DCC
{DCC}   DCC_TTL⊲
File: DCC.kicad_sch

J101
FEMALE
4   A
DCC 3   B
POW 2
1

D_bridge
⊳AC_1
⊳AC_2   VCC⊲
File: D_bridge.kicad_sch

VCC

Buck   5V high pow
⊳VCC   5V⊲   +5VA
File: Buck.kicad_sch   servo pow

LDO   5V low pow
⊳VCC   5V⊲   +5V
File: LDO.kicad_sch   atmega
                           pow

USB
{Serial}⊲
File: USB.kicad_sch

atmega
⊳DCC   P[1..16]⊲

⊳{Serial}

File: atmega.kicad_sch

P1   ⊳P   P1   File: P.kicad_sch
P2   ⊳P   P2   File: P.kicad_sch
P3   ⊳P   P3   File: P.kicad_sch
P4   ⊳P   P4   File: P.kicad_sch
P5   ⊳P   P5   File: P.kicad_sch
P6   ⊳P   P6   File: P.kicad_sch
P7   ⊳P   P7   File: P.kicad_sch
P8   ⊳P   P8   File: P.kicad_sch
P9   ⊳P   P9   File: P.kicad_sch
P10   ⊳P   P10   File: P.kicad_sch
P11   ⊳P   P11   File: P.kicad_sch
P12   ⊳P   P12   File: P.kicad_sch
P13   ⊳P   P13   File: P.kicad_sch
P14   ⊳P   P14   File: P.kicad_sch
P15   ⊳P   P15   File: P.kicad_sch
P16   ⊳P   P16   File: P.kicad_sch

+5V +5VA LED

R203 R204 R201
6k2   6k2   6k2

D202 D203 D201
LED   LED   LED

GND   GND   GND

led and switch on pin 13

+5V

C202
100nF

GND

Y201
Crystal_GND2

X1 1   3 X2
C201   C203
12pF   12pF

GND

SW201
default_switch

J201 GND
ICSP

6
5 MOSI   Reset
4 MISO
3 SCK   R202
2   10k
1   +5V

GND

{Serial}
Rx
Tx
Reset

+5V

4 VCC
18 AVCC

AREF 20

ADC6 19
ADC7 22

PB0 12 D8   P6
PB1 13 D9   P7
PB2 14 D10 P8
PB3 15 D11 P9   MOSI
PB4 16 D12 P10 MISO
PB5 17 D13 LED SCK

XTAL1/PB6 7 X1
XTAL2/PB7 8 X2

PC0 23 A0 P11
PC1 24 A1 P12
PC2 25 A2 P13
PC3 26 A3 P14
PC4 27 A4 P15
PC5 28 A5 P16

RESET/PC6 29 Reset

PD0 30 D0 Rx
PD1 31 D1 Tx
PD2 32 D2 DCC
PD3 1   D3 P1
PD4 2   D4 P2
PD5 9   D5 P3
PD6 10 D6 P4
PD7 11 D7 P5

GND 3

U202
ATmega328-A

GND

P[1..16]

P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
P13
P14
P15
P16

{DCC}

R1001
1k
1 2

D1001
1N4148WS

A
B

U1001
6N137

A
2
C
3

VCC
8
7
Vo
6
GND
5

GND

+5V

R1002
10k
1
2

R1003
10k

+5V

R301
6k2

D301
LED

DCC_TTL

VCC

U301
AMS1117-5.0

| 3 | VI | VO | 2 |

GND

1

C301
470nF

C302
100nF

C303
100uF

5V

GND

VCC

+5V

D601
SM4007

JP601
SolderJumper_2_Open

R603
10k

R601
22R

+5VA

3
2
1
J601
Conn_01x03_Pin

PD

1   2

Q601

R602
22k

GND

GND

GND

GND

VCC

+5V

D701
SM4007

JP701
SolderJumper_2_Open

R703
10k

R701
22R

PD

1   2   1

Q701

+5VA

3

2

J701

1

Conn_01x03_Pin

R702
22k

GND

GND

GND

GND

VCC

+5V

D801
SM4007

JP801
SolderJumper_2_Open

R803
10k

R801
22R

+5VA

3

2

J801

1

Conn_01x03_Pin

PD

1   2   1

Q801

2

GND

R802
22k

GND   GND

VCC

+5V

D901
SM4007

JP901
SolderJumper_2_Open

R906
10k

R904
22R

+5VA

3

2

J901

Q901

1

Conn_01x03_Pin

PD

R905
22k

GND

GND

GND

GND

VCC

D1002
SM4007

+5V

JP1001
SolderJumper_2_Open

R1006
10k

R1004
22R

+5VA

3
2
1

J1001
Conn_01x03_Pin

PD

Q1001

R1005
22k

GND

GND

GND

+5V

C701
10uF

C702
100nF

GND

C705
100nF

GND

+5V

J702
USB_B_Mini

+5V

VBUS 1
D+ 3
D− 2
ID 4
Shield
GND 6 5

swapped here!

R705
1k

Rx

Tx

R706
1k

{Serial}

V3 4
VCC 16
R232 15
TXD 2
RXD 3
UD+ 5
UD− 6
CTS 9
DSR 10
RI 11
DCD 12
DTR 13
RTS 14
XI 7
XO 8
GND 1

U701
CH340G

C706
100nF

Reset

Y701
Crystal

1 2 3

C703
22pF

C704
22pF

GND

VCC

+5V

D1301
SM4007

JP1301
SolderJumper_2_Open

R1303
10k

R1301
22R

+5VA

3

Q1301

2

J1301
Conn_01x03_Pin

PD

1

R1302
22k

1

GND

GND

GND

VCC

D1401
SM4007

+5V

JP1401
SolderJumper_2_Open

R1403
10k

R1401
22R

PD

Q1401

R1402
22k

+5VA

3

2

1

J1401
Conn_01x03_Pin

GND

GND

GND

GND

VCC

+5V

D1501
SM4007

JP1501
SolderJumper_2_Open

R1503
10k

R1501
22R

+5VA

3

Q1501

2

J1501
Conn_01x03_Pin

R1502
22k

1

GND

PD

GND

GND

VCC

+5V

D1601
SM4007

JP1601
SolderJumper_2_Open

R1603
10k

R1601
22R

+5VA

3

Q1601

2

J1601
Conn_01x03_Pin

PD

1

R1602
22k

GND

GND

GND

GND

VCC

+5V

D1701
SM4007

JP1701
SolderJumper_2_Open

R1703
10k

R1701
22R

3

PD

1

Q1701

+5VA

2

J1701

R1702
22k

GND

1

Conn_01x03_Pin

GND

GND

GND

VCC

D1801
SM4007

+5V

JP1801
SolderJumper_2_Open

R1803
10k

R1801
22R

PD

Q1801

R1802
22k

+5VA

GND

3
2
1

J1801
Conn_01x03_Pin

GND

GND

VCC

+5V

D1901
SM4007

JP1901
SolderJumper_2_Open

R1903
10k

R1901
22R

PD

1   2   Q1901
3
1

+5VA

3
2   J1901
1   Conn_01x03_Pin

GND

R1902
22k

GND   GND

VCC

+5V

D2001
SM4007

JP2001
SolderJumper_2_Open

R2003
10k

R2001
22R

+5VA

PD

1   2   1

3

Q2001

R2002
22k

2

GND

GND

3   J2001
2
1   Conn_01x03_Pin

GND

VCC

+5V

D2101
SM4007

JP2101
SolderJumper_2_Open

R2103
10k

R2101
22R

1   2

PD

R2102
22k

Q2101

+5VA

3
2
1

J2101
Conn_01x03_Pin

GND

GND

GND

GND

VCC

+5V

D2201
SM4007

JP2201
SolderJumper_2_Open

R2203
10k

R2201
22R

PD

1   2

+5VA

3

2

J2201

Q2201

1

Conn_01x03_Pin

R2202
22k

GND

GND

GND

GND

VCC

+5V

D2301
SM4007

JP2301
SolderJumper_2_Open

R2303
10k

R2301
22R

+5VA

3
2
1

J2301
Conn_01x03_Pin

PD

1
2

1

Q2301

R2302
22k

GND

GND

GND

GND