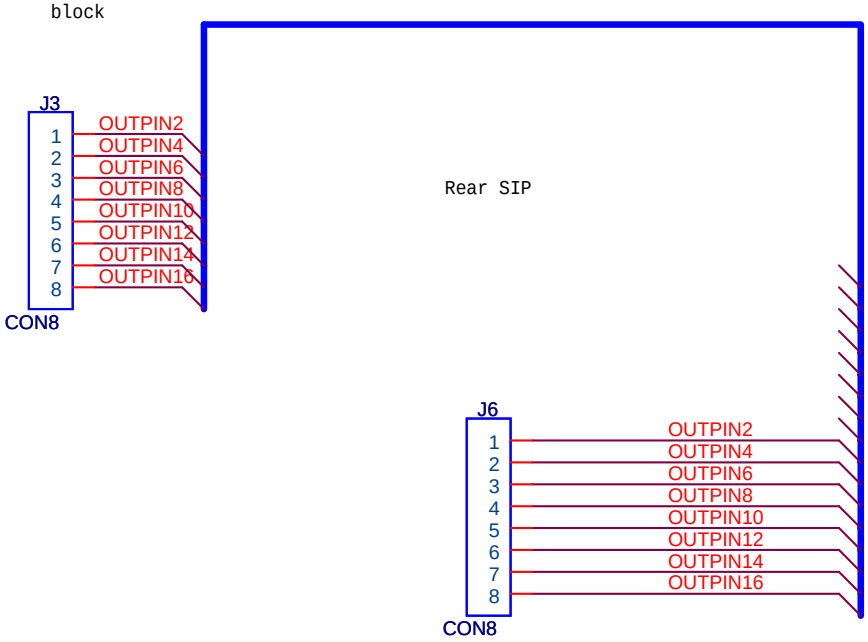
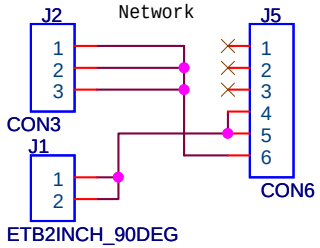
SIP terminal block





Ground Connections

Calcuated spacing for upper connector = 0.621"

Jus use sip haeders as Amang has, try them out

Rev9: added header for RS485 connector

TEMCO CONTROLS LTD.
1027 WEST 7TH AVE
VANCOUVER BC, V6H 1B2
TEL: (604) 438 - 8294
FAX: (604) 438 - 9313

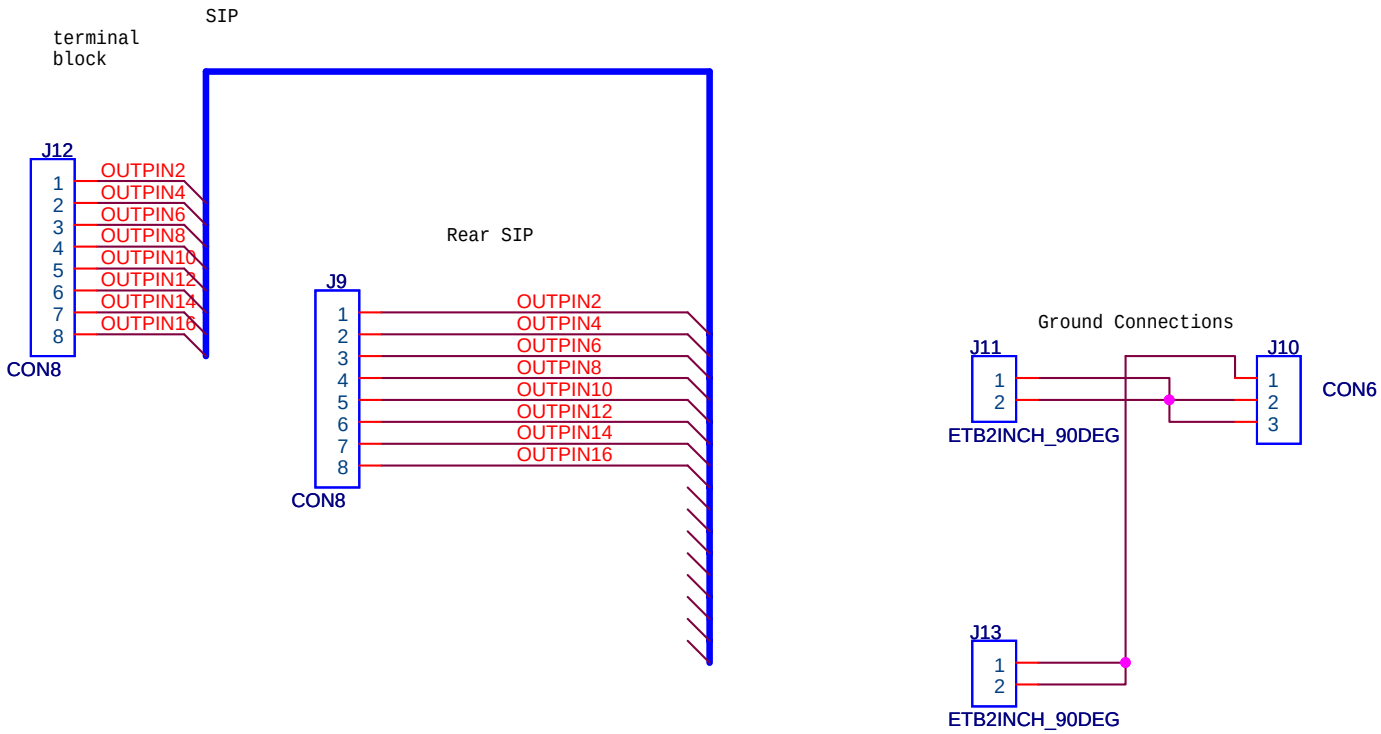
T3000 OUTPUT CARD

Size	CAGE Code	DWG NO	Rev
A	<Cage Code>		03

Friday, July 19, 2013

Scale

Sheet 0 of 2

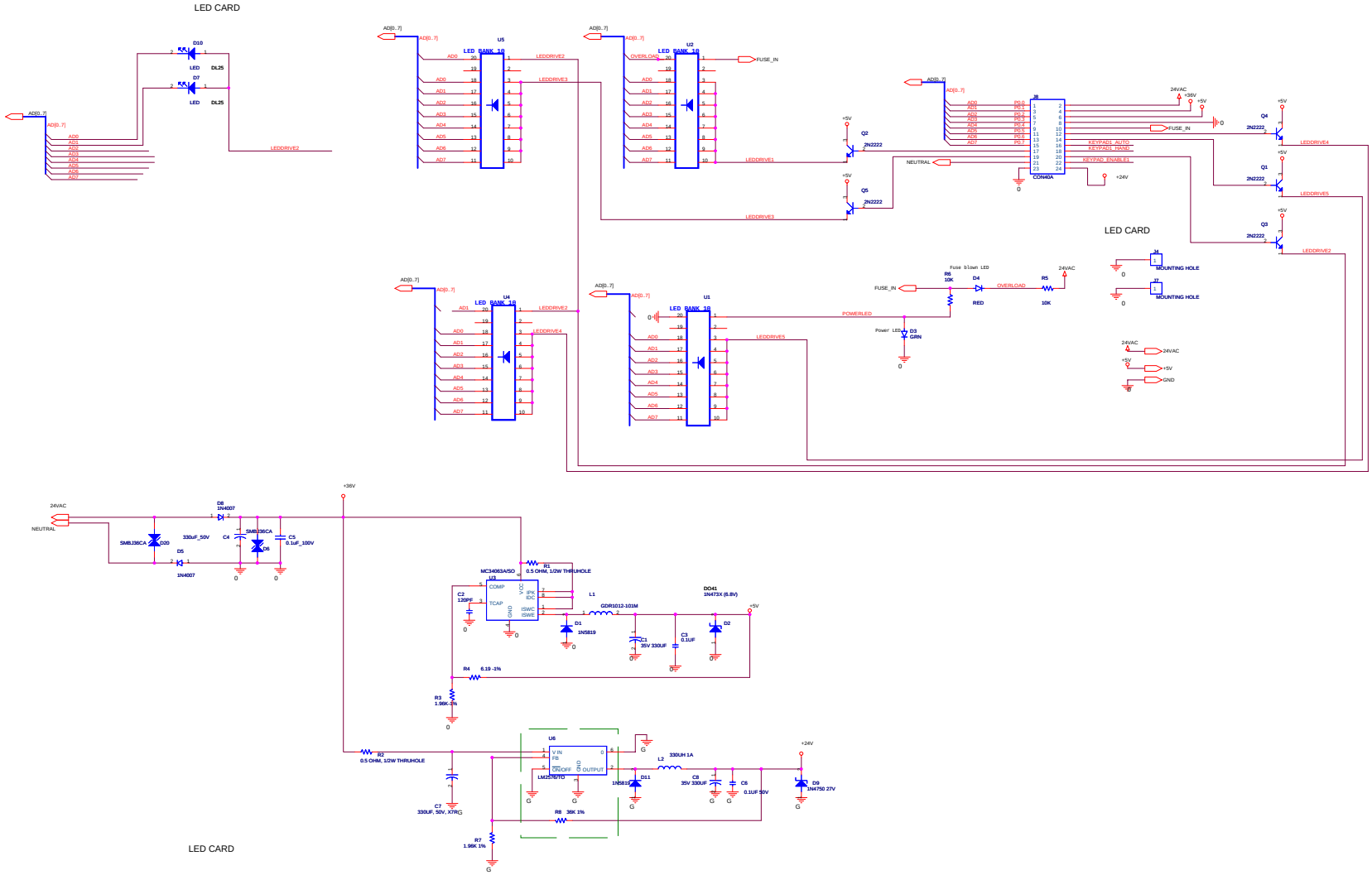


Calcuated spacing for upper connector = 0.621"

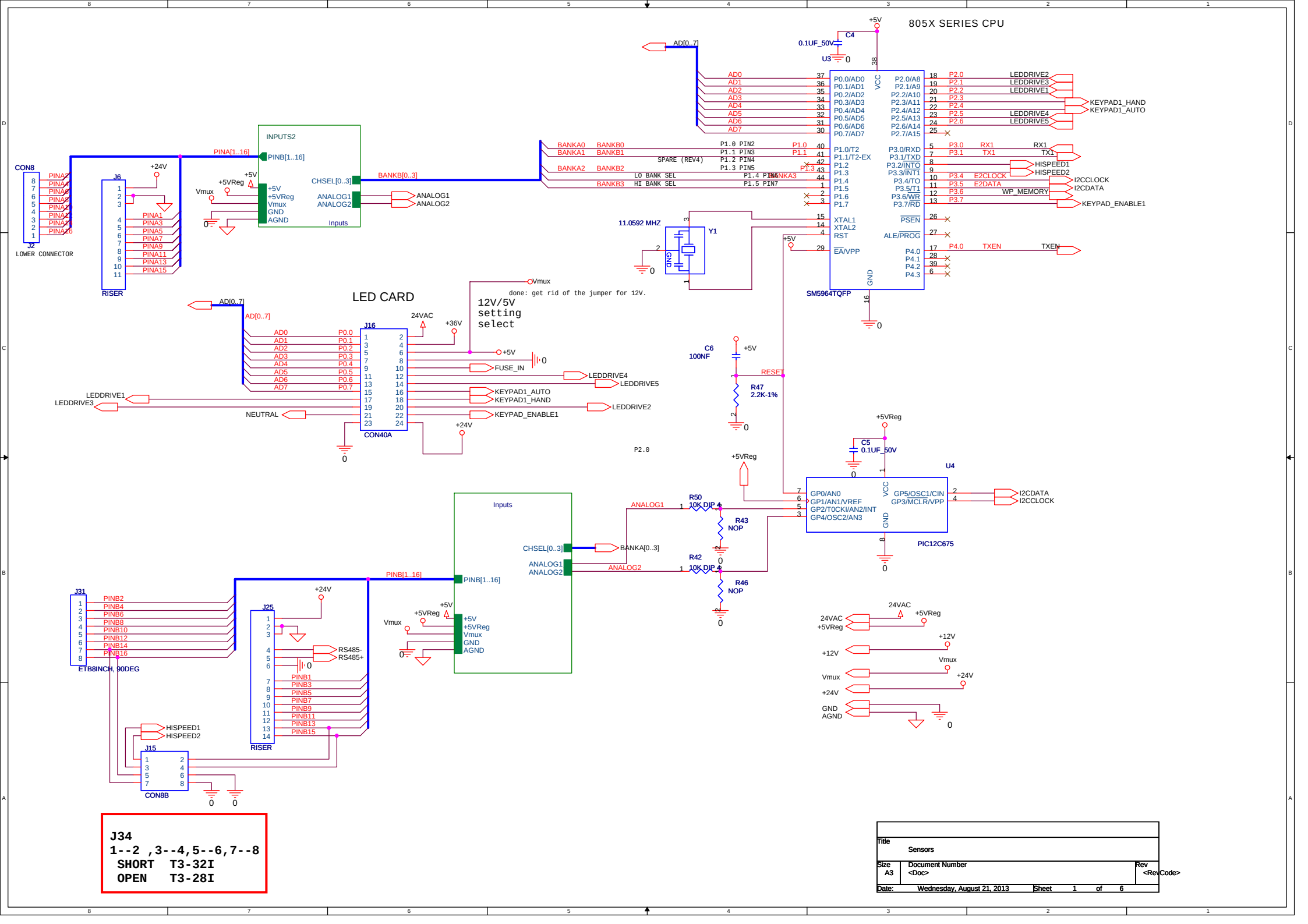
Jus use sip haeders as Amang has, try them out

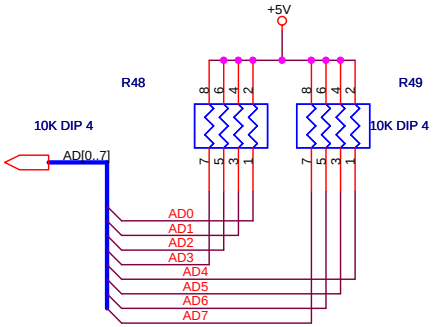
Rev9: added header for RS485 connector

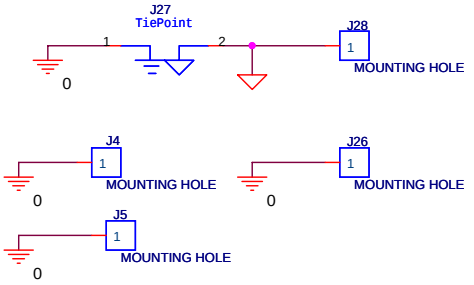
	TEMCO CONTROLS LTD. 1027 WEST 7TH AVE VANCOUVER BC, V6H 1B2 TEL: (604) 438 - 8294 FAX: (604) 438 - 9313			
	T3000 OUTPUT CARD			
	Size A	CAGE Code <Cage Code>	DWG NO	Rev 03
Friday, February 18, 2011	Scale		Sheet 0 of 2	

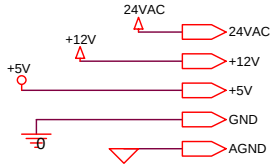


	TEMCO CONTROLS LTD. 1027 WEST 7TH AVE VANCOUVER BC, V6H 1B2 TEL: (604) 438 - 9254 FAX: (604) 438 - 9313	
	T3000 OUTPUT CARD	
	Size: D	CAGE Code: <Cage Code>
	DWG NO	Rev: 03
Monday, August 05, 2013	Scale	Sheet: 1 of 2

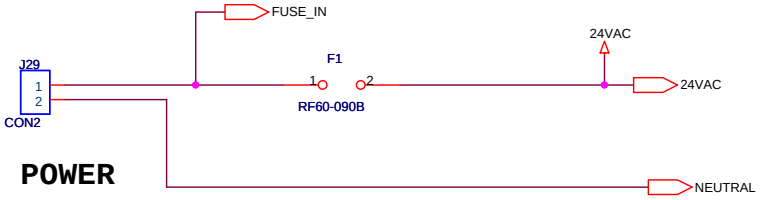

805X SERIES CPU
SM5964TQFP
LED CARD
12V/5V setting select
done: get rid of the jumper for 12V.
INPUTS2
Inputs
RISER
LOWER CONNECTOR
CON40A
CON8
CON8B
ETB8INCH, 90DEG
PIC12C675
11.0592 MHZ
J34
1--2 ,3--4,5--6,7--8
SHORT T3-32I
OPEN T3-28I
Title
Sensors
Size A3
Document Number <Doc>
Rev <RevCode>
Date: Wednesday, August 21, 2013
Sheet 1 of 6

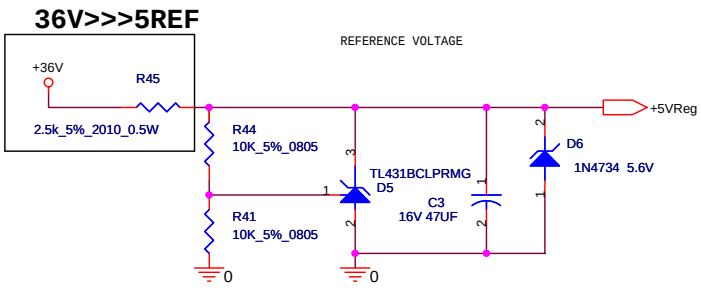


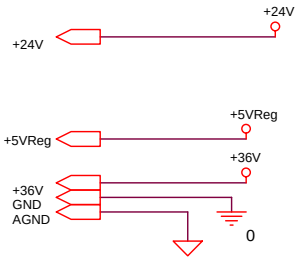


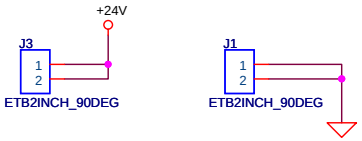


Mounting Holes



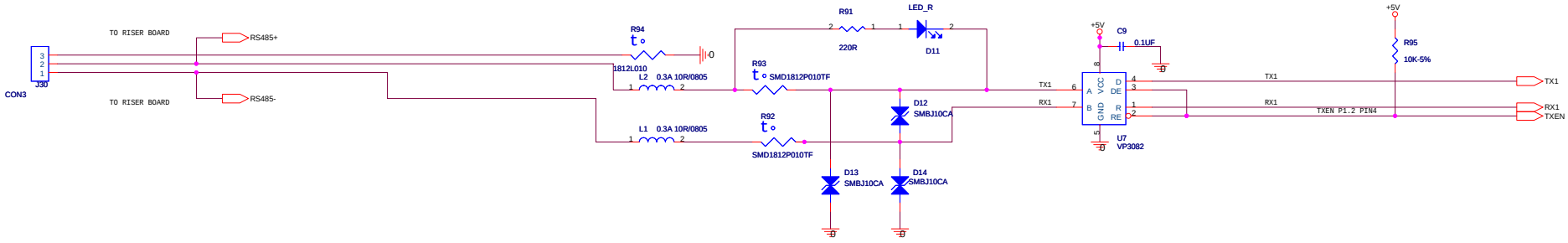




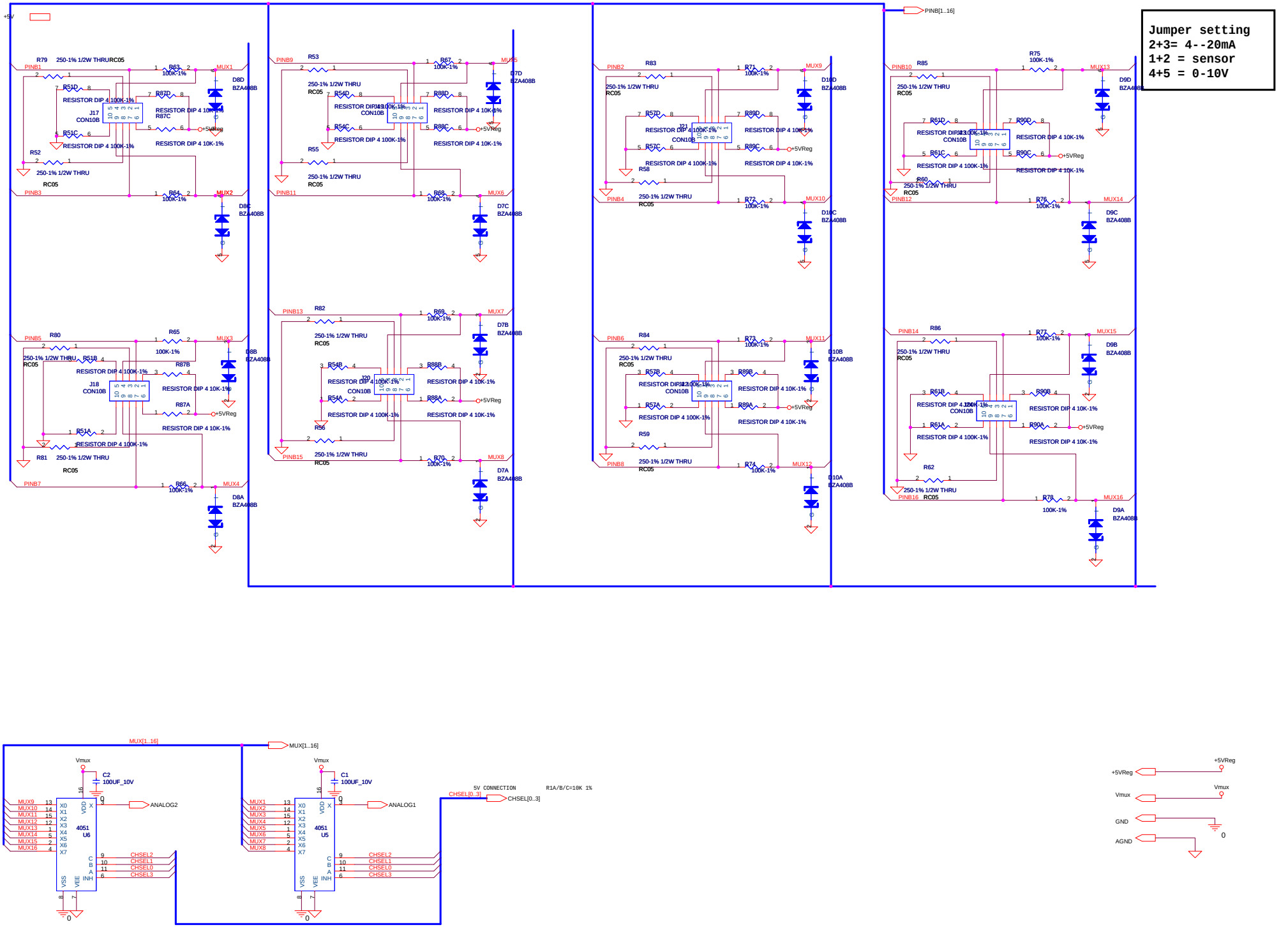


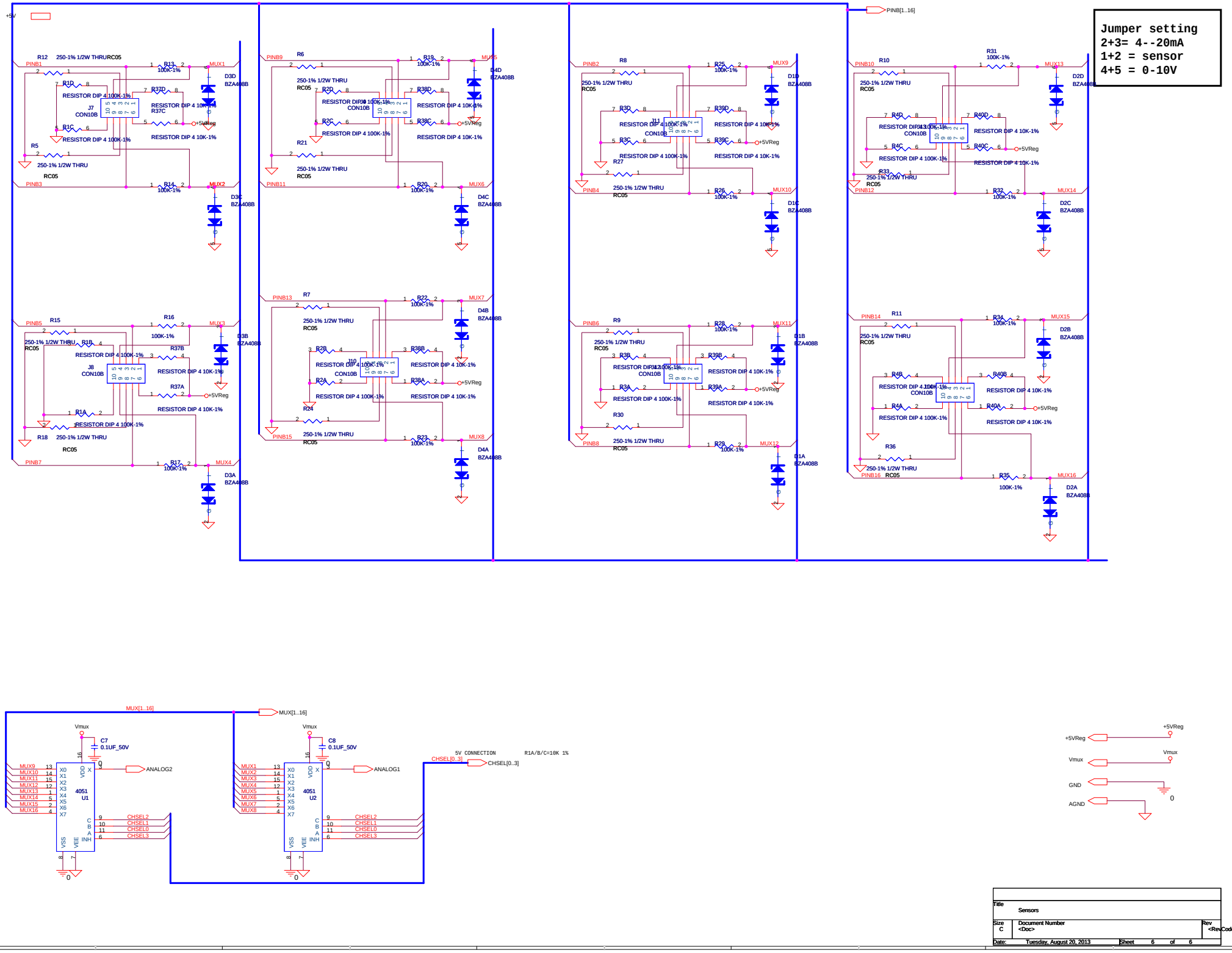
POWER

Title: <Title>		
Size: B	Document Number: <Doc>	Rev: <RevCode>
Date: Wednesday, August 21, 2013	Sheet 2 of 6	



Title	<Title>		
Size C	Document Number <Doc>		Rev <RevCode>
Date: Monday, August 05, 2013	Sheet 4 of 6		


Jumper setting
2+3= 4--20mA
1+2 = sensor
4+5 = 0-10V
+5V
PINB[1..16]
MUX1
MUX2
MUX3
MUX4
MUX5
MUX6
MUX7
MUX8
MUX9
MUX10
MUX11
MUX12
MUX13
MUX14
MUX15
MUX16
RESISTOR DIP 4 100K-1%
RESISTOR DIP 4 10K-1%
250-1% 1/2W THRU
RC05
100K-1%
+5VReg
CON10B
D8D BZA408B
D8C BZA408B
D8B BZA408B
D8A BZA408B
D7D BZA408B
D7C BZA408B
D7B BZA408B
D7A BZA408B
D10D BZA408B
D10C BZA408B
D10B BZA408B
D10A BZA408B
D9D BZA408B
D9C BZA408B
D9B BZA408B
D9A BZA408B
MUX[1..16]
Vmux
C2 100UF_10V
C1 100UF_10V
4051
U6
U5
ANALOG2
ANALOG1
5V CONNECTION
R1A/B/C=10K 1%
CHSEL[0..3]
CHSEL2
CHSEL1
CHSEL0
CHSEL3
GND
AGND
Title
Sensors
Size C
Document Number <Doc>
Rev <RevCode>
Date: Tuesday, August 20, 2013
Sheet 5 of 6


Jumper setting
2+3= 4--20mA
1+2 = sensor
4+5 = 0-10V
+5V
PINB[1..16]
MUX[1..16]
MUX1
MUX2
MUX3
MUX4
MUX5
MUX6
MUX7
MUX8
MUX9
MUX10
MUX11
MUX12
MUX13
MUX14
MUX15
MUX16
D3D BZA408B
D3C BZA408B
D3B BZA408B
D3A BZA408B
D4D BZA408B
D4C BZA408B
D4B BZA408B
D4A BZA408B
D1D BZA408B
D1C BZA408B
D1B BZA408B
D1A BZA408B
D2D BZA408B
D2C BZA408B
D2B BZA408B
D2A BZA408B
R12 250-1% 1/2W THRU RC05
R13 100K-1%
R14 100K-1%
R15
R16 100K-1%
R17 100K-1%
R18 250-1% 1/2W THRU RC05
R5 250-1% 1/2W THRU RC05
R6 250-1% 1/2W THRU RC05
R7 250-1% 1/2W THRU RC05
R8 250-1% 1/2W THRU RC05
R9 250-1% 1/2W THRU RC05
R10 250-1% 1/2W THRU RC05
R11 250-1% 1/2W THRU RC05
R19 100K-1%
R20 100K-1%
R21 250-1% 1/2W THRU RC05
R22 100K-1%
R23 100K-1%
R24 250-1% 1/2W THRU RC05
R25 100K-1%
R26 100K-1%
R27
R28 100K-1%
R29 100K-1%
R30
R31 100K-1%
R32 100K-1%
R33 250-1% 1/2W THRU RC05
R34 100K-1%
R35 100K-1%
R36 250-1% 1/2W THRU RC05
J7 CON10B
J8 CON10B
J9 CON10B
J10 CON10B
J11 CON10B
J12 CON10B
RESISTOR DIP 4 100K-1%
RESISTOR DIP 4 10K-1%
+5VReg
PINB1
PINB2
PINB3
PINB4
PINB5
PINB6
PINB7
PINB8
PINB9
PINB10
PINB11
PINB12
PINB13
PINB14
PINB15
PINB16
C7 0.1UF_50V
C8 0.1UF_50V
Vmux
ANALOG1
ANALOG2
4051
U1
U2
CHSEL0
CHSEL1
CHSEL2
CHSEL3
CHSEL[0..3]
5V CONNECTION
R1A/B/C=10K 1%
GND
AGND
Title
Sensors
Size C
Document Number <Doc>
Rev <RevCode>
Date: Tuesday, August 20, 2013
Sheet 6 of 6

32 INPUT

Rev1

Done: Took 8in8out board and modified for 32 inputs

Done: Reduce number of pins on riser cards since they get in the way, align in the center

Done: allow full and half wave power supplies, this means changing the upper card, jumper selectable

Done: add LEDs, use the bargraph type

Done: for the full wave make sure to have two separate lines, gnd and neutral

Done: synchronize the pins from the bottom board to the led board

Rev2

- (01/24/05) add a 12 volt voltage divider for inputs

- (01/24/05) add a 5 volt pull up on the input lines.

- (01/24/05) removed the 10K packets and placed a 1K current limitting

- (01/24/05) added connection to the 5 volts reg

- (01/25/05) added Vmux which allows us to set the mux to 12 or 5 volts Vdd.

Done: make hardware rev visible on board while inside the enclosure

Rev3

Done: change the VDD supply to the pic chip to 5Vreg

Done: fix BAS40 on RS485 line

Done: DELETE rs485 RESISToRS

Done: make space for 24pin header

Rev4

TBD: update thermal relief

TBD: need to work out mux vcc, 12V is too high

Done: input resistor is OK, double confirmed now

Done: Add RS485 opto isolator module.

Rev5

Done: swap power lines to RS485 module

Done: rotate F1

Done: make 120, mostly for datanab

For using OPTO-Isolated RS485 module, the corresponding LEDBOARD is modified as following: R6 changed to 2K 1% R8 changed to 5.9K 1%

TBD: the Ground of two RS485 connectors are different, they should both be connected to the ground of the RS485 module

```
TBD: the voltage of J5(mux's supply) need to
be decreased to 10v to adapt 5v supply
required by RS485 module, in series with  an
extra diode to the supply
```

Rev10

```
TBD:move the hole far away to component
pad on PCB,modify 16SOP150 footprint.
```

Rev11

```
done::add 5v vref for input<Check this
```

Rev12

```
done:Rev12: add TXEN pin for RS485 module
done:Rev12: try to fit zigbee module here
done:Rev12: check 24vac protection on all pins
done:Rev12: check jumper silk screen is big
```

Rev13

```
done:ADD J35&J34 JUMPER  , J34&J35 SHORT 28I, J34&J35 OPEN 32I
```

Rev14

```
done:Del J35&J34  Jumpers  ,  Add  new  8PIN  pinheader  for  32I&28I switchover .
```

Rev15

```
done: change the rev14  J34 net.  now jumper out for T3-32IN and jumper in for T3-28IN with two channels high speed counting.
```

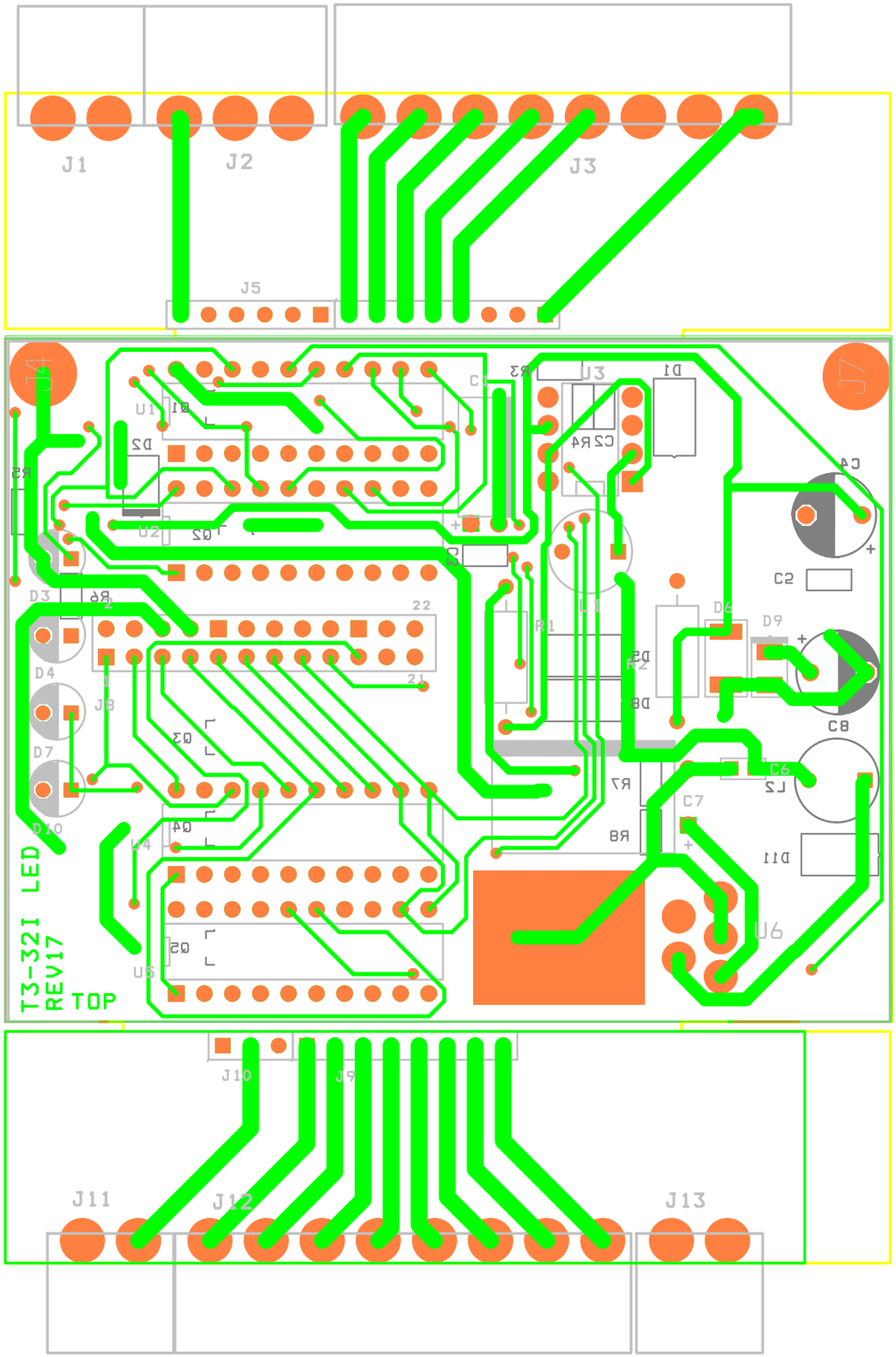
Rev16

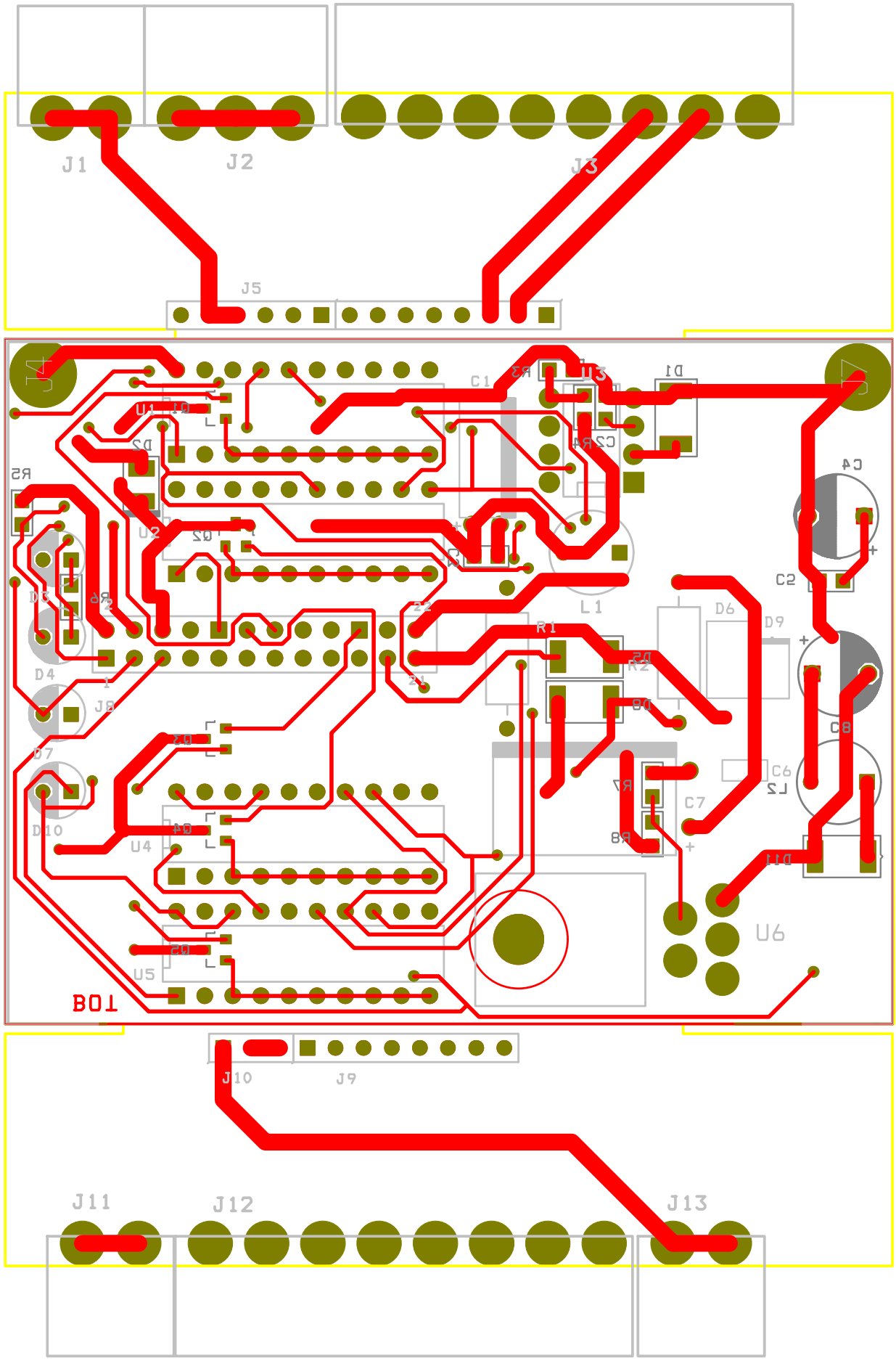
```
done:get the RS485 module down lower.
done: move the top row of terminal inward for 1mm
done:Silk screen shows rev12 and rev5 for bottom.
tbd: update rev notes, check half wave jumper, get rid of it next rev
tbd: get rid of the jumper for 12V.
tbd: change the reference vaoltage circuit.
```

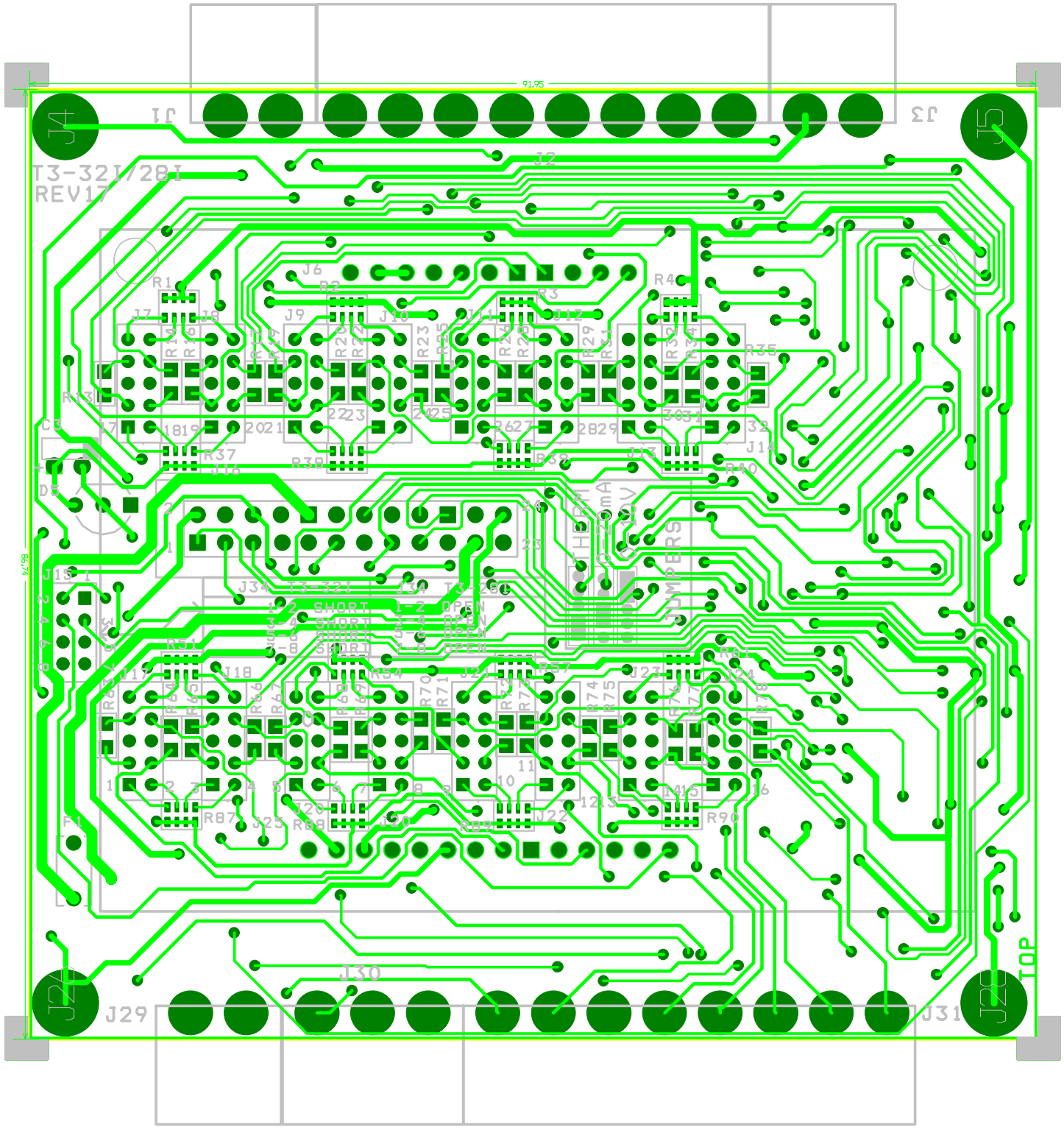
Rev17:

```
done: update rev notes, check half wave jumper, get rid of it next rev
done: get rid of the jumper for 12V.
done: change the reference vaoltage circuit.
done: delete 12V power supply.
```

Title <Title>		
Size B	Document Number <Doc>	Rev <RevCode>
Date: Tuesday, July 30, 2013	Sheet 2 of 2	


J1
J2
J3
J5
J4
J7
U1
U2
U3
U4
U5
U6
D1
D2
D3
D4
D7
D10
D5
D6
D8
D9
D11
C1
C2
C3
C4
C5
C6
C7
C8
R1
R2
R3
R4
R5
R6
R7
R8
J8
J10
J9
J11
J12
J13
T3-321 LED
REV17
TOP


J1
J2
J3
J5
J4
C1
D1
C4
C2
L1
D6
D9
R1
C8
C6
L2
C7
D11
U6
D10
U4
U5
BOT
J10
J9
J11
J12
J13


T3-32I/28I
REV17
J1
J2
J3
J4
J5
J6
J29
J30
J31
TOP
91,95
86,74

INPUTS
BOT

T3_32AI_TOP_REV17_BOM

Item	Quantity	Reference	Part	Footprint
1	1	C1	16V 330UF	CPCYLHORIZ/D.200/LS.100/.034
2	1	C2	120PF	SM/C_0805
3	1	C3,C5,C6	0.1UF	SM/C_0805
4	3	C4,C7,C8	330UF, 50V	CPCYLHORIZ/D.400/LS.200/.034_REV1
5	2	D1,D11	1N5819	SM/D_MLL41_21
6	1	D2	1N4735 (6.2V)	SM/D_1206_21_2
7	1	D5	1N4007	SM/MOV40V
8	2	D6,D20	SMBJ36CA	SM/MOV40V
9	1	D8	1N4007	SM/D_MLL41_21
10	1	D9	1N4750 27V	SM/D_1206_21_2
11	3	J1,J11,J13	ETB2INCH_90DEG	ETB2INCH
12	1	J2	CON3	ETB3INCH
13	2	J3,J12	CON8	ETB8INCH
14	2	J4,J7	MOUNTING HOLE	MTHOLEGROUND
15	1	J5	CON6	SIP/TM/L.600/6
16	1	J6	CON8	BOARD_T32INB
17	1	J8	CON40A	LEDBOARD_2
18	1	J9	CON8	SIP/TM/L.800/8
19	1	J10	CON6	BOARD_T32INA
20	1	L1	GDR1012-101M	CYL/D.300/LS.200/.034
21	1	L2	330UH 1A	L/330UH
22	5	Q1,Q2,Q3,Q4,Q5	2N2222	SM/SOT23_213
23	2	R1,R2	0.5 OHM, 1/2W THRUHOLE	AX/.500X.150/.034_REV2
24	2	R3,R7	1.96K-1%	SM/R_0805
25	1	R4	6.19 -1%	SM/R_0805
26	2	R5,R6	10K	SM/R_0805
27	1	R8	36K 1%	SM/R_0805
28	4	U1,U2,U4,U5	LEDBANK_10	DIP.100/20/W.300/L1.000
29	1	U3	MC34063A/SO	8DIP300
30	1	U6	LM2576ADJ	TO220_5PIN_HORIZ_SINK

T3_32AI_BOT_REV17_BOM

Item	QTY	Reference	Part	Footprint
1	2	C1,C2	100nF_10V	SM/C_1206
2	1	C3	16V 47UF	CPCYLHORIZ/D.200/LS.100/.034
3	2	C4,C5,C6,C9	0.1UF_50V	SM/C_0805
4	2	C7,C8	0.1UF_50V	SM/C_1206
5	8	D1,D2,D3,D4,D7,D8,D9,D10	BZA408B	SM/SOT457
6	1	D5	TL431BCLPRMG	TO92/100
7	1	D6	1N4734 5.6V	SM/D_1206_21_2
8	1	D11	LED_RED	SM/D_0805_21
9	3	D12,D13,D14	SMBJ10CA	SM/MOV40V
10	1	F1	RF60-090B	RAD/.250X.125/LS.200/.034
11	2	J1,J3	ETB2INCH_90DEG	ETB2INCH
12	1	J2	CON8	ETB8INCH
13	4	J4,J5,J26,J28	NOP 90度弯针 上板已经有	MTHOLEGROUND
14	1	J6	RISER	SIP/TM/L1.100/11_REV1
15	16	J7,J8,J9,J10,J11,J12,J13,J14,J17,J18,J19,J20,J21,J22,J23,J24	CON10B	SIP/TM/L.500/5_DUAL
16	1	J15	CON8B	SIP/TM/L.500/4_DUAL
17	1	J16	2X14	BLKCON.100/VH/TM2OE/W.200/24
18	1	J25	NOP 90度弯针 上板已经有	SIP/TM/L1.400/14_REV1
19	1	J27	焊金属跳线	GROUNDS
20	1	J29	CON2	ETB2INCH
21	1	J30	CON3	ETB3INCH
22	1	J31	ETB8INCH, 90DEG	ETB8INCH
23	2	L1,L2	0.3A 102K/0805	SM/C_0805
24	8	R1,R2,R3,R4,R51,R54,R57,R61	RESISTOR DIP 4 100K-1%	SM/R_1608_NET4
25	32	R5,R6,R7,R8,R9,R10,R11,R12,R15,R18,R21,R24,R27,R30,R33,R36,R52,R53,R55,R56,R58,R59,R60,R62,R79,R80,R81,R82,R83,R84,R85,R86	250-1% 1/2W THRU	SM/C_1210
26	32	R13,R14,R16,R17,R19,R20,R22,R23,R25,R26,R28,R29,R31,R32,R34,R35,R63,R64,R65,R66,R67,R68,R69,R70,R71,R72,R73,R74,R75,R76,R77,R78,	100K-1%	SM/R_0805
28	10	R37,R38,R39,R40,R87,R88,R89,R90,R48,R49	RESISTOR DIP 4 10K-1%	SM/R_1608_NET4
29	3	R42,R50,R95,R41,R44	10K	SM/R_0805
30	1	R45	2.5K_5%_2010_0.5W	SM/R_2010
31	1	R47	2.2K-1%	SM/R_0805
32	1	R91	220R	SM/R_0805
33	3	R92,R93,R94	SMD1812P010TF	SM/C_1825
34	4	U1,U2,U5,U6	4051 (飞利浦)	16SOP150
35	1	U3	SM5964 TQFP	QUAD.80M/44/WG14.15
36	1	U4	PIC12F675	8SOP150
37	1	U7	VP3082	8SOP150
38	1	Y1	11.0592 MHZ	SM/X_OSC_REV1

jeesie：R43,R46. 不用焊接。R45 改为2.5K。R41，R44 改为10K。