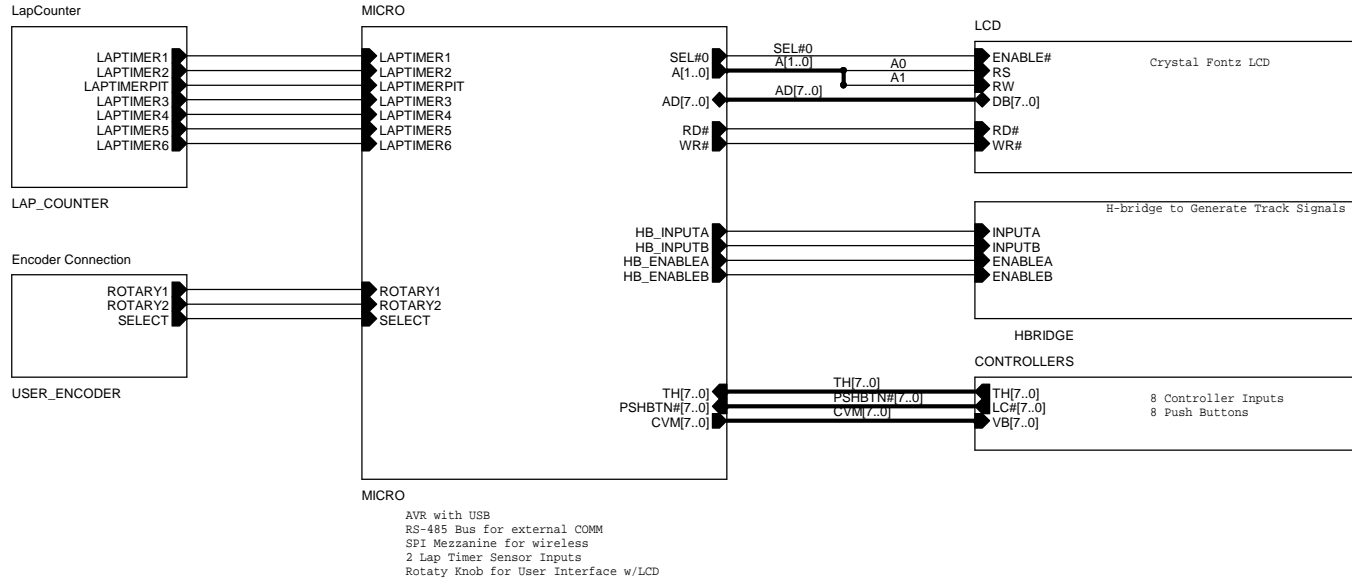


POWERSUPPLY



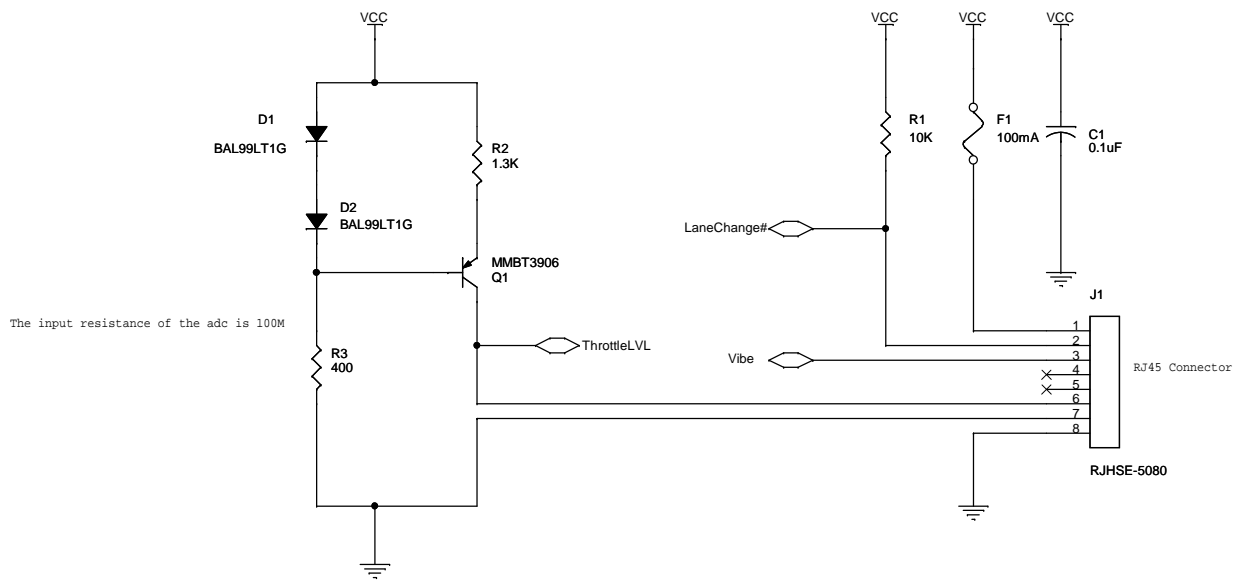
POWERSUPPLY

5A Buck style Regulator  
to power MCU and external  
components

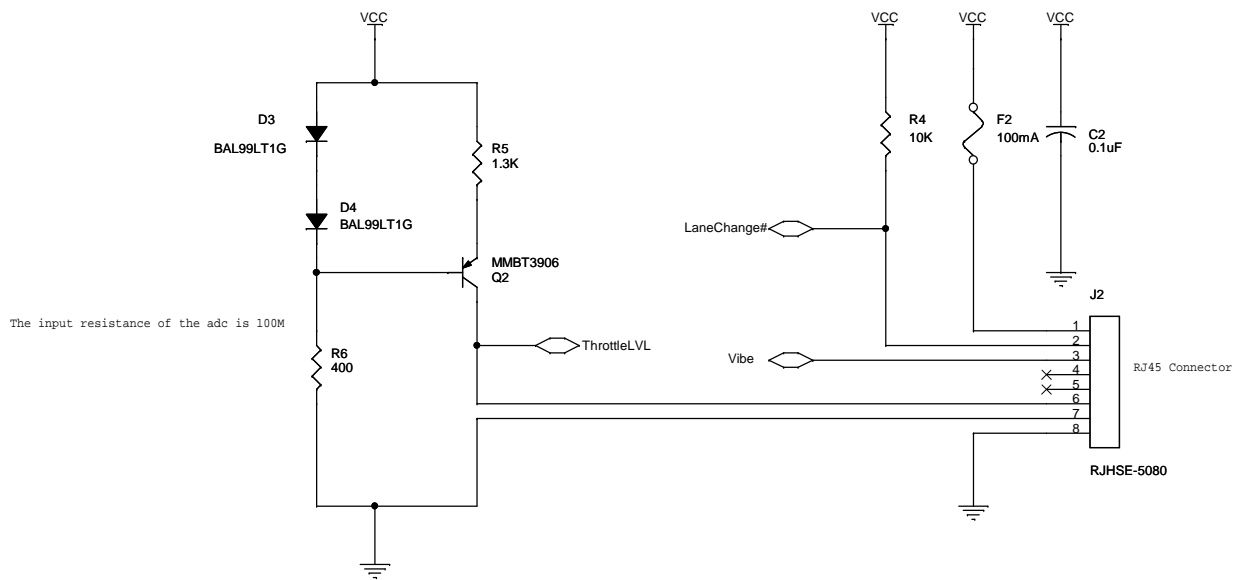


MICRO  
 AVR with USB  
 RS-485 Bus for external COMM  
 SPI Mezzanine for wireless  
 2 Lap Timer Sensor Inputs  
 Rotary Knob for User Interface w/LCD

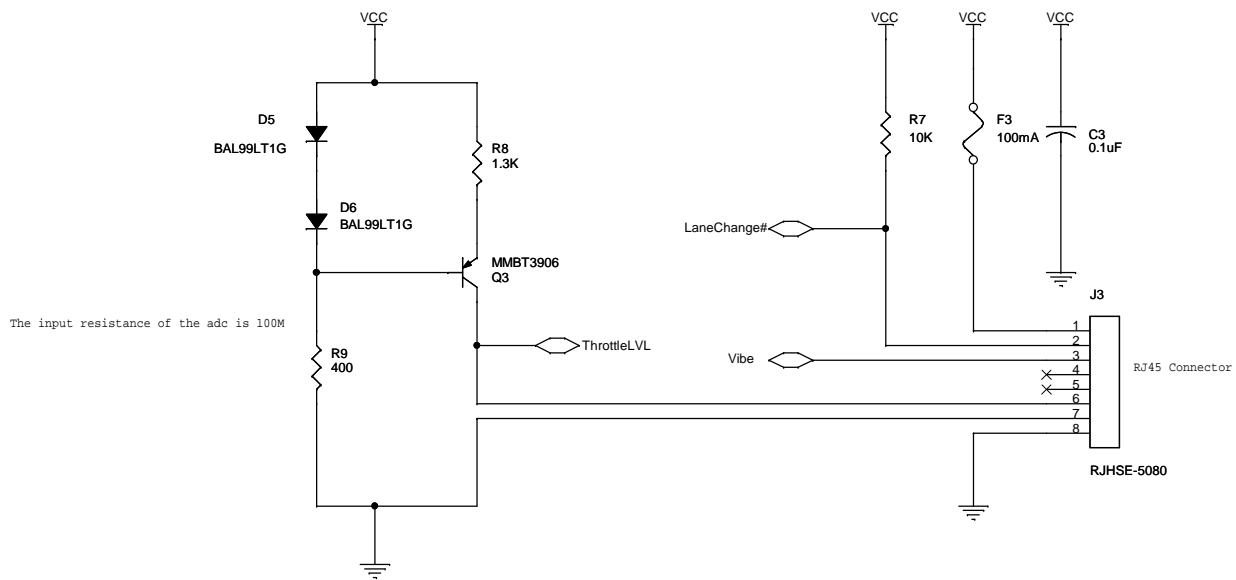
Title		
Main Control Unit - Block Level		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Wednesday, July 16, 2008	Sheet 1 of 22



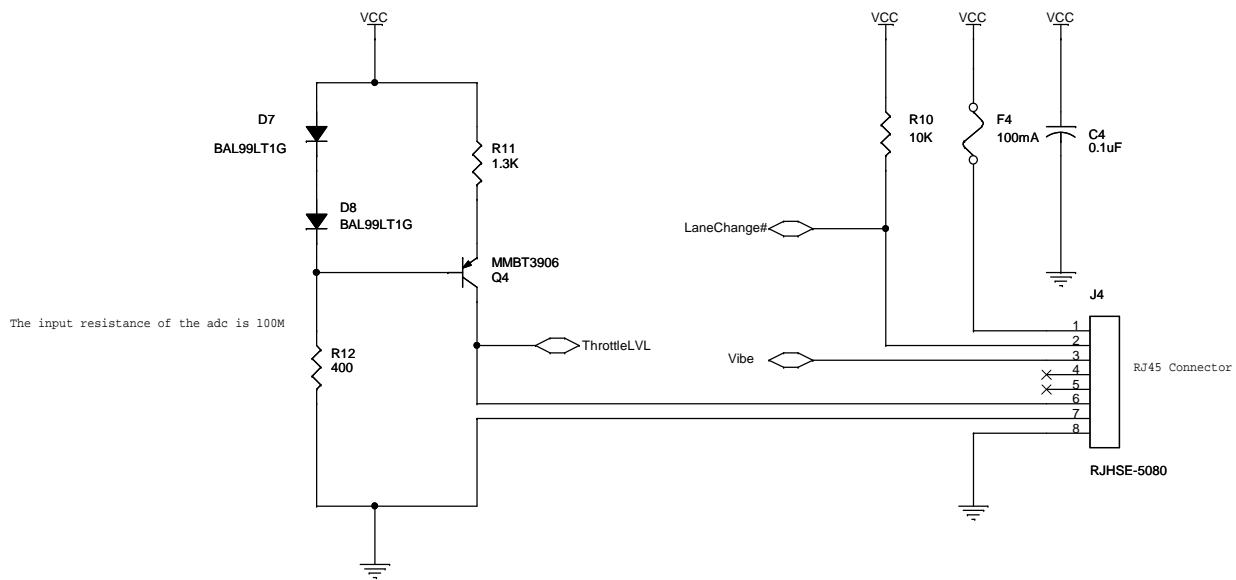
Title		
Controller Connection Block		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 2 of 22



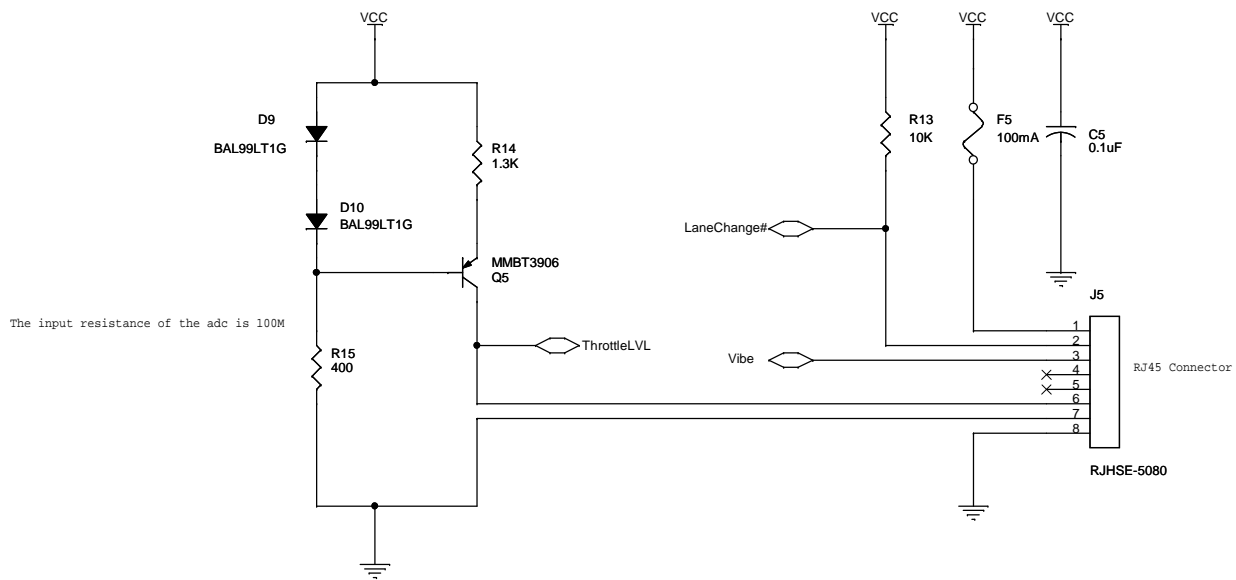
Title		
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Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 3 of 22



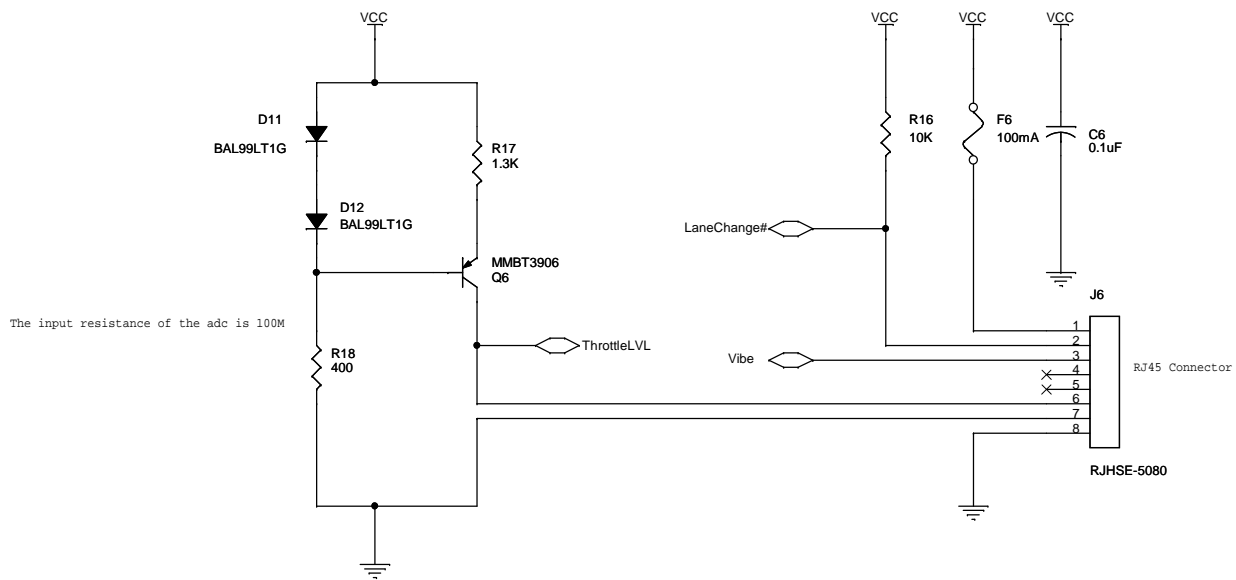
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Size	Document Number	Rev
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Date:	Saturday, November 29, 2008	Sheet 4 of 22



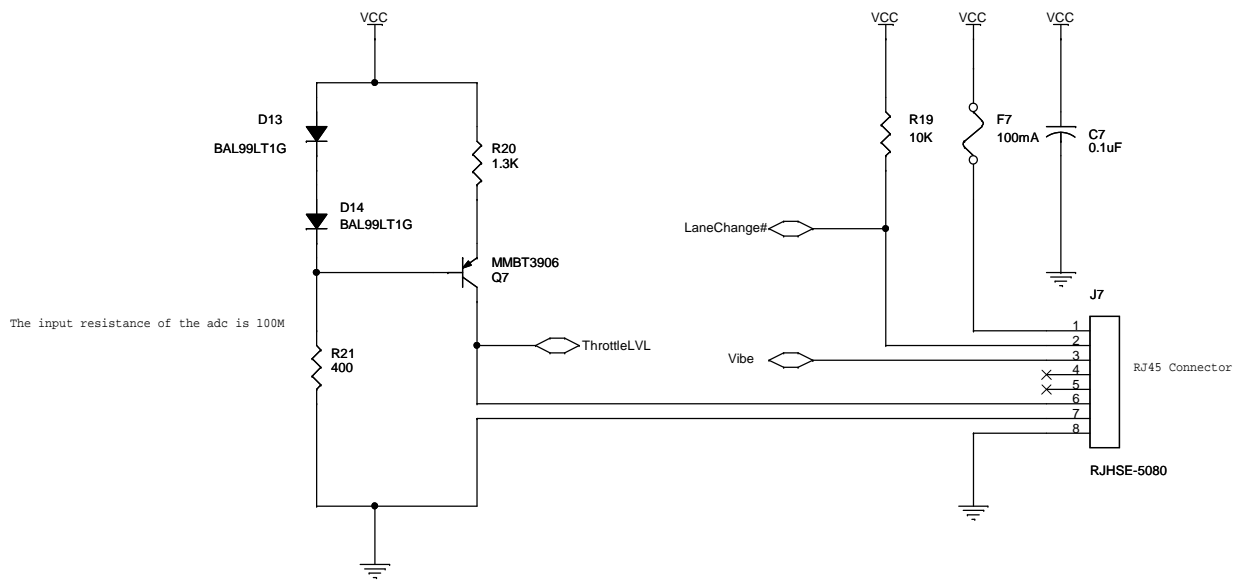
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Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 5 of 22



Title		
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Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 6 of 22

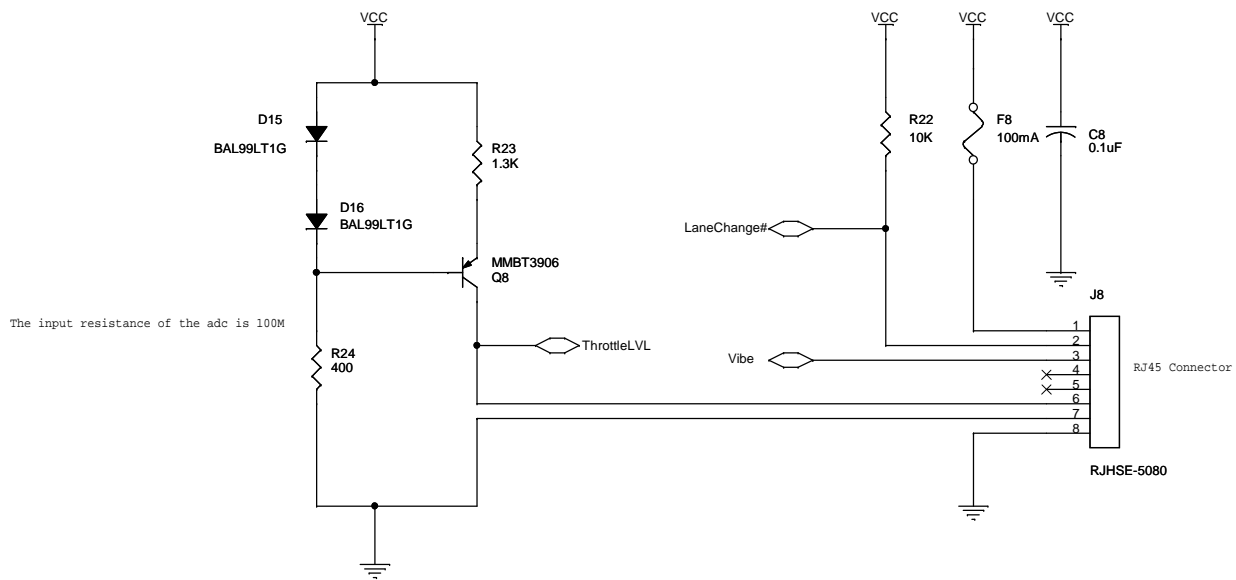


Title		
Controller Connection Block		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 7 of 22

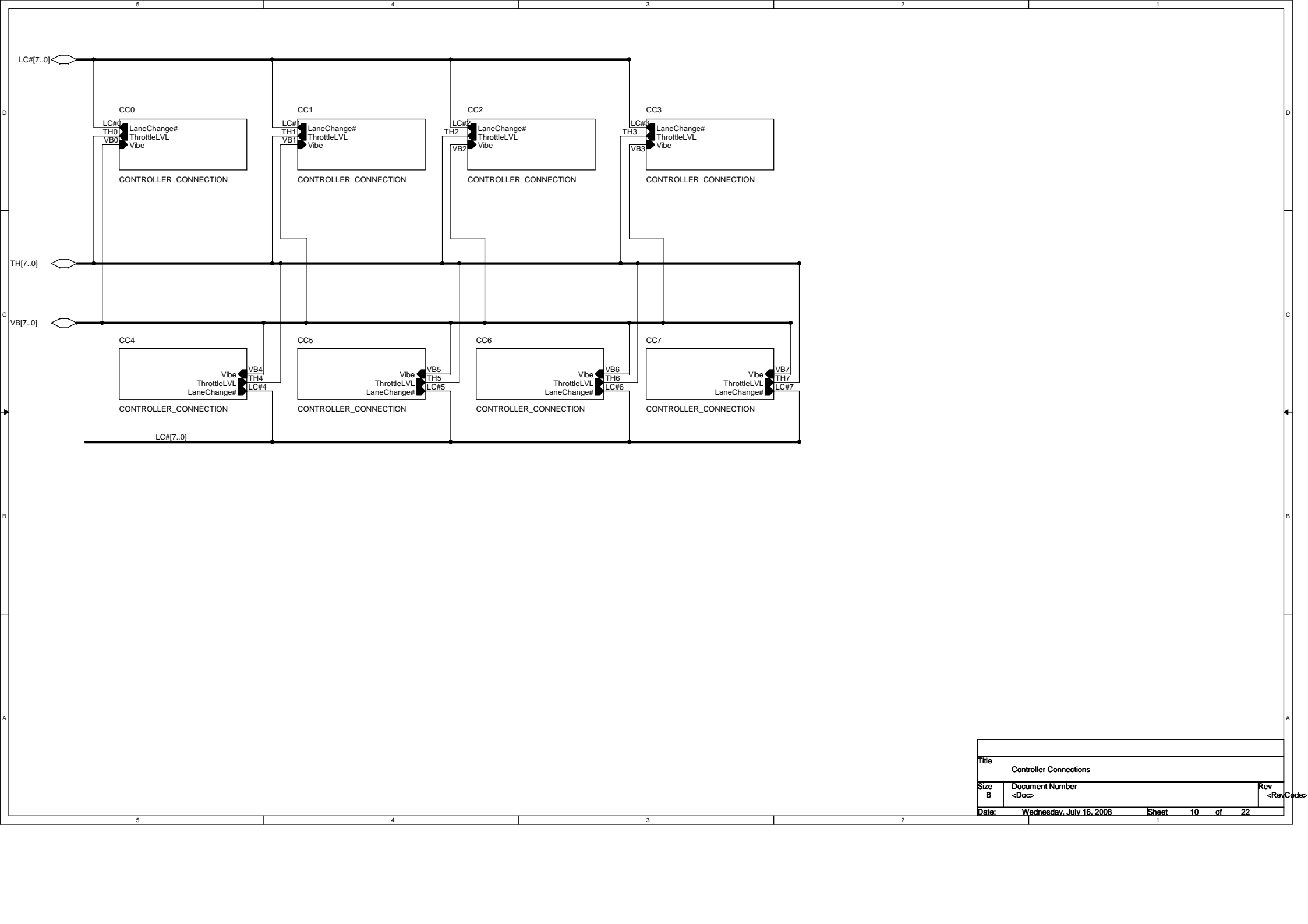


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Controller Connection Block		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 8 of 22



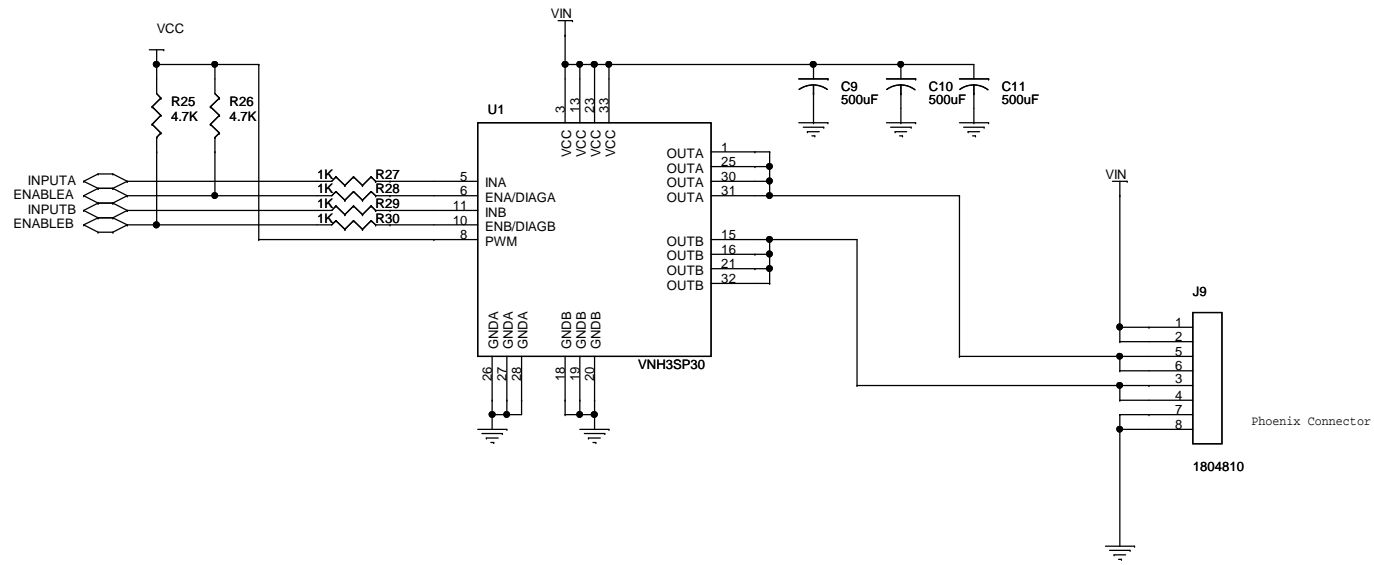


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Controller Connection Block		
Size	Document Number	Rev
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Date:	Saturday, November 29, 2008	Sheet 9 of 22

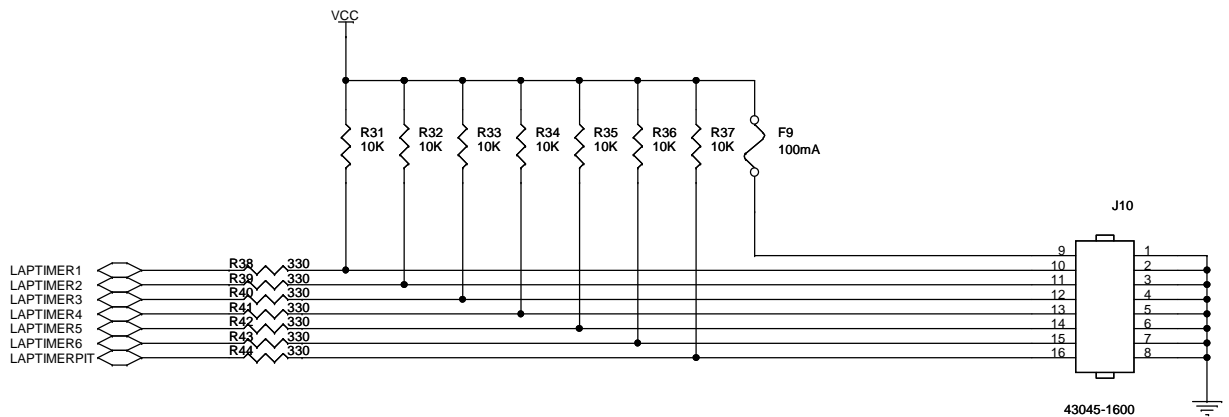


Title		
Controller Connections		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Wednesday, July 16, 2008	Sheet 10 of 22

these are to read for errors in collectors

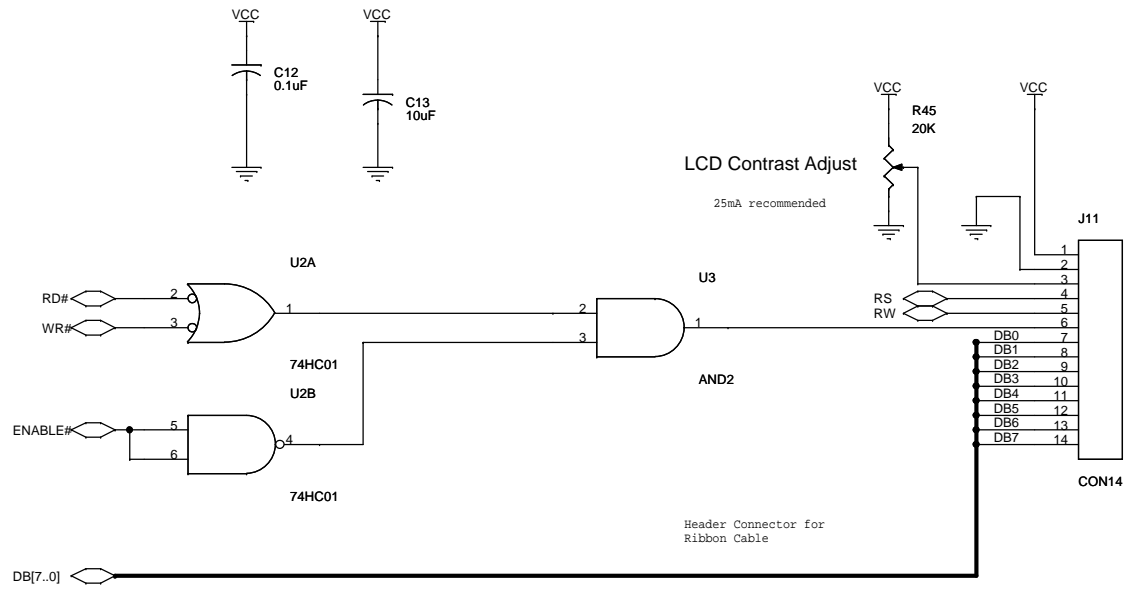


Title		
H-Bridge		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Thursday, December 11, 2008	Sheet 11 of 22

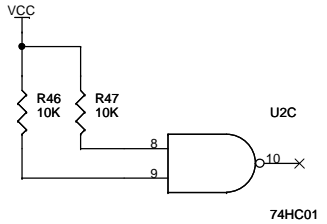


Title		
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Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Monday, December 01, 2008	Sheet 12 of 22

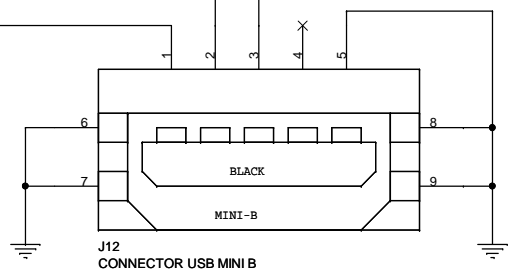
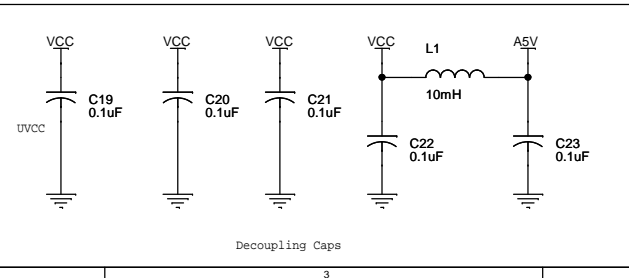
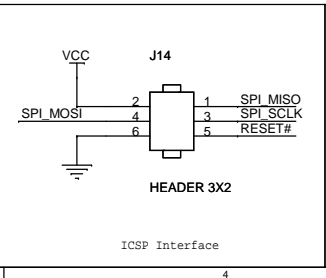
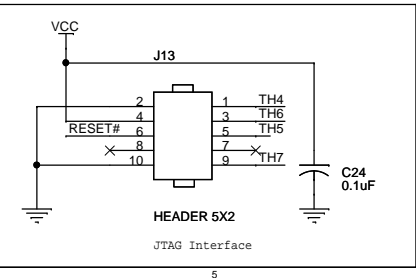
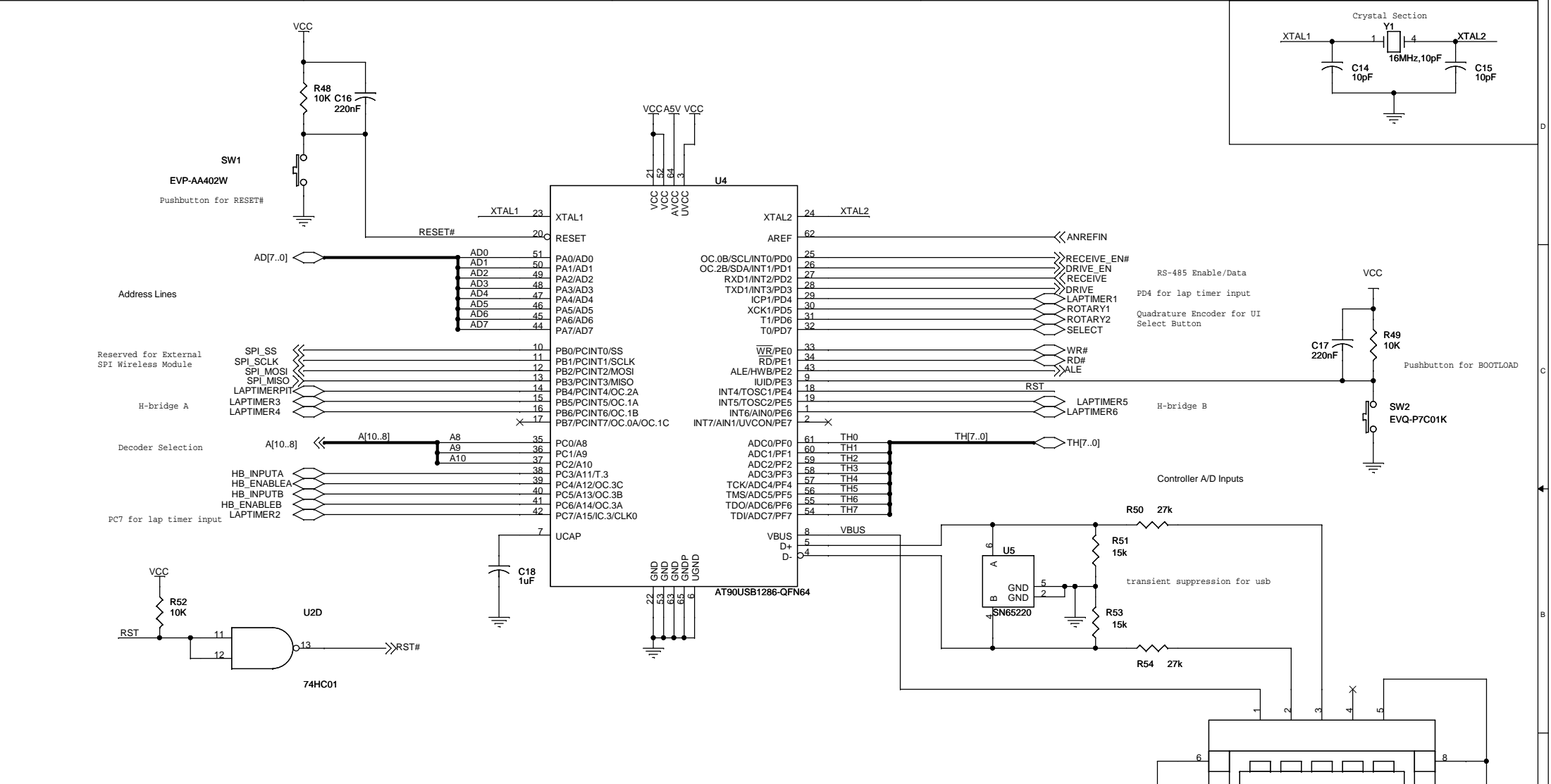
Convert from Intel to Motorola Style



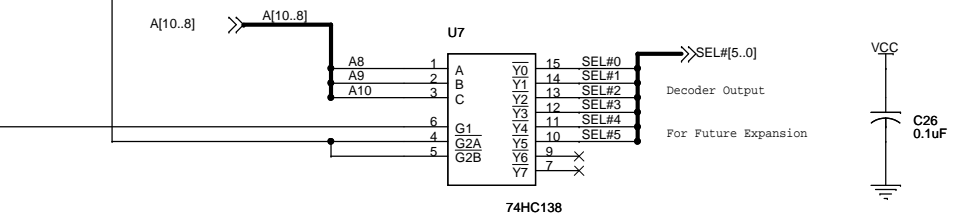
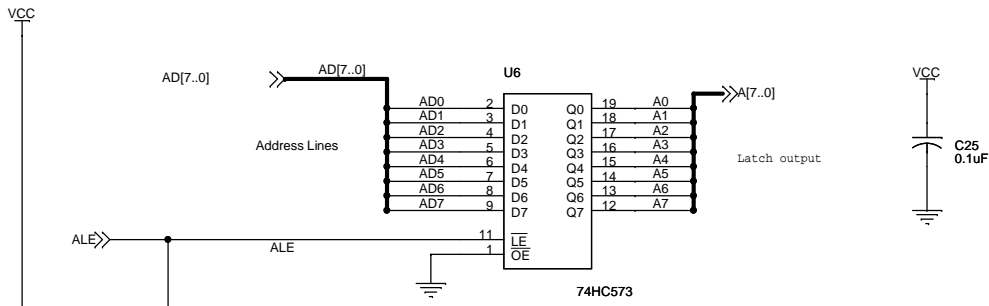
LCD Connector Pinout	
1	- VDD
2	- VSS
3	- VO
4	- RS
5	- R/W'
6	- E
7	- DB0
8	- DB1
9	- DB2
10	- DB3
11	- DB4
12	- DB5
13	- DB6
14	- DB7



Title		
8-bit Parallel LCD w/Contrast		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Monday, December 01, 2008	Sheet 13 of 22



Title		
AVR Microcontroller		
Size	Document Number	Rev
B	<Doc>	0.1
Date:	Monday, December 01, 2008	Sheet 14 of 22

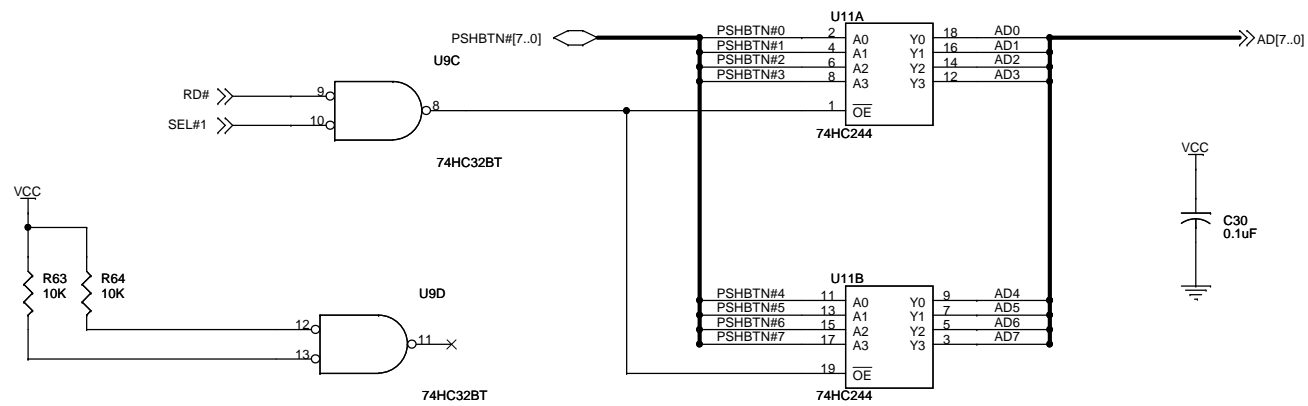
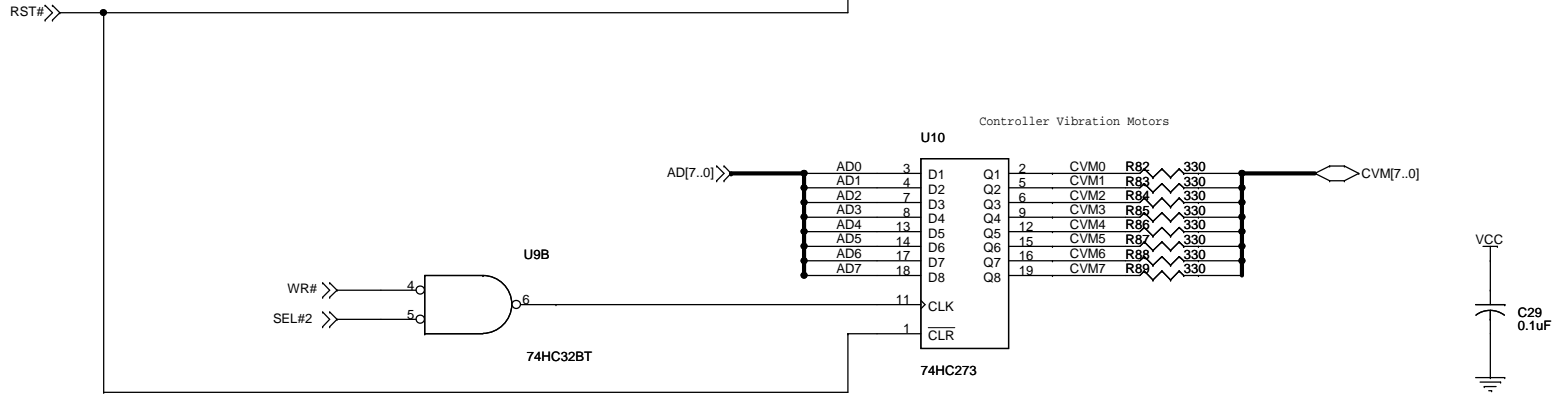
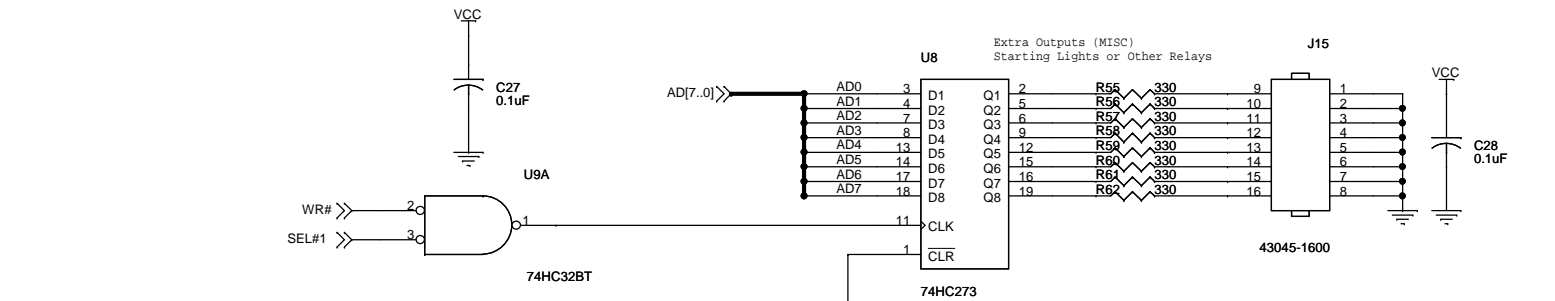


Special ports to top level.  
These were need to get rid of a warning on the block level.

A[1..0]

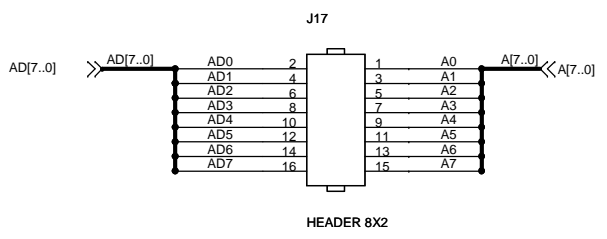
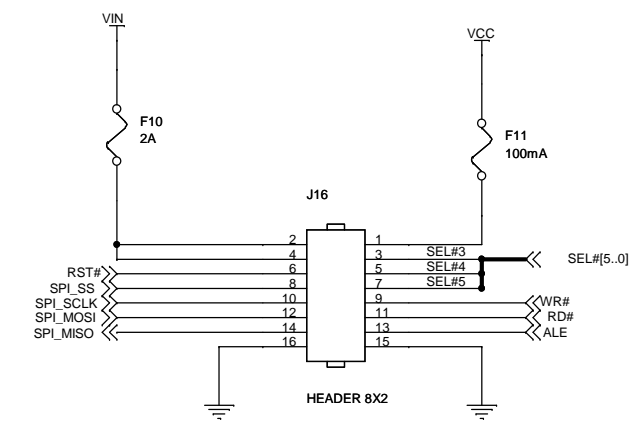
SEL#0

Title		
Decoder and Latch		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Wednesday, July 16, 2008	Sheet 15 of 22

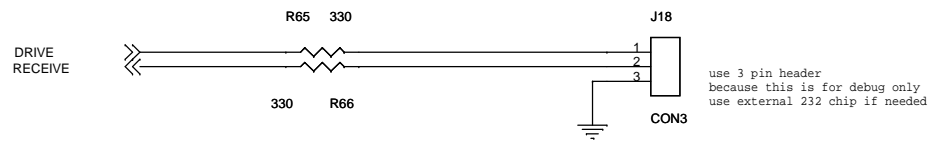


Title		
Extra Input Output		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Tuesday, December 02, 2008	Sheet 16 of 22

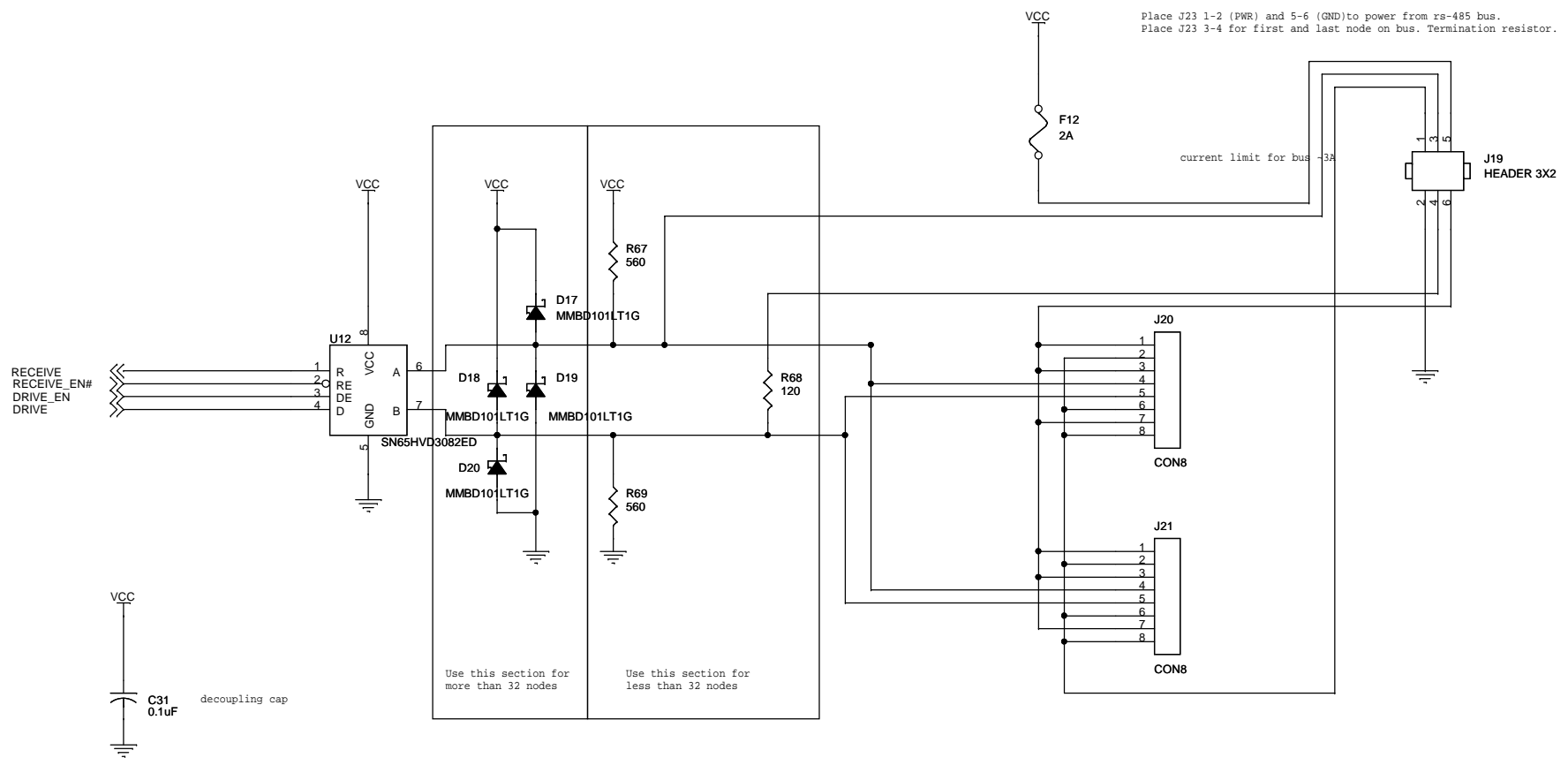




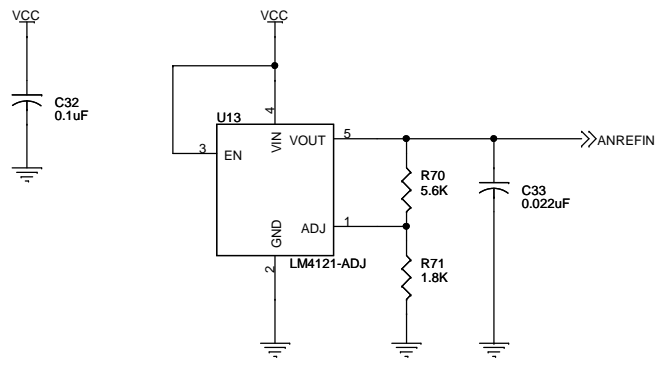
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Mezzanine Connection (ACCESSORY)		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Wednesday, July 16, 2008	Sheet 17 of 22



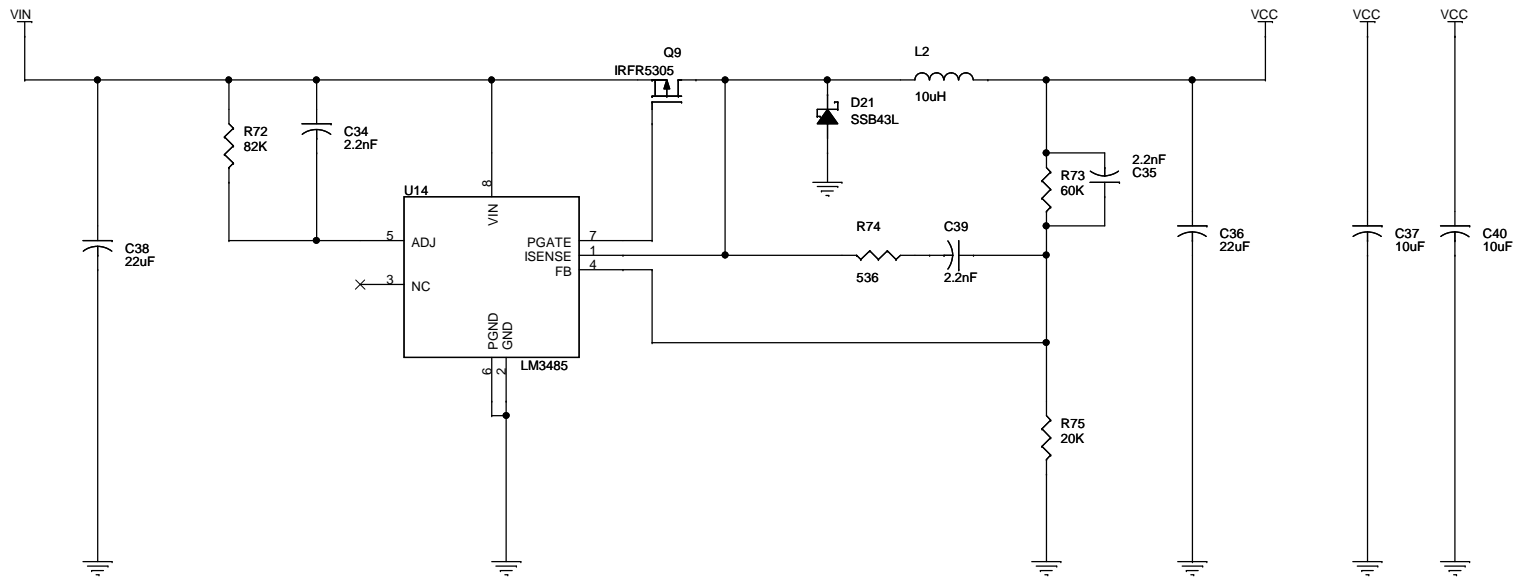
Title		
RS232 Interface		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Saturday, November 29, 2008	Sheet 18 of 22



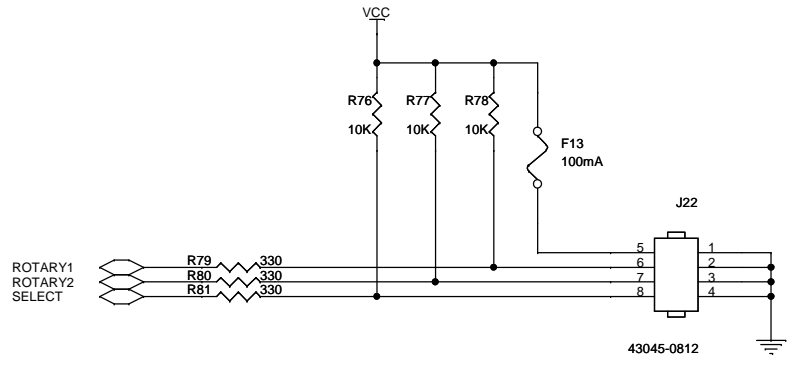
Title		
RS-485 interface		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Friday, December 12, 2008	Sheet 19 of 22



Title		
Voltage Reference		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Wednesday, July 16, 2008	Sheet 20 of 22



Title		
5V Power Supply		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Friday, December 12, 2008	Sheet 21 of 22



Title		
<Title>		
Size	Document Number	Rev
B	<Doc>	<RevCode>
Date:	Monday, December 01, 2008	Sheet 22 of 22