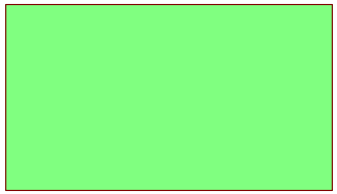
File: H7RS7L8HxH_POWER.kicad_sch

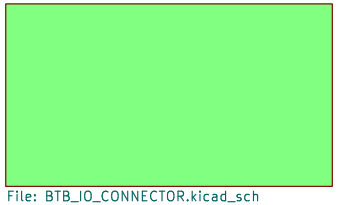
U_XSPI_MEMORY



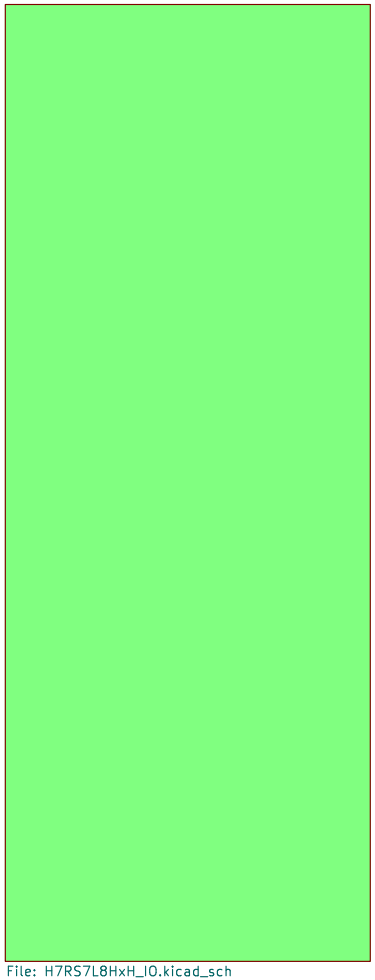
File: XSPI_MEMORY.kicad_sch

File: EMMC.kicad_sch

U_BTB_IO_CONNECTOR



File: BTB_IO_CONNECTOR.kicad_sch



File: H7RS7L8HxH_IO.kicad_sch

ART-Pi_2_Core_A_Board

Hardware V1.0

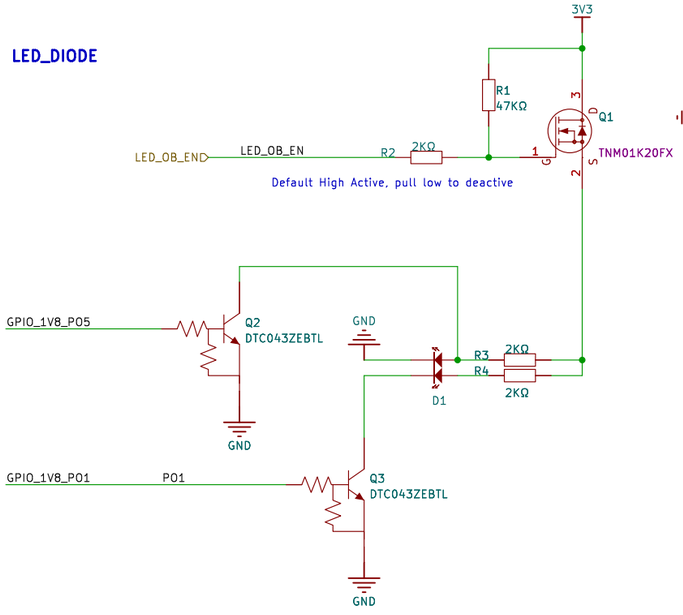
ART-Pi_2_Core_A_Board
www.rt-thread.org
RT-Thread Team

Sheet: /
File: H7R_core.kicad_sch

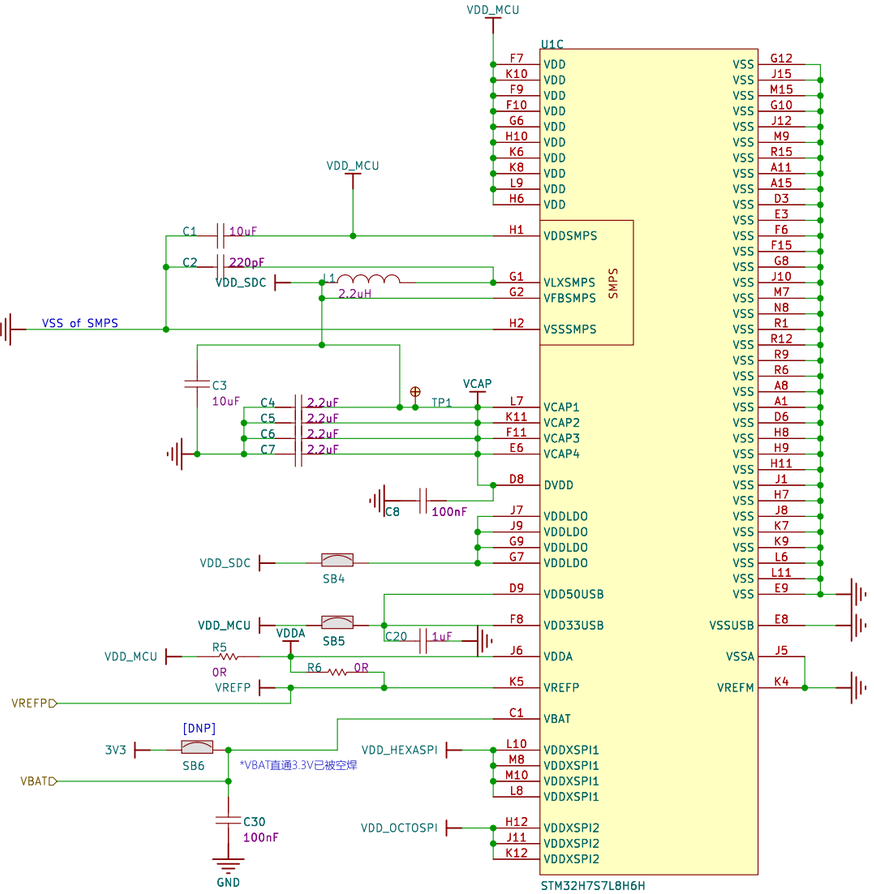
Title: SYS_ARCHITACTURE

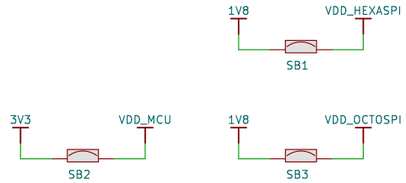
Size: A4	Date: 2025-02-23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 1/6

LED_DIODE

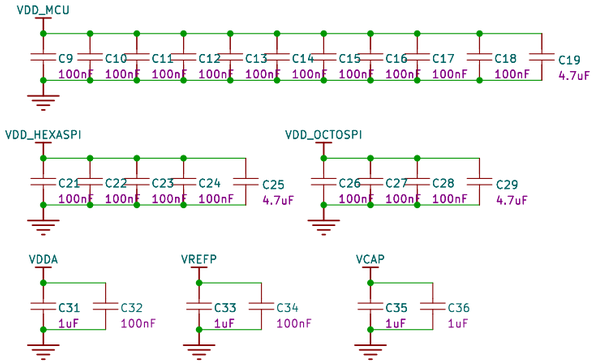


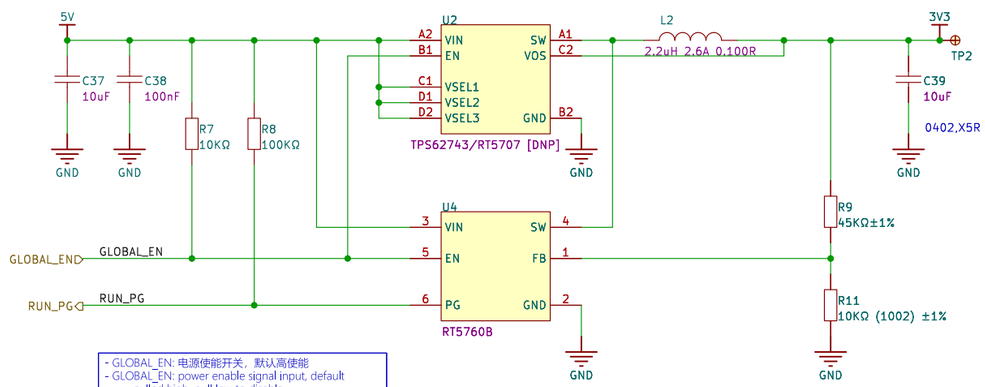
BLUE LED Low/drain active, RED LED High active.
蓝色灯拉低/开漏使能，洋红灯拉高使能
*蓝色灯默认点亮，充当电源指示。所有灯可通过拉低LED_OB_EN控制熄灭。





*当需要对MCU功耗进行评估时，可用于拆解模块功耗

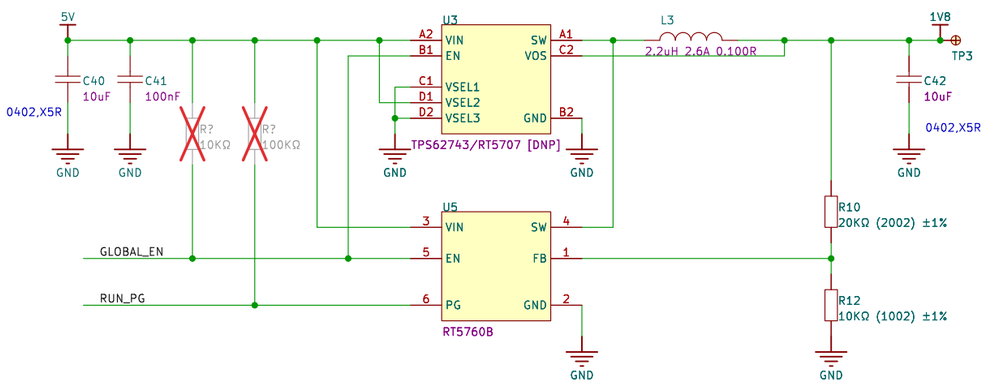




- GLOBAL_EN: 电源使能开关，默认高使能
- GLOBAL_EN: power enable signal input, default pulled high, pull low to disable.
- RUN_PG: power good信号，电压建立时输出高电平，异常或关闭时为低电平（仅RT5760B具备）
- RUN_PG: power good signal output, default pulled high, low when malfunction or shutoff.

电源方案:
- TPS62743/RT5707 拥有良好的低功耗指标
- RT5760B 拥有良好的电源性能

*根据需求只选择贴片其中一个



ART-Pi_2_Core_A_Board
www.rt-thread.org
RT-Thread Team
Sheet: /U_H7RS7L8HxH_Power/
File: H7RS7L8HxH_POWER.kicad_sch

Title: POWER_Distribution

Size: A3	Date: 2025-02-23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 2/6

eMMC

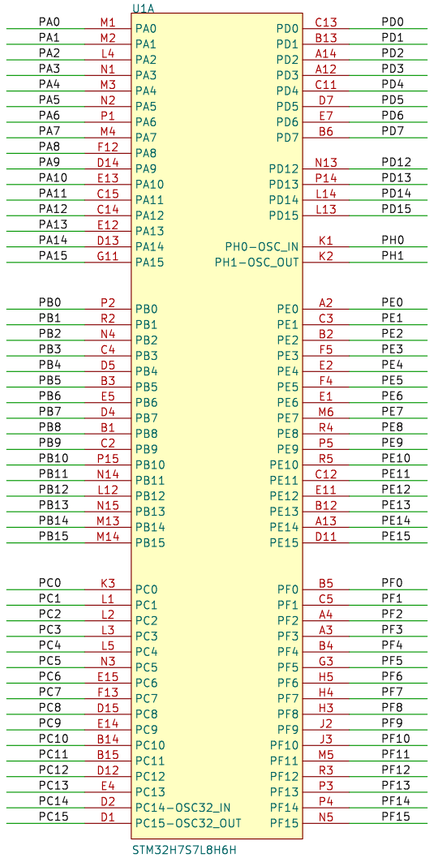
SDMMC1_CMD	PD2
SDMMC1_CK	PC12
SDMMC1_D0	PC8
SDMMC1_D1	PC9
SDMMC1_D2	PC10
SDMMC1_D3	PC11
SDMMC1_D4	PB8
SDMMC1_D5	PB9
SDMMC1_D6	PC6
SDMMC1_D7	PC7

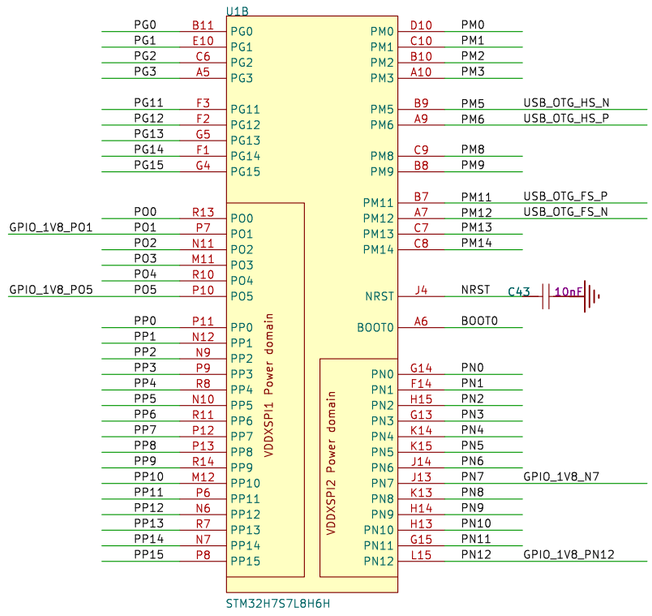
HexaSPI PSRAM

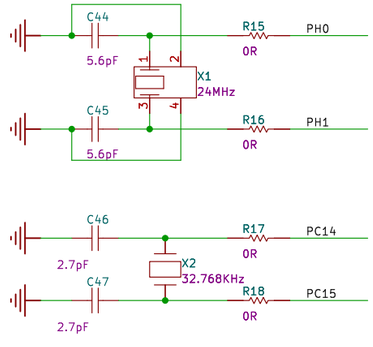
HEXASPI_NCS	PO0
HEXASPI_CLK	PO4
HEXASPI_DQS0	PO2
HEXASPI_IO0	PP0
HEXASPI_IO1	PP1
HEXASPI_IO2	PP2
HEXASPI_IO3	PP3
HEXASPI_IO4	PP4
HEXASPI_IO5	PP5
HEXASPI_IO6	PP6
HEXASPI_IO7	PP7
HEXASPI_DQS1	PO3
HEXASPI_IO8	PP8
HEXASPI_IO9	PP9
HEXASPI_IO10	PP10
HEXASPI_IO11	PP11
HEXASPI_IO12	PP12
HEXASPI_IO13	PP13
HEXASPI_IO14	PP14
HEXASPI_IO15	PP15

OctoSPI Flash

OCTOSPI_NCS	PN1
OCTOSPI_DQS	PN0
OCTOSPI_CLK	PN6
OCTOSPI_NCLK	PN7
OCTOSPI_IO0	PN2
OCTOSPI_IO1	PN3
OCTOSPI_IO2	PN4
OCTOSPI_IO3	PN5
OCTOSPI_IO4	PN8
OCTOSPI_IO5	PN9
OCTOSPI_IO6	PN10
OCTOSPI_IO7	PN11

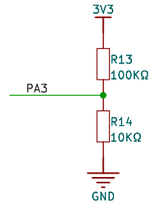






HW_ID

HW0.1 = 2KΩ
HW1.0 = 10KΩ

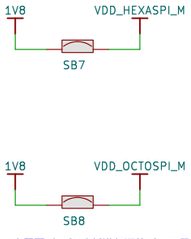


ART-Pi_2_Core_A_Board
www.rt-thread.org
RT-Thread Team

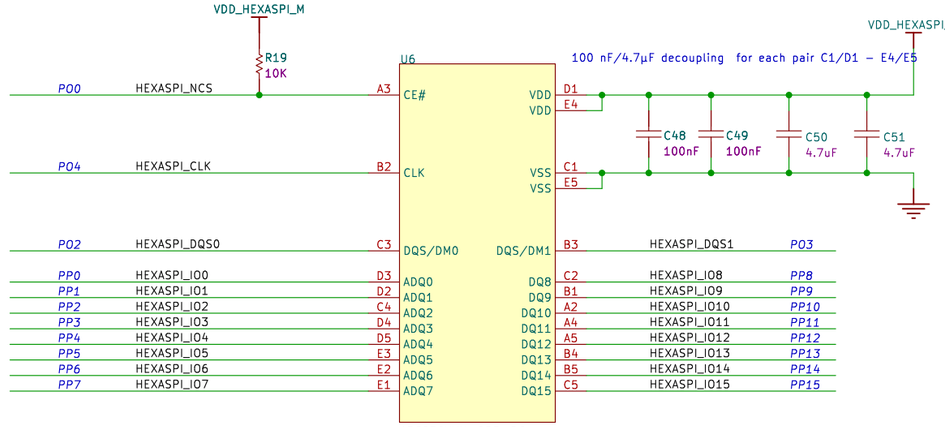
Sheet: /U_H7RS7L8HxH_Peripherals/
File: H7RS7L8HxH_IO.kicad_sch

Title: STM32H7R7L8HxH_Peripherals

Size: A3	Date: 2025-02-23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 3/6

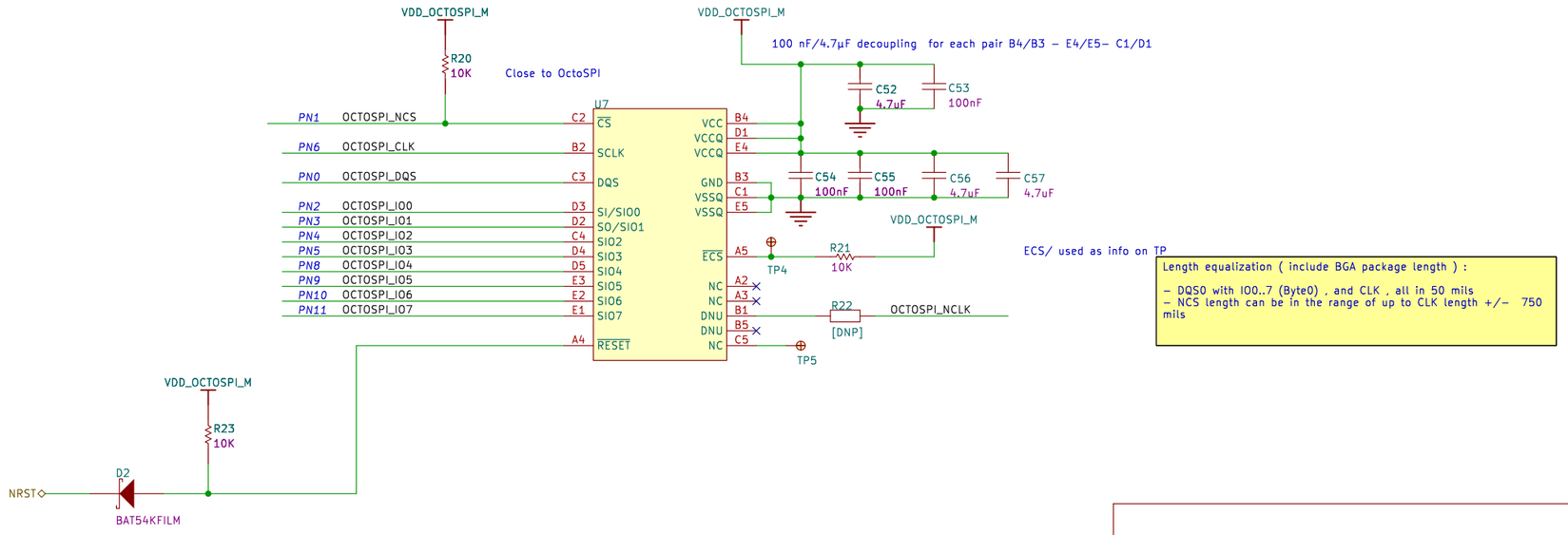


*当需要对MCU功耗进行评估时，可用于拆解模块功耗



Match length (including BGA package length)

– DQS0 with IO0..7 (Byte0) , all in 50 mils,
– DQS1 with IO8..15 (Byte1), all in 50 mils,
– CLK is 100 mils from any signal of Byte0 or Byte1
– NCS can be CLK +/– 700 mils



Length equalization (include BGA package length) :

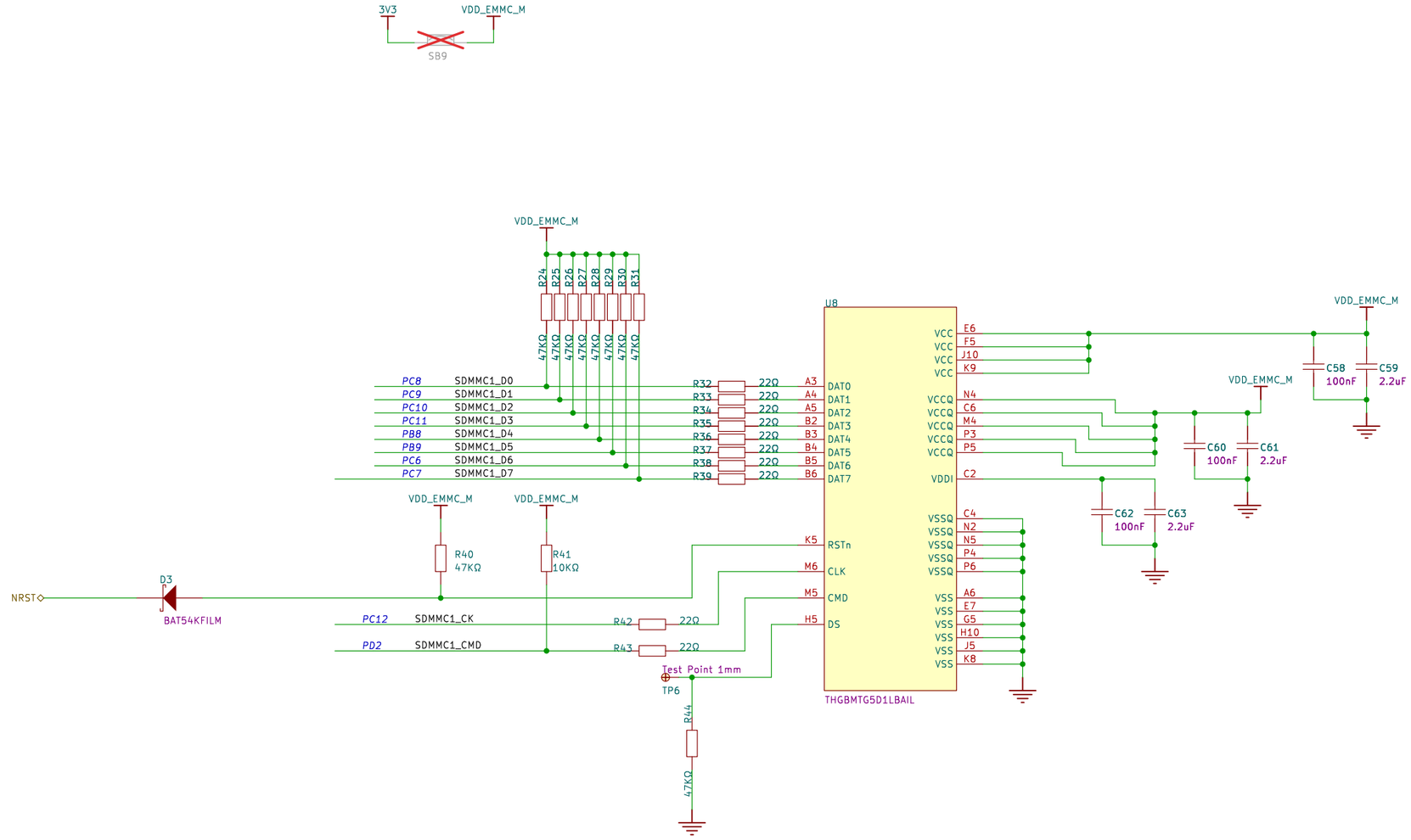
– DQS0 with IO0..7 (Byte0) , and CLK , all in 50 mils
– NCS length can be in the range of up to CLK length +/– 750 mils

ART–Pi_2_Core_A_Board
www.rt–thread.org
RT–Thread Team

Sheet: /U_XSPI_MEMORY/
File: XSPI_MEMORY.kicad_sch

Title: XSPI_MEMORY

Size: A3	Date: 2025–02–23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 4/6



ART-Pi_2_Core_A_Board *EMMC与SD卡资源共用，二者存在互斥关系，非EMMC版本此图器件空贴。

www.rt-thread.org

RT-Thread Team

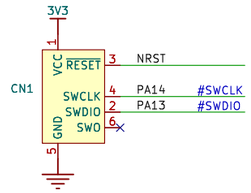
Sheet: /U_EMMC_Memory/

File: EMMC.kicad_sch

Title: EMMC_MEMORY

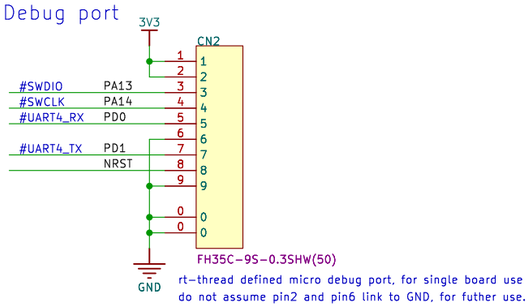
Size: A3	Date: 2025-02-23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 5/6

TAG Connecor

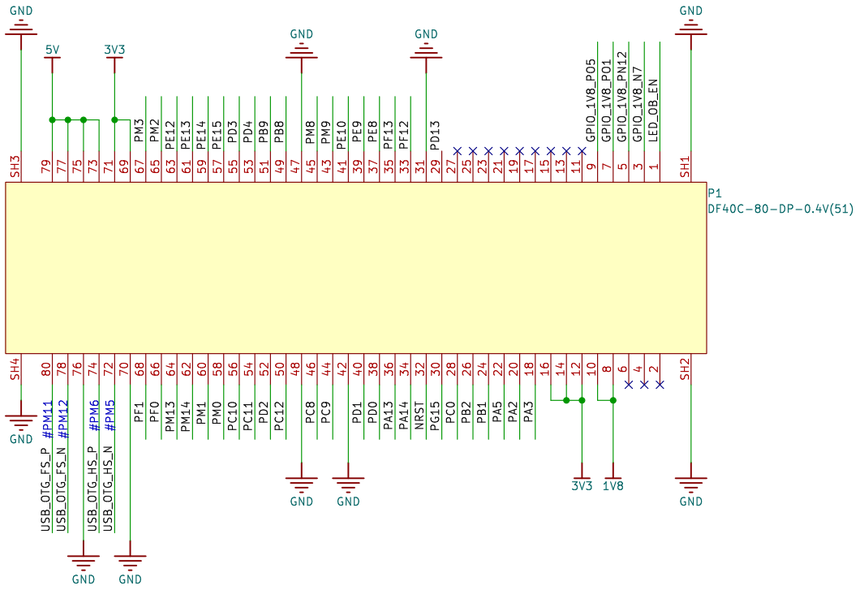


TAG: Only footprint with cable: TC2030-IDC-NL

m-Debug port

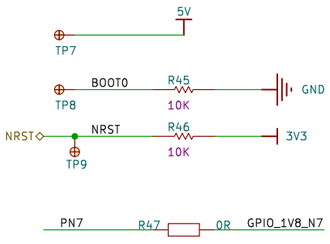


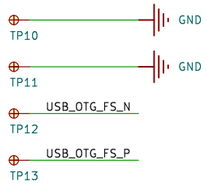
rt-thread defined micro debug port, for single board use
do not assume pin2 and pin6 link to GND, for futher use.

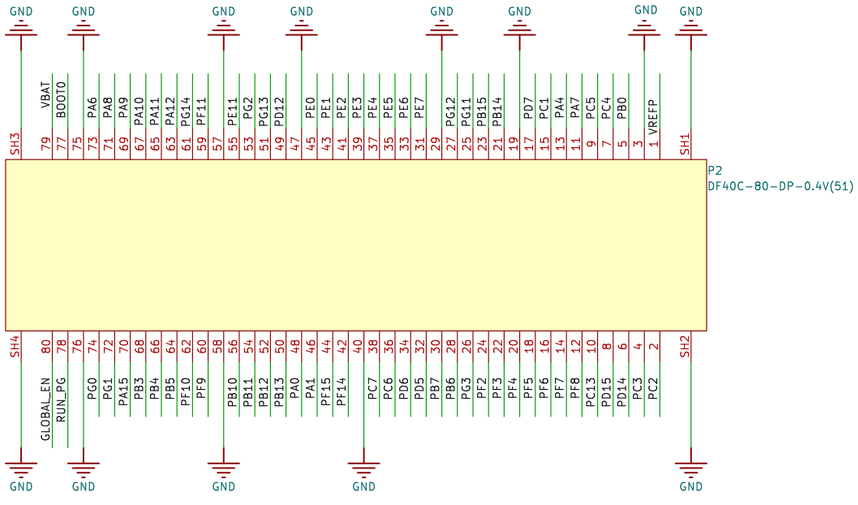


*P1和P2连接器使用Top View展示Pin脚对应关系。
*翻转PCB到背面视角则和原理图为镜像关系。

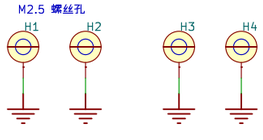
*需要注意：DF40C系列连接器，公座会有额外4Pin固定脚位，不参与电气连接。







M2.5 螺丝孔



ART-Pi_2_Core_A_Board
www.rt-thread.org
RT-Thread Team

Sheet: /U_BTB_IO_CONNECTOR/
File: BTB_IO_CONNECTOR.kicad_sch

Title: BTB_IO_CONNECTOR

Size: A3	Date: 2025-02-23	**Rev: V1.0**
KiCad E.D.A. 9.0.0		Id: 6/6