

1

2

3

4

5

6

A

A

PN-02218-A-001.A0

phyNODE-Athena

B

B

Copyright 2017 PHYTEC TECHNOLOGIE HOLDING AG

C

C

INFORMATION IN THIS DOCUMENT IS PROVIDED SOLELY FOR USE IN CONJUNCTION WITH THE PHYTEC PRODUCT DESCRIBED HEREIN. NO INTELLECTUAL PROPERTY RIGHTS -- EXPRESS OR IMPLIED -- ARE GRANTED THROUGH THIS DOCUMENT. LIKEWISE, PHYTEC MAKES NO EXPRESS OR IMPLIED WARRANTIES OF ANY KIND, WHETHER AS TO MANUFACTURABILITY; MERCHANTABILITY; FITNESS FOR A PARTICULAR PURPOSE; OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. SPECIFICATIONS HEREIN ARE SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE.

D

D

1

2

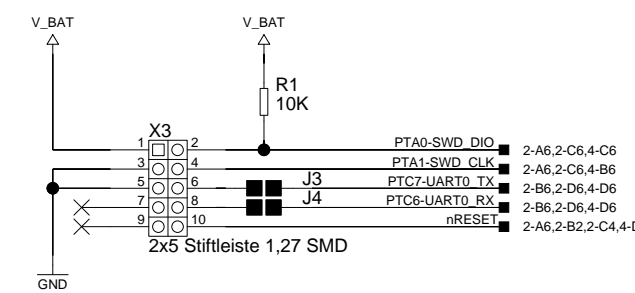
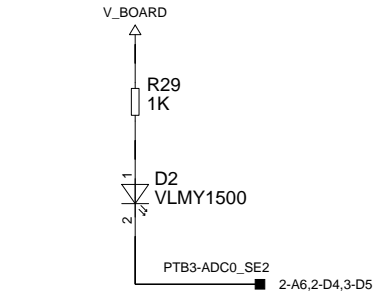
3

4

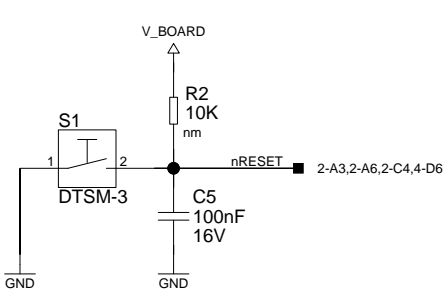
5

6

PHYTEC		PHYTEC Messtechnik GmbH Robert-Koch-Strasse 39 D-55129 Mainz	
Project: phyNODE-Athena		Department : F&E Author: Johann Fischer	
26.09.2017	PCB-No.: 1490.1	Revision : 001	Sheet 1 of 5



SWD interface for external debugger



External debugger connector (X3):

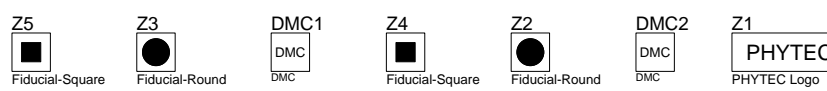
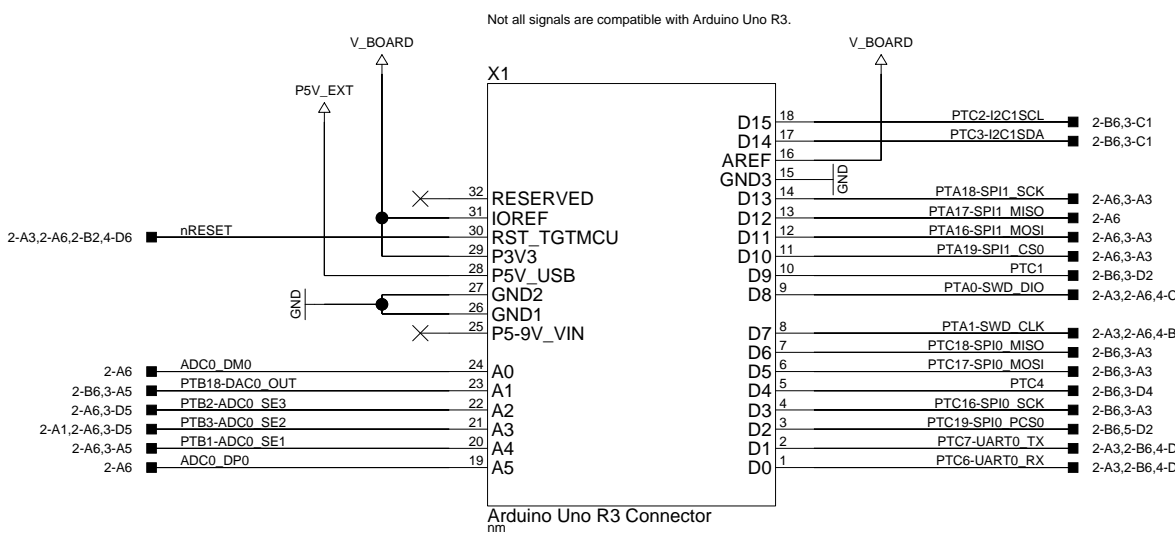
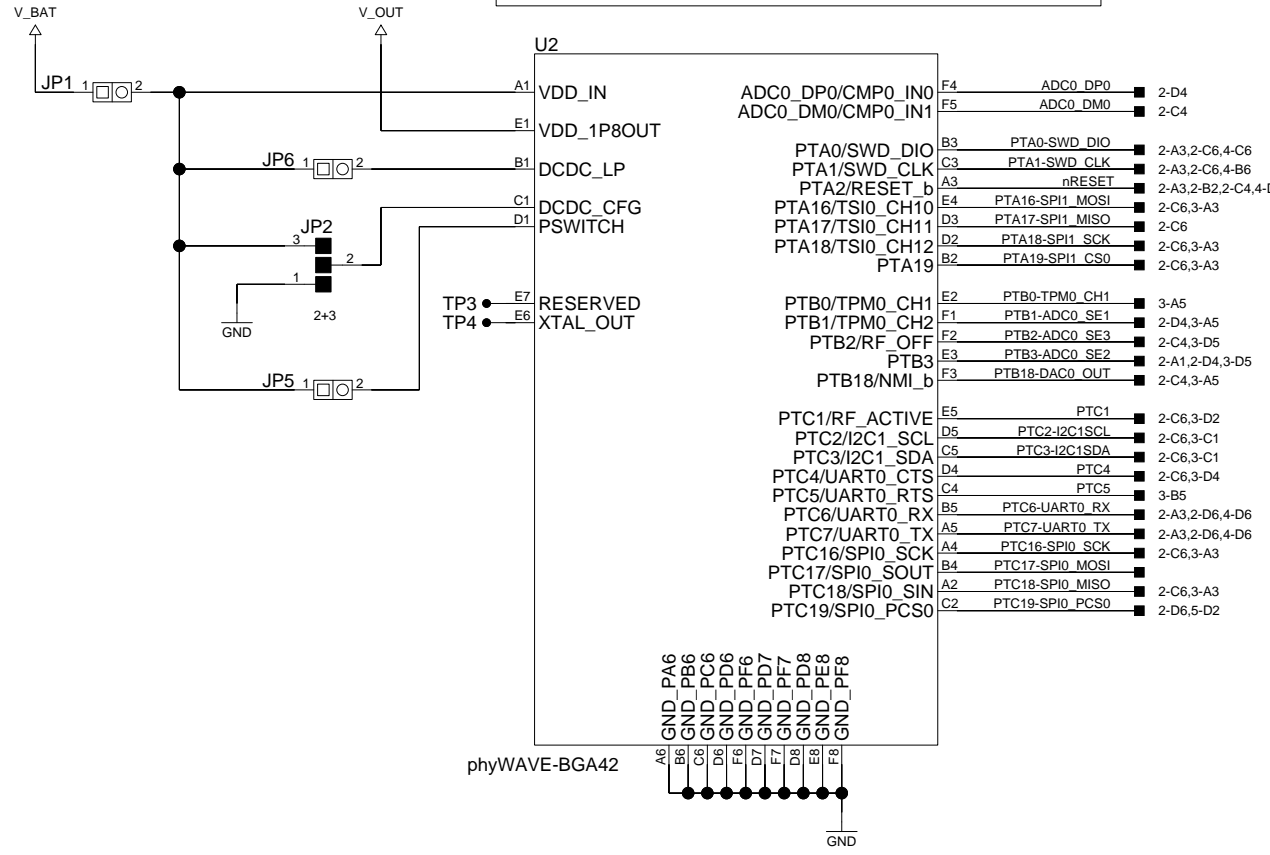
Close J3 and J4 to pass the UART0 connection to X3.
In combination with the debugger this connection can be used to forward UART via the debug cable besides JTAG.

phyWAVE-KW41Z Power Modes:

Buck Mode (1.8V .. 4.2V): JP6 open, JP2 2+3, JP5 closed

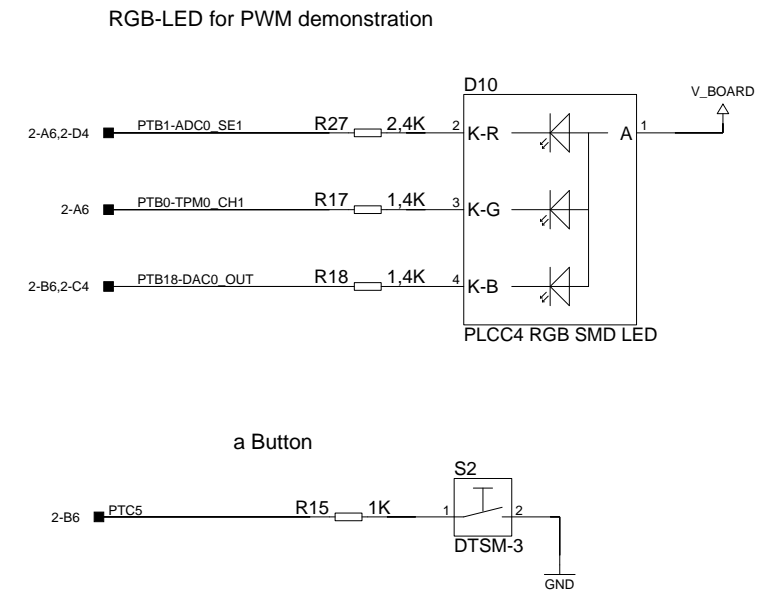
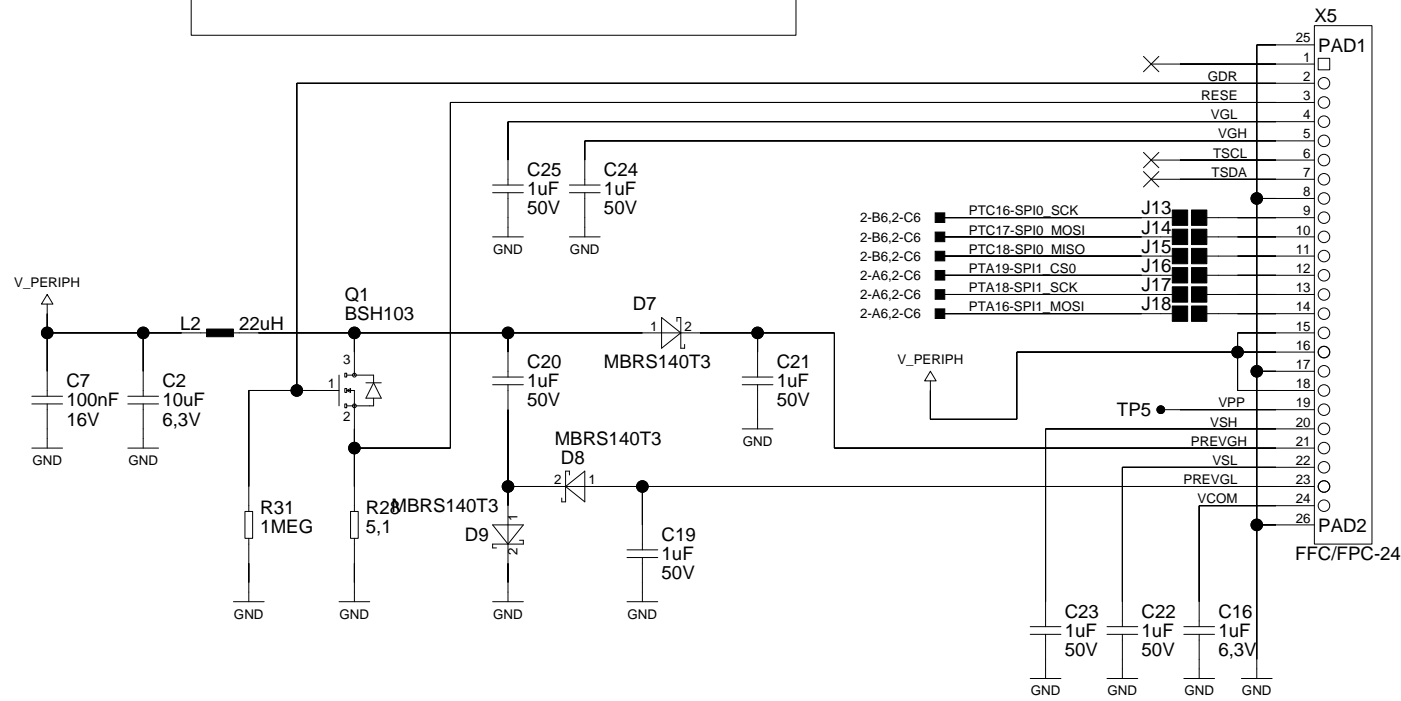
Boost Mode (0.9V .. 1.8V): JP6 closed, JP2 1+2, JP5 closed

Note: JP1 is for the current measurement of the phyWAVE module only

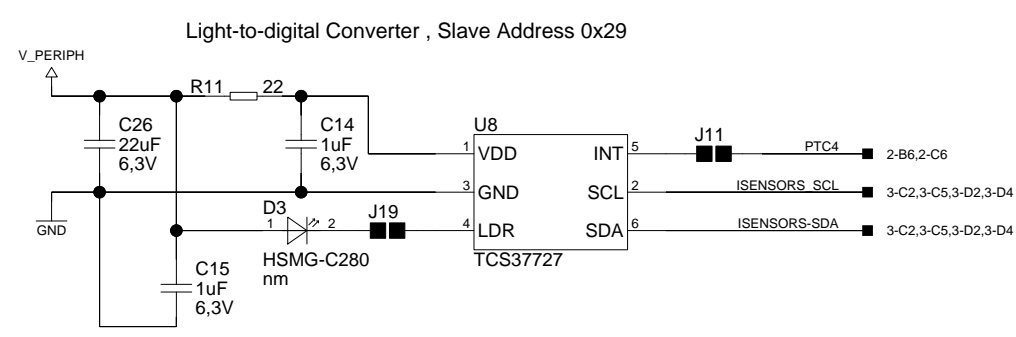
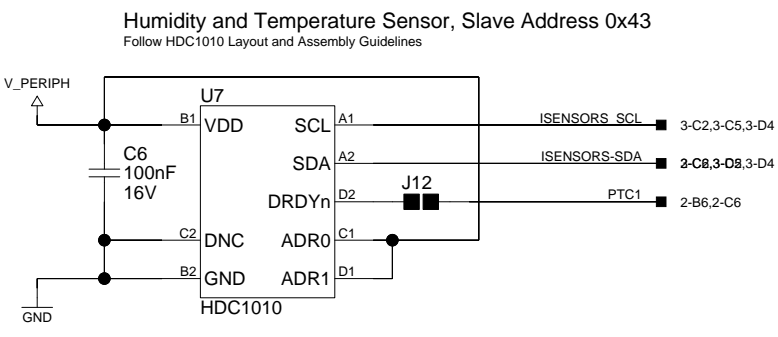
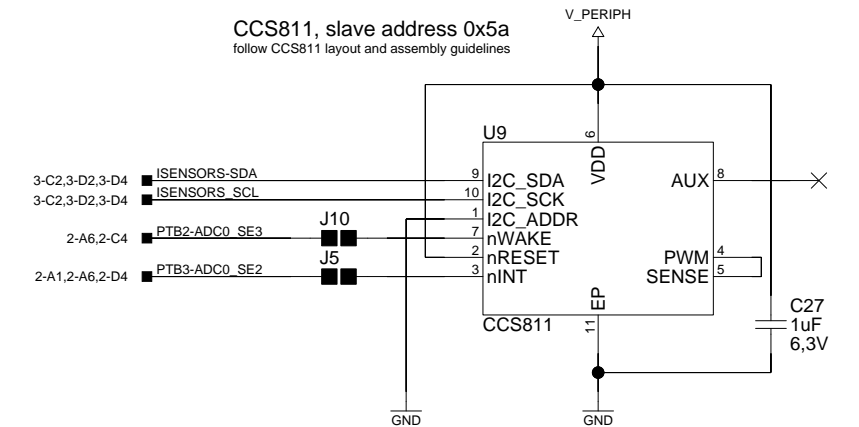
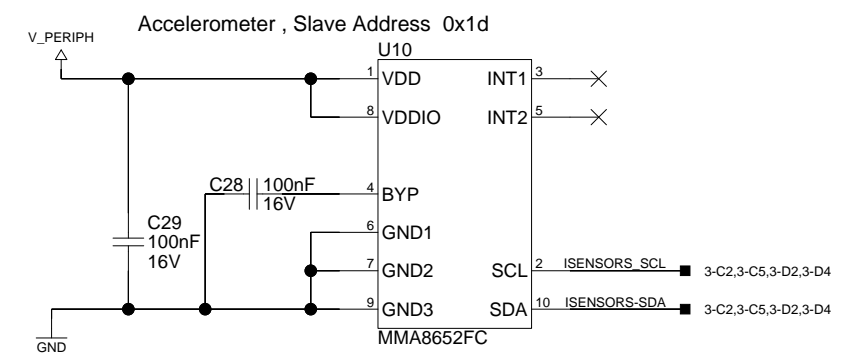
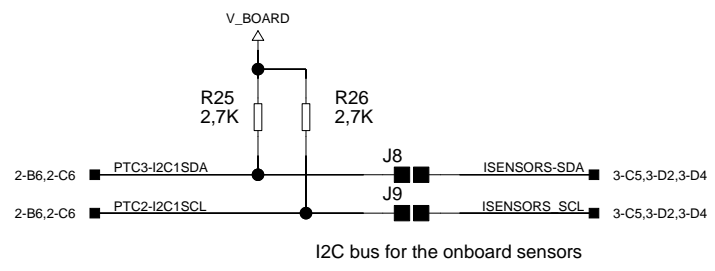


<h1>PHYTEC</h1>		PHYTEC Messtechnik GmbH	
		Robert-Koch-Strasse 39 D-55129 Mainz	
Project:	phyNODE-Athena	Department:	F&E
26.09.2017	PCB-No.: 1490.1	Author:	Johann Fischer
		Revision:	001
		Sheet	2 of 5

EPD, RGB LED and Sensors

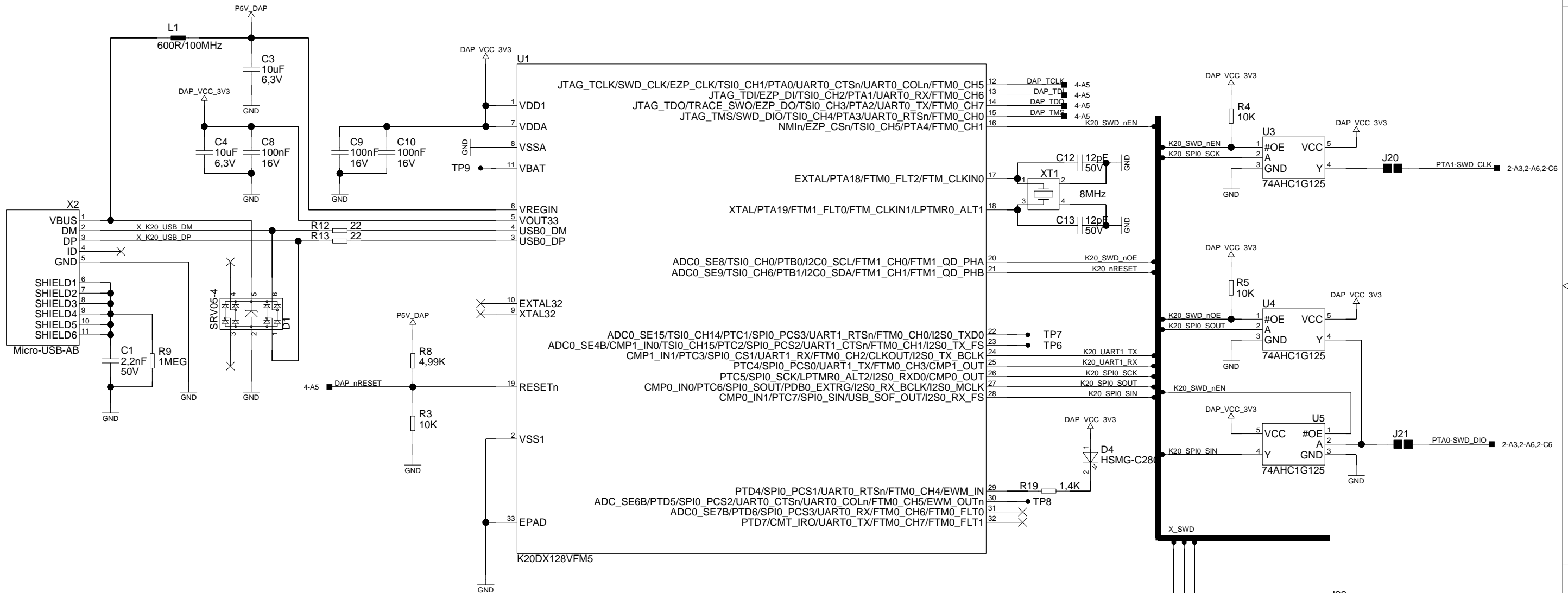
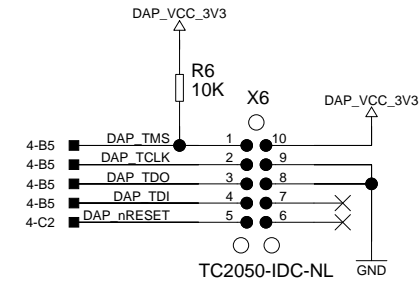
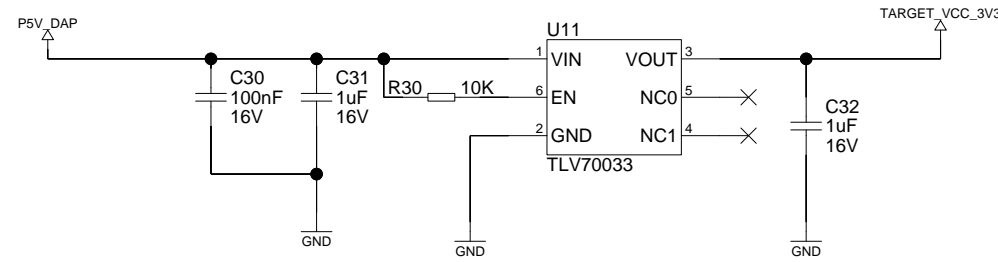


Note:
 Cut J8 and J9 to disconnect on board sensors from the I2C bus.
 Cut J10 ... J18 if you want to use PTB2, PTC1, PTC4, PTC16, PTC17, PTC18 and SPI1 over Arduino connector (X1).
 Connect J5 if you want to use the interrupt from CCS811 sensor (PTB3 is also connected to yellow LED D2).
 The voltage V_PERIPH must be switched on via PTC19 to power EPD and sensors.

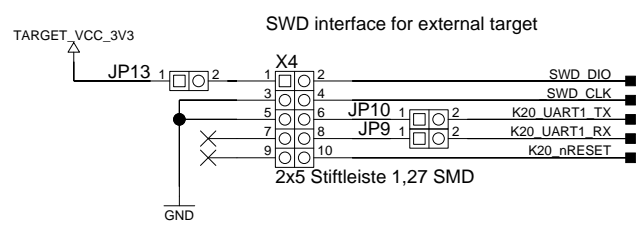


PHYTEC		PHYTEC Messtechnik GmbH Robert-Koch-Strasse 39 D-55129 Mainz	
		Project: phyNODE-Athena	Department: F&E Author: Johann Fischer
26.09.2017	PCB-No.: 1490.1	Revision: 001	Sheet 3 of 5

CMSIS-DAP

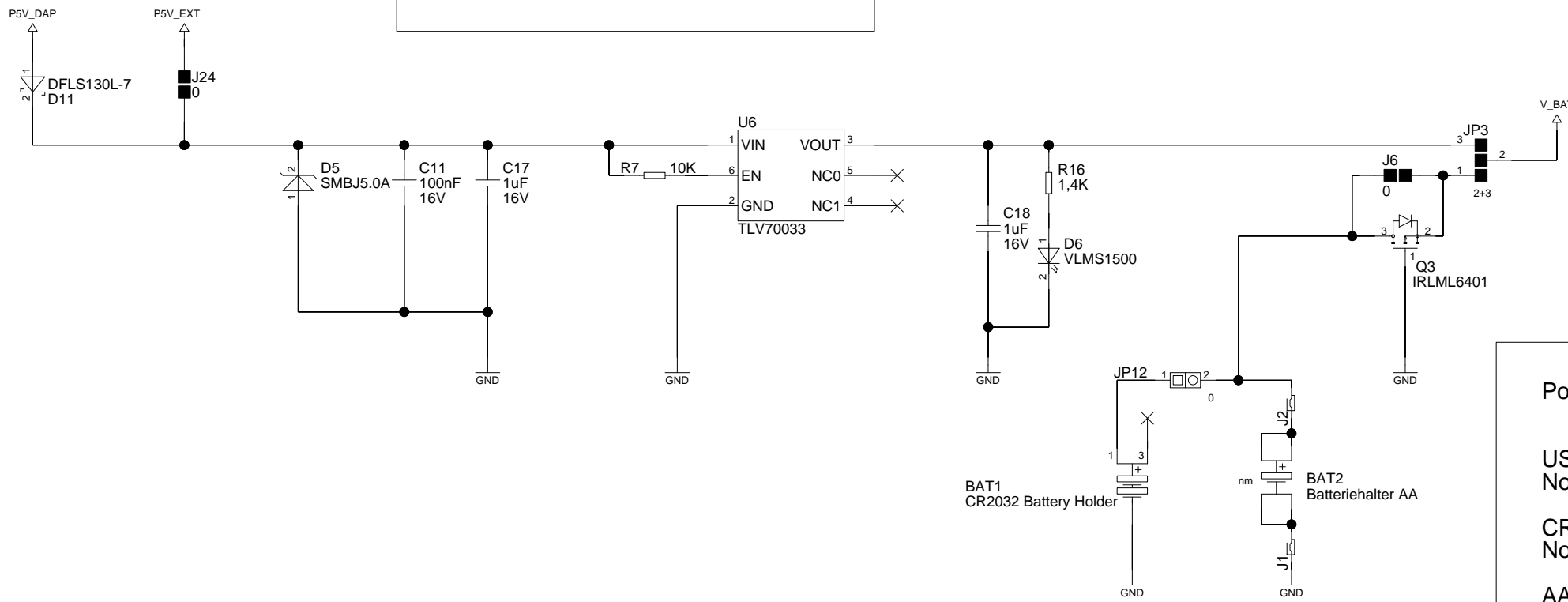


Internal debugger:
 The internal debugger has an USB serial converter over UART1 exposed to X4.
 Close J9 and J10 to connect the UART interface of the target to X4.



<h1>PHYTEC</h1>		PHYTEC Messtechnik GmbH	
		Robert-Koch-Strasse 39 D-55129 Mainz	
Project:	phyNODE-Athena	Department:	F&E
26.09.2017	PCB-No.: 1490.1	Author:	Johann Fischer
		Revision:	001
		Sheet	4 of 5

Power



Power source configuration:

USB (DAP) - JP3: 2+3
Note: select Buck Mode as Power Mode.

CR2032 battery - JP3: 1+2, JP12 closed.
Note: select Buck Mode as Power Mode.

AA battery holder - JP3: 1+2, JP12 open.
Note: select properly power mode for the battery voltage,
close J6 if the battery voltage is below 1.5V

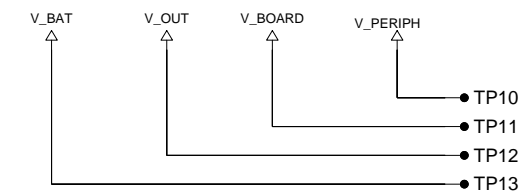
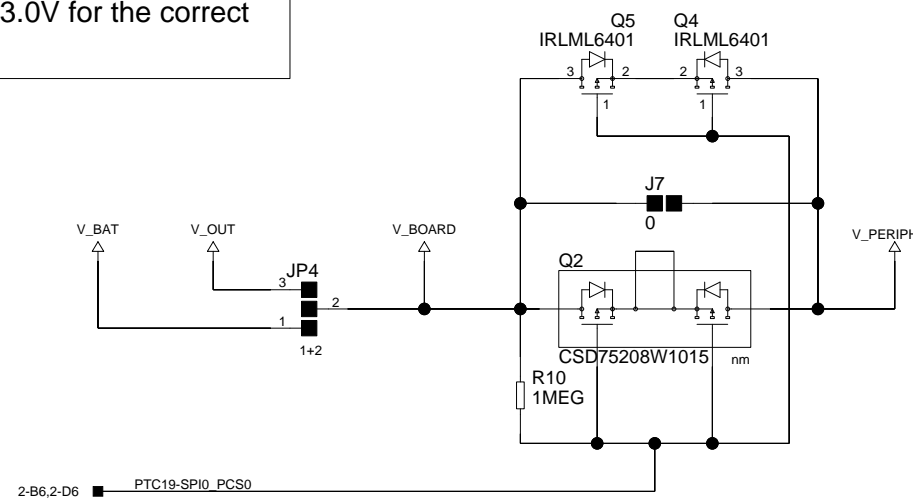
Board Voltage configuration:

Board is supplied directly from the battery - JP3: 1+2

Board is powered by the phyWAVE-KW41Z - JP3: 2+3

Note: V_OUT should be between 2.7V and 3.0V for the correct function of the EPD and sensors.

Peripheral and Board Voltage



Place together and label

PHYTEC

PHYTEC Messtechnik GmbH
Robert-Koch-Strasse 39
D-55129 Mainz

Project:	phyNODE-Athena		Department:	F&E
Author:	Johann Fischer		Revision:	001
26.09.2017	PCB-No.:	1490.1	Sheet	5 of 5