

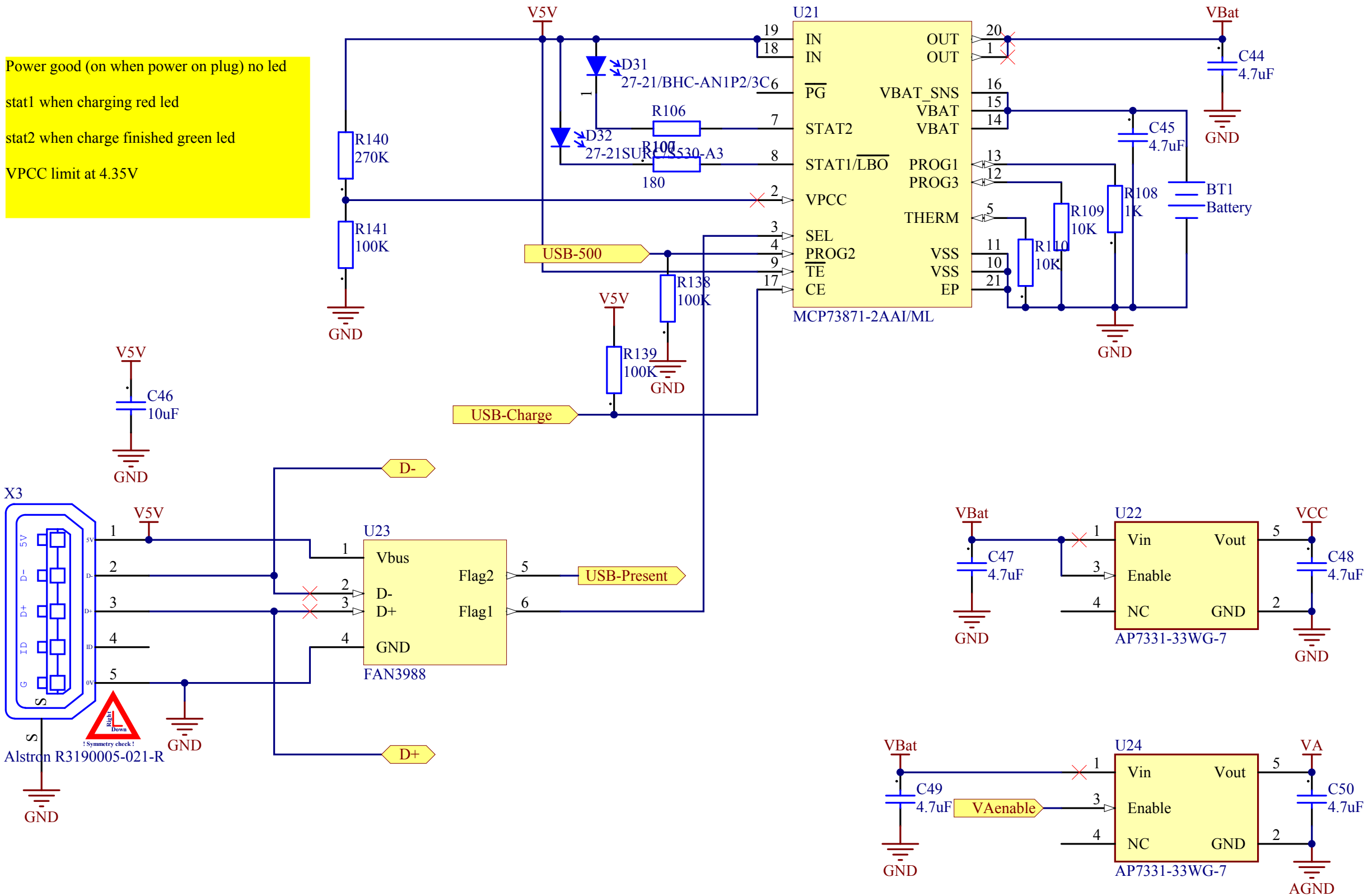


Power good (on when power on plug) no led

stat1 when charging red led

stat2 when charge finished green led

VPCC limit at 4.35V



Project **thymio2-main.PrjPCB**

Part **Thymio2
PCB principal**

File : **USB-power.SchDoc**

Date:
28.02.2011
15:07:56

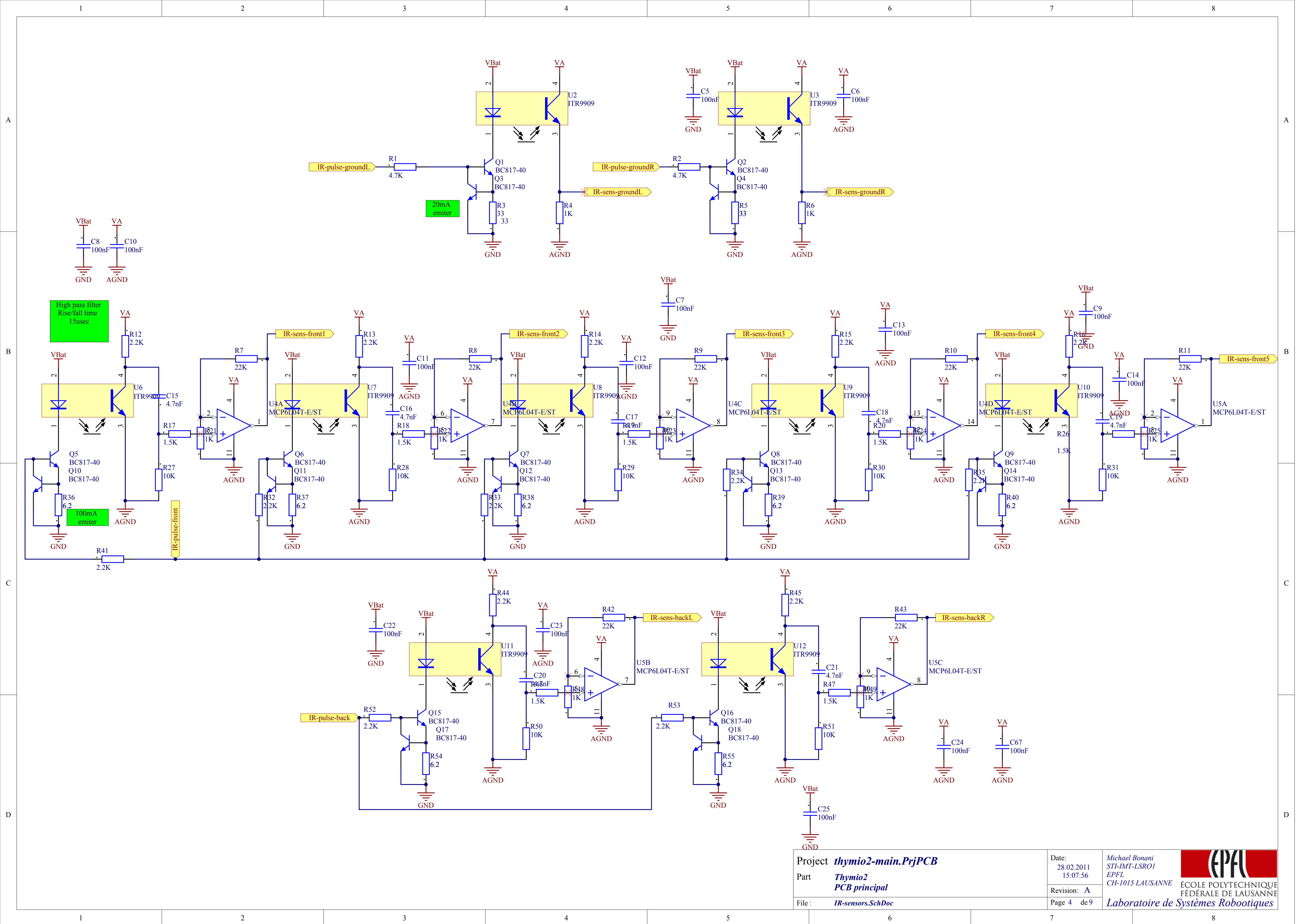
Revision: **A**

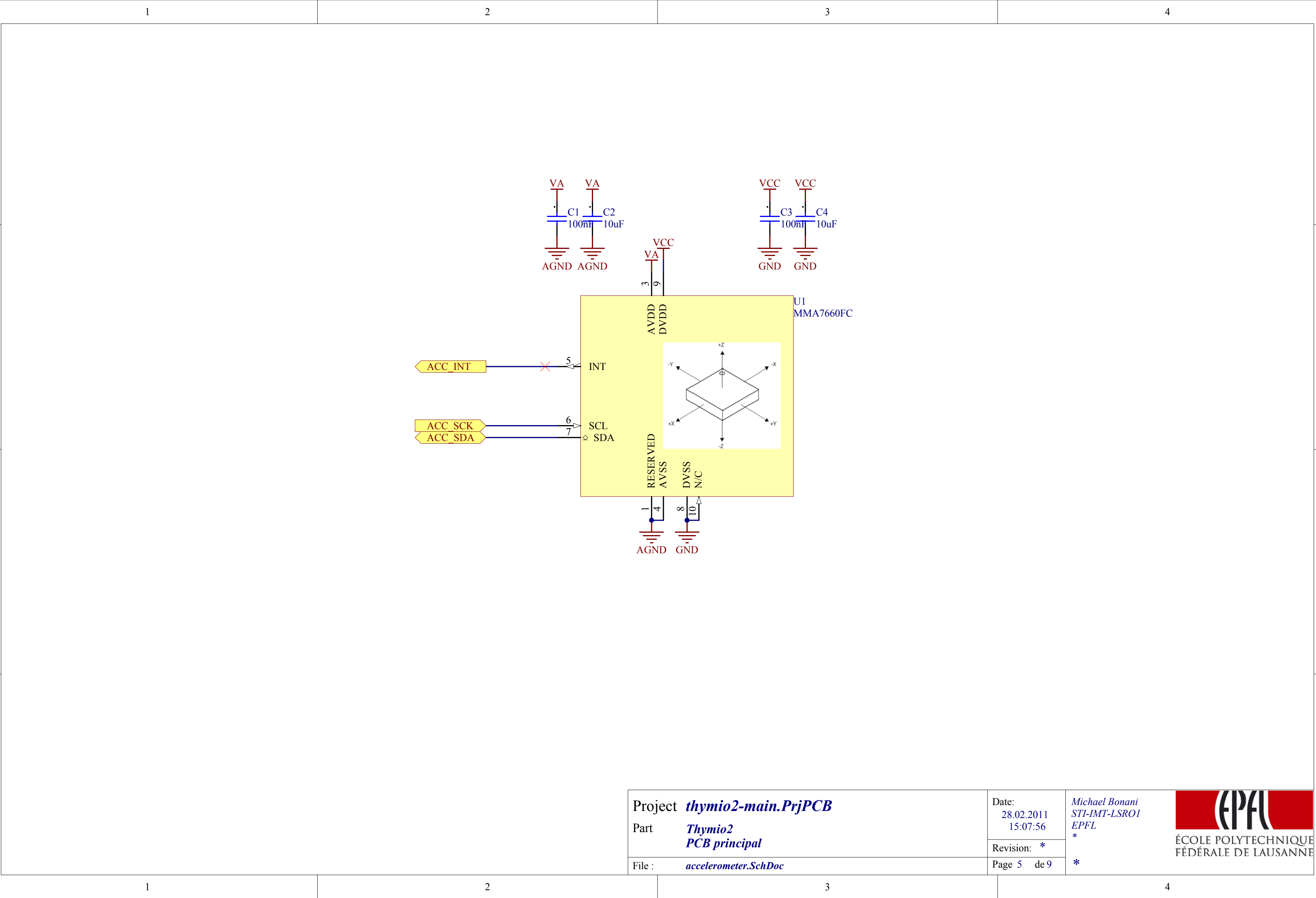
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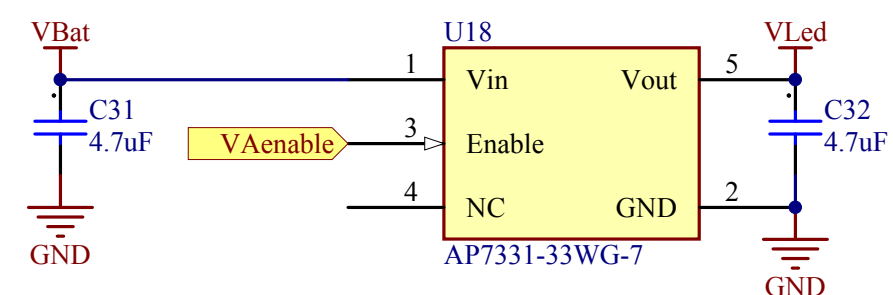
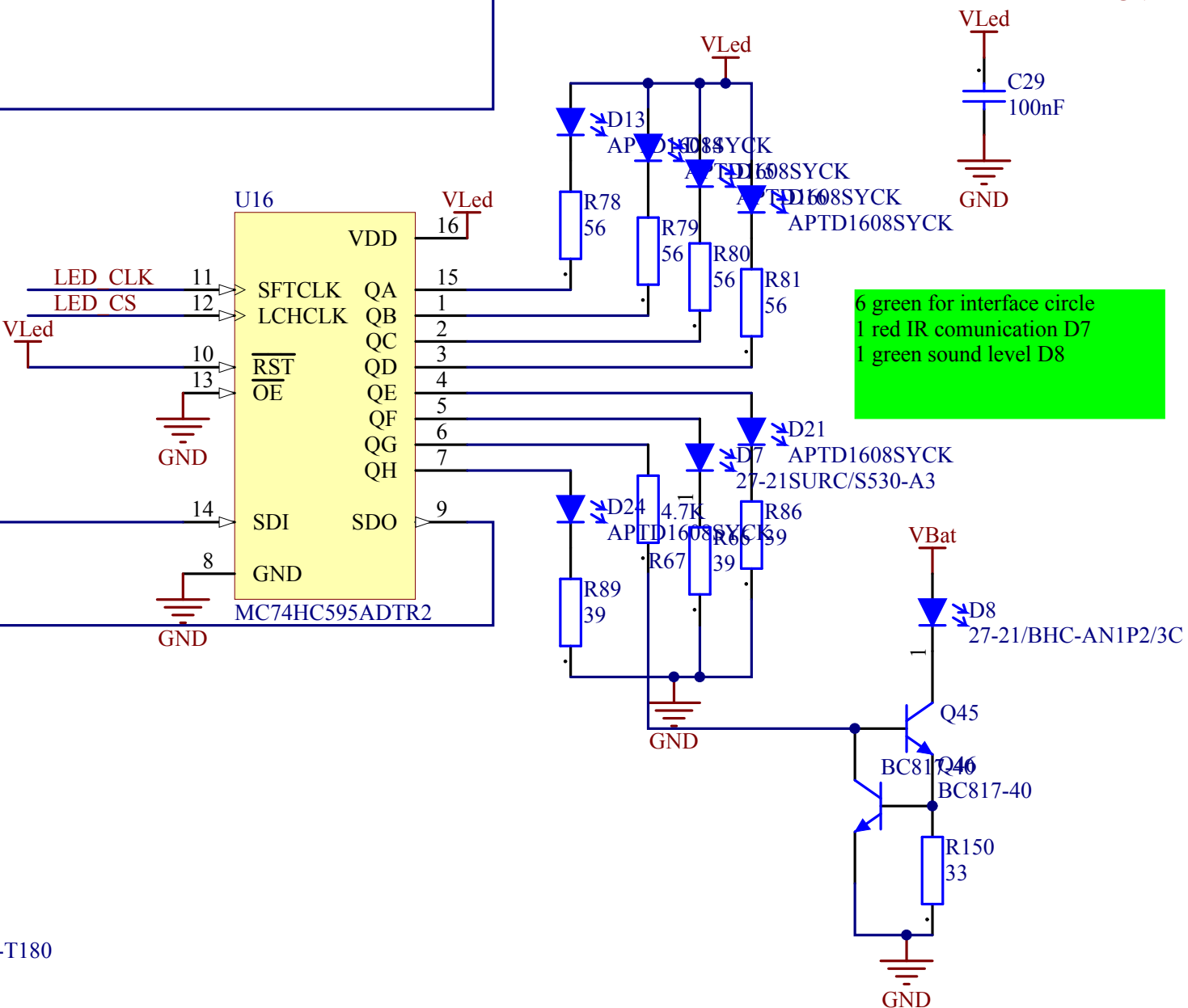
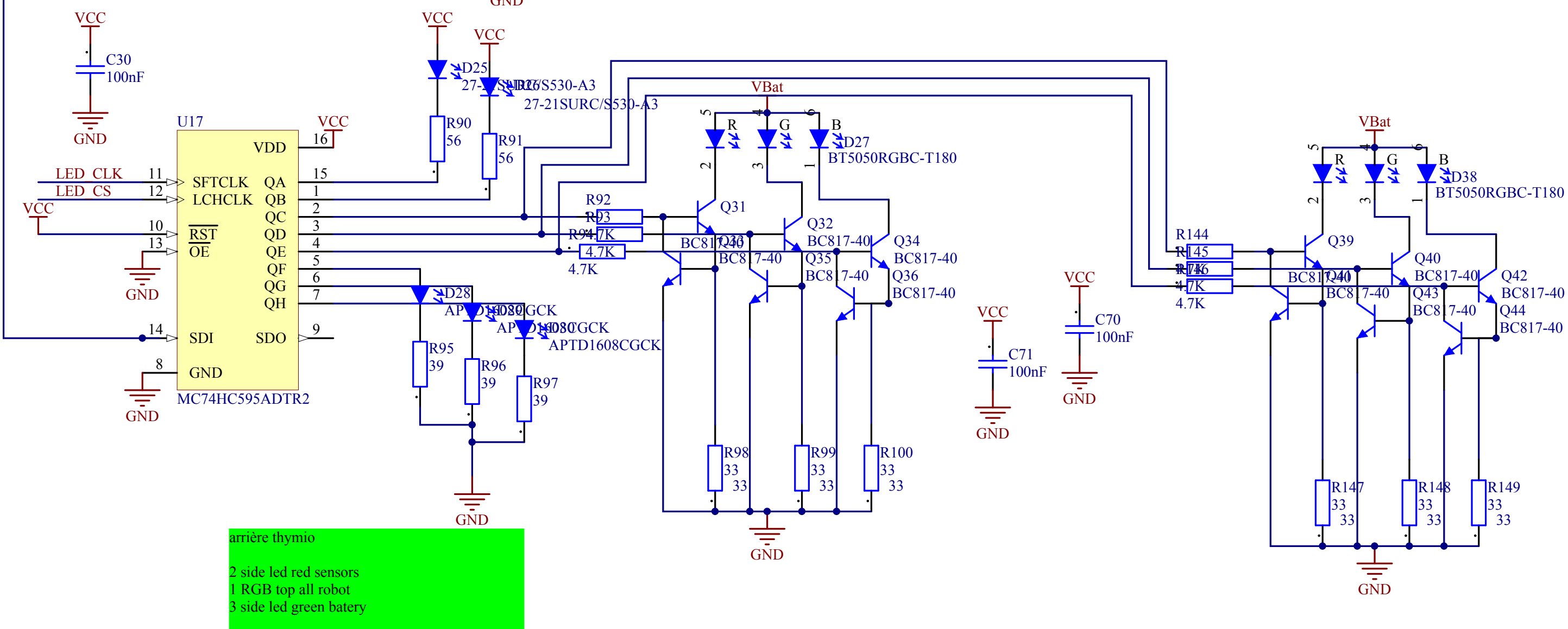
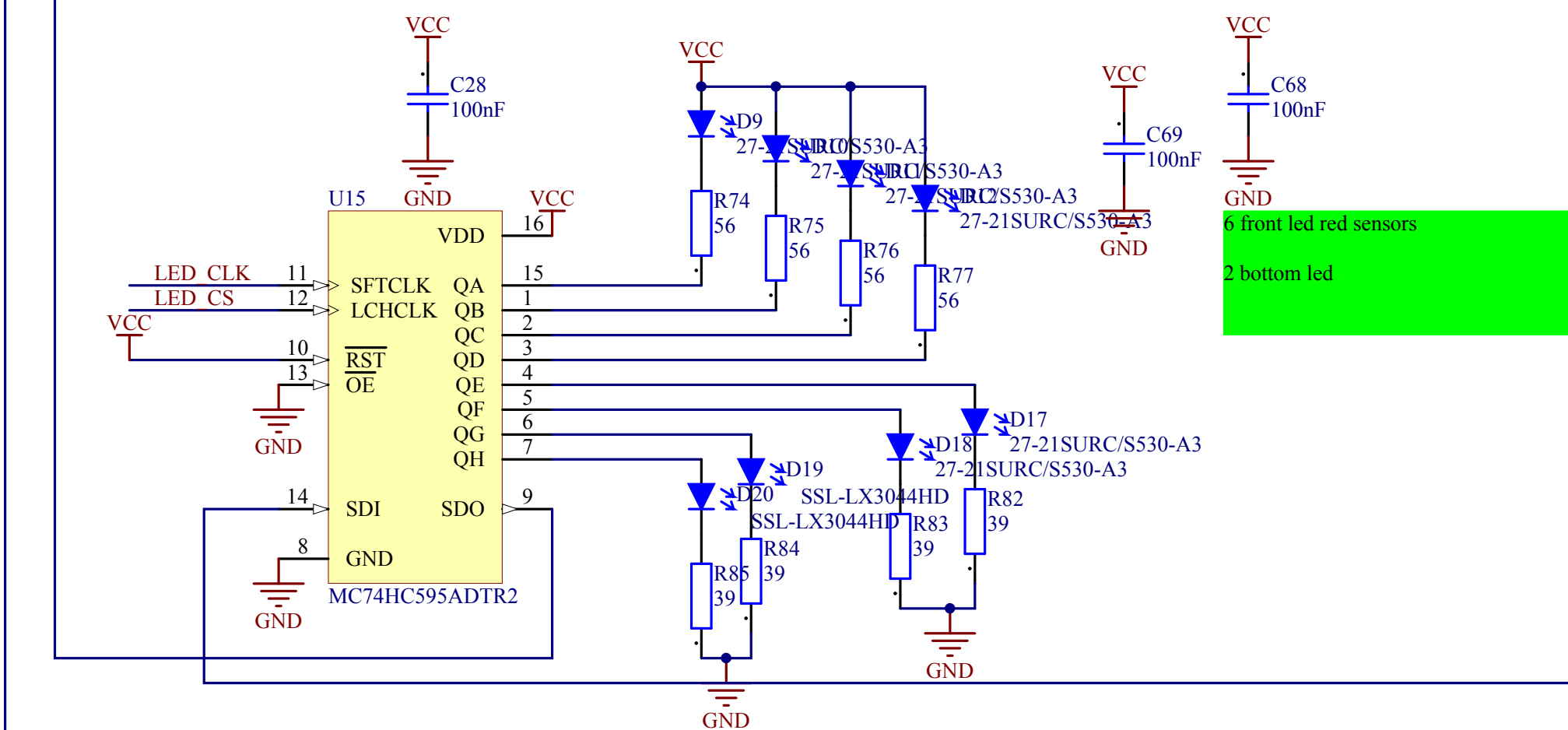
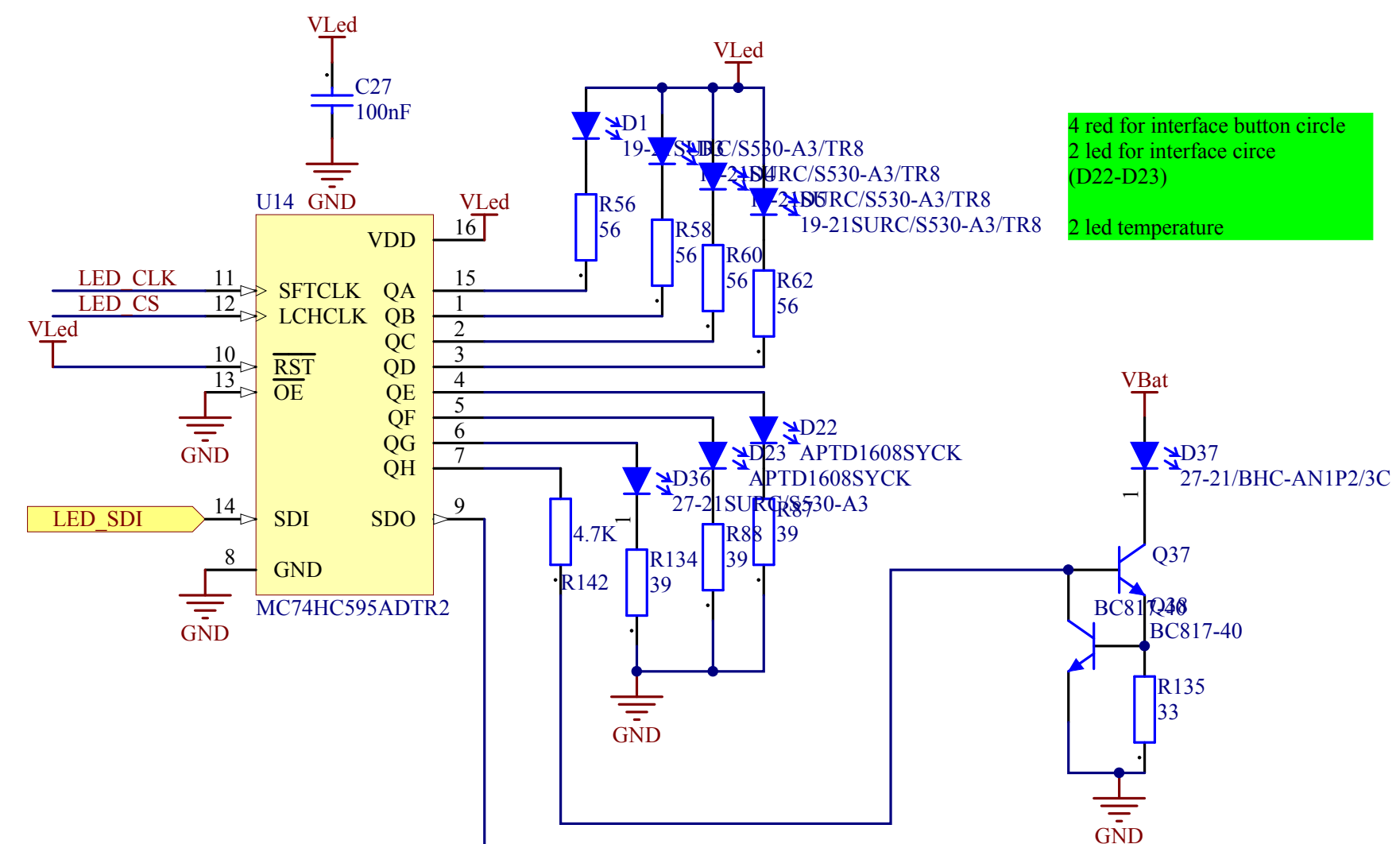
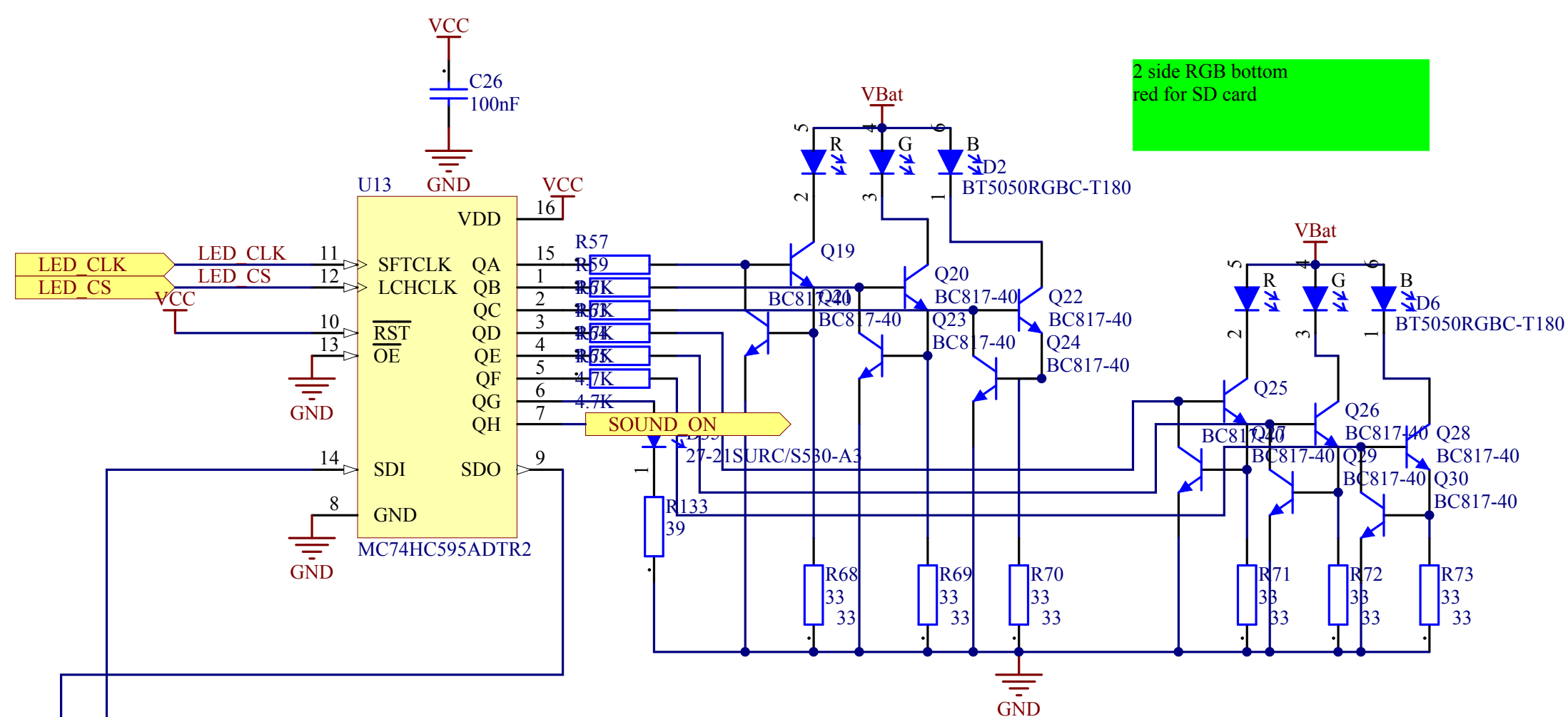
Michael Bonani
STI-IMT-LSRO1
EPFL
CH-1015 LAUSANNE



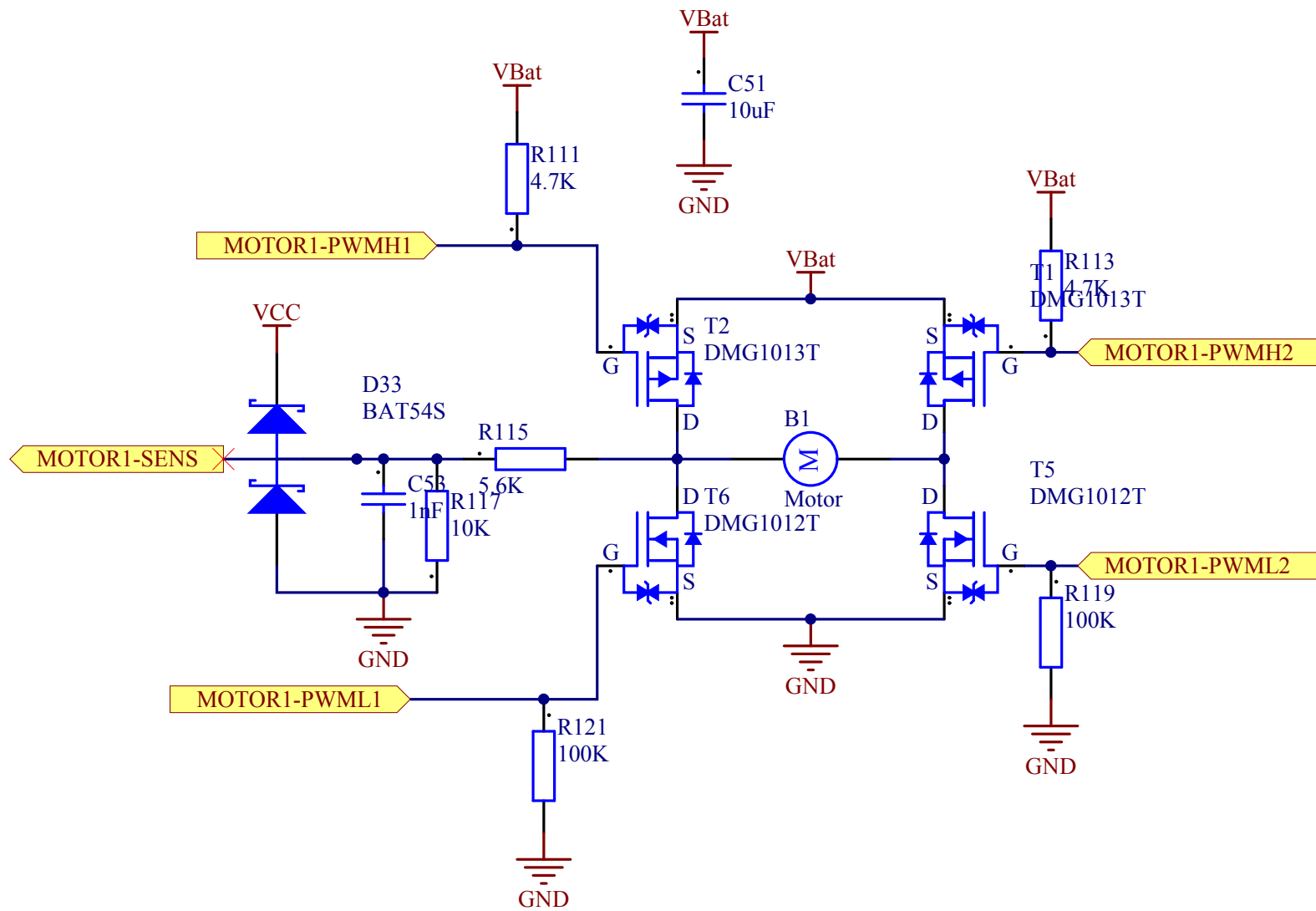
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FÉDÉRALE DE LAUSANNE
Laboratoire de Systèmes Robotiques



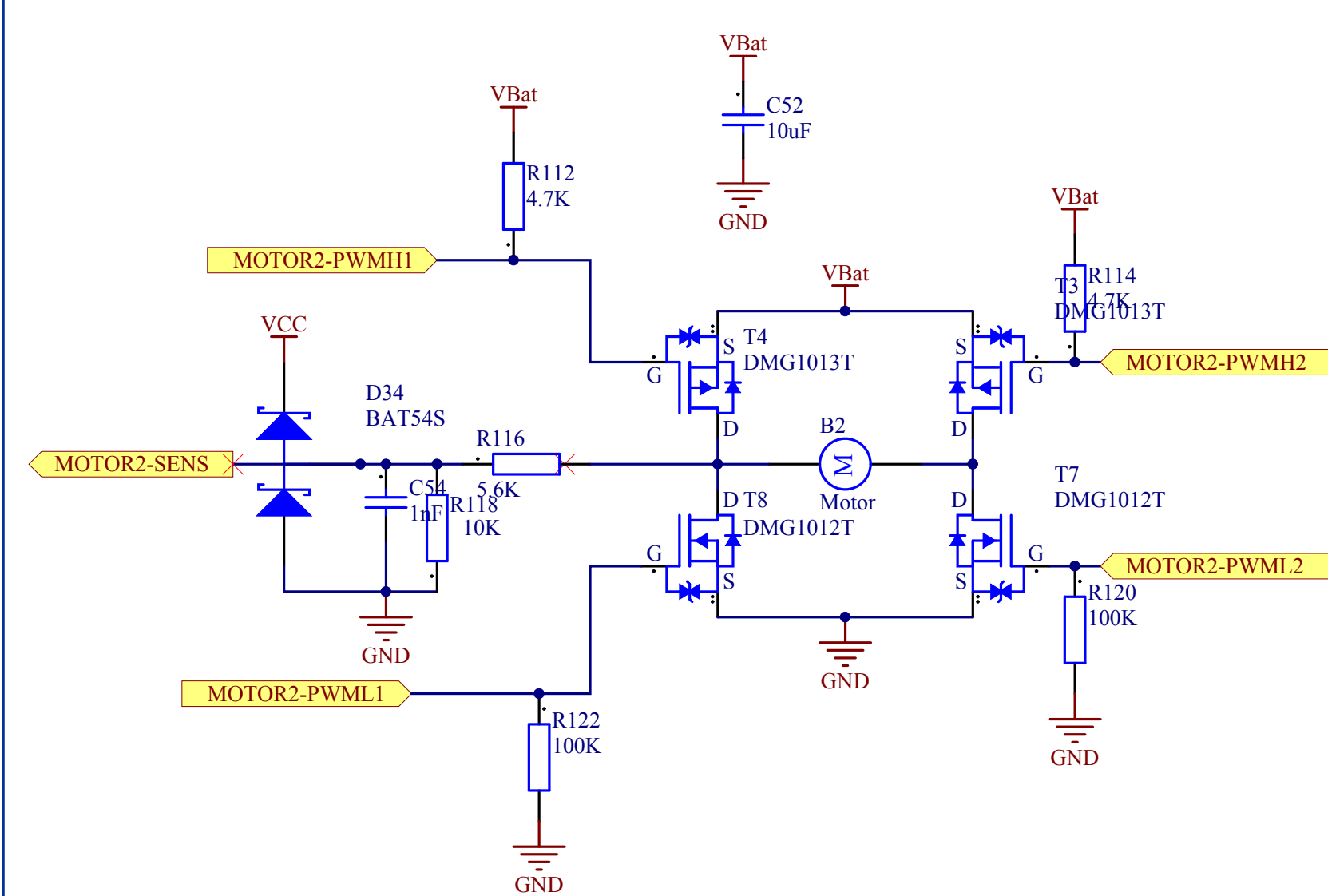




Motor Left



Motor Right



Project *thymio2-main.PrjPCB*

Part *Thymio2
PCB principal*

File : *motor.SchDoc*

Date:
28.02.2011
15:07:56

Revision: *A*

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

Laboratoire de Systèmes Robotiques



A

A

B

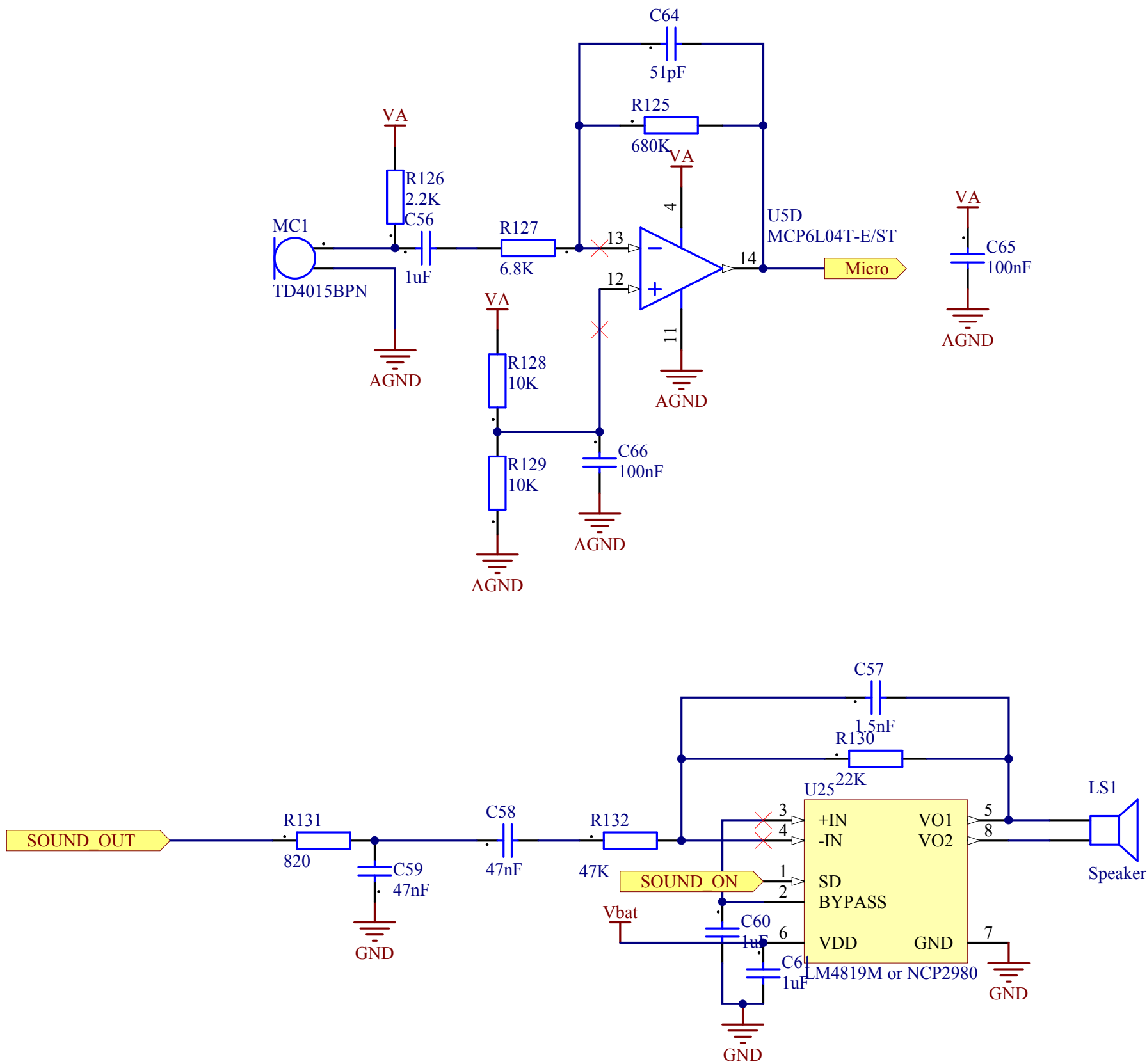
B

C

C

D

D



Project *thymio2-main.PrjPCB*

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

File : *sound.SchDoc*

Date:
28.02.2011
15:07:56

Revision: *A*

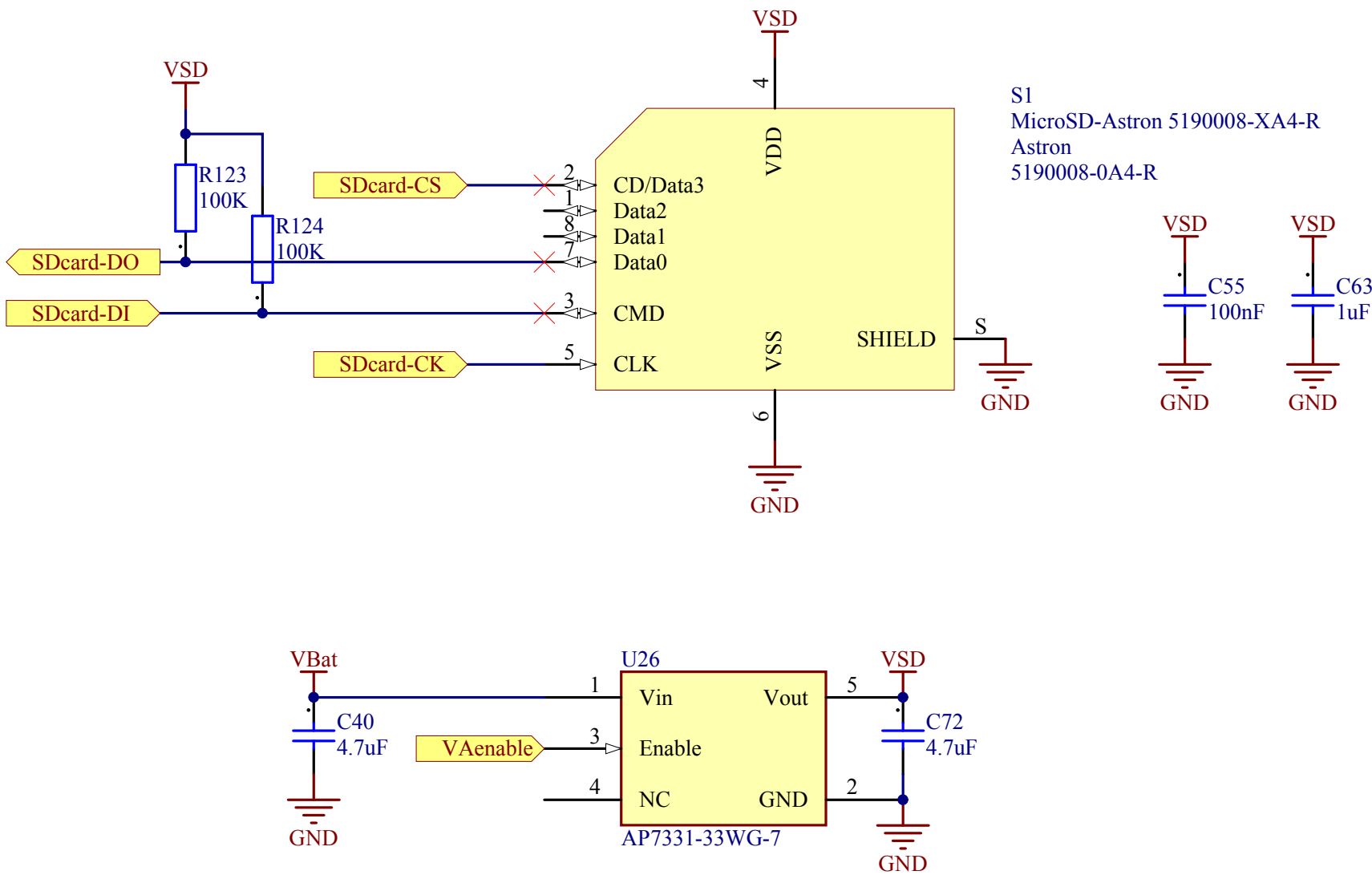
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Daniel Burnier
STI-IMT-LSRO1
EPFL
CH-1015 LAUSANNE

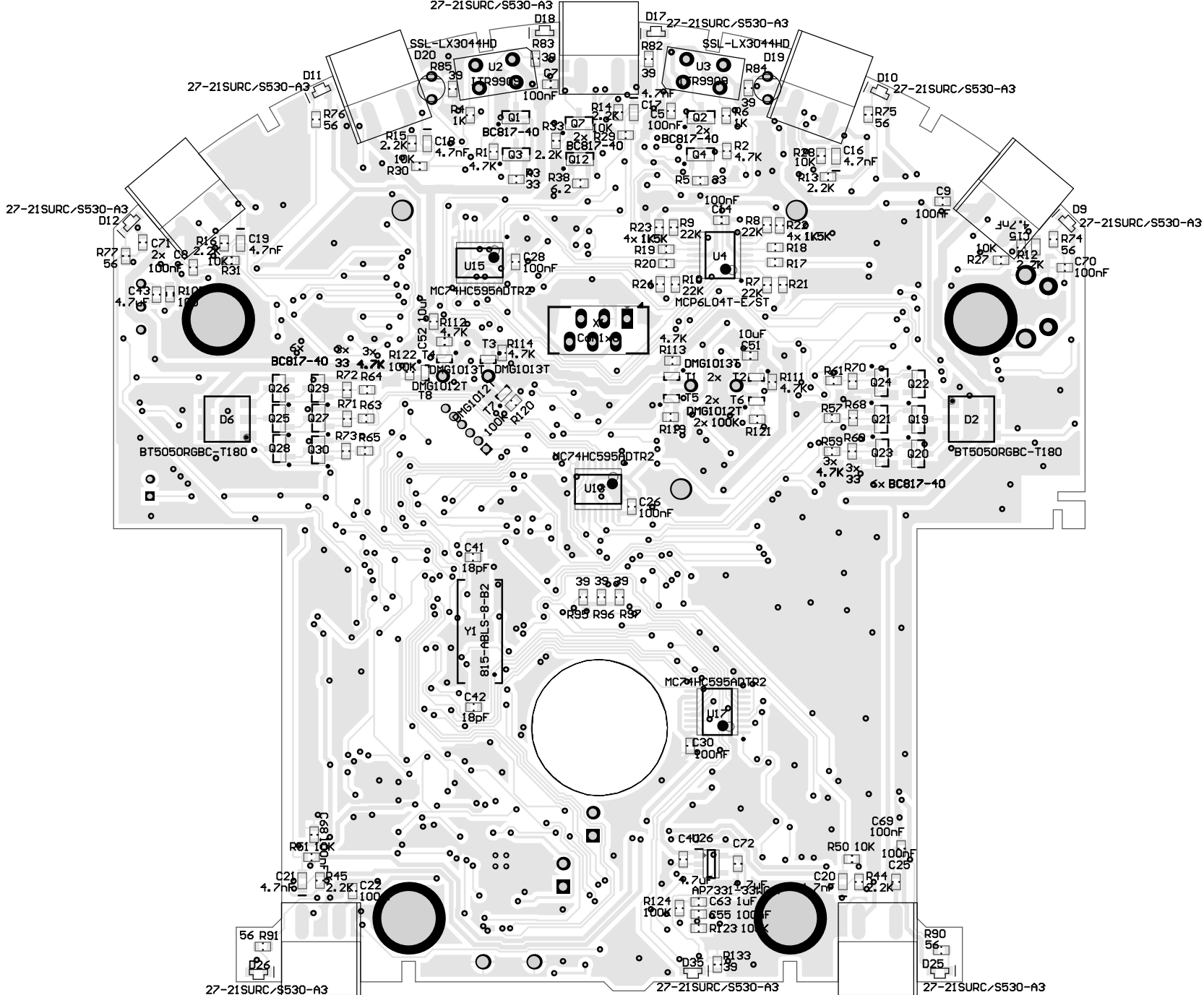
Laboratoire de Systèmes Robotiques



ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE







Quantity	Comment	LibRef	Designator	Description	Footprint	Supplier	Supplier Nr	Layer
1 100		RES_ACO RT	R105	Resistance	RESC1608X06N			Bottom
1 1uF		10uF[[\]]0603[[\]]1	C63	Capacitor	RESC1608X06L	Distrelec	823495	Bottom
1 6.2		RES	R38	120	RESC1608X06L			Bottom
1 815-ABLS-8-B2		HC49V4H_SMX	Y1	Surface Mount Quartz Crystal 8Mhz	HC49V4H_SMX			Bottom
1 AP7331-33WG-7		AP7331	U26	300mA, Low Quiescent Current, Fast Transient LDO	SOT95P285X100-5N			Bottom
1 Con1x6		Con1x6_1	X1	1 x 6 pins connector	TYCO_7-215079-6			Bottom
1 MCP6L04T-E/ ST		MCP6L04 T-E/ ST	U4	1 MHz, 85 µA Quad Op Amp, 14-Pin TSSOP, Extended Temperature Range, Tape and Reel	TSSOP-ST14_N			Bottom
12 4.7K		4.7K[[\]]0603[[\]]1	R1, R2, R57, R59, R61, R63, R64, R65, R111, R112, R113, R114	Resistor	RESC1608X06L	Distrelec	715604	Bottom
15 100nF		100nF[[\]]0603[[\]]1	C5, C7, C8, C9, C14, C22, C25, C26, C28, C30, C55, C68, C69, C70, C71	Capacitor	RESC1608X06L	Famell	1288255	Bottom
18 BC817-40		BC817-40	Q1, Q2, Q3, Q4, Q7, Q12, Q19, Q20, Q21, Q22, Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30	NPN General-purpose Transistor	SOT23_N			Bottom
2 10uF		10uF[[\]]0603[[\]]1	C51, C52	Capacitor	RESC1608X06L	Famell	1463375	Bottom
2 18pF		10pF[[\]]0603[[\]]3	C41, C42		RESC1608X06L	Famell	8819815	Bottom
2 BT5050RGBCT180		LED RGB SMD 2	D2, D6	\$0.027/ 2000k	LEDSDMD5			Bottom
2 ITR9909		ITR9909	U2, U3	Everlight Opto Interrupter	ITR9909_LONG			Bottom
2 SSL-LX3044HD		LED	D19, D20	Red led 2V@20ma 57mcd	Led_TH_3mm_20mm			Bottom
3 4.7uF		4.7uF[[\]]0603[[\]]1	C40, C43, C72	Capacitor	RESC1608X06L	Famell	9227784	Bottom
3 MC74HC595ADTR2		MC74HC595ADTR2	U13, U15, U17	8-Bit Serial-Input/Serial or Parallel-Output Shift Register with Latched 3-State Outputs	948F-01_N			Bottom
4 1.5K		RES	R17, R18, R19, R20	120	RESC1608X06L			Bottom
4 22K		RES	R7, R8, R9, R10	120	RESC1608X06L			Bottom
4 DMG1012T		DMG1012 T	T5, T6, T7, T8	Transistor MOSFET 1 x N, Pining : 1=G, 2=S, 3=D	SOT50P160X80-3N			Bottom
4 DMG1013T		DMG1013 T	T1, T2, T3, T4	Transistor MOSFET 1 x P, Pining : 1=G, 2=S, 3=D	SOT50P160X80-3N			Bottom
6 100K		100K[[\]]0603[[\]]1	R119, R120, R121, R122, R123, R124	Resistor	RESC1608X06L	Distrelec	715636	Bottom
6 1K		RES	R4, R6, R21, R22, R23, R24	120, Resistor	RESC1608X06L			Bottom
6 56		88K[[\]]0603[[\]]1	R74, R75, R76, R77, R90, R91	Resistor	RESC1608X06L	Distrelec	715632	Bottom
7 10K		RES	R27, R28, R29, R30, R31, R50, R51	120	RESC1608X06L			Bottom
7 4.7nF		CAP-NP	C15, C16, C17, C18, C19, C20, C21	Capacitor	CAPC1608N			Bottom
8 2.2K		2.2K[[\]]0603[[\]]1, RES	R12, R13, R14, R15, R16, R33, R44, R45	120, Resistor	RESC1608X06L	Distrelec	715596	Bottom
8 33		RES	R3, R5, R68, R69, R70, R71, R72, R73	120, Resistor	RESC1608X06L			Bottom
8 39		88K[[\]]0603[[\]]1	R82, R83, R84, R85, R95, R96, R97, R133	Resistor	RESC1608X06L	Distrelec	715632	Bottom
27-21SURC/SS30-9 A3		LED	D9, D10, D11, D12, D17, D18, D25, D26, D35	SMD Red led right angle mount 2V@20ma 57mcd	27-21 Everlight			Bottom
1 1.5nF		10nF[[\]]0603[[\]]1	C57	Capacitor	RESC1608X06L	Famell	9406182	Top
1 100		RES_ACO RT	R106	Resistance	RESC1608X06N			Top
1 270K		270K[[\]]0603[[\]]2	R140	Resistor	RESC1608X06L	Famell	9330941	Top
1 47K		22K[[\]]0603[[\]]1	R132	Resistor	RESC1608X06L	Distrelec	715620	Top
1 51pF		10nF[[\]]0603[[\]]1	C64	Capacitor	RESC1608X06L	Famell	9406182	Top
1 6.8K		10K[[\]]0603[[\]]1	R127	Resistor	RESC1608X06L	Distrelec	715612	Top
1 680K		470K[[\]]0603[[\]]1	R125	Resistor	RESC1608X06L	Distrelec	715652	Top
1 820		22K[[\]]0603[[\]]1	R131	Resistor	RESC1608X06L	Distrelec	715620	Top
Alstron R3190005-021-R		USB_MINI AB	X3	USB connector Micro B	Astron 3190005-x21-r			Top
1 Battery		Battery	BT1	Multicell Battery	BAT-2			Top
1 Con1x6		Con1x6	X2	1 x 6 pins connector	MHDR1X6			Top
1 FAN3988		FAN3988	U23	USB/ Charger and Over Voltage Detection Device	MLP 1.45x1mm			Top
1 IRM-3636T		TSOP322 36	U20	IR Receiver Module (36 kHz) for Remote Control Systems	IR-receiver			Top
LM4819M or 1 NCP2980		LM4819M	U25	350mW Audio Power Amplifier with Shutdown Mode	M08A_N			Top
1 MCP6L04T-E/ ST		MCP6L04 T-E/ ST	U5	1 MHz, 85 µA Quad Op Amp, 14-Pin TSSOP, Extended Temperature Range, Tape and Reel	TSSOP-ST14_N			Top
1 MCP73871-2AAI/ML		MCP7387 1-2AAI/ML	U21	Stand-Alone System Load Sharing and Li-Ion/Li-Polymer Battery Charge Management Controller, 4.2V, 20-Pin QFN, Industrial Temperature	QFN-ML20_N			Top
		SD-Card-						

1	MCP73871-2AAI/ML	MCP7387 1-2AAI/ML	U21			Sharing and Li-Ion/ Li- Polymer Battery Charge Management Controller, 4.2V, 20-Pin QFN, Industrial Temperature	QFN-ML20_N			Top
1	MicroSD-Astron 5190008-XA4-R	SD-Card- Micro- ASLTRON 5190008- XA4-R	S1			MicroSD Card connector 5190008-XA4-R	Astron 5190008-XA4-R			Top
1	MMA7660FC	MMA7660 FC	U1			MMA7660FC: XYZ-A035 ACCELEROMETER ±1.5 g	DFN50P300X300X100- 12N			Top
1	NCP15XH103F03R C	Res Thermal	RT1			Thermistors - NTC 10K OHM 1% 0402	RESC1005X04L			Top
1	PIC24FJ64GB106- I/PT	PIC24FJ64 GB106- I/PT	U19			General Purpose 16-bit Flash Microcontroller with USB On-The-Go, 64KB Flash, 16KB SRAM, 64-Pin TQFP, Industrial Temperature	TOFP-PT64_N			Top
1	Speaker	Speaker	LS1			Loudspeaker	PIN2			Top
1	SW-PB	SW-PB	S2			Switch	FSMRA2JH			Top
1	TD4015BPN	Micro1	MC1			Omnidirectional Back Electret Condenser Microphone	MICRO_PANASONIC_ WM-64PN			Top
10	4.7K	4.7K[[\]]0 603[[\]]1	R67, R92, R93, R94, R103, R104, R142, R144, R145, R146			Resistor	RESC1608X06L	Distrele c	715604	Top
2	180	180R[[\]] 0603[[\]]1	R107, R137			Resistor	RESC1608X06L	Distrele c	715570	Top
2	1nF	100nF[[\]] 0603[[\]]1	C53, C54			Capacitor	RESC1608X06L	Famell	1288255	Top
2	47nF	10nF[[\]]0 603[[\]]1, 470nF[[\]] 0603[[\]]1	C58, C59			Capacitor	RESC1608X06L	Distrele c, Famell	823494, 9406182	Top
2	5.6K	2.2K[[\]]0 603[[\]]1	R115, R116			Resistor	RESC1608X06L	Distrele c	715596	Top
2	BAT54S	BAT54S	D33, D34			Schottky Barrier Double Diode	SOT23_N			Top
2	BT5050RGBCT180	LED RGB SMD 2	D27, D38			\$0.027/ 2000k	LEDSMD5			Top
2	MC74HC595ADTR2	MC74HC5 95ADTR2	U14, U16			8-Bit Serial-Input/Serial or Parallel-Output Shift Register with Latched 3- State Outputs	948F-01_N			Top
2	Motor	Motor	B1, B2			Motor, General Kind	RB5-10.5			Top
21	100nF	100nF[[\]] 0603[[\]]1	C1, C3, C6, C10, C11, C12, C13, C23, C24, C27, C29, C33, C35, C36, C37, C38, C39, C62, C65, C66, C67			Capacitor	RESC1608X06L	Famell	1288255	Top
28	BC817-40	BC817-40	Q5, Q6, Q8, Q9, Q10, Q11, Q13, Q14, Q15, Q16, Q17, Q18, Q31, Q32, Q33, Q34, Q35, Q36, Q37, Q38, Q39, Q40, Q41, Q42, Q43, Q44, Q45, Q46			NPN General-purpose Transistor	SOT23_N			Top
3	1.5K	RES	R26, R46, R47			120	RESC1608X06L			Top
3	100K	10K[[\]]0 603[[\]]1, 100K[[\]] 0603[[\]]1	R138, R139, R141			Resistor	RESC1608X06L	Distrele c	715612, 715636	Top
3	1uF	1uF[[\]]06 03[[\]]1, 4.7uF[[\]] 0603[[\]]1	C56, C60, C61			Capacitor	RESC1608X06L	Distrele c, Famell	823495, 9227784	Top
3	27-211 BHC- AN1P2/ 3C	LED	D8, D31, D37			SMD Blue led right angle mount 3.3V@20ma 28mcd	27-21 Everlight Blue			Top
3	27-21SURC/ S530- A3	LED	D7, D32, D36			SMD Red led right angle mount 2V@20ma 57mcd	27-21 Everlight			Top
3	AP7331-33WG-7	AP7331	U18, U22, U24			300mA Low Quiescent Current, Fast Transient LDO	SOT95P285X100-5N			Top
3	APT-D1608CGOK	LED	D28, D29, D30			LED standard - CMS Helios SMD Green 570nm 230mcd	DIOC1608X08N			Top
4	10uF	10uF[[\]]0 603[[\]]1	C2, C4, C34, C46			Capacitor	RESC1608X06L	Famell	1463375	Top
4	19-21SURC/ S530- A3/ TR8	LED	D1, D3, D4, D5			SMD Red 0603 2V@20ma 56 mcd	DIOC1608X08N			Top
4	1K	1K[[\]]06 03[[\]]1, RES	R25, R48, R49, R108			120, Resistor	RESC1608X06L	Distrele c	715588	Top
4	22K	22K[[\]]0 603[[\]]1, RES	R11, R42, R43, R130			120, Resistor	RESC1608X06L	Distrele c	715620	Top
6	39	68K[[\]]0 603[[\]]1	R66, R86, R87, R88, R89, R134			Resistor	RESC1608X06L	Distrele c	715632	Top
6	6.2	RES	R36, R37, R39, R40, R54, R55			120	RESC1608X06L			Top
7	2.2K	2.2K[[\]]0 603[[\]]1	R32, R34, R35, R41, R52, R53, R126			Resistor	RESC1608X06L	Distrele c	715596	Top
7	ITR9909	ITR9909	U6, U7, U8, U9, U10, U11, U12			Everlight Opto Interrupter	ITR9909_EDGE			Top
8	33	68K[[\]]0 603[[\]]1, RES	R98, R99, R100, R135, R147, R148, R149, R150			120, Resistor	RESC1608X06L	Distrele c	715632	Top
8	4.7uF	4.7uF[[\]] 0603[[\]]1	C31, C32, C44, C45, C47, C48, C49, C50			Capacitor	RESC1608X06L	Famell	9227784	Top
8	56	68K[[\]]0 603[[\]]1	R56, R58, R60, R62, R78, R79, R80, R81			Resistor	RESC1608X06L	Distrele c	715632	Top
8	APT-D1608SYCK	LED	D13, D14, D15, D16, D21, D22, D23, D24			LED standard - CMS Helios SMD Yellow 590nm 480mcd	DIOC1608X08N			Top
9	10K	8.2K[[\]]0	R101, R102, R109, R110, R117, R118, R128, R129, R143			Resistor	RESC1608X06L	Distrele	715612, 9330399, 9331565	Top