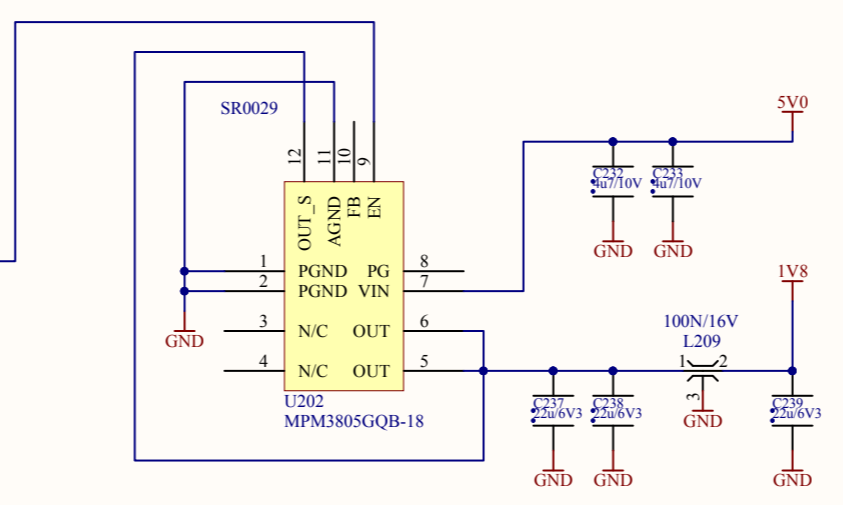
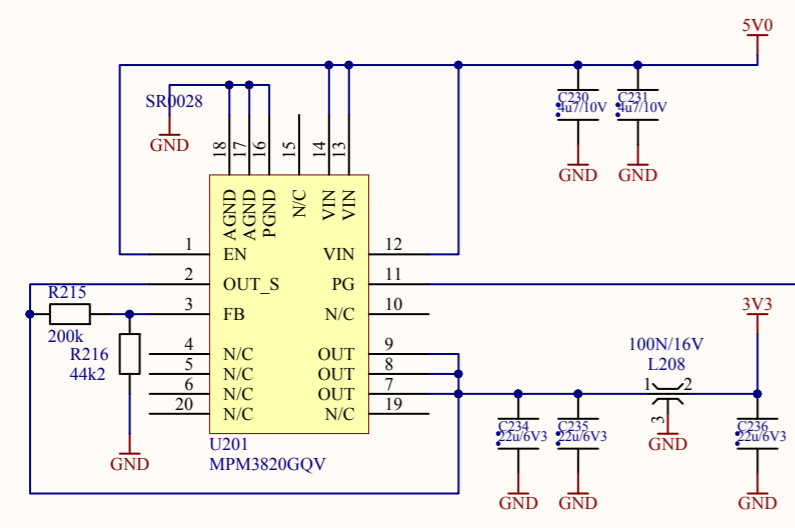
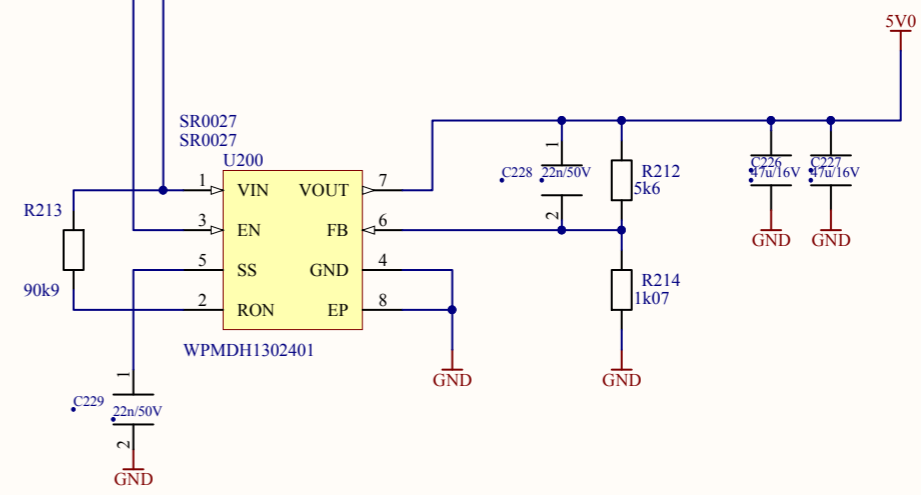
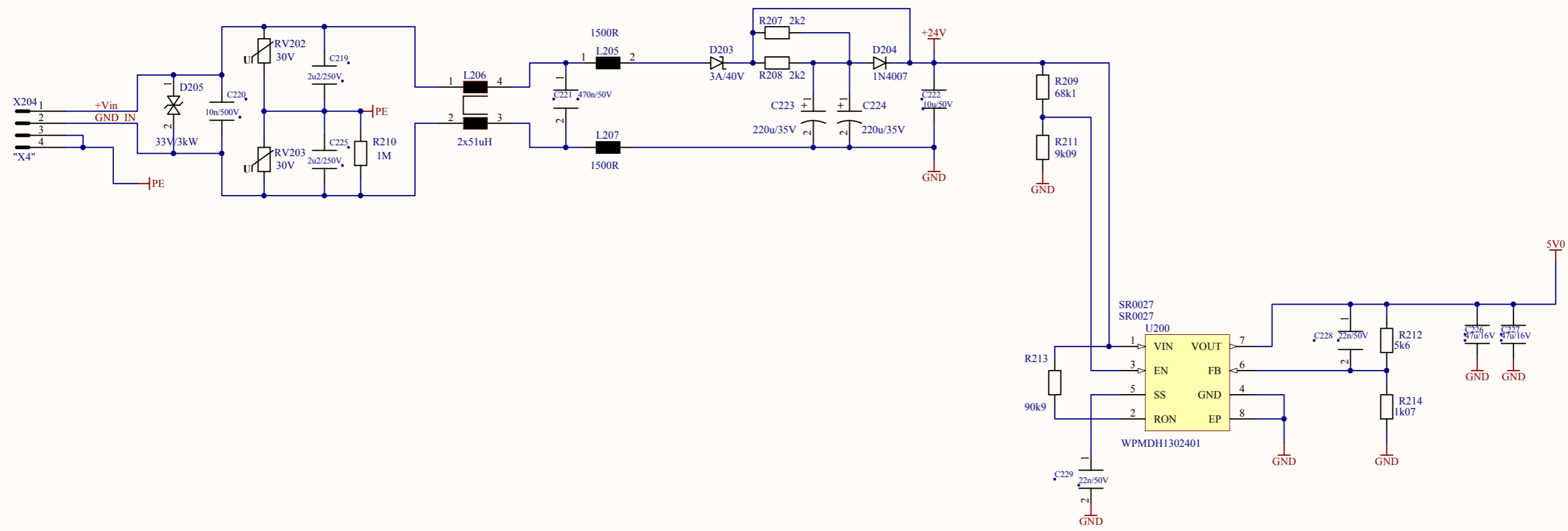
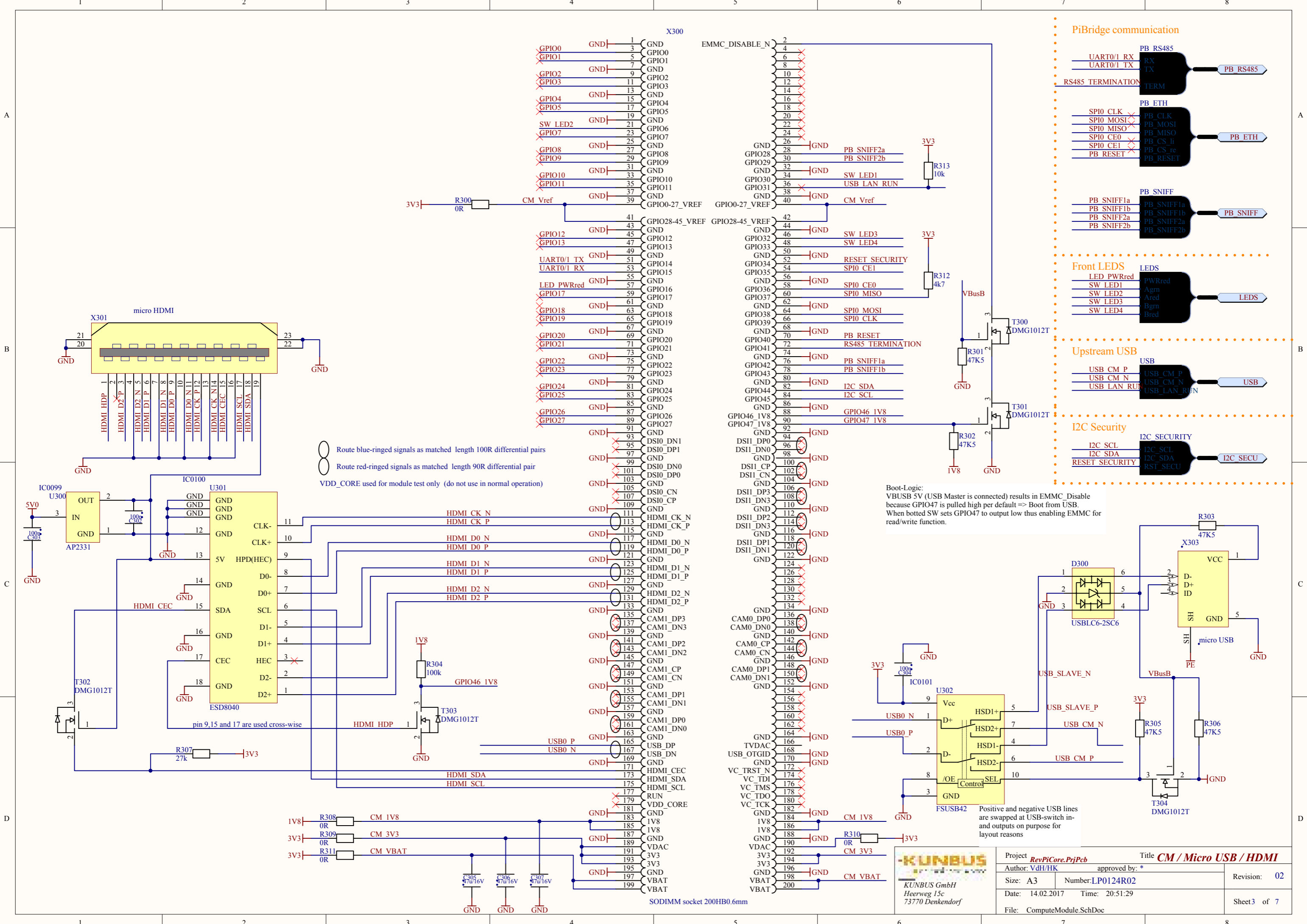


Project	RevPiCore.PrjPcb	Title	overview
Author:	VdH/HK	approved by:	*
Size:	A3	Number:	LP0124R02
Date:	14.02.2017	Time:	20:51:29
File:	Overview.SchDoc		
Revision:			02
Sheet 1 of 7			



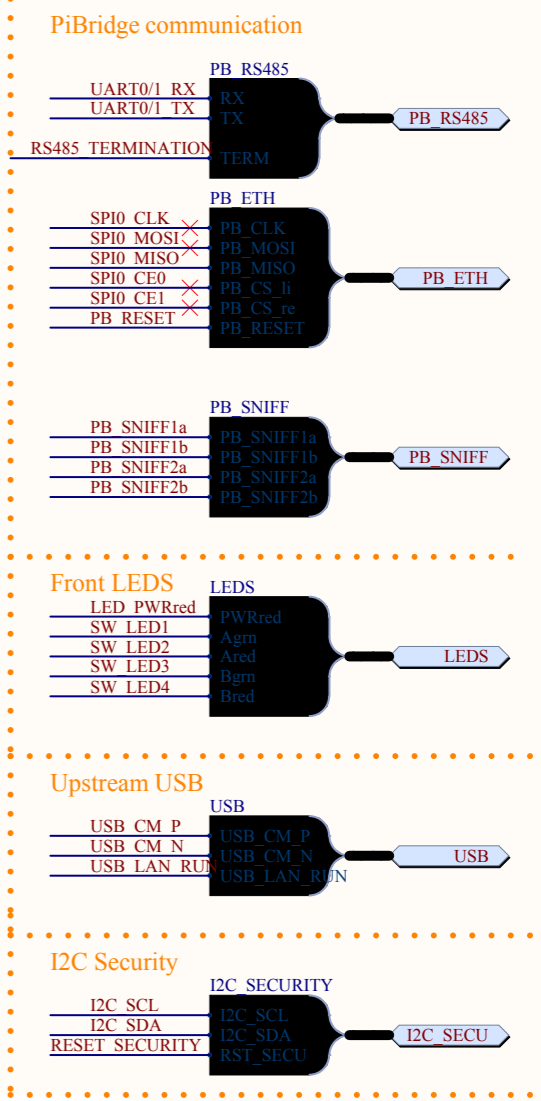
Project	RevPiCore.PrjPcb	Title	Powersupply
Author:	VdH/HK	approved by:	*
Size:	A3	Number:	LP0124R02
Date:	14.02.2017	Time:	20:51:29
File:	PowersupplyB.SchDoc		
			Revision: 02
			Sheet2 of 7



Route blue-ringed signals as matched length 100R differential pairs  
 Route red-ringed signals as matched length 90R differential pair  
 VDD\_CORE used for module test only (do not use in normal operation)

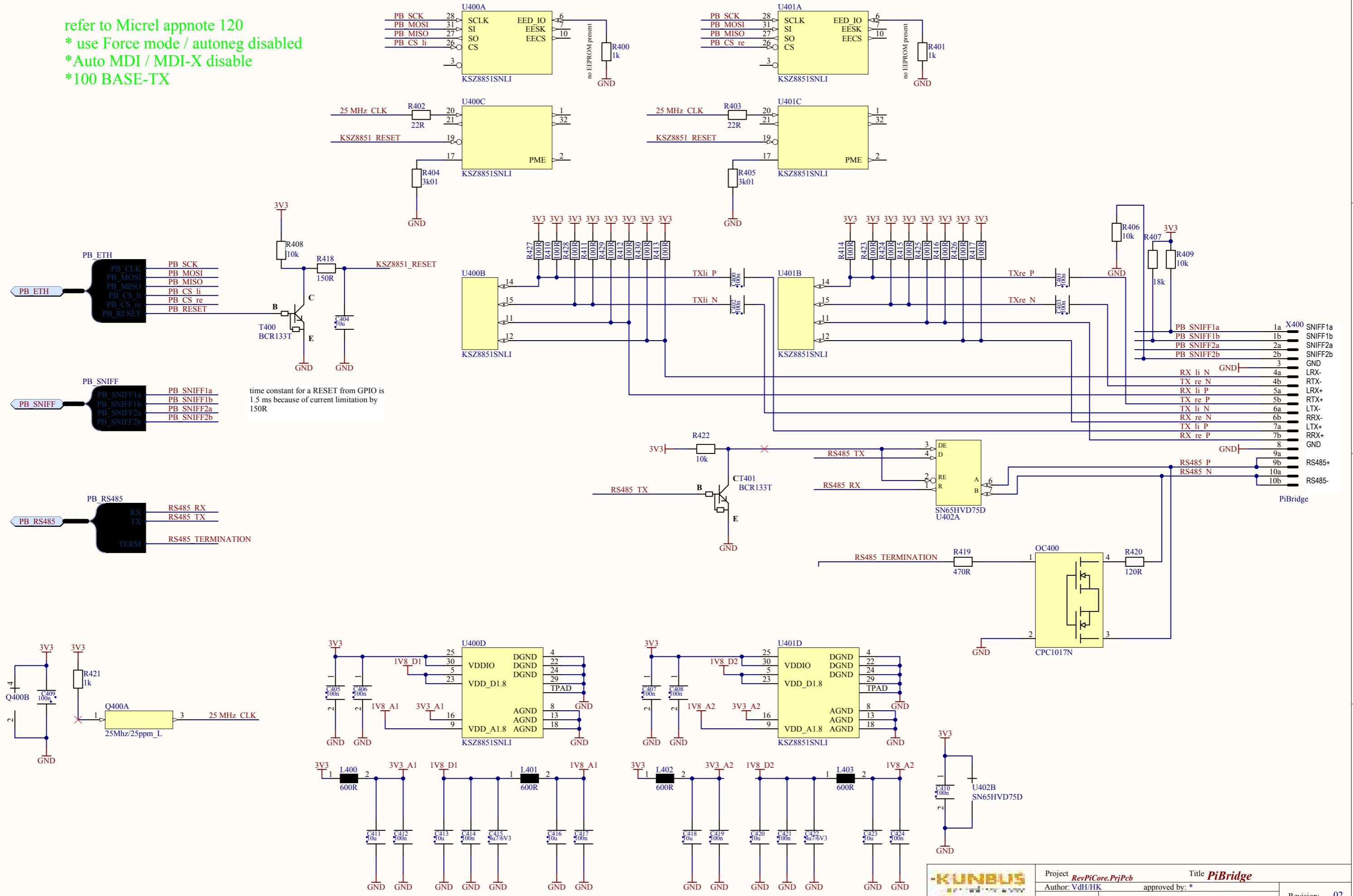
Boot-Logic:  
 VBUS 5V (USB Master is connected) results in EMMC Disable because GPIO47 is pulled high per default => Boot from USB.  
 When boot SW sets GPIO47 to output low thus enabling EMMC for read/write function.

Positive and negative USB lines are swapped at USB-switch in- and outputs on purpose for layout reasons



 KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project <b>RevPiCore.PriPcb</b>	Title <b>CM / Micro USB / HDMI</b>
	Author: VdH/HK	approved by: *
	Size: A3	Number: LP0124R02
	Date: 14.02.2017	Time: 20:51:29
	File: ComputeModule.SchDoc	Revision: 02
		Sheet 3 of 7

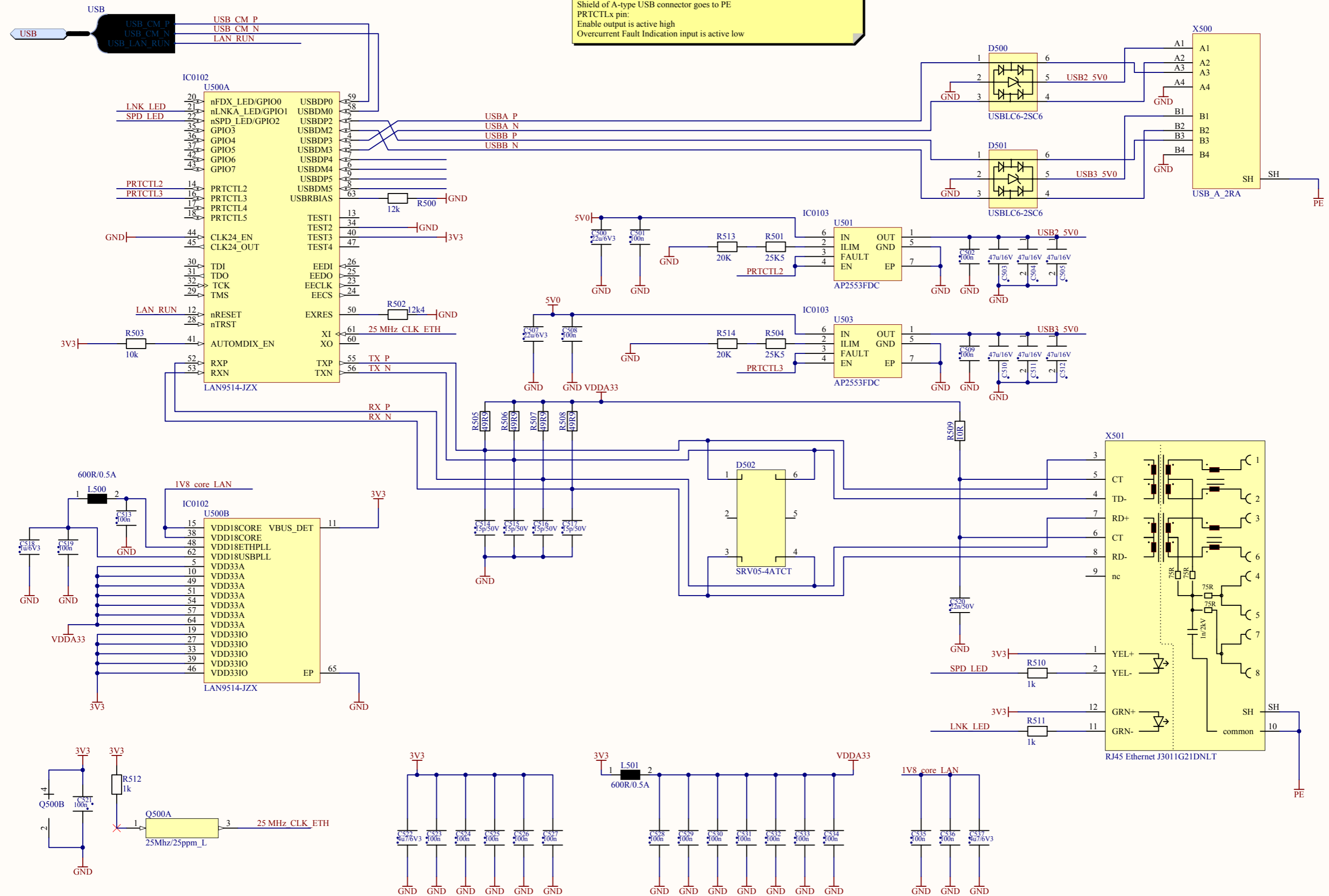
refer to Micrel appnote 120  
 \* use Force mode / autoneg disabled  
 \* Auto MDI / MDI-X disable  
 \* 100 BASE-TX

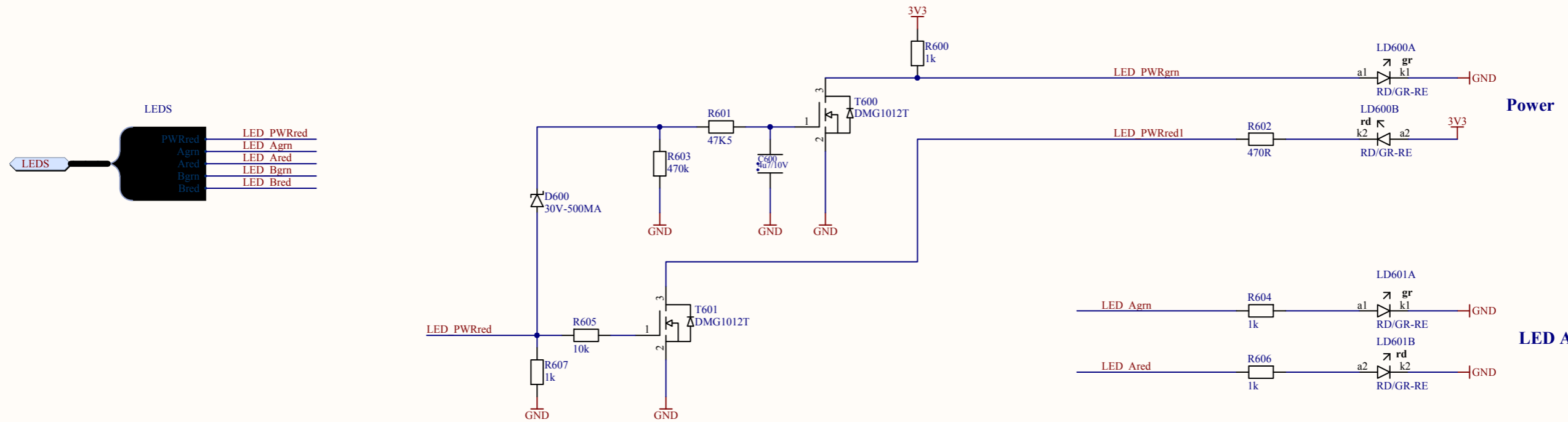


time constant for a RESET from GPIO is 1.5 ms because of current limitation by 150R

 KUNBUS GmbH Heerweg 15c 73770 Denkendorf	Project <b>RevPiCore.PriPcb</b> Title <b>PiBridge</b>
	Author: VdH/HK approved by: *
	Size: A3 Number: LP0124R02
	Date: 14.02.2017 Time: 20:51:30
File: PiBridge.SchDoc	Revision: <b>02</b>
	Sheet4 of 7

USB\_P goes to pin 3 of A-type USB connector  
 USB\_N goes to pin 2 of A-type USB connector  
 pin 1 of A-type USB connector goes to 5V\_USB (VCC) with 150 uF  
 pin 4 of A-type USB connector goes to GND  
 Shield of A-type USB connector goes to PE  
 PRTCTLx pin:  
 Enable output is active high  
 Overcurrent Fault Indication input is active low





**Green Power LED function:**

When system is switched on capacity draws gate of green LED to GND. Thus FET is off and LED\_PWgrn is high and green LED is on.

During startup LED\_PWred is high impedance pulled up by Broadcom and pulled down by 1k. Thus FET is off and LED\_PWgrn is high and green LED is on.

After booting Broadcom changes LED\_PWred to output low. Thus FET is off and LED\_PWgrn is high and green LED is on.

On severe error Braodcom sets LED\_PWred to output high. After charging Capacitor to 1.5 V FEI will turn on (max. 1 s delay). Thus LED\_PWgrn is low and green LED is off. This mode pulls  $2 \times 3.3V/1k = 6.6$  mA current.

On fault condition Braodcom sets LED\_PWred to 1Hz high / low oscillation. After charging Capacitor to 1.5 V (during high phase) FET will turn on. Discharge during low phase of LED\_PWred is much slower and capacitor is not discharged. Thus LED\_PWgrn keeps low and green LED stays off. LED turns on again when LED\_PWred is low for more than 3 seconds.

