

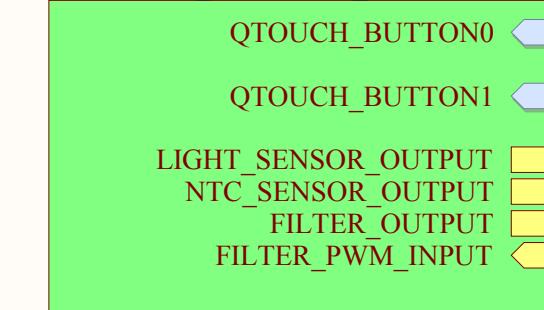
A

U_XMEGA-C3_XPLAINED_PowerManagement
XMEGA-C3_XPLAINED_PowerManagement.SchDoc

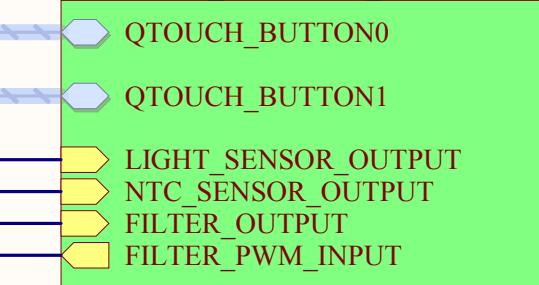


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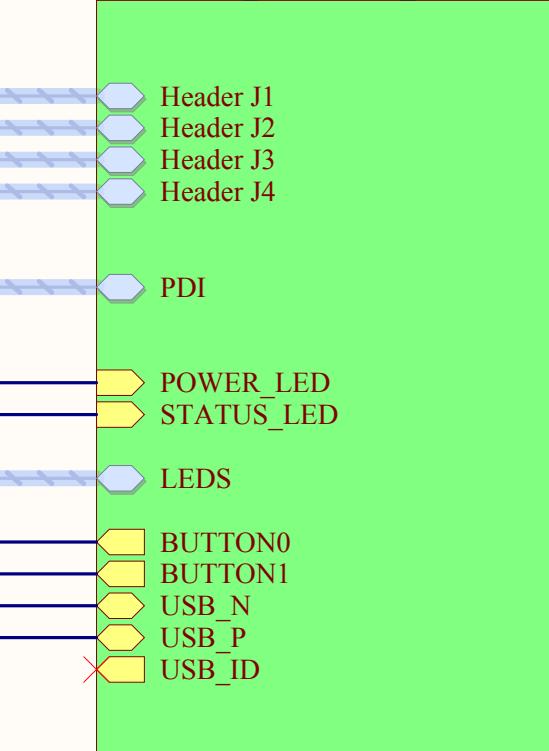
U_XMEGA-C3_XPLAINED_Sensors
XMEGA-C3_XPLAINED_Sensors.SchDoc



U_XMEGA-C3_XPLAINED MCU
XMEGA-C3_XPLAINED MCU.SchDoc



U_XMEGA-C3_XPLAINED IO
XMEGA-C3_XPLAINED IO.SchDoc



U_XMEGA-C3_XPLAINED_Memory
XMEGA-C3_XPLAINED_Memory.SchDoc



U_XMEGA-C3_XPLAINED_Display
XMEGA-C3_XPLAINED_Display.SchDoc

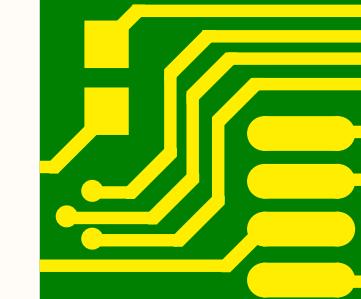


LABEL1

Product number/revision
 Serial number

Label PCBA

PCB1

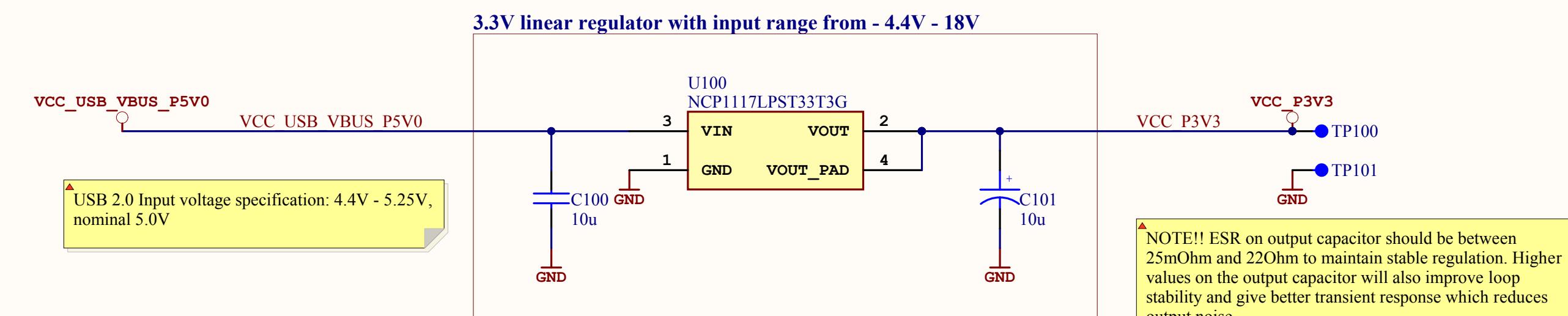


A08-1429

ATMEL Norway	*	
Vestre Rosten	79	
N-7075 TILLER	*	
NORWAY		
Date:	2012-9-27	13:07:18
Document number:	1	Revision 3
TITLE: Top Level Block Diagram		
XMEGA-C3_XPLAINED_TopLevel.SchDoc		

A

A



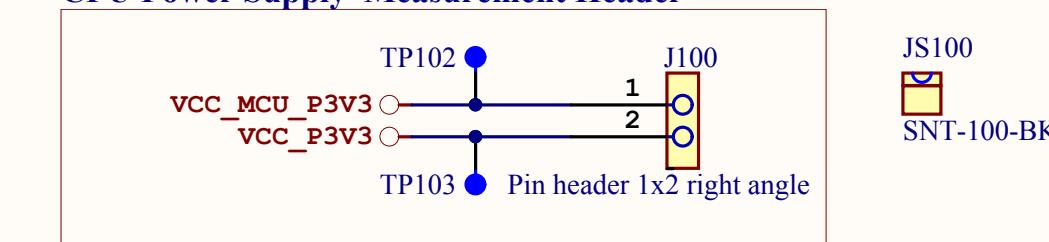
NOTE!! ESR on output capacitor should be between 25mOhm and 220hm to maintain stable regulation. Higher values on the output capacitor will also improve loop stability and give better transient response which reduces output noise.

This regulator can handle up to 18V input voltage and maximum 1.0A load current, with a maximum voltage drop of 1.4V. The output voltage is 3.3V +2%. The maximum quiescent current is 700uA. NOTE!! that worst-case output voltage may drop down to 3.0V with 4.4V input voltage.

B

B

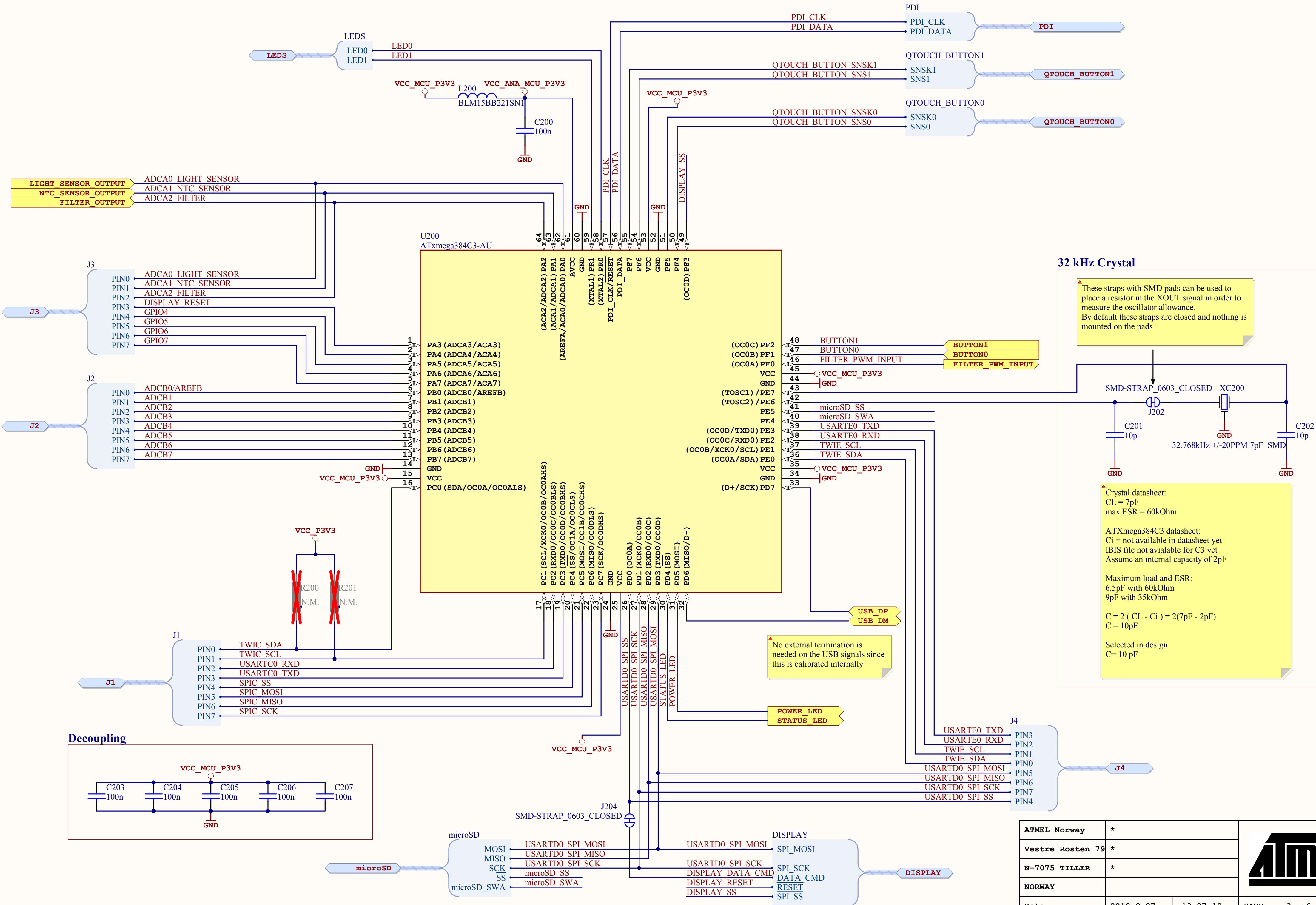
CPU Power Supply Measurement Header



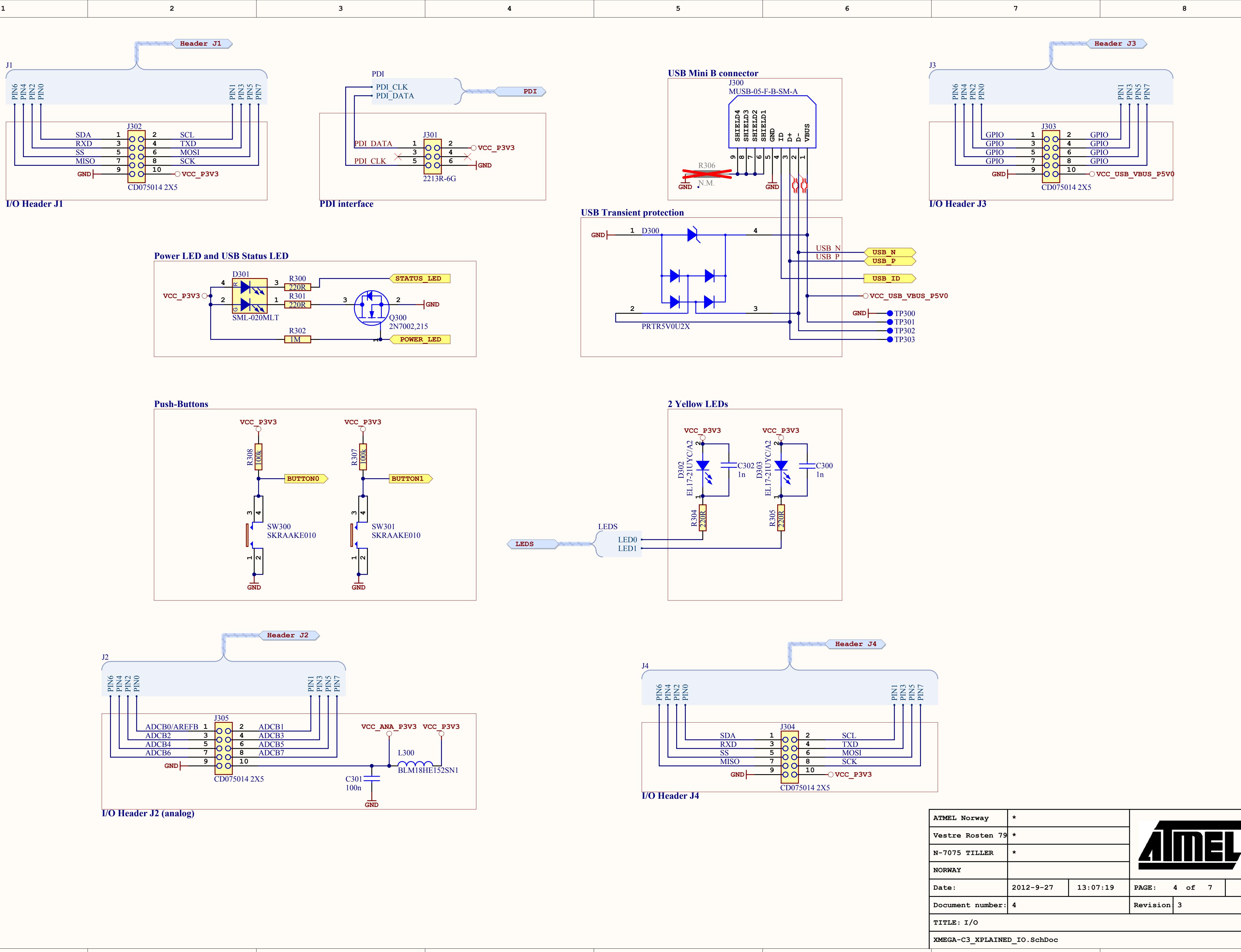
C

C

ATMEL Norway	*		
Vestre Rosten 79	*		
N-7075 TILLER	*		
NORWAY			
Date:	2012-9-27	13:07:19	PAGE: 2 of 7
Document number:	2		Revision 3
TITLE: Power Supply			
XMEGA-C3_XPLAINED_PowerManagement.SchDoc			

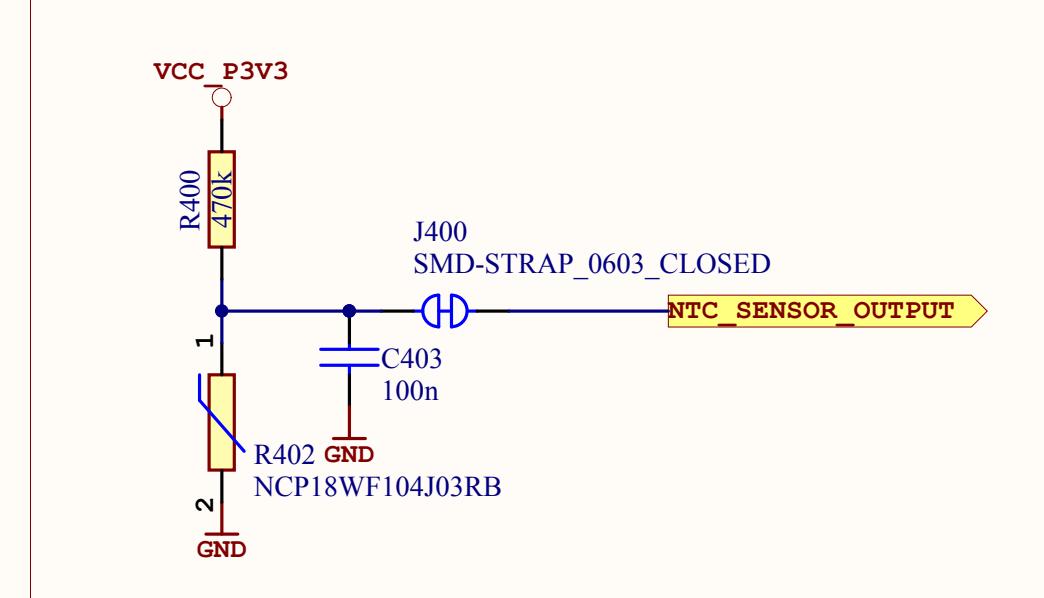


ATMEL Norway	*	
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	2012-9-27	13:07:19
Document number:	3	Revision 3
TITLE: MCU ATxmega384C3		
XMEGA-C3 XPLAINED MCU.SchDoc		

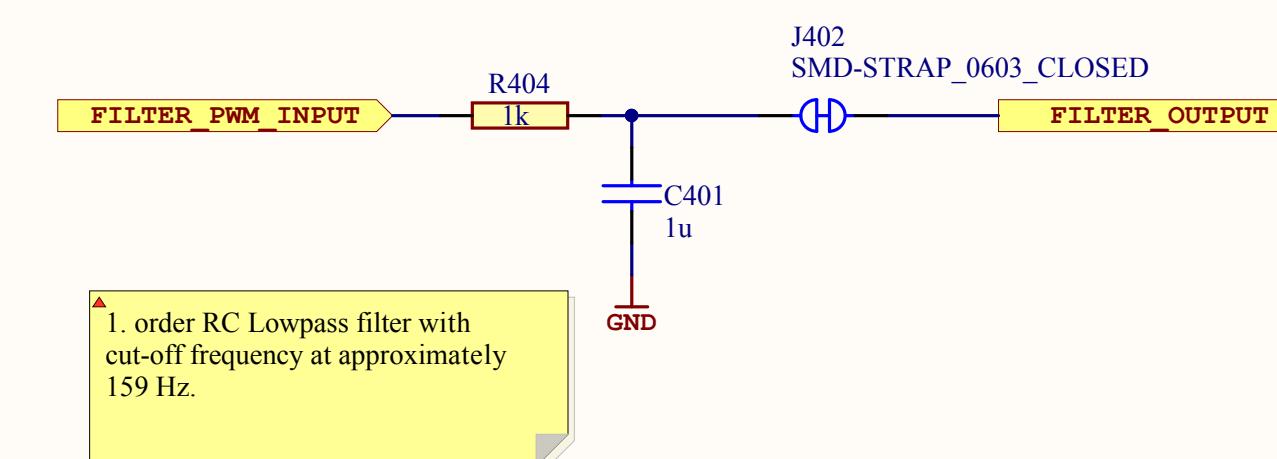


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NTC Temperature Sensor

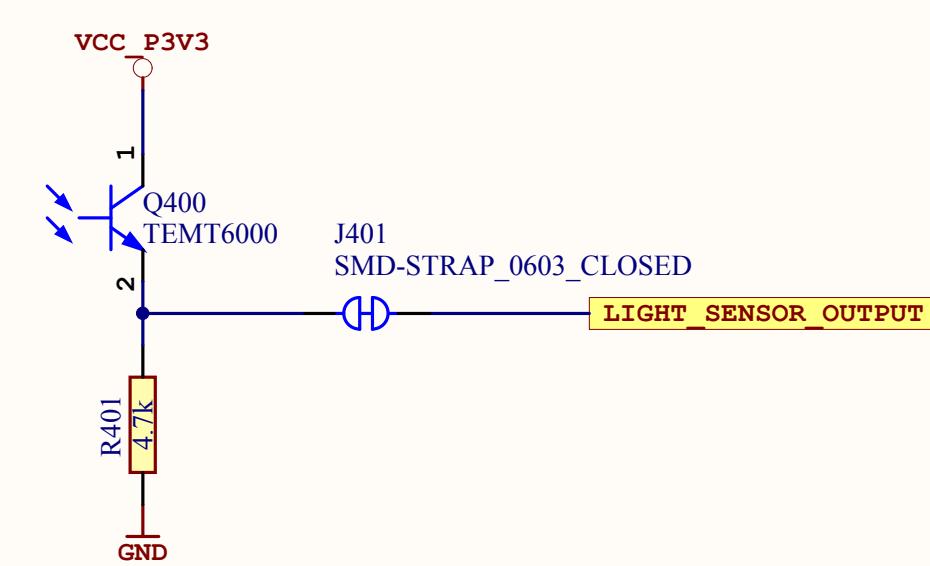


Lowpass RC Filter



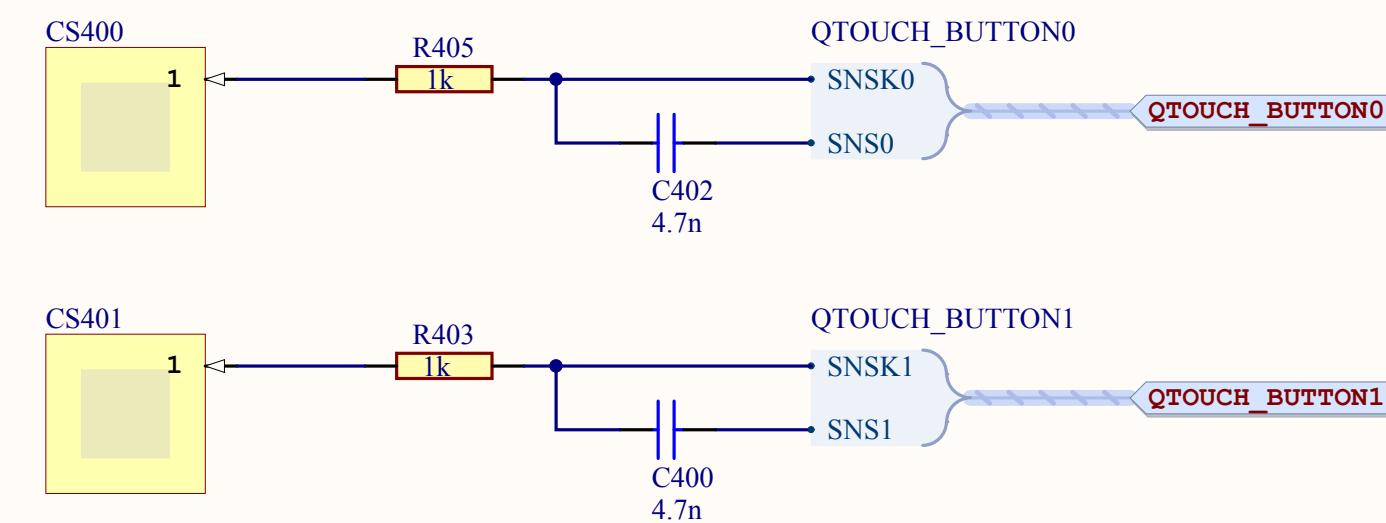
B

Light Sensor



C

QTouch



D

ATMEL Norway	*	
Vestre Rosten	79	*
N-7075 TILLER	*	
NORWAY		
Date:	2012-9-27	13:07:19
Document number:	5	Revision 3
TITLE: Sensors		
XMEGA-C3_XPLAINED_Sensors.SchDoc		



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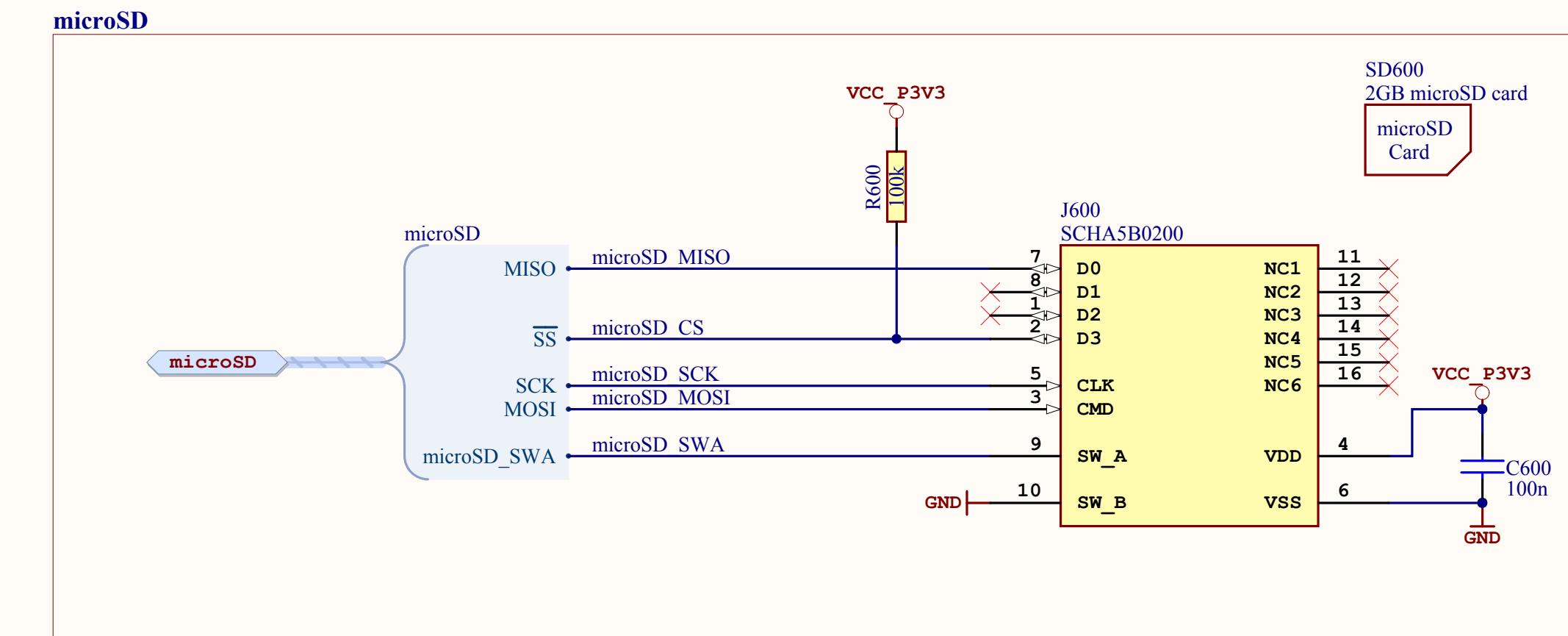
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C

C

D

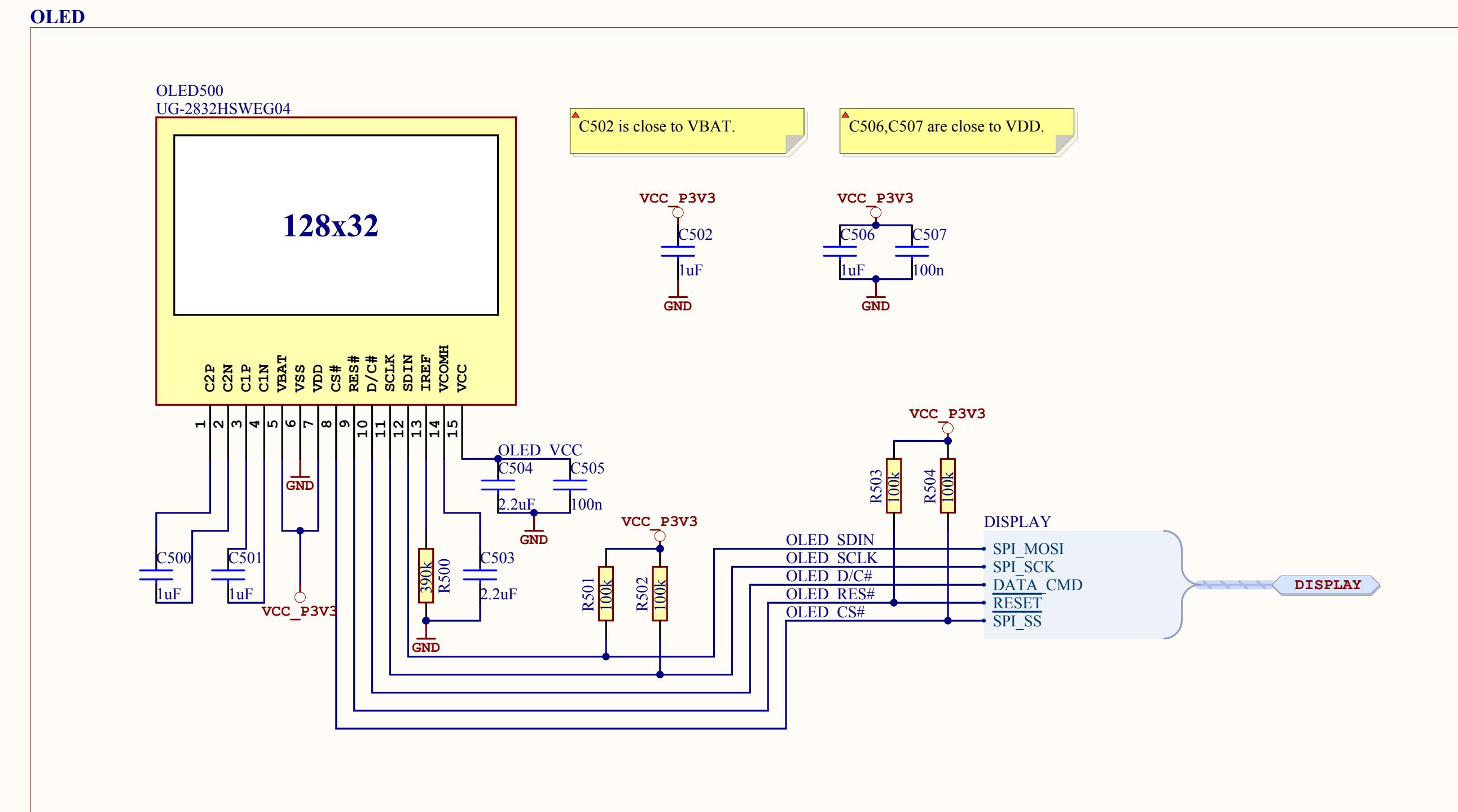
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ATMEL Norway	*	ATMEL
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	2012-9-27 13:07:19	PAGE: 6 of 7
Document number:	6	Revision 3
TITLE: Memory		
XMEGA-C3_XPLAINED_Memory.SchDoc		

A

A



B

B

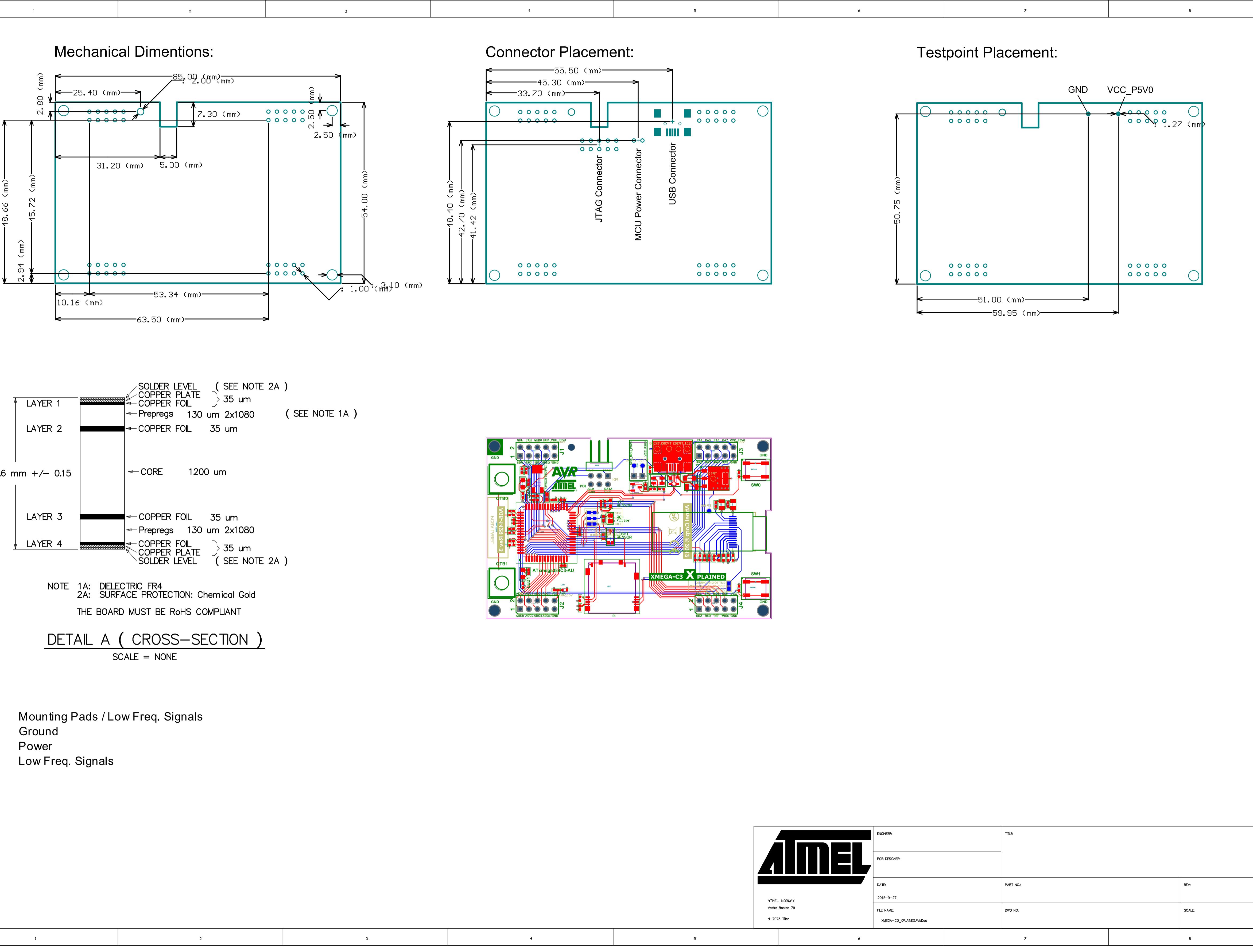
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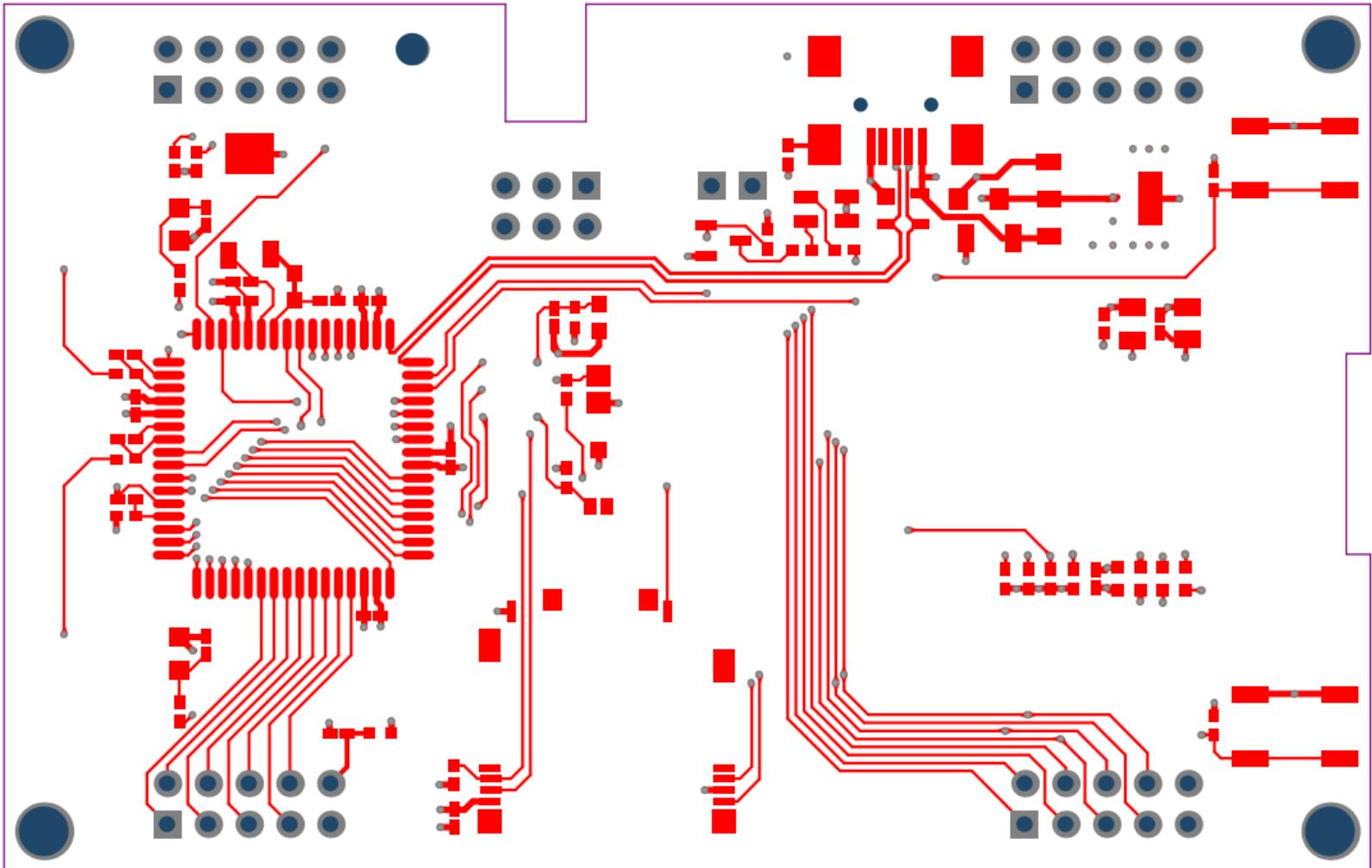
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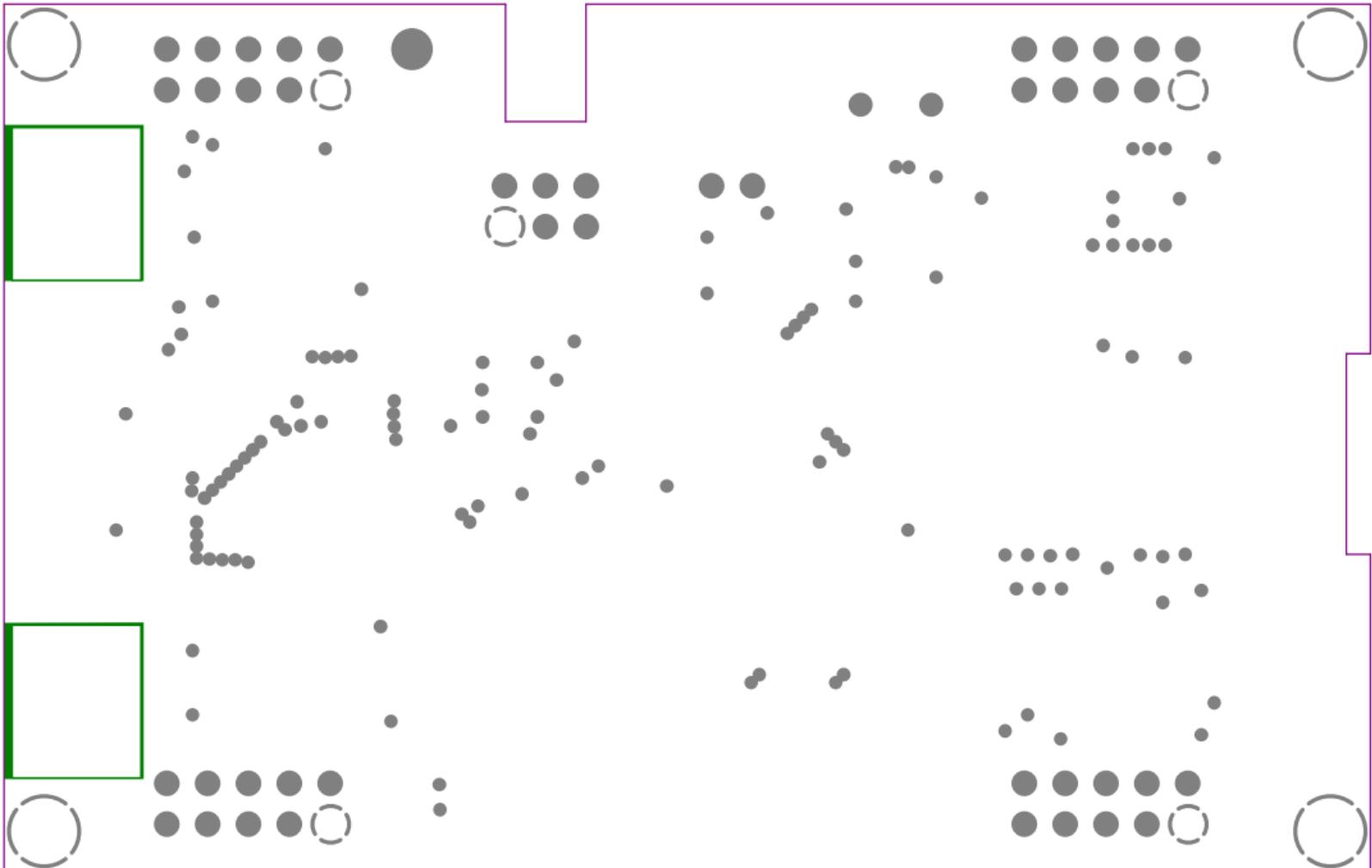
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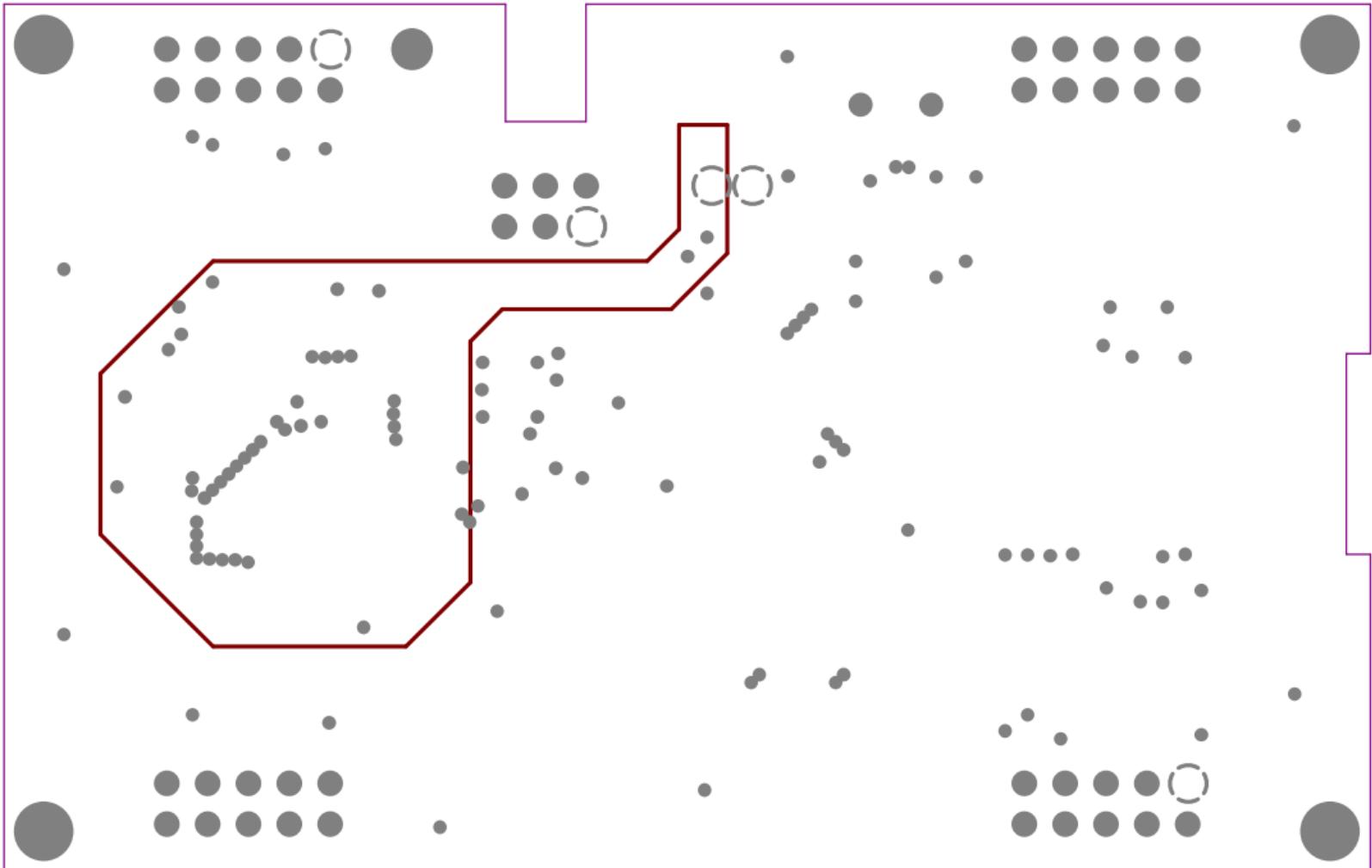
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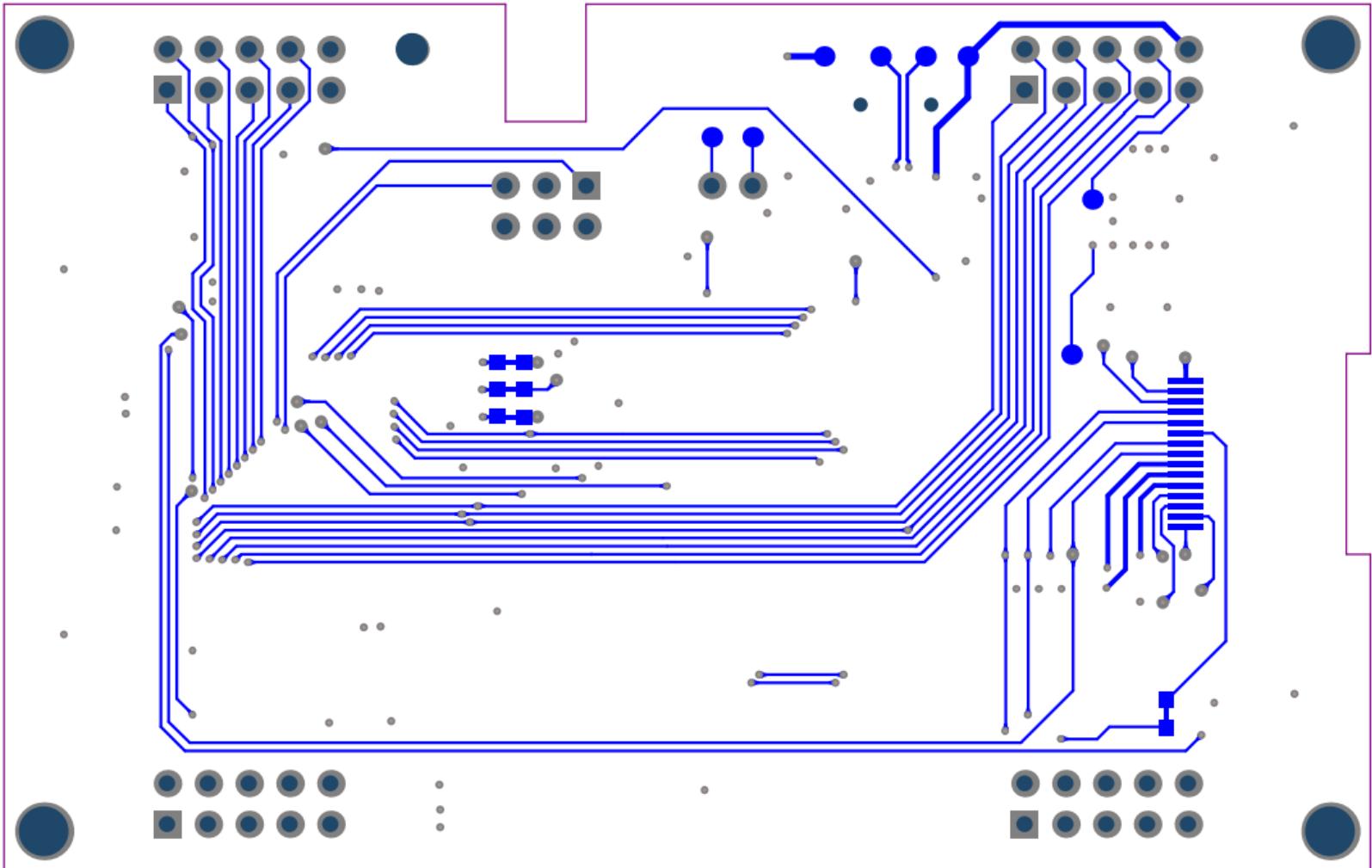
ATMEL Norway	*	ATMEL
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	2012-9-27 13:07:19	PAGE: 7 of 7
Document number:	7	Revision 3
TITLE: Display		
XMEGA-C3_XPLAINED_Display.SchDoc		

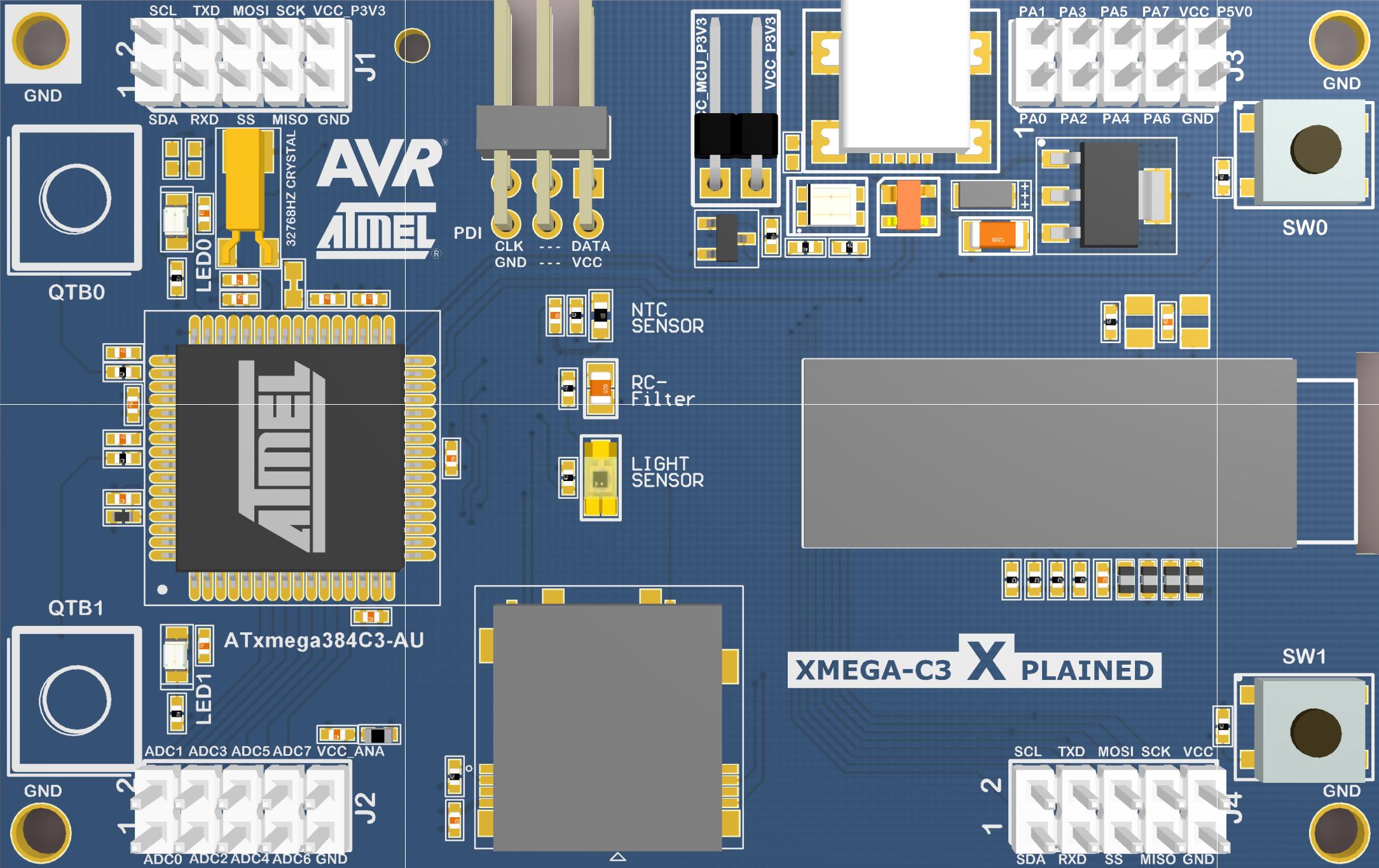












VCC_P5V0 PA7 PA5 PA3 PA1
GND PA6 PA4 PA2 PA0

TP301 TP302 TP303 TP300

VCC_P3V3 PC7 PC5 PC3 PC1
GND PC6 PC4 PC2 PC0

TP101

TP100

TP103 TP102

DATA CLK
PDI
VCC GND

NTC SENSOR
RC-FILTER
LIGHT SENSOR
CUT THESE STRAPS TO
DISCONNECT THE
SENSORS IF NEEDED

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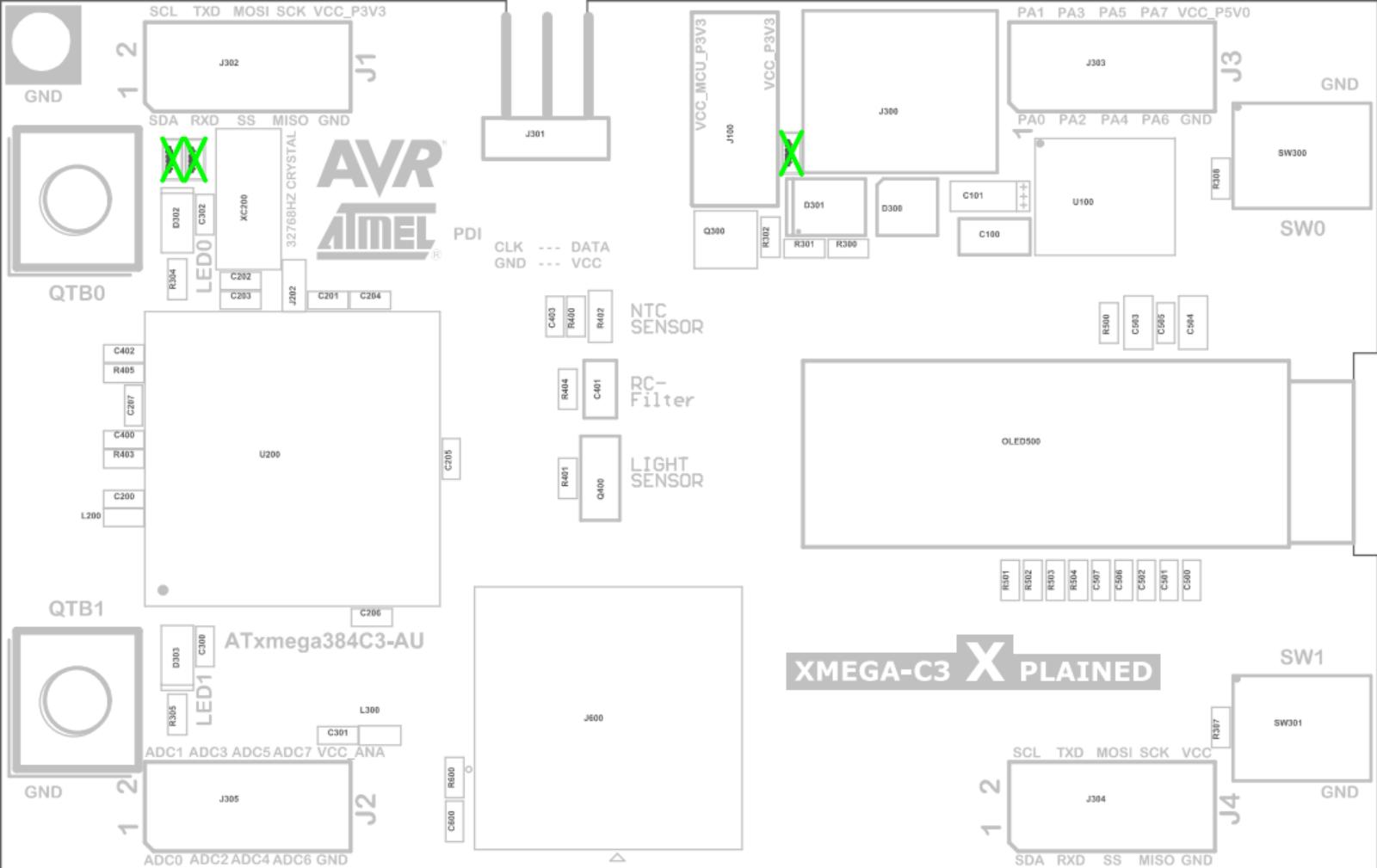
CUT TO DISCONNECT
DISPLAY_DA_CMD FROM
USARTD0_SPI_SS

VCC_P3V3 PD1 PD3 PE3 PE1
GND PD2 PD0 PE2 PE0

VCC_ANA_P3V3 PB7 PB5 PB3 PB1
GND PB6 PB4 PB2 PB0

A08-1429 Rev 3

PCBA LABEL



VCC_P5V0 PA7 PA5 PA3 PA1 TP301 TP302 TP303 TP300



VCC_P3V3 PC7 PC5 PC3 PC1

GND PA6 PA4 PA2 PA0

TP103 TP102



GND PC6 PC4 PC2 PC0

TP101



DATA -- CLK

PDI

VCC -- GND

TP100



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NTC SENSOR J400

RC-FILTER J402

LIGHT SENSOR J401

CUT THESE STRAPS TO
DISCONNECT THE
SENSORS IF NEEDED

A08-1429 Rev 3

PCBA LABEL

J204

CUT TO DISCONNECT
DISPLAY_DA_CMD FROM
USARTD0_SPI_SS

VCC_P3V3 PD1 PD3 PE3 PE1

VCC_ANA_P3V3 PB7 PB5 PB3 PB1

GND PD2 PD0 PE2 PE0

GND PB6 PB4 PB2 PB0

Component list

Top Level Block Diagram

Source Data From:
Project:
Variant:

XMEGA-C3_XPLAINED.PrjPcb
XMEGA-C3_XPLAINED.PrjPcb
default_variant



Report Date: 2012-9-27 13:07:37
Print Date: 2012-9-27 13:07:33

#	Designator	Quantity	Value	Manufacturer	MPN	Description
1	C100	1	10u	Murata	GRM31CR71C106KA12L	Ceramic capacitor, SMD 1206, X7R, 16V, ?0 %
2	C101	1	10u	Kemet	T494A106K016AT	SMD tantalum capacitor, ESR = 3 Ohm, 3216-18 (EIA) 1206
3	C200, C203, C204, C205, C206, C207, C301, C403, C505, C507, C600	11	100n	Kemet	C0402C104K4RACTU	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10%
4	C201, C202	2	10p			Ceramic capacitor, SMD 0402, NP0, 50V, +/-5%
5	C300, C302	2	1n			Ceramic capacitor, SMD 0402, X7R, 50V, +/-10%
6	C400, C402	2	4.7n			Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
7	C401	1	1u			Ceramic capacitor, SMD 0805, X7R, 16V, ?0 %
8	C500, C501, C502, C506	4	1uF	Murata	GRM188R61C105KA12D	Ceramic capacitor, SMD 0603, X5R, 16V, 10% (de19763)
9	C503, C504	2	2.2uF	Murata	GRM21BR61E225KA12L	Ceramic capacitor, SMD 0805, X5R, 25V, 10%, (de20024)
10	D300	1	PRTR5V0U2X	Philips	PRTR5V0U2X	Double rail-to-rail USB ESD protection diode
11	D301	1	SML-020MLT	ROHM	SML-020MLT	LED, 2 colour (RED/GREEN), transparent clear lens, SMD
12	D302, D303	2	EL17-21UYC/A2	Everlight	EL17-21UYC/A2	LED, Yellow , Wave length=591nm, SMD 0805, ?0 需PARTCOUNT=2
13	J100	1	Pin header 1x2 right angle	Pro-data International Corp	2213R-2G	1x2 pin header, right angle, 2.54 mm pitch, through-hole
14	J300	1	MJUSB-05-F-B-SM-A	SAMTEC	MJUSB-05-F-B-SM-A	USB Mini-B Connector, SMD
15	J301	1	2213R-6G	Multicomp	2213R-6G	Header, 2 Row, R/Angle, 6 Way, Inverted
16	J302, J303, J304, J305	4	CD075014 2X5	Freber	CD075014 2X5	2x5 pin header, 2.54 mm pitch, Pin-in-Paste THM
17	J600	1	SCHA5B0200	ALPS	SCHA5B0200	microSD memory card connector, push/push
18	JS100	1	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	Jumper cap for 2.54mm pinheader
19	L200	1	BLM15BB221SN1	Murata	BLM15BB221SN1	SMD RF inductor 0402, Z=220Ohm (@100MHz), Max R(dc)=0.80Ohm, Max current=200mA
20	L300	1	BLM18HE152SN1	Murata	BLM18HE152SN1	SMD RF inductor 0603, Z=1500Ohm (@100MHz), Max R(dc)=0.50Ohm, Max current=500mA
21	LABEL1	1	Label PCBA	ACT Logimark AS	505462	PCBA identification label PP Top White Gloss
22	OLED500	1	UG-2832H5WEQ04	WiseChip	UG-2832H5WEQ04	OLED display Module, 128x32 pixels
23	PCB1	1	A08-1429			XMEGA-C3 Xplained PCB, 4 layer, size 54mm x 85mm
24	Q300	1	2N7002,215	NXP	2N7002,215	N-Channel MOSFET. 60V, 0.300A continuous, 1.2A Peak. RDS(ON) = 3.8Ohm@VGS=4.5V, VGS(th)<2.5V
25	Q400	1	TEMT6000	vishay	TEMT6000	light sensor
26	R300, R301, R304, R305	4	220R			Thick film resistor, SMD 0402, 1/16W, 1%
27	R302	1	1M	KOA	RK73H1ETTP1004F	Thick film resistor, SMD 0402, 1/16W, 1%
28	R307, R308, R501, R502, R503, R504, R600	7	100k			Thick film resistor, SMD 0402, 1/16W, 1%
29	R400	1	470k			Thick film resistor, SMD 0402, 1/16W, 1%
30	R401	1	4.7k			Thick film resistor, SMD 0402, 1/16W, 1%
31	R402	1	NCP18WF104J03RB	Murata	NCP18WF104J03RB	NTC Thermistor 100kOhm @ 25deg, 1/10W, 5%, SMD 0603
32	R403, R404, R405	3	1k			Thick film resistor, SMD 0402, 1/16W, 1%
33	R500	1	390k			Thick film resistor, SMD 0402, 1/16W, 1%
34	SD600	1	2GB microSD card		2GB microSD card	2GB microSD card without adapters and case
35	SW300, SW301	2	SKRAAKE010	ALPS	SKRAAKE010	6.2x6.2 mm SMD tact switch, same as A08-0091 but less force is needed
36	U100	1	NCP111L PST33T3G	ON Semiconductor	NCP111L PST33T3G	The low power version of the popular NCP111
37	U200	1	ATxmega384C3-AU	ATMEL	ATxmega384C3-AU	AVR 8-bit RISC MCU
38	XC200	1	32.768kHz +/-20PPM 7pF SMD	Micro Crystal	MS1V-T1K 32.768kHz 7pF +/-20PPM TA	32k768 crystal, +/-20ppm, CL=7pF, max ESR 60kOhm, SMD

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Notes

Approved