

Table of Contents

| | |
|-------------------------|---|
| W5500 Performance | 1 |
|-------------------------|---|

W5500 Performance

W5500 SPI transmission

- Cortex-M3

- **Loopback Test(Only TCPs/1CH)**

- MCU : STM32F103C8
- Development Tool : ColDE v1.7.4
- ARM Ver : 4.7 2013q2
- Main Clock : 72MHz, SPI Clock(Max) : 36MHz
- Test Project : [W5500_SPI_Performance.zip](#)
- Test Tool : AX2, unit of measure: Mbps

| buf(KB)\socket(KB) | 1 | 2 | 4 | 8 | 16 |
|--------------------|-------|-------|-------|-------|-------|
| 1 | 2.648 | 3.208 | 3.208 | 3.208 | 3.195 |
| 2 | X | 2.779 | 3.342 | 3.337 | 3.337 |
| 4 | X | X | 3.384 | 3.407 | 3.407 |
| 8 | X | X | X | 3.441 | 3.443 |
| 16 | X | X | X | X | 3.284 |

- **buf : memory of MCU/socket : socket size of W5500**

- Cortex-M0

- **Loopback Test(Only TCPs/1CH)**

- MCU : M0516LBN
- Development Tool : ColDE v1.7.4
- ARM Ver : 4.7 2013q2
- Main Clock : 50MHz, SPI Clock(Max) : 25MHz
- Test Project : [W5500_SPI_Performance.zip](#)
- Test Tool : AX2, unit of measure : Mbps

| buf(KB)\socket(KB) | 1 | 2 | 4 | 8 | 16 |
|--------------------|------|-------|-------|-------|-------|
| 1 | 1.49 | 1.624 | 1.624 | 1.624 | 1.624 |
| 2 | X | 1.592 | 1.693 | 1.693 | 1.693 |

- Memory Size (Flash/SRAM)

- STMicro STM32F103C8 (64KB / 20KB)
- Nuvoton M0516LBN (64KB / 4KB)

Data throughput according to SPI clock speed

- Cortex-M3

- **Loopback Test**

- MCU : STM32F103C8
- Development Tool : ColDE v1.7.4
- ARM Ver : 4.7 2013q2
- Main Clock : 72MHz, SPI Clock :
36MHz/18MHz/9MHz/4.5MHz/2.25MHz/1.12MHz/0.562Mz/0.281MHz
- Test Project : [SPI_SPEEP_TEST.zip](#)
- Test Setting : Only TCPs / 1CH / Databuf(2K) / No Delay ack X

- Test Tool : AX2, unit of measure : Mbps

| Hz /socket(KB) | 1 | 2 | 4 | 8 | 16 |
|----------------|-------|-------|-------|-------|-------|
| 0.281M | 0.124 | 0.126 | 0.129 | 0.129 | 0.129 |
| 0.562M | 0.243 | 0.249 | 0.257 | 0.257 | 0.257 |
| 1.12M | 0.447 | 0.456 | 0.484 | 0.484 | 0.484 |
| 2.25M | 0.761 | 0.779 | 0.863 | 0.863 | 0.863 |
| 4.5M | 1.196 | 1.226 | 1.417 | 1.418 | 1.418 |
| 9M | 1.621 | 1.671 | 2.090 | 2.090 | 2.093 |
| 18M | 2.055 | 2.108 | 2.738 | 2.738 | 2.738 |
| 36M | 2.435 | 2.534 | 3.501 | 3.501 | 3.501 |

- SPI36MHz / SOCKBUF16K / DATABUF16K / No Delay ACK : **3.63Mbps**
- **socket : socket size of W5500**
- Test result : [SPI_SPEED_TEST.xls](#)

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