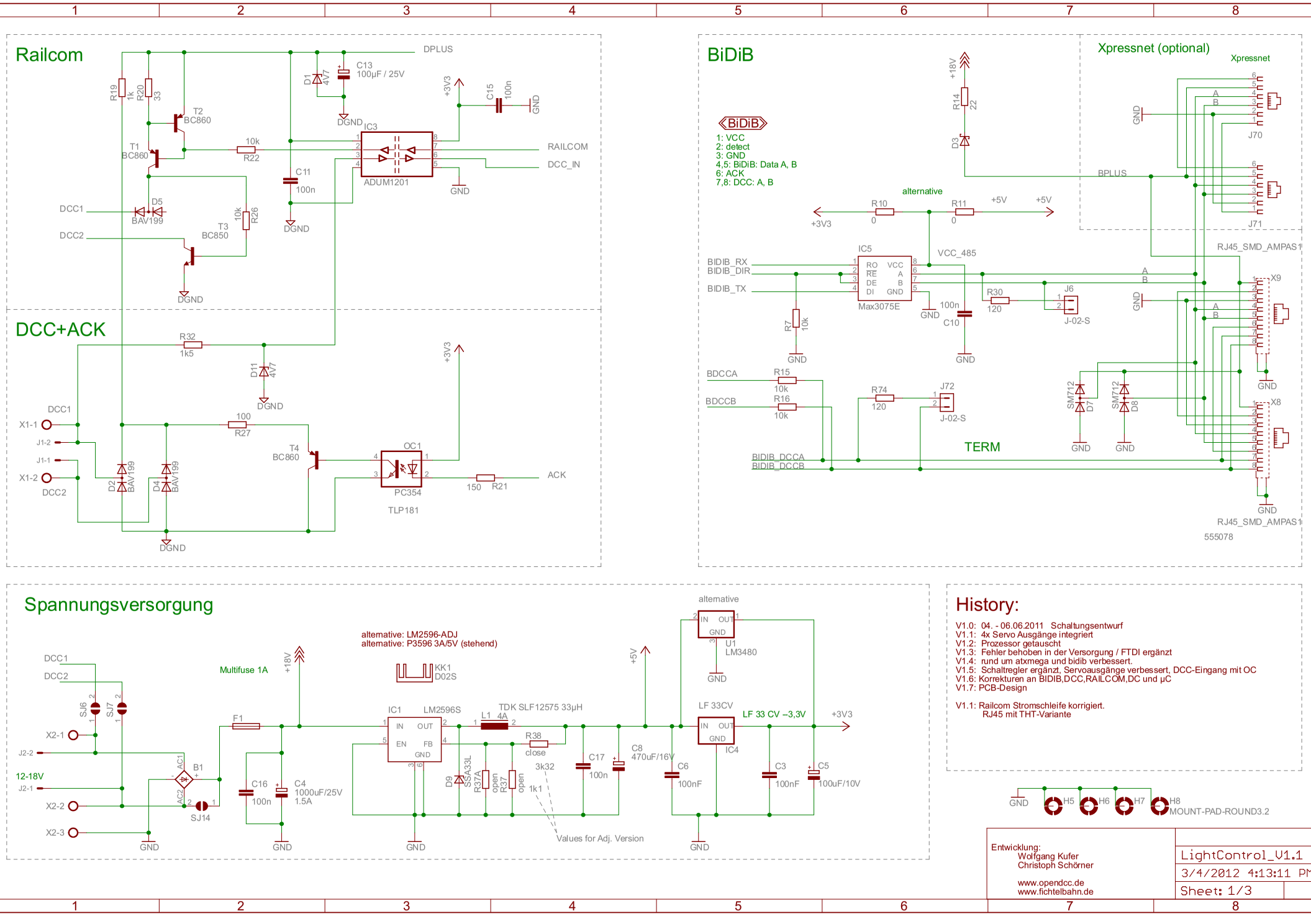
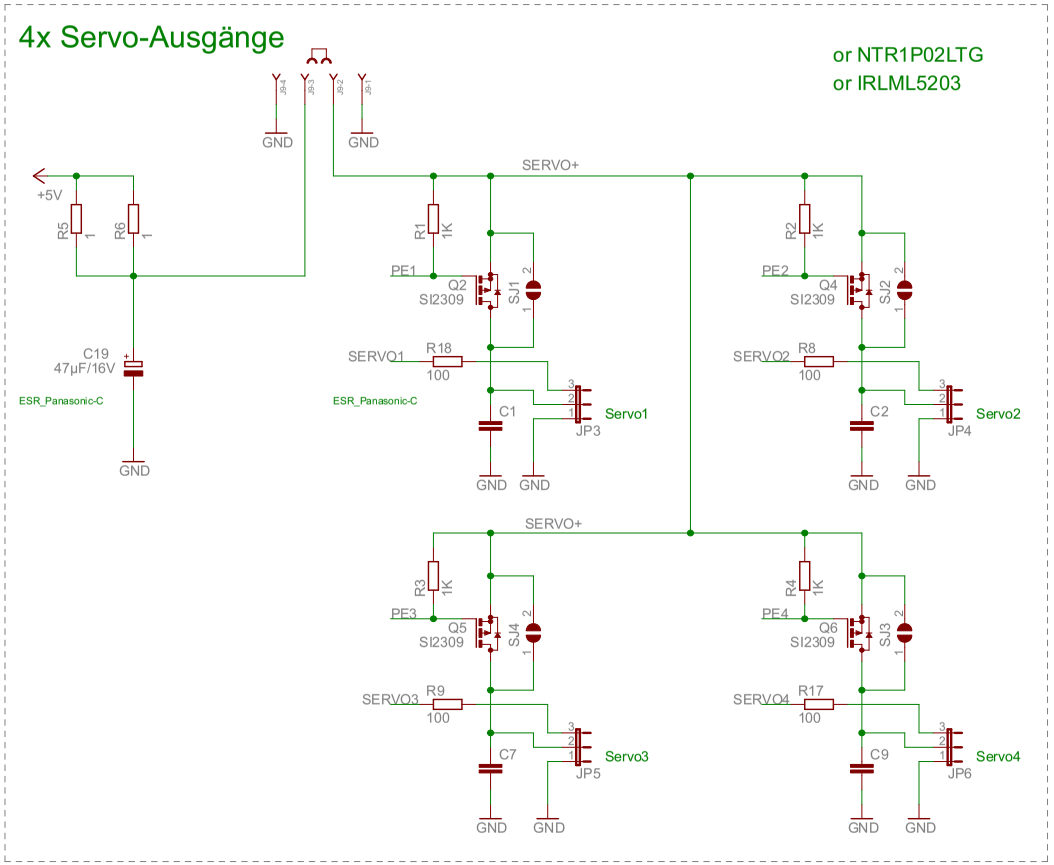
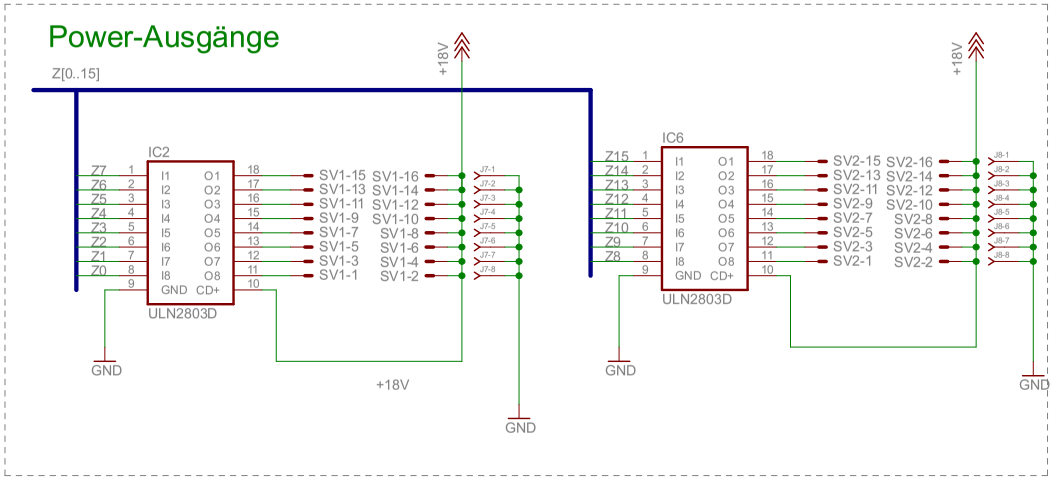
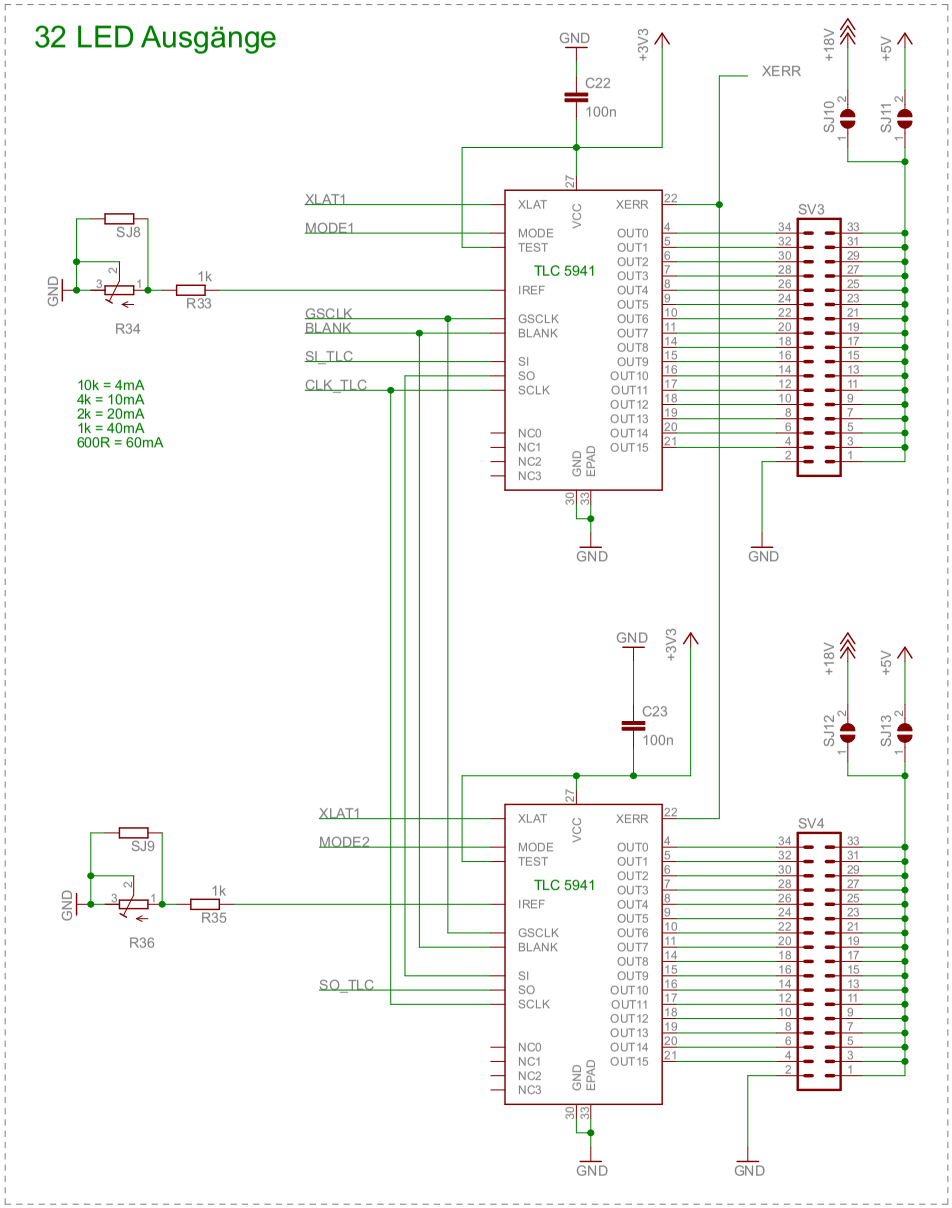

Railcom
DPLUS
C13
100µF / 25V
D1
4V7
+3V3
C15
100n
GND
R19
1k
R20
33
T2
BC860
T1
BC860
10k
R22
IC3
ADUM1201
RAILCOM
DCC_IN
C11
100n
DGND
DCC1
D5
BAV199
DCC2
T3
BC850
10k
R26
DGND
DCC+ACK
R32
1k5
D11
4V7
DGND
+3V3
DCC1
X1-1
J1-2
J1-1
X1-2
DCC2
100
R27
D2
BAV199
D4
BAV199
T4
BC860
OC1
PC354
TLP181
150
R21
ACK
DGND
BiDiB
BiDiB
1: VCC
2: detect
3: GND
4,5: BiDiB: Data A, B
6: ACK
7,8: DCC: A, B
+18V
R14
22
D3
BPLUS
alternative
R10
0
R11
0
+5V
+5V
+3V3
IC5
Max3075E
RO
RE
DE
DI
VCC
A
B
GND
BIDIB_RX
BIDIB_DIR
BIDIB_TX
VCC_485
100n
C10
R30
120
J6
J-02-S
R7
10k
GND
BDCCA
BDCCB
R15
10k
R16
10k
R74
120
J72
J-02-S
TERM
BIDIB_DCCA
BIDIB_DCCB
SM712
D7
SM712
D8
Xpressnet (optional)
Xpressnet
J70
J71
RJ45_SMD_AMPAS1
X9
X8
555078
Spannungsversorgung
alternative: LM2596-ADJ
alternative: P3596 3A/5V (stehend)
KK1
D02S
Multifuse 1A
+18V
DCC1
DCC2
SJ6
SJ7
X2-1
J2-2
12-18V
J2-1
X2-2
X2-3
B1
SJ14
F1
C16
100n
C4
1000uF/25V
1.5A
IC1
LM2596S
IN
OUT
EN
FB
GND
L1
4A
TDK SLF12575 33µH
R38
close
D9
SSA33L
R37A
open
R37
open
3k32
1k1
Values for Adj. Version
C17
100n
C8
470uF/16V
C6
100nF
C3
100nF
C5
100uF/10V
+5V
alternative
U1
LM3480
LF 33CV
IC4
LF 33 CV –3,3V
+3V3
History:
V1.0: 04. - 06.06.2011 Schaltungsentwurf
V1.1: 4x Servo Ausgänge integriert
V1.2: Prozessor getauscht
V1.3: Fehler behoben in der Versorgung / FTDI ergänzt
V1.4: rund um atxmega und bidib verbessert.
V1.5: Schaltregler ergänzt, Servoausgänge verbessert, DCC-Eingang mit OC
V1.6: Korrekturen an BIDIB,DCC,RAILCOM,DC und µC
V1.7: PCB-Design
V1.1: Railcom Stromschleife korrigiert.
RJ45 mit THT-Variante
H5
H6
H7
H8
MOUNT-PAD-ROUND3.2
Entwicklung:
Wolfgang Kufer
Christoph Schörner
www.opendcc.de
www.fichtelbahn.de
LightControl_V1.1
3/4/2012 4:13:11 PM
Sheet: 1/3







Entwicklung:
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Christoph Schörner

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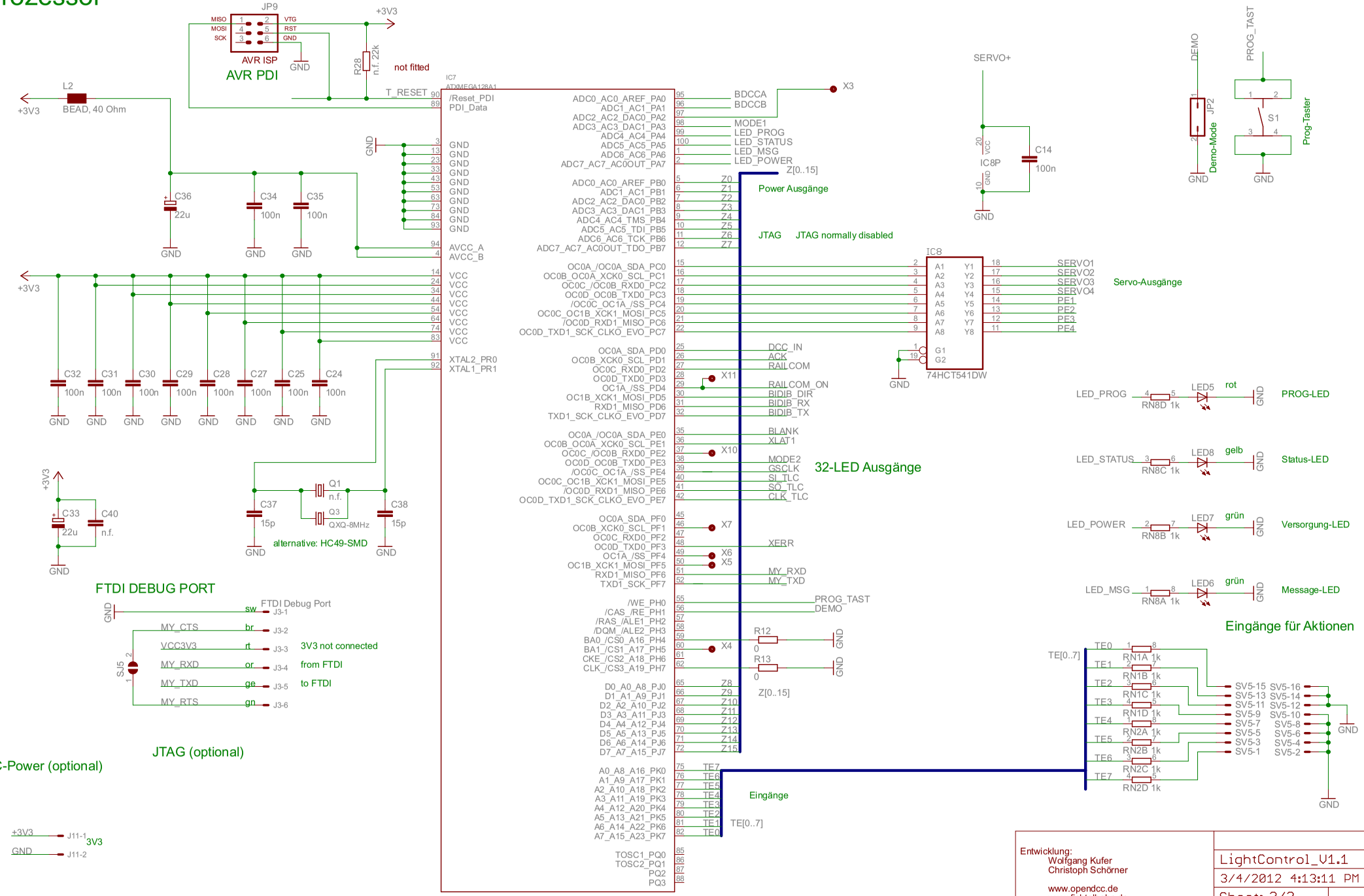
www.fichtelbahn.de

LightControl_V1.1

3/4/2012 4:13:11 PM

Sheet: 2/3

Prozessor



Entwicklung:
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Christoph Schörner

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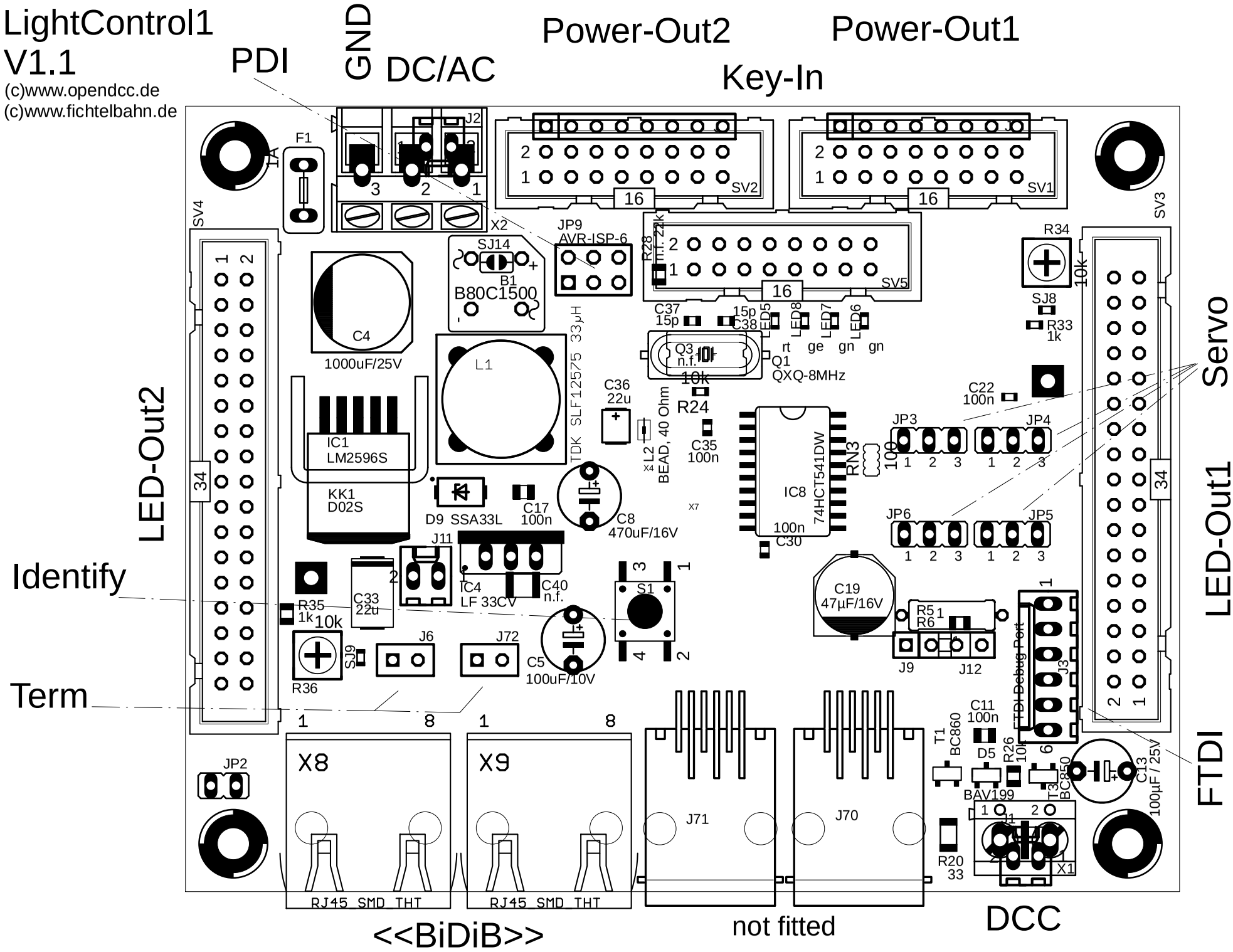
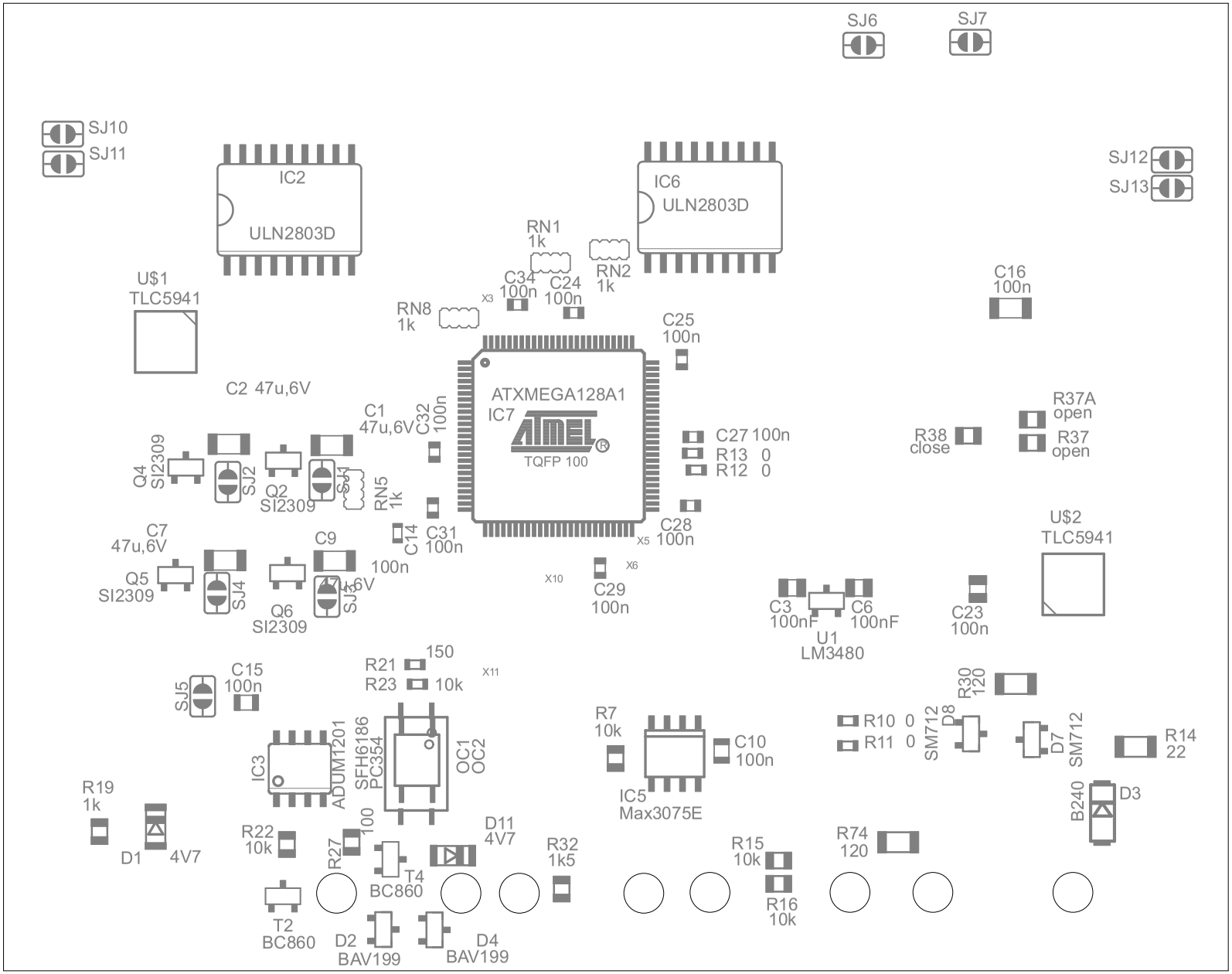
LightControl_V1.1	
3/4/2012 4:13:11 PM	
Sheet: 3/3	


LightControl1
V1.1
(c)www.opendcc.de
(c)www.fichtelbahn.de
PDI
GND
DC/AC
Power-Out2
Power-Out1
Key-In
LED-Out2
Identify
Term
Servo
LED-Out1
FTDI
<<BiDiB>>
not fitted
DCC
SV4
SV2
SV1
SV5
SV3
J2
F1
X2
JP9
AVR-ISP-6
SJ14
B1
B80C1500
C4
1000uF/25V
L1
TDK SLF12575 33µH
IC1
LM2596S
KK1
D02S
D9 SSA33L
C17
100n
C8
470uF/16V
C36
22u
L2
BEAD, 40 Ohm
C35
100n
R24
10k
C37
15p
C38
15p
Q3
n.f.
Q1
QXQ-8MHz
LED5
LED8
LED7
LED6
R28
n.f. 22k
R34
10k
SJ8
R33
1k
C22
100n
IC8
74HCT541DW
RN3
100
JP3
JP4
JP6
JP5
C30
100n
C19
47µF/16V
R5
R6
J9
J12
J3
TDI Debug Port
C11
100n
T1
BC860
D5
BAV199
R26
10k
T3
BC850
C13
100µF / 25V
X1
R20
33
J1
J71
J70
X8
X9
RJ45_SMD_THT
RJ45_SMD_THT
J11
IC4
LF 33CV
C40
n.f.
C33
22u
R35
1k
R36
10k
SJ9
J6
J72
C5
100uF/10V
S1
JP2
34
34


SJ6
SJ7
SJ10
SJ11
SJ12
SJ13
IC2
ULN2803D
IC6
ULN2803D
RN1
1k
RN2
1k
U$1
TLC5941
C34
100n
C24
100n
C16
100n
RN8
1k
X3
C25
100n
ATXMEGA128A1
IC7
TQFP 100
C2 47u,6V
C1
47u,6V
C32
100n
Q4
SI2309
SJ2
Q2
SI2309
SJ4
RN5
1k
C27 100n
R13 0
R12 0
R38
close
R37A
open
R37
open
C14
C31
100n
C28
100n
X5
C7
47u,6V
C9
100n
Q5
SI2309
SJ3
Q6
SI2309
X10
X6
C29
100n
U$2
TLC5941
C3
100nF
C6
100nF
U1
LM3480
C23
100n
SJ5
C15
100n
R21
150
R23
10k
X11
R30
120
R7
10k
C10
100n
IC5
Max3075E
R10 0
R11 0
SM712
D8
D7
SM712
R14
22
IC3
ADUM1201
SFH6186
PC354
OC1
OC2
R19
1k
D1
4V7
R22
10k
R27
100
D11
4V7
T4
BC860
R32
1k5
R15
10k
R74
120
B240
D3
R16
10k
T2
BC860
D2
BAV199
D4
BAV199