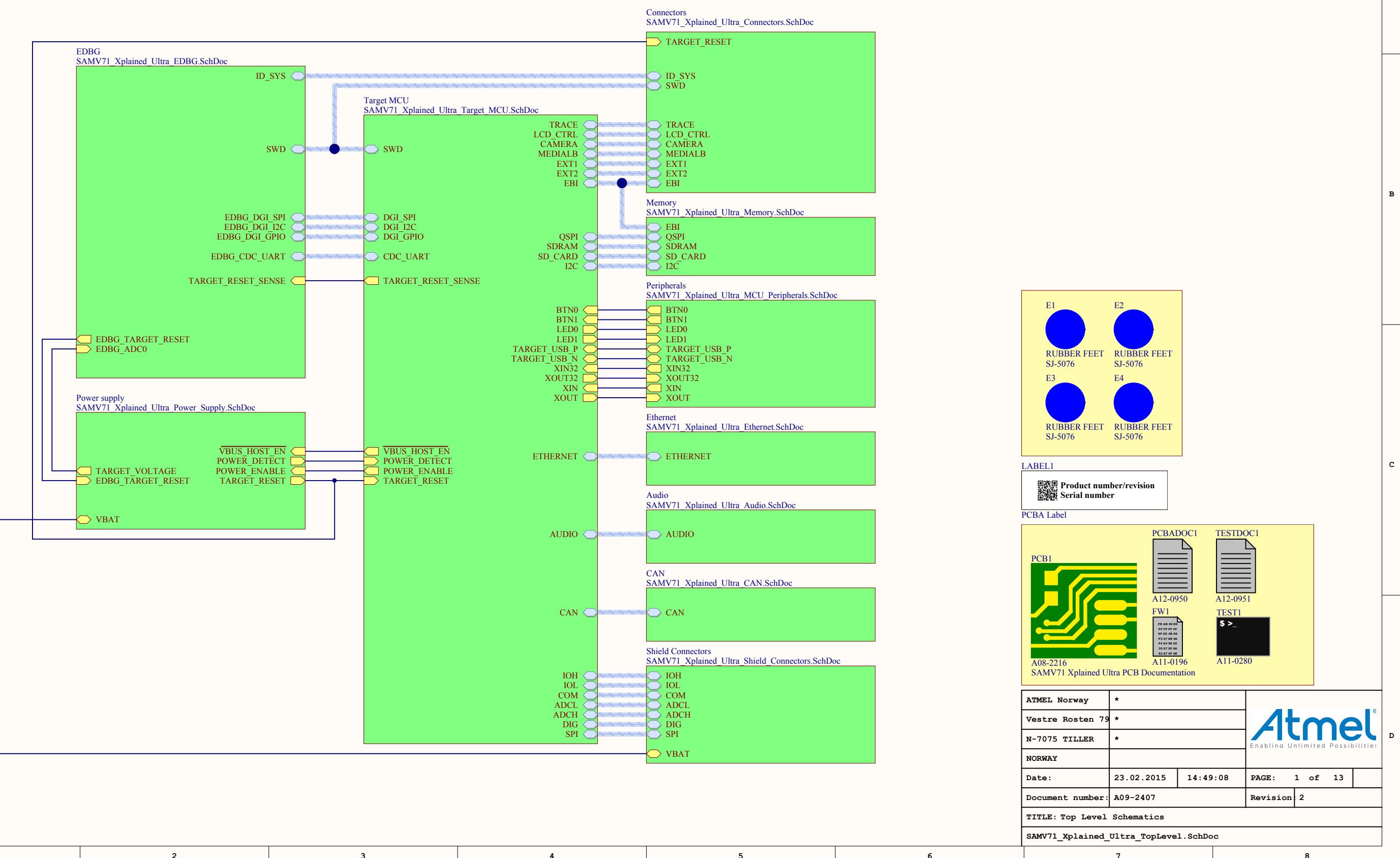
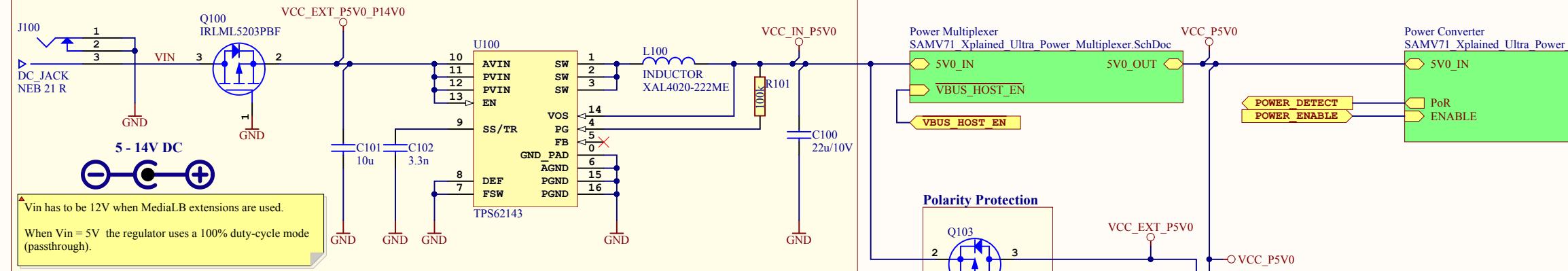


SAM V71 Xplained ULTRA



5V to 14V input, 5V out Power Supply

Power inputs to SAM V71 Xplained Ultra:
VCC_EXT_P5V0_P14V0:
2.1mm power jack with positive center. This voltage is used to generate VCC_EXT_P5V0, the regulator supports 5V to 17V input voltage. If MediaLB is not used the input voltage can be a maximum of 17V.

VCC_EXT_P5V0:
This power input can be used to power the whole board and it has a higher priority than the USB power inputs.
Connect a power supply if a target MCU with USB host is present and VCC_EXT_P5V0_P17V0 is not used.
4.3V to 5.5V is possible but for USB host operation and in case on-board devices use this voltage it should be 5V +2%.

VCC_EDBG_USB_P5V0:
EDBG USB power input. This supply is used when VCC_EXT_P5V0 is not present.

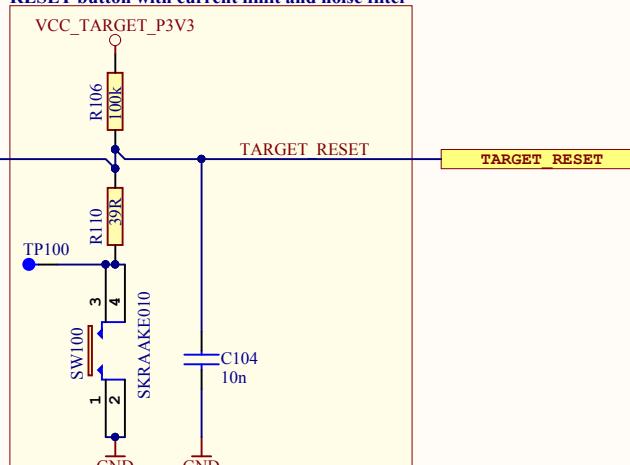
VCC_TARGET_USB_P5V0:
Target MCU USB power input. It is used to power the whole board when no other 5V power supply is present.

Other voltages:

VCC_P5V0:
This supply is connected to either VCC_EXT_P5V0, VCC_EDBG_USB_P5V0 or VCC_TARGET_USB_P5V0, based on the availability and priority of these supplies.

VCC_P3V3: Regulated 3.3V from VCC_P5V0
VCC_P2V0: Regulated 2.0V from VCC_P5V0
VCC_P1V8: Regulated 1.8V from VCC_P5V0
VCC_P1V2: Regulated 1.2V from VCC_P5V0

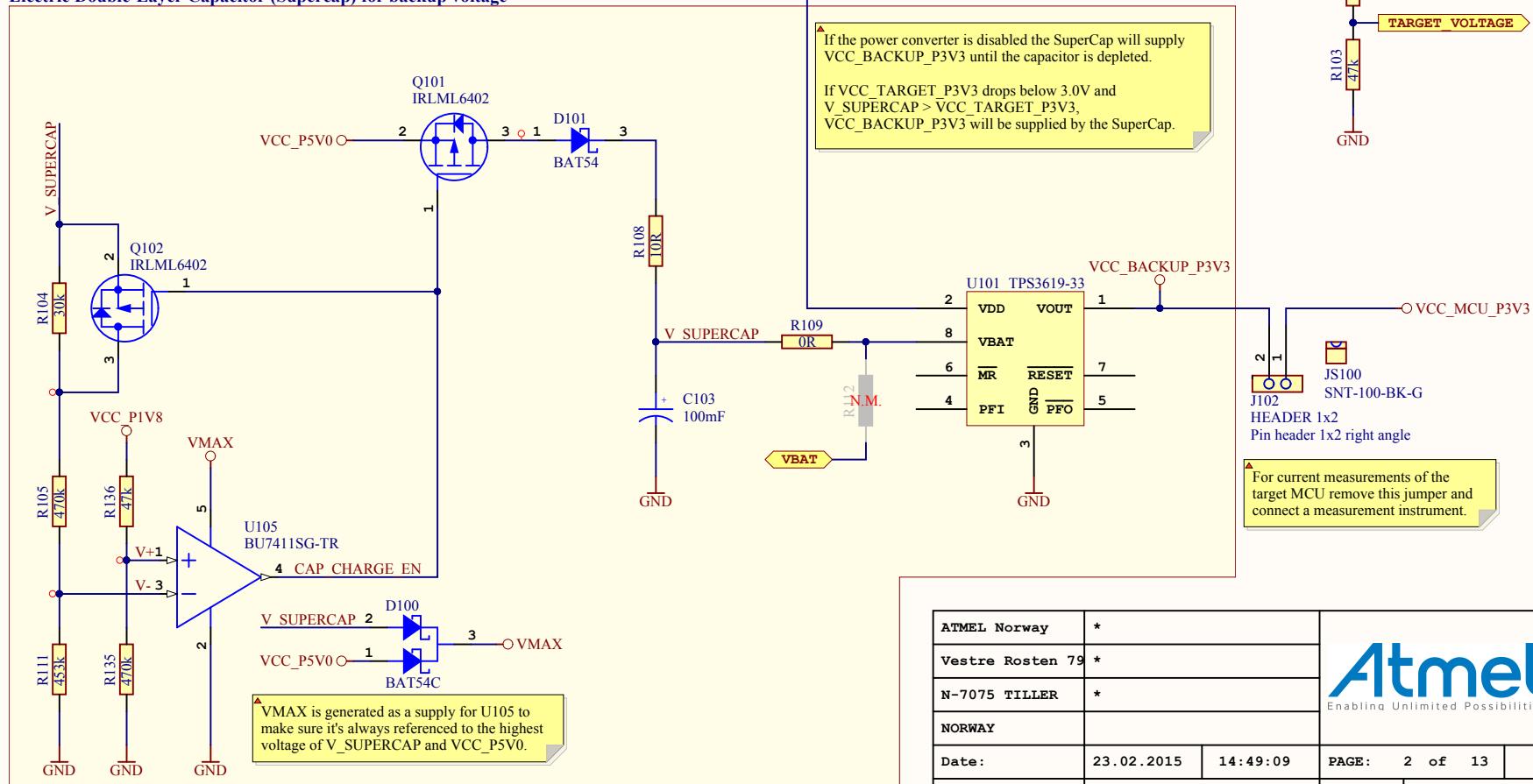
VCC_TARGET_P3V3: Target supply voltage (target MCU, peripherals, connectors)
VCC_BACKUP_P3V3: Powers target MCU, can be supplied from either VCC_TARGET_P3V3 or V_SUPERCAP.
V_SUPERCAP: The SuperCap is charged to 3.52V from VCC_P5V0 when that voltage is present. V_SUPERCAP is used to supply target MCU when the voltage regulator for VCC_P3V3 is turned off, intended for sleepmode and currents below 100µA.

RESET button with current limit and noise filter

U105 compares V_SUPERCAP to a known reference, when V_SUPERCAP is low Q101 and Q102 will open causing V_SUPERCAP to charge to:
 $V_{cap}(\max) = (U_{105_V_} * (R_{111} + R_{105})) / R_{111} = 3.52V$

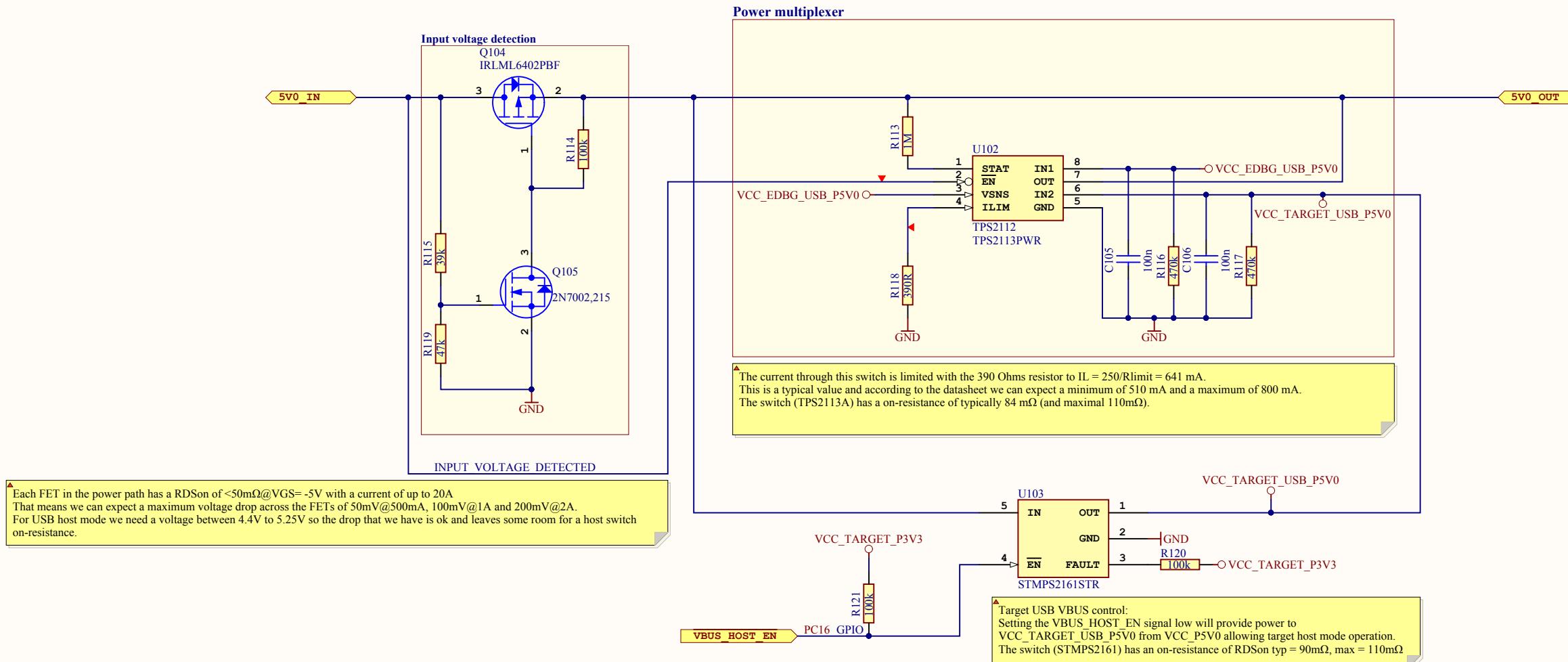
At $V_{cap}(\max)$ Q101 and Q102 will close and R104 is no longer short circuited by Q102.
Vcap is now given by the following formula:
 $V_{cap} = (U_{105_V_} * (R_{111} + R_{105} + R_{104})) / R_{111} = 3.40V$

Q102 and R104 implements a charge hysteresis to prevent oscillation when the capacitor is fully charged.

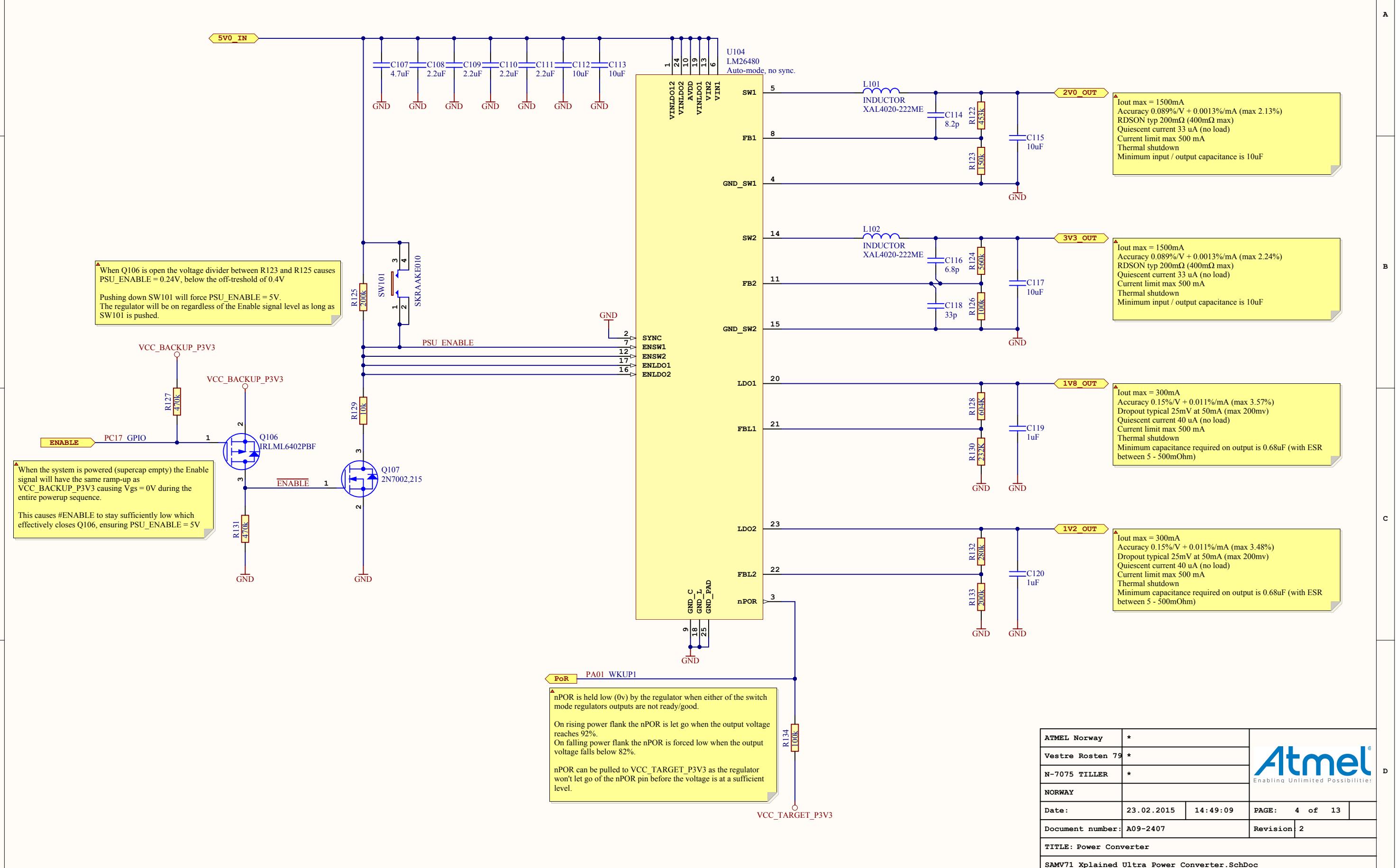
Electric Double-Layer Capacitor (Supercap) for backup voltage

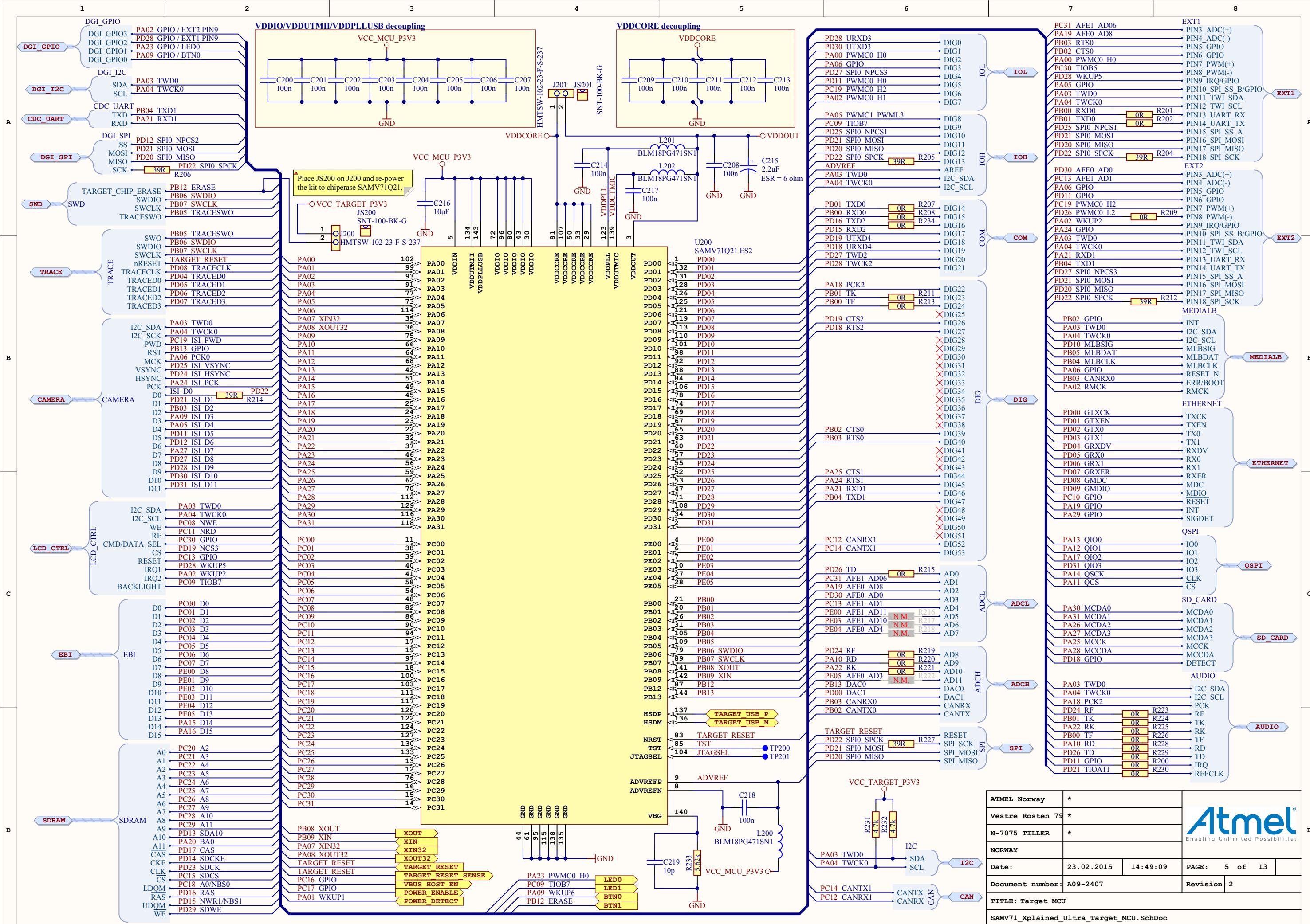
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N-7075 TILLER	*
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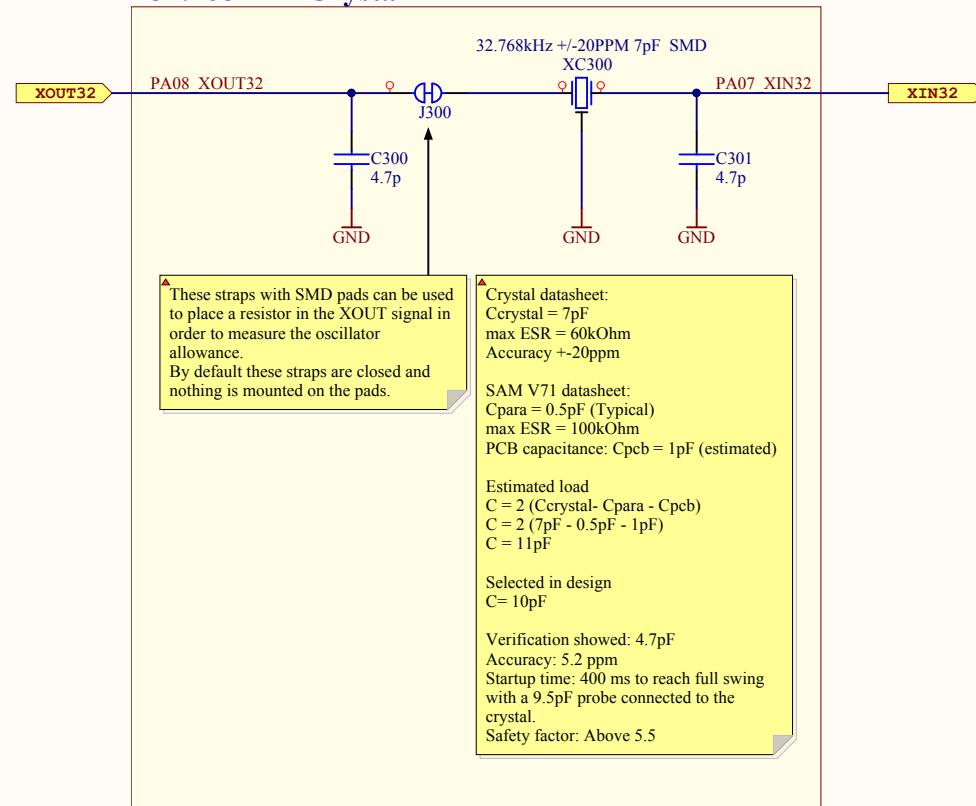
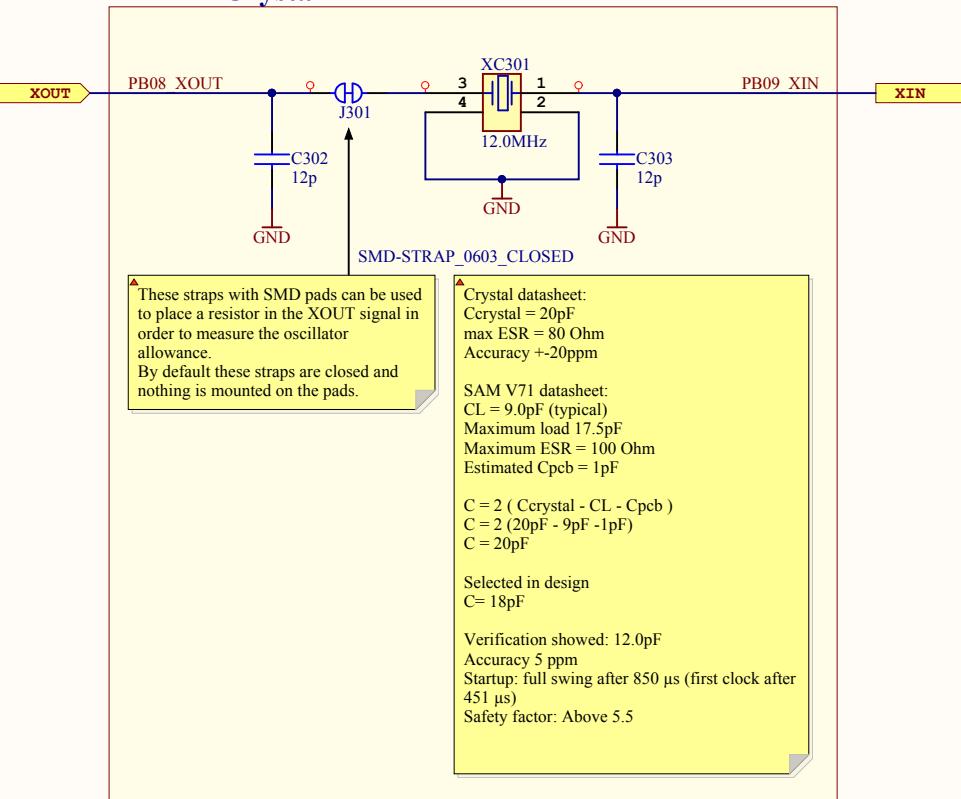
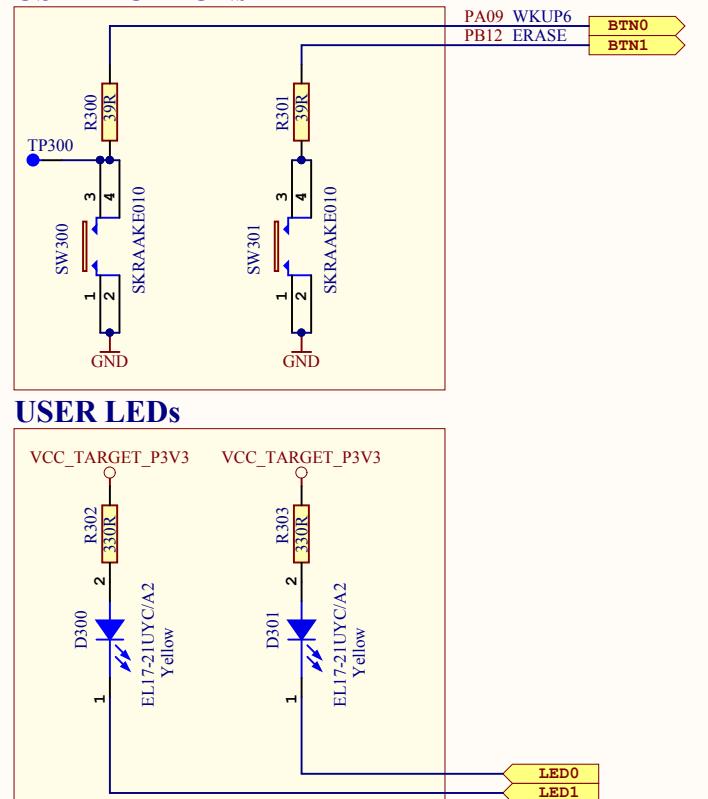
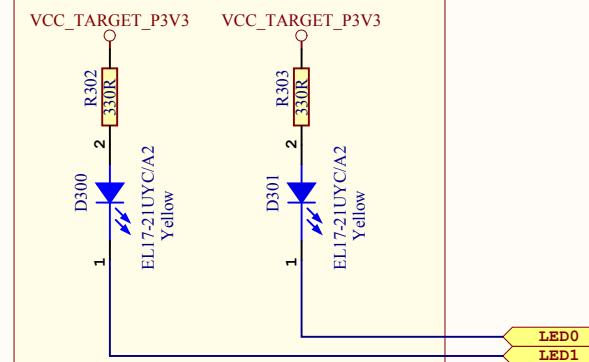
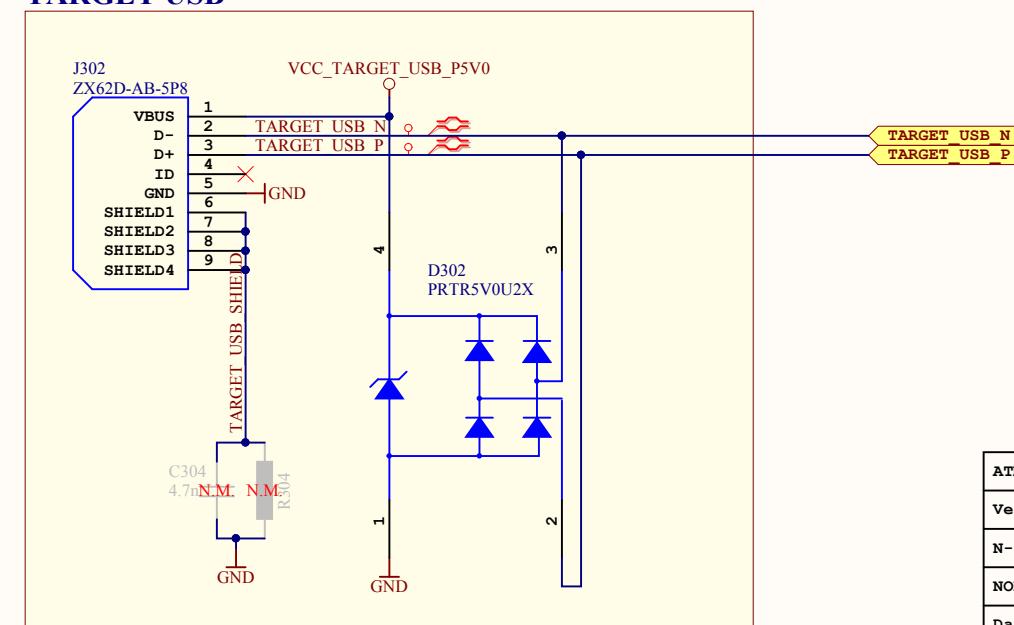
Atmel
Enabling Unlimited Possibilities



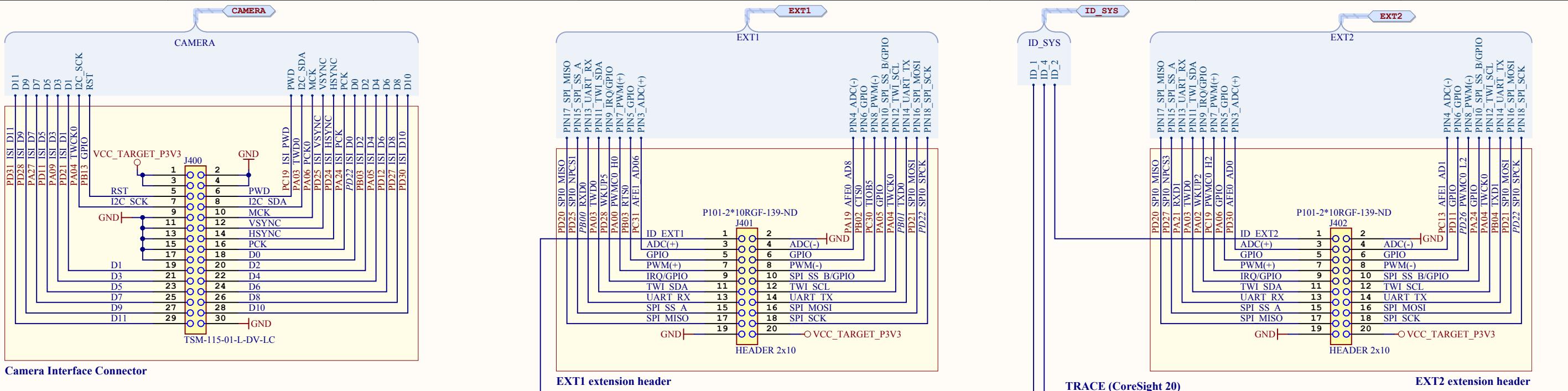
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N-7075 TILLER	*	
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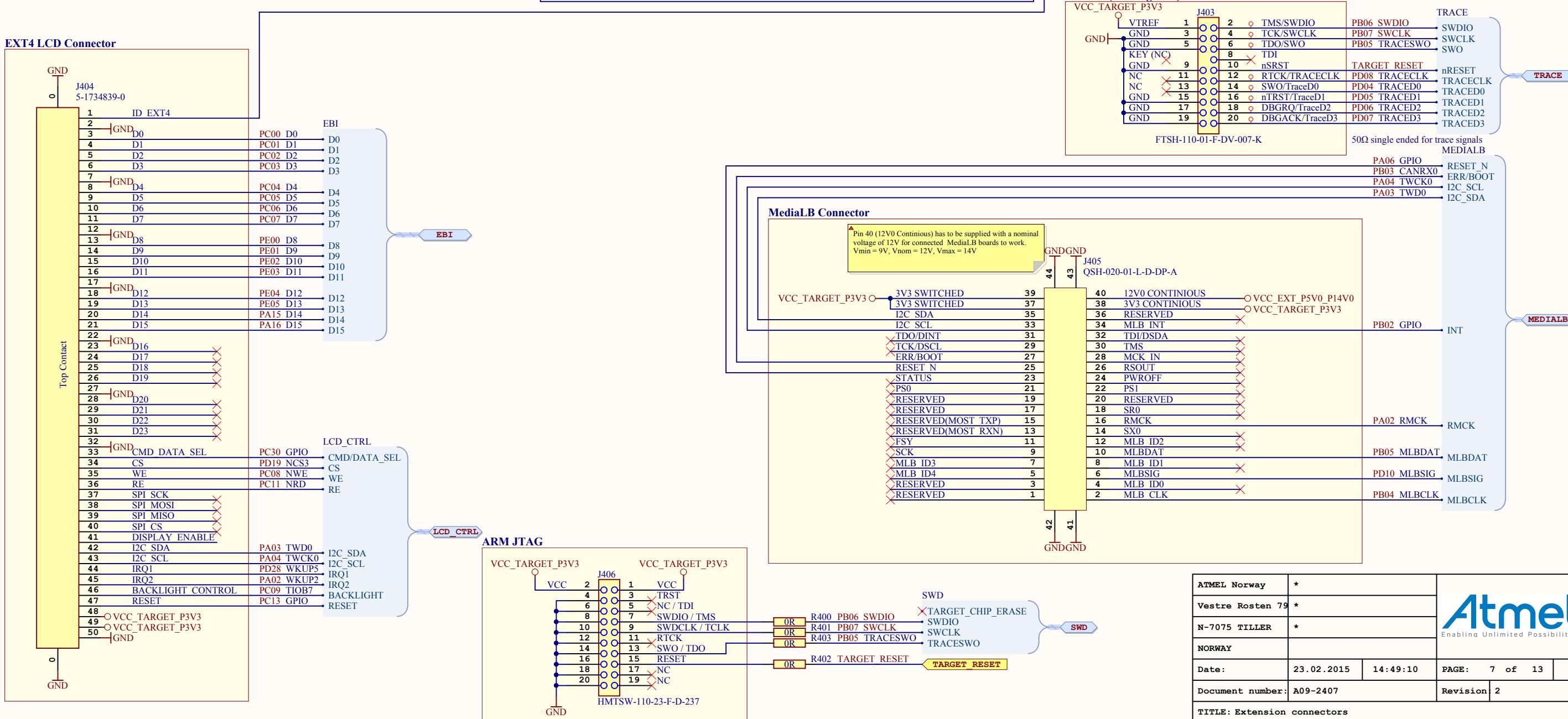


32.768 kHz Crystal**12 MHz Crystal****USER BUTTONS****USER LEDs****TARGET USB**

ATMEL Norway	*
Vestre Rosten 79	*
N-7075 TILLER	*
NORWAY	
Date:	23.02.2015 14:49:10
Document number:	A09-2407
Revision	2
TITLE: Target MCU Peripherals	
SAMV71_Xplained_Ultra_MCU_Peripherals.SchDoc	



Camera Interface Connector



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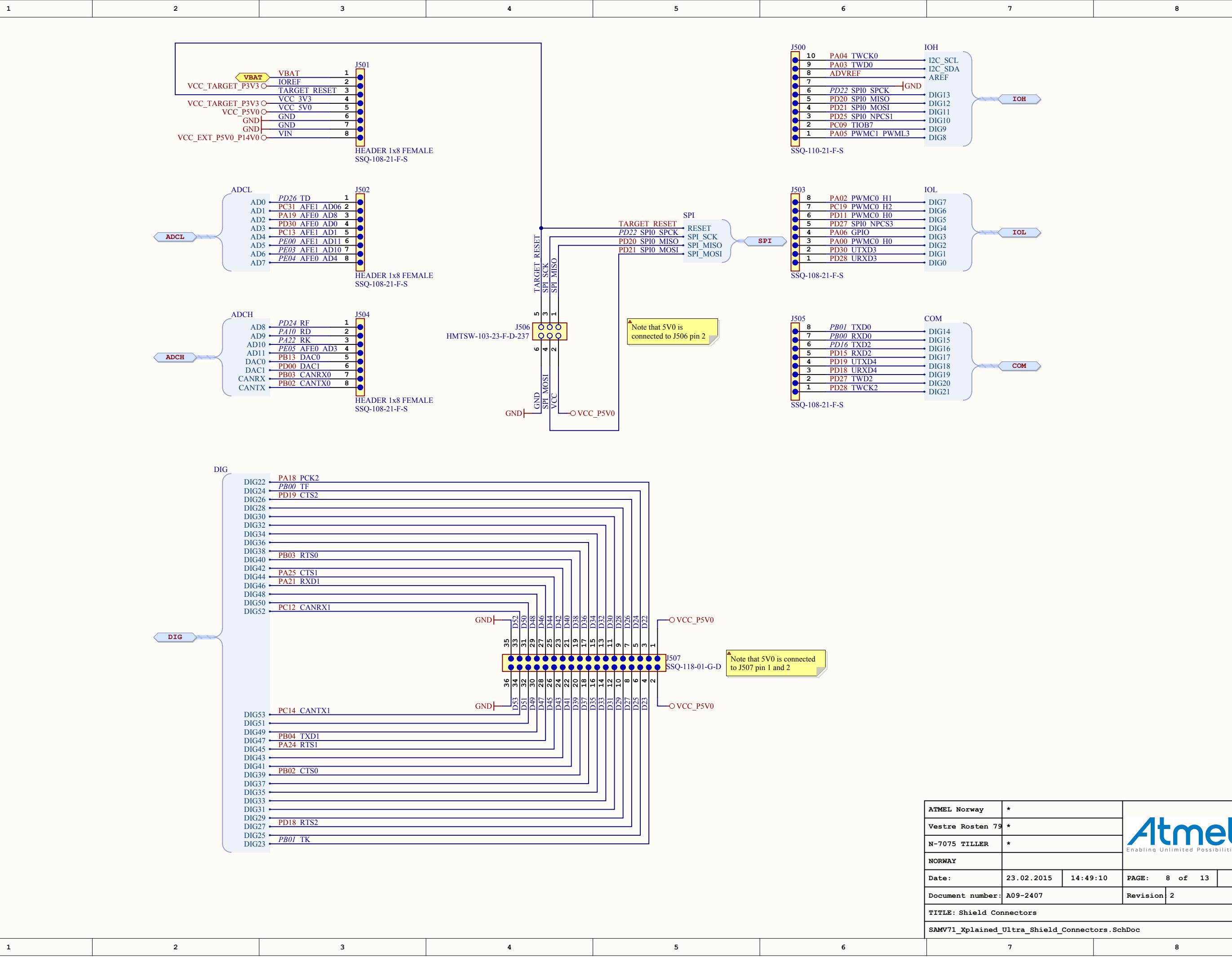
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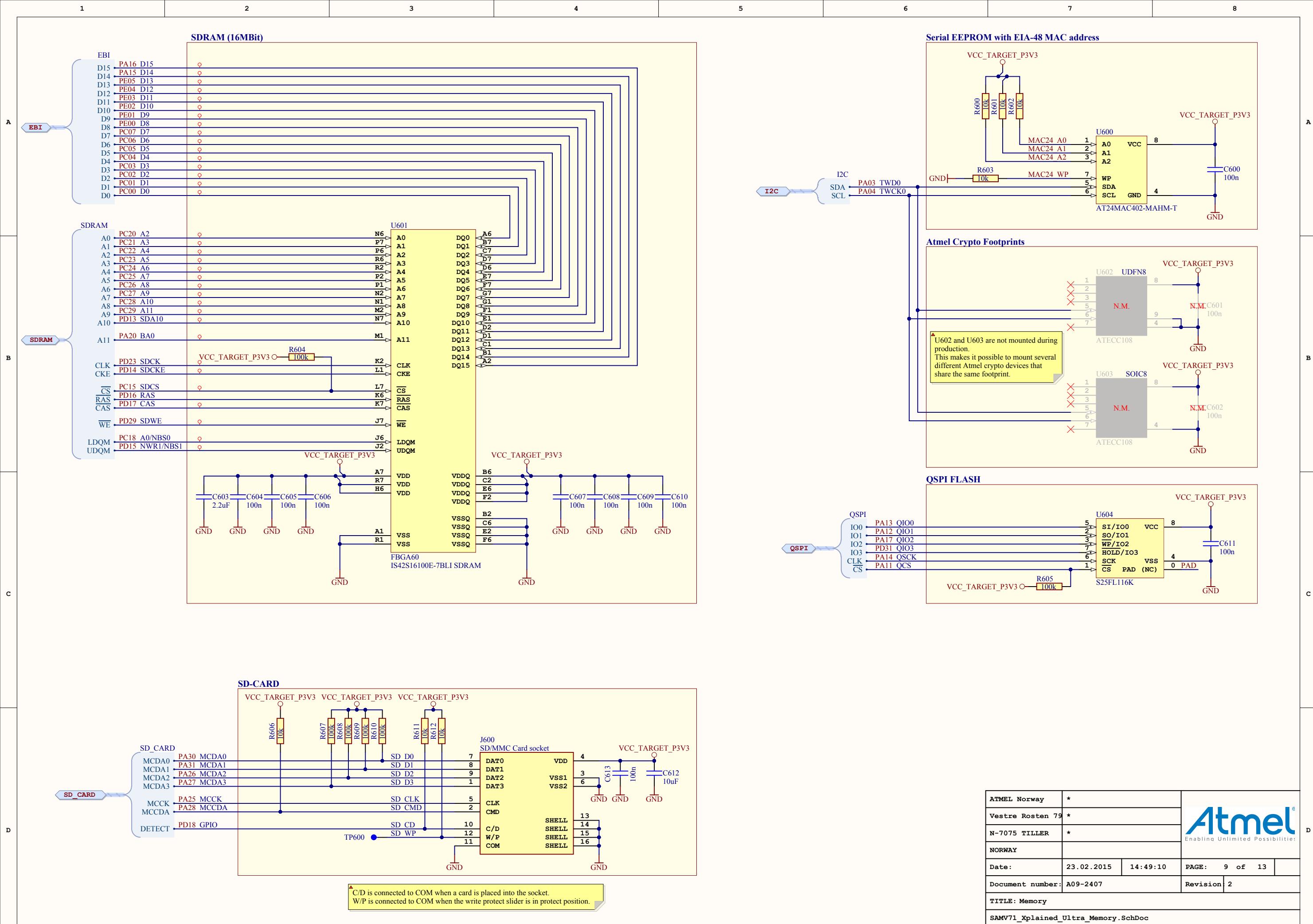
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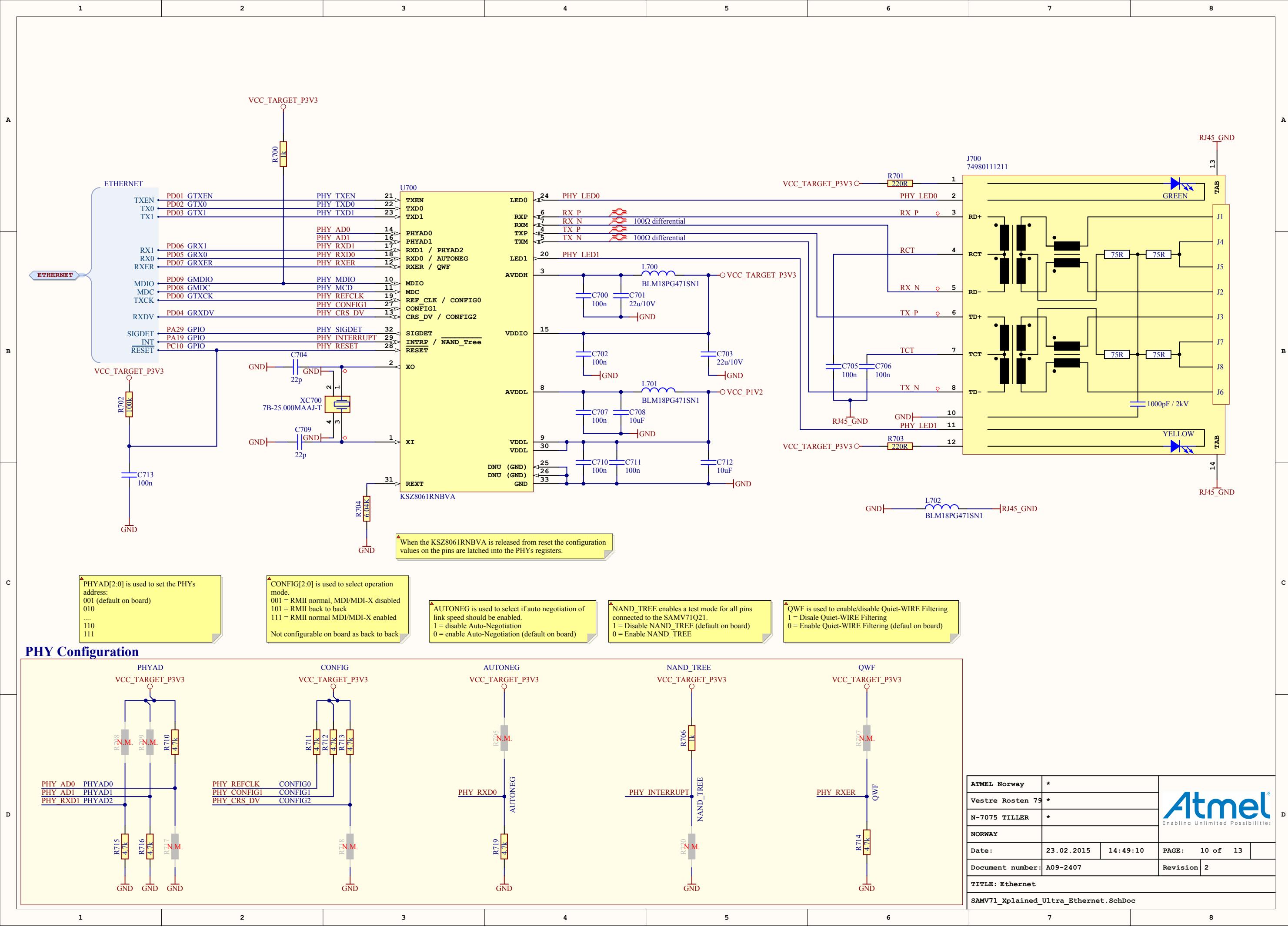
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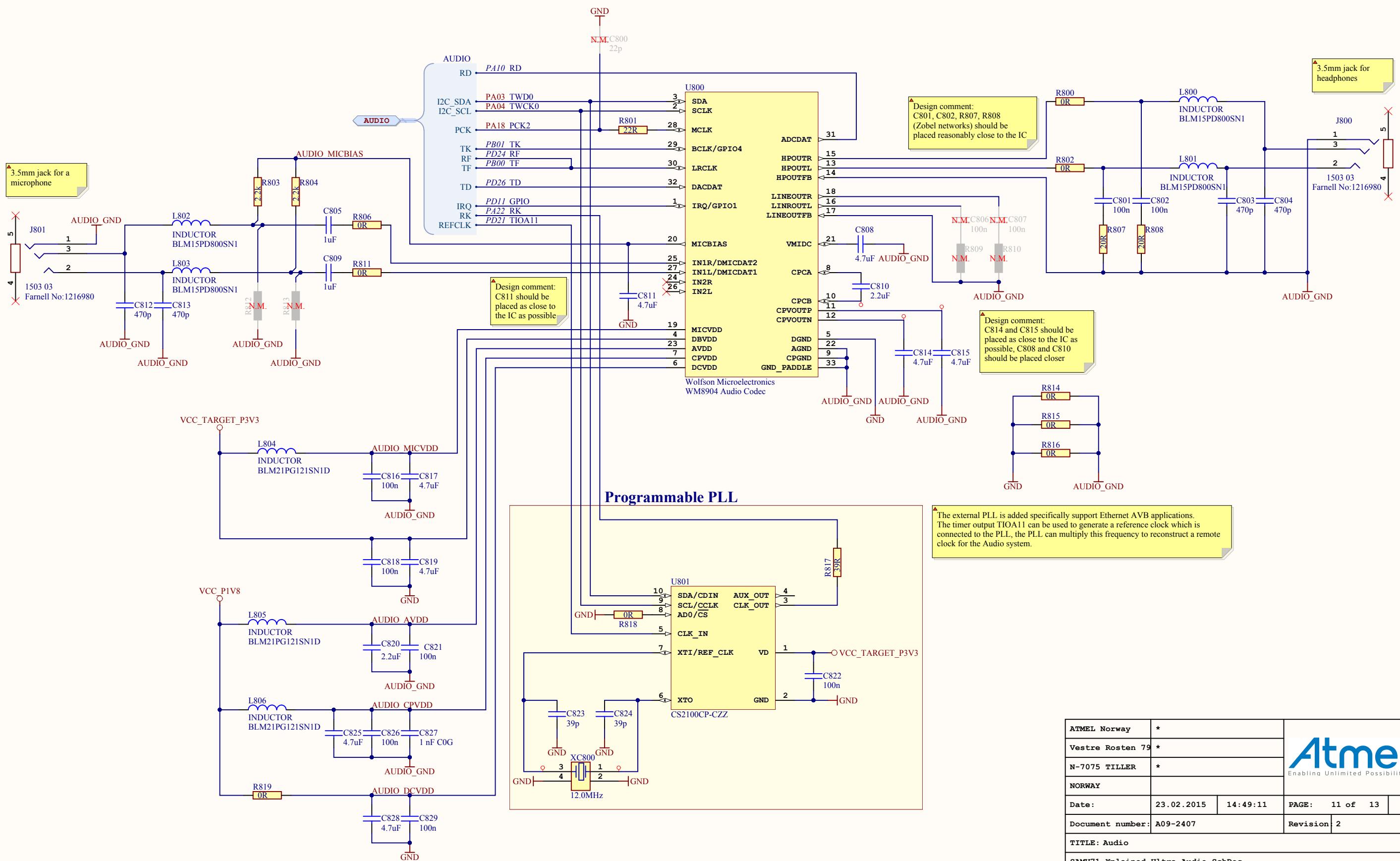
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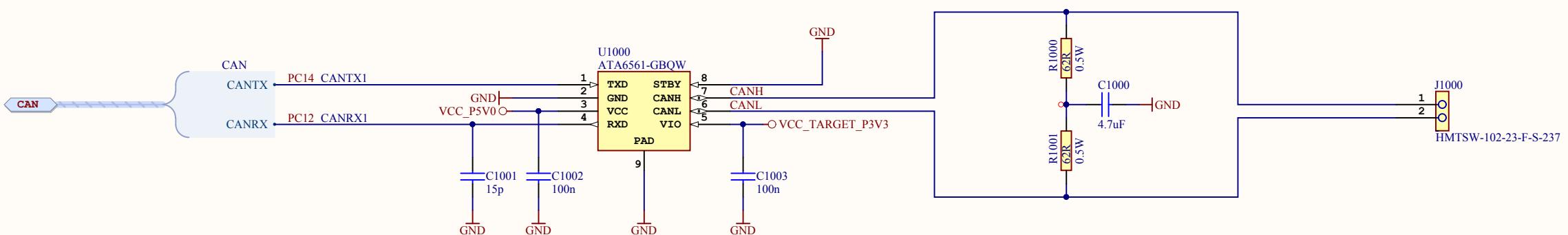




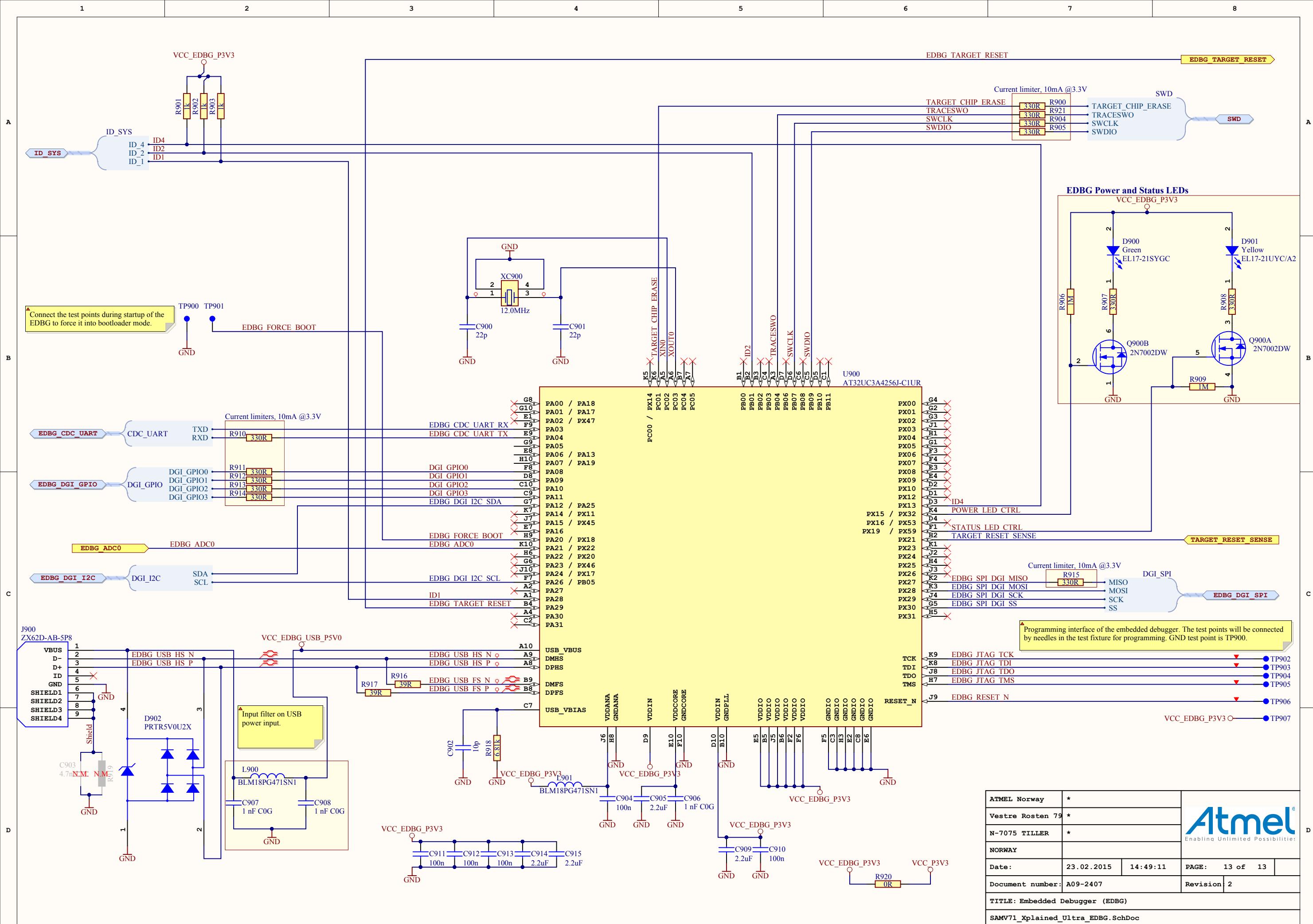


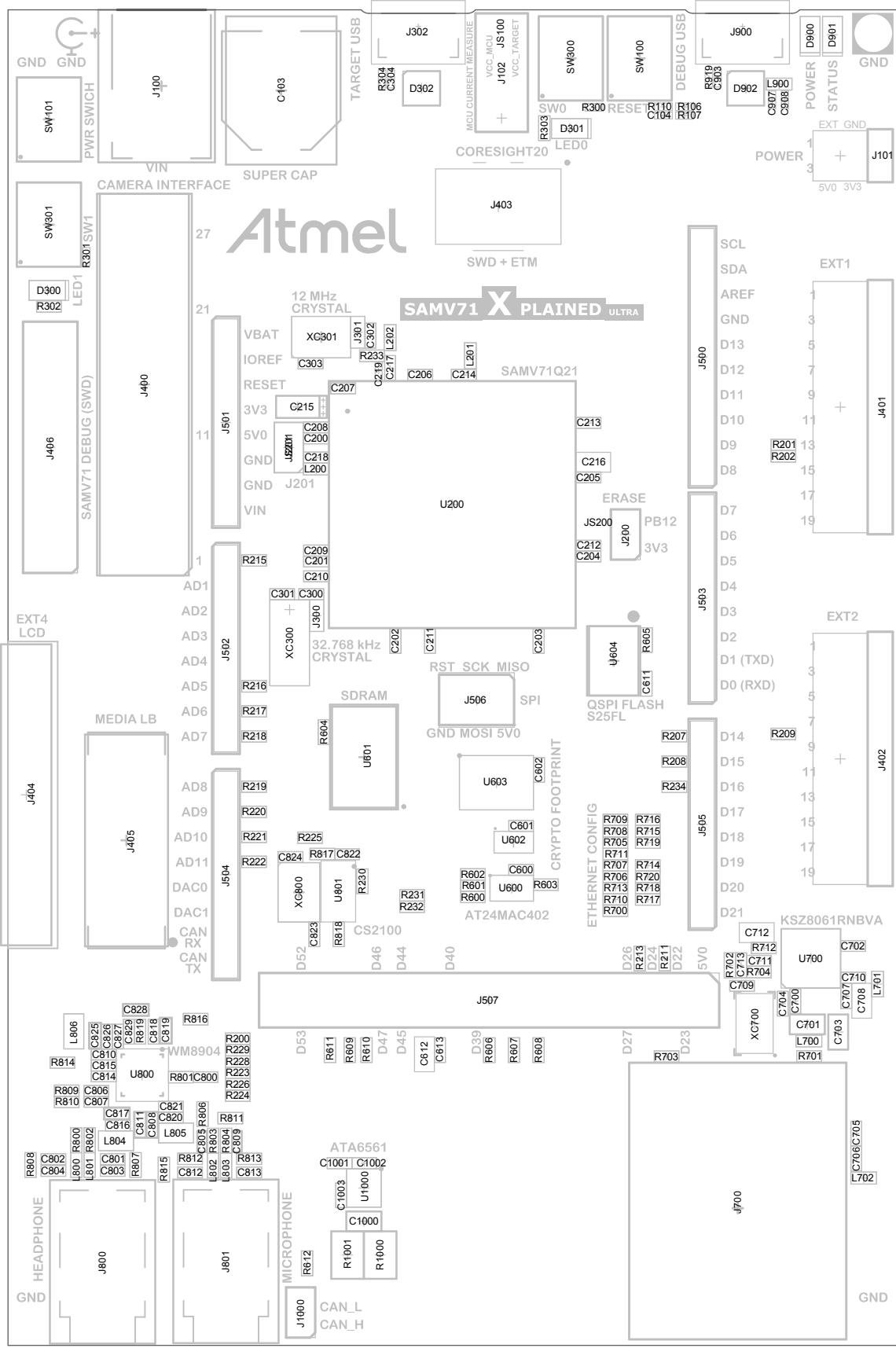


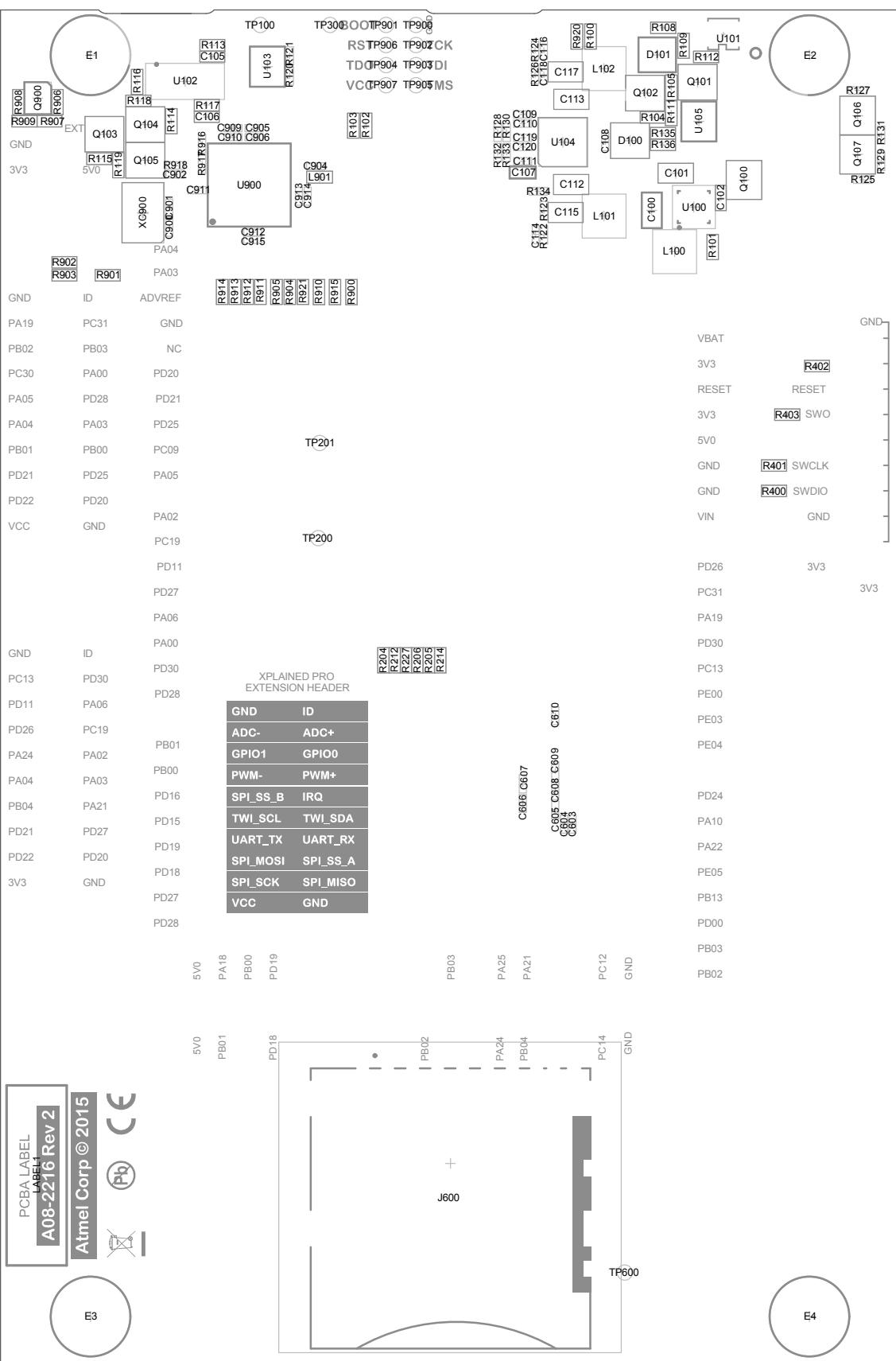
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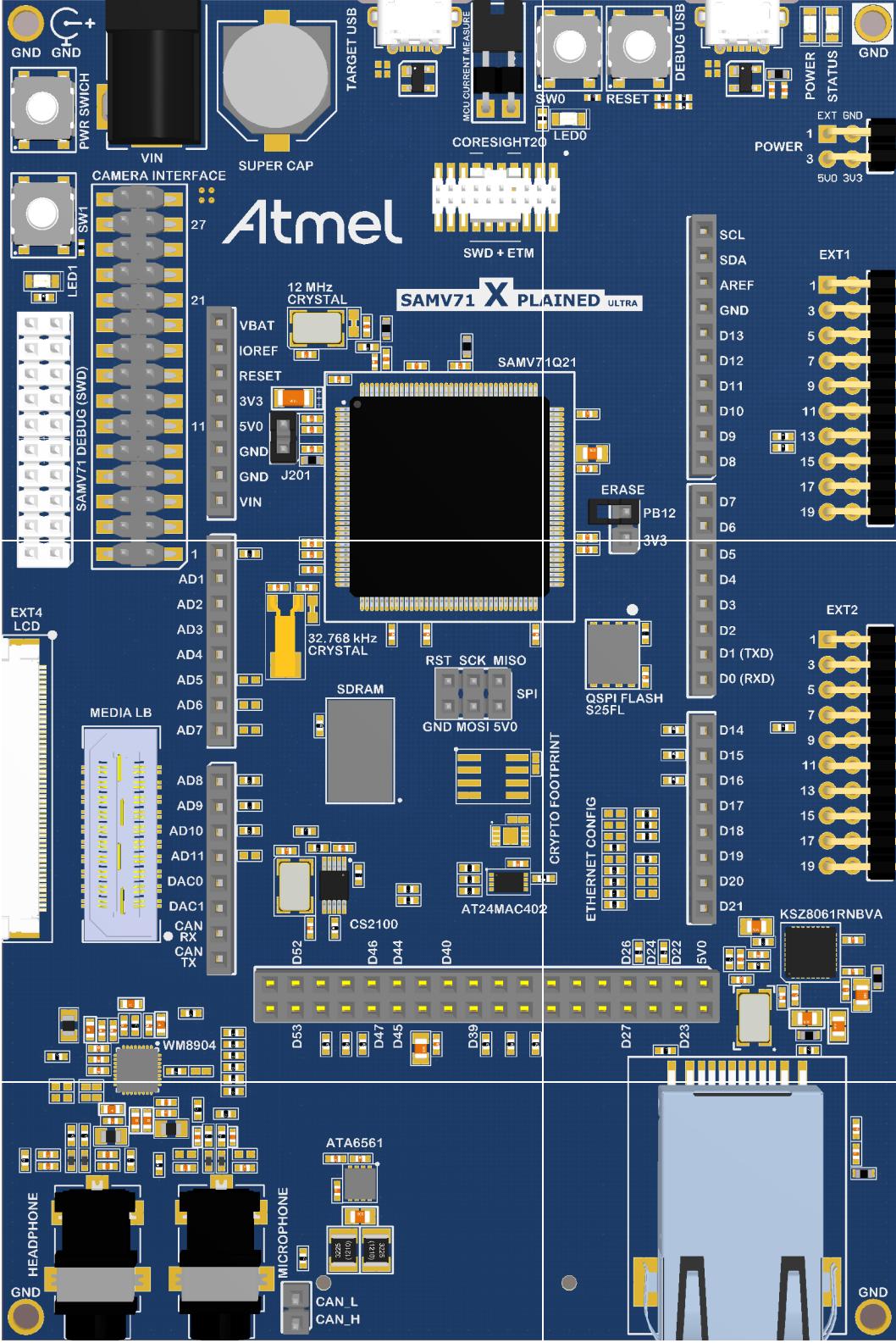


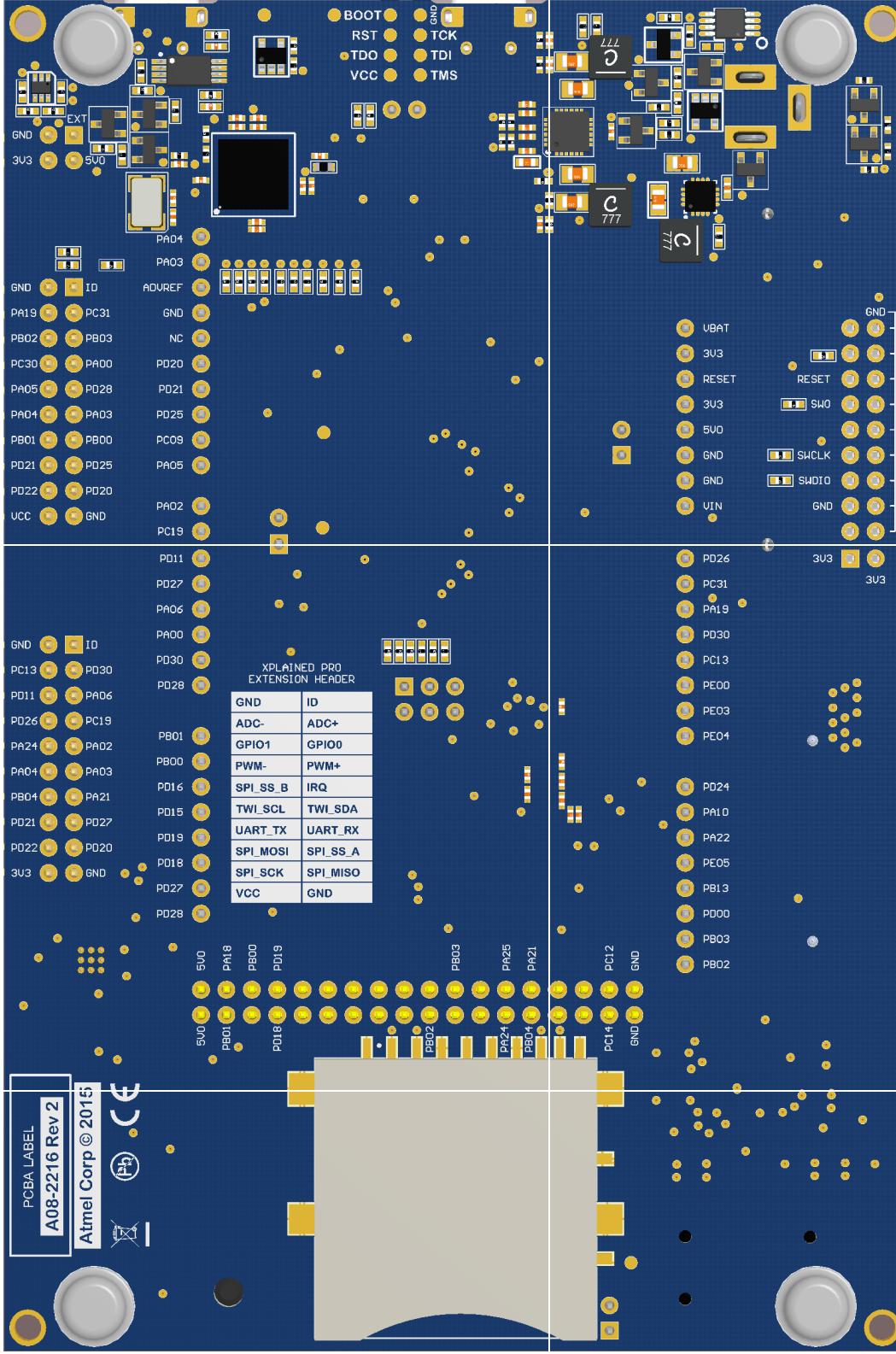
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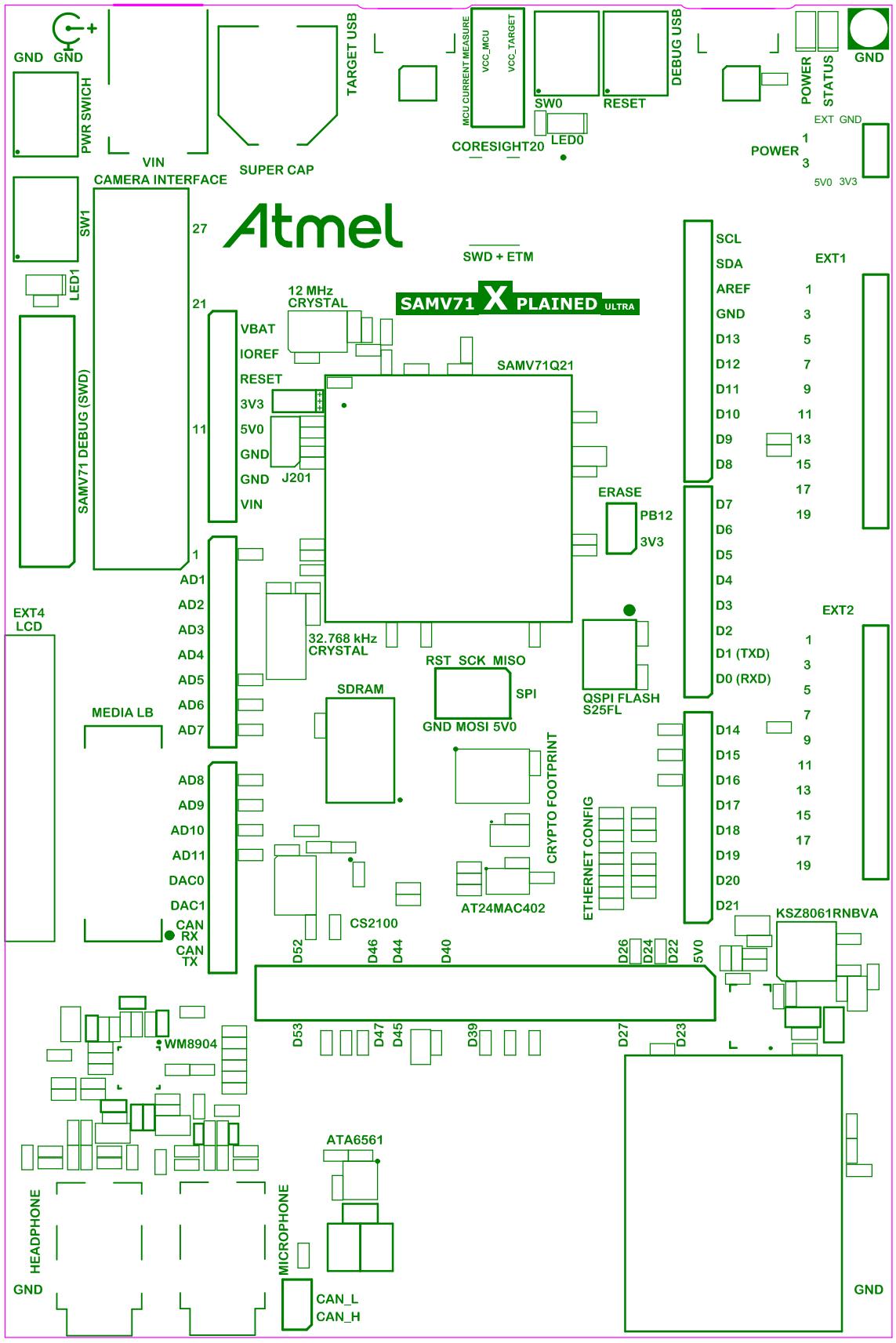
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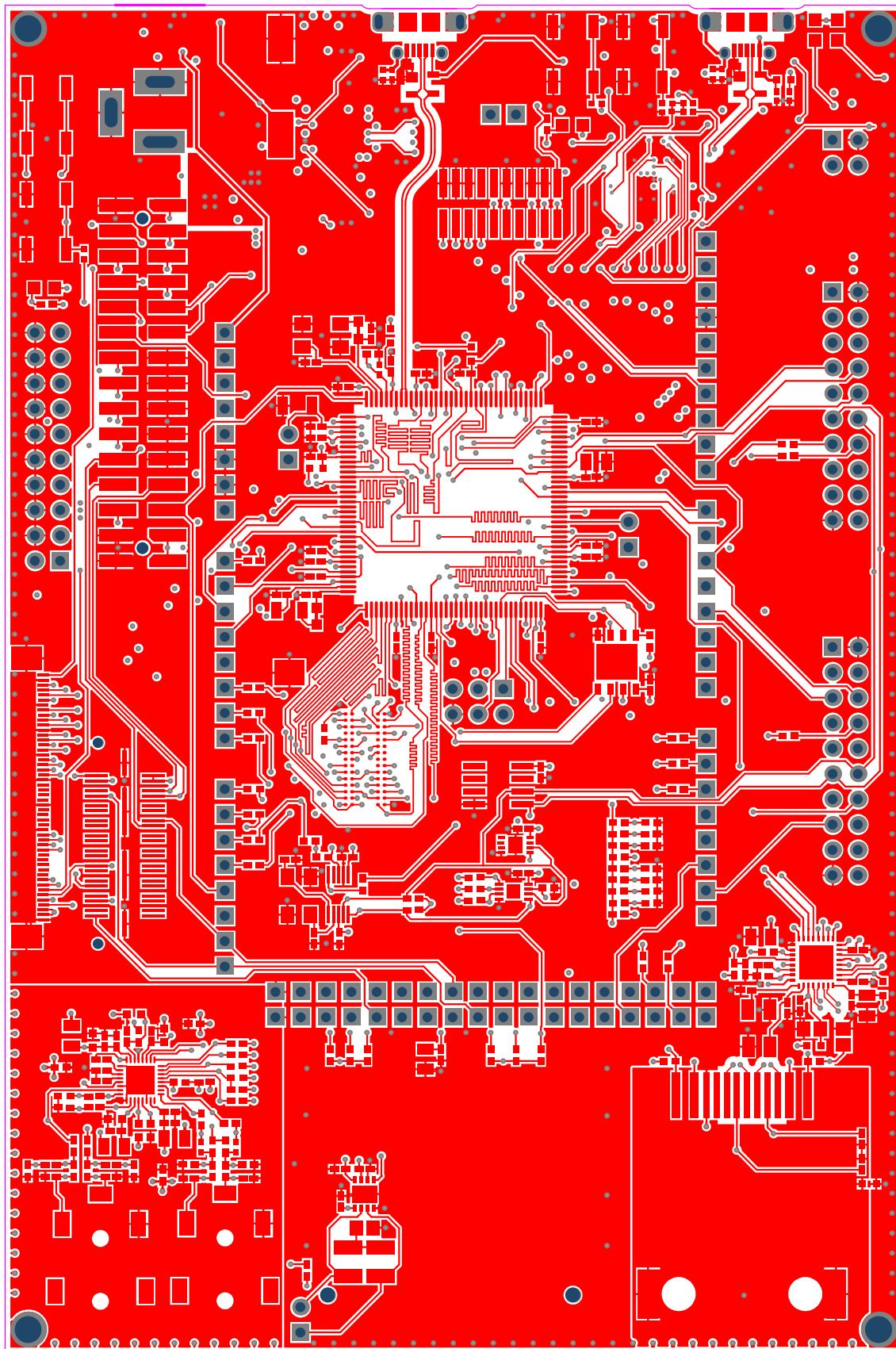
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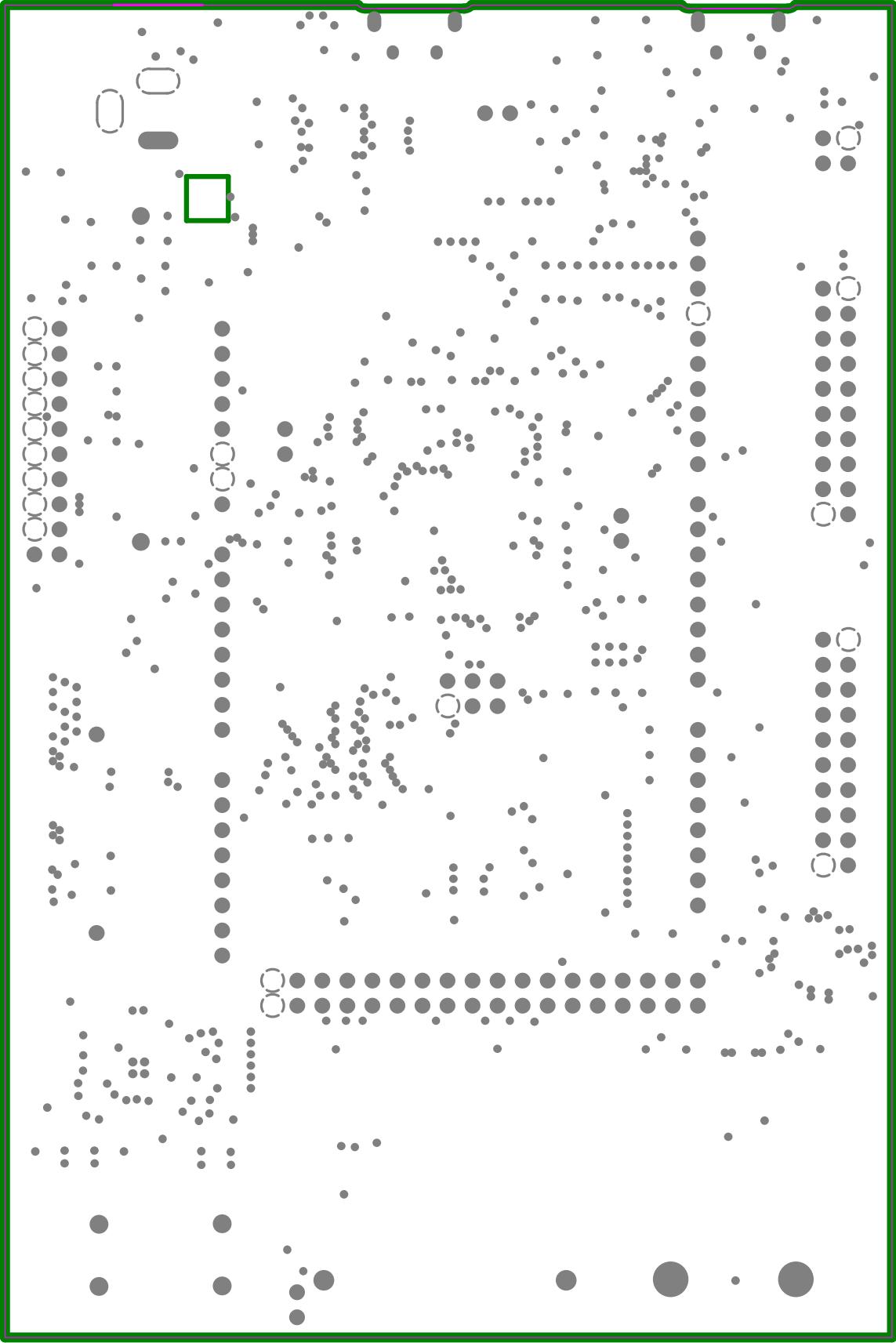
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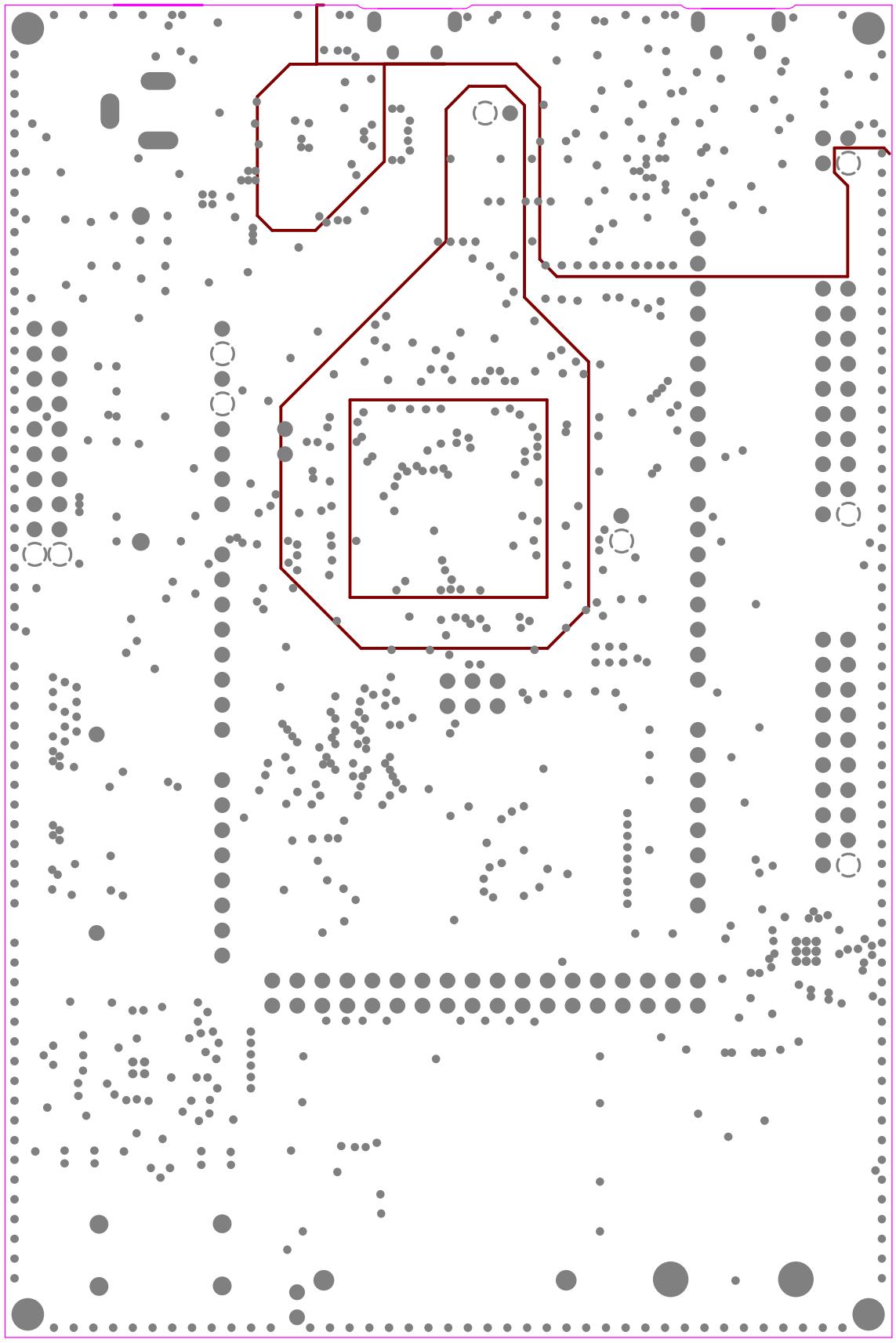
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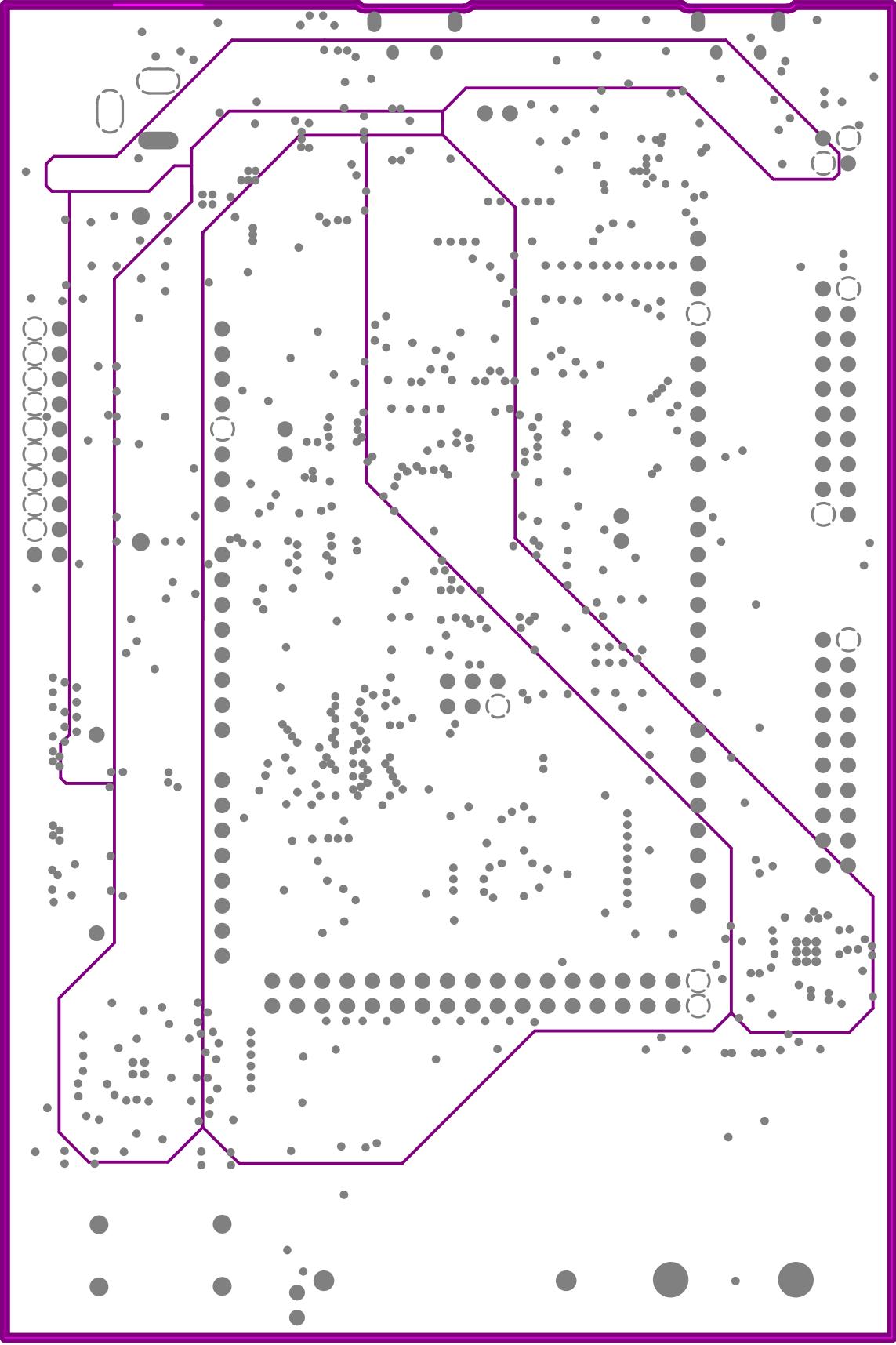
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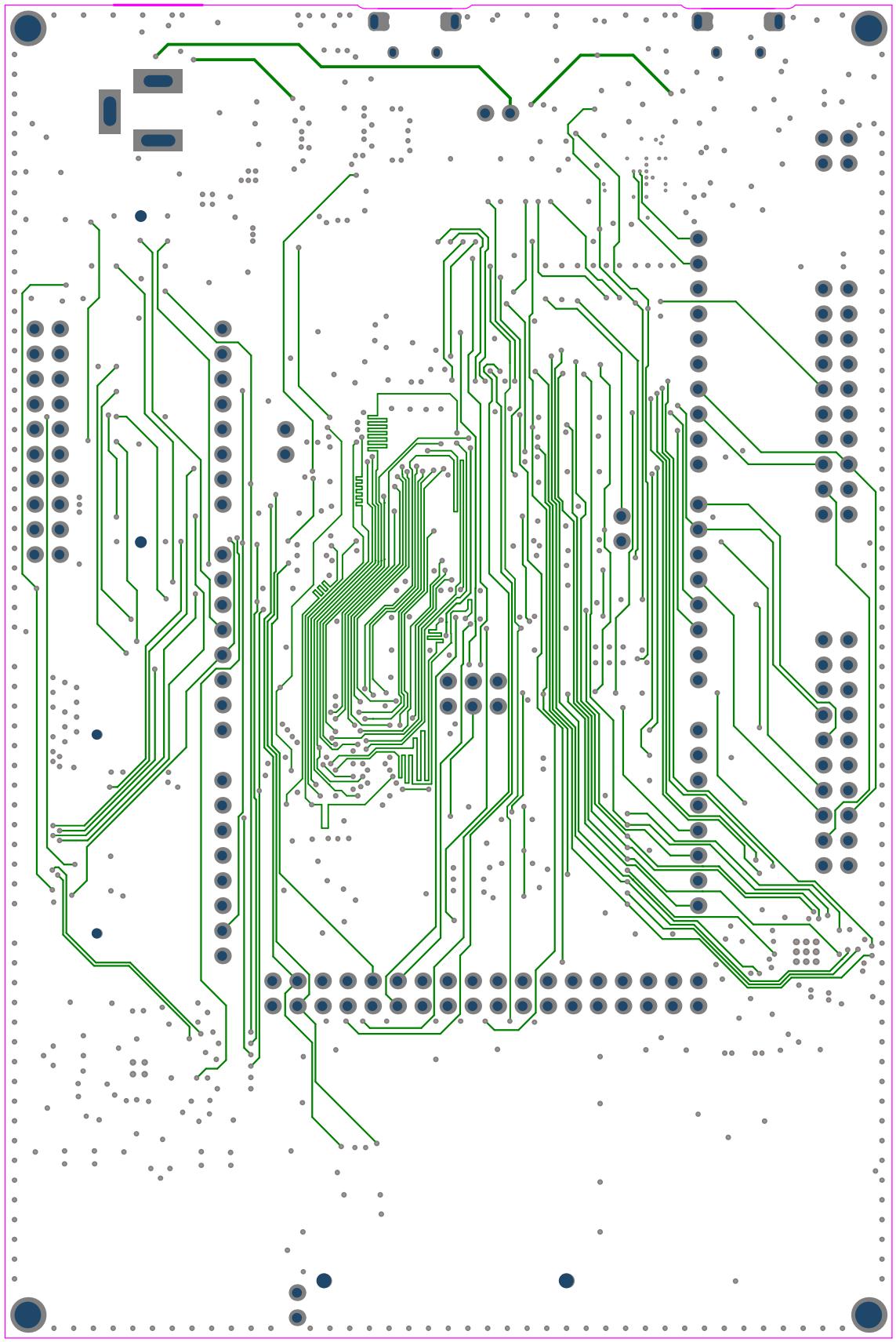


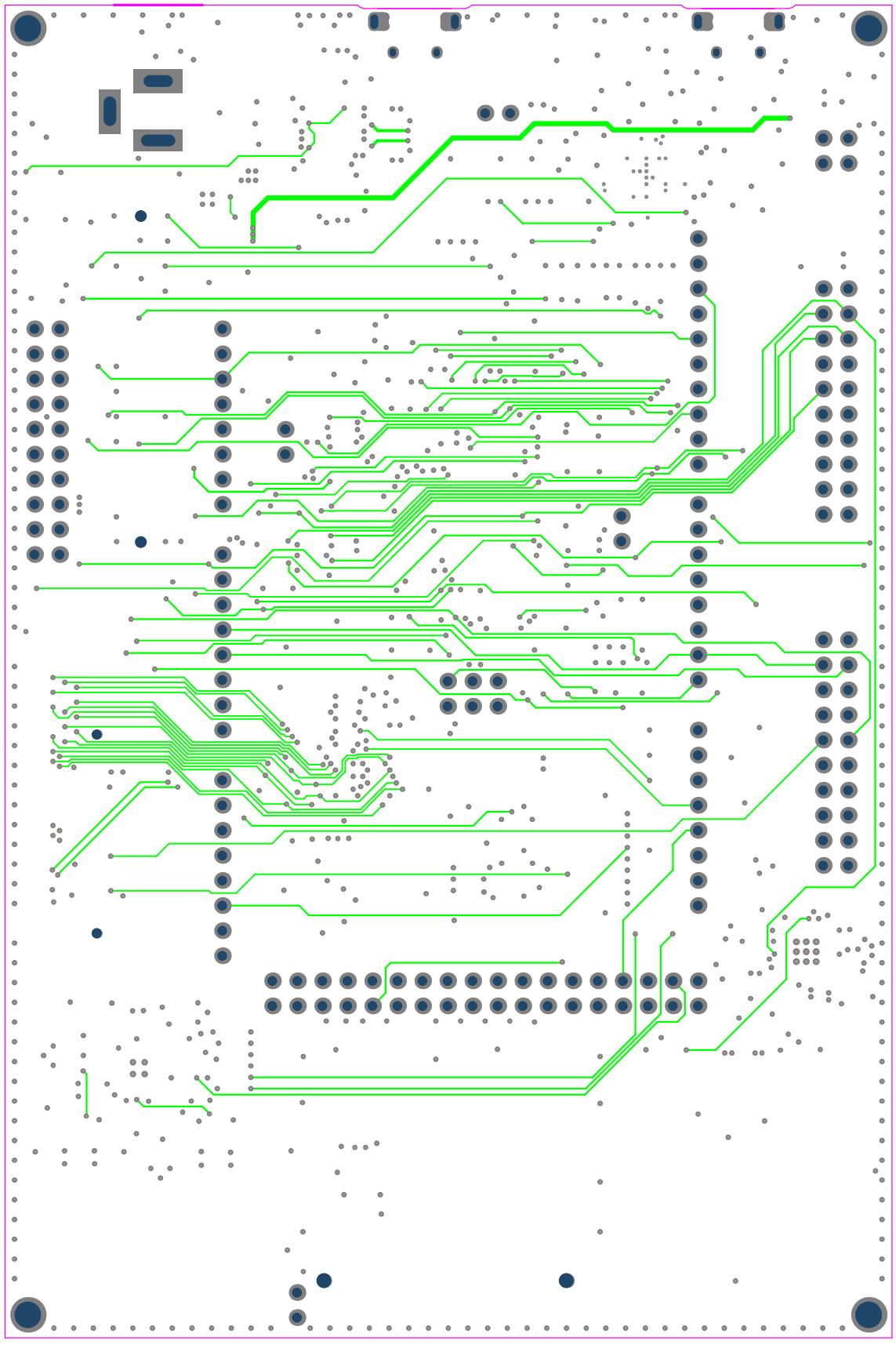


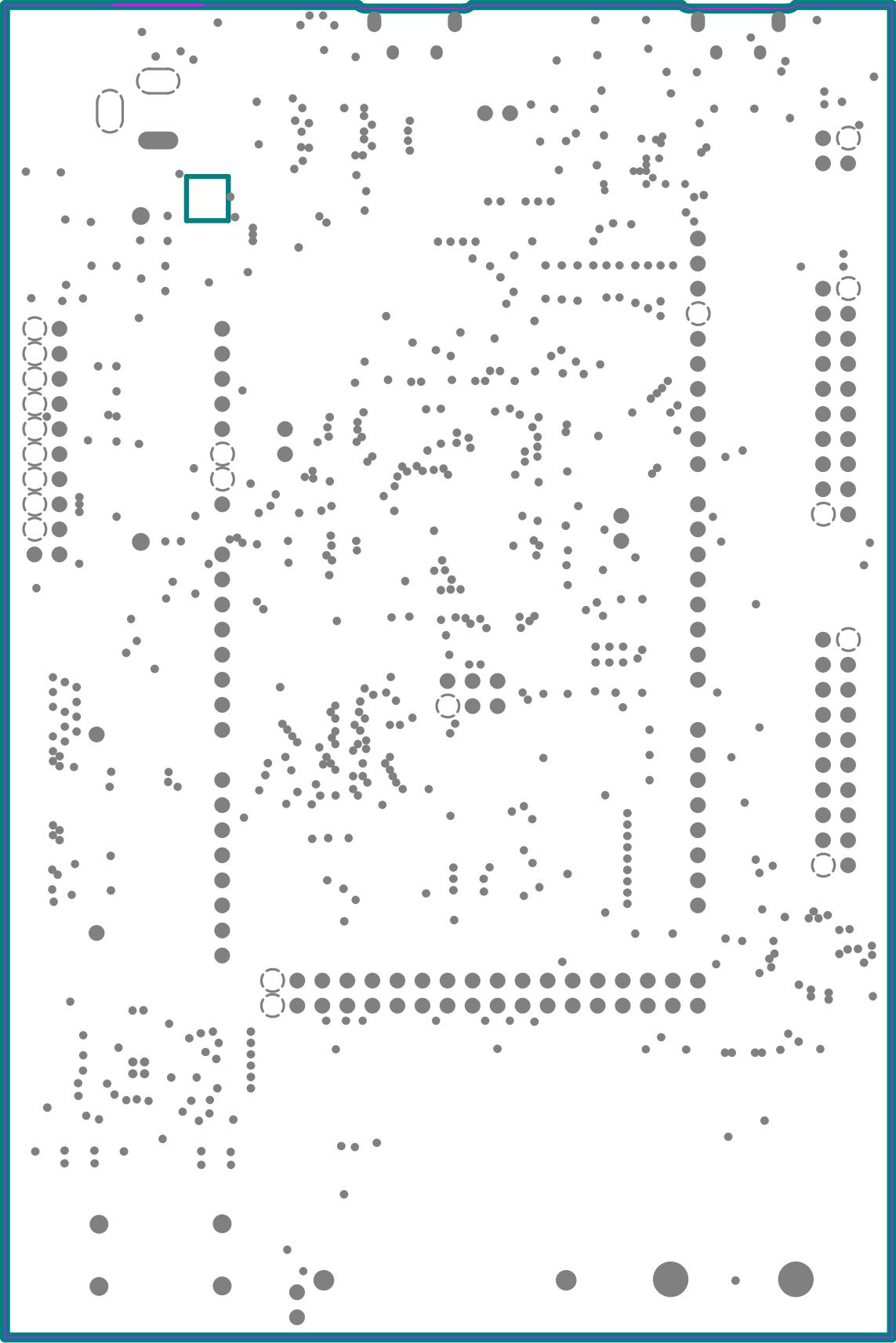


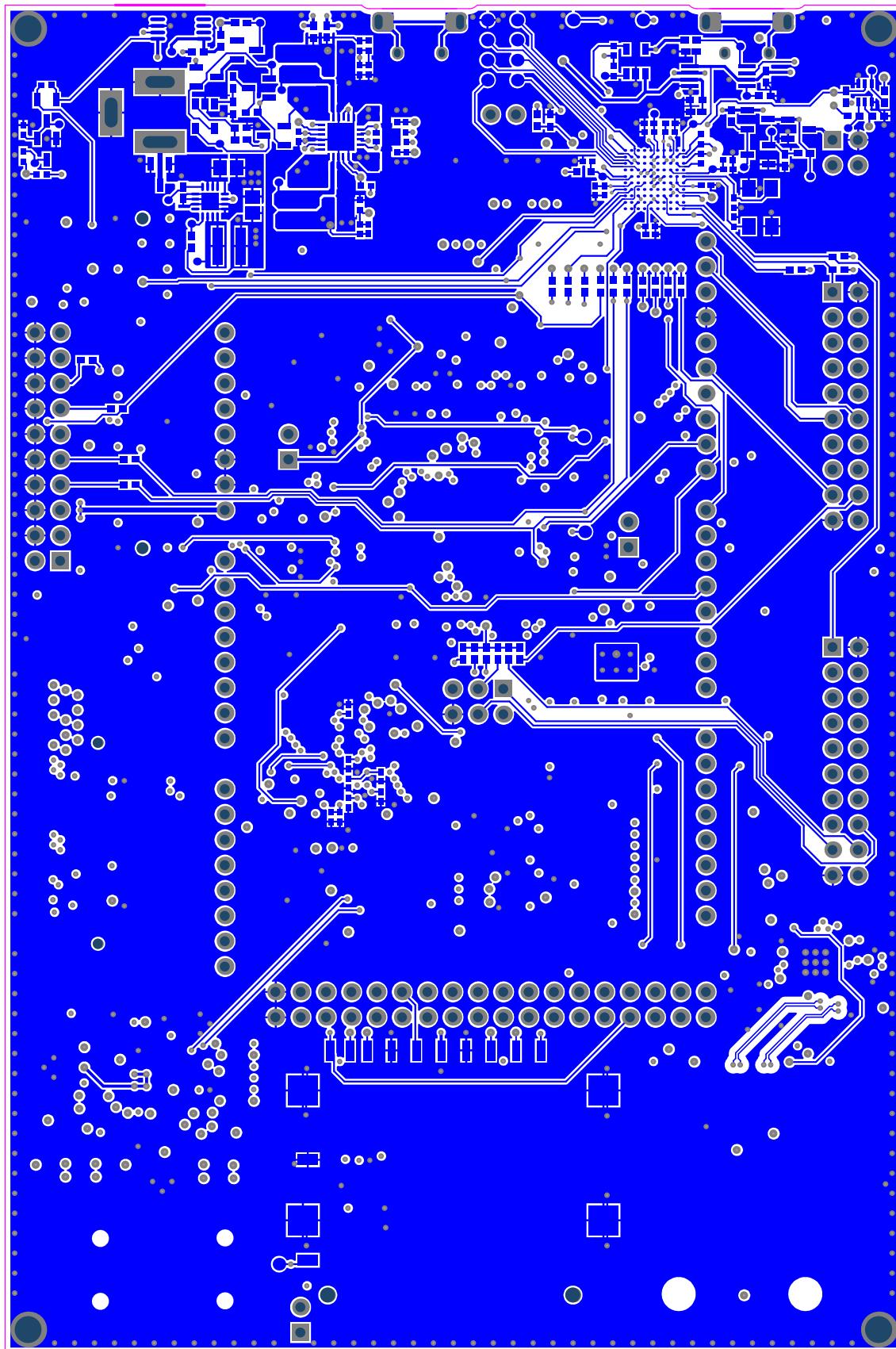






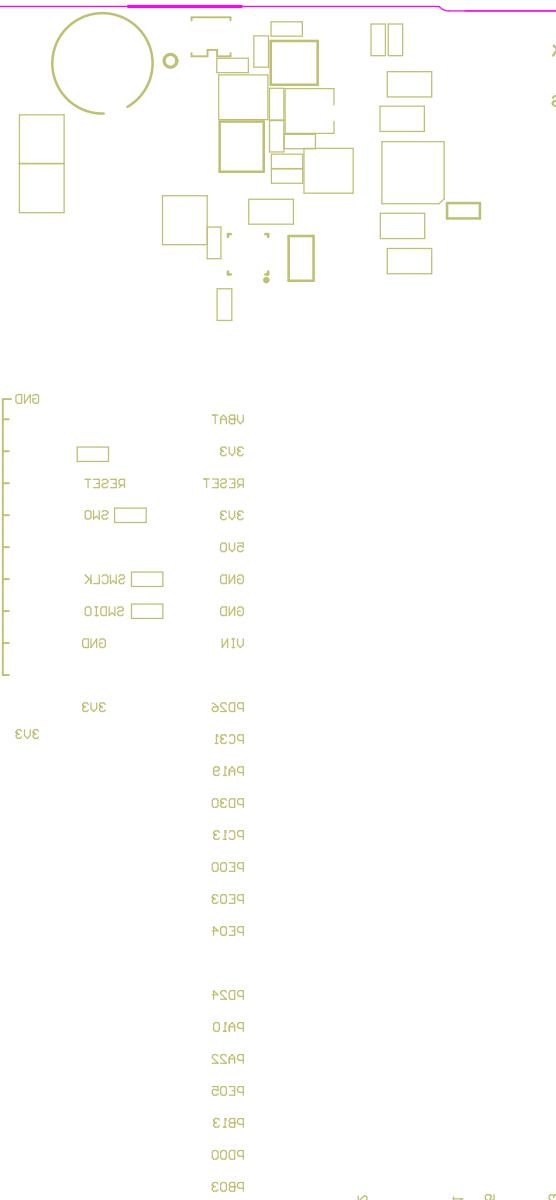
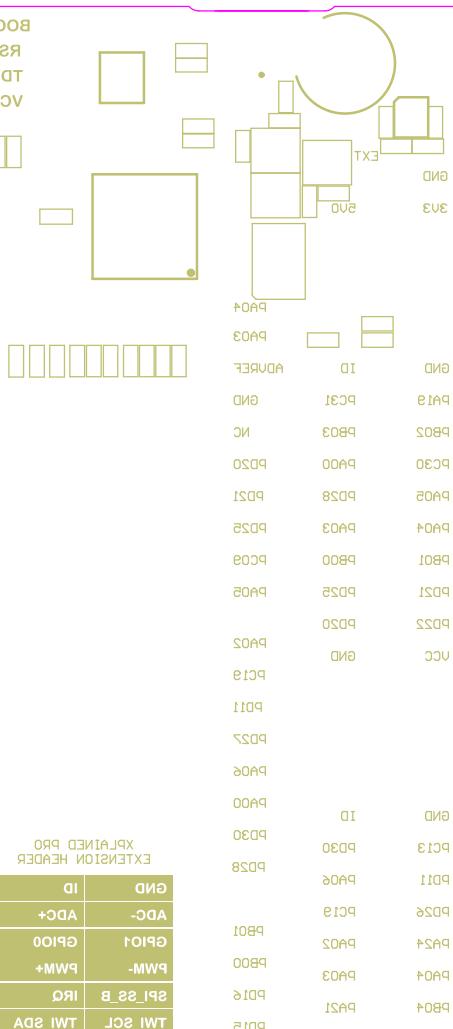






JEDEC Rev A

QFP-252 © 2010 ROHM Semiconductor



Component list

Top Level Schematic

Source Data From: SAMV71_Xplained_Ultra.PrjPCB
Project: SAMV71_Xplained_Ultra.PrjPCB
Variant: Default_assembly

