+5V

P1
VBUS
D-
D+
GND
USB B HEADER

R1 1
R2 2.2k
R3 68   D-
R6 68   D+

D1 3V6
D2 3V6
GND

VCC
+5V +3.3V
J1

+5V +C1 100uF   GND
+5V +C3 10uF/6.3V   GND
+5V +C4 100nF   GND

U1
IN OUT
TAB GND
LM1117MP-3.3
+5V +3.3V
+3.3V

TP1
+C7 100uF
C8 100nF
GND GND GND

VCC
R4 100   AVCC
C5 100nF
C6 100nF
+C2 100uF
GND GND GND

R40 1k R41 1k
+5V +3.3V
J2

P2
GND
Contrast
RS
RW
EN
D4
D5
D6
D7
LED+
LED-
LCD

R5 10K

AVCC
P3 TMP1
R30 100k
R7 10k 1%
R8 10k 1%
C9 100nF
GND GND GND
ADC6
SW1 SW-PB GND

AVCC
P4 TMP2
R32 100k
R17 10k 1%
R19 10k 1%
C13 100nF
GND GND GND
ADC7
SW3 SW-PB GND

U2
PB0 (ICP)   12
PB1 (OC1A) 13
PB2 (SS/OC1B) 14
PB3 (MOSI/OC2) 15
PB4 (MISO) 16
PB5 (SCK) 17
PB6 (XTAL1/TOSC1)
PB7 (XTAL2/TOSC2)
PC0 (ADC0) 23
PC1 (ADC1) 24
PC2 (ADC2) 25
PC3 (ADC3) 26
PC4 (ADC4/SDA) 27
PC5 (ADC5/SCL) 28
ADC6 19
ADC7 22
PD0 (RXD) 30
PD1 (TXD) 31
PD2 (INT0) 32
PD3 (INT1) 1
PD4 (XCK/T0) 2
PD5 (T1) 9
PD6 (AIN0) 10
PD7 (AIN1) 11
PC6 (RESET) 29
VCC 6
VCC 4
AVCC 18
AREF 20
GND 21
GND 5
GND 3
ATmega8-16AI

D- 12
D+ 13
SS 14
MOSI 15
MISO 16
SCK 17

CE 23
EN 24
RW 25
RS 26
SDA 27
SCL 28
ADC6 19
ADC7 22
RST 29

RX 30
TX 31
INT1 32
D4 1
D5 9
D6 10
D7 11

Y1 12MHz
C11 22pF
C12 22pF
GND GND

R14 100 D+

VCC
R11 10k
C10 100nF
GND
SW2 SW-PB GND

AVCC
R18 10k
AREF
D3 2V7
GND

C14 100nF
GND GND

+5V
R9 100 R10 100
R12 100 R13 100

R15 100
VD1 LED

+5V
R16 10k
BL
TP2
R20 4.7k
Q1 BC817-16
GND

P5 DHT11
VCC VCC
R21 4.7k
R23 100 RS
GND GND

SW4 SW-PB
INT1 R22 10k VCC
GND

J3
+3.3V +5V
P7 BMP085
R29 4.7k
R28 4.7k
SDA
XCLR
EOC TP3
SCL
GND

R34 10k R35 100 RW
R27 10k XCLR

P8 VCC
SCK
MOSI
MISO
GND
Prog

GND +3.3V
C15 100uF
R26 1
P9 nRF24
CE 1 2 SS
SCK 3 4 MOSI
MISO 5 6 INT1
7 8

VCC
R24 100
RX R25 100 P6
TX
UART
D4 3V6
GND GND

TP6 R31 100 RST
VCC R36 10k MISO

R5 100 AUX
TP4

+5V
R33 100
D7
P10 REL1
R37 10k
RL R38 4.7k
TP5
Q2 BC817-16
GND

VD2 LED
R39 100 SCL
VCC

P? BH10
MOSI VCC
RST
SCK
MISO

P9 I2C
VCC
R214.7k
SCL R22100
R234.7k
SDA
VCC GND
VD2 LED

Title
Size A3
Number
Revision
Date: 12.06.2014
Sheet of
File: D:\Y32\Muxa\USBMega88\PCB\main.SchDoc
Drawn By:

Comment	Description	Designator	Footprint	LibRef	Quantity
Cap Pol1	Polarized Capacitor (Radial)	C1, C2, C15	CAPPR2.5-6.3x5	Cap Pol1	3
Cap Pol	Polarized Capacitor (Surface Mount)	C3	TC6032-2412	Cap Pol	1
Cap	Capacitor	C4, C8	RESC2012N	Cap	2
Cap	Capacitor	C5, C6, C9, C13, C14	CAPC2012W	Cap	5
Cap Pol	Polarized Capacitor (Surface Mount)	C7	C	Cap Pol	1
Cap	Capacitor	C10	CAPC2012N	Cap	1
Cap	Capacitor	C11, C12	CAPC1608N	Cap	2
3V6	Zener Diode	D1, D2, D4	DIO6.35-3.1x1.6	D Zener	3
2V7	Zener Diode	D3	DIO6.35-3.1x1.6	D Zener	1
Diode	Default Diode	D7	MELF-D5023-2009	Diode	1
J3	Jumper 1:2	J1, J2, J3	J3_SMT_60	J3	3
USB B HEADER	Connector, USB B Type, Right Angle, Thru Hole, White	P1	HDR1X4	USB_B	1
LCD	Header, 16-Pin	P2	HDR2X8	Header 16	1
TMP1	Header, 3-Pin	P3	HDR1X3	Header 3	1
TMP2	Header, 3-Pin	P4	HDR1X3	Header 3	1
DHT11	Header, 4-Pin	P5	HDR1X4	Header 4	1
UART	Header, 4-Pin	P6	HDR1X4	Header 4	1
BMP085	Header, 6-Pin	P7	HDR1X6	Header 6	1
nRF24	Header, 4-Pin, Dual row	P9	HDR2X4	Header 4X2	1
REL1	Header, 2-Pin	P10	HDR1X2	Header 2	1
BC817-16	NPN General-purpose Transistor	Q1, Q2	SOT23_N	BC817-16	2
Resistor	Resistor	R1, R2, R3, R4, R5, R6, R7, 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, R37, R38, R39, R40, R41	RESC2012W	Resistor	40
Resistor	Resistor	R36	AXIAL-0.3	Resistor	1
SW-PB	Switch	SW1, SW2, SW3, SW4	SW 1P4C 200x300mil	SW-PB	4
LM1117MP-3.3	800mA Low-Dropout Linear Regulator	U1	MP04A_M	LM1117MP-3.3	1
ATmega8-16AI	8-Bit AVR Microcontroller with 8K Bytes of In-System Programmable Flash Memory	U2	32A_N	ATmega8-16AI	1
LED		VD1, VD2	LED2.54x3	LED	2
12MHz	Crystal Oscillator	Y1	HC49U	XTAL	1