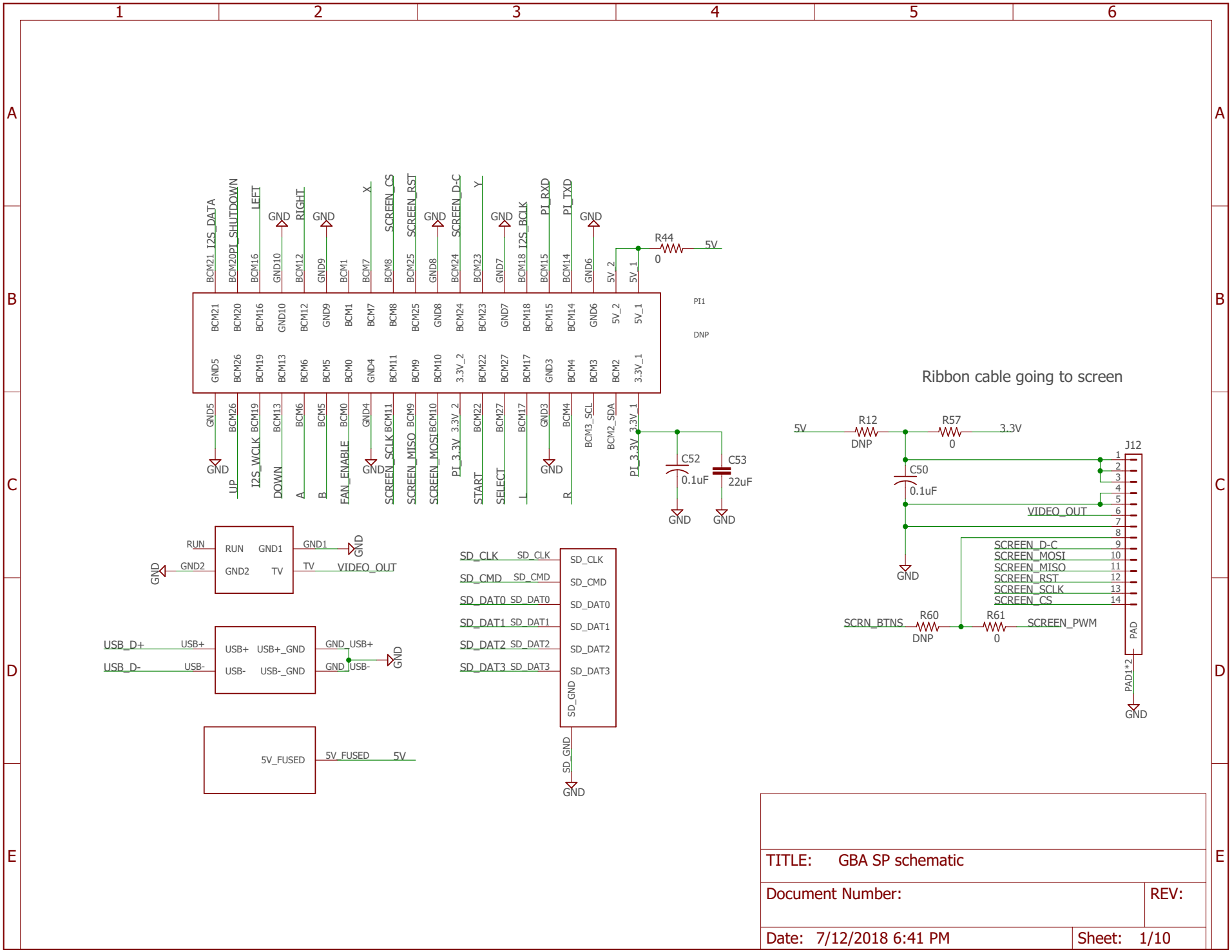
1
2
3
4
5
6
A
B
C
D
E
BCM21 I2S_DATA
BCM20 PI_SHUTDOWN
BCM16 LEFT
GND10
BCM12 RIGHT
GND9
BCM1
BCM7 X
BCM8 SCREEN_CS
BCM25 SCREEN_RST
GND8
BCM24 SCREEN_D-C
BCM23 Y
GND7
BCM18 I2S_BCLK
BCM15 PI_RXD
BCM14 PI_TXD
GND6
5V_2
5V_1
R44
0
5V
PI1
DNP
GND5
BCM26
BCM19
BCM13
BCM6
BCM5
BCM0
GND4
BCM11
BCM9
BCM10
3.3V_2
BCM22
BCM27
BCM17
GND3
BCM4
BCM3
BCM2
3.3V_1
UP
I2S_WCLK
DOWN
A
B
FAN_ENABLE
SCREEN_SCLK
SCREEN_MISO
SCREEN_MOSI
PI_3.3V
START
SELECT
L
R
BCM3_SCL
BCM2_SDA
C52
0.1uF
C53
22uF
RUN
GND1
GND2
TV
VIDEO_OUT
USB_D+
USB_D-
USB+
USB-
USB+_GND
USB-_GND
GND_USB+
GND_USB-
5V_FUSED
SD_CLK
SD_CMD
SD_DAT0
SD_DAT1
SD_DAT2
SD_DAT3
SD_GND
Ribbon cable going to screen
R12
DNP
R57
0
3.3V
C50
0.1uF
J12
SCREEN_D-C
SCREEN_MOSI
SCREEN_MISO
SCREEN_RST
SCREEN_SCLK
SCREEN_CS
PAD
PAD1*2
SCRN_BTNS
R60
DNP
R61
0
SCREEN_PWM
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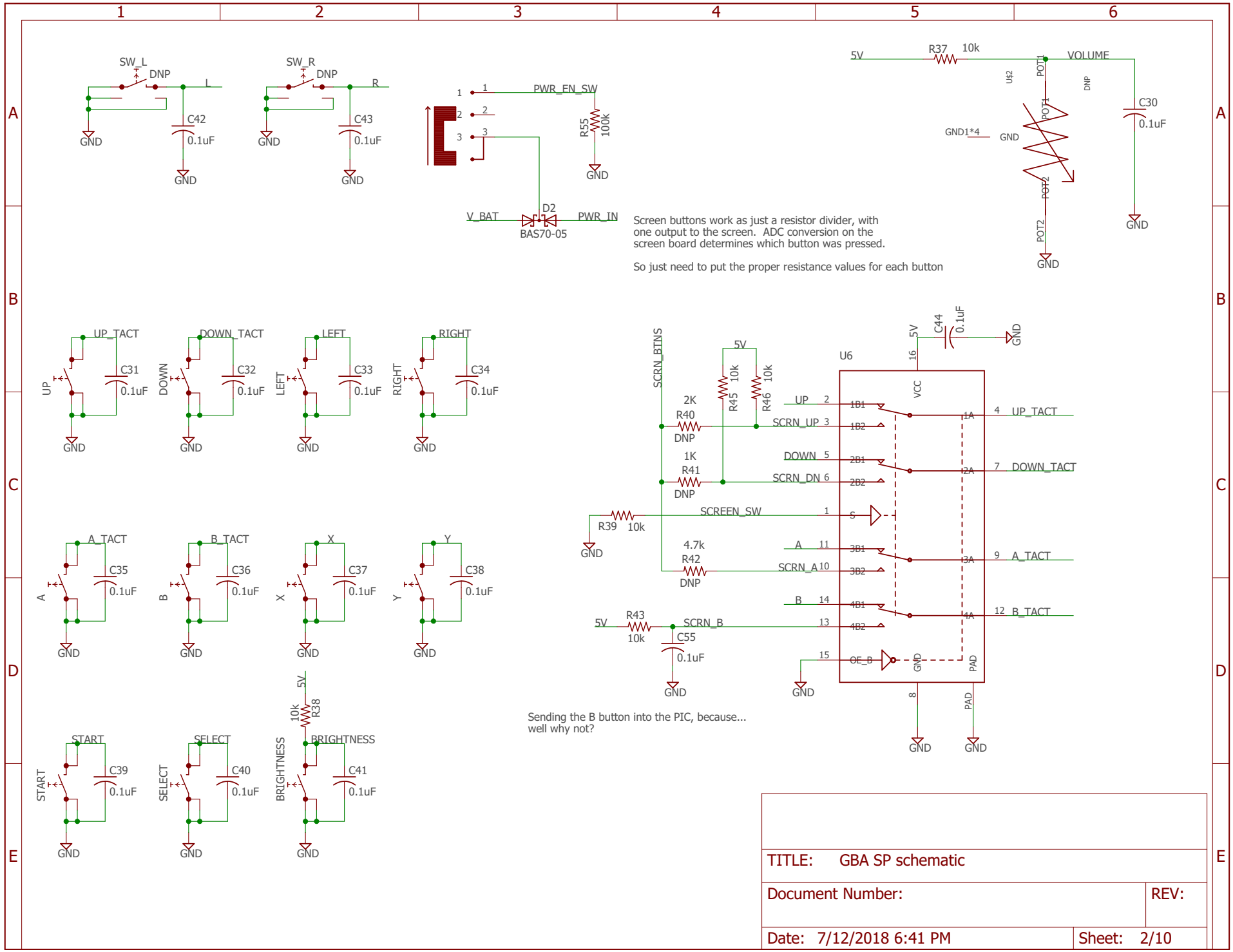
SW_L
DNP
L
C42
0.1uF
GND
SW_R
DNP
R
C43
0.1uF
GND
1
2
3
PWR_EN_SW
R55
100k
GND
V_BAT
D2
BAS70-05
PWR_IN
Screen buttons work as just a resistor divider, with one output to the screen. ADC conversion on the screen board determines which button was pressed.
So just need to put the proper resistance values for each button
5V
R37
10k
VOLUME
U$2
POT1
DNP
POT1
C30
0.1uF
GND1*4
GND
POT2
POT2
GND
UP_TACT
C31
0.1uF
UP
GND
DOWN_TACT
C32
0.1uF
DOWN
GND
LEFT
C33
0.1uF
LEFT
GND
RIGHT
C34
0.1uF
RIGHT
GND
A_TACT
C35
0.1uF
A
GND
B_TACT
C36
0.1uF
B
GND
X
C37
0.1uF
X
GND
Y
C38
0.1uF
Y
GND
START
C39
0.1uF
START
GND
SELECT
C40
0.1uF
SELECT
GND
5V
10k
R38
BRIGHTNESS
C41
0.1uF
BRIGHTNESS
GND
SCRN_BTNS
5V
10k
R45
10k
R46
U6
16
5V
C44
0.1uF
GND
VCC
2K
R40
DNP
UP
2
1B1
1A
4
UP_TACT
SCRN_UP
3
1B2
1K
R41
DNP
DOWN
5
2B1
2A
7
DOWN_TACT
SCRN_DN
6
2B2
SCREEN_SW
1
S
R39
10k
GND
4.7k
R42
DNP
A
11
3B1
3A
9
A_TACT
SCRN_A
10
3B2
B
14
4B1
4A
12
B_TACT
5V
R43
10k
SCRN_B
13
4B2
C55
0.1uF
GND
15
OE_B
GND
PAD
8
PAD
GND
GND
Sending the B button into the PIC, because... well why not?
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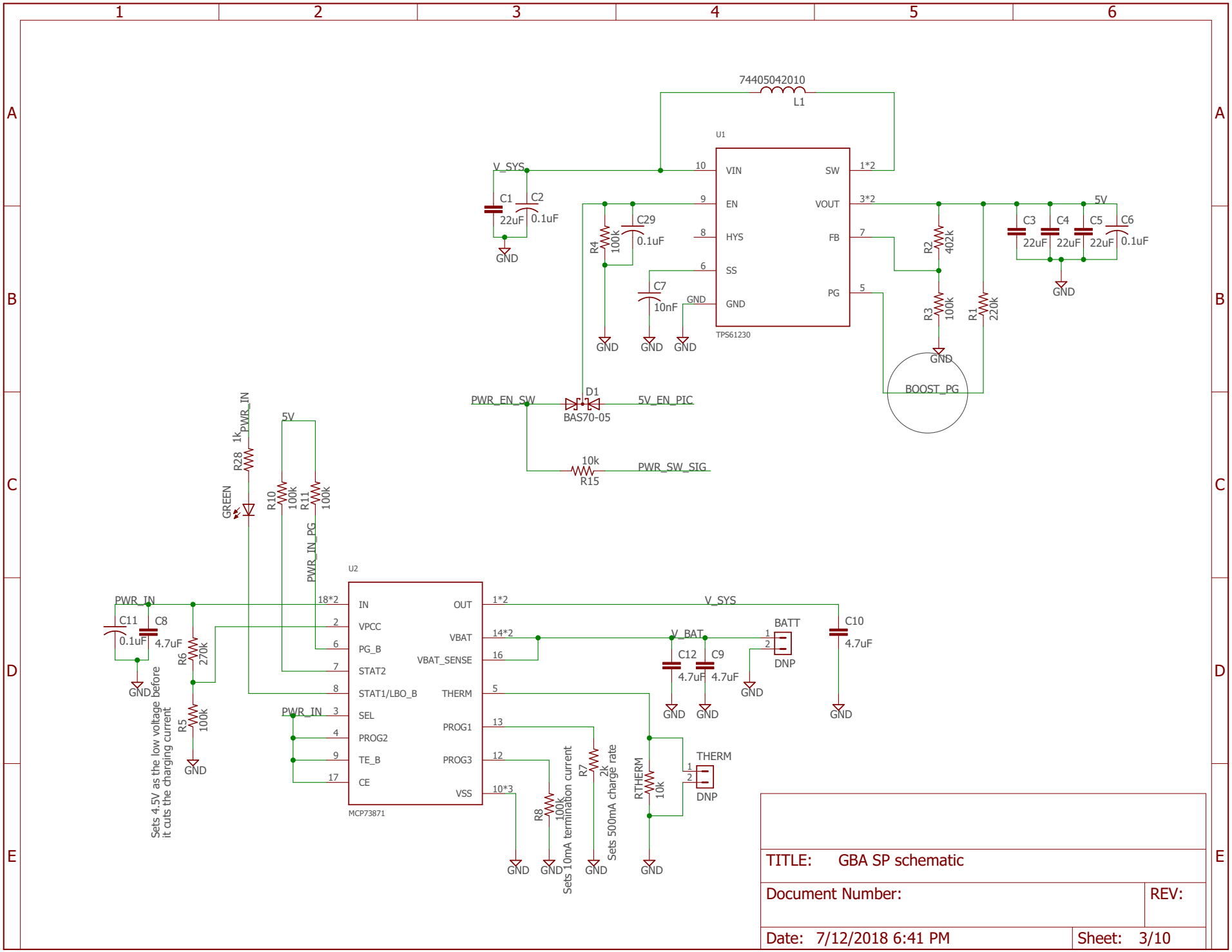
74405042010
L1
U1
VIN
SW
EN
VOUT
HYS
FB
SS
PG
GND
TPS61230
V_SYS
C1
22uF
C2
0.1uF
C29
0.1uF
R4
100k
C7
10nF
R2
402k
R3
100k
R1
220k
C3
22uF
C4
22uF
C5
22uF
C6
0.1uF
5V
BOOST_PG
PWR_EN_SW
D1
BAS70-05
5V_EN_PIC
10k
R15
PWR_SW_SIG
R28
1k
PWR_IN
GREEN
R10
100k
R11
100k
PWR_IN_PG
U2
IN
OUT
VPCC
VBAT
PG_B
VBAT_SENSE
STAT2
STAT1/LBO_B
THERM
SEL
PROG1
PROG2
PROG3
TE_B
VSS
CE
MCP73871
C11
0.1uF
C8
4.7uF
R6
270k
R5
100k
Sets 4.5V as the low voltage before it cuts the charging current
R8
100k
Sets 10mA termination current
R7
2k
Sets 500mA charge rate
RTHERM
10k
THERM
DNP
V_BAT
BATT
DNP
C12
4.7uF
C9
4.7uF
C10
4.7uF
TITLE: GBA SP schematic
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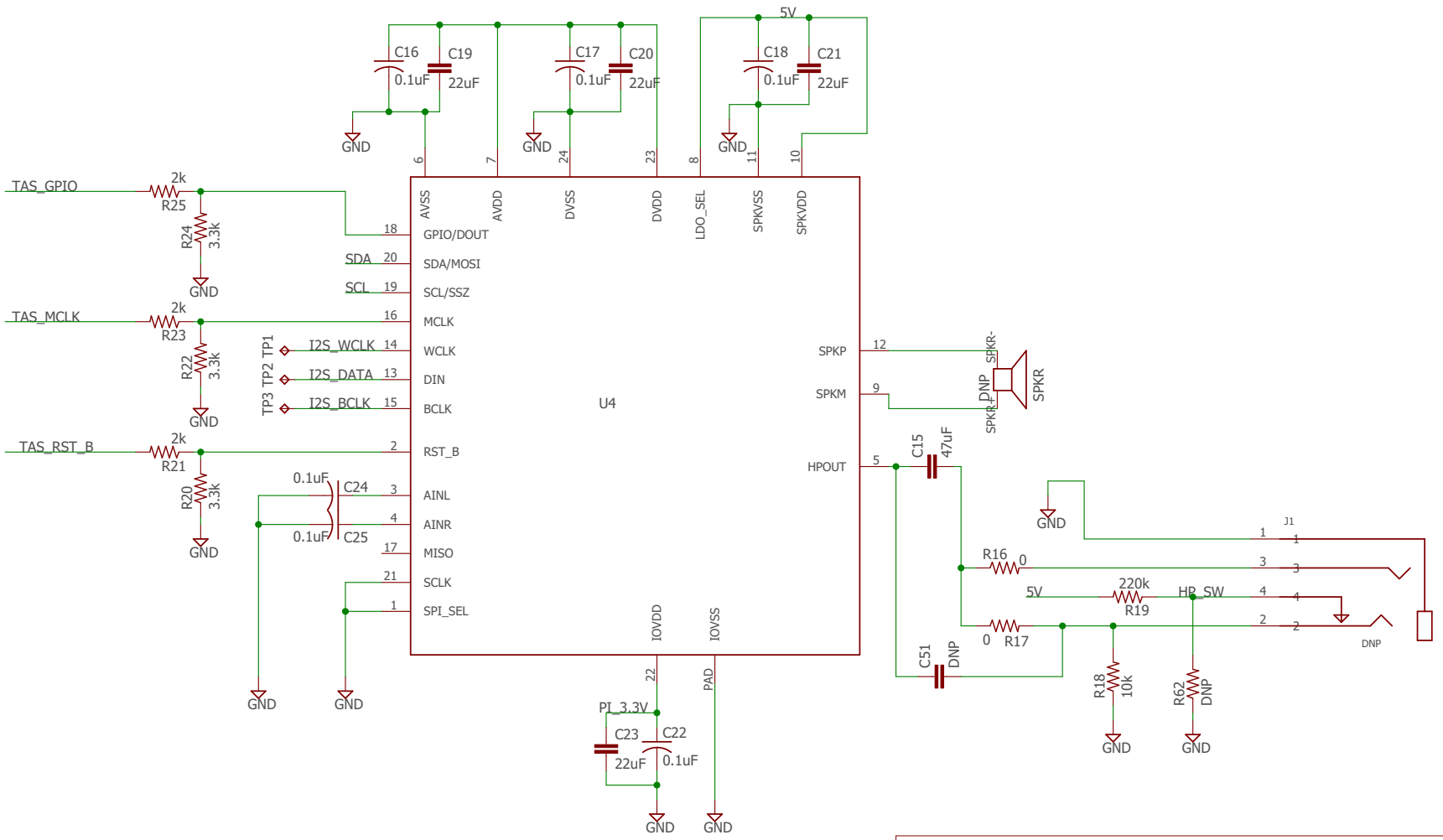
# TAS2521: I2S to speaker and headphone

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| TITLE: GBA SP schematic | | |
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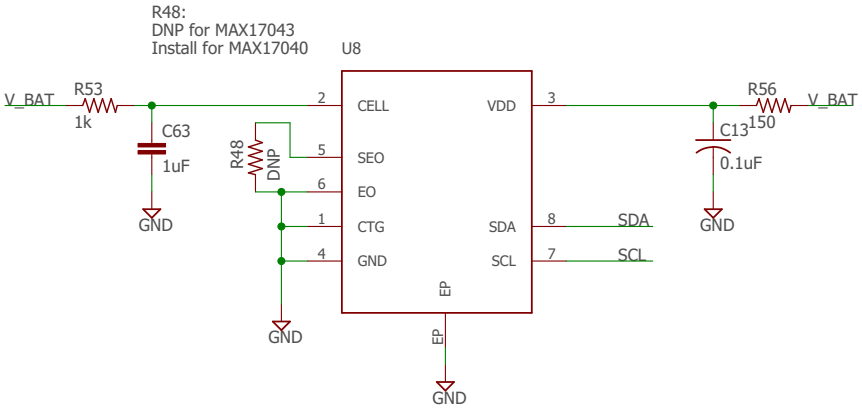


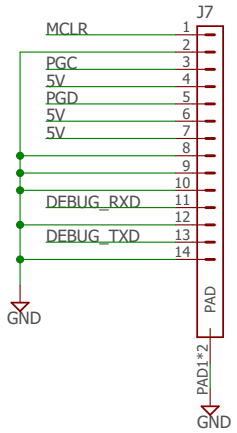


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| TITLE: GBA SP schematic | | |
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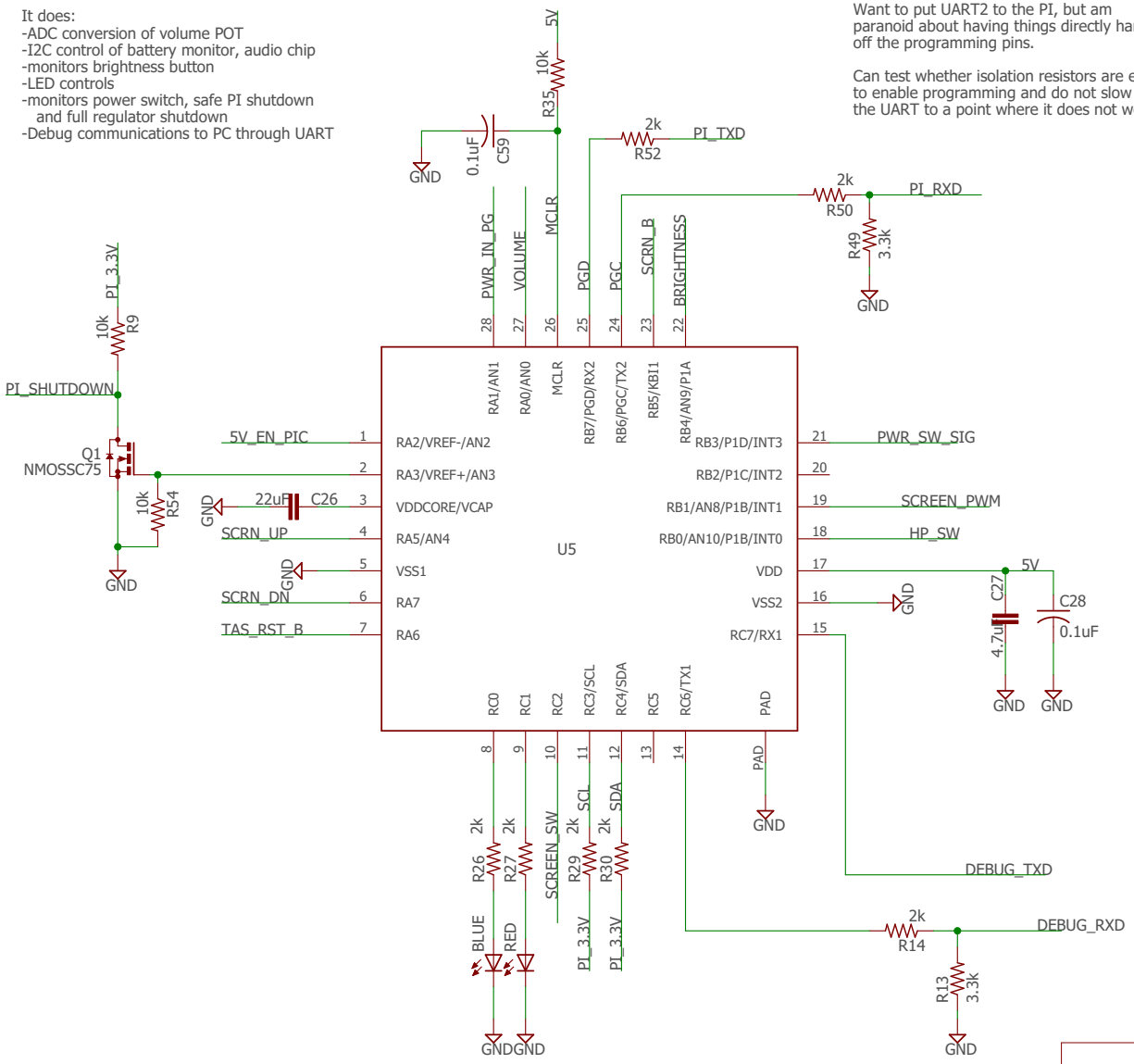
# PIC18F25K80 microcontroller

It does:
-ADC conversion of volume POT
-I2C control of battery monitor, audio chip
-monitors brightness button
-LED controls
-monitors power switch, safe PI shutdown
and full regulator shutdown
-Debug communications to PC through UART

Want to put UART2 to the PI, but am paranoid about having things directly hanging off the programming pins.

Can test whether isolation resistors are enough to enable programming and do not slow down the UART to a point where it does not work

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|---|---|
| TITLE: GBA SP schematic | |
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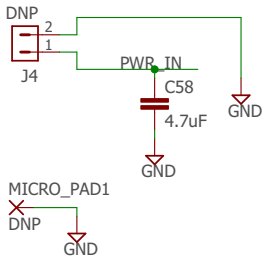
# Connectors that are on mini-adapter boards

SD Card adapter board

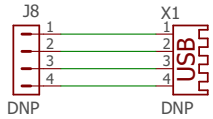
SD card adapter mounting pins

Micro UBS power input on main board

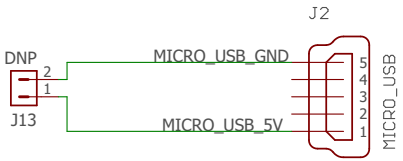



Micro UBS power spacer board

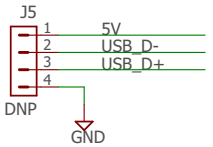





Micro UBS power adapter board









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| TITLE: GBA SP schematic | |
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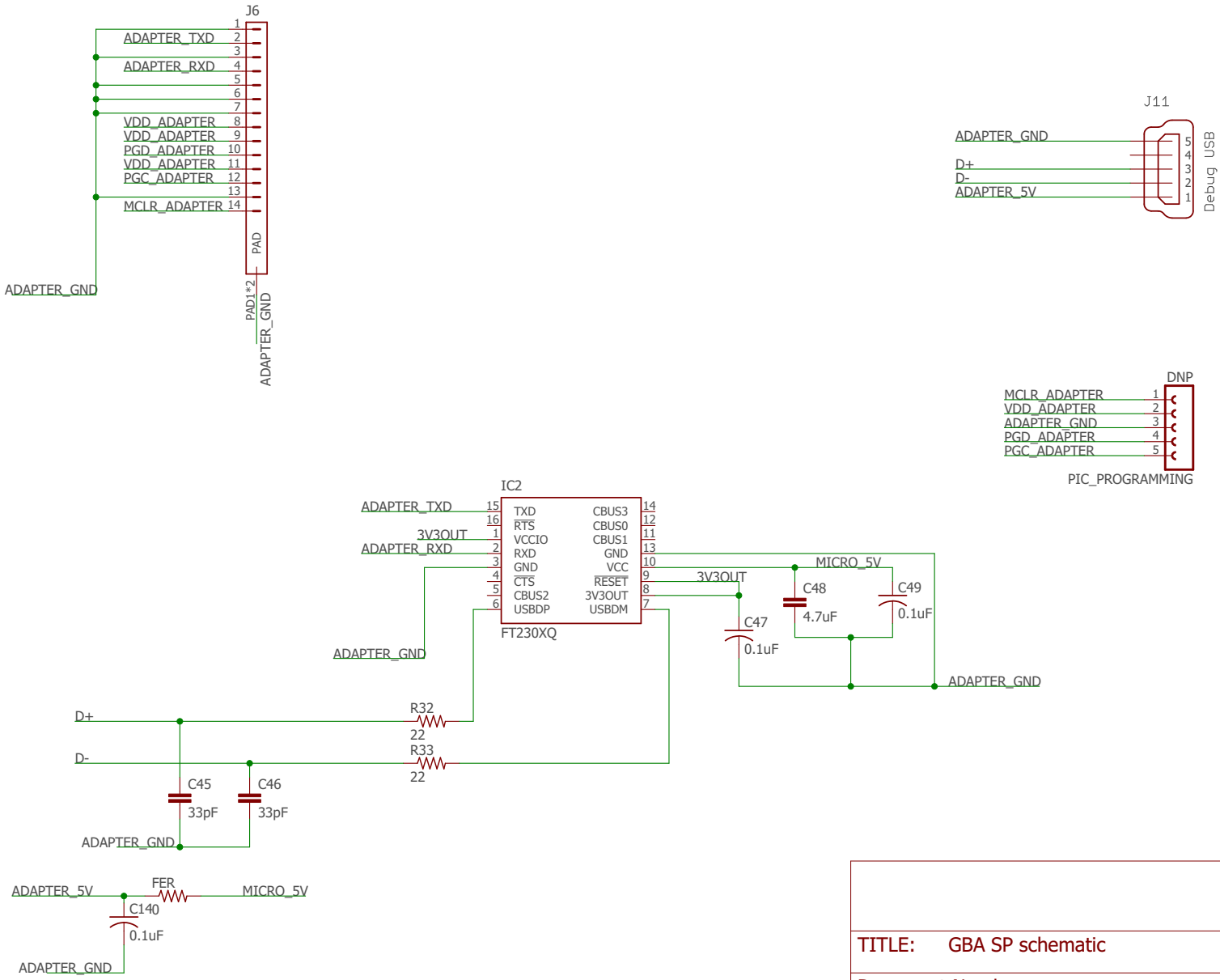
# Adapter for programming and debug ports

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| TITLE: GBA SP schematic | |
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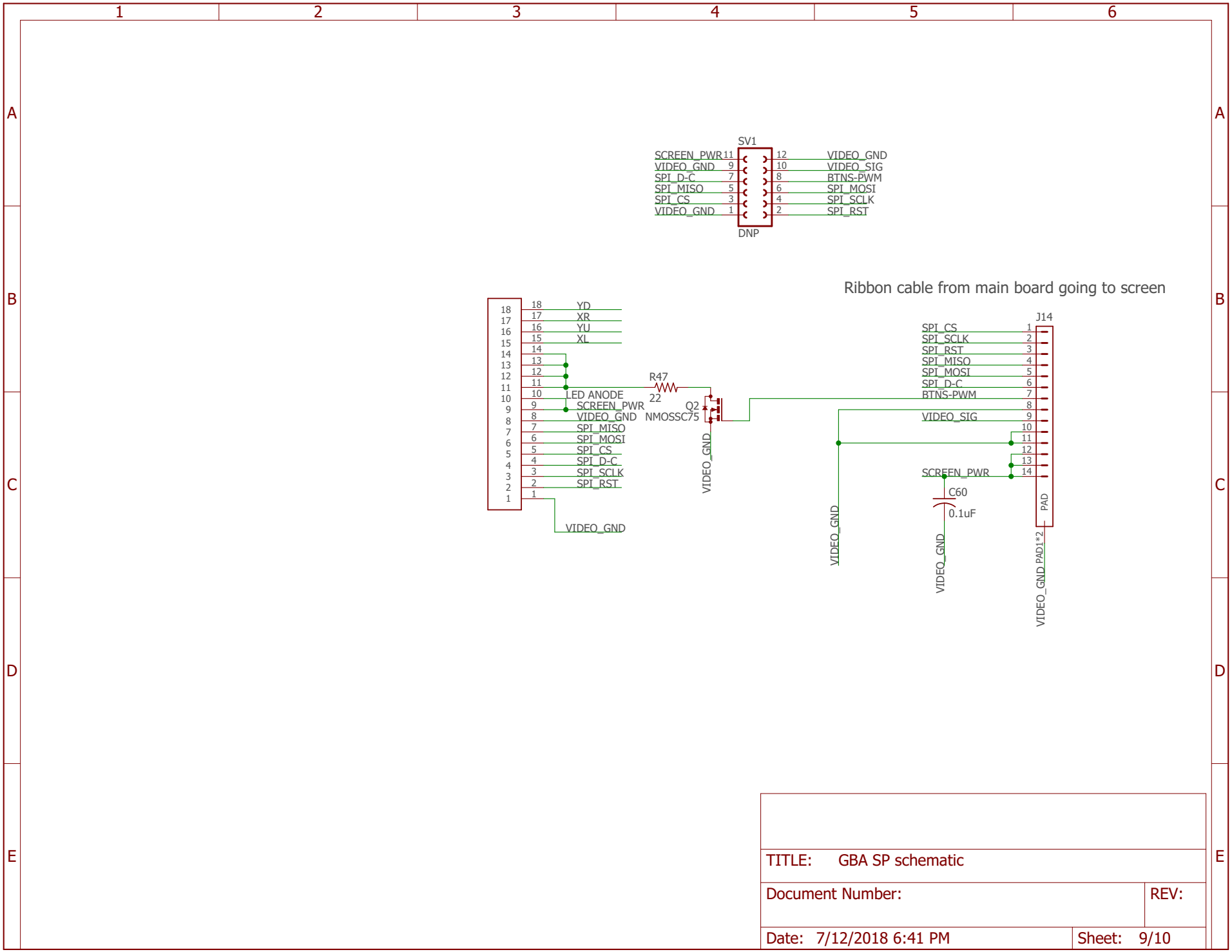
SV1
SCREEN_PWR 11
VIDEO_GND 9
SPI_D-C 7
SPI_MISO 5
SPI_CS 3
VIDEO_GND 1
12 VIDEO_GND
10 VIDEO_SIG
8 BTNS-PWM
6 SPI_MOSI
4 SPI_SCLK
2 SPI_RST
DNP
Ribbon cable from main board going to screen
18 YD
17 XR
16 YU
15 XL
LED ANODE
SCREEN_PWR
VIDEO_GND
SPI_MISO
SPI_MOSI
SPI_CS
SPI_D-C
SPI_SCLK
SPI_RST
VIDEO_GND
R47
22
Q2
NMOSSC75
VIDEO_GND
J14
SPI_CS 1
SPI_SCLK 2
SPI_RST 3
SPI_MISO 4
SPI_MOSI 5
SPI_D-C 6
BTNS-PWM 7
8
VIDEO_SIG 9
10
11
12
13
SCREEN_PWR 14
PAD
VIDEO_GND PAD1*2
C60
0.1uF
VIDEO_GND
VIDEO_GND
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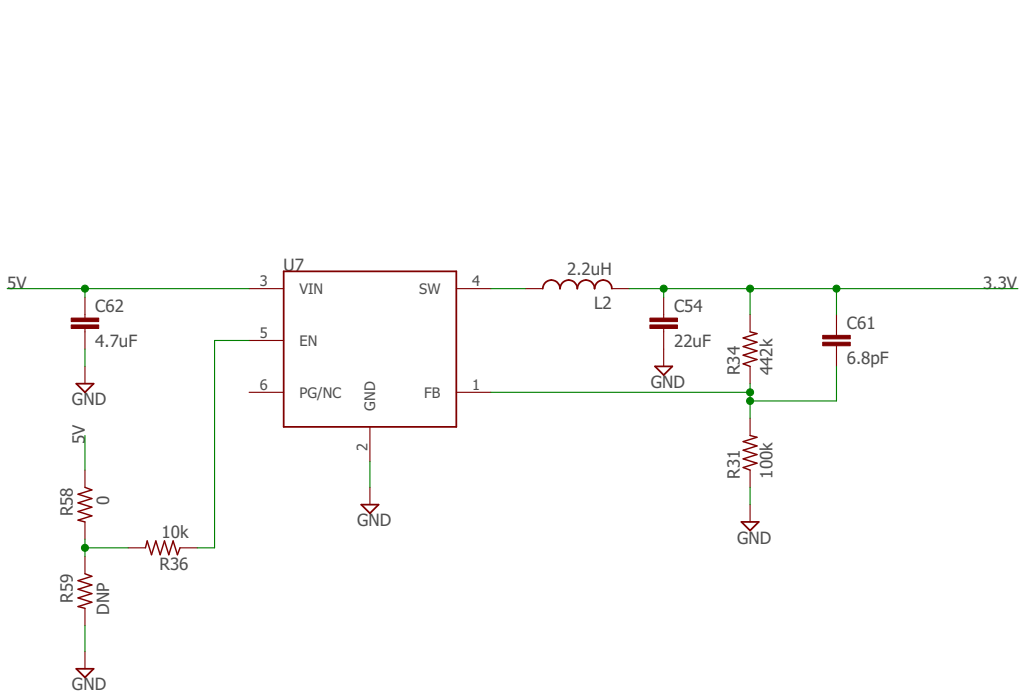


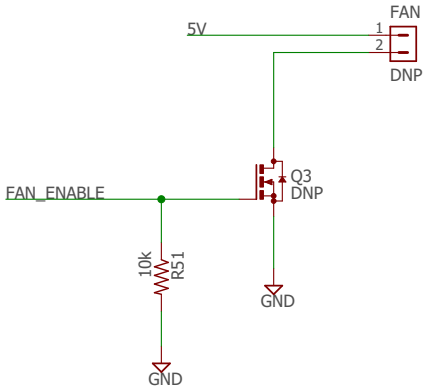


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| TITLE: GBA SP schematic | | |
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| Date: 7/12/2018 6:41 PM | Sheet: 10/10 | |