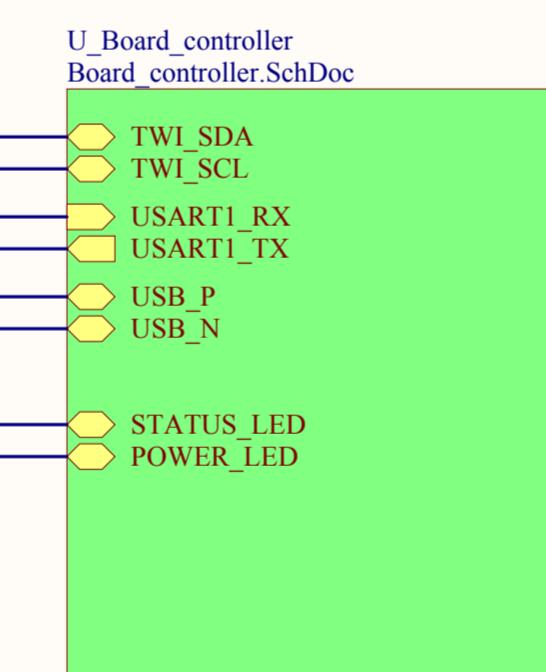
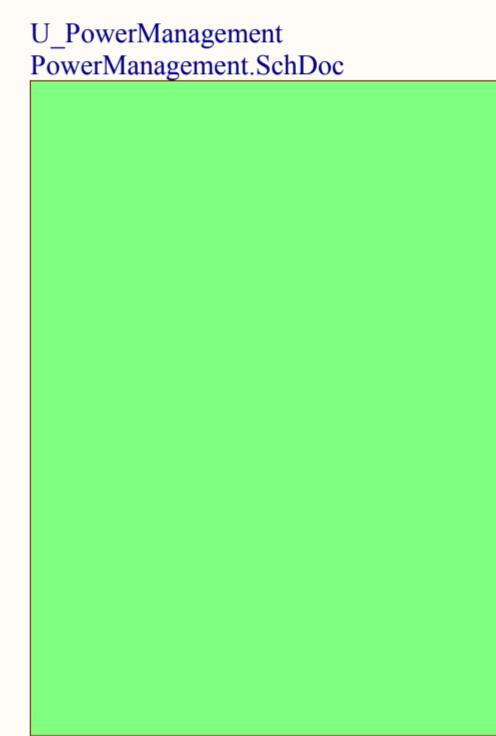
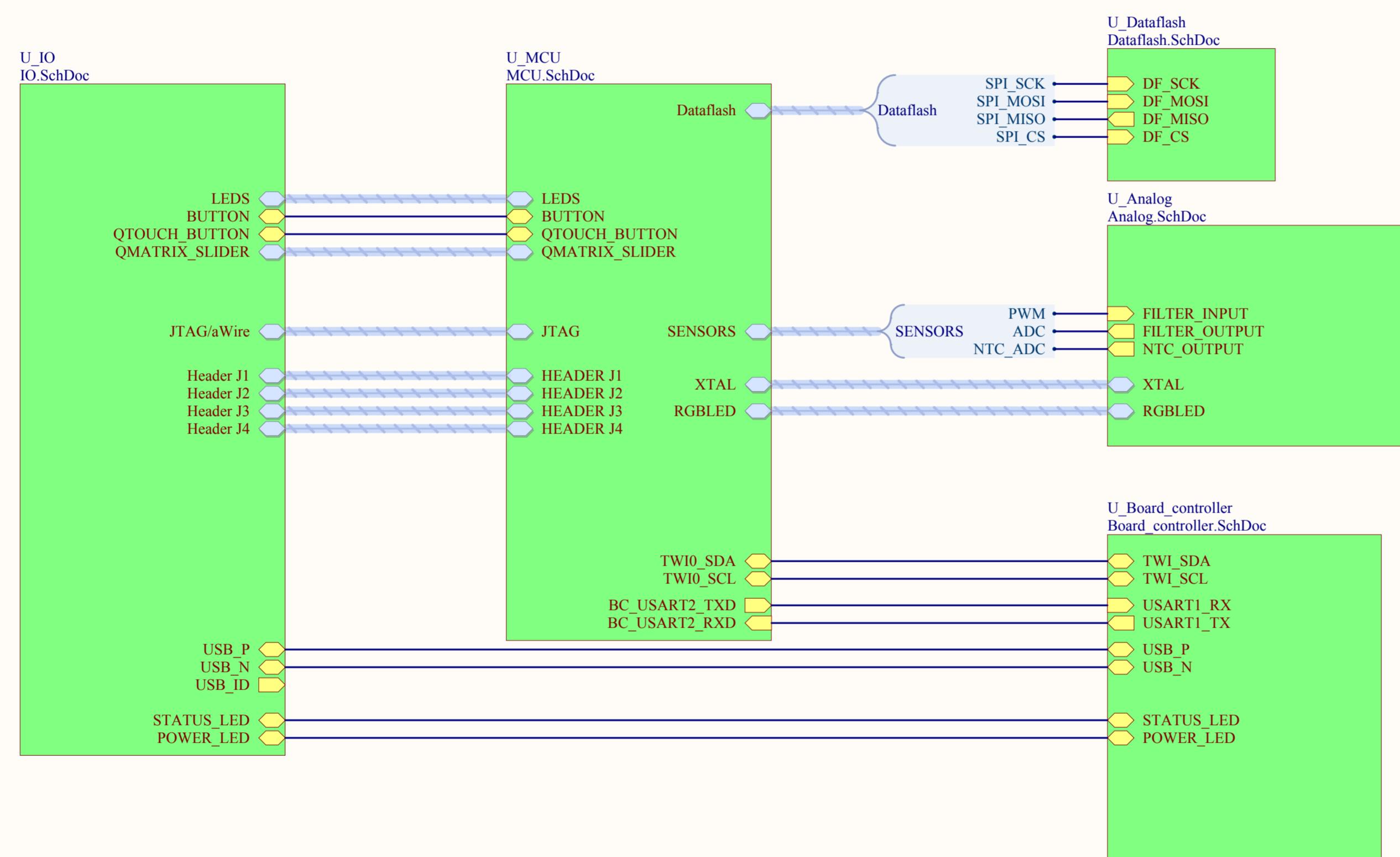


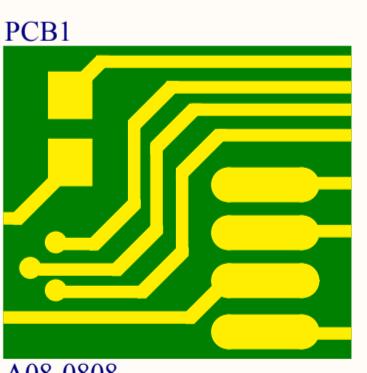
A

A



LABEL1

Product number/revision
Serial number



B

B

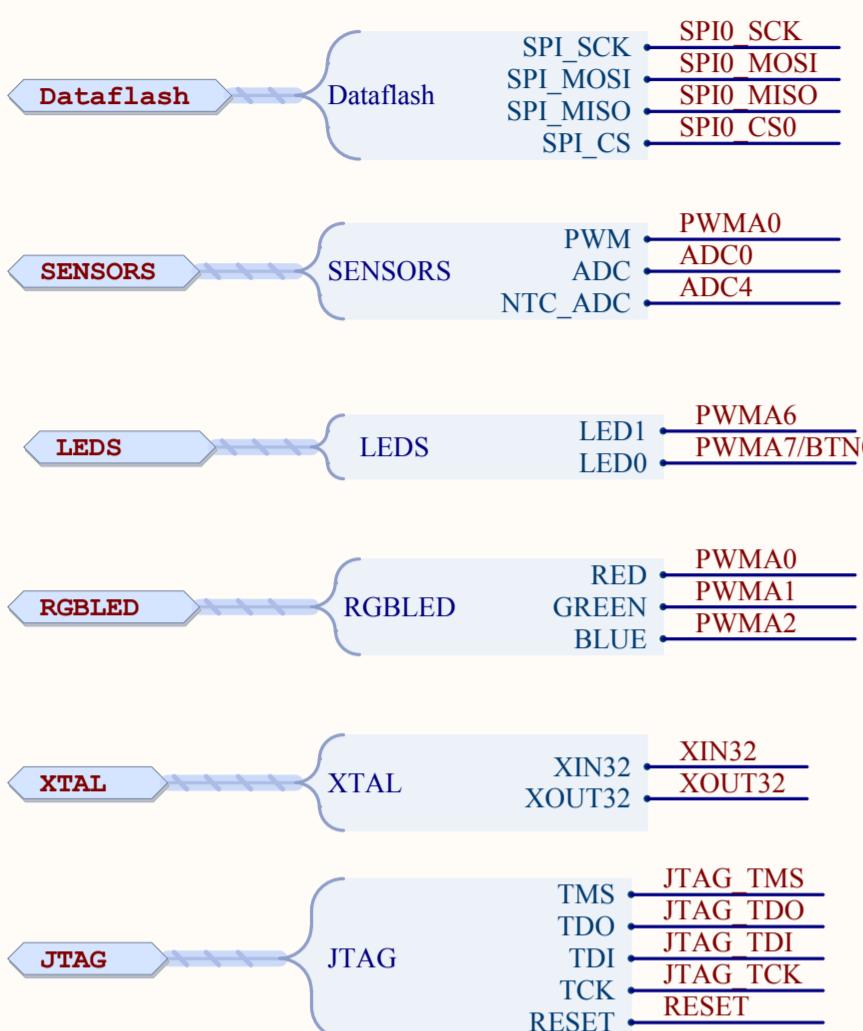
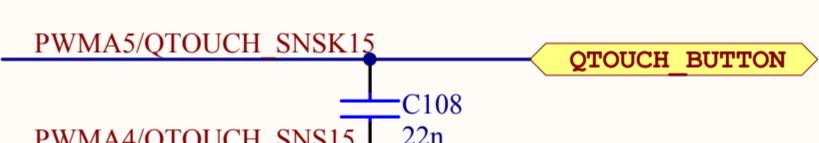
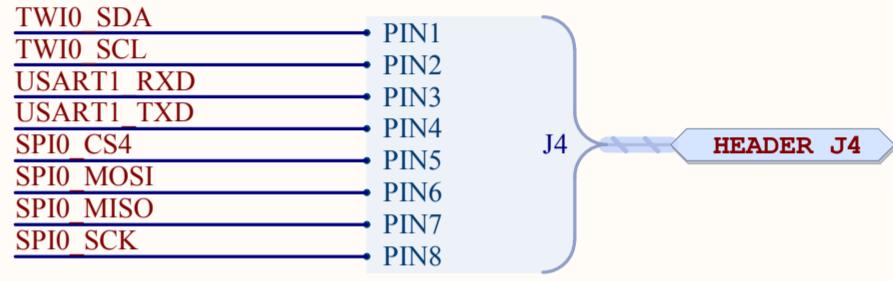
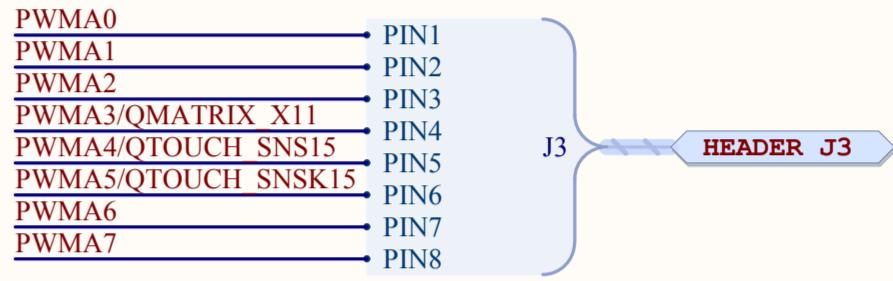
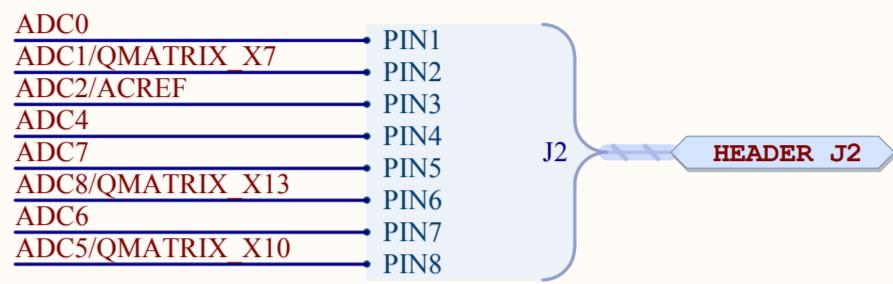
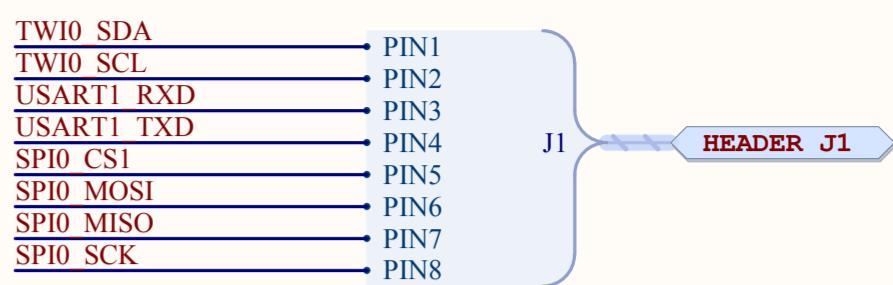
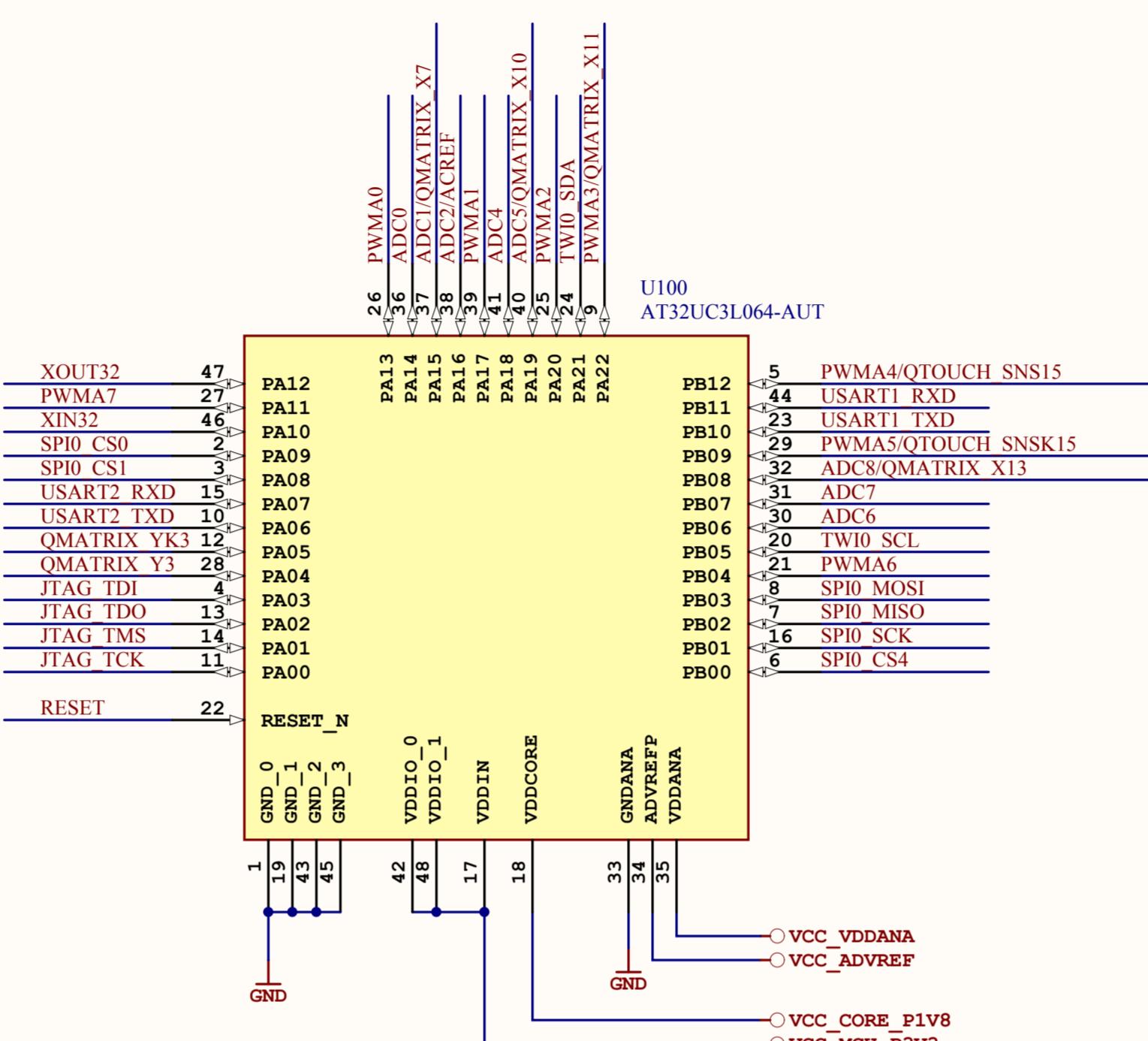
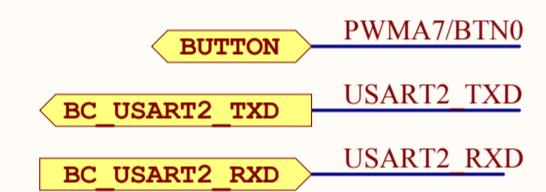
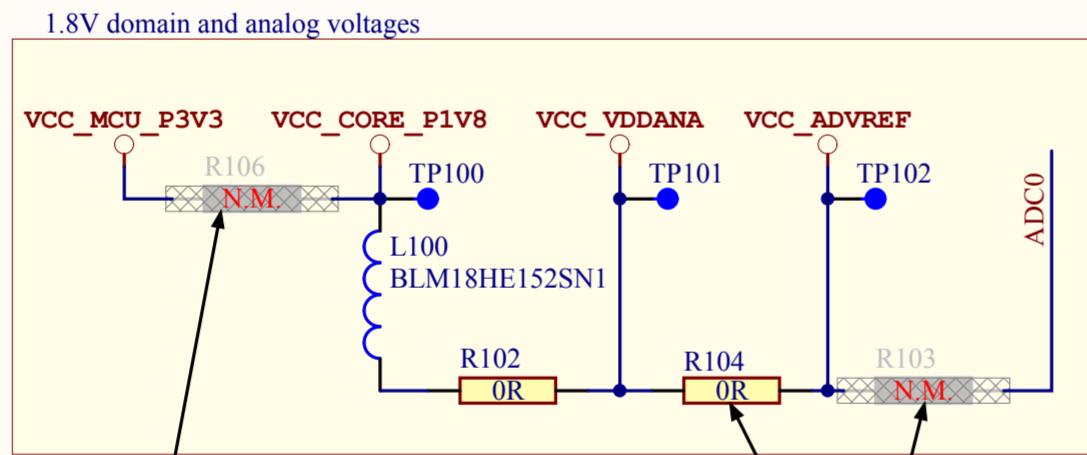
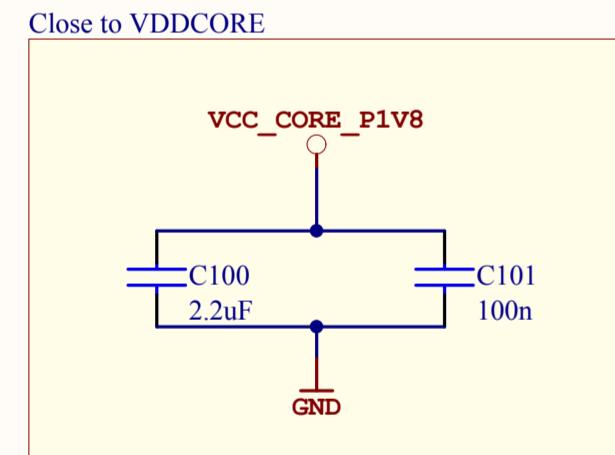
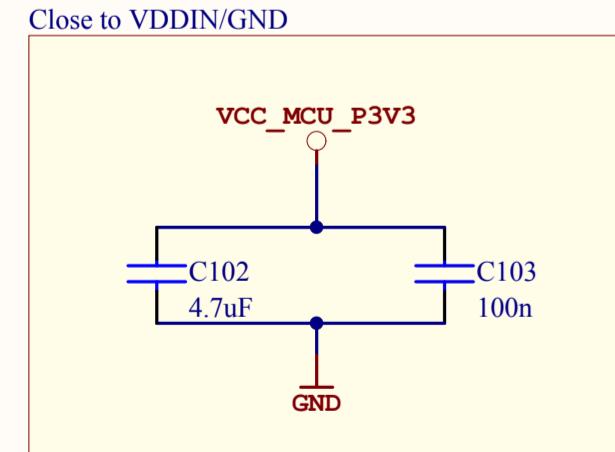
C

C

D

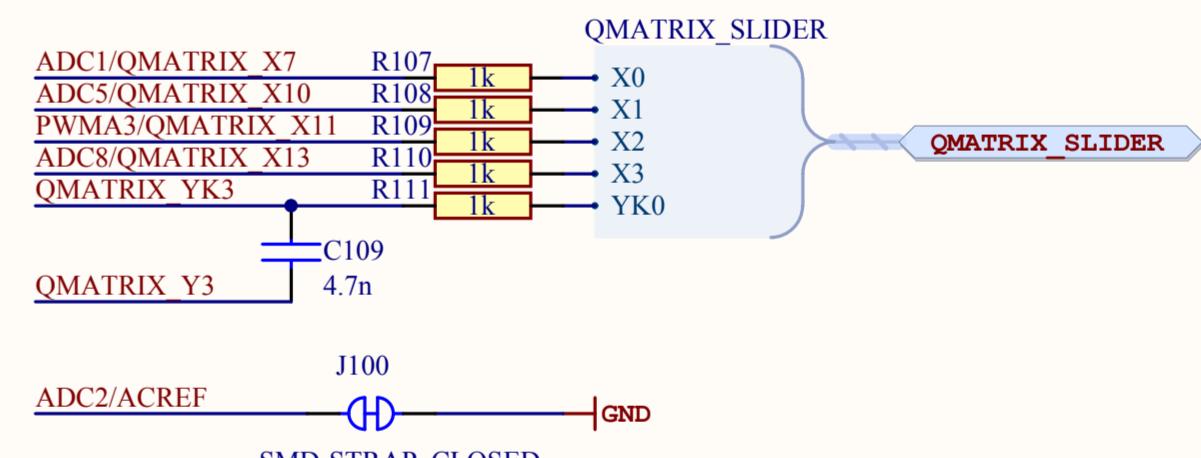
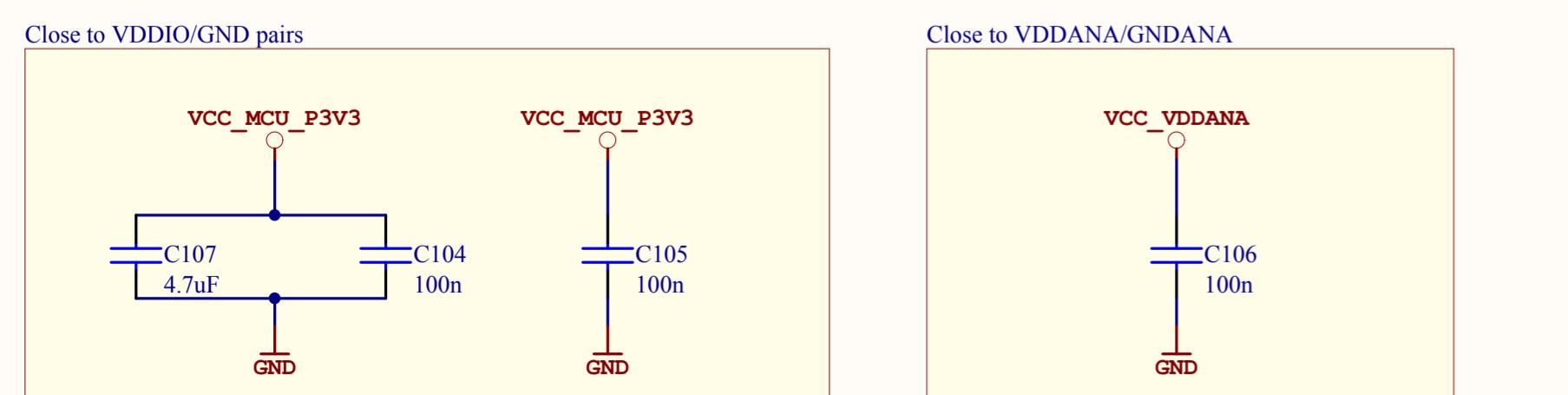
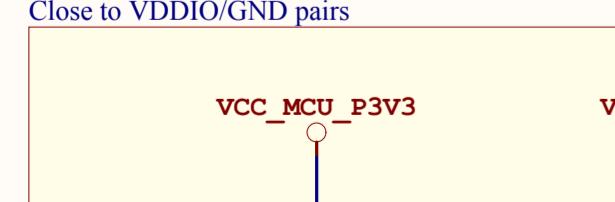
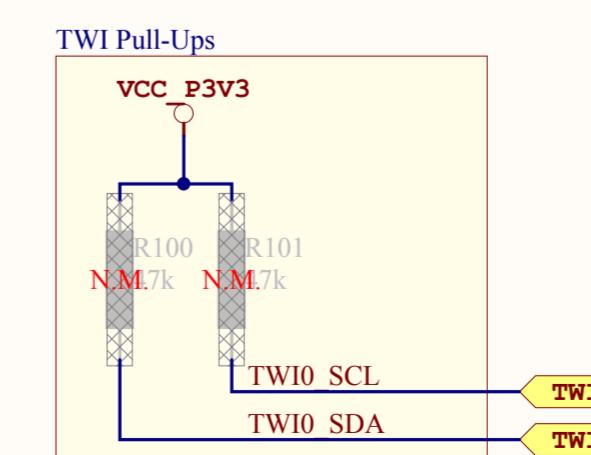
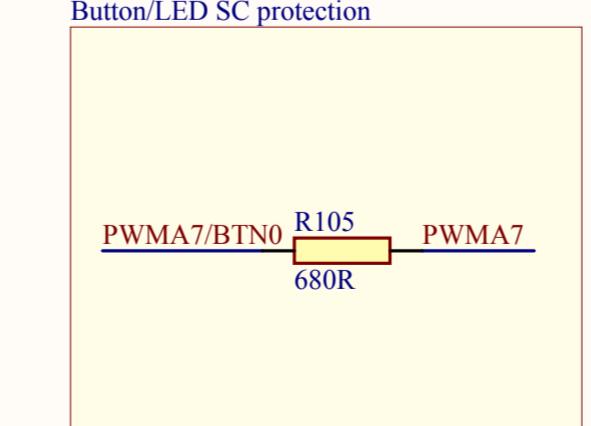
D

ATMEL Norway	*	ATMEL
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	08.10.2010 13:59:12	PAGE: 1 of 7
Document number:	1	Revision: 4
TITLE: UC3-L0 XPLAINED		
TopLevel.SchDoc		

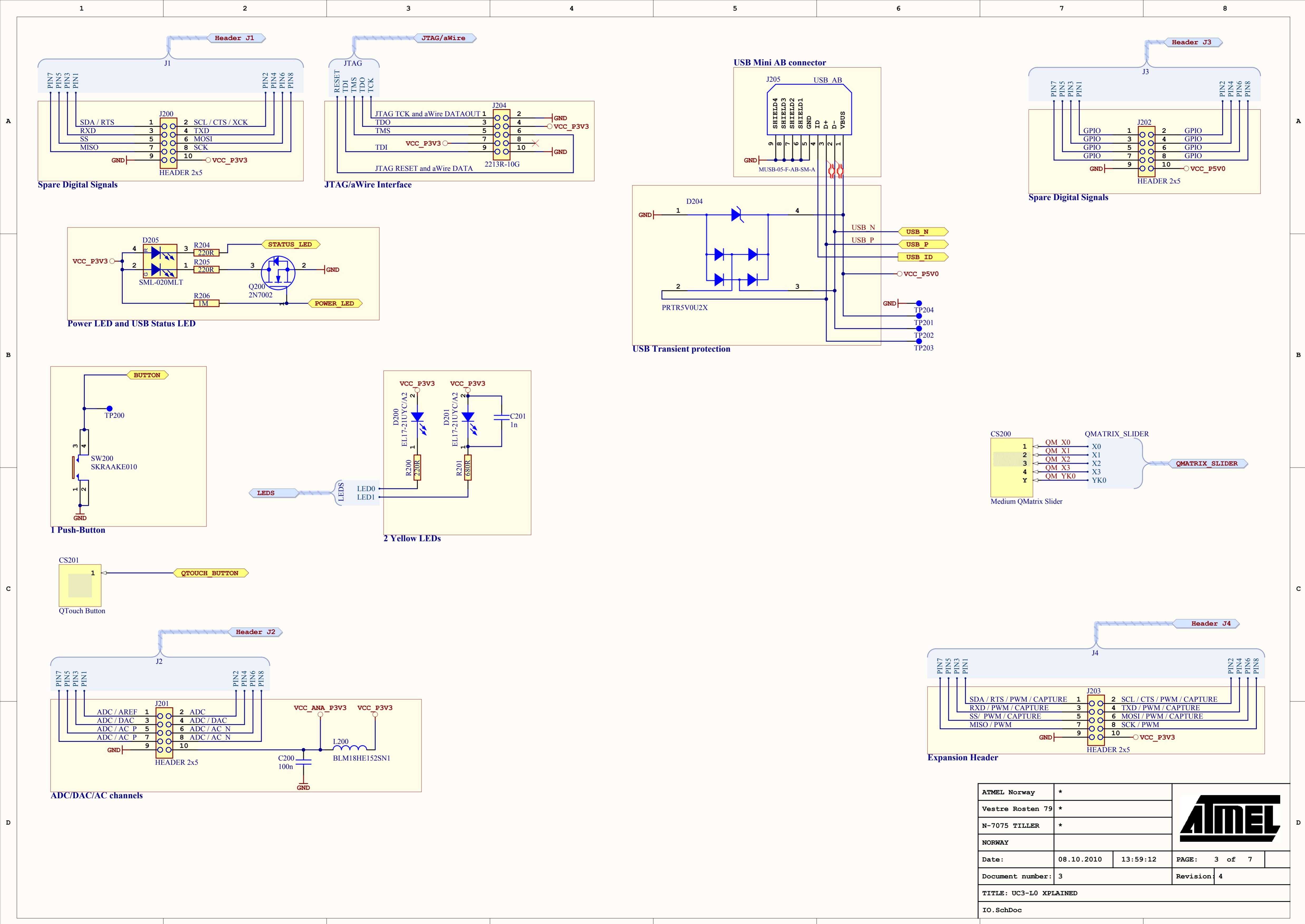
A**B****C****C****C**

Add this resistor for 1.8V operation (VCC_MCU_P3V3 must be 1.8V).

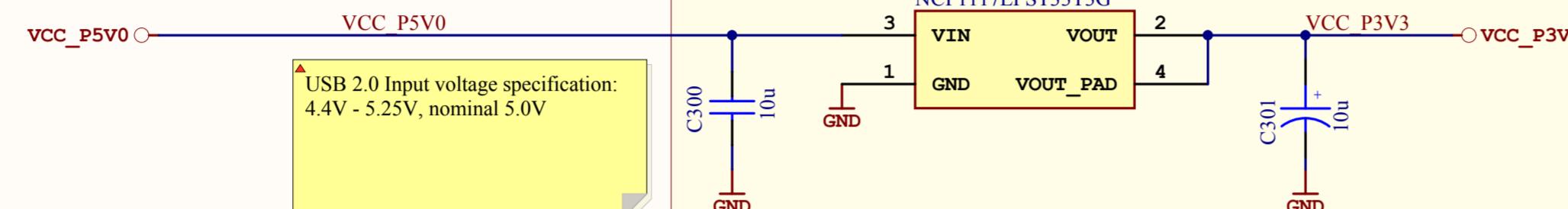
Add resistor 103 and remove resistor 104 if an external reference should be connected from header J2, pin 0.

**D****D**

ATMEL Norway	*	
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	08.10.2010 13:59:12	
Document number:	2	
Revision:	4	
TITLE: UC3-L0 XPLAINED		
MCU.SchDoc		



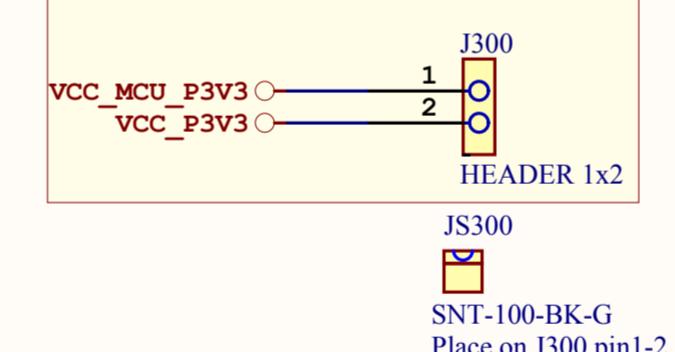
A

3.3V linear regulator with input range from -4.4V - 18V

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 $3.3V \pm 2\%$. The maximum quiescent current is $700\mu A$. NOTE!! that worst-case output voltage may drop down to 3.0V with 4.4V input voltage.

NOTE!! ESR on output capacitor should be larger than 20mOhm to maintain stable regulation. Higher values on the output capacitor will also improve loop stability and give better transient response which reduces output noise.

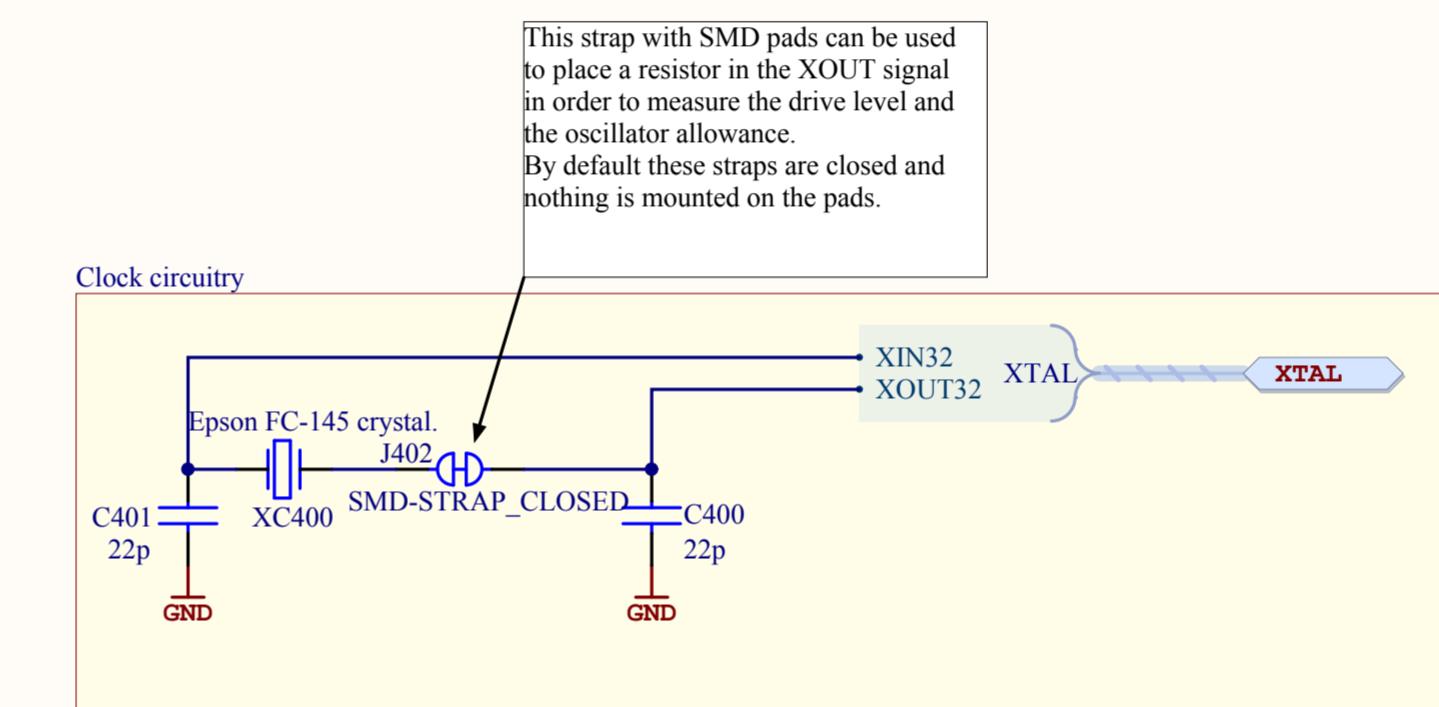
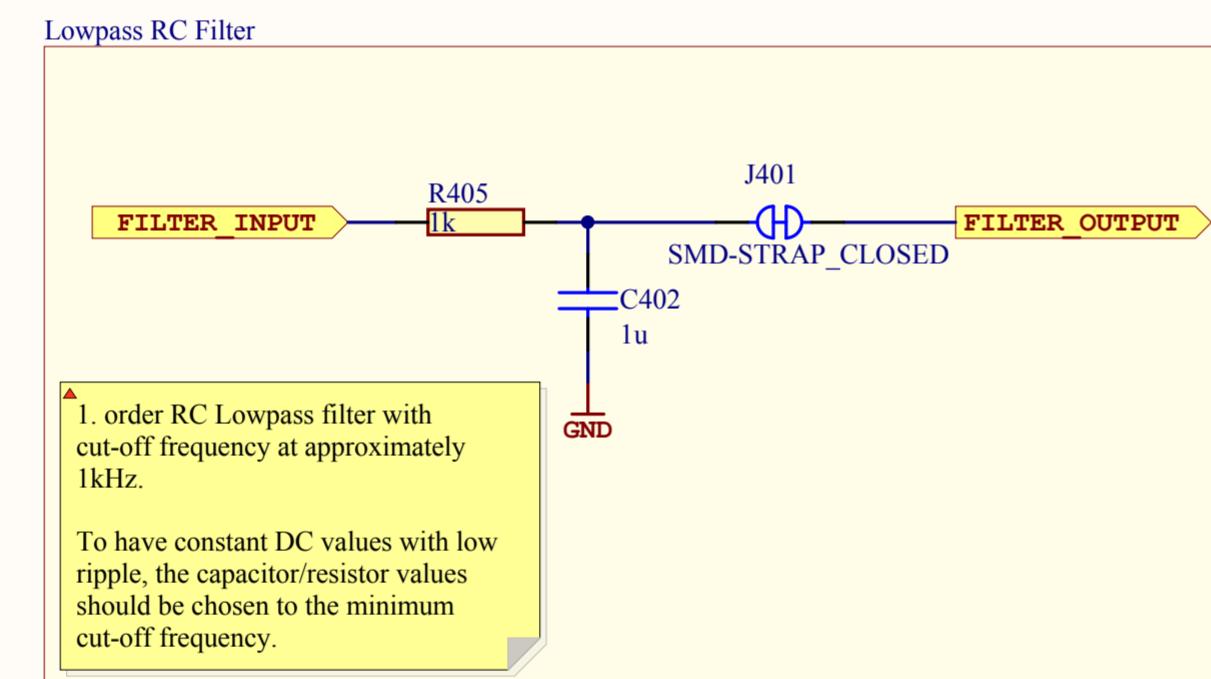
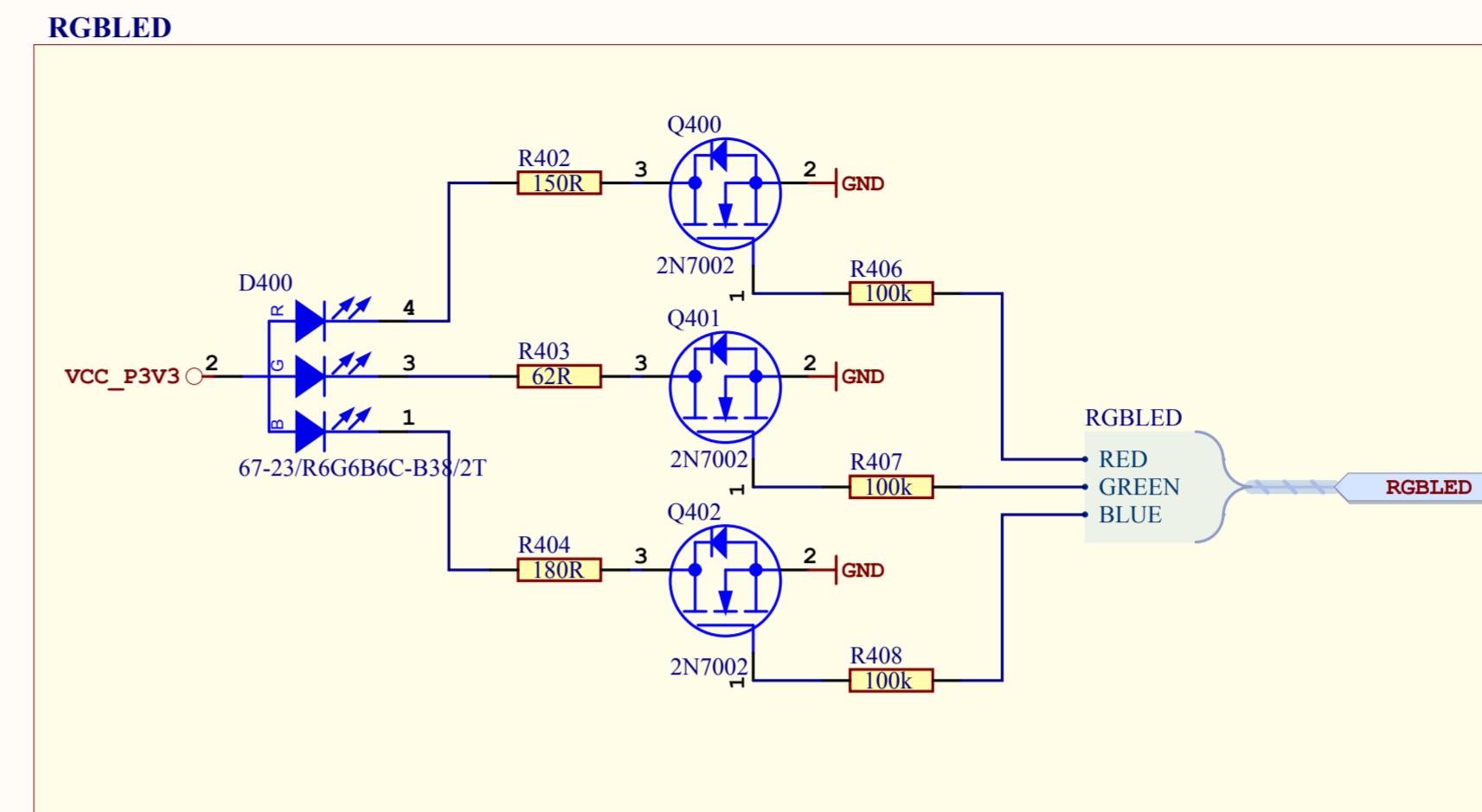
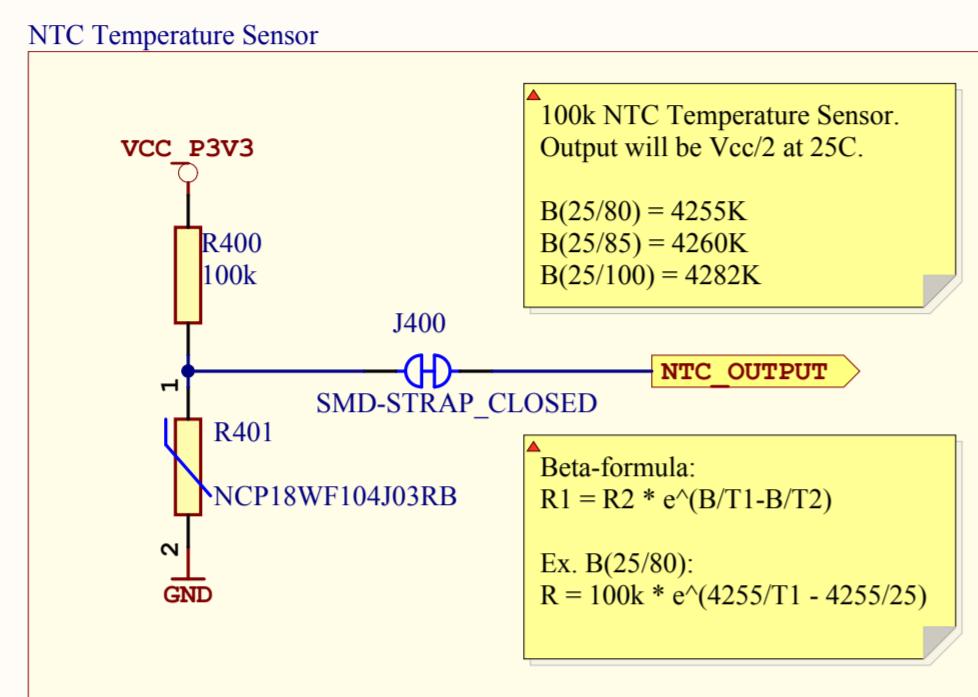
B

CPU Power Supply Measurement Header

C

D

ATMEL Norway	*	
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	08.10.2010 13:59:13	PAGE: 4 of 7
Document number:	4	Revision: 4
TITLE: UC3-L0 XPLAINED		
PowerManagement.SchDoc		



Crystal datasheet:
Load capacitance CL = 12.5 pF
ESR 70kOhm Max.
Frequency tolerance 20ppm
Drive Level 0.5uW

AT32UC3L0 datasheet:
Internal equivalent capacitance of the device is Ci = 2 pF
The package and pin capacitance is negligible (< 1pF)

$C = 2 (CL - Ci) = 2 (12.5 - 2) pF = 21 pF$

Selected value is 22pF

ATMEL Norway	*	
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N-7075 TILLER	*	
NORWAY		
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Document number:	5	Revision: 4
TITLE: UC3-L0 XPLAINED		
Analog.SchDoc		

A

A

B

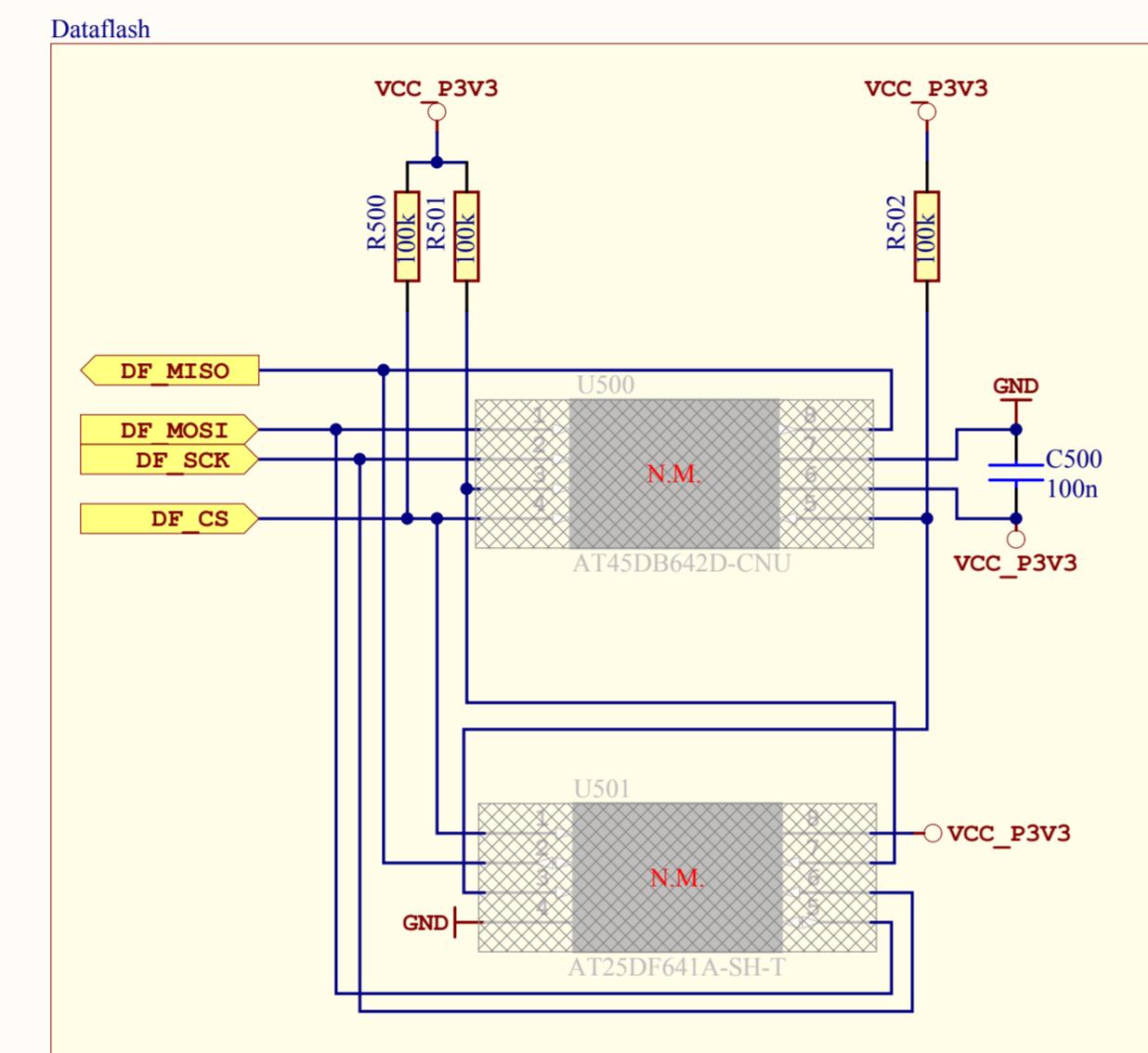
B

C

C

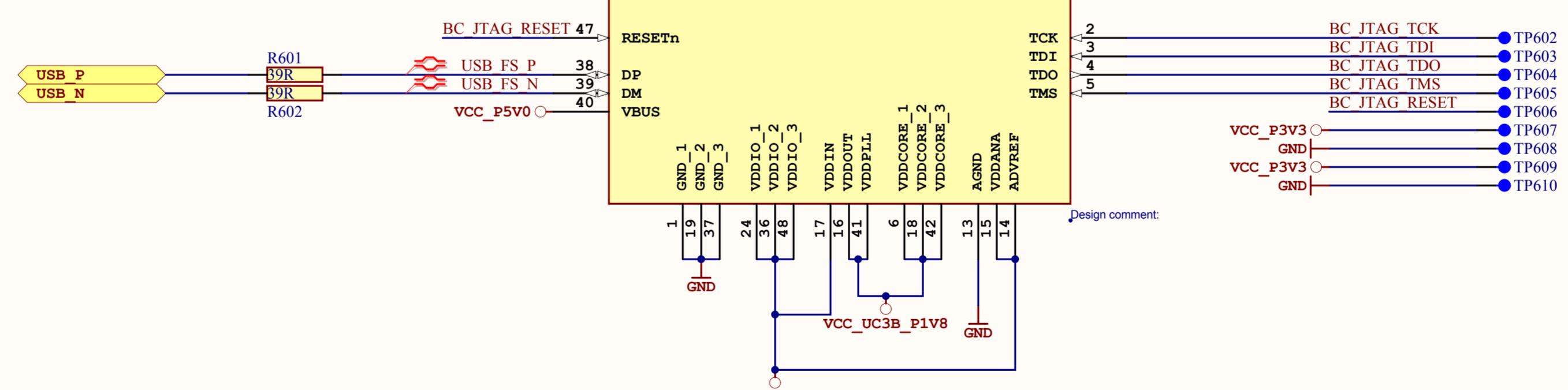
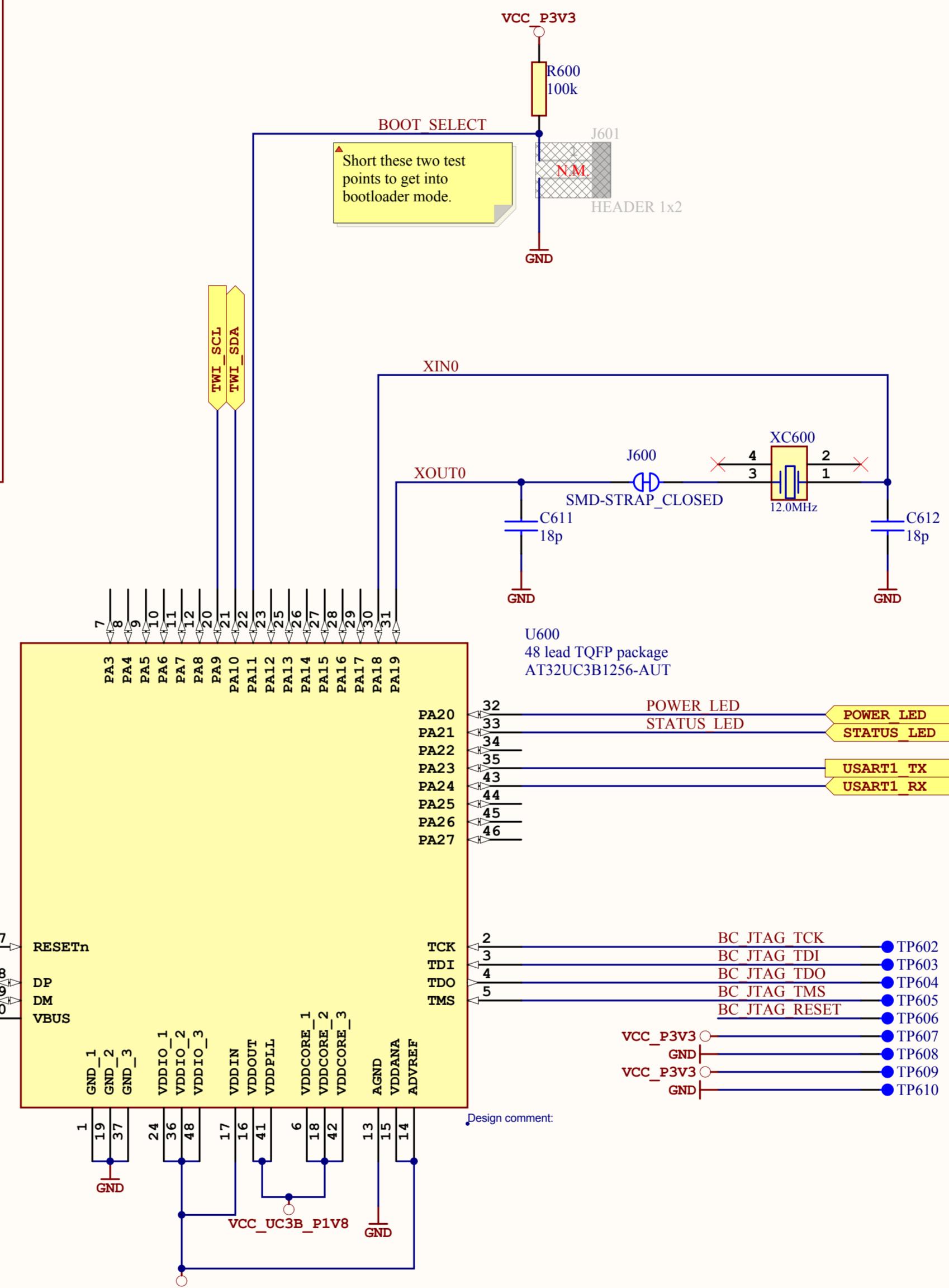
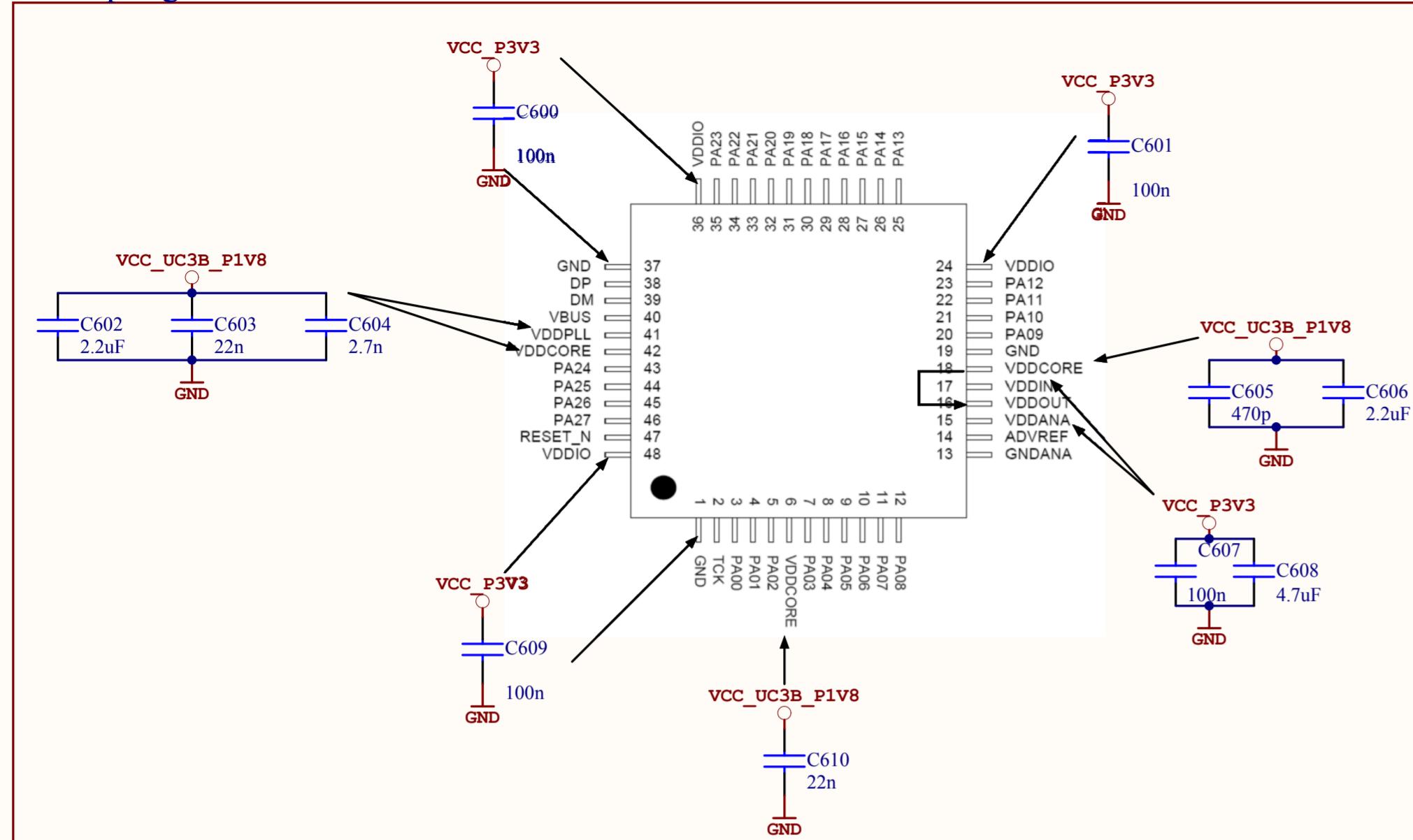
D

D

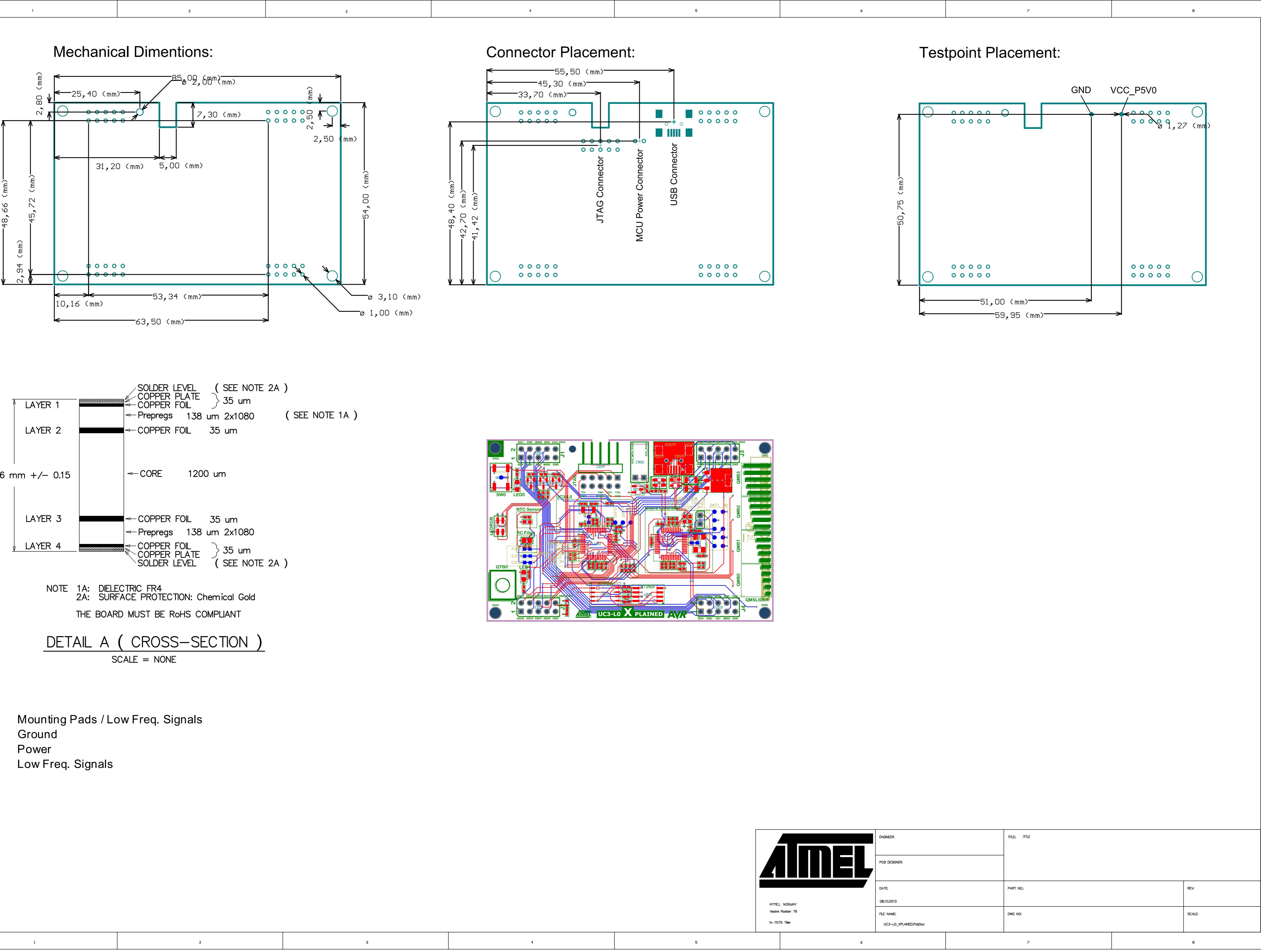


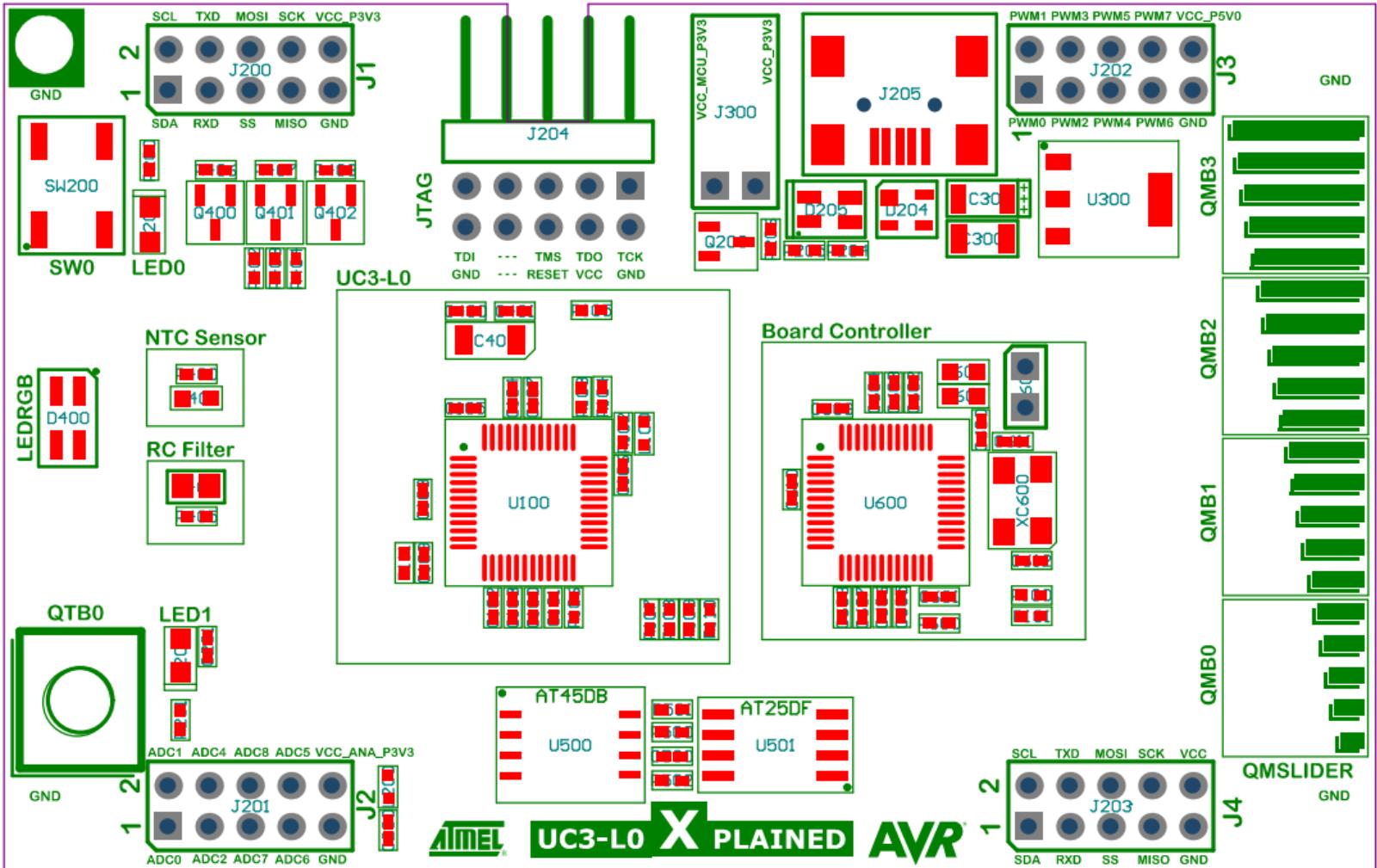
ATMEL Norway	*	ATMEL
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
Date:	08.10.2010 13:59:13	PAGE: 6 of 7
Document number:	6	Revision: 4
TITLE: UC3-L0 XPLAINED		
Dataflash.SchDoc		

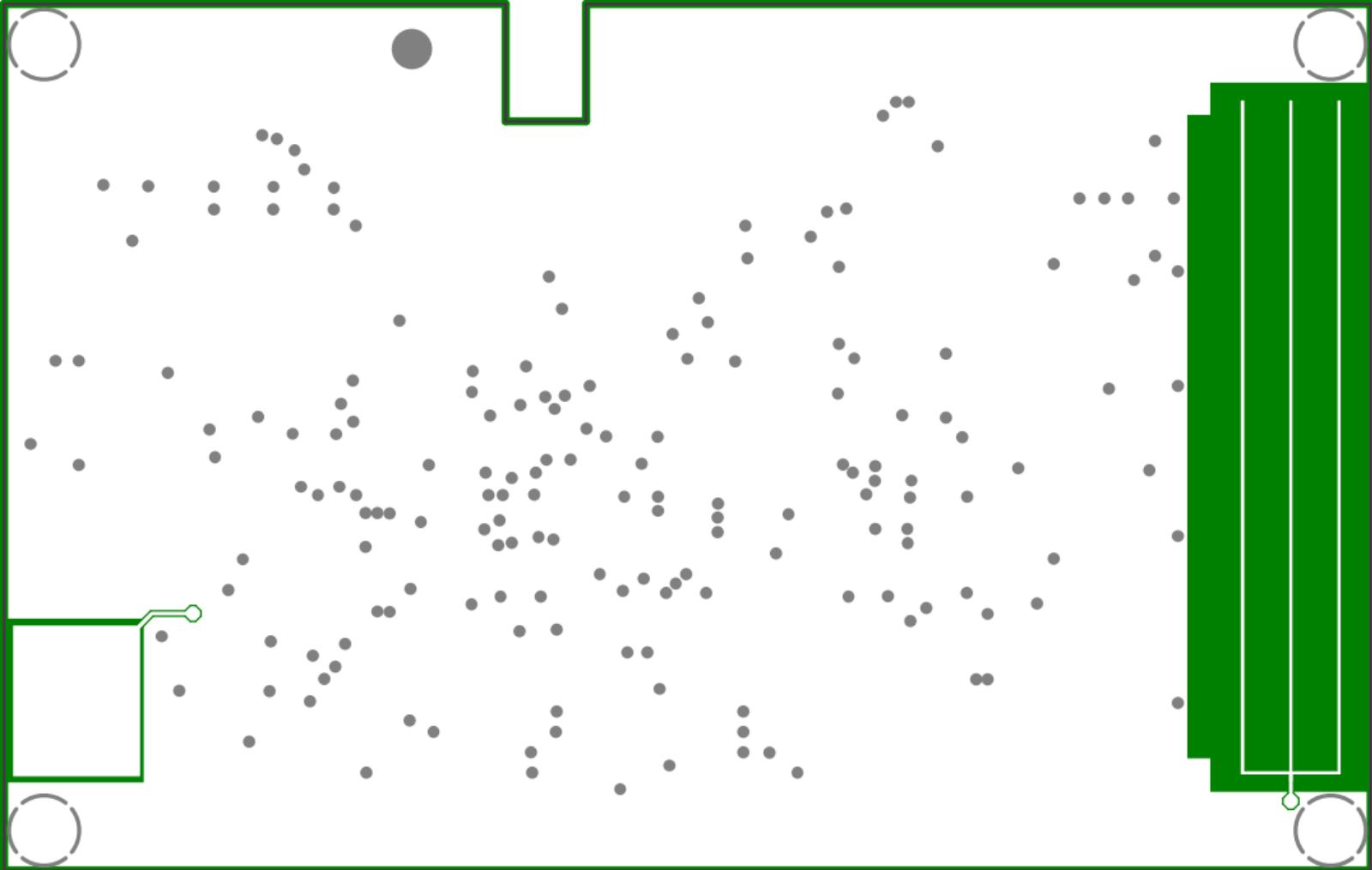
Decoupling

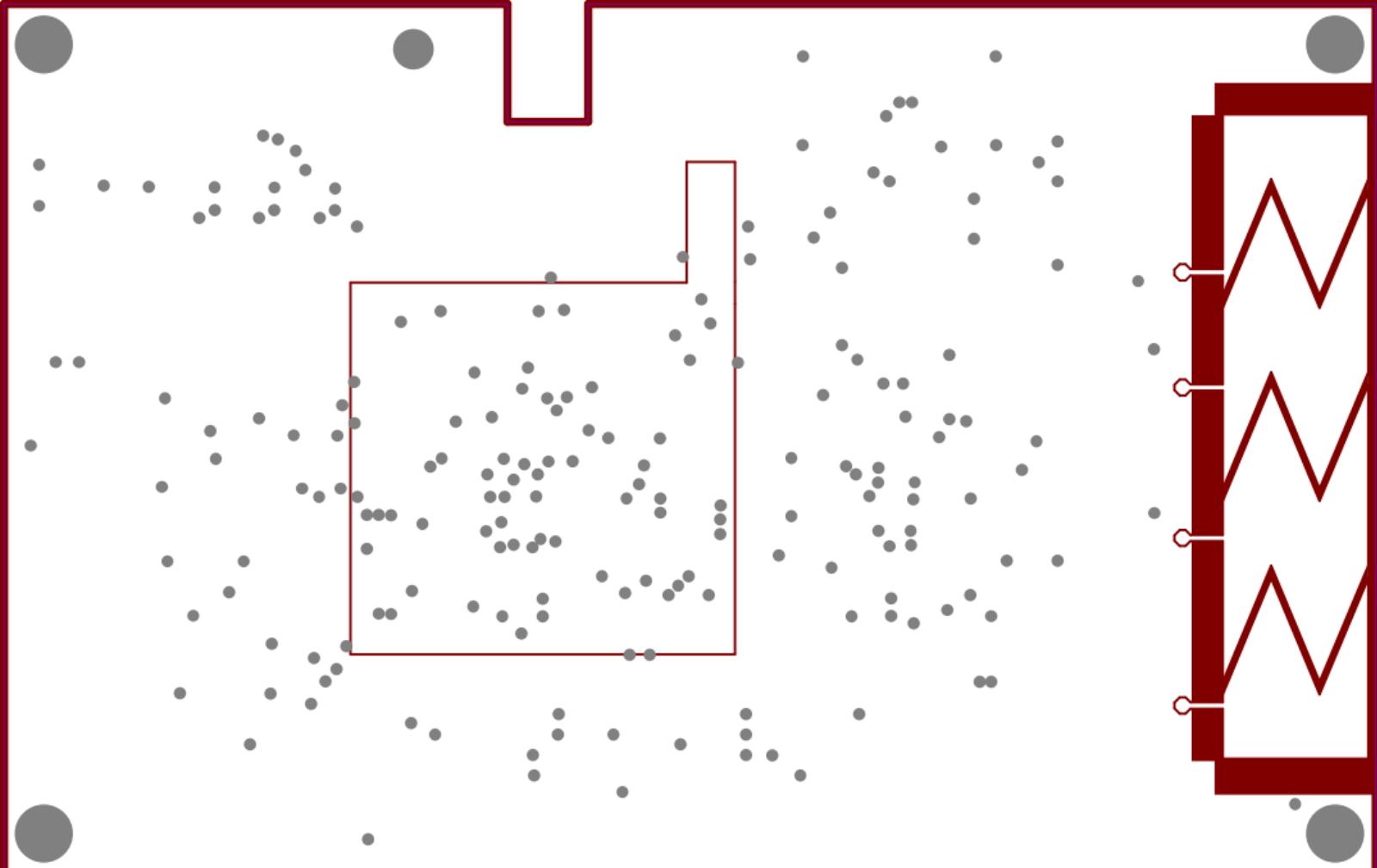


ATMEL Norway	*	ATMEL
Vestre Rosten 79	*	
N-7075 TILLER	*	
NORWAY		
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Document number:	7	Revision: 4
TITLE: UC3-L0 XPLAINED		
Board_controller.SchDoc		









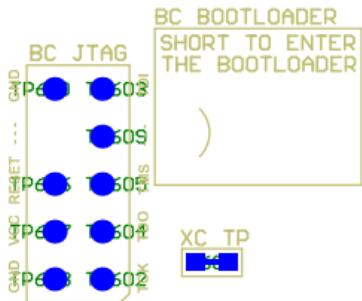
Atmel Corp © 2010



A08-0808, Rev 4

PCBA LABEL

VCC_P3V3 PB01 PB03 PB10 PB05



GND PB04 PB12 PA20 PA13

TP201 TP203

TP202 TP204

VCC_P5V0 PB01 PB03 PB10 PB05

GND PB02 PA08 PB11 PA21

TP200



TP100
TP101
TP102

ANALOG SIGNALS

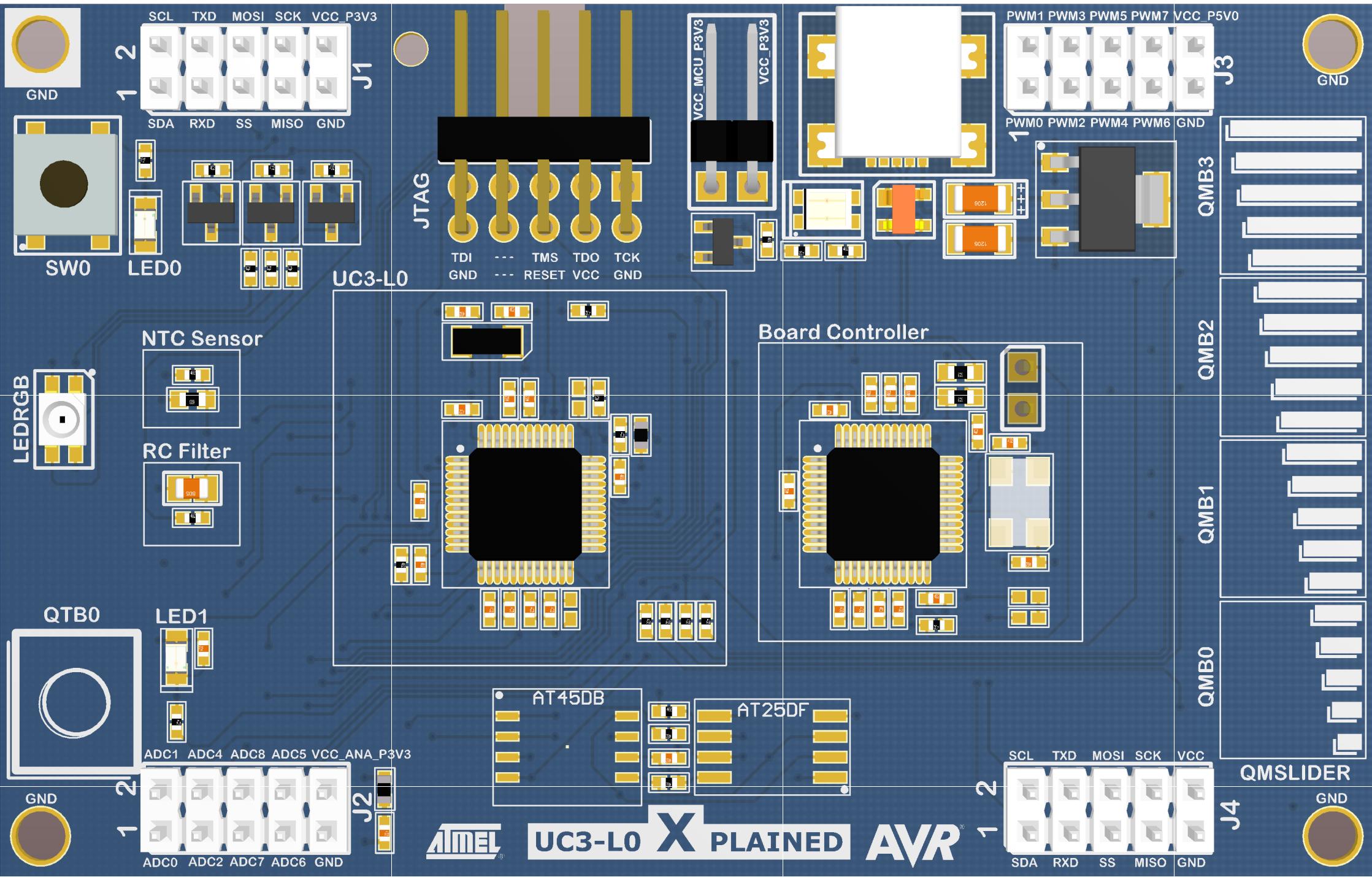
CUT STRAP TO
DISCONNECT ONBOARD
ANALOG SIGNALS
FROM THE ADC

ADC4
ADC2
ADCO

VCC_ANA_P3V3 PA19 PB08 PA18 PA15

GND PB02 PB00 PB11 PA21

GND PB06 PB07 PA16 PA14

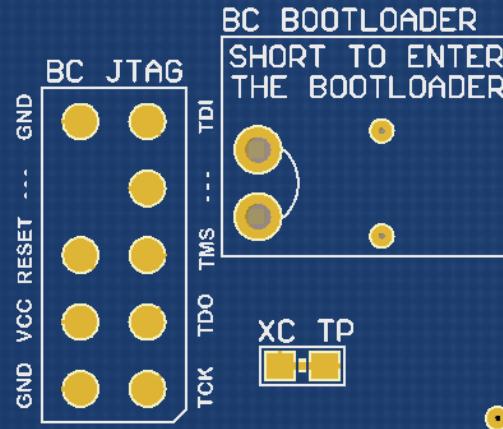




PCBA LABEL

VCC_P6V0 PA11 PB09 PA22 PA17
 GND PB04 PB12 PA20 PA13

TP201 TP203
 TP202 TP204



VCC_P3V3 PB01 PB03 PB10 PB05
 GND PB02 PA08 PB11 PA21

TP200

XC TP

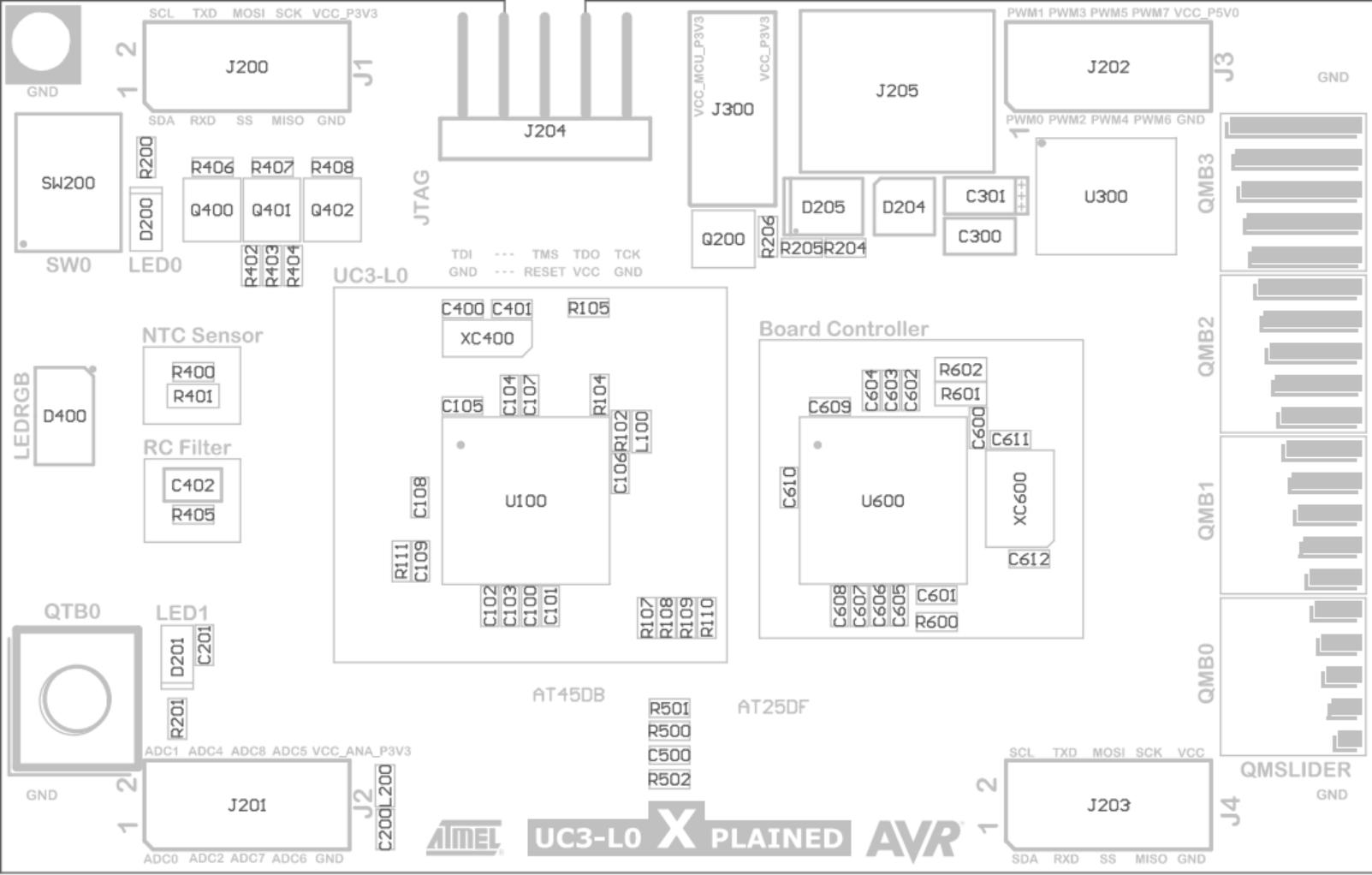
ANALOG SIGNALS

CUT STRAP TO
 DISCONNECT ONBOARD
 ANALOG SIGNALS
 FROM THE ADC

ADC4
 ADC2
 ADC0

VCC_P3V3 PB01 PB03 PB10 PB05
 GND PB02 PB00 PB11 PA21

VCC_ANA_P3V3 PA19 PB08 PA18 PA15
 GND PB06 PB07 PA16 PA14





A08-0808, Rev 4

PCBA LABEL

VCC_P3V3 PB01 PB03 PB10 PB05

GND PB02 PB00 PB11 PA21

GND PB04 PB12 PA20 PA13

VCC_P5V0 PA11 PB09 PA22 PA17

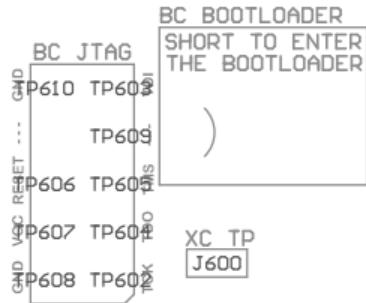
TP201 TP203

TP202 TP204

VCC_P3V3 PB01 PB03 PB10 PB05

GND PB02 PA08 PB11 PA21

TP200

TP100
TP101
TP102J402
XC TP

ANALOG SIGNALS

CUT STRAP TO DISCONNECT ONBOARD ANALOG SIGNALS FROM THE ADC	J400 ADC4
	J100 ADC2
	J401 ADC0

VCC_ANA_P3V3 PA19 PB08 PA18 PA15

GND PB06 PB07 PA16 PA14

Designator	Quantity	MPN	Manufacturer	Value	Description
C100, C602, C606	3	C0402C225M9PAC	Kemet	2.2uF	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20%
C101, C103, C104, C105, C106, C200, C500, C600, C601, C607, C609	11	C0402C104K4RACTU	Kemet	100n	Ceramic capacitor, SMD 0402, X7R, 16V, +/-10%
C102, C107, C608	3	GRM155R60J475ME87D	Murata	4.7uF	Ceramic capacitor, SMD 0402, X5R, 6.3V, +/-20%
C108, C603, C610	3			22n	Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
C109	1			4.7n	Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
C201	1			1n	Ceramic capacitor, SMD 0402, X7R, 50V, +/-10%
C300	1	GRM31CR71C106KA12L	Murata	10u	Ceramic capacitor, SMD 1206, X7R, 16V, +/-10%
C301	1	TR3A106K016C1700	vishay	10u	SMD tantalum capacitor, ESR = 1.7, 3216-18 (EIA) 1206,
C400, C401	2			22p	Ceramic capacitor, SMD 0402, NP0, 50V, +/-5%
C402	1			1u	Ceramic capacitor, SMD 0805, X7R, 16V, +/-10%
C604	1			2.7n	Ceramic capacitor, SMD 0402, X7R, 25V, +/-10%
C605	1			470p	Ceramic capacitor, SMD 0402, X7R, 50V, +/-10%
C611, C612	2			18p	Ceramic capacitor, SMD 0402, NP0, 50V, +/-5%
D200, D201	2	EL17-21UYC/A2	Everlight	EL17-21UYC/A2	LED, Yellow, Wave length=591nm SMD0805 ±7°
D204	1	PRTTR5V0U2X	Philips	PRTTR5V0U2X	Double rail-to-rail USB ESD protection diode
D205	1	SML-020MLT	ROHM	SML-020MLT	LED, 2 colour (RED/GREEN), transparent clear lens, SMD
D400	1	67-23/R6G6B6C-B38/2T	Everlight	67-23/R6G6B6C-B38/2T	RGB LED
J200, J201, J202, J203	4	CD075014 2X5	Freber	CD075014 2X5	2x5 pin header, 2.54 mm pitch, Pin-in-Paste THM
J204	1	2213R-10G	Multicomp	2213R-10G	Header, 2 Row, R/Angle, 10 Way
J205	1	MUSB-05-F-AB-SM-A	SAMTEC	MUSB-05-F-AB-SM-A	USB Mini-AB Connector, SMD
J300	1	2213R-2G	Pro-data International Corp	Pin header 1x2 right angle	1x2 pin header, right angle, 2.54 mm pitch, through-hole
JS300	1	SNT-100-BK-G	SAMTEC	SNT-100-BK-G	Jumper cap for 2.54mm pinheader
L100, L200	2	BLM18HE152SN1	Murata	BLM18HE152SN1	SMD RF inductor 0603, Z=1500Ohm (@100MHz), Max R(d)=0.50Ohm, Max current=500mA
LABEL1	1	505462	ACT Logimark AS	Label PCBA	PCBA identification label PP Top White Gloss
PCB1	1			A08-0808	UC3-LO XPLAINED PCB, 4-layer, size 54mm x 85mm
Q200, Q400, Q401, Q402	4	N2N7002	Fairchild	N2N7002	N-Channel MOSFET. 60V, 0.115 continuous, 0.8A Peak. RDS(ON) 7.50hm@VGS=5.0V, VGS(th)=3
R102, R104	2			0R	Thick film resistor, SMD 0402, 1/16W, 1%
R105, R201	2			680R	Thick film resistor, SMD 0402, 1/16W, 1%
R107, R108, R109, R110, R111, R405	6			1k	Thick film resistor, SMD 0402, 1/16W, 1%
R200, R204, R205	3			220R	Thick film resistor, SMD 0402, 1/16W, 1%
R206	1	RK73H1ETTP1004F	KOA	1M	Thick film resistor, SMD 0402, 1/16W, 1%
R400, R406, R407, R408, R500, R501, R502, R600	8			100k	Thick film resistor, SMD 0402, 1/16W, 1%
R401	1	NCP18WF104J03RB	Murata	NCP18WF104J03RB	NTC Thermistor 100kOhm @ 25deg, 1/10W, 5%, SMD 0603
R402	1			150R	Thick film resistor, SMD 0402, 1/16W, 1%
R403	1			62R	Thick film resistor, SMD 0402, 1/16W, 1%
R404	1			180R	Thick film resistor, SMD 0402, 1/16W, 1%
R601, R602	2	RK73H1JTTD39R0F	KOA	39R	Thick film resistor, SMD 0603, 1/10W, 1%
SW200	1	SKRAAKE010	ALPS	SKRAAKE010	6.2x6.2 mm SMD tact switch, same as A08-0091 but less force is needed
U100	1	AT32UC3L064-AUT	ATMEL	AT32UC3L064-AUT	AVR32 UC3L 48 pins
U300	1	NCP1117LPST33T3G	ON Semiconductor	NCP1117LPST33T3G	The low power version of the popular NCP1117
U600	1	AT32UC3B1256-AUT	ATMEL	AT32UC3B1256-AUT	AVR 32-bit RISC MCU
XC400	1	FC-145 32.7680KA-A0 / Q13FC1450000614	Epson Toyocom	Q13FC1450000614	32kHz crystal, SMD, 4.1 x 1.5 mm FC-145
XC600	1	FQ5032B-12-C-C-200-1 / 738B	F2x Electronics	12.0MHz	Fox FQ5032B 12.0MHz SMD crys