ICSP1 ICSP +5V

UMISO(D1) 1 2
USCK(D3) 3 4 UMOSI(D2)
URESET 5 6
3x2M_NM

RESET1
TS42

GND

+5V

C19 C18
100n 100n

10k R2

URESET D1
CD1206-S01575
10k R1

URESET GND

RESET

+5V

XTAL2
16MHz
Z1A
XTAL1

GND

C24 22p
C20 22p

Z1
16MHz KX-7

1M R100

AREF

GND

C2
1uF

UCAP

UGND

MH2029-300Y
L1

UGND

GND

C17 100n
C1 1uF

L3 MH2029-300Y

GND

D_U4 2
D_U3 2
D_U1 2
D_U2 2

D- D+ RD- RD+

RD+ 1 J_U1 2 D+

RD- J_U2 D-

GND

4D1

34 VCC1
43 GND3
13 RESET

XTAL2 16 XTAL2
XTAL1 17 XTAL1

AVCC 44 AVCC1
24 AVCC

42 AREF
14 VCC
15 GND
23 GND1
35 GND2
6 UCAP
2 UVCC
3 D-
4 D+
5 UGND
7 VBUS

VUSB

VUSB

P$1 PAD

GND ATMEGA32U4

(PCINT7/OC0A/OC1C/#RTS)PB7 12 UPB7
(PCINT6/OC1B/OC4B/ADC13)PB6 30 UPB6
(PCINT5/OC1A/#OC4B/ADC12)PB5 29 UPB5
(ADC11/PCINT4)PB4 28 UPB4
(PD0/MISO/PCINT3)PB3 11 UMISO(D1)
(PDI/MOSI/PCINT2)PB2 10 UMOSI(D2)
(SCLK/PCINT1)PB1 9 USCK(D3)
(SS/PCINT0)PB0 8 UPB0

(ICP3/CLK0/OC4A)PC7 32 UPC7
(OC3A/#0C4A)PC6 31 UPC6

(INT6/AIN0)PE6 1 UPE6
(#HWB)PE2 33 HWB

(T0/OC4D/ADC10)PD7 27 UPD7
(T1/#OC4D/ADC9)PD6 26 UPD6
(XCK1/#CTS)PD5 22 UPD5
(ICP1/ADC8)PD4 25 UPD4
(TXD1/INT3)PD3 21 UPD3
(RXD1/AIN1/INT2)PD2 20 OE(UPD2)
(SDA/INT1)PD1 19 UPD1
(OC0B/SCL/INT0)PD0 18 UPD0

(ADC7/TDI)PF7 36 UPF7
(ADC6/TDO)PF6 37 UPF6
(ADC5/TMS)PF5 38 UPF5
(ADC4/TCK)PF4 39 UPF4

(ADC1)PF1 40 UPF1
(ADC0)PF0 41 UPF0

AGND

SV2
3
2
1

SV3
8
7
6
5
4
3
2
1

+5V SV5
CON_KB_N
9 vcc
CD1 8 d1
CD2 7 d2
CD3 6 d3
KBN3 5 kbn3
LED_NUM 4 led_num
KBN2 3 kbn2
KBN1 2 kbn1
1 gnd

GND

+5V SV6
11 vcc
10 d1
CD2 9 d2
8 d3
KBB6 7 kbb6
KBB5 6 kbb5
KBB4 5 kbb4
KBB3 4 kbb3
KBB2 3 kbb2
KBB1 1 kbb1
gnd

GND

LEDS

UPB7	1	2	UPB4
UPB6	3	4	UPC7
UPB5	5	6	N$74

led_num   L
led_scroll   L
led_caps   L
              9   *
d1
d2
d3
x   x

              11   *
kbb3   10

x   x

kbb2   8
              7   *   kba6
              5   *   kba5
kbb4   6
              4   *   kba4
              3   *   kba3
kbb19   2
              1   *   kba2

kbn3   12
kbn2   13
kbn1   14
              15   *   kba1

kbb1   16
kbb5   17

RESET2 TS42

D0

D1

D2

D3

D4

MOSI8535

MISO8535

SCK8535

PPC0(BS2)

SWCLK(XTAL1)

PPC1(RB)

PPC2(OE)

PPC3(WR)

PPC4(BS1)

PPC5(XA0)

PPC6(XA1)

PPC7(PAGEL)

VTG

TRST(RESET)

+5V

HWB	R5	10k
upb0		
UPC7	R4	10k
UPC6	R6	10k
UPD7	R7	10k
upe6		
UPD6	R8	10k
UPD5	R9	10k
UPD4	R10	10k
UPD3	R11	10k
OE(UPD2)	R12	10k
UPD1	R13	10k
UPD0	R15	10k

UPF7	R16	10k
UPF6	R17	10k
UPF5	R18	10k
UPF4	R19	10k
UPF1	R20	10k
UPF0	R21	10k

GND

HVPP JP

UPD1	R/B̄	1	DATA0	1	UPB0
OE(UPD2)	OE	1	DATA1	1	USCK(D3)
UPD3	WR	1	DATA2	1	UMOSI(D2)
UPD4	BS1	1	DATA3	1	UMISO(D1)
UPD5	XA0	1	DATA4	1	UPB4
UPD6	XA1	1	DATA5	1	UPB5
UPD7	PAG	1	DATA6	1	UPB6
UPE6	BS2	1	DATA7	1	UPB7
XTAL1	XTAL1	1	RES	1	URESET

USB-HUB

F1 MF-MSMF050-2 500mA

VUSB

1X1

USB USB-B_PN61729-S

1R1 10 D-
1R2 10 D+

8 1 DMI
7 2 DPI
22R RNA
22R RNB
6 3
5 4
22R RNC
22R RND

RU1 RU2

CG0603MLC-05E

GND

VUSB

1C7 10u   1C8 100n   1C9 100n

GND

1D1

GND

1C1 22   1Z1 12MHz
GND

1C2 22
GND

VUSB

1R6 47k

1R7 100k

VD1V8

VD3V3

1C4 100n   1C5 100n   1C6 10m

1C3 10m

GND

1R3 100k   1R4 100k   1R5 100k

1R8 2k7

GND

1RJ ?

1	VSS	DRV	22
20	VDD5	LED1	23
		LED2	24
2	XOUT		
3	XIN		
27	TESTJ		
26	OVCJ		
25	PWRJ		
19	BUSJ		
18	VBUSM	DP1	11
17	XRSTJ	DM1	10
14	REXT		
12	VD18_O	DP2	9
28	VD18	DM2	8
21	VD33_O	DP3	7
13	VD33	DM3	6
15	DMU	DP4	5
16	DPU	DM4	4

FE1.1s

HL1 HL3   1R9 1k
HL2 HL4   1R10 1k

RD+ 1R11 10
RD-

GND 1R12 10

1X2 USB USB_TYPE_A_FEMALE_TH

VUSBH

F2 MF-MSMF050-2 500mA

UU+
UU-

CR+
CR- PINS

1C10 100n
GND

USB-TTL

pin 4 to +5V
pin 6 to +5V
R1, R2, R6-R10 not

J HW не нужен
1R6 для J HW

tx = out

2C1 20   2Z1 12MHz
2C2 20
GND

2D1

28	OSC2	TXD	1
27	OSC1	DTR_N	2
26	PLL_TEST	RTS_N	3
25	GND_A	VDD_325	4
24	VDD_33A	RXD	5
23	GP1	RI_N	6
22	GP0	GND	7
21	GND	VDD_33	8
20	VDD_5	DSR_N	9
19	RESET_N	DCD_N	10
18	GND	CTS_N	11
17	VO_33	SHTD_N	12
16	DM	EE_CLK	13
15	DP	EE_DATA	14

PL-2303XA

2R2 220k
2R3 220k
+5V

2R1 100
UU-
UU+
2R8 100

2R4 1.5k

TX_USB
RESET8535 JR2
MOSI8535   JO2
SCK8535   JS2
RX_USB

2R5 220k
2R6 220k

MISO8535 JI2
2R7 220k

2C3 100n
GND

+5V

2C4 10mf   2C5 1mf

GND

2R9   2R10

2D2

VCC 8
SCL 6
WP   7
SDA 5
A2   3
A1   2
A0   1
GND 4

Array EEPROM
24C02CP

GND

DC5V-DC12V

orig 3R1 4e7

3L2 100uh

3R6 0.5-1
3R5 220

+5V

3C6 100n

5D3 MC34063AD

8	DC	SWC	1
7	IS	SWE	2
6	VCC	TC	3
5	FB	GND	4

3VD2 SS12
+12V

3C7 1n
GND

3R7 20k

3R8 2k2

3C9 100μ 16V
3C10 100n

3C8 470μ / 10V

GND   GND   GND

RESET8535

5D1 MEGA8535-A

Z3
7,3728MHz

1C20 33p
1C21 33p
GND

4 RESET
7 XTAL2
8 XTAL1

29 AREF
27 AVCC
28 GND
17 VCC
5
38
18 GND
6
39
GND

30 (ADC7)PA7
31 (ADC6)PA6
32 (ADC5)PA5
33 (ADC4)PA4
34 (ADC3)PA3
35 (ADC2)PA2
36 (ADC1)PA1
37 (ADC0)PA0

3 (SCK)PB7   SCK8535
2 (MISO)PB6   MISO8535
1 (MOSI)PB5   MOSI8535
44 (SS)PB4   D4
43 (AIN1/OC0)PB3 D3
42 (AIN0/INT2)PB2 D2
41 (T1)PB1   D1
40 (T0/XCK)PB0 D0

26 (TOSC2)PC7 PPC7(PAGEL)
25 (TOSC1)PC6 PPC6(XA1)
24 PC5   PPC5(XA0)
23 PC4   PPC4(BS1)
22 PC3   PPC3(WR)
21 PC2   PPC2(OE)
20 PC1(SDA)   PPC1(RB)
19 PC0(SCL)   PPC0(BS2)

16 (OC2)PD7   PD7
15 (ICP)PD6
14 (OC1A)PD5 PD5
13 (OC1B)PD4
12 (INT1)PD3 High Voltage Enable
11 (INT0)PD2 PD2
10 (TXD)PD1
9 (RXD)PD0

HW1
1
2

J6 N$37 1 2 TX_AVR
J5 N$41 1 2 RX_AVR

1R35 36k
1R33 1k5
1R34 1k5
READY
green

LED red
GND

5D2
9 SER 10
A
B 11
C 12
D 13
E 14
F 3
G 4
H 5
6
QH
7 QH

CLK 2
INH 15
SH/LD 1
74HC165D

1R37 10k
1R38 10k
1R39 47k
5D2P
1C19 100n

16 VCC
8 GND

T_RESET
1
2
Target Reset

JX1 GND
4VT6 IRML2502
n-ch
PD7
4R10 1k
SWCLK(XTAL1)

JV1
p-ch
4VT5 IRML6402
VTG

+5V
4R6 1.5k
4R9 2k2
4C2 10n
PD5
4R8 2k2
4VT4 BC847
4R7 10k
GND
GND

+12V +5V
1R31 10k
1VT5 BC857
1R30 10k
1R40 2k
HW yellow

1VD3 SB130

1R29 10k
1VT4 BC847
1R42 22k
GND
J HW не нужен
1R6 для J HW

1R32 1k
TRST(RESET)
HW(reset=+12v)
PD2
1R28 10k
1VT6 BC847
GND

pin 4 to +5V
pin 6 to +5V
R1, R2, R6-R10 not

UART
LED / STK500

DISK ON & STK500 ON

JUMPER
1 2 none 2 3
ISP ON HVPP

12 5D5D 11
13
4011D

+5V
5D6P 5D5P 5D4P
20 VCC 14 VDD 20 VCC
10 GND 7 VSS 10 GND
GND

+5V
D3 LL4148
1R15 10k
JP2
1 2 3
ISP_EN
GND
1R16 10k
D2 LL4148
HVPP_EN
LED/STK500

TX_USB
JR 1 2
RX_STK500
RX_LED
8 5D5C 10
9
4011D

JT 1 2
5D6A 5D6B
2 A1 Y1 18
4 A2 Y2 16
6 A3 Y3 14
8 A4 Y4 12
1 G
11 A1 Y1 9
13 A2 Y2 7
15 A3 Y3 5
17 A4 Y4 3
19 G
74HC244DW
TX_STK500
RX_USB
TX_LED

SCK8535
MISO8535
MOSI8535

OutEnable=0
32u4 >> 8535
OutEnable=1
8535 >> 32u4

ISP_EN
D6 LL4148
D10 LL4148
1 5D5A 3
2
4011D
PPC2(OE)
D7 LL4148
D8 LL4148
D11 LL4148
5 5D5B 4
6
4011D
HVPP_EN
D9 LL4148

UPB7
UPB6
UPB5

1R14 10k
19
5D4A 74HC244DW
2 A1 Y1 18
4 A2 Y2 16
6 A3 Y3 14
8 A4 Y4 12
1 G

5D4B 74HC244DW
19 G
17 A4 Y4 3
16 A3 Y3 5
13 A2 Y2 7
11 A1 Y1 9

1R17 10k
GND

+5V

1R41
10k

1C23
100n

P_RESET

2
1

1C22
100n

GND

JP1

1
2
3

TRST(RESET)

Selfprogramming

+5V

1C24
100n

RESET(P)
SCK8535

MISO8535

5
3
1

ISP1

6
4
2

GND

MOSI8535
VTG

TRST(RESET)

RES1-0R

RESET(P)
RESET8535