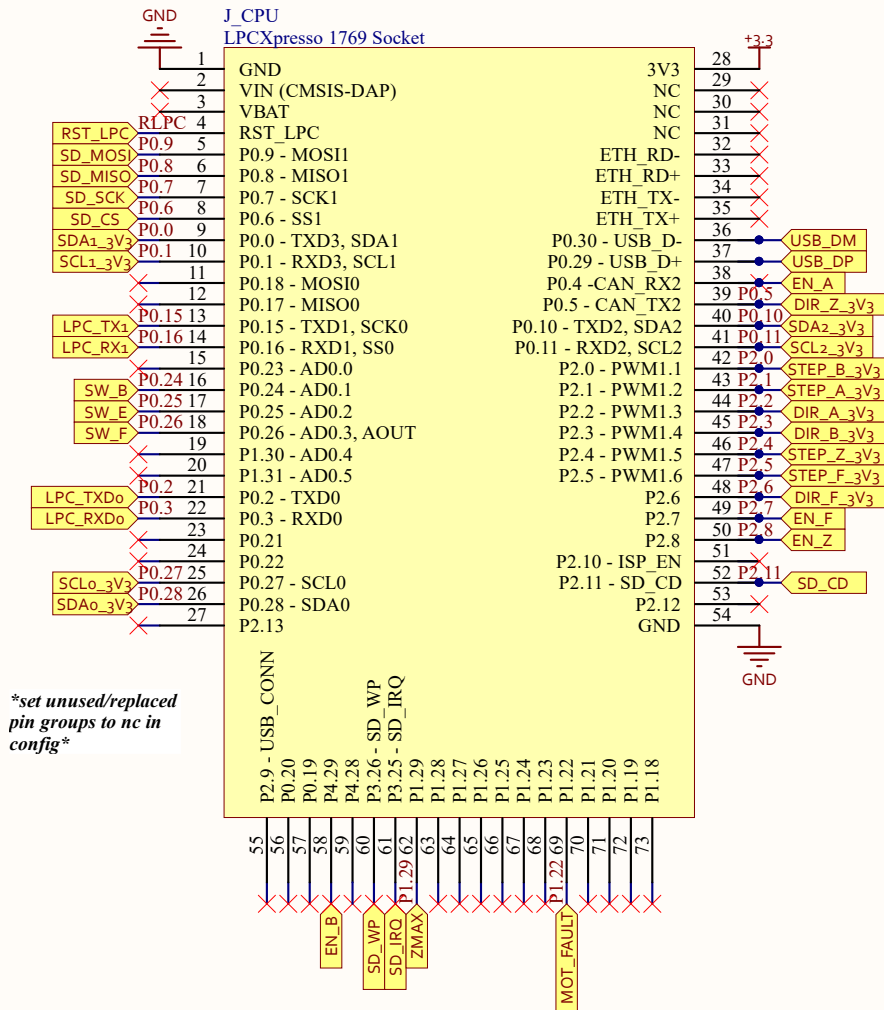
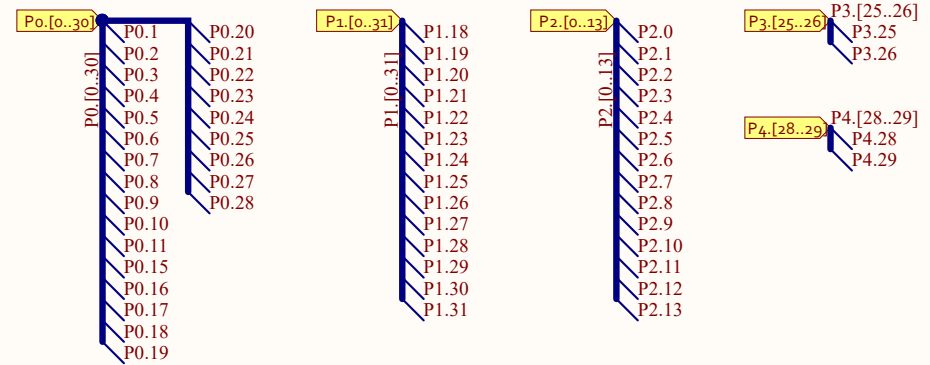


Controller

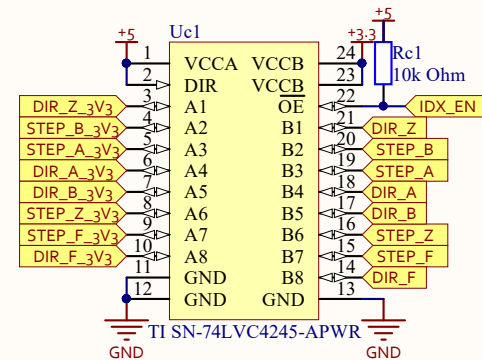


CPU Port Connections



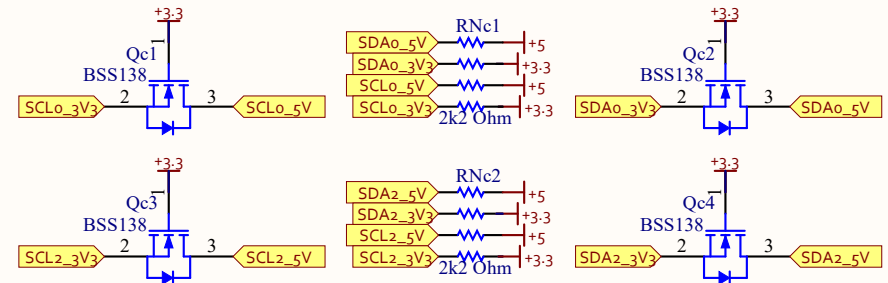
Inter Chip Communication

Fast Switching Indexer Level Shifting



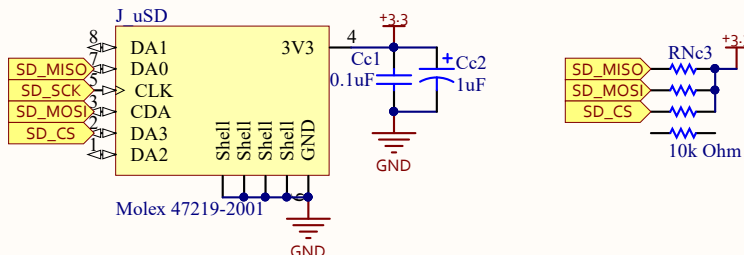
N.B.: All IDX output signals will be in Hi-Z until IDX_EN is tied low.

I2C Bidirectional Level Shifting

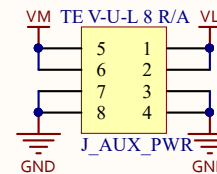
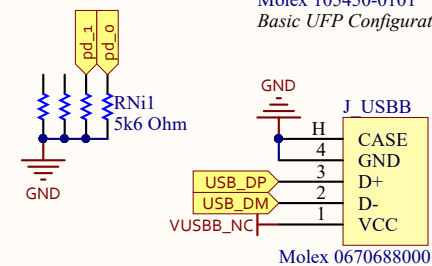
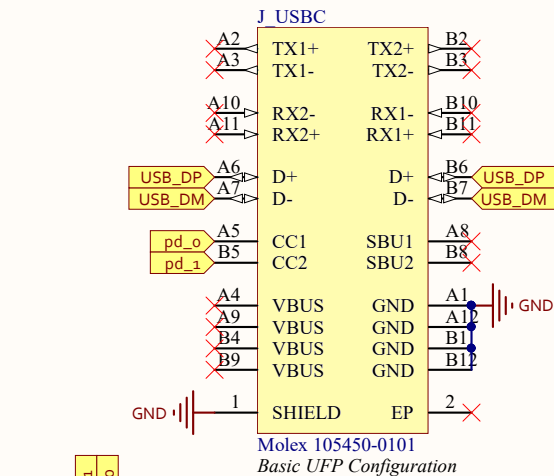
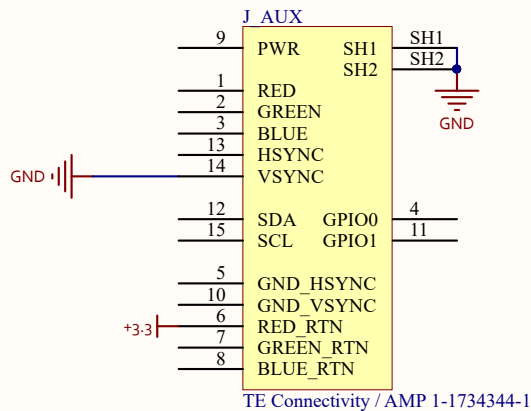
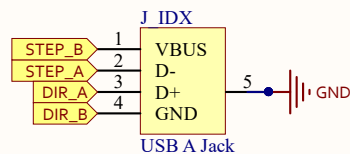
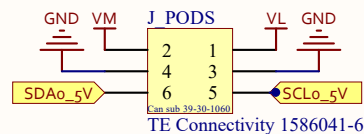
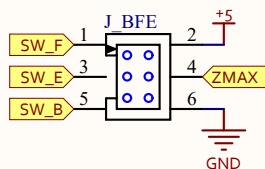
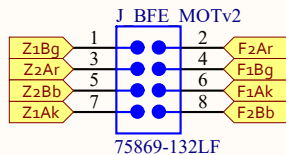
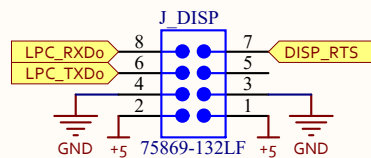


Programming

Binary Flashing:

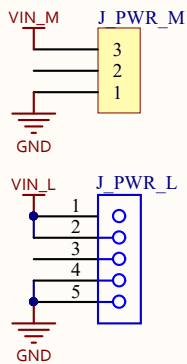


Title			
Ottia Interim Main Board - Control			
Size	Number	Revision	
A		v.1	
Date:	2/5/2019	Sheet	1 of 7
File:	Control.SchDoc	Drawn By:	Connor W. Colombo

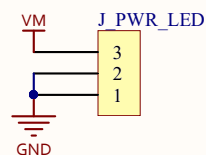


Title			
Ottia Interim Main Board - IO			
Size	Number	Revision	
A	R2Mi	v.1	
Date:	2/5/2019	Sheet	2 of 7
File:	IO.SchDoc	Drawn By: ConnorW.Colombo	

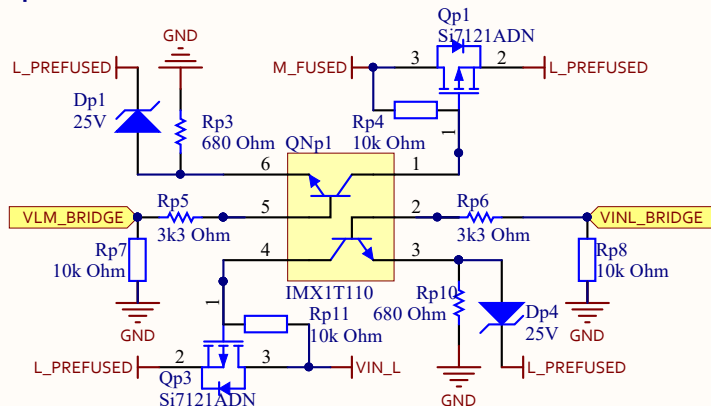
Input



Output

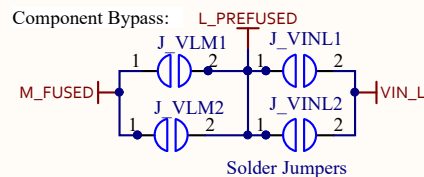


Input Control



Controllable (by MCB) switching of source for VL between Fused VM and dedicated PSU on VINL (if available). Also allows for complete turn off of VL in event of fault.

Component Bypass:



Protective Systems

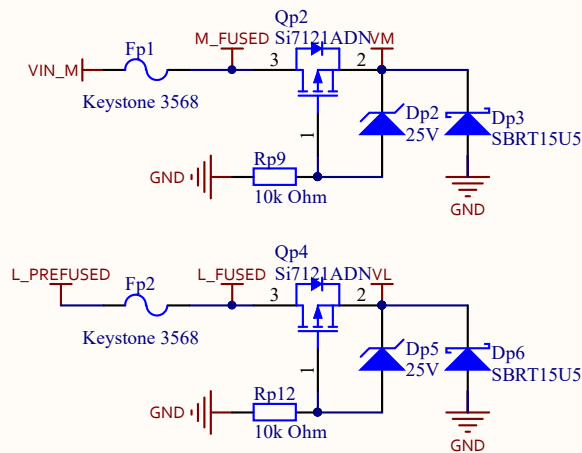
VM - Main Voltage Supply, target 12V (may not exceed 14V)

VL - Load Voltage Supply(High-Power (inductive) Tools, Heated Bed, &c.), target 24V (can't exceed 27V)

Overcurrent:

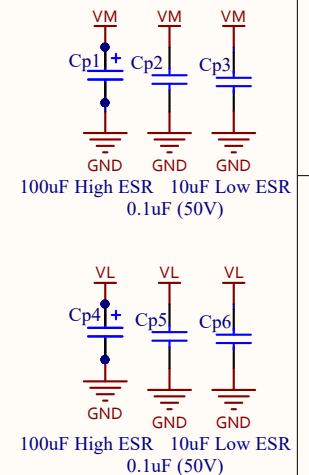
Reverse Voltage:

Flyback:

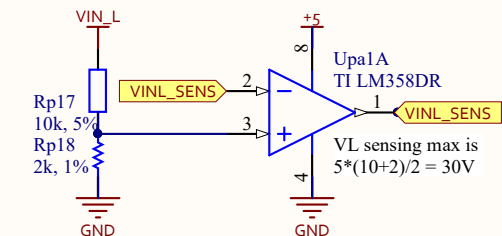
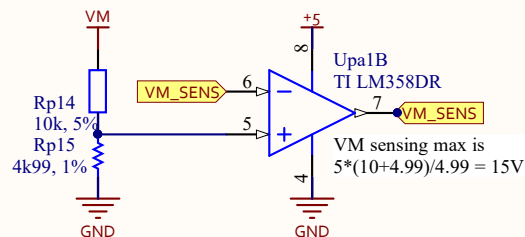


*N.B. Fuse Holders for MINI type blade fuses. Target: Littelfuse MINI-297

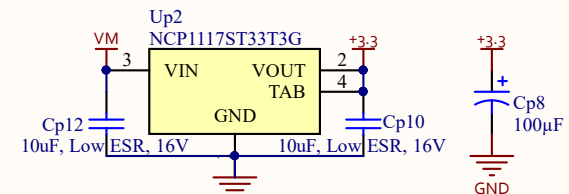
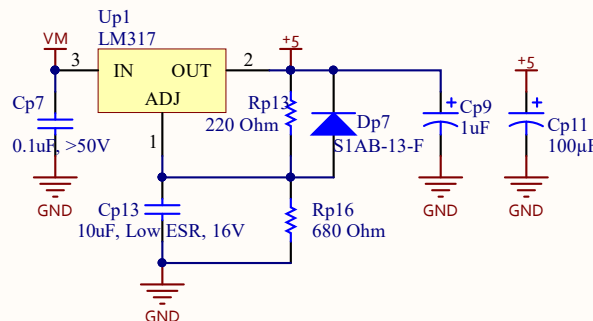
Decoupling:



Sensing

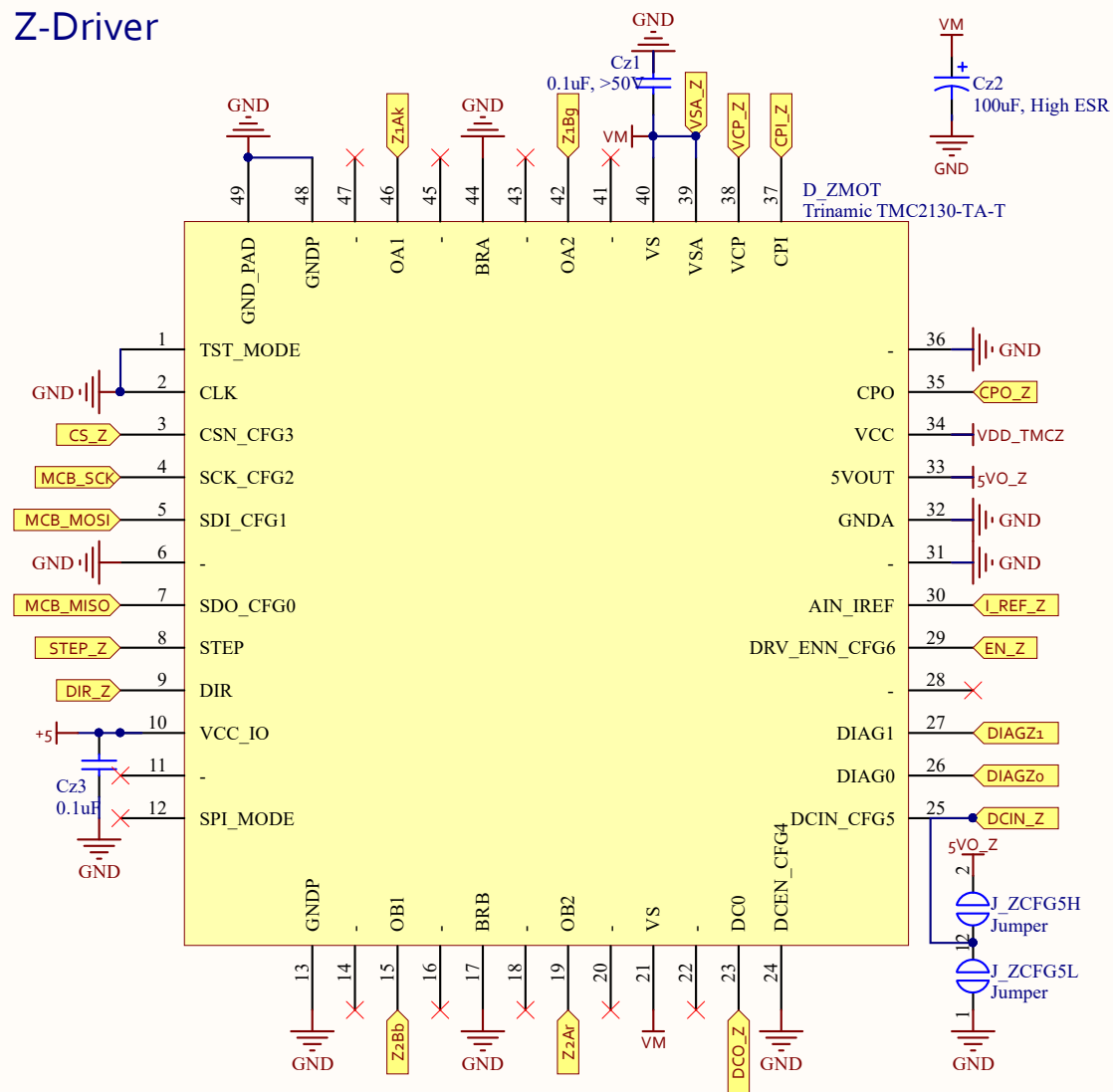


Regulation

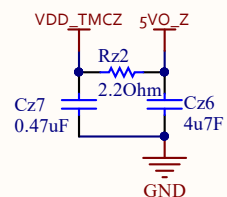


Title Ottia Interim Main Board - Power			
Size A	Number R2Mi	Revision v.1	
Date:	2/5/2019	Sheet 4of	7
File:	Power.SchDoc	Drawn By: ConnorW.Colombo	

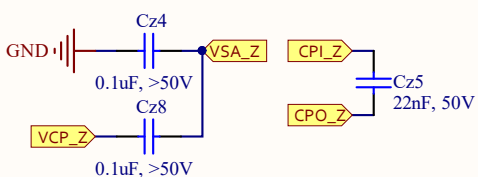
Z-Driver



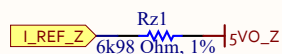
Power Filter:



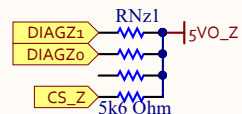
Charge Pump:



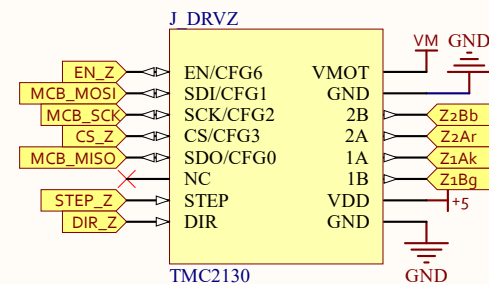
Reference Current:



Misc. Nets:



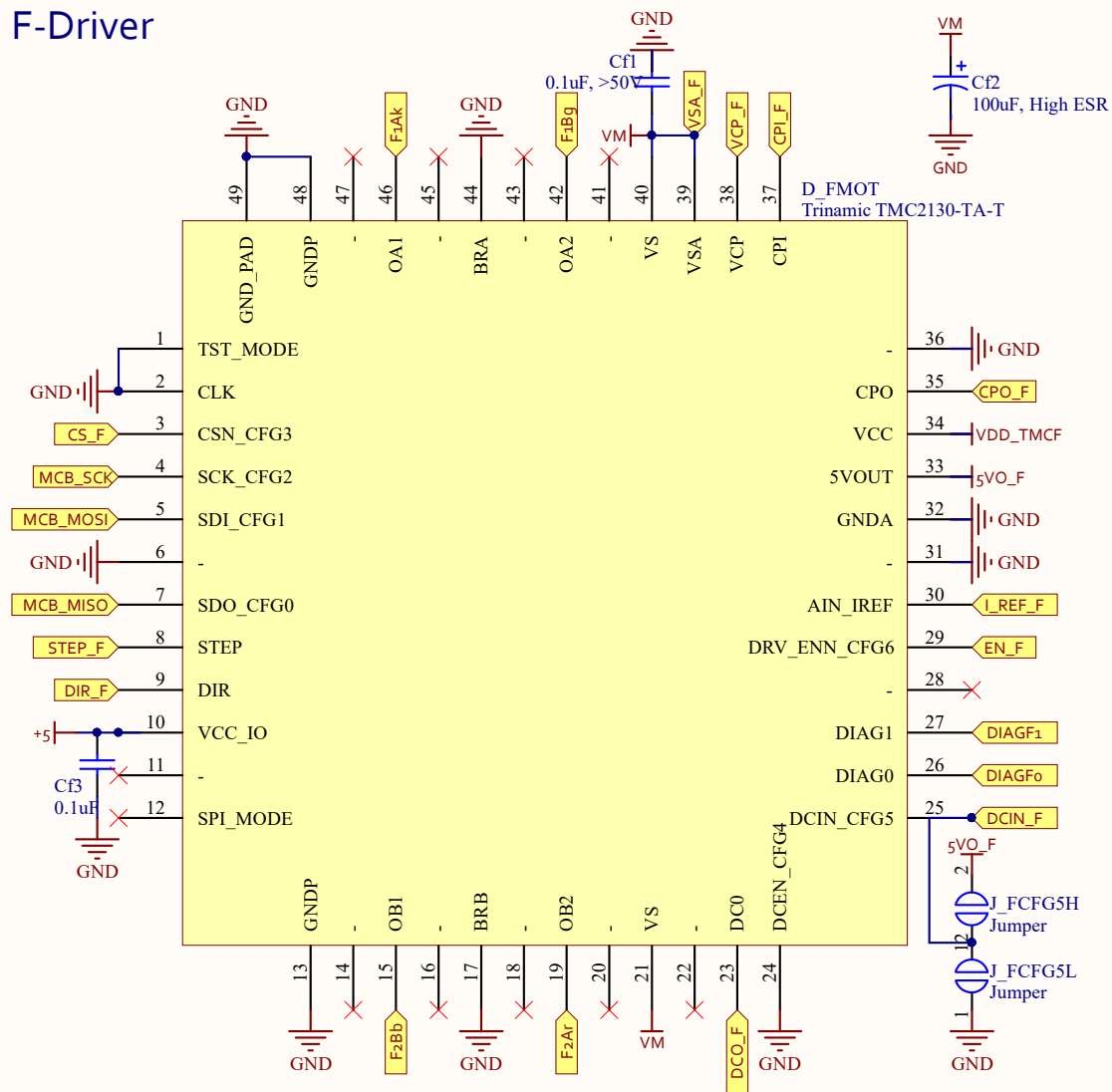
Debug



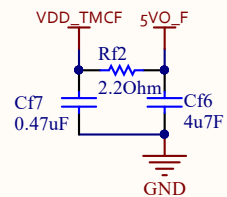
Title	Ottia Interim Main Board - Z-Driver
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Size A	Number R2Mi	Revision V.1
Date:	2/5/2019	Sheet 5 of 7
File:	Z Driver.SchDoc	Drawn By: Connor W. Colombo

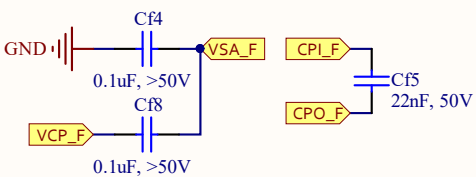
F-Driver



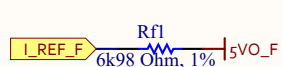
Power Filter:



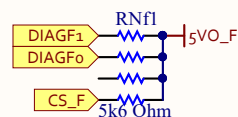
Charge Pump:



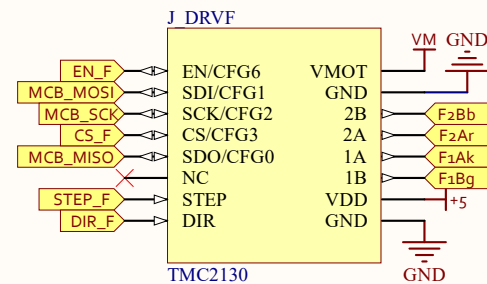
Reference Current:



Misc. Nets:

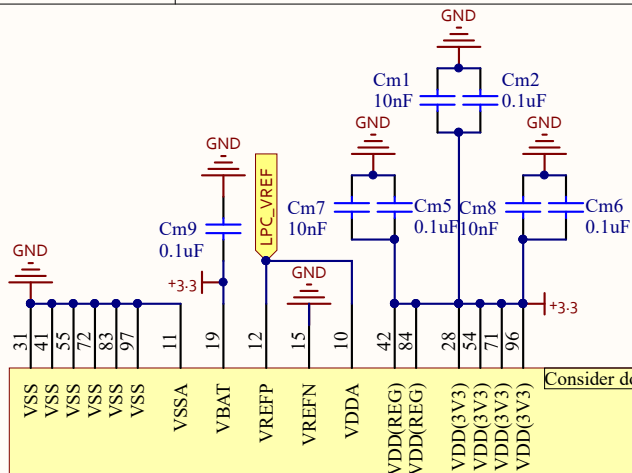
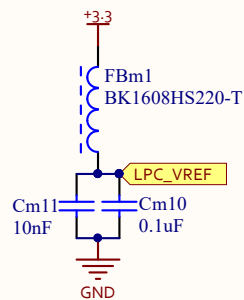


Debug



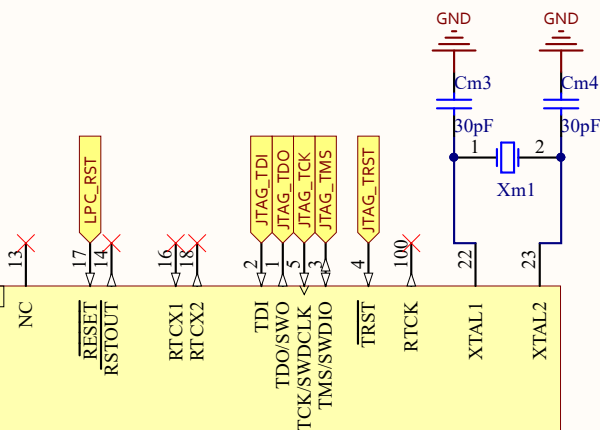
Title Ottia Interim Main Board - F-Driver			
Size A	Number R2Mi	Revision v.1	
Date:	2/5/2019	Sheet	6 of 7
File:	F Driver.SchDoc	Drawn By: Connor W. Colombo	

A

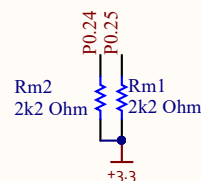
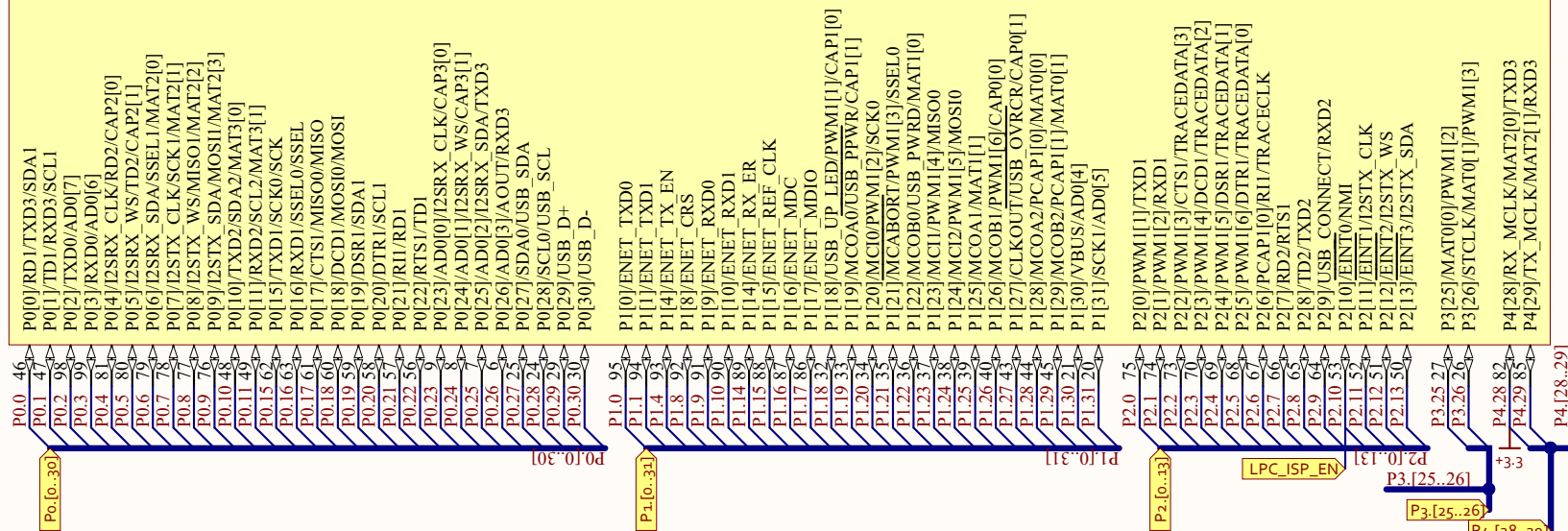


MCU
NXP Semiconductors LPC1769FBD100,551

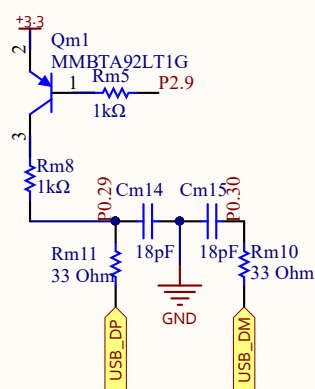
Consider downgrading to a cheaper "LPC17xx micro-controller"



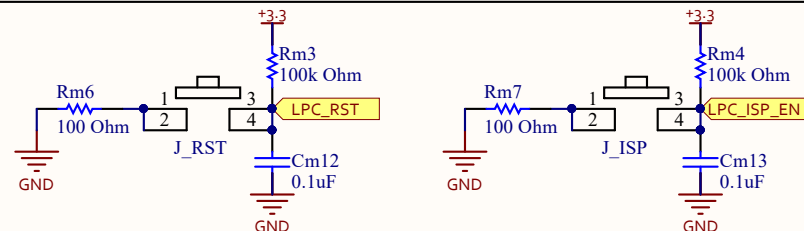
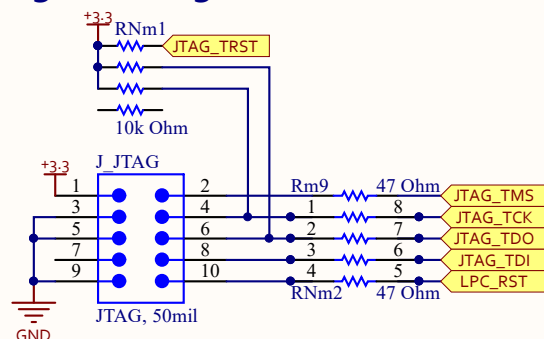
B



D



Programming



Title Ottia Interim Main Board - CPU			
Size A	Number R2Mi		Revision v.1
Date:	2/5/2019	Sheet 7 of	7
File:	CPU.SchDoc	Drawn By:	Connor W. Colombo