W6100 Ethernet Shield Datasheet
Version 1.0

Included W6100 MKR-Ethernet Shield
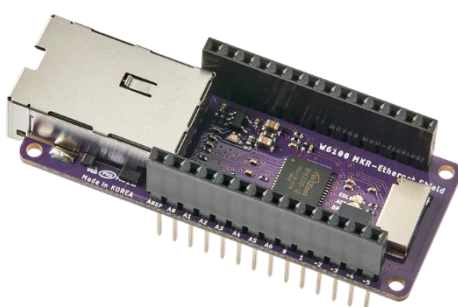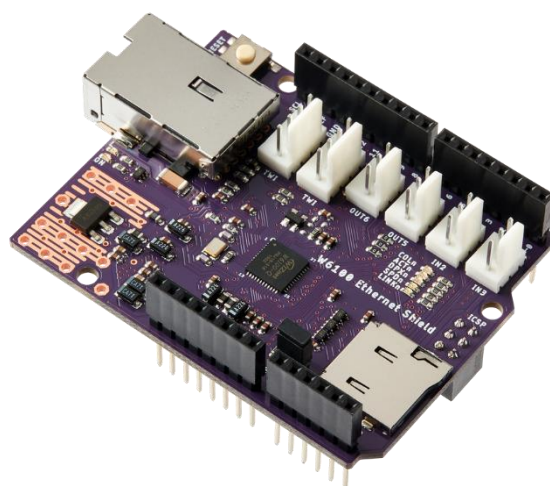
Table of Contents

1. Overview

W6100 Ethernet Shield is based on W6100. For more information about W6100, please visit W6100 Datasheet. This Ethernet Shield can be used on boards with an Arduino Pin Header Form factor. W6100 suits users in need of stable Internet Connectivity best, using a single chip to implement TCP/IP Dual Stack, 10/100 Ethernet MAC and PHY. Hardwired TCP/IP Stack supports TCP, UDP, IPv4, IPv6, ICMP, ARP, IGMP, and PPPoE etc which has been proven through various Applications over many years.

- Arduino Platform
- Others Arduino Pin-Compatible Boards
  - ARM mbed Platform

2. Features

- Operation Voltage DC5V or DC3.3V
  - Signals (SPI) Voltage 3.3V

- Included W6100 of WIZnet

- SPI Interface

- 10/100 Ethernet PHY embedded

- Hardware TCP/IP Protocols
  - TCP, UDP, IPv6, IPv4, ICMPv6, ICMPv4, IGMP, MLDv1, ARP, PPPoE

- **Support IPv4/IPv6 Dual Stack**

- Support 8 independent SOCKETs simultaneously with 32KB Memory

- Support SOCKET-less Command: ARP, PING, ICMPv6(PING, ARP, DAD, NA, RS) Command for IPv6 Auto-configuration& Network Monitoring

- Support Auto Negotiation
  - Full / Half Duplex
  - 10/ 100 Based

- Support Micro SD Card slot for storage

- Low height RJ45

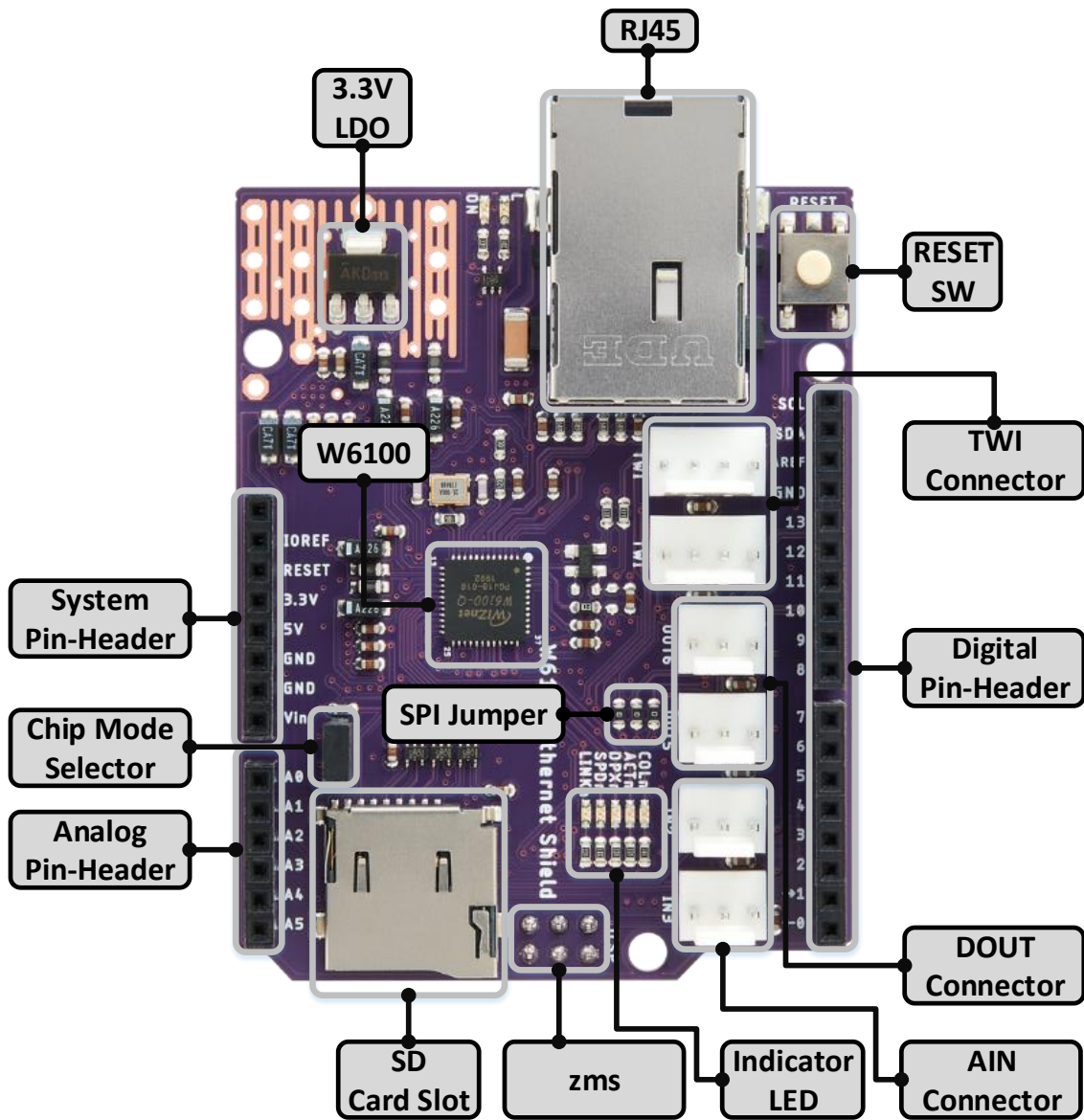# 3. Hardware Specification

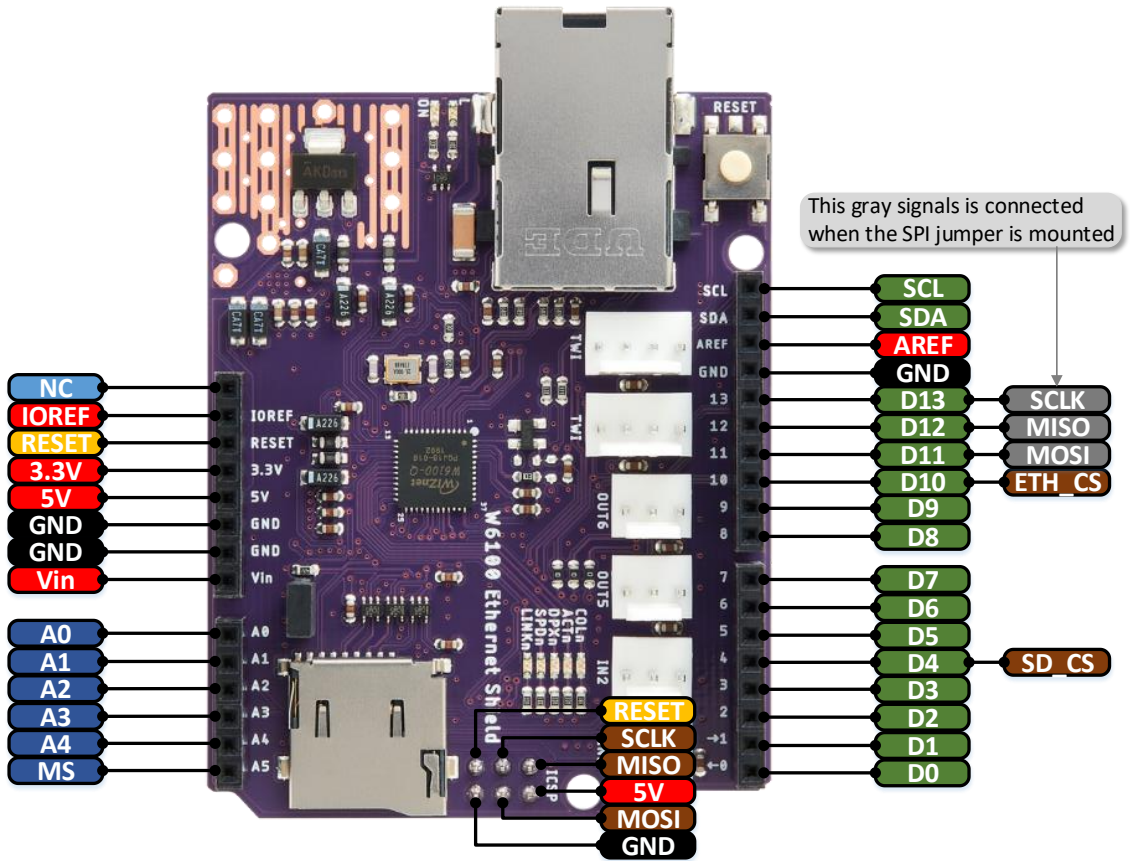## 3.1. Call-out & Pin-out

Figure 1. W6100 Ethernet Shield Call-out

Figure 2. W6100 Ethernet Shield Pin-out

The labels visible in the figure:

This gray signals is connected when the SPI jumper is mounted

Left column: NC, IOREF, RESET, 3.3V, 5V, GND, GND, Vin, A0, A1, A2, A3, A4, MS

Right column: SCL, SDA, AREF, GND, D13 (SCLK), D12 (MISO), D11 (MOSI), D10 (ETH_CS), D9, D8, D7, D6, D5, D4 (SD_CS), D3, D2, D1, D0

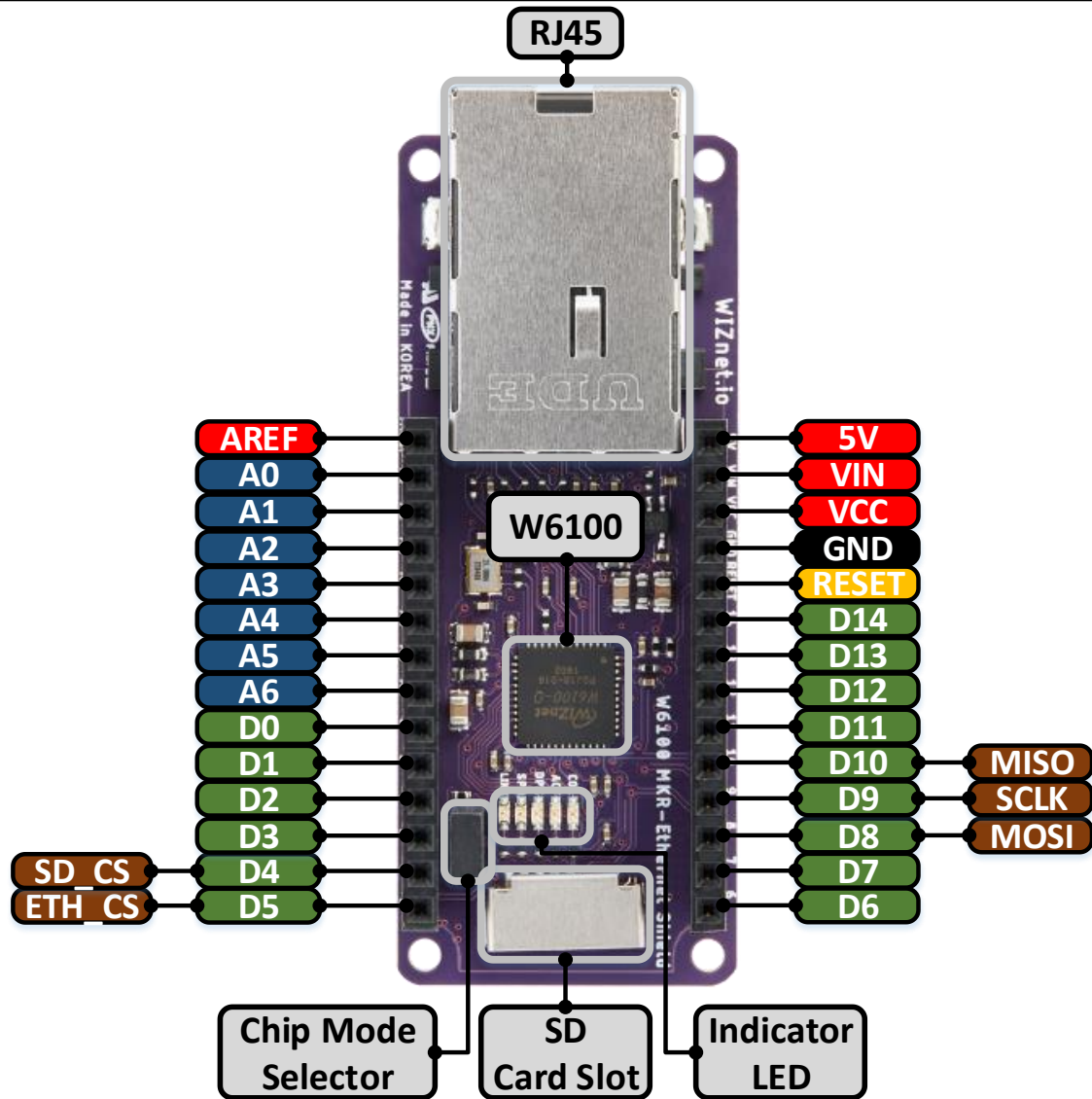ICSP: RESET, SCLK, MISO, 5V, MOSI, GND

Figure 3. W6100 MKR-Ethernet Shield Call-out & Pin-out

4. Board Configuration

4.1. Chip Mode Selector

- Short: SPI frame is W6100 mode (**default**)
- Open: SPI frame is W5500 mode

4.2. SPI Jumper (Only W6100 Ethernet Shield)

- Mount: SPI signals is connected to D11(MOSI), D12(MISO), D13(SCLK) and ICSP connector. (**default**)
- Not mount: SPI signals is connected to only ICSP connector.

5. Technical Reference

5.1. W6100S Datasheet

- http://wizwiki.net/wiki/doku.php?id=products:w6100:start

5.2. Hardware data (Schematic, Part list, Gerber)

- W6100 Ethernet Shield
  - https://github.com/Wiznet/Hardware-Files-of-WIZnet/tree/master/08_OSHW/W5100S%20Ethernet%20Shiel
- W6100 MKR-Ethernet Shield
  - https://github.com/Wiznet/Hardware-Files-of-WIZnet/tree/master/08_OSHW/W6100%20MKR-Ethernet%20Shield
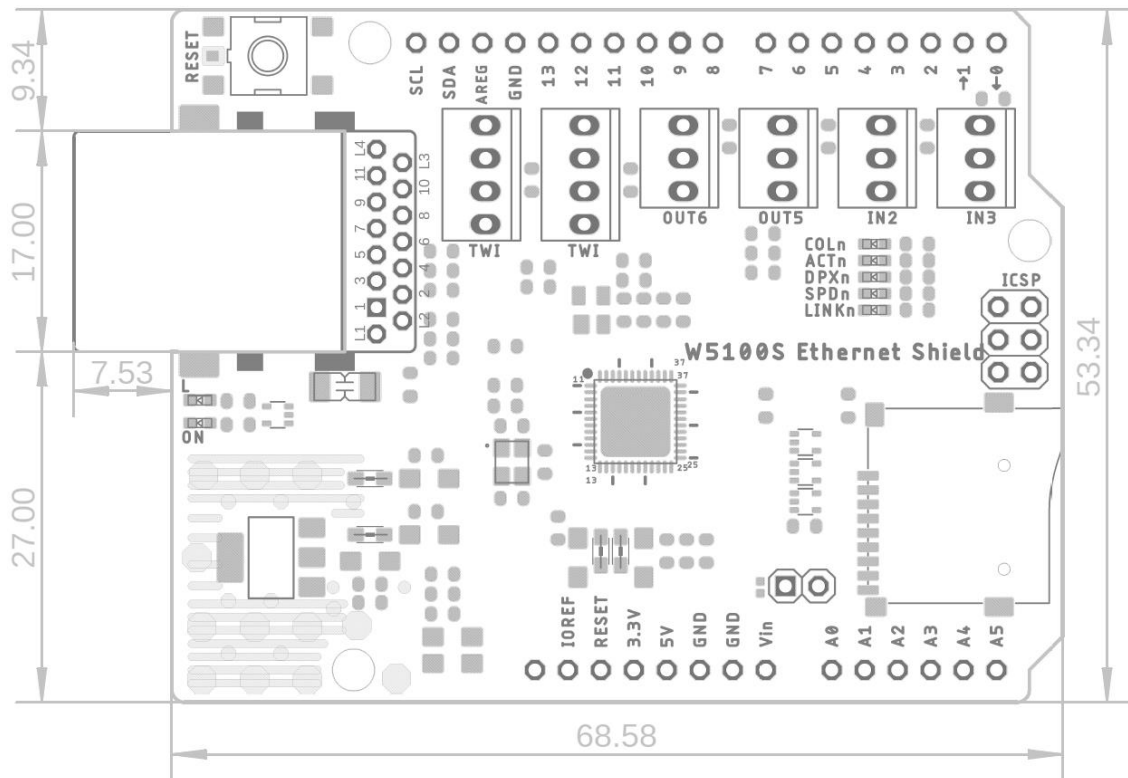
5.3. Dimension

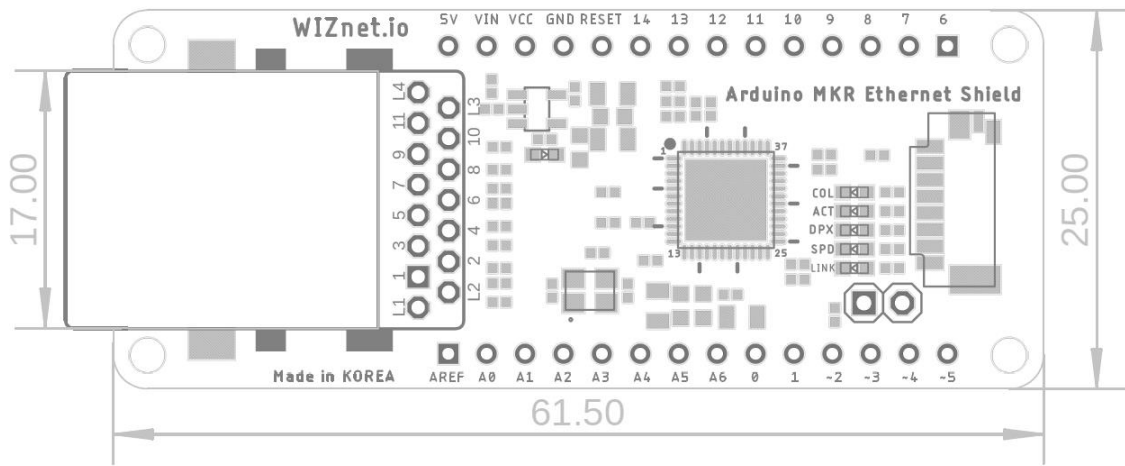**Figure 4. W6100 Ethernet Shield Dimension**

Figure 5. W6100 MKR-Ethernet Shield Dimension

Document Revision History

Date	Revision	Changes
2019-02-26	V1.0	Initial Release

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