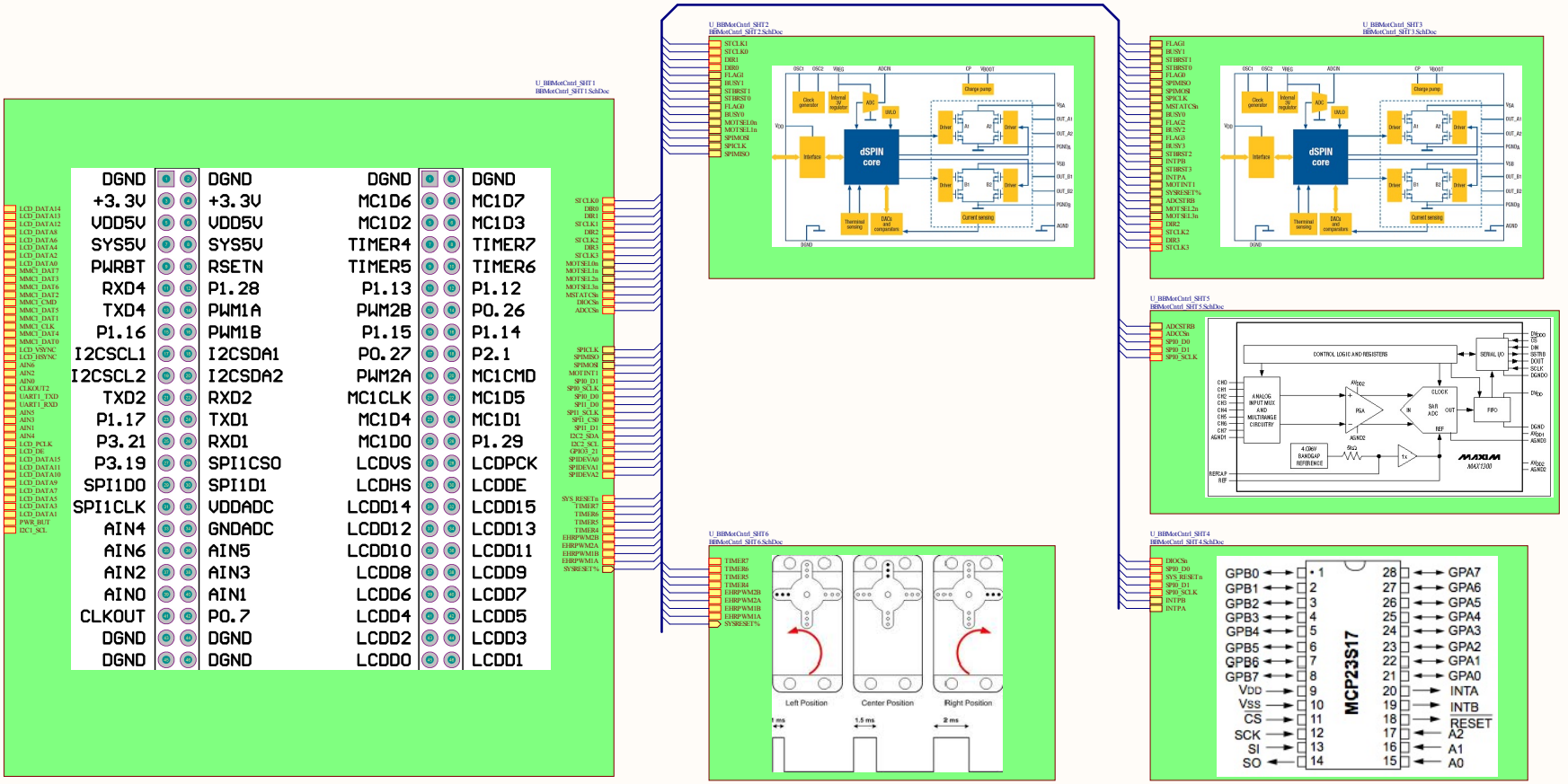
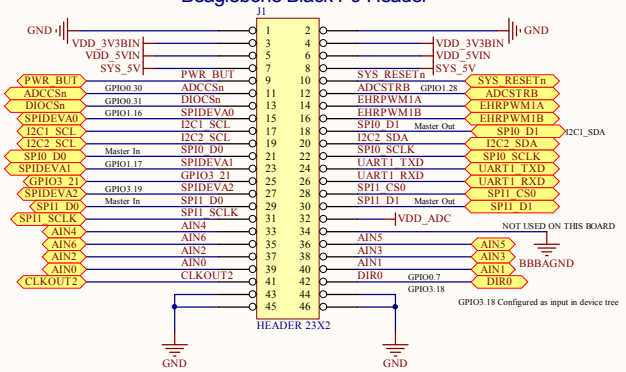
EMBEDDEDTOYS.COM
BEAGLEBONE BLACK ROBO CAPE REV A
3/2/2014

SHEET	
1	BBB Robo Cape Interface + SPI Decoding
2	BBB Robo Cape L6470 (1 and 2)
3	BBB Robo Cape L6470 (3 and 4)
4	BBB Robo Cape Digital I/O
5	BBB Robo Cape MAX1300 ADC
6	BBB Robo Cape PWM + PWR IN

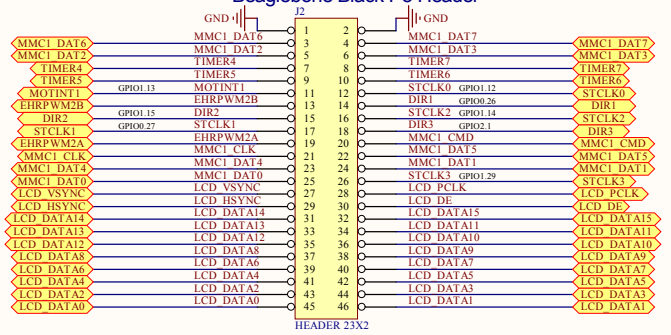


BBB Interface

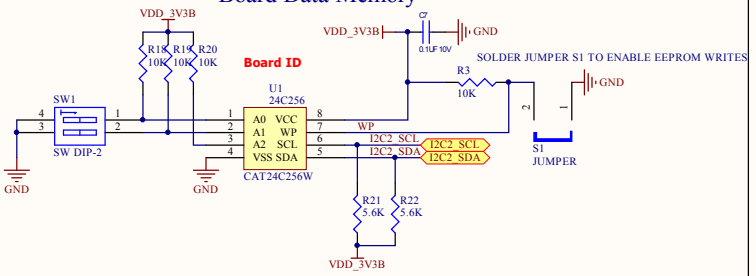
Beaglebone Black P9 Header



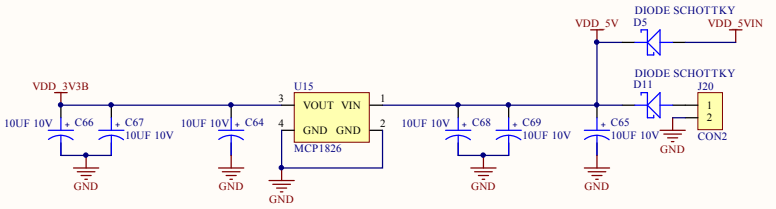
Beaglebone Black P8 Header



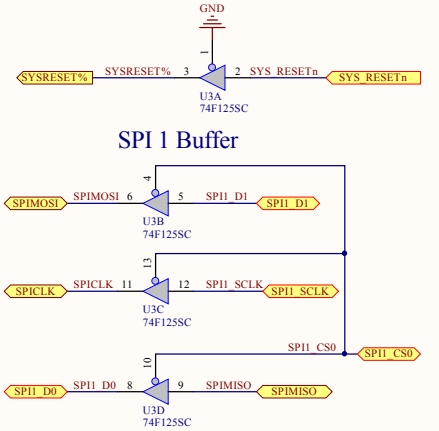
Board Data Memory



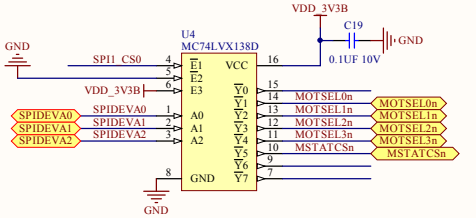
PWR IN + 3.3V REGULATOR



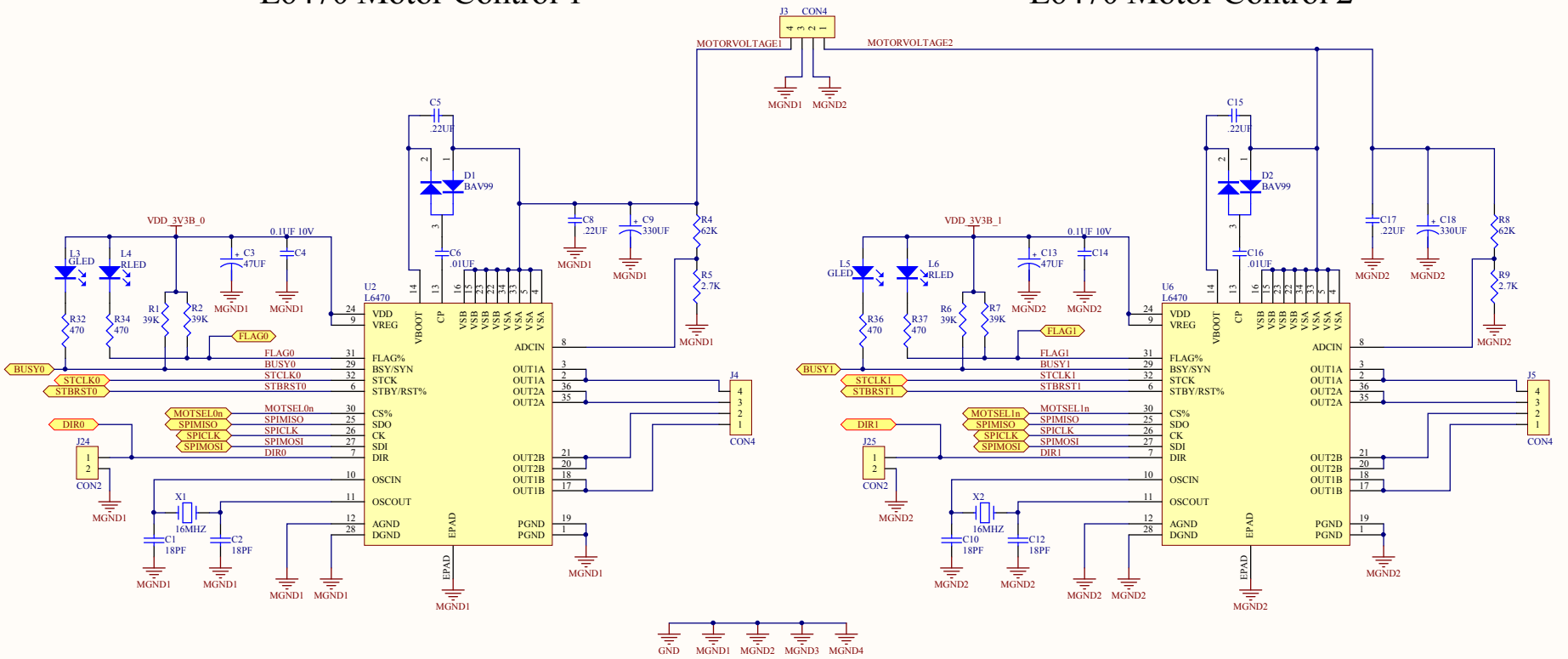
SPI 1 Buffer



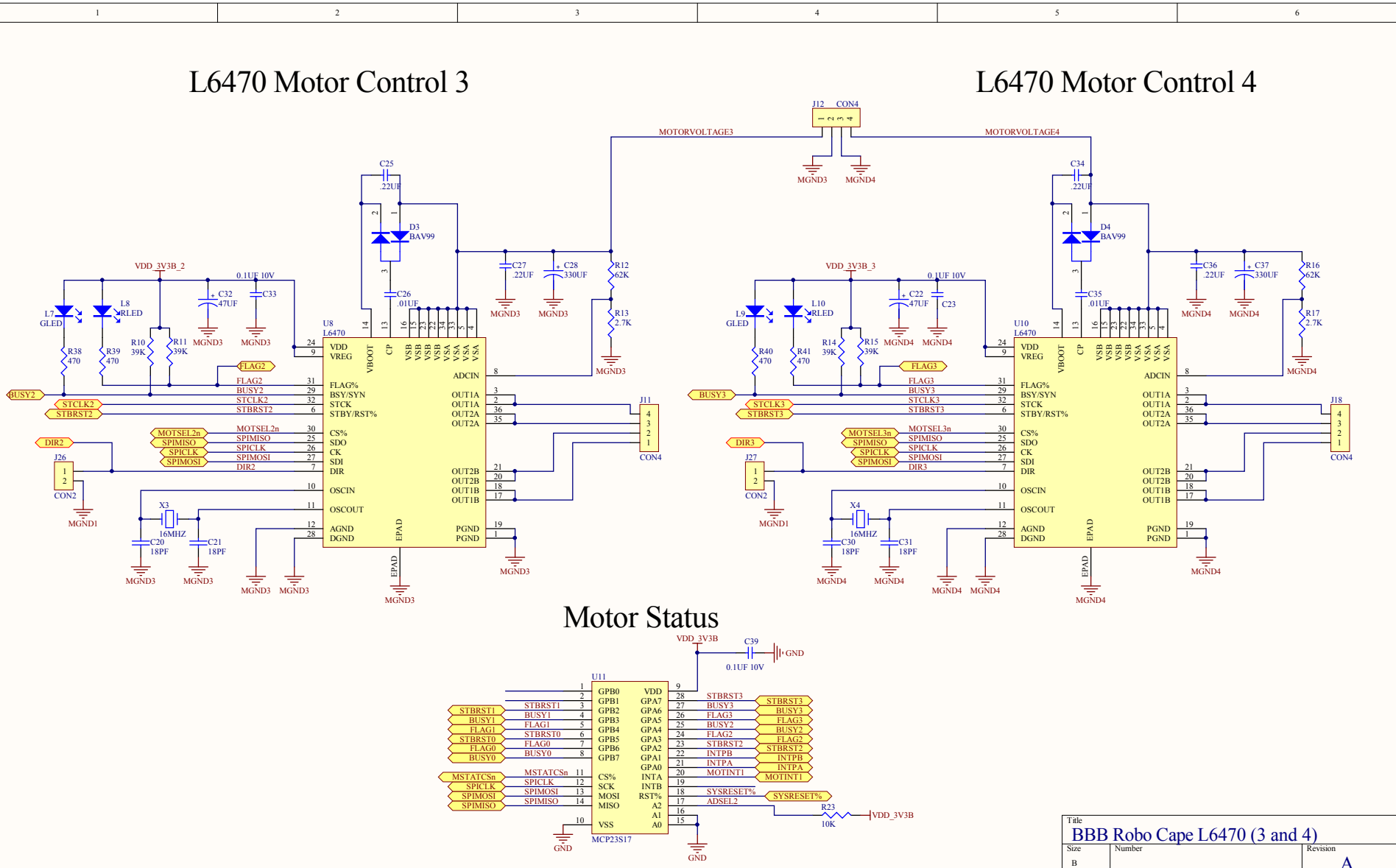
Chip Select Decoder

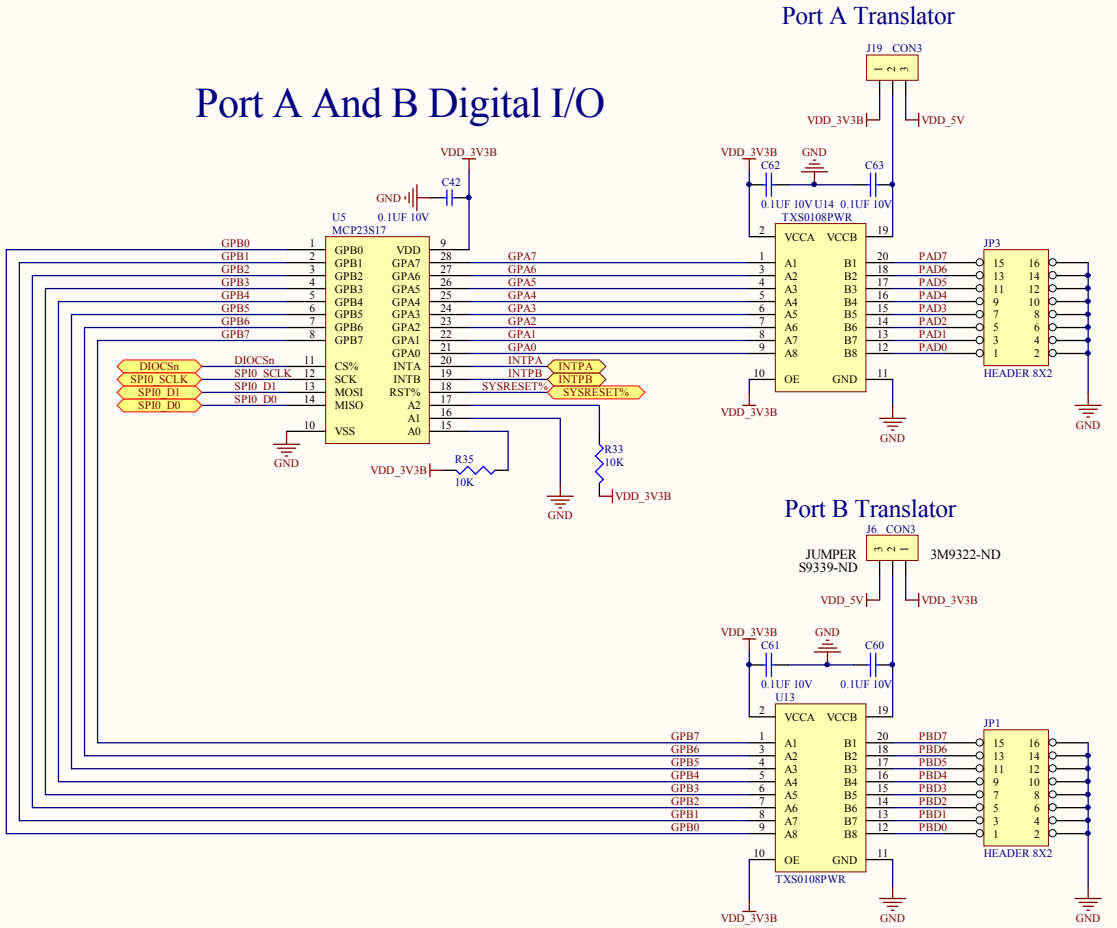


Title: BBB Robo Cape Interface + SPI Decoding		
Size: A3	Number	Revision: A
Date: 8/7/2014		Sheet 1 of 6
File: C:\BB_MOTCntl_revA1\..BBMotCntrl_SPI1.SchDoc		Drawn By:

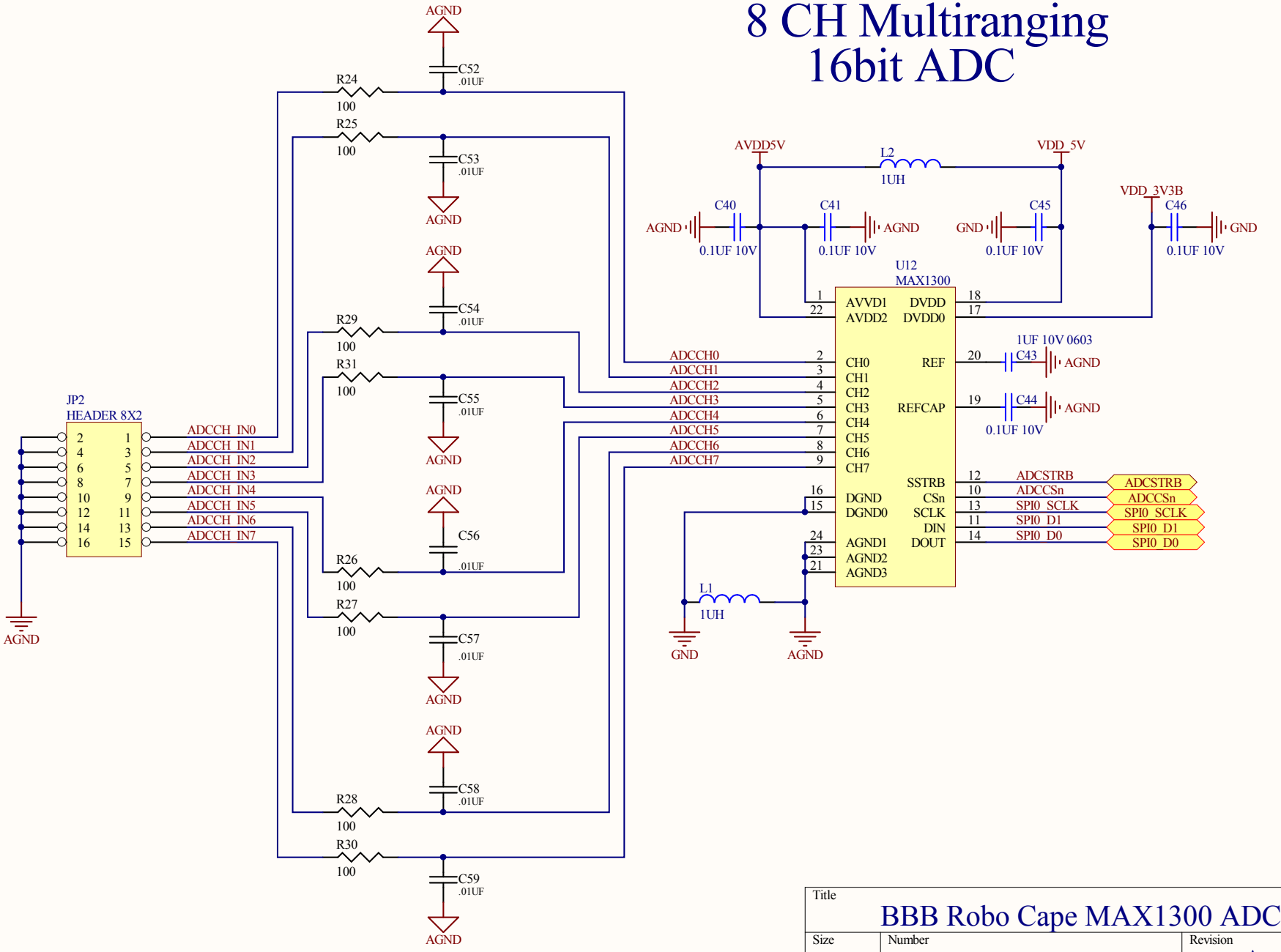


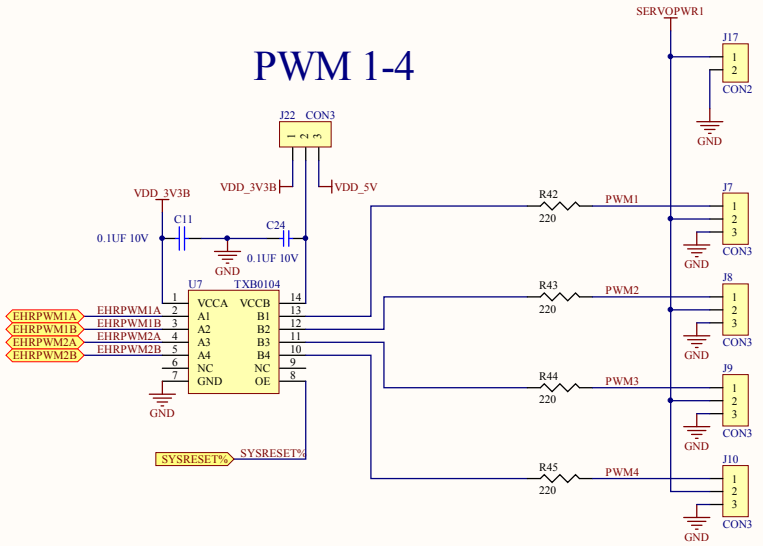
Title	BBB Robo Cape L6470 (1 and 2)	
Size: B	Number	Revision: A
Date: 8/7/2014	Sheet 2 of 6	
File: C:\BB_MOTCntl_revA1\..BBMotCntrl_Sht2.SchDoc	Drawn By:	

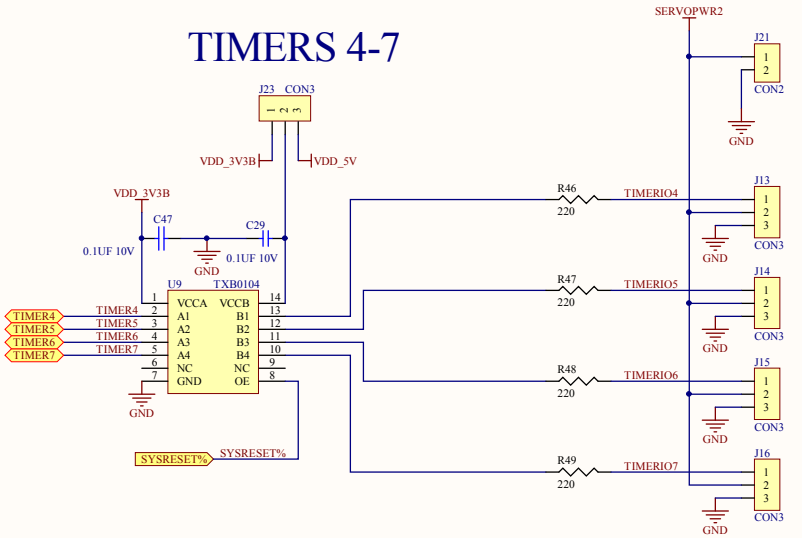

L6470 Motor Control 3
L6470 Motor Control 4
Motor Status
MOTORVOLTAGE3
MOTORVOLTAGE4
J12 CON4
U8 L6470
U10 L6470
U11 MCP23S17
VDD_3V3B_2
VDD_3V3B_3
VDD_3V3B
0.1UF 10V
C25 .22UF
C26 .01UF
C27 .22UF
C28 330UF
C32 47UF
C33
C34 .22UF
C35 .01UF
C36 .22UF
C37 330UF
C22 47UF
C23
C39
D3 BAV99
D4 BAV99
L7 GLED
L8 RLED
L9 GLED
L10 RLED
R10 39K
R11 39K
R12 62K
R13 2.7K
R14 39K
R15 39K
R16 62K
R17 2.7K
R23 10K
R38 470
R39 470
R40 470
R41 470
X3 16MHZ
X4 16MHZ
C20 18PF
C21 18PF
C30 18PF
C31 18PF
J11 CON4
J18 CON4
J26 CON2
J27 CON2
MGND1
MGND3
MGND4
GND
FLAG2
BUSY2
STCLK2
STBRST2
FLAG3
BUSY3
STCLK3
STBRST3
MOTSEL2n
MOTSEL3n
SPIMISO
SPICLK
SPIMOSI
DIR2
DIR3
VDD
VREG
VBOOT
CP
VSB
VSA
FLAG%
BSY/SYN
STCK
STBY/RST%
ADCIN
OUT1A
OUT2A
OUT2B
OUT1B
CS%
SDO
CK
SDI
DIR
OSCIN
OSCOUT
AGND
DGND
PGND
EPAD
GPB0
GPB1
GPB2
GPB3
GPB4
GPB5
GPB6
GPB7
GPA7
GPA6
GPA5
GPA4
GPA3
GPA2
GPA1
GPA0
INTA
INTB
SCK
MOSI
MISO
RST%
A2
A1
A0
VSS
STBRST1
BUSY1
FLAG1
STBRST0
FLAG0
BUSY0
MSTATCSn
SYSRESET%
ADSEL2
INTPB
INTPA
MOTINT1
Title
BBB Robo Cape L6470 (3 and 4)
Size
B
Number
Revision
A
Date: 8/7/2014
Sheet 3 of 6
File: C:\BB_MOTCntl_revA1\..BBMotCntrl_Sch1.SchDoc
Drawn By:



Title: BBB Robo Cape Digital I/O		
Size: B	Number:	Revision: A
Date: 8/7/2014		Sheet 4 of 6
File: C:\BB_MOTCntl_revA1\..BBMotCntrl_Sht4.SchDoc		Drawn By:


8 CH Multiranging
16bit ADC
JP2
HEADER 8X2
ADCCH_IN0
ADCCH_IN1
ADCCH_IN2
ADCCH_IN3
ADCCH_IN4
ADCCH_IN5
ADCCH_IN6
ADCCH_IN7
R24
R25
R29
R31
R26
R27
R28
R30
100
C52
C53
C54
C55
C56
C57
C58
C59
.01UF
AGND
AVDD5V
VDD_5V
VDD_3V3B
L2
1UH
C40
C41
C45
C46
0.1UF 10V
GND
U12
MAX1300
AVVD1
AVDD2
DVDD
DVDD0
CH0
CH1
CH2
CH3
CH4
CH5
CH6
CH7
REF
REFCAP
SSTRB
DGND
DGND0
CSn
SCLK
DIN
DOUT
AGND1
AGND2
AGND3
ADCCH0
ADCCH1
ADCCH2
ADCCH3
ADCCH4
ADCCH5
ADCCH6
ADCCH7
1UF 10V 0603
C43
C44
ADCSTRB
ADCCSn
SPI0_SCLK
SPI0_D1
SPI0_D0
L1
1UH
Title
BBB Robo Cape MAX1300 ADC
Size
A
Number
Revision
A
Date:
8/7/2014
Sheet 5 of 6
File:
C:\BB_MOTCntl_revA1\..BBMotCntrl_SHT15.SchDoc
Drawn By:





Title	BBB Robo Cape PWM + PWR IN	
Size: B	Number	Revision: A
Date: 8/7/2014	Sheet 6 of 6	
File: C:\BB_MOTCntl_revA1\..BBMotCntrl_Sht1.SchDoc	Drawn By:	