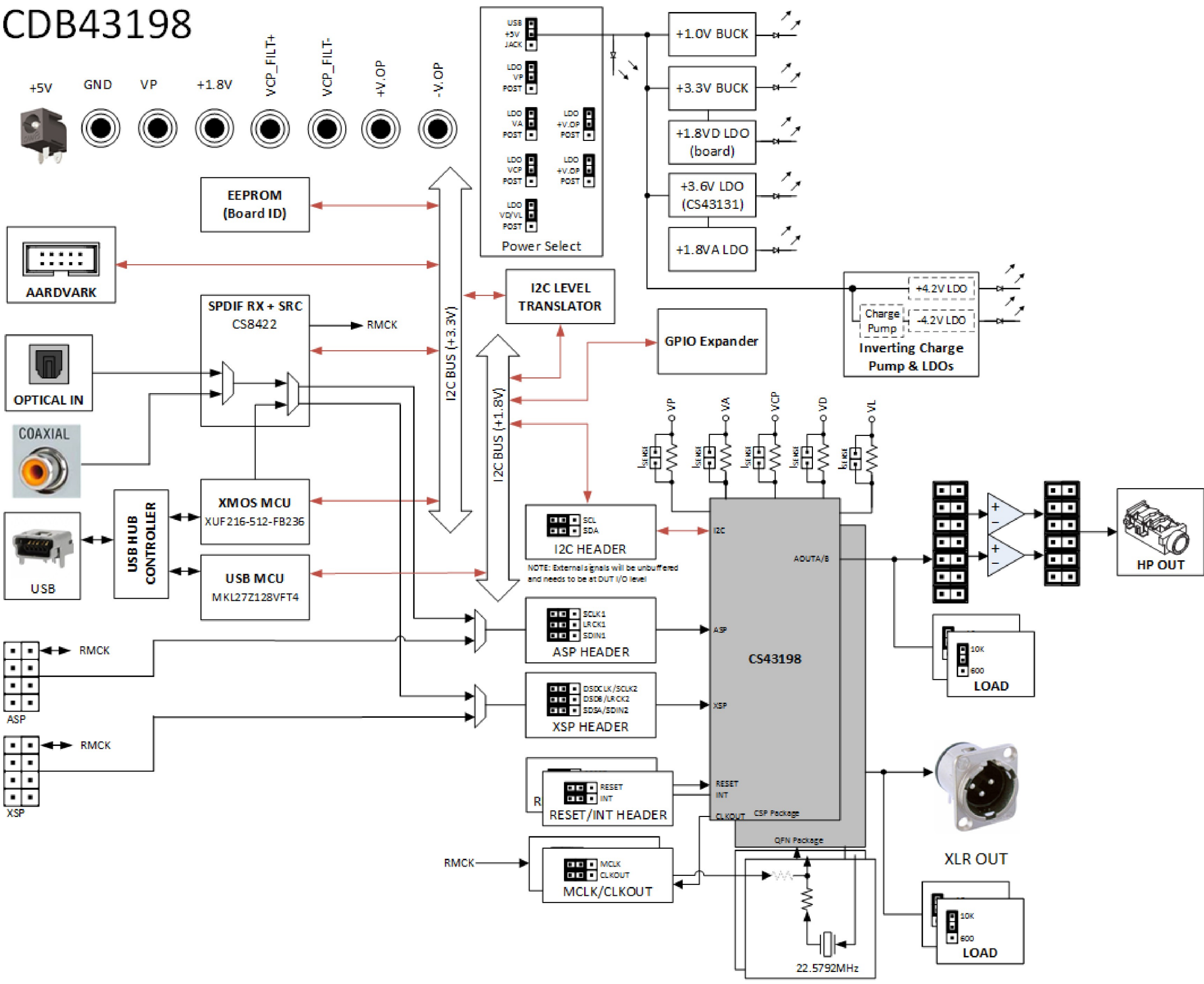


CDB43198



REV	DESCRIPTION	DATE
A0	INITIAL RELEASE	11/10/2017
B0	DEBOUNCE RESET ADDED	03/09/2018
B1	ADDED SCREW	03/29/2018

PCB DWG- 240-10322/B0
LBL SUBASSY PROD ID AND REV

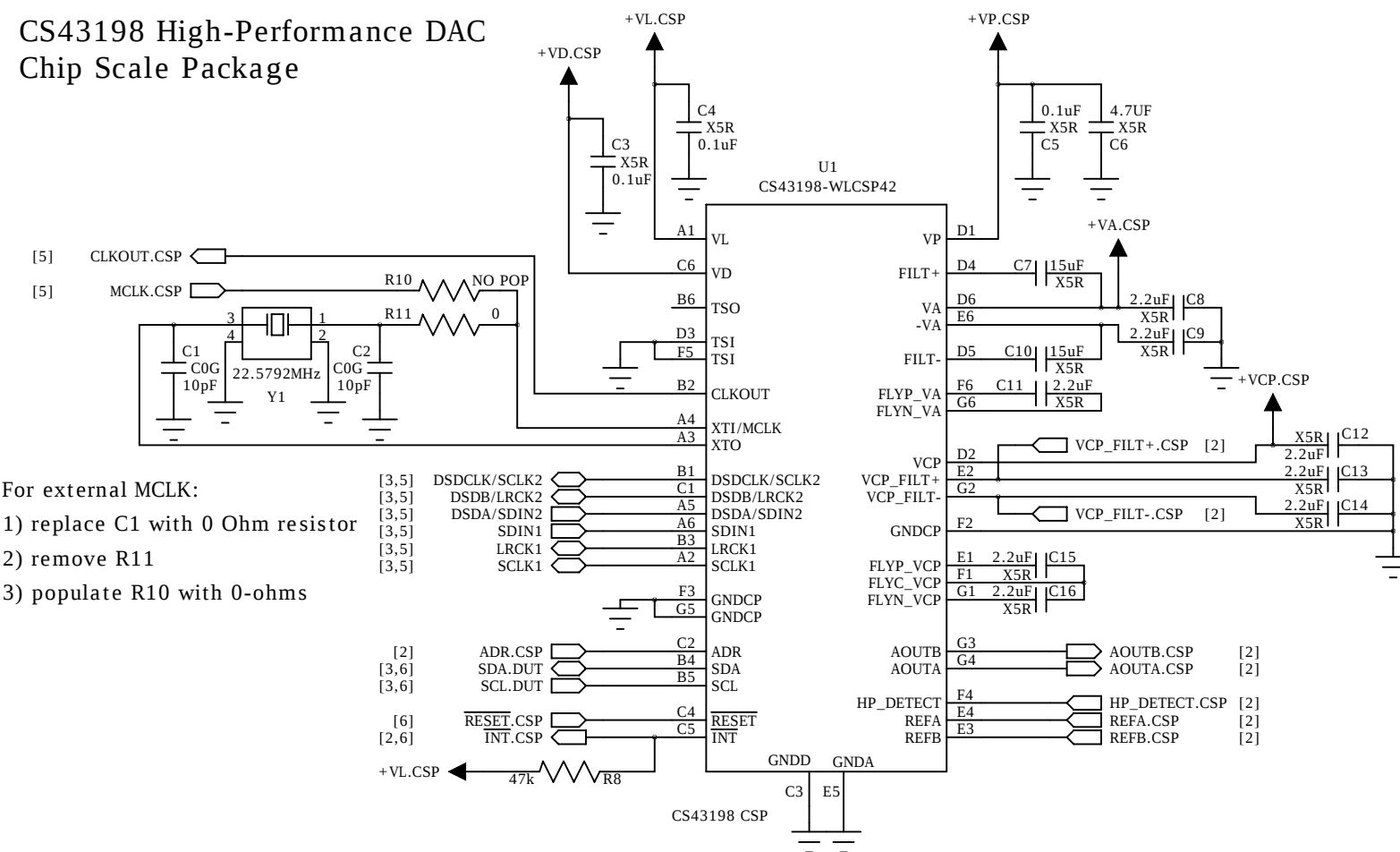
SHEET TITLEBLOCK-DIAGRAM

PART#CDB43198Rev B1

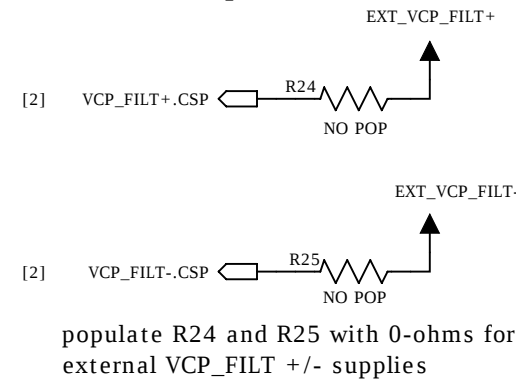
DRAWN BYM. KUREKENGINEERM. KUREK

DATE7/10/2018SHEET 1 OF 12SHEET SIZEB

CS43198 High-Performance DAC Chip Scale Package



External Amplifier Power

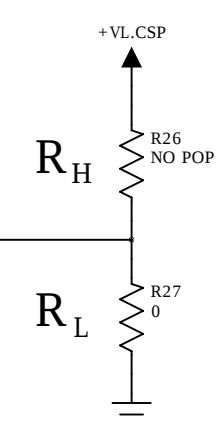


DAC I2C Address

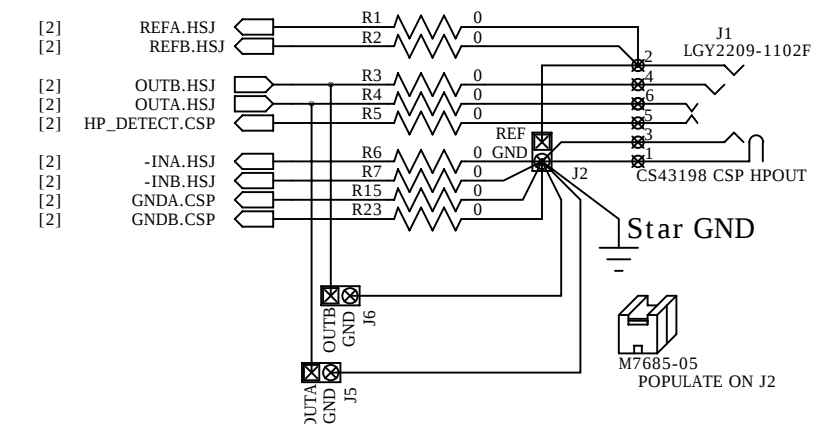
0	1	1	0	0	B1	B0	R/W
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I2C Write/Read: 0x60/0x61

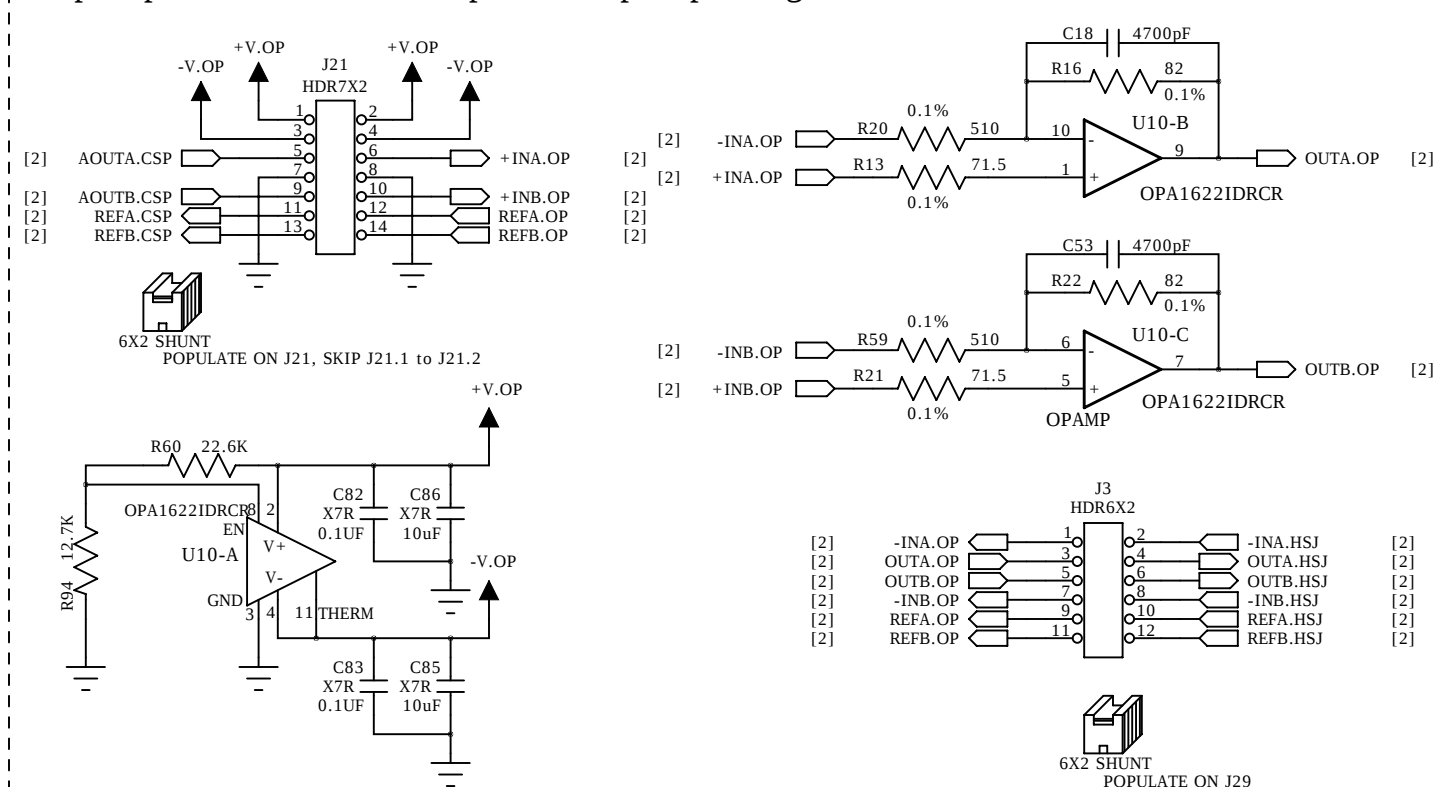
Resistor	B1B0
RL = 0 Ohms	0b00
RL = 4.99K Ohms	0b01
RH = 4.99K Ohms	0b10
RH = 0 Ohms	0b11



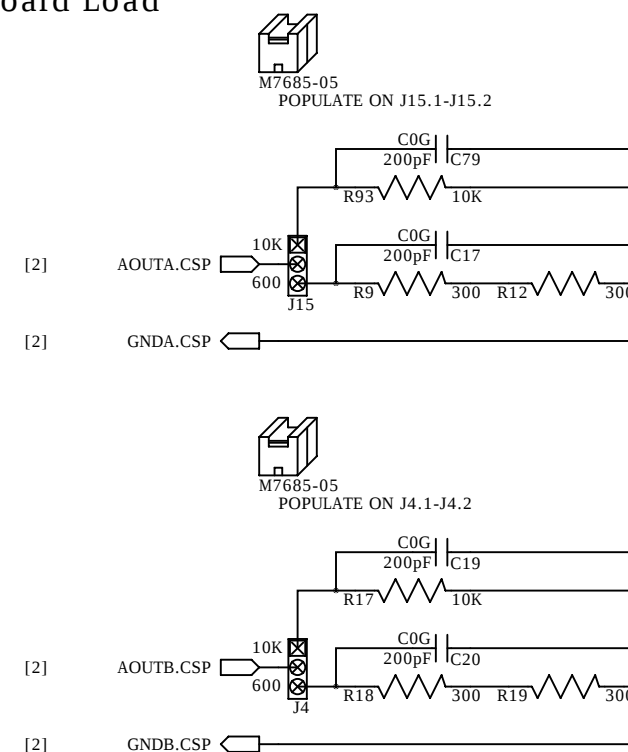
3.5mm Headset Jack



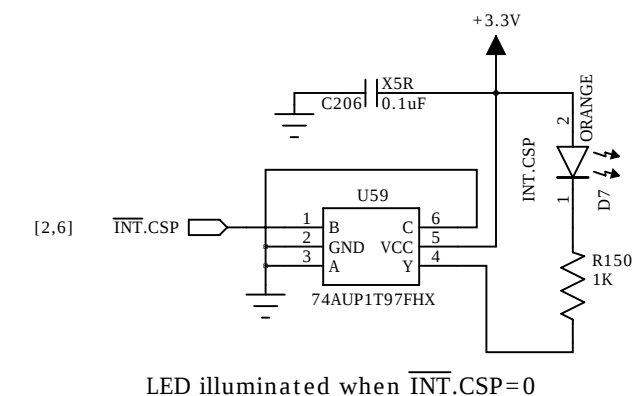
Opamp and Headers for optional Opamp Daughter Card



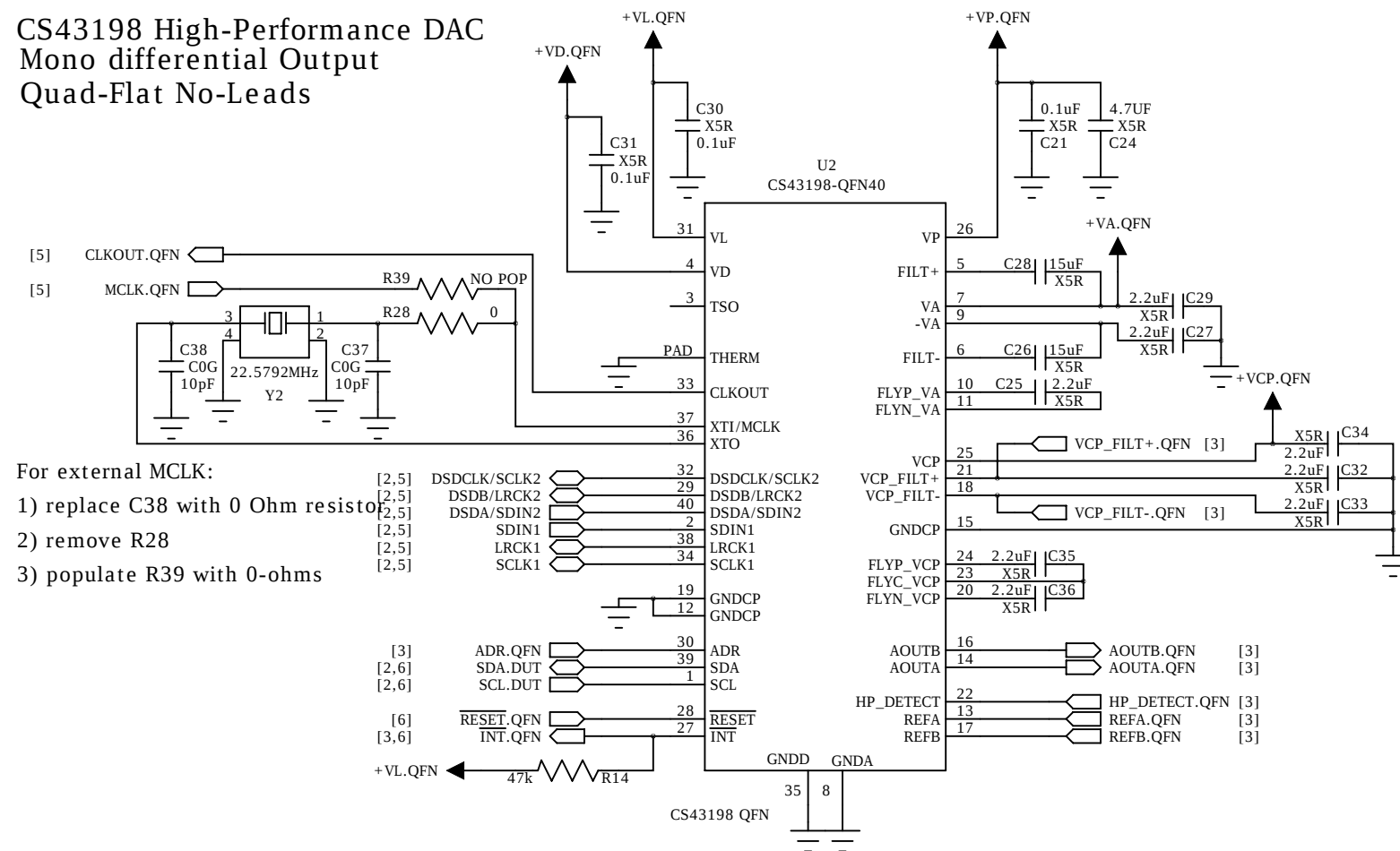
On-Board Load



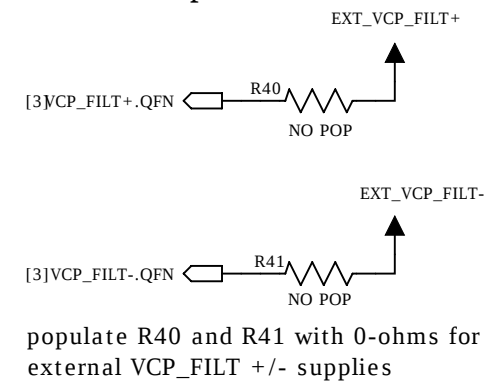
Interrupt LED



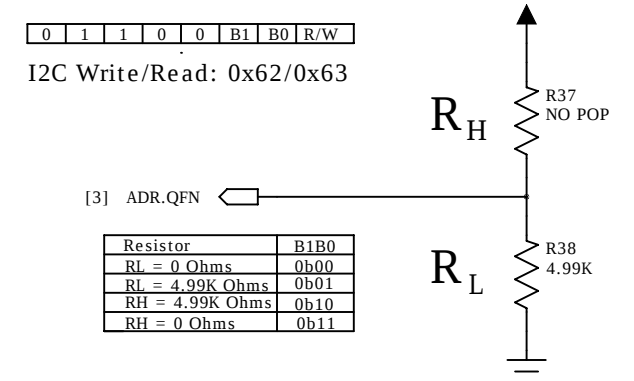
CS43198 High-Performance DAC
Mono differential Output
Quad-Flat No-Leads



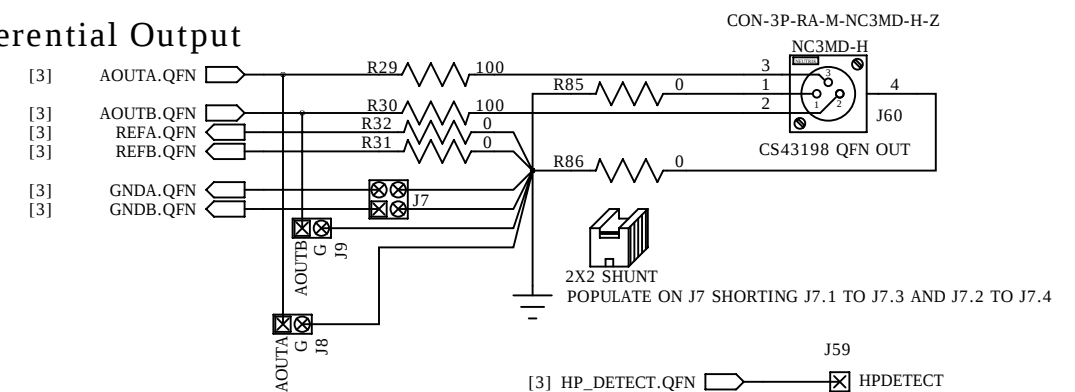
External Amplifier Power



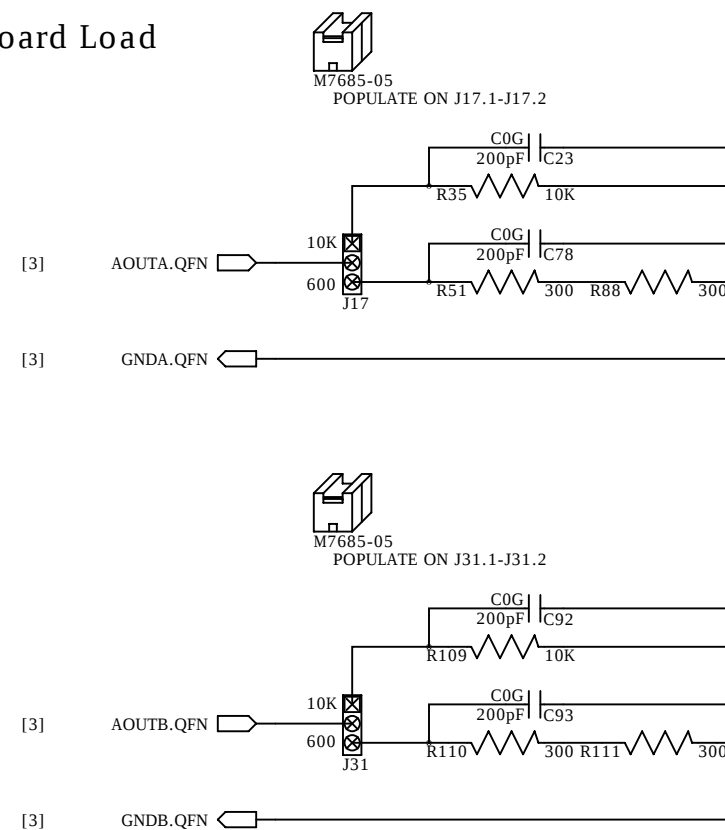
DAC I2C Address



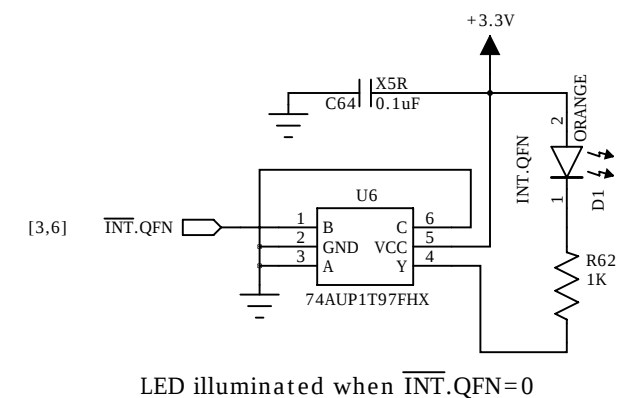
XLR Differential Output



On-Board Load



Interrupt LED



CIRRUS LOGIC®

SHEET TITLE	CS43198-QFN
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PART #	CDB43198
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Rev B1

DRAWN BY M. KUREK

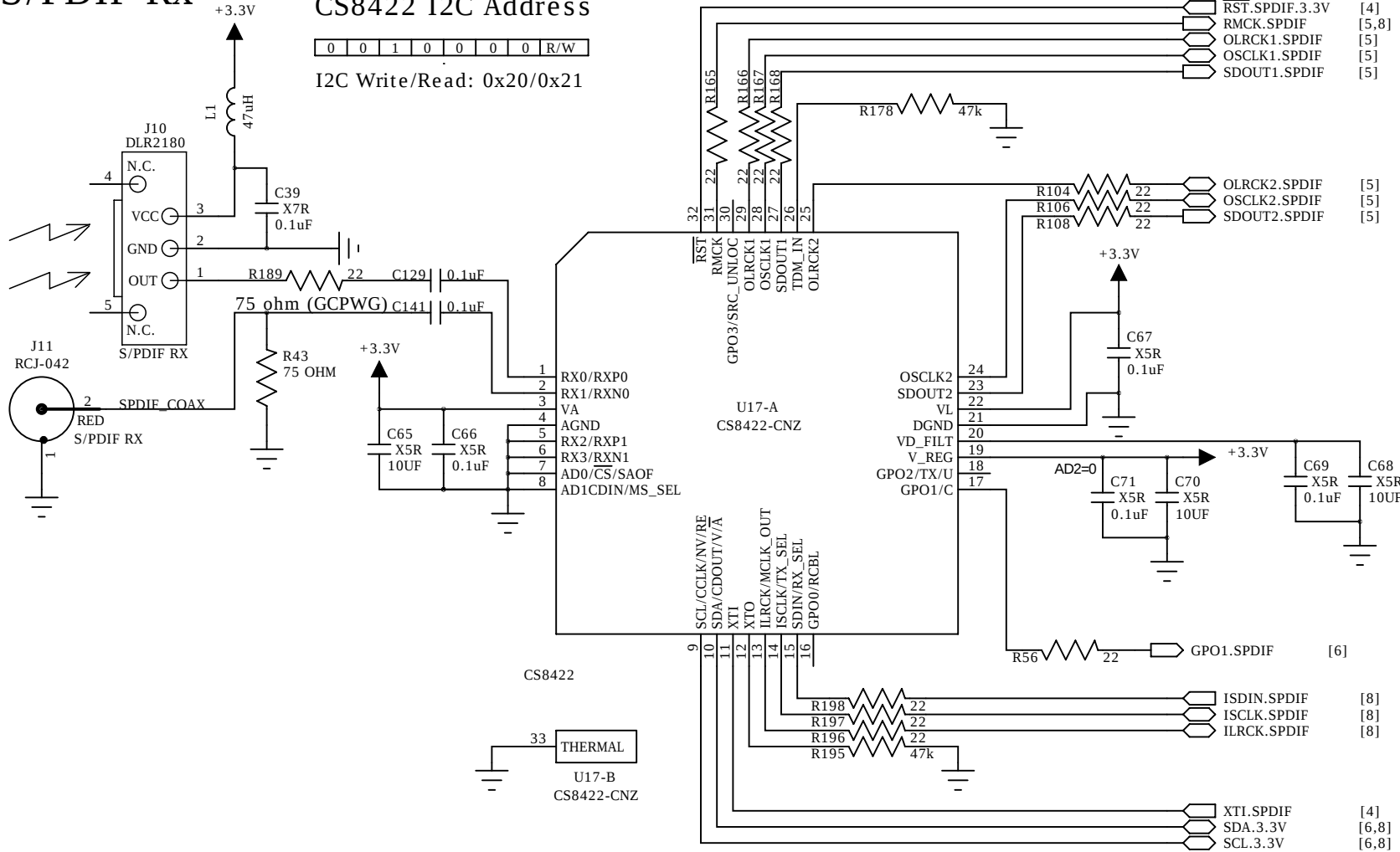
ENGINEER M. KUREK

DATE	7/10/2018
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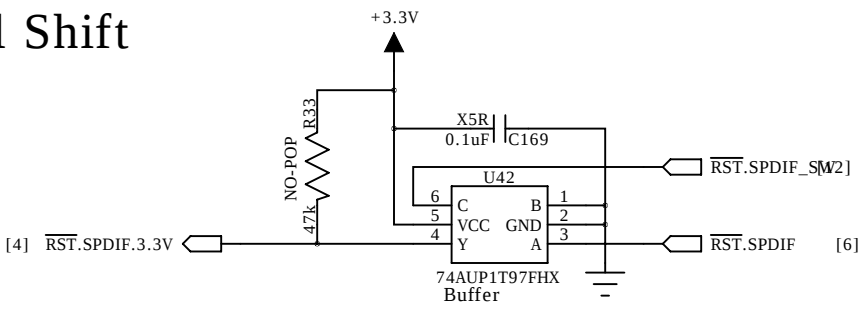
SHEET 3 OF 12

SHEET SIZE	B
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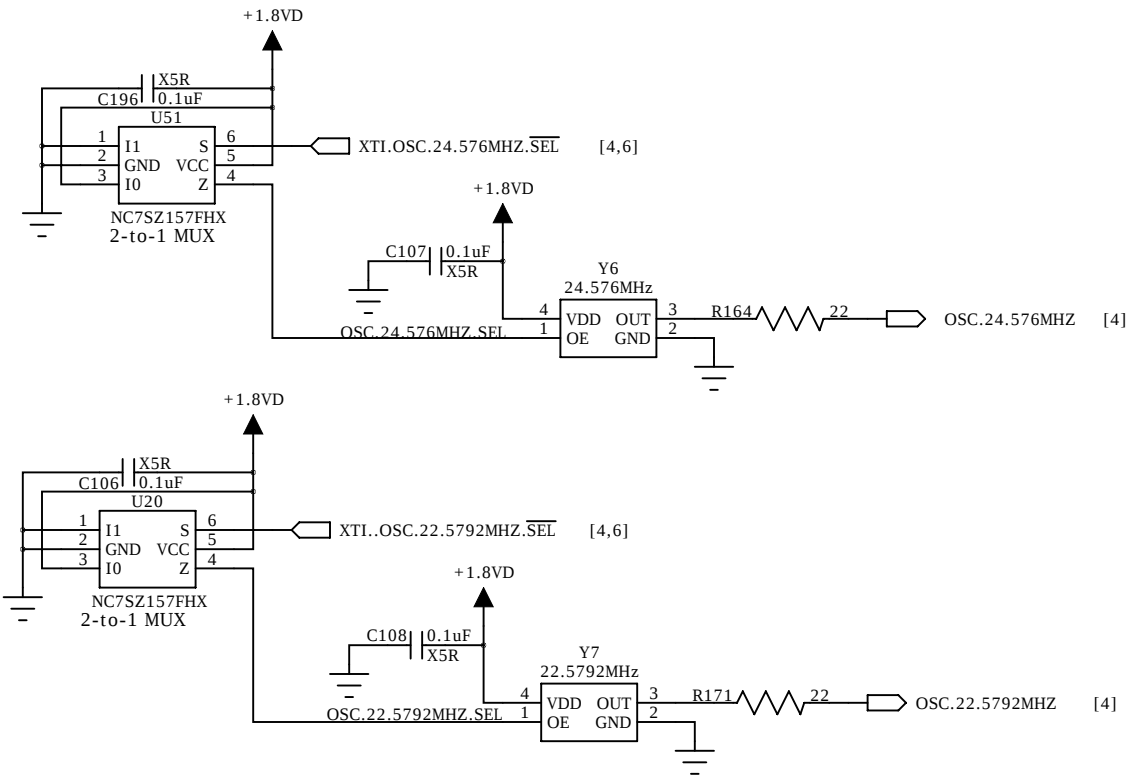
S/PDIF Rx



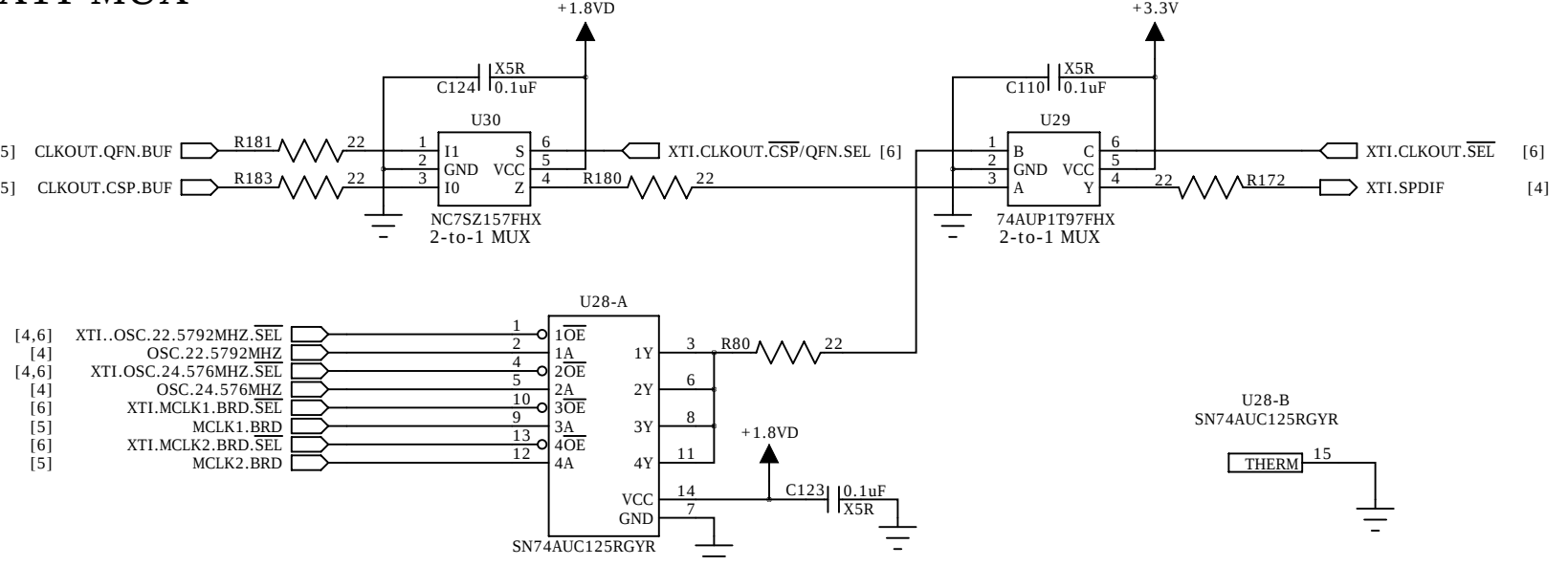
Level Shift



OSCILLATORS - only enable when using

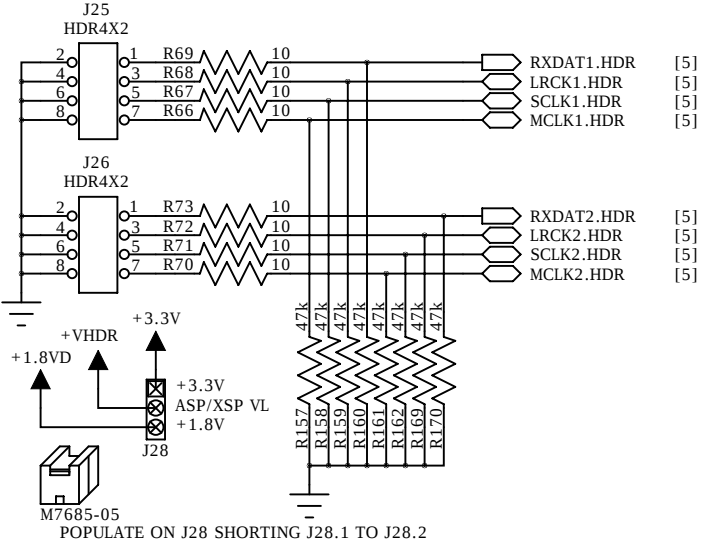


XTI MUX

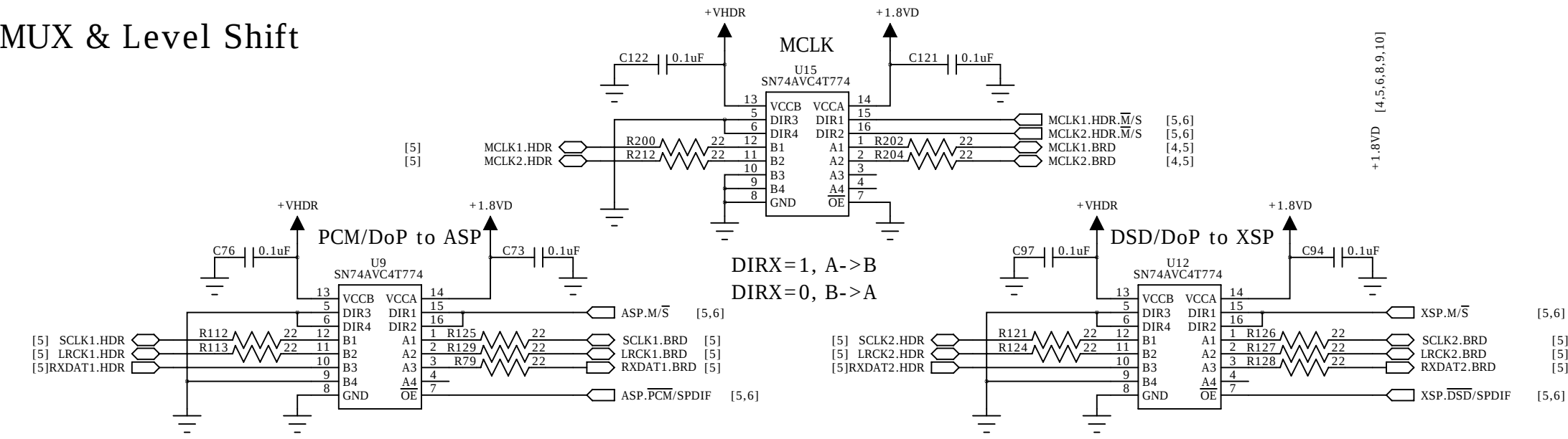


SHEET TITLE		S/PDIF-RX	
PART#		CDB43198	
DRAWN BY		Rev B1	
M. KUREK		ENGINEER M. KUREK	
DATE		7/10/2018	
SHEET		4 OF 12	
SIZE		B	

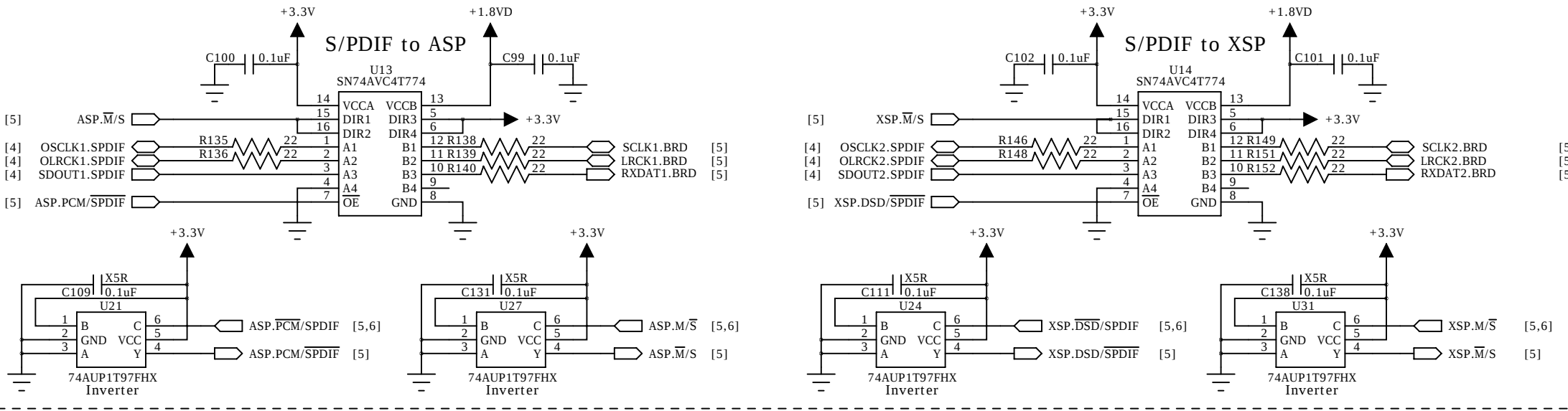
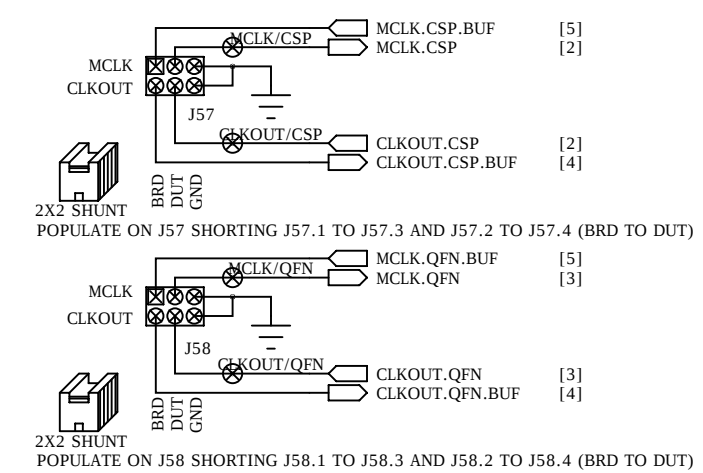
PCM, DOP, & DSD headers



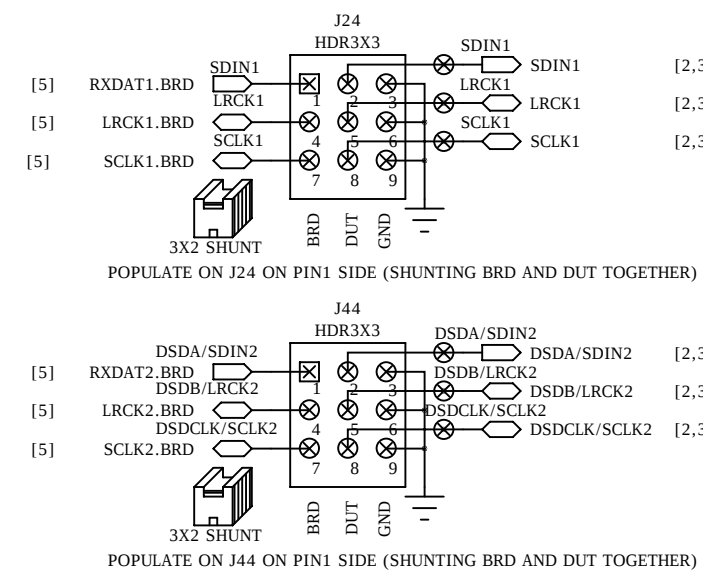
MUX & Level Shift



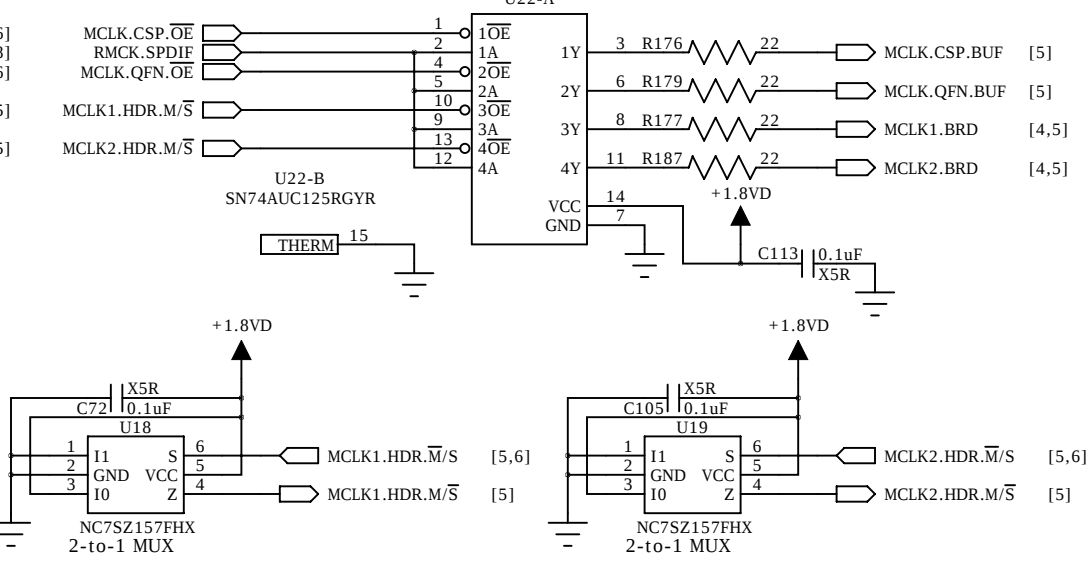
MCLK & CLKOUT direct header



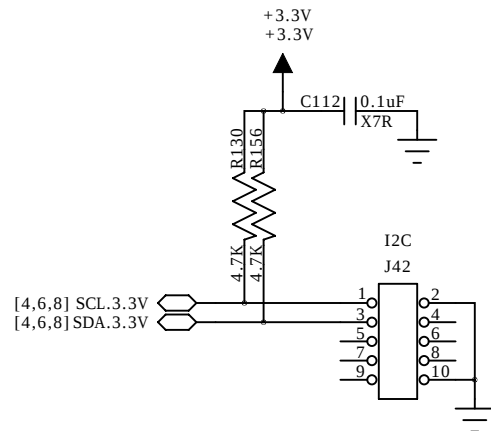
ASP & XSP direct header



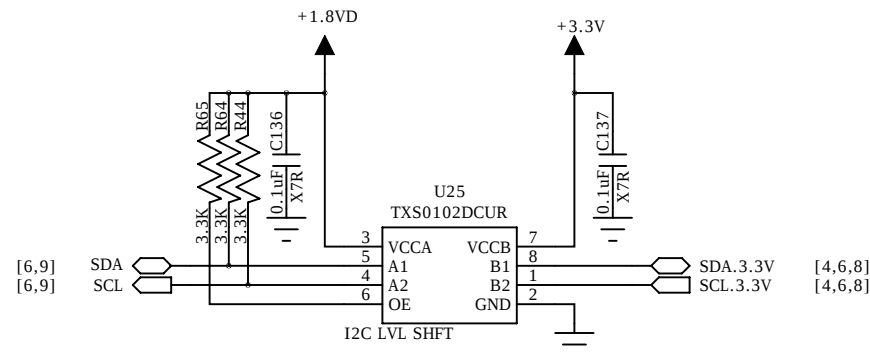
MCLK BUFFER



Aardvark header



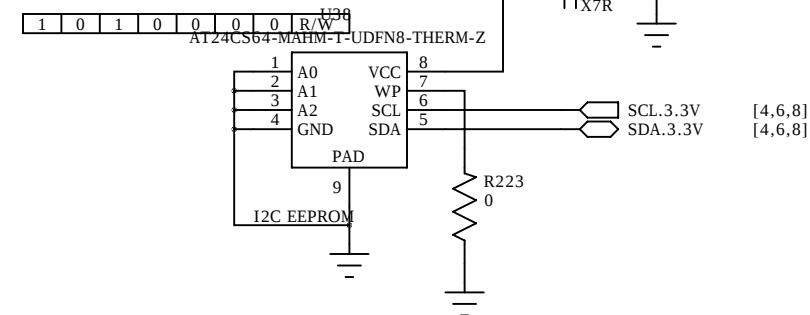
I2C level shifter



Device ID EEPROM with Unique S/N

I2C ADDRESS

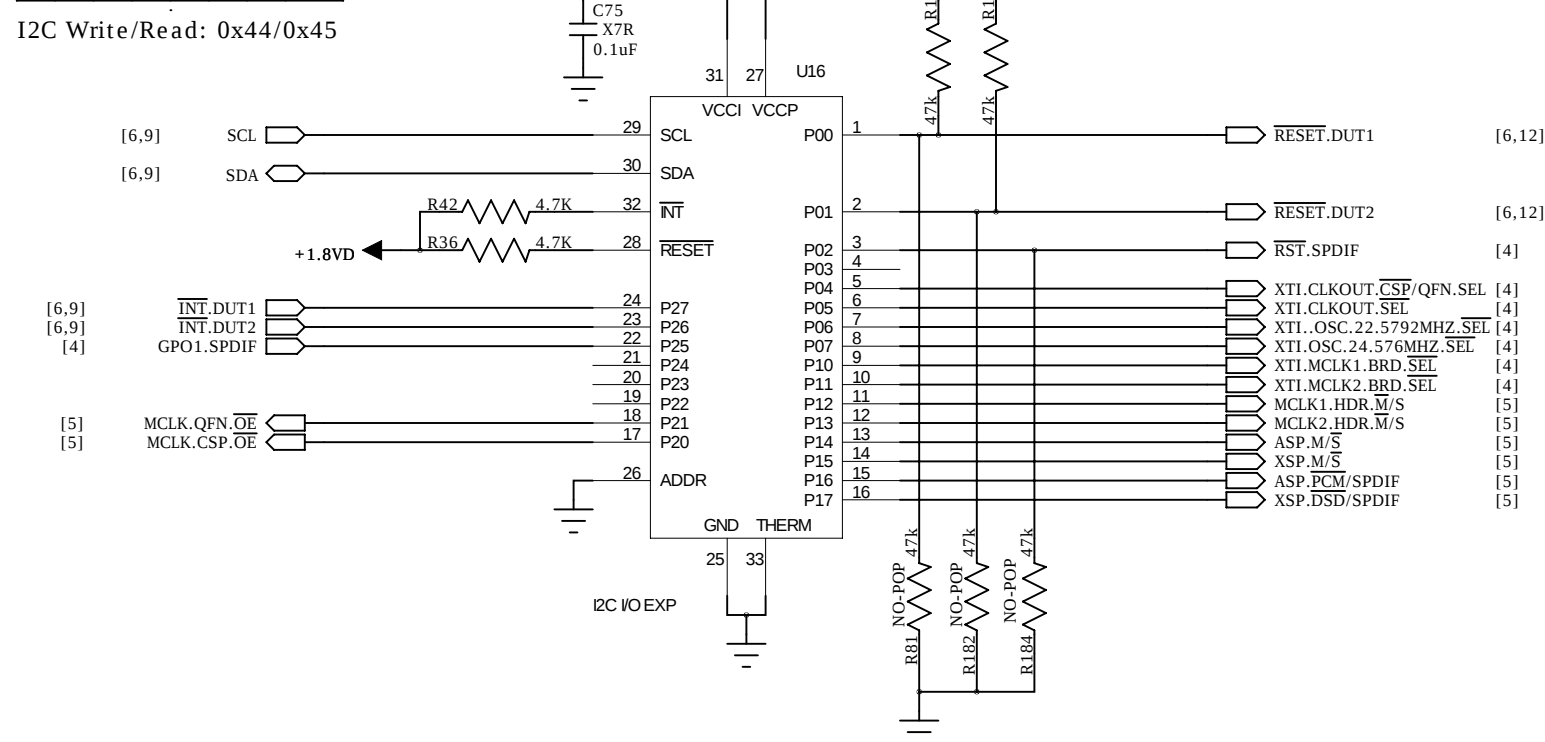
I2C Write/Read: 0xA0/0xA1



IO Expander

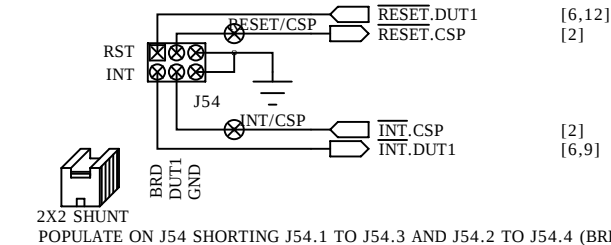
I2C Address

I2C Write/Read: 0x44/0x45



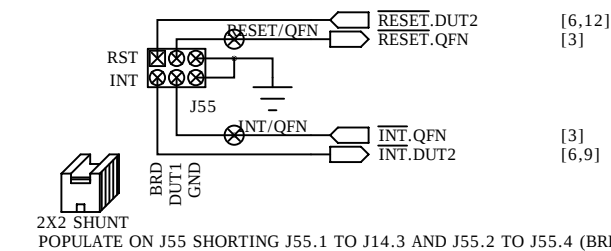
RST and INT HEADER

NOTE: External RST and INT will be unbuffered and needs to be at DUT I/O level



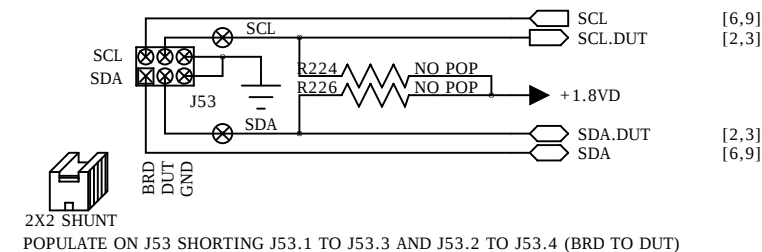
RST and INT HEADER

NOTE: External RST and INT will be unbuffered and needs to be at DUT I/O level



I2C HEADER

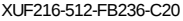
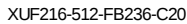
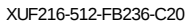
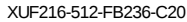
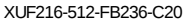
NOTE: External I2C will be unbuffered and needs to be at DUT I/O level



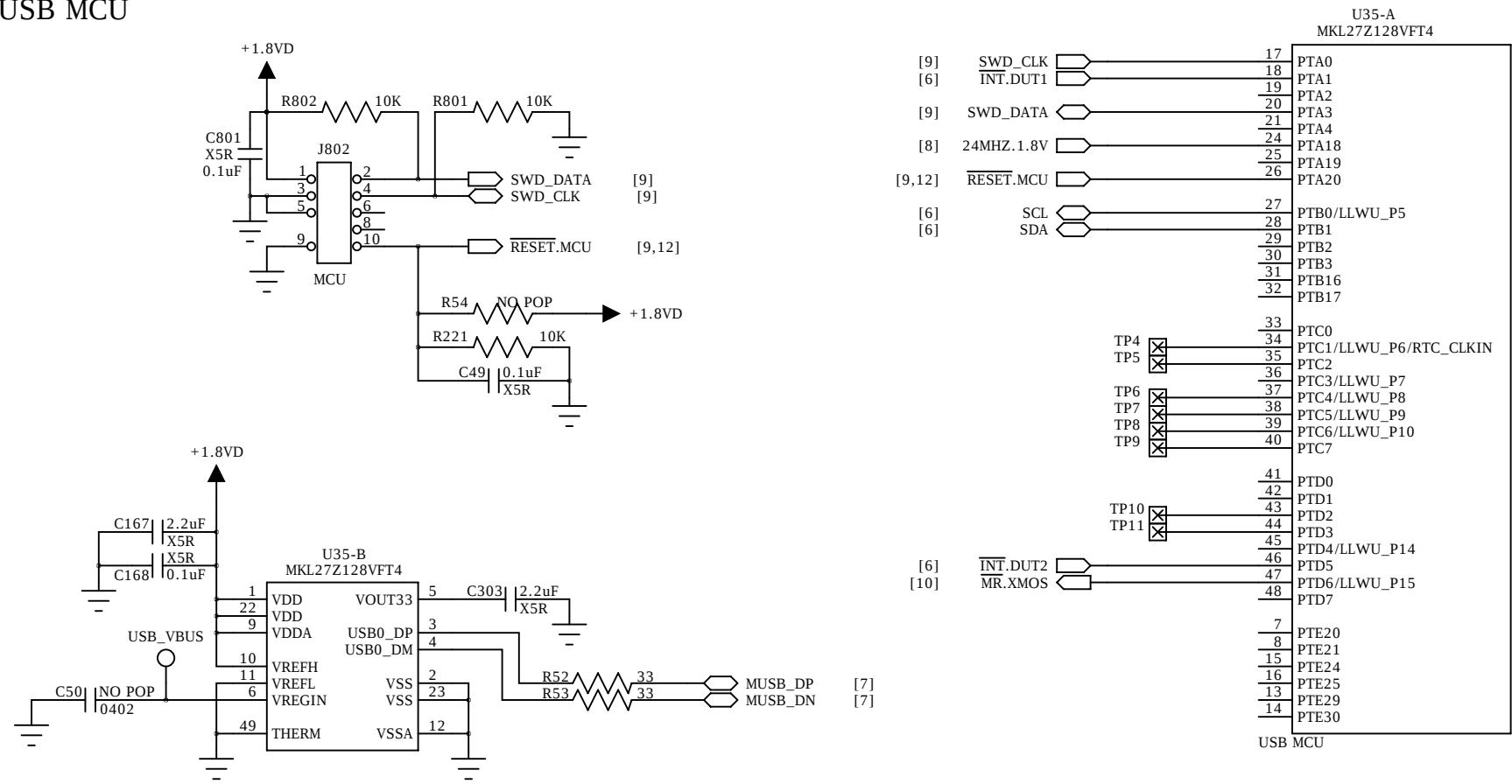
USB Hub



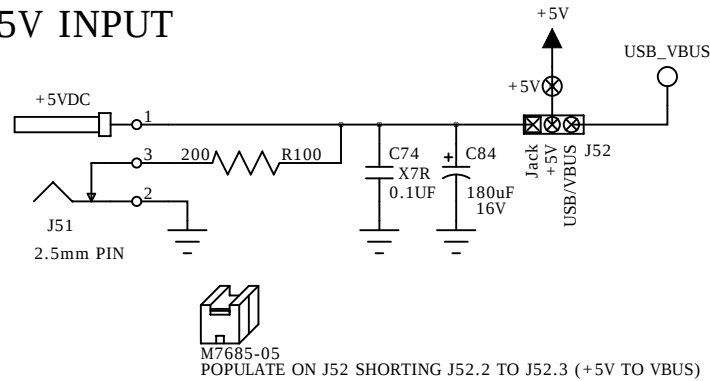
POPULATE ON J29 SHORTING J29.1 TO J29.2



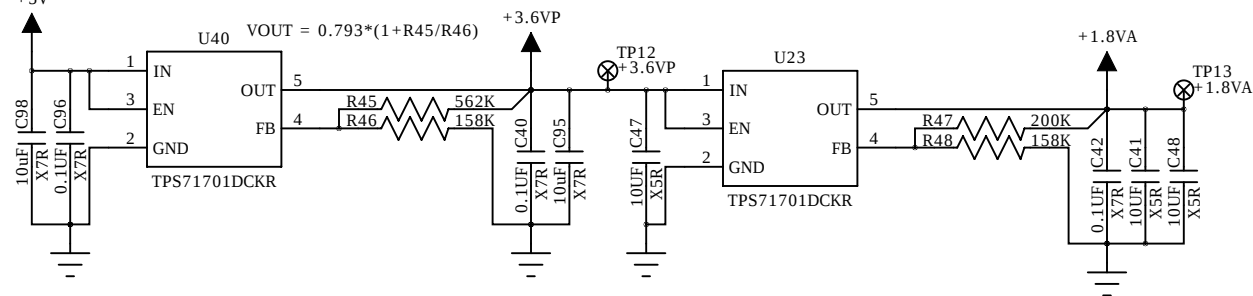
USB MCU



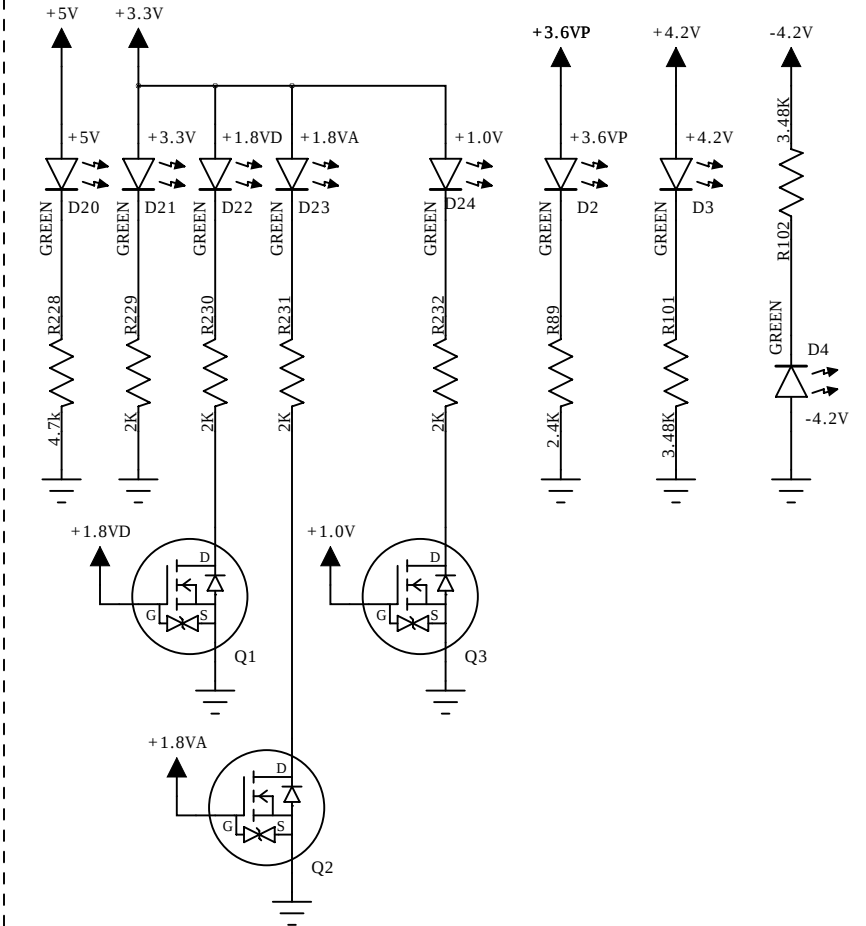
5V INPUT



CS43198 3.6V and 1.8V LDO

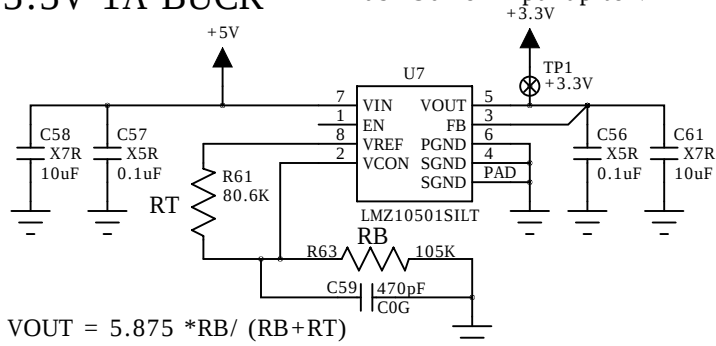


POWER INDICATORS



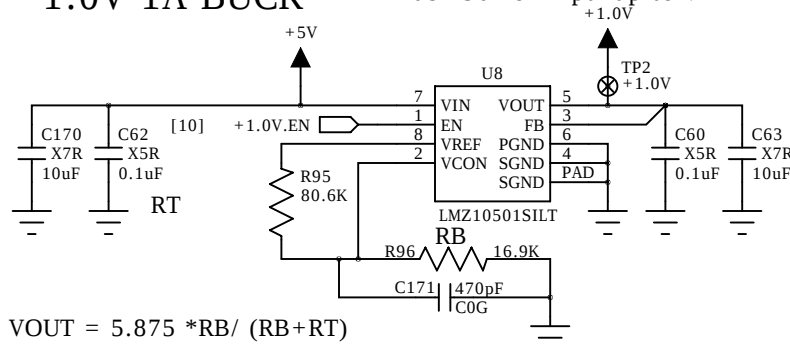
3.3V 1A BUCK

EN has 790 kohm pullup to VIN



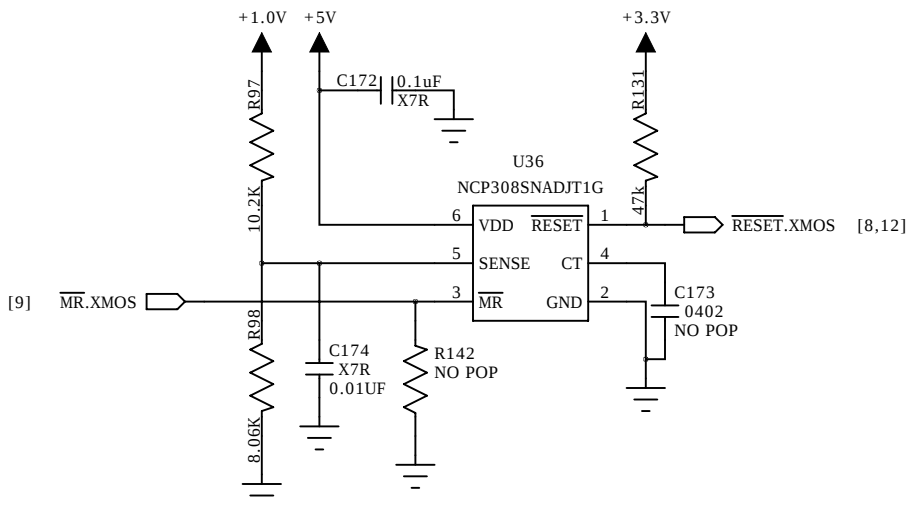
1.0V 1A BUCK

EN has 790 kohm pullup to VIN



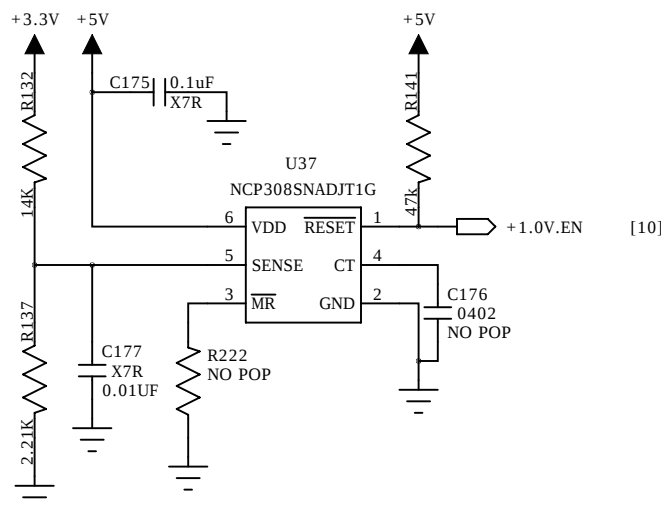
Programmable Delay Reset

RESET output valid at VDD of 0.8V (worst case)
RESET release delay = 20 ms
 SENSE threshold (neg) = $(10.2K/8.06K+1) \times 0.405V = 0.9175V$
 SENSE threshold (pos, typ) = $0.9175V \times 1.0175 = 0.9336V$
 SENSE threshold (pos, max) = $0.9175V \times 1.0375 = 0.9519V$
 MR_V_IL (max) = $0.3 \times VDD = 1.5V$
 MR_V_IH (min) = $0.7 \times VDD = 3.5V$
 MR internal pull-up resistance = 90kOhms typ

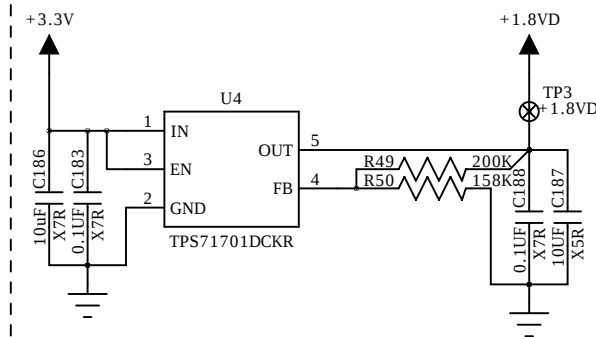


Programmable Delay Reset

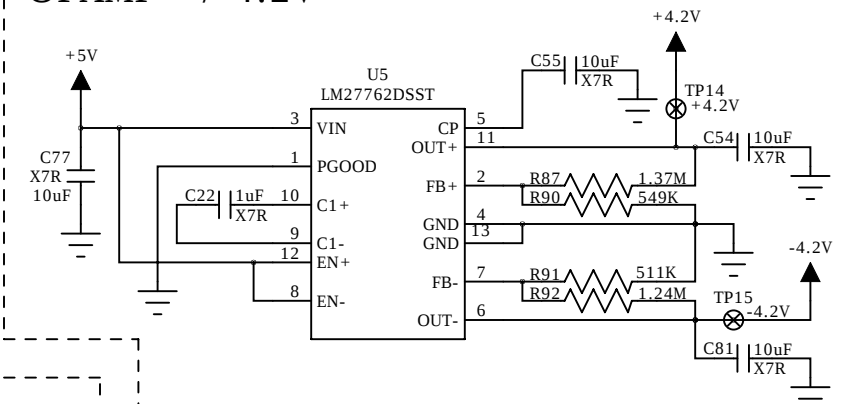
RESET output valid at VDD of 0.8V (worst case)
RESET release delay = 20 ms
 SENSE threshold (neg) = $(14K/2.21K+1) \times 0.405V = 2.97V$
 SENSE threshold (pos, typ) = $2.97V \times 1.0175 = 3.022V$
 SENSE threshold (pos, max) = $2.97V \times 1.0375 = 3.135V$
 MR_V_IL (max) = $0.3 \times VDD = 1.5V$
 MR_V_IH (min) = $0.7 \times VDD = 3.5V$
 MR internal pull-up resistance = 90kOhms typ



1.8V LDO for board

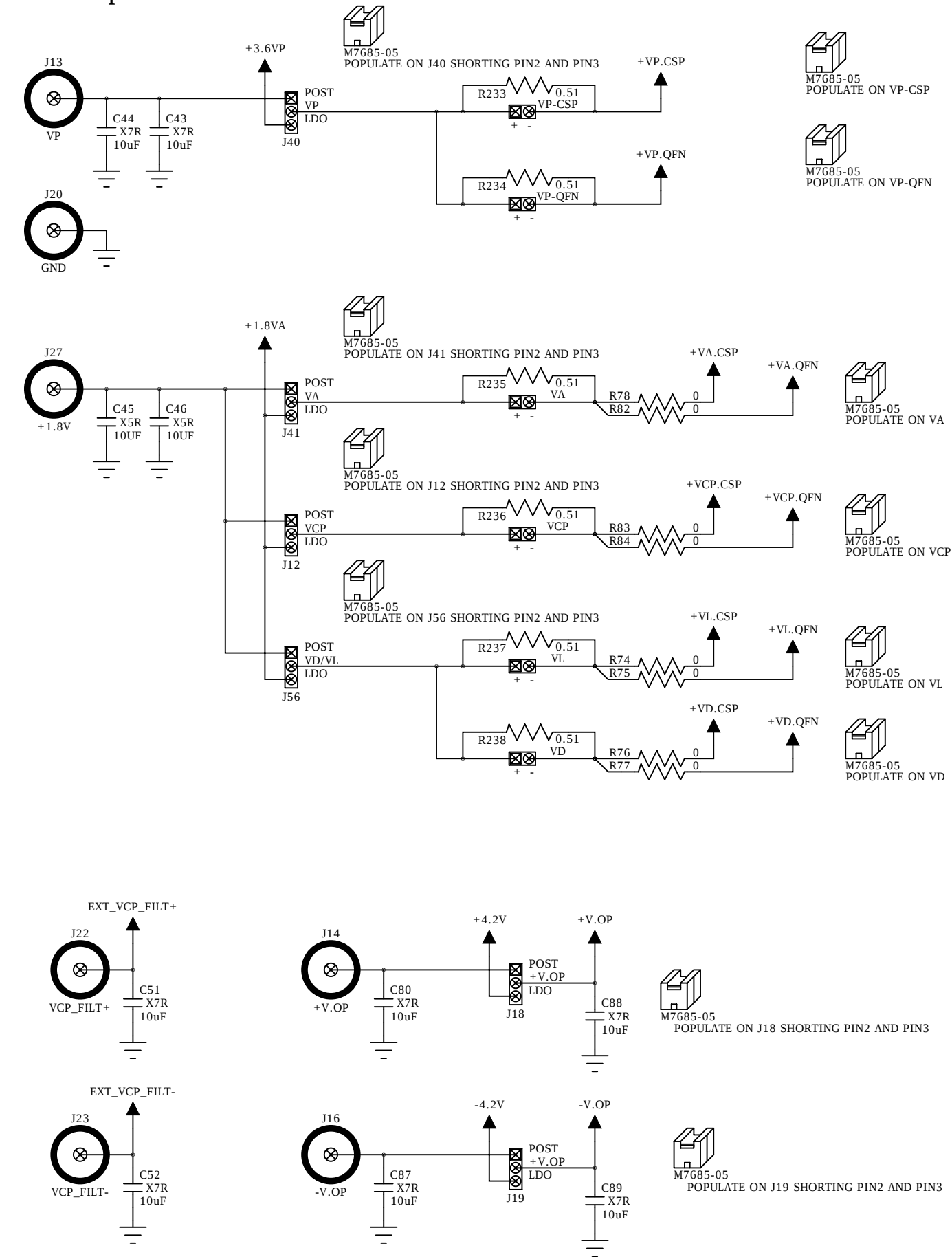


OPAMP +/-4.2V



SHEET TITLE			POWER		
PART#			CDB43198		
DRAWN BY			Rev B1		
DATE			M. KUREK		
SHEET			10 OF 12		
SHEET SIZE			B		

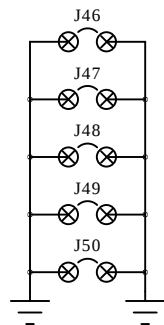
Power Options and Current Measurement



Hardware

MH1	MH5	SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
MH2	MH6	SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
MH3	MH7	SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
MH4	MH8	SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
		SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
		SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
		SCREW-PHILIPS-4-40THR-PH-5/16-L-Z	PMSSS 440 0031 PH
		SCREW-4-40THR-SS-1/4L	90190A106

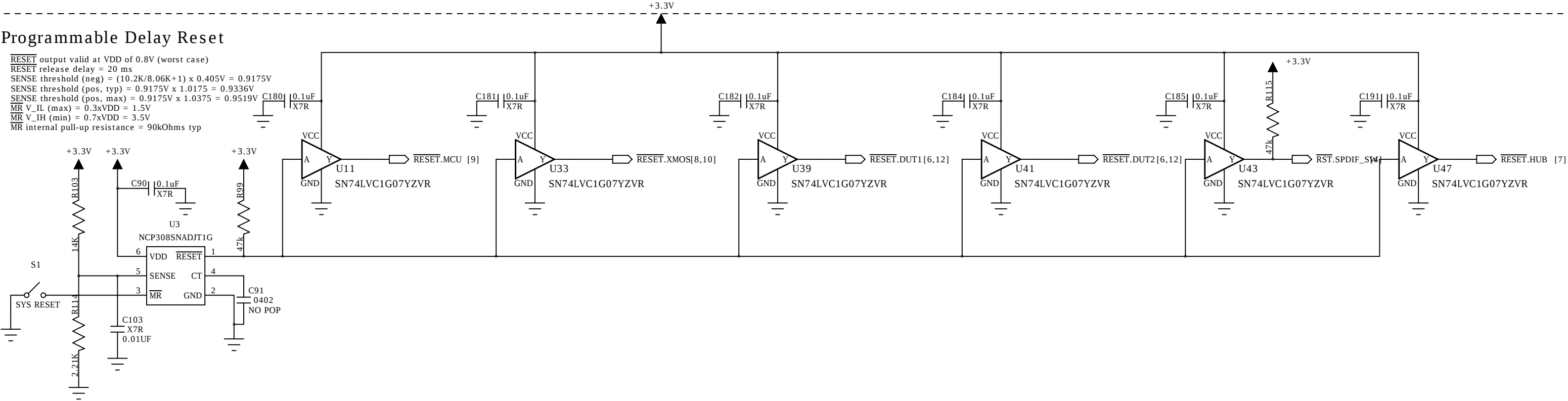
Testpoints



SHEET TITLE	EXT-POWER		
PART#	CDB43198		Rev B1
DRAWN BY	M. KUREK	ENGINEER	M. KUREK
DATE	7/10/2018	SHEET 11 OF 12	SHEET SIZE B

Programmable Delay Reset

RESET output valid at VDD of 0.8V (worst case)
RESET release delay = 20 ms
SENSE threshold (neg) = (10.2K/8.06K+1) x 0.405V = 0.9175V
SENSE threshold (pos, typ) = 0.9175V x 1.0175 = 0.9336V
SENSE threshold (pos, max) = 0.9175V x 1.0375 = 0.9519V
MR V_IL (max) = 0.3xVDD = 1.5V
MR V_IH (min) = 0.7xVDD = 3.5V
MR internal pull-up resistance = 90kOhms typ



Programmable Delay Reset

RESET output valid at VDD of 0.8V (worst case)
RESET release delay = 20 ms
SENSE threshold (neg) = (10.2K/8.06K+1) x 0.405V = 0.9175V
SENSE threshold (pos, typ) = 0.9175V x 1.0175 = 0.9336V
SENSE threshold (pos, max) = 0.9175V x 1.0375 = 0.9519V
MR V_IL (max) = 0.3xVDD = 1.5V
MR V_IH (min) = 0.7xVDD = 3.5V
MR internal pull-up resistance = 90kOhms typ

