

Ethernet Shield W5100 Compatible With Arduino



The Arduino Ethernet Shield allows an Arduino board to connect to the internet. It is based on the Wiznet W5100 ethernet chip. The Wiznet W5100 provides a network (IP) stack capable of both TCP and UDP. The Ethernet W5100 Shield Network Expansion Board w/ Micro SD Card Slot 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 Arduino UNO board. This Ethernet Shield connects the UNO R3 board to the internet in mere minutes. Just plug this module onto your Arduino board, connect it to your network with an RJ45 cable (not included) and follow a few simple instructions to start controlling your world through the internet. allows you to connect your Arduino UNO 328 **or** MEGA 2650 1280 to a network or the internet AND retrieve or store files on a Micro SD Card!

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 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 original revision of the shield contained a full-size SD card slot; this is not supported.

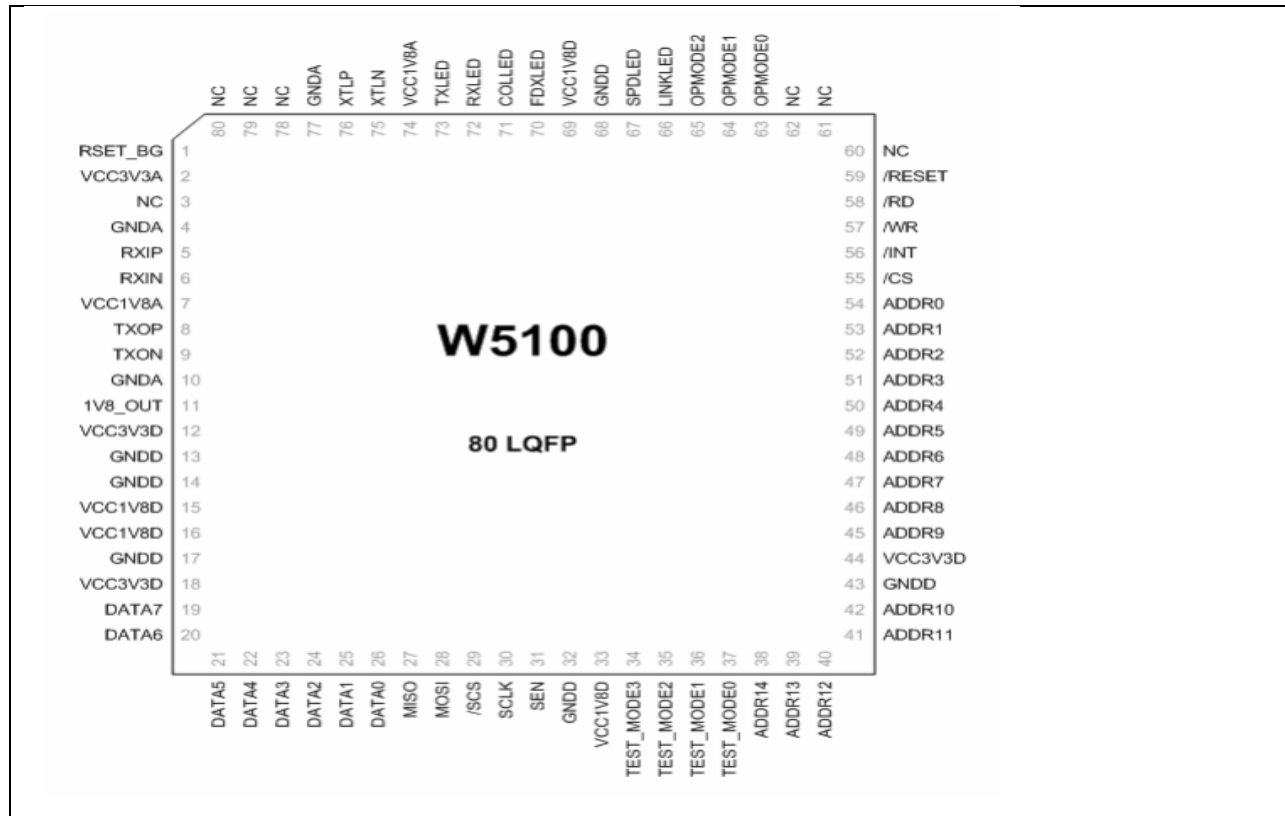
The shield also includes a reset controller, to ensure that the W5100 Ethernet module is properly reset on power-up. Previous revisions of the shield were not compatible with the Mega and need to be manually reset after power-up.

This module is compatible with following Arduino versions:
Arduino UNO
Arduino MEGA

SPECIFICATIONS:

- With this Ethernet Shield, with Arduino board can be used to connect to internet.
- Can be used as server or client.
- Directly plug puzzle board, no soldering required.
- Controller: W5100.
- This is the latest version of the Ethernet Shield.
- This For Arduino Ethernet Shield which is based on the Wiznet W5100 Ethernet Chip gives you an easy way to Arduino Online.
- It is directly supported by Arduino official Ethernet Library.
- Connection Speed: 10/100Mb
- It adds a micro-SD card slot, which can be used to store files for serving over the network.
- It is compatible with Arduino Duemilanove (168 or 328), Uno as well as Mega (1280/2560) and can be accessed using the SD library.
- 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.
- Fits all version of arduino Main board,2009,UNO, mega 1280, mega 2560.
- Size:7cm x 5.4cm x 2.4cm - 2.76inch x 2.12inch x 0.94inch.
- Address: 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED byte [] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED };

PIN ASSIGNMENT :



DEVICE OPERATION:

The W5100 is controlled by a set of instruction that is sent from a host controller, commonly referred to as the SPI Master. The SPI Master communicates with W5100 via the SPI bus which is composed of four signal lines: Slave Select (/SS), Serial Clock(SCLK), MOSI(Master Out Slave In), MISO(Master In Slave Out). The SPI protocol defines four modes for its operation (Mode 0, 1, 2, 3). Each mode differs according to the SCLK polarity and phase - how the polarity and phase control the flow of data on the SPI bus. The W5100 operates as SPI Slave device and supports the most common modes - SPI Mode 0 and 3. The only difference between SPI Mode 0 and 3 is the polarity of the SCLK signal at the inactive state. With SPI Mode 0 and 3, data is always latched in on the rising edge of SCLK and always output on the falling edge of SCLK.

ELECTRICAL SPECIFICATIONS:

ABSOLUTE MAXIMUM RATING:

Symbol	Parameter	Rating	Unit
VDD	DC Supply Voltage	-0.5 to 3.6	V
Vin	DC Input Voltage	-0.5to5.5 (5V tolerant)	V
IIN	DC Input Current	±5	Ma
Top	Operating temperature	-40 to 85	°C
TSTG	Storage temperature	-55 to 125	°C

DC CHARACTERISTICS:

Symbol	Parameter	Test Condition	Min	Max	Unit
VDD	DC Supply voltage	Junction temperature is from -55 °C to 125 °C	3.0	3.6	V
VIH	High level input voltage		2.0	5.5	V
VIL	Low level input voltage		-0.5	0.8	V
VOH	High level output voltage	IOH= 2,4,6,12,16,24MA	2.0	3.6	V
VOL	Low level output voltage	IOL= -2,-4,-8,-12,-16,-24MA	0.0	0.4	V
II	Input current	VIN=VDD		±5	µA

POWER DISSIPATION:

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
P10Base	Power consumption in 10BaseT	Vcc 3.3V Temperature 25°C	-	138	183	mA
P100Base	Power consumption in 100BaseT	Vcc 3.3V Temperature 25°C	-	146	183	mA

LED AND INDICATION:

1. PWR: Board is powered
2. LINK: the presence of network and flashes when transmits or receives data
3. 100M: the presence of 100Mb/s network connection
4. FULLD: a network connection is a full duplex
5. COLL: flashes on detection of network collision
6. RX: flashes when receives data
7. TX: flashes when transmits data