

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 MIC 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 DCDC U103 for M.2 supply 3. add low Vr diode D28 for I2C communication 4. add load switch for M.2 5. optimzie 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 MX 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).

Block	Ref Name	Design Voltage	Design Current
USB Connector	USB_HS_500T_VBUS	5.0V	0.5A/Q_5A / 0.5Amax
	USB_PRT_V50	5.0V	0.5A/Q_5A
	USB_V50	5.0V	0.5A/Q_5A
Diode	BY8_V50	5.0V	0.5A/Q_5A
PMIC	PMIC_A001_OUT	1.8V(default)	0.501A
	PMIC_A002_OUT	3.3V(default)	0.25A
	PMIC_B01_OUT	1.0V(default)	0.25A
	PMIC_B04_OUT	1.8V(default)	0.5A
LDO	VDD_V33	3.3V	1.0A
	VDD_V18	1.8V	1.0A
DCDC Buck	DCDC_V33	3.3V	3.5A
Load Switch	SDC_V33	3.3V	-

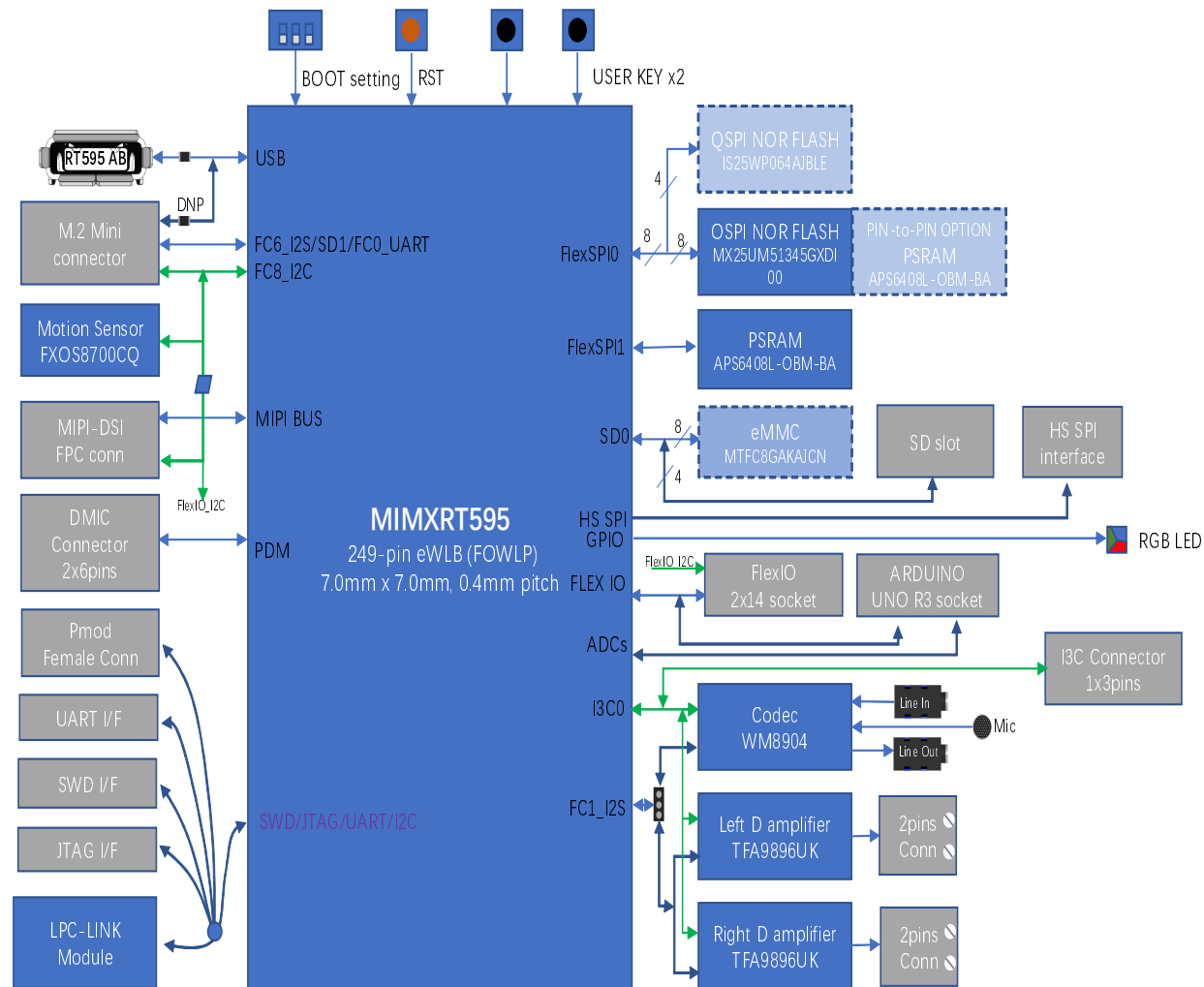
1 3 5
2 4 6

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	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

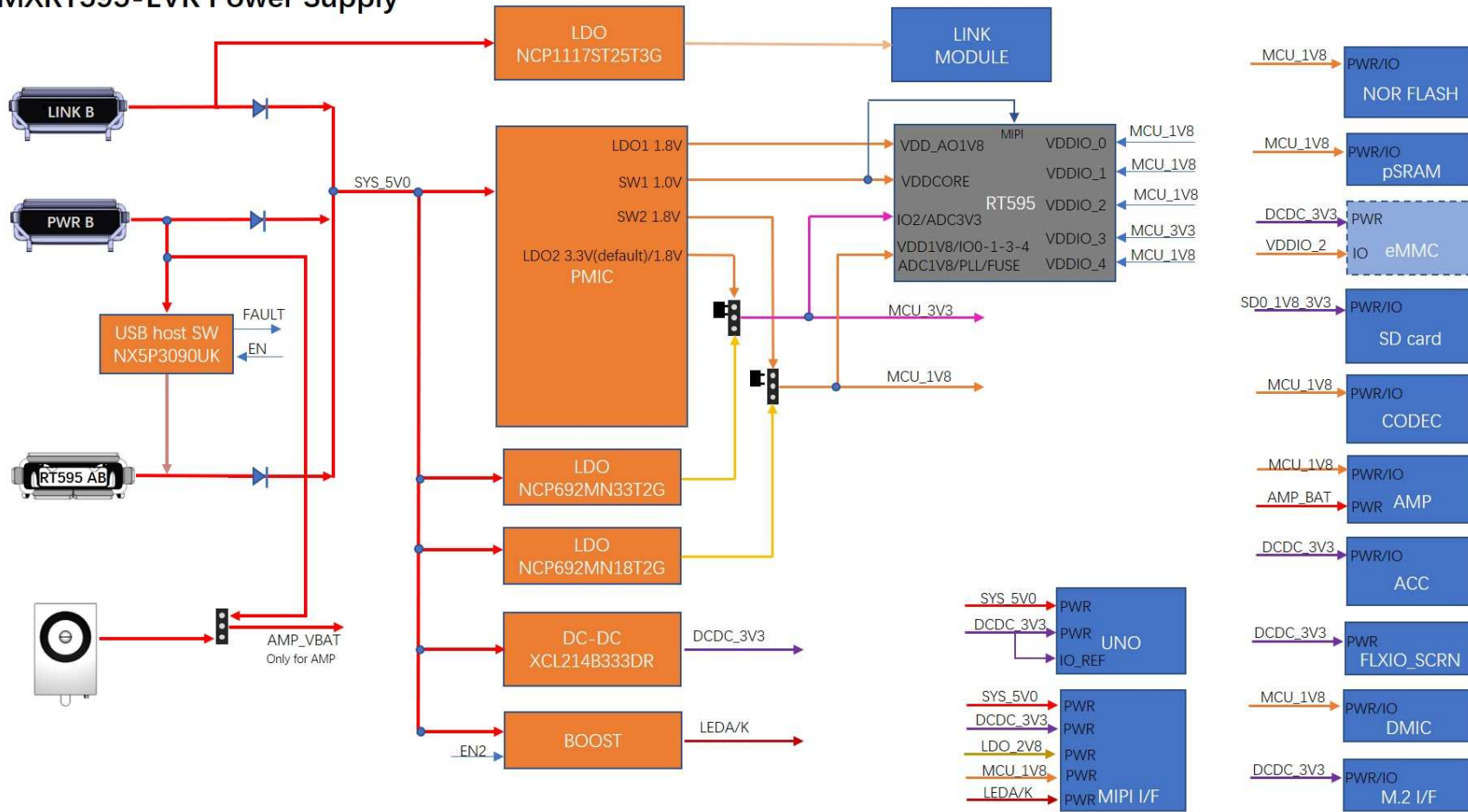
REF DES	JUMPER(DEFAULT)	PAGE NAME
JP23,JS19,JS18,JP21,JP24	1-2	05_SYSTEM_POWER
JS21,JS20,JS30,JS23,JS25,JS29,JS22,JS24	1-2	06_RT595_POWER
JS28	2-3	06_RT595_POWER
JS26	1-2	08_MEMORY
JP6,JP27,JP8,JP28,JP29,JP7	1-2	09_AUDIO_CODEC
JP11	1-2	10_AUDIO_AMP
JP33	1-2	11_ACC_LED_BUTTON_UNO
JS9,JS27,JP13	1-2	14_PMOD_ISP
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

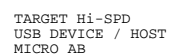


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Drawing Title: MIMXRT595-EVK			
Page Title: Title and Rev History			
Size C	Document Number SCH-45800 PDF: SPF-45800	Rev D1	
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MIMXRT595-EVK Power Supply





External +5V
Power only
Micro-B



Link
USB Device
Micro-B



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	Re
	D

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

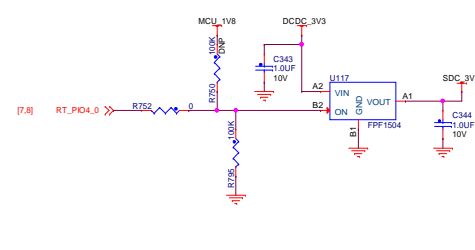
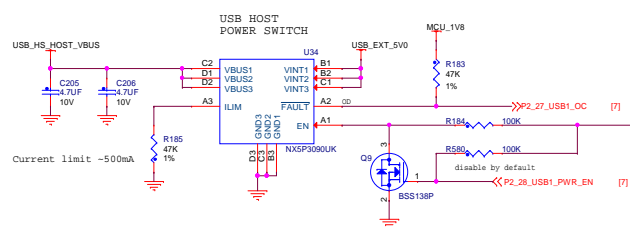
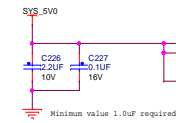
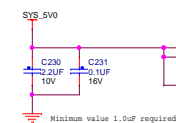
when power supply from Battery,
need to short TP31(2-3),
and some functions that belong
to 5V power domain are limited.



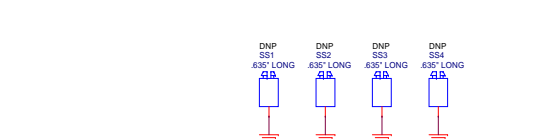
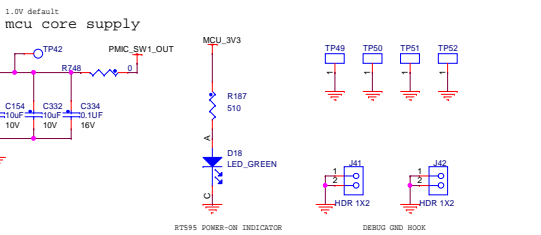
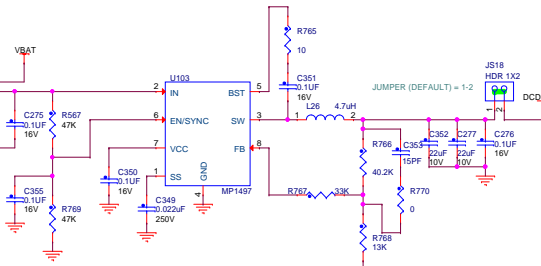
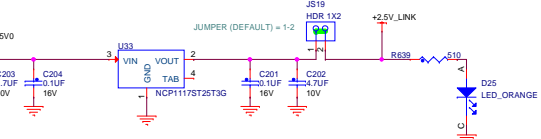
① Programmable Output Voltage Regulator:

1. SW1: Core Buck, 0.5V-1.5V Output, 25mV/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, 1.75V-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

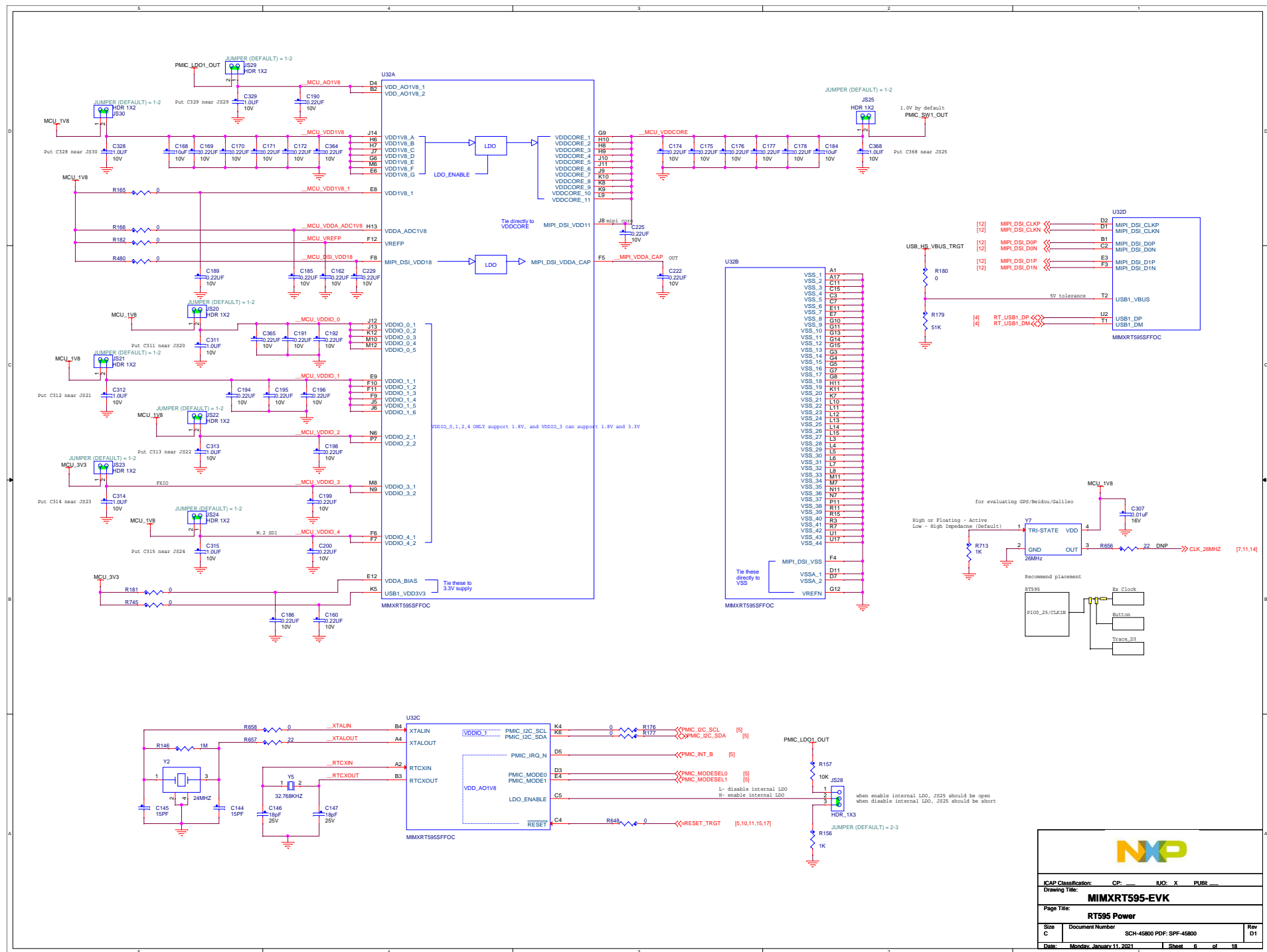
MODE 0 by default
SW1 = 1.5V for core supply
SW2 = 1.8V
LDO1 = 1.8V for RTC always on
LDO2 = 3.3V



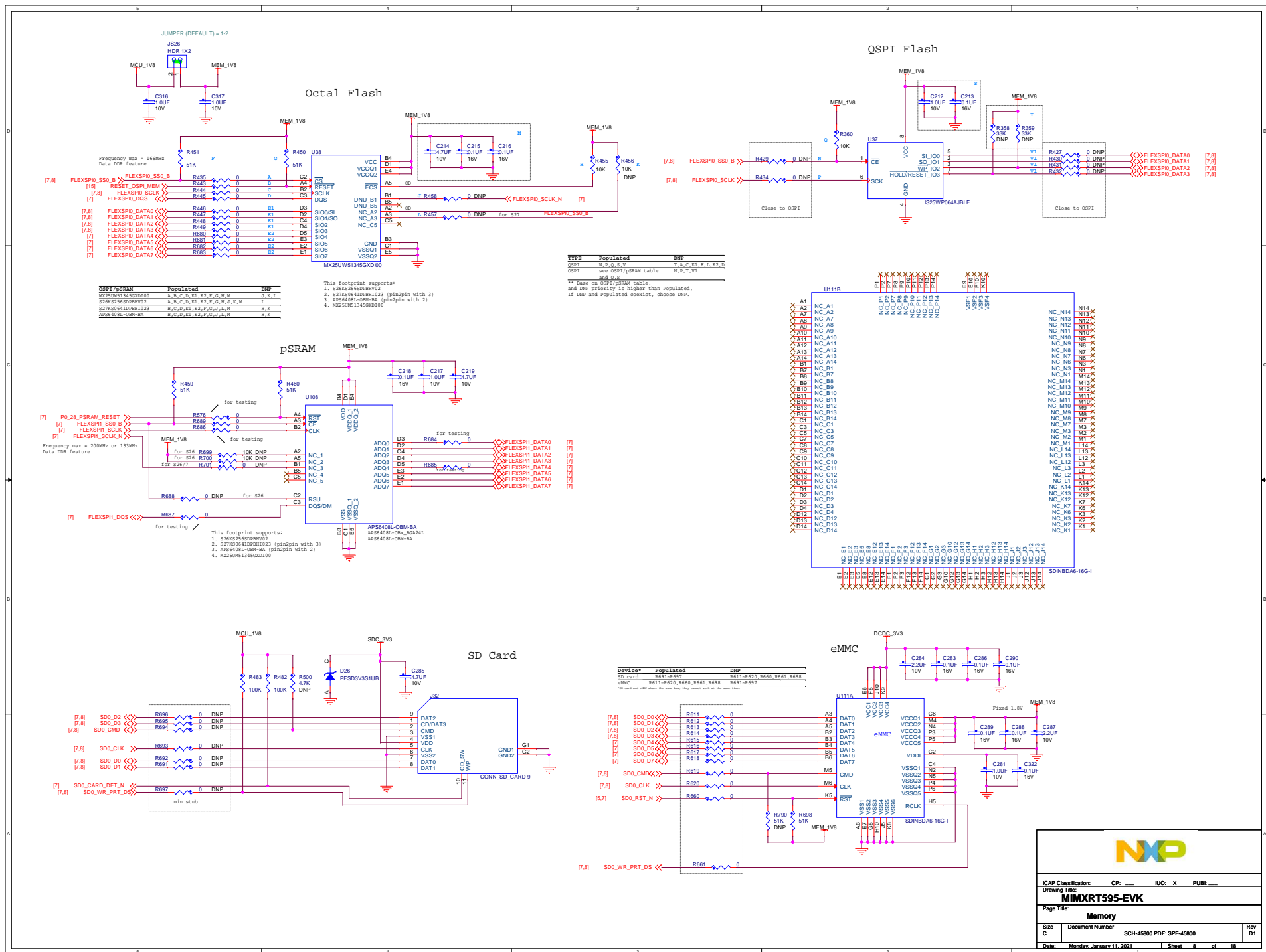
Link 2.5v Power
2.5V- NCP1117ST25T3G
3.3V- NCP1117ST33T3G



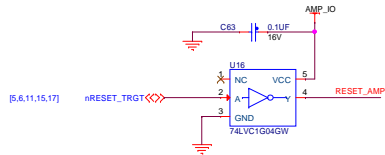
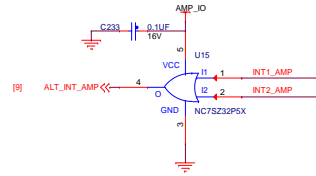
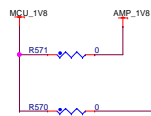
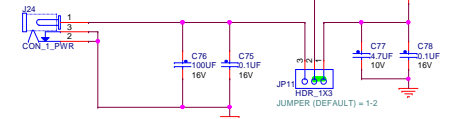
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Page Title:		System Power					
Size	Document Number	SCH-45800 PDF: SPF-45800				Rev	D1
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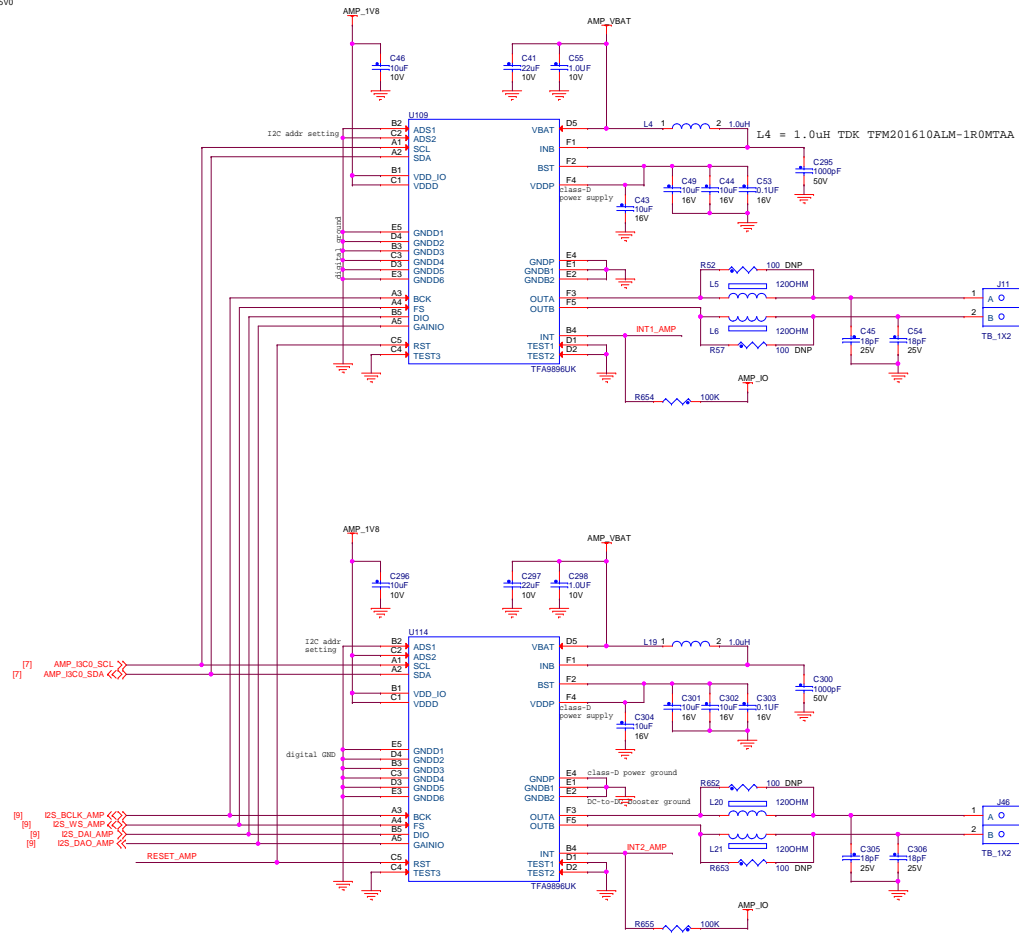




EXTERNAL PWR SUPPLY FOR AMP
MAX INPUT PWR <5.5V



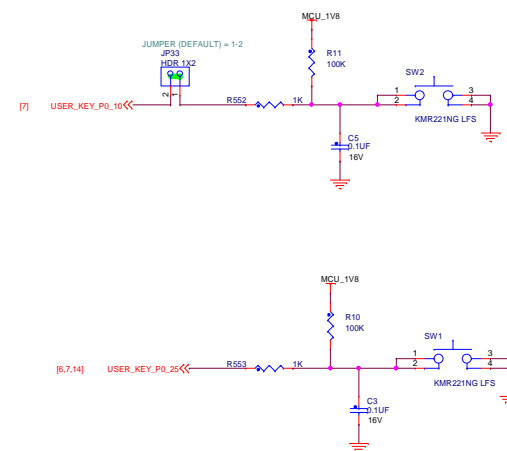
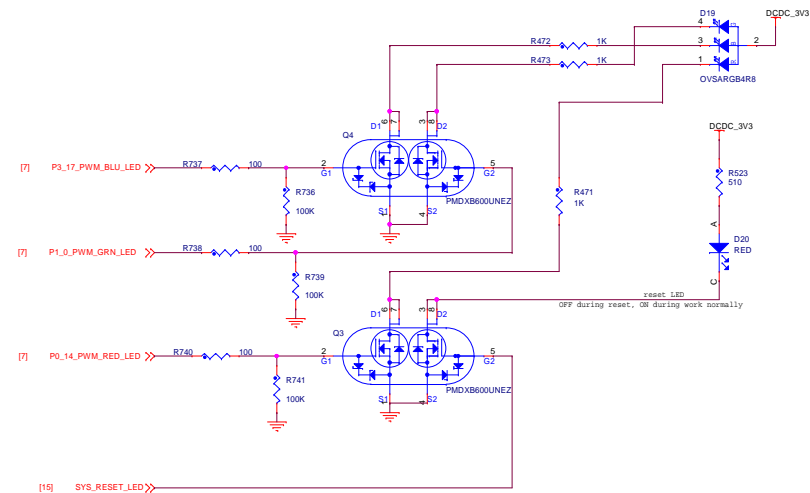
AP L/R



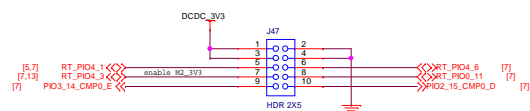
ADS1=L, ADS2=L,
read 01101001(0a69), write 01101000(0a68)
ADS1=R, ADS2=L,
read 01101011(0a6b), write 01101010(0a6a)

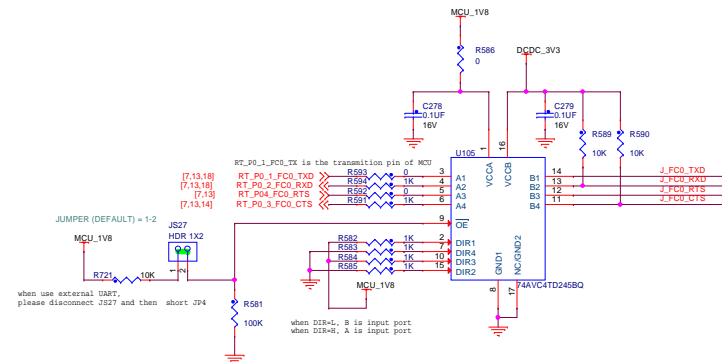
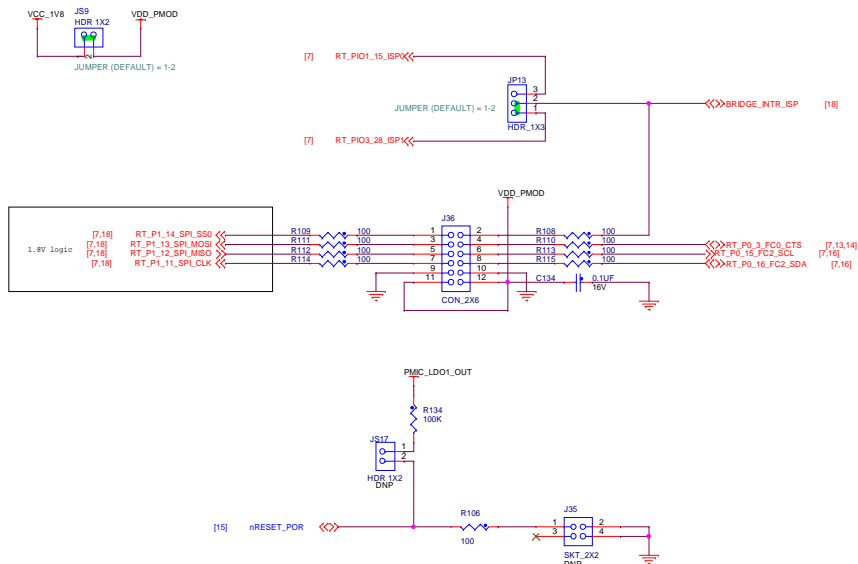
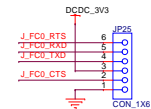
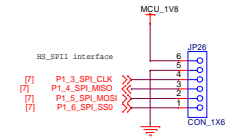
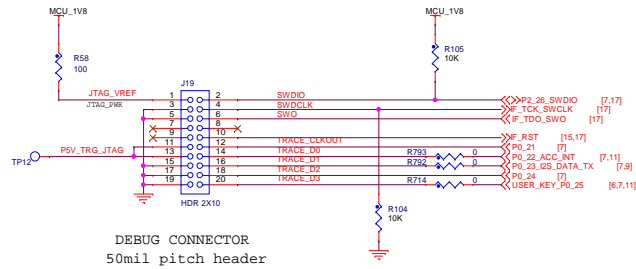


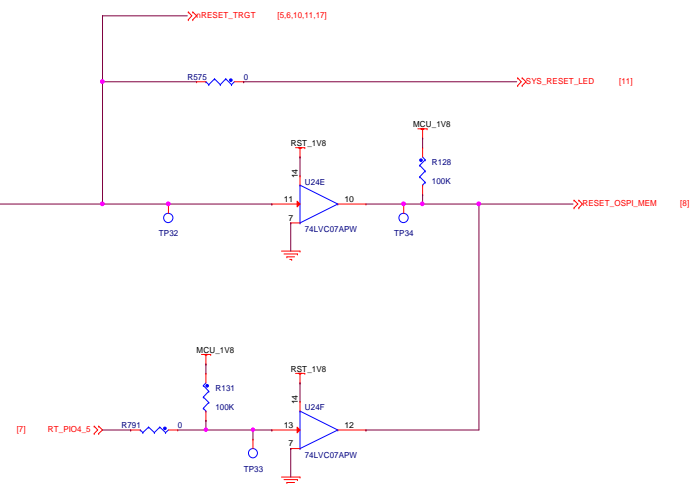
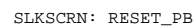
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Page Title: Audio AMP class-D	
Size C	Document Number SCH-45800 PDF: SPF-45800
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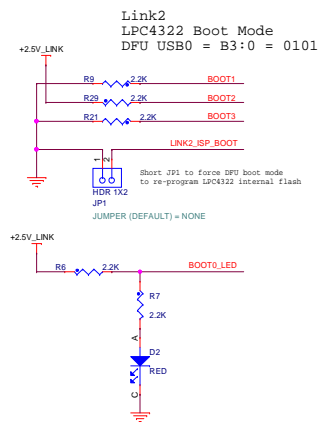
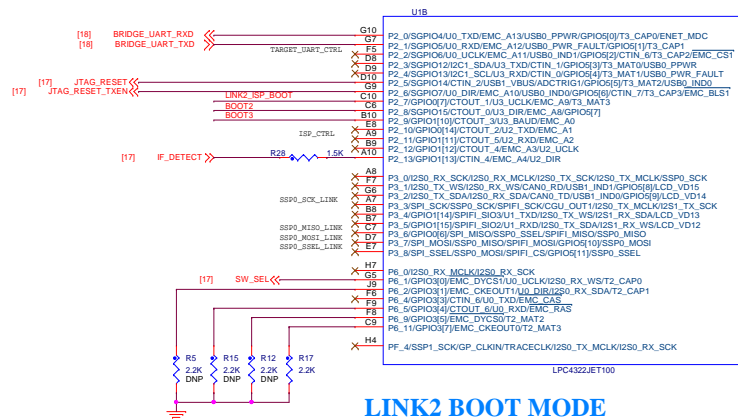


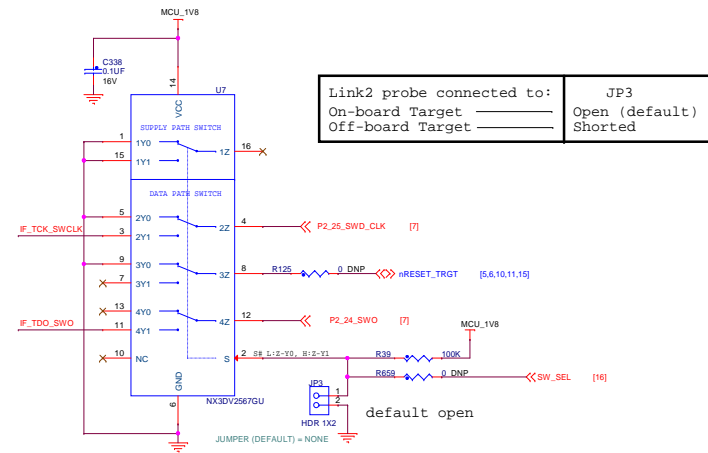
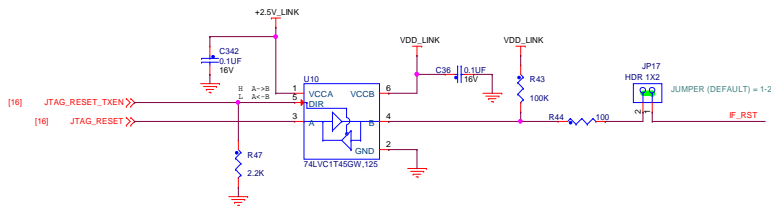
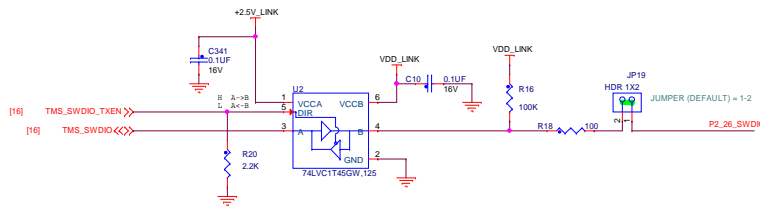
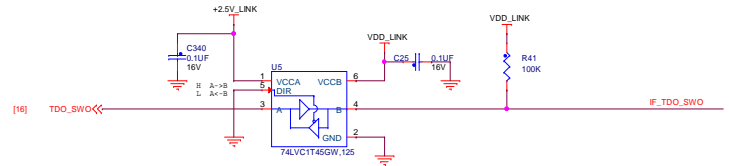
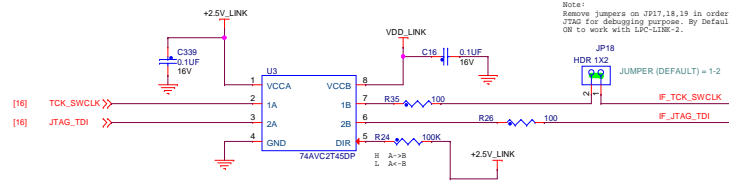
NOTE: Arduino shield used should not exceed 200 mA power requirements through 3V3.



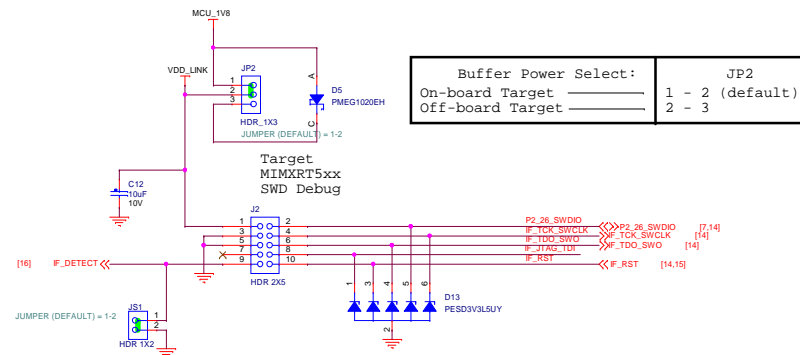








10-pin SWD

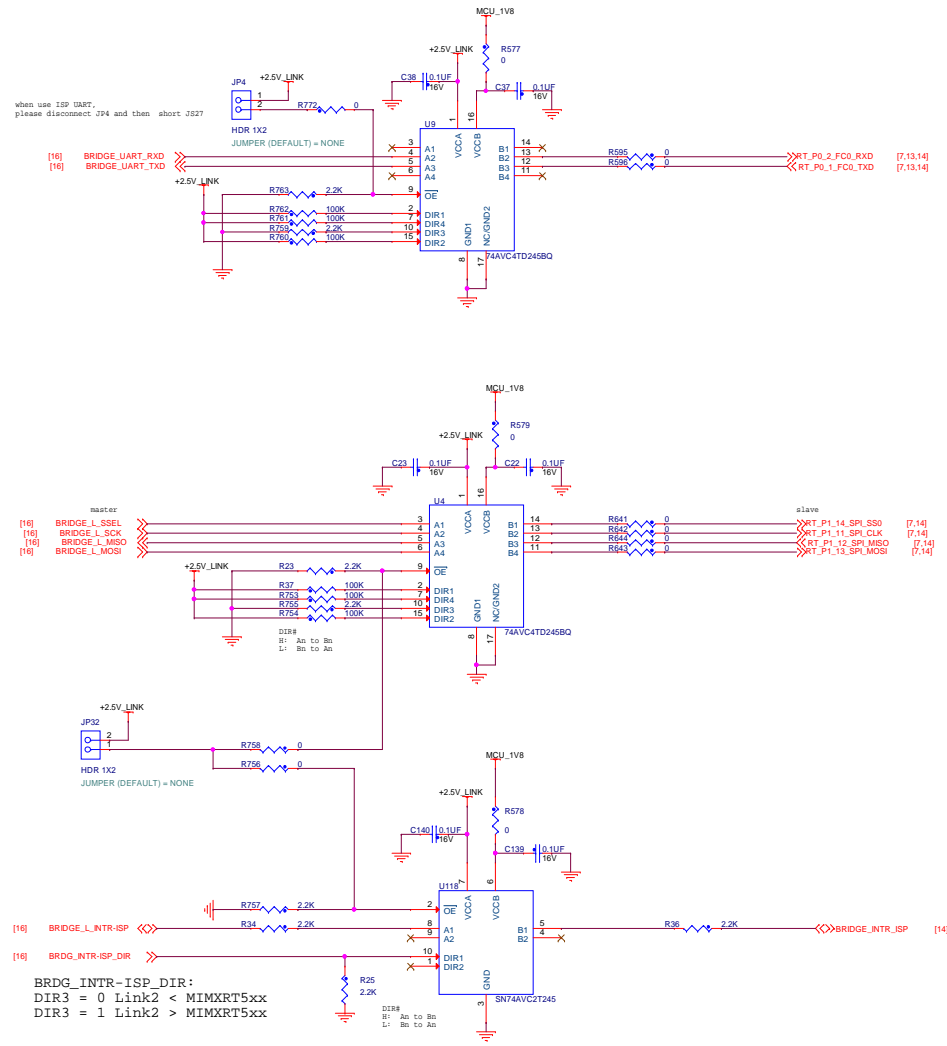


Pin Name	Pin Name	Ref Name	Conn Ref
TCK	P100-1	P0-7: TCK SWCLK	P23-2
TDO	P100-2	P0-8: TDO SWCLK	P23-2
TMS	P100-3	P0-9: TMS SWCLK	P23-2
JTAG	P100-4	P0-10: JTAG SWCLK	P23-2
JTAG_RESET	P100-5	P0-11: JTAG_RESET	P23-2
JTAG_RESET_TSEN	P100-6	P0-12: JTAG_RESET_TSEN	P23-2
JTAG_RESET_TSEN	P100-7	P0-13: JTAG_RESET_TSEN	P23-2
JTAG_RESET_TSEN	P100-8	P0-14: JTAG_RESET_TSEN	P23-2
JTAG_RESET_TSEN	P100-9	P0-15: JTAG_RESET_TSEN	P23-2
JTAG_RESET_TSEN	P100-10	P0-16: JTAG_RESET_TSEN	P23-2

Link2 Level Translators

Link2 side

Target MIMXRT5xx side



ICAP Classification:	CP: _____	I/O: X	PUR: _____
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