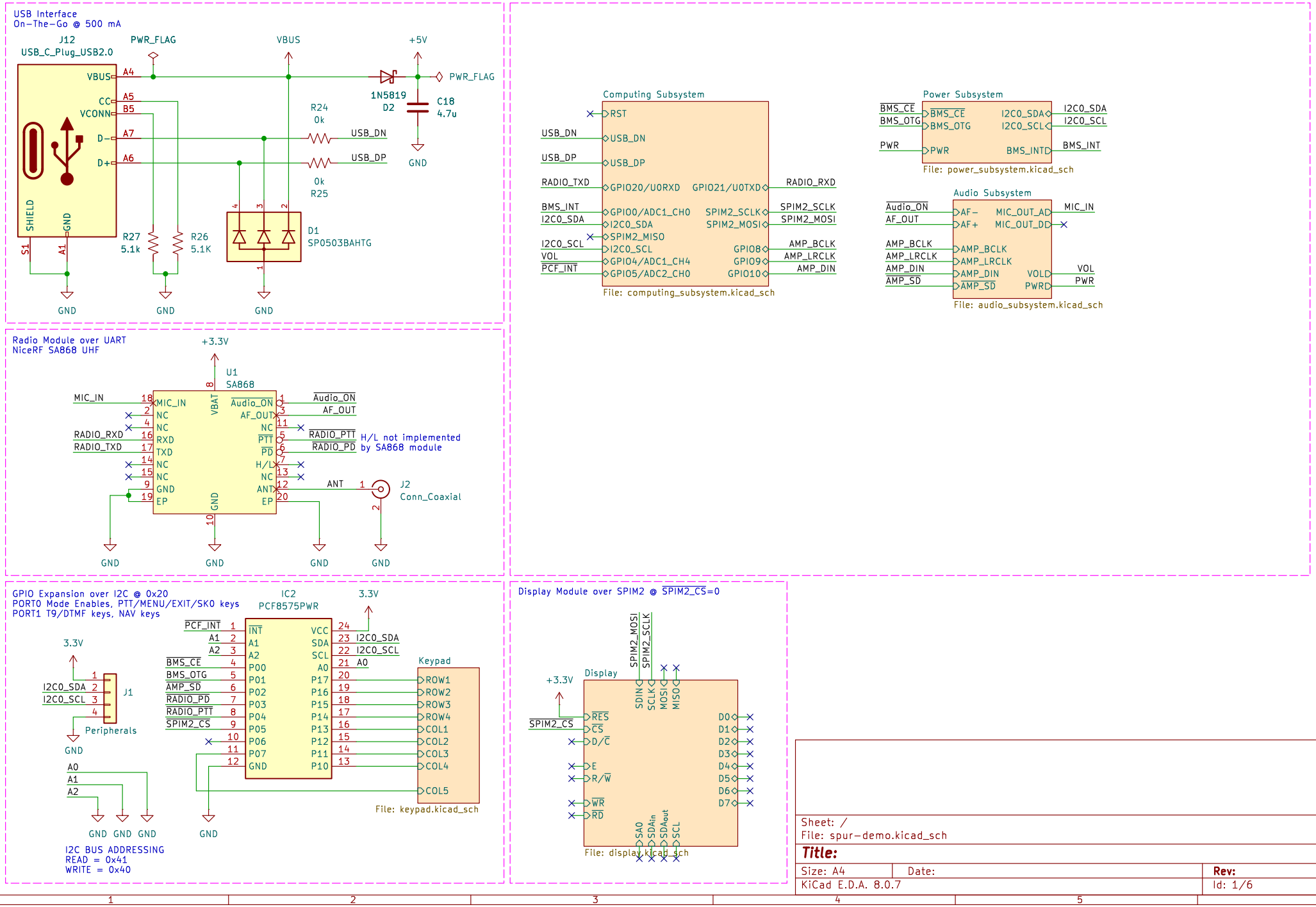
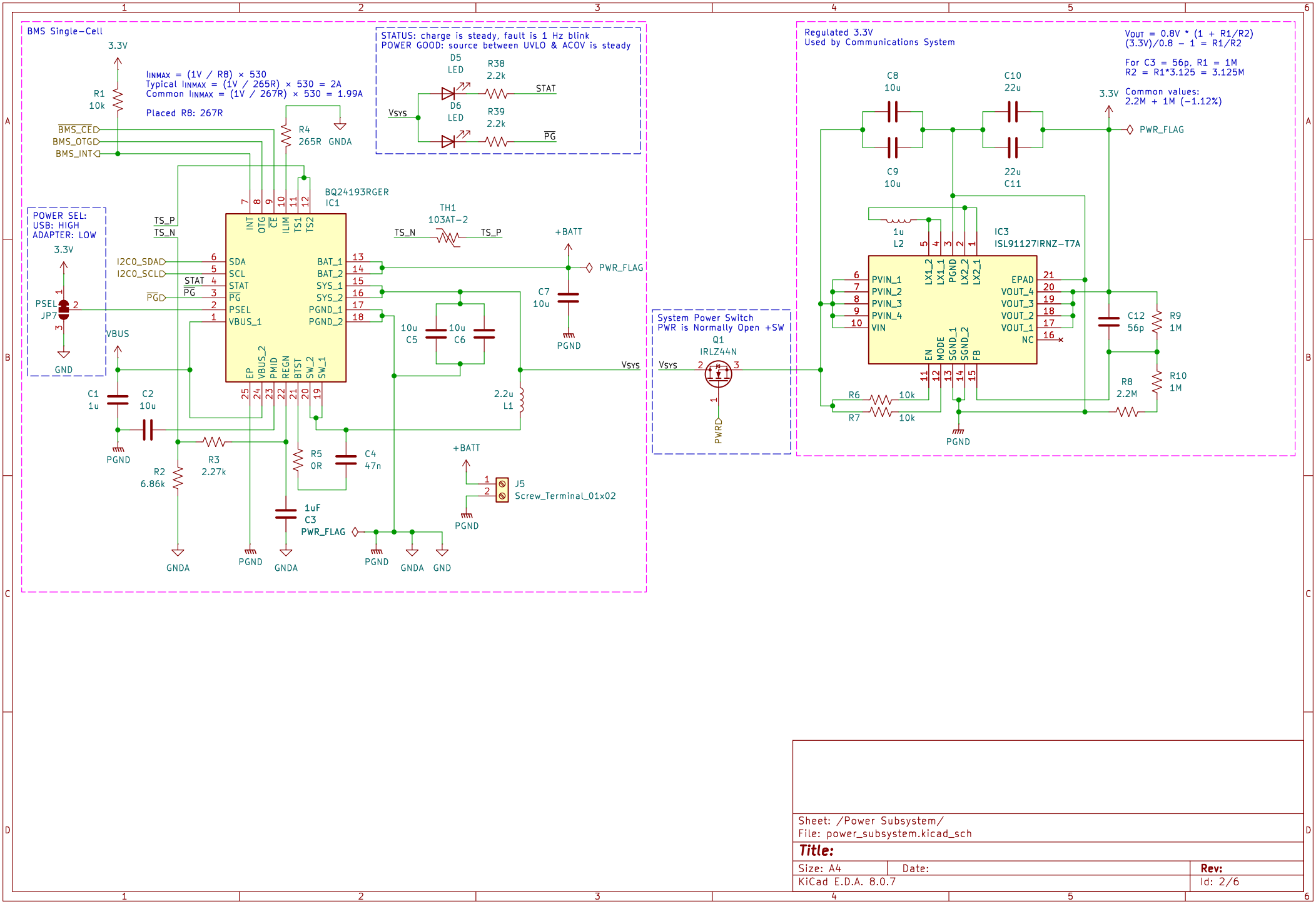
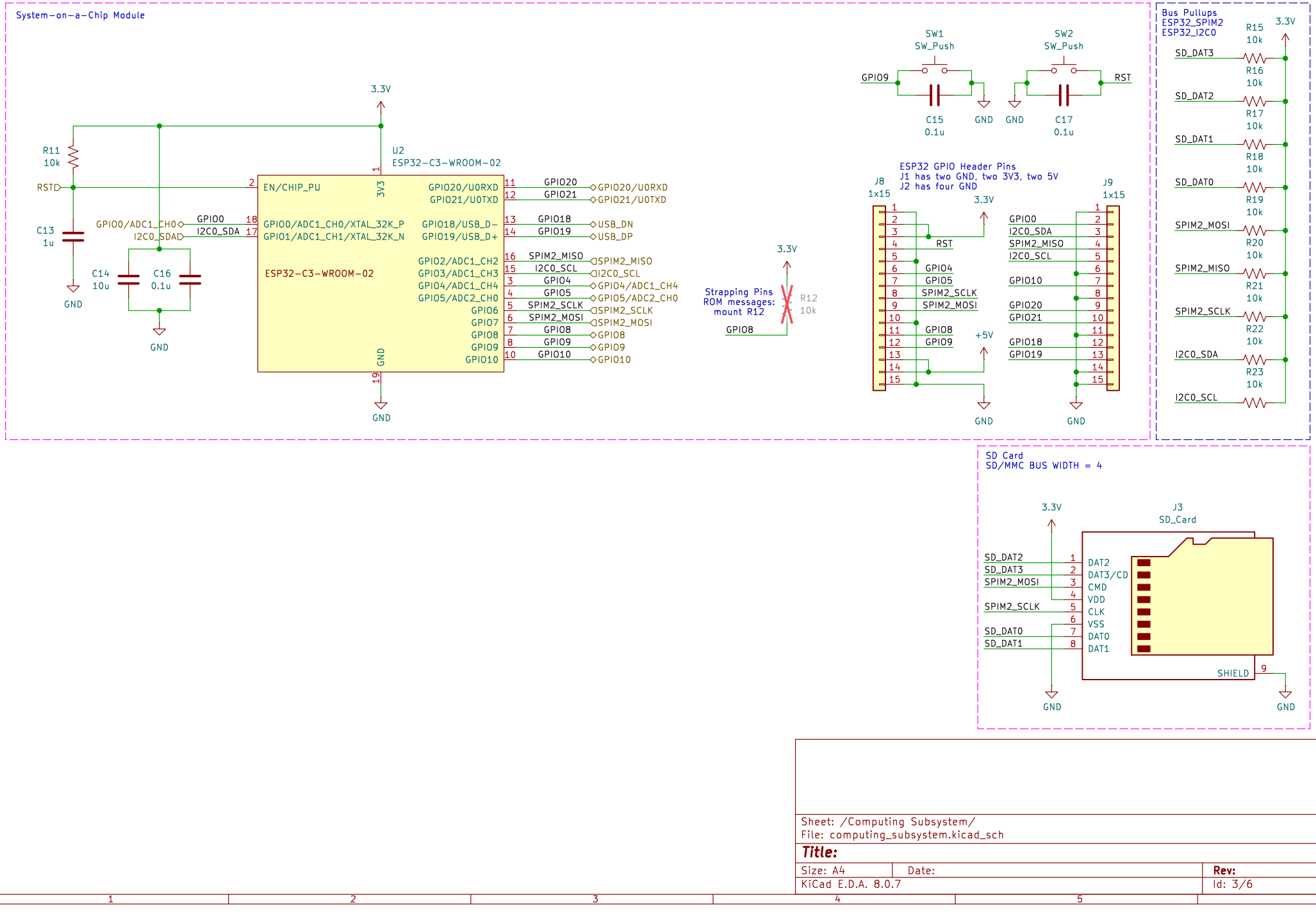

USB Interface
On-The-Go @ 500 mA
J12
USB_C_Plug_USB2.0
PWR_FLAG
VBUS
+5V
1N5819
D2
C18
4.7u
R24
0k
R25
0k
USB_DN
USB_DP
R27
5.1k
R26
5.1K
D1
SP0503BAHTG
SHIELD
GND
Computing Subsystem
RST
USB_DN
USB_DP
RADIO_TXD
GPIO20/U0RXD
GPIO21/U0TXD
RADIO_RXD
BMS_INT
I2C0_SDA
I2C0_SCL
VOL
PCF_INT
GPIO0/ADC1_CH0
I2C0_SDA
SPIM2_MISO
I2C0_SCL
GPIO4/ADC1_CH4
GPIO5/ADC2_CH0
SPIM2_SCLK
SPIM2_MOSI
AMP_BCLK
AMP_LRCLK
AMP_DIN
GPIO8
GPIO9
GPIO10
File: computing_subsystem.kicad_sch
Power Subsystem
BMS_CE
BMS_OTG
PWR
I2C0_SDA
I2C0_SCL
BMS_INT
File: power_subsystem.kicad_sch
Audio Subsystem
Audio_ON
AF_OUT
AMP_BCLK
AMP_LRCLK
AMP_DIN
AMP_SD
AF-
AF+
MIC_OUT_AD
MIC_OUT_DD
VOLD
PWRD
MIC_IN
VOL
PWR
File: audio_subsystem.kicad_sch
Radio Module over UART
NiceRF SA868 UHF
+3.3V
U1
SA868
MIC_IN
RADIO_RXD
RADIO_TXD
VBAT
Audio_ON
AF_OUT
RADIO_PTT
RADIO_PD
H/L not implemented
by SA868 module
ANT
J2
Conn_Coaxial
GND
GPIO Expansion over I2C @ 0x20
PORT0 Mode Enables, PTT/MENU/EXIT/SK0 keys
PORT1 T9/DTMF keys, NAV keys
IC2
PCF8575PWR
3.3V
PCF_INT
A1
A2
BMS_CE
BMS_OTG
AMP_SD
RADIO_PD
RADIO_PTT
SPIM2_CS
INT
P00
P01
P02
P03
P04
P05
P06
P07
VCC
SDA
SCL
A0
P17
P16
P15
P14
P13
P12
P11
P10
I2C0_SDA
I2C0_SCL
Keypad
ROW1
ROW2
ROW3
ROW4
COL1
COL2
COL3
COL4
COL5
J1
Peripherals
I2C BUS ADDRESSING
READ = 0x41
WRITE = 0x40
File: keypad.kicad_sch
Display Module over SPIM2 @ SPIM2_CS=0
Display
SPIM2_MOSI
SPIM2_SCLK
SPIM2_CS
RES
CS
D/C
E
R/W
WR
RD
SDIN
SCLK
MOSI
MISO
D0
D1
D2
D3
D4
D5
D6
D7
SA0
SDAin
SDAout
SCL
File: display.kicad_sch
Sheet: /
File: spur-demo.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 8.0.7
Id: 1/6



Sheet: /Power Subsystem/		
File: power_subsystem.kicad_sch		
Title:		
Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.7		Id: 2/6

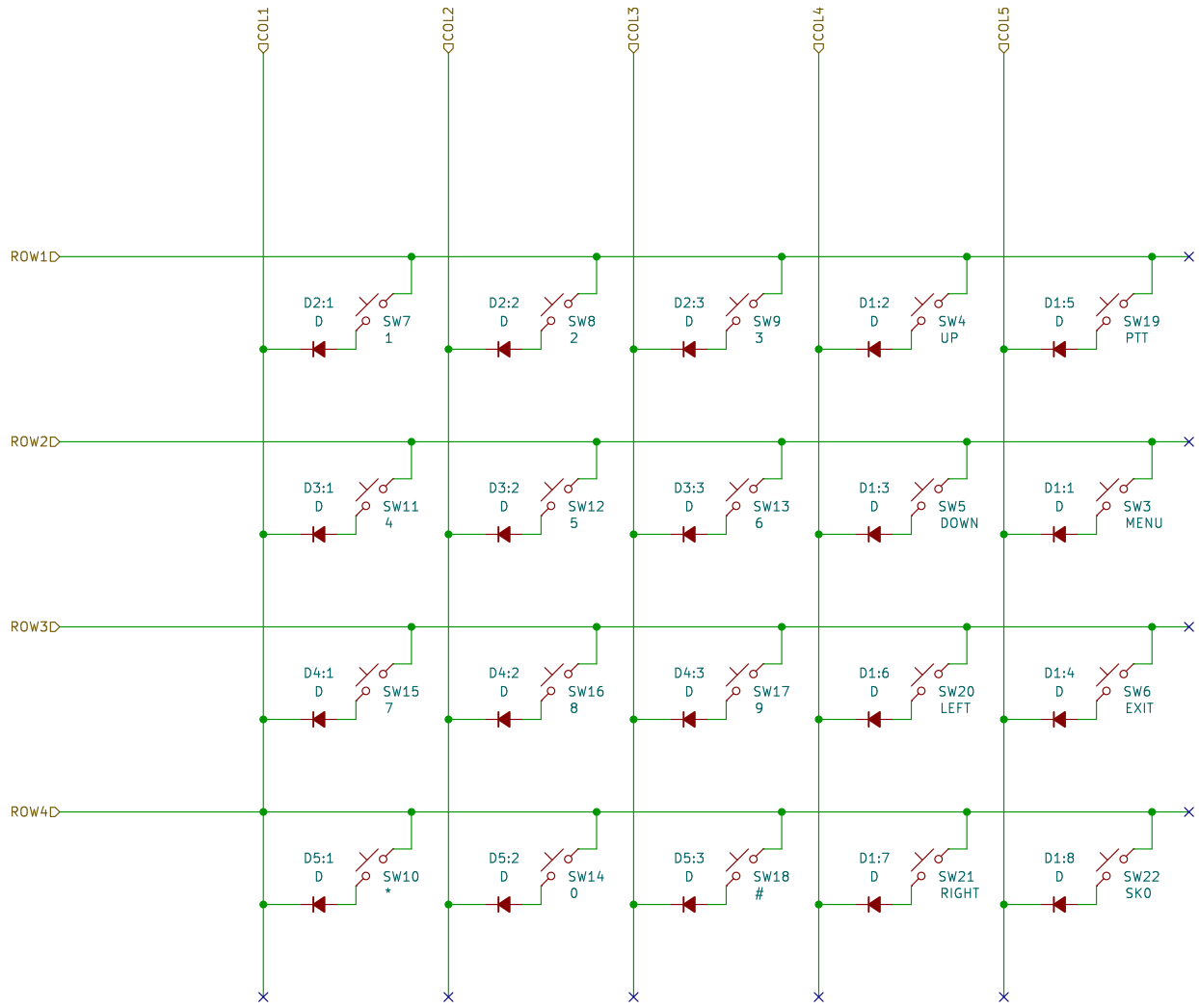


Sheet: /Computing Subsystem/
File: computing_subsystem.kicad_sch

Title:

Size: A4 | Date: | **Rev:**

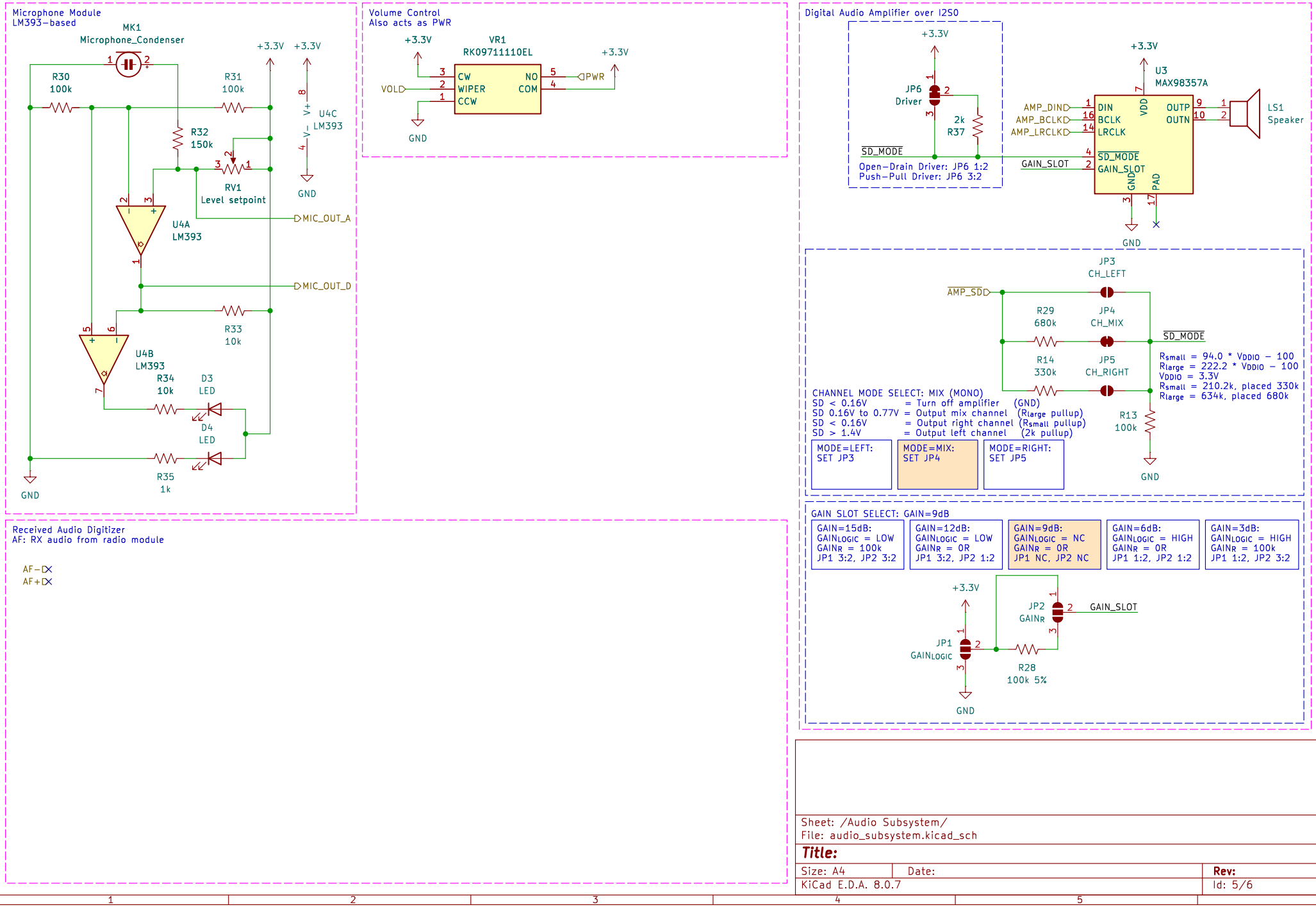
KiCad E.D.A. 8.0.7 | Id: 3/6

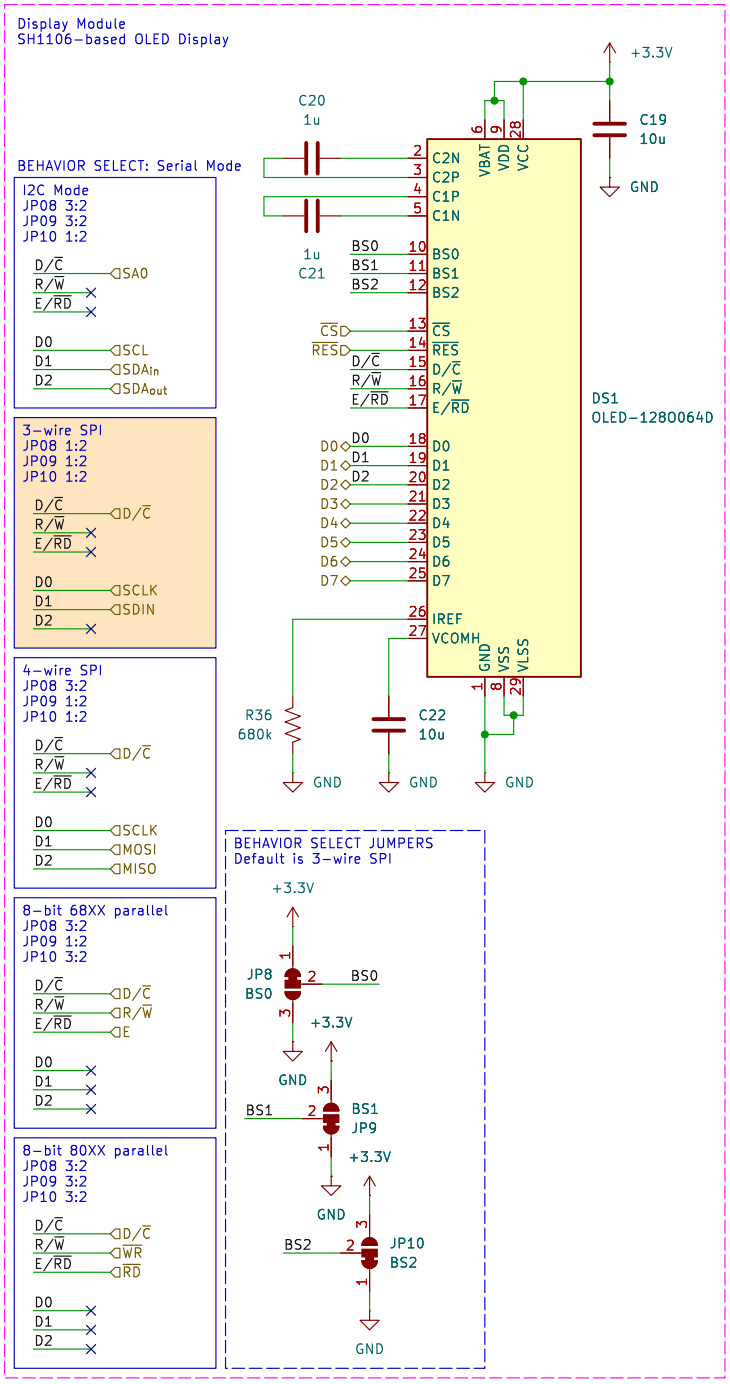


Sheet: /Keypad/
File: keypad.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.7		Id: 4/6


Microphone Module
LM393-based
MK1
Microphone_Condenser
+3.3V
+3.3V
R30
100k
R31
100k
R32
150k
RV1
Level setpoint
U4C
LM393
GND
U4A
LM393
MIC_OUT_A
MIC_OUT_D
R33
10k
U4B
LM393
R34
10k
D3
LED
D4
LED
R35
1k
GND
Volume Control
Also acts as PWR
+3.3V
VR1
RK09711110EL
+3.3V
VOL
CW
WIPER
CCW
NO
COM
PWR
GND
Digital Audio Amplifier over I2S0
+3.3V
JP6
Driver
2k
R37
SD_MODE
Open-Drain Driver: JP6 1:2
Push-Pull Driver: JP6 3:2
+3.3V
U3
MAX98357A
AMP_DIN
AMP_BCLK
AMP_LRCLK
DIN
BCLK
LRCLK
VDD
OUTP
OUTN
LS1
Speaker
SD_MODE
GAIN_SLOT
GND
PAD
GND
JP3
CH_LEFT
AMP_SD
R29
680k
JP4
CH_MIX
SD_MODE
R14
330k
JP5
CH_RIGHT
Rsmall = 94.0 * VDDIO - 100
Rlarge = 222.2 * VDDIO - 100
VDDIO = 3.3V
Rsmall = 210.2k, placed 330k
Rlarge = 634k, placed 680k
CHANNEL MODE SELECT: MIX (MONO)
SD < 0.16V = Turn off amplifier (GND)
SD 0.16V to 0.77V = Output mix channel (Rlarge pullup)
SD < 0.16V = Output right channel (Rsmall pullup)
SD > 1.4V = Output left channel (2k pullup)
R13
100k
GND
MODE=LEFT:
SET JP3
MODE=MIX:
SET JP4
MODE=RIGHT:
SET JP5
GAIN SLOT SELECT: GAIN=9dB
GAIN=15dB:
GAINLOGIC = LOW
GAINR = 100k
JP1 3:2, JP2 3:2
GAIN=12dB:
GAINLOGIC = LOW
GAINR = 0R
JP1 3:2, JP2 1:2
GAIN=9dB:
GAINLOGIC = NC
GAINR = 0R
JP1 NC, JP2 NC
GAIN=6dB:
GAINLOGIC = HIGH
GAINR = 0R
JP1 1:2, JP2 1:2
GAIN=3dB:
GAINLOGIC = HIGH
GAINR = 100k
JP1 1:2, JP2 3:2
+3.3V
JP2
GAINR
GAIN_SLOT
JP1
GAINLOGIC
R28
100k 5%
GND
Received Audio Digitizer
AF: RX audio from radio module
AF-
AF+
Sheet: /Audio Subsystem/
File: audio_subsystem.kicad_sch
Title:
Size: A4
Date:
Rev:
KiCad E.D.A. 8.0.7
Id: 5/6



Sheet: /Display/
File: display.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.7		Id: 6/6