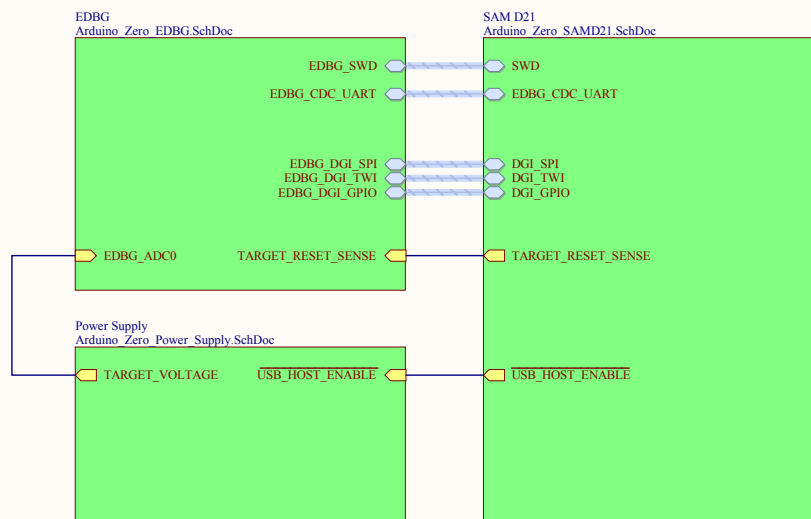


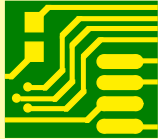




# Arduino Zero




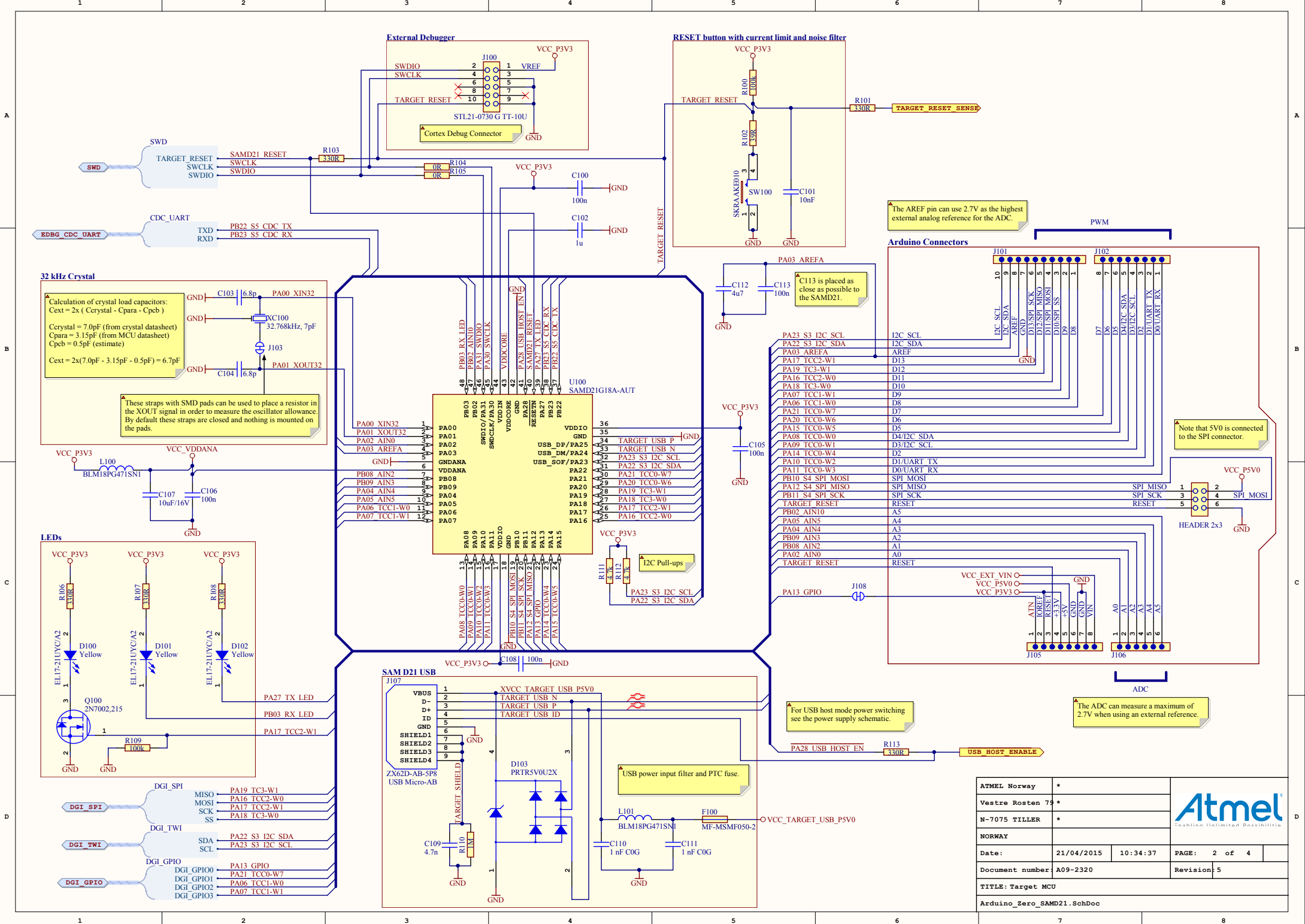
LABEL1

Product number/revision  
Serial number

PCBA Label

PCB1  A08-2116 Arduino Zero PCB	TESTDOC1  A12-0899	PCBADOC1  A12-0900
	TEST1  A11-0263	FW1  A11-0196

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Vestre Rosten 79	*			
N-7075 TILLER	*			
NORWAY				
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TITLE: Top Level Schematics				
Arduino_Zero_Top_Level.SchDoc				



**32 kHz Crystal**

Calculation of crystal load capacitors:  
 $C_{ext} = 2x (C_{crystal} - C_{para} - C_{pcb})$

Crystal = 7.0pF (from crystal datasheet)  
 $C_{para} = 3.15pF$  (from MCU datasheet)  
 $C_{pcb} = 0.5pF$  (estimate)

$C_{ext} = 2x(7.0pF - 3.15pF - 0.5pF) = 6.7pF$

These straps with SMD pads can be used to place a resistor in the XOUT signal in order to measure the oscillator allowance. By default these straps are closed and nothing is mounted on the pads.

The AREF pin can use 2.7V as the highest external analog reference for the ADC.

Note that 5V0 is connected to the SPI connector.

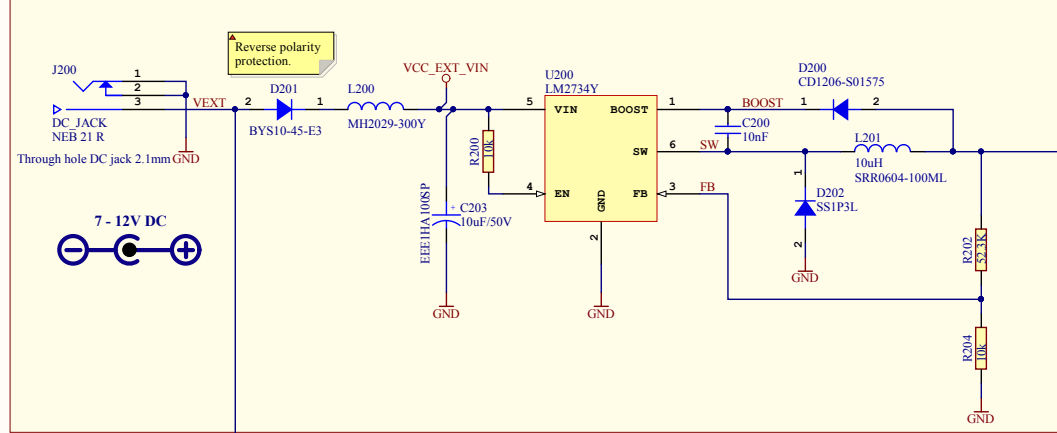
For USB host mode power switching see the power supply schematic.

The ADC can measure a maximum of 2.7V when using an external reference.

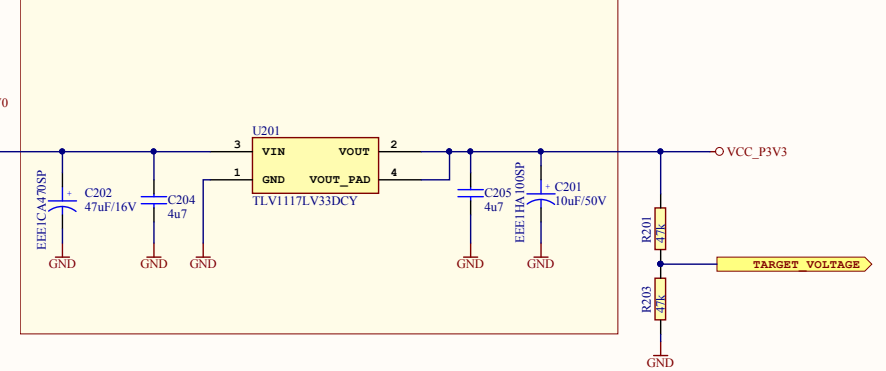
ATMEL Norway	*		
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### External Voltage Input and 5V Buck Regulator



### 3.3V Regulator



Vin	Q200	#USB_HOST_ENABLE	Q201
0v (NC)	Open	3.3V	Closed
	Open	0V	Open
7-12V	Closed	3.3V	Closed
	Closed	0V	Open


Arduino Zero can be powered from three sources; External voltage, SAM D21 USB and EDBG USB.

The table above shows the states of Q200 and Q201 according to Vin and the #USB\_HOST\_ENABLE signal. When USB\_HOST\_DISABLE is low Q201 is open and power will be supplied to the USB connector.

Note that when Q200 and Q201 are closed, current can still flow from USB ports through the internal diode in the FETs to power the Arduino Zero.

When #USB\_HOST\_ENABLE is set low power is routed from the board to the SAM D21 USB connector. This enables USB host mode applications that supplies the device from the board.

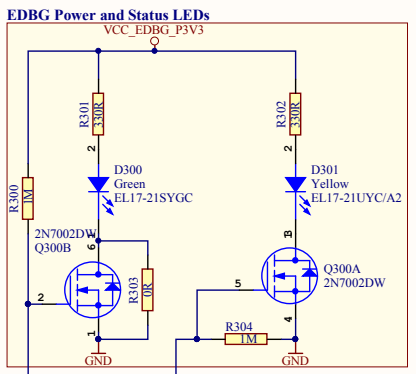
Note that in order to be able to supply full 500mA to the device an external power supply has to be used.

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Arduino_Zero_Power_Supply_SchDoc				

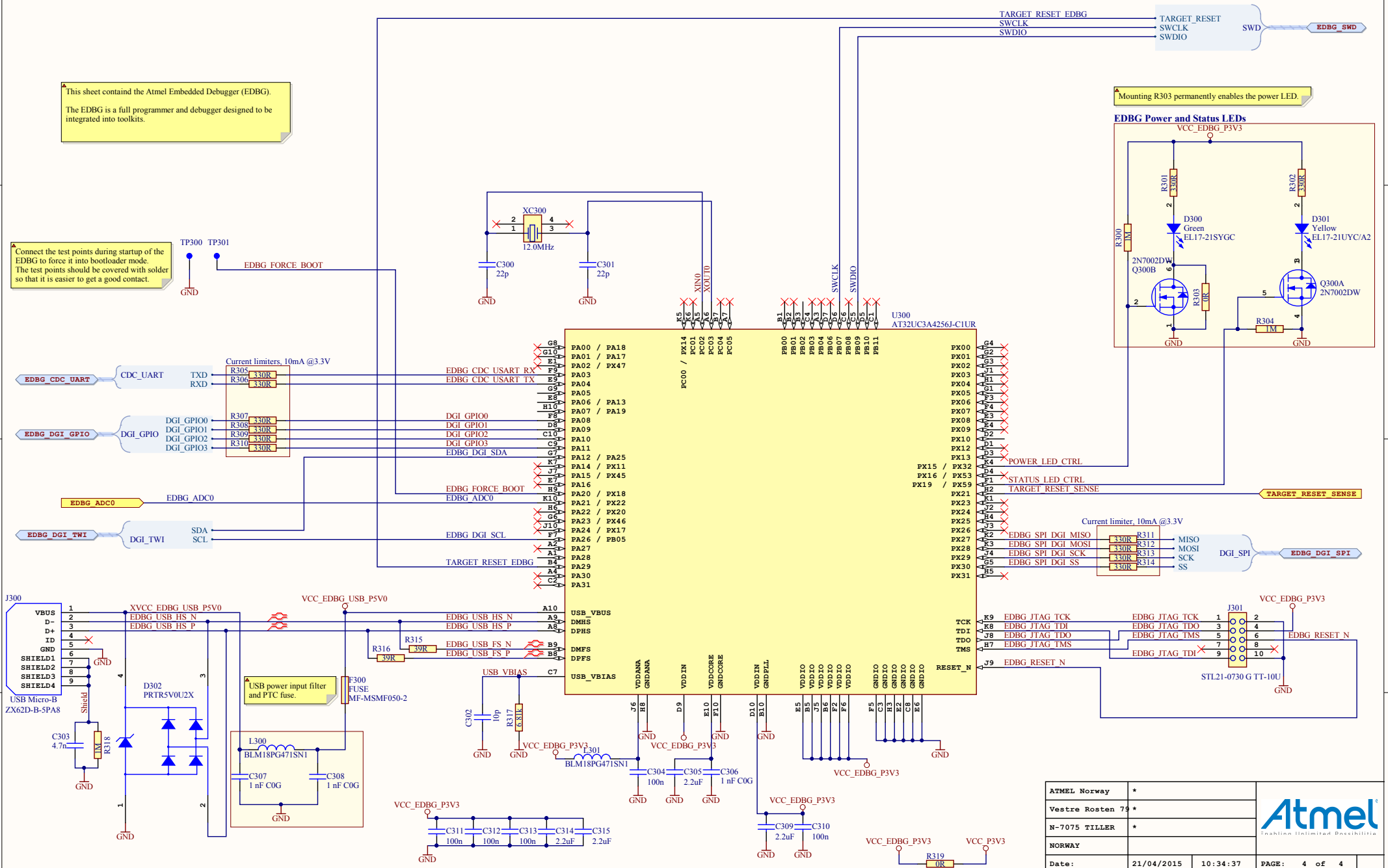
This sheet contained the Atmel Embedded Debugger (EDBG).  
The EDBG is a full programmer and debugger designed to be integrated into toolkits.

Connect the test points during startup of the EDBG to force it into bootloader mode. The test points should be covered with solder so that it is easier to get a good contact.

Mounting R303 permanently enables the power LED.



TARGET RESET SENSE



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