
L13
PR29C/+/GR_PCLK3_1/RDQ32
L12
PR29D/−/RDQ32
SD_CLK
N16
PR32A/+/HS/RDQS32
SD_CMD
P15
PR32B/−/HS/RDQSN32
GPDI_HPD
L14
PR32C/+/RDQ32
M14
PR32D/−/RDQ32
SD_DAT3
P16
PR35A/+/HS/RDQ32
GPDI_D2+
R16
PR35B/−/VREF1_3/HS/RDQ32
GPDI_D2−
M13
PR35C/+/RDQ32
N14
PR35D/−/RDQ32
N13
PR38A/+/HS/RDQ44
SD_DAT0
P14
PR38B/−/HS/RDQ44
GPDI_D1+
R15
PR38C/+/RDQ44
GPDI_D1−
T15
PR38D/−/RDQ44
P13
PR41A/+/HS/RDQ44
SD_DAT1
R14
PR41B/−/HS/RDQ44
GPDI_D0+
R13
PR41C/+/RDQ44
GPDI_D0−
T14
PR41D/−/RDQ44
GPDI_CLK+
R12
PR44A/+/HS/RDQS44
GPDI_CLK−
T13
PR44B/−/HS/RDQSN44
M12
PR44C/+/RDQ44
N12
PR44D/−/RDQ44
M11
PR47A/+/HS/RDQ44
N11
PR47B/−/HS/RDQ44
P11
PR47C/+/LRC_GPLL0T_IN/RDQ44
P12
PR47D/−/LRC_GPLL0C_IN/RDQ44
U1E
ECP5U_25F_CABGA256
+5V
18
+5V
GPDI_D2+
C29
22nF
CONN_D2+
2
GPDI_D2−
C30
22nF
CONN_D2−
3
GPDI_D1+
C31
22nF
CONN_D1+
5
GPDI_D1−
C32
22nF
CONN_D1−
6
GPDI_D0+
C33
22nF
CONN_D0+
8
GPDI_D0−
C34
22nF
CONN_D0−
9
GPDI_CLK+
C35
22nF
CONN_CK+
11
GPDI_CLK−
C36
22nF
CONN_CK−
12
D2+
D2−
D1+
D1−
D0+
D0−
CK+
CK−
HDMI
GPDI_CEC
470
R12
14
CEC
GPDI_SCK_5V
15
SCL
GPDI_SDA_5V
16
SDA
R13
GPDI_UTIL
10k
17
UTILITY
GPDI_HPD
470
R14
19
HPD
D2S
D1S
D0S
CKS
GND
SH
1
4
7
10
13
GND
J2
HDMI_C_1.3
Shift 3v3 to 5v
+5V
+3V3
PWR_FLAG
100k
R15
4.7k
R16
4.7k
R17
3.3k
R18
3.3k
R19
VREF1
VREF2
2
7
EN
8
SCL1
SDA1
3
4
SCL2
SDA2
6
5
5V
GPDI_SCK
GPDI_SDA
GPDI_SCK_5V
GPDI_SDA_5V
GND
C37
100pF
GND
1
U5
PCA9306DCT
https://github.com/cheyao/icepi-zero
Chengyin Yao (cheyao)
Sheet: /GPIO/
File: gpio.kicad_sch
Title: Icepi zero
Size: A4
Date: 2025-06-11
Rev: v1.1
KiCad E.D.A. 9.0.2
Id: 3/7



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Chengyin Yao (cheyao)

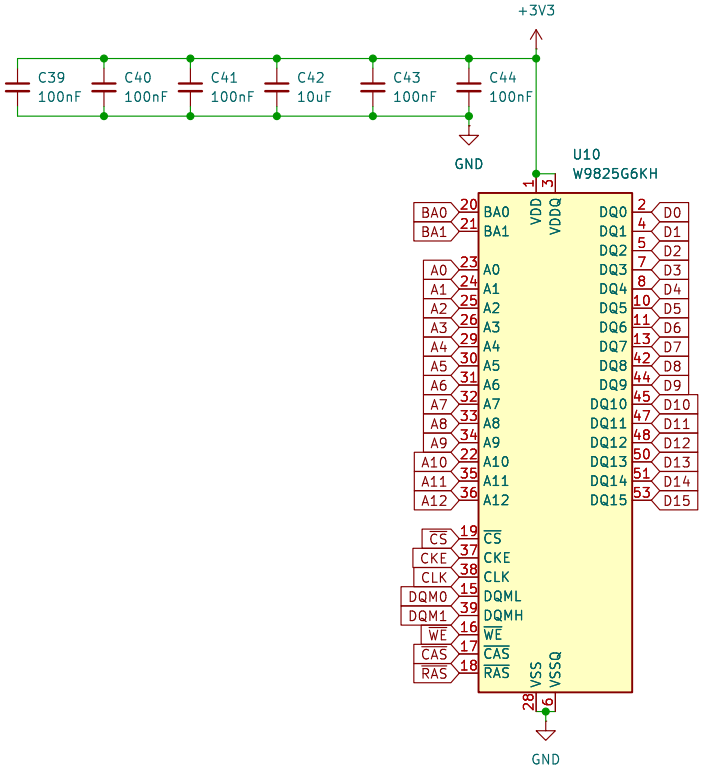
Sheet: /USB/

File: usb.kicad_sch

Title: Icepi zero

Size: A4	Date: 2025-06-11	**Rev: v1.1**
KiCad E.D.A. 9.0.2		Id: 4/7

256MiB Memory
Can be replaced by digikey 512MiB Memory if I have the $$$



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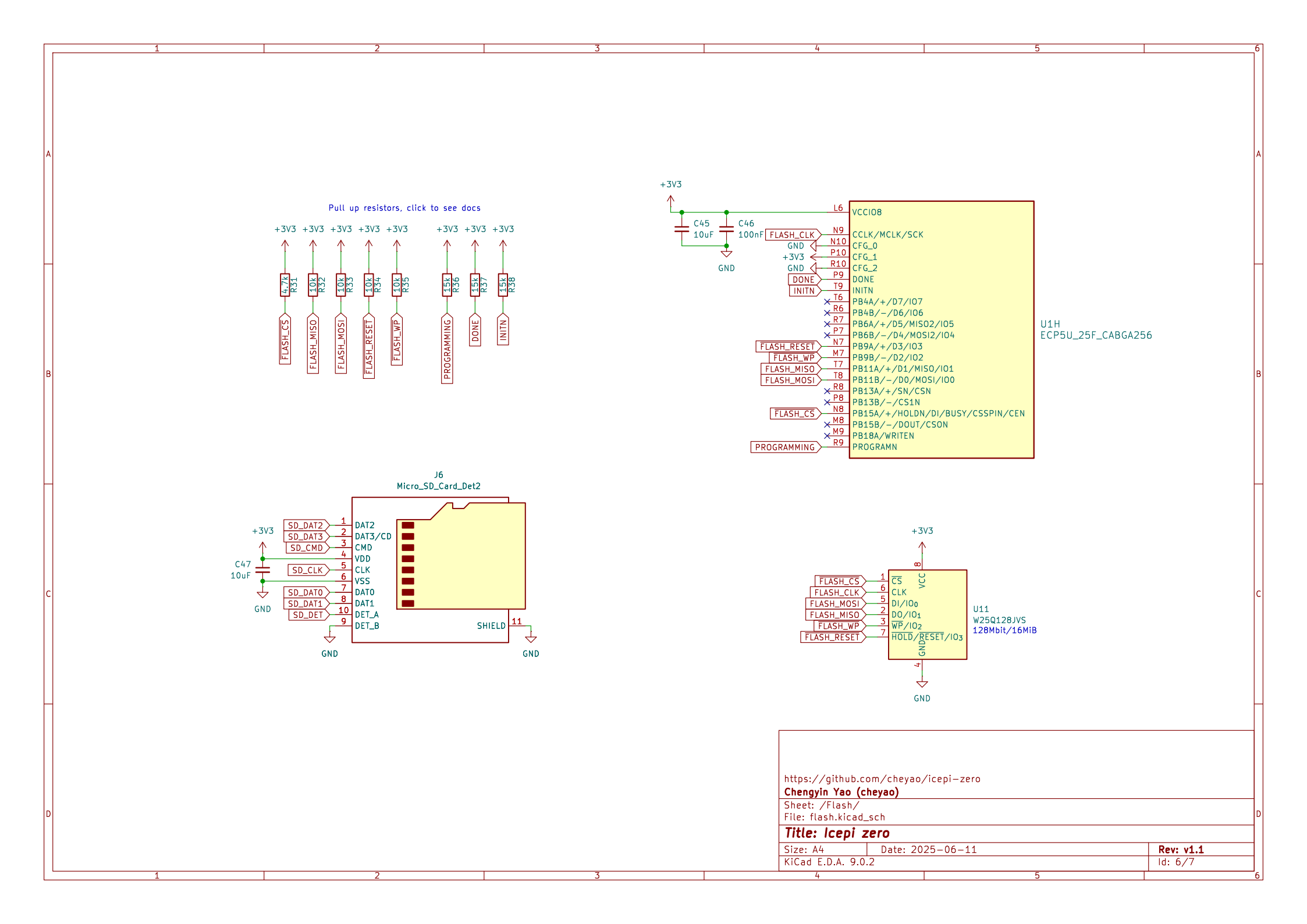
Sheet: /SDRAM/
File: sdram.kicad_sch

Title: Icepi zero

Size: A4	Date: 2025-06-11	**Rev: v1.1**
KiCad E.D.A. 9.0.2		Id: 5/7



https://github.com/cheyao/icepi-zero

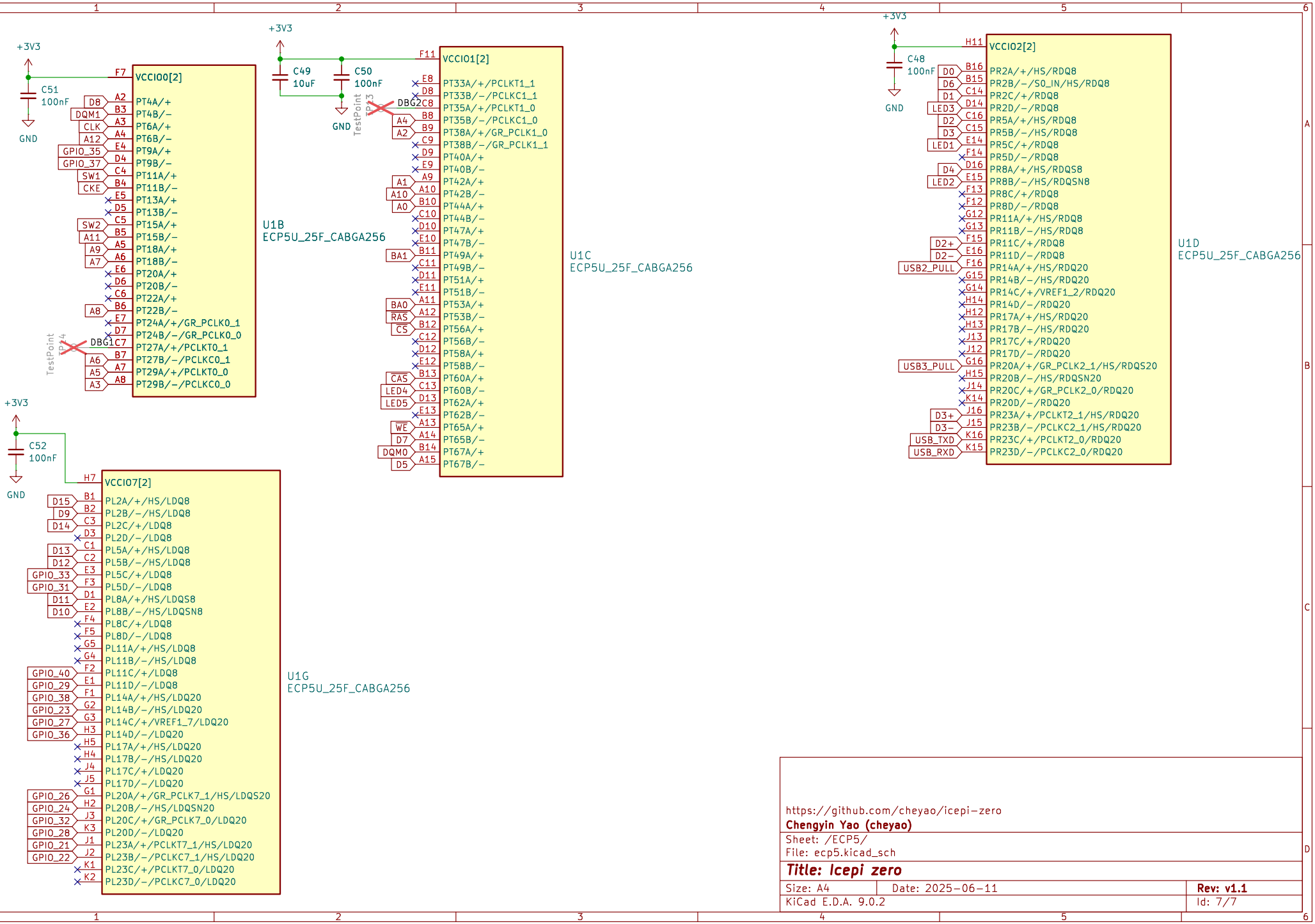
Chengyin Yao (cheyao)

Sheet: /Flash/

File: flash.kicad_sch

Title: Icepi zero

Size: A4	Date: 2025-06-11	**Rev: v1.1**
KiCad E.D.A. 9.0.2		Id: 6/7


+3V3
C51
100nF
GND
VCCIO0[2]
PT4A/+
PT4B/−
PT6A/+
PT6B/−
PT9A/+
PT9B/−
PT11A/+
PT11B/−
PT13A/+
PT13B/−
PT15A/+
PT15B/−
PT18A/+
PT18B/−
PT20A/+
PT20B/−
PT22A/+
PT22B/−
PT24A/+/GR_PCLK0_1
PT24B/−/GR_PCLK0_0
PT27A/+/PCLKT0_1
PT27B/−/PCLKC0_1
PT29A/+/PCLKT0_0
PT29B/−/PCLKC0_0
TestPoint
TP24
DBG1
U1B
ECP5U_25F_CABGA256
+3V3
C49
10uF
C50
100nF
GND
TestPoint
TP23
DBG2
VCCIO1[2]
PT33A/+/PCLKT1_1
PT33B/−/PCLKC1_1
PT35A/+/PCLKT1_0
PT35B/−/PCLKC1_0
PT38A/+/GR_PCLK1_0
PT38B/−/GR_PCLK1_1
PT40A/+
PT40B/−
PT42A/+
PT42B/−
PT44A/+
PT44B/−
PT47A/+
PT47B/−
PT49A/+
PT49B/−
PT51A/+
PT51B/−
PT53A/+
PT53B/−
PT56A/+
PT56B/−
PT58A/+
PT58B/−
PT60A/+
PT60B/−
PT62A/+
PT62B/−
PT65A/+
PT65B/−
PT67A/+
PT67B/−
U1C
ECP5U_25F_CABGA256
+3V3
C48
100nF
GND
VCCIO2[2]
PR2A/+/HS/RDQ8
PR2B/−/SO_IN/HS/RDQ8
PR2C/+/RDQ8
PR2D/−/RDQ8
PR5A/+/HS/RDQ8
PR5B/−/HS/RDQ8
PR5C/+/RDQ8
PR5D/−/RDQ8
PR8A/+/HS/RDQS8
PR8B/−/HS/RDQSN8
PR8C/+/RDQ8
PR8D/−/RDQ8
PR11A/+/HS/RDQ8
PR11B/−/HS/RDQ8
PR11C/+/RDQ8
PR11D/−/RDQ8
PR14A/+/HS/RDQ20
PR14B/−/HS/RDQ20
PR14C/+/VREF1_2/RDQ20
PR14D/−/RDQ20
PR17A/+/HS/RDQ20
PR17B/−/HS/RDQ20
PR17C/+/RDQ20
PR17D/−/RDQ20
PR20A/+/GR_PCLK2_1/HS/RDQS20
PR20B/−/HS/RDQSN20
PR20C/+/GR_PCLK2_0/RDQ20
PR20D/−/RDQ20
PR23A/+/PCLKT2_1/HS/RDQ20
PR23B/−/PCLKC2_1/HS/RDQ20
PR23C/+/PCLKT2_0/RDQ20
PR23D/−/PCLKC2_0/RDQ20
U1D
ECP5U_25F_CABGA256
+3V3
C52
100nF
GND
VCCIO7[2]
PL2A/+/HS/LDQ8
PL2B/−/HS/LDQ8
PL2C/+/LDQ8
PL2D/−/LDQ8
PL5A/+/HS/LDQ8
PL5B/−/HS/LDQ8
PL5C/+/LDQ8
PL5D/−/LDQ8
PL8A/+/HS/LDQS8
PL8B/−/HS/LDQSN8
PL8C/+/LDQ8
PL8D/−/LDQ8
PL11A/+/HS/LDQ8
PL11B/−/HS/LDQ8
PL11C/+/LDQ8
PL11D/−/LDQ8
PL14A/+/HS/LDQ20
PL14B/−/HS/LDQ20
PL14C/+/VREF1_7/LDQ20
PL14D/−/LDQ20
PL17A/+/HS/LDQ20
PL17B/−/HS/LDQ20
PL17C/+/LDQ20
PL17D/−/LDQ20
PL20A/+/GR_PCLK7_1/HS/LDQS20
PL20B/−/HS/LDQSN20
PL20C/+/GR_PCLK7_0/LDQ20
PL20D/−/LDQ20
PL23A/+/PCLKT7_1/HS/LDQ20
PL23B/−/PCLKC7_1/HS/LDQ20
PL23C/+/PCLKT7_0/LDQ20
PL23D/−/PCLKC7_0/LDQ20
U1G
ECP5U_25F_CABGA256
https://github.com/cheyao/icepi-zero
Chengyin Yao (cheyao)
Sheet: /ECP5/
File: ecp5.kicad_sch
Title: Icepi zero
Size: A4
Date: 2025-06-11
Rev: v1.1
KiCad E.D.A. 9.0.2
Id: 7/7