

MCIMX6SLEVK board

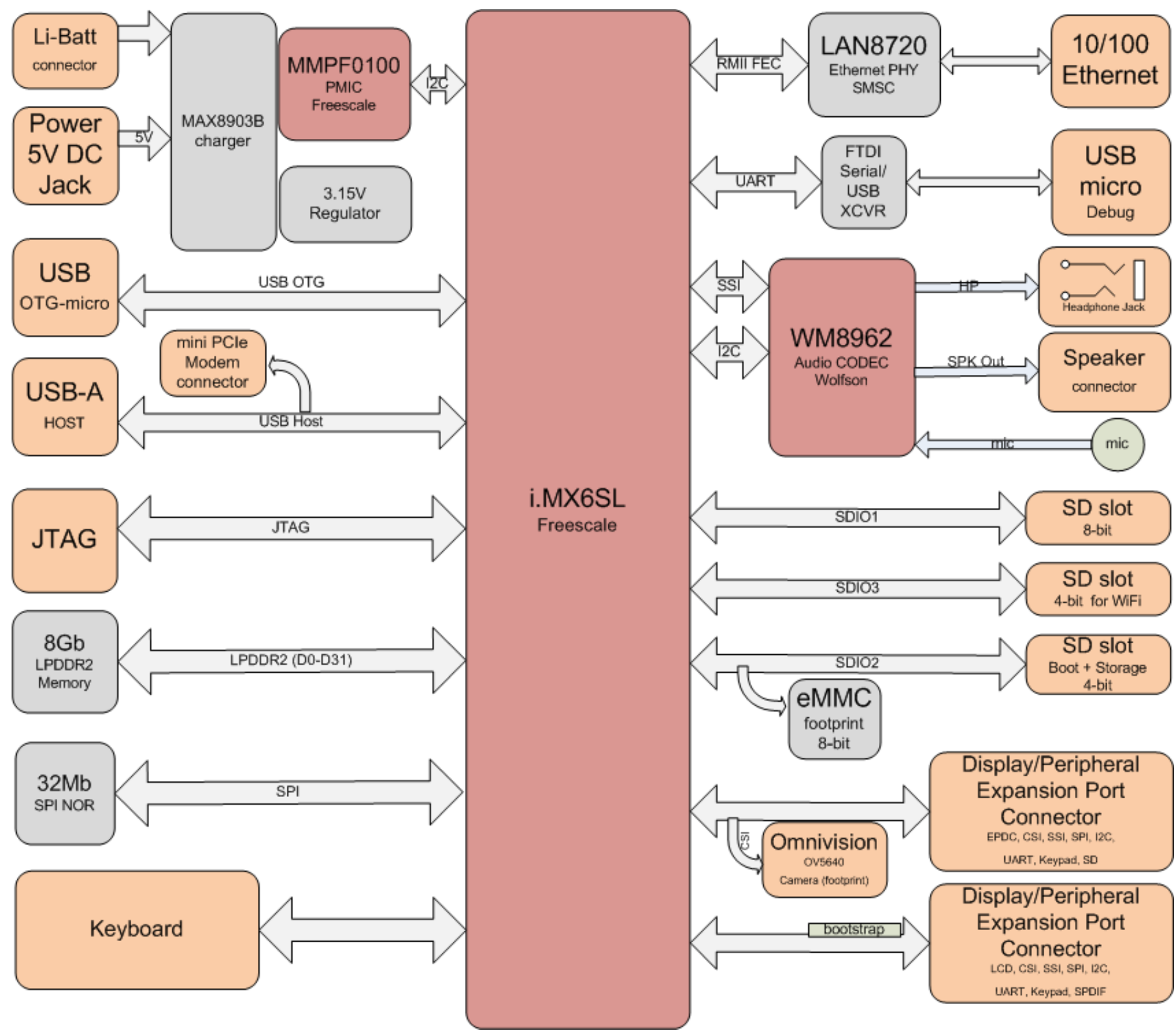
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Revision History

Rev. Code	Date	Description
A	2012/05/11	Rev A
B	2012/09/27	<p>ENGR00225877. Replaced D24 with BAT54C-7-F</p> <p>ENGR00225876. DNP standoffs H1, H2, H3 and H4</p> <p>ENGR00225878. Replaced R11, R129 and R130 with SH14, SH15 and SH16 respectively</p> <p>ENGR00225879.</p> <ol style="list-style-type: none"> 1. Replaced U3 - MMPF0100NPEP with MMPF0100F1EP 2. Replaced C23 (0.1uF, 0402) with 0.22uF, 0201 3. Added C410, C412 per PMIC datasheet 4. Replaced C40 (0.1uF, 0402) with 0.22uF, 0201 5. Replaced C27, C28 and C32 (0.1uF) with 0.22uF 6. Replaced C70 (22uF, 0603, 6.3V) with 47uF, 0805, 10V <p>ENGR00226044. Replaced P4 - WM-64PNT with WM-64PCT</p> <p>ENGR00226043. Replaced U2 - K4P8G304EB-AGC1 with MT42L256M32D2LG-25WT</p> <p>ENGR00225880.</p> <ol style="list-style-type: none"> 1. Replaced C146 (10uF) with 47uF 2. Replaced C159 and C160 (0402, 6.3V) with 0603, 10V <p>ENGR00225881.</p> <ol style="list-style-type: none"> 1. Move PMIC SW1AB feedback to the load side of SH2 to compensate for SH2 voltage drops during current measurement. 2. Move PMIC SW1C feedback to the load side of SH3 to compensate for SH3 voltage drops during current measurement. 3. Move PMIC SW2 feedback to the load side of SH1 to compensate for SH1 voltage drops during current measurement. 4. Move PMIC SW3 feedback to the load side of SH5 to compensate for SH5 voltage drops during current measurement. <p>ENGR00225088. Connected J12.117 to POR_B</p> <p>ENGR00226215. Renamed PFUSE_VIN net to PF0100_VIN</p> <p>ENGR00227037. Replaced all capacitors in PF0100_VIN net whose voltage rating is less than 10V with 10V capacitors: C46, C47, C66, C41, C48, C63, C58.</p> <p>ENGR00227038. Flipped the capacitors whose polarity was inverted: C4, C2, C11, C21, C36, C46, C47, C58, C66, C156, C166, C178, C218, C200.</p> <p>ENGR00223967:</p> <ol style="list-style-type: none"> 1. Added test points TP42, 43, 44 and 45 2. The following pins were changed to NC in J8: CLKREQ#, UIM_C8, UIM_C4W, SMB_CLK, SMB_DATA, LED_WLAN#, LED_WPAN#, Reserved1-8, Reserved10 3. DNP C140, C191, C192 and C210 <p>ENGR00229277: Y1 (CC7V-T1A) 9pF is selected as default/preferred part. However, 12pF version may be used for production board.</p> <p>ENGR229701:</p> <ol style="list-style-type: none"> 1. Removed R195. 2. Replaced C152 (150uF) with 2.2uF

MCIMX6SLEVK board Diagram

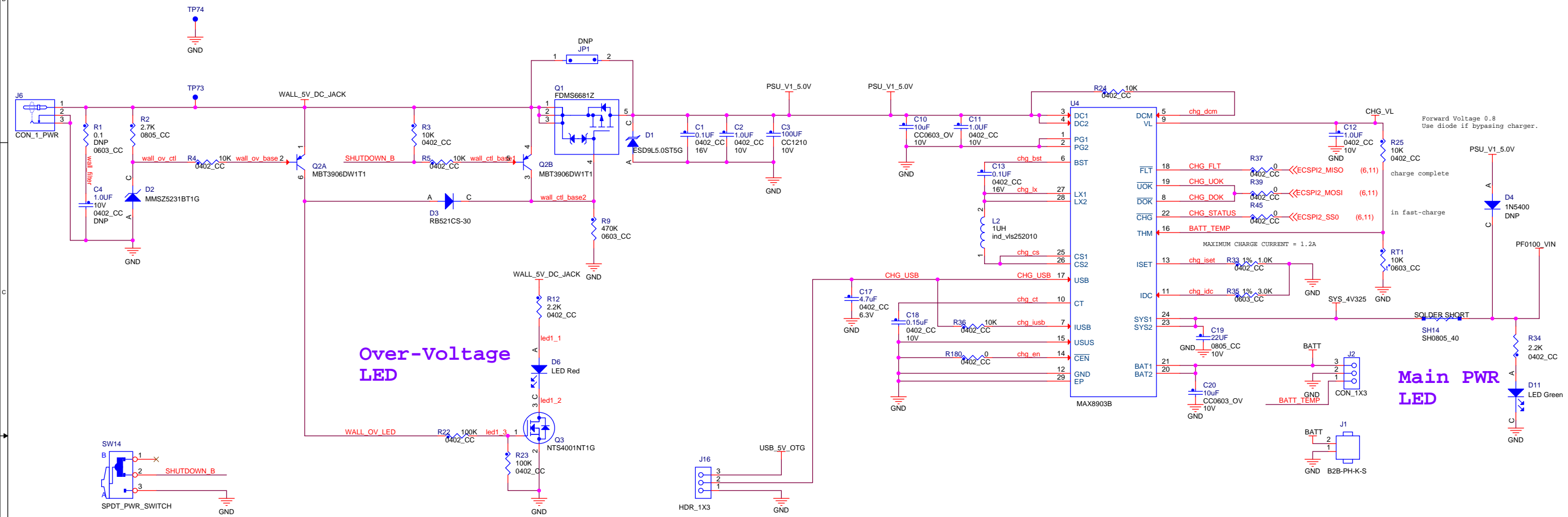


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Drawing Title: MCIMX6SLEVK board		
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DC JACK 5V

Over Voltage Protection

Lithium Charger



PWR Cut Switch For SW Development

Secondary Charge Source USB or Wireless Charger

Lithium single cell battery connectors

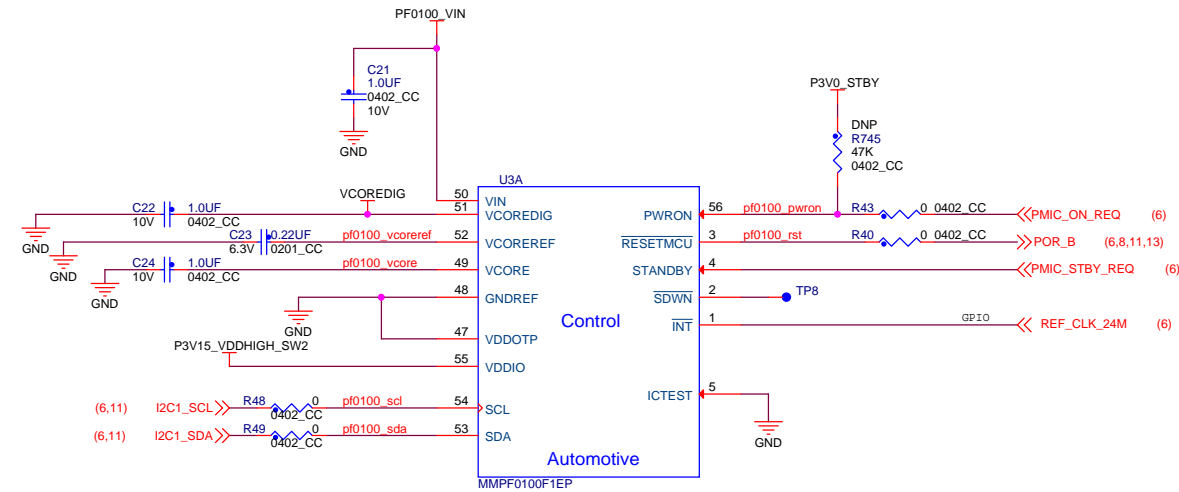
Note:
Shunt 2-3 to experiment with USB charging.
Use cable to pins 1 and 2 to experiment with wireless charging

NEED TO FIGURE OUT THIS BETTER
PWRCTRL3 is the capacitive touch interrupt.
MISO and SSO might be OK.
must permanently decide to eliminate ability to use
Also should use pullups inside the processor

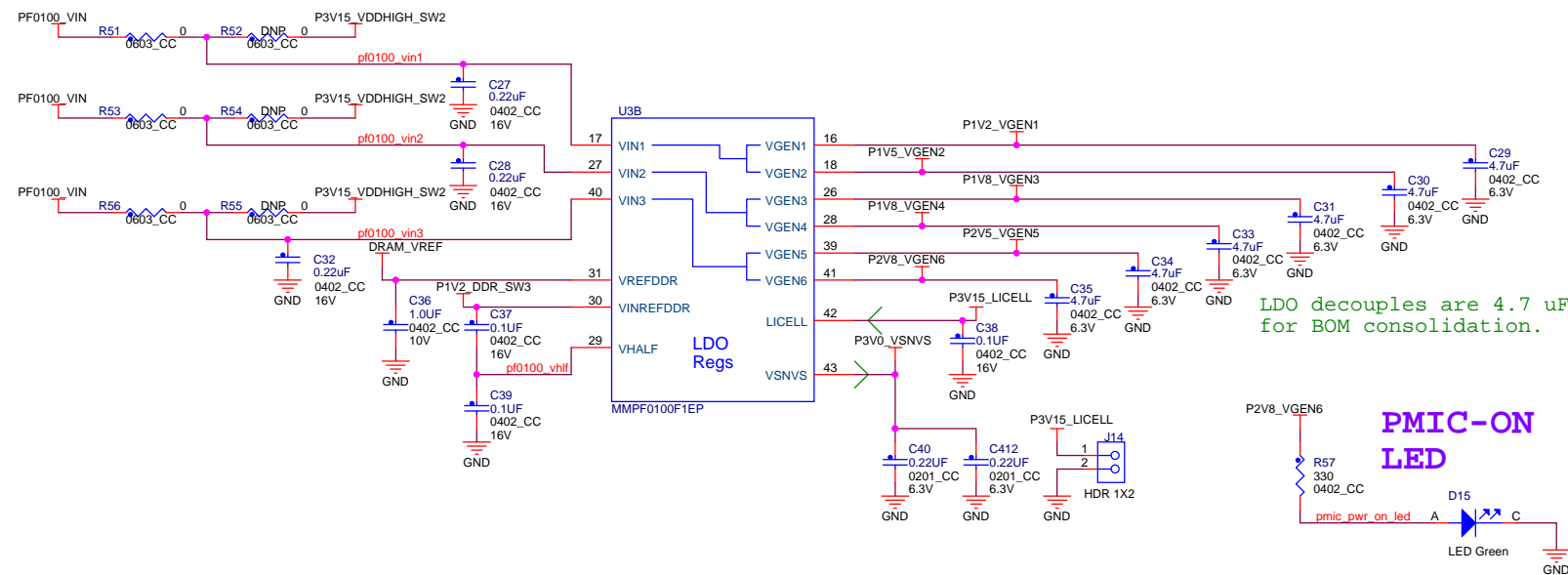
Item ER19 can affect some of the systems, depending on the characteristics. Please check this erratum and its workaround to see if applies.

Freescale MMPF0100NPEP PMIC

Note:
 This device is factory configurable for voltage and timings. This reference design is configured to run from factory pre-programmed parts. Ordering selections with common i.MX6SL voltages/timings are available. Please check the device datasheet for latest ordering info.



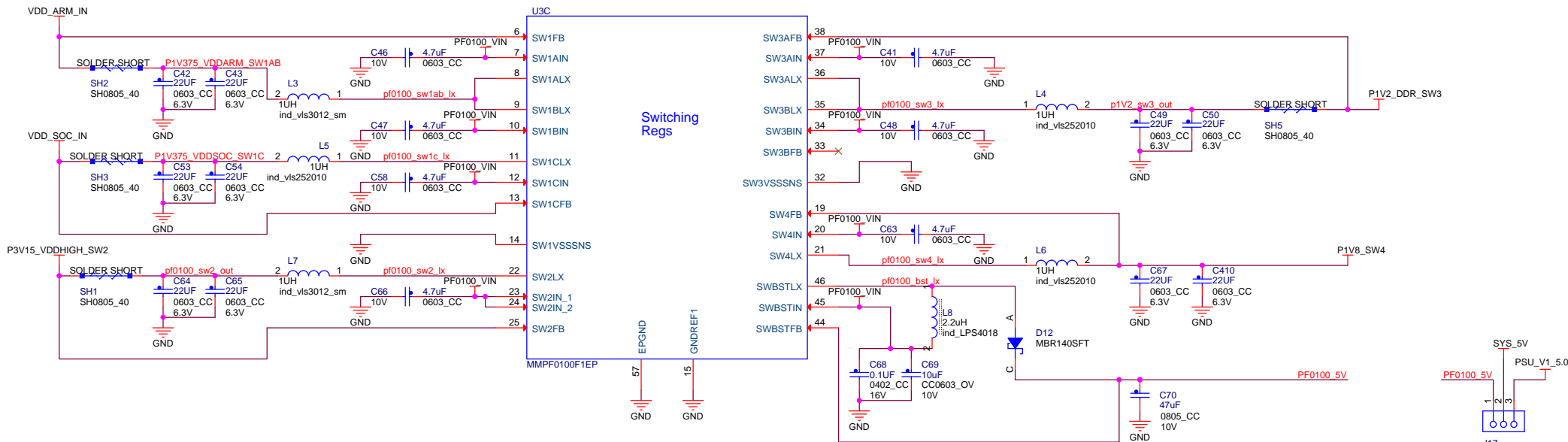
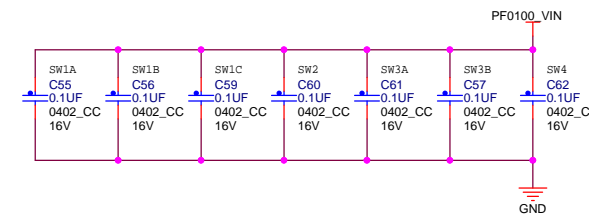
With low-inductive paths between VIN the voltage sources, either 0.22 uF or 0.47 uF may be used.



PMIC output rails

PF0100	Voltage (V)	Current (A)	Power up sequence	Note
SW1A/B	1.375	2.5	1	
SW1C	1.375	1.7	1	
SW2	3.15	2	2	
SW3A/B	1.2	2.5	4	
SW4	1.8	1	3	
SWBST	5	0.6		
VGEN1	1.2	0.1	4	
VGEN2	1.5	0.25		
VGEN3	1.8	0.1		
VGEN4	1.8	0.35	3	
VGEN5	2.5	0.1	5	LED
VSNVS	3	0.0002	0	
VREFDDR	0.6	0.01	4	

SW1A/B = 1.375 V for boot-up at ~800 MHz. Recommend that software increase SW1A/B to 1.425 V for 1 GHz operation.



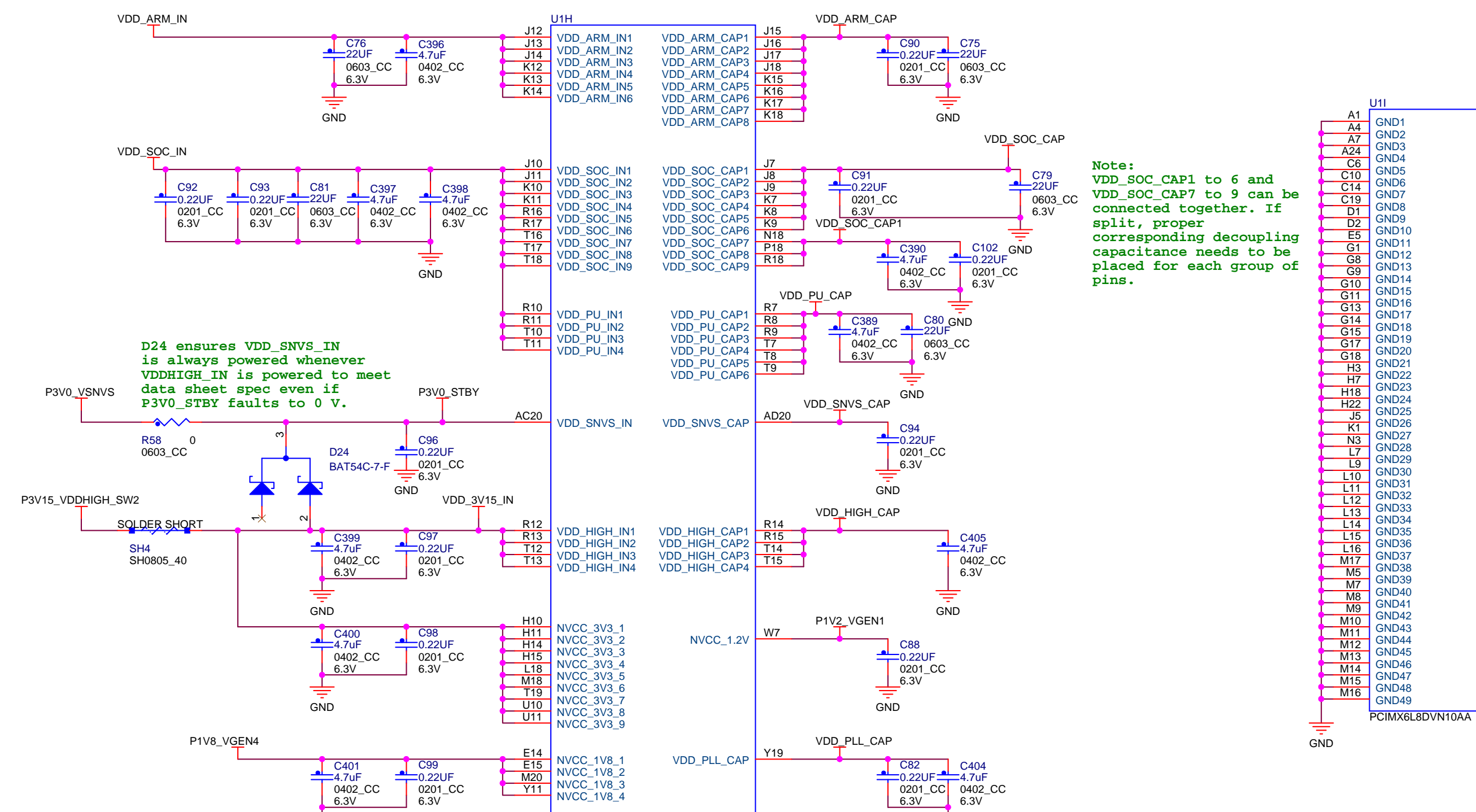
Note:
 Switcher currents and optimum inductor sizes vary depending on application. Please refer to the latest part datasheet for inductor recommendations.

Note: J17
 Shunt 1-2 for SYS_5V from PMIC: 600mA limited
 Shunt 2-3 for SYS_5V from wall adapter

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 Page Title: **PMIC**

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D24 ensures VDD_SNVS_IN is always powered whenever VDDHIGH_IN is powered to meet data sheet spec even if P3V0_STBY faults to 0 V.

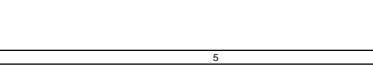
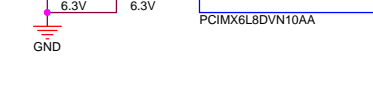
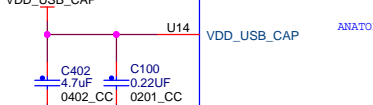
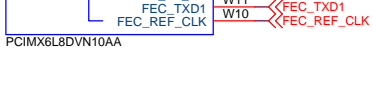
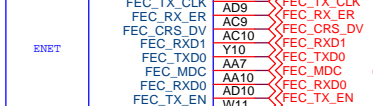
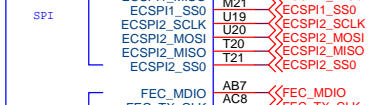
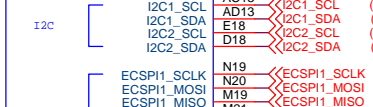
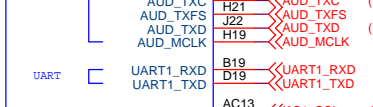
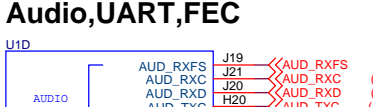
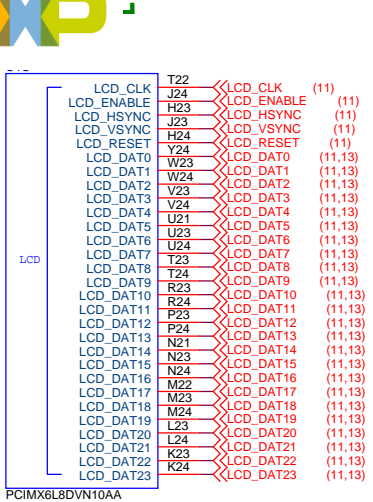
Note: VDD_SOC_CAP1 to 6 and VDD_SOC_CAP7 to 9 can be connected together. If split, proper corresponding decoupling capacitance needs to be placed for each group of pins.

i.mx6SL Power table				
i.mx6SL Voltage Rail	Voltage(V)	Current(mA)	Generated By	Power up sequence
VDD_ARM_IN	1.375	1250	P1V375_VDDARM_SW1AB	1
VDD_ARM_CAP	1.2@1GHz		internal	
VDD_SOC_IN	1.375	250	P1V375_VDDSOC_SW1C	1
VDD_SOC_CAP	1.1		internal	
VDD_PU_IN	1.375	250	P1V375_VDDSOC_SW1C	1
VDD_PU_CAP	1.1		internal	
VDD_SNVS_IN	3	1	P3V0_STBY	0
VDD_SNVS_CAP			internal	
VDD_HIGH_IN	3.15	150	P3V15_VDDHIGH_SW2	2
VDD_HIGH_CAP	2.5		internal	
NVCC_3V3	3.15	150	P3V15_VDDHIGH_SW2	2
NVCC_1V8	1.8	125	P1V8_VGEN4	3
NVCC_1.2V	1.2		P1V2_VGEN1	4
VDD_PLL_CAP	1.1		internal	
VDD_USB_CAP	3		internal	
DARM_PWR_2P5	2.5		VDD_HIGH_CAP	2
DRAM_PWR	1.2	200	P1V2_DDR_SW3	4
DRAM_VREF	0.6		POW6_VREFDDR	4

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 Page Title: **IMX6SL_Power**

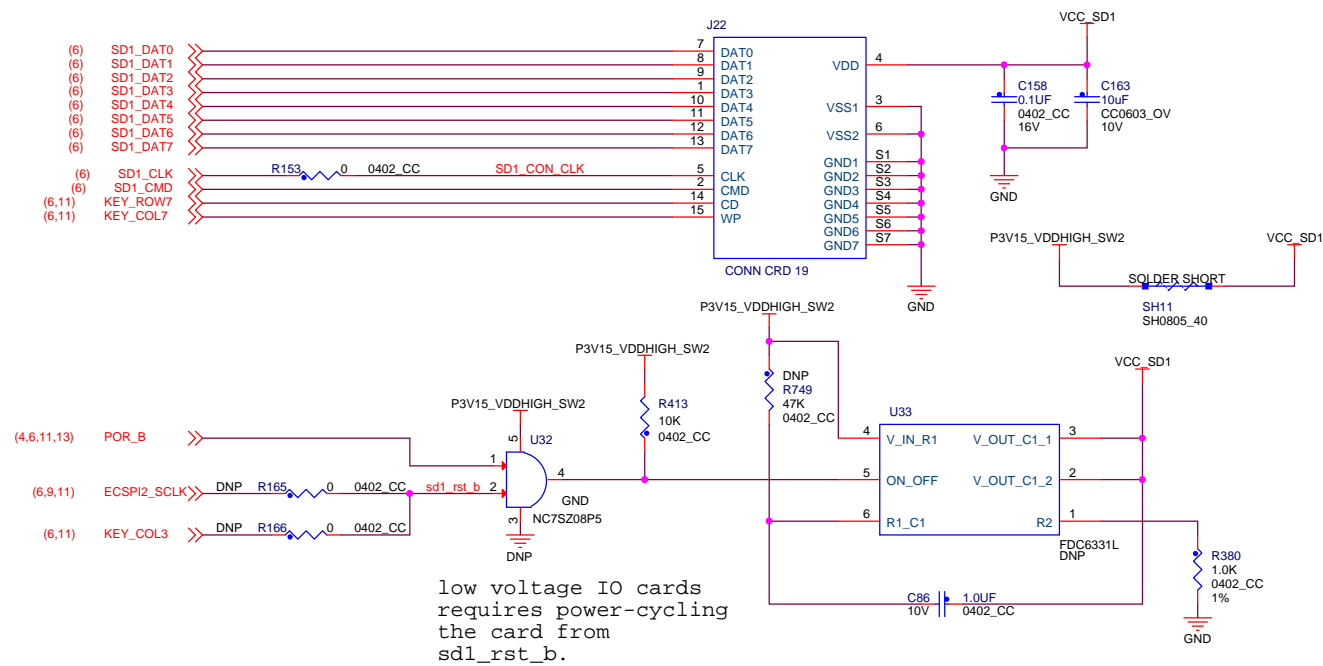
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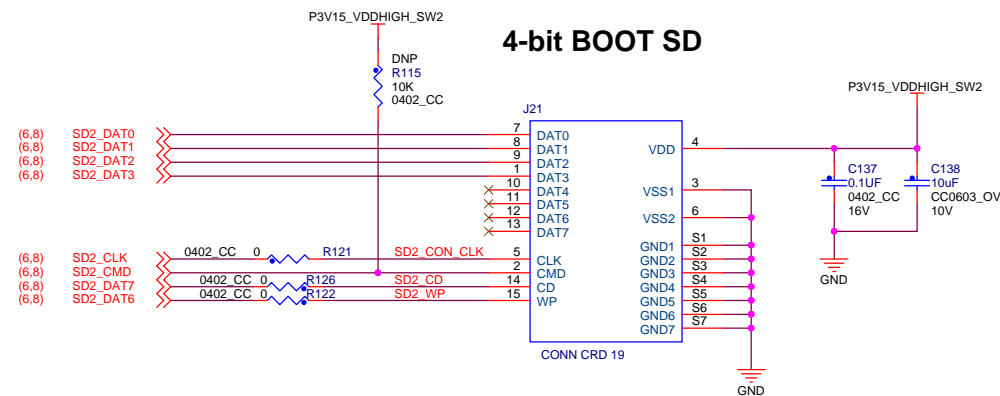


NXP - For Primary External Card Slot

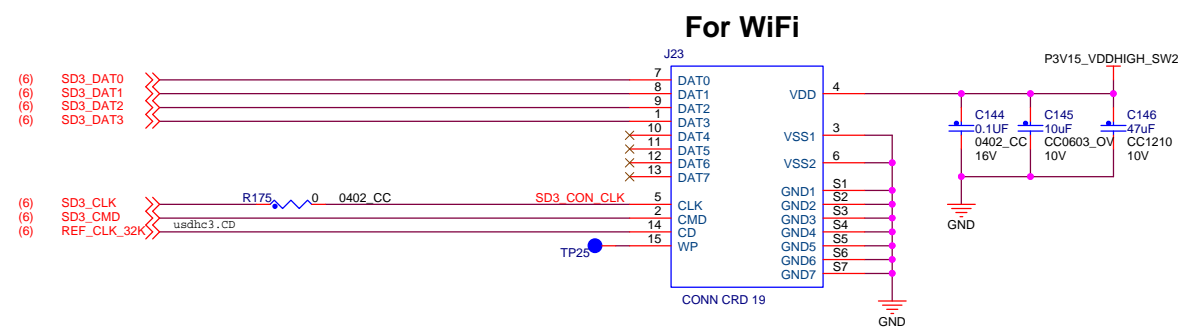
8-bit SD



SD2 - For Boot Code

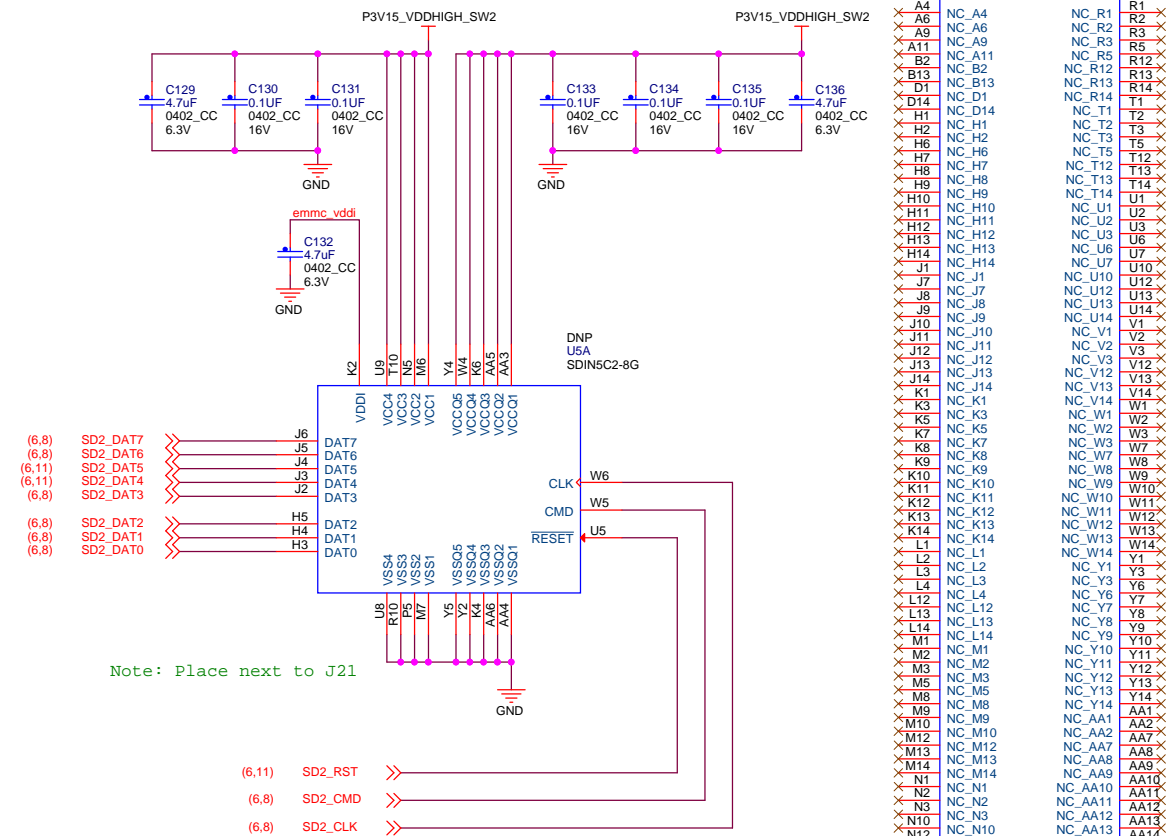


SD3 - for WiFi and SD Accessories

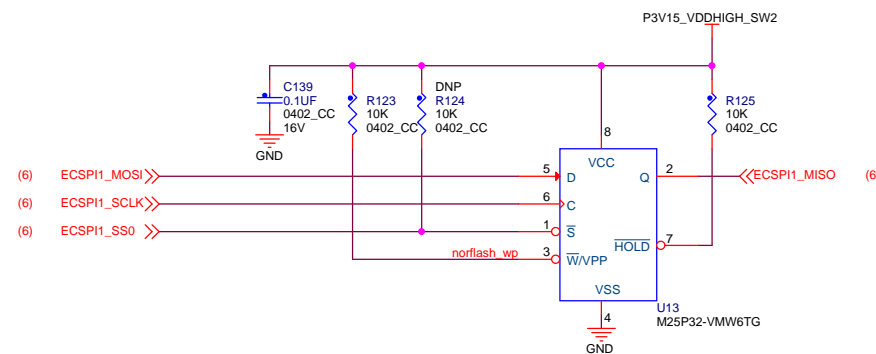


eMMC Footprint

8GB eMMC



4MB SPI NOR FLASH



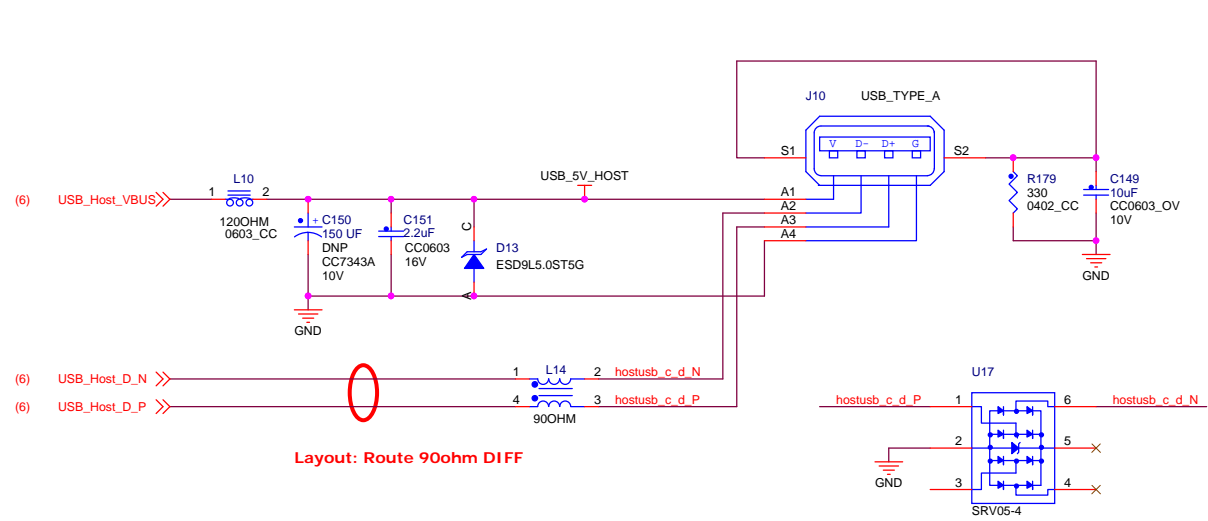
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ICAP Classification: FCP: _____ FIUC: X PUBI: _____
 Drawing Title: **MCIMX6SLEVK board**
 Page Title: **EMMC, SD and SPI NOR**

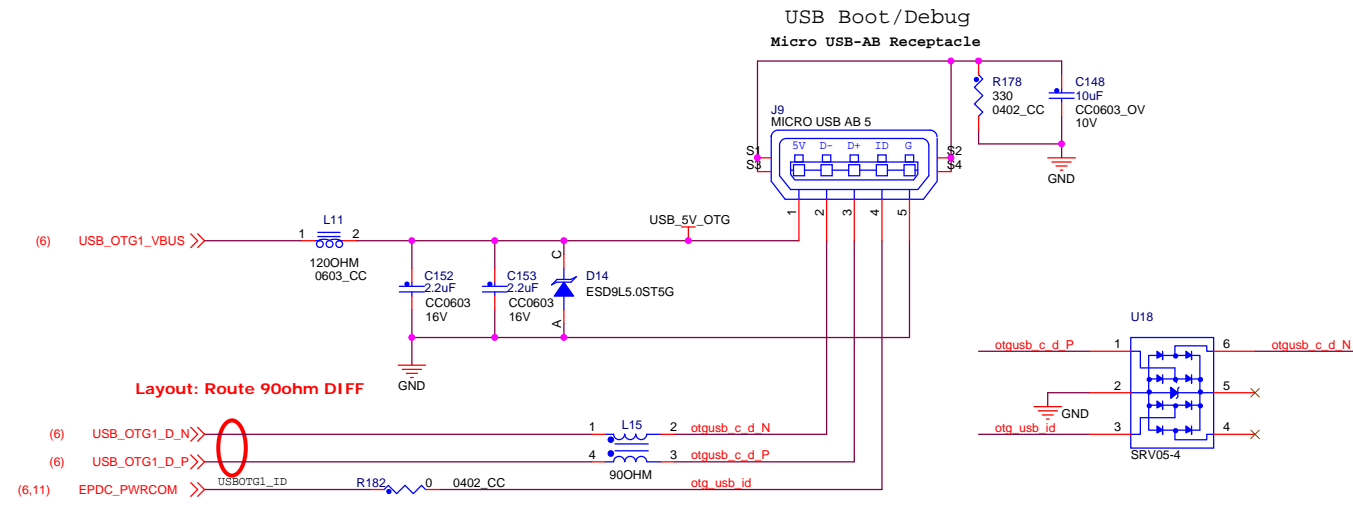
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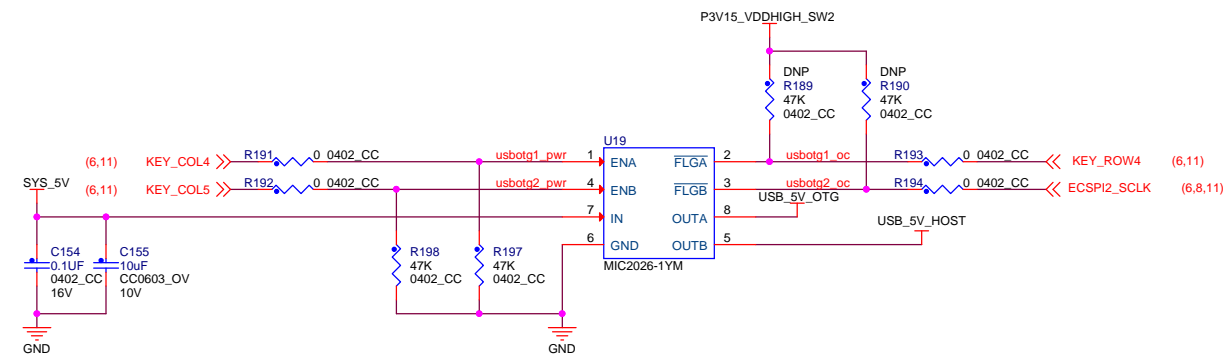
USB Host Port



USB Boot/Host/Device Port



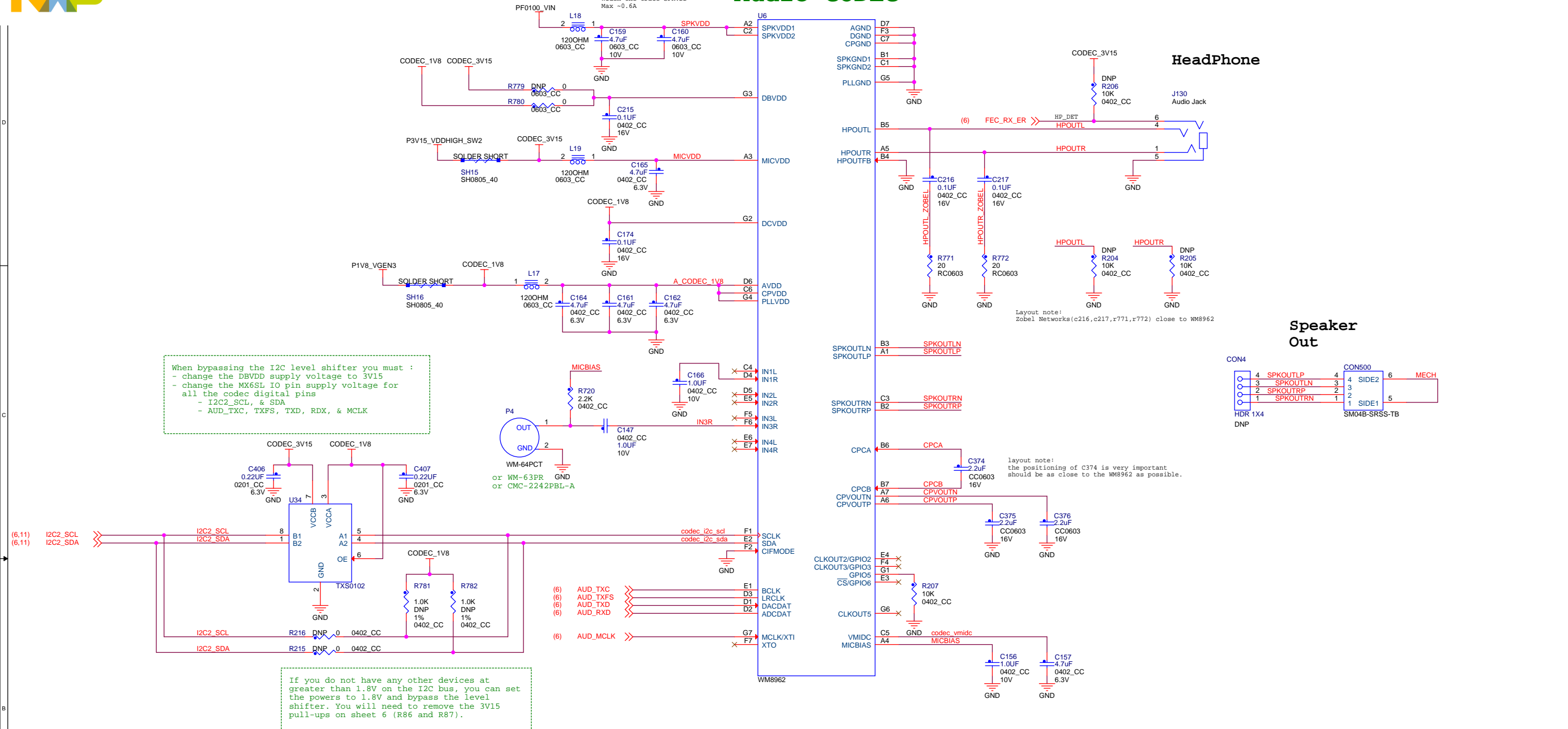
USB 5V Control





Audio CODEC

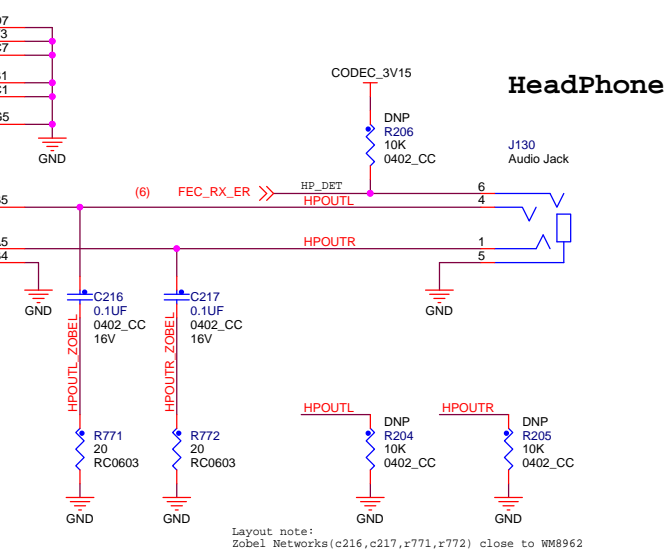
layout note:
Widen the trace SPKVDD
Max -0.6A



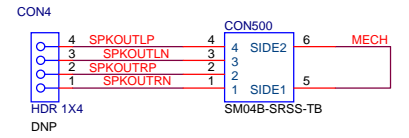
When bypassing the I2C level shifter you must :
 - change the DBVDD supply voltage to 3V15
 - change the MX6SL IO pin supply voltage for all the codec digital pins
 - I2C2_SCL, & SDA
 - AUD_TXC, TXFS, TXD, RDX, & MCLK

If you do not have any other devices at greater than 1.8V on the I2C bus, you can set the powers to 1.8V and bypass the level shifter. You will need to remove the 3V15 pull-ups on sheet 6 (R86 and R87).

HeadPhone



Speaker Out



layout note:
the positioning of C374 is very important
should be as close to the WM8962 as possible.

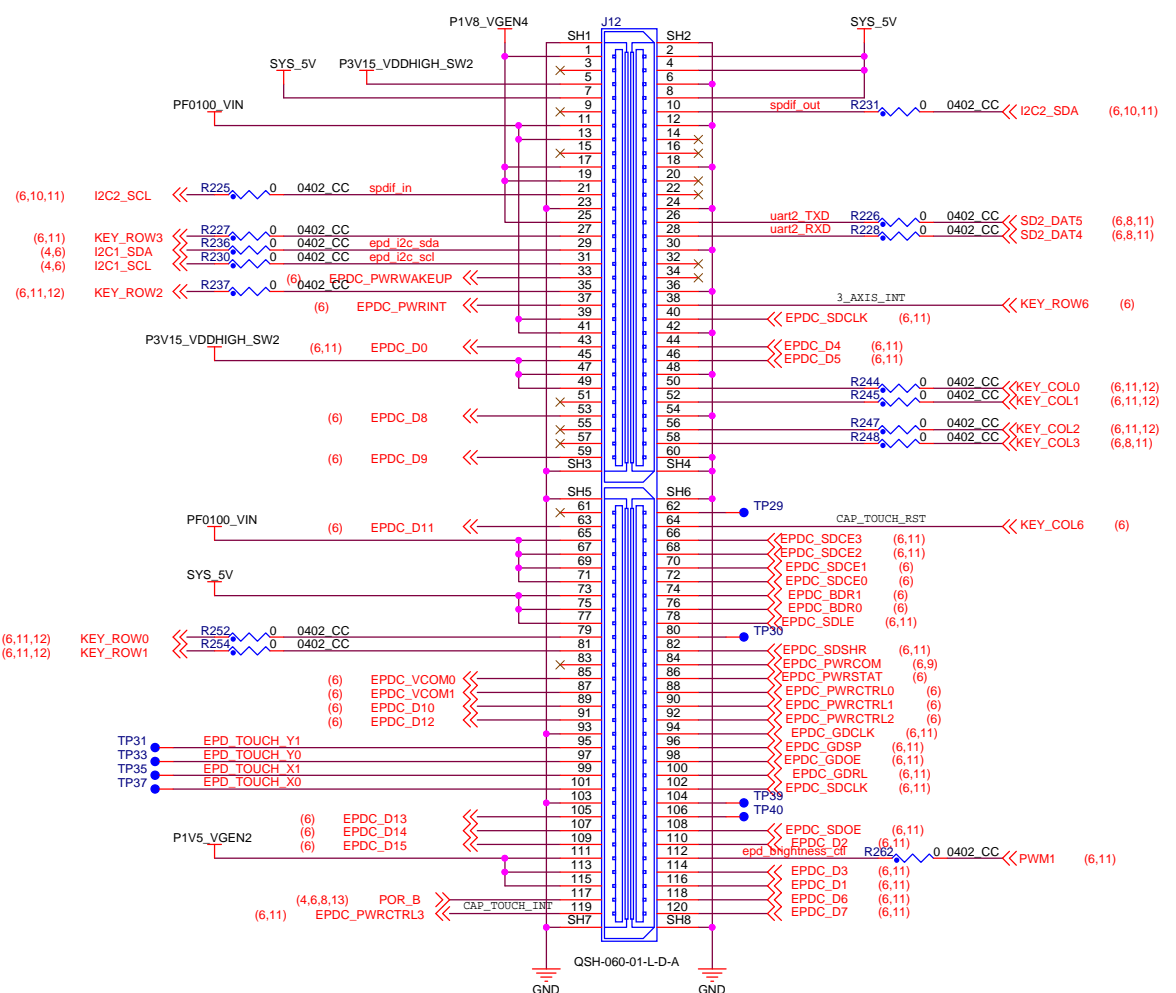
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ICAP Classification: FCP: _____ FIUC: X PUBI: _____
 Drawing Title: **MCIMX6SLEVK board**
 Page Title: **Audio**

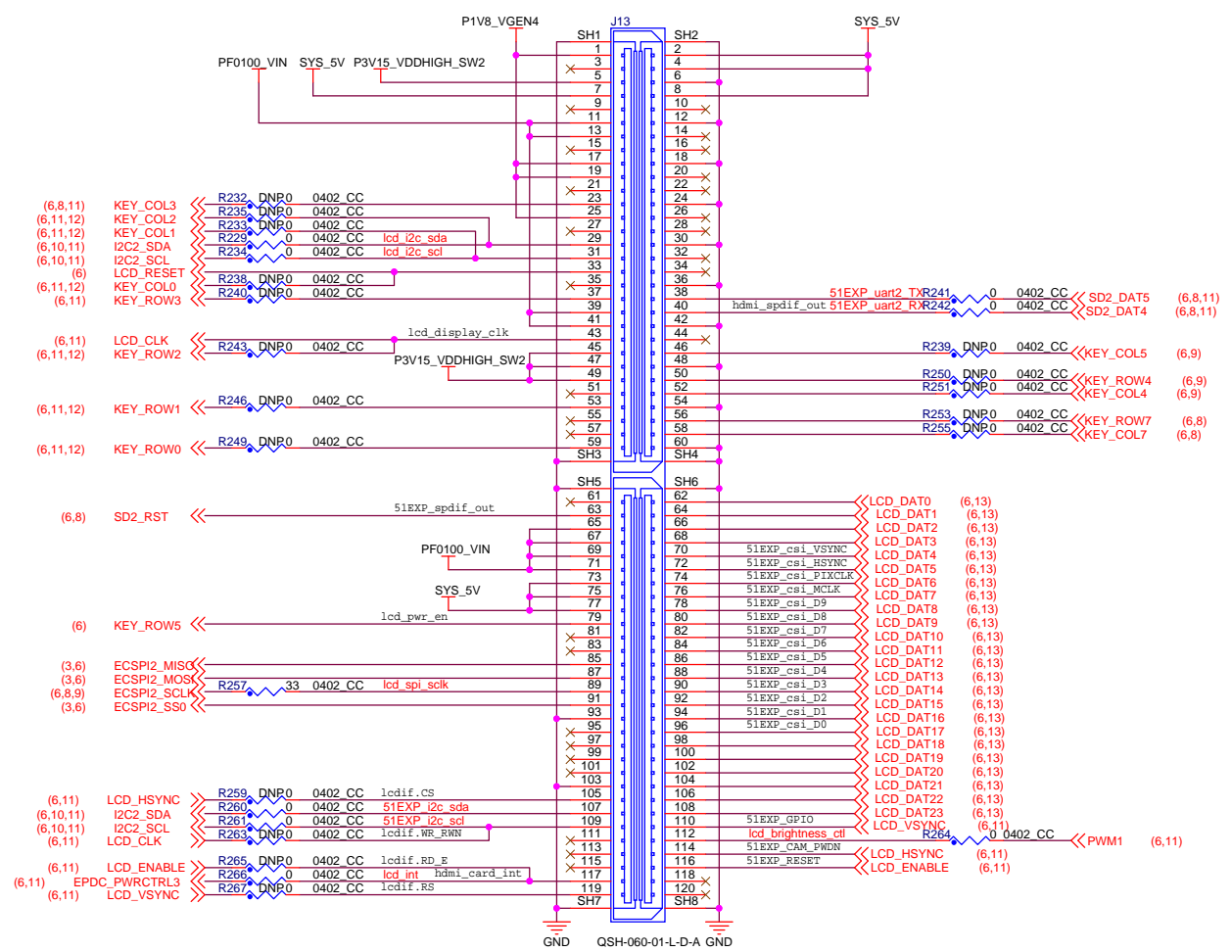
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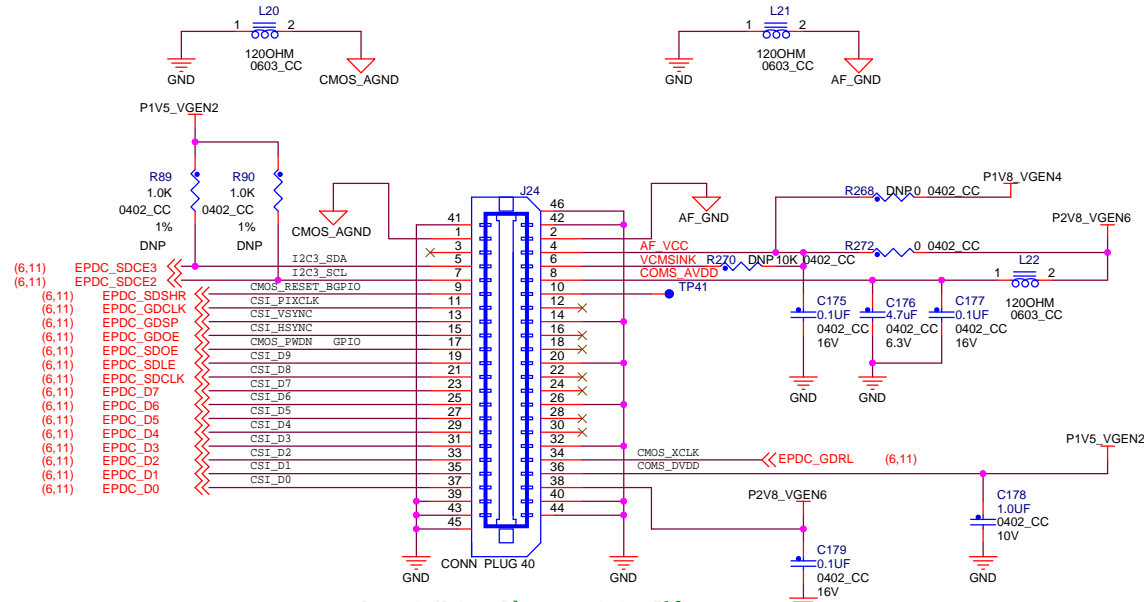
EPDC Expansion Port



LCD Expansion Port



Camera Expansion Connector



Layout Note: Place next to J12
 Use Omnivision OV5642 5M Pixel Sensor with this connector (not included)

Important Note:

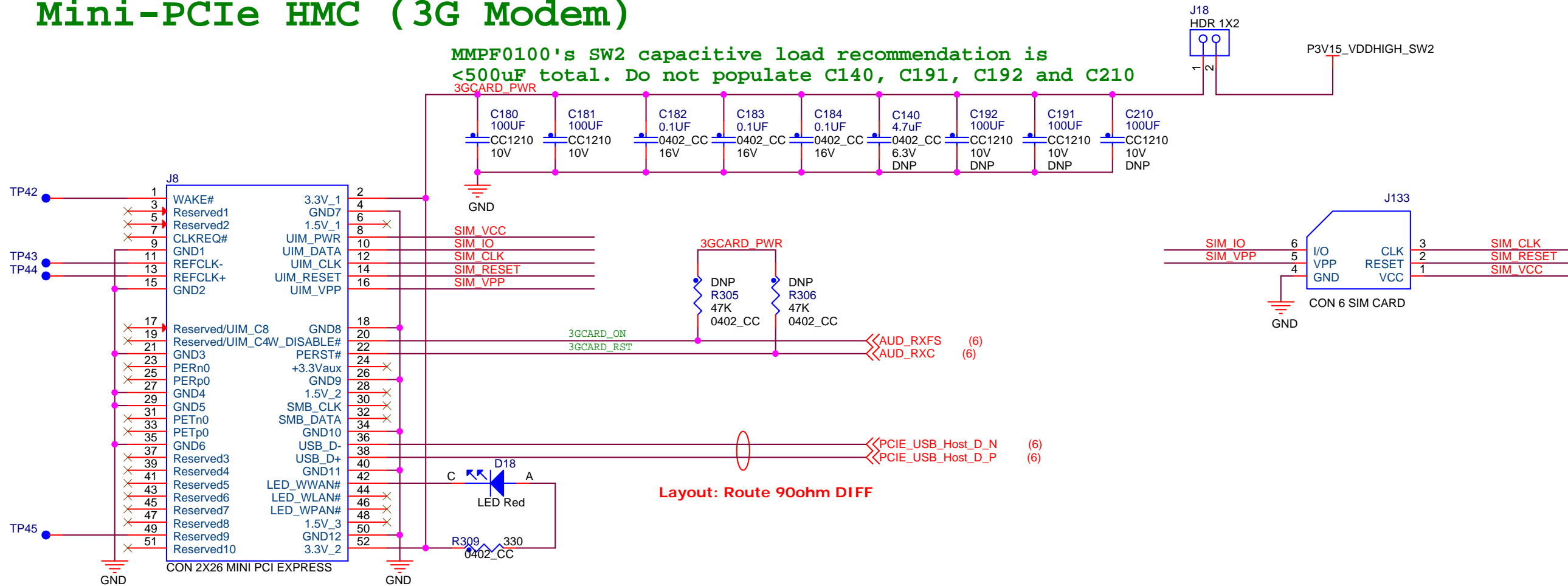
The camera connector (J24) and the EPDC connector (J12) share the same signals and CANNOT be used at the same time.

One of these two peripherals MUST BE REMOVED when a developer wishes to use the other.

ICAP Classification: FCP: _____ FIUC: X PUBI: _____		
Drawing Title: MCIMX6SLEVK board		
Page Title: Video		
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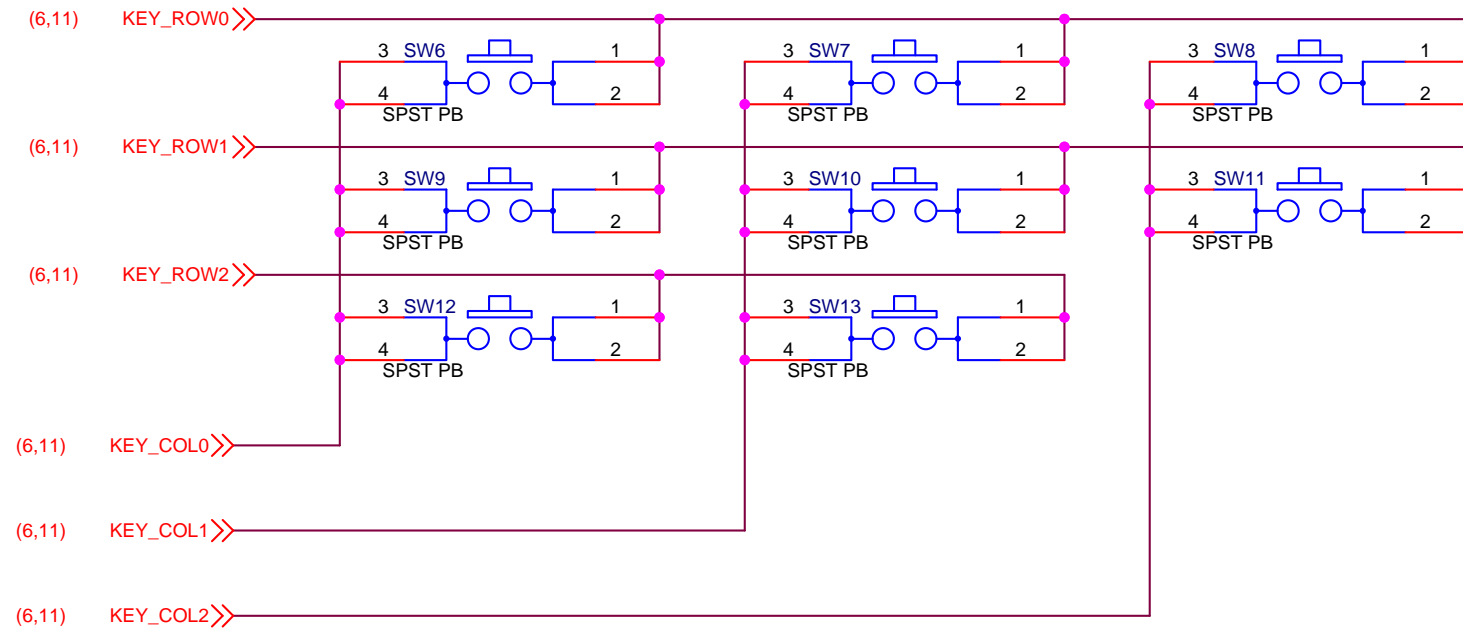
Mini-PCIE HMC (3G Modem)

MMPF0100's SW2 capacitive load recommendation is <500uF total. Do not populate C140, C191, C192 and C210

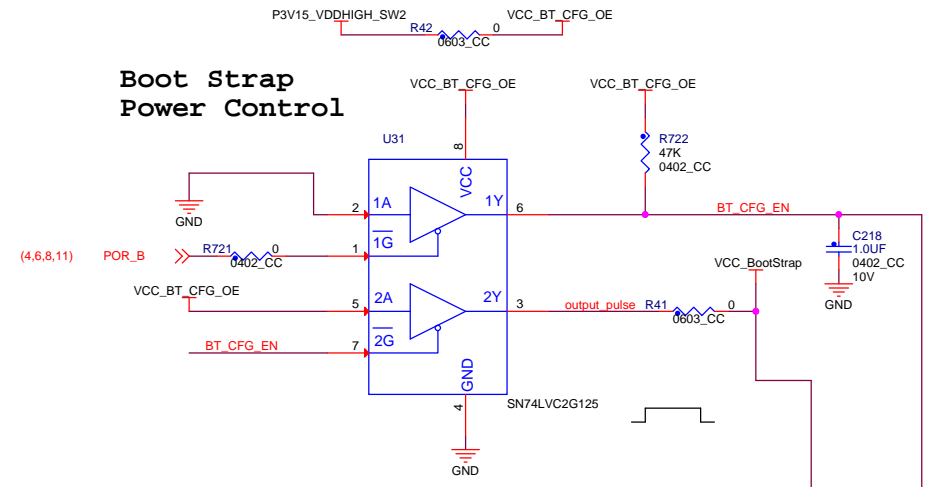


Layout: Route 90ohm DIFF

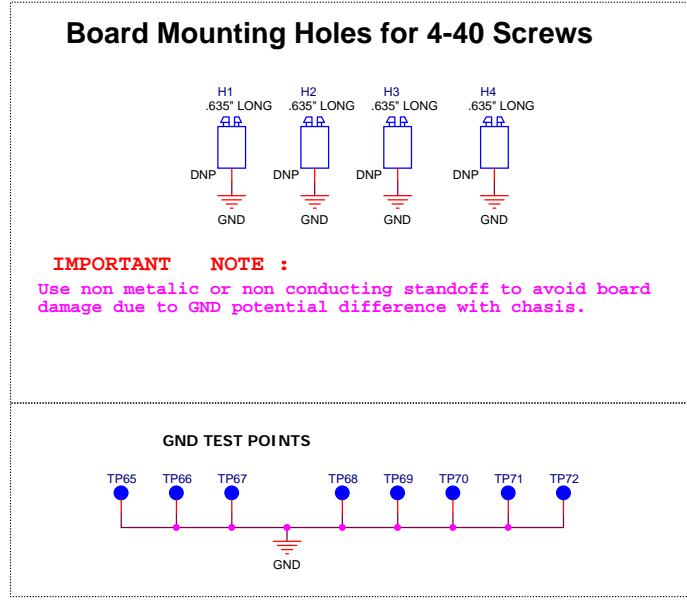
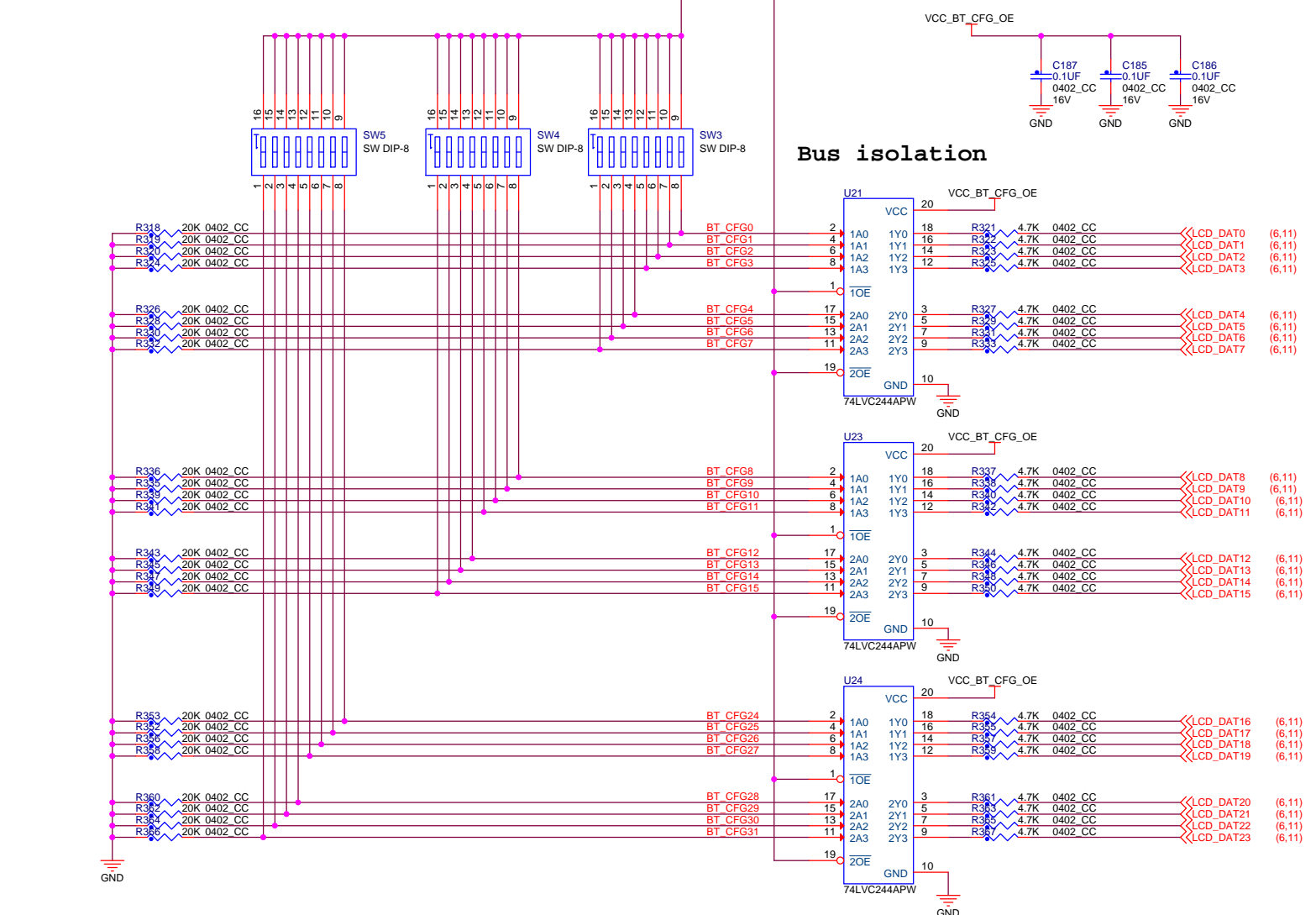
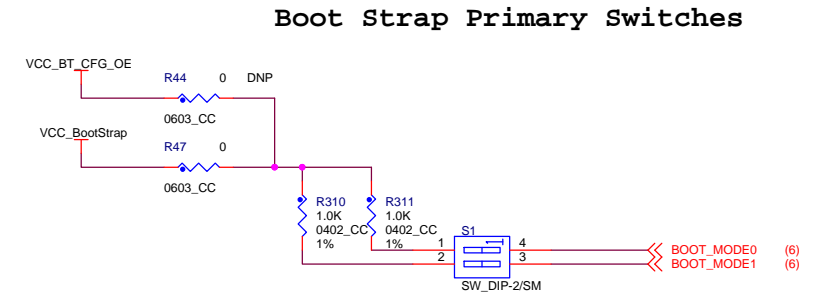
Button Matrix



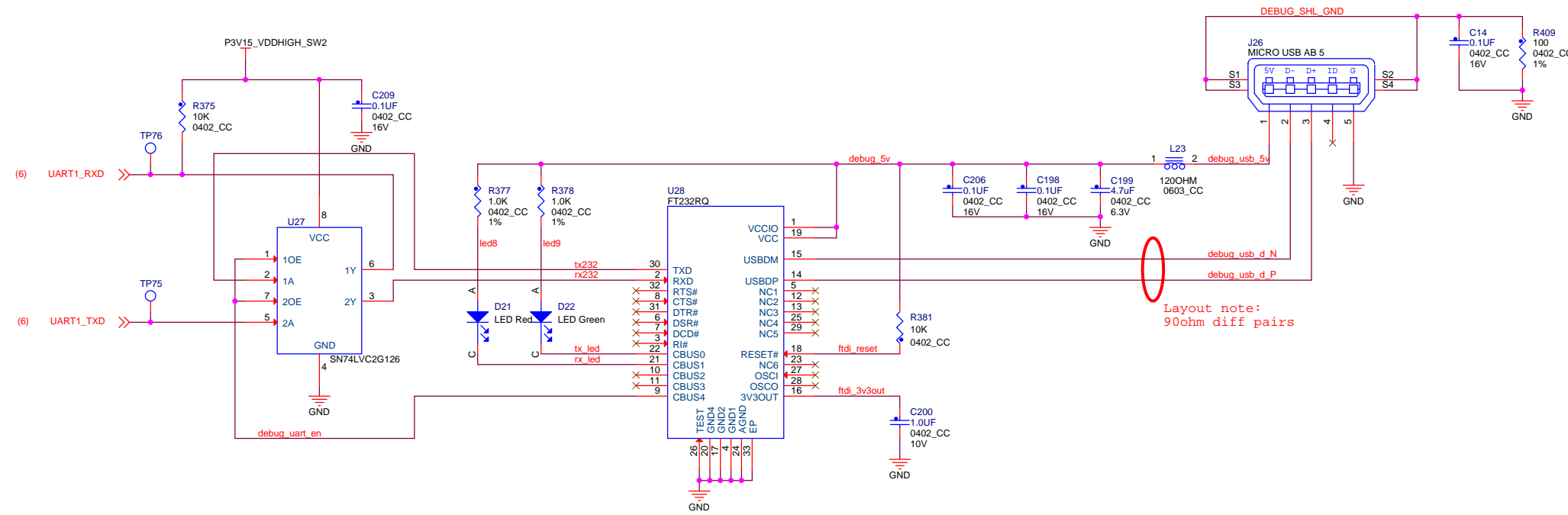
ICAP Classification: FCP:___ FIUO: X PUBL:___		
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Note:
i.MX6SL reads values approximately 300uS to 1mS after reset released. Buffers are active while unit is in reset and lms-10ms after reset is released.

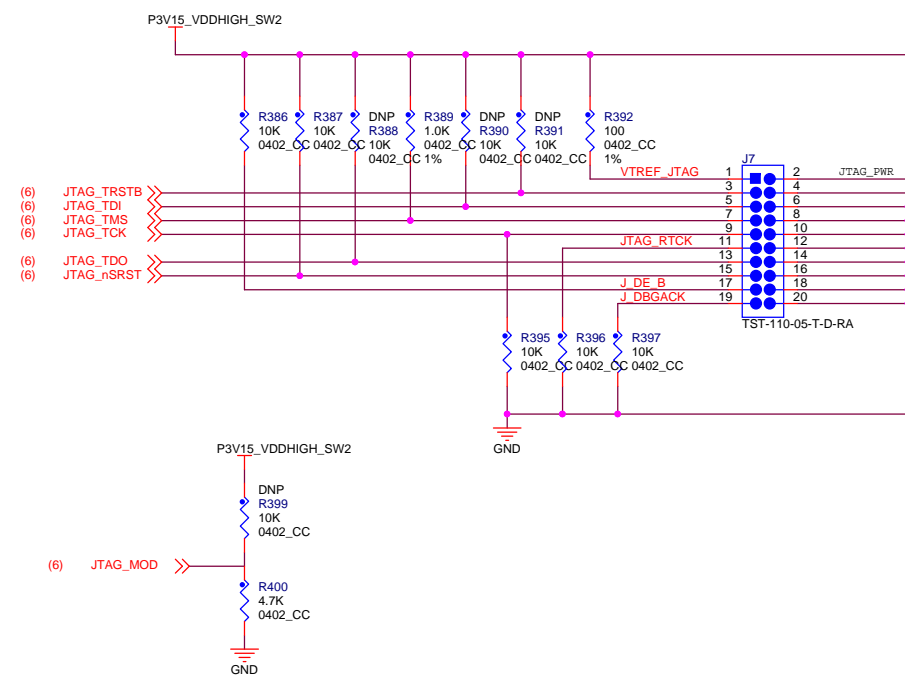


Debug UART2USB Converter

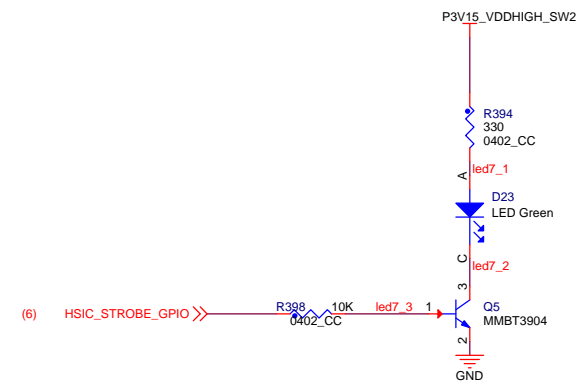


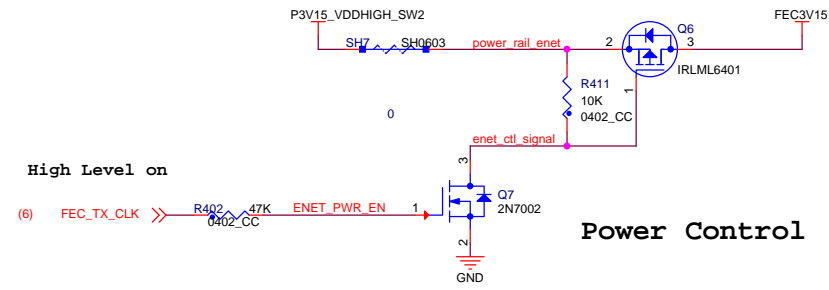
For driver installation, please refer to <http://www.ftdichip.com/Documents/InstallGuides.htm>

JTAG

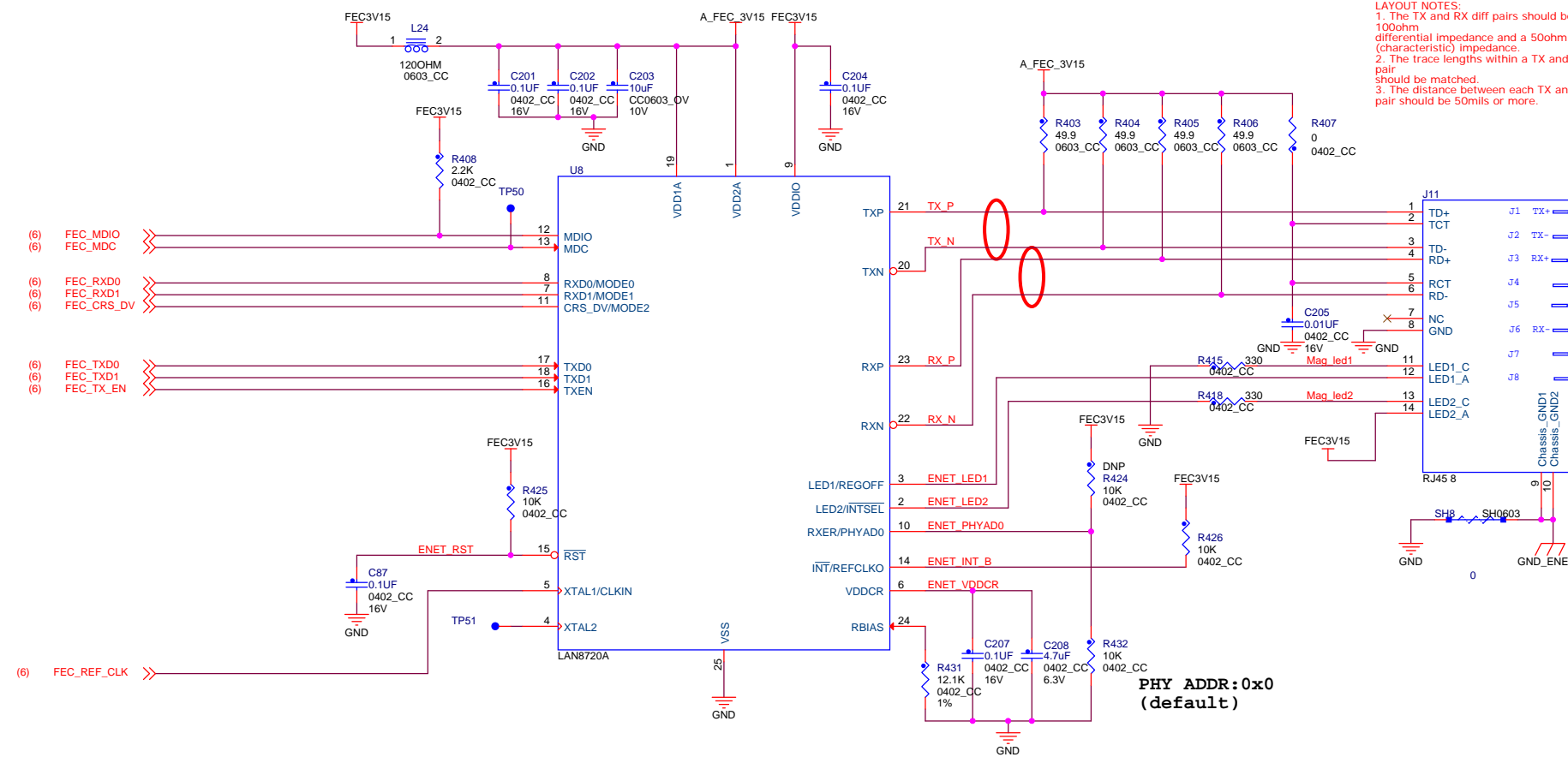


Debug LED





Ethernet





IOMUX Table

Table with columns: PIN NAME, ALTO, ALT1, ALT2, ALT3, ALT4, ALT5, ALT6, ALT7. It lists various pins and their configurations across different alt modes.