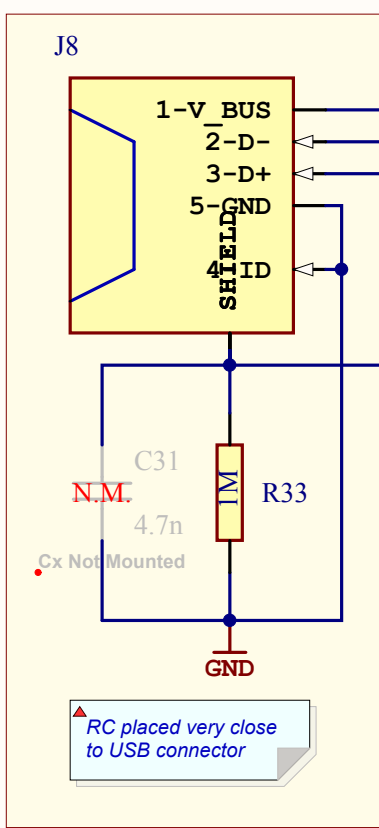
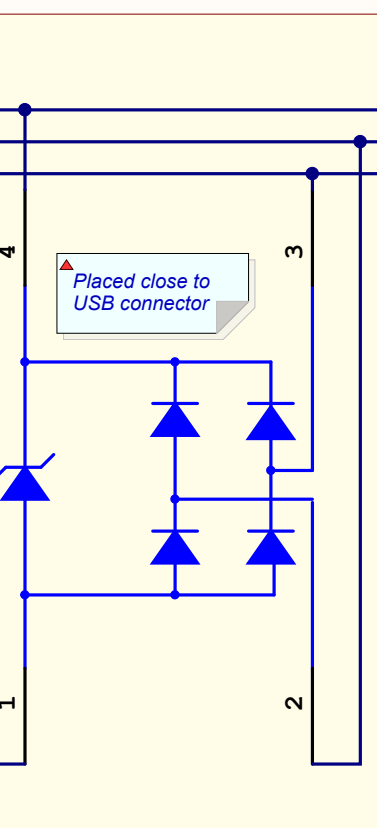


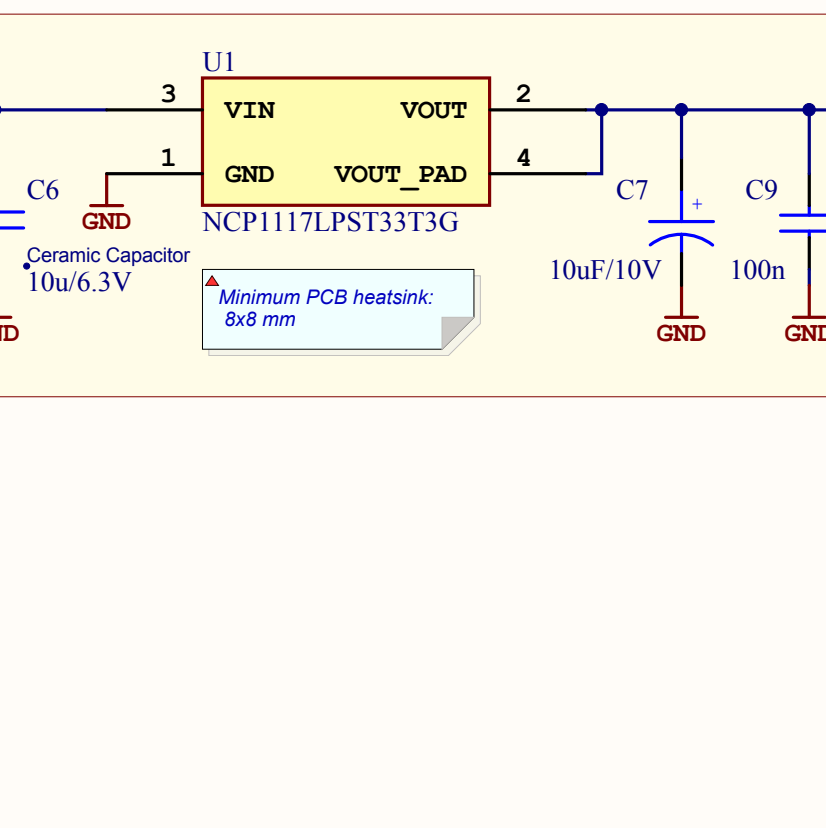
USB Mini B Connector




USB Transient protection



3.3V linear regulator with input range from - 4.5V - 15V

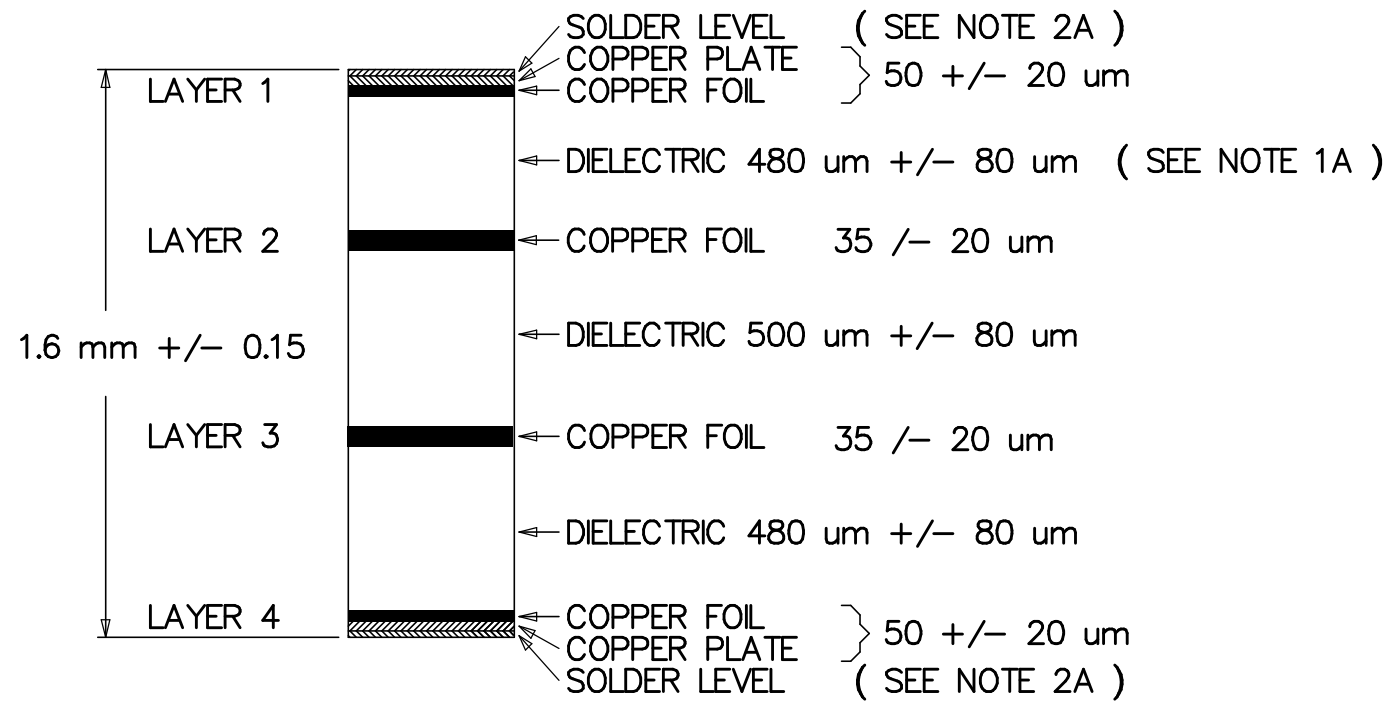


ATMEL Nantes					
La Chantrerie					
BP 70602 44306 NANTES					
FRANCE					
Date:	04.11.2011	16:18:55	PAGE:	3 of 3	
Document number:	A09-1059		Revision:	4	
TITLE: XMEGA-B1 XPLAINED, IO Module					
Xplain_B1_IO Rev4.SchDoc					

DESIGN INFORMATION		BOARD NAME:		Xmega-B1 Xplained Rev4.PcbDoc
BOARD TECHNOLOGY		BOARD SIZE <REFER ALSO PROFILING INFORMATION>		
.15 / .8 / .15 (MIN. TRACK / PADS / CLEARANCE)		SIZE	85.00 x 54	(mm)
MINIMUM ANNUAL RING 0.05MM (0.002'') EXTERNAL PER IPC-2221 CLASS 3 LEVEL C AND IS THE MANUFACTURING REGISTRATION ALLOWANCE				
LAND SIZE CALCULATION MINIMUM - NOMINAL HOLE SIZE + 0.508MM (0.020'')				
CIRCUIT TYPE:	<input type="checkbox"/> SS <input type="checkbox"/> DS <input checked="" type="checkbox"/> PTH	ML	<input checked="" type="checkbox"/>	No. of Layers 4
FINGER CONNECTOR DIM PER:			<input type="checkbox"/> AS SHOWN	
No. OFF TOTAL		<input type="checkbox"/> ONE SIDE	<input type="checkbox"/> BOTH SIDES	
VIAS:	<input type="checkbox"/> NONE <input type="checkbox"/> FEED THRU' <input type="checkbox"/> TENTED	<input type="checkbox"/> BURIED LAYER SEQUENCE		
	<input type="checkbox"/> UNIQUE DRILL <input type="checkbox"/> 2 SIZE	<input type="checkbox"/> BLIND LAYER SEQUENCE		
LAYER CONSTRUCTION PER:	Layer Stack Manager (PCB)	<input checked="" type="checkbox"/> AS SHOWN		
ARTWORK:	<input type="checkbox"/> MANUAL <input type="checkbox"/> DIGITISED <input checked="" type="checkbox"/> CAD	TYPE	Altium Summer 09	
ARTWORK/PATTERN MASTER LIST				
DESCRIPTION	DRAWING No./CAD FILE REF.	PcbDoc	LAYER NAME	GERBER FILE REF
PCB FILE	Xmega-B1 Xplained			
GERBER FILE		GTP	Top Paste Mask	GTP
GERBER FILE		GT0	Top Overlay	GT0
GERBER FILE		GTS	Top Solder Mask	GTS
GERBER FILE		GTL	Top Layer	Board Layer 1 GTL
GERBER FILE		GP1	GND+SHIELD	Board Layer 2 GP1
GERBER FILE		GP2	UCC_P3V3	Board Layer 3 GP2
GERBER FILE		GBL	BOTTOM LAYER	Board Layer 4 GBL
GERBER FILE		GBS	Bottom Solder Mask	GBS
GERBER FILE		GBO	Bottom Overlay	GBO
GERBER FILE		GBP	Bottom Paste Mask	GBP
GERBER FILE		GM1	Dimension	GM1
GERBER FILE				
GERBER FILE				
GERBER FILE				
GERBER FILE				
GERBER FILE				
GERBER FILE				
APERTURE LIST		APR		
DRILL REPORT		DDR		
DRILL FILE		DRL		
EXCELLON DRILL		TXT		
MATERIAL:	<input checked="" type="checkbox"/> GLASS FIBRE EPOXY RESIN NEMA GRADE FR4-08 (IPC-A4101) - WITH TG170			
THICKNESS:	<input type="checkbox"/> 0.8mm <input type="checkbox"/> 1.2mm <input checked="" type="checkbox"/> 1.6mm <input type="checkbox"/> 2.4mm <input type="checkbox"/> 3.2mm			
TOLERANCE:	<input checked="" type="checkbox"/> IN A/W IPC-D-300G CLASS 2		<input type="checkbox"/> OTHER +/-	
BOW & TWIST:	<input checked="" type="checkbox"/> IN A/W IPC-D-300G CLASS 2		<input type="checkbox"/> AS SHOWN	
COPPER THICKNESS (FINISHED)				
OUTER:	<input type="checkbox"/> 18um	<input checked="" type="checkbox"/> 35um	<input type="checkbox"/> 70um	
INNER SIGNAL:	<input type="checkbox"/> 18um	<input checked="" type="checkbox"/> 35um	<input type="checkbox"/> 70um	
INNER PWR:	<input type="checkbox"/> 18um	<input checked="" type="checkbox"/> 35um	<input type="checkbox"/> 70um	
STRUCTURE:	<input type="checkbox"/> REFER _____			
	<input type="checkbox"/> AS PER DRAWING No. _____ <input checked="" type="checkbox"/> AS SHOWN			
DRILLING:				
VIEWED FROM:	<input checked="" type="checkbox"/> COMPONENT SIDE	<input type="checkbox"/> SOLDER SIDE		
REFERENCE:	<input checked="" type="checkbox"/> AS SHOWN	<input type="checkbox"/> PATTERN MASTER LIST	<input checked="" type="checkbox"/> NC_DRILL FILES	
PTH MINIMUM COPPER THICKNESS:	<input checked="" type="checkbox"/> 20um	<input type="checkbox"/> OTHER		
NPTH:	<input checked="" type="checkbox"/> TENTED	<input checked="" type="checkbox"/> PADS REMOVED	<input type="checkbox"/> REMOVE PADS	
	<input type="checkbox"/> 2nd DRILL	<input type="checkbox"/> BOTH	<input type="checkbox"/> AS SHOWN	<input type="checkbox"/> NONE
BOARD FINISH:	<input checked="" type="checkbox"/> ETCHING	<input type="checkbox"/> REFER PATTERN MASTER LIST		
LEGEND / SCREEN PRINT:	<input type="checkbox"/> NONE	<input checked="" type="checkbox"/> COMPONENT	<input checked="" type="checkbox"/> SOLDER	
CLOUR:	<input checked="" type="checkbox"/> WHITE	<input type="checkbox"/> YELLOW	<input type="checkbox"/> OTHER	
SOLDER RESIST:	<input checked="" type="checkbox"/> LIQUID PHOTOIMAGEABLE	<input type="checkbox"/> SCREEN PRINT		
FINISH:	<input type="checkbox"/> MATTE <input checked="" type="checkbox"/> GLOSS			
CLOUR:	<input type="checkbox"/> BLACK <input type="checkbox"/> GREEN <input type="checkbox"/> YELLOW <input checked="" type="checkbox"/> BLUE <input type="checkbox"/> OTHER			
TRACK FINISH:	<input type="checkbox"/> SELECTIVE SOLDER (HASL)	<input type="checkbox"/> REFLOW SOLDER		
	<input checked="" type="checkbox"/> 0.1um - 0.2um ELECTROLESS GOLD OVER 3um NICKEL			
	<input type="checkbox"/> IMMERSION GOLD	<input type="checkbox"/> OTHER		
EDGE BOARD CONTACTS:	<input type="checkbox"/> 1.3um HARD GOLD OVER 5um	NICKEL / TIN-NICKEL		
	<input type="checkbox"/> HARD FINISH GOLDE PLATE	<input type="checkbox"/> OTHER		
	<input type="checkbox"/> AS SHOWN	<input type="checkbox"/> REFER		
PROFILING:	<input checked="" type="checkbox"/> AS DIMENSIONED, MEASURED AND CUT FROM SPECIFIED DATUM.			
	<input type="checkbox"/> REFER PCB BLANK DWG No. _____			
	<input type="checkbox"/> USE PROFILE / ROUTE TAPE SUPPLIED (REFER PATTERN MASTER LIST)			
	<input type="checkbox"/> SQUARE CUT <input type="checkbox"/> N.C. ROUTE <input checked="" type="checkbox"/> V. SCORE <input type="checkbox"/> BLANK			
ACCEPTABILITY:	MATERIALS AND WORKMANSHIP FOR ALL PRINTED WIRING BOARDS TO MEET OR EXCEED THE REQUIREMENTS OF:			
	<input checked="" type="checkbox"/> IPC-6011/12 AND IPC-A-600E	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3		
	<input checked="" type="checkbox"/> UL CERTIFICATION	<input type="checkbox"/> AUTSEL		
	<input type="checkbox"/> ML-P-5511OF GRP <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> AS2546	<input type="checkbox"/> OTHER		
ADDITIONAL REQUIREMENTS:				
MICROSECTION:	<input checked="" type="checkbox"/> NONE	<input type="checkbox"/> SAMPLE PLAN	<input type="checkbox"/> MIL-P-5511OE SERIAL Nos. PER ORDER	
CERTIFICATION:	<input type="checkbox"/> NONE	<input type="checkbox"/> MIL-P-5511OE GRP <input type="checkbox"/> A <input type="checkbox"/> B	IPC CLASS: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	
RoHS Compliant:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> QUALITY RELEASE REPORT	<input type="checkbox"/> OTHER	
ELECTRICAL TEST:	<input type="checkbox"/> NONE	<input checked="" type="checkbox"/> REQUIRED (10		

Notes

1. All dimensions are in mm.
2. The router cutter diameter is 1.2mm.



NOTE 1A: DIELECTRIC FR4
2A: SURFACE PROTECTION: HASL

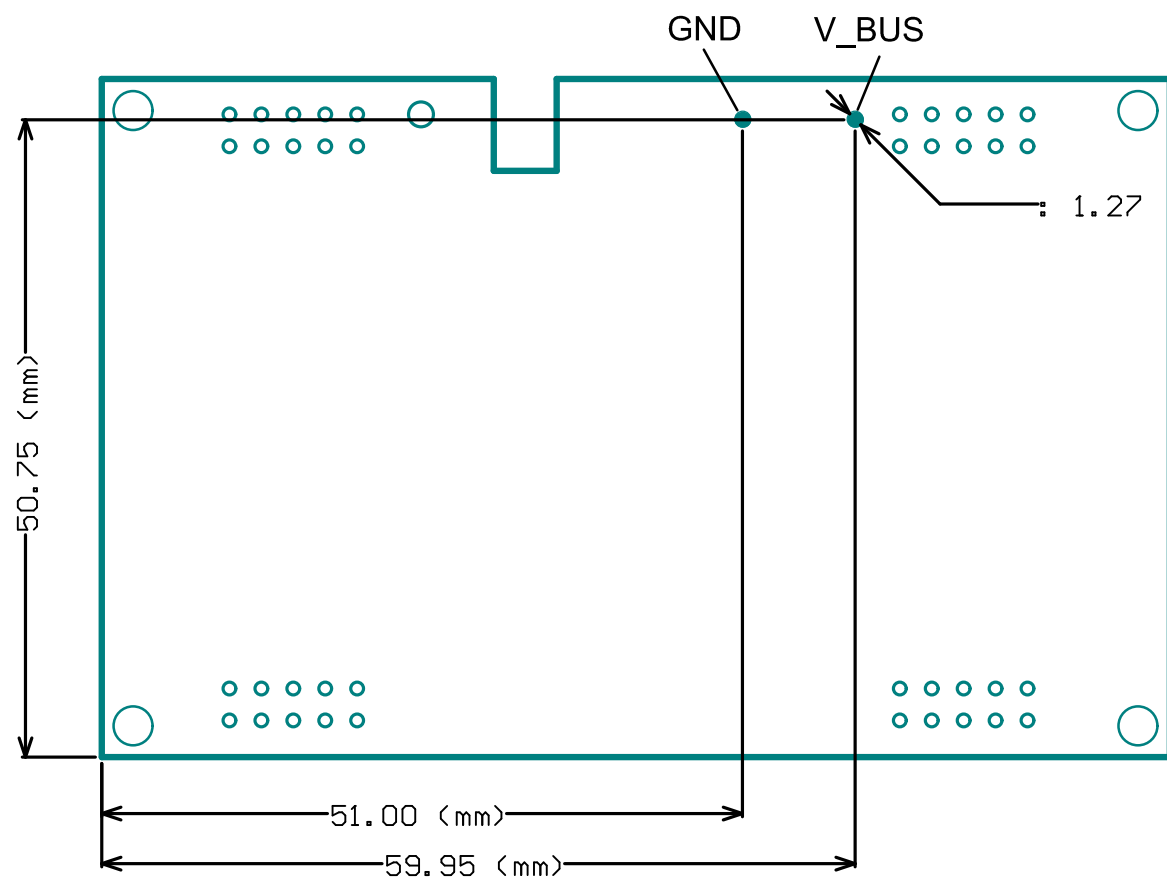
THE BOARD MUST BE RoHS COMPLIANT

DETAIL A (CROSS-SECTION)

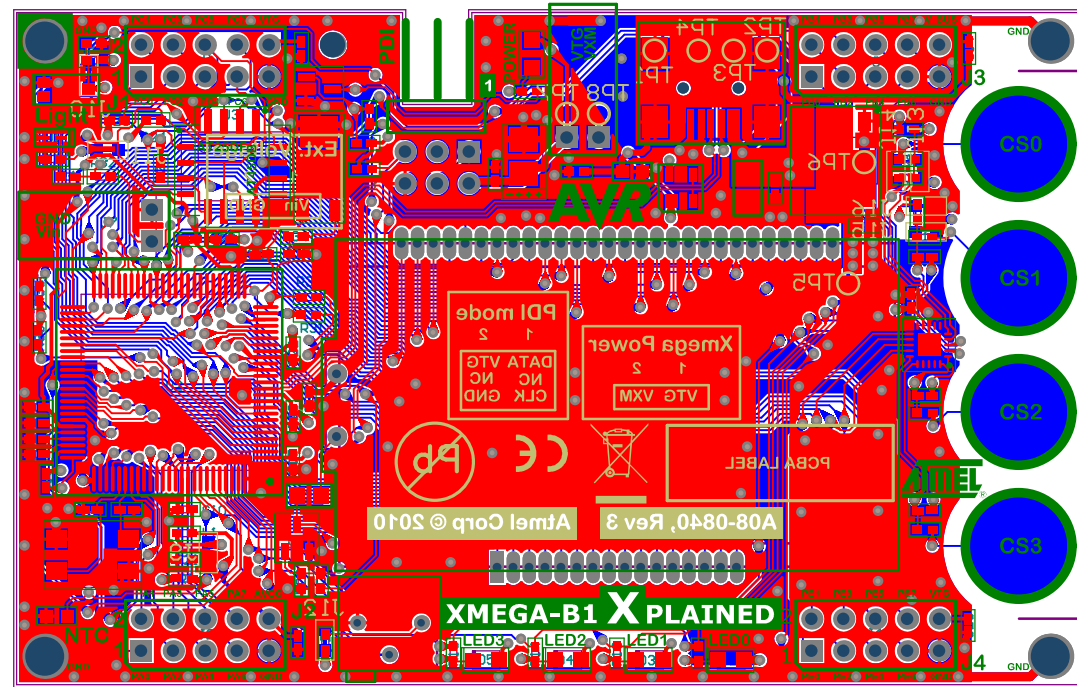
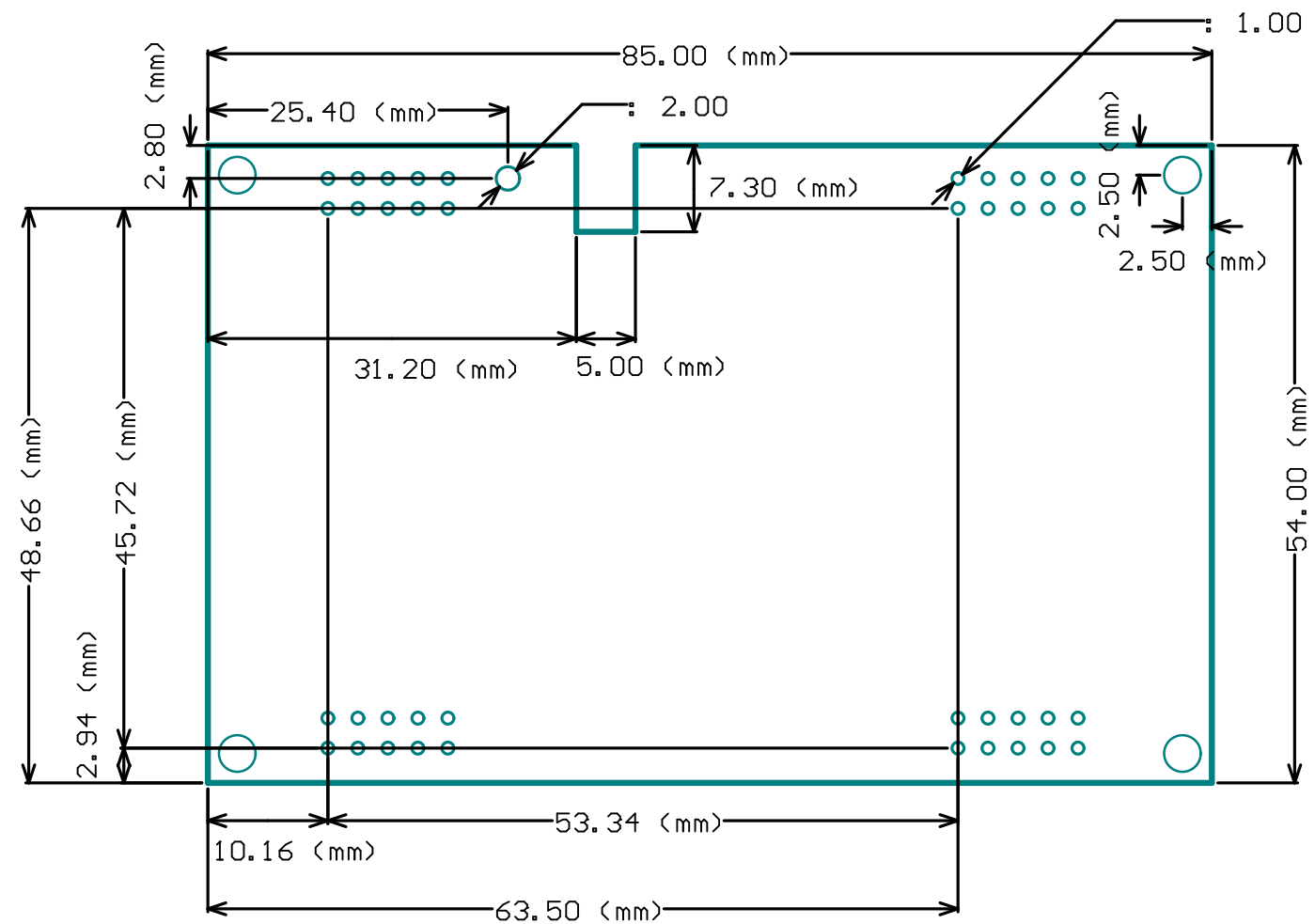
SCALE = NONE

- | | | |
|----|--------------|-----------------------|
| L1 | Top Layer | XMEGA-B1_pcb_rev3.GTL |
| L2 | Ground | XMEGA-B1_pcb_rev3.GP1 |
| L3 | Power | XMEGA-B1_pcb_rev3.GP2 |
| L4 | Bottom Layer | XMEGA-B1_pcb_rev3.GBL |

Testpoint Placement:



Mechanical Dimentions:



ATMEL FRANCE
La Chantrerie
BP 70602
44306 NANTES

ENGINEER

PCB DESIGNER

DATE: 04.11.2011

FILE NAME

Xmega-B1 Xplained Rev4.PcbDoc

TITLE

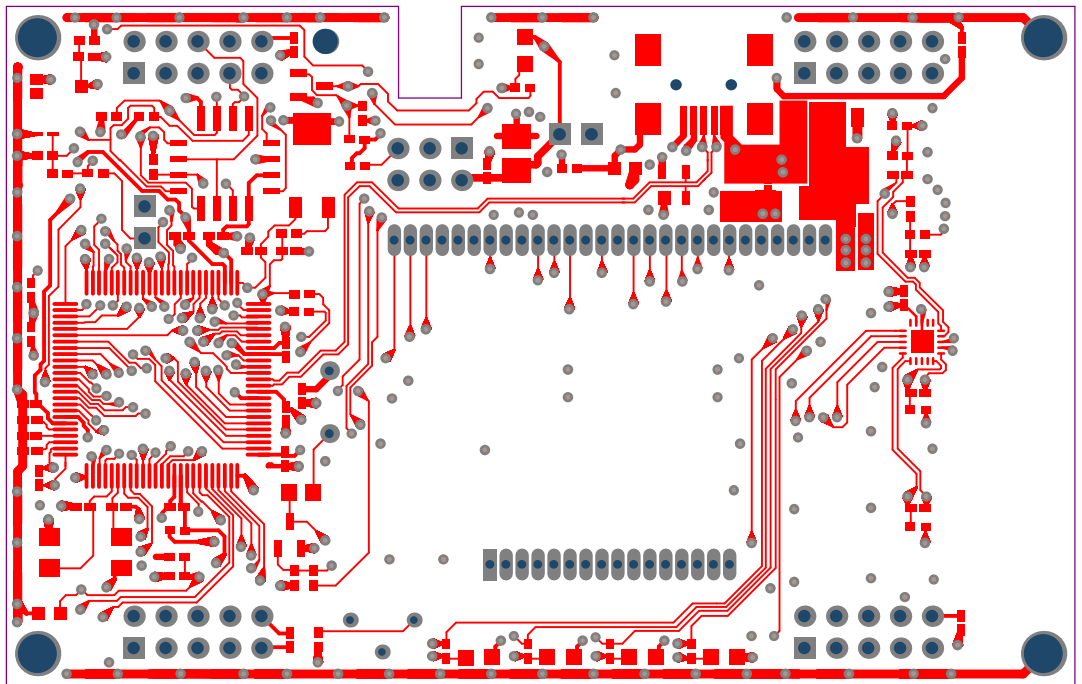
xmegab1 Xplained
A08-0840

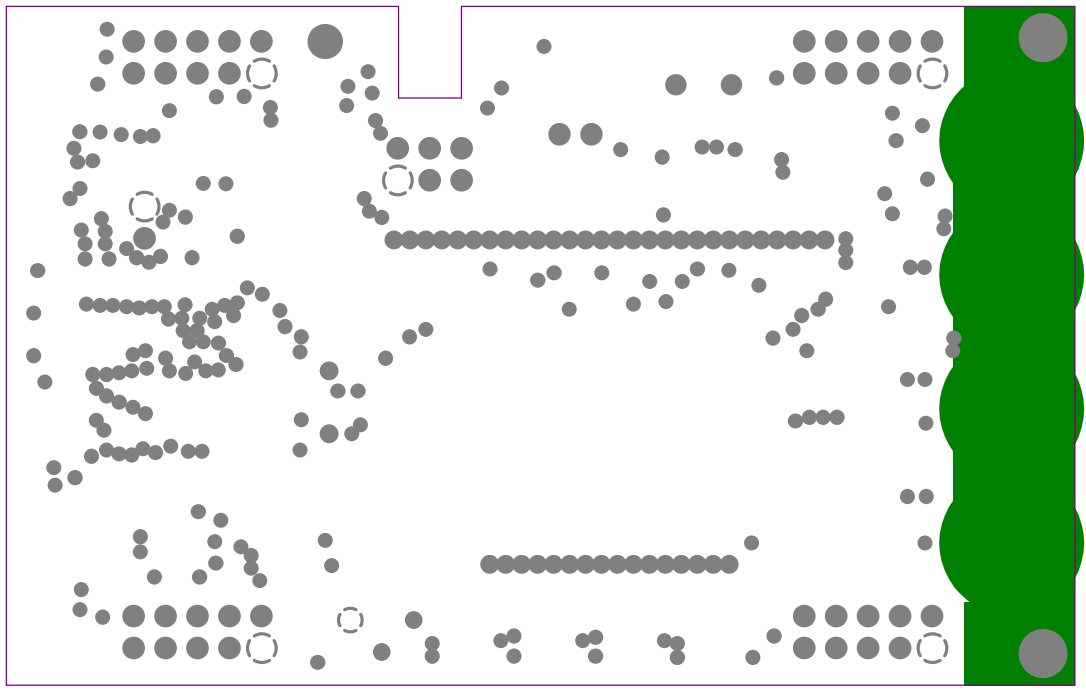
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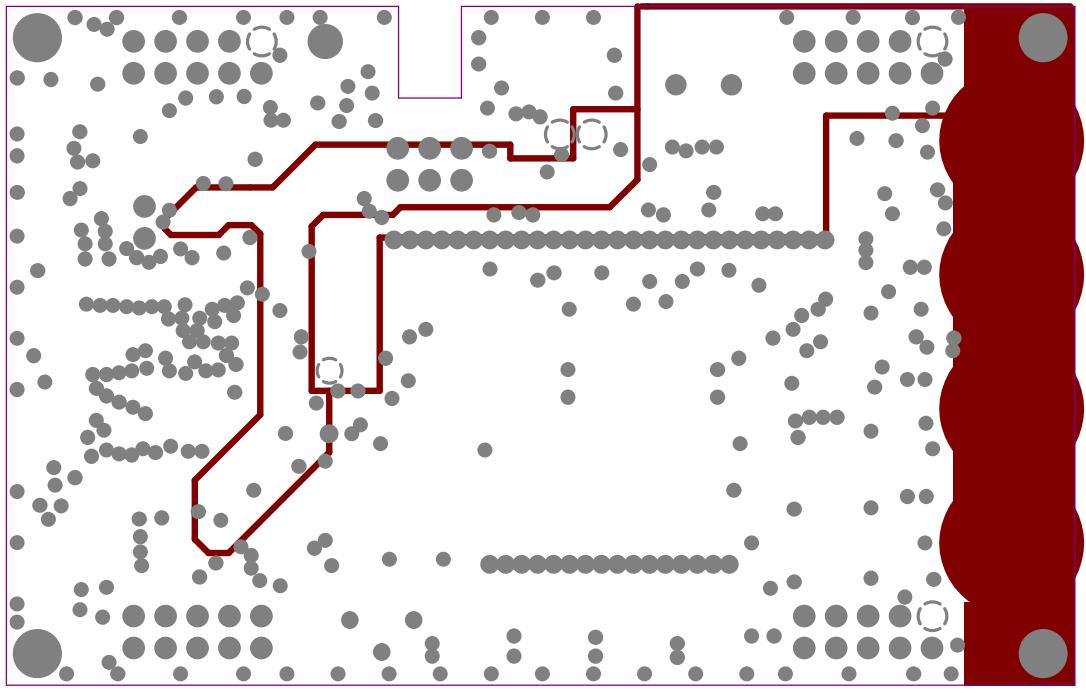
D/WG NO.

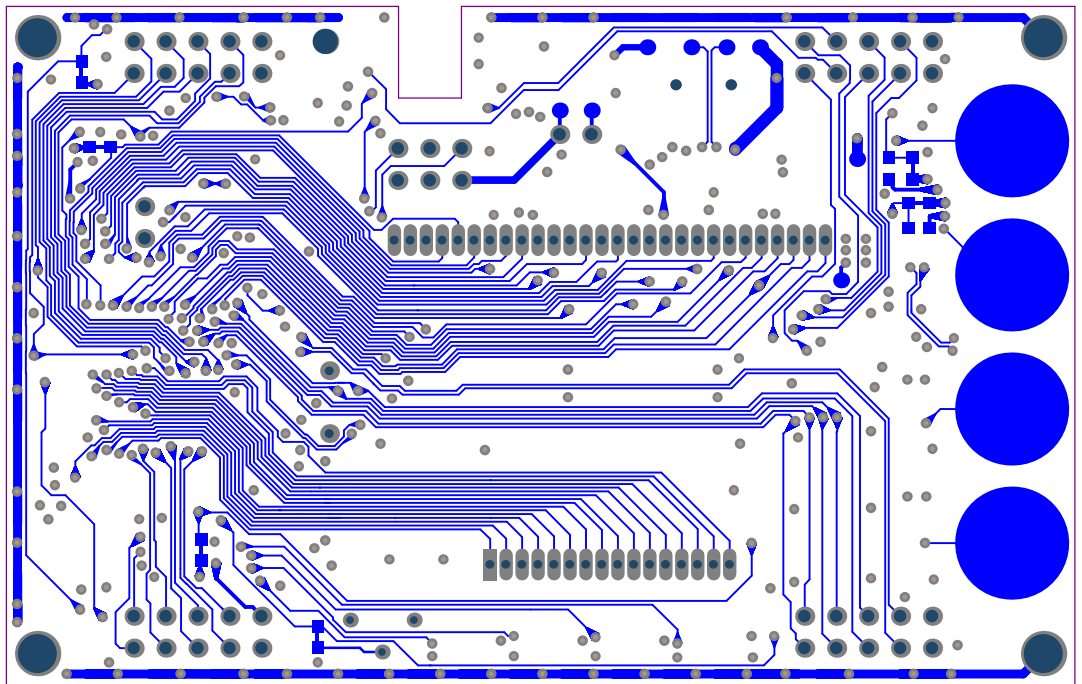
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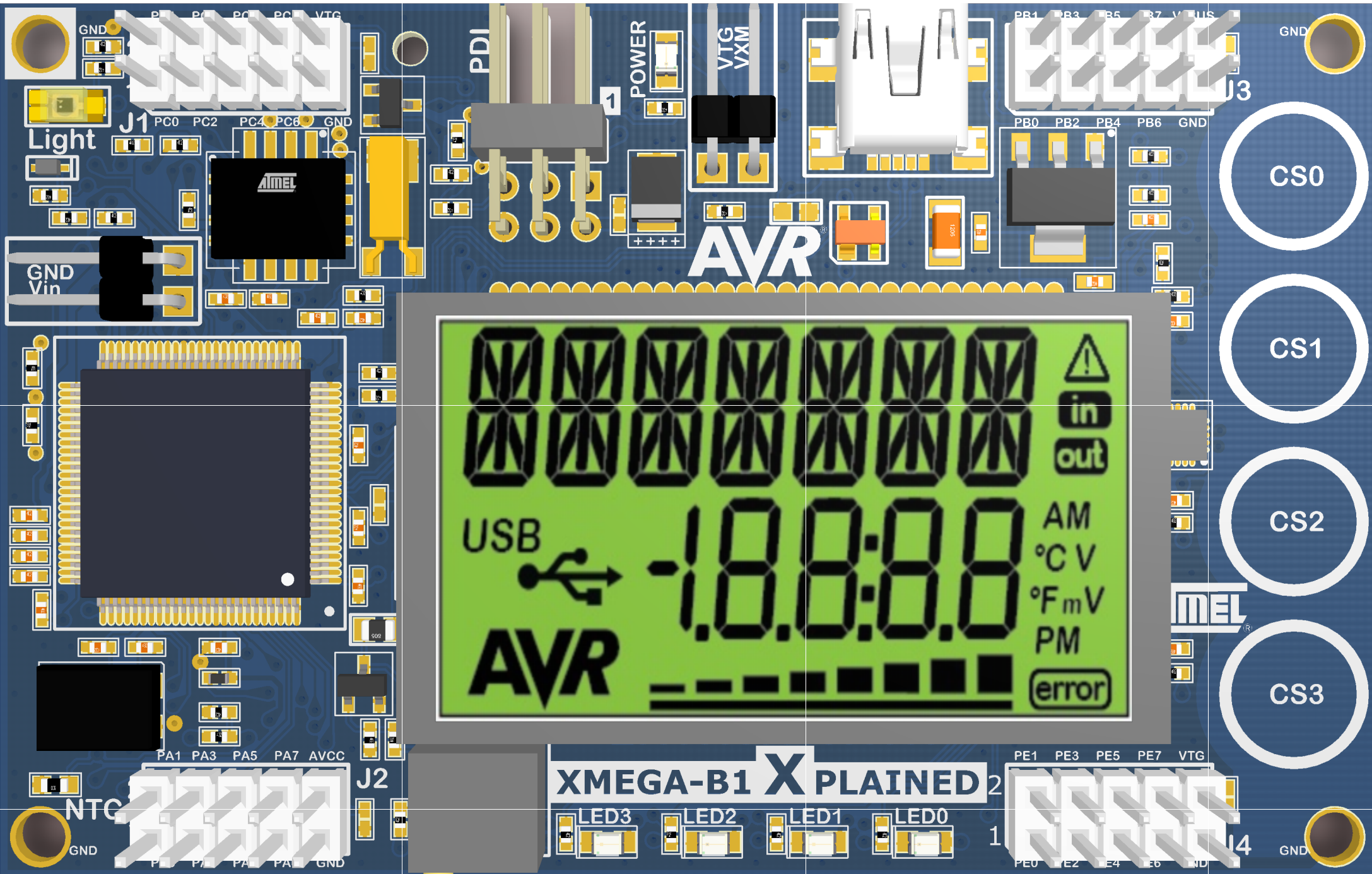
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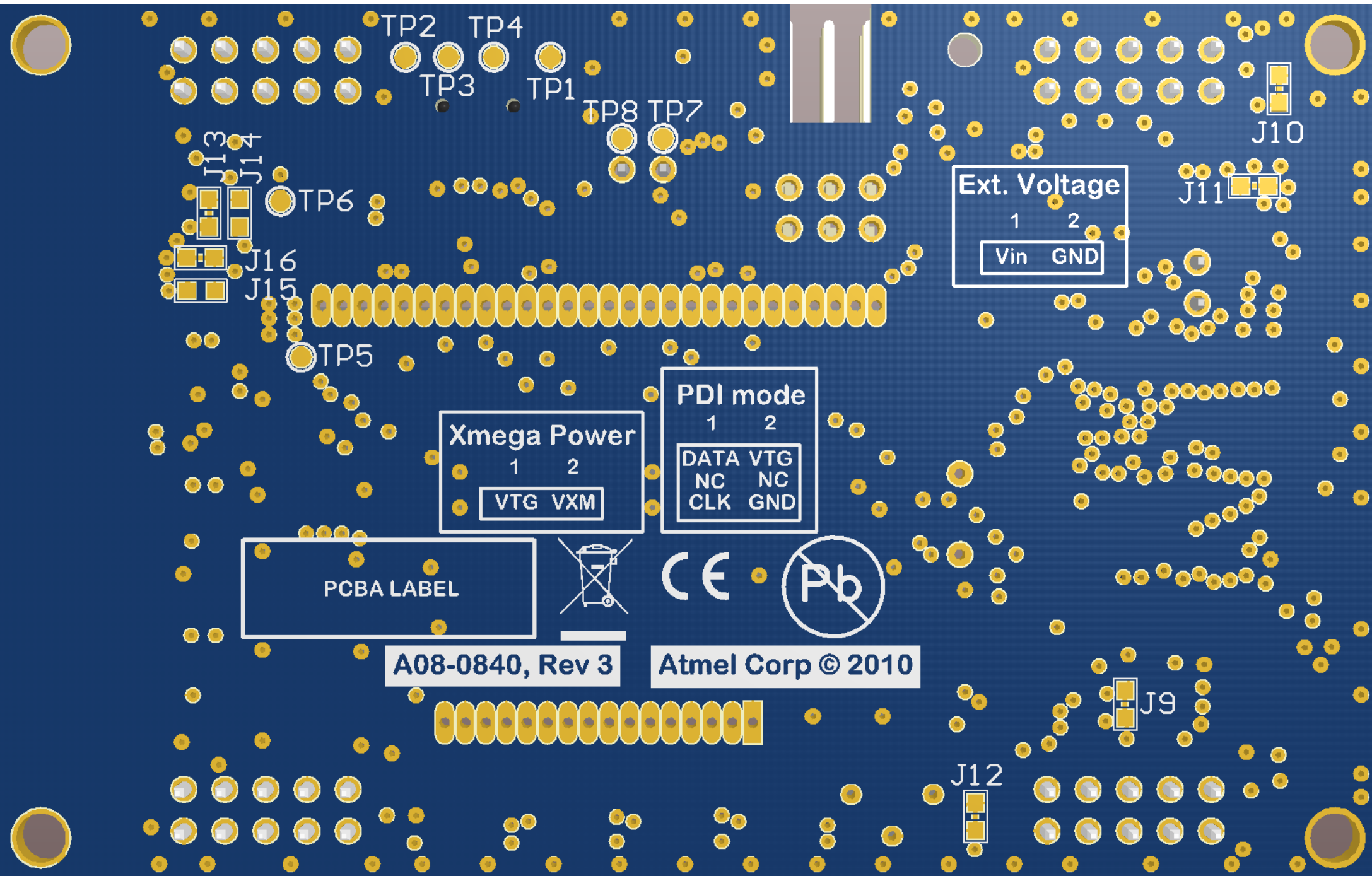


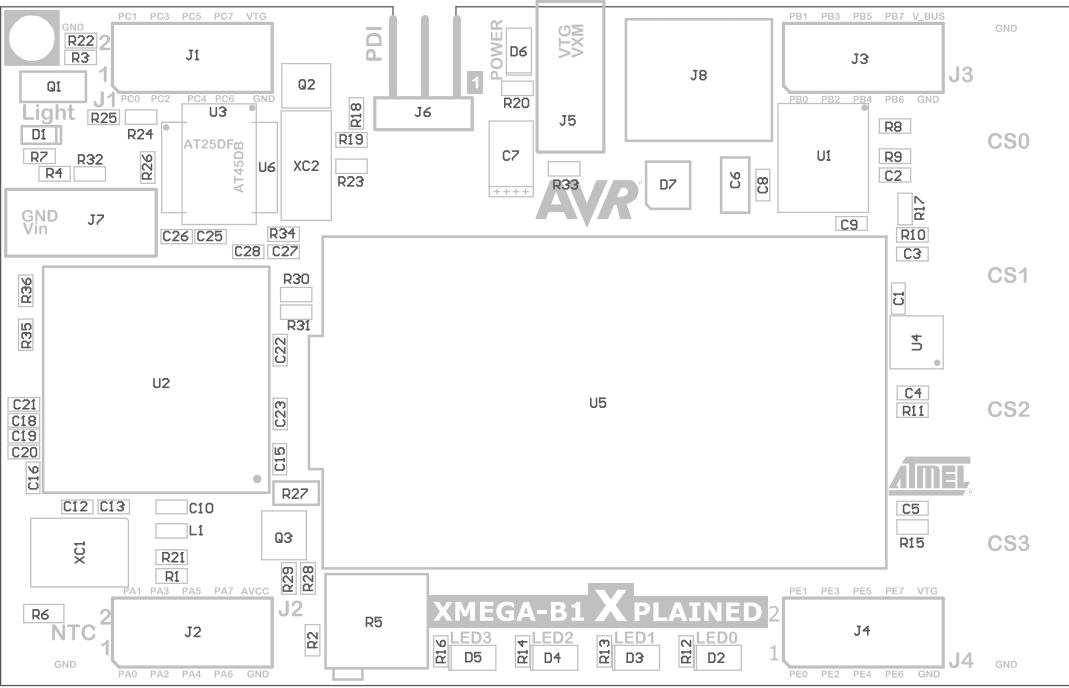












TP2 TP4
TP3 TP1
TP8 TP7

J13
J14
J16
J15

TP6

TP5

Xmega Power
1 2
VTG VXM

PDI mode
1 2
DATA VTG
NC NC
CLK GND

Ext. Voltage
1 2
Vin GND

J10
J11

PCBA LABEL



A08-0840, Rev 3

Atmel Corp © 2010

J9

J12

Component list

Bill of Materials as Print Version For Variant [AVR1912 Production] of Project [AVR1912 Rev4.PrjPCB] (No PCB Document Selected)

Source Data From:

AVR1912 Rev4.PrjPCB

Project:

AVR1912 Rev4.PrjPCB

Variant:

AVR1912 Production



Report Date: 04.11.2011 16:19:21
Print Date: 04.11.2011 16:19:20

#	Designator	Quantity	Value	Manufacturer	MPN	Description
1	C1, C8, C9, C10, C15, C16, C18, C19, C20, C21, C22, C23, C25, C26	14	100n	Kemet	C0402C104K4RACTU	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10%
2	C2, C3, C4, C5	4	10n			Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
3	C6	1	10u/6.3V	Murata	GRM319R60J106KE19	Ceramic capacitor, SMD 1206, X5R, 6.3V, ±10%
4	C7	1	10uF/10V	Kemet	T491B106M010AT	SMD tantalum capacitor, precision molded chip. ESR = 3,5
5	C12, C13	2	18p			Ceramic capacitor, SMD 0402, NP0, 50V, +/-5%
6	C27, C28	2	15p			Ceramic capacitor, SMD 0402, NP0, 50V, +/-5%
7	D1	1	KDZ2.0EV	KEC - Korea Electronics Co	KDZ2.0EV	Zener Diode, 2.0V, ESC package
8	D2, D3, D4, D5	4	EL17-21UYC/A2	Everlight	17-21UYC/S530-A3/TR8	LED, Yellow, Wave length=591nm, SMD 0805, ±70°
9	D6	1	EL17-21SYGC	Everlight	EL17-21SYGC	LED, Green, Wave length=575nm, SMD 0805, ±70°
10	D7	1	PRTR5V0U2X	Philips	PRTR5V0U2X	Double rail-to-rail USB ESD protection diode
11	J1, J2, J3, J4	4	CD075014 2X5	Freber	CD075014 2X5	2x5 pin header, 2.54 mm pitch, Pin-in-Paste THM
12	J5, J7	2	Pin header 1x2 right angle	Pro-data International Corp	2213R-2G	1x2 pin header, right angle, 2.54 mm pitch, through-hole
13	J6	1	2213R-6G	Multicomp	2213R-6G	Header, 2 Row, R/Angle, 6 Way, Inverted
14	J8	1	LUMBERG	Lumberg	2486 01	USB Mini B connector, SMD
15	JS1	1	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	Jumper cap for 2.54mm pinheader
16	L1	1	BLM15BB221SN1	Murata	BLM15BB221SN1	SMD RF inductor 0402. Z=220Ohm (@100MHz), Max R(dc)=0.80Ohm, Max current=200mA
17	LABEL1	1	Label PCBA	ACT Logimark AS	505462	PCBA identification label PP Top White Gloss
18	PCB1	1	XMEGA-B1 Xplained PCB	NCAB		XMEGA-B1 Xplained PCB, 4-layer, size 54mm x 85mm
19	Q1	1	TEM76000	vishay	TEM76000	light sensor
20	Q2, Q3	2	2N7002	Fairchild	2N7002	N-Channel MOSFET. 60V, 0.115A continuous, 0.8A Peak. RDS(ON) = 7.5Ohm@VGS=5.0V, VGS(th)<4V
21	R1, R2, R3, R23, R24, R25, R26	7	100k			Thick film resistor, SMD 0402, 1/16W, 1%
22	R4	1	3.9k			Thick film resistor, SMD 0402, 1/16W, 1%
23	R5	1	3266P-1-253_LF	Bourns	3266P-1-253_LF	Potentiometer, 25k, Side adjust ,12 turns
24	R6	1	NCP18WF104J03RB	Murata	NCP18WF104J03RB	NTC Thermistor 100kOhm @ 25deg,1/10W, 5%, SMD 0603
25	R7	1	820R			Thick film resistor, SMD 0402, 1/16W, 1%
26	R8, R17, R19, R29, R33	5	1M	KOA	RK73H1ETTP1004F	Thick film resistor, SMD 0402, 1/16W, 1%
27	R9, R10, R11, R15, R35, R36	6	4.7k			Thick film resistor, SMD 0402, 1/16W, 1%
28	R12, R13, R14, R16, R20	5	220R			Thick film resistor, SMD 0402, 1/16W, 1%
29	R18, R28	2	100R			Thick film resistor, SMD 0402, 1/16W, 1%
30	R21, R22	2	47k			Thick film resistor, SMD 0402, 1/16W, 1%
31	R27	1	75R			Thick film resistor, SMD 0805, 0.125W, 1%
32	R32	1	1.8k			Thick film resistor, SMD 0402, 1/16W, 1%
33	R34	1	0R			Thick film resistor, SMD 0402, 1/16W, 1%
34	TP7, TP8	2	TESTPAD			Single SMD testpad
35	U1	1	NCP1117LPST33T3G	ON Semiconductor	NCP1117LPST33T3G	The low power version of the popular NCP1117
36	U2	1	ATxmega128B1	ATMEL	ATxmega128B1	AVR 8-bit RISC MCU with LCD and USB modules
37	U4	1	AT42QT1040-MMH	ATMEL	AT42QT1040-MMH	AT42QT1040 QTouch device
38	U5	1	AVR XMEGA-B1 XPLAINE LCD	ATMEL		AVR Xplain B1 LCD
39	U6	1	AT45DB642D-CNU	ATMEL	AT45DB642D-CNU	64-Mbit 2.7-volt serial data
40	XC1	1	8MHz GSX-752	Golledge	GSX-752B/551EF 8MHz	
41	XC2	1	MS1V-T1K 32.768kHz +/-20PPM 7pF SMD	Micro Crystal	MS1V-T1K 32.768kHz +/-20PPM 7pF SMD	32k768 crystal, +-20ppm, CL=7pF, max ESR 60kOhm, SMD

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Approved

Notes