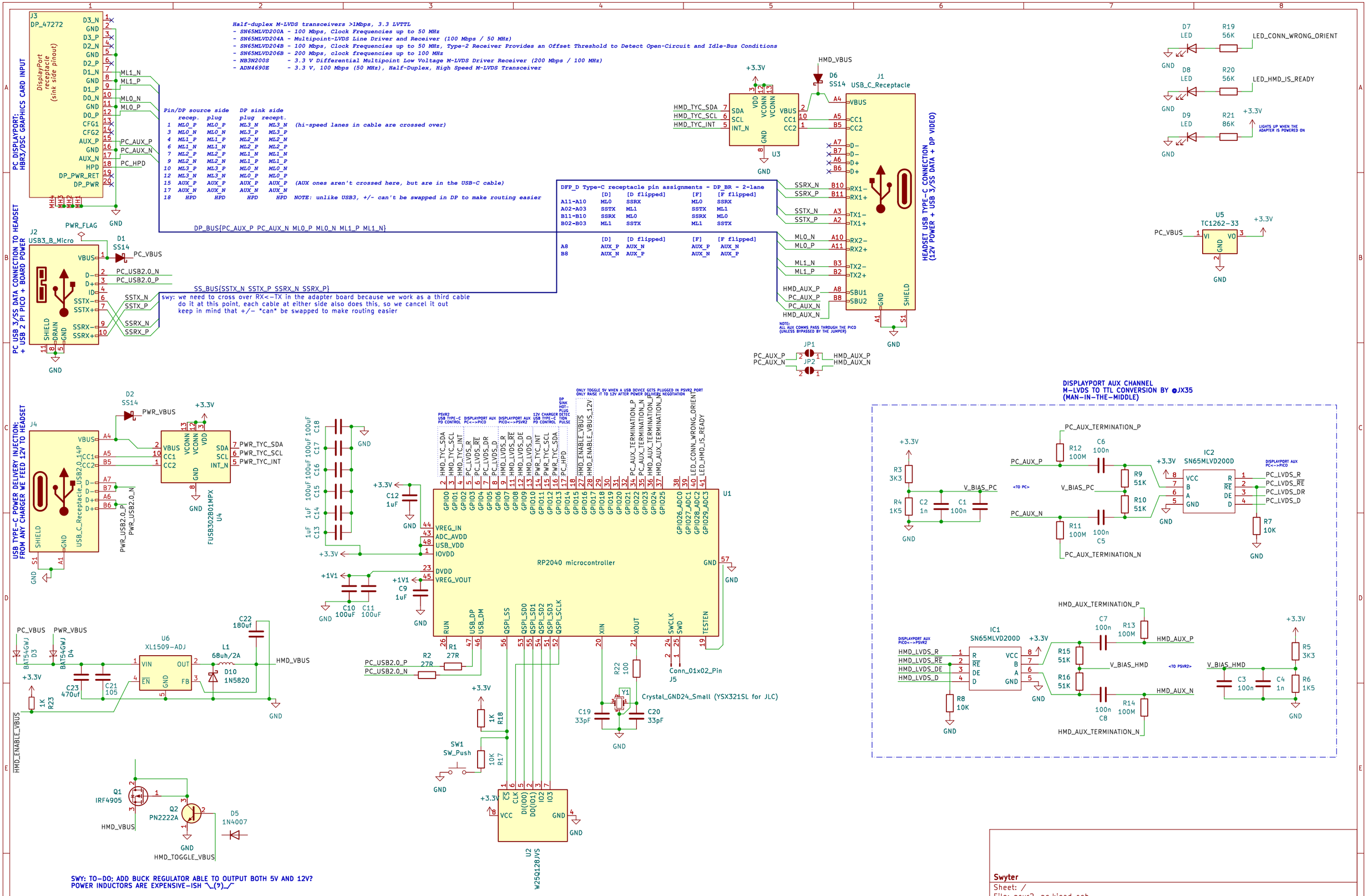
PC DISPLAYPORT: HBR3/DSC GRAPHICS CARD INPUT
J3 DP_47272
DisplayPort receptacle (sink side pinout)
Half-duplex M-LVDS transceivers >1Mbps, 3.3 LVTTL
- SN65MLVD200A - 100 Mbps, Clock Frequencies up to 50 MHz
- SN65MLVD204A - Multipoint-LVDS Line Driver and Receiver (100 Mbps / 50 MHz)
- SN65MLVD204B - 100 Mbps, Clock Frequencies up to 50 MHz, Type-2 Receiver Provides an Offset Threshold to Detect Open-Circuit and Idle-Bus Conditions
- SN65MLVD206B - 200 Mbps, clock frequencies up to 100 MHz
- NB3N200S - 3.3 V Differential Multipoint Low Voltage M-LVDS Driver Receiver (200 Mbps / 100 MHz)
- ADN4690E - 3.3 V, 100 Mbps (50 MHz), Half-Duplex, High Speed M-LVDS Transceiver
Pin/DP source side recep. plug | DP sink side plug recept.
1 ML0_P ML0_P ML3_N ML3_N (hi-speed lanes in cable are crossed over)
3 ML0_N ML0_N ML3_P ML3_P
4 ML1_P ML1_P ML2_N ML2_N
6 ML1_N ML1_N ML2_P ML2_P
7 ML2_P ML2_P ML1_N ML1_N
9 ML2_N ML2_N ML1_P ML1_P
10 ML3_P ML3_P ML0_N ML0_N
12 ML3_N ML3_N ML0_P ML0_P
15 AUX_P AUX_P AUX_P AUX_P (AUX ones aren't crossed here, but are in the USB-C cable)
17 AUX_N AUX_N AUX_N AUX_N
18 HPD HPD HPD HPD NOTE: unlike USB3, +/- can't be swapped in DP to make routing easier
DP_BUS{PC_AUX_P PC_AUX_N ML0_P ML0_N ML1_P ML1_N}
PC_AUX_P
PC_AUX_N
PC_HPD
PWR_FLAG
GND
PC USB 3/SS DATA CONNECTION TO HEADSET + USB 2 PI PICO + BOARD POWER
J2 USB3_B_Micro
D1 SS14
PC_VBUS
PC_USB2.0_N
PC_USB2.0_P
SS_BUS{SSTX_N SSTX_P SSRX_N SSRX_P}
SSTX_N
SSTX_P
SSRX_N
SSRX_P
swy: we need to cross over RX<-TX in the adapter board because we work as a third cable do it at this point, each cable at either side also does this, so we cancel it out keep in mind that +/- *can* be swapped to make routing easier
DFP_D Type-C receptacle pin assignments - DP_BR - 2-lane
[D] [D flipped] [F] [F flipped]
A11-A10 ML0 SSRX ML0 SSRX
A02-A03 SSTX ML1 SSTX ML1
B11-B10 SSRX ML0 SSRX ML0
B02-B03 ML1 SSTX ML1 SSTX
[D] [D flipped] [F] [F flipped]
A8 AUX_P AUX_N AUX_P AUX_N
B8 AUX_N AUX_P AUX_N AUX_P
+3.3V
HMD_VBUS
D6 SS14
J1 USB_C_Receptacle
HMD_TYC_SDA
HMD_TYC_SCL
HMD_TYC_INT
U3
HEADSET USB TYPE-C CONNECTION (12V POWER + USB 3/SS DATA + DP VIDEO)
NOTE: ALL AUX COMMS PASS THROUGH THE PICO (UNLESS BYPASSED BY THE JUMPER)
JP1
JP2
D7 LED
R19 56K
LED_CONN_WRONG_ORIENT
D8 LED
R20 56K
LED_HMD_IS_READY
D9 LED
R21 86K
LIGHTS UP WHEN THE ADAPTER IS POWERED ON
U5 TC1262-33
PC_VBUS
USB TYPE-C POWER DELIVERY INJECTION: 12V TO HEADSET FROM ANY CHARGER WE FEED 12V TO HEADSET
J4 USB_C_Receptacle_USB2.0_14P
D2 SS14
PWR_VBUS
U4 FUSB302B01MPX
PWR_TYC_SDA
PWR_TYC_SCL
PWR_TYC_INT
PWR_USB2.0_P
PWR_USB2.0_N
U1 RP2040 microcontroller
VREG_IN
ADC_AVDD
USB_VDD
IOVDD
DVDD
VREG_VOUT
RUN
USB_DP
USB_DM
QSPI_SS
XIN
XOUT
SWCLK
SWD
TESTEN
Conn_01x02_Pin
J5
Crystal_GND24_Small (YSX321SL for JLC)
SW1 SW_Push
U2 W25Q128JVS
HMD_TOGGLE_VBUS
PC_VBUS
PWR_VBUS
U6 XL1509-ADJ
L1 68uh/2A
D10 1N5820
C22 180uf
HMD_VBUS
HMD_ENABLE_VBUS
Q1 IRF4905
Q2 PN2222A
D5 1N4007
SWY: TO-DO: ADD BUCK REGULATOR ABLE TO OUTPUT BOTH 5V AND 12V?
POWER INDUCTORS ARE EXPENSIVE-ISH ¯_(?)_/¯
DISPLAYPORT AUX CHANNEL M-LVDS TO TTL CONVERSION BY @JX35 (MAN-IN-THE-MIDDLE)
PC_AUX_TERMINATION_P
PC_AUX_TERMINATION_N
IC2 SN65MLVD200D
IC1 SN65MLVD200D
HMD_AUX_TERMINATION_P
HMD_AUX_TERMINATION_N
V_BIAS_PC
V_BIAS_HMD
HMD_AUX_P
HMD_AUX_N
Swyter
Sheet: /
File: psvr2-pc.kicad_sch
Title: PS®VR2 to PC adaptor with DP-AUX MitM and power injection
Size: A3
Date: 2024-02-01
Rev:
KiCad E.D.A. kicad 7.0.10
Id: 1/1