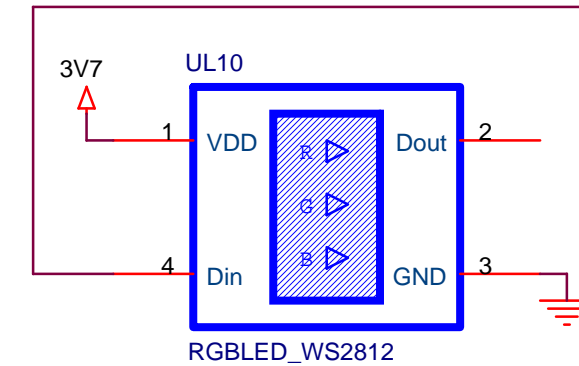
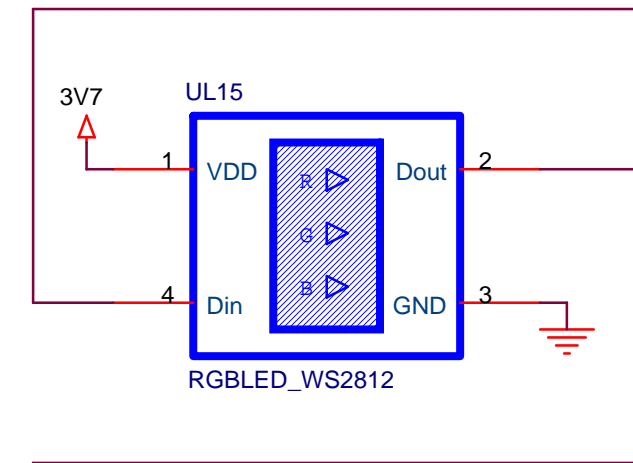
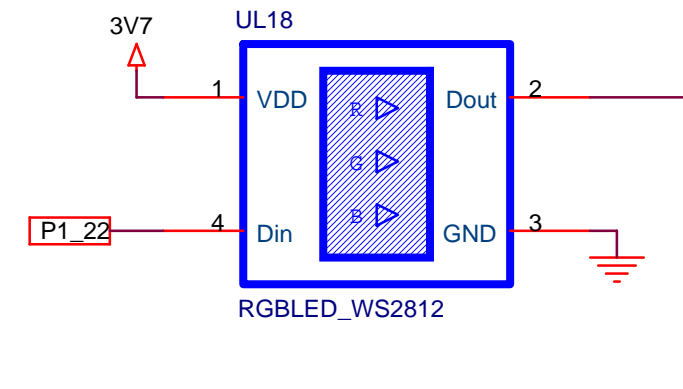
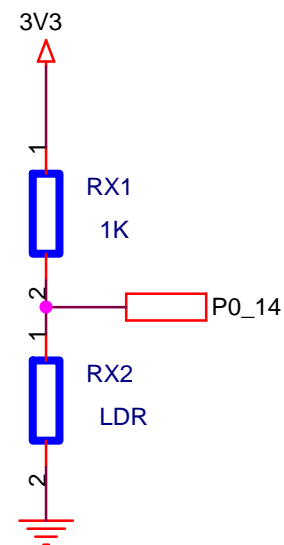
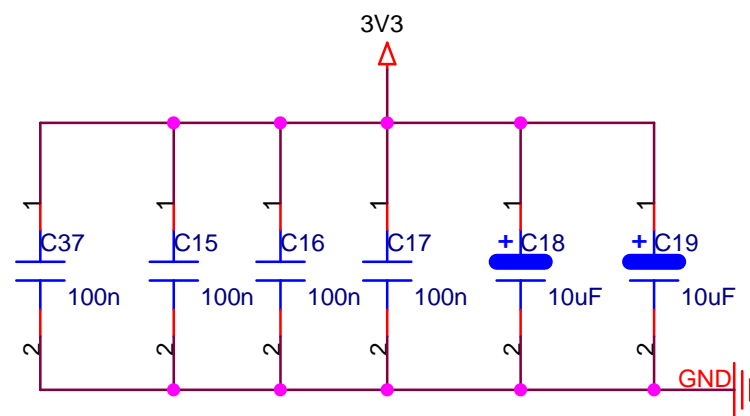
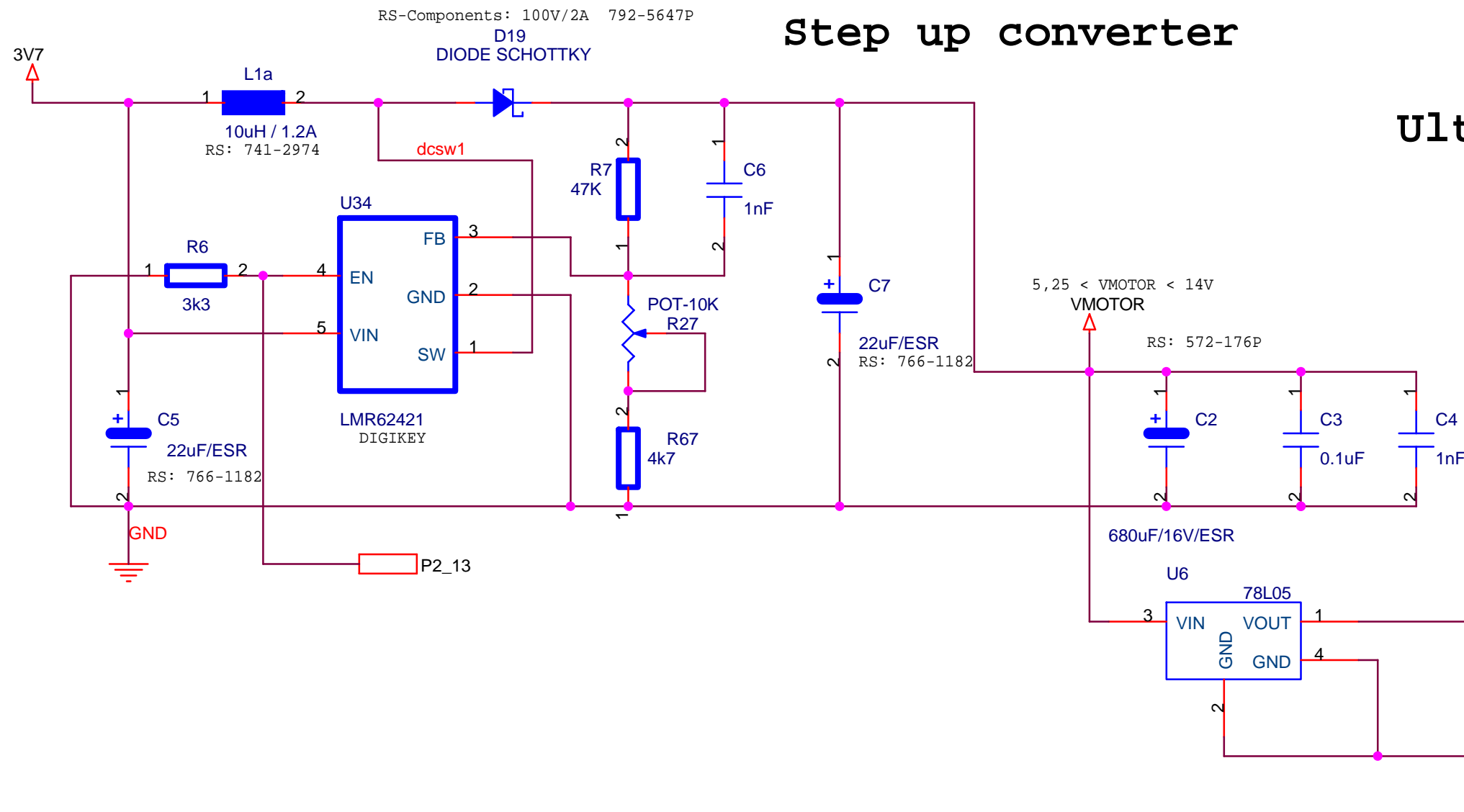


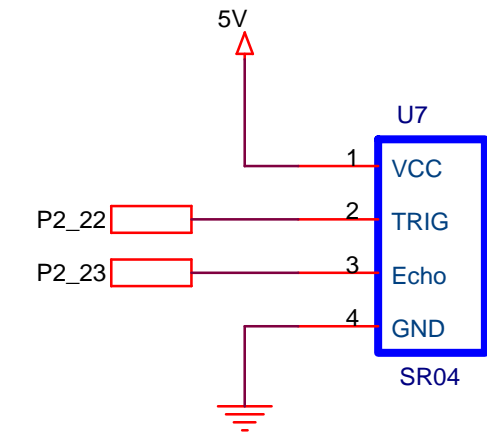
Achtung P1\_17 wird für PWM verwendet!



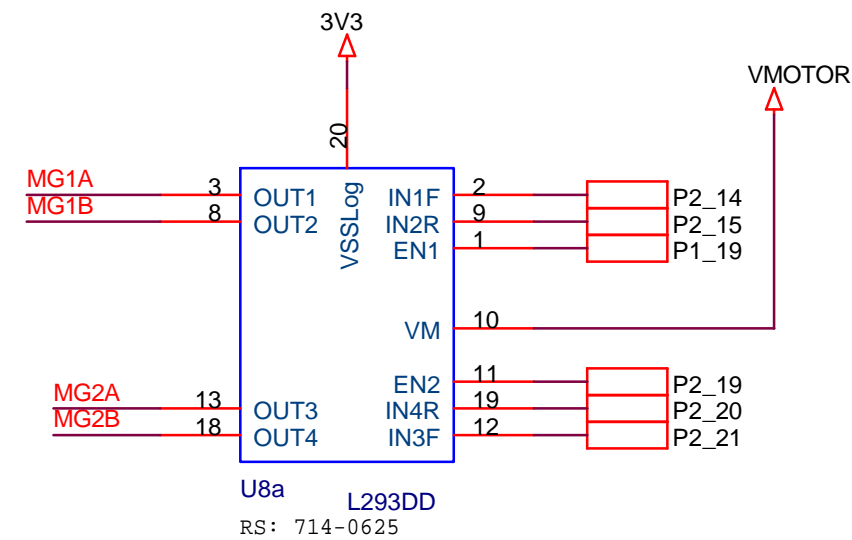
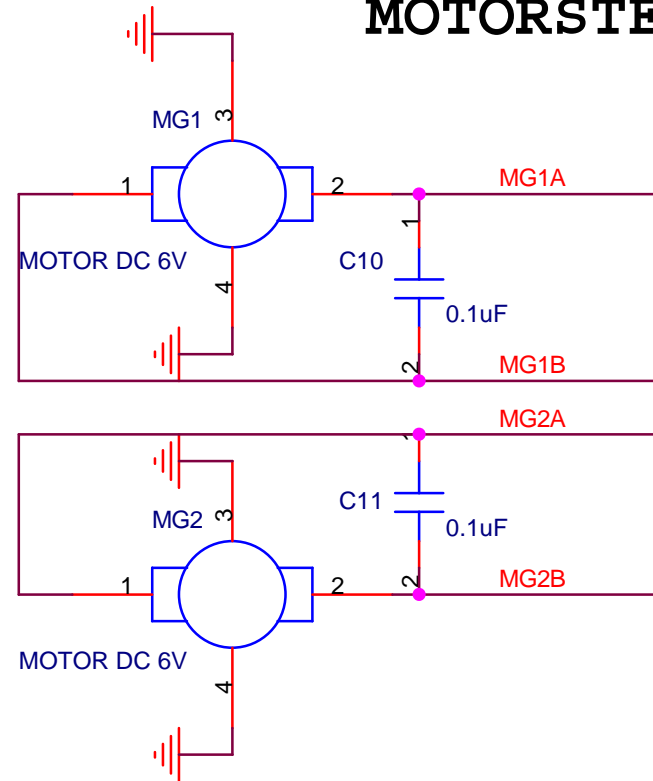
# Step up converter



# Ultraschall Abstandsmessung



# MOTORSTEUERUNG (PWM)

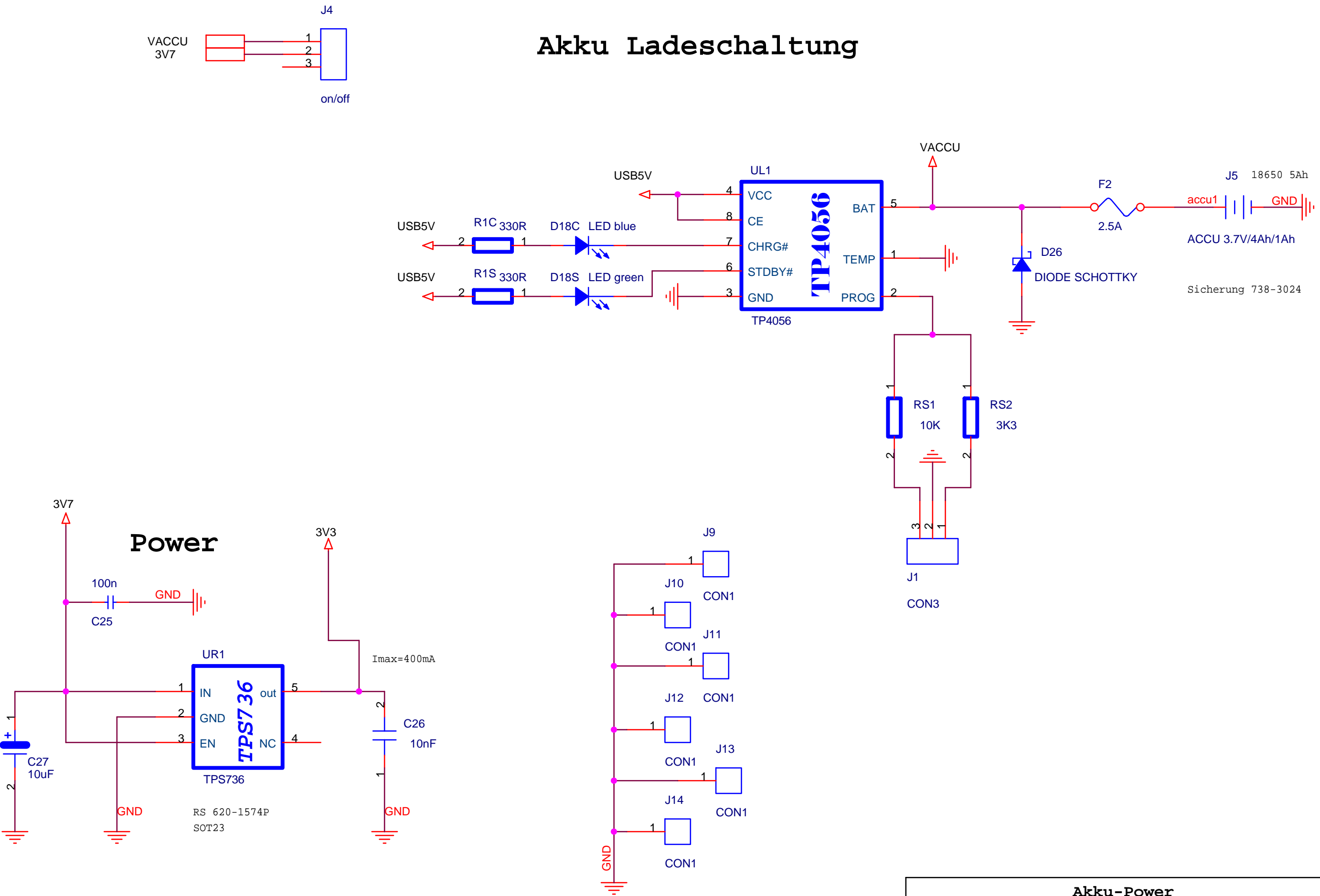


Motorsteuer-IC von Toshiba TB6612  
ist wieder lieferbar, ab der  
Version Bertl 2017 einplanen!

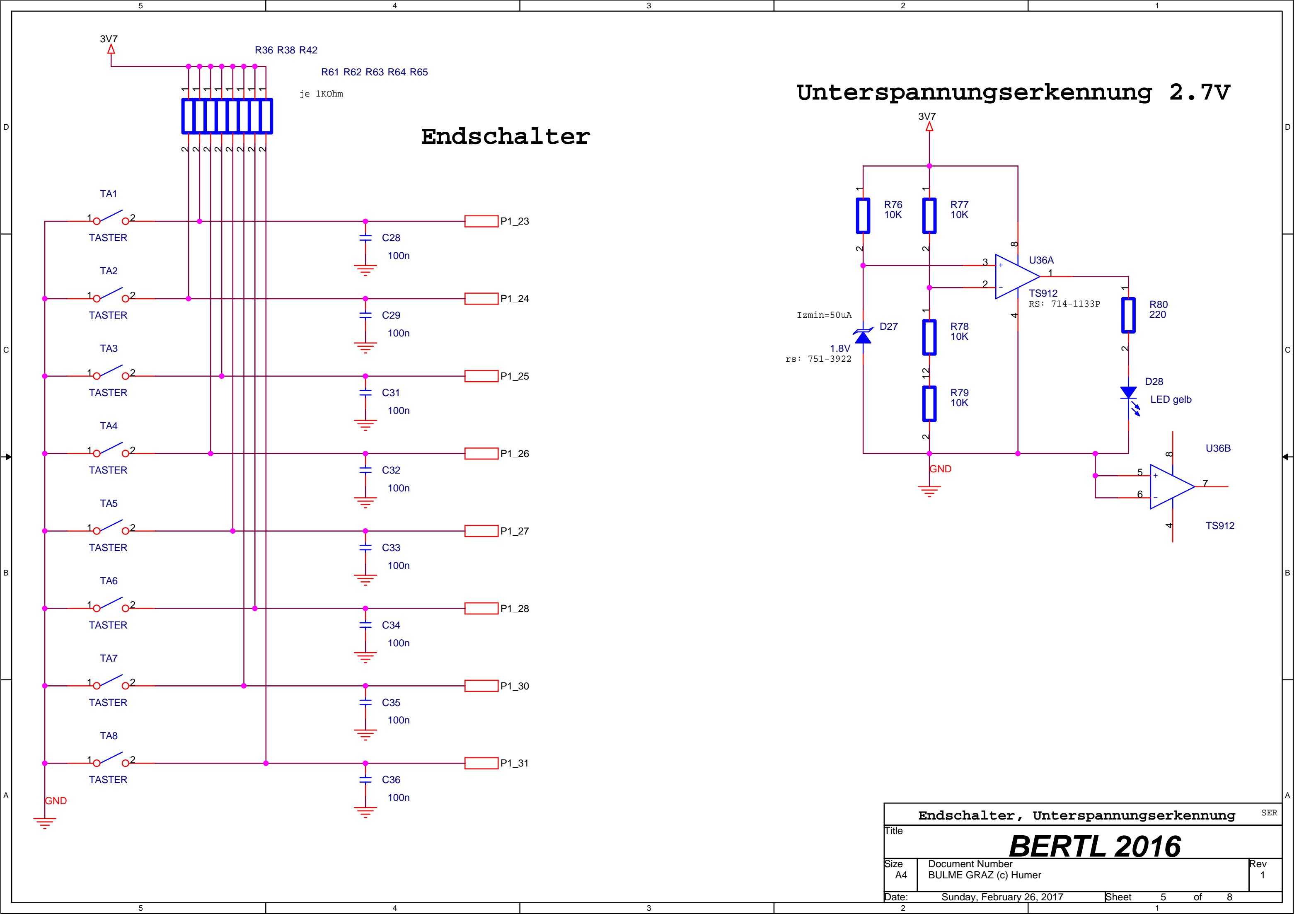
Motor			SER
Title			
<b>BERTL 2016</b>			
Size	Document Number		Rev
A4	BULME GRAZ (c) Humer		1
Date:	Sunday, February 26, 2017		Sheet 2 of 8



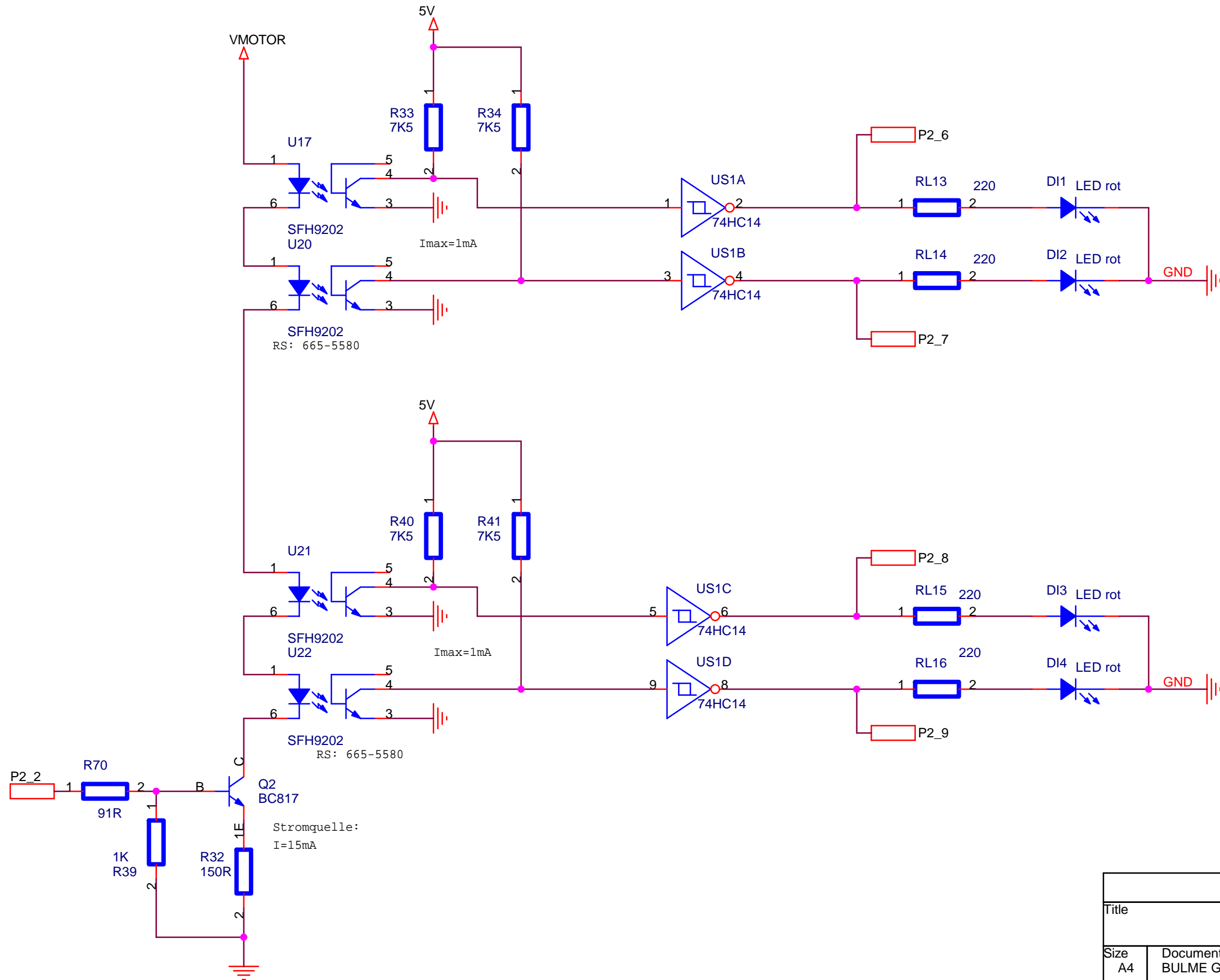
# Akku Ladeschaltung



Akku-Power			SER
Title			<b>BERTL 2016</b>
Size	Document Number	Rev	
A4	BULME GRAZ (c) Humer	1	
Date:	Sunday, February 26, 2017	Sheet	4 of 8

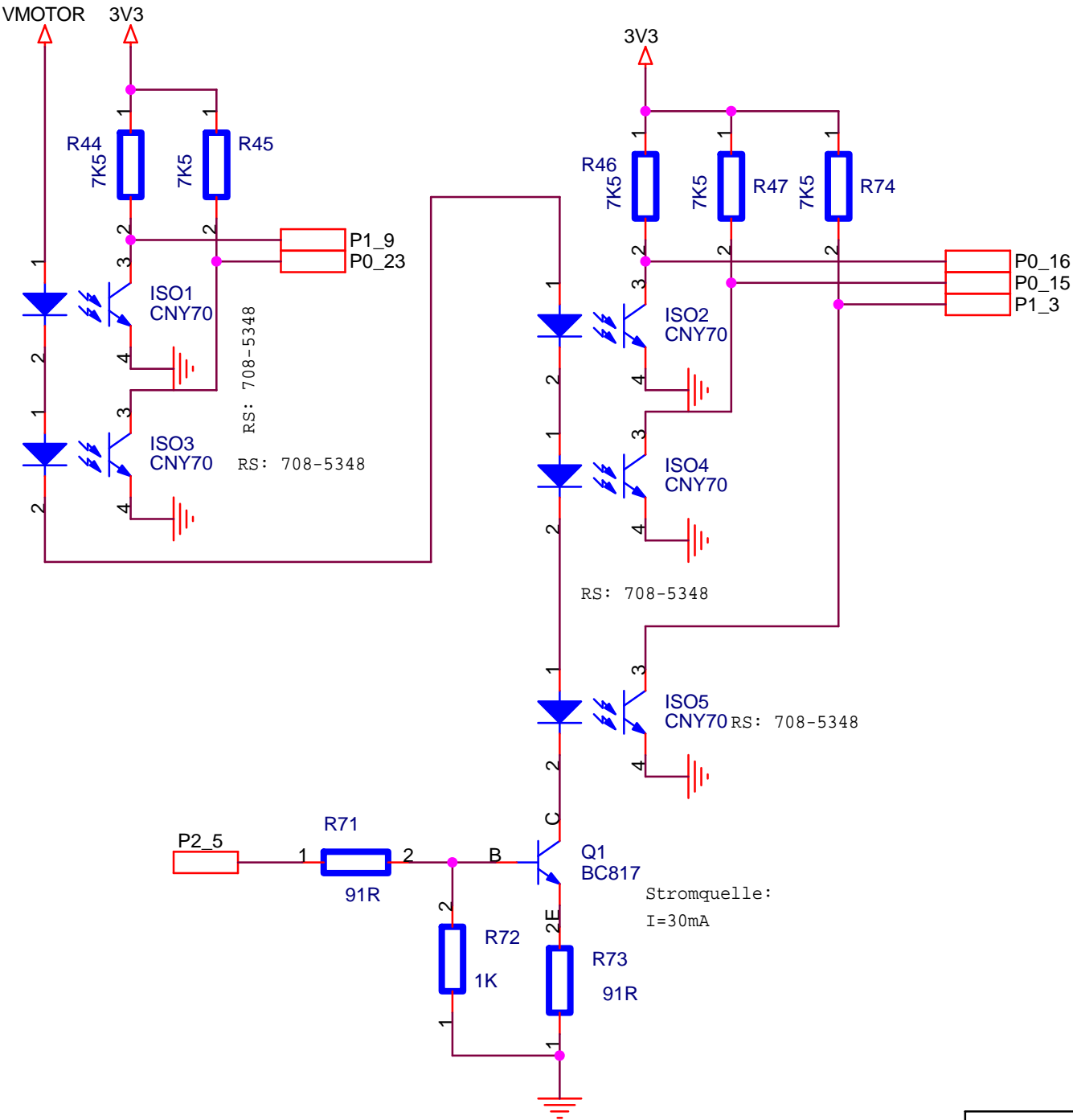


# Incrementalgeber Antrieb links und rechts



Incrementalgeber			SER
Title			<b>BERTL 2016</b>
Size A4	Document Number BULME GRAZ (c) Humer	Rev 1	
Date:	Sunday, February 26, 2017	Sheet 6	of 8

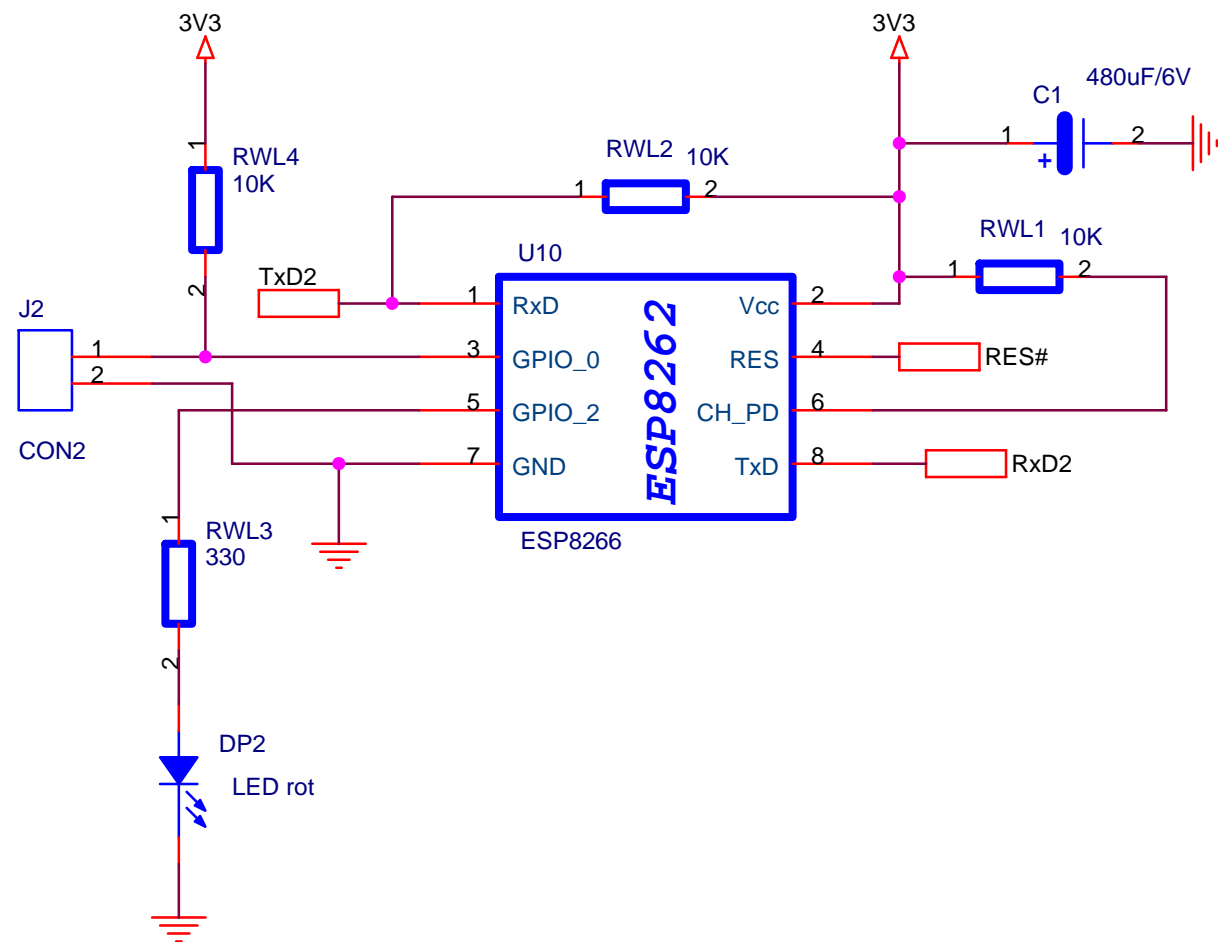
Liniensensor (5-fach Analogwerte)



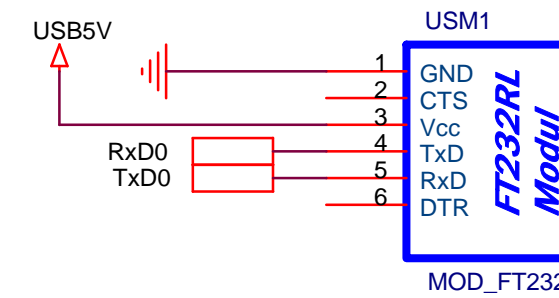
**Analogkanäle**  
**P1\_9 Kanal 0**  
**P0\_23 Kanal 1**  
**P0\_16 Kanal 2**  
**P0\_15 Kanal 3**  
**P1\_3 Kanal 5**

Liniensensor		SER
Title		
BERTL 2016		
Size A4	Document Number BULME GRAZ (c) Humer	Rev 1
Date: Sunday, February 26, 2017	Sheet 7	of 8

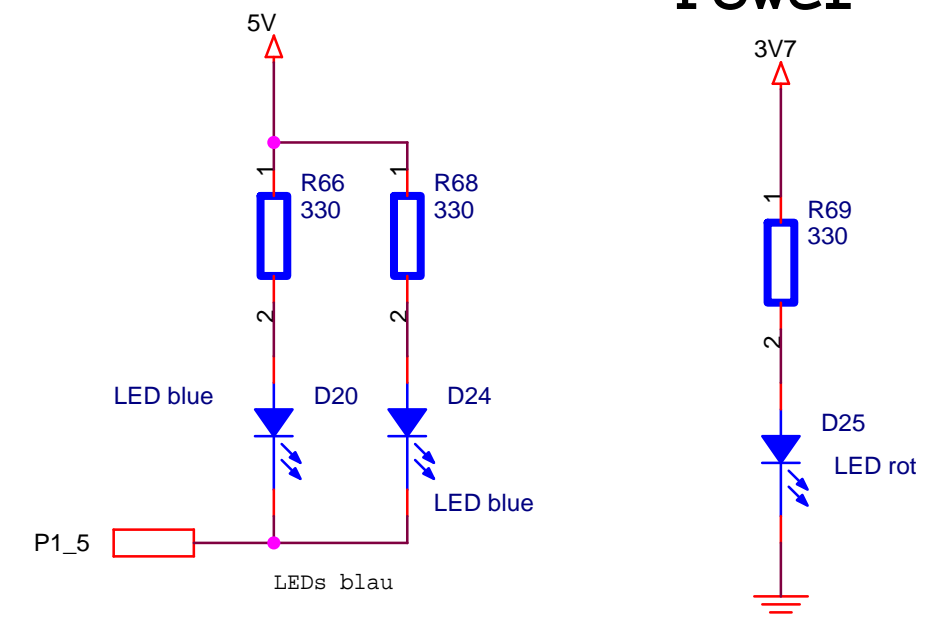
## WLAN



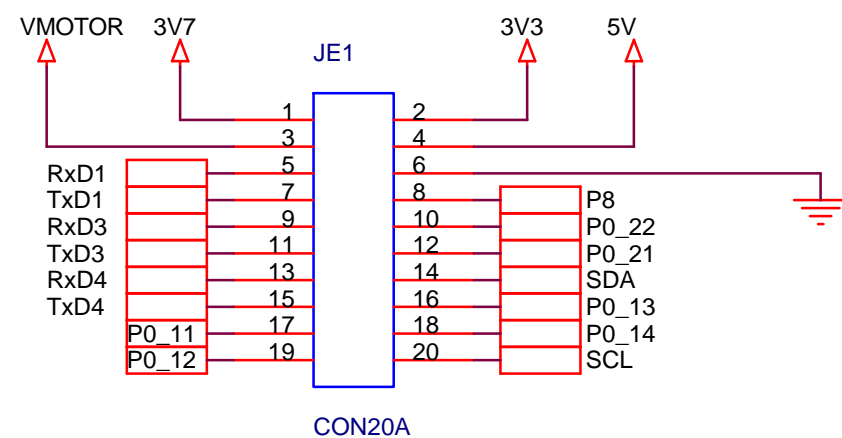
## RS232-USB



## Beleuchtung Boden



## Erweiterung, UART, I2C etc.



*P1.2 RxD1*  
*P1.8 TxD1*  
*P2.3 RxD3*  
*P2.4 TxD3*  
*P2.11 RxD4*  
*P2.12 TxD4*  
*P0.11 ADU#9*  
*P0.12 ADU#8*  
*P0.13 ADU#7*  
*P0.14 ADU#6*  
*P0.4 SCL*  
*P0.5 SDA*  
*P0.2 I/O*  
*P0.22 ADU#11/MISO*  
*P0.21/MOSI*

Kommunikation		SER
Title		
<b>BERTL 2016</b>		
Size	Document Number	Rev
A4	BULME GRAZ (c) Humer	1
Date:	Sunday, February 26, 2017	Sheet 8 of 8