pin* = 5v tolerant

U1

CARD_DETECT 1 RC4*
CARD_SCK 1 R13 2 68 2 RG6*
CARD_SDO 3 RG7*
CARD_SDI 1 R16 2 68 4 RG8*
BTN_RST 5 Vpp
CARD_SS 6 RG9*
d0 7 RA0*
INT1_XMEMFL 8 RE8*
INT2_XMEMW 9 RE9*
PIC_SS 1 R24 2 1k8 10 RB5
11 RB4
12 RB3
wifi_GPIO4 13 RA9
wifi_RST 14 RA10
15 RB8
16 RB9
17 RB10
18 RB11
d1 19 RA1*
wifi_CTS 20 RF13*
wifi_RTS 21 RF12*
22 RB12
23 RB13
24 RB14
25 RB15
a14 26 RD14*
a15 27 RD15*
wifi_TX 28 RF4*
wifi_RX 1 R31 1k 2 29 RF5*
UBW_3V3 1 R32 2 22k 30 RF2* RX1
TX1 31 RF8*
d2 32 RA2*
d3 33 RA3*
d4 34 RA4*
d5 35 RA5*
36 RA14*
37 RA15*
UBW_3V3 38 3V3
VCC 39 5V
GND 40 GND

RC3* 41
RC2* 42
RC1* 43
RE7* 44 BTN_PRG
RE6* 45 BTN_USER
RE5* 46 RESIN
RG15* 47 INP7
RE4* 48 INP0
RE3* 49 LED_GRN
RE2* 50 LED_WHT
RG13* 51 C3
RG12* 52 C2
RG14* 53 C1
RE1* 54 LED_RED
RE0* 55 LED_YEL
RA7* 56 d7
RA6* 57 d6
RG0* 58 CS
RG1* 59 OUT
RF1* 60 NMI
RF0* 61 RDY
RD7* 62 a7
RD6* 63 a6
RD5* 64 a5
RD4* 65 a4
RD13* 66 a13
RD12* 67 a12
RD3* 68 a3
RD2* 69 a2
RD1* 70 a1
RC14 71 RTS1
RC13 72 CTS1
RD0* 73 a0
RD11* 74 a11
RD10* 75 a10
RD9* 76 a9
RD8* 77 a8
3V3 78 UBW_3V3
5V 79 VCC
GND 80 GND

VCC VCC
INP0 1 A
INP1 2 B
GND 3 GND
Y 4 R25 1 1k 2
US 74ACT1G08 MISC
0V

VCC VCC
C2 9 A
C1 10 B
C4 12 C
OUT 13 D
GND 7 GND
Y 8
U6b 74HCT21 SOIC14

VCC VCC
VCC 1 A
CS 2 B
C3 4 C
INP7 5 D
GND 7 GND
Y 6
U6a 74HCT21 SOIC14

R8 4k7
R17 4k7

U3

5V_ALT 1 Vcc
2 RA5
3 RA4
PIC_Vpp 4 Vpp/RA3
5 RC5
6 RC4
PIC_SS 7 RC3
GND 14 GND
ICSPD/RA0 13
ICSPCK/RA1 12
RA2 11
RC0 10 PIC_SCK
RC1 9 PIC_SDI
RC2 8 PIC_SDO

R9 1k8
R11 1k8 PIC_SDI
R15 1k8 PIC_SCK

PIC_Vpp 1 A max9V_I
5V_ALT 2 B
GND 3 C
4 D POD
5 E POC
J2 5WP PROG

U8

-12V 1 V-
2 TX_TTL
RX_TTL 3
GND 4
V+ 8 +12V
TX 7
ref 6
RX 5

1k8 R5
0V

A TxD
GND 2 B
C RxD
J3 3WP DSC RS232

PL1
1 A GND
2 B 5V_ALT
3 C VBUS_HOST

U7

5V_ALT 1 Vin
Gnd
Vout 3 Wifi_3V3
2
1u C7
1u C8
1u C2
0V

J1

GND 1 FTDI_GND
CTS1 330 R26 2 FTDI_CTS
3 FTDI_+5V_OUT
RX1 330 R28 4 FTDI_TX
TX1 330 R30 5 FTDI_RX
RTS1 330 R33 6 FTDI_RTS

R43 5R
5V_ALT 2 1

J2a

1 VBUS
D- 2 D-/PS2SCK
D+ 3 D+/PS2DAT
GND 4 GND
5 SHIELD

J2b

1 VBUS
2 D-
3 D+
4 ID (device=NC)
GND 5 GND
6 SHIELD

C3 4n7
R48 2 1M 1

VDD3V3
UBW_3V3
5V_ALT
C4 220n
C1 220n
C6 220n
+5V
VCC
C5 220n
GND
0V

USB shield via RC recommended by FTDI and ATMEL (AVR1017).

U2

1 dat2
CARD_SS 2 CS
CARD_SDI 3 DI
UBW_3V3 4 VDD
CARD_SCK 5 CLK
GND 6 VSS
7 DO
8 dat1
CARD_DETECT 9 DETECT
CHASSIS 14 GND
CHASSIS 13
CHASSIS 12 GND
DET_GND 11 GND
CHASSIS 10 GND

CARD_SDO 1 R3 2 68R

U4

VDD_3V3 1
UART_TX 2
UART_RX 3
GPIO8 4
RESET 5
GPIO5 6
GPIO7 7
GPIO9 8
GPIO1 9
GND 10
SENSOR2 20
GPIO2 19
GPIO3 18
SENSOR5 17
UART_CTS 16
GPIO6 15
NC 14
GPIO4 13
UART_RTS 12
GPIO14 11

wifi_TX 1 1k R6 2
wifi_RX 3
wifi_RST 1 1k R7 2
UBW_3V3 1 22k R2 2
wifi_RTS 1 1k R1 2
wifi_GPIO4 1 1k R4 2
wifi_CTS 1 1k R29 2

+5V
100k R22
100k R23
100k R10
100k R18
100k R12
100k R21
100k R19
100k R14
100k R20

+12V 1 1
-12V 3 3 1
GND 2 2
GND 4 2
RESIN 3 3
3 5 3
INT1_XMEMFL 4 4
INT2_XMEMW 6 4
5 5
d7 7 5
6 6
d6 8 6
7 7
d5 9 7
8 8
d4 10 8
9 9
d3 11 9
10 10
d2 12 10
11 11
d1 13 11
12 12
d0 14 12
13 13
15 13
a15 16 14
14 17 14
INP7 15 15
a14 18 15
INP1 16 16
a13 19 16
INP0 17 17
a12 20 17
C4 18 18
a11 21 18
C3 19 19
a10 22 19
C2 20 20
a9 23 20
C1 21 21
a8 24 21
OUT 25 22
a7 26 22
CS 27 23
a6 28 23
NMI 29 24
a5 30 24
a4 31 25
25
a3 32 26
26
a2 33 27
27
a1 34 28
28
a0 35 29
RDY 36 30
VCC 37 30
VCC 38 31
31
39 32
40 32
CONN1 6464F DSC

E	D	C	B	A	Drawn	Check	Projection Do Not Scale
Drn	Drn	Drn	Drn	Project Abcbus			Client
Chk	Chk	Chk	Chk	Title			Filename

Drawing No.

Sheet of