gizDuino X |e

Hardware Reference Manual

USB Port for Uploading Program

Compatible Shields Pin Port

Power Indicator

External Power Supply Port (8-12V)

Compatible Shields Pin Port

Extended I/O Port

JP3 — AREF GND 13 12 11 10 9 8 | SPI | 7 6 5 4 3 2 1 0 TX0 RX0 — JP4 | PWM

JP9 — JP7 — RI DSR DCD CTS — JP8 +5V +5V 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 GND GND

Fuse — F1

U3 PL-2303 Serial TTL - USB Converter Chip

RESET-EN — Reset Enable Jamming Port

S1 — Reset Button

PWR LED1

Q2

7805 U2

U5

C5

C4

D1

JP5

ATmega MCU U1

JP6

ICSP Programming Header

Y1

Status Indicator — LED2

POWER — JP1 Reset +3.3V +5V GND GND VIN

ANALOG IN — JP2 A0 A1 A2 A3 A4 A5 A6 A7

gizDuino X is the latest addition to our growing family of Arduino compatible controllers. It is based on an ATMEGA1281 MCU, a family member of the ATMEGA1280 used in Arduino Mega board. This kit offers 54 I/Os, 1 hardware SPI, 2- hardware UART, not to mention its large memory capacities: 128K FLASH, 8K SRAM, and 4K EEPROM. Other hardware peripherals additions inherited from ATMEGA1281 chip includes 3 additional timers, 10 additional timer OCR, 1 additional ICR, and 2 additional PWMs.

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Pin Assignments
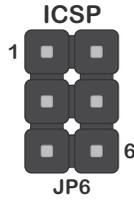
ICSP

Table 1. ICSP programming port pins (JP6)

Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
1	PDO	3	PE1(TXD0/PDO)
2	+5V Operating Voltage	VCC	VCC
3	SCK	11	(SCK/PCINT1)PB1
4	PDI	2	PE0(RXD0/PCINT8/PDI)
5	RST	20	Reset
6	Ground	GND	GND
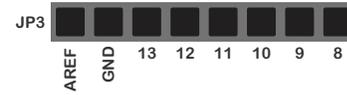
Table 4. Digital I/O & PWM Pins (JP3)

Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
AREF	analog reference pin for the A/D Converter.	-	-
GND	Ground	-	-
13	(SCK)	11	(SCK/PCINT1)PB1
12	(MISO)	13	(MISO/PCINT3)PB3
11	(MOSI)	12	(MOSI/PCINT2)PB2
10	(SS)	10	(SS/PCINT0)PB0
9	PWM OUT / Digital I/O	15	(OC1A/PCINT5)PB5
8	PWM OUT / Digital I/O	14	(OC2A/PCINT4)PB4
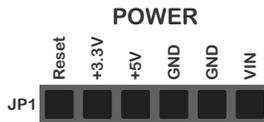
POWER

Table 2. Power Pins (JP1)

Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
RST	Reset	20	RESET
+5V	+5V device supply / Output Voltage	Regulator	-
+5V	+5V device supply / Output Voltage	Regulator	-
GND	Ground	Regulator	-
GND	Ground	Regulator	-

Table 4. Digital I/O & PWM Pins (JP4)

Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
7	PWM OUT / Digital I/O	17	(OC0A/OC1C/PCINT7)PB7
6	PWM OUT / Digital I/O	16	(OC1B/PCINT6)PB6
5	PWM OUT / Digital I/O	5	PE3(OC3A/AIN1)
4	PWM OUT / Digital I/O	1	PG5(OC0B)
3	PWM OUT / Digital I/O	7	PE5(OC3B/INT5)
2	PWM OUT / Digital I/O	6	PE4(OC3B/INT4)
1	TX / Digital I/O	3	PE1(TXD0/PDO)
0	RX / Digital I/O	2	PE0(RXD0/PCINT8/PDI)

ANALOG IN

Table 3. Analog Input Pins (JP2)

Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
A0	Analog Input / Digital I/O	61	PF0(ADC0)
A1	Analog Input / Digital I/O	60	PF1(ADC1)
A2	Analog Input / Digital I/O	59	PF2(ADC2)
A3	Analog Input / Digital I/O	58	PF3(ADC3)
A4	Analog Input / Digital I/O	57	PF4(ADC4)
A5	Analog Input / Digital I/O	56	PF5(ADC5)
A6	Analog Input / Digital I/O	55	PF6(ADC6)
A7	Analog Input / Digital I/O	54	PF7(ADC7)

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Pin Assignments Additional I/O Port

```
        JP8
+5V  ▪ ▪  +5V
45   ▪ ▪  44
43   ▪ ▪  42
41   ▪ ▪  40
39   ▪ ▪  38
37   ▪ ▪  36
35   ▪ ▪  34
33   ▪ ▪  32
31   ▪ ▪  30
29   ▪ ▪  28
27   ▪ ▪  26
25   ▪ ▪  24
23   ▪ ▪  22
21   ▪ ▪  20
19   ▪ ▪  18
17   ▪ ▪  16
15   ▪ ▪  14
GND  ▪ ▪  GND
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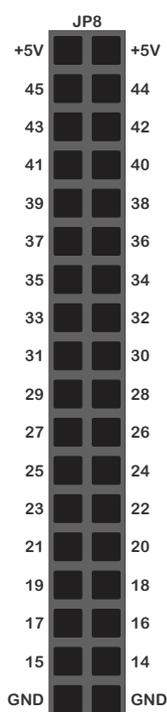
Table 6. *Additional I/O Pins (JP8)*

| Pin I.D.	gizDuino X Designation	IC Pin	IC Pin Function
GND	GND	-	-
GND	GND	-	-
14	PD7	32	(T0)PD7
15	PD6	31	(T1)PD6
16	PD5	30	(XCK1)PD5
17	PD4	29	(ICP1)PD4
18/TX1	PD3	28	(TXD1/INT3)PD3
19/RX1	PD2	27	(RXD1/INT2)PD2
20/SDA	PD1	26	(SDA/INT1)PD1
21/SCL	PD0	25	(SCL/INT0)PD0
22	PA0	51	(AD0)PA0
23	PA1	50	(AD1)PA1
24	PA2	49	(AD2)PA2
25	PA3	48	(AD3)PA3
26	PA4	47	(AD4)PA4
27	PA5	46	(AD5)PA5
28	PA6	45	(AD6)PA6
29	PA7	44	(AD7)PA7
30	PC0	35	(A8)PC0
31	PC1	36	(A9)PC1
32	PC2	37	(A10)PC2
33	PC3	38	(A11)PC3
34	PC4	39	(A12)PC4
35	PC5	40	(A13)PC5
36	PC6	41	(A14)PC6
37	PC7	42	(A15)PC7
38	PG3	18	PG3(TOSC2)
39	PG2	43	PG2(ALE)
40	PG1	34	PG1(WR)
41	PG0	33	PG0(RD)
42	PG4	19	PG4(TOSC1)
43	PE2	4	PE2(XCK0/AIN0)
44	PE6	8	PE6(T3/INT6)
45	PE7	9	PE7(ICP3/CLKO/INT7)
+5V	+5V device supply / Output Voltage	-	-
+5V	+5V device supply / Output Voltage	-	-

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Schematic Diagram
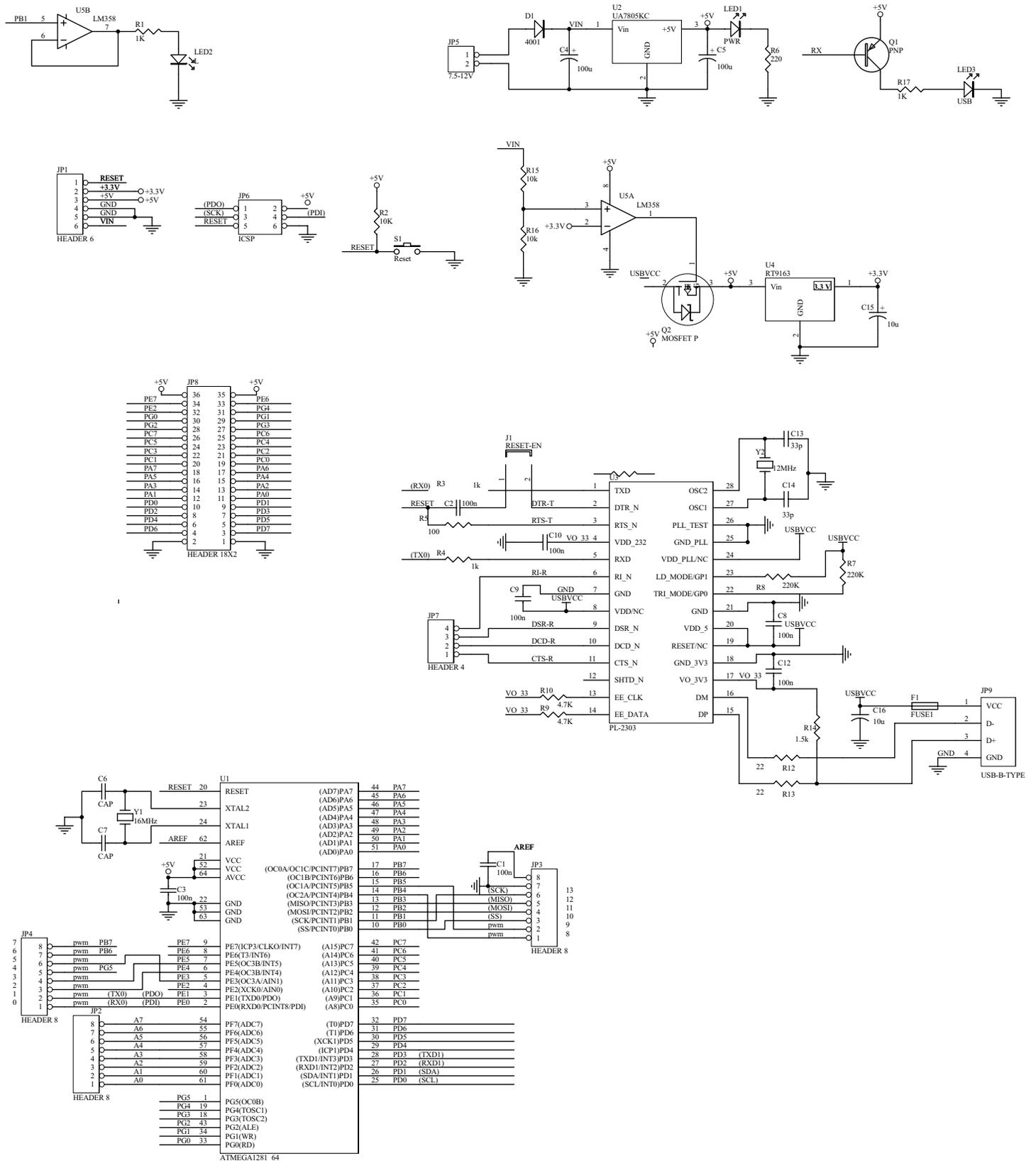
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PCB Presentation
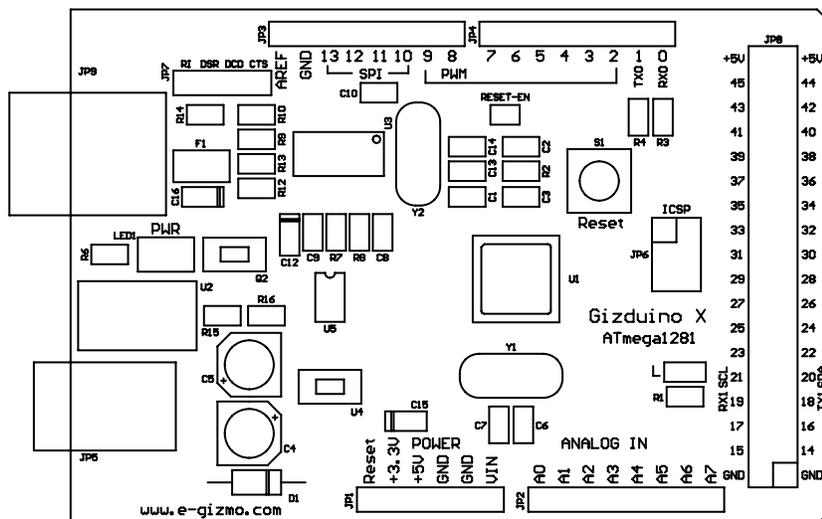
*gizDuino X Silk Screen Layout*
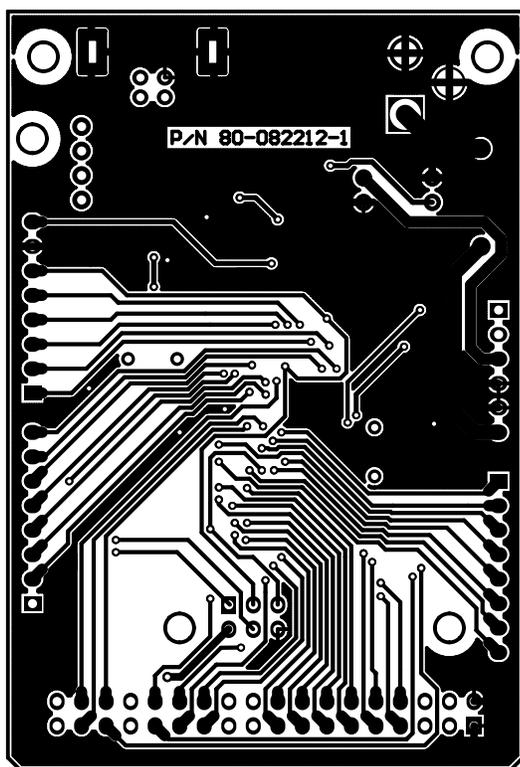
Copper Pattern Layout (Bottom layer)
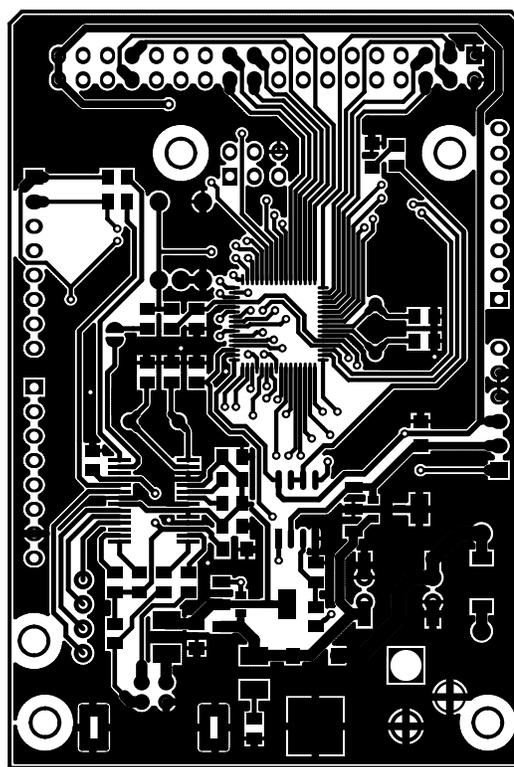
Copper Pattern Layout (Top layer)