

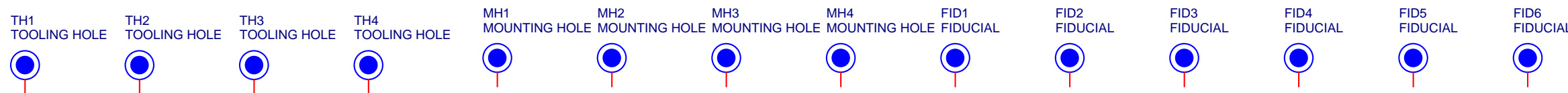
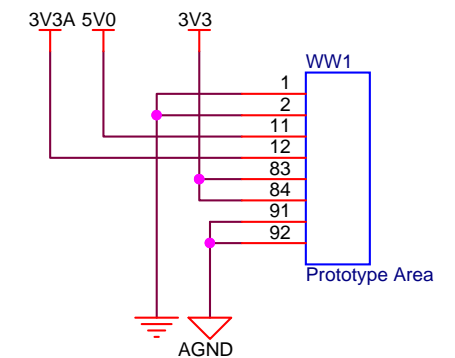
RENESAS DEVELOPMENT KIT FOR RL78G13

REVISION HISTORY

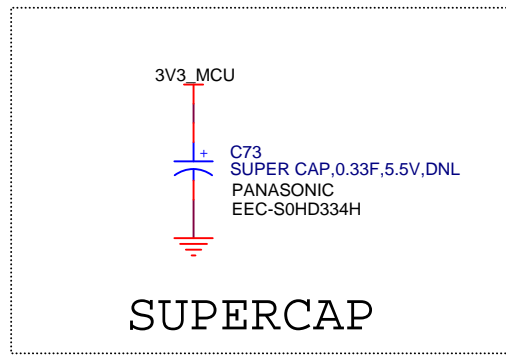
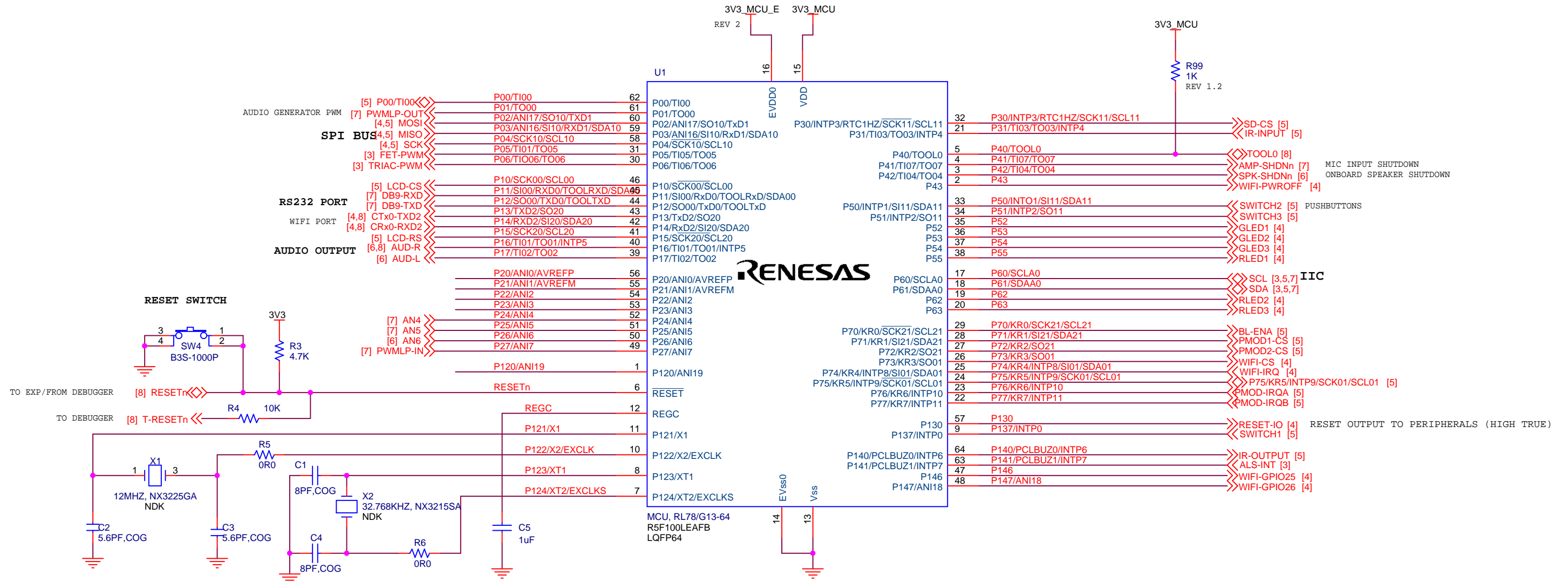
REV 1.0	07/18/2011	INITIAL RELEASE
REV 1.1	08/11/2011	CORRECT EEPROM WP CONNECTIVITY
REV 1.2	08/15/2011	ADD 1K PULLUP TO TOOL0
REV 2.0	08/30/2011	PRODUCTION RELEASE
REV 2.1	11/02/2011	LOAD FET CIRCUITRY CHANGE TO NDK CRYSTALS AND SPECIFIED CAPS

PAGE	DESCRIPTION
1	INDEX
2	RL78G13 MCU
3	FET/TRIAC/EEPROM/ALS
4	REDPINE WIFI/PWR INPUT/LEDS
5	OKAYA LCD/PBTN/BEAGLE/uSD/IR/PMOD
6	NSC AUDIO OUTPUT
7	ADI MIC/ACCEL/TEMP/RS232
8	USB DEBUGGER

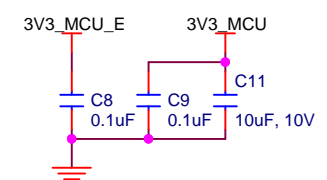
NOTE:
R : FIXED RESISTOR
VR : POTENTIOMETER
U : INTEGRATED CIRCUIT
X : CRYSTAL
SW : PUSHBUTTON/DIP SWITCH
LED : LIGHT EMITTING DIODE
J : CONNECTOR, JUMPER
L : FERRITE BEAD/INDUCTOR
D : DIODE



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J17	RL78 PINS	J18
P120/ANI19	64	P140/PCLBUZ0/INTP6
P43	63	P141/PCLBUZ1/INTP7
P42/TI04/TO04	62	P00/TI00
P41/TI07/TO07	61	P01/TO00
P40/TOOLO	60	P02/ANI17/SO10/TXD1
RESETE	59	P03/ANI16/SI10/RXD1/SDA10
	58	P04/SCK10/SCL10
	57	P130
	56	P20/ANI0/AVREFP
	55	P21/ANI1/AVREFM
	54	P22/ANI2
	53	P23/ANI3
	52	P24/ANI4
	51	P25/ANI5
	50	P26/ANI6
	49	P27/ANI7
	48	P147/ANI18
	47	P146
P60/SCLA0	46	P10/SCK00/SCL00
P61/SDAA0	45	P11/SI00/RXD0/TOOLRXD/SDA00
P62	44	P12/SO00/TXD0/TOOLTxD
P63	43	P13/TXD2/SO20
P31/TI03/TO03/INTP4	42	P14/RXD2/SI20/SDA20
P77/KR7/INTP11	41	P15/SCK20/SCL20
P76/KR6/INTP10	40	P16/TI01/TO01/INTP5
P75/KR5/INTP9/SCK01/SCL01	39	P17/TI02/TO02
P74/KR4/INTP8/SI01/SDA01	38	P55
P73/KR3/SO01	37	P54
P72/KR2/SO21	36	P53
P71/KR1/SI21/SDA21	35	P52
P70/KR0/SCK21/SCL21	34	P51/INTP2/SO11
P06/TIO06/TO06	33	P50/INTO1/SI11/SDA11
P05/TI05/TO05	32	
P30/INTP3/RTC1HZ/SCK11/SCL11	31	
	30	
	29	
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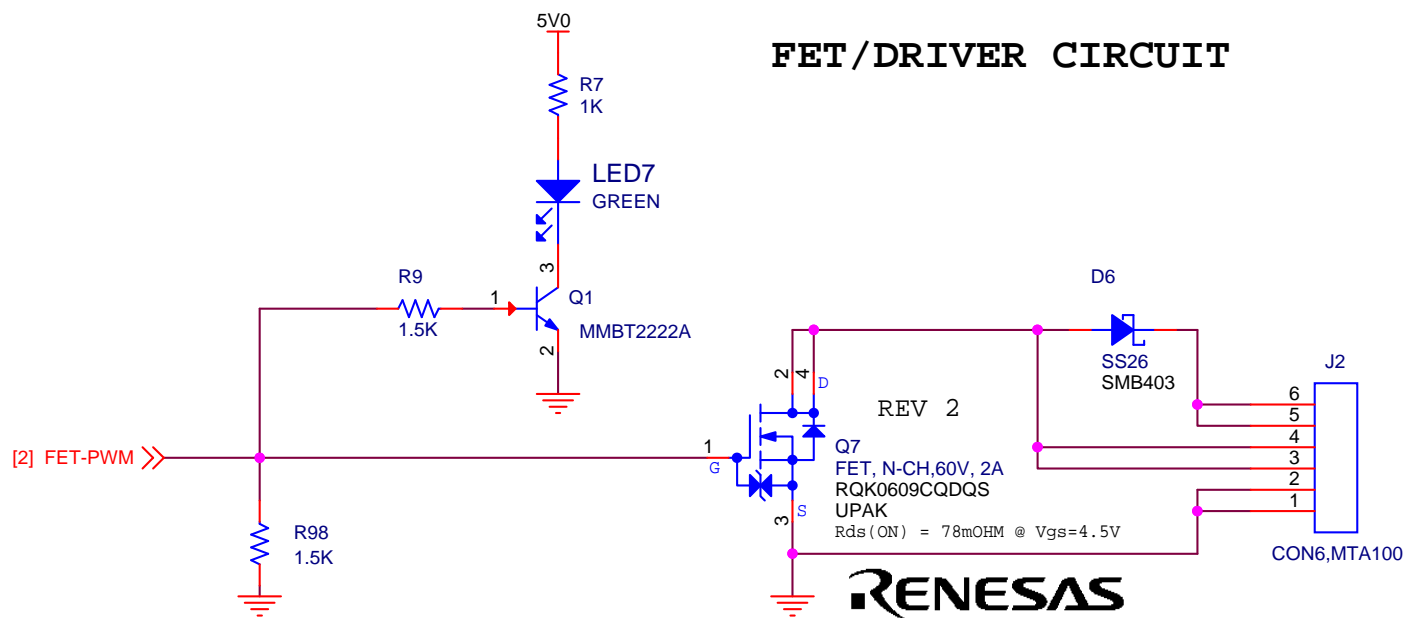
EXPANSION HEADER



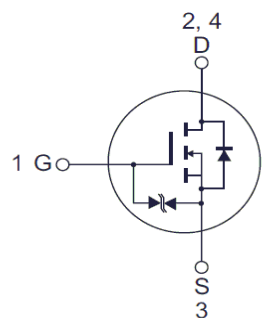
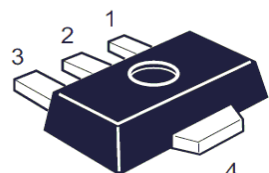
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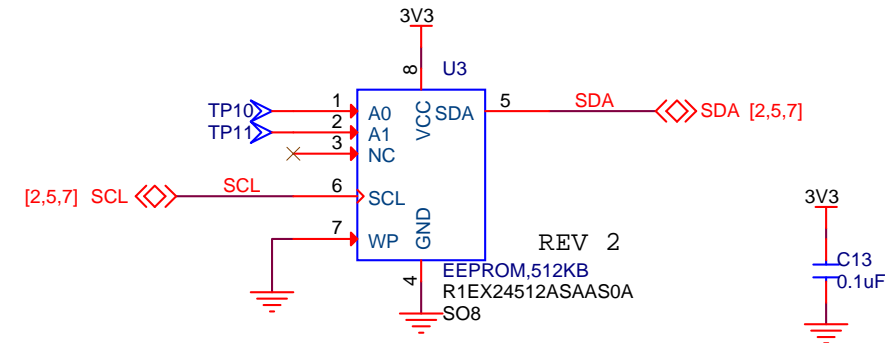
FET/DRIVER CIRCUIT



REV 2.1 - FET CIRCUITRY LOADED

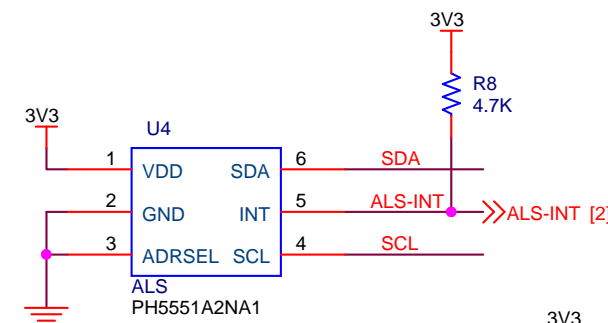


- 1. Gate
- 2. Drain
- 3. Source
- 4. Drain



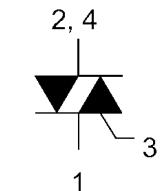
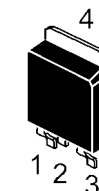
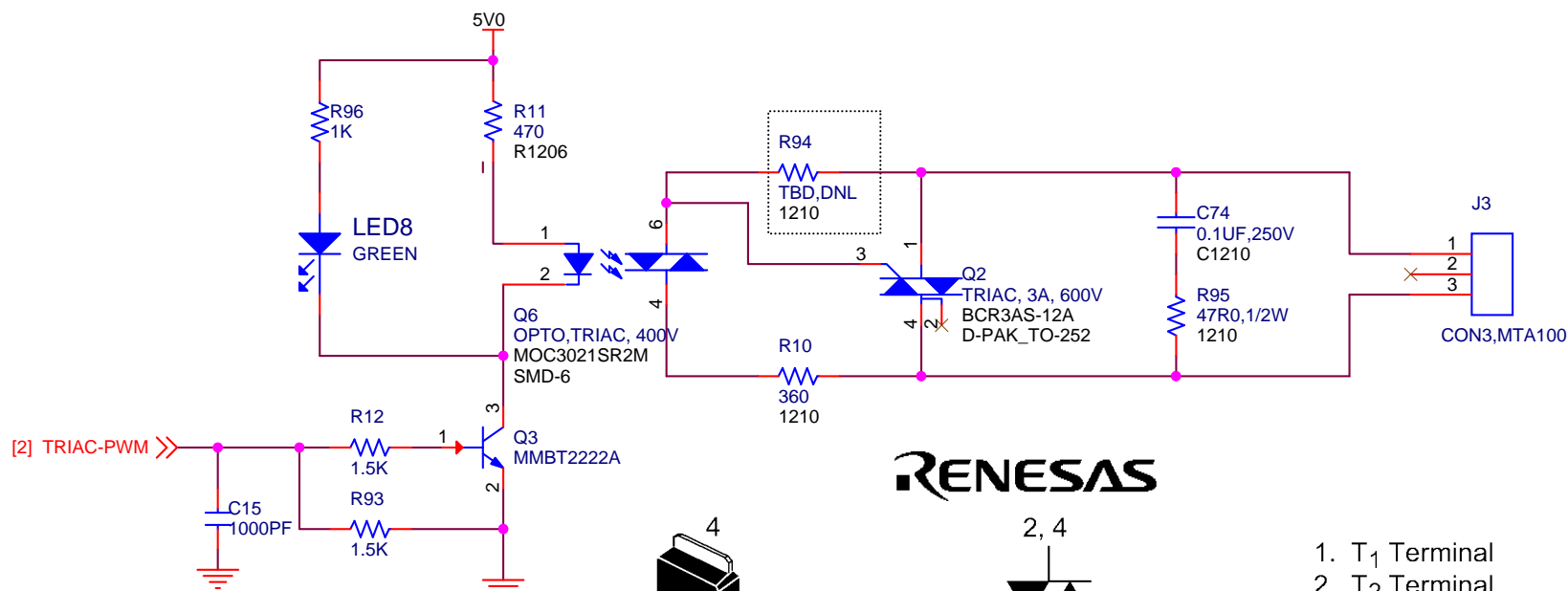
SERIAL EEPROM STORAGE

I2C ADDR = 0xA0 (1010aaxr)
 aa = A2:A1 I2C address
 x = A16 of memory address
 r=R/Wn, Read/Write

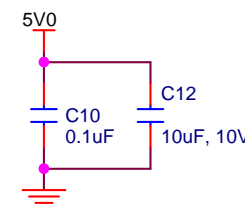


AMBIENT LIGHT SENSOR

DEFAULT I2C ADDR = 0x72 (0111001r)
 r=R/Wn, Read/Write



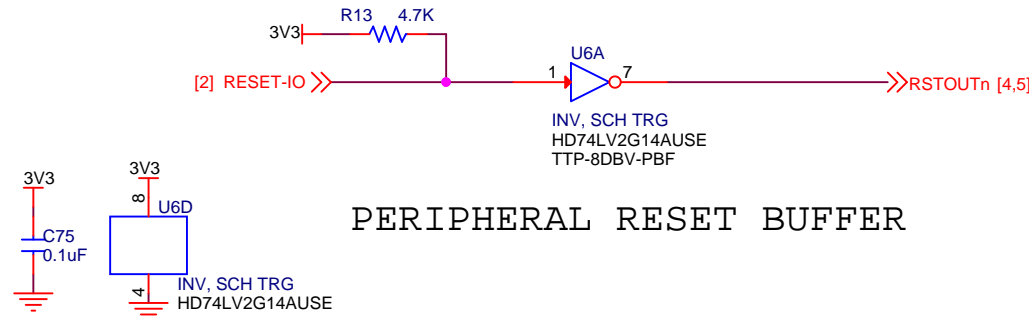
- 1. T₁ Terminal
- 2. T₂ Terminal
- 3. Gate Terminal
- 4. T₂ Terminal



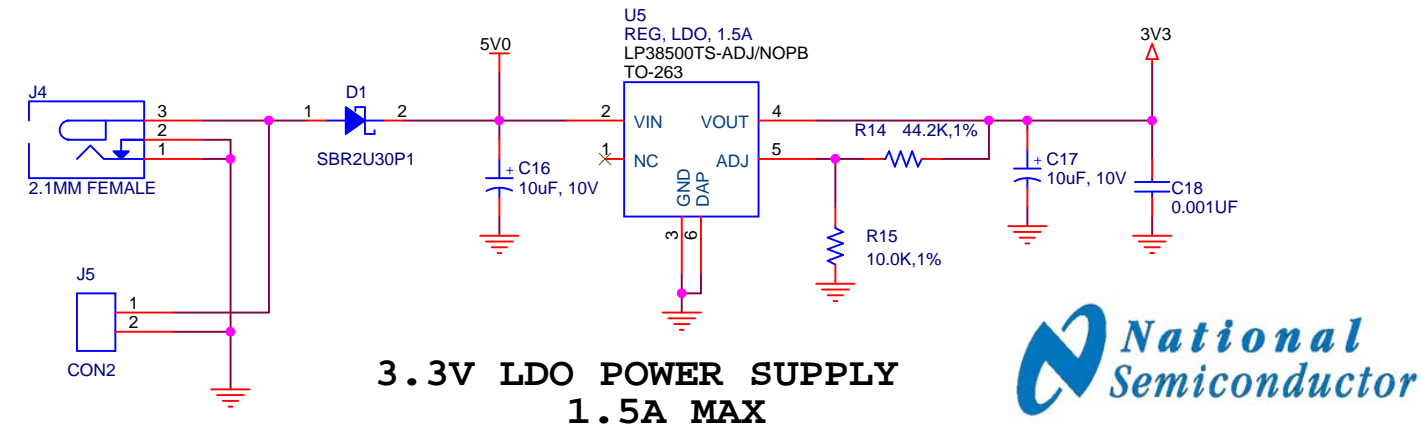
TRIAC CIRCUIT



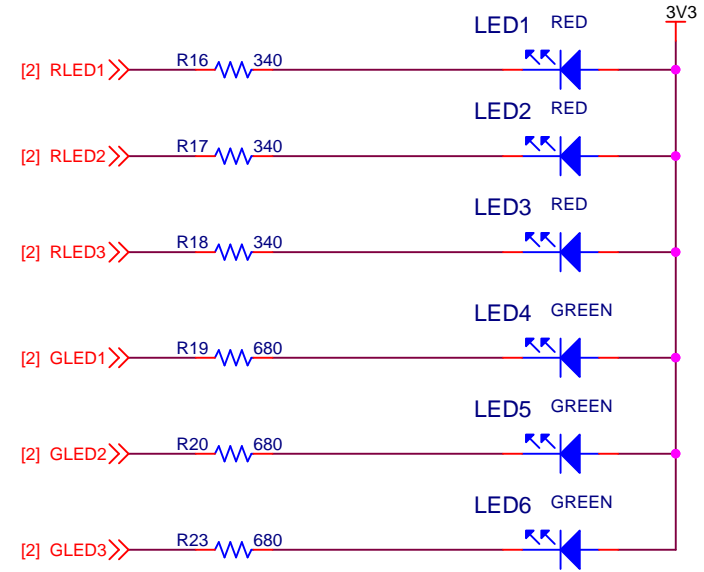
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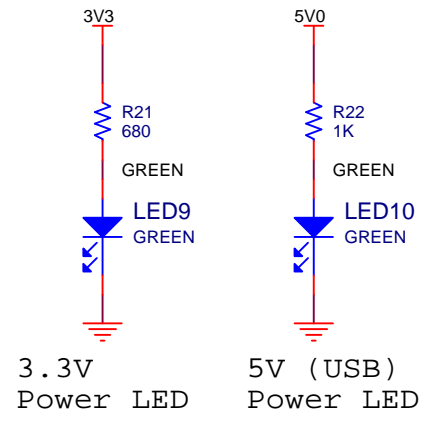
PERIPHERAL RESET BUFFER



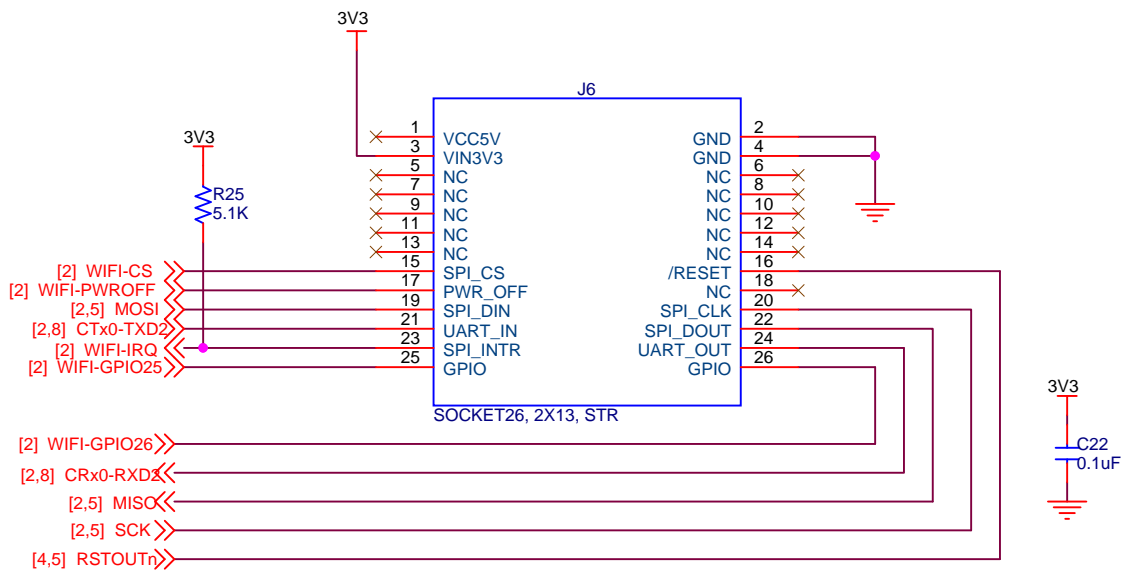
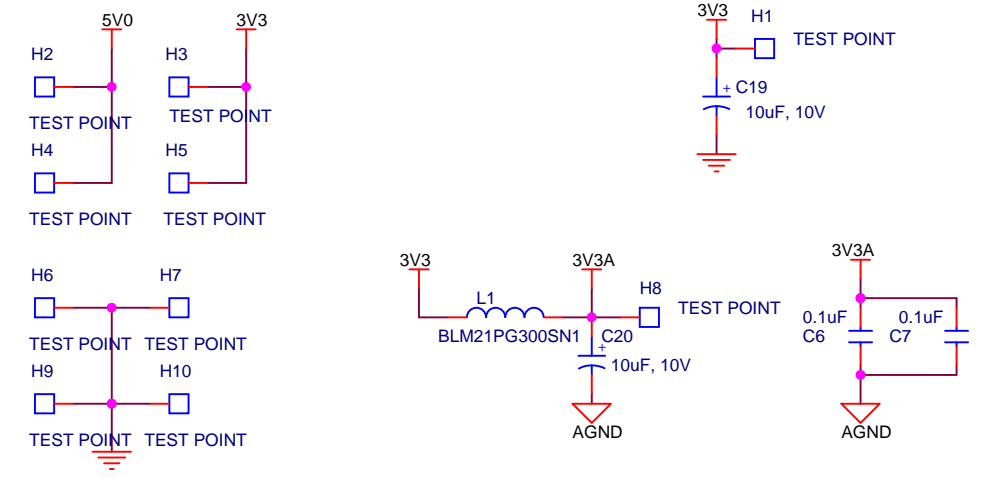
3.3V LDO POWER SUPPLY
1.5A MAX



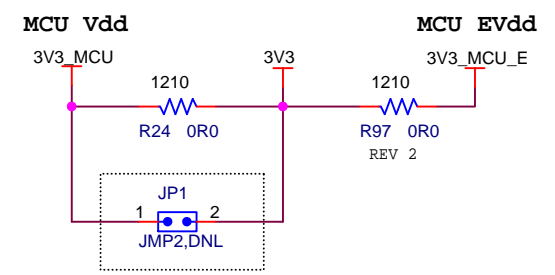
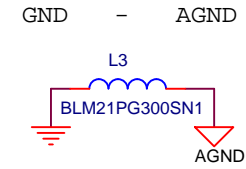
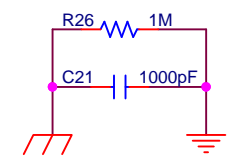
LED RESISTORS LED ARRAY



POWER TEST PIN



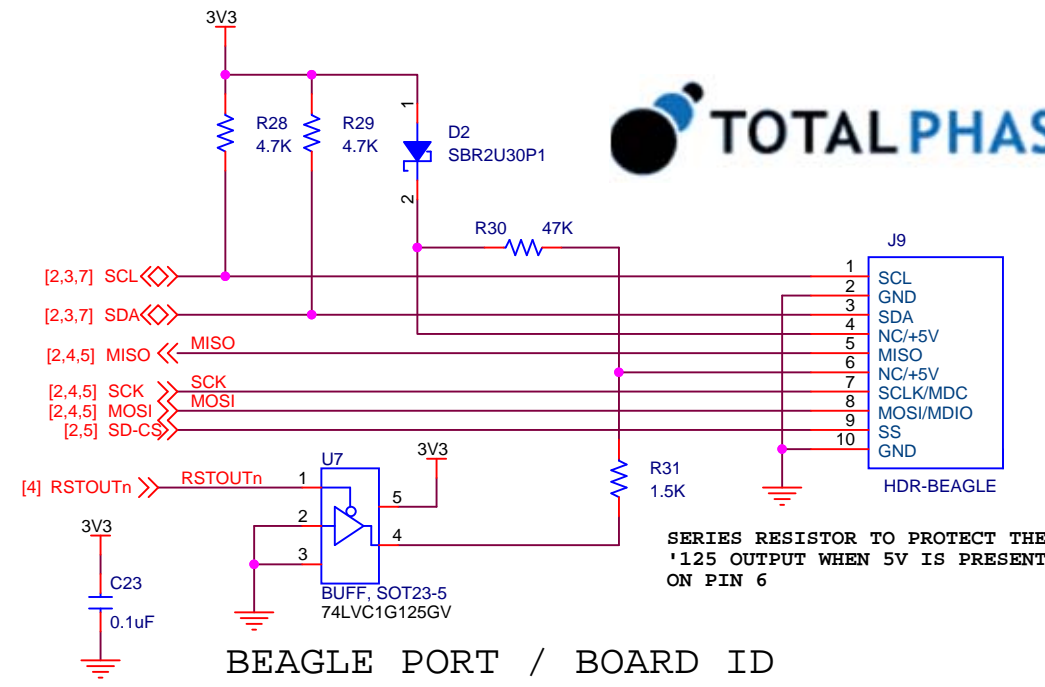
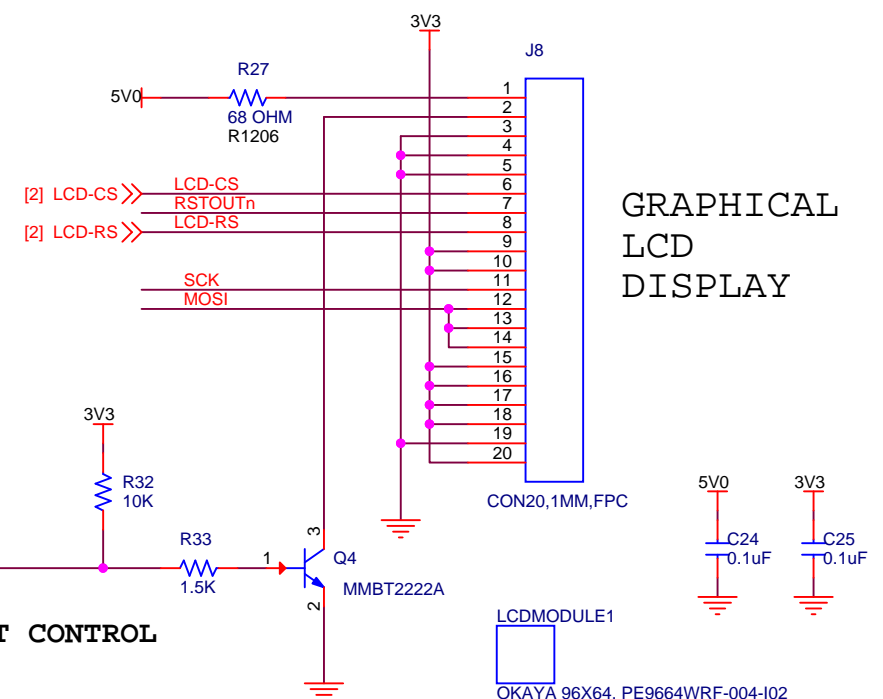
APPLICATION HEADER
WIFI MODULE



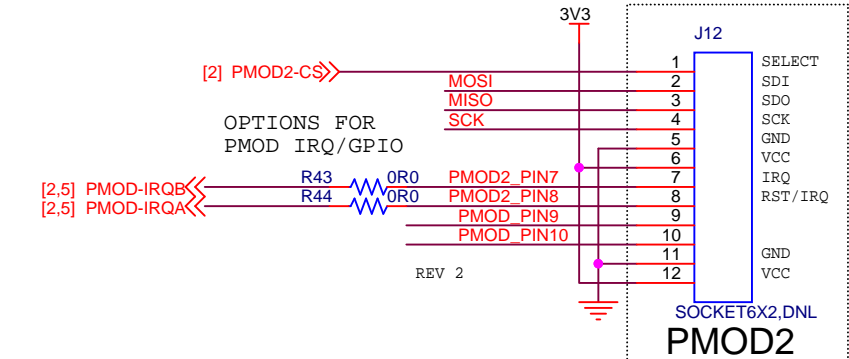
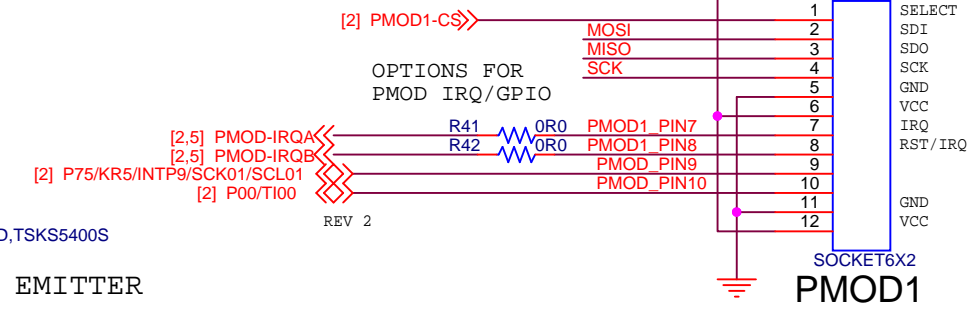
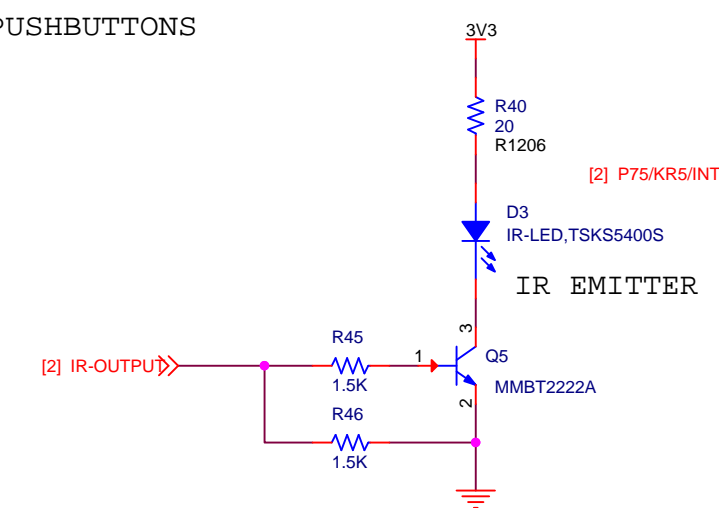
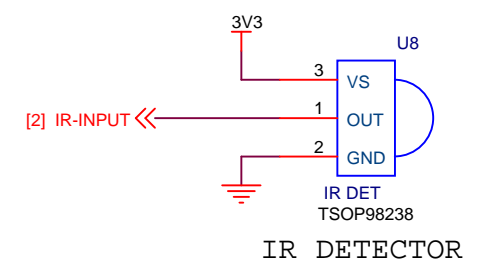
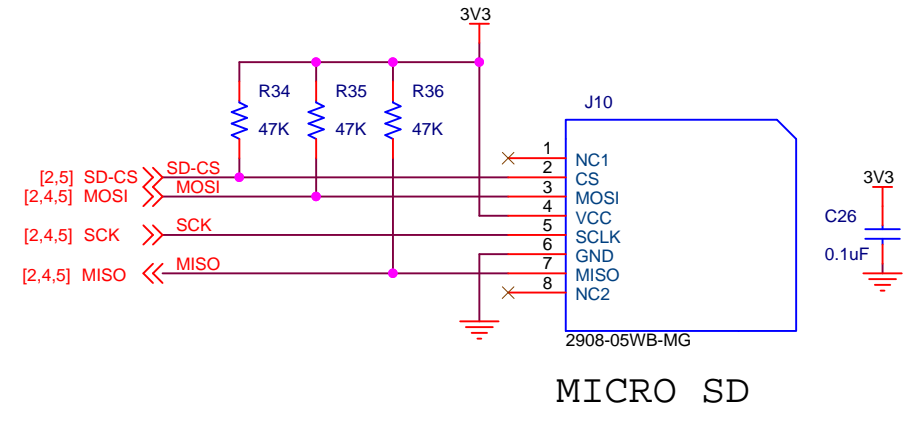
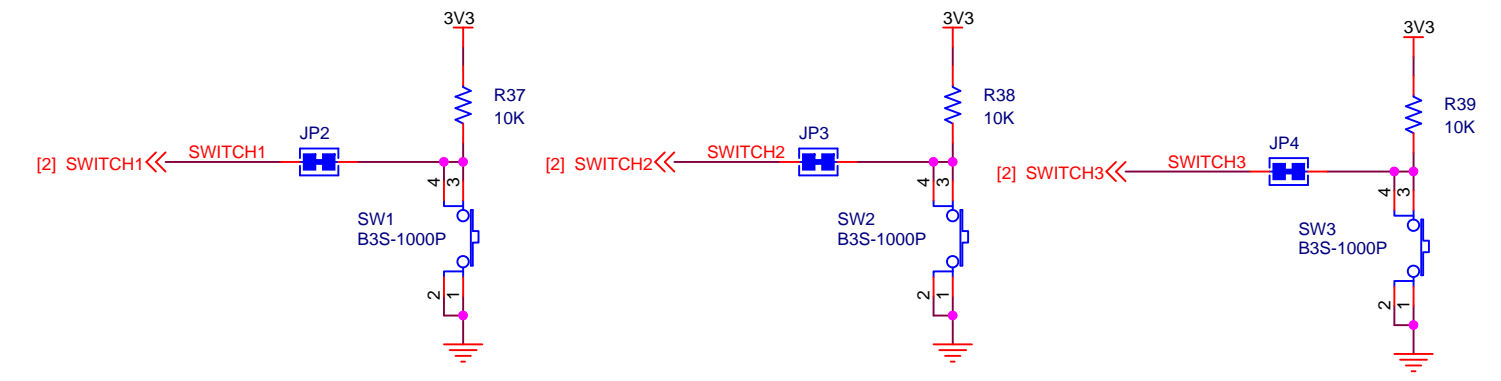
MCU CURENT MEASUREMENT
NOTE RL78 Vdd REQUIREMENTS:
1.6V <= EVdd <= Vdd <= 5.5V

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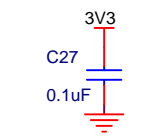
BACKLIGHT CONTROL



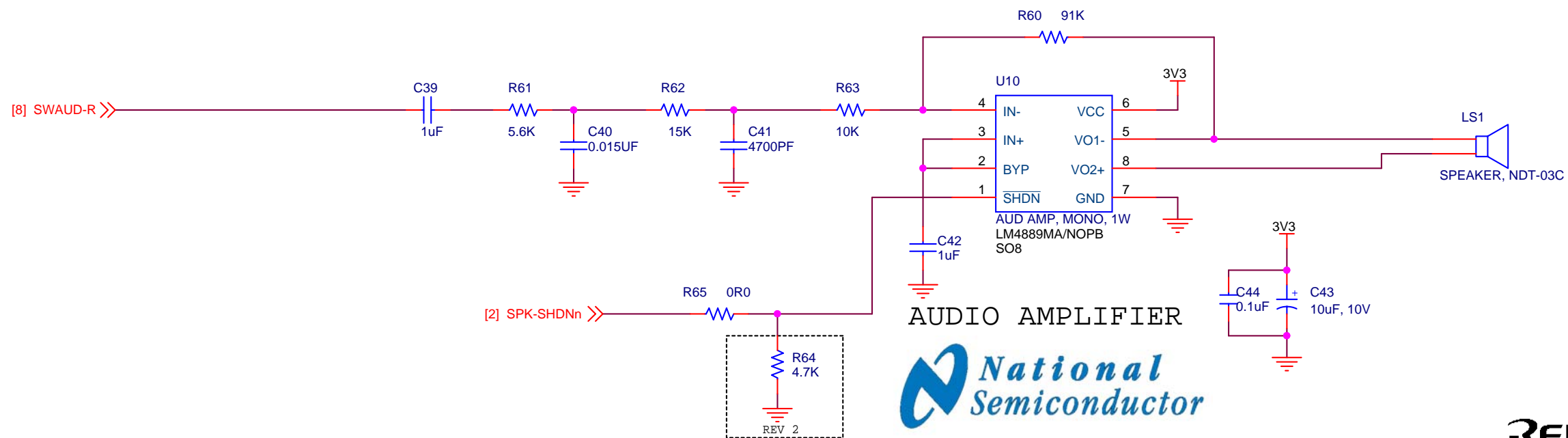
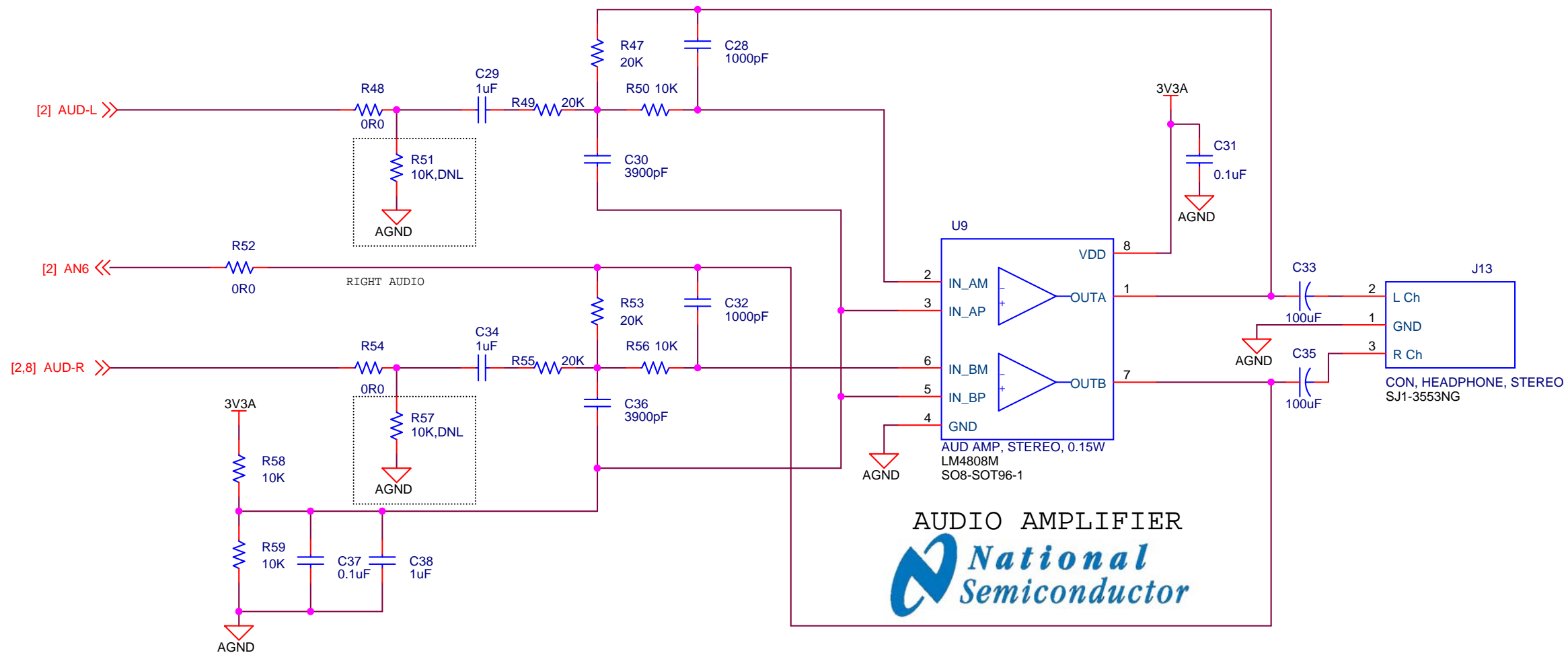
IR INTERFACES

PMOD CONNECTORS

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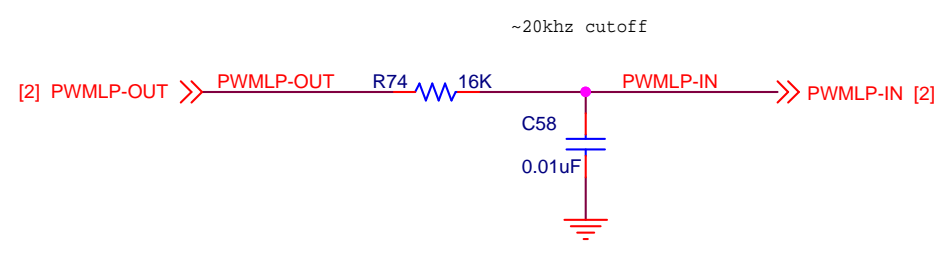
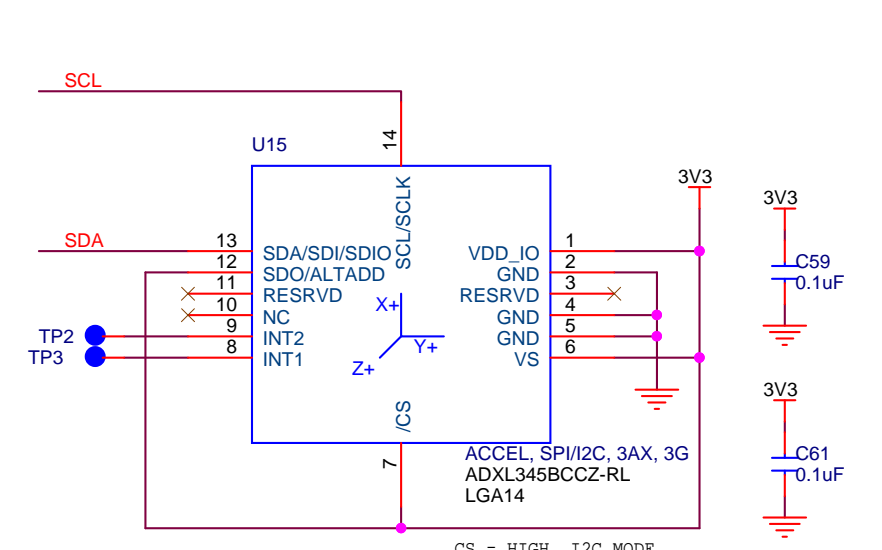
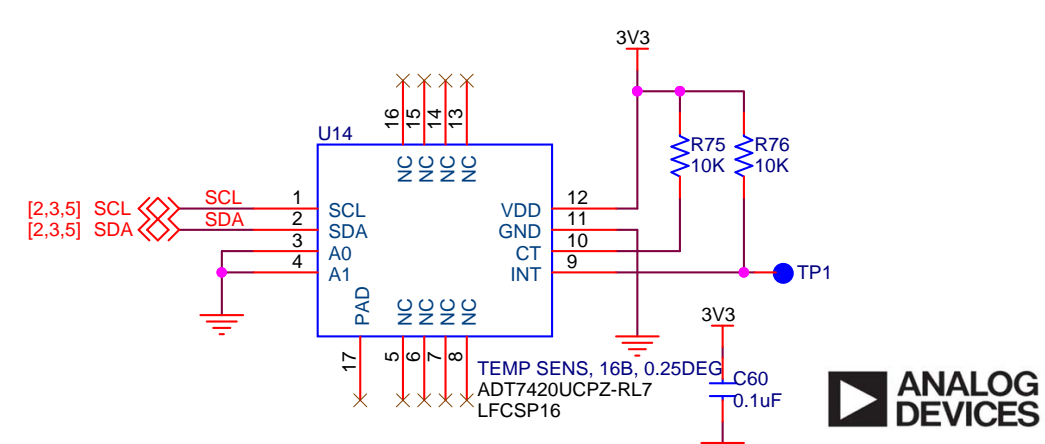
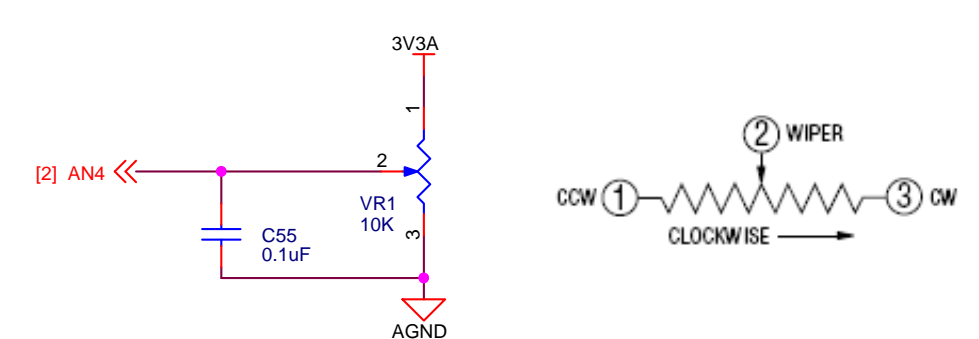
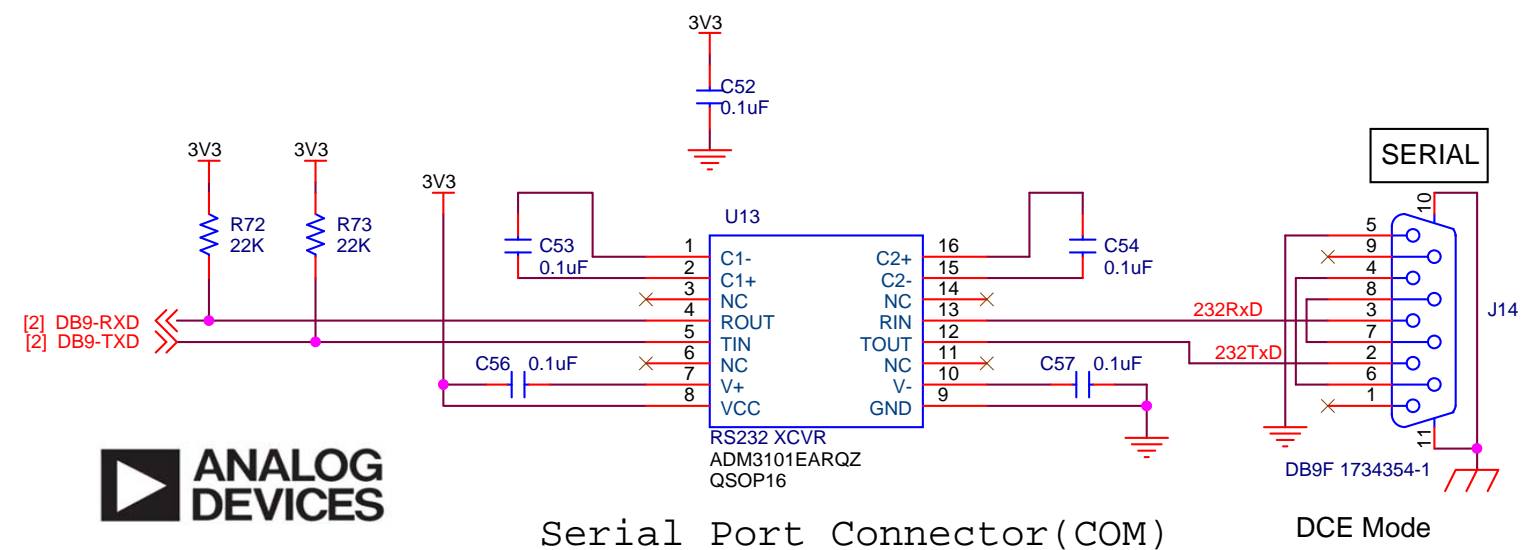
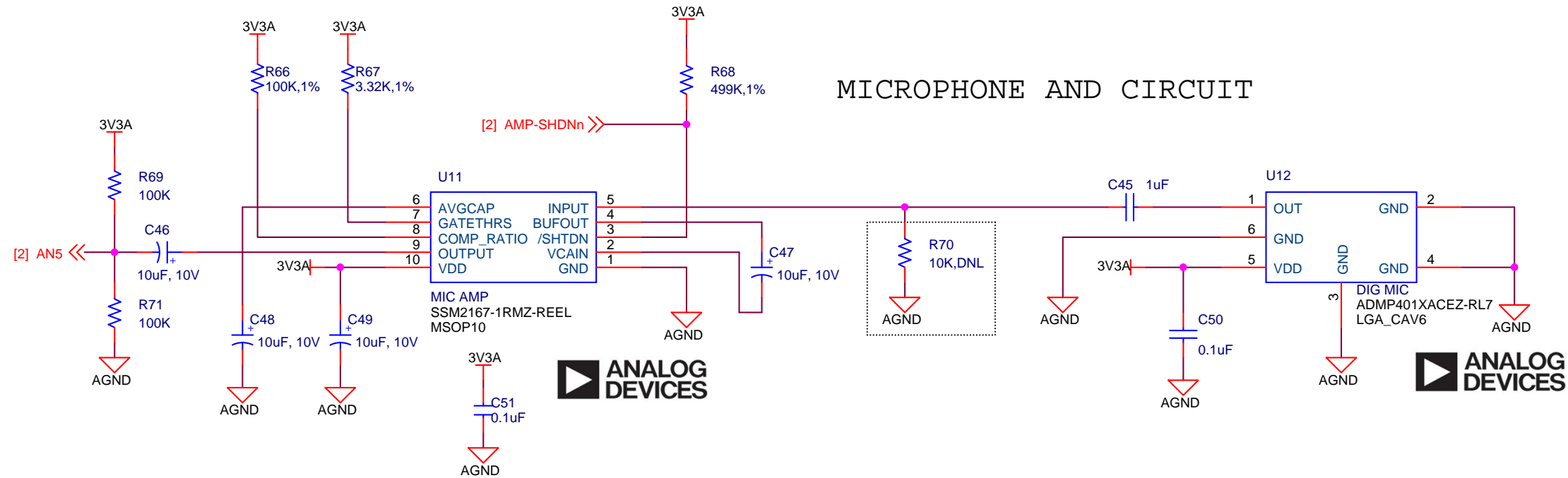
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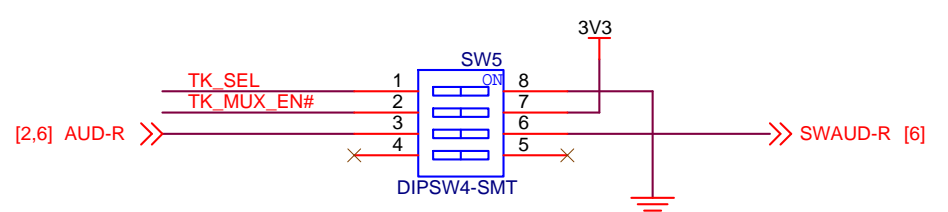
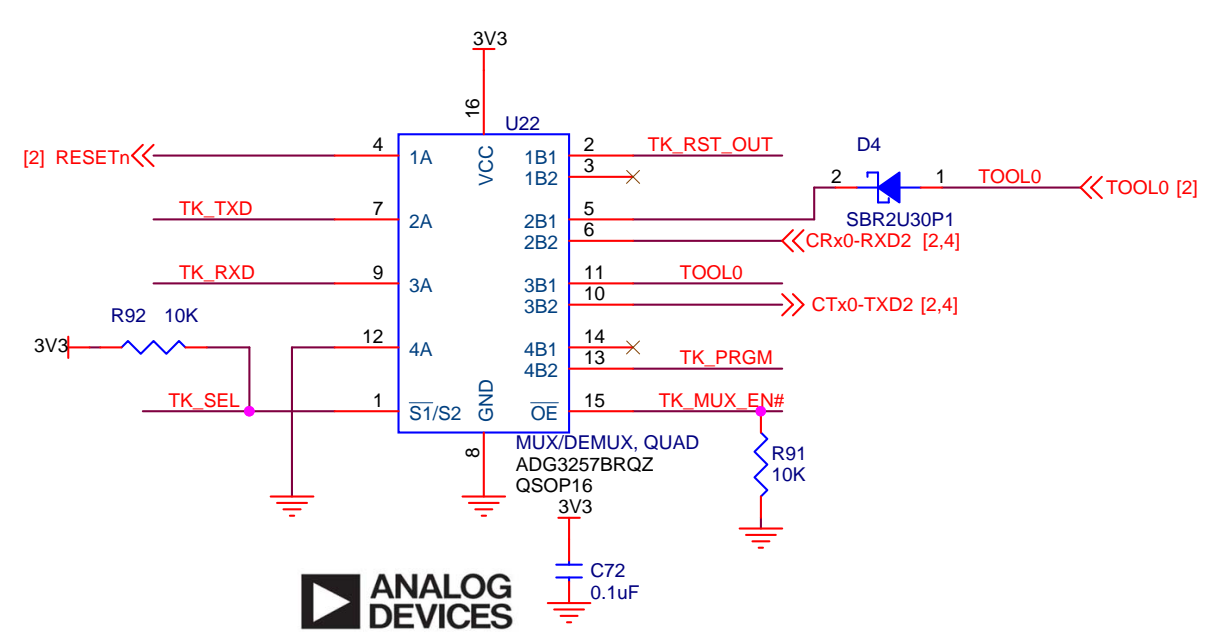
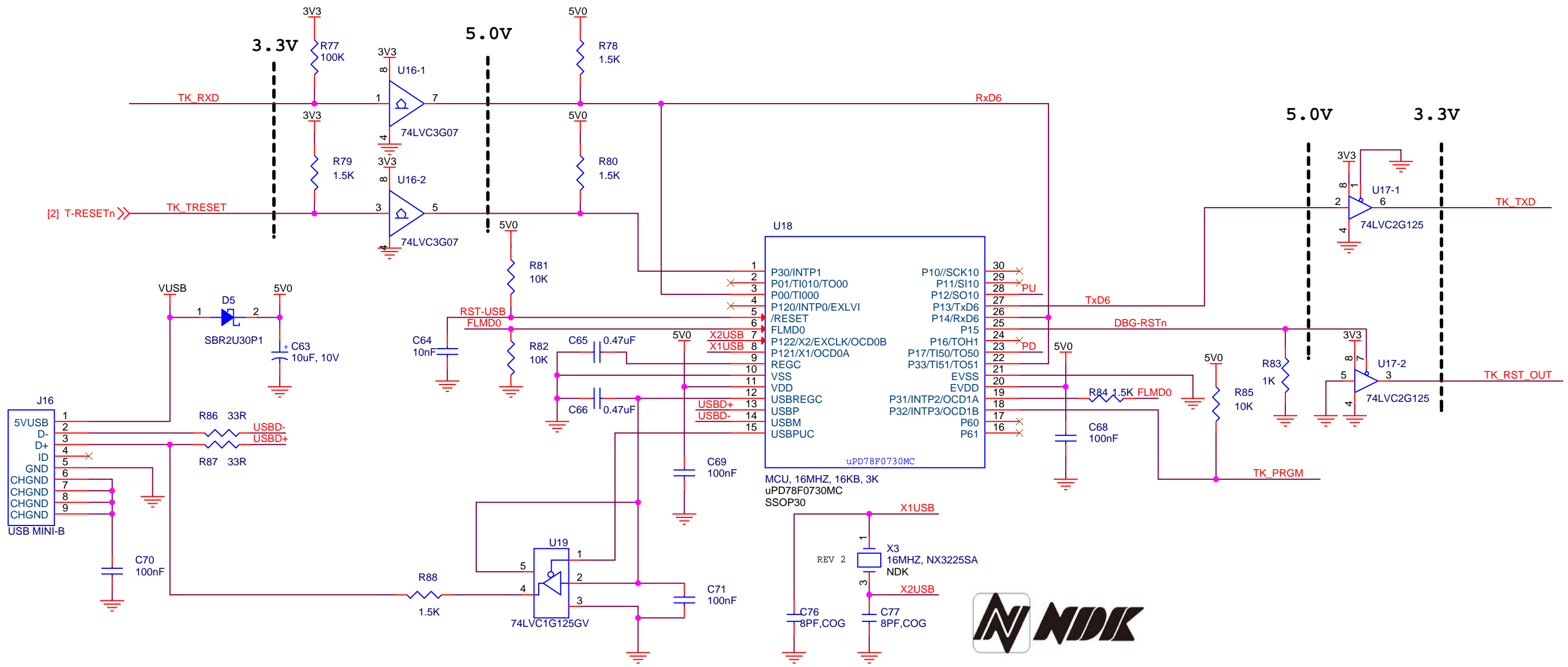
TEMP SENSOR
 I2C ADDR = 0x90
 (10010aar), aa = A1:A0, r=R/Wn
 MAKE SURE TO PLACE AWAY FROM ANY HEAT SOURCE

ACCELEROMETER
 I2C ADDR = 0x3A
 (0011101r), r=R/Wn

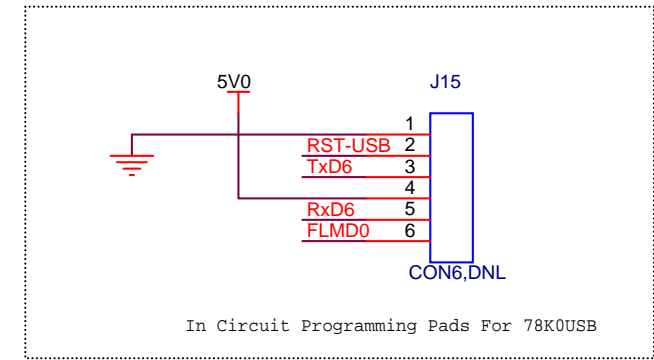
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SWITCH 1
 OFF = VIRTUAL COM PORT MODE
 ON = TK DEBUGGER MODE
 SWITCH 2
 OFF = ENABLE MUX
 ON = DISABLE MUX
 SWITCH 3
 OFF = SPEAKER DISABLED
 ON = SPEAKER ENABLED



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