

MIMXRT595-EVK

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Revision History

Rev. Code	Date	Description
A	20190311	First release
B	20190516	1. Remove Q14 and related resistor 2. Add level translator for nRESET 3. Optimize MIPI power supply 4. VDDIO_2 is compatible with two power domains-3V3 and 1V8 5. Change VDDIO_3 from 1.8V to 3.3V 6. Change eMMC IO power domain 7. Change SD card supply 8. Change analog MFC circuit 9. Change LED brightness 10. Change FlexIO LCD and arduino IO power domain to 3.3V 11. Add disable circuits for external UART 12. Optimize reset circuit
	20190705	1. Add AMP function 2. Change power supply of SD card
	20190709	1. add jumpers J29 and J30 instead of resistors R168 and R159
	20190726	1. Merge the VDD_IO and VDDD to a single supply for U109 and U114, and removed C52 and C299.
	20190731	1. Optimize PMIC circuit, and add L25 for FRO function
B1	20190906	1. Modify typo, this is a non-electrical change.
C	20200221	1. add load switch for SD card powe cycle 2. change DDC U103 for M.2 supply 3. add low Vf diode D28 for I2C communication 4. add load switch for M.2 5. optimize link2 debug buffer 6. add on board dmic
	20200306	1. optimize de-coupling capacitors 2. optimize mcu symbol
C1	20200423	1. correct j-trace interface 2. optimaize SDIO0 bus
D	20201016	1. Connected VDDIO_2 to MCU_1V8 2. Updated the symbol for MIMXRT595SFFOC using updated MUX table 3. Added a note for the External DMIC connector connection 4. Added a note for JTAG Connection 5. Removed U116 (Only support Low Voltage SD Card now; No boot support) 6. Updated R179 and R180 for 5V VBUS detect (Previously using 3V VBUS detect) 7. U117 uses new GPIO (PIO4_0)
D1	20210111	1. Change R547, R548 with RES 12K (470-30955) from 4.7K (470-82064).
D2	20210607	1. Change J39, J40 to USB205FB-C1013224
D3	20211310	U6 making into DNP

Block	Net Name	Design Voltage	Design Current
USB Connector	USB_HS_BUST_VBUS	5.0V	0.5A/0.5A/1.5A(max)
	USB_BATT_VDD	5.0V	0.5A/0.5A
	USB_BATT_VDD	5.0V	0.5A/0.5A
Diode	SWC_S00	1.0V	0.5A/0.5A
PMIC	PMIC_LDO1_OUT	1.8V(default)	0.01A
	PMIC_LDO2_OUT	3.3V(default)	0.25A
	PMIC_LDO3_OUT	1.8V(default)	0.25A
	PMIC_LDO4_OUT	1.8V(default)	0.5A
IC0	VCC_VP	3.3V	1.0A
	VCC_VP	1.8V	1.0A
DDC Buck	DDC_VDD	3.3V	2.0A
Load Switch	SDC_VDD	3.3V	-

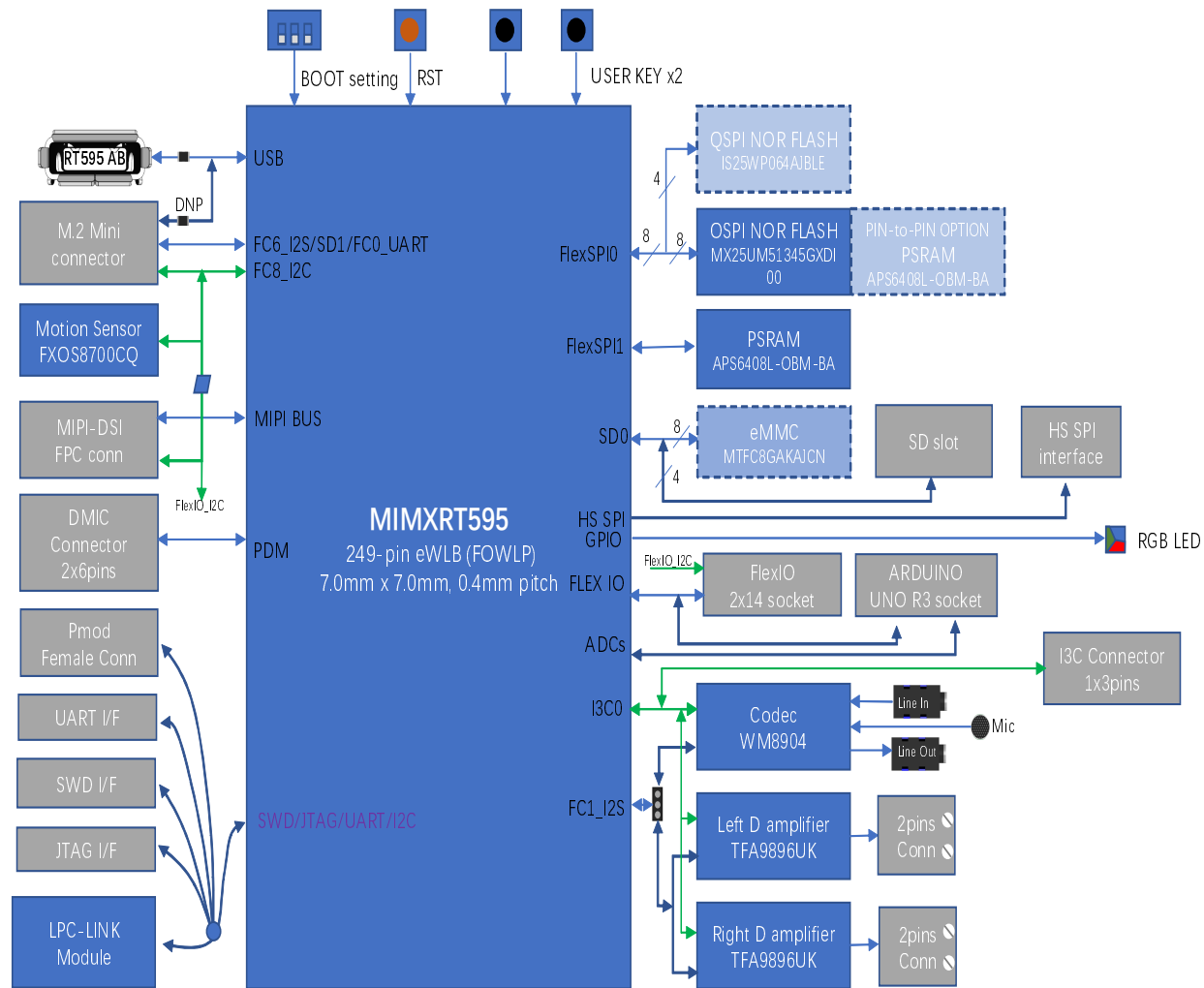
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REF DES	ASSY OPT	PAGE NAME
SS2,R149,SS4,C337,R750,R153,SS1,SS3,R150,C336,L25,J37,R154	DNP	05_SYSTEM_POWER
R656	DNP	06_RT595_POWER
R679,R536	DNP	07_RT595_IO
R456,R697,R457,R431,R430,R500,R693,R695,R691,R359,R700,R701,R458,R427,R692,R434,R694,R696,R429,R358,R790,R688,R699,R432	DNP	08_MEMORY
C324	DNP	09_AUDIO_CODEC
R57,R52,R653,R746,R652	DNP	10_AUDIO_AMP
R140,R139,R137,R138,U6	DNP	11_ACC_LED_BUTTON_UNO
C239,R478,R495,R494,R499,R546,R477,R490,R476,R545	DNP	12_MIPI_DSI
C321,C354,R671,Y8,R788,R712	DNP	13_M2_FXIO_DMIC_I3C_IF
JS17,J35	DNP	14_PMOD_ISP
R12,JP30,R15,R734,R5	DNP	16_LINK2_DEBUG
R125,R659	DNP	17_SWD_BUF

REF DES	JUMPER(DEFAULT)	PAGE NAME
JP23,JS19,JS18,JP21,JP24	1-2	05_SYSTEM_POWER
JS21,JS20,JS30,JS23,JS25,JS29,JS22,JS24	1-2	06_RT595_POWER
JS28	2-3	06_RT595_POWER
JS26	1-2	08_MEMORY
JP6,JP27,JP8,JP28,JP29,JP7	1-2	09_AUDIO_CODEC
JP11	1-2	10_AUDIO_AMP
JP33	1-2	11_ACC_LED_BUTTON_UNO
JS9,JS27,JP13	1-2	14_PMOD_ISP
JS5,JP1,JS6	NONE	16_LINK2_DEBUG
JS1,JP17,JP2,JP18,JP19	1-2	17_SWD_BUF
JP3	NONE	17_SWD_BUF
JP32,JP4	NONE	18_DEBUG_UART_SPI

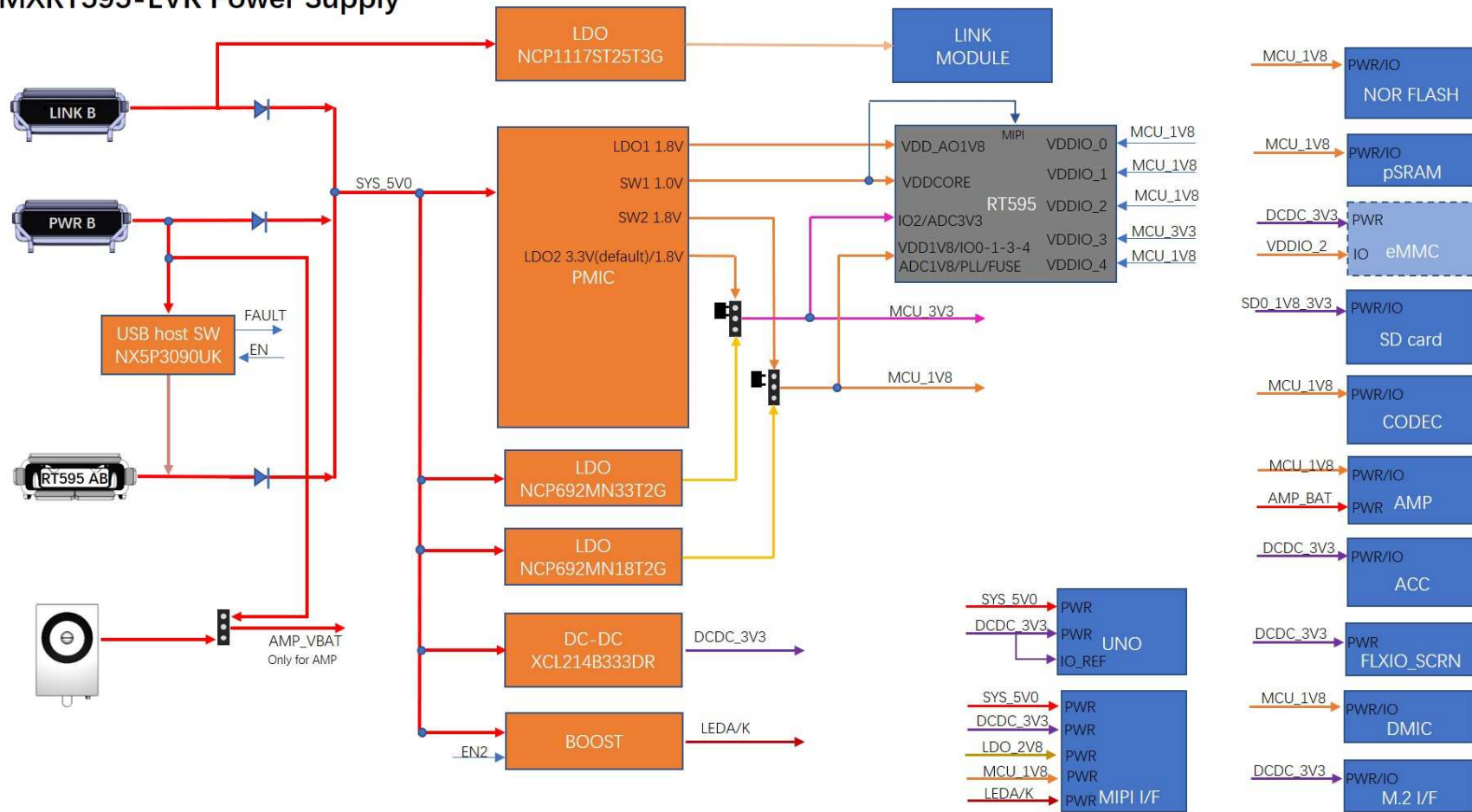


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Page Title: Title and Rev History							
Size C	Document Number	SCH-45800 PDF: SPF-45800					Rev 00
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Drawing Title: MIMXRT595-EVK			
Page Title: System Diagram			
Size C	Document Number SCH-45800 PDF: SPF-45800	Rev 03	
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MIMXRT595-EVK Power Supply



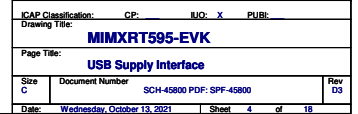
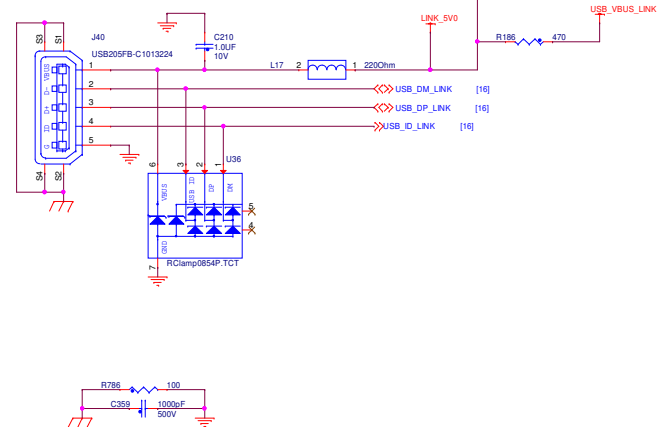
TARGET Hi-SPD
USB DEVICE / HOST
MICRO AB



External +5V
Power only
Micro-B

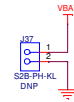


Link
USB Device
Micro-B



Battery Holder:
Option to Connect
2025/ 2032 Size
Coin Cell Battery

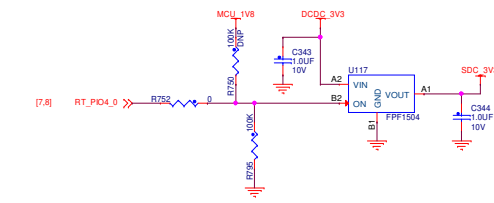
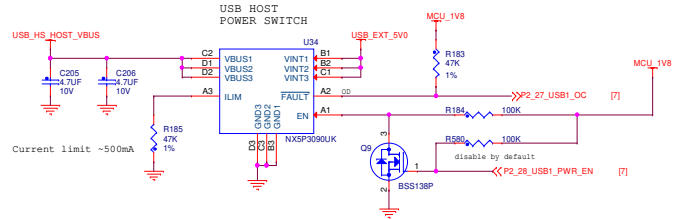
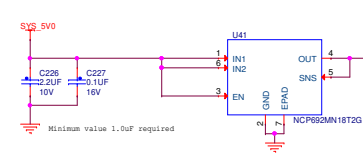
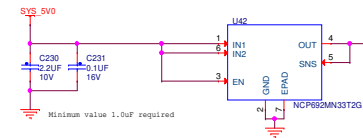
when power supply from Battery,
need to short JPS1 (2-3),
and some functions that belong
to 5V power domain are limited.



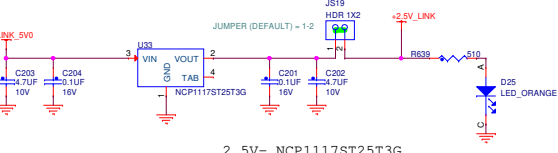
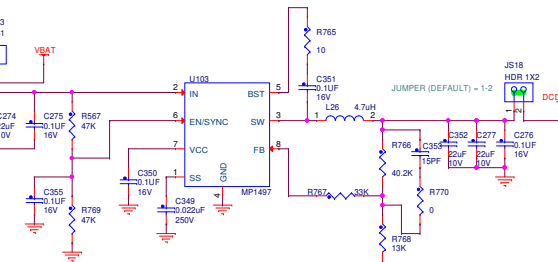
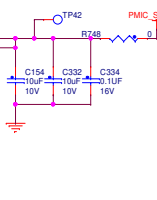
Programmable Output Voltage Regulation:

1. SW1: Core Buck, 0.5V~1.5V Output, 50mV/step, up to 250mA
2. SW2: System Buck, 1.5V~2.1V/2.7V~3.3V Output, 25mV/step, up to 500mA
3. LDO1: Always ON LDO, 1.70V~1.90V Output, 25mV/step, up to 1mA
4. LDO2: System LDO, 1.5V~2.1V/2.7V~3.3V Output, 25mV/step, up to 250mA

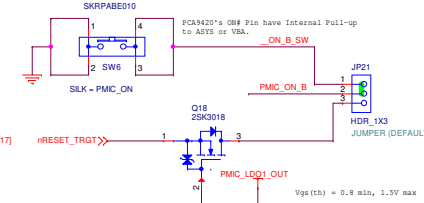
MODE 0 by default
SW1 = 1.0V for core supply
SW2 = 1.5V
LDO1 = 1.8V for RTC always on
LDO2 = 3.3V



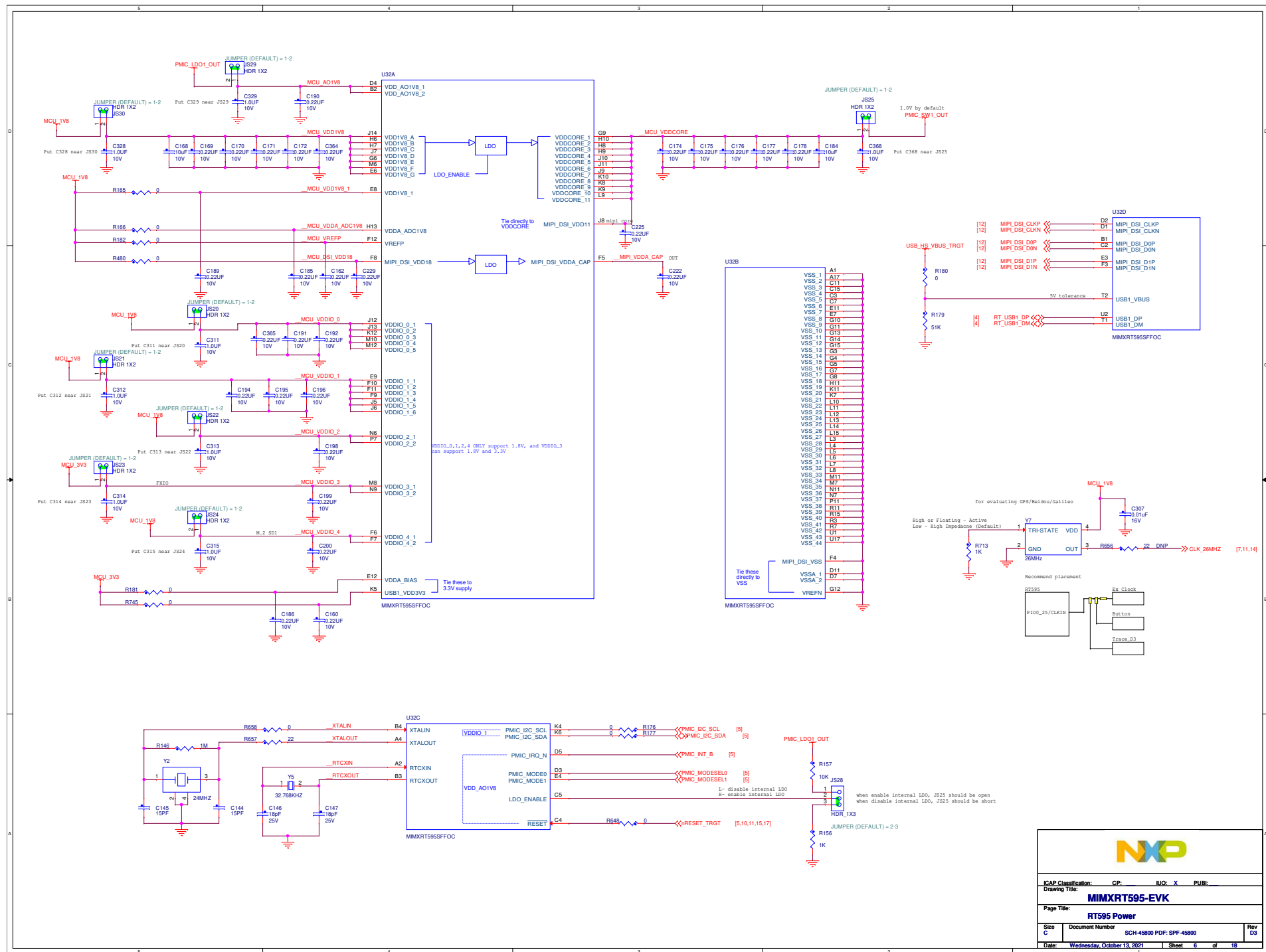
mcu core supply



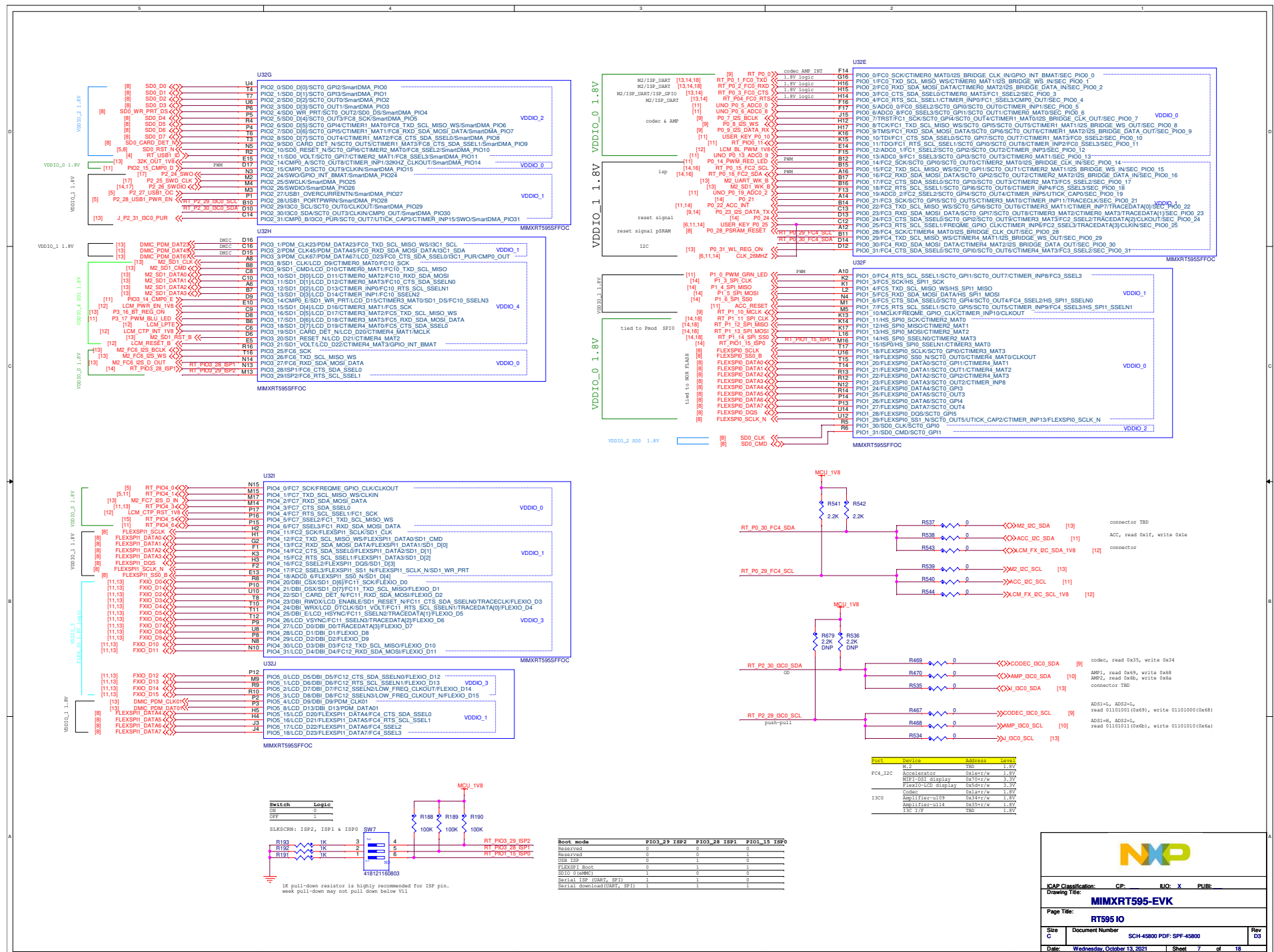
Link 2.5v Power
2.5V- NCP1117ST25T3G
3.3V- NCP1117ST33T3G

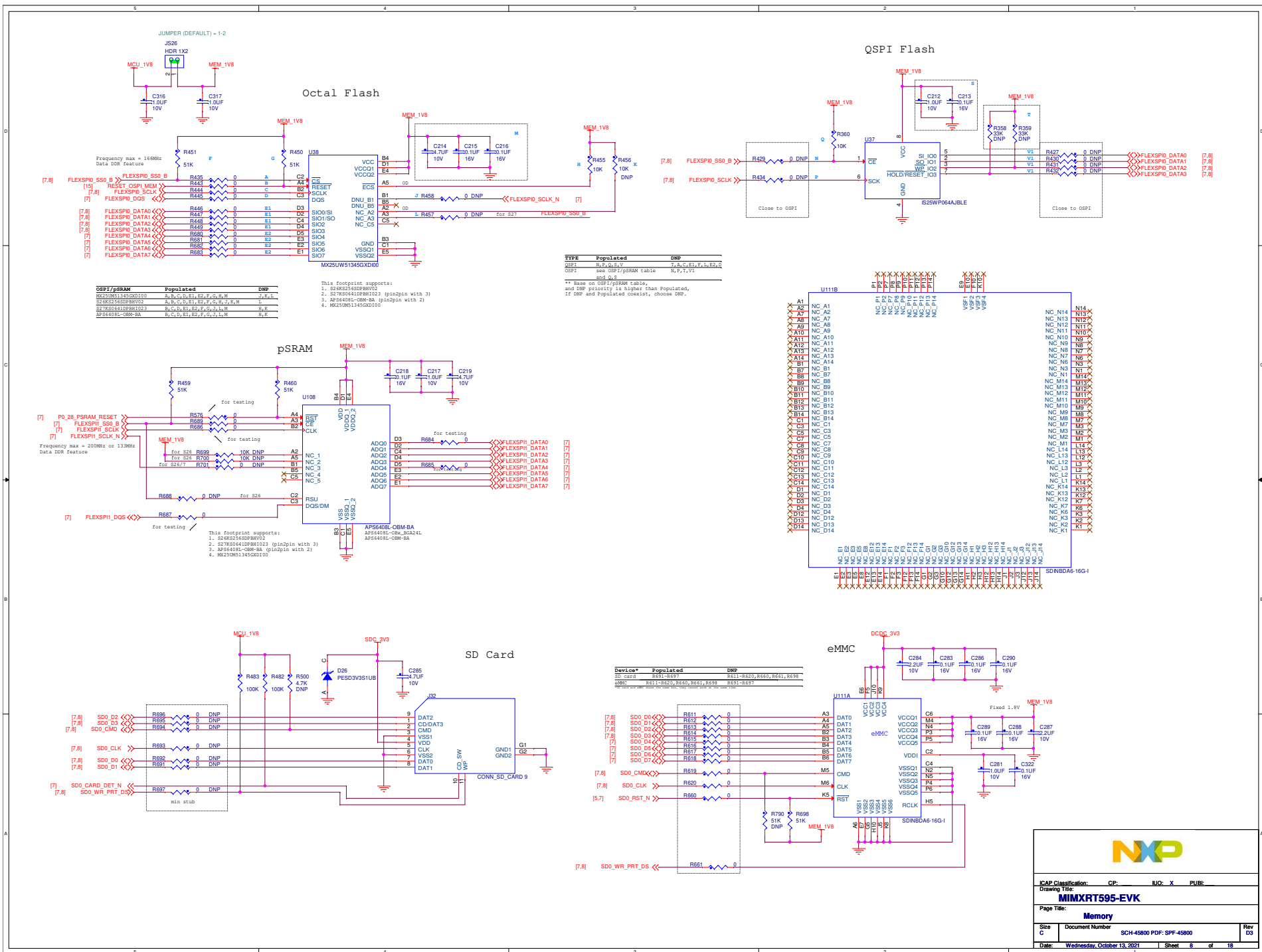


IAP Classification:		CP:	UIC: X	PUB:
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Page Title:		System Power		
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Page Title:		RT595 Power			
Size	Document Number	SCH-45800 PDF: SPF-45800			Rev
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Date:		Wednesday, October 13, 2021	Sheet	6	of 18





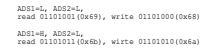
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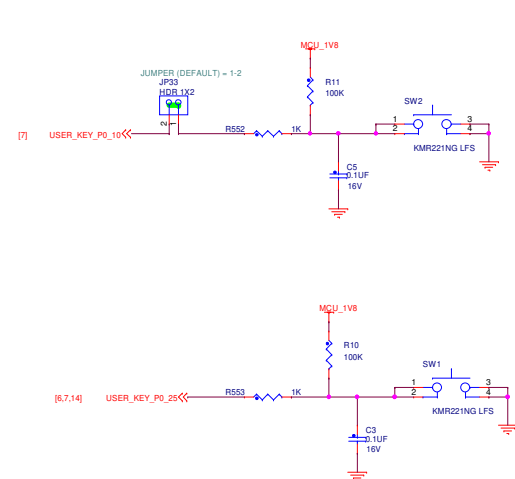
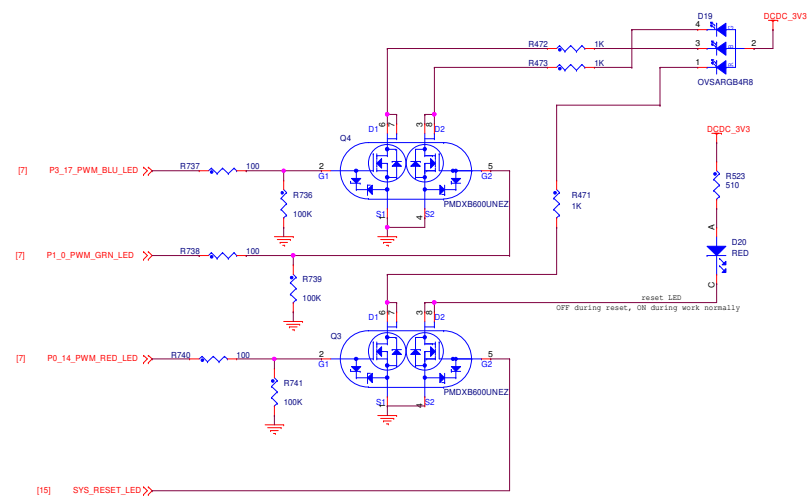
Drawing Title: **MIMXRT595-EVK**

Page Title: **Memory**

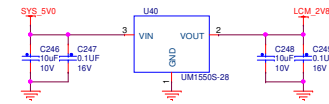
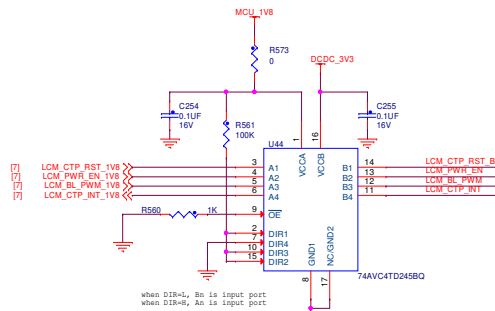
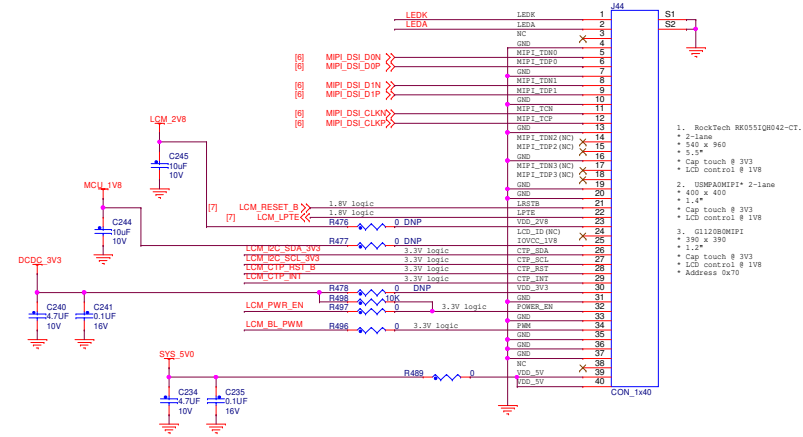
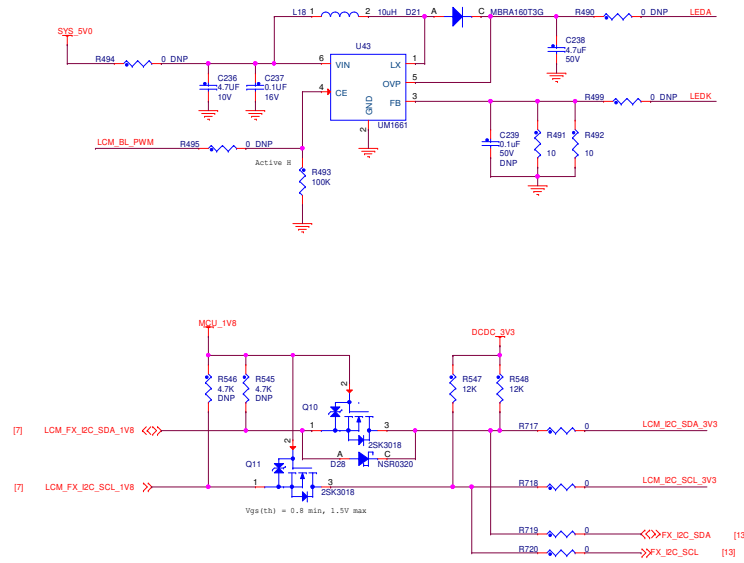
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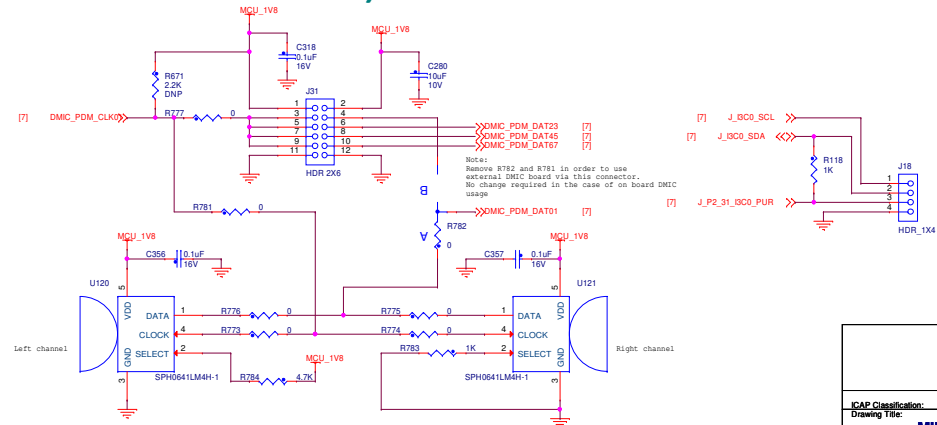
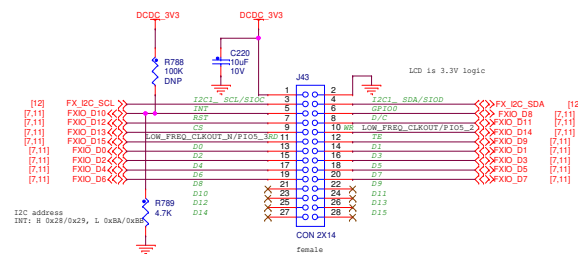
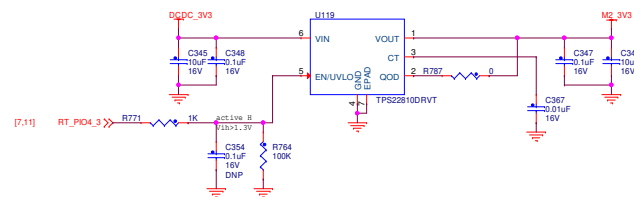



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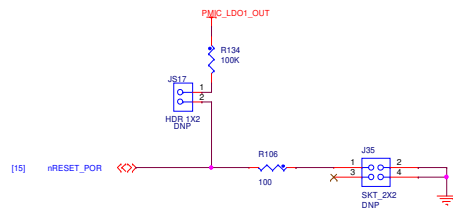
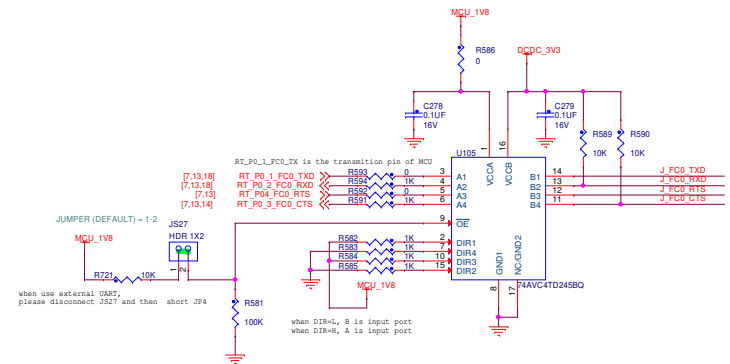
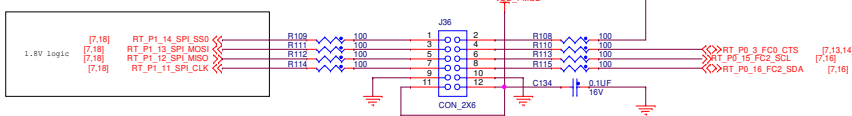
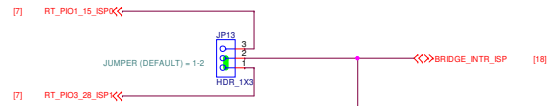
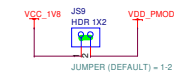
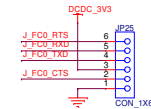
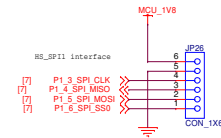
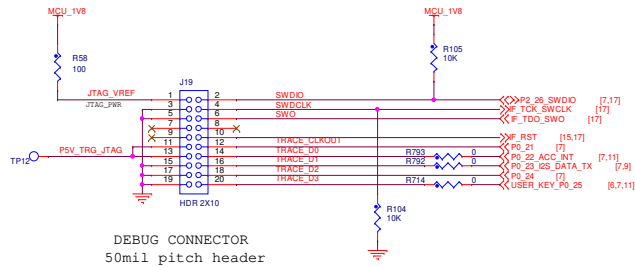
back light circuit supports RR051QR042-CT accessory
not support UM980R025 & G1120R0125 accessories

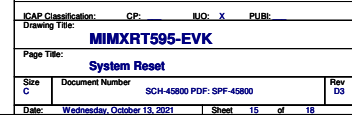
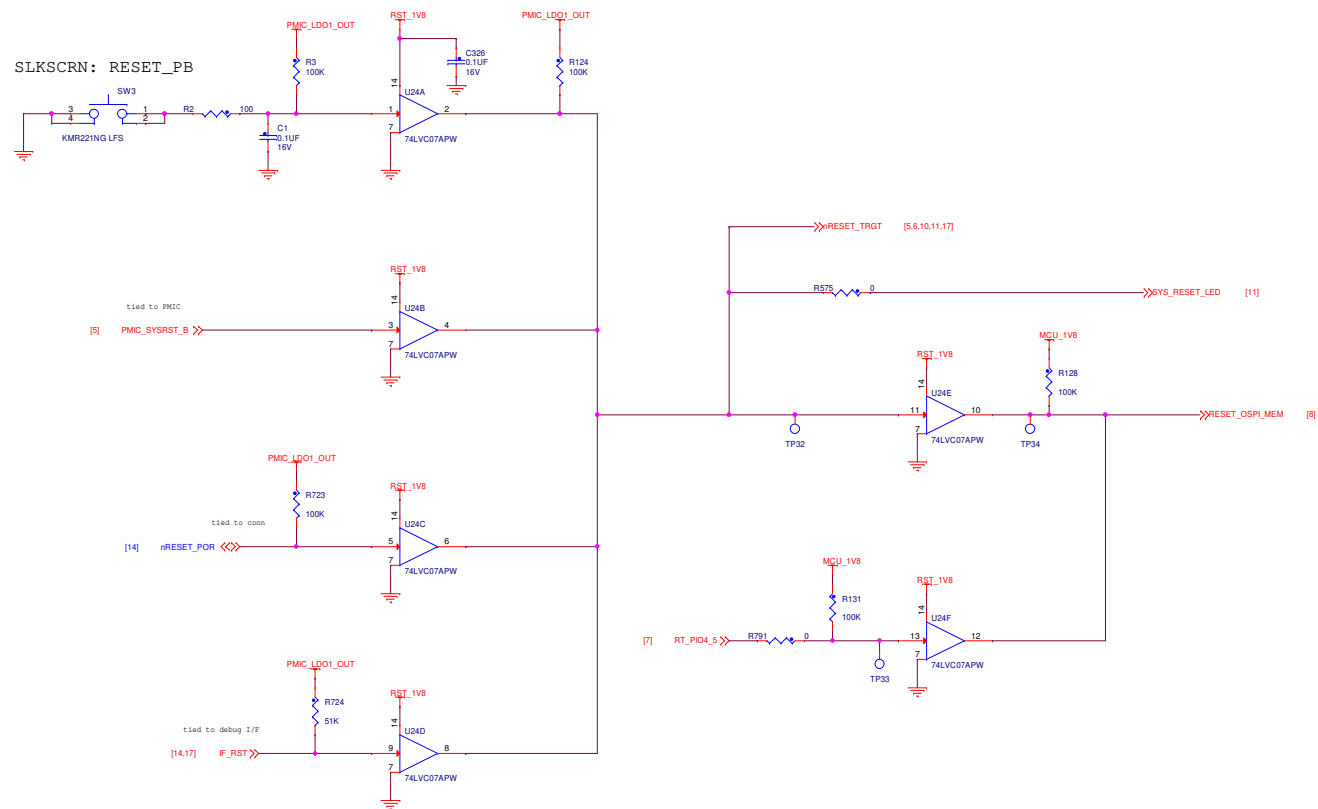


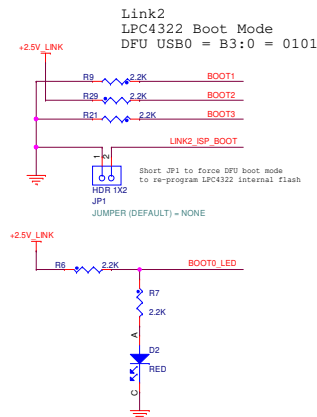
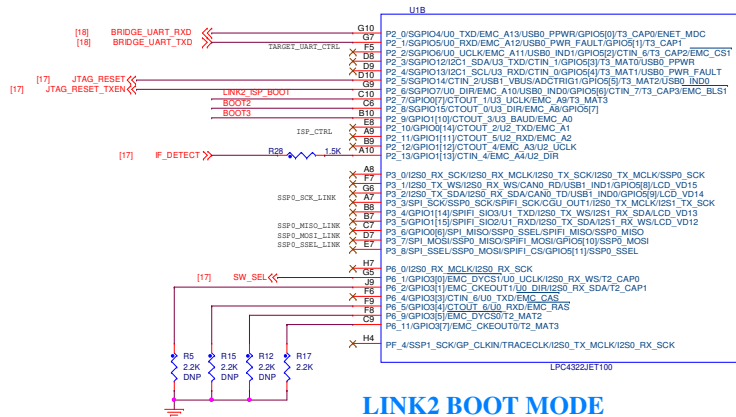
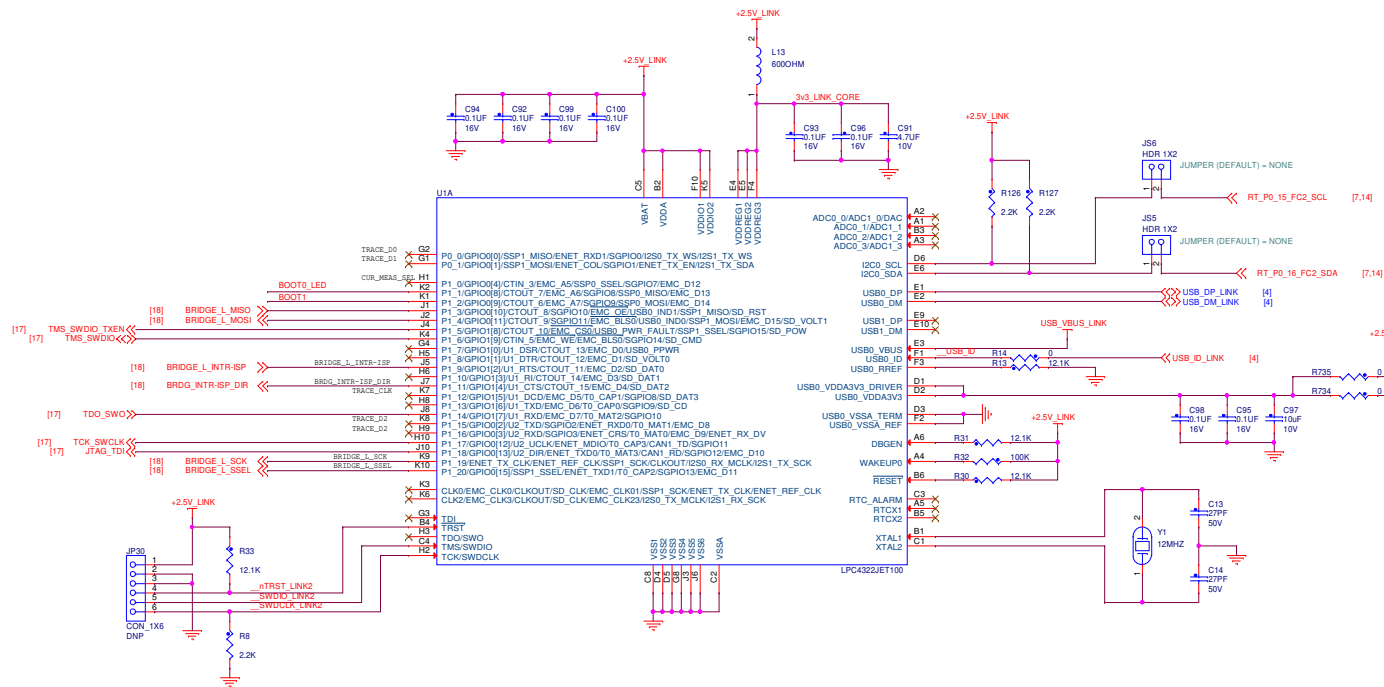
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Page Title:		MIPI-DSI	
Size C	Document Number	SCH-45800 PDF: SPF-45800	Rev 00
Date:	Wednesday, October 13, 2021	Sheet 12 of 18	



			
ICAP Classification: CP: BUC: X PUB:			
Drawing Title:			
MIMXRT595-EVK			
Page Title:			
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Size	Document Number	Rev	
C	SCH-45800 PDF: SPF-45800	D3	
Date:	Wednesday, October 13, 2021	Sheet	13 of 18



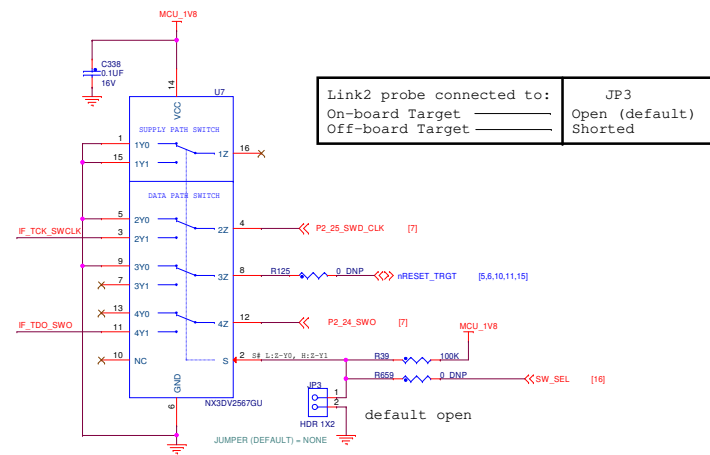
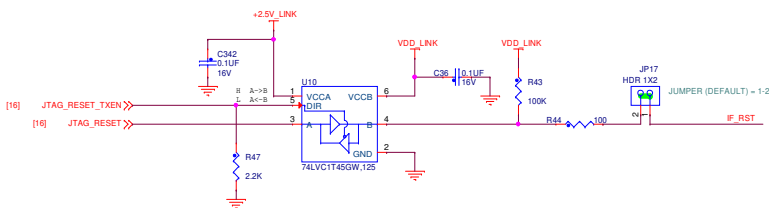
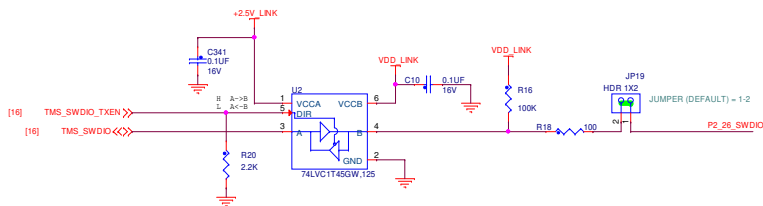
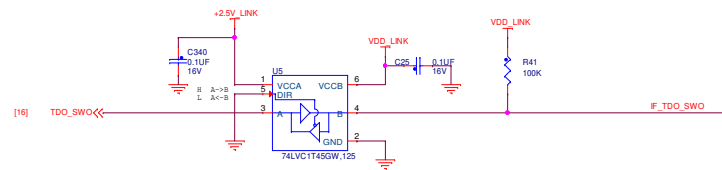
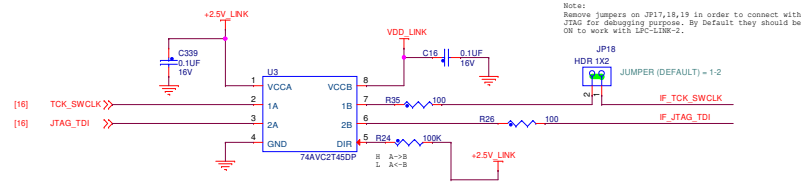




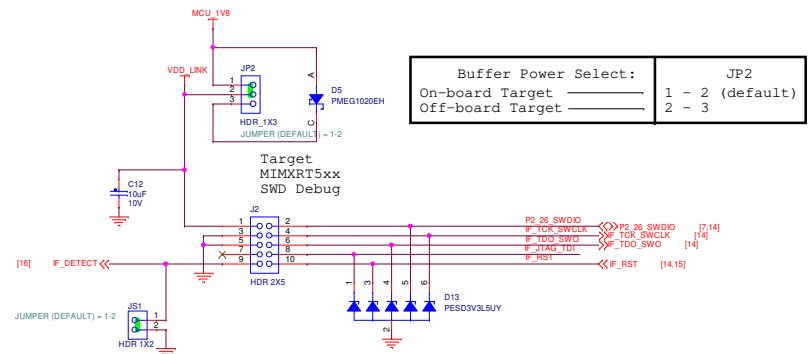
LINK2 BOOT MODE



ICAP Classification:		CP:	BUC: X		PUBI:
Drawing Title:					
MIMXRT595-EVK					
Page Title:					
Link2 Debug					
Size C	Document Number				Rev D3
	SCH-45800 PDF: SPF-45800				
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10-pin SWD



JTAG Name	Pin Name	Ref Name	Conn Ref
TRST	P100-7	P0-7-125-BCLK	JP23-2
TCK	P100-8	P0-8-125-K0	JP23-2
TMS	P100-9	P0-9-125-DATA_K0	JP23-2
TDO	P100-10	TRST-RES-P0-10	JP23-2
TDO	P100-11	WT-P100-11	JP47-8

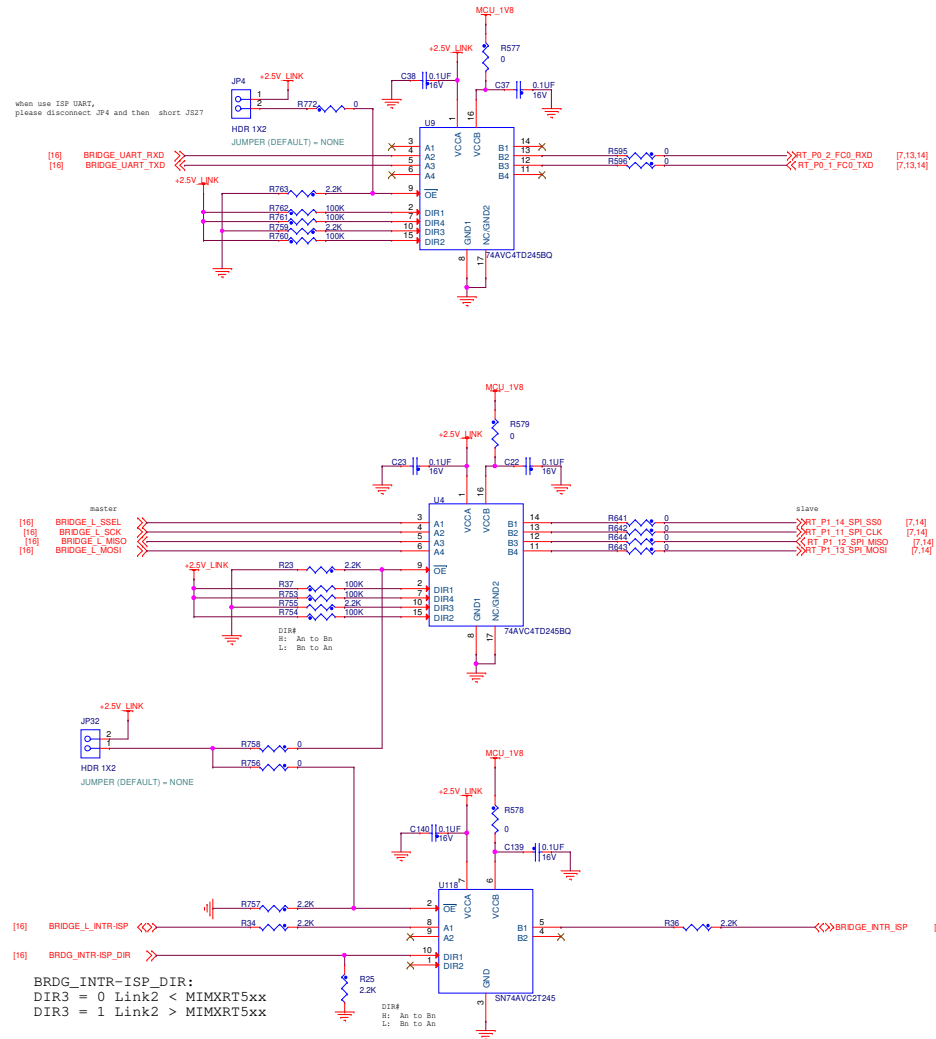
***If need boundary scan, an external JTAG or on-board JTAG is required and tie to these pins.



Link2 Level Translators

Link2 side

Target MIMXRT5xx side



PAP Classification: CP: BUC: X PUBL			
Drawing Title: MIMXRT595-EVK			
Page Title: Debug Translator			
Size C	Document Number SCH-45800 PDF: SPF-45800	Rev 03	
Date: Wednesday, October 13, 2021	Sheet 18 of 18		