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# Overview

IPRAW is the type of data communication that uses IP layer, which is the lower protocol layer of UDP and TCP.

W5500 is embedded a Hardwired TCP/IP that is structured from Link layer to Transport later, excluding the Application Layer in [OSI 4 layers](#).

The W5500 supports IPRAW mode for data processing in IP layer protocols like [ICMP](#) (0x01) and [IGMP](#) (0x02) according to the protocol number. But if user needs, the host can directly process the IPRAW by opening the SOCKET n to IPRAW. This application note described ICMP, one of the IP Layer's protocol, and how it is used as a simple Ping application.

## Development Environment

- MCU : STM32F103C8
- Used program:
  - CoIDE V1.7.4
  - Flash Loader Demonstrator
  - Terminal v1.9b
  - WireShark V1.10.3

## Application note & Source code

### APPLICATION note

Version	Date	Download
1.0.0	2014-02-21	<a href="#">W5500_AP_IPRAW_V100E.pdf</a> <a href="#">W5500_AP_IPRAW_V100K.pdf</a>
1.1.0	2014-04-09	<a href="#">W5500_AP_IPRAW_V110E.pdf</a> <a href="#">W5500_AP_IPRAW_V110K.pdf</a>

### APPLICATION Source Code

Version	Date	Download	Etc
1.0.0	2014-02-21	<a href="#">W5500_APC_IPRAW_V100.zip</a>	Initial Version
1.1.0	2015-05-10	<a href="#">W5500_APC_IPRAW_V110.zip</a>	Modify - Use all socket

### Reference Video(Test Result)

- YouTube : [IPRAW Ping Test](#)

2014/02/21 13:09 · [ekkim](#)

For more information [W5500](#) chip please also refer to the chip's datasheet:

## Datasheet

- [W5500 Datasheet v1.0.9 - English](#)
- [W5500 Datasheet v1.0.9 - Korean](#)

### Datasheet History

Version	Date	Description
1.0.0	2013-08-01	Initial Release
1.0.1	2013-09-13	Corrected duplicated statements and typing errors (P.14, 23, 24, 28, 39, 51) Corrected descriptions (P.35)
1.0.2	2013-11-14	Changed "descriptions of pin at 1.1 Pin Descriptions" (P.10) starting "It must be tied to GND to NC (PIN38..42)" / 2. corrected typing error: starting "0x02 to 0x42 value of SOCK_MACRAW at 4.2 Socket Registers(P.50)"
1.0.3	2014-05-29	Corrected "Sn_MSSR at 4.2 Socket Register" (P.53): wrong descriptions of Sn_MSSR about FMTU/MTU
1.0.4	2014-06-13	1. Added Note about reading size register value (P.56, 58) / 2. Added IR Reflow Temperature Profile (P.66)
1.0.5	2014-11-11	1. Added description for MISO pin (P.11):The SCSn signal defines MISO pin output value / 2. Modified the register notation (P.33), Modified the register notation "Sn_IR at 4.2 Socket Register" (P.49) :from [R] to [RCW1] / 3. Corrected typing error: from DICON to DISCON of Sn_SR at 4.2 Socket Register (P.50)
1.0.6	2014-12-30	Corrected typing error : from 0x02 to 0x42 value of SOCK_MACRAW "Sn_CR at 4.2 Socket Registers"(P.46)
1.0.7	2016-02-24	1. Corrected Interrupt Assert Wait Time function (P.34) / 2. Notice PLLclk is 150MHz (P.34)
1.0.8	2017-05-19	1. Corrected Driver Level Range Unit uW/MHz to uW (P.60)
1.0.9	2019-05-22	1. Corrected Sn_IMR Description (P.55) 2. Corrected Junction temperature Min value TJ (P.57) 3. Added Maximum junction temperature TJMAX (P.58)

#### WIZ550io History

Version	Date	Description
1.0	2013-08-01	Initial Release
1.1	2014-01-17	Changed "External Transformer + RJ-45 to MAGJACK(inside transformer)"
1.2	2015-04-20	Added "Resistor 33R in MDI line. because EMI issue." Changed "PCB artwork. because changed develop tool(PADS → Altium) "
1.3	2018-08-10	Modified "inner 2 layer copper foil (3V3D). This copper foil plated below of CHAND area. It may affect ESD."

2013/08/30 10:01 · [bongbong](#)

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