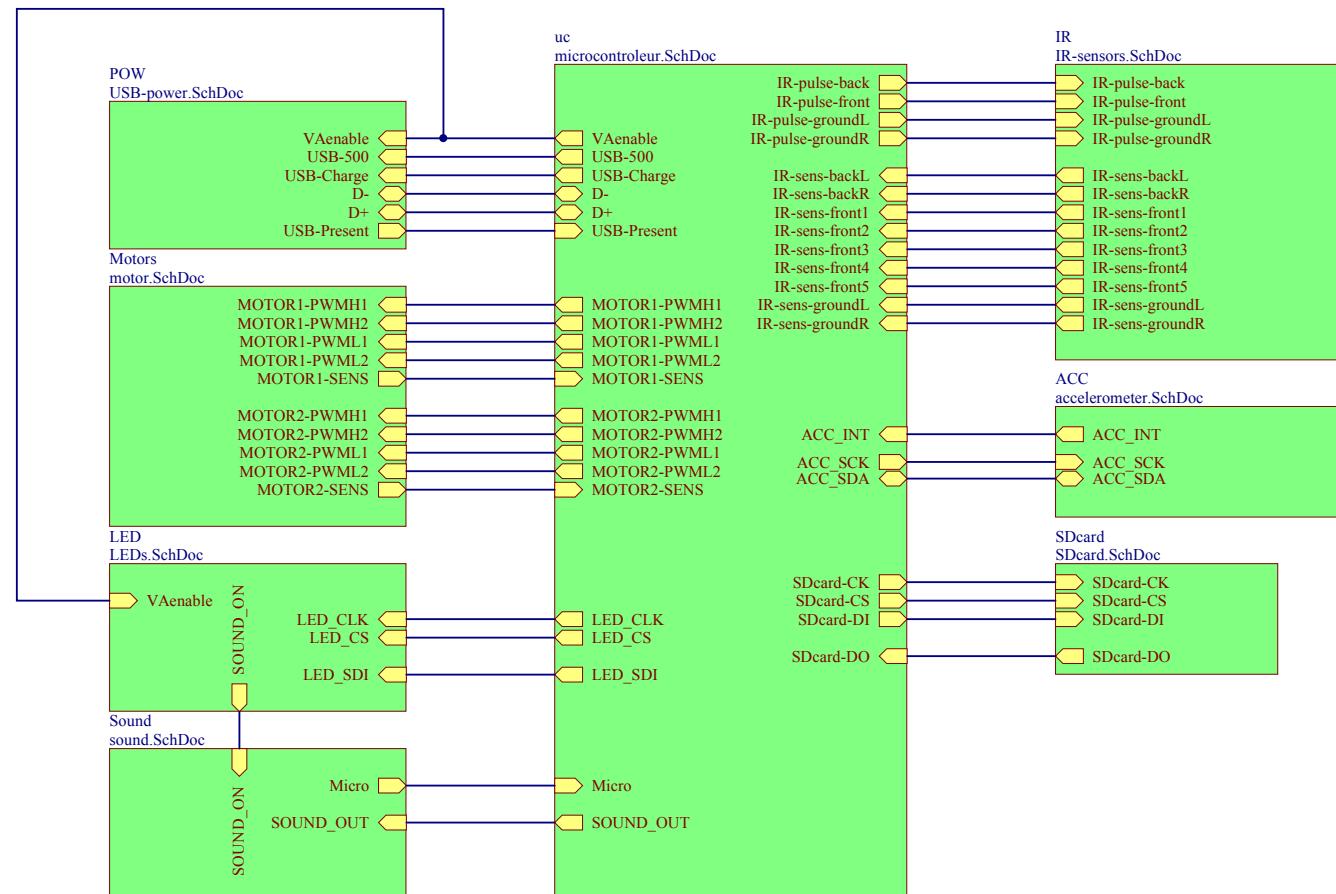


A



B

A

B

C

C

D

D

Project **thymio2-main.PrjPCB**

Part **Thymio2
PCB principal**

File : **thymio2-main.SchDoc**

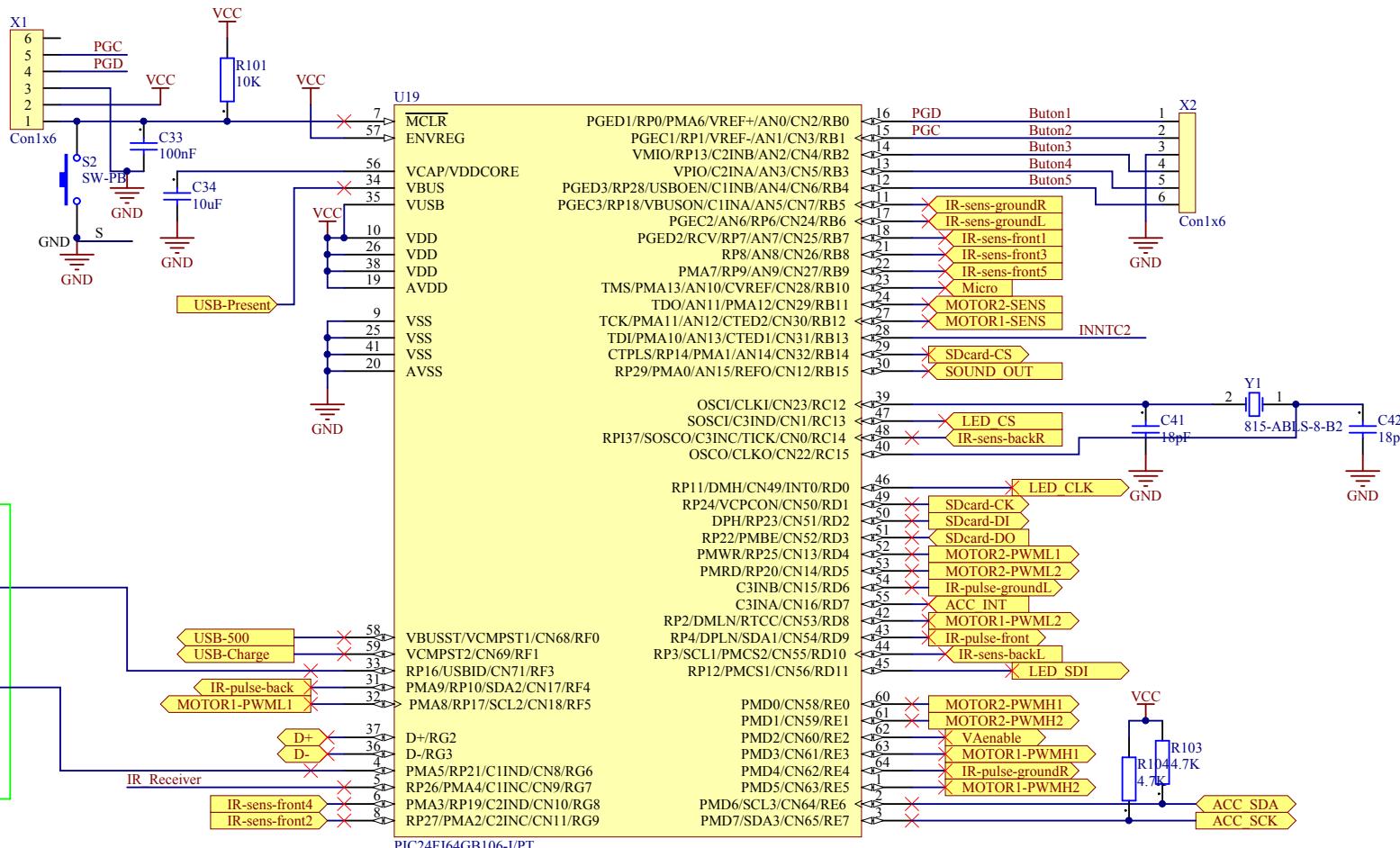
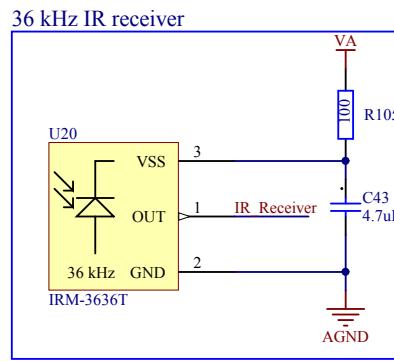
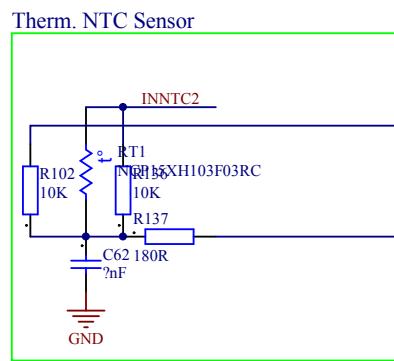
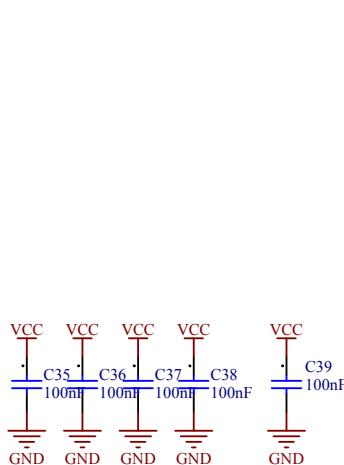
Date:
14.02.2011
11:47:04

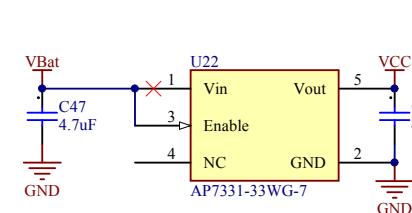
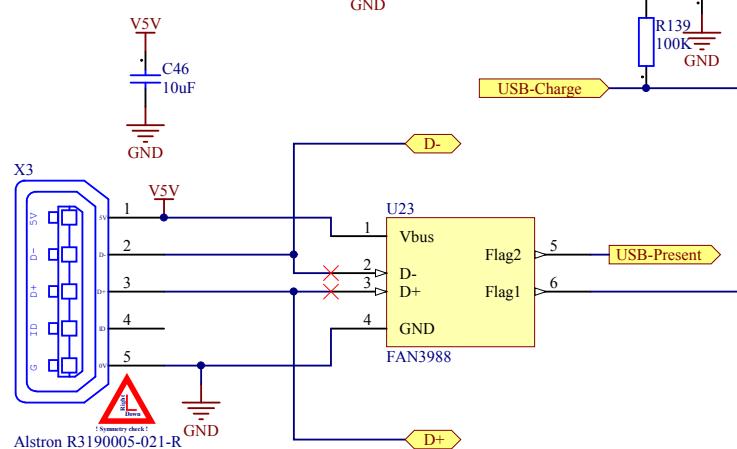
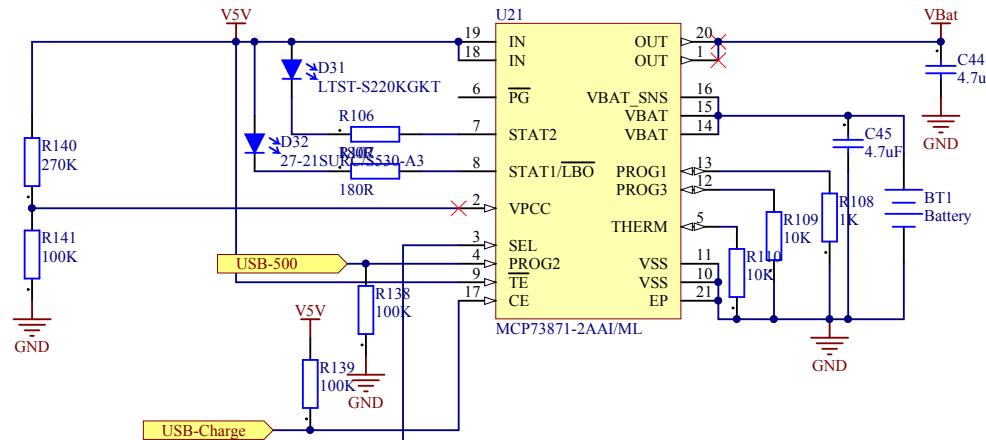
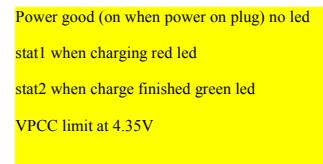
Michael Bonani
STI-IMT-LSRO1
EPFL
CH-1015 LAUSANNE



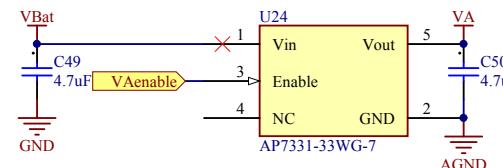
ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Laboratoire de Systèmes Roboوتiques





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

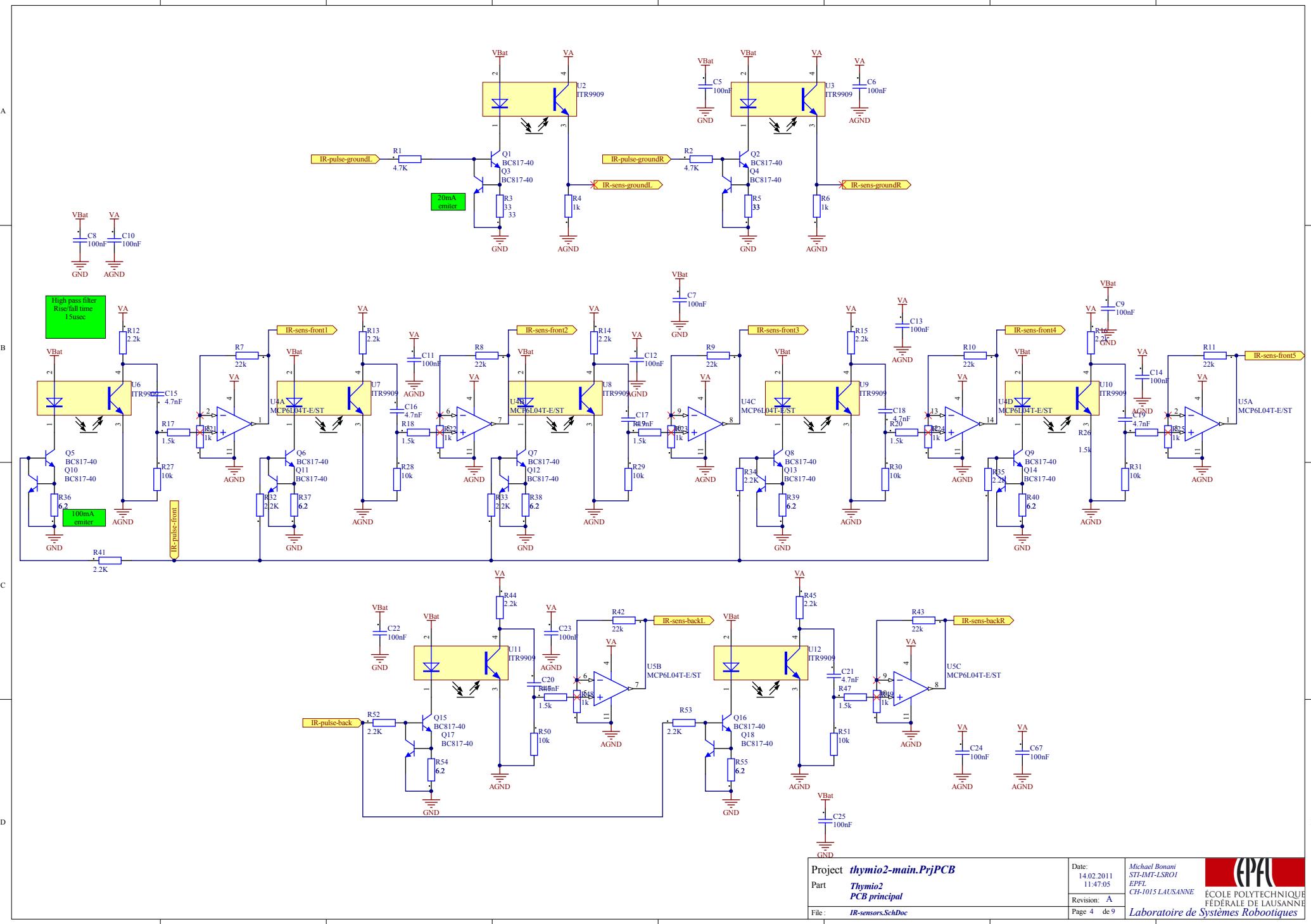
Project ***thymio2-main.Pcb***
Part ***Thymio2***
 PCB principal
File : ***USB-power.SchDoc***

11
04

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



L
A
9
CH-1015 LAUSANNE ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE
Laboratoire de Systèmes Robotiques



A

A

B

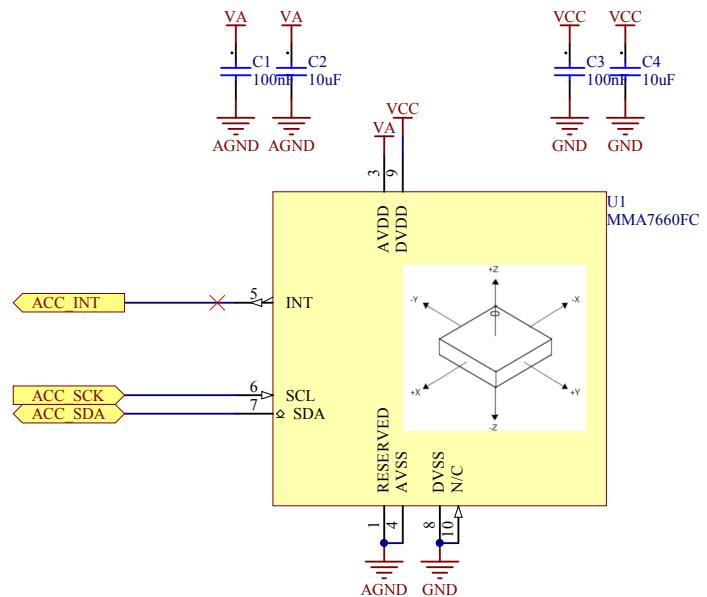
B

C

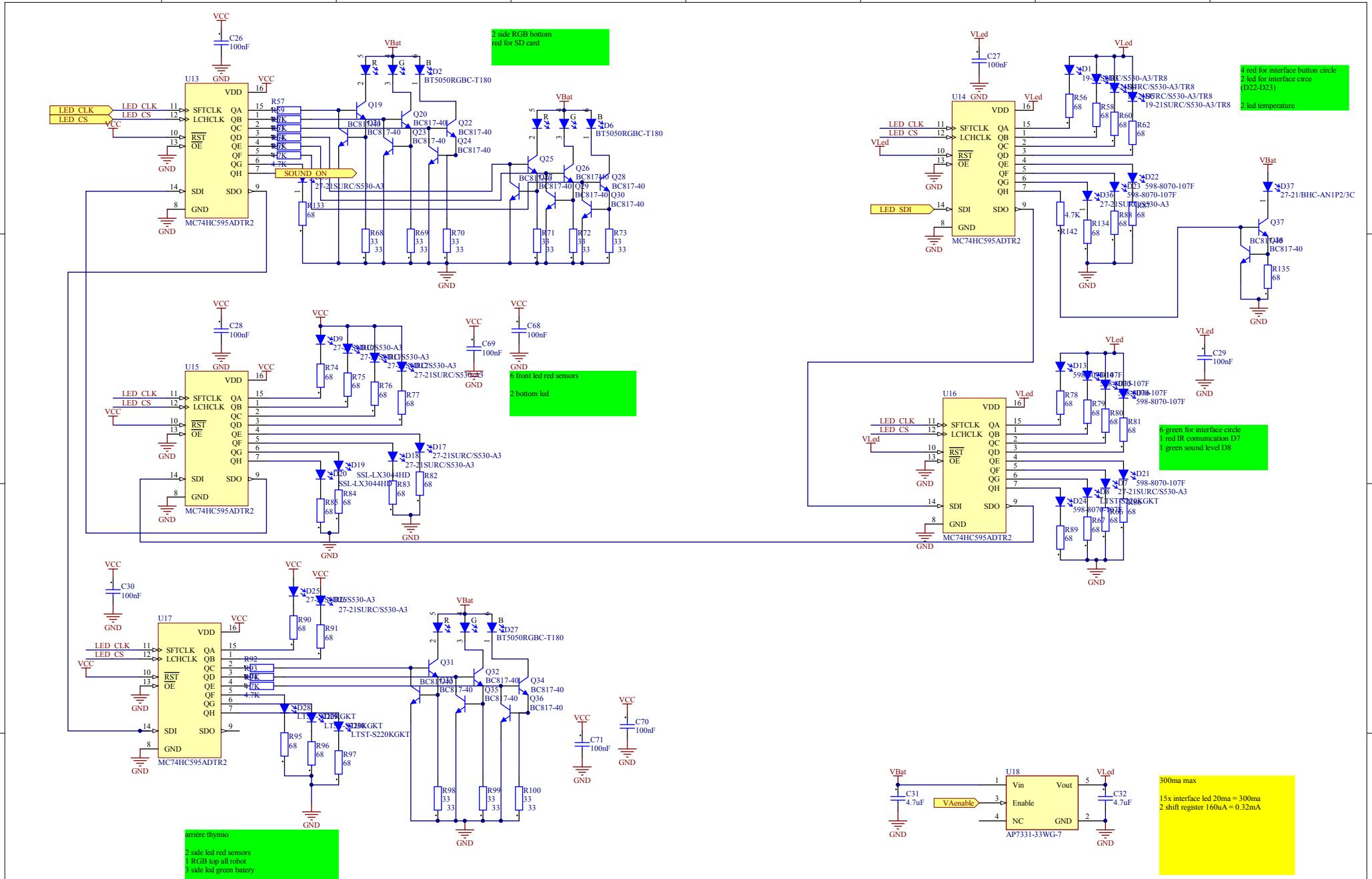
C

D

D



Project	<i>thymio2-main.PrjPCB</i>	Date:	<i>Michael Bonani STI-IMT-LSROI EPFL</i>	
Part	<i>Thymio2 PCB principal</i>	14.02.2011 11:47:05	*	
File :	<i>accelerometer.SchDoc</i>	Revision: *	*	
		Page 5 de 9	*	

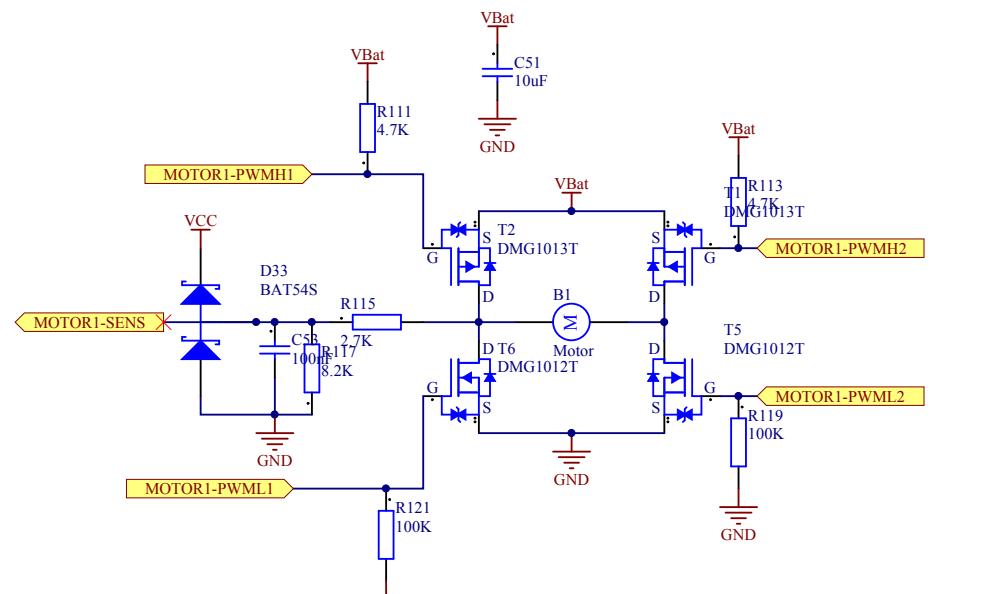


Project	<i>thymio2-main.PrjPCB</i>	Date:	14.02.2011	<i>Michael Bonani</i>	EPFL
Part	<i>Thymio2</i>		11.47.05	<i>STI-JMT-LSRO1</i>	
	<i>PCB principal</i>	Revision:	*	*	
File :	<i>LEDs.SchDoc</i>	Page	6 de 9	*	ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

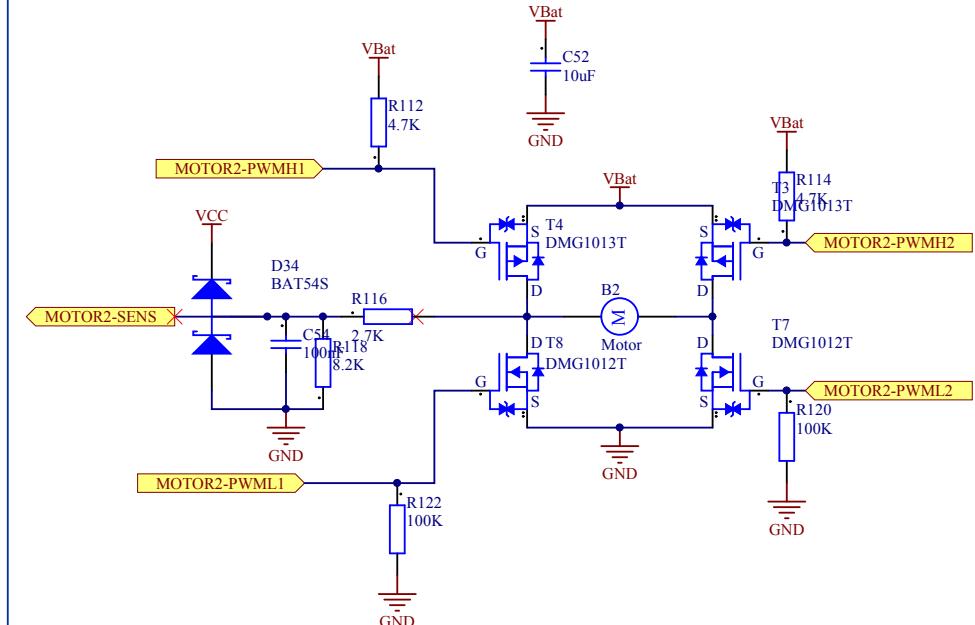
A

A

Motor Left



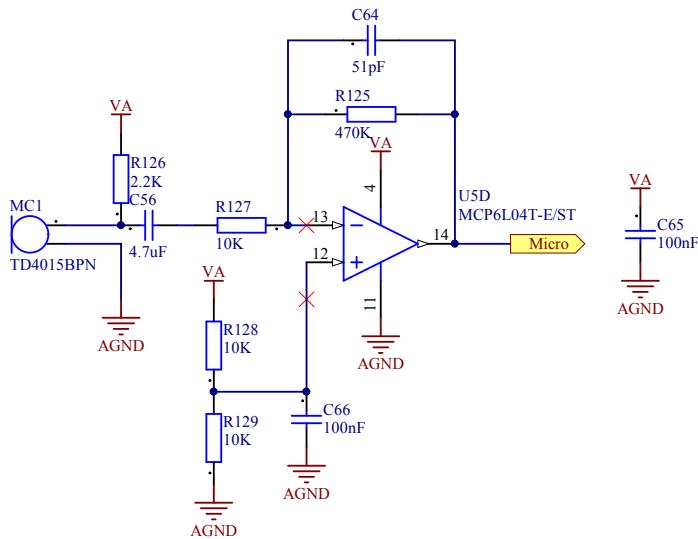
Motor Right



D

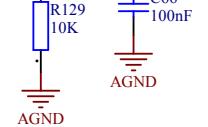
D

A



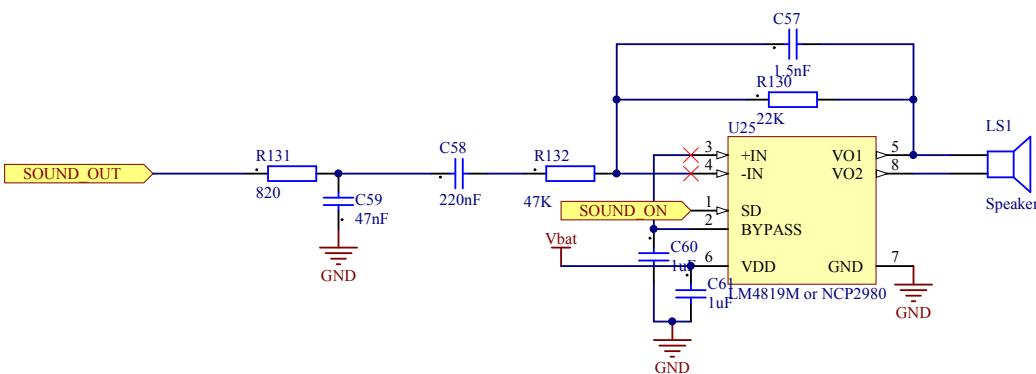
A

B



B

C



C

D

Project *thymio2-main.PrjPCB*Part
Line 1 of project part
Line 2 of project partFile : *sound.SchDoc*Date:
14.02.2011
11:47:05Daniel Burnier
STI-IMT-LSRO1
EPFL
CH-1015 LAUSANNE

ÉCOLE POLYTECHNIQUE

FÉDÉRALE DE LAUSANNE

Laboratoire de Systèmes Robootiques

A

A

B

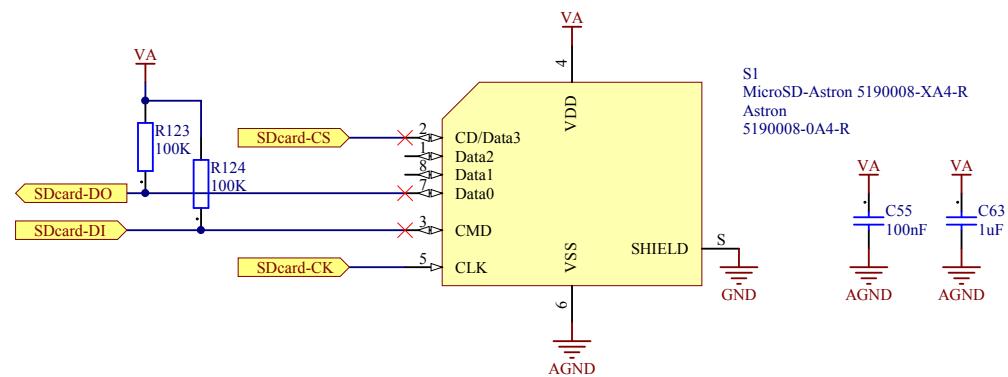
B

C

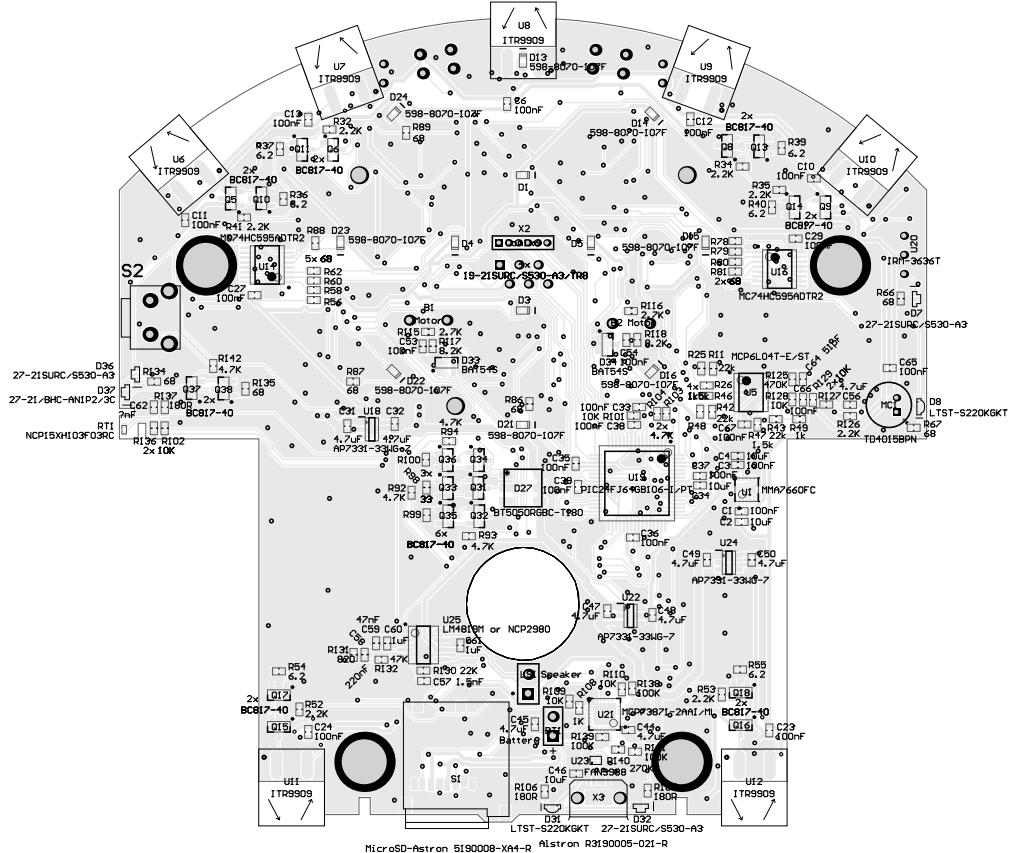
C

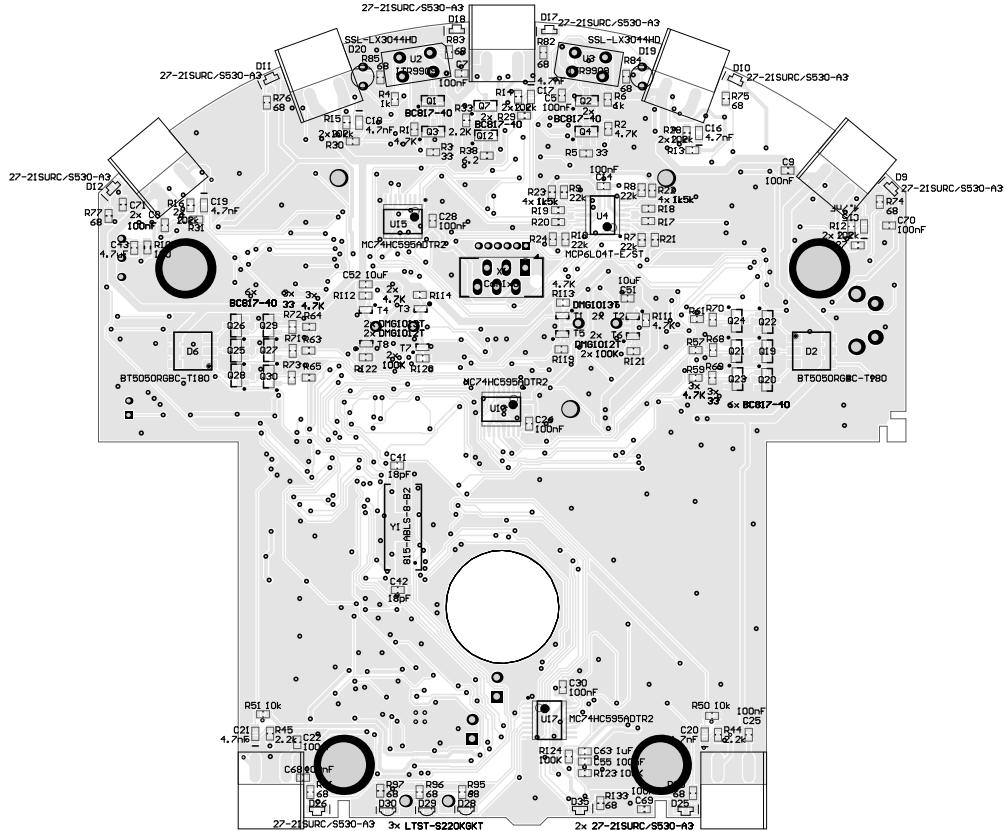
D

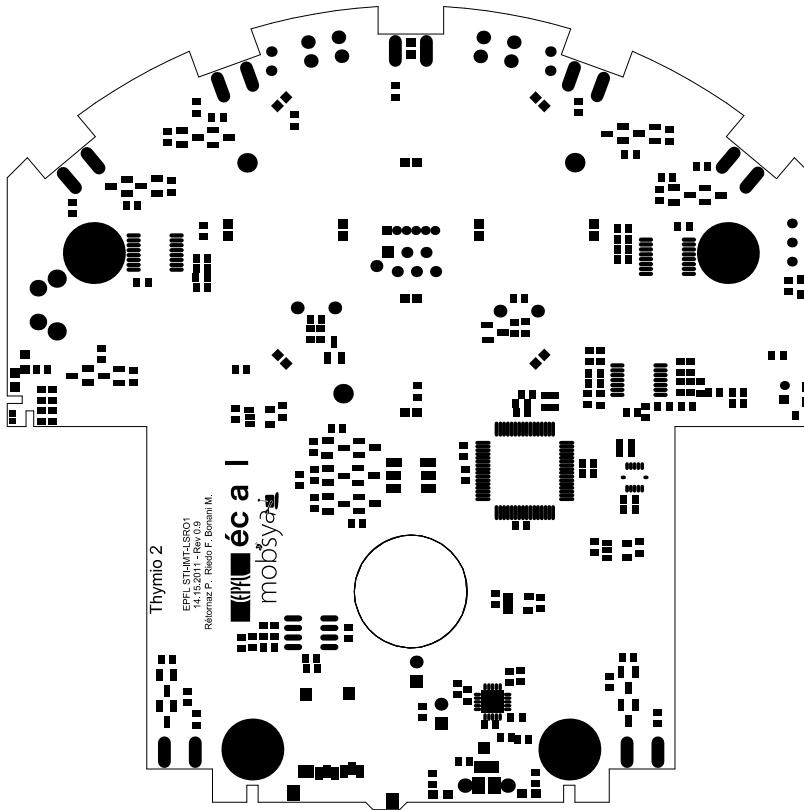
D



Quantity	Comment	LibRef	Designator	Description	Footprint	Supplier	Supplier Nr
2	Motor	Motor	B1, B2	Motor, General Kind	RBS10.5		
1	Battery	B11		Multicell Battery	BAT-2		
		C1,C3,C5,C8,C7,C8,C9,C10,C11,C12,C13,C14,C22,C23,C24,C25,C27,C28,C29,C31,C33,C35,C36,C37,C38,C39,C53,C54,C55,C56,C66,C67,C68,C69,C76,C77	Capacitor	RESC1608X06L	Farnell	1288255	
37	100nF	100nF[1][0603]	C2, C4, C34, C45, C51, C52	Capacitor	RESC1608X06L	Farnell	1463375
6	10uF	10uF[1][0603]	C51, C56	Capacitor	RESC1608X06L	Farnell	1463375
7	4.7uF	CAP-NP	C15, C16, C17, C18, C19, C20, C21	Capacitor	CAPC1608N		
10	4.7uF	4.7uF[1][0603]	C31, C32, C43, C44, C45, C47, C48, C49,C50, C56	Capacitor	RESC1608X06L	Farnell	9227784
2	18uF	18uF[1][0603]	C41, C42	Capacitor	RESC1608X06L	Farnell	8819815
1	1.5uF	1.5uF[1][0603]	C57	Capacitor	RESC1608X06L	Farnell	9406182
1	220nF	470nF[1][0603]	C58	Capacitor	RESC1608X06L	Ditelec	823494
1	47nF	10nF[1][0603]	C59	Capacitor	RESC1608X06L	Farnell	9406182
3	1uF	1uF[1][0603]	C60, C61, C63	Capacitor	RESC1608X06L	Ditelec	823495
1	7nF	10nF[1][0603]	C62	Capacitor	RESC1608X06L	Farnell	1288255
1	51pF	10pF[1][0603]	C64	Capacitor	RESC1608X06L	Farnell	9406182
4	19-21SIRC/S530-A3/TR8	LED	D1, D3, D4, D5	SMD Red 0603 2V@20mA 56 mcd	DOIC1608X08N		
3	BT5050R-GBC-T180	LED RGB SMD	D2, D6, D7	SMD Red 0603 2V@20mA 56 mcd	DOIC1608X08N		
12	27-21SIRC-S530-A3	LED	D7, D9, D10, D11, D12, D17, D18, D25,D26, D32, D35, D36	SMD Red led right angle mount 2V@20mA 57mcd	27-21 Everlight		
5	LTS7-3220KGKT	LED	D8, D26, D29, D30, D31	SMD Green led right angle mount 2V@20mA 35mcd	LITEON-sideview		
8	598-8070-107F	LED	D13, D14, D15, D16, D21, D22, D23, D24	SMD Green 0603 2V@20mA 20mcd	DOIC1608X08N		
2	SSL-LX304HID	LED	D19, D20	Red led 2V@20mA 57mcd	LED_TH_3mm_20mm		
2	BAT54S	BAT54S	D33, D34	Schottky Barrier Double Diode	SOT23_N		
1	27-21BHC-AN1P2/3C	LED	D37	Red led right angle mount 3.9V@20mA 28mcd	27-21 Everlight Blue		
1	Speaker	Speaker	L51	Loudspeaker	PIN2		
1	TD4015BPN	Micro1	M1	Unidirectional Back Electret Condenser Microphone	MICRO_PANASONIC_WM-64PN		
			G1, G2, G3, G4, G5, G6, G7, G8, G9, G10, G11, G12, G13, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24, G25, G26, G27, G28, G29, G30, G31, G32, G33, G34, G35, G36, G37, G38	NPN General purpose Transistor	SOT23_N		
38	BIC817-40	BC817-40		NPN General purpose Transistor	SOT23_N		
			R5, R6, R8, R9, R10, R11, R12, R13, R14, R142	Resistor	RESC1608X06L	Ditelec	715604
18	4.7k	4.7k[1][0603]	R12, R13, R14, R15, R16, R17, R17, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, 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, R94, R95, R96, R97, R133, R134, R135	Resistor	RESC1608X06L	Ditelec	715604
11	33	RES	R98, R99, R100	Resistor	RESC1608X06L	Ditelec	715598
10	1k	1k[1][0603]	R1, RES	Resistor	RESC1608X06L	Ditelec	715588
8	22k	22k[1][0603]	R7, R8, R9, R10, R11, R12, R43, R130	Resistor	RESC1608X06L	Ditelec	715620
15	2.2k	2.2k[1][0603]	R14, R15, R16, R17, R20, R22, R46, R47	Resistor	RESC1608X06L	Ditelec	715598
7	1.5k	RES	R17, R18, R19, R20, R22, R46, R47	Resistor	RESC1608X06L	Ditelec	715598
1	10k[1][0603]		R27, R28, R29, R30, R31, R50, R51, R52, R53, R54, R55, R56, R57, R58, R59, R60, R61, R62, R63, 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, R94, R95, R96, R97, R133, R134, R135	Resistor	RESC1608X06L	Ditelec, Farnell	715612, 9330399
7	6.2	RES	R36, R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R52, R53, R54, R55	Resistor	RESC1608X06L		
30	68		R56, R58, R60, R62, R66, R67, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R85, R86, R87, R88, R89, R90, R91, R92, R93, R94, R95, R96, R97, R98, R99, R100, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R111, R112, R113, R114, R115, R116, R117, R118, R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135	Resistor	RESC1608X06L	Ditelec	715632
1	100	RES_ACORT	R105	Resistance	RESC1608X06N		
3	180R	180R[1][0603]	R106, R107, R137	Resistor	RESC1608X06L	Ditelec	715570
2	2.7K	2.2K[1][0603]	R115, R116	Resistor	RESC1608X06L	Ditelec	715598
2	8.2K	8.2K[1][0603]	R117, R118	Resistor	RESC1608X06L	Farnell	9331565
9	100K	100K[1][0603]	R119, R120, R121, R122, R123, R124, R125, R126, R127, R128, R129, R130, R131, R132, R133, R134, R135	Resistor	RESC1608X06L	Ditelec	715632, 715636
1	470K	470K[1][0603]	R138, R139, R141	Resistor	RESC1608X06L	Ditelec	715652
1	180	22k[1][0603]	R131	Resistor	RESC1608X06L	Ditelec	715620
1	47K	22k[1][0603]	R132	Resistor	RESC1608X06L	Ditelec	715620
1	270K	270K[1][0603]	R140	Resistor	RESC1608X06L	Farnell	9330941
1	NCP15XH103F03RC	Res Therm	R1T1	Thermistors - NTC 10K OHM 15.0420	RESC1005X04L		
		SD-Card-Micro-ASLSTRON	R51	MicroSD Card connector 5190008-XA4-R	Astron 5190008-XA4-R		
1	SW-PB	SW	S2	Switch	FSMPRAJH		
4	DMG1013T	DMG1013T	T1, T2, T3, T4	Transistor MOSFET 1xP Hring - 1Hg, 2x5, 3x0	SOT50P160X03N		
4	DMG1012T	DMG1012T	T5, T6, T7, T8	Transistor MOSFET 1xN, Hring - 1Hg, 2x5, 3x0	SOT50P160X03N		
1	MM47680FC	MM47680FC	U1	MM47680FC_XYZ-AXIS Accelerometer 1.5 g	DFNSP5300X300X100-12N		
2	ITR9009	ITR9009	U2, U3	Everlight Opto Interceptor	ITR9009_LONG		
2	MCP804T-E/ST	MCP804T-E/ST	U4, U5	1.1MVESS 35°C Output Logic Level TSSOP_ Extended Temperature Range, Tape and Reel	TSSOP-ST14_N		
7	ITR9009	ITR9009	U6, U7, U8, U9, U10, U11, U12	Everlight Opto Interceptor	ITR9009_EDGE		
5	MC24H956ADTR2	MC24H956ADTR2	U13, U14, U15, U16, U17	300mA, Low Quiescent Current, Fast Transient LDO	SOT50P285X100-5N		
3	AP7331-33WG-7	AP7331	U18, U22, U24	General Purpose 1.8V Flash Memory with USB On-The-Go, 64KB Flash, 16KB SRAM, 64-Bit TQFP Industrial Temperature	TQFP-PT64_N		
1	PIC24FJ64GB106-I/PT	PIC24FJ64GB106-I/PT	U19	350mW Audio Power Amplifier with Shutdown Mode	TYCO_7_2150796		
1	IRM-363T	TSOP32236	U20	IR Receiver Module (56 kHz) for Remote Control	TYCO_7_2150796		
				IR receiver			
1	MCP73871-2AAU/ML	MCP73871-2AAU/ML	U21	Stand-Alone System Load Shaving and Li-Ion/Li-Polymer Battery Charge Management Controller, 4.2V, 20-Pin QFN, Industrial Temperature	QFN-ML20_N		
1	FAN3988	FAN3988	U23	300mA, High Accuracy, Low Voltage Detection Device	MLP_1.45x1mm		
1	LM4819M or NCP2980	LM4819M	U25	350mW Audio Power Amplifier with Shutdown Mode	MO8A_N		
1	Con1x6	Con1x6	X1	1 x 6 pins connector	TYCO_7_2150796		
1	Con1x6	X2		1 x 6 pins connector	MHDRIKX		
1	Altron R319005-021R	USB_MINIAB	X3	USB connector Micro B	Altron 319005-x21		
1	815-ABL5-B2	HC48/4H_SMX	Y1	Surface Mount Quartz Crystal 8MHz	HC48/4H_SMX		



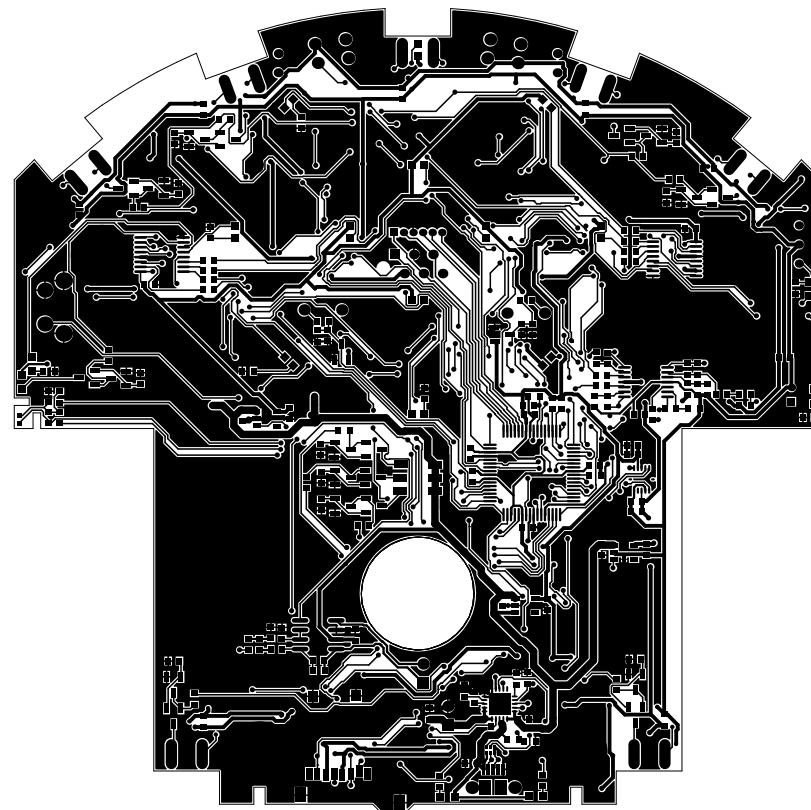


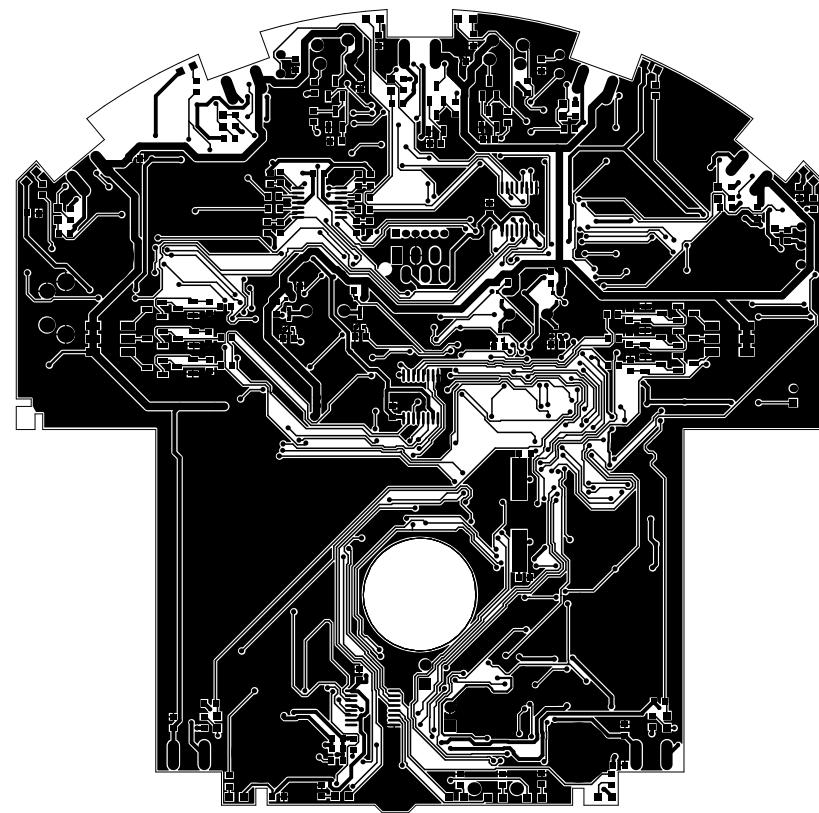


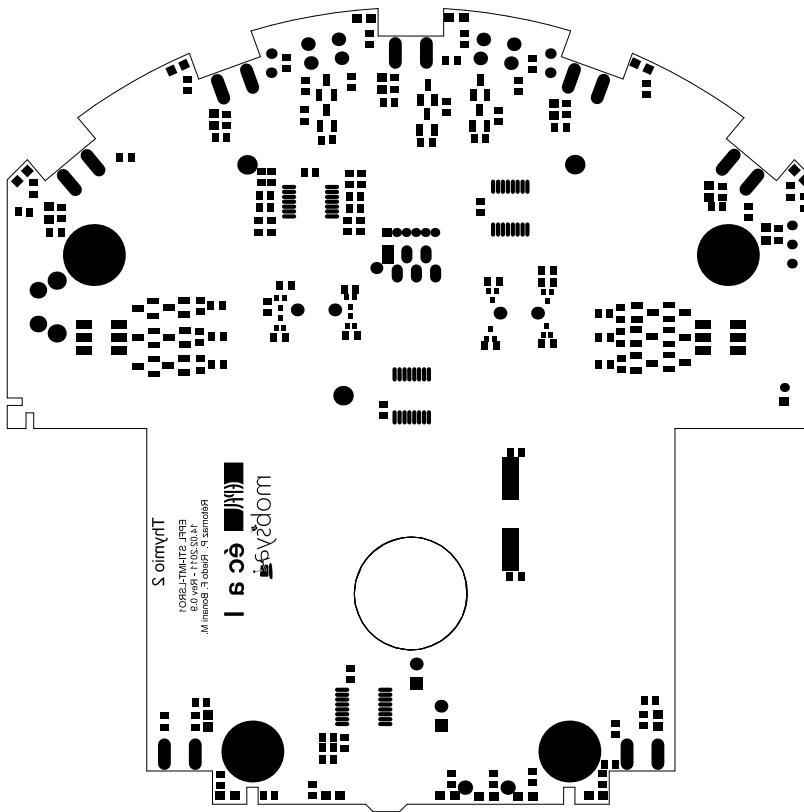
Thymio 2

EPR-STHMTL-SR01
14.15.2011 - Rev 0.9
Retornaz P., Reito F., Bouani M.

Thymio 2
mob*sys







Volume 2
Series 1
Issue 1
March 2013

