ITead Studio
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IBoard Ex

-Ethernet Development Platform Based On Arduino

Overview

The Iboard Ex is a unique Arduino board which features a WIZnet Ethernet port with POE, an XBee socket, nRF24L01+ module interface, Micro SD socket and an ATMEGA32U4. This board will add wireless XBee control as well as internet connectivity to your projects. And don't need any external programmer, just connect it with PC by a USB cable. It's great for anything from home automation to robot control. The possibilities are endless!
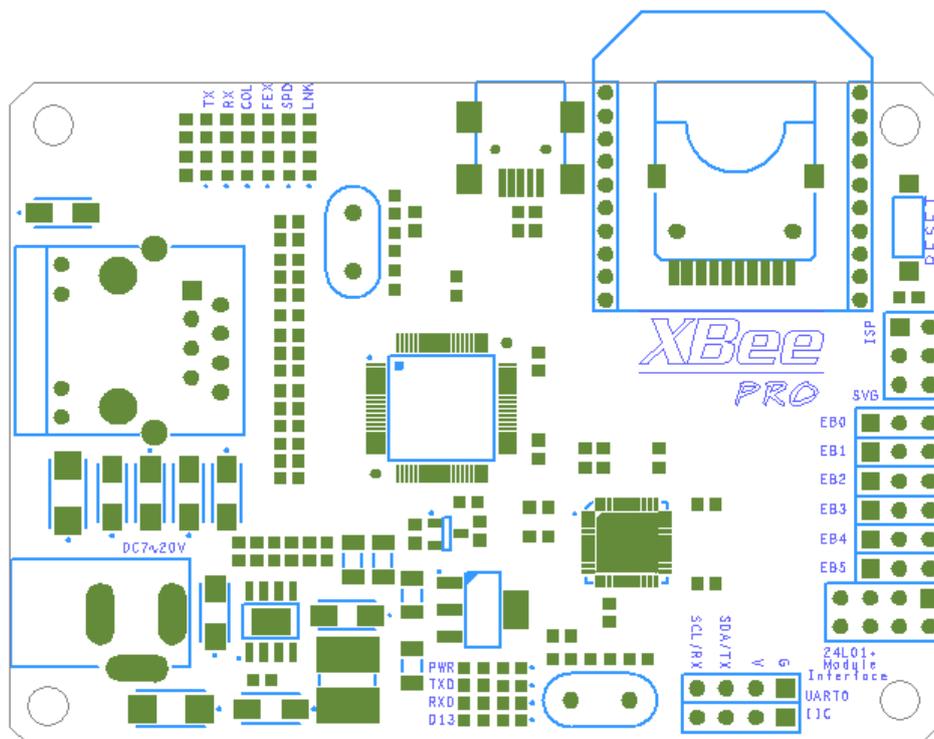
Specifications

PCB size	80.77mm X 57.66mm X 1.6mm
Power supply	7~23V DC
POE supply	7~23V
Microprocessor	Atmega32u4
Indicators	PWR, Tx, Rx, COL, FDX, SPD, LINK,TEST
Communication Interface	Ethernet RJ45,XBee,nRF24L01+,UART,IIC
RoHS	Yes

Electrical Characteristics

Specification		Min	Type	Max	Unit
Power Voltage		7	–	23	VDC
Input Voltage VH	Target Voltage = 3.3V	3	3.3	3.6	V
Input Voltage VL:		−0.3	0	0.5	V
Current Consumption		–	100	500	mA

Hardware

Top View Map

Ethernet RJ45 with POE, Micro-SD Socket, XBee interface, nRF24L01+ interface, analog/digital electronic brick interfaces and so on, many interfaces are designed and broke out for many projects as Ethernet communication, wireless communication, mass storage, digital control and signal sample.

Pin Map

ITDB02 EB Interface

Index of Interface	Name of Interface	Index of Arduino	Pin of Atmega32U4
1	EB0	A0	PF7
2	EB1	A1	PF6
3	EB2	A2	PF5
4	EB3	A3	PF4
5	EB4	A4	PF1
6	EB5	A5	PF0

nRF24L01+ Module Interface

Index of Interface	Name of Interface	Index of Arduino	Pin of Atmega32U4
1	GND	–	–
2	3V3	–	–
3	CE	D5	PC6
4	CS	D9	PB5
5	SCK	D13	PC7
6	MOSI	D8	PB4
7	MISO	D7	PE6
8	IRQ	D6	PD7

Micro SD Socket

Index of Interface	Name of Interface	Index of Arduino	Pin of Atmega32U4
2	SD_CS	D4	PD4
3	SD_MOSI	D16	PB2
4	3V3	–	–
5	SD_SCK	D15	PB1
6	GND	–	–
7	SD_MISO	D14	PB3

W5100 Communication Interface

Index of Interface	Name of Interface	Index of Arduino	Pin of Atmega32U4
1	W5100_CS	D10	PB6
2	SD_MOSI	D16	PB2
3	SD_SCK	D15	PB1
4	SD_MISO	D14	PB3
5	W5100_RESET	D11	PB7

Xbee Communication Interface

Index of Interface	Name of Interface	Index of Arduino	Pin of Atmega32U4
1	XBee_Reset	D12	PD6
2	RX	D0	PD2
3	TX	D1	PD3

Software

IBoard Ex is used the ATmega32U4, and compatible with Arduino Leonardo. Now the SD and Ethernet library is not support well with Arduino Leonardo, so when you use the IBoard Ex with these libraries, you need to modify something to make the code work.

With embedded bootloader, IBoard Ex is easy to use by Arduino IDE through USB, and chooses the selection of the "Board" menu with "Arduino Leonardo". ISP of Atmega32U4 is broke out for download firmware easily.

Revision History

Rev.	Description	Release date
v1.0	Initial version	2012-09-03
v1.1	Fix some typo	2012-11-1