1. General description

The Ethernet Shield allows an Arduino board to connect to the internet. It is based on the Wiznet W5100 ethernet chip (datasheet). The Wiznet W5100 provides a network (IP) stack capable of both TCP and UDP. It supports up to four simultaneous socket connections. Use the Ethernet library to write sketches which connect to the internet using the shield. The ethernet shield connects to an Arduino board using long wire-wrap headers which extend through the shield. This keeps the pin layout intact and allows another shield to be stacked on top.

The most recent revision of the board exposes the 1.0 pinout on rev 3 of the Freaduino UNO board.The Ethernet Shield has a standard RJ-45 connection, with an integrated line transformer and Power over Ethernet enabled. There is an onboard micro-SD card slot, which can be used to store files for serving over the network. It is compatible with the Arduino Uno and Mega (using the Ethernet library). The onboard microSD card reader is accessible through the SD Library. When working with this library, SS is on Pin 4.The shield also includes a reset controller, to ensure that the W5100 Ethernet module is properly reset on power-up.

Arduino communicates with both the W5100 and SD card using the SPI bus (through the ICSP header). This is on digital pins 11, 12, and 13 on the Duemilanove and pins 50, 51, and 52 on the Mega. On both boards, pin 10 is used to select the W5100 and pin 4 for the SD card. These pins cannot be used for general i/o. On the Mega, the hardware SS pin, 53, is not used to select either the W5100 or the SD card, but it must be kept as an output or the SPI interface won't work.

Note：Ethernet_Shield Micro SD can only support 2GB memory card

2. Features

- Standard Arduino and Arduino Mega compatible
- Ethernet：WIZ5100
- Standard RJ45 Ethernet interface
- Arduino Ethernet Library compatible
- Support Micro SD Card（no more than 2GB）
- Arduino/ Freaduino/Mega fully compatible
- Easy to access reset button
- Up to 4 TCP/UDP network connections
- SD Card IO CS:D4 ;MOSI:D11;SCK:D13;MISO:D12
- Operating voltage：DC5-12V
- Dimension：78mmx53.5m

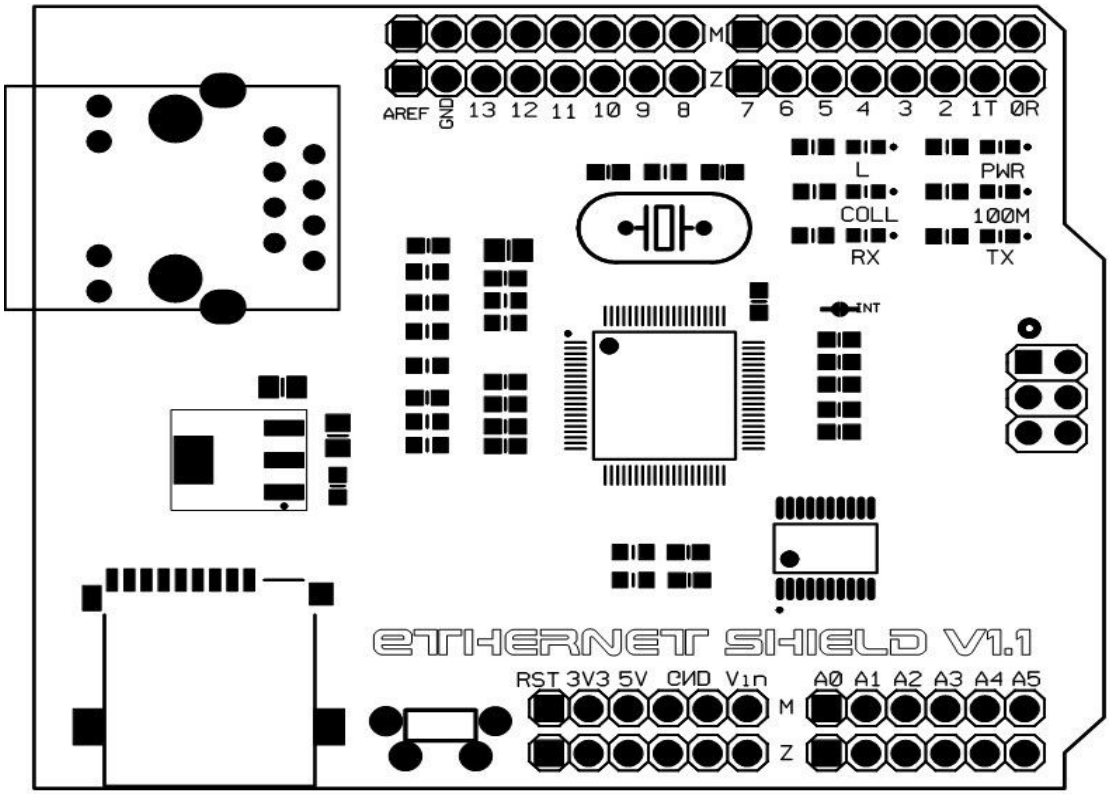
3. Applications

- Smart home
- Engineering control

4. Electronic characteristics

PARAMETER	MIN	TYP	MAX	UNIT
Power supply voltage	5	-	12	V
Power supply current	1.5	100	2000	mA
HIGH level input voltage	3	3.3	3.6	V
LOW level input voltage	-0.3	0	0.5	V

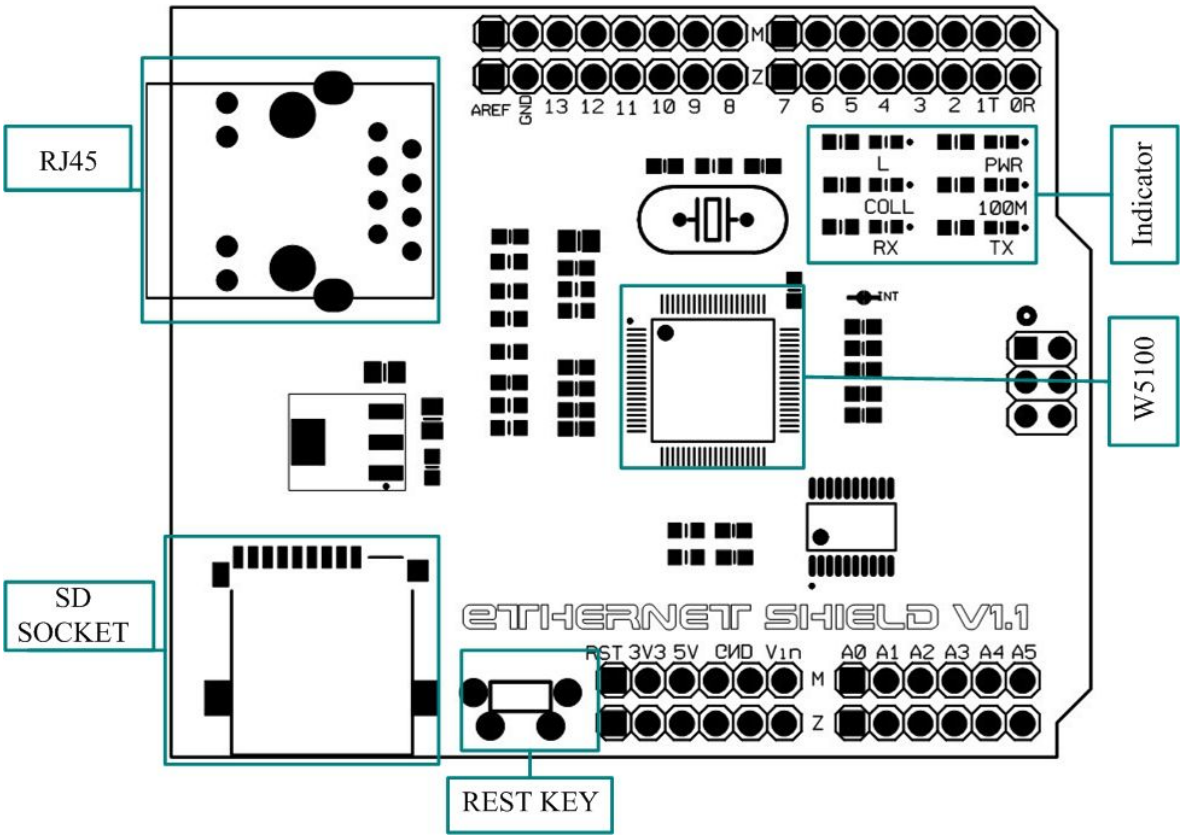
5. Pining information



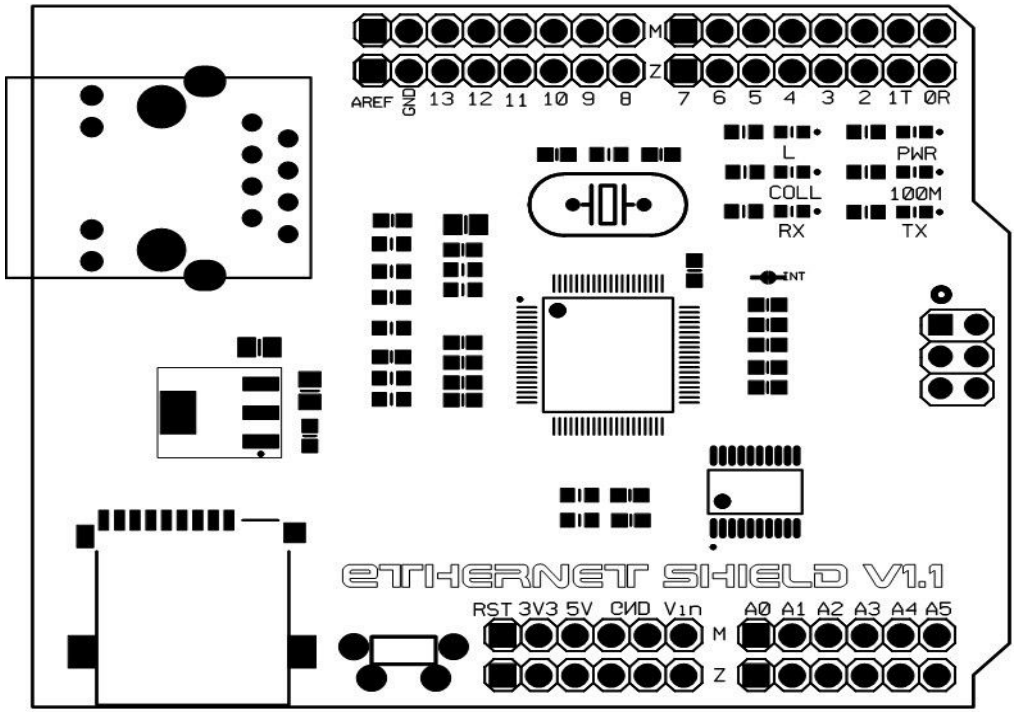
Types	Symbol	Description
	D0	Communication Pin RX
	D1	Communication Pin TX
	D2	Connect to W5100 INT pin
	D3	Arduino Digital Port D3
	D4	SD Card chip select
	D5	Arduino Digital Port D5
	D6	Arduino Digital Port D6
	D7	Arduino Digital Port D7
	D8	Arduino Digital Port D8
Arduino pin	D9	Arduino Digital Port D9
	D10	SPI Bus EN Signal Port
	D11	SPI Bus MOSI Data Input Port
	D12	SPI Bus MISO Data Output Port
	D13	SPI Bus Clock Signal Port
	A0	Arduino Analog Port A0
	A1	Arduino Analog Port A1

Types	Symbol	Description
	A2	Arduino Analog Port A2
	A3	Arduino Analog Port A3
	A4	Arduino Analog Port A4
	A5	Arduino Analog Port A5
	RST	Mainboard Reset connect to W5100 Reset Port
	AREF	Arduino AREF
	VIN	Adapter input power supply
	GND	Power Ground
	5V	5V voltage provided by the mainboard

6. Interface description



7. Dimension outline



8. Revision history

REVISION	DESCRIPTION	RELEASE DATE
V1.1	Initial version	6/13/2013

9. Contact information

For more information, please visit: http://www.elecfreaks.com
For sales office addresses, please send an email to: service@elecfreaks.com