

License: CERN-OHL-S v2  
GPIO 2.54 mm connectors

EMARD

Sheet: /gpio/  
File: gpio.sch

Title: ULX3S

Size: A4 Date: 2022-09-21

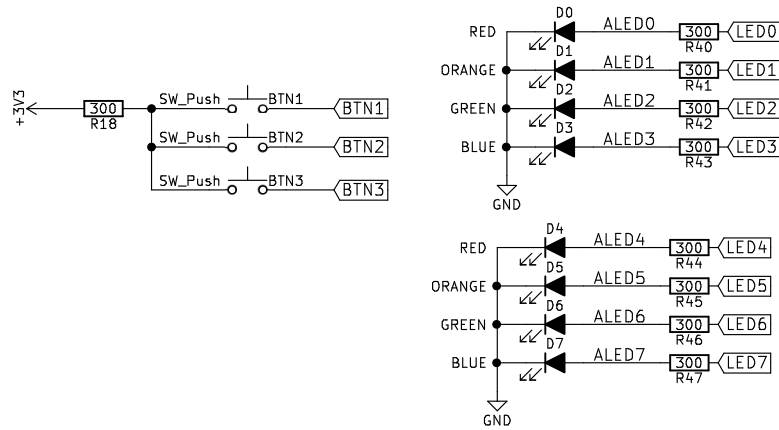
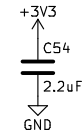
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Rev: 0.0.3

Id: 2/11



ST7789/SSD1331/SSD1351/SSD1306  
compatible LCD/OLED 0.96/1.3/1.54" PCB  
14x14 units  
1 unit = 2.54 mm



License: CERN-OHL-S v2  
Buttons, LEDs, OLED display

**EMARD**

Sheet: /blinky/  
File: blinky.sch

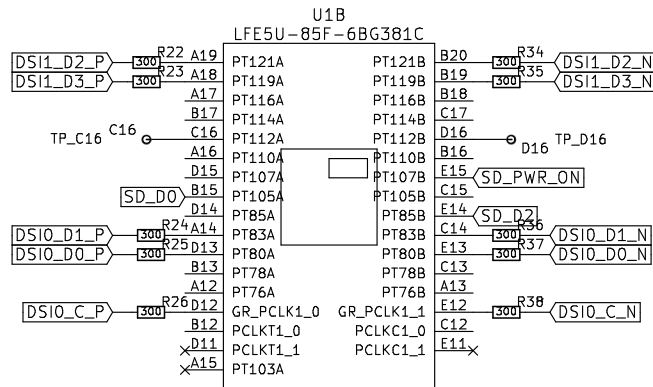
**Title: ULX3S**

Size: A4  
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

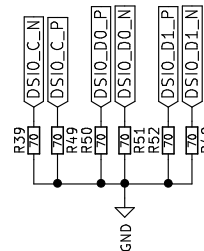
Date: 2022-09-21

Rev: 0.0.3

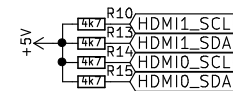
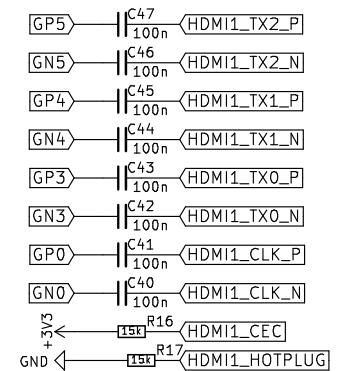
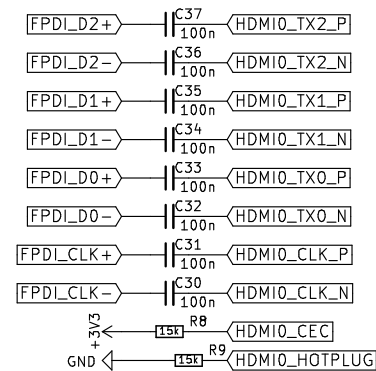
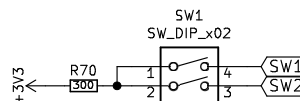
Id: 4/11



BANK1  
SINGLE ENDED - NOT DIFFERENTIAL



nEXTRST



License: CERN-OHL-S v2  
General Purpose Differential Interface

**EMARD**

Sheet: /gpd/

File: gpd.sch

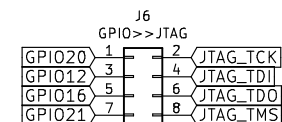
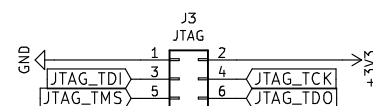
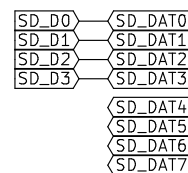
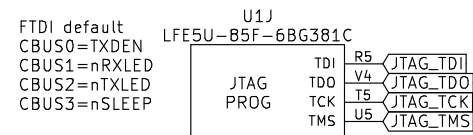
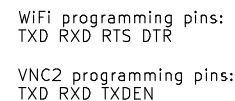
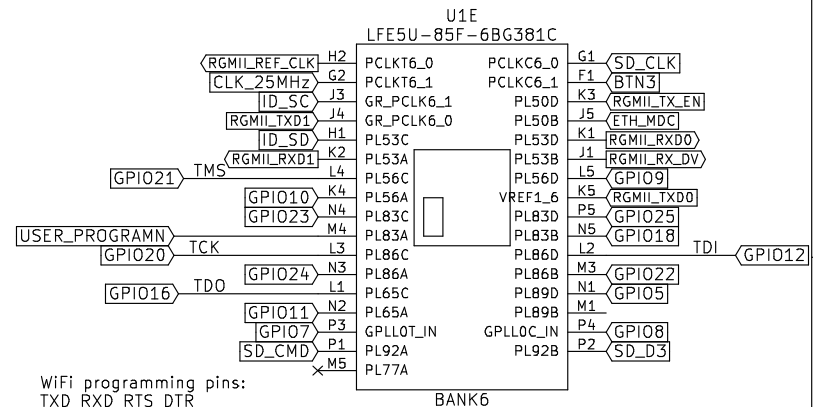
**Title: ULX3S**

Size: A4 Date: 2022-09-21

KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

**Rev: 0.0.3**

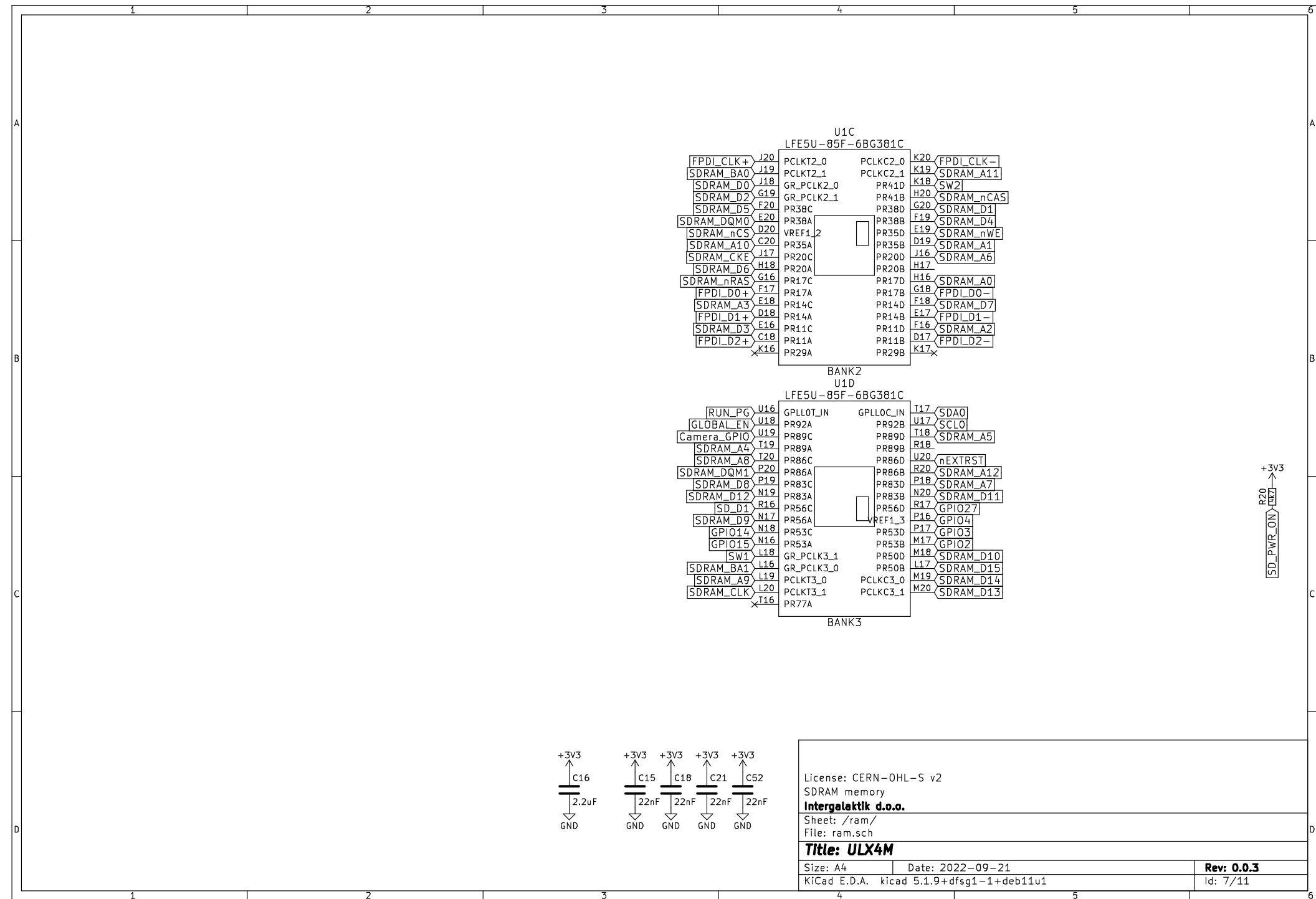
Id: 5/11



EMARD

**Title:** *ULX3S*

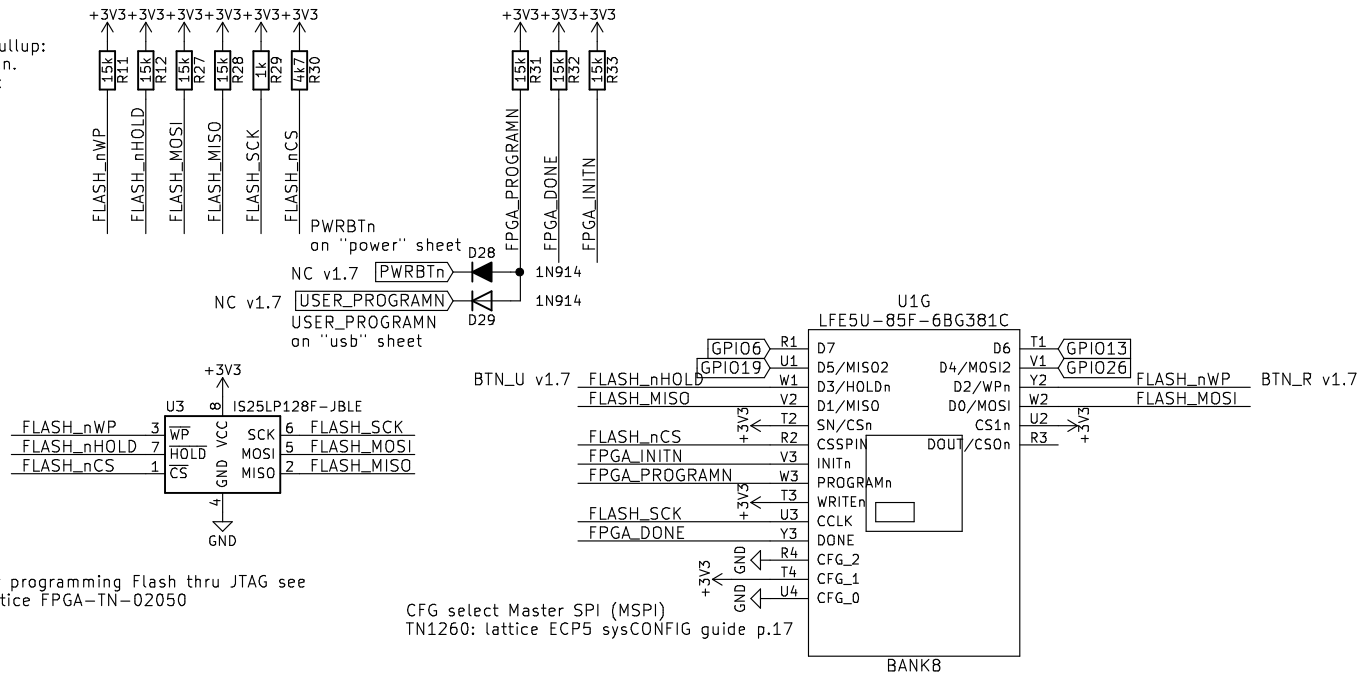
<b>Rev: 0.0.3</b>
Id: 6/11



Deviation from TN1260 in pullup:  
values for BOM simplification.  
Correct values should be 1k  
but 1.1k is used.

pullups for Master SPI (MSPI) required by  
TN1260: lattice ECP5 sysCONFIG guide p.6

pullups to allow entering USER mode  
TN1260: lattice ECP5 sysCONFIG guide p.6, p.8, p.13



For programming Flash thru JTAG see  
Lattice FPGA-TN-02050

CFG select Master SPI (MSPI)  
TN1260: lattice ECP5 sysCONFIG guide p.17

License: CERN-OHL-S v2

SPI flash

EMARD

Sheet: /flash/

File: flash.sch

Title: ULX3S

Size: A4 Date: 2022-09-21

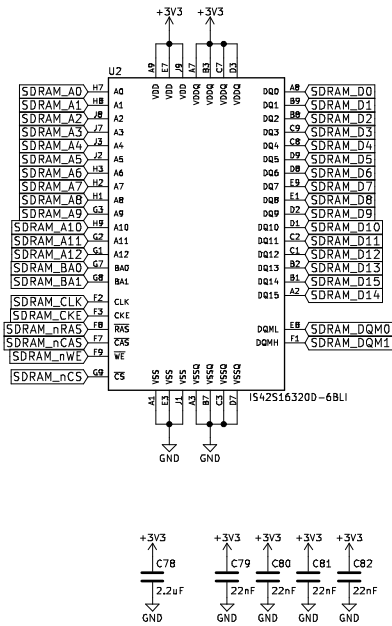
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Rev: 0.0.3

Id: 8/11







Apache License 2.0  
Reference - ecp5-dc-scm

Sheet: /DDR3/  
File: ddr3.sch

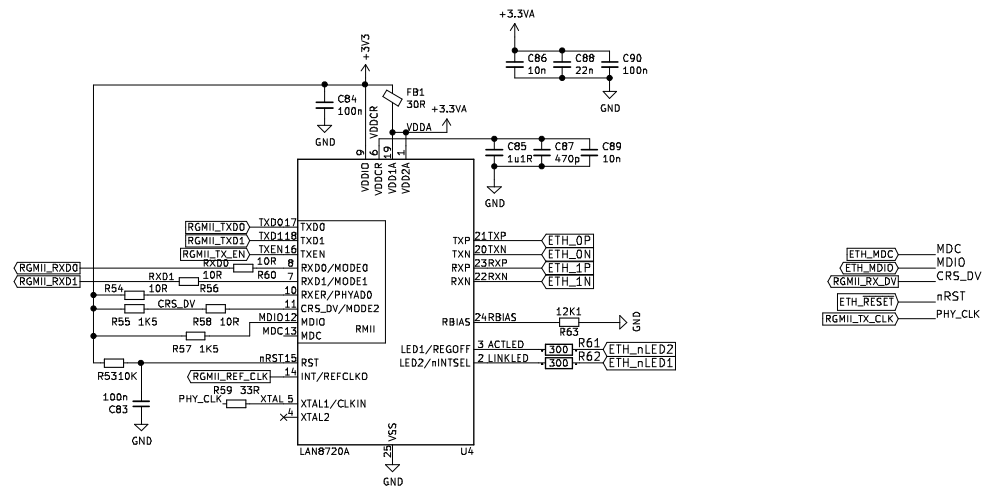
**Title: DDR3**

Size: A3  
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Date: 2022-09-21

Rev: 0.0.3

Id: 10/11



RJ45 connector

License: CERN-OHL-S v2  
Reference - ESP32-Ethgate

Sheet: /ethernet/  
File: ethernet.sch

**Title: Ethernet**

Size: A3  
KiCad E.D.A. kicad 5.1.9+dfsg1-1+deb11u1

Date: 2022-09-21

Rev: 0.0.3

Id: 11/11