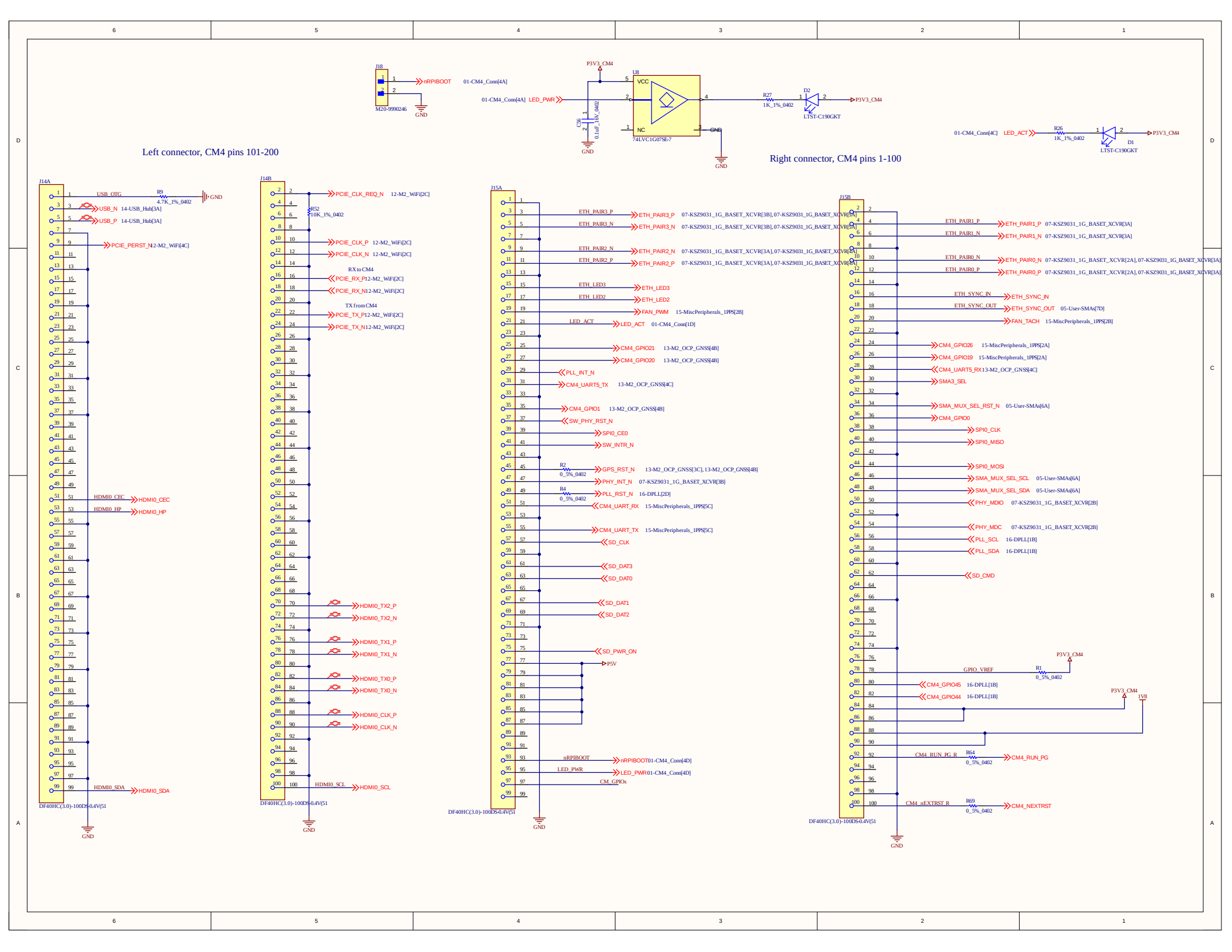
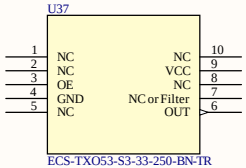

J18
M20-9990246
nRPIBOOT
01-CM4_Conn[4A]
GND
P3V3_CM4
U8
VCC
NC
GND
74LVC1G07SE-7
01-CM4_Conn[4A] LED_PWR
C56
0.1uF_16V_0402
R27
1K_1%_0402
D2
LTST-C190GKT
P3V3_CM4
01-CM4_Conn[4C] LED_ACT
R26
1K_1%_0402
D1
LTST-C190GKT
P3V3_CM4
Left connector, CM4 pins 101-200
Right connector, CM4 pins 1-100
J14A
USB_OTG
R9
4.7K_1%_0402
USB_N 14-USB_Hub[3A]
USB_P 14-USB_Hub[3A]
PCIE_PERST_N 12-M2_WiFi[4C]
HDMI0_CEC
HDMI0_HP
HDMI0_SDA
DF40HC(3.0)-100DS-0.4V(51
J14B
PCIE_CLK_REQ_N 12-M2_WiFi[2C]
R52
10K_1%_0402
PCIE_CLK_P 12-M2_WiFi[2C]
PCIE_CLK_N 12-M2_WiFi[2C]
RX to CM4
PCIE_RX_P 12-M2_WiFi[2C]
PCIE_RX_N 12-M2_WiFi[2C]
TX from CM4
PCIE_TX_P 12-M2_WiFi[2C]
PCIE_TX_N 12-M2_WiFi[2C]
HDMI0_TX2_P
HDMI0_TX2_N
HDMI0_TX1_P
HDMI0_TX1_N
HDMI0_TX0_P
HDMI0_TX0_N
HDMI0_CLK_P
HDMI0_CLK_N
HDMI0_SCL
DF40HC(3.0)-100DS-0.4V(51
J15A
ETH_PAIR3_P ETH_PAIR3_P 07-KSZ9031_1G_BASET_XCVR[3B],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR3_N ETH_PAIR3_N 07-KSZ9031_1G_BASET_XCVR[3B],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR2_N ETH_PAIR2_N 07-KSZ9031_1G_BASET_XCVR[3A],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR2_P ETH_PAIR2_P 07-KSZ9031_1G_BASET_XCVR[3A],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_LED3 ETH_LED3
ETH_LED2 ETH_LED2
FAN_PWM 15-MiscPeripherals_1PPS[2B]
LED_ACT LED_ACT 01-CM4_Conn[1D]
CM4_GPIO21 13-M2_OCP_GNSS[4B]
CM4_GPIO20 13-M2_OCP_GNSS[4B]
PLL_INT_N
CM4_UART5_TX 13-M2_OCP_GNSS[4C]
CM4_GPIO1 13-M2_OCP_GNSS[4B]
SW_PHY_RST_N
SPI0_CE0
SW_INTR_N
R2
0_5%_0402
GPS_RST_N 13-M2_OCP_GNSS[3C],13-M2_OCP_GNSS[4B]
PHY_INT_N 07-KSZ9031_1G_BASET_XCVR[3B]
R4
0_5%_0402
PLL_RST_N 16-DPLL[2D]
CM4_UART_RX 15-MiscPeripherals_1PPS[5C]
CM4_UART_TX 15-MiscPeripherals_1PPS[5C]
SD_CLK
SD_DAT3
SD_DAT0
SD_DAT1
SD_DAT2
SD_PWR_ON
P5V
nRPIBOOT nRPIBOOT 01-CM4_Conn[4D]
LED_PWR LED_PWR 01-CM4_Conn[4D]
CM_GPIOx
DF40HC(3.0)-100DS-0.4V(51
J15B
ETH_PAIR1_P ETH_PAIR1_P 07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR1_N ETH_PAIR1_N 07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR0_N ETH_PAIR0_N 07-KSZ9031_1G_BASET_XCVR[2A],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_PAIR0_P ETH_PAIR0_P 07-KSZ9031_1G_BASET_XCVR[2A],07-KSZ9031_1G_BASET_XCVR[3A]
ETH_SYNC_IN ETH_SYNC_IN
ETH_SYNC_OUT ETH_SYNC_OUT 05-User-SMAs[7D]
FAN_TACH 15-MiscPeripherals_1PPS[2B]
CM4_GPIO26 15-MiscPeripherals_1PPS[2A]
CM4_GPIO19 15-MiscPeripherals_1PPS[2A]
CM4_UART5_RX 13-M2_OCP_GNSS[4C]
SMA3_SEL
SMA_MUX_SEL_RST_N 05-User-SMAs[6A]
CM4_GPIO0
SPI0_CLK
SPI0_MISO
SPI0_MOSI
SMA_MUX_SEL_SCL 05-User-SMAs[6A]
SMA_MUX_SEL_SDA 05-User-SMAs[6A]
PHY_MDIO 07-KSZ9031_1G_BASET_XCVR[2B]
PHY_MDC 07-KSZ9031_1G_BASET_XCVR[2B]
PLL_SCL 16-DPLL[1B]
PLL_SDA 16-DPLL[1B]
SD_CMD
P3V3_CM4
GPIO_VREF
R1
0_5%_0402
CM4_GPIO45 16-DPLL[1B]
CM4_GPIO44 16-DPLL[1B]
P3V3_CM4
1V8
CM4_RUN_PG_R
R64
0_5%_0402
CM4_RUN_PG
CM4_nEXTRST_R
R69
0_5%_0402
CM4_NEXTRST
DF40HC(3.0)-100DS-0.4V(51



TCXO_25MHz 16-DPLL[2A]

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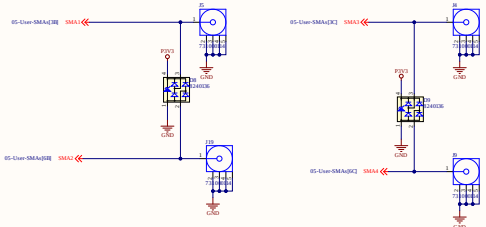
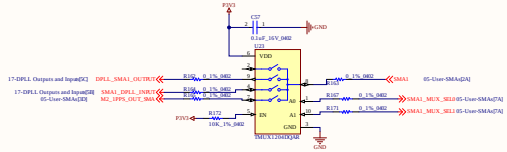
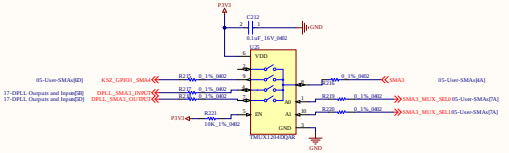


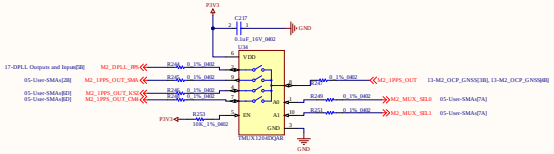
SMA1 - M.2 GPS 1PPS Raw (For debug) or DPLL Input or DPLL Output



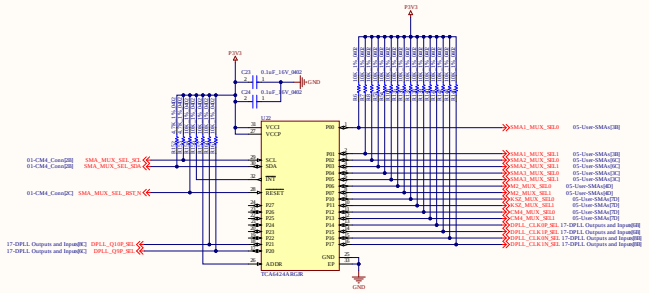
SMA3 - KSZ9567 1PPS or DPLL Input or DPLL Output



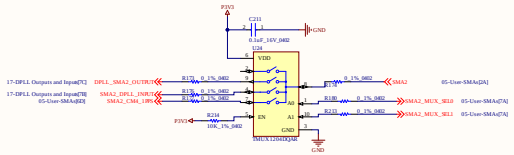
M.2 1PPS 1x4 multiplexer, go to SMA1 or KSZ or CM4 or DPLL



Mux I/O Selects

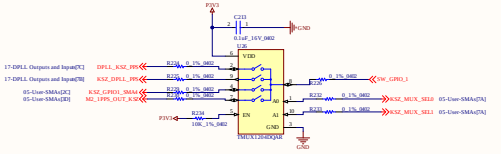


SMA2 -> CM4 1PPS Raw or DPLL Input or DPLL Output

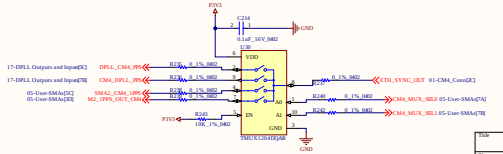


SMA4 -> DPLL Input

KSZ 1PPS Input 1x4 Multiplexer, comes from M2 As input or SMA3 as In/out or DPLL as output or DPLL as input



CM4 1PPS Input 1x4 Multiplexer, comes from M2 As input or SMA2 as In/out or DPLL as output or DPLL as input



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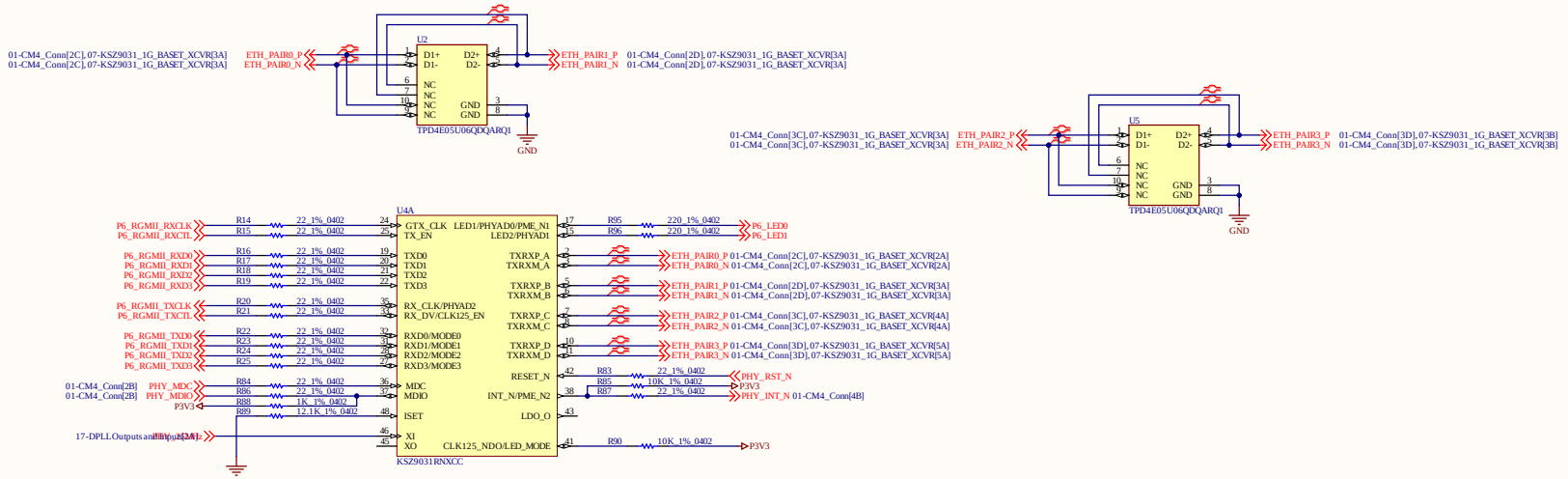

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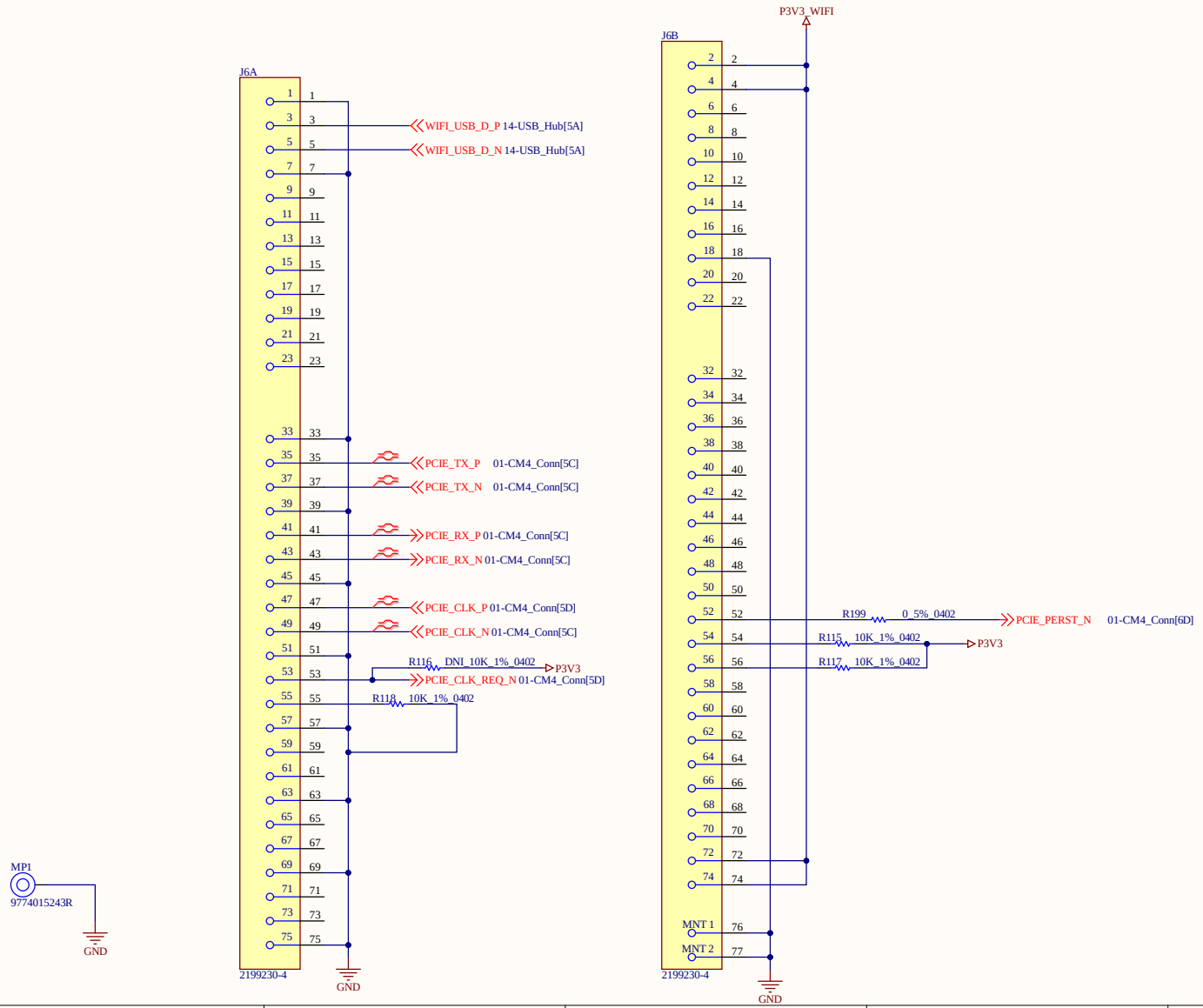
M.2 E-Key for WiFi

https://developer.embeddedartists.com/docs-m2/integration/pinning/



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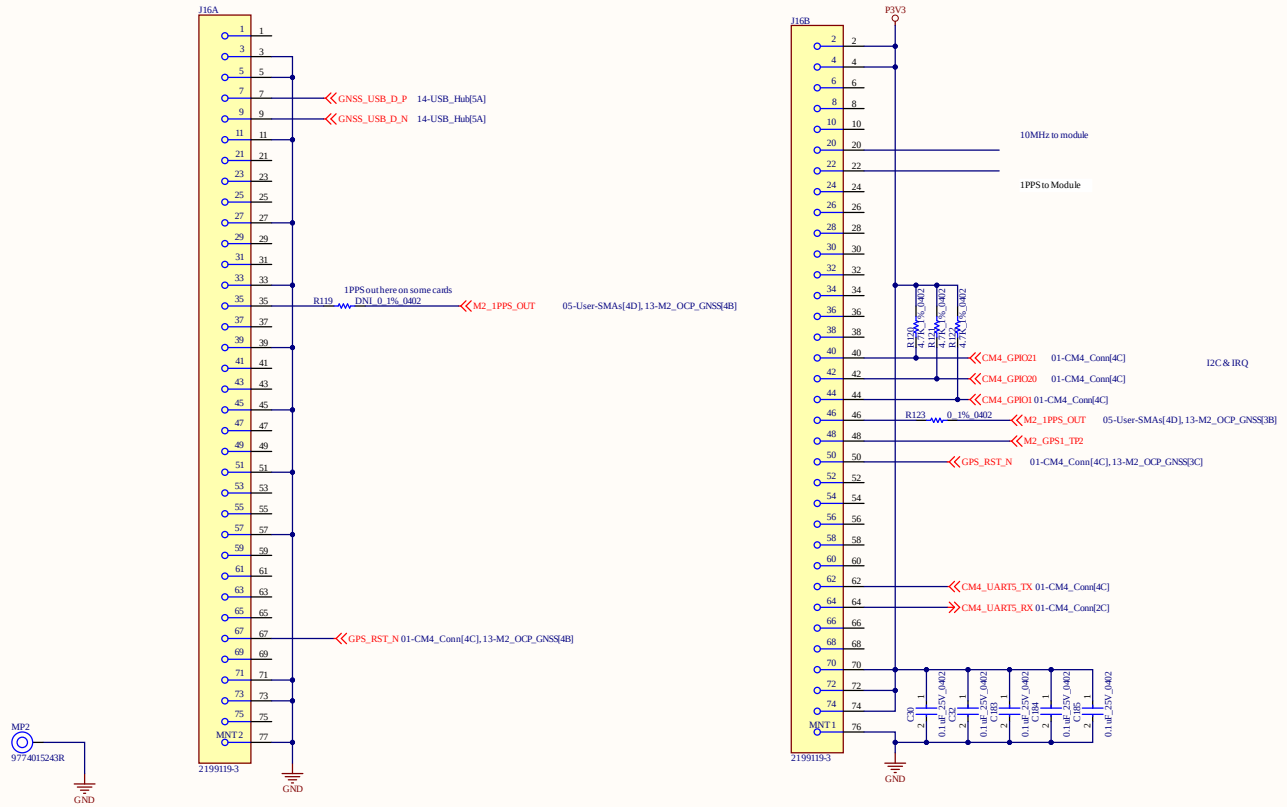
Socket 2 Key B PCIe-based WWAN Adapter Pinout , table 3-21 in M.2 spec



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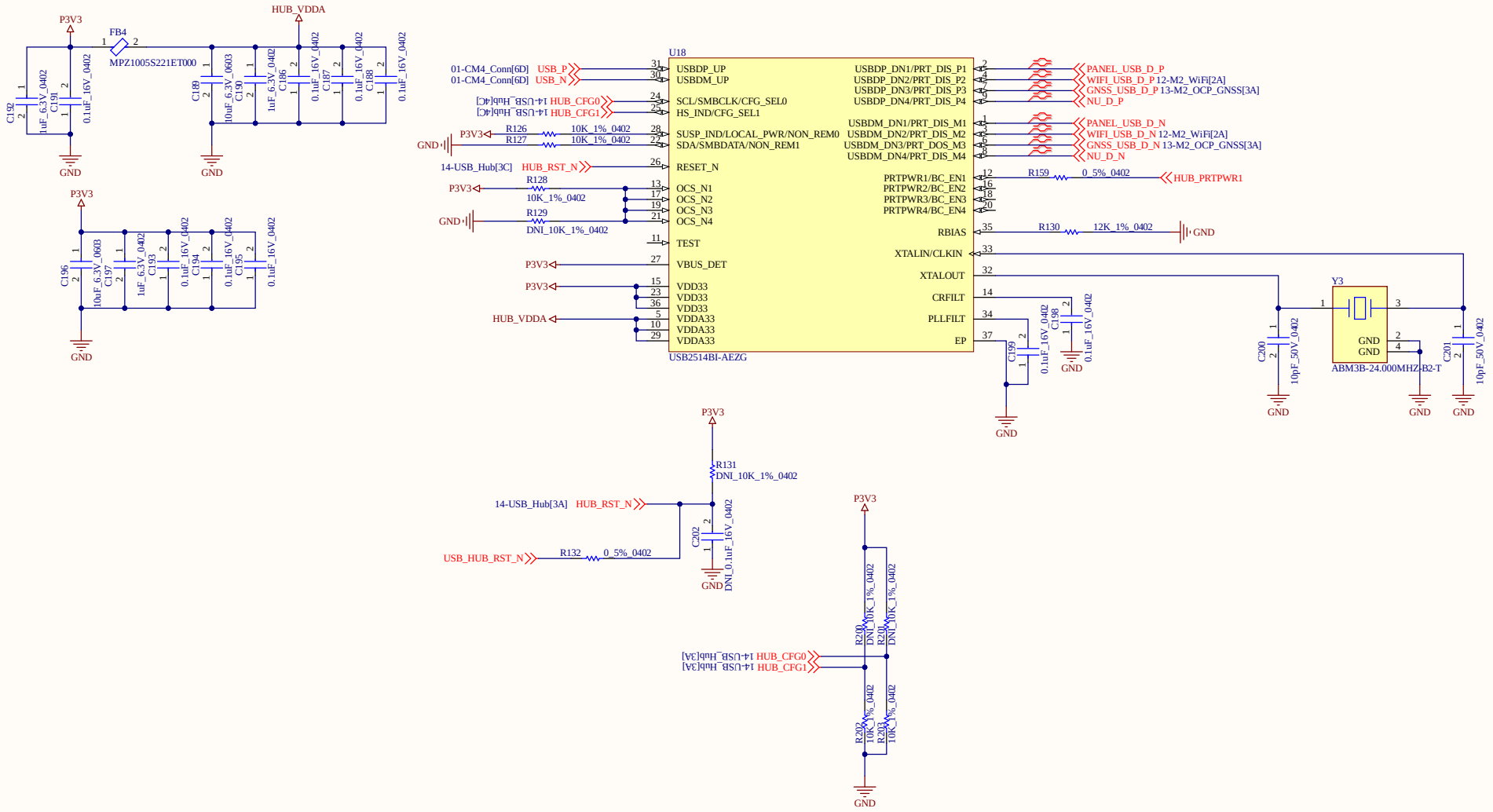
USB 2.0 HUB



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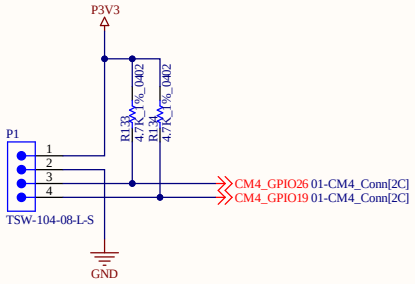
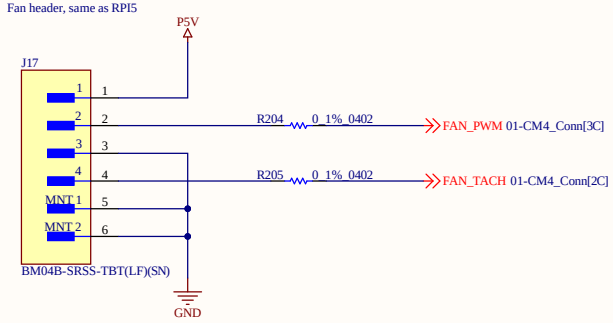
I2C Header for OLED or something

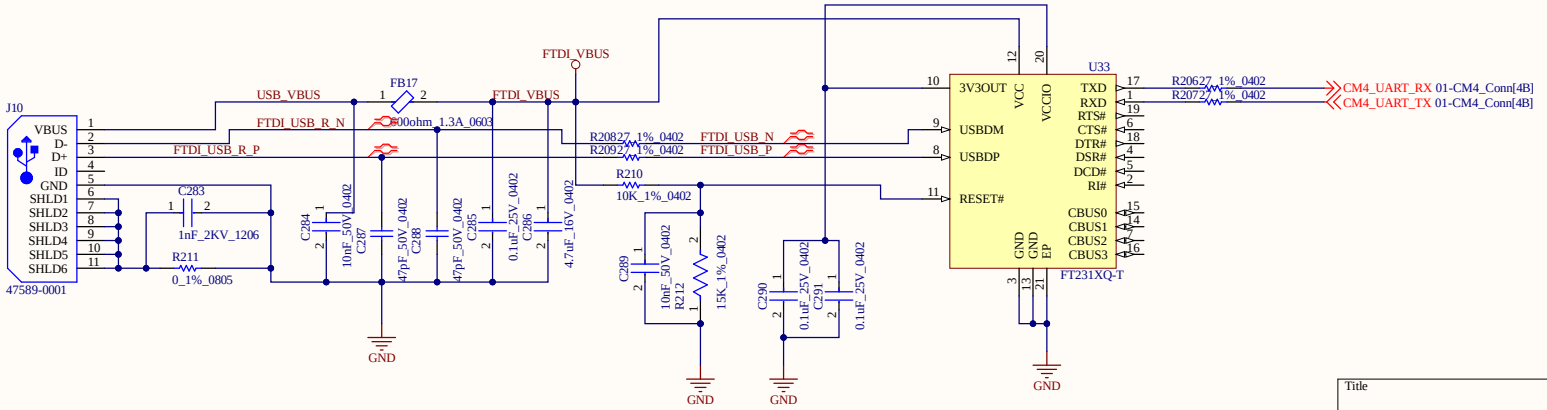


Fan header, same as RPI5



Debug UART

USB to UART



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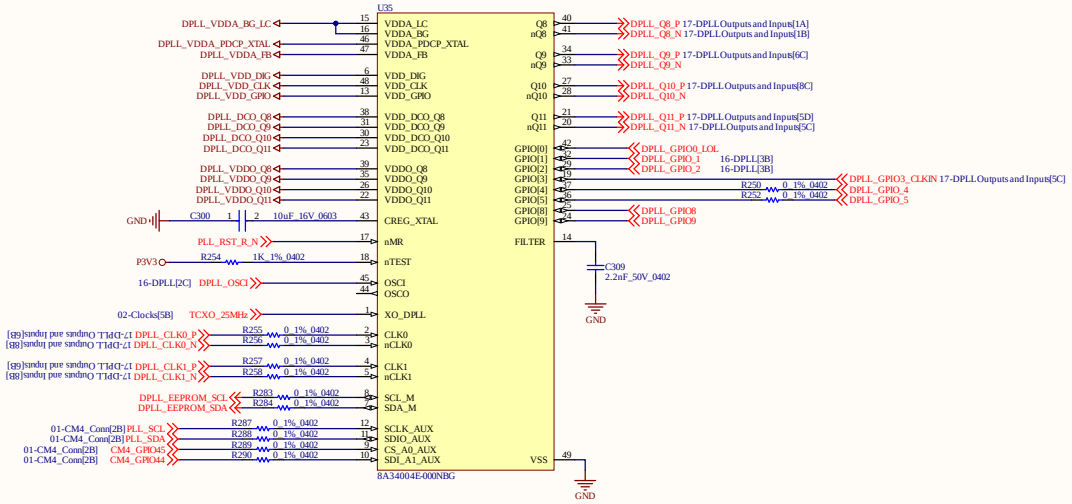

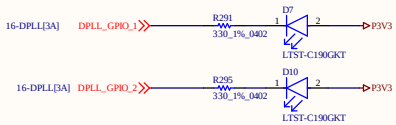

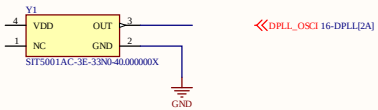

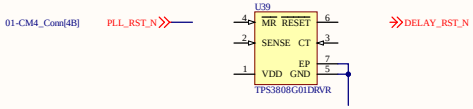

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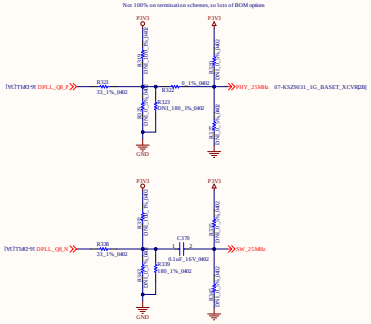
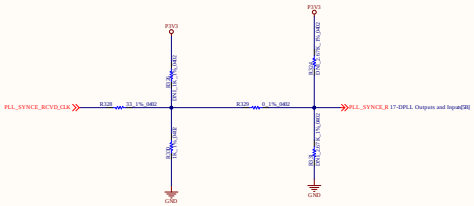
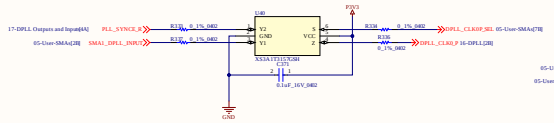
Not 100% on termination schemes, so lots of BOM options

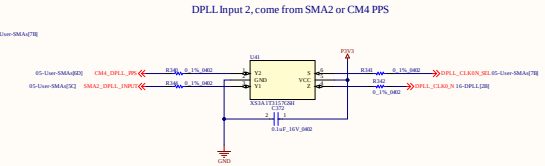




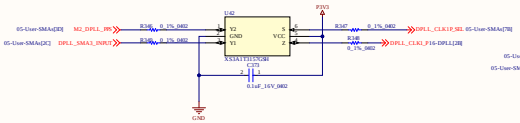
DPLL Input 1, come from SyncE Output or SMA1



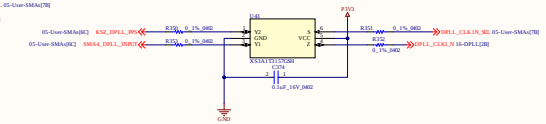
DPLL Input 2, come from SMA2 or CM4 PPS



DPLL Input 3, come from SMA3 or M2 PPS

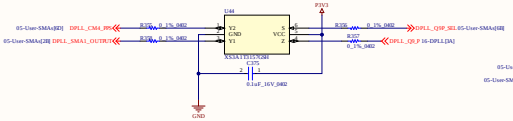


DPLL Input 4, come from SMA4 or KSZ PPS

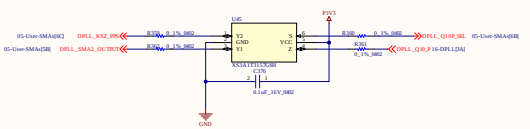


DPLL Input 5, from Output 4 (loopback) , Used for PPS Input TDC or zero delay

DPLL Output 2, go to SMA1 or CM4 PPS



DPLL Output 3, go to SMA2 or KSZ PPS



DPLL Output 4, go to SMA3

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