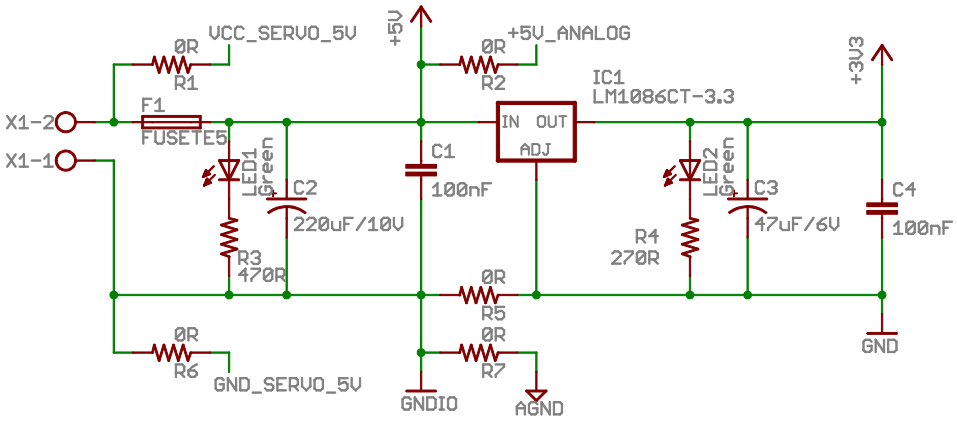

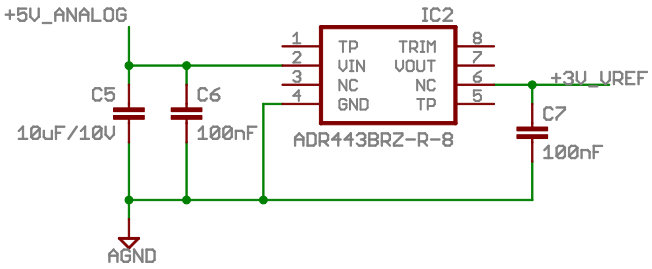

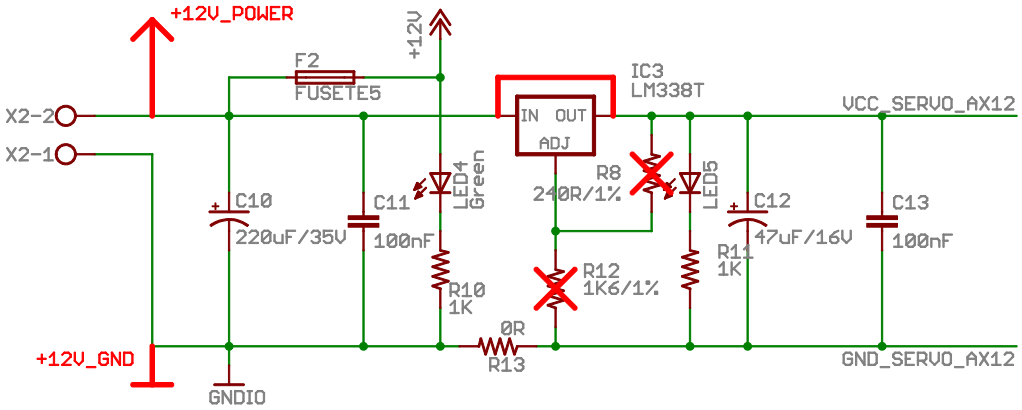

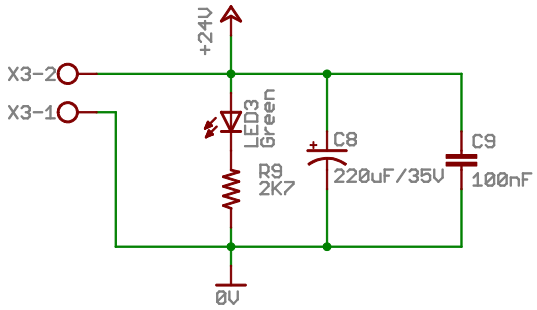

Power supply

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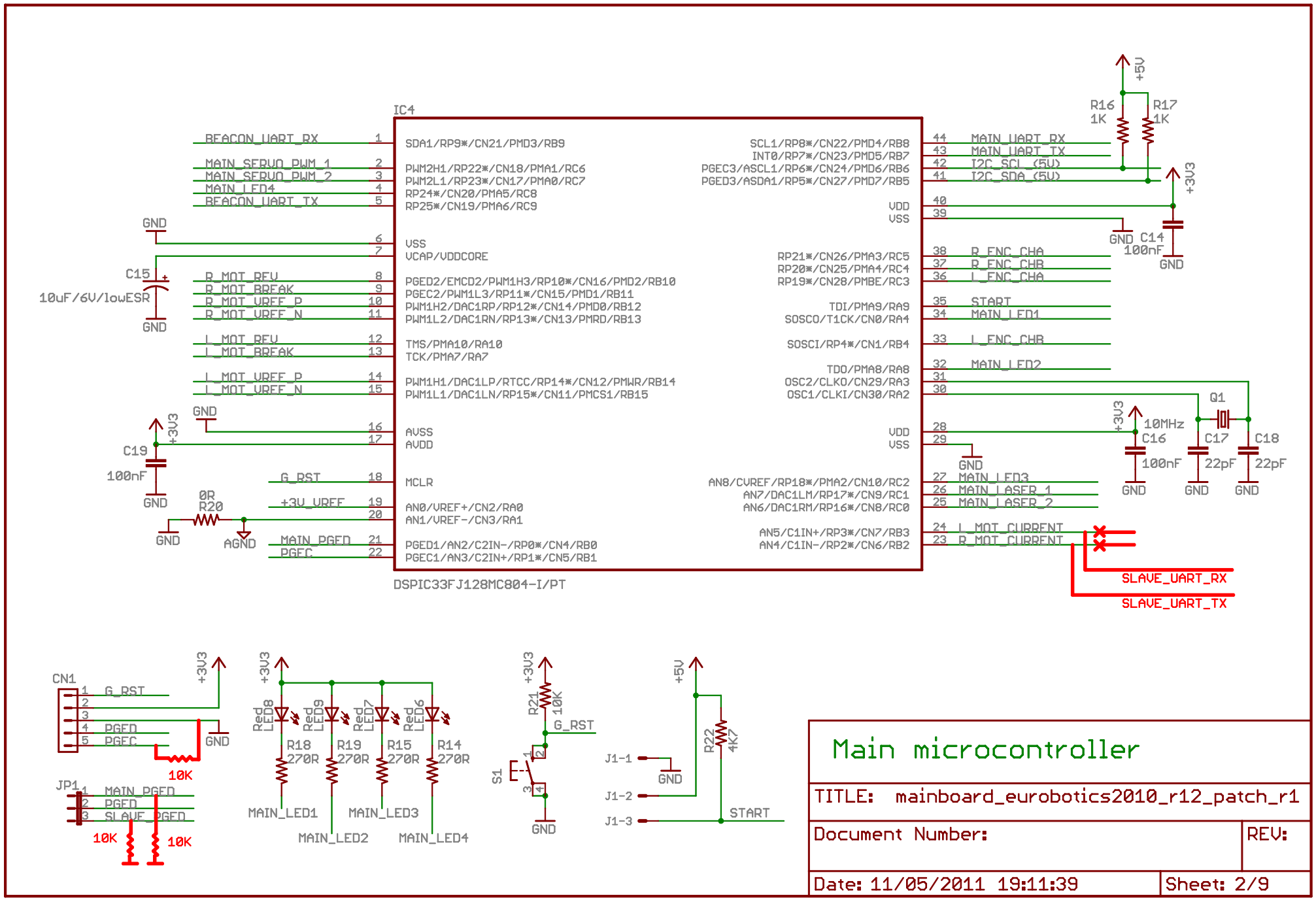
IC4
BEACON_UART_RX
MAIN_SERVO_PWM_1
MAIN_SERVO_PWM_2
MAIN_LED4
BEACON_UART_TX
SDA1/RP9*/CN21/PMD3/RB9
PWM2H1/RP22*/CN18/PMA1/RC6
PWM2L1/RP23*/CN17/PMA0/RC7
RP24*/CN20/PMA5/RC8
RP25*/CN19/PMA6/RC9
SCL1/RP8*/CN22/PMD4/RB8
INT0/RP7*/CN23/PMD5/RB7
PGEC3/ASCL1/RP6*/CN24/PMD6/RB6
PGED3/ASDA1/RP5*/CN27/PMD7/RB5
VDD
VSS
MAIN_UART_RX
MAIN_UART_TX
I2C_SCL_(5V)
I2C_SDA_(5V)
R16
1K
R17
1K
+5V
+3V3
GND
C14
100nF
C15
10uF/6V/lowESR
VSS
VCAP/VDDCORE
R_MOT_REV
R_MOT_BREAK
R_MOT_VREF_P
R_MOT_VREF_N
PGED2/EMCD2/PWM1H3/RP10*/CN16/PMD2/RB10
PGEC2/PWM1L3/RP11*/CN15/PMD1/RB11
PWM1H2/DAC1RP/RP12*/CN14/PMD0/RB12
PWM1L2/DAC1RN/RP13*/CN13/PMRD/RB13
RP21*/CN26/PMA3/RC5
RP20*/CN25/PMA4/RC4
RP19*/CN28/PMBE/RC3
R_ENC_CHA
R_ENC_CHB
L_ENC_CHA
START
MAIN_LED1
L_MOT_REV
L_MOT_BREAK
L_MOT_VREF_P
L_MOT_VREF_N
TMS/PMA10/RA10
TCK/PMA7/RA7
PWM1H1/DAC1LP/RTCC/RP14*/CN12/PMWR/RB14
PWM1L1/DAC1LN/RP15*/CN11/PMCS1/RB15
TDI/PMA9/RA9
SOSCO/T1CK/CN0/RA4
SOSCI/RP4*/CN1/RB4
TDO/PMA8/RA8
OSC2/CLKO/CN29/RA3
OSC1/CLKI/CN30/RA2
L_ENC_CHB
MAIN_LED2
Q1
10MHz
C16
100nF
C17
22pF
C18
22pF
C19
100nF
AVSS
AVDD
VDD
VSS
MCLR
G_RST
+3V_VREF
AN0/VREF+/CN2/RA0
AN1/VREF-/CN3/RA1
0R
R20
AGND
MAIN_PGED
PGEC
PGED1/AN2/C2IN-/RP0*/CN4/RB0
PGEC1/AN3/C2IN+/RP1*/CN5/RB1
AN8/CVREF/RP18*/PMA2/CN10/RC2
AN7/DAC1LM/RP17*/CN9/RC1
AN6/DAC1RM/RP16*/CN8/RC0
AN5/C1IN+/RP3*/CN7/RB3
AN4/C1IN-/RP2*/CN6/RB2
MAIN_LED3
MAIN_LASER_1
MAIN_LASER_2
L_MOT_CURRENT
R_MOT_CURRENT
SLAVE_UART_RX
SLAVE_UART_TX
DSPIC33FJ128MC804-I/PT
CN1
JP1
MAIN_PGED
PGED
SLAVE_PGED
10K
Red LED8
Red LED9
Red LED7
Red LED6
R18 270R
R19 270R
R15 270R
R14 270R
MAIN_LED1
MAIN_LED2
MAIN_LED3
MAIN_LED4
R21 10K
S1
J1-1
J1-2
J1-3
R22 4K7
START
Main microcontroller
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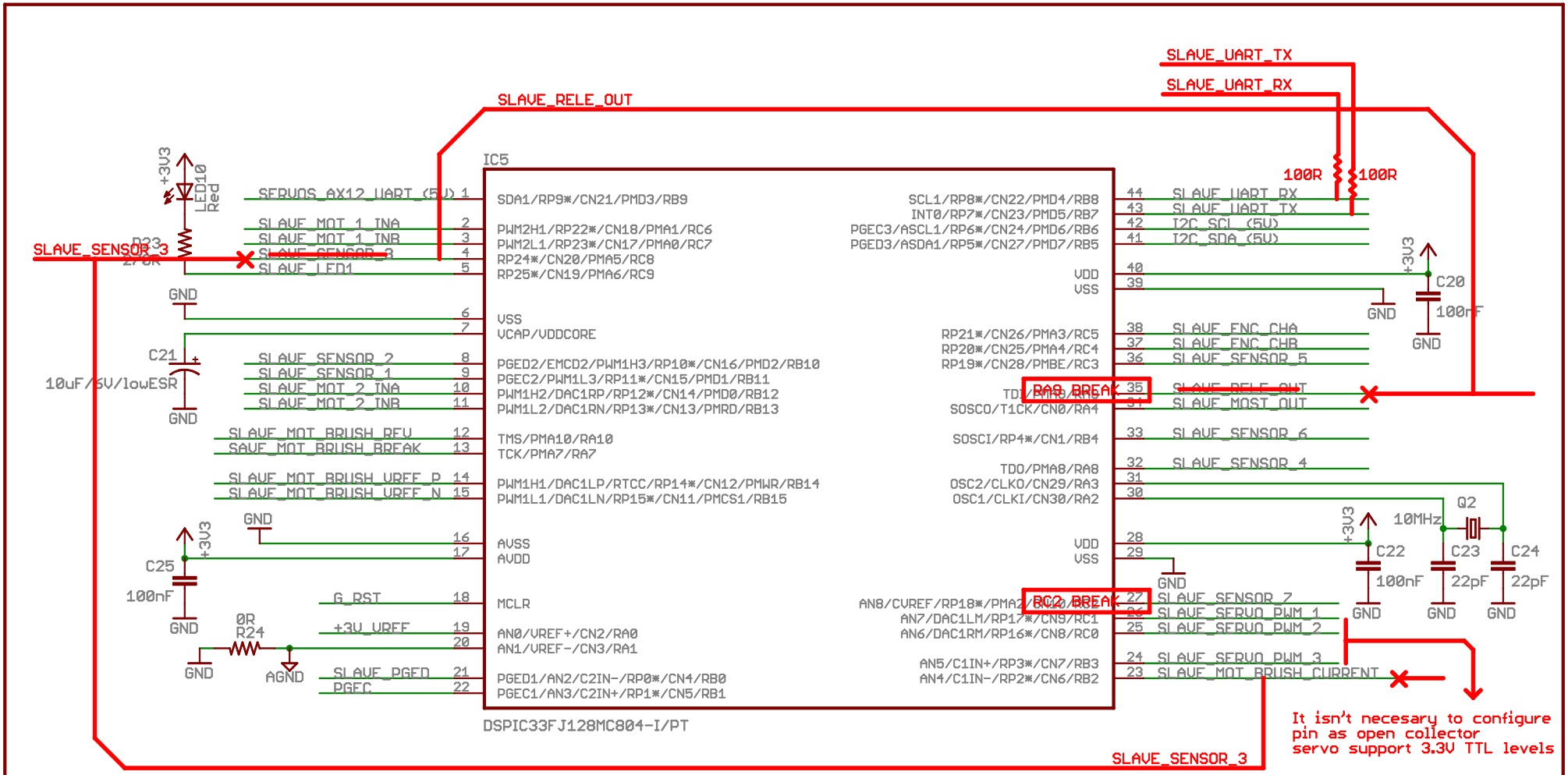

Slave microcontroller

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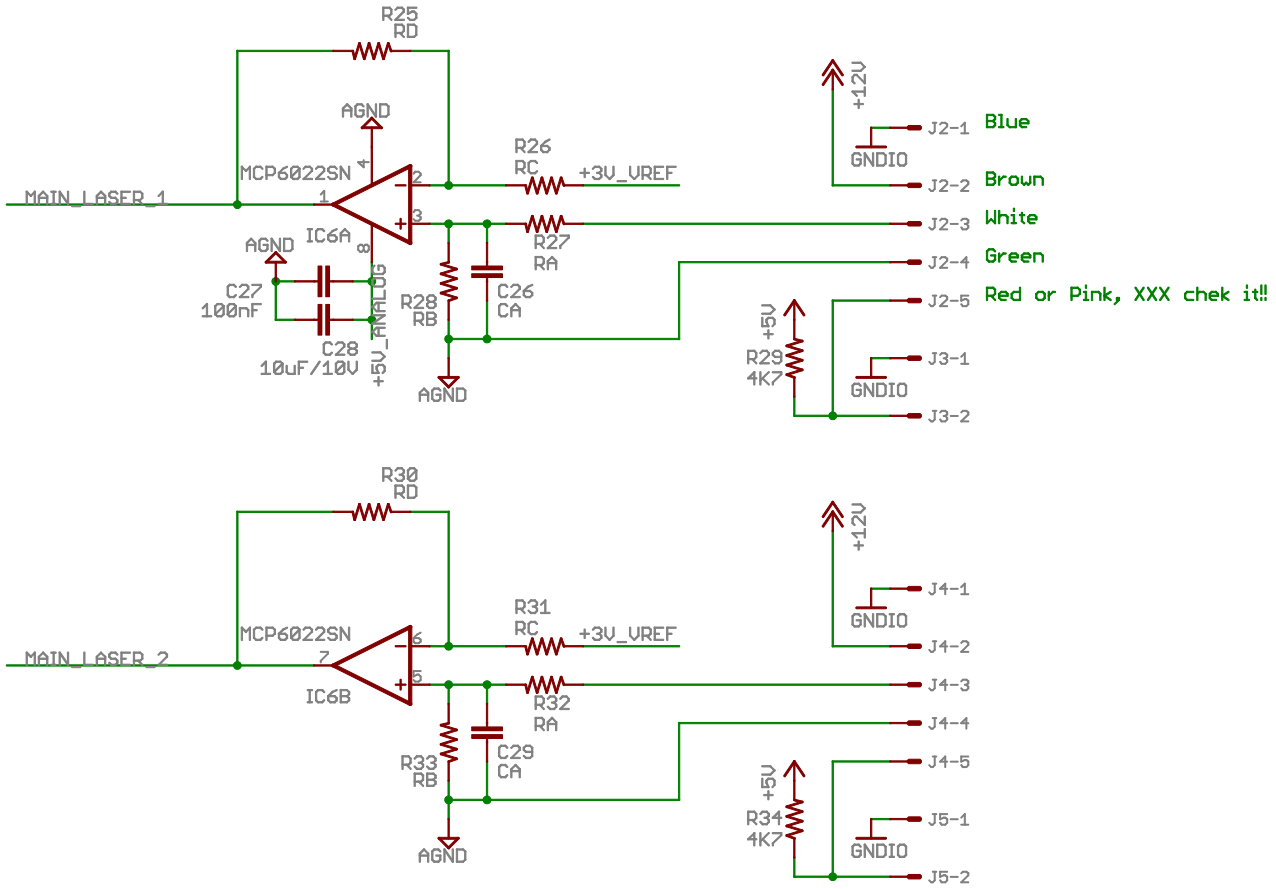

Output laser type	Component values				
	RA	RB	RC	RD	CA
Voltaje	10K/1%	4K3/1%	NC	0R	1.5uF
Current	0R	187R/1%	1K1/1%	3K3/1%	56nF

Note: In voltaje type RA = 2.33RB and fc = 661Hz
Note: In current type RD = 3RC and fc = 567Hz

Analog sensors

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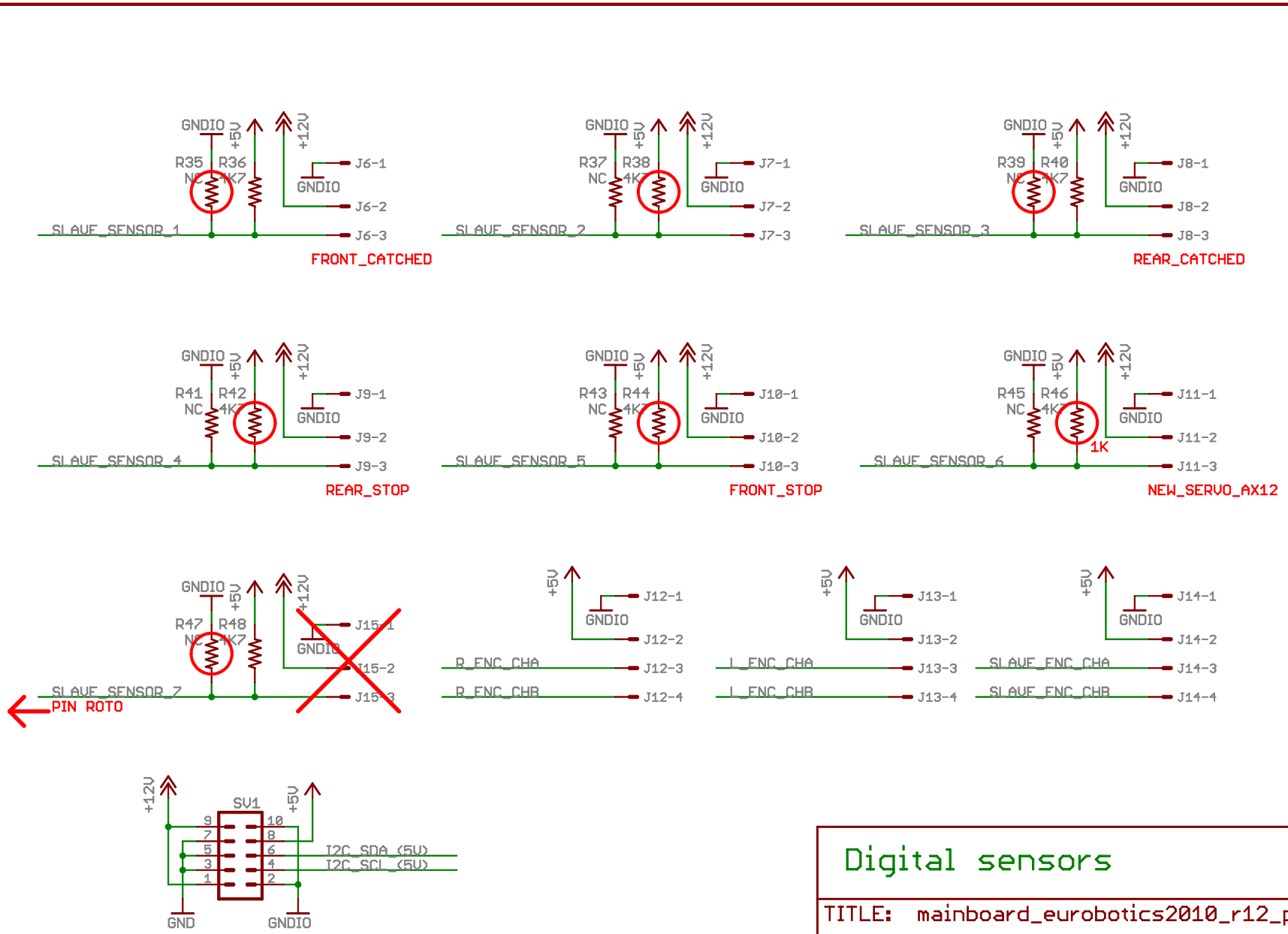

Digital sensors

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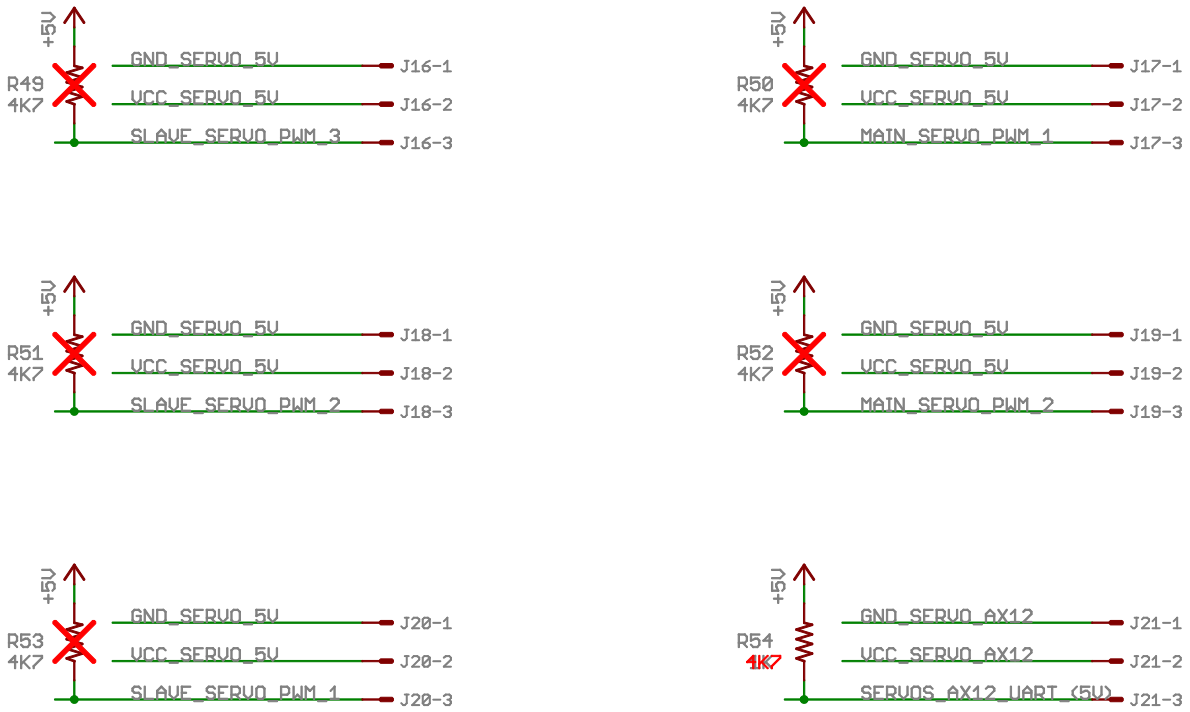

Servo motors

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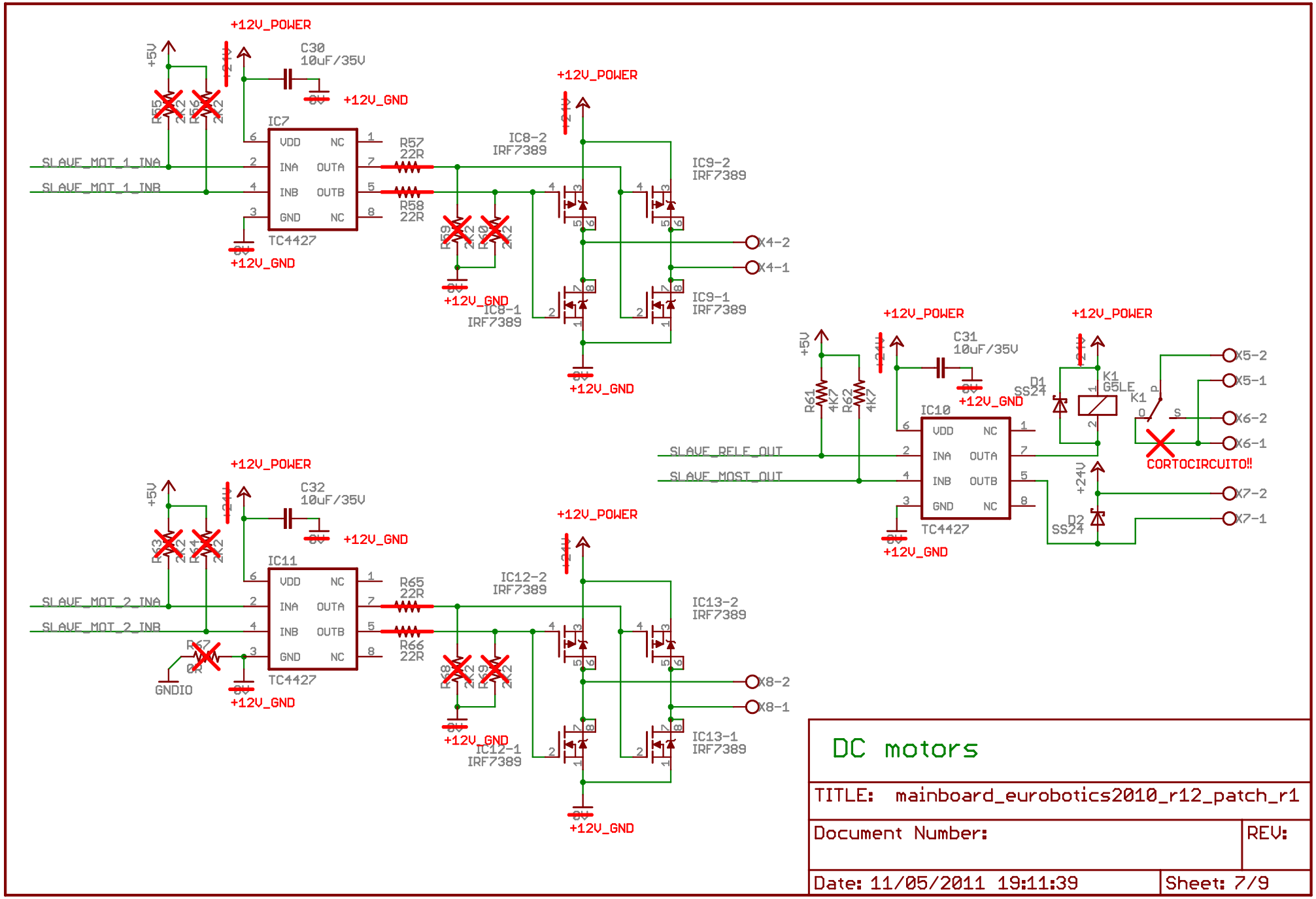
+12V_POWER
C30
10uF/35V
+12V_GND
+5V
IC7
VDD
NC
INA
OUTA
INB
OUTB
GND
NC
TC4427
SLAVE_MOT_1_INA
SLAVE_MOT_1_INB
R57
22R
R58
22R
IC8-2
IRF7389
IC9-2
IRF7389
IC8-1
IRF7389
IC9-1
IRF7389
X4-2
X4-1
C31
10uF/35V
IC10
TC4427
SLAVE_RELE_OUT
SLAVE_MOST_OUT
R61
4K7
R62
4K7
D1
SS24
K1
G5LE
CORTOCIRCUITO!!
X5-2
X5-1
X6-2
X6-1
+24V
D2
SS24
X7-2
X7-1
C32
10uF/35V
IC11
TC4427
SLAVE_MOT_2_INA
SLAVE_MOT_2_INB
R67
0R
GNDIO
R65
22R
R66
22R
IC12-2
IRF7389
IC13-2
IRF7389
IC12-1
IRF7389
IC13-1
IRF7389
X8-2
X8-1
DC motors
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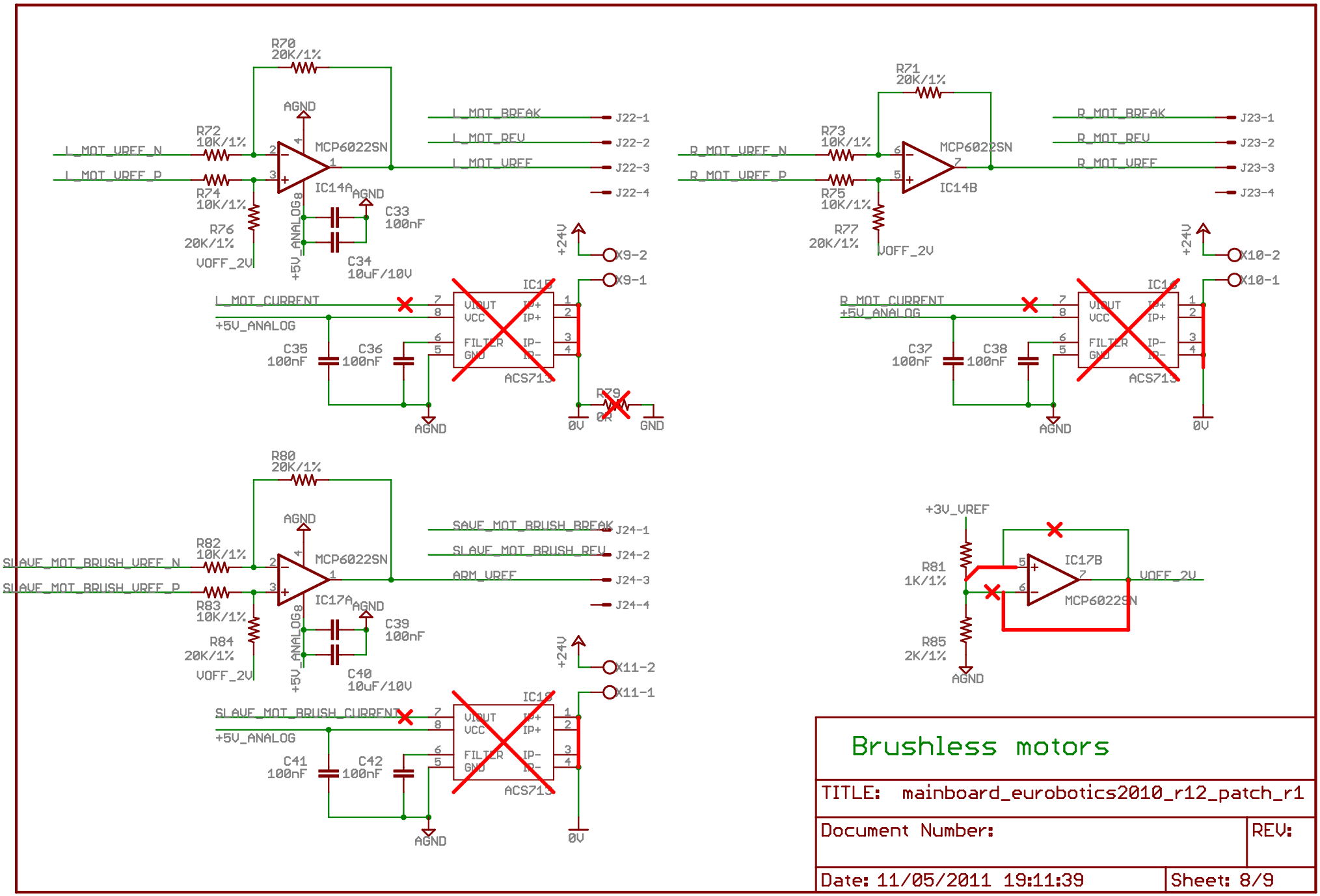
R70
20K/1%
AGND
R72
10K/1%
L_MOT_VREF_N
L_MOT_VREF_P
MCP6022SN
IC14A
R74
10K/1%
R76
20K/1%
VOFF_2V
+5V_ANALOG
C33
100nF
C34
10uF/10V
L_MOT_BREAK
L_MOT_REV
L_MOT_VREF
J22-1
J22-2
J22-3
J22-4
+24V
X9-2
X9-1
L_MOT_CURRENT
+5V_ANALOG
C35
100nF
C36
100nF
VIOUT
VCC
FILTER
GND
IP+
IP-
ACS713
R79
0R
0V
GND
R71
20K/1%
R73
10K/1%
R_MOT_VREF_N
R_MOT_VREF_P
IC14B
R75
10K/1%
R77
20K/1%
R_MOT_BREAK
R_MOT_REV
R_MOT_VREF
J23-1
J23-2
J23-3
J23-4
X10-2
X10-1
R_MOT_CURRENT
C37
100nF
C38
100nF
R80
20K/1%
SLAVE_MOT_BRUSH_VREF_N
SLAVE_MOT_BRUSH_VREF_P
IC17A
R82
10K/1%
R83
10K/1%
R84
20K/1%
C39
100nF
C40
10uF/10V
SLAVE_MOT_BRUSH_BREAK
SLAVE_MOT_BRUSH_REV
ARM_VREF
J24-1
J24-2
J24-3
J24-4
X11-2
X11-1
SLAVE_MOT_BRUSH_CURRENT
C41
100nF
C42
100nF
+3V_VREF
R81
1K/1%
R85
2K/1%
IC17B
MCP6022SN
VOFF_2V
Brushless motors
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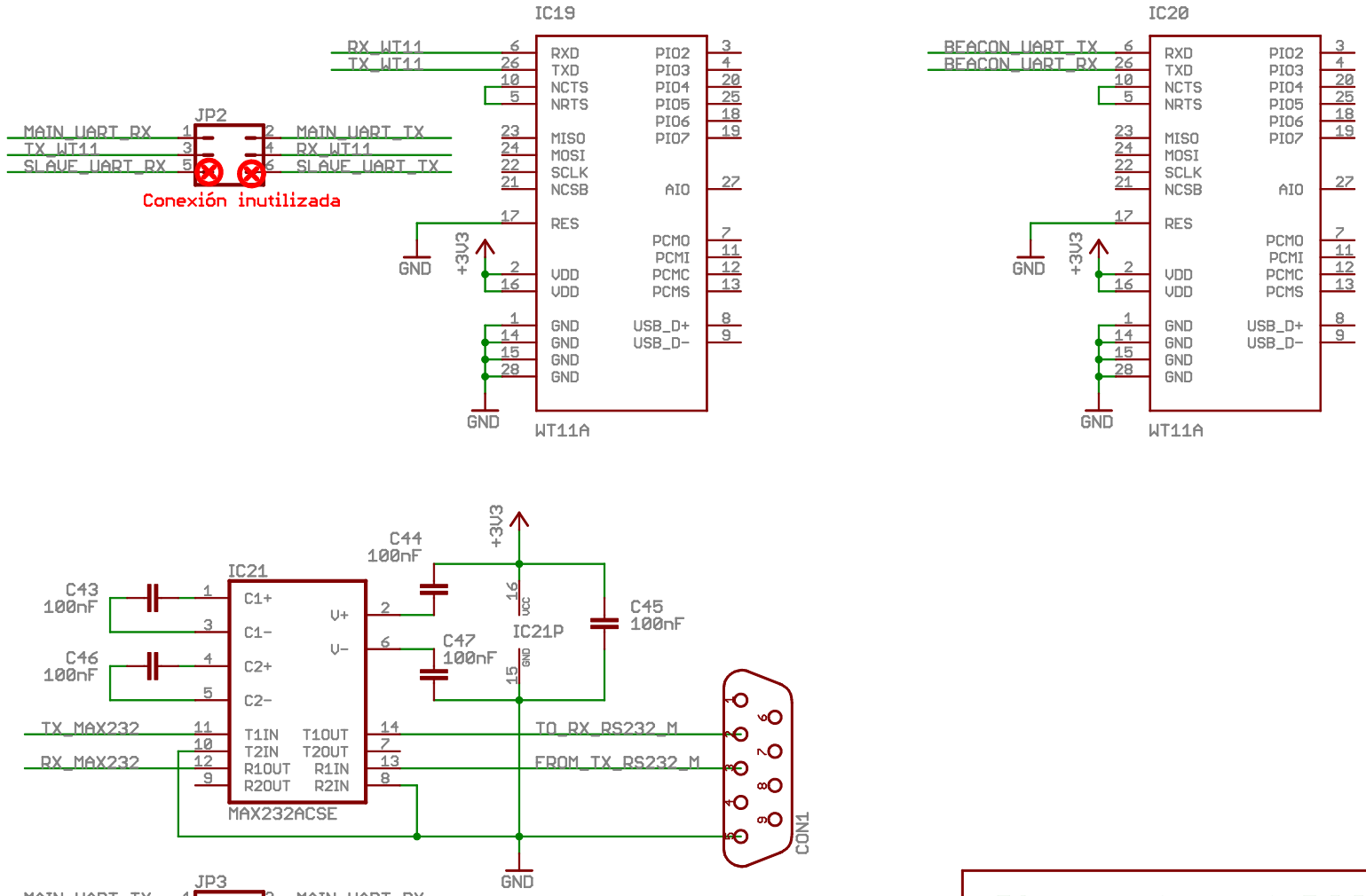

Bluetooth and RS232

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