

A

A

B

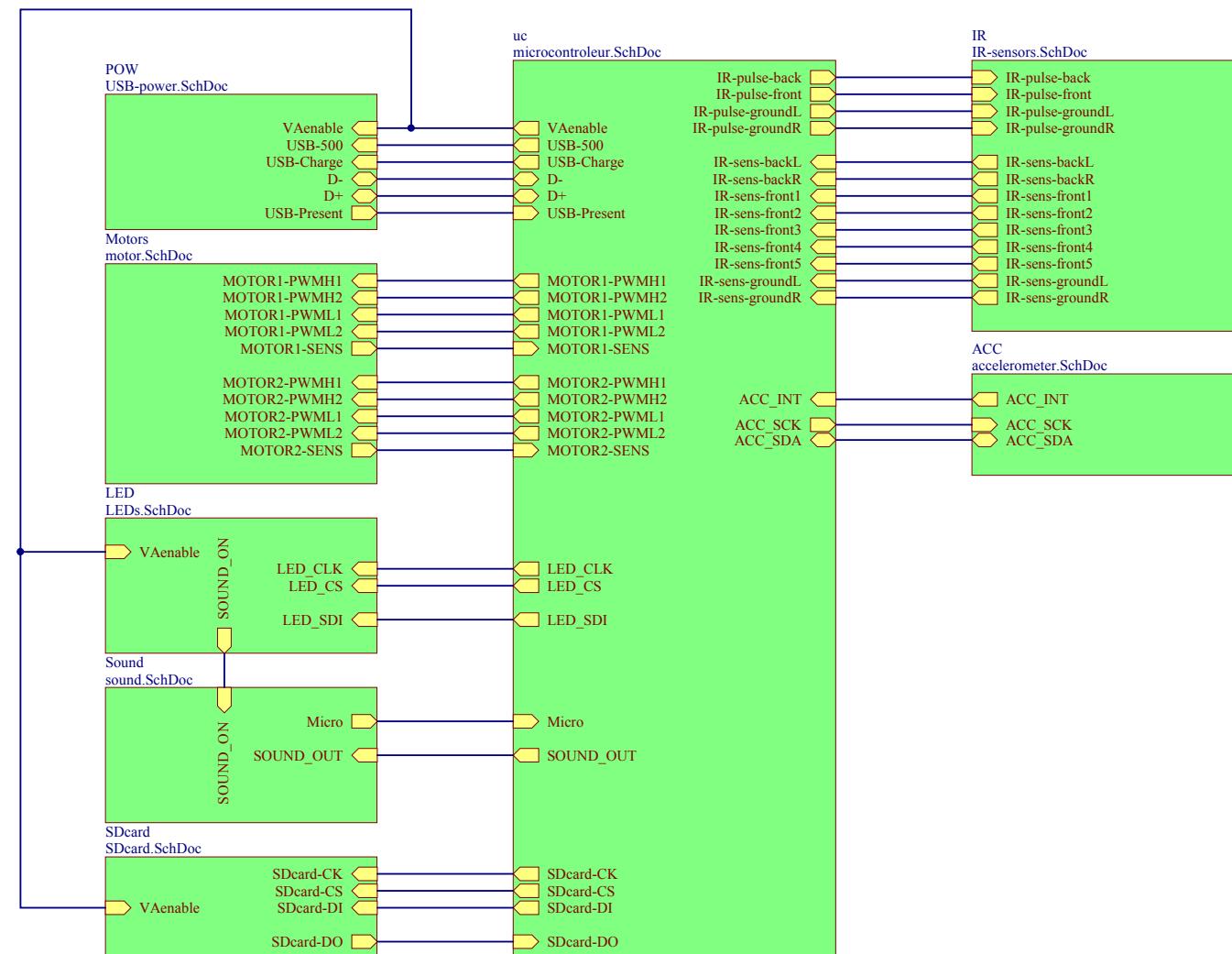
B

C

C

D

D

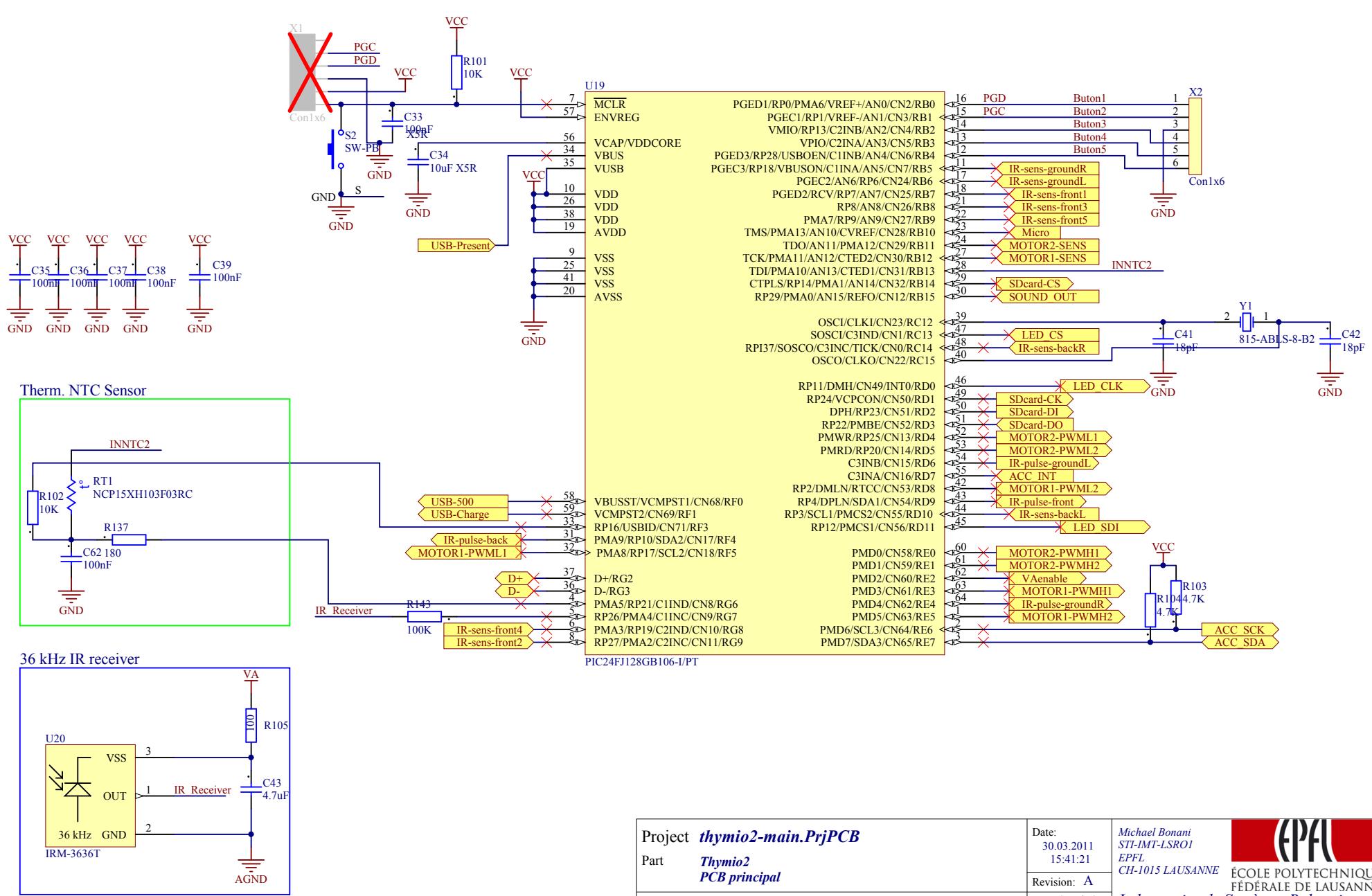
Project **thymio2-main.PnjPCB**Part **Thymio2  
PCB principal**File : **thymio2-main.SchDoc**Date:  
30.03.2011  
15:41:21Michael Bonani  
STI-IMT-LSRO1  
EPFL  
CH-1015 LAUSANNE

ÉCOLE POLYTECHNIQUE

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Revision: **A**

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Project ***thymio2-main.PrjPCB***  
Part ***Thymio2***  
***PCB principal***

File : microcontroller-SchDoc

Date:  
30.03.2011  
15:41:21

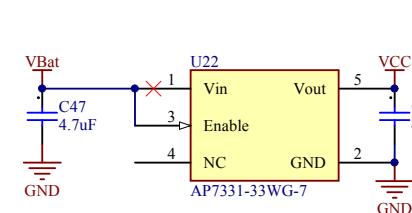
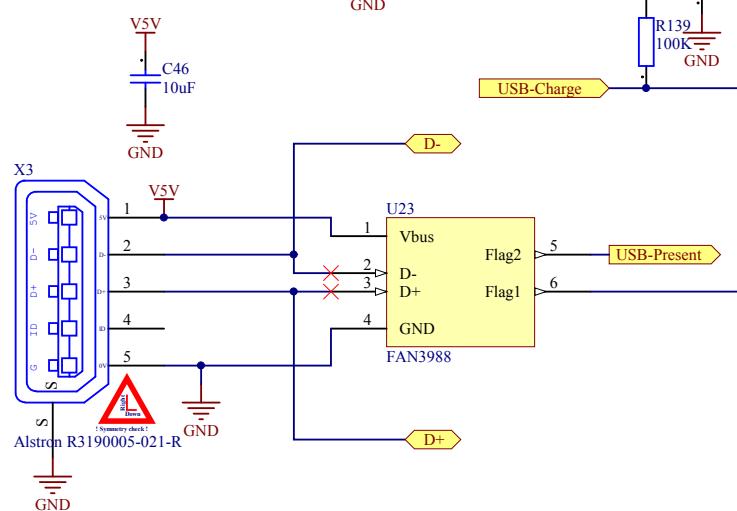
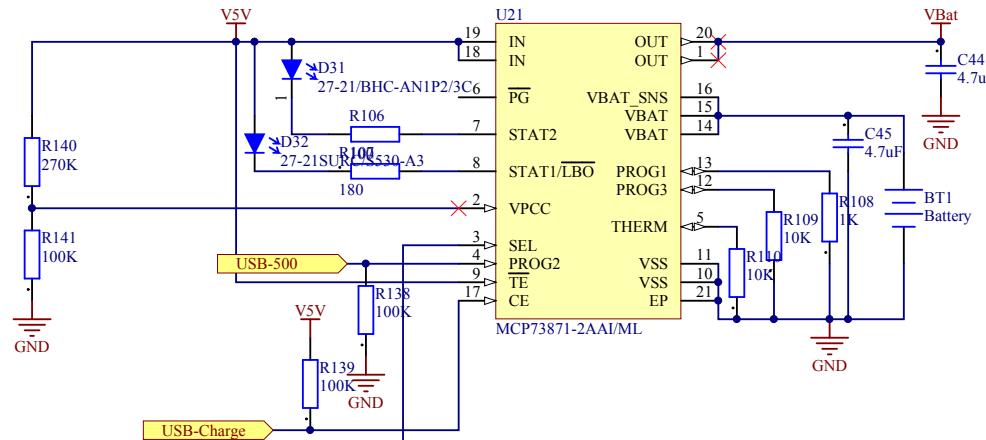
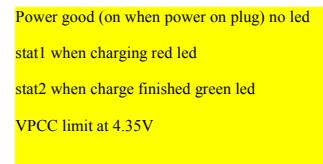
*Michael Bonani  
STI-IMT-LSRO1  
EPFL  
CH-1015 LAUSANNE*



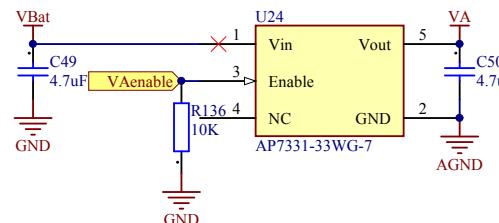
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FÉDÉRALE DE LAUSANNE  
*Systèmes Robotiques*

Laboratoire d'

Laboratoire de



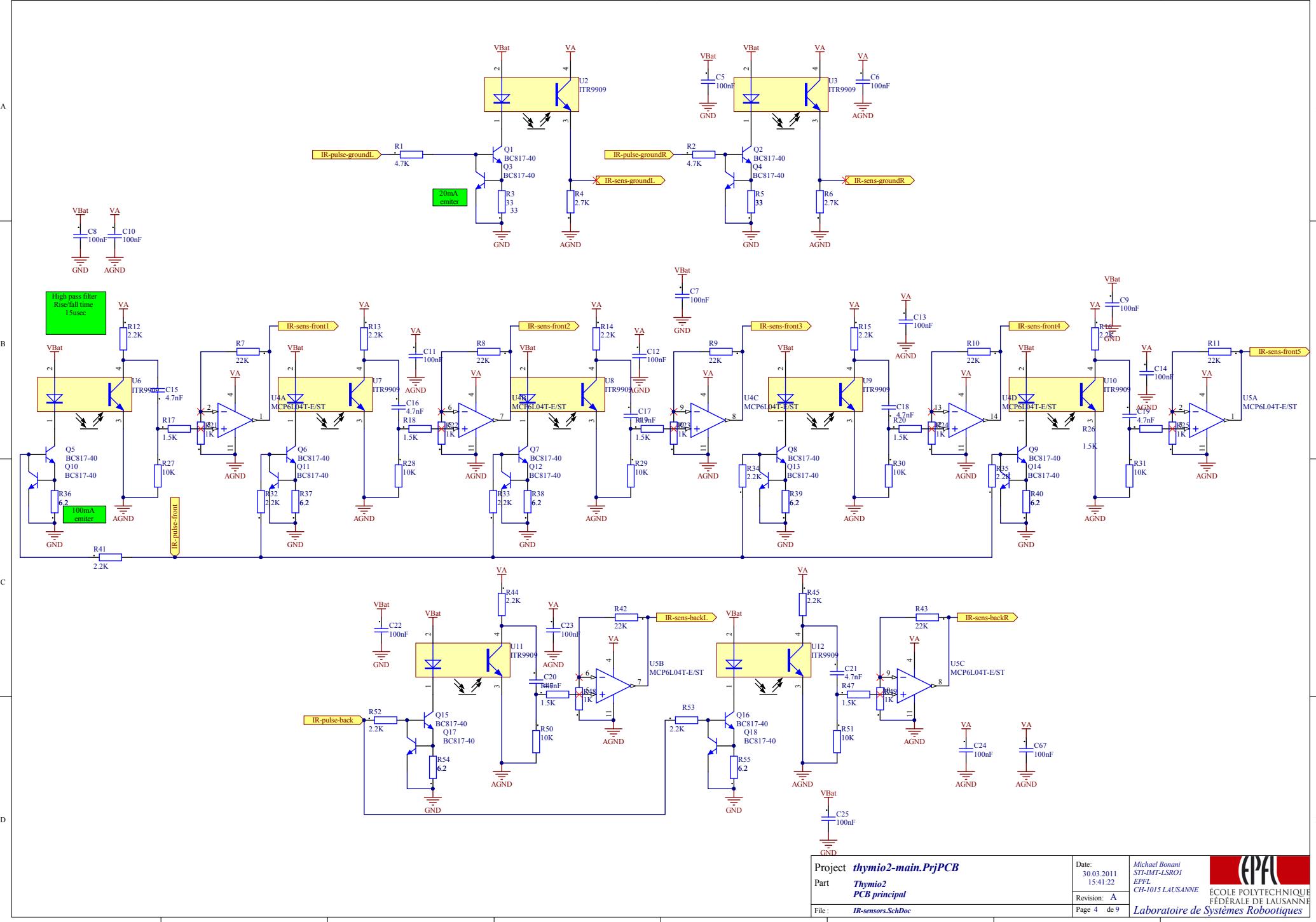
300mA max  
 1x pic24F = 24 mA  
 13x led 20mA = 260mA  
 1 MMA7660 = 47uA  
 3 shift register 160uA = 0.48mA



AGND : Analog Ground      GND : Logical Ground

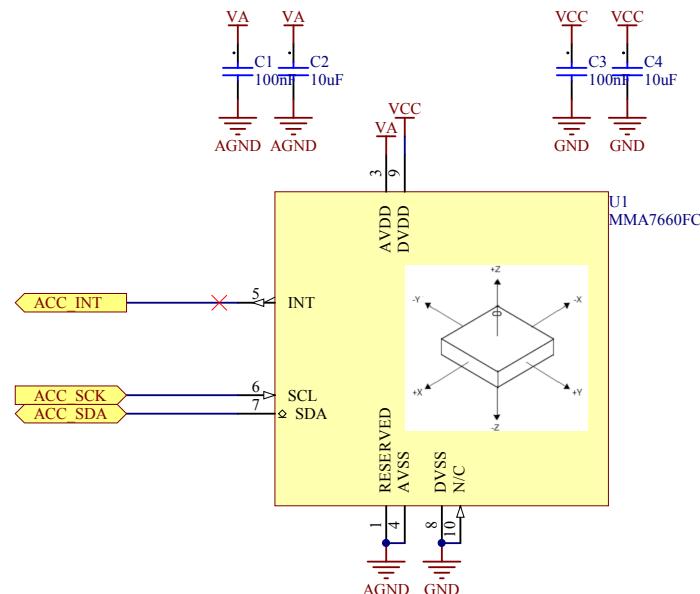
```

    graph TD
        AGND --- XS1
        GND --- XS1
        SC2[SC2] --- XS1
    
```



A

A



B

B

C

C

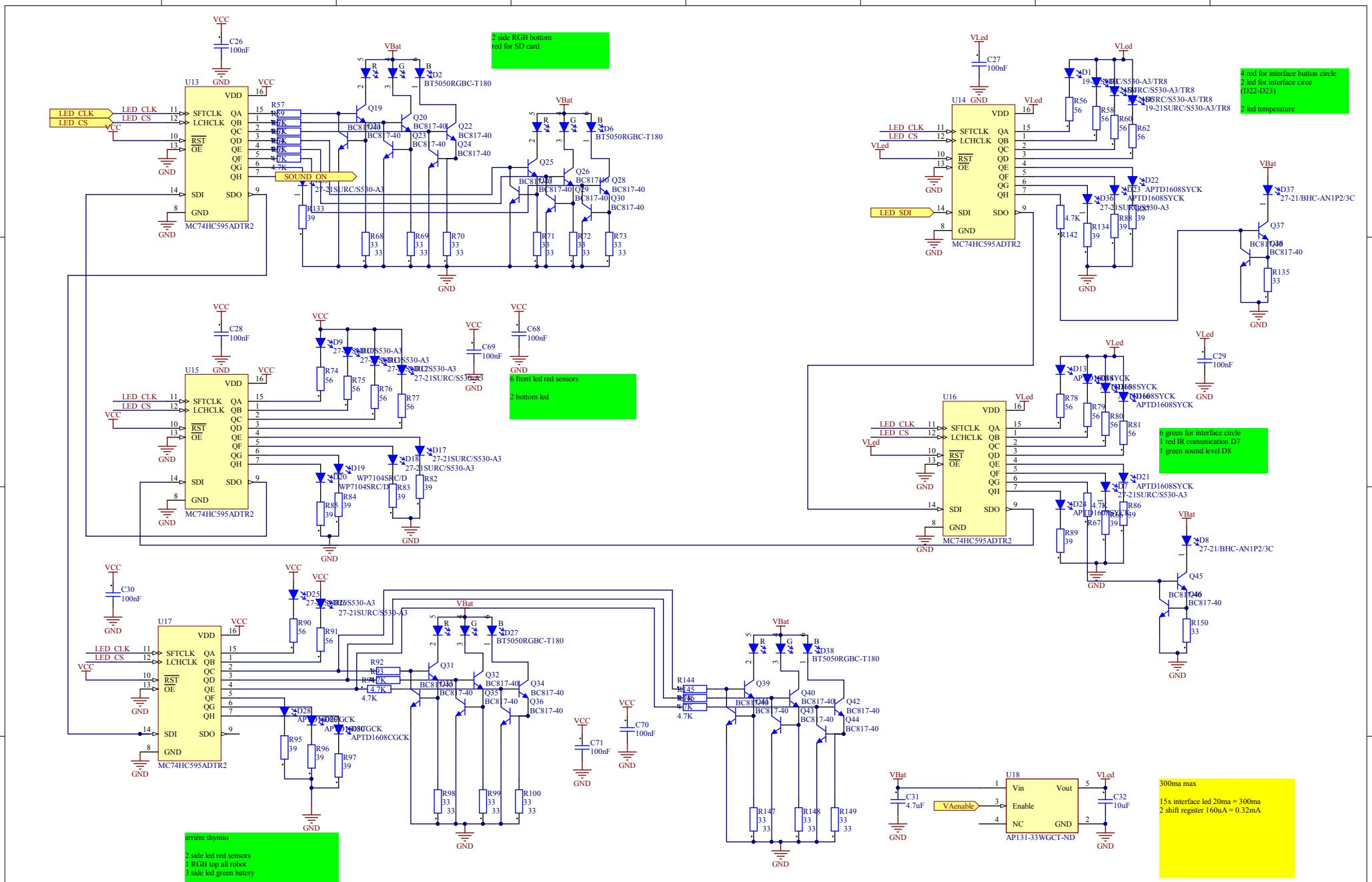
D

D

Project *thymio2-main.PrjPCB*Part *Thymio2 PCB principal*File : *accelerometer.SchDoc*Date:  
30.03.2011  
15:41:22Michael Bonani  
STI-IMT-LSRO1  
EPFL  
\*

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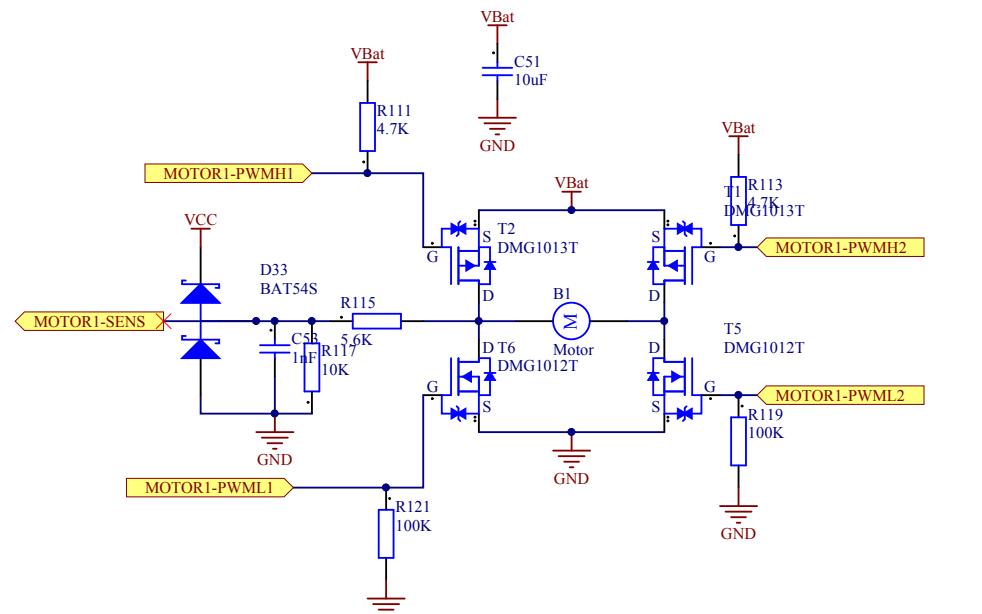


Project	<b><i>thymio2-main.PrjPCB</i></b>	Date:	<b>30.03.2011</b>	<i>Michael Bonani</i>	
Part	<b><i>Thymio2</i></b>		<b>15.41.22</b>	<i>STI-JMT-LSRO1</i>	
	<b><i>PCB principal</i></b>			<i>EPFL</i>	
File :	<b><i>LEDs.SchDoc</i></b>	Revision:	*	*	
		Page	6 de 9	*	

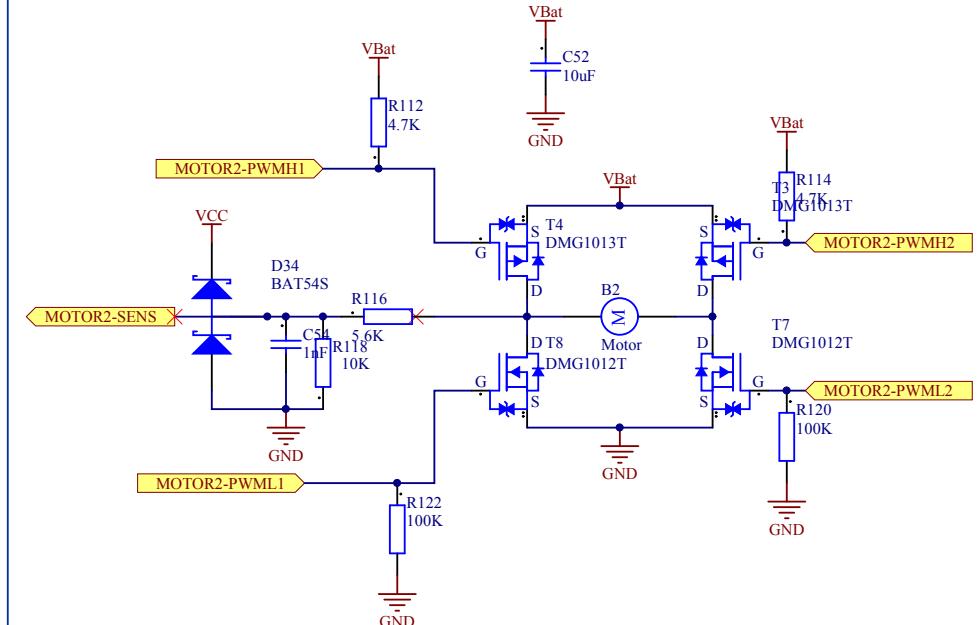
A

A

## Motor Left



## Motor Right



D

D

Project *thymio2-main.PrjPCB*Part *Thymio2*  
*PCB principal*File : *motor.SchDoc*Date:  
30.03.2011  
15:41:22

Revision: A

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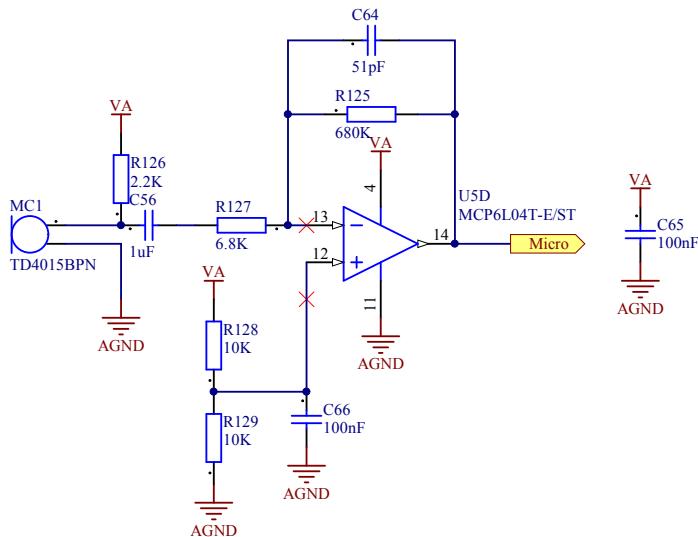


ÉCOLE POLYTECHNIQUE

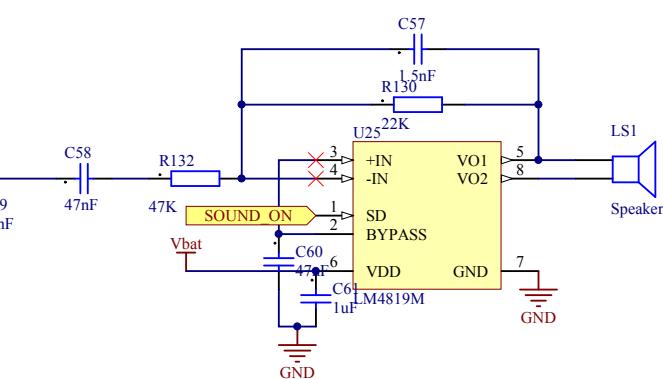
FÉDÉRALE DE LAUSANNE

Laboratoire de Systèmes Roboوتiques

A



B



C

A

A

B

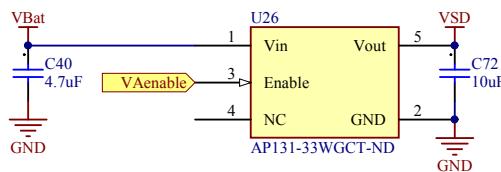
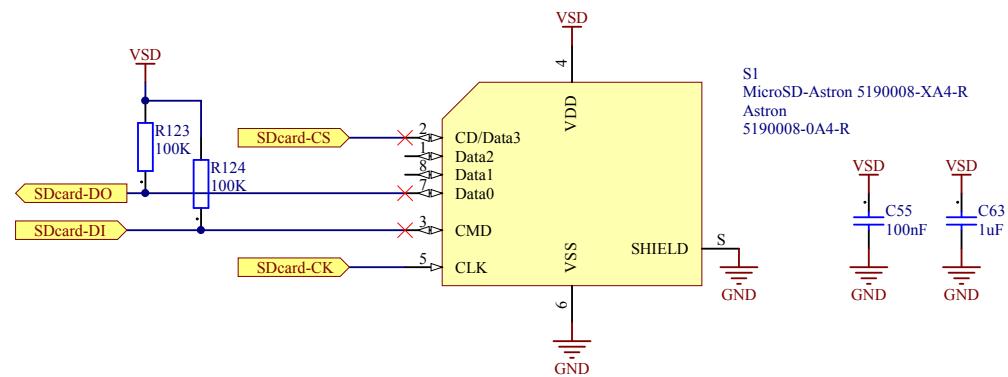
B

C

C

D

D



Project *thymio2-main.PnjPCB*

Part   *Line 1 of project part*  
*Line 2 of project part*

File : *SDcard.SchDoc*

Date:  
30.03.2011  
15:41:22

Daniel Burnier  
STI-IMT-LSRO1  
EPFL  
CH-1015 LAUSANNE



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Quantity	Comment	LibRef	Designator	Description	Footprint	Supplier	Supplier Nr
2	Motor	B1, B2		Motor, General Kind	RBS-10.5		
1	Battery	BT1		Multicell Battery	BAT-2		
36	100nF	100nF[1][1][0603][1] 1	C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C22, C23, C24, C26, C27, C28, C29, C30, C33, C35, C36, C37, C38, C39, C55, C62, C65, C66, C67, C68, C69, C70, C71	Capacitor	RES1608X06L	Famell	1288255
1	4.7uF	4.7uF[1][1][0603][1] 1	C2, C4, C32, C46, C51, C52, C72	Capacitor	RES1608X06L	Famell	1463375, 9227784
1	10uF	10uF[1][1][0603][1] 1	C15, C16, C17, C18, C19, C20, C21	Capacitor	CAPC1608N		
1	4.7uF	4.7uF[1][1][0603][1] 1	C31, C40, C43, C44, C45, C47, C48, C49, C50	Capacitor	RES1608X06L	Famell	9227784
1	10uF X5R	10uF[1][1][0603][1] 1	C34	Capacitor	RES1608X06L	Famell	1463375
2	10uF	10uF[1][1][0603][1] 1	C41, C42	Capacitor	RES1608X06L	Famell	9819815
2	1nF	100nF[1][1][0603][1] 1	C53, C54	Capacitor	RES1608X06L	Famell	1288255
		10uF[1][1][0603][1] 1					
3	1uF	4.7uF[1][1][0603][1] 1	C56, C61, C63	Capacitor	RES1608X06L	Distrelec Famell	823495, 9227784
1	1.5uF	10uF[1][1][0603][1] 1	C57	Capacitor	RES1608X06L	Famell	9406182
3	47nF	10nH[1][1][0603][1] 1	C58, C59, C60	Capacitor	RES1608X06L	Distrelec Famell	823494, 9406182
1	51pF	10nH[1][1][0603][1] 1	C64	Capacitor	RES1608X06L	Famell	9406182
4	19-21SIRC/S530-A3/TR8	LED	D1, D3, D4, D5	SMO Red 0603 2V@20mA 56 mcd	DIOD1608X08N		
4	BT5050RGBC-T180	LED RGB SMD 2	D2, D6, D27, D38	SMO Red led right angle mount 2V@20mA 57mcd	LEDSM05		
12	27-21SIRC/S530-A3	LED	D7, D9, D10, D11, D12, D17, D18, D25, D26, D32, D35, D36	SMO Red led right angle mount 2V@20mA 57mcd	27-21 Everlight		
3	27-21 BHCAH1P2/3C	LED	D8, D31, D37	Blue led right angle mount 3V@20mA 29mcd	27-21 Everlight Blue		
8	APTD1608SYCK	LED	D13, D14, D15, D16, D21, D22, D23, D24	LED standard - CMS Helios SMD Yellow 590nm 480mcd	DIOD1608X08N		
2	WP71045RC-D	LED	D19, D20	Red led 2V@20mA 57mcd	Led_TH_3mm_20mm		
3	APTD1608COOK	LED	D28, D29, D30	LED standard - CMS Helios SMD Green 5/0mm 230mcd	DIOD1608X08N		
2	BAT54S	BAT54S	D33, D34	Schottky Barrier Double Diode	SOT23_N		
1	Speaker	Speaker	L51	Speaker	PIN2		
1	TD4015BPN	Micro1	MCI	Unidirectional back Electret Condenser Microphone	MICRO_PANASONIC_WM-64P		
		Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, Q10, Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q47					
48	BC817-40	BC817-40	R1, R2, R57, R58, R59, R61, R64, R65, R67, R62, R63, R65, R66, R68, R70, R71, R72, R73, R68, R69, R70, R135, R147, R148, R150	NPN General-purpose Transistor	SOT23_N		
22	4.7k	4.7k[1][1][0603][1] 1	R142, R143, R144, R145, R146	Resistor	RES1608X06L	Distrelec	715604
16	133	68k[1][1][0603][1] 1, RES	R3, R5, R6, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R52, R53, R126	Resistor	RES1608X06L	Distrelec	715632
2	2.7K	RES	R4, R6	Resistor	RES1608X06L		
8	22K	22k[1][1][0603][1] 1, RES	R7, R8, R9, R10, R11, R42, R43, R130	Resistor	RES1608X06L	Distrelec	715620
15	2.2K	2.2k[1][1][0603][1] 1, RES	R12, R13, R14, R15, R16, R32, R33, R34, R35, R41, R44, R45, R52, R53, R126	Resistor	RES1608X06L	Distrelec	715596
7	1.5K	RES	R17, R18, R19, R20, R26, R46, R47	Resistor	RES1608X06L		
8	1K	1K[1][1][0603][1] 1, RES	R21, R22, R23, R24, R25, R48, R49, R108	Resistor	RES1608X06L	Distrelec	715588
1	2.4K	2.4k[1][1][0603][1] 2, 10K	R27, R28, R29, R30, R31, R50, R51, R101, R102, R103, R110, R117, R118, R128, R129, R136	Resistor	RES1608X06L	Distrelec Famell	715612, 9330399, 9331565
7	6.2	RES	R36, R37, R38, R39, R40, R54, R55	Resistor	RES1608X06L		
14	95	68k[1][1][0603][1] 1, RES	R56, R58, R60, R62, R74, R75, R76, R77, R78, R62, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R134	Resistor	RES1608X06L	Distrelec	715632
14	39	68k[1][1][0603][1] 1, RES_ACORT	R95, R96, R97, R133, R134	Resistor	RES1608X06L	Distrelec	715632
2	100	RES_ACORT	R103, R106	Resistance	RES1608X06N		
1	160	160[1][1][0603][1] 1	R107, R137	Resistor	RES1608X06L	Distrelec	715570
5	5.6K	5.6k[1][1][0603][1] 1, RES	R115, R116	Resistor	RES1608X06L	Distrelec	715598
10	100K	100k[1][1][0603][1] 1	R119, R120, R121, R122, R123, R124, R138, R139, R141, R143	Resistor	RES1608X06L	Distrelec	715612, 715636
1	680K	470k[1][1][0603][1] 1	R125	Resistor	RES1608X06L	Distrelec	715652
1	6.8K	10k[1][1][0603][1] 1	R127	Resistor	RES1608X06L	Distrelec	715612
1	620	22k[1][1][0603][1] 1, R131	R131	Resistor	RES1608X06L	Distrelec	715620
1	47K	22k[1][1][0603][1] 1, R132	R132	Resistor	RES1608X06L	Distrelec	715620
1	270K	270k[1][1][0603][1] 2, R140	R140	Resistor	RES1608X06L	Famell	9330941
1	NCP150XH103F03RC	NCP150XH103F03RC	R1T1	Thermistor - NTC 10K OHM 1% 0402	RES1050X04L		
1	MicrSD_Atron 5190008-XA4-R	MicrSD_Atron 5190008-XA4-R	S1	MicroSD Card connector 5190008-XA4-R	Atron 5190008-XA4-R		
1	SW-PB	SW-PB	S2	Switch	FSMRA2JH		
4	DMG1013T	DMG1013T	T1, T2, T3, T4	Transistor MOSFET 1x P Pinf = 1Hg, 2AS, 3D	SOT50P160X030		
4	DMG1012T	DMG1012T	T5, T6, T7, T8	Transistor MOSFET 1x N, Pinf = 1Hg, 2AS, 3D	SOT50P160X030		
1	MMAT7660FC	MMAT7660FC	U1	MMAT7660FC XY2-AXIS ACCELEROMETER 1±5 g	DFN650P300X300X100-12N		
2	ITR9009	ITR9009	U2, U3	Everlight Opto Intemper	ITR9005_LONG		
1	MCP634AT-E/ST	MCP634AT-E/ST	U4, U5	1MHz, 85dB Quad Up/Amp, 14-Pin TSSOP, 1x8 Pin Optocoupler	TSSOP-3T14_N		
1	TR9009	TR9009	U6, U7, U8, U9, U10, U11, U12	8-Bit Serial Input/Serial Parallel Output Shift Register with Latched 3-State Outputs	ITR9005_EDGE		
5	MC74HC595ADTR2	MC74HC595ADTR2	U13, U14, U15, U16, U17	8-Bit Serial Input/Serial Parallel Output Shift Register with Latched 3-State Outputs	948F01_N		
2	AP7331-33WGCT-ND	AP7331	U18, U26	300nA, Low Quiescent Current, Fast Transient LDO	SOT95P285X100-5N		
1	PIC24F128GB106-I/P	PIC24F128GB106-I/P	U19	16bit, 8-Bit Flash Microcontroller with USB On-The-Go, 128KB Flash, 16KB SRAM, 64x16 TOFP, Industrial Temperature Range	TQFP-PT64_N		
1	FAN988	FAN988	U23	USB Charger and Over Voltage Detection Device	MLP 1.45x1mm		
1	LMA4819M	LMA4819M	U25	Low Power Audio Power Amplifier with Shutdown Mode	M08A_N		
1	Con1x6	Con1x6	X2	1x 6 pins connector	MHD1R16		
1	Altron R319005-021-R	USB_MINIAB	X3	USB connector Micro B	Atron 319005-021x		
1	615ABLS-8-B2	HC49/4H_SMX	Y1	Surface Mount Quartz Crystal 8MHz	HC49/4H_SMX		

