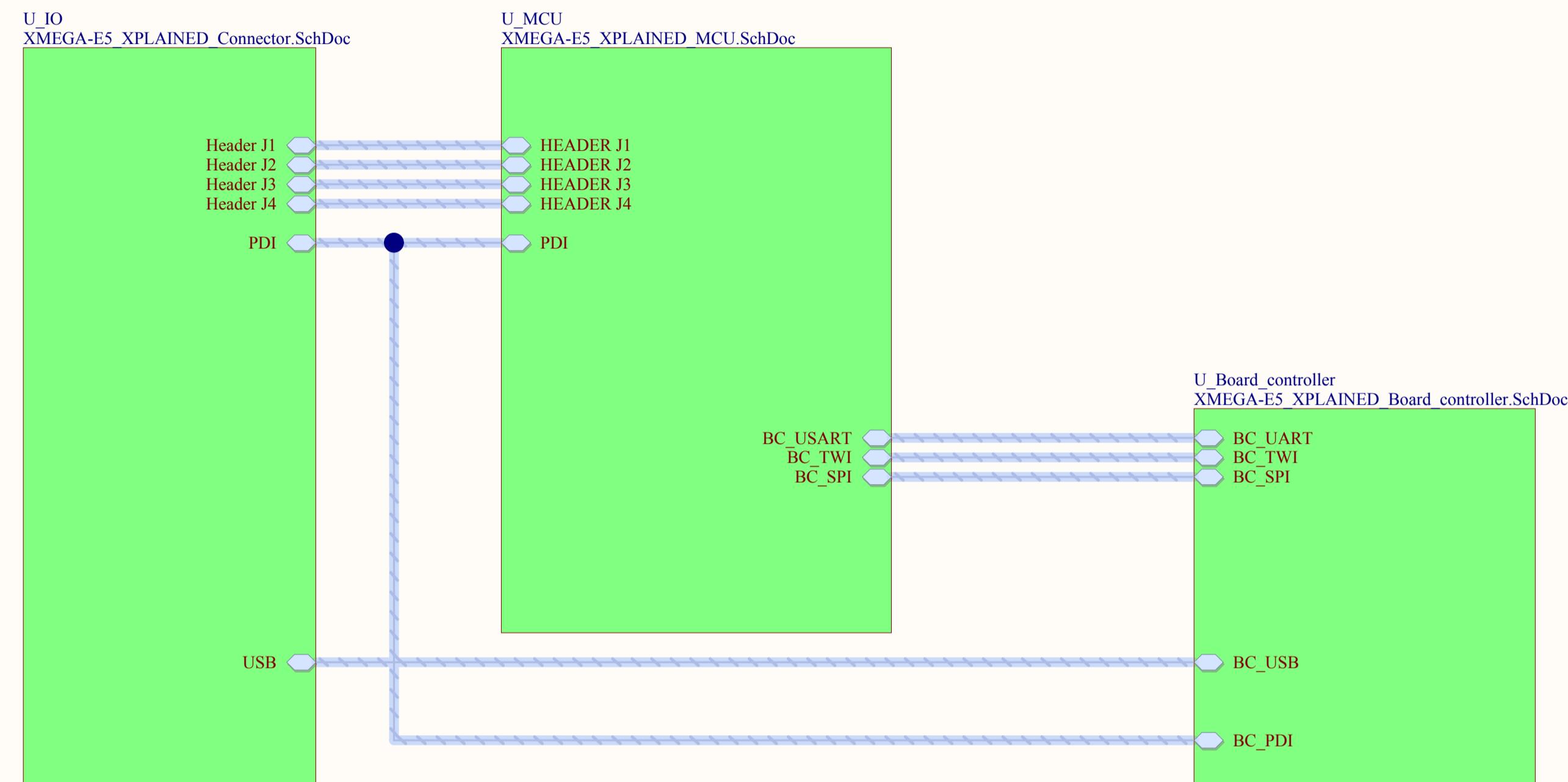
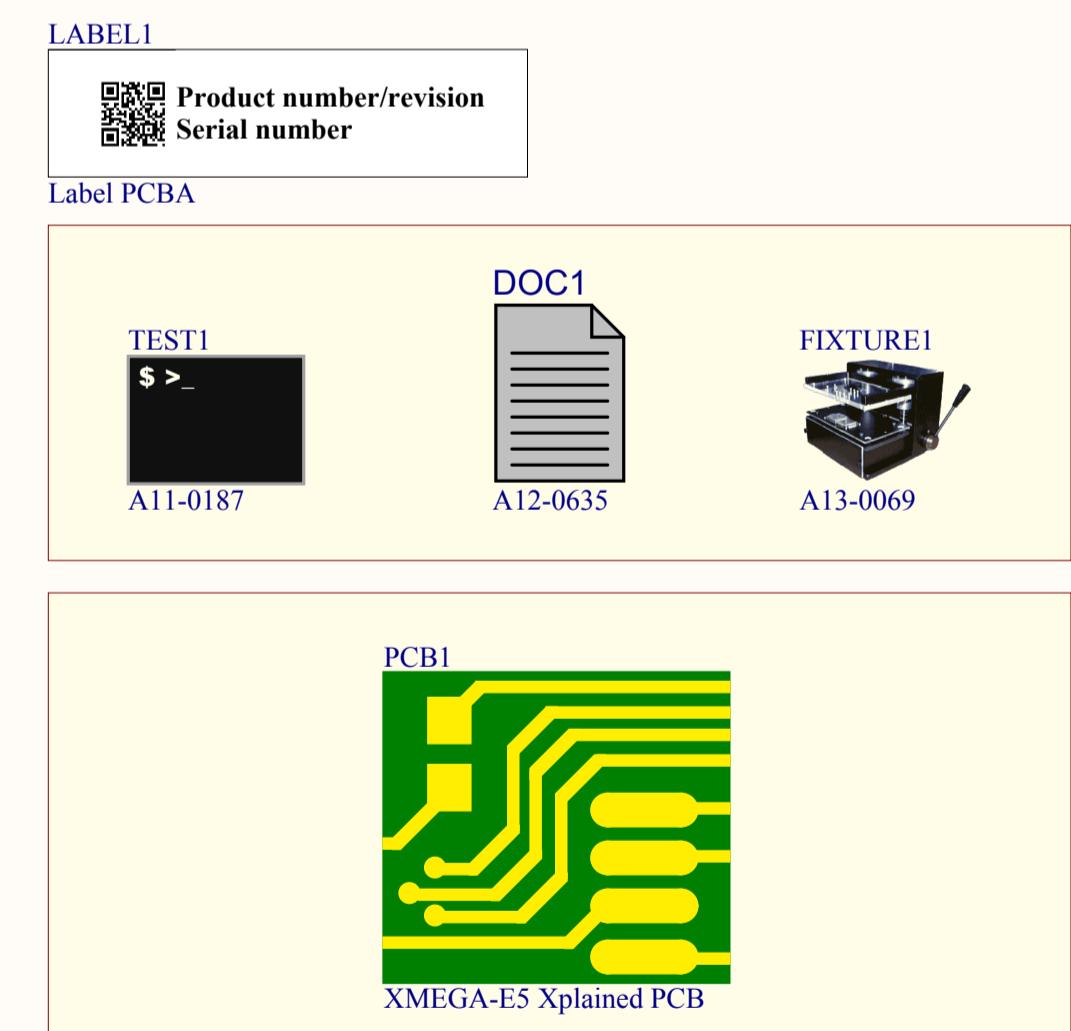


A



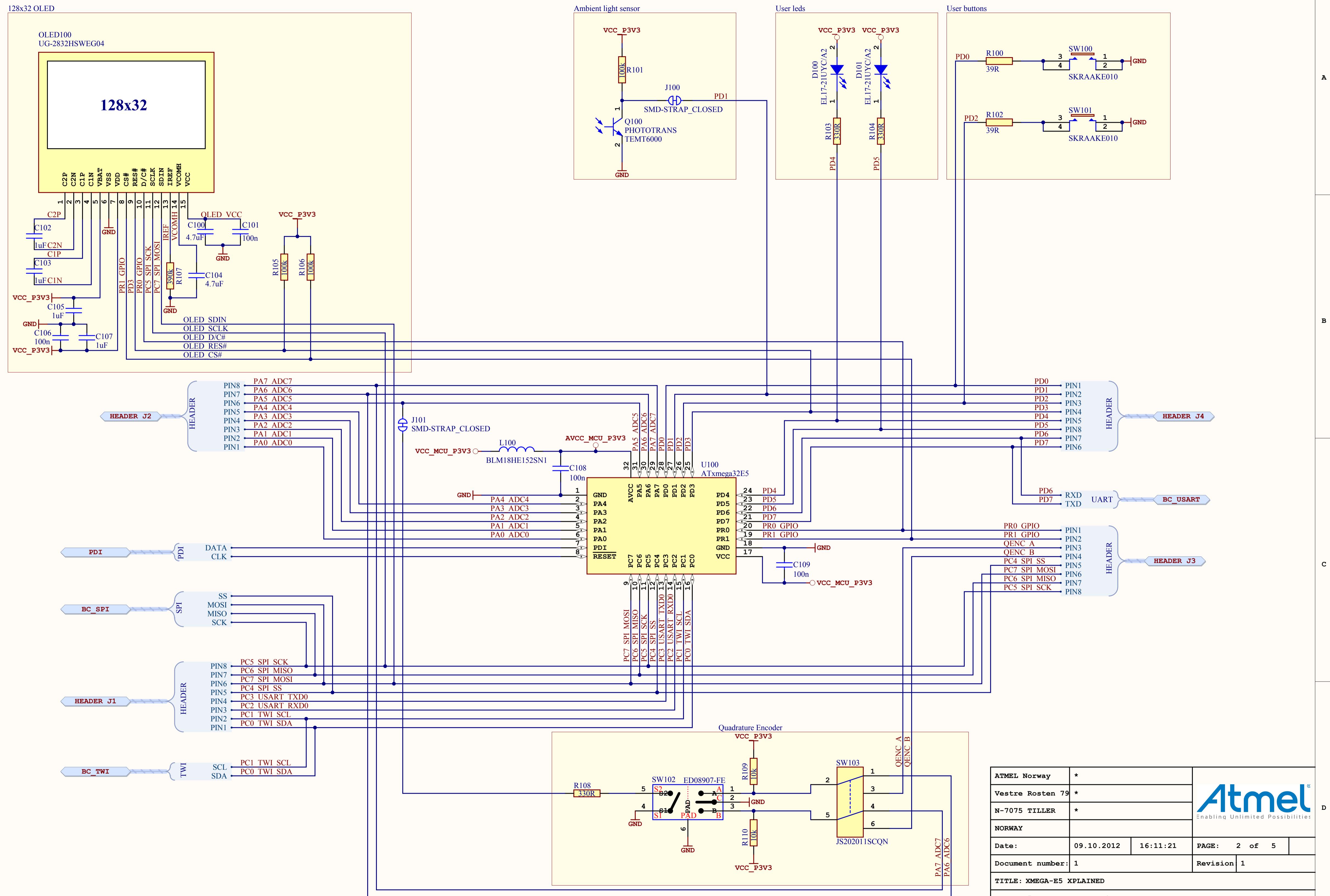
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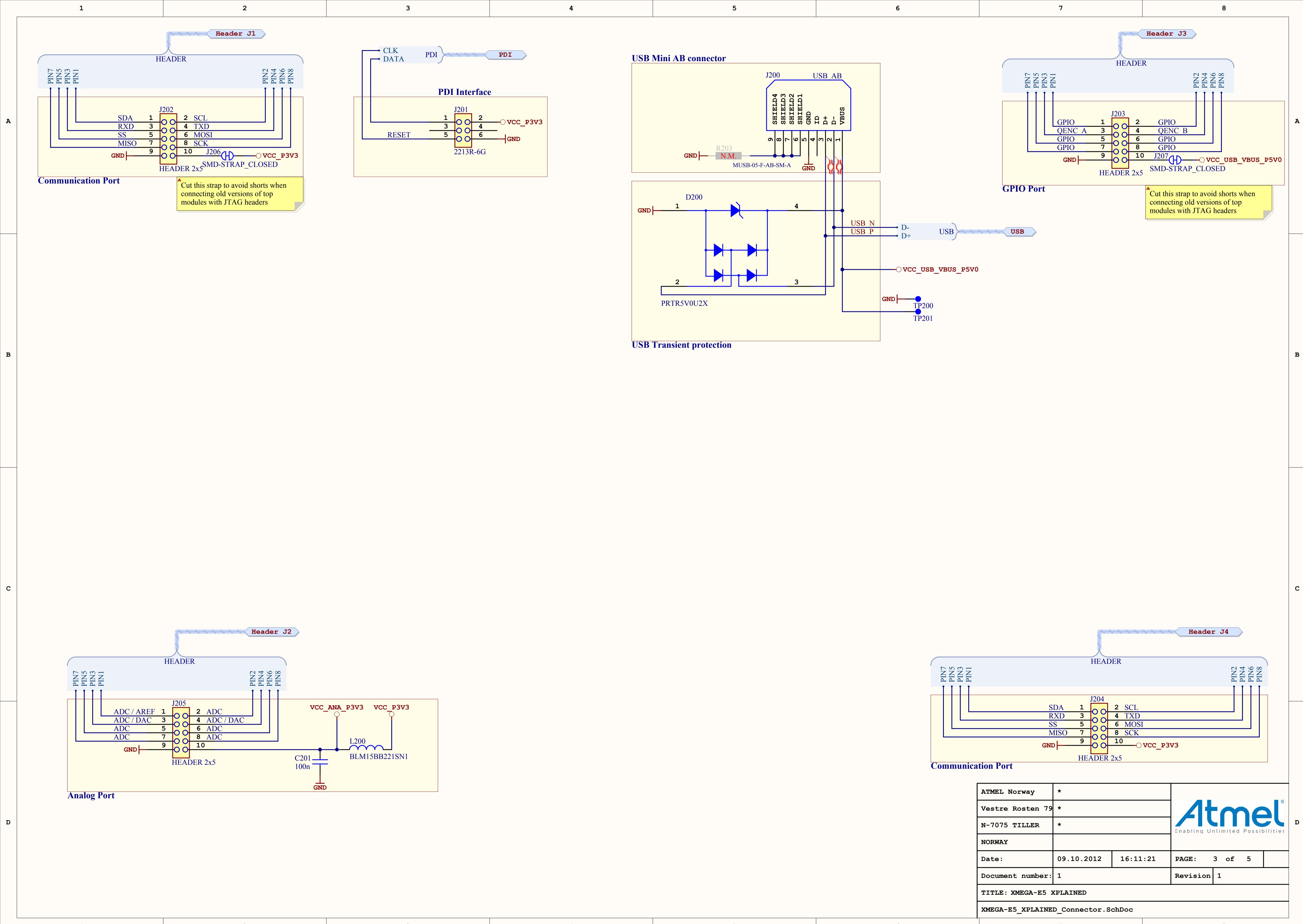


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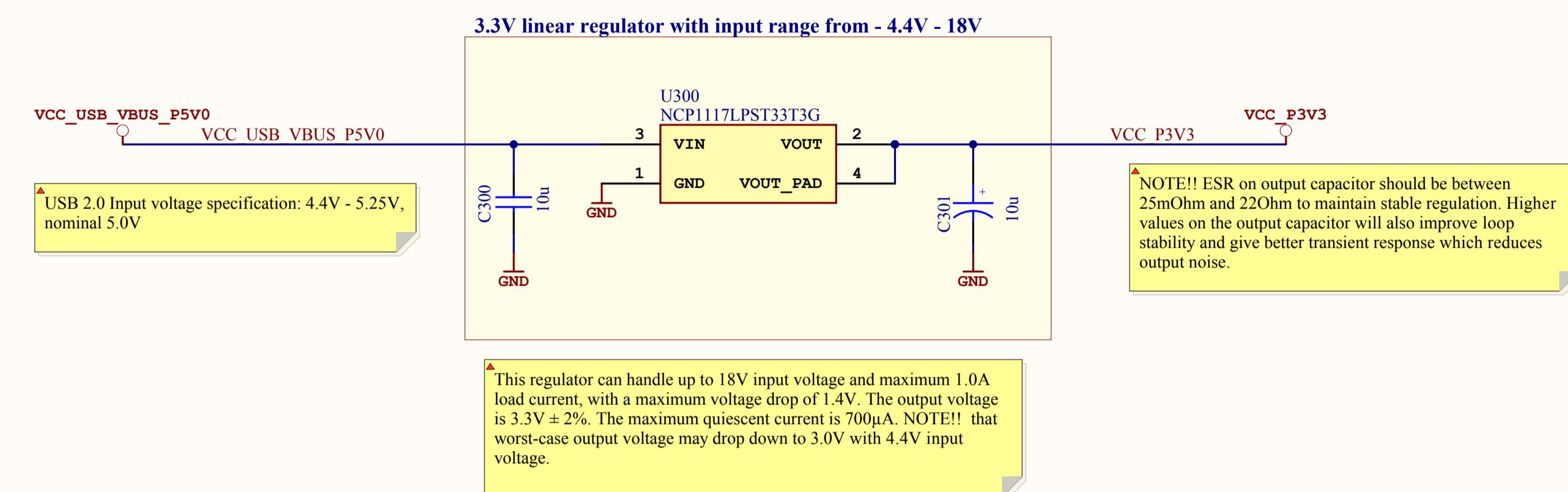
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Vestre Rosten 79	*		
N-7075 TILLER	*		
NORWAY			
Date:	09.10.2012	16:11:21	PAGE: 1 of 5
Document number:	1	Revision	1
TITLE: XMEGA-E5_XPLAINED			
XMEGA-E5_XPLAINED_TopLevel.SchDoc			

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Enabling Unlimited Possibilities

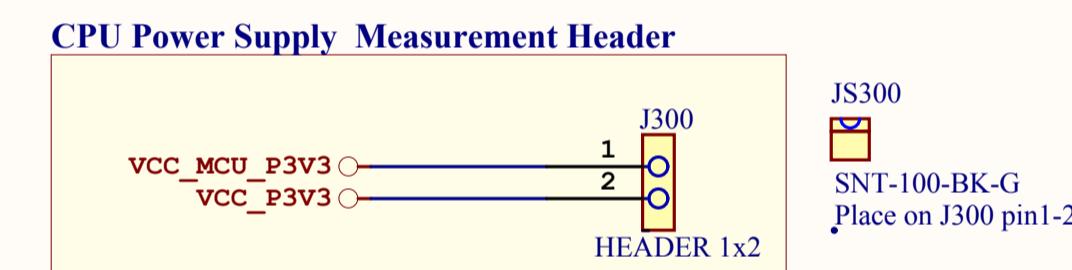




A



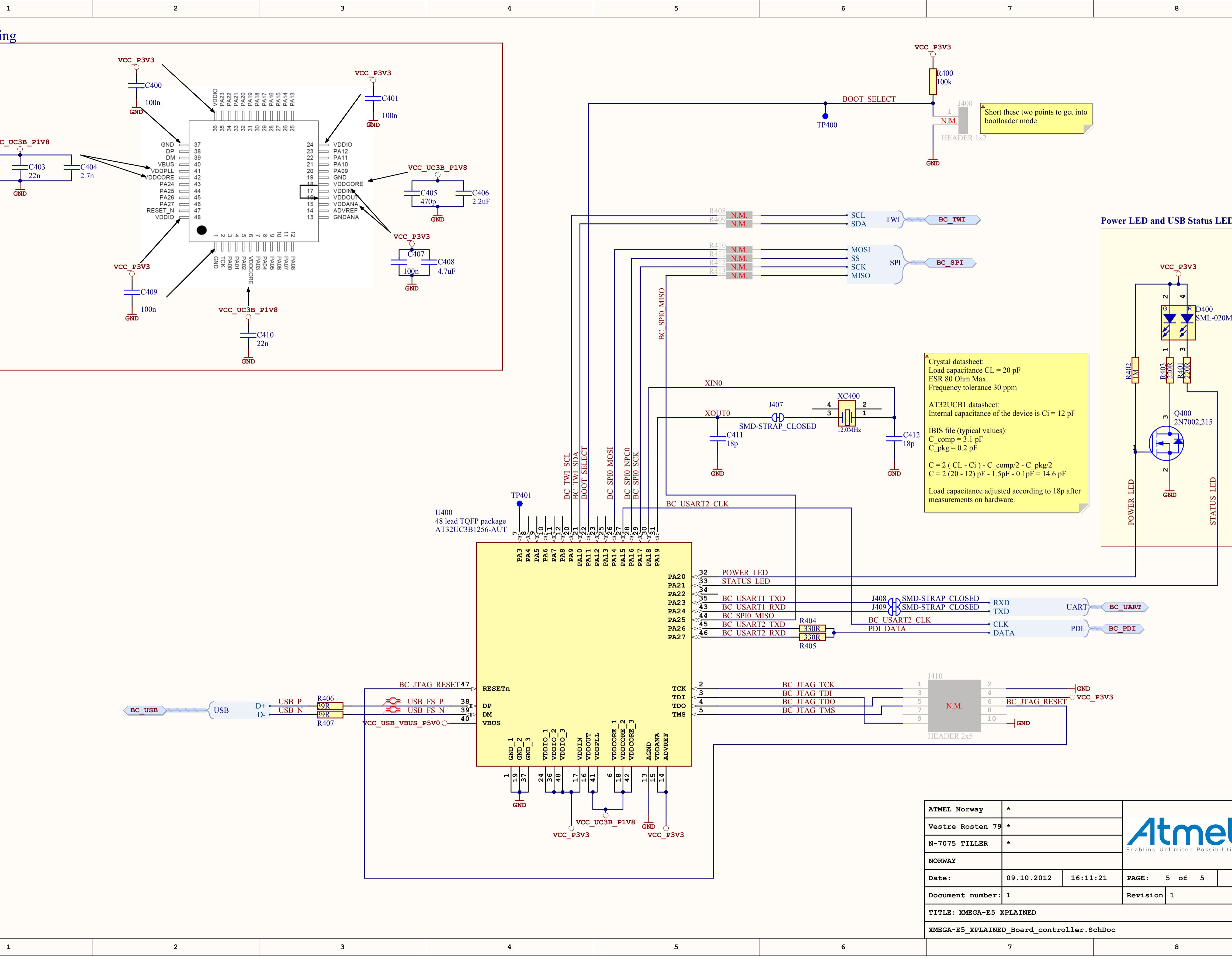
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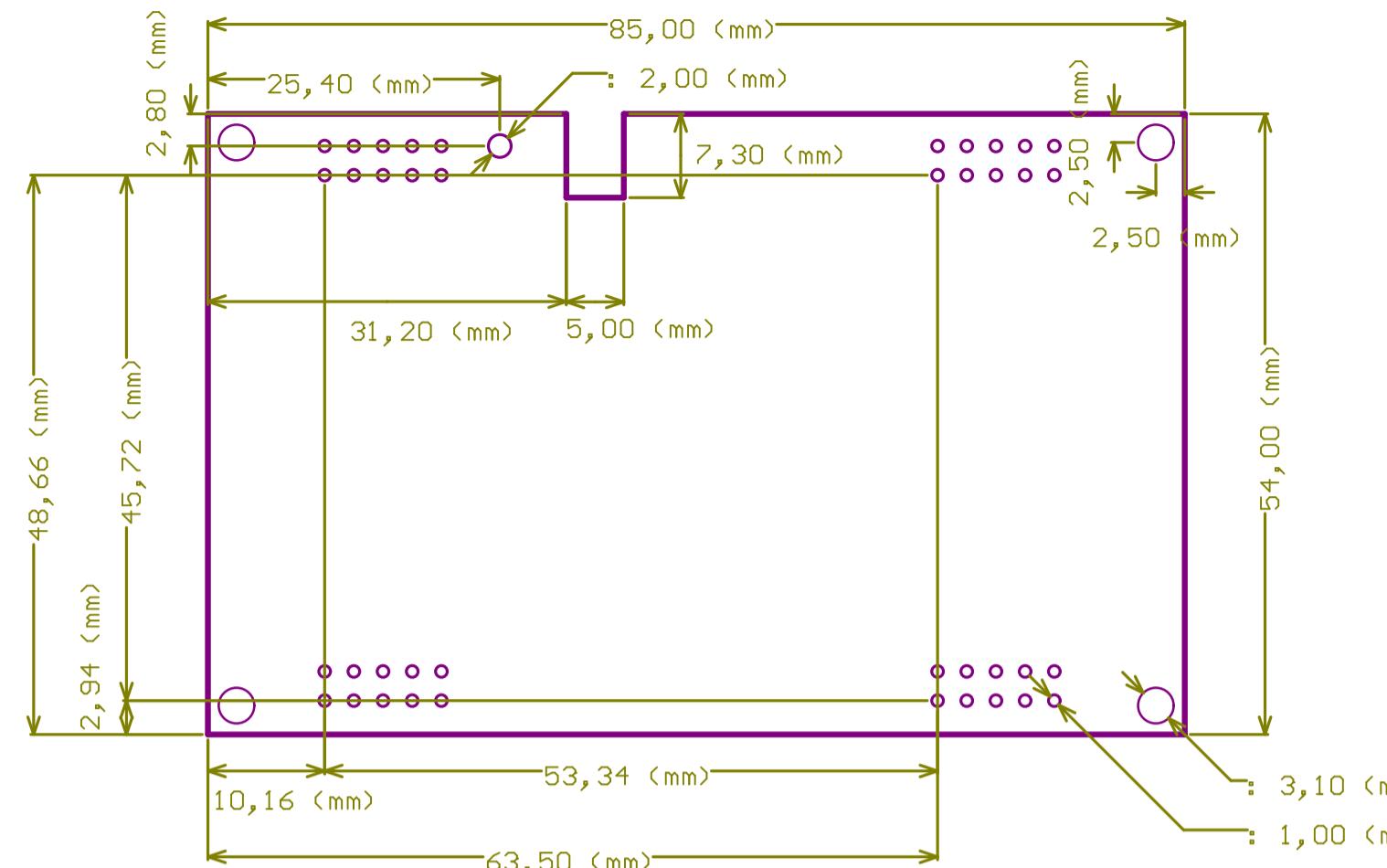
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ATMEL Norway	*		
Vestre Rosten 79	*		
N-7075 TILLER	*		
NORWAY			
Date:	09.10.2012	16:11:21	PAGE: 4 of 5
Document number:	1	Revision	1
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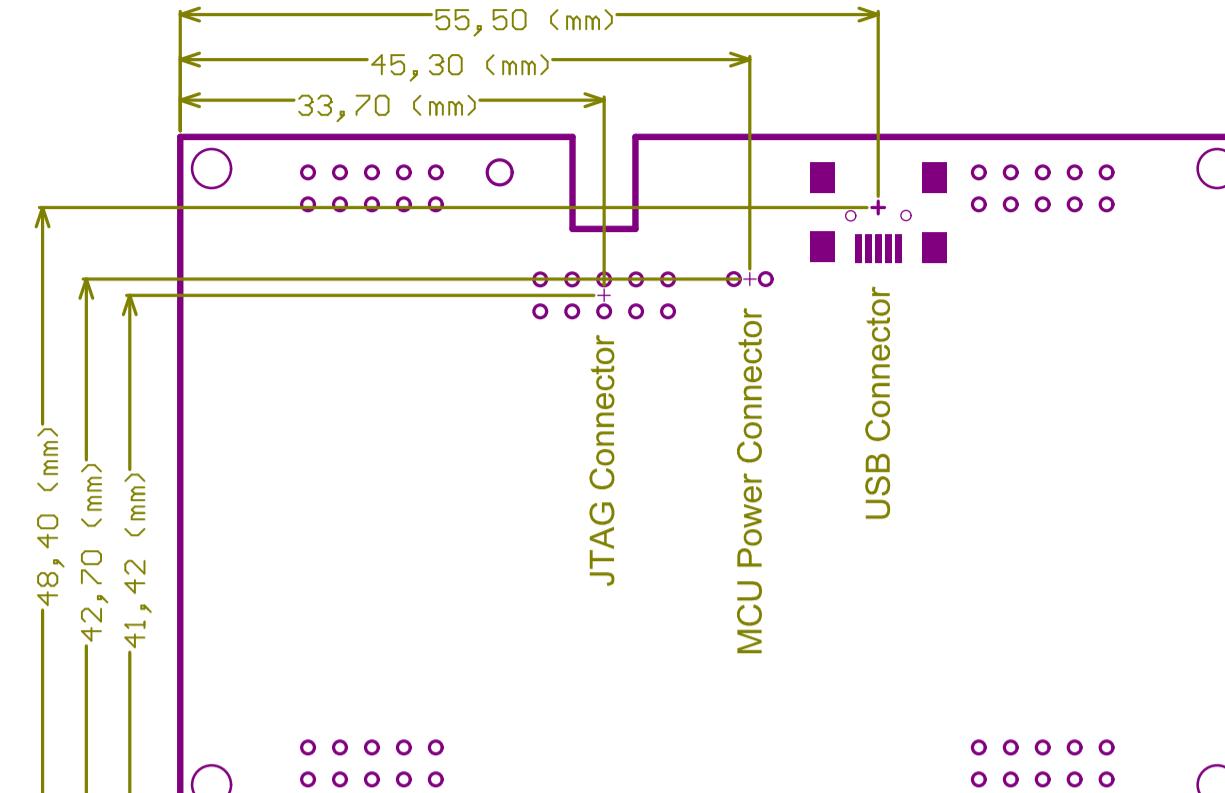
Atmel®
Enabling Unlimited Possibilities



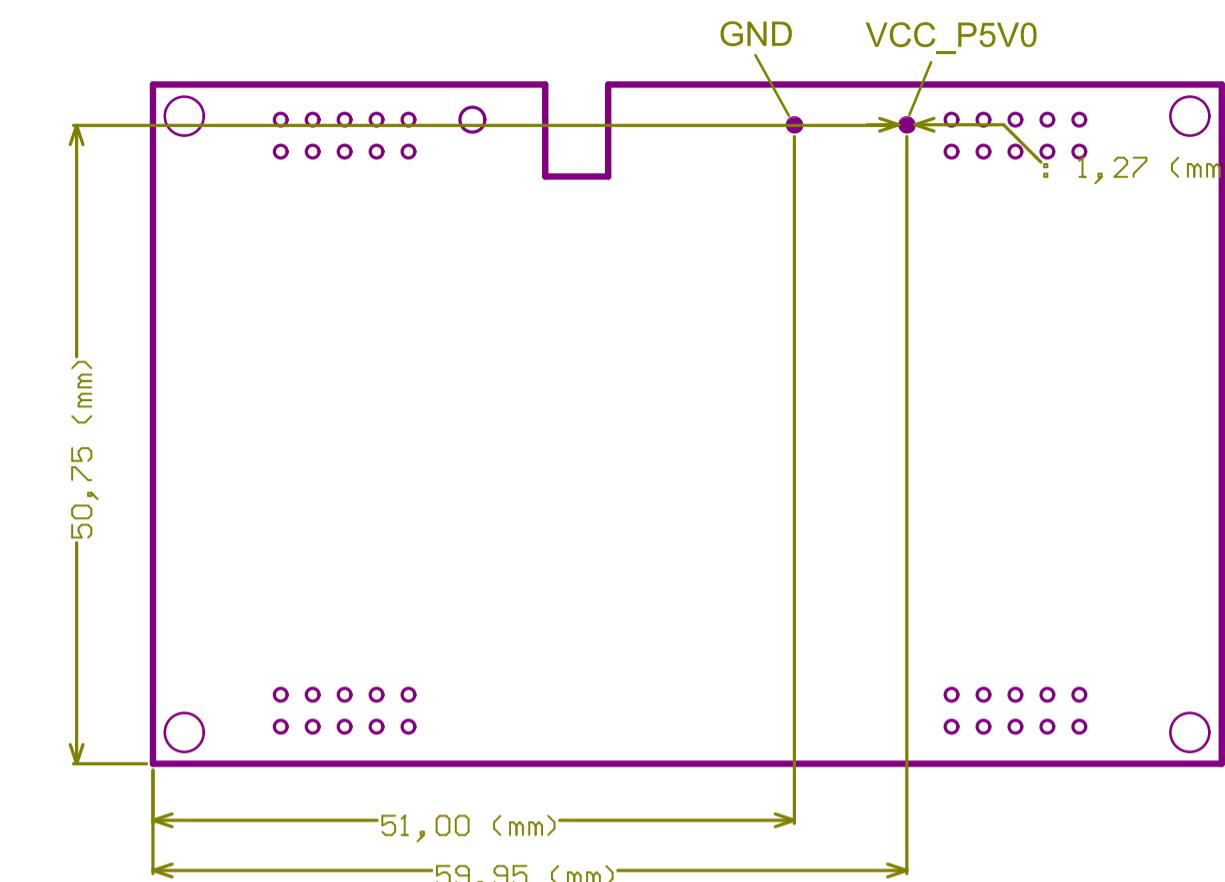
Mechanical Dimensions:



Connector Placement:



Testpoint Placement:



The diagram illustrates a cross-section of a four-layer printed circuit board (PCB) stack-up. The total thickness of the board is specified as $1.6 \text{ mm} +/-. 0.15$. The stack-up consists of the following layers from top to bottom:

- LAYER 1:** Solder Level, Copper Plate, Copper Foil, Prepregs.
- LAYER 2:** Copper Foil, Prepregs.
- CORE:** 1200 μm .
- LAYER 3:** Copper Foil, Prepregs.
- LAYER 4:** Copper Foil, Copper Plate, Solder Level.

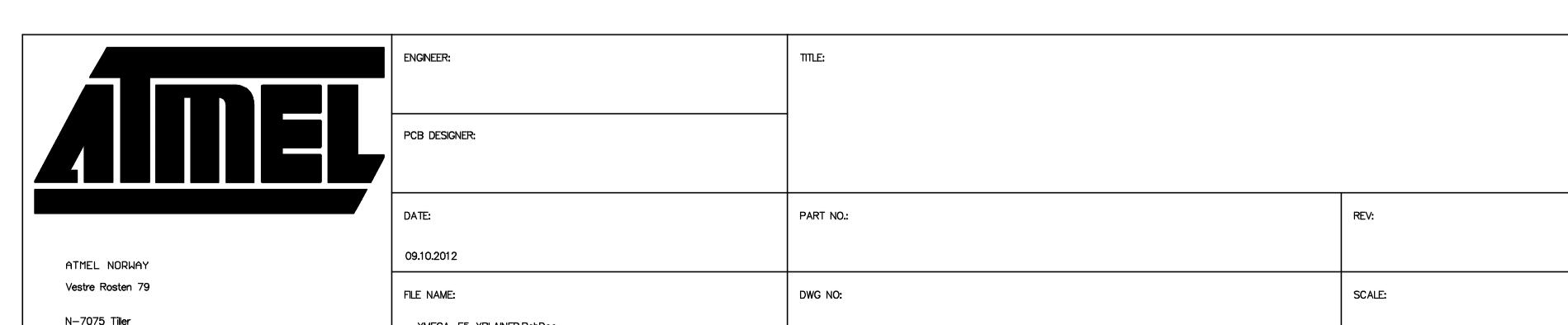
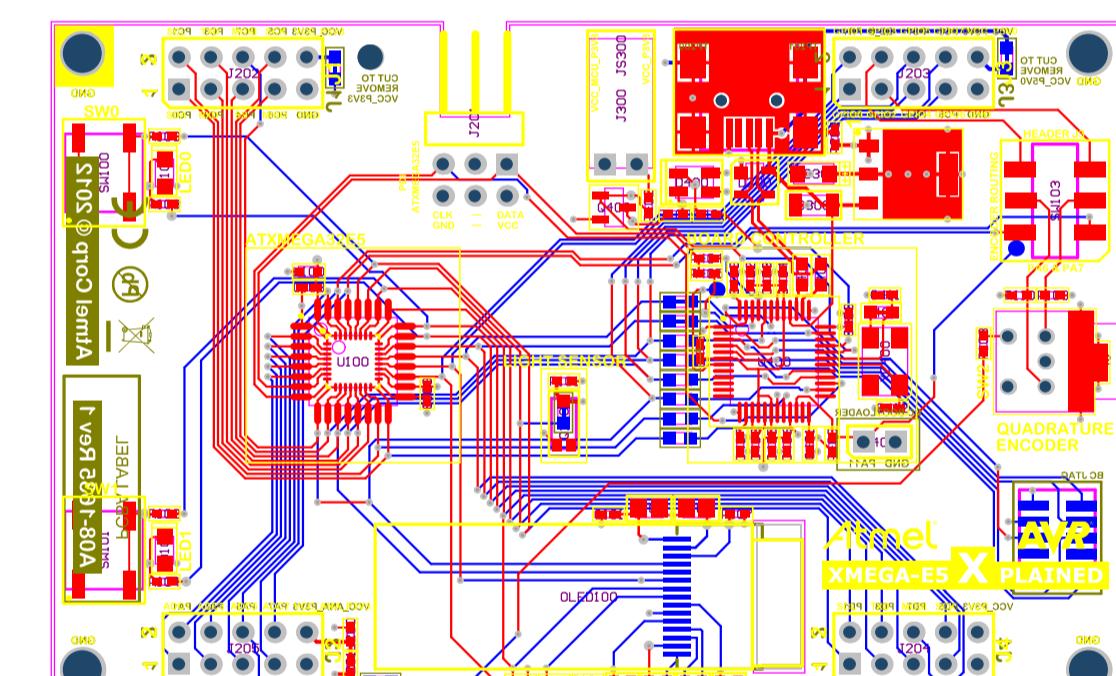
Annotations provide specific dimensions for each layer and material type. For example, the total thickness of the top two layers (Layer 1 and Layer 2) is indicated as 35 μm , and the total thickness of the bottom two layers (Layer 3 and Layer 4) is also indicated as 35 μm . The core thickness is explicitly labeled as 1200 μm . The copper foils are each 35 μm thick, and the prepreg layers are each 130 μm thick, with a quantity of 2x1080. Notes 1A and 2A are referenced for additional information on the top and bottom layers respectively.

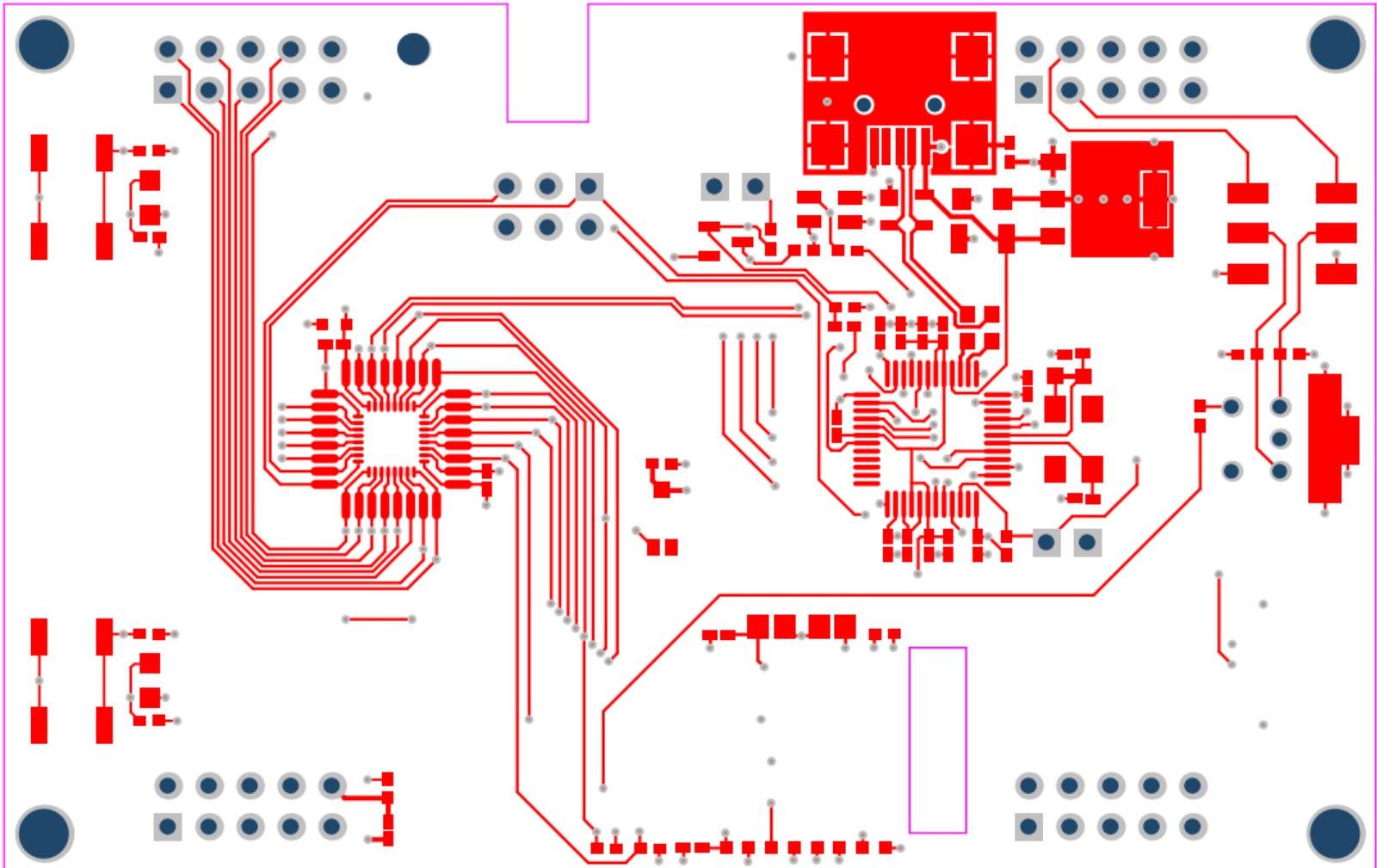
NOTE 1A: DIELECTRIC FR4
2A: SURFACE PROTECTION: Chemical Gold

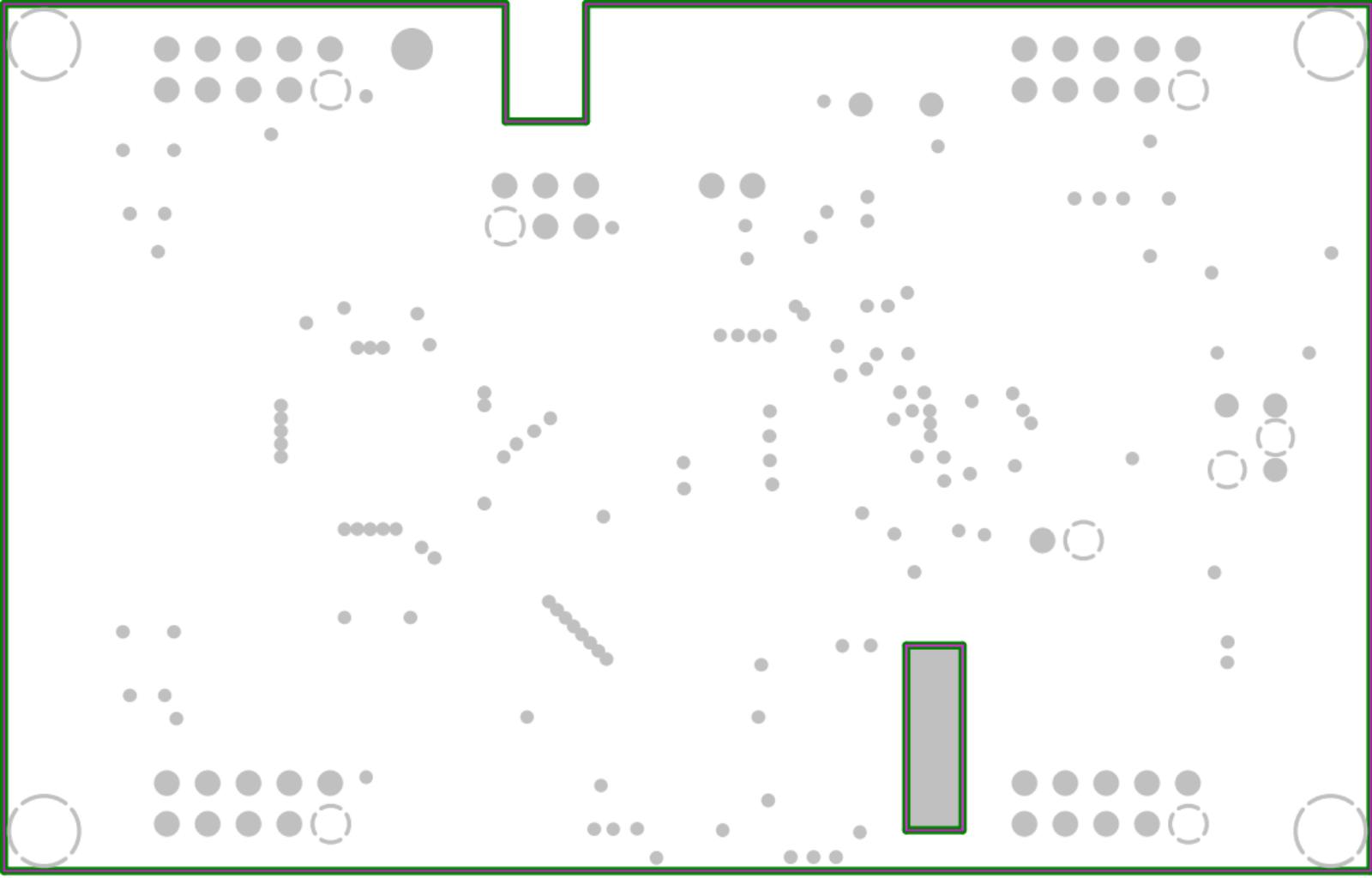
THE BOARD MUST BE RoHS COMPLIANT

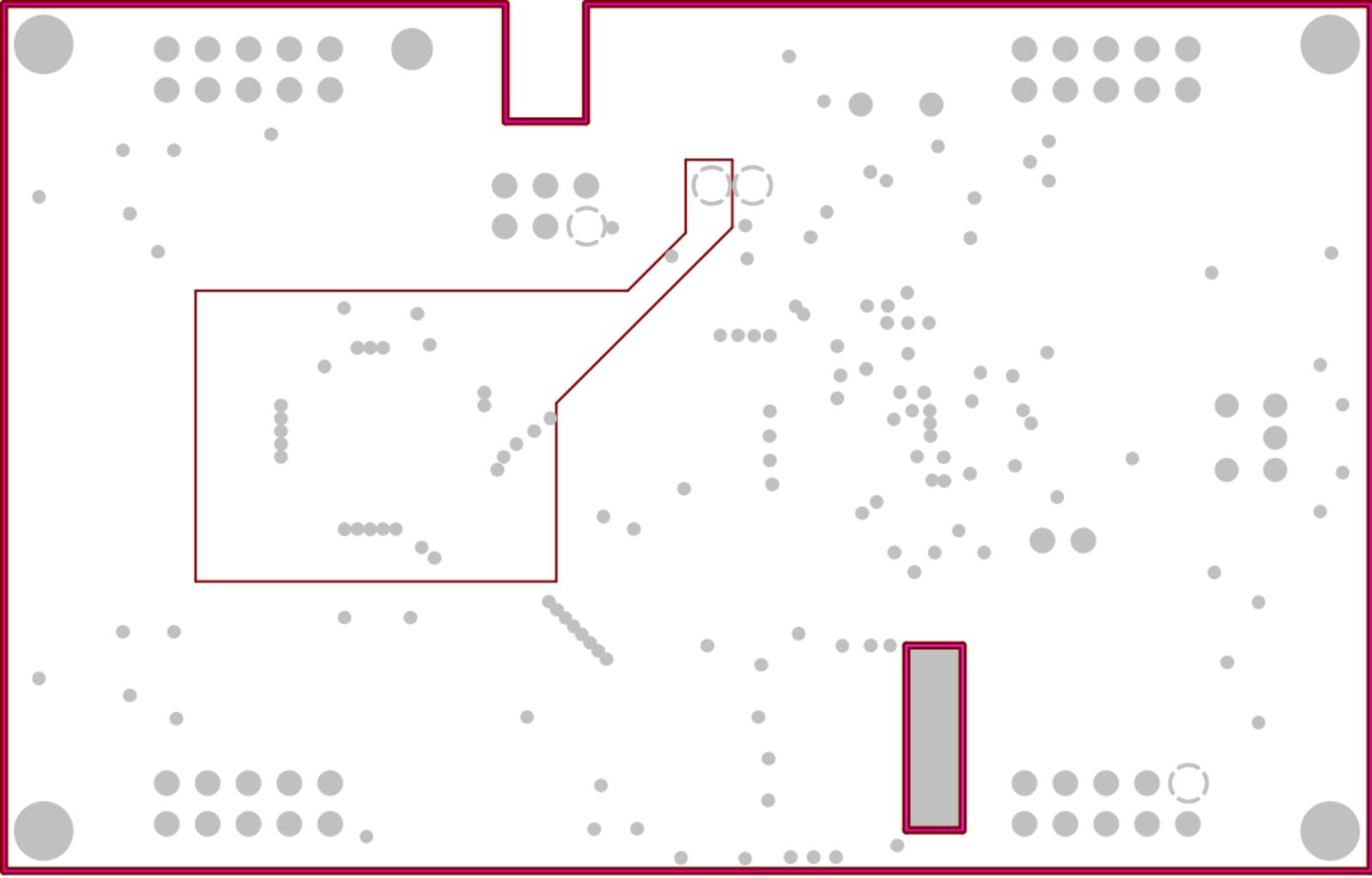
SCALE - NONE

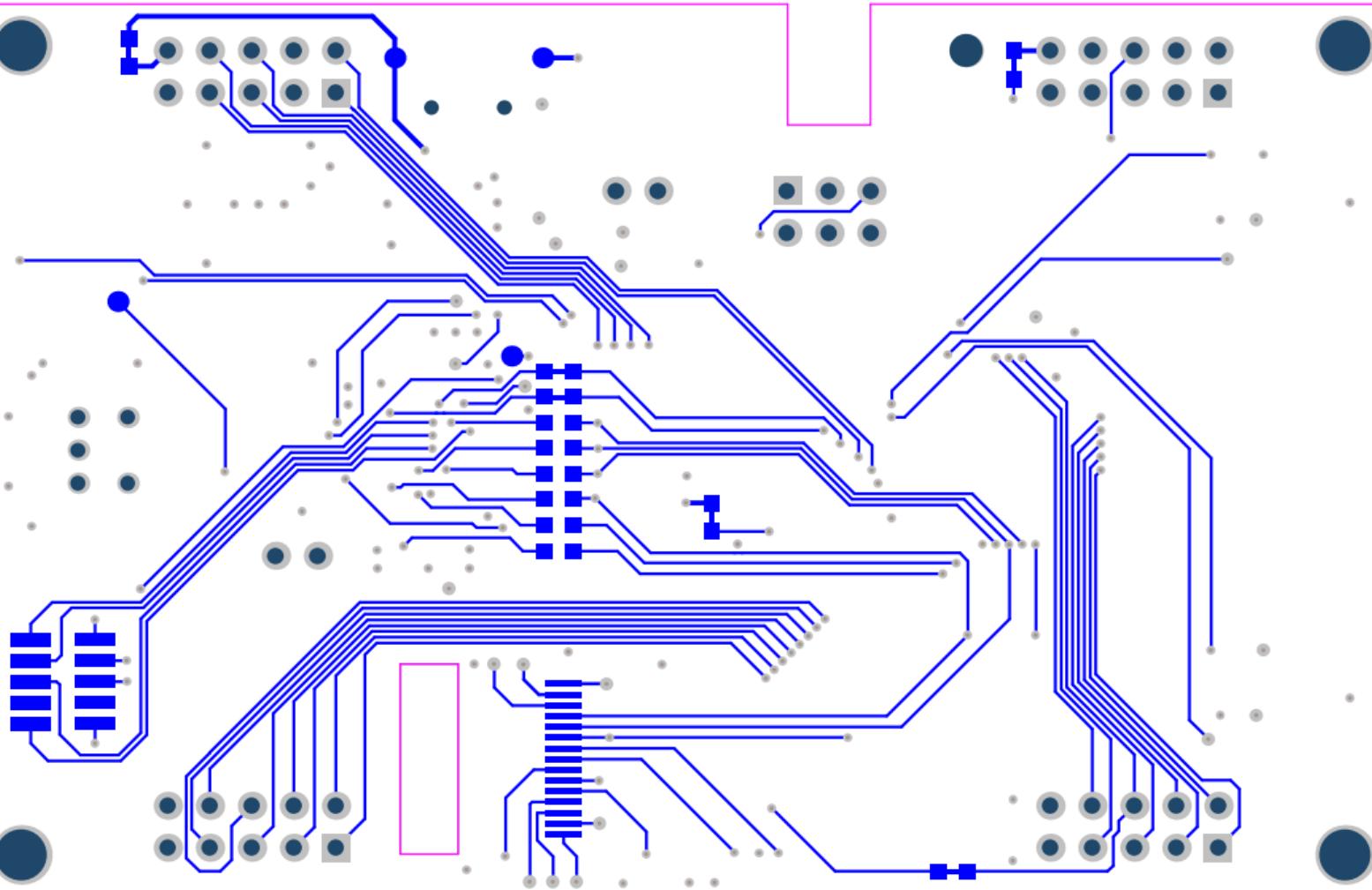
- L1 Mounting Pads / Low Freq. Signals
- L2 Ground
- L3 Power
- L4 Low Freq. Signals

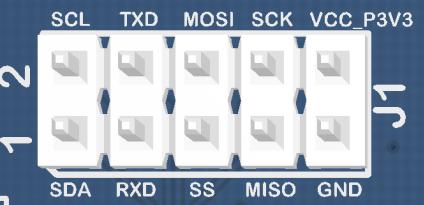




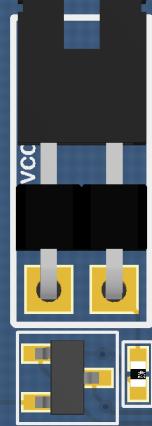
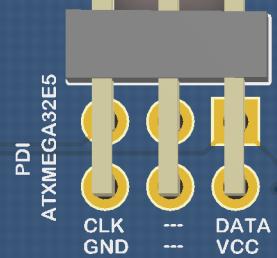








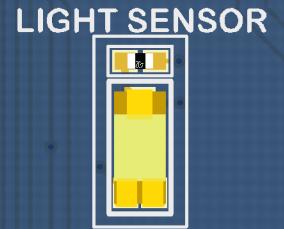
LED0



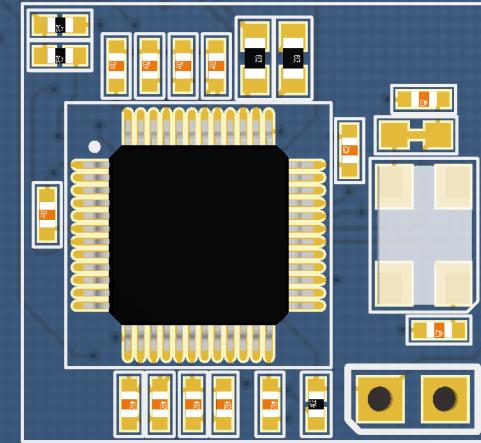
J2



LED1



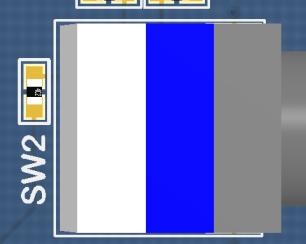
BOARD CONTROLLER



J3



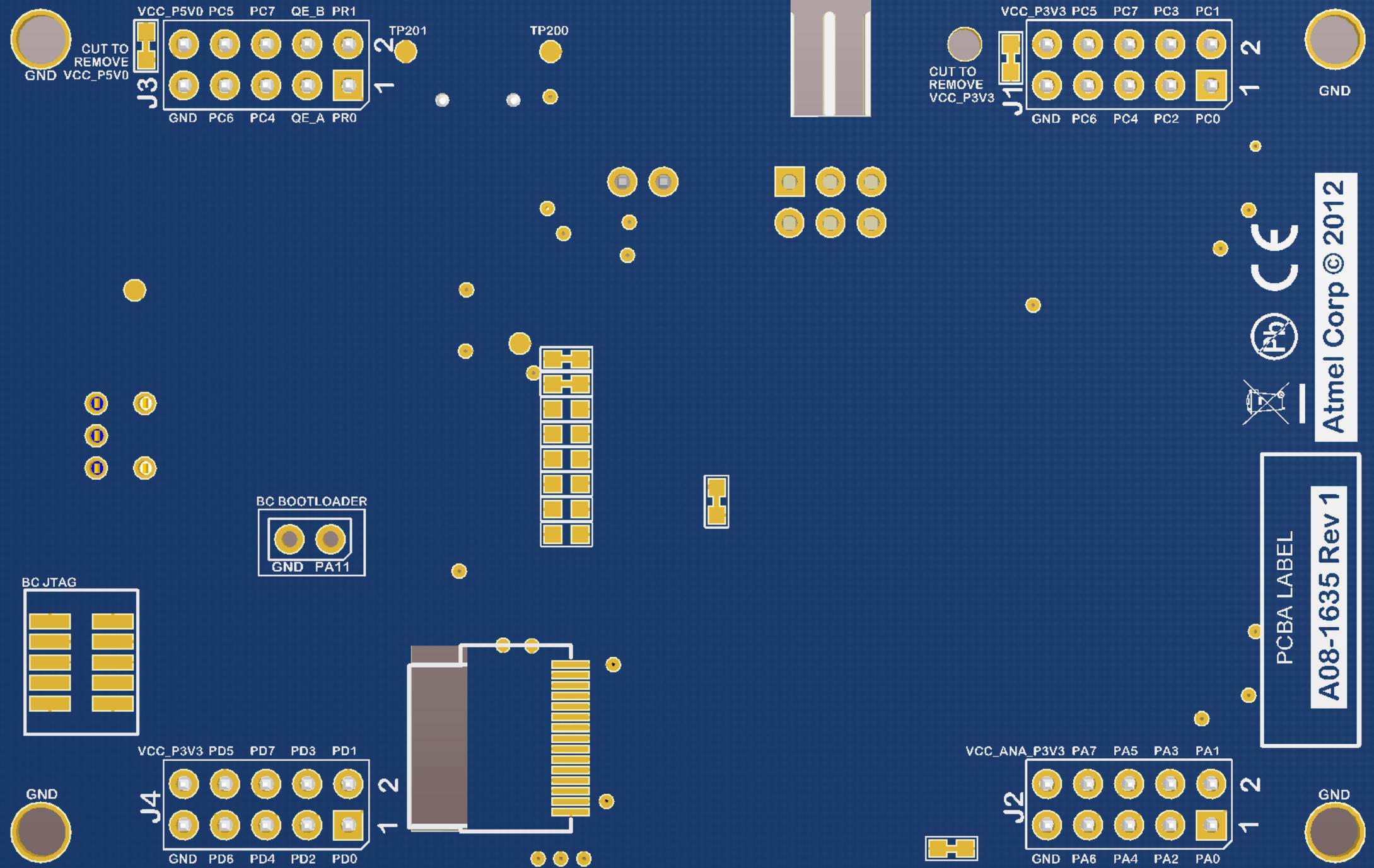
J4



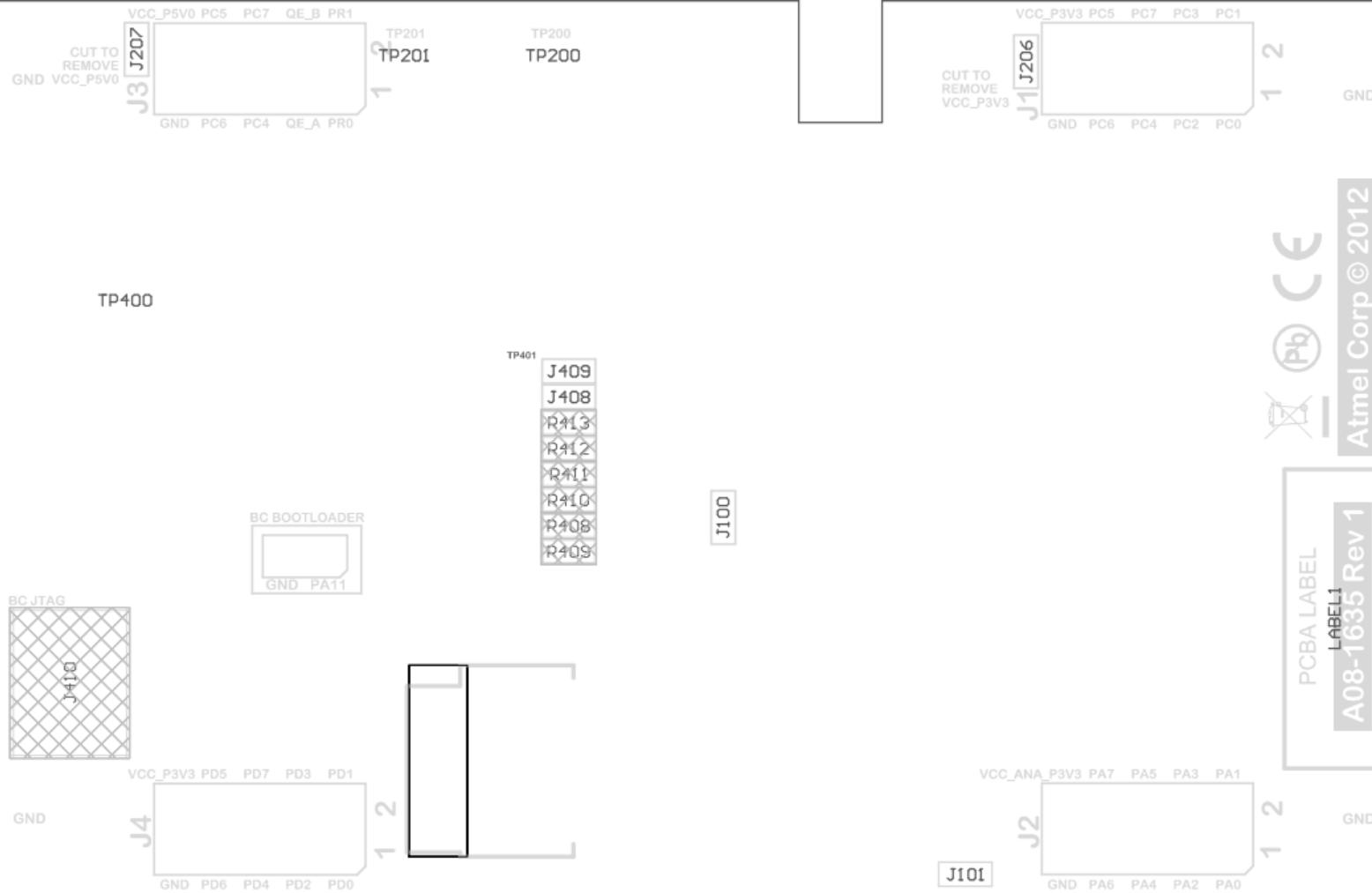
QUADRATURE
ENCODER

Atmel®
AVR®
XMEGA-E5 X PLAINED









Component list

XMEGA-E5 XPLAINED

Source Data From:

XMEGA-E5_XPLAINED.PrbPcb

Project:

XMEGA-E5_XPLAINED.PrbPcb

Variant:

Default_assembly

Report Date: 09.10.2012 16:11:41
Print Date: 09.10.2012 16:11:39



#	Designator	Quantity	Value	Manufacturer	MPN	Description
1	C100, C104	2	4.7uF			Ceramic capacitor, SMD 0805, X7R, 16V, 10%,
2	C101, C106, C108, C109, C201, C400, C401, C407, C409	9	100n	Kemet	C0402C104K4RACTU	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10%
3	C102, C103, C105, C107	4	1uF	Murata	GRM188R61C105KA12D	Ceramic capacitor, SMD 0603, X5R, 16V, 10% (de19763)
4	C300	1	10u	Murata	GRM31CR71C106KA12L	Ceramic capacitor, SMD 1206, X7R, 16V, +/-10 %
5	C301	1	10u	Kemet	T49A106K016AT	SMD tantalum capacitor, ESR = 3 Ohm, 3216-18 (EA) 1206
6	C402, C406	2	2.2uF	Kemet	C0402C225M9PAC	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20%
7	C403, C410	2	22n			Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
8	C404	1	2.7n			Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
9	C405	1	470p			Ceramic capacitor, SMD 0402, X7R, 50V, +/-10%
10	C408	1	4.7uF	Murata	GRM155R60J475ME87D	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20%
11	C411, C412	2	18p			Ceramic capacitor, SMD 0402, NPO, 50V, +/-5%
12	D100, D101	2	EL17-21UYC/A2	Everlight	EL17-21UYC/A2	LED, Yellow , Wave length=591nm, SMD 0805, +/-70°
13	D200	1	PRTR5V0U2X	Philips	PRTR5V0U2X	Double rail-to-rail USB ESD protection diode
14	D400	1	SML-020MLT	ROHM	SML-020MLT	LED, 2 colour (RED/GREEN), transparent clear lens, SMD
15	DOC1	1	A09-1842 PCBA Files	ATMEL		XMEGA-E5 Xplained PCB Documentation
16	Fixture1	1	XMEGA-B1 Xplained Jupiter Test Fixture	ESCA TEC	XMEGA-B1 Xplained Jupiter Test Fixture	XMEGA-B1 Xplained Jupiter Test Fixture
17	J200	1	MUSB-05-F-AB-SM-A	SAMTEC	MUSB-05-F-AB-SM-A	USB Mini-AB Connector, SMD
18	J201	1	2213R-6G	Multicomp	2213R-6G	Header, 2 Row , R/Angle, 6 Way, Inverted
19	J202, J203, J204, J205	4	CD075014 2X5	Freber	CD075014 2X5	2x5 pin header, 2.54 mm pitch, Pin-in-Paste THM
20	J300	1	Pin header 1x2 right angle	Pro-data International Corp	2213R-2G	1x2 pin header, right angle, 2.54 mm pitch, through-hole
21	JS300	1	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	Jumper cap for 2.54mm pinheader
22	L100	1	BLM18HE152SN1	Murata	BLM18HE152SN1	SMD RF inductor 0603, Z=1500Ohm (@100MHz), Max R(dc)=0.50Ohm, Max current=500mA
23	L200	1	BLM15BB221SN1	Murata	BLM15BB221SN1	SMD RF inductor 0402, Z=220Ohm (@100MHz), Max R(dc)=0.80Ohm, Max current=200mA
24	LABEL1	1	Label PCBA	ACT Logimark AS	505462	PCBA identification label PP Top White Gloss
25	OLED100	1	UG-2832HSWEG04	WiseChip	UG-2832HSWEG04	OLEDisplay Module, 128x32 pixels
26	PCB1	1	XMEGA-E5 Xplained PCB	NCAB		XMEGA-E5 Xplained PCB, 4 layer, size 54mm x 85mm
27	Q100	1	TEM76000	vishay	TEM76000	light sensor
28	Q400	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
29	R100, R102	2	39R			Thick film resistor, SMD 0402, 1/16W, 1%
30	R101, R105, R106, R400	4	100k			Thick film resistor, SMD 0402, 1/16W, 1%
31	R103, R104, R108, R404, R405	5	330R			Thick film resistor, SMD 0402, 1/16W, 1%
32	R107	1	390k			Thick film resistor, SMD 0402, 1/16W, 1%
33	R109, R110	2	10k			Thick film resistor, SMD 0402, 1/16W, 1%
34	R401, R403	2	220R			Thick film resistor, SMD 0402, 1/16W, 1%
35	R402	1	1M	KOA	RK73H1ETTP1004F	Thick film resistor, SMD 0402, 1/16W, 1%
36	R406, R407	2	39R	KOA	RK73H1JTTD39R0F	Thick film resistor, SMD 0603, 1/10W, 1%
37	SW100, SW101	2	SKRAAKE010	ALPS	SKRAAKE010	6.2x6.2 mm SMD tact switch, same as A08-0091 but less force is needed
38	SW102	1	ED08907M-FE	Dongguan Changtaier Electronic CO LTD	ED08907M-FE15C7.0-C10-200	8mm Rotary encoder with switch
39	SW103	1	JS202011SCQN	C&K Components	JS202011SCQN	Slide Switch, C&K, 2 Pos 2 Pol, SMD
40	TEST1	1	XMEGA-E5 Xplained test	ATMEL		Fixture test for XMEGA-E5 Xplained
41	U100	1	ATxmega32E5	ATMEL	ATxmega32E5-AU	AVR 8-bit RISC MCU TQFP32
42	U300	1	NCP111LPST33T3G	ON Semiconductor	NCP111LPST33T3G	The low power version of the popular NCP1117
43	U400	1	AT32UC3B1256-AUT	ATMEL	AT32UC3B1256-AUT	AVR 32-bit RISC MCU
44	XC400	1	12.0MHz	Fox Electronics	FQ5032B-12-C-C-C-200-1 / 738B-12	Fox FQ5032B 12.0MHz SMD crystal 738B-12

Notes

Approved

75