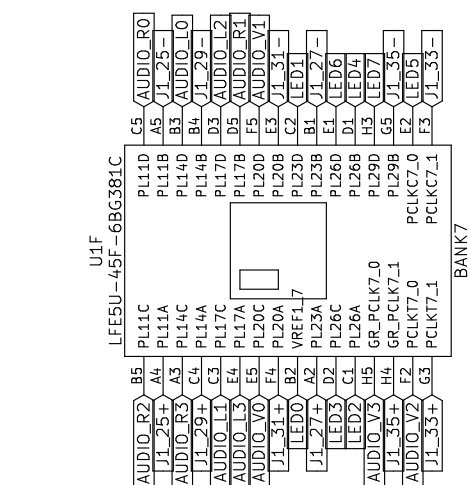
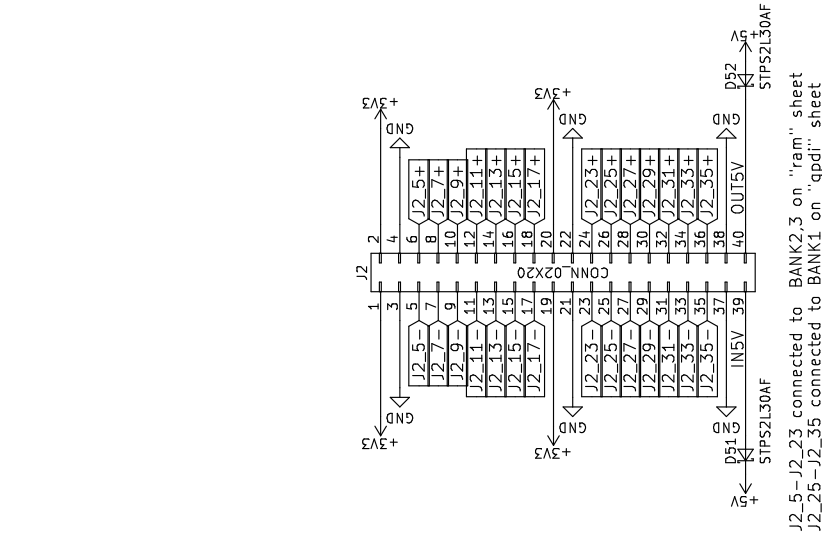


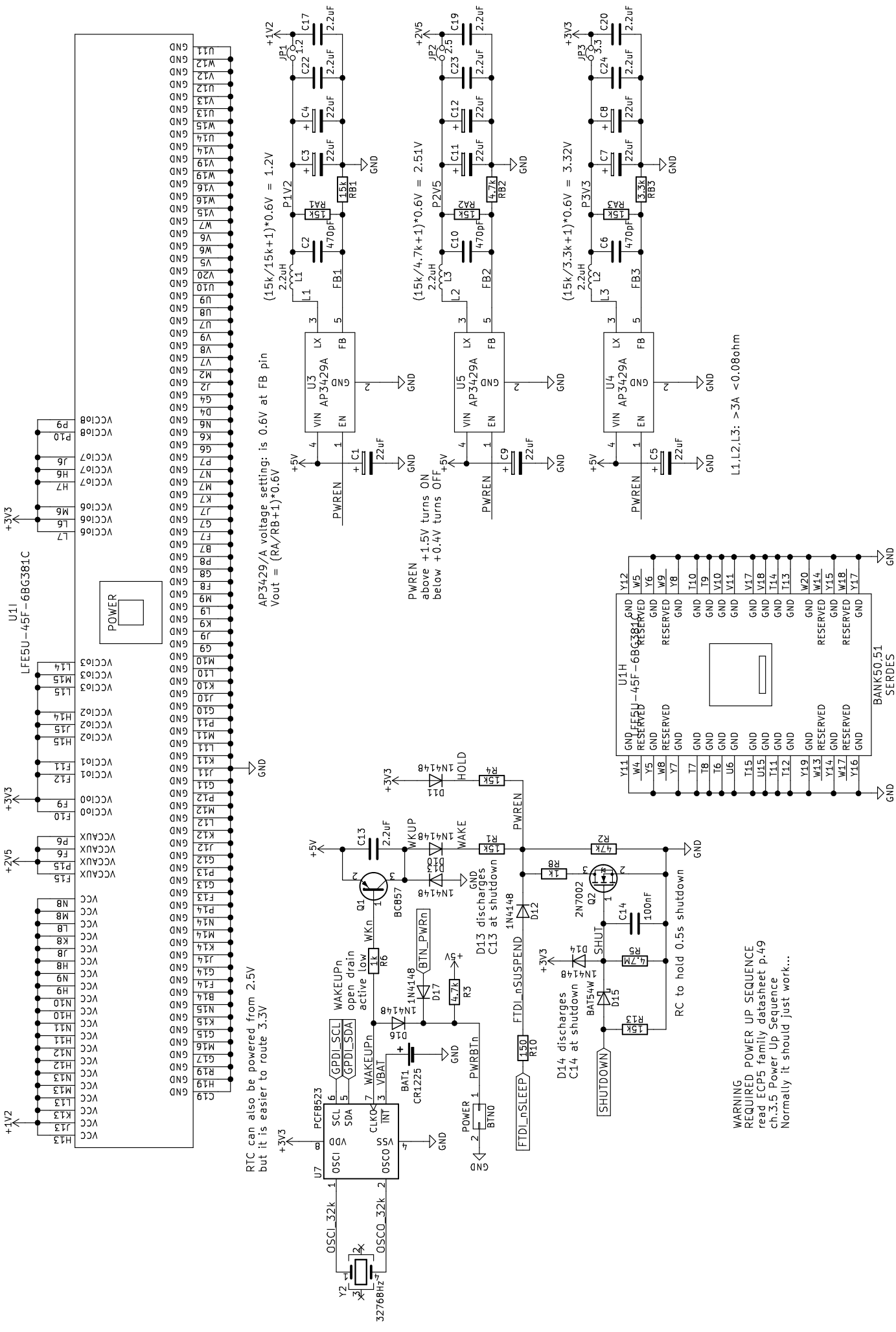
click on mouse pointer arrow on top of right toolbar  
and double-click on sheet to open

Sheet: power	Sheet: usb	Sheet: blinky	Sheet: ram	Sheet: sdcard
File: power.sch	File: usb.sch	File: blinky.sch	File: ram.sch	File: sdcard.sch
Sheet: gpio	Sheet: gpd1	Sheet: analog	Sheet: wifi	Sheet: flash
File: gpio.sch	File: gpd1.sch	File: analog.sch	File: wifi.sch	File: flash.sch



J2\_5-J2\_23 connected to BANK2,3 on "ram" sheet  
 J2\_25-J2\_35 connected to BANK1 on "gpci" sheet

GPIO route only A/B pairs as those are differential, bidirectional  
 don't route C/D pairs to GPIO as those can be differential input only



AP3429/A voltage setting: is 0.6V at FB pin  
 $V_{out} = (RA/RB+1) \cdot 0.6V$

AP3429/A voltage setting: is 0.6V at FB pin  
 $V_{out} = (RA/RB+1) \cdot 0.6V$

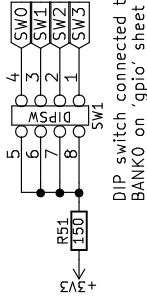
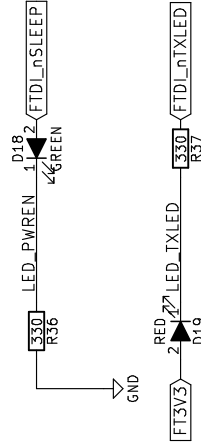
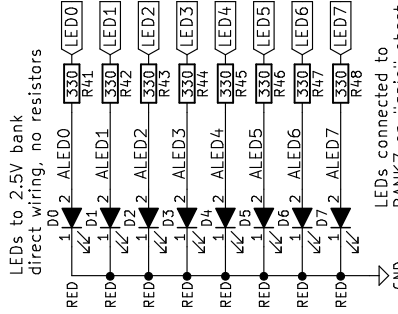
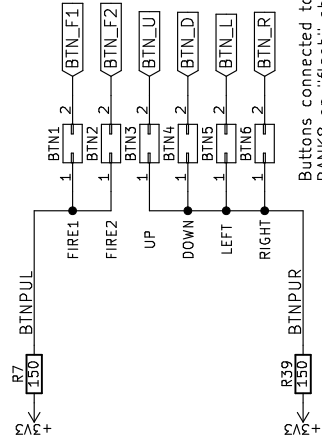
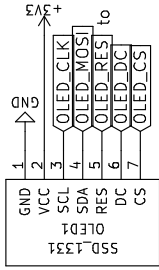
AP3429/A voltage setting: is 0.6V at FB pin  
 $V_{out} = (RA/RB+1) \cdot 0.6V$

RTC can also be powered from 2.5V but it is easier to route 3.3V

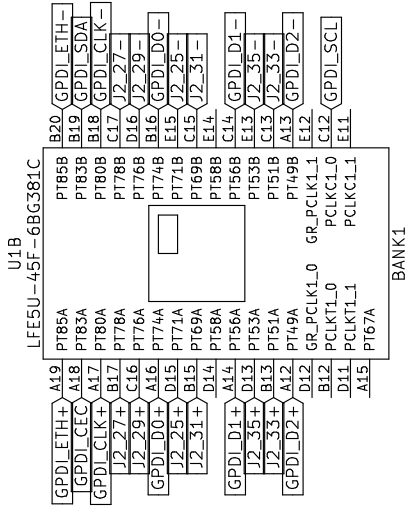
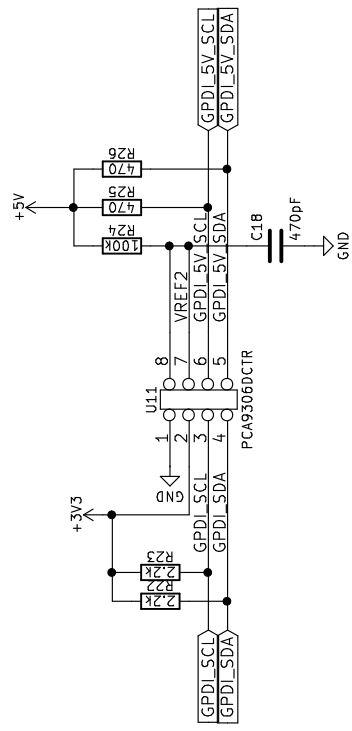
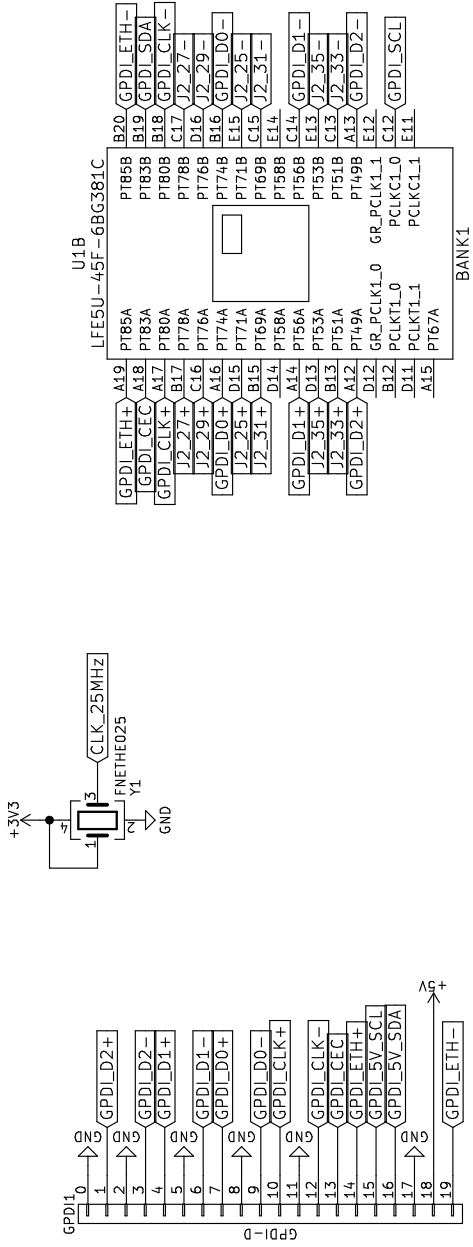
L1.L2.L3: >3A <0.08ohm

WARNING  
 REQUIRED POWER UP SEQUENCE  
 read ECP5 family datasheet p.49  
 ch.3.5 Power Up Sequence  
 Normally it should just work...

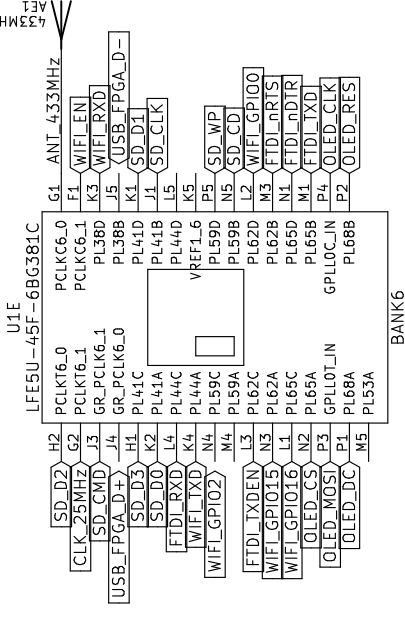
SSD1306 B/W or SSD1331 COLOR  
 compatible OLED 0.96" or 1.3" PCB  
 14x14 units  
 1 unit = 2.54 mm



To fix issues with FT231XS rev A,B,C  
 Short-circuit D18 LED, but then  
 board cannot keep awake by USB.  
 chip rev D works properly  
 See TN140\_FT231X Errata

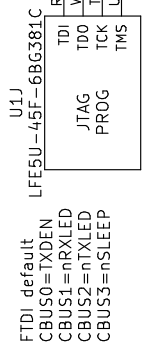


4.33MHz

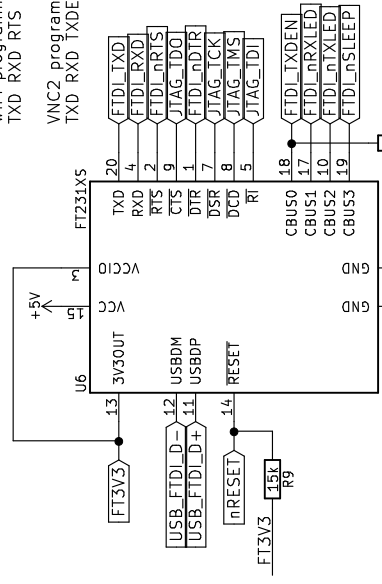
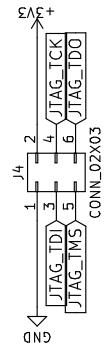


WiFi programming pins:  
 TXD RXD RTS DIR

VNC2 programming pins:  
 TXD RXD TXDEN

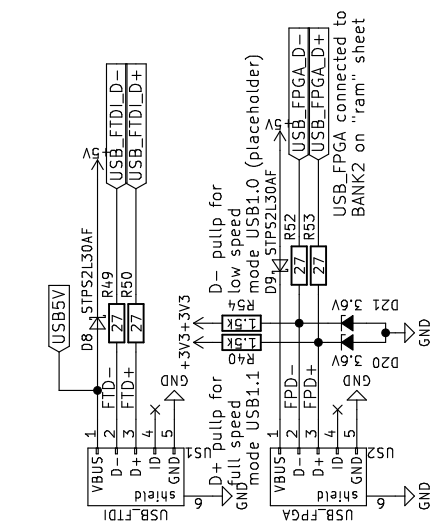


FTDI default  
 CBUS0=TXDEN  
 CBUS1=nRXLED  
 CBUS2=nTXLED  
 CBUS3=nSLEEP

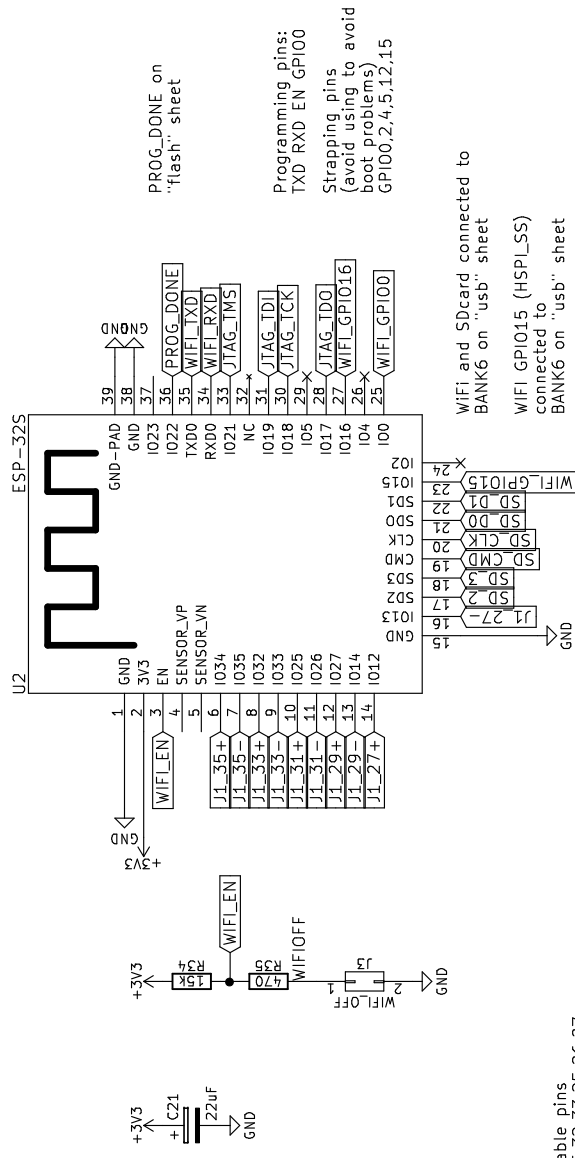


Short circuit R56 for chip rev A,B,C workaround in TN140\_FT231X Errata

warning:  
 U1X35 has different pinout for simpler PCB routing and because FT230X has weak CTS drive capability. (Undocumented, FLEApaga mail from 13-Nov-2015)  
 U1X25 pinout was:  
 TCK = DSR  
 TMS = RI  
 TDI = CTS  
 TDO = DCD



D8,D9: Schottky 2A/30V  
 Low drop V<sub>fmax</sub>=0.375V



PROG\_DONE on "flash" sheet

Programming pins:  
TXD RXD EN GPIO0

Strapping pins  
(avoid using to avoid boot problems)  
GPIO0,2,4,5,12,15

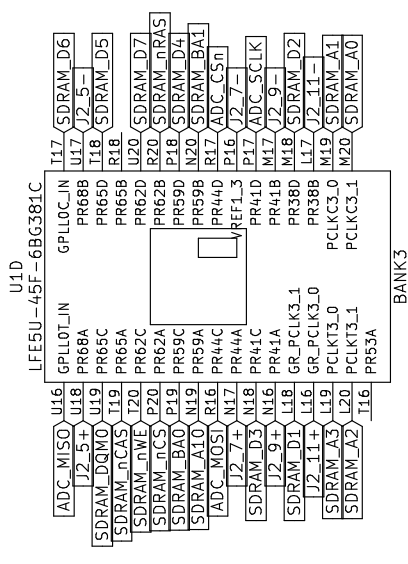
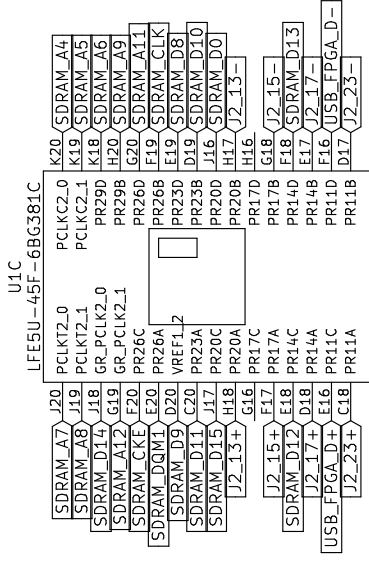
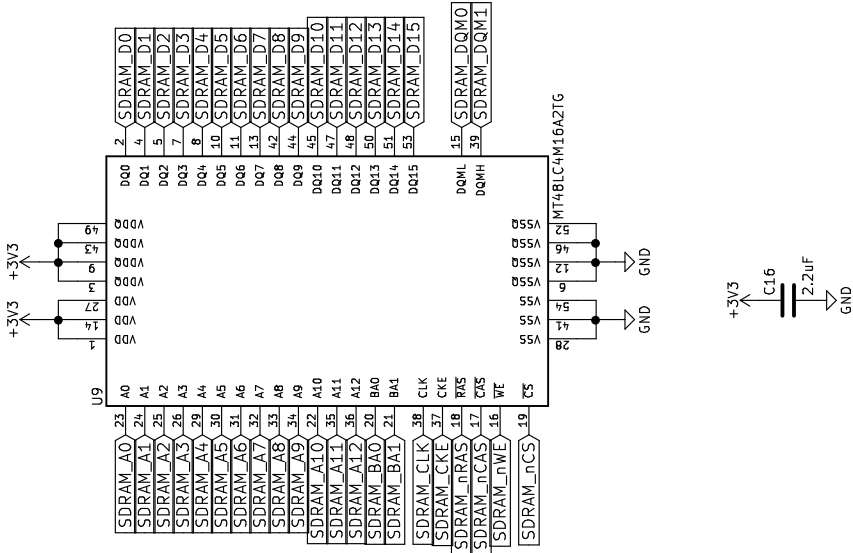
WIFI and SDcard connected to BANK6 on "usb" sheet

WIFI GPIO15 (HSPI\_SS) connected to BANK6 on "usb" sheet

ESP32 ADC capable pins  
GPIO36,39,34,35,32,35,25,26,27,  
GPIO14,12,13,15 - shared with HSPI/JTAG  
Connected to "gpio" sheet

ESP32 VSPi pins  
GPIO5: SS  
GPIO18: SCK  
GPIO19: MISO  
GPIO23: MOSI

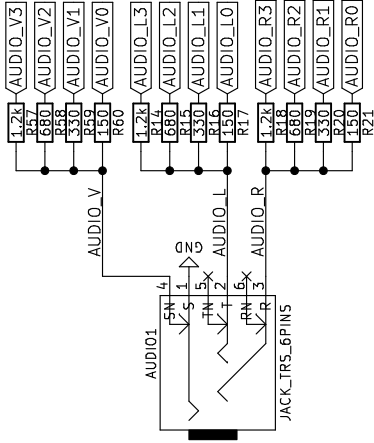
ESP32 JTAG slave interface  
EN: TRST\_N  
GPIO15: TDO  
GPIO12: TDI  
GPIO13: TCK  
GPIO14: TMS



BANK2

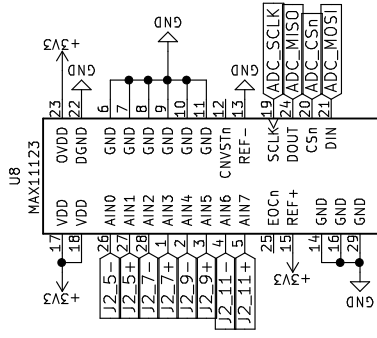
BANK3



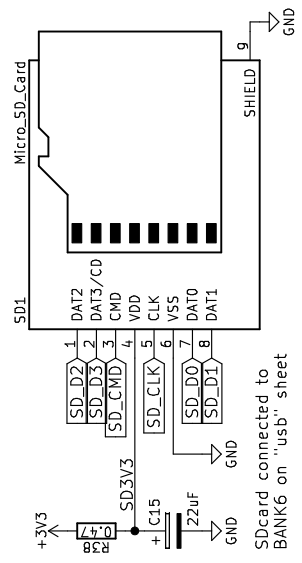


JACK pinout for SJ-43516-SMT-TR  
<http://www.cui.com/product/resource/sj-4351x-smt-series.pdf>  
 pin 1 - sleeve (GND)  
 pin 2 - tip (left channel)  
 pin 3 - ring1 (right channel)  
 pin 4 - ring2 (video)  
 pin 5 - tip switch  
 pin 6 - ring1 switch

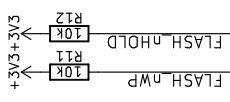
Audio connected to  
 BANK7 on "gpio" sheet



ADC SPI connected to  
 BANK3 of "ram" sheet



minimum pins for compatible mode  
SD\_CLK, SD\_CMD, SD\_D0, SD\_D3



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

